Attachment 1: Errata to EA and Technical Studies

The following corrections apply to the environmental assessment (EA) and Draft Section 4(f) Evaluation, which was issued on April 4, 2008, and its accompanying technical studies for the Tukwila to Renton Project. The technical studies were completed in 2007 prior to the completion and issuance of the EA.

These corrections serve to clarify or enhance readability of the EA. Because these changes to the EA neither alter the analysis nor the conclusions of No Significant Impact, the issuance of a revised EA is not required. Changes to the EA are identified as to location by the corresponding page number in the EA. Each deletion of original text is shown with a line striking through it; new text is shown as underlined. These minor revisions to the EA and technical studies are incorporated into the EA by reference.

Environmental Assessment and Draft Section 4(f) Evaluation

Page 1-4, 1st full paragraph

The text has been revised as follows:

> The I-405 Team will conduct further evaluation of the ~~seven~~ six fish passage barrier culverts within the study area. Retrofit or replacement of these barriers will be determined during the project's permitting phase.

Page 1-5, 3rd paragraph

The text has been revised as follows:

> **Draft Section 4(f) Evaluation**. The Tukwila to Renton Project will not adversely affect any historic properties or recreational resources. Within the study area, 20 ~~19~~ parks and 2 historic buildings are protected Section 4(f) resources. Of these, two are also Section 6(f) resources. The Tukwila to Renton Project will have direct uses at 5 of the 22 ~~21~~ Section 4(f) resources in the study area. These effects will change some of the resource features but will not permanently interfere with the activities or purposes of the resources. All temporarily occupied trails and parks will be restored following construction.

Page 1-6, section What is the purpose of this Environmental Assessment?

The text has been revised as follows:

> The purpose of this EA is to provide information to the public about environmental effects anticipated from the Tukwila to Renton Project. This EA compares two alternatives: the Tukwila to Renton Project as the Build Alternative and a No Build Alternative. This document fulfills WSDOT's obligation under the National Environmental Policy Act to disclose project effects and mitigation. Following the public comment period, FHWA will either publish a Finding of No Significant Impact (FONSI) document or expand this document to an EIS. Upon final approval, the project will move into the construction

phase. Construction of the entire Tukwila to Renton Project is expected to be spread over several years as funding becomes available.

Page 3-8, last paragraph, 2nd sentence
The text has been revised as follows:

In spring ~~winter~~ 2008, a public hearing and meeting will be held to discuss this EA.

Page 5-20, How noisy is the study area?
The text has been revised as follows:

Baseline conditions include the effects of the Renton Nickel Improvement Project. Under these conditions, some study area locations already approach, meet, or exceed the NAC. Locations that currently approach, meet, or exceed 67 dBA include approximately ~~98~~ 106 residences, ~~2~~ 1 hotel~~s~~, 6 parks, and 3 trails. ~~Eleven~~ Nineteen of these residences and the ~~2~~ hotel~~s~~ exceed the NAC because of noise from local traffic on Main Avenue, S Grady Way, Benson Road S, N 3rd Avenue, the SR 169/N 3rd Avenue connector, and/or SR 169.

Page 5-20, How will noise levels change after the project is completed?
The second paragraph of this section has been revised as follows:

To accommodate the road widening, WSDOT will acquire 30 noise-affected residences and one park as right-of-way for the roadway project. If the project were built without noise barriers, 92 residences and 1 library would go from being below the NAC to approaching, meeting, or exceeding the NAC. Added to the ~~98~~ 106 residences, ~~2~~ 1 hotel~~s~~, 6 parks, and 3 trails that are already at or above the NAC, a total of ~~190~~ 198 residences, ~~2~~ 1 hotel~~s~~, 1 library, 6 parks, and 3 trails are predicted to experience noise levels at or above the NAC of 66 dBA in 2030.

Page 5-22, first paragraph
The first paragraph on this page has been revised as follows:

With these barriers in place, the ~~190~~ 198 residences that approach, meet, or exceed the NAC will be reduced to ~~121~~ 129 residences. These noise barriers will not change the noise levels at the ~~2~~ 1 hotel~~s~~, 1 library, 6 parks, and 3 trails that are also expected to approach, meet, or exceed the NAC after the project is complete.

Page 5-23, first paragraph
The first paragraph on this page has been revised as follows:

With the noise barriers in place for the Build Alternative, noise levels will approach, meet, or exceed the NAC at 36 locations (representing ~~121~~ 129 residences, ~~2~~ 1 hotel~~s~~, 1 library, 6 parks, and 3 trails). The Tukwila to Renton Project will not cause any substantial (more than 10 dBA) increases in noise.

Page 5-23, What would future noise levels be like if WSDOT did not build this project?
This section has been revised as follows:

If this project is not built, no additional receptors will approach, meet or exceed the NAC. Under the No Build Alternative, the ~~98~~ 106 residences, ~~2~~ 1 hotel~~s~~, 6 parks, and 3 trails that

already approach, meet or exceed the NAC will continue to experience noise levels that approach, meet, or exceed the NAC in 2030.

Page 5-43, What recreational resources are located in the study area?

This section has been revised as follows:

There are 23 publicly-owned parks and recreation areas and no waterfowl or wildlife refuges near the proposed Tukwila to Renton Project right-of-way. Exhibit 5-18 lists these resources from east to west (northbound) and compares each resource with Section 4(f) criteria. Of these, 20 ~~19~~ are protected Section 4(f) properties. Exhibits 5-19 and 5-20 show these properties.

Page 5-43, Exhibit 5-18

Exhibit is revised as follows:

Exhibit 5-18: Park, Trail, and Recreation Areas Compared Against Section 4(f) Criteria

Property/Jurisdiction	Publicly Owned	Open to the Public	Major Purpose is Recreation	Significant as a Park	Section 4(f) Protected Property
Crystal Springs Park *(Tukwila)*	Yes	Yes	Yes	Yes	Yes
Ikawa Park *(Tukwila)*	Yes	Yes	Yes	Yes	Yes
Tukwila Park *(Tukwila)*	Yes	Yes	Yes	Yes	Yes
Duwamish-Green River Trail/Christensen Greenbelt *(Tukwila)*	Yes	Yes	Yes	Yes	Yes
Duwamish-Green River Trail Trailhead *(Tukwila)*	Yes	Yes	Yes	Yes	Yes
Fort Dent Park *(Tukwila)*	Yes	Yes	Yes	Yes	Yes
Interurban Trail *(Tukwila)*	Yes	Yes	Yes	Yes	Yes
Springbrook Trail *(Renton)*	Yes	Yes	Yes	Yes	Yes
Lake Street Open Space *(Renton)* [1]	Yes	No	No	No	No
Panther Creek Wetlands Open Space *(Renton)*[1]	Yes	No	No	No	No
Gateway Park *(Renton)*	Yes	Yes	Yes	Yes	Yes
Piazza Park *(Renton)*	Yes	Yes	Yes	Yes	Yes
Burnett Linear Park *(Renton)*	Yes	Yes	Yes	Yes	Yes
Cedar River Trail-South Loop *(Renton)*	Yes	Yes	Yes	Yes	Yes
Tonkins Park *(Renton)*	Yes	Yes	Yes	Yes	Yes
Renton Hill Park *(Renton)*[2, 3]	Yes	Yes	Yes	No	No
Veterans Memorial Park *(Renton)*	Yes	Yes	Yes	Yes	Yes
Jones Park *(Renton)*	Yes	Yes	Yes	Yes	Yes
Cedar River Natural Area *(Renton)*[1]	Yes	Yes	Yes ~~No~~	Yes ~~No~~	Yes ~~No~~
Narco Property *(Renton)*[4]	Yes	Yes	Yes	Yes	Yes
Cedar River Trail *(Renton)*	Yes	Yes	Yes	Yes	Yes
Cedar River Park *(Renton)*	Yes	Yes	Yes	Yes	Yes
Liberty Park *(Renton)*	Yes	Yes	Yes	Yes	Yes

[1] The City of Renton Parks Department and the City of Renton *2003 Park, Recreation, and Implementation Open Space Plan* show these are currently undeveloped and only receive incidental or occasional recreation, therefore they are not ~~significant under~~ a Section 4(f) resource.

[2] Consultation with the City of Renton Parks Department concluded that this park is not identified in the City of Renton *2003 Park, Recreation, and Implementation Open Space Plan* and is not considered significant within the recreational and park objectives of the City.

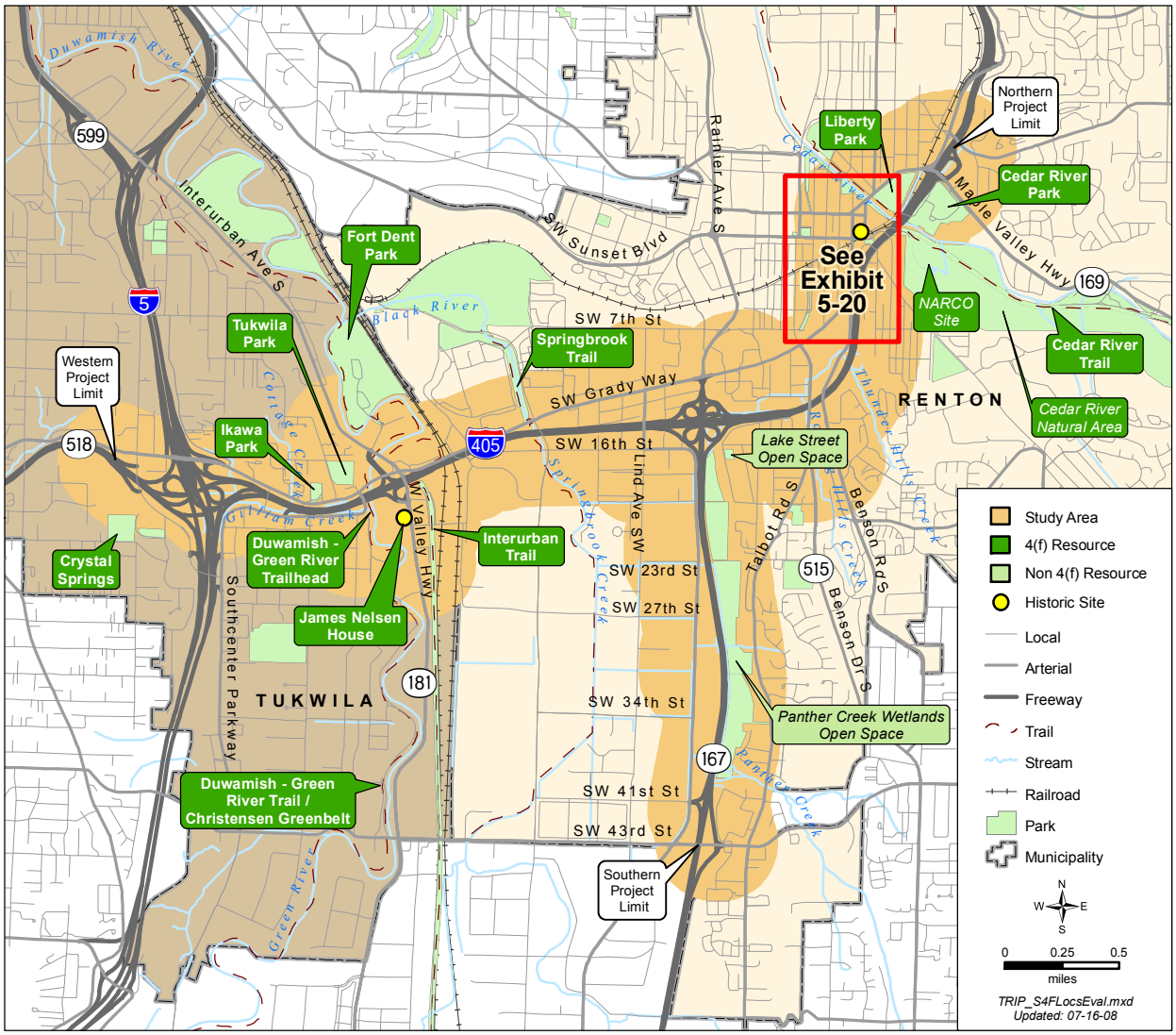
[3] Renton Hill Park is also known as Freeway Park.

[4] While the Narco Property has not been developed, the City of Renton has completed long-range master planning that integrates the property and future recreation facilities with Cedar River Park, Liberty Park, and the Cedar River Trail.

Page 5-44, Exhibit 5-19

Exhibit has been revised to show Cedar River Natural Area as a Section 4(f) resource.

Exhibit 5-19: Potential Section 4(f) Resources Identified in the Study Area



Page 5-59, Surface Water, 2nd paragraph

The text has been revised as follows:

> In general, the surface waterbodies in the study area have been highly altered from their natural states to accommodate <u>transportation facilities,</u> residential, commercial, and industrial land uses. This alteration has included bank hardening, such as installing riprap and placing streams in concrete channels and pipes; reducing or removing streamside vegetation; straightening stream channels; and removing in-stream habitat. The installation of levees has also reduced the historic floodplains associated with many of these waterbodies.

Page 5-77, 2nd paragraph

The text has been revised as follows:

> In general, the rivers and streams in the study area have been highly altered from their natural states to accommodate transportation facilities, residential, commercial, and industrial land uses. This alteration has included bank hardening, such as installing riprap and placing streams in concrete channels; reducing or removing streamside vegetation; straightening stream channels; removing in-stream habitat, and introducing barriers to fish passage. These alterations have also resulted in loss of the historic floodplains associated with most of these waterbodies. Significant changes have occurred in the vegetation surrounding these waterbodies. What was once predominantly mature native vegetation has been replaced by a mix of immature native vegetation and non-native invasive plant species.

Page 5-77, last paragraph

The text has been revised as follows:

> WSDOT has identified ~~10~~ nine existing culverts that convey waters of the state. These have been determined to be fish bearing, and where in-water work will occur as a result of the Tukwila to Renton P~~p~~roject. Of these ~~10~~ nine culverts, WSDOT has determined that ~~seven~~ six of them are existing fish passage barriers.[10] These fish passage barriers occur on Panther Creek, Rolling Hills Creek, and an unnamed tributary to Rolling Hills Creek~~, and Thunder Hills Creek~~. The remaining three culverts are presently fish passable. WSDOT will address fish passage at the culverts per the Memorandum of Agreement between WSDOT and the Washington State Department of Fish and Wildlife. Exhibit 5-37 details the ~~10~~ nine fish bearing culverts owned by WSDOT and associated with in-water work.

Page 5-78, Exhibit 5-37

Thunder Hills Creek culvert has been replaced as an emergency repair project. This exhibit has been revised to reflect this change.

Exhibit 5-37: Fish Bearing Culverts owned by WSDOT and Associated with In-water Work

Stream Conveyed	Culvert Type	Culvert Length (ft)	Upstream Habitat (lf)*	Fish Passable	Barrier Description
Gilliam Creek	108 inch CMP	1,103	600 to 800	Yes	N/A
Gilliam Creek	108 inch CMP	207	1,300 to 2,600	Yes**	N/A
Rolling Hills Creek	48 inch CONC	551	10,200***	No	Temporal barrier based on velocity
Rolling Hills Creek	132 inch CMP	918	10,200***	No	Pipe exceeds velocity criteria at high fish passage design flow
Unnamed Tributary to Rolling Hills Creek	30 inch CONC	281	200	No	Pipe exceeds velocity and water depth criteria at high fish passage design flow
~~Thunder Hills Creek~~	~~48 inch CONC~~	~~466~~	~~100~~	~~No~~	~~Pipe exceeds velocity criteria at high fish passage design flow~~
Panther Creek	24 inch CMP	155	2,600	No	Pipe exceeds velocity criteria at high fish passage design flow
Panther Creek	30 inch CMP	153	2,600	No	Pipe exceeds velocity criteria at high fish passage design flow
Panther Creek	72 inch Steel	189	7,100	No	Temporal barrier based on velocity
Rolling Hills Creek	3-foot by 4-foot box	265	N/A**** (fish passable)	Yes	N/A

* All habitat lengths ~~gains~~ are approximations based on field reconnaissance and are rounded to the nearest hundred foot increment.

** A large metal flap gate (which controls high flows) and a splash pad are located at the end of this culvert. The flap gate and splash pad on downstream end of the culvert prevent fish from moving up or downstream when it is closed. This culvert is owned by the City of Tukwila (Gilliam Creek Basin Stormwater Management Plan, http://www.ci.tukwila.wa.us./pubwks/gilliam.pdf).

*** These culverts both carry the main flow of Rolling Hills Creek underneath the I-405/SR 167 interchange. As such, they must be considered together for purposes of fish passage. One culvert is an overflow culvert and only conveys flow during high flow events.

**** No upstream habitat length is identified for this culvert as it is presently fish passable and all known upstream habitat is presently available.

CMP = corrugated metal pipe CONC = concrete ft = feet lf = linear feet

Page 5-79, Exhibit 5-38

Exhibit 5-38 has been revised to show coho salmon as occurring in Rolling Hills Creek:

Exhibit 5-38: Anadromous Fish Species Known or Presumed to be in the Study Area

	Fish Species								
	Chinook Salmon	Coho Salmon	Pink Salmon	Sockeye Salmon	Chum Salmon	Steelhead Trout	Bull Trout	Sea-Run Cutthroat	Pacific Lamprey
Gilliam Creek	√	√				√		√	√
Cottage Creek									
Unnamed Tributary to Gilliam Creek									
Green River	√	√	√	√	√	√	√	√	√
Springbrook Creek	√	√				√			
Panther Creek	√	√				√			
Rolling Hills Creek		√							
Unnamed Tributary to Rolling Hills Creek									
Thunder Hills Creek									
Unnamed Tributary to Thunder Hills Creek									
Cedar River	√	√		√		√	√		
Unnamed Tributary to Cedar River									

Note: Presence of coho salmon in Rolling Hills Creek is per conversation with Karen Walter of the Muckleshoot Indian Tribe, July 3, 2008.

Page 5-85, Aquatic Resources and Exhibit 5-42

The Thunder Hills Creek culvert has been replaced as an emergency repair project. The text on this page and exhibit are revised to reflect that change.

> Rivers and streams that may need to be dewatered to construct the project include Gilliam Creek, the Green River, Rolling Hills Creek, an unnamed tributary to Rolling Hills Creek, ~~Thunder Hills Creek,~~ an unnamed tributary to Thunder Hills Creek, Panther Creek, and the Cedar River. A summary of the temporary construction effects to aquatic resources can be found in Exhibit 5-42.

Exhibit 5-42: Summary of Temporary Aquatic Resource Effects

	Regulated Stream Buffer (feet)	Temporary Effect Below OHWM (square feet)	Temporary Effect to Stream Buffer (square feet)	Temporary Effects from Shading * (square feet)
Gilliam Creek	100	436	3,920	0
Green River	100	57,499	14,810	436
Panther Creek	100	3,050	6,969	0
Rolling Hills Creek	75	436	3,920	436
Unnamed tributary to Rolling Hills Creek	75	436	1,307	871
Thunder Hills Creek	75	0 ~~436~~	4,792	0
Unnamed Tributary to Thunder Hills Creek	75	436	6,970	0
Cedar River	100	871	3,049	2,178
Total		**63,500 ~~64,000~~****	**46,000****	**4,000****

*Areas of shading detail only those new areas that will be shaded and do not account for existing shaded areas. The shaded areas represent areas directly below/in the footprint of an overwater structure. Whereas other areas are shaded during a solar day, these are likely the areas where the effects and duration are the greatest.

** The total temporary effects in this table have been rounded up to the nearest 500 square feet

Page 5-88, Aquatic Resources

Bullet is deleted from this section:

- ~~Encroaching into the OHWM of Thunder Hills Creek to accommodate I-405 roadway improvements including construction of a retaining wall.~~

Page 5-89, Aquatic Resources and Exhibit 5-45

The Thunder Hills Creek culvert has been replaced as an emergency repair project. The text on this page and exhibit are revised to reflect that change.

> Rivers and streams that may need to be dewatered to construct the project include Gilliam Creek, the Green River, Rolling Hills Creek, an unnamed tributary to Rolling Hills Creek, ~~Thunder Hills Creek,~~ an unnamed tributary to Thunder Hills Creek, Panther Creek, and the Cedar River. A summary of the temporary construction effects to aquatic resources can be found in Exhibit 5-42.

Exhibit 5-45: Summary of Permanent Aquatic Resource Effects

	Regulated River/Stream Buffer (feet)	Permanent Effect Below OHWM (square feet)	Permanent Effect to River/Stream Buffer (square feet)	Permanent Shading Effects from New Over-water Cover (square feet)*
Gilliam Creek	100	1,742	46,174	0
Green River	100	16,553	121,532	16,988
Panther Creek	100	45,738	36,590	0
Rolling Hills Creek	75	4,792	33,106	5,227
Unnamed Tributary to Rolling Hills Creek	75	871	12,632	871
Thunder Hills Creek	75	0 ~~2,614~~	37,462	0
Unnamed Tributary to Thunder Hills Creek	75	495	4,356	0
Cedar River	100	436	25,700	14,375
Total		**71,000** ~~**73,500****~~	**318,000****	**37,500****

*Areas of shading detail only those new areas that will be shaded and do not account for existing shaded areas
** The total permanent effects in this table have been rounded up to the nearest 500 square feet

Page 5-102, bullet list

Cumulative effects for the two projects listed below were considered subsequent to the original publication of the EA. No additional effects are expected to occur because of mitigation measures that are part of these projects. These two projects are added to the bullet list.

- Thunder Hills Creek Emergency Replacement Project (WSDOT)
- Utility Relocation Project at Thunder Hills Creek and SR 515 (Puget Sound Energy)

Page 5-109, How will the completed project contribute to cumulative effects?, Aquatic Resources

Section revised as follows:

> WSDOT will address fish passage at ~~seven~~ six culverts in the project area per the Memorandum of Agreement between WSDOT and WDFW. Where possible and practicable, other highway projects will also replace existing fish barriers with fish passable structures. By opening up previously inaccessible habitat, fish will be able to return to spawning, rearing, migrating, and refuge habitat.

Page 6-17, 8th paragraph
Section revised as follows:

> The I-405 Team will conduct further evaluation on the ~~seven~~ six culverts that are fish passage barriers to determine which ones will be retrofitted or replaced as part of the project. The determination of which culverts will be retrofitted or replaced will occur during the project's permitting phase.

Appendix G – Cumulative Effects Analysis Technical Memorandum

Page 3, bullet list
Cumulative effects for the two projects listed below were considered subsequent to the original publication of the EA. No additional effects are expected to occur because of mitigation measures that are part of these projects. These two projects are added to the bullet list.

- Thunder Hills Creek Emergency Replacement Project (WSDOT)
- Utility Relocation Project at Thunder Hills Creek and SR 515 (Puget Sound Energy)

Appendix I – Ecosystems Discipline Report

Page viii, Exhibit S-1
The exhibit is revised as follows:

Exhibit S-1: Summary of Ecosystem Element Effects

Ecosystem Element	Temporary Effects*	Permanent Effects*
Wetlands (acres)	1.1	7.5
Wetland buffers (acres)	0.5	8.1
Aquatic resources below ordinary high water mark (streams and rivers) (square feet)	63,500 ~~64,000~~	71,000 ~~73,500~~
Aquatic resources from shading (streams and rivers) (square feet)	4,000	37,500
Aquatic resources buffers (square feet)	46,000	318,000
Wildlife habitat (acres)	73.3	34.0

* All temporary and permanent effects in this summary table have been rounded up to either the nearest tenth of an acre or the nearest 500 square feet.

Page 3-8

Section is revised as follows:

To assess existing fish passage conditions in the study area, the I-405 Team also examined existing culverts. Field work associated with this culvert assessment was completed in July and August of 2006. Based on the results of the fish passage barrier investigation, WSDOT has determined that ~~10~~ nine culverts convey waters of the state, are fish bearing, and will be affected by the project. Of these ~~10~~ nine culverts, WSDOT has determined that ~~seven~~ six of them are existing fish passage barriers.[17] The remaining three culverts are presently fish passable. WSDOT will address fish passage at the culverts per the Memorandum of Agreement between WSDOT and WDFW.

Page 4-10, Exhibit 4-7

Exhibit is revised to note that Wetland 0.15R is an existing WSDOT mitigation site as follows:

Exhibit 4-7: Summary of Wetlands Located within the Green River Basin

Wetland	Size (acres)	Cowardin Classification	Characteristics
0.1R	0.05	Emergent	Depression dominated by reed canarygrass, soft rush (*Juncus effusus*), and bentgrass (*Agrostis stolonifera*); located in the southeast portion of the I-405/I-5 interchange
0.15R*	0.52	Emergent	Depression associated with Gilliam Creek dominated by reed canarygrass; located south of I-5 NB to I-405 NB ramp
0.25M	0.07	Emergent	Maintained swale dominated by reed canarygrass; located between I-405 NB lanes and the HOV on-ramp to I-5 NB
0.3R	1.29	Forested	Ponded depression associated with Gilliam Creek dominated by willow and red cedar (*Thuja plicata*); located south of I-5 NB to I-405 NB ramp and west of 61st Avenue S.
0.4L	0.03	Emergent	Narrow depression that drains into a culvert associated with Cottage Creek dominated by reed canarygrass, common cattail (*Typha latifolia*), and bentgrass; located between I-405 SB lanes and Southcenter Boulevard
0.6L	0.17	Scrub-shrub	Narrow depression that flows to Gilliam Creek via culverts beneath I-405; dominated by reed canarygrass, black cottonwood (*Populus balsamifera ssp. trichocarpa*), willow, and soft rush; located between I-405 SB lanes and Southcenter Boulevard
0.9R	1.00	Aquatic bed and scrub-shrub	Depression with scrub-shrub wetland along perimeter that was the former main channel of the Green River; dominated by willow, located south of the I-405 and SR 181 interchange and east of the Green River
Total	**3.13**		

NB = northbound; SB = southbound

* Wetland 0.15R is an existing WSDOT mitigation site.

Page 4-17, 1st paragraph

Section revised as follows:

In general, the rivers and streams in the Tukwila to Renton Project study area have been highly altered from their natural states to accommodate transportation facilities, residential, commercial, and industrial land uses. This alteration has included bank hardening, such as installing riprap and placing streams in concrete channels; reducing or removing

streamside vegetation; straightening stream channels; and removing in-stream habitat. These alterations have also resulted in loss of the historic floodplains associated with most of these waterbodies. Significant changes have occurred in the vegetation surrounding these waterbodies. What was once predominantly mature native vegetation has been replaced by a mix of immature native vegetation and non-native invasive plant species.

Page 4-18, Exhibit 4-12

Exhibit 4-12 has been revised to show coho salmon as occurring in Rolling Hills Creek.

Exhibit 4-12: Anadromous Fish Species Known or Presumed to be in the Study Area

	Fish Species								
	Chinook Salmon	Coho Salmon	Pink Salmon	Sockeye Salmon	Chum Salmon	Steelhead Trout	Bull Trout	Sea-Run Cutthroat	Pacific Lamprey
Gilliam Creek	√	√				√		√	√
Cottage Creek									
Unnamed Tributary to Gilliam Creek									
Green River	√	√	√	√	√	√	√	√	√
Springbrook Creek	√	√				√			
Panther Creek	√	√				√			
Rolling Hills Creek		√							
Unnamed Tributary to Rolling Hills Creek									
Thunder Hills Creek									
Unnamed Tributary to Thunder Hills Creek									
Cedar River	√	√		√		√	√		
Unnamed Tributary to Cedar River									

Note: Presence of coho salmon in Rolling Hills Creek is per conversation with Karen Walter of the Muckleshoot Indian Tribe, July 3, 2008.

Sources: Anchor, 2005; Kerwin, J. 2001; Kerwin et all, 2000; WDFW, 2006; WDFW 2004; Wydoski and Whitney 2003

Page 4-28, Rolling Hills Creek

Section revised as follows:

~~No~~ According to the Muckleshoot Indian Tribe, coho salmon are the only anadromous fish species ~~are~~ reported to occur in Rolling Hills Creek or its unnamed tributary.[48]

[48] ~~*King County DNR, 2004*~~ *Karen Walter, Muckleshoot Indian Tribe, conversation on July 3, 2008.*

Page 4-28, Thunder Hills Creek

Section revised as follows:

The headwaters of Thunder Hills Creek are located to the southeast of I-405. Exhibit 4-22 depicts Thunder Hills Creek. Upstream of I-405, Thunder Hills Creek is contained in an incised channel with an intact stream buffer along the east side of the creek and a buffer of varying widths (from 0 to approximately 20 feet wide) along the west side of the creek. At the downstream end of this upper section, Thunder Hills Creek flows under I-405 and daylights into a concrete outfall located directly behind Sam's Club. The culvert under I-405 acts as a complete upstream fish passage barrier due to the water velocity in the culvert during high water flows. This culvert failed in December 2007. WSDOT has replaced this culvert under an emergency repair, separate from the Tukwila to Renton Project. The new culvert will continue to act as a fish barrier due to water velocity.

Page 4-31, Fish Passage Barriers

Section revised as follows:

WSDOT has identified ~~10~~ nine existing culverts that convey waters of the state, have been determined to be fish bearing, and where in-water work will occur as a result of the Tukwila to Renton P~~p~~roject. Of these ~~10~~ nine culverts, WSDOT has determined that ~~seven~~ six of them are existing fish passage barriers.[55] These fish passage barriers occur on Panther Creek, Rolling Hills Creek, and an unnamed tributary to Rolling Hills Creek~~, and Thunder Hills Creek~~ and are described in greater detail under the descriptions of these streams above. The remaining three culverts are presently fish passable. WSDOT will address fish passage at the culverts per the Memorandum of Agreement between WSDOT and WDFW. Exhibit 4-26 details the fish bearing culverts associated with in-water work.

Page 4-32, Exhibit 4-26

Thunder Hills Creek culvert has been replaced as an emergency repair project. This exhibit has been revised to reflect the new culvert.

Exhibit 4-26: Fish Bearing Culverts owned by WSDOT and Associated with In-water Work

Stream Conveyed	Culvert Type	Culvert Length (ft)	Upstream Habitat (lf)*	Fish Passable	Barrier Description
Gilliam Creek	108 inch CMP	1,103	600 to 800	Yes	N/A
Gilliam Creek	108 inch CMP	207	1,300 to 2,600	Yes**	N/A
Rolling Hills Creek	48 inch CONC	551	10,200***	No	Temporal barrier based on velocity
Rolling Hills Creek	132 inch CMP	918	10,200***	No	Pipe exceeds velocity criteria at high fish passage design flow
Unnamed Tributary to Rolling Hills Creek	30 inch CONC	281	200	No	Pipe exceeds velocity and water depth criteria at high fish passage design flow
~~Thunder Hills Creek~~	~~48 inch CONC~~	~~466~~	~~100~~	~~No~~	~~Pipe exceeds velocity criteria at high fish passage design flow~~
Panther Creek	24 inch CMP	155	2,600	No	Pipe exceeds velocity criteria at high fish passage design flow
Panther Creek	30 inch CMP	153	2,600	No	Pipe exceeds velocity criteria at high fish passage design flow
Panther Creek	72 inch Steel	189	7,100	No	Temporal barrier based on velocity
Rolling Hills Creek	3-foot by 4-foot box	265	N/A**** (fish passable)	Yes	N/A

* All habitat lengths ~~gains~~ are approximations based on field reconnaissance and are rounded to the nearest hundred foot increment.

** A large metal flap gate (which controls high flows) and a splash pad are located at the end of this culvert. The flap gate and splash pad on downstream end of the culvert prevent fish from moving up or downstream when it is closed. This culvert is owned by the City of Tukwila (Gilliam Creek Basin Stormwater Management Plan, http://www.ci.tukwila.wa.us./pubwks/gilliam.pdf).

*** These culverts both carry the main flow of Rolling Hills Creek underneath the I-405/SR 167 interchange. As such, they must be considered together for purposes of fish passage. One culvert is an overflow culvert and only conveys flow during high flow events.

**** No upstream habitat length is identified for this culvert as it is presently fish passable and all known upstream habitat is presently available.

CMP = corrugated metal pipe CONC = concrete ft = feet lf = linear feet

Page 4-44, Do any federally listed species or federal species of concern occur in the study area?

The second sentence in the text at the top of page 4-44 is revised as follows:

> Chinook salmon primarily use the portions of these waterbodies that are in the study area for upstream and downstream migration and rearing; however, substrate conditions in the Cedar River in the study area could provide ~~some limited~~ spawning habitat.[56a, b, c]

[56a] Golder Associates, *2000 Salmonid Spawner Survey Results for the Lower Cedar River and Elliot rearing/Spawning Side-Channel*. Prepared for the U.S. Army Corps of Engineers Section 205 Cedar River Flood Damage Reduction Project.

[56b] Golder Associates, *2001 Salmonid Spawner Survey Results for the Lower Cedar River and Elliot rearing/Spawning Side-Channel*. Prepared for the U.S. Army Corps of Engineers Section 205 Cedar River Flood Damage Reduction Project.

[56c] Golder Associates, *2002 Salmonid Spawner Survey Results for the Lower Cedar River and Elliot rearing/Spawning Side-Channel*. Prepared for the U.S. Army Corps of Engineers Section 205 Cedar River Flood Damage Reduction Project.

Page 4-46, Is the project within a recognized tribal fishing area?

The first paragraph of this section is revised as follows:

> ~~The Tukwila to Renton Project is located within the tribal treaty rights for usual and accustomed fishing areas of the~~ The Muckleshoot Indian Tribe has adjudicated Usual and Accustomed Fishing Grounds and Stations within the Tukwila to Renton Project study area. The Muckleshoot Indian Tribe's Usual and Accustomed Fishing Grounds and Stations ~~areas in the study area~~ include the Green, Cedar, and Black Rivers, ~~and~~ as well as their tributaries and Lake Washington (384 F. Supp at 365)~~to these rivers~~.

The third paragraph of this section is revised as follows:

> The Muckleshoot harvest salmon from the study area pursuant to judicially recognized treaty rights, as interpreted by the Boldt Decision of 1974. ~~The Boldt Decision provided the Yakama Tribe "the right to enjoy all of these fisheries as they had beforehand," which requires that they take the fish "by consent of the tribes in that region" and that consent still applies today.~~ The Yakama Tribe has been found at treaty times to have used fisheries located in the Puget Sound area. This use of fisheries in the Puget Sound area was found to be by the consent of the tribes in that region (384 F. Supp at 365). That consent requirement remains today. Over the years, judicial decisions have affirmed that treaty tribes have a right to harvest fish free of state interference, subject to conservation principals, to co-manage the fishery resource with the state, and to harvest up to 50 percent of the harvestable fish.

Page 5-7, Aquatic Resources

The following bullet is deleted from the list on this page:

- ~~Encroachment into the OHWM of Thunder Hills Creek to accommodate I-405 roadway improvements including construction of a retaining wall.~~

Page 5-8, Exhibit 5-4

The Thunder Hills Creek culvert has been replaced as an emergency repair project. This exhibit is revised to reflect that change.

Exhibit 5-4: Summary of Permanent Aquatic Resource Effects

	Regulated River/Stream Buffer (feet)	Permanent Effect Below OHWM (square feet)	Permanent Effect to River/Stream Buffer (square feet)	Permanent Shading Effects from New Over-water Cover (square feet)*
Gilliam Creek	100	1,742	46,174	0
Green River	100	16,553	121,532	16,988
Panther Creek	100	45,738	36,590	0
Rolling Hills Creek	75	4,792	33,106	5,227
Unnamed Tributary to Rolling Hills Creek	75	871	12,632	871
Thunder Hills Creek	75	0 ~~2,614~~	37,462	0
Unnamed Tributary to Thunder Hills Creek	75	495	4,356	0
Cedar River	100	436	25,700	14,375
Total		**71,000** ~~73,500~~**	**318,000****	**37,500****

*Areas of shading detail only those new areas that will be shaded and do not account for existing shaded areas
** The total permanent effects in this table have been rounded up to the nearest 500 square feet

Page 5-9, Over-water Structures

The second full paragraph is revised as follows:

> The project will create additional over-water cover on the Green River, Gilliam Creek, an unnamed tributary to Gilliam Creek, Rolling Hills Creek, an unnamed tributary to Rolling Hills Creek, ~~Thunder Hills Creek,~~ the Cedar River, and Panther Creek.

Page 5-11, Fish Barrier Removal

Section is revised as follows:

> WSDOT has identified ~~seven~~ six existing fish passage barriers where in-water work will occur. These fish passage barriers occur on Panther Creek, Rolling Hills Creek, and an unnamed tributary to Rolling Hills Creek~~, and Thunder Hills Creek~~.

Page 5-12, Temporary Aquatic Resources Effects

Section is revised as follows:

> Construction activities over, in, or near a stream can disturb fish, other aquatic species, and aquatic habitat. Except where absolutely necessary (as in the case of culvert replacements or extensions, and bridge removal and construction), construction equipment will not enter streams below the OHWM. In addition, streams will be dewatered prior to replacing or lengthening culverts. Dewatering and stream diversions could strand or entrain (draw in) fish and create temporary barriers to fish migration. Rivers and streams that may need to be dewatered to construct the project include Gilliam Creek, the Green River, Rolling Hills Creek, an unnamed tributary to Rolling Hills Creek, ~~Thunder Hills Creek,~~ an unnamed tributary to Thunder Hills Creek, Panther Creek, and the Cedar River. Dewatering of each of these waterbodies will only occur in localized areas where construction will occur. A summary of the temporary construction effects to aquatic resources can be found in Exhibit 5-5.

Page 5-13, Exhibit 5-5

The Thunder Hills Creek culvert has been replaced as an emergency repair project and will no longer be part of the Tukwila to Renton Project. This exhibit is revised to reflect that change.

Exhibit 5-5: Summary of Temporary Aquatic Resource Effects

	Regulated Stream Buffer (feet)	Temporary Effect Below OHWM (square feet)	Temporary Effect to Stream Buffer (square feet)	Temporary Effects from Shading * (square feet)
Gilliam Creek	100	436	3,920	0
Green River	100	57,499	14,810	436
Panther Creek	100	3,050	6,969	0
Rolling Hills Creek	75	436	3,920	436
Unnamed tributary to Rolling Hills Creek	75	436	1,307	871
Thunder Hills Creek	75	0 ~~436~~	4,792	0
Unnamed Tributary to Thunder Hills Creek	75	436	6,970	0
Cedar River	100	871	3,049	2,178
Total		**63,500 ~~64,000~~****	**46,000****	**4,000****

*Areas of shading detail only those new areas that will be shaded and do not account for existing shaded areas. The shaded areas represent areas directly below/in the footprint of an overwater structure. Whereas other areas are shaded during a solar day, these are likely the areas where the effects and duration are the greatest.

** The total temporary effects in this table have been rounded up to the nearest 500 square feet

Page 6-1, What measures will be taken to mitigate effects before and during construction?

Section is revised as follows:

- Retaining walls were used to limit in-water effects to Gilliam Creek, Rolling Hills Creek, an unnamed tributary to Rolling Hills Creek, ~~Thunder Hills Creek,~~ an unnamed tributary to Thunder Hills Creek, Panther Creek, and the Panther Creek wetlands (Wetland 24.7R).

Page 6-7, last paragraph

Section is revised as follows:

> The effects to fish from stream buffer effects related to this project will be difficult to measure, particularly considering the already degraded condition of the existing stream buffer. ~~Eight~~ Seven of the streams (Gilliam Creek, the Green River, Panther Creek, Rolling Hills Creek, an unnamed tributary to Rolling Hills Creek, ~~Thunder Hills Creek,~~ an unnamed tributary to Thunder Hills Creek, and the Cedar River) in the study area will experience work below the OHWM. For both stream buffer effects and work below the OHWM, on-site mitigation at the affected sites will likely not substantially improve stream functions or values in those areas based on the existing degraded condition of these streams.

Appendix J: Environmental Justice Discipline Report

Page v, How did we analyze environmental justice?

Section is revised as follows:

> For the I-405, Tukwila to Renton Improvement Project (I-5 to SR 169 – Phase 2), referred to as the Tukwila to Renton Project, we collected information from the U.S. Census Bureau, National Center for Education Statistics, and the I-405 public involvement team. The *Ecosystems Discipline Report, Water Resources Discipline Report, Social Elements, Public Services, and Utilities Technical Memorandum*; *Transportation Discipline Report*; and *Cultural, Historic, and Archaeological Technical Memorandum* prepared for this project provided information on social conditions, tribes in the area, public transportation, and schools in the area.

Page v, Does the study area have populations that are protected under environmental justice?

Section is revised as follows:

> Ten percent of study area residents are low income. This percentage for low-income residents matches the city of Renton's percentage (10 percent) and is lower than the city of Tukwila's percentage (13 percent) according to the U.S. Census (U.S. Census 2000). Thirty-nine percent of study area residents are minority. This percentage for minority residents is higher than the city of Renton's percentage (34 percent minority), and lower than the city of Tukwila's percentage (46 percent minority). African American, Asian, and Hispanic populations are represented in substantial numbers throughout the study area. The study area has substantial numbers of people who speak Spanish, Vietnamese, Chinese, and

Tagalog. In addition, tribes with treaty rights (Muckleshoot, Snoqualmie, and Yakama tribes) within the project boundaries and the Duwamish Tribe have interests that could be affected by the project.

Page vi, What effects will the project have on minority and low-income populations?
Section is revised as follows:

The Build Alternative will benefit the area population by raising freeway travel speeds, decreasing congestion at most intersections, ~~and~~ improving safety within the study area, and improving water quality and stream habitat. Those using high-occupancy (HOV) facilities will benefit from increased speeds due to the new direct-connector ramps. These benefits will affect both the general public and minority and low-income populations.

Page 1-2, What topics are included in environmental justice?
The following are added to the end of the bulleted list:

- Ecosystems
- Water Resources

Page 3-5, What public involvement activities have occurred since the I-405 Corridor Program Final EIS?
The following is added to the beginning of the bulleted list on this page:

- We consulted with affected tribes.

Page 3-6, How did we evaluate effects on environmental justice populations?
The following are added to the end of the bulleted list:

- Ecosystems
- Water Resources

Page 4-5, Why is it important to involve tribal governments in the project?
Section is revised as follows:

> American Indians are included in environmental justice analyses because they are minorities and are protected under Civil Rights laws. WSDOT consults with Indian tribes that could be affected by a project. WSDOT sent letters providing information on the project to the Confederated Tribes and Bands of the Yakama Nation, Duwamish Tribe, Muckleshoot Indian Tribe, and Snoqualmie Tribe~~, and Tulalip Tribe,~~ and will continue to coordinate with the tribes. These tribes have crucial information on natural, cultural, and archaeological resources in the study area that WSDOT can incorporate into the environmental and design processes. Tribal coordination efforts are further enforced by a WSDOT Executive Order signed in 2003 that directs WSDOT employees to enter consultation with tribes who have ancestral homelands in affected areas.

Page 5-3, How will project construction affect minority and low-income populations?
Section is revised as follows:

> The project will widen the roadway, widen or replace I-405 bridges, relocate or protect utilities, and install storm drainage facilities. These activities will have minor short-term effects such as increased noise, increased dust, decreased visual aesthetics, reduced access for fishing, and increased traffic congestion that could affect people living and working in and traveling through the study area. The temporary reroutes of the Duwamish-Green River and Interurban Trails will affect bicyclists and pedestrians. Parts of Cedar River Park, Liberty Park, Cedar River Trail, and NARCO Property will be redeveloped and will be temporarily unavailable for use. Because these construction effects are localized and temporary, they will have only a minor negative effect on the cohesiveness of neighborhoods or the social interactions of residents within the neighborhoods. Our analysis showed that environmental justice populations will not disproportionately bear any of these adverse effects. Relocations and displacements are discussed under operational effects.

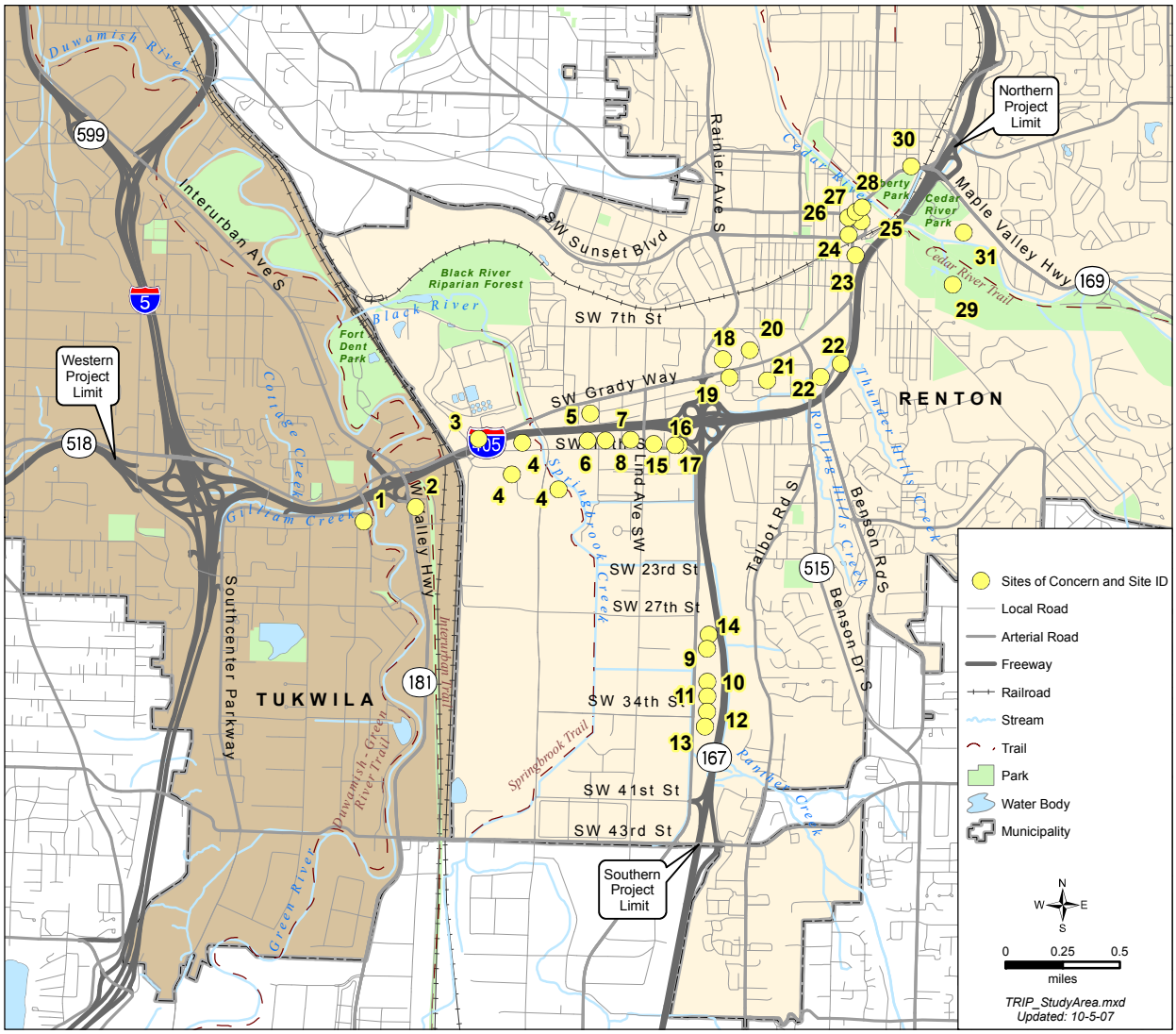
Page 6-1, What measures will be taken to mitigate effects during construction?
Section is revised to add a bullet at the end of the list as follows:

- We will continue to consult with tribes as the project continues into construction.

Appendix L: Hazardous Materials Technical Memorandum

Exhibits 2 through 10 below replace the place holders in this appendix.

Exhibit 2. Project Area with Reasonably Predictable Sites



Note: Site of Concern No. 4 is shown as three parcels because the files reviewed for this project do not clearly identify which of the three parcels owned by Boeing/Longacres is the site of the concern identified in Exhibit 1.

Exhibit 3. Project Overview with Reasonably Predictable Sites, Sheet 1

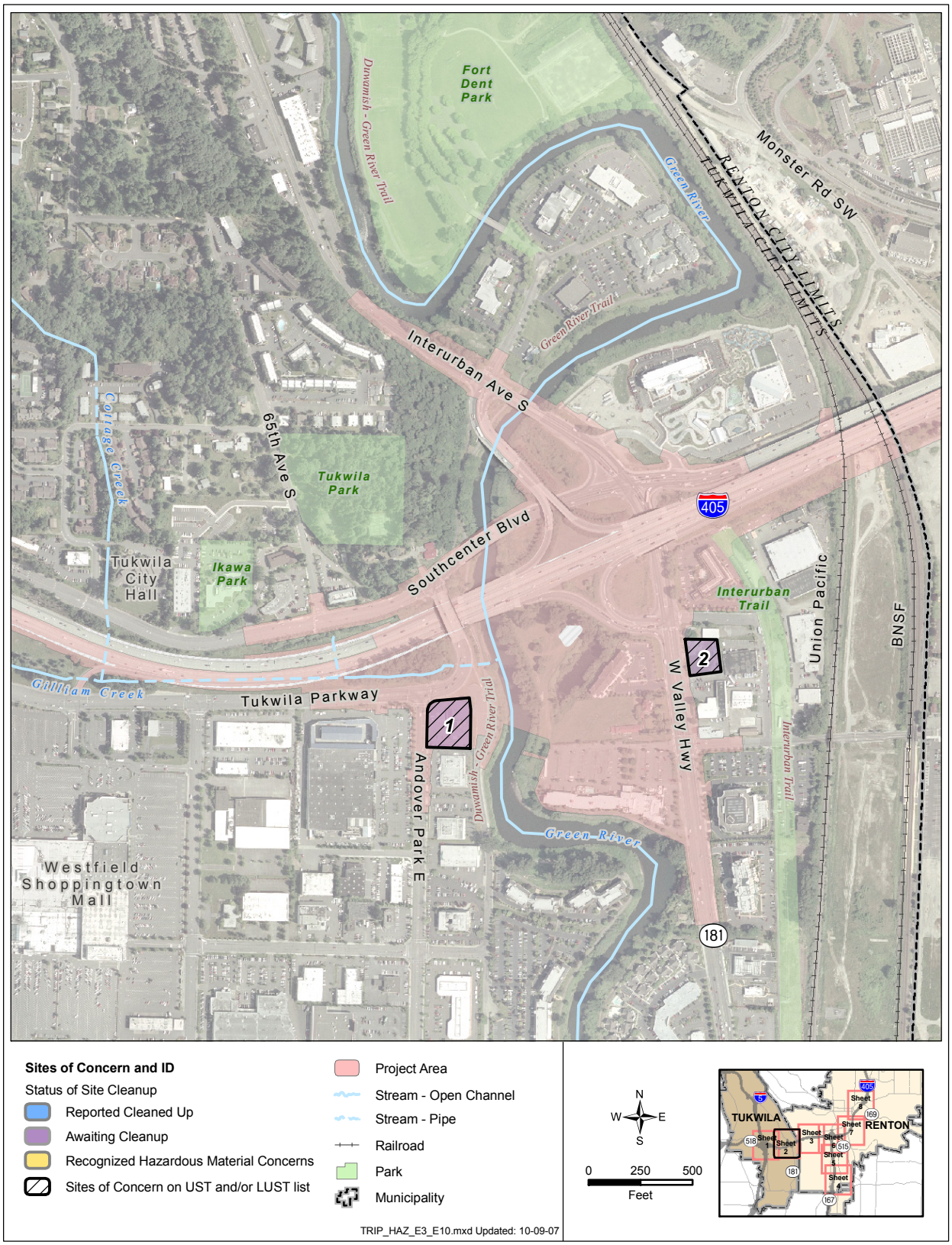



Exhibit 4. Project Overview with Reasonably Predictable Sites, Sheet 2