

SECTION 5 PROJECT EFFECTS

How would the project use Section 4(f) resources?

This section addresses the extent to which the Build Alternative would affect the protected Section 4(f) properties within the study area for the Tukwila to Renton Project. In Section 1, the terms direct use, temporary occupancy, and constructive use are described. Direct use, temporary occupancy, and constructive use were examined for each Section 4(f) resource and are described beginning at the western project limit and continuing east (northbound).

Direct Use and Temporary Occupancy

During development of the project, WSDOT strove to find reasonable options that avoid effects to the community and the environment while improving driving conditions for motorists on I-405. The development of a viable project necessitated finding an optimal balance between meeting the project purpose and need and minimizing project effects. FHWA and WSDOT also considered avoidance alternatives to eliminate effects to Section 4(f) resources. These are discussed in Section 6. As a result, the Tukwila to Renton Project would have a use at the following five resources:

- Duwamish-Green River Trail Trailhead
- Cedar River Park
- Liberty Park
- Cedar River Trail
- Narco Property

Constructive Use

Constructive use is a type of indirect use in which a transportation project's proximity impacts (as opposed to direct impacts) is so severe that the protected activities, features, or attributes that qualify a resource for protection under Section 4(f) is substantially impaired. Examples include excessive noise level increases, diminished aesthetic features, ecological intrusions, and other indirect impacts to the resource's environment or utility. Noise, visual quality, and air quality studies were completed for the Tukwila to Renton Project EA. Information from these studies was analyzed to determine whether there would be constructive uses at any of the Section 4(f) resources.

Air Quality Analysis

Under the Clean Air Act Amendments of 1990, USDOT cannot fund, authorize, or approve projects that are not first found to conform to Clean Air Act requirements. The Tukwila to Renton Project must be in compliance with National Ambient Air Quality Standards (NAAQS). Currently, the I-405 Corridor meets all NAAQS, and based on the results of modeling, FHWA and WSDOT concluded that the Tukwila to Renton Project would not substantially affect air quality in the vicinity of the Section 4(f) resources.

What is dBA?

Sound is created when objects vibrate. The human response to sound depends on the magnitude of a sound and the sound's frequency or pitch. The decibel (dB) is used to measure sound level and is a logarithmic unit. Noise specialists use weighting factors to measure how humans perceive sounds of low to moderate magnitude. A-weighting (dBA) is used to model noise levels along the I-405 corridor.

What are FHWA noise abatement criteria?

The FHWA noise abatement criteria are based on documented and measured speech interference. Noise can also disturb wildlife by disrupting communication, interfering with mating, and reducing the ability to obtain sufficient food, water, and cover. A location is determined to have traffic noise effects if the traffic noise level is predicted to approach within 1 dBA of, meet, or exceed the NAC in the future design year.

Noise Analysis

Project noise specialists modeled noise levels for both the Build and No Build Alternative. The year 2030 was used to determine projected dBA levels. These dBA levels were compared with FHWA criteria to identify acceptable noise levels for different land uses. The FHWA noise abatement criterion (NAC) for recreation resources is 67 dBA. Noise levels range from representative suburban outdoor sound levels, between 50 and 60 dBA, to very noisy levels (above 70 dBA) that are typical of locations within 100 feet of a busy freeway.

In all cases, the modeled noise levels⁵ approach or exceed the NAC at the Section 4(f) resources where data was available. These levels increased or decreased by 1 to 2 dBA except at Cedar River Park where the increase in noise level between the baseline condition and the 2030 build condition was projected to be 3 dBA. The threshold at which the human ear can perceive a change in sound levels is 3 dBA. One facility in Cedar River Park is the indoor Carco performing arts theater. Because all performances are indoors, additional noise analysis was not conducted specifically to address noise intrusion at the theater. WSDOT determined that the Section 4(f) resources are physically located where noise mitigation from I-405 would not be feasible. Furthermore, the absence of a large number of noise-sensitive receptors in the immediate area of each Section 4(f) resource prevents it from meeting WSDOT's reasonableness criteria for constructing noise barriers.

FHWA and WSDOT concluded that the projected noise levels and vibration during operations attributable to the Tukwila to

⁵ *Modeling of noise levels occurred during Spring 2006. I-405, Tukwila to Renton Improvement Project (I-5 to SR 169-Phase 2) Noise Discipline Report.*

Renton Project would not substantially interfere with the use and enjoyment of the Section 4(f) resources.

Visual Quality Analysis

Both FHWA and WSDOT mandate evaluations of visual effects, including aesthetics and light and glare. This assessment considers views from and toward the freeway and the evaluation is based on a qualitative visual quality rating system.⁶ One result of the evaluation identifies whether the proposed project substantially diminishes aesthetic features or attributes that qualify a resource for protection under Section 4(f). FHWA and WSDOT determined that the Tukwila to Renton Project would not substantially diminish aesthetic features or attributes protected by Section 4(f) at any of the identified resources.

What would be the effects on each Section 4(f) Resource?

Crystal Springs Park

WSDOT proposes to construct stormwater features west of the I-405/I-5 interchange and north of SR 518. These proposed stormwater features would be separated from Crystal Springs Park by SR 518 and approximately 400 feet of private property.

None of the proposed construction activities would occur in or adjacent to Crystal Springs Park. No land would be acquired, either permanently or temporarily, from this park.

Ikawa Park

During the construction of the Tukwila to Renton Project, Southcenter Boulevard would be widened and the road profile would be raised by up to four feet approximately 1,000 feet east of Ikawa Park. No construction would occur in the I-405 corridor or on Southcenter Boulevard immediately adjacent to the park.

No land would be acquired, either permanently or temporarily, from this park.

What is the test for feasibility and reasonableness to mitigate noise?

WSDOT evaluates noise sensitive areas that approach or exceed the NAC to determine the feasibility and reasonableness to mitigate noise with noise barriers. To be feasible, a barrier must be constructible in a location that achieves a noise reduction of at least 7 dBA. Determination of reasonableness depends on the number of sensitive receptors benefiting by a reduction in noise of at least 3 dBA, the cost effectiveness of the barriers, and concerns such as aesthetics, safety, and desires of nearby residents. A sensitive receptor represents a location where noise levels (dBA) approach or exceed the NAC or where noise levels increase 10 dBA or more over existing conditions.

⁶ *I-405, Tukwila to Renton Improvement Project (I-5 to SR 169 – Phase 2) Visual Quality Technical Memorandum, David Evans and Associates. 2007.*

Tukwila Park

Many construction activities associated with the Tukwila to Renton Project would occur in the vicinity of Tukwila Park:

- Southcenter Boulevard would be widened and raised.
- The existing 66th Avenue S (Christensen Road) bridge would be demolished.
- A new 66th Avenue S bridge would be constructed immediately west of the existing location.
- In the I-405 corridor, two new bridges (northbound and southbound) would replace the existing I-405 bridges crossing the Green River.
- SR 181 (Interurban Avenue S) would be widened to add capacity in the area around the interchange.

None of these construction activities would occur in or immediately adjacent to Tukwila Park. No land would be acquired, either permanently or temporarily, from this park.

Duwamish-Green River Trail/Christensen Greenbelt

Construction proposed by the Build Alternative in the vicinity of the Duwamish-Green River Trail/Christensen Greenbelt would include:

- Reconstructing the south half of the SR 181 interchange. This would include removing the existing Tukwila Parkway northbound on-ramp, extending Tukwila Parkway east to SR 181 over the Green River and Duwamish-Green River Trail, and constructing a new on-ramp from Tukwila Parkway to northbound I-405.
- Reconstructing the northbound and southbound I-405 bridges over the Green River and the Duwamish-Green River Trail.
- Widening the Southcenter Boulevard bridge over the Green River and the Duwamish-Green River Trail.
- Demolishing the existing 66th Avenue S (Christensen Road) bridge.
- Constructing a new 66th Avenue S bridge constructed immediately west of the existing location.
- Maintaining the existing alignment of the Duwamish-Green River Trail, but lowering the trail elevation to allow for adequate vertical clearance beneath the new bridge.

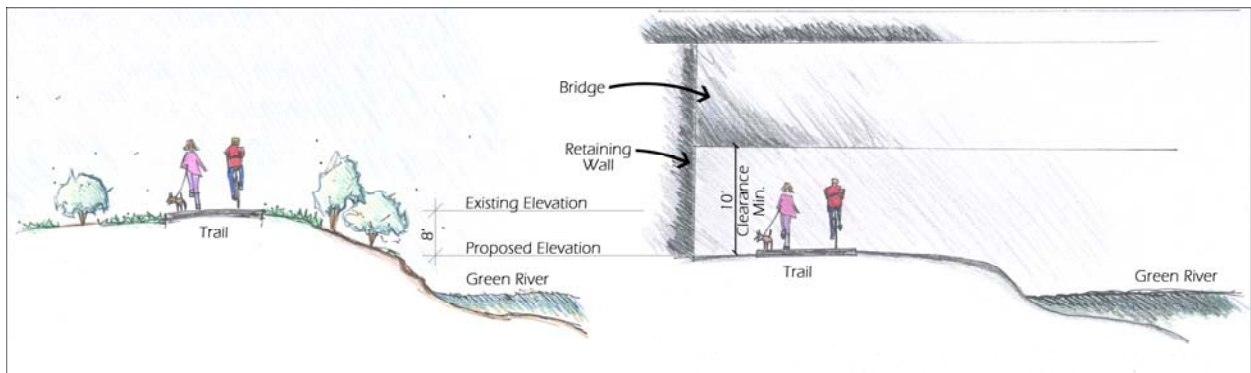
Refinements to on-ramp configurations to provide smooth through-movements would result in an effect on the Duwamish-Green River Trail that would be unavoidable.

Based on coordination with the RCO and the NPS, the protected Section 4(f) and 6(f) trail comprises a width of 14 feet. While no land would be permanently incorporated into the transportation facility, the trail's slope would be revised to ensure adequate clearance for the trail beneath the bridges. FHWA and WSDOT determined this construction activity would result in a temporary occupancy of the protected Section 4(f) resource. A minimum 10-foot vertical clearance would be maintained between the Tukwila Parkway bridge and the trail. The trail would be lowered by up to eight feet. See Exhibits 5-1 and 5-2.

Exhibit 5-1: Duwamish-Green River Trail/Christensen Greenbelt Impact Area



Exhibit 5-2: Profiles of the Existing Trail and the Proposed Trail Beneath the New Tukwila Parkway Bridge



The occupancy would be temporary because:

- The disruption to the trail would require less time than the construction period for the entire project;
- There would be no change in ownership;

- The nature and the magnitude of the changes to the Section 4(f) resource would be minimal;
- There would be no anticipated permanent adverse physical impacts and there would be no interference with the activities or purpose of the resource, on either a temporary or permanent basis;
- The land being used would be restored to a condition which is at least as good as that prior to the project; and
- WSDOT and the City of Tukwila have agreed to the temporary occupancy of the resource. A copy of a letter between the two agencies is in Appendix B.

There would be no direct use under Section 4(f) because the bridges would span the trail and the piers for the bridges would not be located within the 14-foot-wide trail property. Constructive uses would not occur with the proposed modifications to the trail. Currently, five existing bridges cross over the trail within the study area. The proposed new bridge would be constructed adjacent to the existing bridges. Conditions experienced by the trail user would remain relatively unchanged with respect to noise, air quality, and visual quality. The exposure and duration of exposure to noise and views would not be substantially altered because the trail would continue to cross beneath each bridge as it does today and the proposed bridge would be a similar scale and style.



Existing View



Proposed View

Duwamish-Green River Trail Trailhead

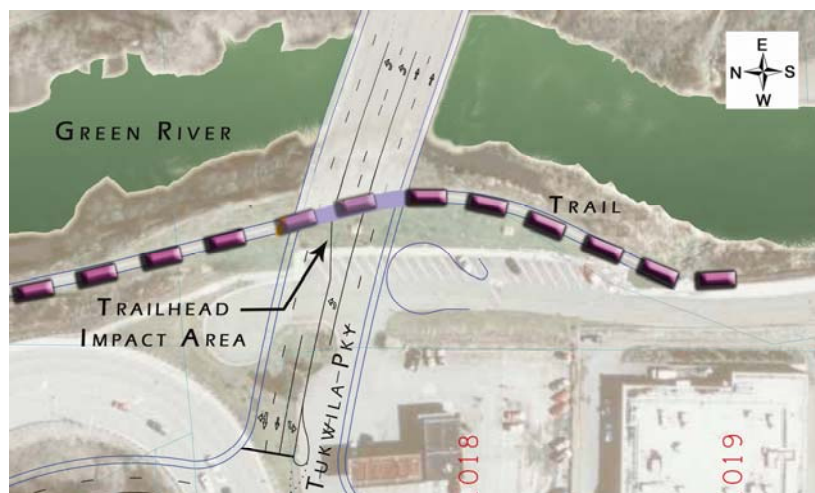
The Build Alternative construction proposed in the vicinity of the Duwamish-Green River Trail Trailhead includes:

- Reconstructing the south half of the SR 181 interchange. This would include removing the existing Tukwila Parkway northbound on-ramp; extending Tukwila Parkway east to SR 181 over the Green River, trailhead, and Duwamish-Green River Trail; and constructing a new on-ramp from Tukwila Parkway to northbound I-405.
- Reconstructing the northbound and southbound I-405 bridges over the Green River and the Duwamish-Green River Trail.
- Demolishing the existing 66th Avenue S (Christensen Road) bridge.

- Constructing a new 66th Avenue S bridge immediately west of the existing location.

Approximately 4,500 square feet or 0.1 acres of land from the trailhead would be permanently incorporated into the transportation facility as a result of the construction of the Tukwila Parkway extension. The property that would be affected includes passive recreation uses, landscaping, trail access and 13 parking stalls. The 13 parking stalls would be replaced west of the existing parking lot. See Exhibits 5-3 and 7-1.

Exhibit 5-3: Impact Area at Duwamish-Green River Trail Trailhead



Fort Dent Park

The Build Alternative proposes to modify the intersection at Fort Dent Way/Interurban Avenue S/I-405 on- and off-ramps, which provide access to the park.

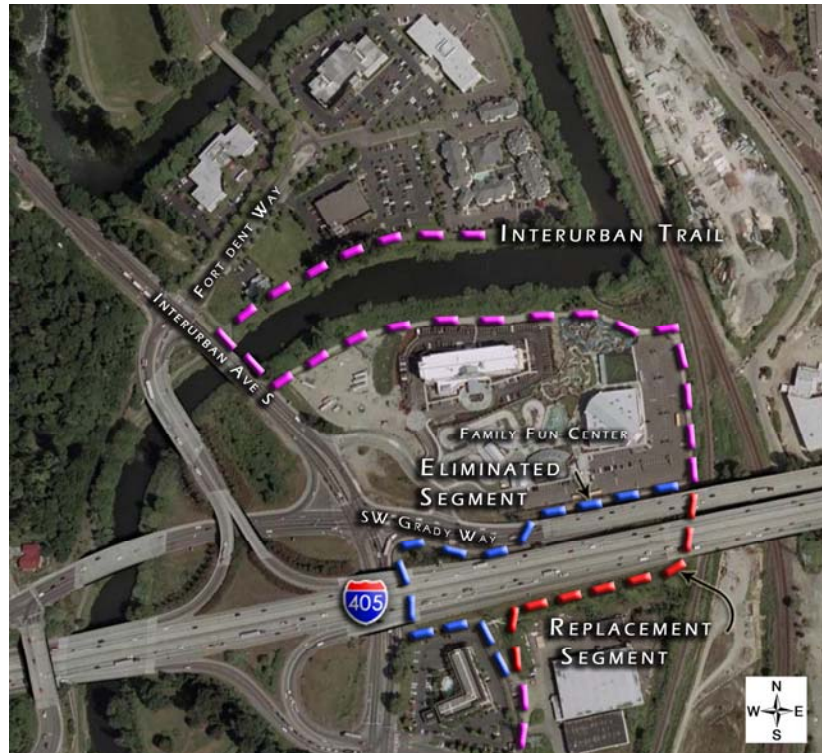
No land would be acquired, either permanently or temporarily, from this park, because access will be maintained.

Interurban Trail

In the vicinity of the Interurban Trail, WSDOT proposes to add one lane in each direction, build new bridges over SR 181 and the railroads, and reconstruct a section of I-405. WSDOT coordinated with the City of Tukwila Parks Department during development of the Build Alternative. This coordination resulted in a design that proposes to realign the trail, creating a smoother-flowing route that would cross under I-405 parallel to the Union Pacific railroad. The realignment to replace the current indirect route would be done in conjunction with reconstruction of the I-405 bridges over the railroads. The re-

aligned trail would be reconstructed within WSDOT right-of-way. In Exhibit 5-4, the trail segment highlighted in blue would be replaced with the segment highlighted in red.

Exhibit 5-4: Realignment of Interurban Trail



No land would be permanently acquired from this trail. There would be temporary occupancy during construction; however, the occupancy would not rise to a use under Section 4(f) because:

- The disruption to the trail would require less time than the construction period for the entire project;
- There would be no change in ownership;
- The nature and the magnitude of the changes to the Section 4(f) resource would be minimal;
- There would be no anticipated permanent adverse physical impacts and there would be no interference with the activities or purpose of the resource, on either a temporary or permanent basis;
- The new trail alignment would be constructed to a condition which is at least as good as that prior to the project; and

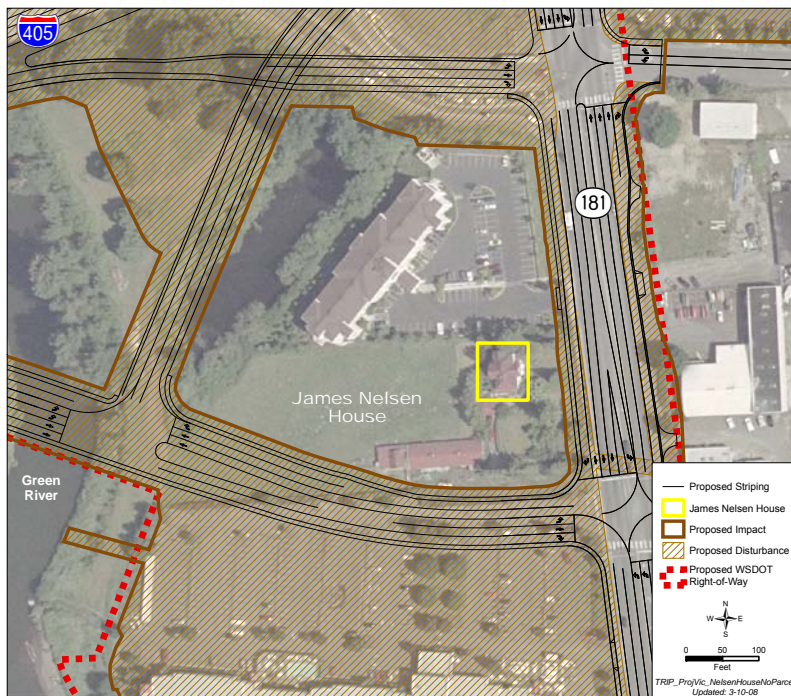
- WSDOT and the City of Tukwila have agreed to the temporary occupancy of the resource. A copy of a letter between the two agencies is in Appendix B.

The proposed trail realignment would not alter its proximity to I-405. Constructive uses would not be triggered by the proposed construction. Conditions experienced by the trail user would remain relatively unchanged or slightly improved with respect to noise, air quality, and visual quality. Currently, the trail crossing beneath I-405 is adjacent to SR 181. When it is realigned, the trail would be further from SR 181 and thus further from noise generated along SR 181.

James Nelsen House

The Tukwila to Renton Project proposes to extend Tukwila Parkway east to SR 181 and construct a new on-ramp to northbound I-405 in the vicinity of the James Nelsen House. While the project would result in permanent acquisition of non-Section 4(f)-protected property adjacent to the James Nelsen House, this acquisition would have no affect on the integrity of the historic structure (see Exhibit 5-5). The acquisition of property would also not preclude the use of the James Nelsen House.

Exhibit 5-5: Proposed Tukwila Parkway and SR 181/I-405 Interchange Next to James Nelsen House



There would be no direct, temporary, or constructive uses of the James Nelsen House. Modeling demonstrated that noise levels would increase and begin to approach the NAC for residences, but would not reach a dBA level that would constitute a use. Air quality is expected to improve slightly as traffic from the adjacent freeway would operate more efficiently. Views from the James Nelsen House would be altered by the construction of the Tukwila Parkway Bridge. However, the current setting of the James Nelsen House is adjacent to the I-405/SR 181 interchange and within a commercially zoned area. The addition of the Tukwila Parkway extension and the acquisition of property would not substantially change the current views from the house.

Springbrook Trail

During construction of the Renton Nickel Improvement Project, (1) the bridge spanning Springbrook Creek and Springbrook Trail was replaced with two new bridges that span the creek, trail, and Oakesdale Avenue and (2) a stormwater flow control facility was constructed adjacent to the trail. The Tukwila to Renton Project would add one lane in both directions on I-405 over the trail by restriping the lanes.

No land would be acquired, either permanently or temporarily, from this trail.

Gateway Park and Piazza Park

Gateway and Piazza Parks are located almost 0.25 mile from the proposed limits of construction.

No land would be acquired, either permanently or temporarily, from these parks.

Burnett Linear Park

Burnett Linear Park is located almost 0.25 mile from the proposed limits of construction.

No land would be acquired, either permanently or temporarily, from this park.

Cedar River Trail – South Loop

The South Loop of the Cedar River Trail is almost 0.25 mile from the proposed limits of construction.

No land would be acquired, either permanently or temporarily, from this park.

Tonkins Park

Tonkins Park is almost 0.25 mile from the proposed limits of construction.

No land would be acquired, either permanently or temporarily, from this park.

Veterans Memorial Park

Two design options are proposed in the vicinity immediately adjacent to Veterans Memorial Park. Both options would involve changing traffic flow patterns on Main Avenue S and Mill Avenue S due to the proposed closure of Houser Way N east of Mill Avenue S.

The Mill Avenue design option would direct traffic from Main Avenue S, Houser Way N, and S 3rd Street to Mill Avenue S and on to Bronson Way N. This would be accomplished by restriping Mill Avenue S as a one-way street between S 2nd Street and Bronson Way N and installing a traffic light at the intersection of Mill Avenue S and S 2nd Street. Bronson Way N would also be restriped for an additional northbound lane. See Exhibit 2-13.

The Main Avenue design option would convert Main Avenue S from a one-way to a two-way street and would direct traffic from S 3rd Street and Houser Way to Bronson Way N. To accommodate the two-way street, Main Avenue S would be widened. The widening would require acquisition of approximately a 16-foot strip of right-of-way. See Exhibit 2-14.

Mill Avenue Design Option

The Mill Avenue design option is a prudent and feasible alternative. No land would be acquired, either permanently or temporarily, from Veterans Memorial Park.

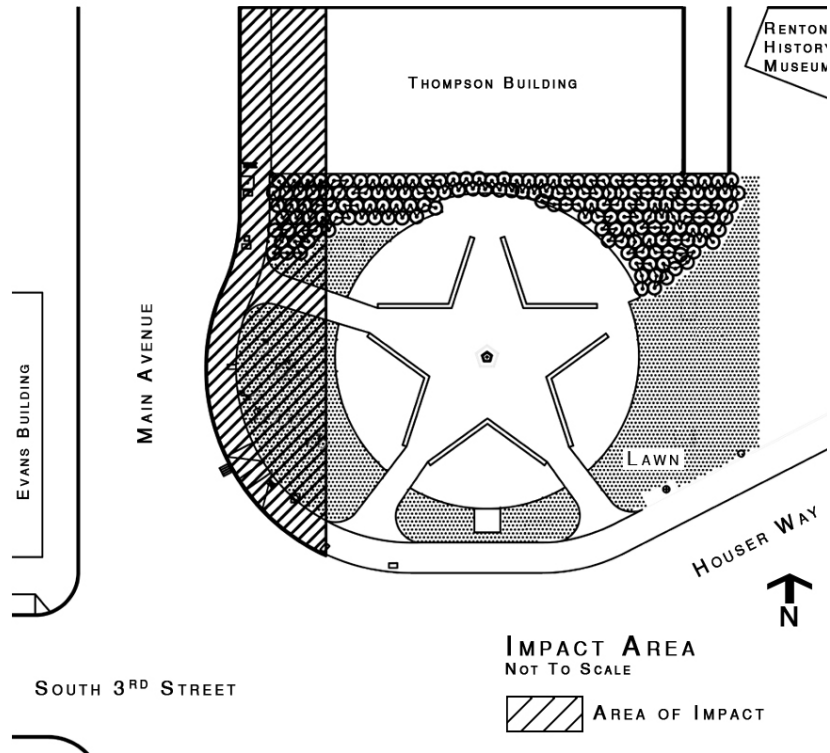
Main Avenue Design Option

This option would require the permanent acquisition of 2,087 square feet of Veterans Memorial Park. The affected area within the park is characterized by ornamental landscaping, lawn, and a walkway from the sidewalk to the memorial statuary.

Veterans Memorial Park would also be subject to temporary occupancy during project construction. Another 1,346 square

feet would be affected temporarily. Because the use would be temporary and the land being used would be restored to a condition which is at least as good as that prior to the project, it would not be defined as a Section 4(f) use. Exhibit 5-6 illustrates the affected area.

Exhibit 5-6: Main Avenue Design Option and Veterans Memorial Park



Source: Cal Jordan, Inc.

The results of the alternatives analysis demonstrate that the Mill Avenue design option is both feasible and prudent and would avoid permanent direct use of Veterans Memorial Park. In recent discussions with the City of Renton, WSDOT has learned that the City plans to potentially develop a civic center campus in the vicinity of Mill and Main Avenues and may possibly relocate Veterans Memorial Park. These plans are currently conceptual and lack funding. However, when funding is secured for this portion of the I-405 Tukwila to Renton project, FHWA and WSDOT may update its Section 4(f) analysis to include the most current baseline condition. If at that point Veterans Memorial Park is relocated by the City from its current location, the Main Avenue design option may be reanalyzed.

Renton History Museum

The Renton History Museum has been determined as eligible for listing in the NRHP (WSDOT 2005). It is listed on the Washington Heritage Register and is architecturally distinctive due to its Art Deco design elements, workmanship, detailing of architectural elements, and its commercial district setting. Both the Mill Avenue and Main Avenue design options would be adjacent to the Renton History Museum.

The Mill Avenue design option would be the preferred prudent and feasible alternative because it would not result in impacts at either Veterans Memorial Park or the Renton History Museum. This design option would not result in an increase in traffic volume adjacent to the Renton History Museum site. This option would redirect the same volume of traffic currently using Houser Way to Mill Avenue S. There would be no proximity effects because there would be no increase in traffic volume, and there would be no changes in the widths or alignments of Houser Way and Mill Avenue S.

No land would be acquired, either permanently or temporarily, from the property housing the museum.

Jones Park

Jones Park is almost 0.25 mile from the proposed limits of construction.

No land would be acquired, either permanently or temporarily, from this park.

Cedar River Park, Liberty Park, Cedar River Trail, and the Narco Property

The City of Renton proposes to integrate Cedar River Park, Liberty Park, and the Narco Property into one large integrated park complex. These three properties plus the Cedar River Trail share common borders, and their close proximity to each other and to I-405 enabled FHWA, WSDOT, and the City to analyze potential effects of the Tukwila to Renton Project collectively as well as separately. The proposed construction in the vicinity of these Section 4(f) resources includes:

- Constructing two additional lanes in both directions on I-405 from SR 167 to SR 169.

- Closing Houser Way S, removing the Houser Way bridge over the Cedar River, and rerouting traffic to a restriped Bronson Way N.
- Replacing three bridges over the Cedar River, including the northbound and southbound I-405 bridges and a pedestrian bridge.
- Relocating the Burlington Northern Santa Fe Railroad bridge.

Design Charrette

A charrette consists of an intense period of design activity. It is a collaborative session in which a group of stakeholders and technical experts draft a solution to a design problem.

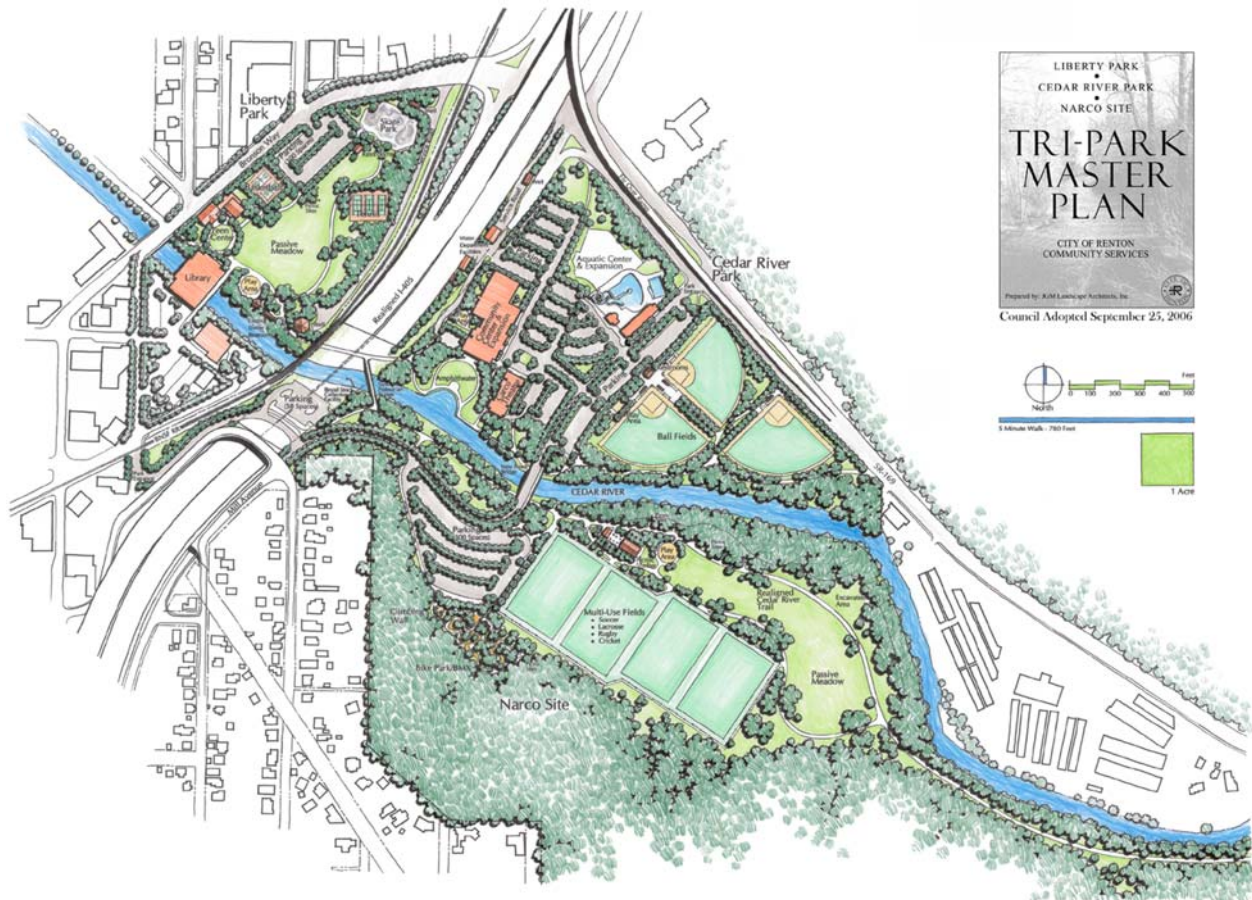
As a precursor to identifying these I-405 improvements in Renton, the City of Renton and WSDOT undertook a design charrette to identify how the City of Renton recreational facilities at Liberty and Cedar River Parks, Cedar River Trail, and the Narco property and an improved (widened) I-405 could co-exist in a physically constrained area. The resulting charrette concept (formalized into a master plan adopted by the City of Renton) integrated Liberty and Cedar River Parks and the Narco property into one large park complex. The design scheme would redevelop the existing Liberty Park and Cedar River Park facilities, realign the Cedar River Trail, develop the Narco site with sports fields, and acquire an additional property to develop ball fields.⁷ The result will be a functionally improved and more integrated park system that accommodates the proposed I-405 improvements with less effect than would result under any other reasonable alternative. See Exhibit 5-7.

Some of the other specific design solutions, in what is now called the City of Renton Tri-Park Master Plan, included:

- Providing the primary entrance to Liberty Park at Garden Avenue and Bronson Avenue.
- Reconstructing the pedestrian bridge to link the Cedar River Trail and the parks and to make the trail as continuous as possible.
- Constructing a new bridge over the Cedar River for direct vehicular access between Cedar River Park and the Narco property.

⁷ Cedar River Vicinity Charrette, *Solutions for Parks, Wells & Local Access*, Washington State Department of Transportation and City of Renton, July 11-14, 2005.

Exhibit 5-7: Tri-Park Master Plan Adopted by City of Renton



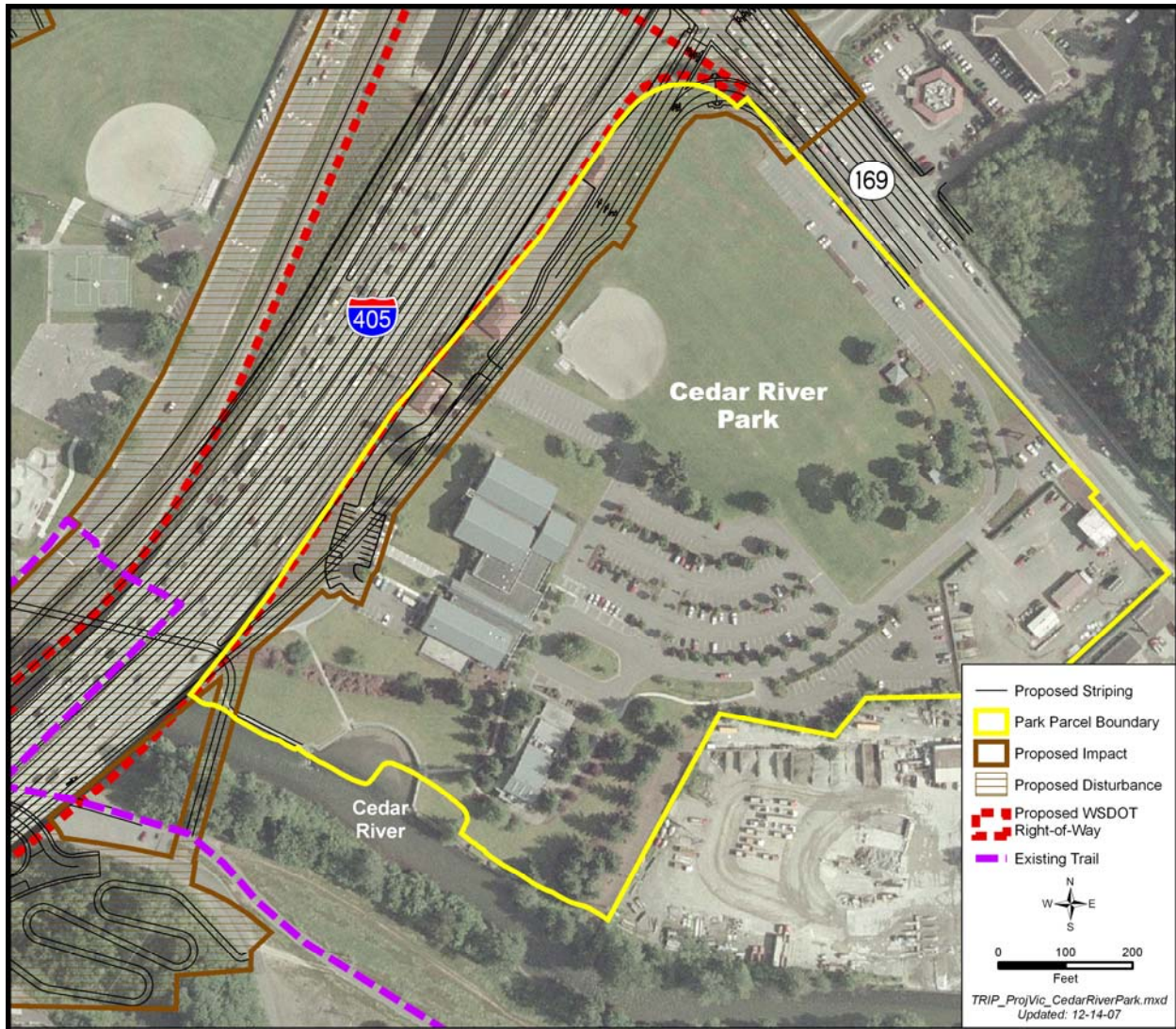
Source: City of Renton

- Removing ball fields and the stadium from Liberty Park and relocating them at the proposed Stoneway property acquisition.
- Expanding the Parks Department building to accommodate a new teen center.
- Demolishing the existing skate park and relocating a new skate park next to the teen center.
- Maintaining Carco Theater, the community center, the aquatic center, and the existing parking at Cedar River Park.
- Converting the soccer fields at Cedar River Park into a general purpose meadow to allow for future expansion of the aquatic center.
- Relocating the proposed southbound I-405 to southbound SR 169 flyover ramp to the median of SR 169 to maximize the distance between the water slides at the aquatic center

and the ramp. (This ramp is proposed as part of the Renton to Bellevue Improvement Project.)

As a result of the avoidance and minimization of effects accomplished through the design charrette, there would be no land permanently acquired from Liberty Park, Cedar River Trail, and the Narco property. Permanent acquisition of Section 4(f) protected resources at Cedar River Park includes 35,752 square feet or 0.82 acres. See Exhibit 5-8.

Exhibit 5-8: Direct Use at Cedar River Park



The affected area supports a mix of park and non-recreation uses, including, but not limited to, access to several City of Renton pumps, wells, and associated water supply system facilities; parking for the community center; a ballfield; and the landscape buffer between I-405 and the park.

While the proposed direct uses can be measured and expressed in a quantifiable area, both WSDOT and the City of Renton concur that the Tukwila to Renton Project would impose other, even though less quantifiable, adverse uses to the recreation environments at Liberty Park, Cedar River Park, Cedar River Trail, and the Narco property. These uses would include:

- Reconstructing the pedestrian bridge for the Cedar River Trail over the Cedar River.
- Replacing one of the Cedar River Park accesses with a new secondary access.
- Reconfiguring the service access and parking on west side of the Community Center at Cedar River Park.
- Removing and replacing landscaping at the northwest corner of Cedar River Park.
- Relocating the SR 169 entrance to Cedar River Park further south along SR 169.
- Eliminating major access to Liberty Park by removing the Houser Way Bridge.
- Modifying the existing access road under I-405 to the Narco property.

WSDOT and the City arrived at a consensus on necessary and desirable park improvements and further concurred on whether each park improvement would be considered mitigation for effects as a result of the I-405 project or would be city-desired recreation improvements. The overall design was presented to and approved by the Renton City Council on April 27, 2006. The decisions are summarized in Section 7, Exhibit 7-2. A signed Letter of Concurrence between WSDOT and the City of Renton is in Appendix A.

What effects would occur under the No Build Alternative?

The No Build Alternative assumes that the improvements associated with the Renton Nickel Improvement Project are constructed and that only routine activities such as road maintenance, repair, and safety improvements would take place between 2014 and 2030. This alternative does not include improvements that would increase roadway capacity or reduce congestion. 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.

Under the No Build Alternative, the use of Section 4(f) resources would be avoided. However, it is not considered to be a feasible and prudent alternative as it would not reduce congestion and increase roadway capacity on I-405.

The No Build Alternative would have an adverse affect on the City of Renton Tri-Park Master Plan. The implementation of the City Master Plan improvements at Cedar River Park, Liberty Park, Cedar River Trail, and at the Narco property is contingent on WSDOT proceeding with the Tukwila to Renton Project. The No Build Alternative would cause the City to re-evaluate the Master Plan for recreation facilities at these Section 4(f) resources.