

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



Corridor Program
Congestion Relief & Bus Rapid Transit Projects

SOCIAL ELEMENTS, PUBLIC SERVICES AND UTILITIES TECHNICAL MEMORANDUM

December 2007



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Summary

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) is one of several projects being advanced as part of a phased implementation of improvements along I-405.

The project extends approximately four 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 a general-purpose direct-connector ramp from I-405 southbound to SR 167 southbound, high-occupancy vehicle (HOV) direct-connector ramps from SR 167 northbound to I-405 northbound and from I-405 southbound to SR 167 southbound, and a split-diamond interchange at Lind Avenue and Talbot Road with connecting frontage roads.

To address local access needs resulting from the removal of the Houser Way bridge over the Cedar River, the project proposes two design options. The first design option stripes Mill Avenue as a one-way street to provide two lanes northbound from the intersection of 2nd Street and Mill Avenue to Bronson Way. However, a second design option referred to as the Main Avenue design option, leaves Mill Avenue as it currently exists and reconfigures Main Avenue, which is currently a one-way street southbound. This second option widens Main Avenue for two-way traffic to provide access to Bronson Way.

The study area limits encompass the area of potential effects on social elements, public services, and utilities. The extent of this potential effect is about one-half mile from the project activities along I-405 and SR 167 in the cities of Tukwila and Renton (see Exhibit 1). All of the I-405 projects have used a half-mile study area to analyze potential effects on social elements, public services, and utilities. The study area for this project was altered in places to ensure that entire neighborhoods were included and to accurately capture and report any project effects. The project will extend beyond the current right-of-way, resulting in some property acquisitions.

Industrial and commercial land uses dominate the study area, with pockets of residential uses in neighborhoods such as Renton Hill, South Renton, and Talbot Hill. The project will support planned growth in these areas by providing the necessary infrastructure to enhance planned connectivity and concentration of growth within the study area.

The cities of Tukwila and Renton are within the study area. Tukwila has a population of 17,181, and Renton has a population of 50,052 residents. Almost 58 percent of residents in Tukwila are renters and 50 percent in Renton. Approximately 14 and 17 percent of households within Tukwila and Renton contain residents aged 65 years or older, respectively.

Many social resources, such as schools, community centers, and health care facilities, are available to residents in both communities. Community recreational facilities include parks, trails, and bike paths that connect places of community activity throughout the study area.

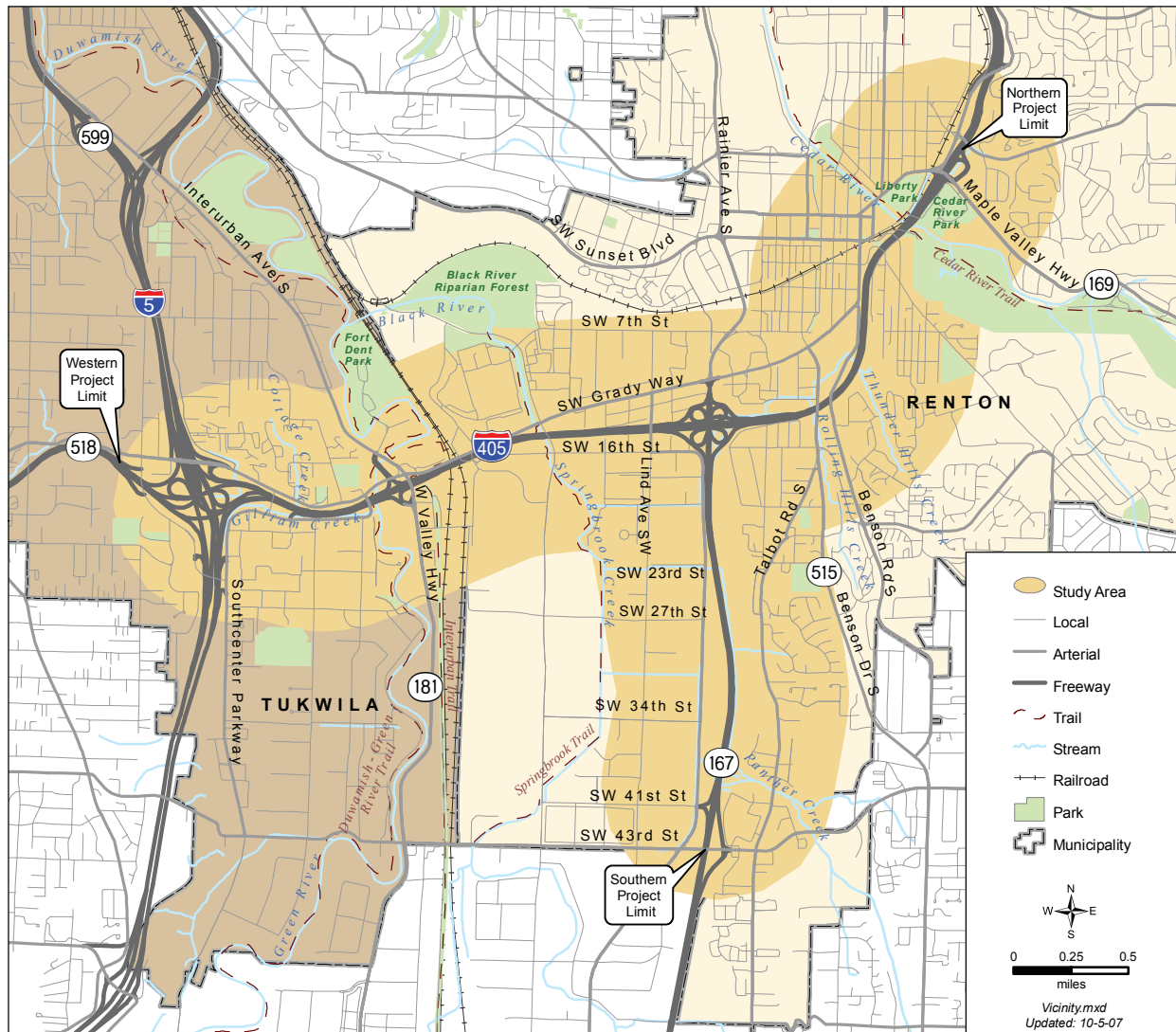


Exhibit 1: Project Vicinity

Neighborhoods and Community Cohesion

Community cohesion in the cities of Tukwila and Renton is exhibited through use of community elements that promote social interactions between residents, such as neighborhood parks and recreation centers, religious organizations, and annual neighborhood picnics.

Tukwila’s three neighborhoods in the study area are Tukwila Hill, Thorndyke, and McMicken. The Renton neighborhoods in the study area are North Renton, Piazza Renton, Monterey Terrace, Renton Hill, South Renton, Talbot Hill, Valley Vue, and Victoria Park. The degree of cohesion varies with each neighborhood. The project is not anticipated to affect neighborhood cohesion for two primary reasons. First, the proposed project will widen an existing freeway

and will not separate or isolate existing neighborhoods. Second, access to community facilities, services, and recreational areas will remain largely unchanged. Therefore, the effect will be minimal and existing internal neighborhood cohesion should remain the same.

The project will increase noise levels throughout the entire study area, primarily affecting residences in the Renton Hill and Talbot Hill neighborhoods. The project will increase noise levels above the noise abatement criteria for 92 residences, 1 park, and 1 library.

The new cul-de-sac at Houser Way will contribute to a more pedestrian-friendly environment within the surrounding neighborhoods, allowing residents from the Piazza Renton and Renton Hill neighborhoods to travel within the Tri-Park area with less traffic and subsequently less traffic noise. Local neighborhoods will also benefit from the elimination of many existing traffic flow and transportation safety problems in the study area. The decrease in traffic congestion will result in improved air quality, mobility, and access for residents within the study area.

Parks and Trails

The project will reconstruct portions of the Duwamish-Green River and Interurban Trails, acquire a small portion of Cedar River Park, remove the existing access for Liberty Park, and will completely acquire Freeway Park. The project will create a new pedestrian trail east of I-405 that runs from the Renton Hill neighborhood down to the Cedar River. This new trail will improve access for local residents to the Tri-Park area (Cedar River Park, Liberty Park, and the Narco site) and the Cedar River Interpretive Trail. As part of the project, WSDOT will provide funding to the City of Renton to provide new access to Liberty Park as part of the Tri-Park redevelopment plan.

Public Services and Utilities

Existing public services in Tukwila and Renton include fire districts, police districts, schools, religious organizations, medical services, and cemeteries. The project will increase the average travel speed on I-405 by up to 30 mph when the project opens in 2014, enhancing mobility and reducing response times for fire and emergency medical service vehicles along I-405 and SR 167. The improvements will also eliminate many existing traffic flow and transportation safety problems in the study area.

The project will result in utility conflicts with many utility owners within the study area, including providers for water, solid waste collection and recycling, sewer, storm sewer, electric power, natural gas, petroleum, and telecommunications. It is estimated that 103 utilities are currently in conflict and there is potential for 57 additional utilities to be in conflict as the project design progresses. In areas where avoidance is not feasible through project design, conflicts will be resolved by working with the utility owners to either relocate the utilities or protect them in place.

Displacements

Both commercial and residential properties within the study area will be affected by full and partial parcel acquisitions for the right-of-way needed to construct the project improvements.

In the City of Tukwila, three commercial parcel acquisitions will result in relocations. In the City of Renton, 25 residential and 13 commercial parcel acquisitions will require relocation. Commercial property acquisitions will also result in a loss of approximately 358 parking spaces within the study area.

If the Main Avenue design option is selected over the Mill Avenue design option, an additional ten commercial property acquisitions would occur in the City of Renton, including seven displacements and loss of five more parking spaces. The Main Avenue design option would also acquire 2,087 square feet of Veterans Memorial Park and would displace the YWCA Renton Regional Center. These effects would not be experienced with the Mill Avenue design option.

Circulation and Public Safety

The project will have citywide and regional benefits, which include reduced congestion at chokepoints in the study area, reduced congestion duration during peak commuter travel hours, and improved freight movement. The added roadway capacity will also help improve safety by providing drivers with more time and extra room to accelerate or decelerate when entering and exiting the freeway. This will help decrease rear-end and sideswipe collisions.

Avoidance and Minimization Measures

WSDOT has actively pursued ways to avoid impacts to the community and preserve the integrity of the area's neighborhoods. Since highway noise in the study area already exceeds acceptable levels, places to provide noise barriers and lower overall noise levels were considered in the project design. The design also considered how to shift the roadway alignment and use retaining walls to have the least effect possible on neighborhoods, businesses, and historic sites that border the freeway.

Adverse effects from project construction will be further avoided or minimized through several strategies incorporated into the construction management program. These strategies include providing clear construction signage, keeping road closures to a minimum, providing access to alternative travel options, and posting construction information on the project website. WSDOT will meet with staff from Tukwila and Renton Parks and Public Works Departments during final design to coordinate temporary trail closures and detours. If trail traffic cannot be maintained during construction, safe detours will be identified for use by cyclists and/or pedestrians. WSDOT will develop signs explaining the temporary closure timing and detour routes.

WSDOT will provide relocation assistance to residents and businesses in compliance with the Uniform Relocation Assistance and Real Property Acquisition Act of 1970, as amended. Where the avoidance of existing utilities is not feasible through project design, they will be relocated or protected in place. WSDOT will prepare a Traffic Management Plan and conduct ongoing coordination with service providers.

Two new noise barriers will be constructed to reduce noise impacts for the Berkshire Apartments and the Renton Hill neighborhood. Noise Barrier 8 will be located along the WSDOT right-of-way east of Benson Road S and southeast of I-405, near the Berkshire

Apartments. This barrier will reduce the number of residences that are above the noise abatement criteria from 27 to 5. Noise Barrier 10 is composed of two walls, Noise Barriers 10A and 10B, which were evaluated together as a system. The barrier system is planned for construction atop a retaining wall from Renton Avenue S to the end of Mill Avenue S. This barrier will reduce the number residences that are above the noise abatement criteria from 76 to 29. With these two barriers in place, noise levels that approach or exceed the noise abatement criteria will be reduced from 190 residences to 121 residences. Noise levels will also continue to approach or exceed the noise abatement criteria at 2 hotels, 1 library, 6 parks, and 3 trails.

Project Description

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 as does 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.

Background

The social environment, public services, and utilities are important to consider during a project development process because they enhance the quality of human life. They allow us to live in a safer environment and enjoy a higher standard of living. Because of the large scale of many transportation projects and the large amounts of associated traffic, these projects can have substantial effects on social resources. A number of federal and state laws and regulations protect citizens and their quality of life as well as the surrounding environment, and several laws enforce the reporting and analysis of actions. To comply with these laws and regulations, the I-405 Team first collected information about the community and then assessed the level of effect, both positive and negative, on the community from the project.

The National Environmental Policy Act (NEPA) 42 U.S.C. 4371 et seq., establishes the need for systematic analysis and evaluation of social, economic, and environmental effects from federally funded projects. The Federal Highway Administration (FHWA) implementing regulations can be found at 23 CFR 771 (FHWA) and 40 CFR 1500-1508 (Council on Environmental Quality (CEQ)). The Federal Aid Highway Act of 1970 - Section 23 U.S.C. 109 (h), provides a list of the types of social and economic impacts that must be considered for highway projects. Section 23 U.S.C. 128 establishes a minimum requirement for investigating social, economic, and environmental effects of highway projects and the consistency of highway plans with local comprehensive planning. Also, environmental protection legislation helps protect human health and welfare. One example is the Clean Water Act, 33 U.S.C. s/s 1251 et seq. (1977); Clean Air Act (CAA) 42 U.S.C. s/s 7401 et seq. (1970); and CERCLA (Superfund) 42 U.S.C. s/s 9601 et seq. (1980). The project is also subject to the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 as amended (49 CFR Part 24) and CFR Title 23, Reimbursement for Utility Relocation. This 1970 statute, amended in 1987, establishes a uniform policy for the fair and equitable treatment of individuals and businesses displaced as a direct result of programs or projects undertaken by a federal agency with federal financial assistance. The primary purpose of this Act is to ensure that such persons shall not suffer disproportionate adverse impact as a result of programs and projects designed for the benefit of the public as a whole and to minimize the hardship of displacement.

Under the Washington State Environmental Policy Act (SEPA) (WAC 197-11) regulations, public services and utilities are included in the analysis of impacts to the built environment. Specifically, the discussion of significant impacts is to include the, "...cost of and effects on public services, such as utilities, roads, fire and police protection, that may result from the project (WAC 197-11-44(6))."

Other regulations that are complied with during a project are the Americans with Disabilities Act (ADA), the Age Discrimination Act (1975), and Title VI of the Civil Rights Act of 1964. Additionally, the President's Executive Order (EO) 13166-Limited English Proficiency, on Improving Access to Services for Persons with Limited English Proficiency (August 2000), is also complied with during a transportation project.

Public Involvement Activities

WSDOT has an extensive public involvement plan in place to inform the public and encourage participation. Public meetings are held as needed and the project maintains a website to help inform the public of project activities. WSDOT is continuing their efforts to conduct public outreach to all social groups by contacting social service organizations, conducting public meetings, and producing a newsletter that is distributed to all residents living within 1,000 feet of the I-405 corridor. WSDOT held a public scoping meeting in May 2006 and has held fourteen neighborhood meetings throughout the study area since April 2004. All public meetings are accessible by transit and extensively publicized to interested and affected citizens and civic organizations.

WSDOT will provide translation and interpreter services at public meetings upon request. These services are published on public notices prior to public meetings. Upon request by a citizen, WSDOT will provide translation and interpreter services in multiple languages to help persons with limited understanding of English use the project materials and participate in the decision-making process. WSDOT will continue to employ these practices to ensure future public involvement.

Baseline Conditions

Social

What neighborhoods exist in the study area?

The City of Tukwila has three neighborhoods within the study area (Exhibit 2), as designated in the City’s Comprehensive Plan: Thorndyke, Tukwila Hill, and McMicken. The Foster Community Club is a neighborhood association located within the study area, which includes residents of the Thorndyke neighborhood as well as two neighborhoods located outside of the study area (<http://www.ci.tukwila.wa.us/infopack/neighbor.htm>).

Within the study area, the City of Renton has eight designated neighborhoods (Exhibit 3). These include North Renton, Piazza Renton, and South Renton on the north side of I-405; Monterey Terrace, Renton Hill, Talbot Hill, Valley Vue, and Victoria Park on the south side of I-405 and east of SR 167.

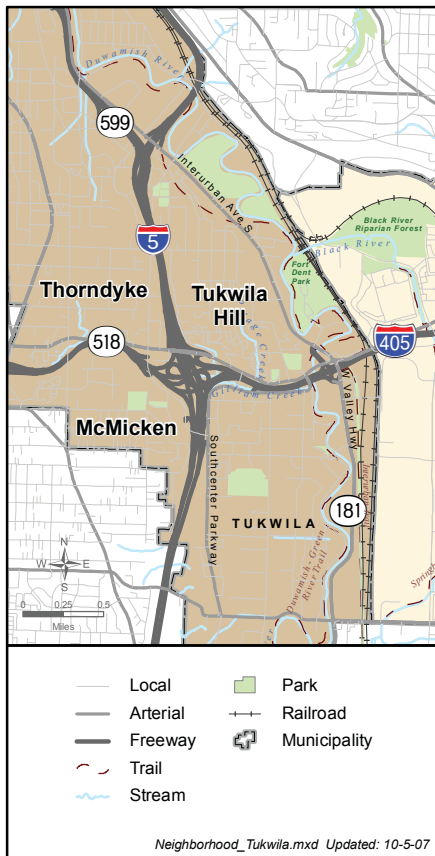


Exhibit 2: Tukwila Neighborhoods

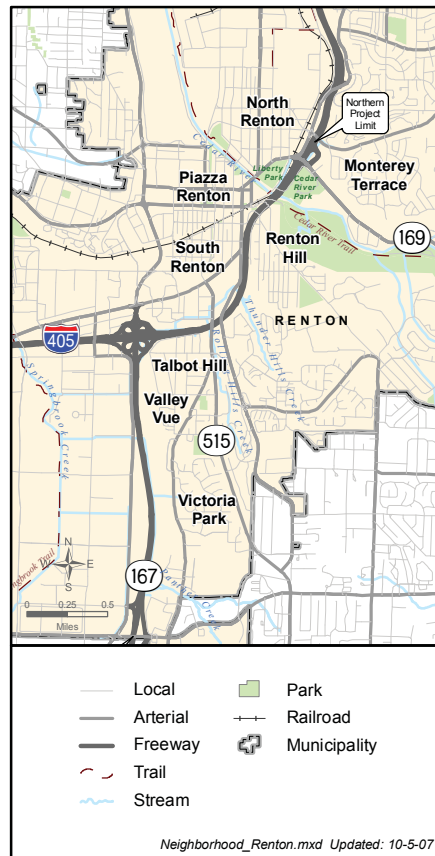


Exhibit 3: Renton Neighborhoods

Commercial and industrial uses are the dominant land use in the immediate vicinity of I-405 and SR 167 with few residences located in those areas. Many areas have no residential units immediately adjacent to I-405.

What are the local demographics?

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 additional 5,308 residents, representing an 11 percent increase.

Exhibit 4 shows the percentage of minority populations in the study area, based on 2000 Census information. The largest minority groups within both Tukwila and Renton are African American and Asian. The data indicate that approximately 59 percent of Tukwila's population is white, with an African American population of approximately 13 percent and an Asian population of approximately 11 percent. Approximately 61 percent of Renton's population is white, with an Asian population of approximately 13 percent and an African American population of approximately 9 percent. More detailed information about minority and low-income populations within the study area is available in the *Environmental Justice Discipline Report*.

The percentage of renters is higher in Tukwila than Renton. Approximately 58 percent of all housing units in Tukwila are rentals, whereas rentals represent only 50 percent of housing units in Renton.

The 2000 Census data show that nearly 14 percent of households in Tukwila contain people aged 65 years or older. In Renton, over 17 percent of households contain residents aged 65 years or older. Households with individuals under age 18 make up about 31 percent of households in Tukwila and about 29 percent in Renton.

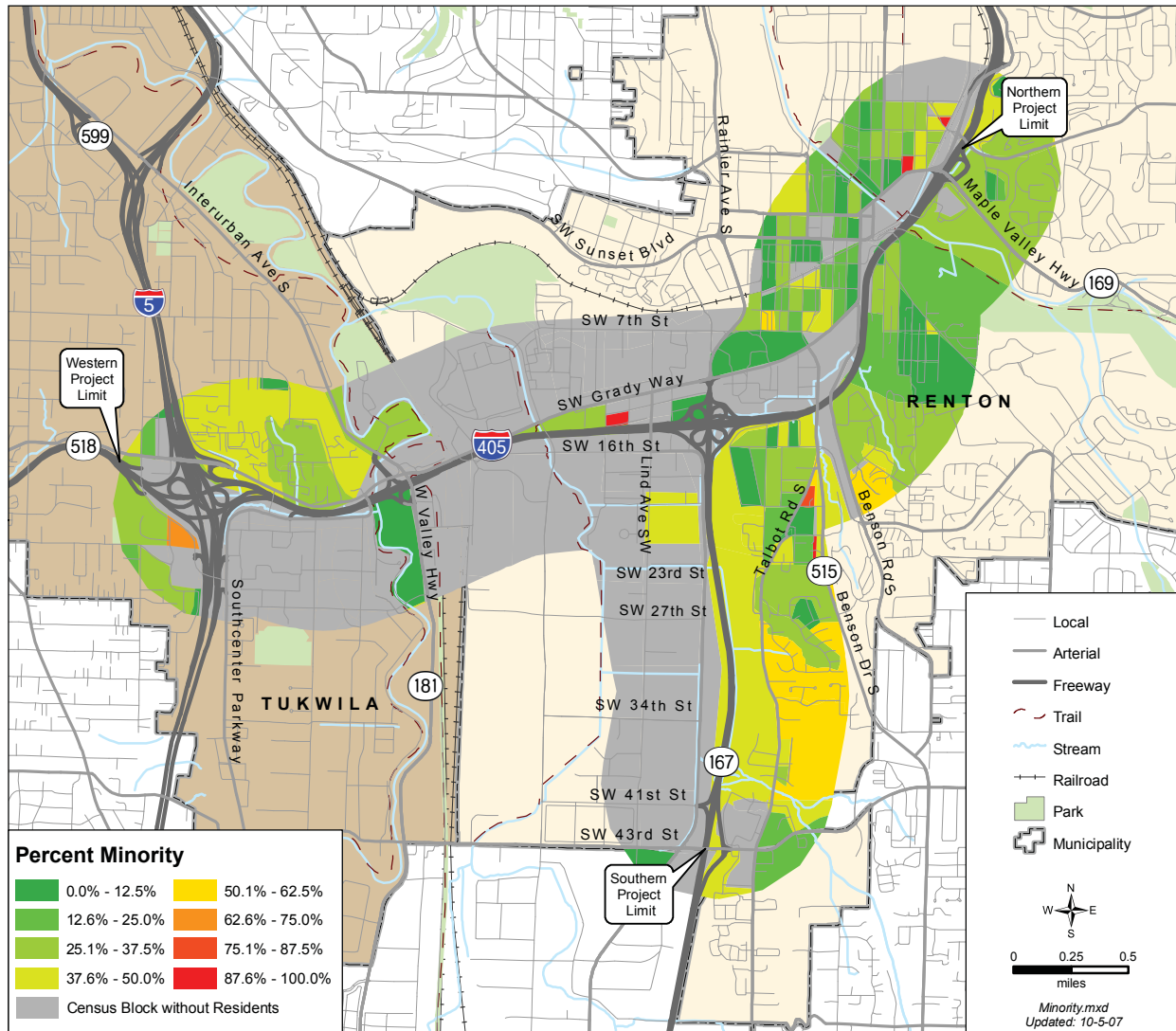


Exhibit 4: Minority Populations

The Tukwila and Renton neighborhoods west of SR 167 contain between 10 and 15 percent disabled persons, which represent the lowest percentages within the study area. This area largely corresponds with the areas in the project that have no residential units in the corresponding Census Blocks as shown in Exhibit 4. The South Renton, Piazza Renton, North Renton, and Victoria Park neighborhoods have the highest percentage of disabled persons with 25 to 30 percent compared to the rest of the study area neighborhoods, which range from 15 to 25 percent. The neighborhoods with the highest percentages of disabled generally correspond with the neighborhoods that have the highest elderly population. These areas also cluster around the neighborhoods with the highest incidence of medical facilities and other public and community resources (see Exhibit 5, Public Services and Community Resources). For additional information related to the presence of elderly and disabled populations within the study area, refer to the *Environmental Justice Discipline Report* for this project.

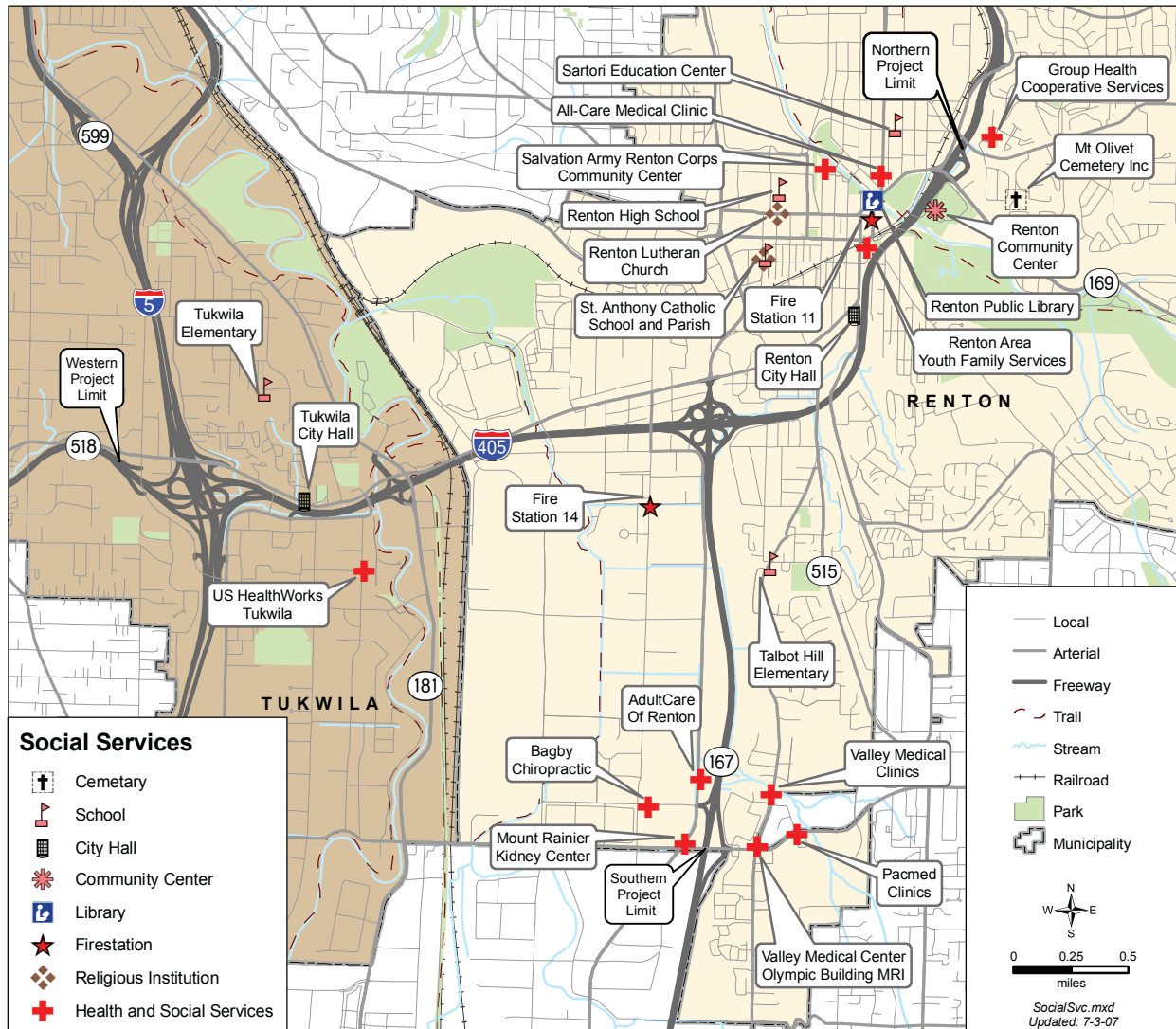


Exhibit 5: Public Services and Community Resources

Does the study area exhibit community cohesion?

As stated in the Community Impact Assessment Handbook from the Center for Urban Transportation Research (2000), “Community cohesion is the degree to which residents have a sense of belonging to their neighborhood or community, including commitment to the community or a strong attachment to neighbors, institutions in the community, or particular groups. The level of community cohesion is often evidenced by the degree of interaction among individuals, groups, and institutions within a community.”

Physical elements of the neighborhoods that promote social interactions between residents contribute to community cohesion. For example, parks often provide areas for children to play and parents have opportunities to socialize. Park benches and tables, walking paths, swings, and other constructed play areas are cohesive elements that contribute to a sense of neighborhood through promoting social interactions. Schools and pedestrian and bicycle paths also serve a larger community and help promote community identity.

Tukwila and Renton both offer a variety of parks, trails, and other recreational facilities within the study area. King County also provides several regional trails that cross I-405 within the study area, as shown on Exhibits 1 and 5. Other public facilities that help the sense of cohesion in a neighborhood are pedestrian and bicycle facilities. According to the Renton Planning Code (CP-712), “Pedestrian and bicycle linkages are encouraged and should be planned.” Pedestrian and bicycle facilities are planned and/or already incorporated into each planned residential area within the study area as part of other local improvement projects.

Although the City of Tukwila has a large proportion of commercial and industrial development compared to residential development, the City exhibits community cohesion and is actively working to improve its communities. This is evident in their 2005 Comprehensive Plan goal (Goal 7-1) to support urbanization and development that fosters a sense of community. The Comprehensive Plan characterizes Tukwila’s residential neighborhoods as a mix of dense, small-town residential areas and newer suburban areas. The principal residential areas within the Tukwila study area include single-family and multi-family areas north of I-405 between I-5 and Interurban Avenue. Topography north of I-405 results in prominent views of the Green River Valley, including I-405, from residential areas on the hill slopes, especially the multi-family developments prevalent in these areas. Within these neighborhoods, the hilly topography limits roads and dictates some limits on development.

Neighborhood cohesion in Tukwila is slightly less than in Renton, because some residential areas have a high turnover rate, which contributes to a lack of community identity and involvement. This is due in part to the higher number of rental units. The existing freeways, crisscrossing arterials, and hilly topography further contribute to dividing the City into numerous, almost disconnected segments. The Tukwila Elementary School represents an important social resource within the community. The school grounds contain play equipment, and baseball, soccer, and basketball facilities that are open to the whole community.

Renton’s Neighborhood Program promotes positive interaction between the City and its residents. The program supports recognized neighborhoods through a team of City employees who serve as volunteer liaisons. The program also administers Neighborhood Grants, which provide matching funds for small neighborhood improvement projects and neighborhood picnics, in cooperation with recognized neighborhood groups. The eight recognized neighborhoods in the City of Renton include older single-family homes and smaller multifamily units. The two public schools within the Renton study area are located in the Piazza Renton neighborhood (Renton High School) and the Valley Vue neighborhood (Talbot Hill Elementary School), providing further opportunity for social interaction in those neighborhoods.

What social amenities are found in the study area?

Both Tukwila and Renton offer many social amenities. Parks in the study area provide open space and recreational facilities. Bicycle and pedestrian facilities provide connections between amenities and include dedicated trails, sidewalks, and bike lanes.

Tukwila parks within the study area include Crystal Springs Park, Tukwila Park, Fort Dent Park, and Ikawa Park. Crystal Springs Park is an 11-acre park located in the southwest corner

of the I-5/I-405 interchange, with a natural area, walking path, picnic areas, horseshoe pits, playgrounds, tennis court and basketball court. Tukwila Park is a 6.5-acre City of Tukwila neighborhood park built in 1934. This park includes a gazebo, wooded area, picnic area, basketball court, tennis court, paved pathway and children's playground. Fort Dent Park is Tukwila's largest park, and has a baseball complex, all-weather soccer complex, playground, picnic area, trails and open areas. Ikawa Park is situated on 0.2 acres approximately 200 feet north of the I-405 right-of-way and comprises a Japanese garden, koi pond and waterfall, and trail with benches.

Renton parks within the study area include Liberty Park, Cedar River Park, Philip Arnold Park, Thomas Teasdale Park, Freeway Park, and Veterans Memorial Park. Liberty Park is a 12-acre park and playfield area that includes Giannini Stadium, Wilcoxon Field, and a skate park, as well as a community center, multi-purpose court, tennis courts, children's play equipment, and access to Cedar River Trail. Cedar River Park is a 23-acre park situated between I-405, SR 169, and the Cedar River. Within the park are the Carco Theater center for the performing arts, Renton Community Center, Henry Moses Aquatic Center, multi-use fields, and 750 feet of shoreline along the Cedar River. The City of Renton plans to integrate Liberty and Cedar River Parks and the Narco property (a large, vacant property purchase by the city west of the Cedar River) into one large park complex, henceforth referred to as the Tri-Park area. The proposed master plan assumes redeveloping both existing parks, developing the Narco property with sports fields, and acquiring the vacant property to the east to develop ball fields. For more information related to the concept and design of the master plan, please refer to the Section 4(f) Evaluation for this project.

Thomas Teasdale Park is a ten-acre neighborhood park located east of SR 167 and includes a recreation building, ballfields, multi-use field, picnic area, basketball court, and children's play equipment. Philip Arnold Park is a ten-acre triangular-shaped neighborhood park located between Jones Avenue S and Beacon Way SE and includes an activity building, ballfields, basketball court, picnic shelter, play equipment, and tennis courts. Freeway Park is located adjacent to I-405 between Renton and Cedar Avenues, and includes an interpretive trail, benches, and landscaping. Veterans Memorial Park was built at the corner of South 3rd Street and Main Avenue as a memorial to the veterans who honorably served their country.

The trails in the study area are shown on Exhibits 1 and 5. The Duwamish-Green River Trail connects with King County's Alki Trail to the north and Interurban Trail to the south. The Duwamish-Green River Trail is 8.4 miles long and provides a 12-foot-wide paved trail with soft shoulders for jogging. The Duwamish-Green River Trail Trailhead is located at the northern end of Christensen Road in the City of Tukwila. The Interurban Trail in its entirety is 14 miles in length, crossing I-405 in Tukwila and extending south to 3rd Avenue SW, just east of SR 167 in the City of Pacific. It is a paved regional pedestrian/bike trail with picnic tables and a view of the Green River near I-405. The Springbrook Trail is a well-developed, paved, mixed-use trail. It traverses north-south following Springbrook Creek within the south industrial area of Renton. The three-mile paved trail connects activity nodes or small parks at select points. The Cedar River Trail extends from Lake Washington east to the boundary of the City of Renton, continuing south and east as part of King County's regional trail system. The paved trail

follows an old railroad right-of-way from downtown Renton to King County's Landsburg Park, serving as a physical link to a series of parks along the Cedar River corridor.

Metro King County (Metro) and Sound Transit both currently provide service within the study area, and planning is underway for new park-and-ride lots, transit centers, and direct-access ramps within the I-405 corridor. Within this area, 26 bus routes provide varying degrees of service. Eleven routes have weekday, Saturday, and Sunday service, two have weekday and Saturday service, and the remaining 13 routes have weekday-only service. Several bus routes serve the Westfield Shoppingtown Mall in Tukwila.

The City of Renton 2005 Comprehensive Plan calls for improved and safer bike lanes to encourage people to commute by bike. To accommodate bicyclist demand, all Metro buses were equipped with bike racks in 1994. Metro buses transport an estimated 465,000 bikes a year throughout the corridor. Metro also provides bike racks and lockers at park-and-ride lots and transit centers within the study area. High occupancy vehicles and transit users comprise around 20 percent of I-405 work trips.

Public Services and Utilities

What public services are available in the study area?

The public services in the area include emergency response services (fire, police), schools, parks and recreational facilities, transit, places of worship, community centers, mail delivery, cemeteries, government offices, and maintenance services (see Exhibit 5).

The Tukwila Fire Department provides fire protection from four locations, three of which serve the study area. The Renton Fire Department provides fire protection from five locations, three of which serve the study area. Renton Fire Department Stations 11 and 14 are the only fire stations located within the study area.

The cities of Tukwila and Renton provide police, municipal court, and jail services and facilities as part of their public safety responsibilities. These services and facilities are currently located on their respective city hall campuses. The Washington State Patrol provides police protection along I-405, SR 167, and at on- and off- ramps.

Some of the major health care and social service facilities within the study area include: Tukwila Office of Human Services, Renton Area Youth Family Services, Renton Community Health Center, Group Health Cooperative Services, Valley Medical Clinics, and the Salvation Army-Renton Corps Community Center.

Schools near the study area include: Tukwila Elementary School, Talbot Hill Elementary School, Saint Anthony's School, Renton High School, and Sartori School. The Tukwila School District has approximately 2,600 students enrolled in five schools. The Renton School District has approximately 13,000 students enrolled in 13 elementary schools, three middle schools, three comprehensive high schools, two alternative high schools, and three special service centers.

What utilities are available in the study area?

The utilities in the study area include municipal agencies (city, county, etc.), special utilities districts, and private companies that provide services such as electricity, natural gas, drinking water, wastewater or stormwater collection, fiber optics, and telecommunications (Exhibit 6 illustrates where the majority of utility lines within the study area cross I-405 and SR 167).

Puget Sound Energy (PSE) provides electrical service throughout the study area. PSE facilities are located on PSE-owned property as well as easements across private and publicly owned property. PSE locates and operates its facilities within public rights-of-way in accordance with state law and franchise agreements with the cities of Tukwila and Renton, and WSDOT. Seattle City Light also provides electricity to areas along Benson Road via an overhead power line that crosses I-405 east of SR 167. Exhibit 6 illustrates where power lines cross I-405 and SR 167.

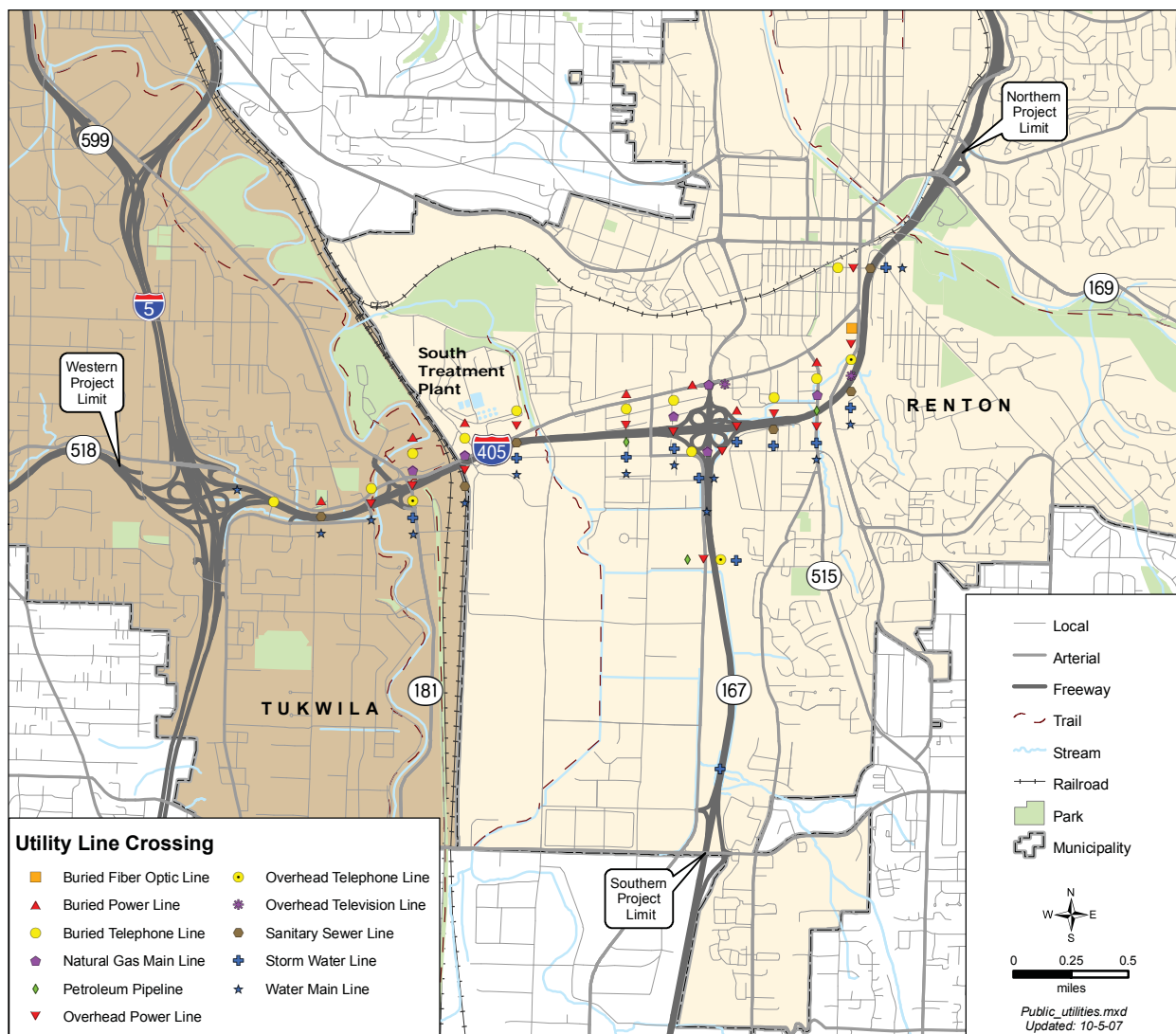


Exhibit 6: Types of Utilities that Cross or are Adjacent to I-405 and SR 167 in the Study Area

PSE also provides natural gas service throughout the study area. Within Tukwila and Renton, PSE operates under a franchise, which allows them to locate facilities within the public street

rights-of-way. PSE facilities are located on PSE-owned property as well as easements across private and publicly owned property. The natural gas distribution system consists of a network of distribution mains and smaller lines that convey natural gas throughout the study area.

Several companies provide telephone service in the study area, including Qwest Communications International, Inc (Qwest); Verizon; and MCI/Sprint. Telephone services include distribution lines, trunk lines, and switching stations. Wireless cellular phone service is provided by Cellular One, Verizon Wireless, T-Mobile, Nextel, Cingular One, and AT&T Wireless. A cell site, which is composed of a tower or other elevated structure for mounting antennas, is located within the center of an area defined by a grid system. Preferred cell site locations include: existing broadcast or communications towers, water towers, high rise buildings, and vacant open land.

Four cable providers operate within the study area. Community Antenna Television (CATV) provides cable television and other broadband data services, including voice and data. AT&T Broadband, Comcast, and TCI Cablevision currently hold cable telecommunication franchises within the study area. 360 Network/PFL, Electric Lightwave, and XO Communications also have buried fiber optic lines within the study area.

The City of Seattle's water system currently supplies the entire City of Tukwila service area through a long-term contract. Nearly all of the water supplied to Tukwila comes from the Cedar River Watershed through two pipelines: the 60-inch Cedar River Pipeline No. 4 and the 48-inch West Seattle supply. Ninety-three percent of Renton's water is supplied by the Cedar Valley Aquifer. It is designated a "sole source" aquifer by the U.S. Environmental Protection Agency. Renton extracts most of its drinking water from a six-well system and one spring within the Cedar Valley Aquifer. The Tukwila and Renton water distribution lines cross I-405 at nine locations within the study area and cross SR 167 at two locations in the study area (Exhibit 6).

The entire study area is in the Western King County Wastewater Treatment Division Service Area. Wastewater is discharged to regional facilities within the study area and is treated at the South Treatment Plant, which includes facilities for handling biosolids, water reuse, and testing alternative treatment technologies. The Tukwila and Renton sanitary sewer lines cross I-405 at six locations within the study area (Exhibit 6).

Stormwater facilities in the study area include the storm sewer conveyance system (pipes, culverts, ditches, catch basins, and other structures) and retention and detention facilities. Along with WSDOT, the cities of Renton and Tukwila own, maintain, and operate the storm and surface water management facilities. These facilities are located within public rights-of-way via easements dedicated for stormwater and surface water management purposes.

The Olympic Pipeline Company owns and operates the only petroleum pipelines within the study area. The pipelines cross I-405 at Raymond Avenue SW and Benson Road and cross SR 167 near East Valley Road.

Potential Effects

The potential project effects on the community are summarized below. The assessment considers both positive and negative and temporary and permanent effects on social elements, public services, and utilities within the study area.

Social

Will project construction temporarily affect neighborhoods and community resources?

Neighborhoods

Construction will have temporary negative effects on neighborhood cohesion. Construction noise levels will increase temporarily at residences adjacent to I-405 and SR 167, and night work may be needed at times. Construction will be carried out in several steps, each with its own mix of equipment and noise levels, potentially including heavy trucks, excavators, jackhammers, and pile drivers. Because these noise effects will be temporary and localized, they will have no substantial negative effect on the cohesiveness of neighborhoods, the social interactions, or residents within the neighborhoods.

Dust generated by construction activities may affect the desire for local residents to socialize within their neighborhoods or participate in outdoor activities. However, the Puget Sound Clean Air Agency (PS Clean Air) regulations require dust control during construction and identify measures to prevent mud deposition on paved streets. WSDOT incorporates best management practices (BMPs) into all of its projects that comply with these regulations. Dust and odors from construction activities will be temporary and localized and are not expected to be adverse.

Parks and Trails

Construction will have temporary effects due to construction noise and the rerouting of bicycle and pedestrian trails. Parts of the Duwamish-Green River, Interurban, and Cedar River Trails will be closed during construction due to public safety concerns where the trails pass under I-405 and other elevated structures. The Duwamish-Green River Trail will be closed temporarily to revise the elevation to ensure adequate clearance for the trail beneath the new Tukwila Parkway bridge. The Cedar River Trail pedestrian bridge replacement across the Cedar River will also require a temporary closure. Part of the Interurban Trail will be realigned to cross beneath I-405 at a new location next to the Union Pacific railroad. The segment replaced by the realignment will be removed and the disturbed area will be planted according to the context-sensitive solution (CSS) guidelines. The project also provides for fully restoring the trails following construction.

As part of its construction process, WSDOT routinely prepares detour routes for construction. This process is described in the section, *Measures to Avoid or Minimize Project Effects*.

Pedestrians and bicyclists could experience a temporary increase in noise caused by construction, depending on the proximity of construction equipment. This effect will be similar to that described above under the section, *Neighborhoods*.

Should the Main Avenue design option be selected to provide access to Bronson Way, a portion of Veterans Memorial Park (1,346 square feet) will be temporarily occupied during construction to widen Main Avenue. The land being used will be restored to a condition, which is at least as good as that prior to the project. The Mill Avenue design option does not affect Veterans Memorial Park.

Community Services

I-405 public involvement staff members conducted interviews with staff at community services agencies operating in Tukwila and Renton. Based on these interviews, the main concerns revolve around existing and anticipated traffic congestion on local streets, I-405, and SR 167. WSDOT anticipates that construction on I-405 and SR 167 will affect traffic by temporarily increasing travel times through construction work zones. The project will also affect traffic by relocating some local streets, and by rebuilding bridges and interchanges.

Temporary traffic disruptions will occur during construction of local arterials, especially where bridges will be reconstructed. The use of detour routes during temporary road closures will ensure that access is maintained within the study area at all times. Bridge construction will involve traffic management, temporary lane narrowing, and construction-related truck traffic. However, the project will provide long-term traffic benefits by improving commute times for those working for or using community services, and other users of I-405.

Will the project permanently affect neighborhoods and community resources?

Neighborhoods and Community Services

Since the proposed improvements will be made to an existing freeway, the project will not separate or isolate neighborhoods within the study area. Access to community facilities, services, and recreational areas will remain largely unchanged. Pedestrian and bicycle facilities will also remain accessible. Adding buffers between the HOV and general-purpose lanes and constructing the HOV direct-connector ramps will allow for higher travel speeds in the HOV lanes, saving time and improving access for transit-dependent populations.

The project will expand I-405 and several I-405 interchanges, allowing more vehicles to access I-405. The project will also improve the ease with which people and freight can enter and exit the freeway from the local arterials. The project will build local street improvements to accommodate the traffic exiting the freeway at the new and improved interchanges.

In addition to changes to I-405 itself, the project will create major changes in travel patterns at four locations. The project will:

- Reconstruct the SR 181 interchange, including an extension of Tukwila Parkway east to SR 181 over the Green River.
- Shift traffic accessing I-405 from the Grady Way S and Rainier Avenue S intersection to the new split-diamond interchange I-405 access points at Lind Avenue and Talbot Road (SR 515).

- Close Houser Way as a cul-de-sac just south of the Cedar River, shifting traffic to Mill Avenue or Main Avenue depending on the design option selected.
- Replace the two local street accesses to Renton Hill. Two local access points will be maintained by rebuilding the Renton Avenue bridge over I-405 and reconstructing Mill Avenue as a stacked structure that also provides access under I-405 to Renton Hill. The existing Cedar Avenue bridge will be removed.

The new cul-de-sac at Houser Way will reduce the number of vehicles traveling past the east side of Liberty Park by rerouting the vehicles via Mill Avenue. This reduction in traffic will contribute to a more pedestrian-friendly environment within the surrounding neighborhoods, allowing residents from the Piazza Renton and Renton Hill neighborhoods to travel within the Tri-Park area with less traffic and subsequently less traffic noise.

The increase in traffic volumes combined with less congestion will increase noise levels throughout the study area, primarily at residences in the Renton Hill and Talbot Hill neighborhoods. Approximately 98 residences, 2 hotels, 6 parks, and 3 trails already exceed the noise abatement criteria within the study area. These locations will continue to exceed the noise abatement criteria if the project is not built. If the project is built, noise levels will increase above the noise abatement criteria for an additional 92 residences, 1 park, and 1 library. WSDOT will acquire 30 noise-affected residences and one park for the project; therefore, these are not included in the estimates of noise-affected receptors if the project is built.

The project will relocate one noise barrier that is being built as part of the Renton Nickel Improvement Project. The barrier is located in the vicinity of the Talbot Hill neighborhood, in the southeast quadrant of the I-405/SR 167 interchange. The barrier is intended to avoid substantial noise increases, but will not provide any reductions beyond the anticipated future noise levels for 32 residences. These residences will actually experience an increase in noise levels, although the magnitude of the increase will be minimized by the replaced noise barrier. The noise levels with the replaced barrier are lower than the noise levels without the barrier. Additional noise barriers of various length and size were evaluated in this area, but they did not noticeably reduce noise levels or meet the WSDOT feasibility criteria.

Two new noise barriers meet the WSDOT reasonable and feasible criteria and will be constructed as part of the project. Noise Barrier 8 will be located along the WSDOT right-of-way east of Benson Road S and southeast of I-405, near the Berkshire Apartments. The barrier proposed near the Berkshire Apartments will reduce the number of residences that are above the noise abatement criteria from 27 to 5. Noise Barrier 10 is composed of two walls, Noise Barriers 10A and 10B, which were evaluated together as a system. The barrier system is planned for construction atop a retaining wall from Renton Avenue S to the end of Mill Avenue S. The barrier system will reduce the number of residences that are above the noise abatement criteria from 76 to 29. While these barriers will provide a benefit to the surrounding neighborhoods in terms of noise reduction, they will also result in a minor change in the visual character of the area. The view from residences located on the east side of the proposed noise barrier in between the Talbot and Renton Hill neighborhoods will change from a direct view of the Berkshire Apartments (2 buildings of which will be acquired to construct the project) to a

direct view of a concrete noise barrier. The visual change is not expected to adversely affect the surrounding residences, since it will not change the urban character of the neighborhood. A substantial visual change is not expected in the Renton Hill neighborhood, since the proposed noise barrier will be constructed on top of an existing concrete retaining wall. Additional information related to the proposed noise barriers, including exhibits, can be found in the *Noise Discipline Report* prepared for this project. Visual simulations of the proposed barriers can also be found in the *Visual Quality Technical Memorandum* prepared for this project.

The Tukwila to Renton Project lies within a carbon monoxide maintenance area. Any regionally significant transportation project in the Puget Sound Air Quality Maintenance areas must conform to the Air Quality Maintenance Plans. The project will not exceed any local or regional air quality standards for carbon monoxide, so it is expected to conform to the Air Quality Maintenance Plan. Mobile source air toxics (MSATs) are toxic air pollutants that are known or suspected to cause cancer or other serious health effects, which typically originate from manmade sources such as cars, airplanes, dry cleaners, etc. MSAT levels in 2014 are predicted to be lower than the existing levels under the No Build and Build Alternatives. Since the project is expected to reduce congestion within the study area, it is anticipated that with fewer idling vehicles, air quality in local neighborhoods will improve. For more information on air quality impacts, see the *Air Quality Discipline Report* for this project.

Displacements

Although the project will not separate or isolate neighborhoods, it will affect parts of neighborhoods due to the acquisition of private property, which will result in both residential and commercial displacements. WSDOT will need to fully acquire 64 properties and partially acquire 91 properties to construct the proposed project. While many partial acquisitions are sliver acquisitions with minimal community effect, 40 of the full acquisitions and one of the partial acquisitions will displace residences or businesses. The community of Talbot Hill will be the most affected because it has residences immediately adjacent to both I-405 and SR 167. Most of the commercial displacements will occur between Oakesdale Avenue and SR 167. Property acquisitions that will require relocation are listed in Exhibit 7. A full or partial property acquisition will require relocation if the majority of an existing structure on the property lies within the proposed design footprint. As such, the full acquisition of a vacant property or the partial acquisition of a property that does not intersect an existing structure will not require relocation. Exhibits 8 through 15 show all planned acquisitions. Four full property acquisitions may be reduced to partial property acquisitions following further design development and coordination with property owners. Three of these four acquisitions currently require commercial displacements (Nos. 39, 40, and 41 in Exhibit 7).

Exhibit 7: Property Acquisitions that Require Relocation

No. ¹	Current Land Use	City	Business Name/Type	Acquisition Type
1-22	Single-Family Residential	Renton	N/A	Full
23	Multi-Family Residential	Renton	Berkshire Apartments	Partial
24	Single-Family Residential	Renton	N/A	Full
25	Vacant Commercial	Tukwila	Future Development ²	Full
26	Commercial	Tukwila	Best Western Inn	Full
27	Commercial	Renton	Longacres Industrial Park	Full
28	Commercial	Renton	South 405 Place	Full
29	Commercial	Renton	Shuttle Express	Full
30	Single-Family Residential	Renton	N/A	Full
31	Commercial	Renton	Seattle Lumber Company	Full
32	Commercial	Renton	Sprint Communications	Full
33	Commercial	Renton	Popa's Roofing Company	Full
34	Commercial	Renton	Cope & McPhetres Marine Service	Full
35	Commercial	Renton	Dahlby Construction	Full
36	Commercial	Renton	1420 Building	Full
37	Commercial	Renton	Office Building	Full
38	Commercial	Renton	Taylor's Auto Body	Full
39	Commercial	Renton	Shurguard Storage	Full
40	Commercial	Renton	Strada de Valle	Full
41	Commercial	Tukwila	Hampton Inn	Full
<p>1. The number shown in the first column corresponds to the bubbles shown on Exhibits 8 through 15.</p> <p>2. Currently in the planning stages for redevelopment. It is anticipated that redevelopment will be complete prior to the construction of this project.</p>				



Exhibit 8: Acquisitions, Sheet 1

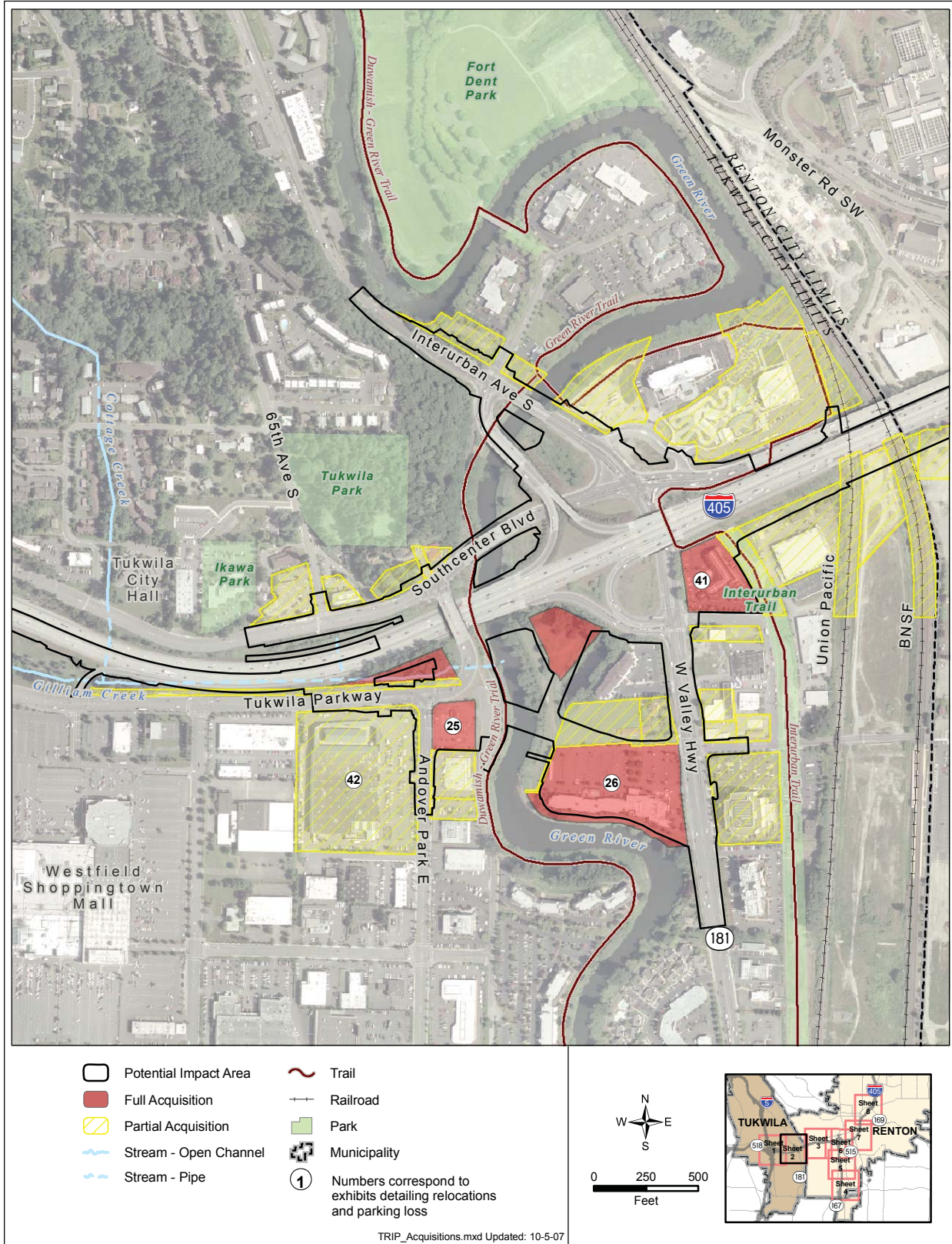


Exhibit 9: Acquisitions, Sheet 2



Exhibit 10: Acquisitions, Sheet 3



Exhibit 11: Acquisitions, Sheet 4

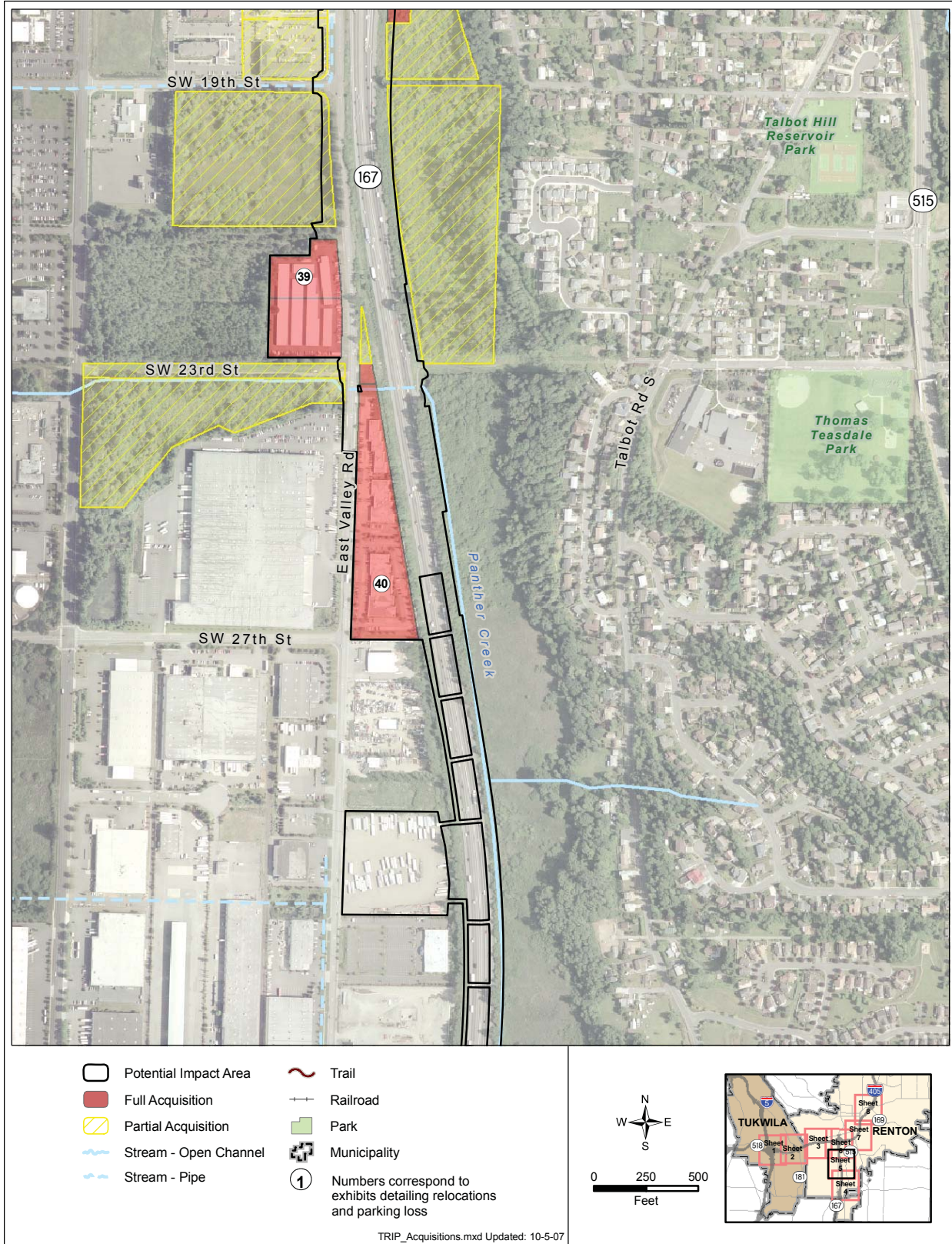


Exhibit 12: Acquisitions, Sheet 5

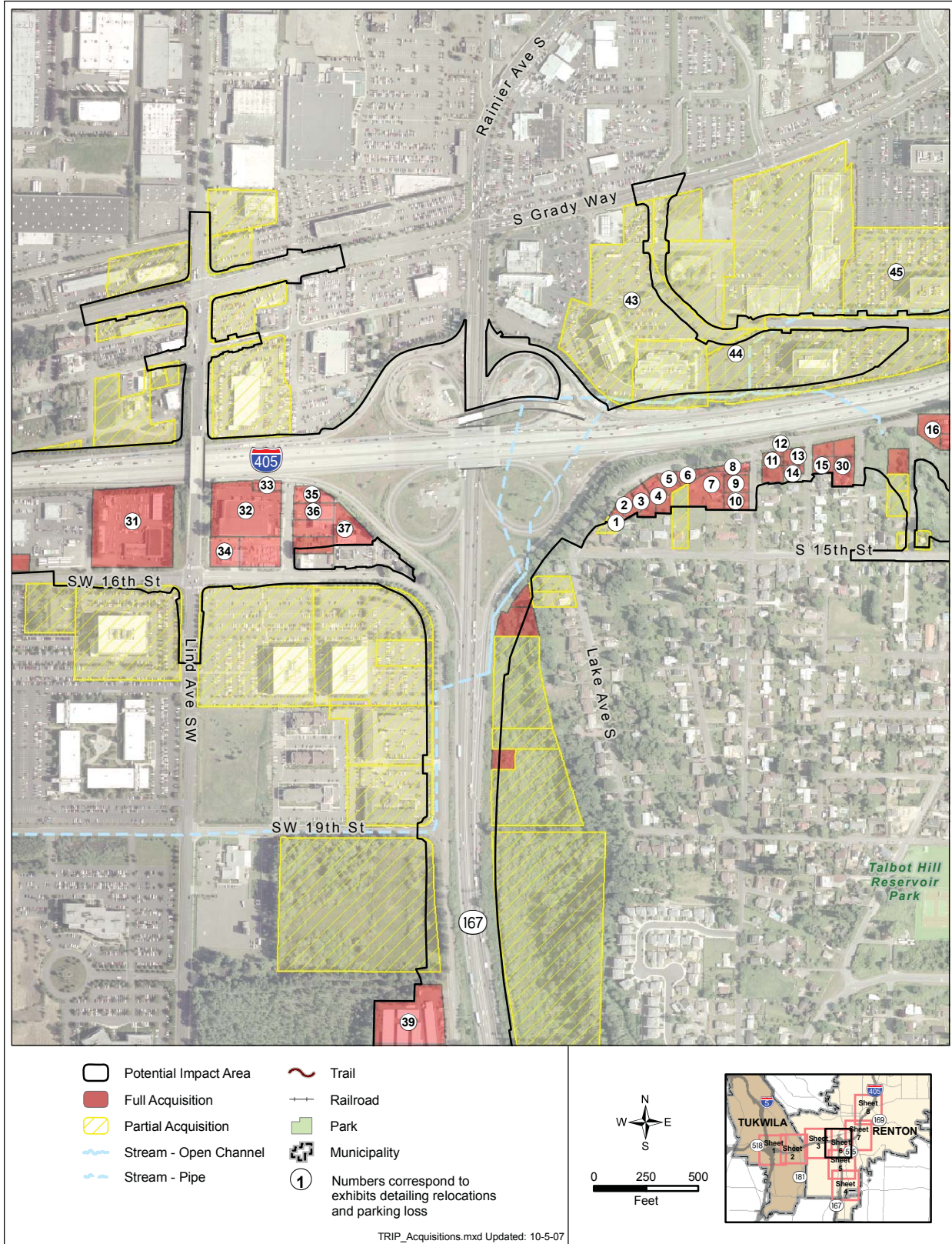


Exhibit 13: Acquisitions, Sheet 6

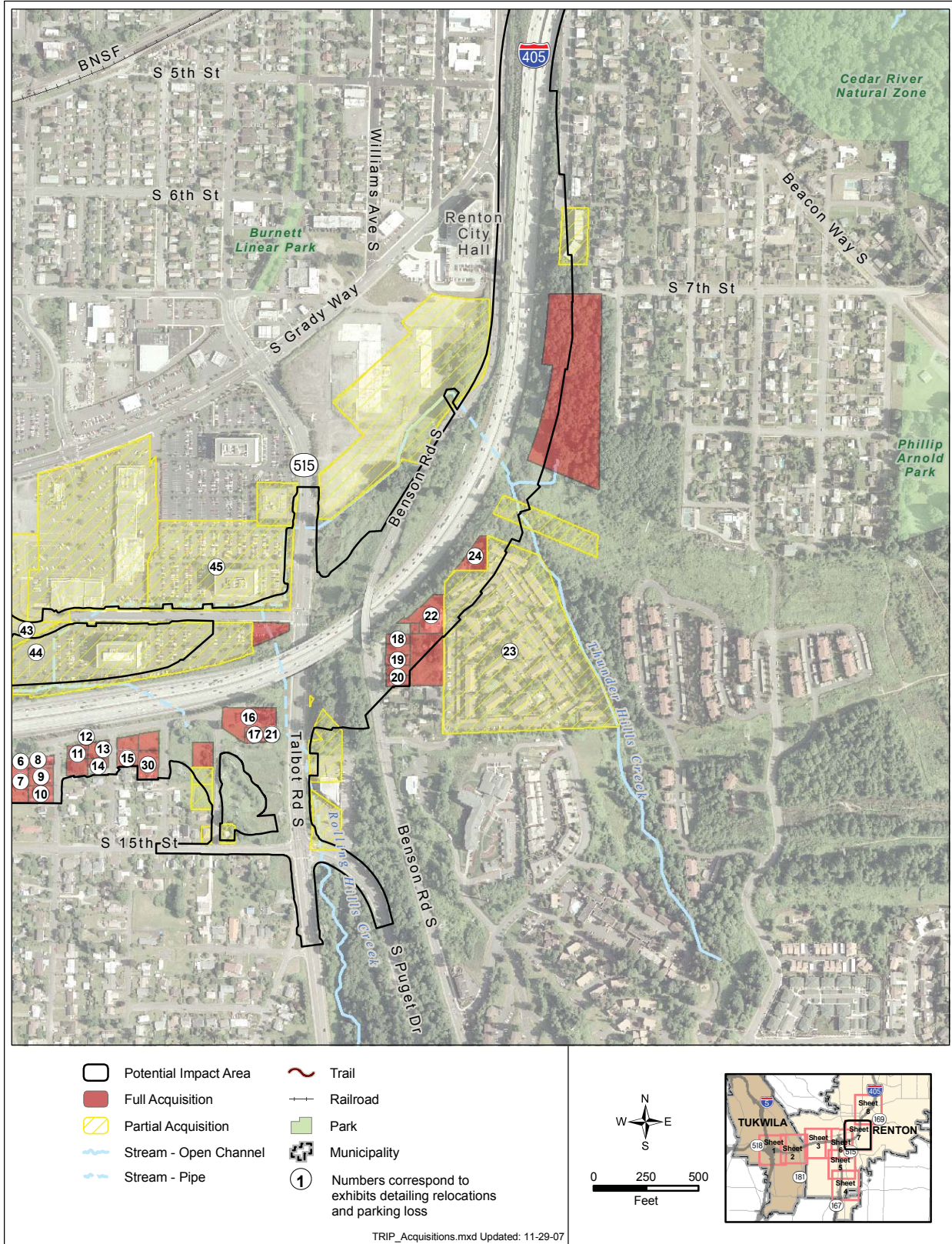


Exhibit 14: Acquisitions, Sheet 7



Exhibit 15: Acquisitions, Sheet 8 (Main Avenue design option acquisitions are shown on Exhibit 18)

Businesses

The project will acquire 16 parcels that will result in commercial displacements, as shown in Exhibit 7. In compliance with the Uniform Relocation Assistance and Real Property Acquisition Act of 1970, as amended, WSDOT will coordinate with the displaced business owners to help them with relocation assistance. The businesses do not provide locally specific services (such as a grocery store) that will be adversely affected if relocated to a nearby location. It is estimated that most of the displaced businesses have very few full time or part time employees, while the hotels, office buildings, and industrial parks that constitute the remaining half are likely to have a higher number of employees. In total, the loss in employment will be offset by the temporary increase in employment during project construction and the overall increase in economic activity that is anticipated during operation (see the *Economic Elements Technical Memorandum* for discussion related to employment and economic effects of the project). The surrounding land uses are largely industrial or commercial, and the business displacements will not affect neighborhood cohesion.

Additional commercial properties will be affected by the project, but these consist primarily of minor right-of-way impacts, such as a partial acquisition that will reduce parking. Exhibit 16 shows the parking losses for each commercial property within the study area. An estimated 358 parking spaces will be eliminated. Based upon further coordination with property owners, the Hampton Inn (No. 41 in Exhibit 7) may be reduced from a full to partial acquisition, which would result in an additional loss of 24 parking spaces. This would increase the total parking loss to 382 spaces.

Exhibit 16: Parking Loss

No. ¹	Business Name/Type	City	Current Parking Spaces	Proposed Parking Spaces	Parking Loss
42	Lowe's	Tukwila	409	298	11 ²
43	Evergreen Building	Renton	515	436	79
44	Triton Tower One	Renton	586	409	177
45	Triton Tower Two	Renton	579	522	57
46	304 Office Building	Renton	39	24	15
47	JB Graphix	Renton	24	16	8
48	Golden Palace Chinese Restaurant	Renton	23	12	11
Total			2,175	1,717	358
<p>1. The number shown in the first column corresponds to the bubbles shown on Exhibits 8 through 15.</p> <p>2. Lowe's currently uses 100 parking spaces for storage. These spaces are not included in the calculation of parking loss.</p> <p>Note: Additional parking losses under the Main Avenue design option are identified in Exhibit 19.</p>					

Parks and Trails

The project will not have any permanent or proximity effects to Fort Dent Park. However, the project will permanently affect several parks and trails within the study area. These resources are:

- Duwamish-Green River Trail
- Interurban Trail
- Tri-Park Area
- Freeway Park
- Veterans Park (Main Avenue design option only)

The project will reconstruct a portion of the Duwamish-Green River Trail on the west side of the Green River. The trail will be lowered by up to eight feet in some areas to ensure adequate clearance beneath the new Tukwila Parkway Bridge. The lowest elevation of the existing trail will not change; rather a longer length of the trail will be lowered to the same elevation. The bridge will span the 14-foot-wide trail, so no land within the trail will be permanently acquired. The presence of a new local arterial and wider freeway above the trail will affect views and ambient noise levels for trail users. This will permanently, but not adversely, affect the trail because its primary function as an urban trail will not be lost. The project will also acquire approximately 36,600 square feet (0.84 acres) of land and 13 parking spaces from the Duwamish-Green River Trail Trailhead, located near the cul-de-sac at the end of Christiansen Road. The *Section 4(f) Evaluation* for this project provides a visual simulation of the proposed view from the trail and additional exhibits illustrating the project effects on the trail and trailhead.

The Interurban Trail will be partially relocated as a result of the project. The current horseshoe loop the trail takes to the left to pass under the highways and arterials will be relocated to take a right turn to the railroad tracks and will then continue north under I-405 and SW Grady Way to reconnect with the existing trail at the southeast corner of the Family Fun Center and Bullwinkle's Restaurant on Fun Center Way. These improvements will have a beneficial effect in providing a better route and clearances as the trail passes under the main roads. This will permanently, but not adversely, affect the trail.

The project will require the full acquisition of Freeway Park. The park is partially within WSDOT right-of-way, and the City of Renton determined that the park is not significant due to its size and location adjacent to I-405. In addition, the park currently experiences noise levels of 76 dBA, which is well above the noise abatement criteria of 67 dBA. The park's removal will result in a loss of urban green space. However, the park is less than one-half acre and does not function as high-quality green space for local residents. Therefore, the removal of the park is not anticipated to have adverse effects on the surrounding community.

The project will provide a benefit to the community by creating a new pedestrian trail that will run from the Renton Hill neighborhood down to the Cedar River. The new trail will be located east of I-405, across from existing Freeway Park, and will improve access to the Tri-Park area for residents of the Renton Hill neighborhood.

With the acquisition of 35,752 square feet (0.82 acre) of Cedar River Park in the Tri-Park area, the project will reconfigure access to several City of Renton pumps, wells, and associated water supply systems; parking for the community center; a baseball field; and the landscape buffer between I-405 and the park. The Tukwila to Renton Project will also remove the existing access

to Liberty Park. Access will be restored with implementation of the Tri-Park Plan and WSDOT will provide funding for the new access. The implementation of the Tri-Park area master plan is contingent on the construction of the proposed project improvements. If the project is not constructed, the City of Renton would have to re-evaluate the master plan for these facilities. Therefore, the No Build Alternative would have a permanent and adverse effect on the Tri-Park area.

The project will permanently change traffic flow patterns around Veterans Memorial Park. Traffic will be directed from Main Avenue, Houser Way, and 3rd Street to the newly installed traffic light at Mill Avenue and 2nd Street. Traffic flow will be focused toward the south side of the park, but the project will not affect the quantity of traffic directed past the park. The project does not require the acquisition of park land, and the proximity of traffic will not substantially impair aesthetic features or impair the function of the park.

WSDOT will coordinate with local jurisdictions to find appropriate replacement property for right-of-way acquisitions and to avoid or minimize adverse effects to all parks and trails.

The increase in traffic volumes will increase noise levels at several of the parks and trails within the study area. According to the project's noise models, the predicted noise levels in 2030 will be 1-3 dBA higher at Ikawa Park, Tukwila Park, the Duwamish-Green River Trail, the Cedar River Trail, Cedar River Park, Veterans Memorial Park, and Liberty Park. The proposed improvements will decrease noise levels at the Interurban Trail and Springbrook Trail by approximately 7 percent (5 dBA) and 5 percent (4 dBA), respectively. In 2030, all but one of the parks and trails within the study area will be above the desirable dBA for recreation resources. However, constructing noise barriers was determined not to be reasonable and/or feasible at any of the park or trail locations.

For more information on effects to parks and trails, see the *Section 4(f) Evaluation* for this project.

Historic Resources

Two High Probability Areas (HPAs) will be affected by the project. These are areas with a higher potential to contain archaeological resources. The affected HPAs are located along the Cedar and Green Rivers. Also, a historic entrance to the Renton Hill coal mines exists near the project in the vicinity of Renton City Hall. For more information on cultural resources, see the *Cultural, Historic, and Archaeological Technical Memorandum* for this project.

WSDOT will coordinate with the agencies that have jurisdiction over the resource to avoid or minimize effects to each historic resource.

Main Avenue Design Option

Under this design option, traffic would be shifted from Houser Way to Main Avenue (currently a one-way road). This option is instead of striping Mill Avenue (currently two-way traffic) for one-way traffic from 2nd Street to Bronson Way to replace the access lost with Houser Way closed as a cul-de-sac just south of the Cedar River. As a result of selecting the Main Avenue design option, Main Avenue would be widened and converted to two-way traffic. This design option would increase overall effects to community resources and Section 4(f) and historic properties. The Main Avenue design option would require ten additional commercial property

acquisitions, seven of which would result in displacements, as shown on Exhibits 17 and 18. Two of the properties (the YWCA and Veterans Memorial Park) are owned by the City of Renton. This option would acquire 2,087 square feet of Veterans Memorial Park, which is characterized by ornamental landscaping, lawn, and a walkway from the sidewalk to the memorial statuary. Access to the park will not be restricted, and a one dBA increase in noise levels will not substantially interfere with the use and enjoyment of the park. The conversion of Main Avenue to a two-way street will place traffic on the west side of the park, from 3rd Street and Houser Way to Bronson Way. The quantity of traffic directed past the park will not be affected. The direct land acquisition and proximity of traffic will not substantially impair aesthetic features or impair the function of the park because the memorial star at the center of the park will remain intact.

Exhibit 17: Property Acquisitions that Require Relocation: Main Avenue Design Option

No.1	Current Land Use	City	Business Name/Type	Acquisition Type
49	Park	Renton	Veterans Memorial Park	Partial
50	Commercial	Renton	Uptown Glassworks	Full
51	Commercial	Renton	Retail Store and Office	Full
52	Commercial	Renton	Ben's Loans	Full
53	Commercial	Renton	Retail Store and Office	Full
54	Commercial	Renton	Service Garage and Retail	Full
55	Office	Renton	YWCA	Full

1. The number shown in the first column corresponds to the bubbles shown on Exhibit 18.



Exhibit 18: Acquisitions, Main Avenue Design Option

The displacement of the YWCA Renton Regional Center will be a major loss for communities within the study area and beyond. The organization serves women and families throughout South King County with programs to end homelessness, create jobs, care for children and youth and prevent violence. Although the building would likely be relocated within the community, residents that currently rely on those services may have to temporarily travel farther to utilize comparable services.

More information regarding impacts to historic resources under the Main Avenue design option can be found in the *Cultural, Historic, and Archaeological Technical Memorandum* for this project.

The Main Avenue design option will result in an additional loss of parking within the study area, as shown in Exhibit 19. In addition to the 358 parking losses identified in Exhibit 16, five parking spaces owned by the City of Renton will be eliminated from the study area with this design option.

Exhibit 19: Parking Loss, Main Avenue Design Option

No. ¹	Business Name/Type	City	Current Parking Spaces	Proposed Parking Spaces	Parking Loss
56	City of Renton Parking	Renton	8	7	1
57	City of Renton Parking	Renton	16	14	2
58	City of Renton Parking	Renton	16	14	2
Total			40	35	5

1. The number shown in the first column corresponds to the bubbles shown on Exhibit 18.

Public Services and Utilities

What effect will construction activities have on public services in the study area?

The project will widen the roadway, reconstruct I-405 bridges, and install storm drainage facilities. These activities will have minor short-term effects on public services in the study area during the construction period. Travelers through the area can expect minor delays and slow downs. Transit, school buses, solid waste collection and recycling, and emergency response vehicles will also experience temporary route detours during some construction phases. Construction staging will be used to minimize delays and detours that may affect the delivery of public services. Bridge construction will occur in multiple stages to keep traffic flowing and avoid closing facilities as much as possible.

What effect will construction activities have on utilities in the study area?

The project will result in utility conflicts with 15 utility owners within the study area, as shown in Exhibit 20. The conflicts that have currently been identified include the protection of 27 utilities in place and the relocation of 79 utilities. While the conflicts have not yet been finalized for all utilities within the study area, there is the potential for conflict with 57 additional utilities as the project design progresses, which may include relocation, reconstruction, need for protection during and after construction, and restricted access.

Exhibit 20: Utility Conflicts

Utility Owner	Utility Type	Number of Utility Lines		
		Protected	Relocated	Potential Conflict
360 Network/PFL	Fiber Optic	1	1	-
City of Renton	Sanitary Sewer	3	10	5
	Water Main	4	25	8
City of Seattle	Power	-	1	-
	Water Main	5	-	-
City of Tukwila	Water Main	-	1	6
Comcast	Fiber Optic	1	1	2
	Telephone Cable	-	1	-
Electric Lightwave	Fiber Optic	-	-	2
	Telephone	-	1	-
King County	Sanitary Sewer	2	-	-
MCI	Fiber Optic	-	2	2
	Telephone Cable	1	-	-
Olympic Pipeline	Telephone Cable	1	-	-
	Petroleum	2	2	-
PSE	Power	1	20	4
	Gas Main	2	2	4
Qwest	Fiber Optic	1	-	1
	Telephone Cable	2	1	7
Seattle City Light	Power	-	2	2
Sprint	Fiber Optic	-	1	1
Verizon	Fiber Optic	-	-	1
XO Communications	Fiber Optic	-	1	-
Unknown	All	1	7	12
Total	All	27	79	57

Major utilities that will require relocation or protection efforts are highlighted below:

- PSE power lines that cross I-405 near Interurban Boulevard, Longacres Drive, and Benson Road.
- King County sanitary sewer line that crosses I-405 and Grady Way west of Springbrook Creek.
- Olympic Pipeline petroleum pipeline crossings at I-405 and Raymond Avenue, SR 167 near East Valley Road, and Benson Road.

- City of Seattle water main crossings at SR 167 and East Valley Road and near Renton Avenue.
- Qwest telephone line that crosses I-405 near Benson Road.
- City of Renton water main crossing I-405 and Benson Road and sanitary sewer line that crosses I-405 near Thunder Hills Creek.
- City of Renton pumps, wells, and associated water supply systems in the Tri-Park area.

WSDOT is coordinating with utility owners and agencies to determine the extent and nature of the possible effects and to develop strategies for relocating and/or protecting the utilities where conflicts have been identified. Those utilities that are covered under franchise agreements will be responsible for their own relocation and/or preservation. The relocation of utility lines will result in temporary outages. WSDOT will minimize disruptions to the public associated with outages by constructing replacement systems prior to taking existing systems out of service, limiting service disruptions to off-peak periods, and coordinating with utility owners to ensure that outages are short term and intermittent.

What effect will project operation have on public services and utilities in the study area?

The project will increase the average travel speed on I-405 by up to 35 mph when the project opens in 2014, enhancing mobility and reducing response times for fire and emergency medical service vehicles along I-405 and SR 167. The improvements will also eliminate many existing traffic flow and transportation safety problems in the study area. Therefore, no substantial police, fire/emergency medical response, or hospital operational effects are anticipated.

Once the project is completed, it will have no effects on utilities.

Measures to Avoid or Minimize Project Effects

How will adverse effects from construction be avoided or minimized?

WSDOT will avoid or minimize adverse effects during construction by using several strategies:

- A Traffic Management Plan (TMP) will be prepared and implemented in coordination with the contractor. Signs will be posted to show detour routes if periods of closure are needed, or if traffic is required to change its normal route.
- The TMP will be implemented and coordinated with all service providers prior to construction activity. This will identify conflicts and resolve them prior to or during construction.
- Construction closures will be timed to minimize inconvenience.
- Current information on construction and travel options will be posted on the project website.

Transportation demand management (TDM) strategies will form an important part of the construction management program. TDM strategies in the Tukwila to Renton Project area will be implemented prior to construction to increase public awareness and participation in HOV travel. The major focus will be on expanding vanpooling and vanshare opportunities. For more information on TDM strategies, please see the *Transportation Discipline Report* for this project. Finally, during periods of road closures, WSDOT will provide detour routes to ensure that access to local neighborhoods and community resources is maintained at all times.

WSDOT will continue active public involvement and work with neighborhood associations and public services. WSDOT will coordinate with any affected residents or business owners to provide them relocation assistance, in compliance with the Uniform Relocation Assistance and Real Property Acquisition Act of 1970, as amended. WSDOT will also coordinate with business owners and the local jurisdictions to ensure that parking losses are mitigated at an appropriate level.

Impacts to existing utilities will be avoided through project design when feasible. Where avoidance is not feasible, utilities will be relocated or protected in place.

During design, WSDOT will meet with staff from the Tukwila and Renton Parks and Public Works Departments to coordinate temporary trail closures and detours related to the project. Notices will be posted and provided to bicycle clubs to keep the public informed about construction activities. If it is not possible to maintain trail traffic during construction, then the team will identify appropriate, safe detours for use by cyclists and/or pedestrians. WSDOT will identify the construction zone and a detour route for the trails using barricades, flagging, signage, and/or signalization to maintain safety for trail users as necessary. Detour routes will be provided and signs will indicate the closure times and provide directions to the detours. The trails will be fully restored following construction.

Construction noise within the study area will be minimized through several methods. These can include using enclosures or walls to surround noisy equipment, installing mufflers on engines, using quieter equipment or construction methods, minimizing operation time, and locating equipment as far as possible from sensitive receptors (residences, parks, etc.). In areas where equipment must be located near residences, parks, or trails, temporary noise barriers or curtains will be constructed around the equipment to reduce noise levels, where practicable.

WSDOT will address dust control through the use of BMPs. More information on the BMPs planned for dust control are available in the *Air Quality Discipline Report* prepared for this project.

How will adverse effects from the project be minimized?

WSDOT made several modifications to the project design to protect community resources and preserve the integrity of the area's neighborhoods. The features that have been incorporated into the current project design include:

- I-405 in the vicinity of SW Grady Way will be widened to the south to avoid having to move Grady Way and minimize property acquisitions for businesses in the area.
- Stacked freeway ramps will be used at the I-405/SR 167 interchange to minimize the need to acquire property.
- SR 167 will be widened as far to the west as possible and retaining walls will be used to minimize effects to both the Panther Creek wetlands and the area that will need to be acquired from businesses west of SR 167.
- I-405 will be widened to the south to minimize impacts to Renton Village.
- I-405 will be widened to the east to avoid impacts to Renton City Hall.
- I-405 will be widened to the north and west to minimize impacts to the Renton Hill neighborhood.
- Local road improvements for access to Renton Hill include a stacked design to minimize property acquisitions and to maintain two local accesses to the Renton Hill neighborhood.
- I-405 will be widened to avoid the City of Renton's public water well buildings on the east side of I-405 near SR 169.
- Retaining walls will be constructed along Tukwila Parkway east of the Green River to avoid the need to move or demolish the barn on the James Nelsen House property.

The acquisition of a portion of Veterans Memorial Park under the Main Avenue design option will be minimized by relocating the displaced portion of sidewalk and replacing the disturbed landscaping.

A variety of methods may be used to effectively reduce traffic noise levels. These methods include constructing noise barriers, implementing traffic management measures, acquiring land as buffer zones, or noise-insulating public buildings. A final determination of the implementation of noise-attenuating methods will take place during detailed project design,

after further opportunity for public involvement and coordination with municipal agencies. Although it was determined that land acquisition and roadway realignment would be unreasonably expensive options for reducing noise levels, the following methods may still be implemented:

- Construct Noise Barrier 8 along the WSDOT right-of-way line east of Benson Road S and southeast of I-405, near the Berkshire Apartments.
- Construct Noise Barrier 10 atop a retaining wall from Renton Avenue S to the end of Mill Avenue S. This barrier is composed of two walls, Noise Barriers 10A and 10B, which work together as a system.
- Traffic management measures, which include time restrictions or traffic control devices and signing, which help prohibit certain vehicle types (motorcycles, heavy trucks, etc.), modify speed limits, and implement exclusive lane designations.
- Noise insulation of public buildings (although this method is not typically used for commercial and residential structures, which constitute most uses within the study area).

Does the project cause any substantial adverse effects that cannot be avoided?

Noise levels will approach or exceed the noise abatement criteria at 121 residences, 2 hotels, 1 library, 6 parks, and 3 trails with the relocated noise barrier and the construction of new noise barriers. However, these noise increases are not considered a substantial adverse noise impact.

Acronyms and Abbreviations

ADA	Americans with Disabilities Act
BMPs	best management practices
CAA	Clean Air Act
CATV	Community Antenna Television
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act (Superfund)
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
EO	Executive Order
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
HOV	High-Occupancy Vehicle
I	Interstate
LEP	Limited English Proficiency
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
PS Clean Air	Puget Sound Clean Air Agency
PSE	Puget Sound Energy
SEPA	Washington State Environmental Policy Act
Sound Transit	Central Puget Sound Regional Transit Authority
SR	State Route
TDM	Transportation demand management
TMP	Traffic Management Plan
USC	United States Code
WAC	Washington Administrative Code
WSDOT	Washington State Department of Transportation

Glossary

accessibility	The ability to conveniently travel through an area and reach a destination, e.g., shopping, services, home.
acquisition	The purchasing of property, residences, or businesses for right-of-way necessary to construct or support a project.
census	The U.S. Census Bureau takes the census of population and housing in years ending in zero. The census form includes both a short form (100 percent survey) and a long form (sample survey of one in six households).
census tract	Census tracts are small, fairly permanent subdivisions of a county. Their delineations are determined by a local committee of users of census data in order to present such data. They are designed to contain somewhat homogeneous population and economic characteristics as well as living conditions. Census tracts average 4,000 inhabitants.
community/neighborhood cohesion	The ability of people to communicate and interact with each other in ways that lead to a sense of community, as reflected in the neighborhood's ability to function and be recognized as a singular unit.
corridor	Within the context of a visual analysis, the road or highway and the adjacent area that is visible from and extending along the highway. The distance the corridor extends out from the highway may vary depending on different factors, such as land use and topography, or the corridor may be defined as a set width, such as one-quarter or one-half mile.
environmental justice	The provisions of Executive Order 12898 that require each federal agency to make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse health and/or environmental effects on minority and/or low-income populations.
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.
Hispanic/Latino	A self-designated classification for people whose origins are from Spain, the Spanish-speaking countries of Central or South America, the Caribbean, or those identifying themselves generally as Spanish, Spanish-American, etc. Origin can be viewed as ancestry, nationality, or country of birth of the person or person's parents or ancestors.
land use	The type of activity (i.e., residential, commercial, or industrial) that occurs on property.
low-income	A household income that is at or below the federally designated poverty level for a given household size.
Metro Transit	The King County public transit agency.
minority	Individuals listed in the Census as Black (a person having origins in any of the black racial groups of Africa); Hispanic (a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race); Asian American (a person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands); American Indian/Alaskan Native (a person having origins in any of the original people of North America and who maintains cultural identification through tribal affiliation or community recognition); or some other race.
noise abatement criteria	The FHWA noise abatement criteria specify exterior and interior noise levels for various land activity categories such as residential and commercial. WSDOT considers a noise impact to occur if predicted equivalent hourly noise levels (Leq (h)) approach within 1 dBA of the noise abatement criteria.
poverty	Having a money income that falls below the federally designated threshold for a given household size and composition. If the total income for a household or unrelated individual falls below the relevant poverty threshold, then the household or individual is classified as being "below the poverty level".

race	A characteristic of population. In the 2000 Census, race included White and Non-White (Persons of Color). Non-White includes Black or African-American alone, American Indian or Alaskan Native alone, Asian alone, Native Hawaiian or other Pacific Islander alone, some other race alone, or a mixture of two or more races. Non-White can include persons of Hispanic/Latino heritage; some Hispanic/Latinos, however, are White.
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.
social resources	Elements of the community or social environment, including population, housing, community facilities, religious institutions, social and employment services, cultural and social institutions, and government institutions.

References

GIS data sources

Exhibit 1

Washington State Department of Transportation (WSDOT).
2006 – 2007. I-405 Staff; study area boundary.

Exhibit 2

All data from the base data referenced below.

Exhibit 3

All data from the base data referenced below.

Exhibit 4

US Census Bureau.
2002 Census 2000 Summary File 3, Washington State Census of Population and Housing.

Exhibit 5

King County Standard GIS Data Disk, extract June 2006:
2005 King County School Sites.

WSDOT.

2005 I-405 Renton Nickel Improvement Project, I-5 to SR 169. Prepared by I-405 Staff and DMJM Harris, Public Services.

Exhibit 6

WSDOT.

2005 I-405 Renton Nickel Improvement Project, I-5 to SR 169. Prepared by I-405 Staff and DMJM Harris, Utilities.

Exhibits 8-15

WSDOT.

2007 I-405 Staff; right-of-way acquisitions, potential impact area.

Exhibit 18

WSDOT.

2007 I-405 Staff; right-of-way acquisitions.

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).

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Center for Urban Transportation Research.

2003 Community Impact Assessment: A Handbook for Transportation Professionals. University of South Florida. November 2000.

Renton, city of

2007 <http://rentonwa.gov/living/default.aspx?id=65>. Renton Parks and Trails. Website accessed on February 9, 2007.

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2007 <http://www.ci.tukwila.wa.us/recreation/parks.htm>. Tukwila Parks. Website accessed on February 9, 2007.

2006 <http://www.ci.tukwila.wa.us/infopack/neighbor.htm>. Tukwila Libraries, Neighborhoods, Volunteers/Welcome Packet. Website accessed on August 18, 2006.

2005 Tukwila Comprehensive Plan. December 5, 2005.

Washington State Department of Transportation (WSDOT).

2007 I-405, Tukwila to Renton Improvement Project: Cultural, Historic, and Archaeological Technical Memorandum. Prepared by Landau and WSDOT.

- 2007 I-405, Tukwila to Renton Improvement Project: Economic Elements Technical Memorandum. Prepared by David Evans and Associates, Inc.
- 2007 I-405, Tukwila to Renton Improvement Project: Noise Discipline Report. Prepared by Parsons Brinkerhoff.
- 2007 I-405, Tukwila to Renton Improvement Project: Section 4(f) Evaluation. Prepared by Osborn Pacific Group, Inc.
- 2007 I-405, Tukwila to Renton Improvement Project: Transportation Discipline Report. Prepared by Mirai Associates.
- 2005 Renton Nickel Improvement Project: Draft Section 4(f) Evaluation. October 2005. Prepared by Osborn Pacific Group, Inc.
- 2005 Renton Nickel Improvement Project: Environmental Justice Discipline Report. October 2005. Prepared by Parametrix.
- 2005 Renton Nickel Improvement Project: Public Services and Utilities Discipline Report. October 2005. Prepared by DMJM Harris.
- 2005 Renton Nickel Improvement Project: Social Discipline Report. October 2005. Prepared by DMJM Harris.
- 2005 Renton Nickel Improvement Project: Transportation Discipline Report. October 2005. Prepared by Mirai Associates.

APPENDIX A: SOCIAL ELEMENTS, PUBLIC SERVICE AND UTILITIES METHODOLOGY

Information was collected from a variety of sources to identify the existing social elements, public services, and utilities, and to assess the proposed project's potential impacts to those populations and services. Indicators of community cohesion include interaction among neighbors, use of community facilities, community leadership, identification with the community, desire to stay in the community, homogeneity-income, ethnicity, age, family-oriented vs. singles-oriented, and length of residency. The methods used to identify indicators of community cohesion included researching websites for the cities of Tukwila and Renton, GIS mapping, coordinating with utility and area service providers, and reviewing American Community Survey data. Much of the baseline conditions information was obtained from *the Social Discipline Report* (October 2005) and the *Public Services and Utilities Discipline Report* (November 2005) completed as part of the I-405, Renton Nickel Improvement Project Environmental Assessment, which has a similar study area. Information taken from those reports was then confirmed either through site visits or contact with local agencies and service providers.

The study area was selected to include areas about one-half mile from the project activities along I-405 and SR 167 in the cities of Tukwila and Renton, as shown in Exhibit 1. The study area for this project was altered in places to ensure that entire neighborhoods were included and to accurately capture and report any project effects. Community demographics, public services, and utilities were identified within the study area boundaries (as shown in Exhibits 4, 5, and 6), although census areas and neighborhood boundaries sometimes include populations outside of the half-mile study area. In those areas, the study area boundary varies to meet neighborhood and census area boundaries. Service areas for community services, such as fire districts and emergency responders, also serve populations outside of the study area. Service providers were included if at least a portion of the service area intersects the half-mile study area. Services without defined boundaries such as churches and community organizations were identified if there are facilities located within the half-mile study area. Recreational amenities were identified within the study area.

Census data collected as part of the *Social Discipline Report* were used as the primary source for demographic information. Local websites, such as the City of Tukwila, City of Renton, and Puget Sound Regional Council provided additional information. Other discipline reports for the project were also reviewed that provided relevant information for assessing the social impacts of the proposed improvements. These reports addressed environmental justice, noise, transportation, land use patterns, air quality, and economics. The input received from the public involvement process is reviewed to help verify demographic data and to help assess any adverse effects on people within the community.

Utility information was gathered from existing utility providers and previous analysis in the *Renton Nickel Utilities Discipline Report*, where all utilities were identified within the half-mile study area. Potential effects to utilities were confirmed through discussions with the WSDOT conceptual alignment designers and local utility providers.