

# I-405, Tukwila to Renton Improvement Project (I-5 to SR 169 – Phase 2)



**Corridor Program**

Congestion Relief & Bus Rapid Transit Projects

## *ECONOMICS TECHNICAL MEMORANDUM*

*December 2007*





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## **APPENDICES**

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Appendix A: Methodology

## Summary

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The Washington State Department of Transportation (WSDOT) has joined with the Federal Highway Administration (FHWA), Federal Transit Administration (FTA), Central Puget Sound Regional Transit Authority (Sound Transit), King County, and local governments to develop strategies to reduce traffic congestion and improve mobility in the I-405 Corridor from Tukwila in the south to Lynnwood in the north. The I-405, Tukwila to Renton Improvement Project (I-5 to SR 169 – Phase 2), referred to as the Tukwila to Renton Project, is one of several projects being advanced as part of a phased implementation of improvements along I-405.

The Tukwila to Renton Project extends approximately four miles along I-405 from I-5 to SR 169, and approximately two miles along SR 167 south from I-405 to SW 43rd Street. The project adds approximately \$1.24 billion (2006) of improvements to the baseline facilities.

The economic characteristics of the study area were assessed within a 37 square-mile area, comprised of 27 transportation analysis zones (TAZ). The study area includes most of Renton and portions of Tukwila and Kent. While no part of the proposed project will be located within the Kent city boundaries, there are concentrations of warehouses within Kent that rely on SR 167 and I-405 where the project will occur.

### ***What is the study area's economic character?***

The study area is a major center of commercial activity in the Puget Sound Region with a strong base in financial, real estate, and services; manufacturing; wholesale, trade communications and utilities; and retail sectors. All sectors in the study area rely heavily on portions of I-405 and SR 167 within the study area for freight transport. The area's regional retail centers rely on the convenient access to SR 167 and I-405 provide to these retail centers for residents living in south and central King County.

### ***What changes are expected in the area's pattern of employment in future years?***

Current Puget Sound Regional Council (PSRC) projections show that the study area will capture an increasing share of the region's overall employment. In 2000, estimated employment in the area represented 6.4 percent of total employment in the region. The PSRC projections indicate that the study area will receive 8.3 percent of the region's employment growth between 2000 and 2030, which will increase the study area's share to 7.0 percent of the region's total employment by 2030.

### ***How many jobs and how much income will be created during construction of the project?***

Assuming approximately 90 percent of the project (construction only, approximately \$1.04 billion) will be taxable, the project will generate approximately \$0.94 billion in taxable sales. Based on current sales and use taxes, this will generate \$8 million in additional tax revenue for the jurisdictions to share for the duration of the project's construction. Tukwila and

Renton will each receive a portion of the sales tax revenue, estimated to be 25 percent for Tukwila and 75 percent for Renton. In addition using the estimate construction cost, the project could create approximately 10,000 direct jobs and 6,400 indirect jobs (full-time jobs)

### ***How many properties will be acquired?***

WSDOT will acquire property for right-of-way, which will displace approximately 16 commercial properties and 25 residential properties. However, no industrial uses will be displaced by the project. In addition to the anticipated displacements, 64 vacant parcels will be fully acquired and portions of 91 residential and commercial properties will be acquired. If the Main Avenue design option is chosen to replace local access lost with the closing of Houser Way, an additional 10 commercial properties will be acquired and three public parking lots will lose a total of 5 parking spaces due to partial property acquisitions. Partial acquisitions of developed parcels that will not displace the business or residence could require modifications to access, on-site parking, or to both.

The project will require acquisition of approximately 74 acres of land for right-of-way from commercial and residential properties within the cities of Tukwila and Renton. These properties generate tax revenue for the cities. Properties that will be partially or completely acquired by the project account for less than 0.3 percent of the total land area within the Tukwila and Renton city limits. The only properties that will no longer contribute to the tax rolls of Tukwila and Renton are those that are converted entirely to right-of-way. In cases where some land will be acquired but the acquisition will not require relocation, the business will continue to generate tax revenue. As a result, the level of effect on the cities revenues is expected to be minor because the majority of property acquisitions will still allow the businesses to operate on the current site and contribute to Tukwila's or Renton's tax revenue. If displaced businesses relocate within the same jurisdiction, effects on tax revenue will be even less because the business will continue to pay property taxes within that jurisdiction.

### ***What effect will the improvements have on the economy during operation?***

The project will have a beneficial effect on the economy by reducing congestion and improving traffic speed within the study area. This will improve the speed at which freight movement can occur throughout the corridor and will benefit local businesses by reducing the amount of time deliveries and shipments sit idle in traffic. This in turn will reduce fuel costs and reduce the number of hours employees spend sitting in traffic. As future improvements are completed in this and other sections of the I-405 corridor,<sup>1</sup> freeway users, neighbors, and businesses within the study area will likely experience more consistent traffic patterns and benefit from improved mobility.

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<sup>1</sup> The 2003 State Legislature passed the "Nickel Account" transportation bill. This bill provides \$775.5 million for projects on King County's draft Regional Transportation Investment District list, which includes several projects along the I-405 corridor. The Legislature passed the Transportation Partnership Account in 2005 to continue funding improvements statewide, some of which will occur in the I-405 corridor. Both packages are funded from increases in the gasoline tax.

The Tukwila to Renton Project will have city-wide and regional benefits. These benefits will include reducing congestion at chokepoints, reducing the duration of congestion during peak commuter travel hours, and improving freight movement. The added roadway capacity will also help improve safety by providing drivers with more time and extra room to accelerate or decelerate and move into and out of the stream of traffic when getting on and off the freeway. This will help decrease the number of rear-end and sideswipe collisions.



## Project Description

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WSDOT is proposing to construct the I-405, Tukwila to Renton Improvement Project (I-5 to SR 169 – Phase 2), referred to as the Tukwila to Renton Project, to relieve congestion. Relieving congestion will benefit the public by:

- Lowering the number of accidents, thus improving safety.
- Increasing overall speeds through this section of freeway.
- Improving response times for emergency service vehicles using I-405.
- Improving access to and from I-405 and local circulation.

The Tukwila to Renton Project extends approximately four and one-half miles along I-405, from I-5 to SR 169, and approximately two miles along SR 167, from I-405 to SW 43rd Street. The project adds capacity to both I-405 and SR 167; improves the SR 181 and SR 169 interchanges; reconstructs the SR 167 interchange consisting of general-purpose direct-connector ramp from southbound I-405 to southbound SR 167, HOV direct-connector ramps from northbound SR 167 to northbound I-405 and from southbound I-405 to southbound SR 167, and a split-diamond interchange at Lind Avenue and Talbot Road with connecting frontage roads. These improvements represent the second phase of the I-405 Corridor Program for this portion of I-405. The first phase consists of improvements in the Renton Nickel Improvement Project, which is considered as the baseline condition for the Tukwila to Renton Project.

The analysis in this technical memorandum describes the baseline conditions, how the project may affect those conditions, and what measures will be taken to mitigate effects. To understand what improvements are being proposed as part of this project, the following presents the main features of the Build Alternative followed by a brief explanation of the No Build Alternative.

### ***Build Alternative***

The Tukwila to Renton Project improvements from west to east (northbound) along the study area are as follows:

#### **I-405 from I-5 to SR 181 Interchange**

- Remove the existing northbound I-405 Tukwila Parkway on-ramp.
- Realign I-405 mainline slightly to the south beginning just west of the existing northbound I-405 Tukwila Parkway on-ramp to the SR 181 interchange.
- Improve the SR 181 interchange:
  - Remove the existing SR 181 on-ramp to northbound I-405.
  - Extend Tukwila Parkway from the intersection with 66th Avenue east over the Green River to SR 181.
  - Construct new northbound I-405 on-ramp from Tukwila Parkway just east of the new crossing over the Green River (replaces the two existing on-ramps).



- Reconstruct the 66th Avenue S bridge over I-405 on a new alignment to the west and reconstruct the intersections with Southcenter Boulevard and Tukwila Parkway.
- Reconstruct the off-ramp from northbound I-405 to SR 181.
- Improve local arterials within the interchange area such as Southcenter Boulevard and Interurban Avenue.
- Reconstruct five bridges and build one new bridge over the Green River.
- Lower the Duwamish-Green River Trail.
- Reconstruct the I-405 structures over SR 181.
- Realign the Interurban Trail.

### **I-405 from East of SR 181 to SR 167 Interchange**

- Realign I-405 to provide a smooth transition onto the new Springbrook Creek/Oakesdale Avenue bridge that was constructed under the Renton Nickel Improvement Project.
- Construct one additional general-purpose lane in each direction on I-405 from SR 181 through SR 167.
- Stripe lanes to provide a buffer between HOV and general-purpose lanes along I-405.
- Reconstruct the I-405 structures over the Burlington Northern Santa Fe (BNSF) and Union Pacific railroads.
- Stripe the bridges over Springbrook Creek/Oakesdale Avenue for five lanes in both directions.

### **SR 167 from I-405 to SW 43rd Street On-ramp**

- Construct an auxiliary lane on northbound SR 167 from SW 43rd Street to I-405.
- Stripe lanes to provide a buffer between HOV and general-purpose lanes along SR 167.
- Reconstruct SR 167 between SW 27th Street and I-405 to accommodate the reconstructed SR 167 interchange.
- Reconstruct East Valley Road to the west of its current alignment between SW 23rd Street and SW 16th Street to accommodate the reconstructed SR 167 interchange.

### **I-405 Interchange with SR 167**

The interchange improvements affect both freeway to freeway access and local access.

#### *Freeway to Freeway Access*

- Construct a general-purpose direct-connector ramp from southbound I-405 to southbound SR 167, replacing the existing loop ramp.

- Reconstruct exterior ramps from northbound I-405 to southbound SR 167 and from northbound SR 167 to northbound I-405, replacing the existing ramps. This project will also add a general-purpose lane to both ramps.
- Construct HOV direct-connector ramps from southbound I-405 to southbound SR 167 and from northbound SR 167 to northbound I-405.
- Maintain existing loop ramp from northbound SR 167 to southbound I-405.

#### *Local Access*

Shift local access between I-405 and Renton from SR 167 to the Lind Avenue/Talbot Road split diamond interchange. WSDOT will:

- Construct a new half-diamond interchange at Lind Avenue.
- Construct a new half-diamond interchange at SR 515 (Talbot Road).
- Construct southbound and northbound frontage roads connecting Lind Avenue to Talbot Road.
- Remove exterior ramps to/from SR 167 north of I-405 and loop ramps south of I-405.
- Reconstruct the Lind Avenue bridge over I-405.
- Reconstruct I-405 structures over Talbot Road.
- Improve local street intersections.
- Provide new connection to Grady Way from S Renton Village Place.

#### **I-405 from East of SR 167 Interchange to North of SR 169**

- Construct two additional general-purpose lanes in each direction on I-405 from SR 167 through SR 169.
- Stripe lanes to provide a buffer between HOV and general-purpose lanes along I-405.
- Reconstruct S 14th Street south of its existing location.
- Cantilever the I-405 structures over Main Avenue.
- Reconstruct three bridges over the Cedar River: southbound and northbound I-405 and a pedestrian bridge.
- Relocate the BNSF railroad bridge over the Cedar River west of its current alignment.
- Close off Houser Way as a cul-de-sac just south of the Cedar River and remove the bridge over the river. Northbound traffic will be rerouted via Bronson Way, which will be striped to accommodate the new traffic pattern. Two options are being considered for northbound traffic between Houser Way and Bronson Way. The first option stripes Mill Avenue as a one-way street to provide two lanes northbound from the intersection of Houser Way and Mill Avenue to Bronson Way. Emergency vehicles will still be allowed to travel southbound on Mill Avenue from 2nd Street to Houser Way. The second option leaves Mill Avenue as a two-way street up to the intersection with 2nd Street where it will be striped

for one-way traffic northbound and reconfigures Main Avenue, a one-way street southbound, for two-way traffic. Main Avenue would be widened and striped for two-way traffic to provide access from the south to Bronson Way.

- Reconstruct the two local street accesses to Renton Hill. Two local access points will be maintained by reconstructing the Renton Avenue bridge over I-405 and reconstructing Mill Avenue as a stacked structure that also provides access to Renton Hill. The existing Cedar Avenue bridge will be removed.
- Construct a pedestrian pathway from Renton Hill to City parks and trails.

### ***No Build Alternative***

The No Build Alternative assumes that the improvements associated with the Renton Nickel Improvement project are constructed and serves as the baseline condition. Only routine activities such as road maintenance, repair, and safety improvements would be expected to take place between 2014 and 2030. This alternative does not include improvements that would increase roadway capacity or reduce congestion beyond baseline conditions. For these reasons, it does not satisfy the project's purpose to reduce congestion on I-405 between I-5 in Tukwila and SR 169 in Renton. The No Build Alternative has been evaluated in this technical memorandum as a comparison for the effects associated with the Build Alternative.

## Baseline Conditions

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The following information was summarized from the Economic Elements Discipline Report for the I-405 Renton Nickel Improvement Project, I-5 to SR 169.<sup>2</sup> This report covered the same general area as the proposed Tukwila to Renton Project and provided the baseline economic conditions for the Tukwila to Renton Project, including major employers by sector.

Baseline conditions describe what will exist in the future after a project that has already been approved and funded is completed. The baseline condition is a snapshot of expected conditions. It provides an important point of comparison for understanding the effects of the proposed Build Alternative. For the Tukwila to Renton Project, the economic baseline condition assumes that the Renton Nickel Improvement Project has been completed.

Additional information from local and regional sources was also used to characterize the economic conditions within the study area.

### ***What geographic area is included in the analysis?***

The economic analysis assessed a 37 square-mile area, comprised of 27 TAZs as shown on Exhibit 1. The study area includes most of Renton and portions of Tukwila and Kent. While no part of the proposed project will be located within the Kent city boundaries, concentrations of warehouses located within Kent rely on the portions of both SR 167 and I-405 within the study area for freight transport.

### ***What is the population in the area?***

The population of Tukwila increased by approximately 45 percent between 1990 and 2000, from 11,874 residents in 1990 to 17,181 residents in 2000. According to the Washington State Office of Financial Management, Tukwila had minimal population growth between 2000 and 2004 with only 59 new residents, representing an increase of less than 1 percent.

The population of Renton increased by approximately 20 percent between 1990 and 2000, from 41,688 residents in 1990 to 50,052 residents in 2000. Renton continued to grow between 2000 and 2004 with an 11 percent increase in population, representing an additional 5,308 residents.

In the study area, the population within the TAZs was 91,403 people in 2000, representing approximately 2.8 percent of the central Puget Sound Region (King, Kitsap, Pierce, and Snohomish counties). The PSRC population projections for TAZs estimate that in 2030 the study area will have a population of approximately 123,950 people, an average annual increase of approximately 2.6 percent.

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<sup>2</sup> WSDOT 2005

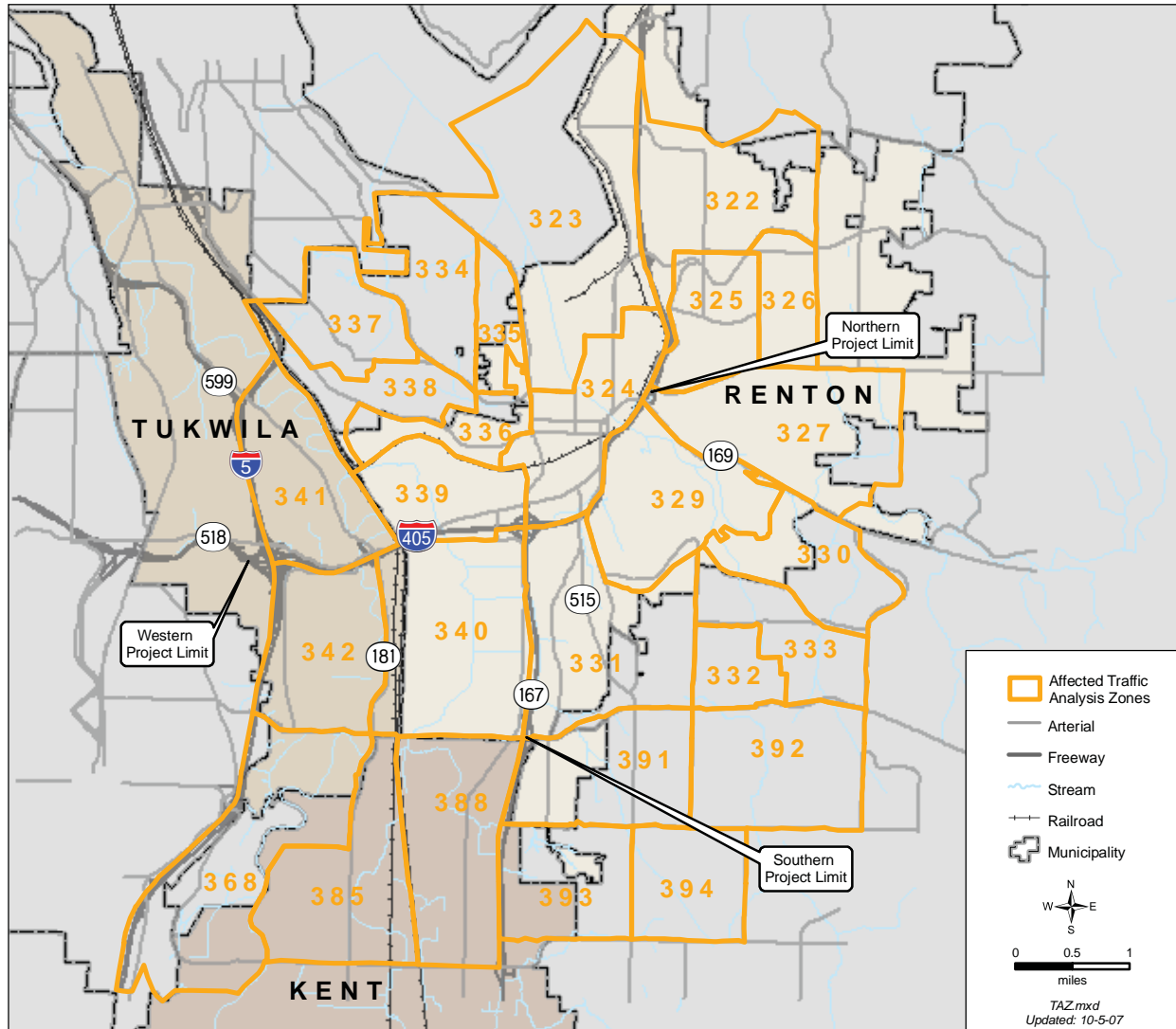


Exhibit 1: Study Area for Economic Analysis

### ***What is the study area's economic character?***

The study area is a major center of commercial activity in the Puget Sound Region with activity concentrated in central Renton and the northern end of the Kent Valley. The study area has a strong base in the finance, insurance, real estate, and services (FIRES), manufacturing; wholesale, trade, communications, and utilities (WTCU); and retail sectors. Construction and resources employment is scattered throughout the study area. All sectors in the study area rely heavily on portions of I-405 and SR 167 for freight transport. The area's regional retail centers rely on the convenient access that I-405 and SR 167 provide to these retail centers for residents living in south and central King County.

### ***What kinds of employers are located in the study area?***

The FIRES sector provides approximately 23 percent of the employment opportunities in the study area, generally in smaller businesses that are more dispersed over the study area than

other sectors. The largest concentrations of FIRES businesses are near I-405 from I-5 to SR 169. Some of the larger employers in this sector include Enterprise Rent-A-Car; Olympic Security; ER Solutions, Inc.; Patient Accounting Services; Diamond Lils; Group Health Cooperative; and StarMed Health Personnel.

Manufacturing constitutes 33 percent of all employment in the study area. It is dominated by larger firms and is primarily concentrated in central Renton and in the Kent Valley between I-5 and SR 167. Boeing; Hexcel Corporation; Wizards of the Coast; Continental Mills, Inc.; Alexander Broadcasting; Alside Supply Center; and Paccar, Inc. are examples of the larger manufacturing employers within the study area. The WTCU sector is also concentrated in this area and includes employers such as Columbia Distributing; Paccar, Inc. (warehouse); Emerald Shared Service; Food Services of America; South Seattle Auto Auction; Shuttle Express, Inc.; and Dreyers Grand Ice Cream.

Retail employment comprises 20 percent of the total employment in the study area, concentrated primarily in the Southcenter area. This area includes the Westfield Shoppingtown Mall in addition to other retail centers, as well as downtown Renton, which also has a large commercial center with a mix of big box, mid-size, and small retail outlets. Some of the larger retail employers in the study area include ARA Services, Inc.; Elmhult; Ikea; Sam’s Club; Compucom Systems, Inc.; WalMart; Nordstrom; Macy’s; JC Penny; Costco; and The Home Depot.

Construction and resources employment is spread throughout the study area, with larger employers generally located in the southern portion of the study area near SR 167 and clustered just west of the SR 167/I-405 interchange. Businesses include ADT Security Services, EJ Bartells, PSC Industrial Outsource, and Scarsella Brothers, Inc.

***What changes are expected in the area’s pattern of employment in future years?***

Current PSRC projections show that the study area will capture an increasing share of the region’s overall employment as shown in Exhibit 2. In 2000, estimated employment in the area represented 6.4 percent of total employment in the region. The PSRC projections indicate that the study area is expected to receive 8.3 percent of the region’s employment growth between 2000 and 2030, which is expected to increase the study area’s share to 7.0 percent of the region’s total employment by 2030.

**Exhibit 2: Current and Forecasted Total Employment**

	Study Area	King, Kitsap, Pierce and Snohomish Counties	Study Area Share of Regional Employment
2000	112,753	1,748,793	6.40%
2030 Forecast	178,189	2,535,899	7.00%
Forecasted Annual Growth Rate	1.90%	1.50%	
Forecasted Growth	65,436	787,106	8.30%
Source: Puget Sound Regional Council 2003 Small Area Forecasts by TAZ as reported in the I-405, Renton Nickel Improvement Project Economic Elements Discipline Report (WSDOT 2005).			

Large-scale retail, commercial, and residential uses are now in various stages of planning within the cities of Renton and Tukwila. These plans include a major expansion of the Westfield Shoppingtown Mall in Tukwila; large-scale development of retail, housing, and commercial space at the southern end of Lake Washington in the Renton urban center; and commercial and retail development south of Tukwila. Combined, these three developments could add more than ten million square feet of commercial and retail uses in the coming years.

Although the overall share of regional employment will increase, employment in some market sectors is expected to diminish as shown in Exhibit 3. Specifically, regional forecasts anticipate that the study area is expected to see diminishing shares of the region’s employment in WTCU and manufacturing, while capturing increasing shares of FIRES, retail, and the government/education sectors of the economy.

**Exhibit 3: Current and Projected Employment by Sector Compared to Regional Employment**

	Manufacturing	WTCU	FIRES	Retail	Government/Education
Region’s employment 2000	240,068	215,040	684,630	320,575	288,480
Study Area’s share 2000	15.50%	9.30%	3.80%	6.90%	2.50%
Region’s employment 2030	235,497	317,999	1,144,395	457,101	380,907
Study Area’s share 2030	14.60%	8.40%	6.50%	7.10%	2.80%

Source: Puget Sound Regional Council 2003 Small Area Forecasts by TAZ as reported in the I-405, Renton Nickel Improvement Project Economic Elements Discipline Report (WSDOT 2005)

Regional forecasts suggest that the study area will become less reliant on manufacturing and WTCU activity in the future, moving toward a greater balance among sectors. Forecasts predict a shift towards FIRES sector activity in the study area and shifts away from manufacturing and WTCU. Retail is expected to remain relatively strong in the study area.

### ***How does the study area reflect the regional economy?***

One way to measure an area’s mix of commercial activity compared to the region as a whole is to use location quotients.<sup>3</sup> The concept of location quotients can be applied to an area of any size, from a neighborhood to a state, and is a useful mechanism for identifying the extent to which the area in question serves as a center of one or more types of commercial activity. A location quotient greater than 1.0 for a given sector means that local commercial activity is more

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<sup>3</sup> A location quotient offers a way to identify the extent to which an area “specializes” in certain economic activities. An area’s location quotient for a given sector is calculated by comparing the area’s share of regional employment in the sector with the area’s share of regional employment across all sectors combined. For instance, a location quotient of 1.0 in the retail sector for a given area means that the area has its “fair share” of retail employment. The area could have ten percent of the region’s retail employment and ten percent of the region’s total employment, which translates to a retail location quotient of 1.0 (ten percent retail share divided by ten percent total share). If, instead, the area had twenty percent of the region’s retail employment, but only ten percent of the region’s total employment, then the area’s location quotient for retail will be 2.0 (twenty percent divided by ten percent), signaling the importance of retail in the area’s local commercial base.



heavily concentrated in that sector while a location quotient of less than 1.0 means that sector is less present in the local area than one typically expects. As of 2000, the study area had a low location quotient in FIRES (0.59), while displaying high location quotients for manufacturing (2.41), WTCU (1.44), and retail employment (1.08).

The study area is currently dominated by manufacturing, particularly because of Boeing and Paccar. While the location quotient for FIRES jobs is relatively low because of the high numbers of those jobs in other parts of the region, such as downtown Seattle, the FIRES sector is expected to provide a large number of jobs in the study area. The PSRC 2030 projections in Exhibit 4 show that within the study area the FIRES sector will increase to approximately 42 percent of total employment as manufacturing and WTCU reduce their employment levels. Retail activity is expected to remain strong in the study area, but will decline as a percent of total due to the large increase forecast for FIRES employment. Government/Education is expected to remain about the same, at 6 percent of total employment within the study area.

**Exhibit 4: Current and Forecasted Employment Area by Sector within the Study Area**

	Manufacturing	WTCU	FIRES	Retail	Government/ Education	Total
2000	37,239	20,019	26,030	22,259	7,206	112,753
Percent of Total Employment (2000)	33%	18%	23%	20%	6%	100%
2030 Forecast	34,308	26,559	73,985	32,591	10,746	178,189
Percent of Total Employment (2030)	19%	15%	42%	18%	6%	100%
Forecasted Annual Growth Rate	-0.30%	1.10%	6.10%	1.50%	1.60%	1.90%
Forecasted Growth	-2,931	6,540	47,955	10,332	3,540	65,436

Source: Puget Sound Regional Council 2003 Small Area Forecasts by TAZ as reported in the I-405, Renton Nickel Improvement Project Economic Elements Discipline Report (WSDOT 2005).

### ***What is the main tax base in the study area?***

The cities of Tukwila, Renton, and Kent are fiscally strong, generating general fund revenues per resident that ranged from a high of \$1,884 (Tukwila) to a low of \$651 (Kent) in 2003. In comparison, the median city in Washington State generated approximately \$423 per resident in general fund revenues in the same year. High revenue per person, while potentially indicating a fiscally strong city, could also indicate that the city has a higher percentage of businesses compared to population. For example, while Tukwila has the highest tax revenue per person, it also has the smallest population of any city in the study area. Among the three affected cities, Tukwila is perhaps in the strongest fiscal position, due in large part to high retail sales tax and property tax revenues per resident. Typically, when a city like Tukwila has high sales tax revenues, it means that the city’s retailers are drawing from markets that extend well beyond city boundaries. In the case of Tukwila, high sales volumes by “big box” stores and the

Westfield Shoppingtown Mall suggest that retailers are drawing in customers from outside the study area.

The City of Renton also generates relatively strong retail sales tax revenues per resident, although its property tax revenues are not as high as those in Tukwila. The City of Kent has larger property tax revenues than Renton, but significantly lower retail sales tax revenues per resident.

## Potential Effects

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### ***What effect will the improvements have on the economy during construction?***

#### **How will construction of the project affect conditions for commerce and business?**

During construction, the existing capacity of the roadways will generally be maintained during peak hours. However, some temporary lane closures will likely be required, temporarily reducing highway and interchange capacity, leading to changes in congestion. At some point during construction, the entire roadway may be closed. These closures will occur during non-peak hours in the evenings. These changes will temporarily disrupt travel along the affected roads. Construction could affect businesses in a wide area around the I-405 corridor in the study area and cause certain businesses to experience some degree of economic hardship. For example, construction could make the trip to a particular business more difficult, which in turn, may cause customers to go elsewhere.

Access changes within the study area may affect existing businesses if vehicle circulation or travel patterns change as a result of the project. For example, if access is improved to one existing business and access is limited to a similar business nearby, the improved access will have a beneficial effect on the one business while adversely affecting the business with more limited access. The extent and duration of the interference, the location of competitors, and the type of affected business could all influence the magnitude of the economic effects resulting from construction.

#### **How many jobs and how much income will be created during construction of the project?**

Construction-related employment

According to the IMPLAN<sup>4</sup> input/output economic model analysis, \$1 million of highway construction activity in the Puget Sound Region in 2001 generated 9.6 direct jobs and an additional 6.2 indirect and induced jobs within the King, Kitsap, Pierce, and Snohomish county areas.<sup>5</sup> Using the estimated construction costs of approximately \$1.04 billion (2006), the project could create approximately 10,000 direct jobs and 6,400 indirect and induced jobs (full-time jobs).

Having noted the relationship between construction expenditures and jobs, it should also be noted that a job created by roadway construction, at a regional level, should not automatically be viewed as a new job to the region. The project's net job-creation effects will depend on the

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<sup>4</sup> IMPLAN is an economic model that traces the ripple effects of a stimulus to the economy, such as an investment in highway construction. The model tracks how an economic action like a highway project affects the regional economy creating revenue, jobs, and income in various sectors of the economy.

<sup>5</sup> I-405, Renton Nickel Improvement, Economic Elements Discipline Report, WSDOT 2005.

portion of the investment dollars that might be diverted away from the Puget Sound economy if the improvements are not built. Therefore, there will be no adverse effects to construction-related employment and there may be some positive employment effect.

#### Construction-related income

The project's effects during construction within the study area will consist primarily of purchases made by construction workers, such as food, gasoline, and supplies. The project will have a beneficial effect on businesses within the region that provide construction services and materials during construction of the Tukwila to Renton Project. These purchases will be subject to retail sales taxes and will benefit the local jurisdiction where the improvements occur or where the purchases are made. Over the entire length of the study area, sales tax at a rate of 8.8 percent will apply to purchases. Renton and Tukwila will receive a portion of the sales tax, totaling 0.85 percent of taxable activities. King County will receive 0.15 percent of all taxable goods and services. The revenues from local sales tax will accrue based on the location of the construction activity.

The project (engineering, right-of-way acquisition, and construction) is expected to cost approximately \$1.24 billion (2006). Based on assumptions used for other projects in the region, primarily the Renton Nickel Improvement Project, approximately 90 percent of the total construction costs for the Tukwila to Renton Project, estimated to be approximately \$1.04 billion (2006), will be subject to sales and use taxes. Those figures imply an average taxable activity of approximately \$0.94 billion for the duration of the project construction. The Washington Department of Revenue reports that Tukwila and Renton, the two local jurisdictions in the study area, had 2005 taxable retail sales (the most recent annual sales data available) of \$1.92 billion and \$1.95 billion, respectively, generating \$16.5 million in sales tax revenue for Tukwila and \$17.1 million in sales tax revenue for Renton. Tukwila and Renton will share in the sales tax revenue according to the proportion of construction in each city, estimated to be 25 percent for Tukwila and 75 percent for Renton. The project will generate a total of approximately \$8 million in additional sales tax revenue for the jurisdictions to share during the time it takes to complete construction of the Tukwila to Renton Project.

#### **How many properties will be acquired?**

The Tukwila to Renton Project will acquire commercial and residential property within the study area. These acquisitions are described in detail in the Social, Public Services, and Utilities Technical Memorandum<sup>6</sup> and the Land Use Discipline Report<sup>7</sup> prepared for this project.

WSDOT will acquire property for right-of-way, which will displace approximately 16 commercial properties and 25 residential properties. No industrial uses will be displaced by the project. In addition to the anticipated displacements, 64 vacant parcels will be fully acquired and portions of 91 residential and commercial properties will be acquired. Partial acquisitions

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<sup>6</sup> I-405, Tukwila to Renton Improvement Project (I-5 to SR 169 - Phase 2), Social, Public Services, and Utilities Technical Memorandum. WSDOT 2007.

<sup>7</sup> I-405, Tukwila to Renton Improvement Project (I-5 to SR 169 - Phase 2), Land Use Discipline Report. WSDOT 2007.

of developed parcels that will not displace the business or residence could require modifications to access, on-site parking, or to both.

#### Mill Avenue and Main Avenue Design Options

To route traffic from Houser Way to Bronson Way, two design options have been proposed. The Mill Avenue design option will change Mill Avenue from a two-way to a one-way street between 2nd Street and Bronson Way. With the Main Avenue design option, the existing one-way road will be widened to provide four lanes, two in each direction. The Mill Avenue design option will not require any property acquisitions. The Main Avenue design option will require ten additional commercial property acquisitions, including a portion of Veterans Memorial Park and 5 parking spaces from 3 public parking lots. Seven commercial properties will be fully acquired and the existing businesses will need to relocate.

#### **What effect will the acquisitions have on local tax revenues?**

The project will require acquisition of approximately 74 acres of land for right-of-way from commercial and residential land within the cities of Tukwila and Renton, which collect tax revenue from those properties. Properties that will be partially or completely acquired by the project account for less than 0.3 percent of the total land area within the Tukwila and Renton city limits. The only properties that will no longer contribute to the tax rolls of Tukwila and Renton are those that are converted entirely to right-of-way. In cases where some land will be acquired but the acquisition will not require relocation, the business will continue to generate tax revenue. As a result, the level of effect is expected to be minor because the majority of property acquisitions will still allow businesses to operate on their current sites and contribute to Tukwila's or Renton's tax revenue. If displaced businesses relocate within the same jurisdiction, tax revenue will be affected even less because the business will continue to pay property taxes within that jurisdiction.

#### ***What effect will the improvements have on the economy during operation?***

The project will have a beneficial effect on the economy by reducing congestion and improving traffic speed within the study area, thus improving the speed at which freight movement can occur throughout the corridor. Reducing congestion will benefit local businesses by decreasing the amount of time deliveries and shipments sit idle in traffic. This in turn will reduce fuel costs and reduce the number of hours employees spend sitting in traffic. As future improvements are completed in this and other sections of the I-405 corridor,<sup>8</sup> freeway users, neighbors, and businesses within the study area will likely experience more consistent traffic patterns and benefit from improved mobility.

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<sup>8</sup> The 2003 State Legislature passed the "Nickel Account" transportation bill. This bill provides \$775.5 million for projects on King County's draft Regional Transportation Investment District list, which includes several projects along the I-405 corridor. The Legislature passed the Transportation Partnership Account in 2005 to continue funding improvements statewide, some of which occur in the I-405 corridor. Both packages are funded from increases in the gasoline tax.

Reducing congestion on I-405 and SR 167 will benefit businesses in the study area and in the region that use the road system to ship materials by reducing travel times and the amount of fuel used due to waiting in traffic. Commute times for employees will also be reduced, potentially increasing the competitiveness of local employers. The improved road system will also make regional retail centers more accessible to a greater number of households who currently avoid businesses in the study area because of traffic congestion.

### ***What would be the economic effects of the No Build Alternative?***

The No Build Alternative would not add any capacity beyond what is already provided in the Renton Nickel Improvement Project. Routine maintenance of roads in the study area would continue to occur. Because no new construction would occur, no economic benefit from construction-related activities would occur.

The No Build Alternative would not reduce congestion in the study area and as a result would have an adverse effect on businesses within the study area that rely on the road system for shipping and access to its customer base. The No Build Alternative would likely increase the long-term costs associated with moving freight and delivering goods and services. It is likely that this alternative would also reduce the effective trade areas for retail centers in Renton and Tukwila.

### ***What will be the indirect effects of the Build Alternative?***

WSDOT expects the freeway system to serve more traffic with the project than with the No Build Alternative. The additional traffic within the study area will benefit local businesses, particularly auto-oriented businesses located at interchanges where vehicles stop and make purchases such as fuel.

Additional capacity along the project corridor could also enable redevelopment of existing parcels along the corridor at higher densities than currently exist. However, several other necessary conditions must typically be met for redevelopment to occur, such as public policy, demand for the development, compliance with local and regional land use planning designations, and sufficient capital facilities such as utilities. Redevelopment at higher densities could increase the tax revenue for local jurisdictions.

### ***What are the unavoidable adverse effects?***

The Tukwila to Renton Project will not have any unavoidable adverse effects on economics within the study area.

## Measures to Avoid or Minimize Project Effects

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### ***How will temporary adverse effects on business owners be reduced or mitigated?***

Access to businesses will be maintained throughout the construction period. Reasonable access will be provided during business hours. As part of construction management, access measures will be prepared and included in the contract specifications.

Because it may be difficult to determine whether a business is open or how to access the site during the construction period, provisions will be made for posting appropriate signs that communicate the necessary information to potential customers.

Through planning and construction staging, potential access restrictions associated with delivery and storage of equipment and materials will be reduced by scheduling those for off-peak travel and non-business hours to minimize effects on surrounding properties. Daytime street closures will be kept to a minimum to provide access for businesses during regular business hours, where practical.

### ***How will permanent adverse effects on business owners be reduced or mitigated?***

Property acquisition and relocation assistance procedures are governed by the Uniform Property Assistance and Real Property Acquisition Act of 1970 and its revisions. The act ensures fair and consistent treatment of all displaced individuals, families, businesses, farm operations, and others who occupy land acquired for right-of-way in a way that does not cause a disproportionate hardship to those affected by projects designed for the benefit of the community. WSDOT will implement the Uniform Relocation Act by providing relocation planning, advisory services, coordination, and financial payments to businesses, which are required to relocate as a result of property acquisitions.



## Acronyms and Abbreviations

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BNSF	Burlington Northern Santa Fe
FHWA	Federal Highway Administration
FIRES	Finance, insurance, real estate and services
FTA	Federal Transit Administration
HOV	High-Occupancy Vehicle
I	Interstate
IMPLAN	Impact analysis for planning
PSRC	Puget Sound Regional Council
Sound Transit	Central Puget Sound Regional Transit Authority
SR	State Route
TAZ	Transportation analysis zone
USDOT	U.S. Department of Transportation
WSDOT	Washington State Department of Transportation
WTCU	Wholesale trade, transportation, communications and utilities

## Glossary

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acquisition	The purchasing of property, residences, or businesses for right-of-way necessary to construct or support a project.
accessibility	The ability to conveniently travel through an area and reach a destination, e.g., shopping, services, home.
displacement	Removal of a business, residence, or public facility from its existing location. In the context of transportation improvements, displacement is generally the result of property acquisition for right-of-way expansion or elimination of access to a property due to traffic revisions.
geographic information system (GIS)	A digital computer mapping system that can overlay a wide variety of data such as land use, utilities, and vegetative cover, and provide a spatial analysis.
high-occupancy vehicle (HOV)	High-occupancy vehicle is a special designation for a bus, carpool, or vanpool provided as an encouragement to increase ride-sharing. Specially designated HOV lanes and parking are among the incentives for persons to pool trips, use fewer vehicles, and make the transportation system more efficient. HOV lanes are generally inside (left-side) lanes, and are identified by signs and a diamond on the pavement. Currently, two or more (2+) occupants are required to use the I-405 HOV lanes. Motorcycles are allowed to use freeway HOV lanes as well.
Puget Sound Regional Council (PSRC)	The Metropolitan Planning Organization (MPO) and Regional Transportation Planning Organization (RTPO) for the central Puget Sound region, which is comprised of Snohomish, King, Pierce, and Kitsap counties. The MPO and RTPO is the legally-mandated forum for cooperative decision-making about regional growth policies and transportation issues in the metropolitan planning area.
right-of-way	Land purchased prior to the construction of transportation improvements along with land for sound walls, retaining walls, stormwater facilities, and other project features. This also includes permanent or temporary easements for construction and maintenance. Vacant land may also be set aside for future highway expansion under certain circumstances.
study area	The area specifically evaluated for environmental effects.
transportation corridor	Primary travel routes between major origins and destinations within a region.

## References

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### **GIS Data Sources**

#### **Exhibit 1**

US Census Bureau.

- 2000 Redistricting Census 2000 TIGER Line Files of Washington: Traffic Analysis Zones.

#### **Base Data**

All GIS exhibits contain one or more of the following as base layers:

Geographic Data Technology, Inc. (GDT).

- 2005 GDT – Dynamap Transportation. April 2005.

King County Standard GIS Data Disk, extract June 2006:

- 2004 Cities with annexations.
- 2005 Open Water.
- 2006 Parks in King County. Data updated by I-405 staff to match data from cities of Renton and Tukwila.
- 2005 Streams and Rivers. Data updated by I-405 staff to match fieldwork, 2002 LiDAR, and orthorectified aerial photography.
- 2005 Trails in King County. Data updated by I-405 staff to match fieldwork, 2002 LiDAR and orthorectified aerial photography.

United States Geological Survey (USGS).

- 2002 Color Aerial Photography. June 2002.  
<http://edc.usgs.gov/products/aerial/hiresortho.html>

Washington State Department of Transportation (WSDOT).

- 2001 Aerial photography program. March 2001.
- 1997 Spatial Data Catalog, Railroads.

### **Text References and Verbal Communications**

Puget Sound Regional Council.

- 2006 2003 Small Area Forecasts. Available online: <http://www.psrc.org>. Accessed: September 4, 2006.

Washington Department of Revenue.

- 2006 Distribution of Local Sales/Use Tax to Cities and Counties. Available online: <http://dor.wa.gov/docs/reports/2005/ltd2005/contents.htm>. Accessed: October 19, 2006.

2006 Distribution of Local Sales/Use Tax to Cities and Counties. Available online:  
[http://dor.wa.gov/content/statistics/stats\\_taxretail.aspx](http://dor.wa.gov/content/statistics/stats_taxretail.aspx). Accessed: October 19, 2006.

Washington State Department of Transportation (WSDOT).

2007 I-405, Tukwila to Renton Improvement Project (I-5 to SR 169 – Phase 2), Land Use Discipline Report. Prepared by Jones and Stokes.

2007 I-405, Tukwila to Renton Improvement Project (I-5 to SR 169 – Phase 2), Social, Public Services, and Utilities Technical Memorandum. Prepared by David Evans and Associates, Inc.

2007 I-405, Tukwila to Renton Improvement Project (I-5 to SR 169 – Phase 2), Transportation Discipline Report. Prepared by Mirai Associates.

2005 I-405, Renton Nickel Improvement Project. Sheckler, Economic Elements Discipline Report. Prepared by Brett and Erica Natali, Berk & Associates.

## **APPENDIX A: METHODOLOGY**

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### ***How was economic information collected?***

Information was collected for this report by reviewing inventories of current commercial conditions from local and regional planners and by reviewing the findings of regional real estate firms. Baseline conditions were determined by considering:

- The current and forecasted population and employment levels within the study area;
- The mix of industrial categories;
- Locations in the study area where specific types of businesses are concentrated relative to the regional economy; and
- The extent to which different commercial areas within the study area serve different roles in the economy.

Baseline conditions information described above was used to identify ways in which the local economy is expected to change in the coming decades. Each commercial sector is affected to a certain degree by accessibility to the site. Consequently, to assess the project's effects, it is important to know the scale and distribution of different employment sectors.

Much of the baseline conditions information was obtained from the Economic Elements Discipline Report (October 2005), completed as part of the I-405, Renton Nickel Improvement Project Environmental Assessment, which has a similar study area.

### ***What data sources were used?***

The primary data source for baseline conditions is the Economic Elements Discipline Report (October 2005). Information, where relevant, was used from that report because it identifies baseline economic conditions within the same study area and was completed recently. Other information used to complete the baseline conditions section of this memorandum includes King County Assessor's data, Washington State Employment Security Division data, and Census data. As needed, other Tukwila to Renton reports, such as the Transportation Discipline Report, were reviewed and incorporated.

### ***What methods of analysis were used to study the project's potential effects?***

The I-405 Team assessed employment effects of construction using the same assumptions as were applied in the Renton Nickel Improvement Project Economic Elements Discipline Report (October 2005). That report used the IMPLAN input/output model estimates to determine the economic effects associated with construction expenditures. The I-405 Team described the primary, short-term construction effects in terms of:

- One-time local sales tax revenues on the value of construction;

- Temporary construction employment and other multiplier effects on the regional economy;
- Possible construction interference on business activity located near the project site; and
- Increased traffic congestion and delays within the study area.

The I-405 Team also evaluated long-term economic effects by examining two factors:

- The economic effect of changes in traffic patterns and patterns of commerce in the local business community; and
- Broader economic changes associated with the project, such as the effect that reducing congestion may have on businesses' ability to deliver goods and services, to access material inputs, and to access labor markets.