

Scott Boettcher

From: Trent Lougheed <tlougheed@skillings.com>
Sent: Friday, September 23, 2016 10:57 AM
To: scottb@sbgh-partners.com
Cc: mmacreynold@ci.chehalis.wa.us; Trent Lougheed
Subject: FW: Final Rice Road Application
Attachments: Final Application Packet.pdf; P16135_Rice Road Box Culvert Grant App_V3.docx

Scott,

Here is the application as we discussed. I feel I need to explain a lot of the cost estimate and why things are so high, but in short it is because the culvert is in WSDOT limited access ROW. Discussions could be had with WSDOT to determine if there are any requirements (process wise) that can be waived/modified in order to reduce the scope and cost of the project.

Trent

From: Grant Gilmore
Sent: Friday, September 23, 2016 10:44 AM
To: Trent Lougheed
Subject: Final Rice Road Application



2017-19 Local Projects Recruitment Form

Chehalis Basin Flood Relief

A. What are local flood relief projects? -- In general, local projects are those projects that provide predominantly localized and quantifiable benefit, are capable of being completed within the funding cycle, are supported by the jurisdiction within which the project is proposed, and are vetted and advanced through a public entity like a City, County, Conservation District, Agency, etc. Furthermore, local projects are envisioned as helping with flooding, not adverse to fish or habitat and (where possible) providers of multiple, quantifiable benefits.

B. What kinds of local flood relief projects are likely to be logical funding candidates for 2017-19?

- Projects that complete an effort previously funded/started.
- Projects that advance improved emergency response.
- Projects that advance improved public infrastructure protection.
- Projects that advance improvements in local or community flood hazard reduction, including local flood proofing projects (e.g., elevations, buy-outs, foundation venting/opening, etc.).
- Projects that advance Conservation District initiated flood hazard reduction (e.g., farm pads, evacuation routes, bank erosion/bank stabilization, etc.)
- Projects that demonstrate innovation (e.g., thinking beyond traditional bank stabilization techniques in favor of natural system designs), partnerships, cost-sharing/leveraging resources, multiple benefits, and proactive vetting with agencies and tribes.
- Projects typically not in excess of \$3M for the stage/phase being funded.

C. Are there projects that would not be good candidates?

- Projects that seek to utilize State Capitol Budget dollars for uses not typically allowed (e.g., maintenance and repair work, cost-sharing under select circumstances, etc.).
- Projects likely to increase potential for flood damage upstream or downstream.
- Projects with unmitigable adverse environmental impacts or significant uncertainty regarding potential environmental impacts.
- Projects not sponsored by a public entity.

Instructions:

- Please submit local flood relief project requests (via this form) to Scott Boettcher (scottb@sbgh-partners.com) no later than 5:00 p.m., Friday, August 12, 2016.
- Please submit one request form for each project proposed, even those past projects previously or partially funded.
- Note: Parts III and IV below [marked by "(**)"] will be scored as part of the Flood Authority Projects Committee's



review and evaluation. Part I and II will not be scored.



| Part I General | |
|---|---|
| 1. Date: | 23 September, 2016 |
| 2. Project Name: | Rice Road Culvert Replacement |
| 3. Project Location -- Please identify the location of the project as precisely as possible, including providing decimal degree latitude/longitude coordinates. | Rice Road, Chehalis, WA 98532, Southwest side of the I-5 Interchange. The culvert spans Dillenbaugh Creek. 46°38'41.54"N 122°57'36.50"W |
| 4. Project Contact -- Please identify who will be responsible for overseeing and managing the project (i.e., name, email, telephone number, etc.). | Trent Lougheed tlougheed@ci.chehalis.wa.us 360-345-2229 |
| 5. Lead Organization -- Please identify the lead organization, agency, entity, etc. responsible for this project. Please identify key partners responsible for assisting in the delivery or implementation of the project. | Lead: City of Chehalis Partner: Skillings Connolly, Inc. |

| Part II Description, Timing and Cost | |
|---|---|
| 6. Project Description -- Please describe the project, what is intended to be accomplished, the benefits to be accrued, and to whom. | The double box culvert located under Rice Road, southwest of the I-5 Interchange, is currently under sized for existing 25 and 100-year flood conditions. The project will include hydraulically sizing the culvert structure to accommodate 25 and 100-year flood conditions and designing the stream crossing to meet fish passage requirements. Upsizing the culvert will decrease the flood water elevation on the upstream side. Unfortunately, no amount of upsizing will bring the floodwater down so as to not over top the low lying section of Rice Road by Stan Headwall Park. Therefore, a section of Rice Road southwest of the culvert location will be raised in order to mitigate against flood damage while allowing access for emergency crews during high intensity rain events. |
| 7. Project Timeline -- Please describe the overall timeline for completion of the project as well any interim stages or phases. | This project will be completed during the summer of 2017 to take advantage of the dry season. Phase 1: Remove existing double box culvert. |



| | |
|---|--|
| | <p>Phase 2: Install new bottomless culvert hydraulically sized for the 25 and 100-year rain event.</p> <p>Phase 3: Raise the elevation of Rice Road to prevent overtopping of road during the 25 and 100-year flood.</p> <p>Phase 4: Mitigate impacts of construction in the surrounding wetlands.</p> <p>All four phases will occur simultaneously or in order of the project. Mitigation will require a monitoring plan which follows the Services guidelines.</p> |
| <p>8. Project Cost and Funding -- What is the cost of this project? What are the on-going maintenance and operation requirements and costs? Is it clear who will be responsible for covering on-going maintenance and operation costs?</p> | <p>Estimated Cost: \$2,862,061</p> <p>The current Dillenbaugh Creek culvert under Rice Road is a double 8 foot x 8 foot, four-sided, box culvert. It is undersized and does not pass flood waters efficiently. This project will replace the box culvert with a three-sided culvert that is 110 feet long, 10 feet deep, with a 26-foot span that will pass a 25-year flood. There may still be some flooding at the 100-year flood so this project also will raise 965 foot of Rice Road to elevation 185 to limit 100-year flood overtopping. These criteria are Washington State Department of Transportation (WSDOT) hydraulic design standards for culvert design.</p> <p>The construction cost estimate is based on the 110 feet long, 10 feet deep, 26-foot span culvert being replaced at its current location. This estimate assumes the existing culvert will be removed by excavating the roadway full depth and width, then constructing the new culvert in that excavation. A full closure of Rice Road will be required during this excavation necessitating a detour southerly on Rice Road to connect with LaBree Road and then I-5, a distance of about three miles. The eventual contractor could choose to use a sheet pile wall to limit the length of excavation but the full closure of Rice Road would still be required.</p> <p>Total project length is estimated at 1300 feet. The Lewis County Road Design Standard of a 40-foot roadway, 12-foot lanes with 8-foot shoulders, is assumed as is the standard roadway section of 0.30-foot hot mix asphalt surface, 0.20-foot crushed surfacing top course, and 0.80-foot crushed surfacing base course. Unit prices for the calculated item quantities utilize the latest WSDOT bid</p> |



| | |
|---|--|
| | <p>results. The cost per square foot for the new structure was calculated from unit costs for preliminary design in the WSDOT Bridge Design Manual.</p> <p>The design and construction engineering estimates at 20% are standard for this type of project and include the environmental process needed for processing as well as the coordination with WSDOT required for constructing the project within I-5 limited access rights of way.</p> <p>It is the intention of the City of Chehalis to fund the project using this and other grants. Agencies in line with this type of project are the Chehalis Flood Authority, Department of Ecology, Salmon Safe, etc.</p> <p>Given the habitat restoration element of this project, a one, three, five and ten-year monitoring plan will need to be implemented by the City's partners to ensure restoration success. Additional planning will dictate the expenses associated with this activity.</p> <p>As this is a replacement project, ownership and operation needs should be reduced, maintenance responsibilities will not change.</p> |
| <p>9. Other Funding -- Please explain the extent to which other funding sources or funding partners are available.</p> | <p>Additional funding in the form of grants will be applied for through the Department of Ecology, Salmon Safe, etc.</p> |
| <p style="text-align: center;">Part III (**) Completion and Doability by June 30, 2019</p> | |
| <p>10. Project Completion -- Does the funding requested complete (or substantially complete) a project that has already been started? If so, please explain.</p> | <p>This project has not been started but complies with funding timelines associated with the Flood Authority. Provided funding is available, this project should be started and completed during the summer of 2017. Some monitoring may continue past June 30, 2019 in order to comply with construction impact mitigation regulations.</p> |
| <p>11. Project Doable -- Can this project or the stage/phase for which funding is sought be completed by June 30, 2019? Please describe any circumstances with potential to impact the project's doability or timeline (e.g., permitting or regulatory unknowns, lack of availability of other cost-share funding resources, etc.). Please describe any advance coordination or vetting with agencies, tribes, other</p> | <p>Yes, this project can be completed by June 30, 2019 with the funding available from this grant.</p> <p>All phases listed below are estimated to be completed in full within the \$3 million limit of this grant. Given the straightforward nature of this project, we do not anticipate unforeseen costs of great magnitude. Should Phase 1 and 2 have unplanned expenses, Phase 3 could be</p> |



| | |
|--|---|
| <p>entities, etc. and the outcomes of that effort.</p> | <p>completed at a later date when additional funding becomes available.</p> <p>Phase 1 will include the demolition and removal of the existing double box culvert and excavation of the road above.</p> <p>Phase 2 will include installation of a new, hydraulically sized, bottomless culvert that will meet fish passage requirements. Phase 2 will also include restoration of the road above.</p> <p>Phase 3 will consist of raising approximately 965 feet of roadway to prevent overtopping of the road during the 100-year rain event.</p> <p>Phase 4 will be an ongoing phase of wetland mitigation monitoring.</p> |
| <p>12. Project Impacts -- Please identify how any project impacts will be mitigated, funded and if that mitigation will be accomplished by June 30, 2019?</p> | <p>If funded by this grant, this project will complete all demolition, construction, and mitigation phases by June 30, 2019.</p> <p>At the completion of all project phases, the culvert site will be restored to a more natural state as the wide, bottomless culvert allows for natural changes in creek path. Natural conditions are beneficial to habitats, flood storage, and stream and river riparian functions. The complete site restoration to natural conditions will mitigate construction impacts.</p> |

| Part IV (**) Benefits Stated and Quantified | |
|---|--|
| <p>13. Emergency Response Benefits -- Please describe (and quantify) how this project enhances emergency response in a flood emergency (e.g., does it keep critical access roads and transportation facilities open and functional, does it enable easy movement of cattle, equipment and farm chemicals out of harm's way, etc.).</p> | <p>The ultimate goal of this project is to reduce the effects of high intensity rain events on the City of Chehalis and its residents. The current double box culvert is undersized. During high intensity rain events, the culvert becomes inundated with water and is unable to pass the water. As a result, the upstream floodwater rises to such a height that it overtops Rice Road to the southwest of the site. This prevents use of Rice Road by emergency personnel or evacuating residents. By resizing the culvert and raising Rice Road, a critical access road will remain open during flood emergencies.</p> |



| | |
|---|--|
| <p>14. Essential Infrastructure Protection Benefits -- Please describe (and quantify) how this project protects essential infrastructure and the risks or consequences of not acting this funding cycle.</p> | <p>During a 25 or 100-year flood event at this location, flood water overwhelms the existing undersized culvert, causing high headwater depths, high velocity through the culvert and submergence of Rice Road. High velocity flows through the culvert can cause structural failure, erosion, concrete degradation, undesirable stream conditions such as undercutting and bank erosion. Saturation of the road compromises the integrity of the base and subbase and risks failure of the embankment. By resizing the culvert to accommodate the 25 and 100-year rain events and raising the low section of Rice Road, floodwater damage can be mitigated. Lower headwater equates to lower velocities through the culvert and no submergence of an emergency access road.</p> |
| <p>15. Public Health, Safety and Welfare Benefits -- Please describe (and quantify) how this project protects public health, safety and welfare.</p> | <p>Currently, during a high intensity rain event, flood water overwhelms the existing undersized culvert, causing highwater depths and the submergence of Rice Road. By resizing the culvert and raising Rice Road, there should be no closure of Rice Road during an emergency.</p> |
| <p>16. Residential, Commercial and/or Agricultural Protection Benefits -- Please describe (and quantify) how this project protects residential, commercial and/or agricultural interests and communities and the benefits of acting (or consequences of not acting) this funding cycle. Consider factors like number of structures at risk, number of people at risk, historic frequency of flood damage, magnitude of benefit to be gained for the cost, etc.).</p> | <p>During a 25 or 100-year flood event at this location, flood water overwhelms the existing undersized culvert, causing high headwater depths and high velocity through the culvert. By resizing the culvert, upstream flooding of the existing agricultural fields will be reduced and downstream fields will be less impacted by erosion from flow velocity. By raising Rice Road, flood waters from the Dillenbaugh should no longer submerge Stan Headwall Park.</p> <p>It is important to note that while effects on Stan Headwall Park from Dillenbaugh Creek will be mitigated, the Newaukum River may still cause flooding from the westerly side of the park.</p> |
| <p>17. Other Project Impacts -- Please explain how this project impacts or is potentially impacted by another project.</p> | <p>The Rice Road culvert assessment is part of a larger assessment of the bridges and culverts along Dillenbaugh Creek currently under evaluation. The ultimate goal of this project is to reduce the effects of high intensity rain events on the City of Chehalis and its residents. Each site is being assessed on condition, hydraulic sizing, and fish passage compliance. This is just one of multiple stream crossings that need to be improved for flows and fish passage.</p> |



| | |
|--|--|
| <p>18. Anything Else -- Please feel free to offer any additional information (e.g., photos, maps, video, drawings, etc.) that would help to better understand the scope, timing and benefits of this project.</p> | <p>Additional information included with this application is provided in the attached documents. This includes the following:</p> <p>Attachment A: Vicinity Map Attachment B: NRCS Soils Mapping Attachment C: FEMA Flood Insurance Rate Map Attachment D: Well Logs for the Surrounding Area Attachment E: National Wetland Maps and Supporting Data Attachment F: Priority Habitats and Species List Attachment G: Construction Estimate Attachment H: Site Photos</p> |
|--|--|

Appendix A

| Process/Schedule (current as of 7-22-2017) | |
|--|--|
| July 21, 2016 (FA In-Person Mtg.) | <ul style="list-style-type: none"> Post and distribute local projects recruitment request on 7/22/2016 following Flood Authority review/discussion at their 7/21/2016 meeting. Allow three weeks for project proposals/submittals (i.e., due no later than 5:00 p.m., Friday, August 12, 2016). |
| August 18, 2016 (FA Conf. Call Mtg.) | <ul style="list-style-type: none"> Receive proposals/submittals. Update Flood Authority at their 8/18/2016 meeting on number received, type of projects received, distribution, etc. |
| September 15, 2016 (FA In-Person Mtg.) | <ul style="list-style-type: none"> Update Flood Authority at their 9/15/2016 meeting on status of Projects Committee's effort to review, rank, discuss with Tribes, discuss with agencies, preliminarily sort and rank, etc. |
| October 20, 2016 (FA In-Person Mtg.) | <ul style="list-style-type: none"> Review/discuss DRAFT ranked and prioritized list with Flood Authority at their 10/20/2016 meeting. |
| November 17, 2016 (FA Conf. Call Mtg.) | <ul style="list-style-type: none"> Seek Flood Authority approval of FINAL ranked and prioritized list at their 11/17/2016 Flood Authority meeting. |

ATTACHMENT A

Vicinity Map

EXISTING DOUBLE BOX CULVERT:
16 FT X 8 FT X 110 FT
PROPOSED BOX CULVERT:
26 FT X 10.5 FT X 110 FT

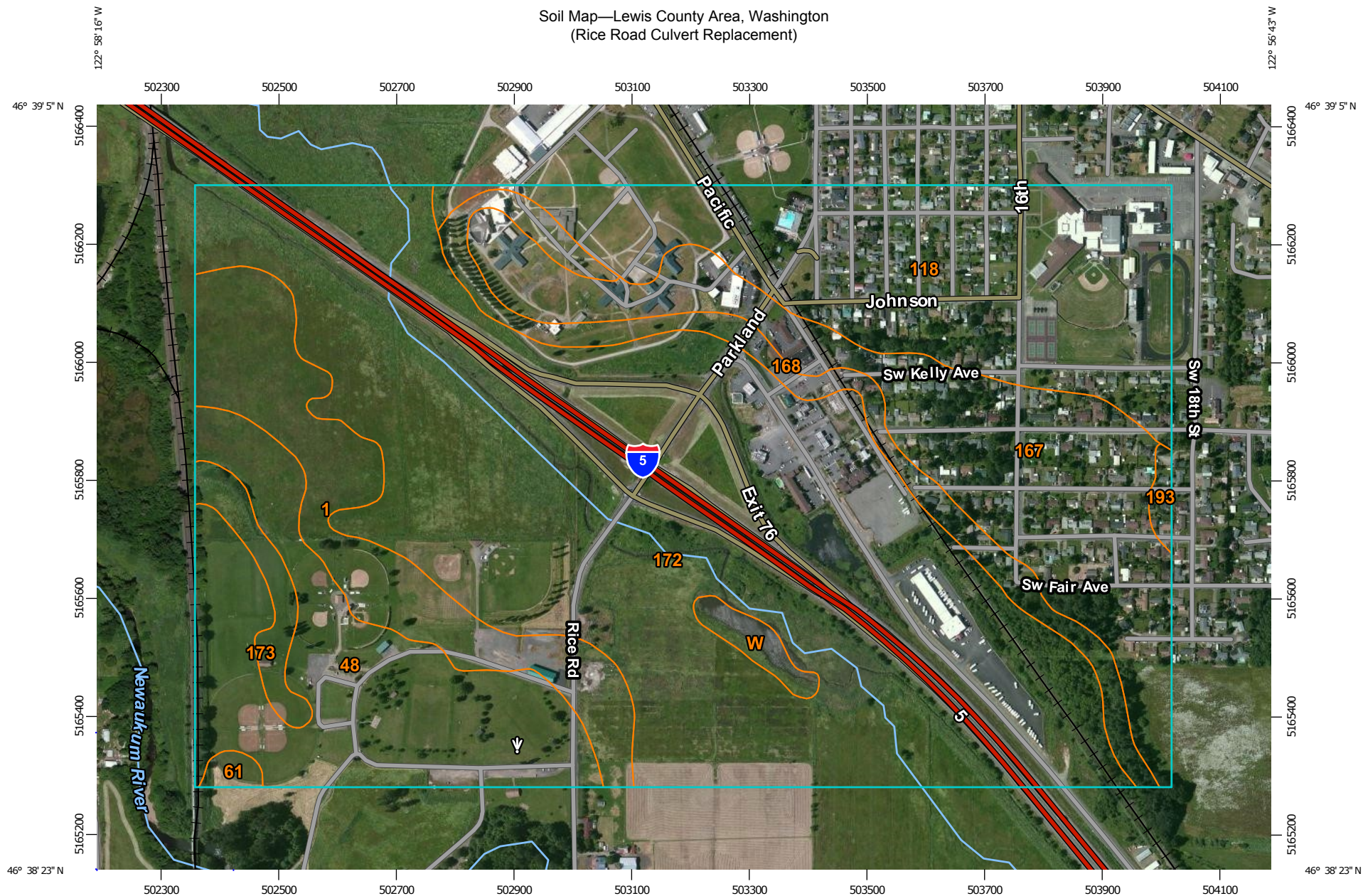


RICE ROAD CULVERT VICINITY MAP

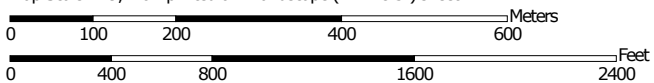
ATTACHMENT B

NRCS Soils Mapping

Soil Map—Lewis County Area, Washington (Rice Road Culvert Replacement)



Map Scale: 1:9,120 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84



**Natural Resources
Conservation Service**


Web Soil Survey
National Cooperative Soil Survey

9/21/2016
Page 1 of 3

Soil Map—Lewis County Area, Washington
(Rice Road Culvert Replacement)

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Lewis County Area, Washington
Survey Area Data: Version 13, Sep 15, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 8, 2010—Jul 9, 2010

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

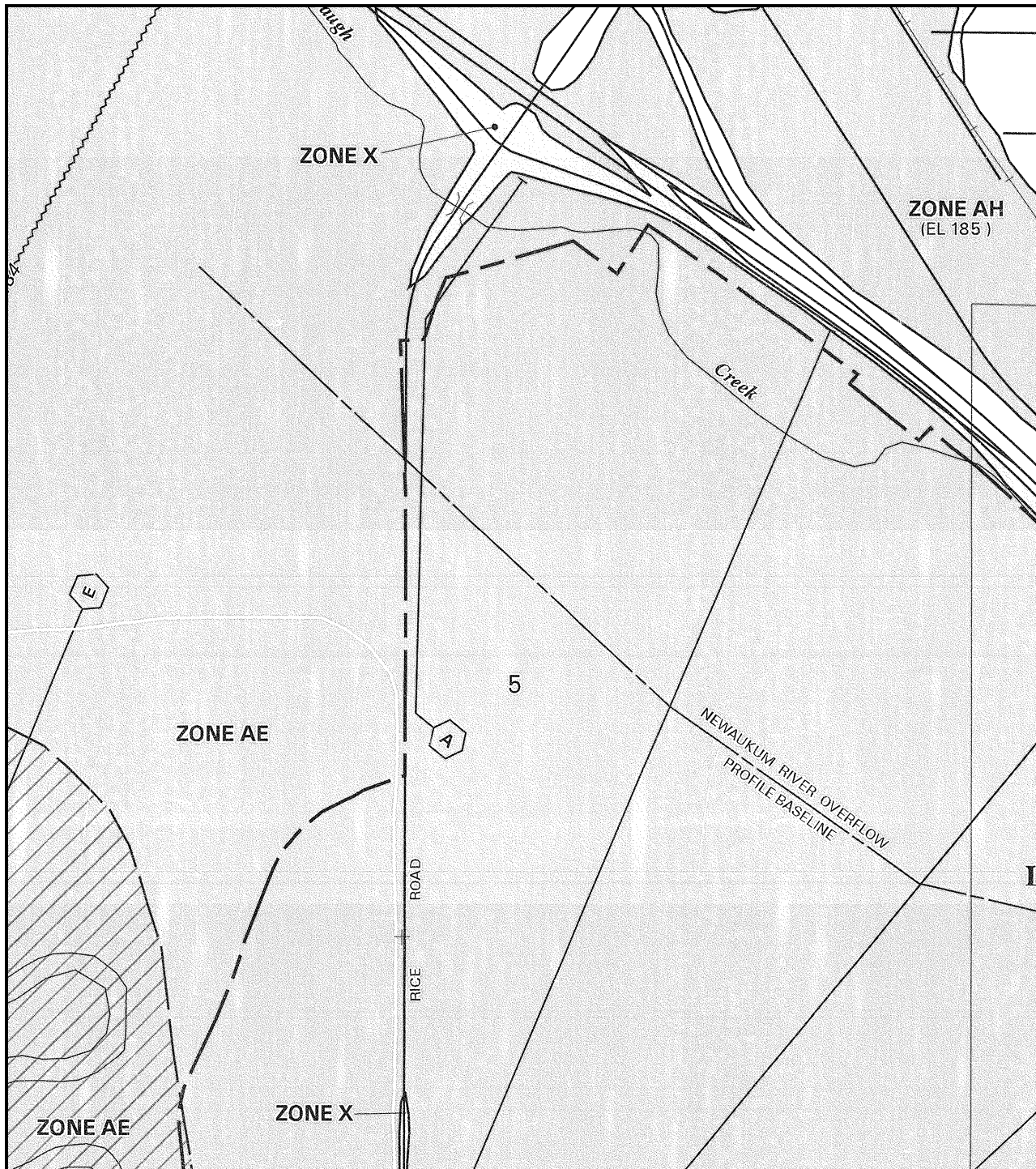
Map Unit Legend

| Lewis County Area, Washington (WA641) | | | |
|---------------------------------------|---|--------------|----------------|
| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
| 1 | Alvor silty clay loam | 32.5 | 7.7% |
| 48 | Chehalis silty clay | 49.7 | 11.8% |
| 61 | Cloquato silt loam | 1.3 | 0.3% |
| 118 | Lacamas silt loam, 0 to 3 percent slopes | 66.7 | 15.9% |
| 167 | Prather silty clay loam, 0 to 5 percent slopes | 55.1 | 13.1% |
| 168 | Prather silty clay loam, 5 to 15 percent slopes | 19.2 | 4.6% |
| 172 | Reed silty clay loam | 185.3 | 44.1% |
| 173 | Reed silty clay loam, channeled | 5.9 | 1.4% |
| 193 | Scamman silty clay loam, 0 to 5 percent slopes | 1.3 | 0.3% |
| W | Water | 3.1 | 0.7% |
| Totals for Area of Interest | | 420.2 | 100.0% |

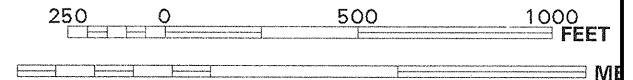
ATTACHMENT C

FEMA Flood Insurance Rate Map

Preliminary FEMA Flood Insurance Rate Map with Base Flood Elevations



MAP SCALE 1" = 500'



PANEL 1364C

FIRM FLOOD INSURANCE RATE MAP

CITY OF
CHEHALIS,
WASHINGTON

LEWIS COUNTY

PANEL 1364 OF 2500

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

| COMMUNITY | NUMBER | PANEL | SUFFIX |
|-------------------|--------|-------|--------|
| CHEHALIS, CITY OF | 530104 | 1364 | C |

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.



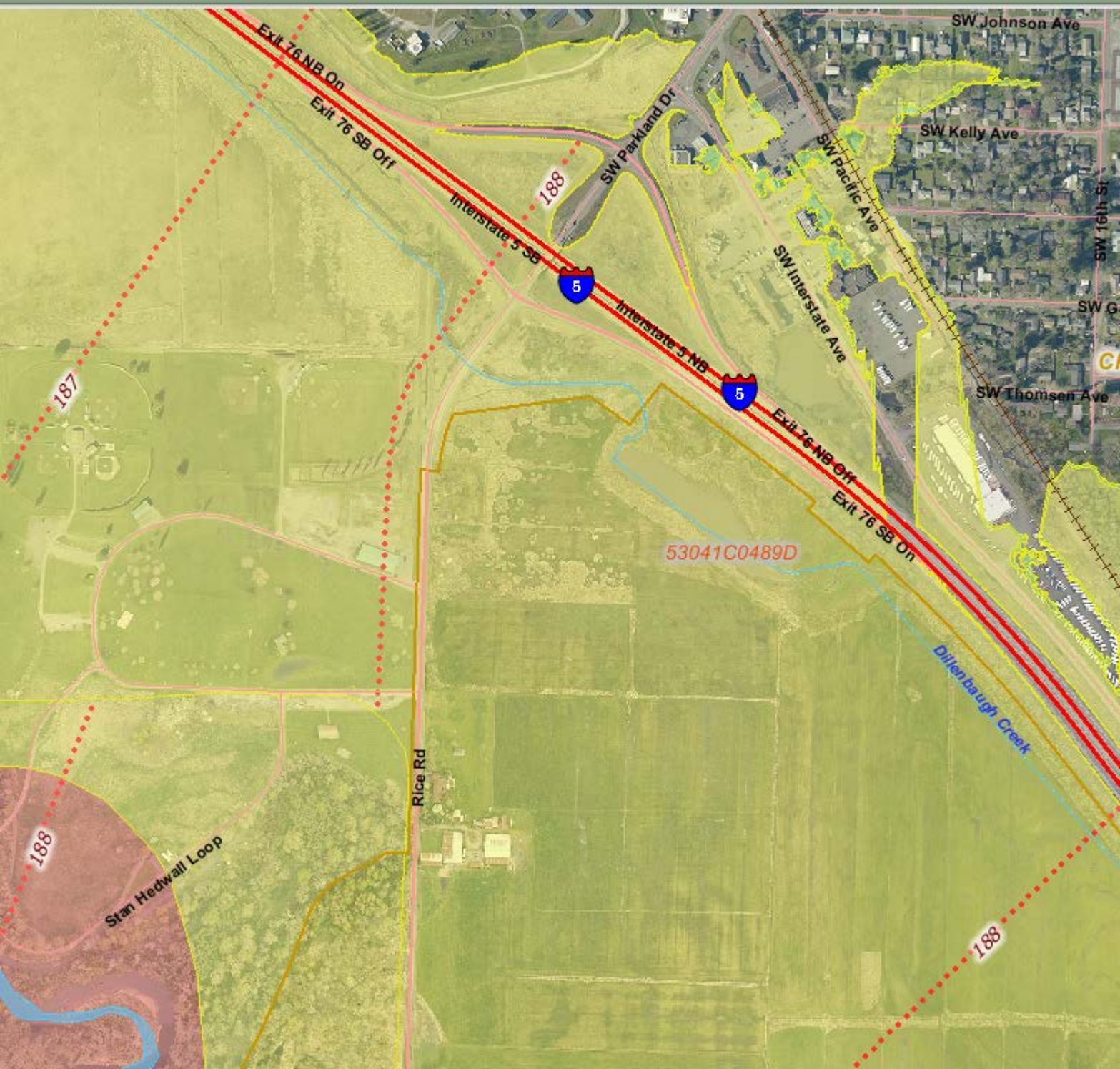
MAP NUMBER
5301041364C

MAP REVISED:
JULY 17, 2006

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

FEMA Preliminary Maps



ATTACHMENT D

Well Logs for the Surrounding Area

Resource Protection Well Report

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission ("x" in circle)

☒ Construction

☐ Decommission ORIGINAL INSTALLATION Notice

RECEIVED

MAR 04 2002

CURRENT

Notice of Intent No. R47731

Type of Well ("x" in circle)

☒ Resource Protection

☐ Geotech Soil Boring

111464

Consulting Firm Squibb and Associates

Unique Ecology Well ID

Tag No AGE 265

WELL CONSTRUCTION CERTIFICATION I constructed and/or accept for construction of this well, and it compliance with all Washington construction standards Materials used and the information reported above are true to my best knowledge and belief

☒ Driller ☐ Engineer ☐ Trainee Name (Print) Pete Larsen

Driller/Engineer/Trainee Signature P. Larsen

Driller or Trainee License No 2407

DEPARTMENT OF ECOLOGY
WELL DRILLING UNIT

Property Owner City of Chehalis

Site Address Bishop Rd betn Rosholt & Rice

City Chehalis County: Lewis

Location NW 1/4 NE 1/4 Sec 5 Twn 13N R 2

EWM
or
WWM

Lat/Long (s, t, r,
still REQUIRED)

Lat Deg _____ Lat Min/Sec _____

Lat Deg _____ Long Min/Sec _____

Tax Parcel No. _____

Cased or Uncased Diameter _____ Static Level 12'

Work/Decommission Start Date 2/4/02

Work/Decommission Completed Date 2/4/02

If trainee, licensed driller's

Signature and License no. _____

Construction/Design

Well Data

Formation Description

| | | |
|--|--|--|
| | Water-tight cover Surface flush vault Locking Cap/Lock Casing Diameter <u>2</u> in Material <u>PVC</u> Welded <input type="checkbox"/> Threaded <input checked="" type="checkbox"/> Glued <input type="checkbox"/> Well Seal <input type="checkbox"/> From <u>1</u> ft To <u>7</u> ft Material <u>Bentonite</u> Amount <u>3 bags</u> Grout Weight _____ Drilling Method <input checked="" type="checkbox"/> Hollow-Stem Auger <input type="checkbox"/> Air Rotary <input type="checkbox"/> Push Probe <input type="checkbox"/> Mud Rotary Borehole diameter <u>10</u> in Screen Material <u>PVC</u> Interval(s) From <u>10</u> To <u>20</u> From _____ To _____ Slot Size <u>.010</u> in Filter Pack From <u>7</u> ft To <u>20</u> ft Material <u>Sand</u> Size <u>10-20</u> in Completed Depth <u>20</u> | 0 ft to <u>20</u> ft <u>Silty Clays</u> _____ ft. to _____ ft. _____ ft. to _____ ft. _____ ft. to _____ ft. _____ ft. to _____ ft. |
|--|--|--|



Washington State
Department of Transportation

LOG OF TEST BORING

7/1/04 WFF

Start Card S 23982

Job No. XL-2103

SR 5

141316

Elevation ft (m)

HOLE No. HC14-1-04

Sheet 1 of 1

Driller Fetterly Lic# 2708

Project I-5 Rush Road to 13th. Street

Inspector Hanning

Site Address I-5 @ M.P. 76. on west shoulder

Start June 28, 2004 Completion June 28, 2004 Well ID# NA Equipment Hand holes

Station Offset Casing open hole Method Auger

Northing Easting Latitude Longitude

County Lewis Subsection SW 1/4 of NE 1/4 Section 5* Range 2 WWM Township 13N

| Depth (ft) | Meters (m) | Profile | Standard Penetration Blows/ft | SPT Blows/6" (N) | Sample Type | Sample No. (Tube No.) | Lab Tests | Description of Material | Groundwater | Instrument |
|------------|------------|---------|-------------------------------|--------------------|-------------|-----------------------|-----------|--|-------------|------------|
| | | | 10 20 30 40 | | | | | | | |
| | | | | 1 1 3 (4) | B | D-1 | | SILT, with organics & sand, very loose, brown, wet, Homogeneous, HCl reaction not tested, Note blow count data from portable penetrometer 06/28/2004 | ▽ | |
| 1 | | | | 2 3 5 (8) | B | D-2 | | SILT, with organics, loose, brown, wet, Homogeneous, HCl reaction not tested, Note count data from portable penetrometer | | |
| 5 | | | | 2 2 5 (7) | B | D-3 | | Elastic SILT, with some sand, soft, gray, moist, Homogeneous, HCl reaction not tested | | |
| 2 | | | | | | | | End of test hole boring at 5.5 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data. | | |
| | | | | | | | | Note: Blow count data from portable penetrometer. | | |
| 10 | | | | | | | | | | |
| 4 | | | | | | | | | | |
| 15 | | | | | | | | | | |
| 5 | | | | | | | | | | |
| 20 | | | | | | | | | | |

RECEIVED

AUG 27 2004

Washington State
Department of Ecology

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

ATTACHMENT E

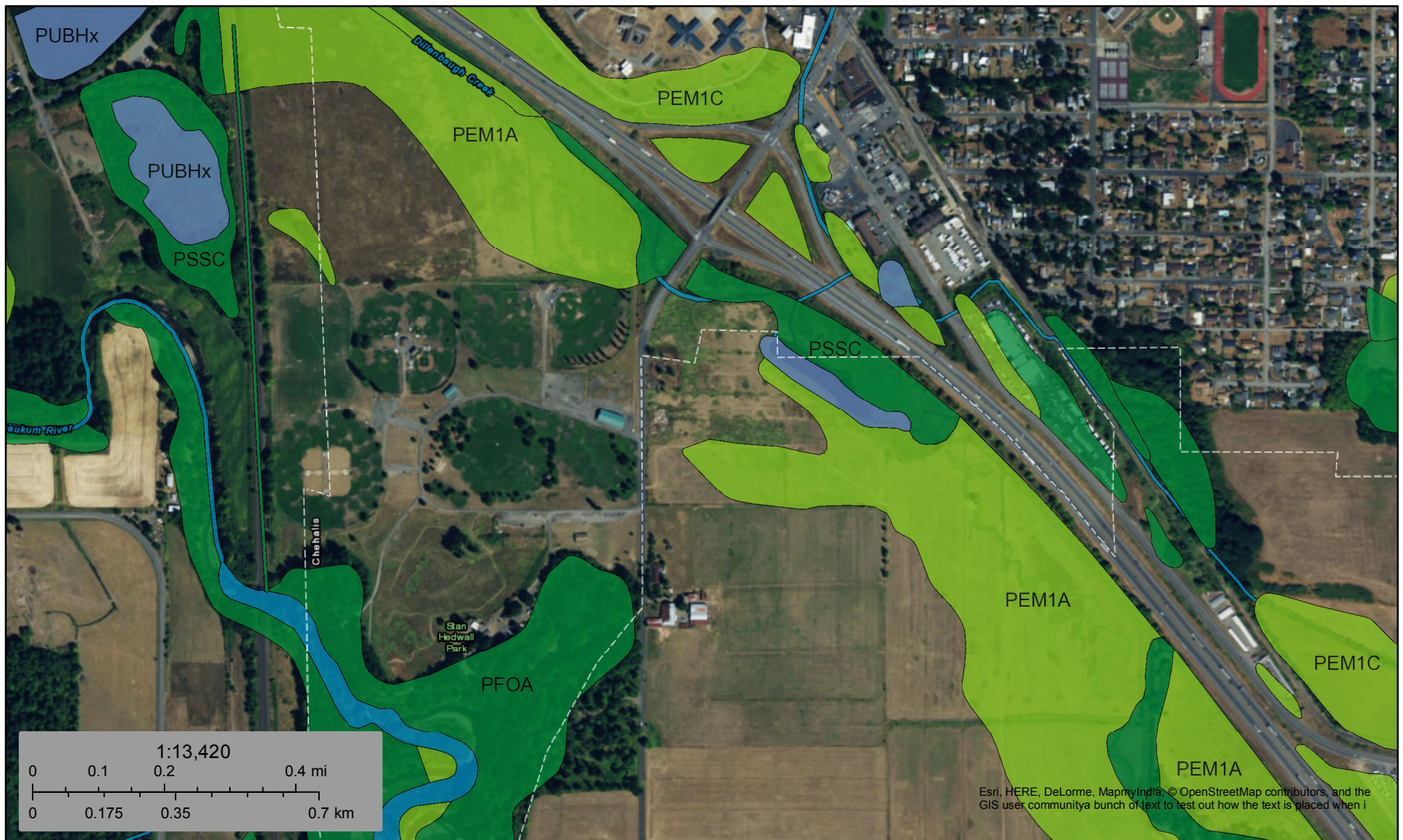
National Wetland Maps and Supporting Data



U.S. Fish and Wildlife Service

National Wetlands Inventory

National Wetland Map at Rice Road



September 22, 2016

- | | | |
|--------------------------------|-----------------------------------|----------|
| Estuarine and Marine Deepwater | Freshwater Forested/Shrub Wetland | Other |
| Estuarine and Marine Wetland | Freshwater Pond | Riverine |
| Freshwater Emergent Wetland | Lake | |

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

ATTACHMENT F

Priority Habitats and Species List



WASHINGTON DEPARTMENT OF FISH AND WILDLIFE

PRIORITY HABITATS AND SPECIES REPORT

SOURCE DATASET: PHSPublic
REPORT DATE: 09/20/2016 2.21

Query ID: P160920142103

| Common Name Scientific Name Notes | Site Name Source Dataset Source Record Source Date | Priority Area Occurrence Type More Information (URL) Mgmt Recommendations | Accuracy | Federal Status State Status PHS Listing Status | Sensitive Data Resolution | Source Entity Geometry Type |
|---|---|--|-------------------|--|------------------------------|---|
| Cavity-nesting Ducks | CHEHALIS RIVER & PHSREGION 905309 | Breeding Area Breeding occurrence http://wdfw.wa.gov/publications/pub.php? | 1/4 mile (Quarter | N/A N/A PHS LISTED | N AS MAPPED | WA Dept. of Fish and Wildlife Polygons |
| Chinook Oncorhynchus tshawytscha | Newaukum River SASI 1435 | Occurrence Occurrence http://wdfw.wa.gov/wlm/diversty/soc/soc.htm http://wdfw.wa.gov/publications/pub.php? | NA | Not Warranted N/A PHS Listed | N AS MAPPED | WDFW Fish Program Lines |
| Chinook Oncorhynchus tshawytscha | Newaukum River SASI 1432 | Occurrence Occurrence http://wdfw.wa.gov/wlm/diversty/soc/soc.htm http://wdfw.wa.gov/publications/pub.php? | NA | Not Warranted N/A PHS Listed | N AS MAPPED | WDFW Fish Program Lines |
| Chinook Oncorhynchus tshawytscha | Chehalis River SASI 1435 | Occurrence Occurrence http://wdfw.wa.gov/wlm/diversty/soc/soc.htm http://wdfw.wa.gov/publications/pub.php? | NA | Not Warranted N/A PHS Listed | N AS MAPPED | WDFW Fish Program Lines |
| Chinook Oncorhynchus tshawytscha | Chehalis River SASI 1432 | Occurrence Occurrence http://wdfw.wa.gov/wlm/diversty/soc/soc.htm http://wdfw.wa.gov/publications/pub.php? | NA | Not Warranted N/A PHS Listed | N AS MAPPED | WDFW Fish Program Lines |
| Coho Oncorhynchus kisutch | Newaukum River SWIFD 56231 | Breeding Area Breeding area http://wdfw.wa.gov/wlm/diversty/soc/soc.htm http://wdfw.wa.gov/publications/pub.php? | NA | N/A N/A PHS LISTED | N AS MAPPED | Lines |
| Coho Oncorhynchus kisutch | Dillenbaugh Creek SWIFD 56269 | Occurrence/Migration Occurrence/migration http://wdfw.wa.gov/wlm/diversty/soc/soc.htm http://wdfw.wa.gov/publications/pub.php? | NA | N/A N/A PHS LISTED | N AS MAPPED | Lines |

| Common Name Scientific Name Notes | Site Name Source Dataset Source Record Source Date | Priority Area Occurrence Type More Information (URL) Mgmt Recommendations | Accuracy | Federal Status State Status PHS Listing Status | Sensitive Data Resolution | Source Entity Geometry Type |
|--|---|--|----------|--|------------------------------|--------------------------------|
| Coho Oncorhynchus kisutch | Chehalis River SWIFD 63843 | Occurrence/Migration Occurrence/migration http://wdfw.wa.gov/wlm/diversty/soc/soc.htm http://wdfw.wa.gov/publications/pub.php? | NA | N/A N/A PHS LISTED | N AS MAPPED | Lines |
| Coho Oncorhynchus kisutch | Newaukum River SASI 3605 | Occurrence Occurrence http://wdfw.wa.gov/wlm/diversty/soc/soc.htm http://wdfw.wa.gov/publications/pub.php? | NA | Candidate N/A PHS Listed | N AS MAPPED | WDFW Fish Program Lines |
| Coho Oncorhynchus kisutch | Dillenbaugh Creek SASI 3605 | Occurrence Occurrence http://wdfw.wa.gov/wlm/diversty/soc/soc.htm http://wdfw.wa.gov/publications/pub.php? | NA | Candidate N/A PHS Listed | N AS MAPPED | WDFW Fish Program Lines |
| Coho Oncorhynchus kisutch | Chehalis River SASI 3605 | Occurrence Occurrence http://wdfw.wa.gov/wlm/diversty/soc/soc.htm http://wdfw.wa.gov/publications/pub.php? | NA | Candidate N/A PHS Listed | N AS MAPPED | WDFW Fish Program Lines |
| Cutthroat Oncorhynchus clarki | Newaukum River SASI 7580 | Occurrence Occurrence http://wdfw.wa.gov/wlm/diversty/soc/soc.htm http://wdfw.wa.gov/publications/pub.php? | NA | Candidate N/A PHS Listed | N AS MAPPED | WDFW Fish Program Lines |
| Cutthroat Oncorhynchus clarki | Dillenbaugh Creek SASI 7580 | Occurrence Occurrence http://wdfw.wa.gov/wlm/diversty/soc/soc.htm http://wdfw.wa.gov/publications/pub.php? | NA | Candidate N/A PHS Listed | N AS MAPPED | WDFW Fish Program Lines |
| Cutthroat Oncorhynchus clarki | Chehalis River SASI 7580 | Occurrence Occurrence http://wdfw.wa.gov/wlm/diversty/soc/soc.htm http://wdfw.wa.gov/publications/pub.php? | NA | Candidate N/A PHS Listed | N AS MAPPED | WDFW Fish Program Lines |
| Fall Chinook Oncorhynchus tshawytscha | Newaukum River SWIFD 56229 | Breeding Area Breeding area http://wdfw.wa.gov/wlm/diversty/soc/soc.htm http://wdfw.wa.gov/publications/pub.php? | NA | N/A N/A PHS LISTED | N AS MAPPED | Lines |

| Common Name Scientific Name Notes | Site Name Source Dataset Source Record Source Date | Priority Area Occurrence Type More Information (URL) Mgmt Recommendations | Accuracy | Federal Status State Status PHS Listing Status | Sensitive Data Resolution | Source Entity Geometry Type |
|--|---|--|----------|--|------------------------------|--|
| Fall Chinook Oncorhynchus tshawytscha | Chehalis River SWIFD 63833 | Occurrence/Migration Occurrence/migration http://wdfw.wa.gov/wlm/diversty/soc/soc.htm http://wdfw.wa.gov/publications/pub.php? | NA | N/A N/A PHS LISTED | N AS MAPPED | Lines |
| Fall Chinook Oncorhynchus tshawytscha | Chehalis River SWIFD 63834 | Breeding Area Breeding area http://wdfw.wa.gov/wlm/diversty/soc/soc.htm http://wdfw.wa.gov/publications/pub.php? | NA | N/A N/A PHS LISTED | N AS MAPPED | Lines |
| Freshwater Emergent | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa. | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Freshwater Emergent | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa. | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Freshwater Emergent | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa. | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Freshwater Emergent | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa. | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Freshwater Emergent | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa. | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Freshwater Emergent | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa. | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |

| Common Name Scientific Name Notes | Site Name Source Dataset Source Record Source Date | Priority Area Occurrence Type More Information (URL) Mgmt Recommendations | Accuracy | Federal Status State Status PHS Listing Status | Sensitive Data Resolution | Source Entity Geometry Type |
|---|---|---|----------|--|------------------------------|--|
| Freshwater Emergent | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa.gov | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Freshwater Emergent | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa.gov | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Freshwater Emergent | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa.gov | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Freshwater Emergent | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa.gov | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Freshwater Emergent | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa.gov | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Freshwater Emergent | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa.gov | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Freshwater Emergent | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa.gov | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Freshwater Emergent | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa.gov | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |

| Common Name Scientific Name Notes | Site Name Source Dataset Source Record Source Date | Priority Area Occurrence Type More Information (URL) Mgmt Recommendations | Accuracy | Federal Status State Status PHS Listing Status | Sensitive Data Resolution | Source Entity Geometry Type |
|---|---|---|----------|--|------------------------------|--|
| Freshwater Emergent | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa.gov | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Freshwater Emergent | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa.gov | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Freshwater Emergent | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa.gov | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Freshwater Emergent | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa.gov | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Freshwater Emergent | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa.gov | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Freshwater Emergent | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa.gov | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Freshwater Emergent | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa.gov | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Freshwater Emergent | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa.gov | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |

| Common Name Scientific Name Notes | Site Name Source Dataset Source Record Source Date | Priority Area Occurrence Type More Information (URL) Mgmt Recommendations | Accuracy | Federal Status State Status PHS Listing Status | Sensitive Data Resolution | Source Entity Geometry Type |
|---|---|---|----------|--|------------------------------|--|
| Freshwater Emergent | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa. | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Freshwater Emergent | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa. | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Freshwater Emergent | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa. | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Freshwater Emergent | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa. | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Freshwater Emergent | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa. | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Freshwater Emergent | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa. | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Freshwater Emergent | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa. | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Freshwater Emergent | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa. | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |

| Common Name Scientific Name Notes | Site Name Source Dataset Source Record Source Date | Priority Area Occurrence Type More Information (URL) Mgmt Recommendations | Accuracy | Federal Status State Status PHS Listing Status | Sensitive Data Resolution | Source Entity Geometry Type |
|---|---|---|----------|--|------------------------------|--|
| Freshwater Emergent | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa. | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Freshwater Emergent | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa. | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Freshwater Emergent | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa. | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Freshwater Emergent | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa. | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Freshwater Emergent | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa. | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Freshwater Emergent | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa. | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Freshwater Emergent | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa. | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Freshwater Emergent | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa. | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Freshwater Forested/Shrub | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa. | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |

| Common Name Scientific Name Notes | Site Name Source Dataset Source Record Source Date | Priority Area Occurrence Type More Information (URL) Mgmt Recommendations | Accuracy | Federal Status State Status PHS Listing Status | Sensitive Data Resolution | Source Entity Geometry Type |
|---|---|---|----------|--|------------------------------|--|
| Freshwater Forested/Shrub | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa.gov | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Freshwater Forested/Shrub | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa.gov | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Freshwater Forested/Shrub | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa.gov | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Freshwater Forested/Shrub | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa.gov | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Freshwater Forested/Shrub | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa.gov | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Freshwater Forested/Shrub | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa.gov | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Freshwater Forested/Shrub | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa.gov | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Freshwater Forested/Shrub | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa.gov | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |

| Common Name | Site Name | Priority Area | Accuracy | Federal Status | Sensitive Data | Source Entity |
|---------------------------|----------------|---|----------|--------------------|----------------|------------------------------|
| Scientific Name | Source Dataset | Occurrence Type | | State Status | Resolution | Geometry Type |
| Notes | Source Record | More Information (URL) | | PHS Listing Status | | |
| Source Date | | Mgmt Recommendations | | | | |
| Freshwater Forested/Shrub | N/A | Aquatic Habitat | NA | N/A | N | US Fish and Wildlife Service |
| | NWIIWetlands | Aquatic habitat | | N/A | AS MAPPED | Polygons |
| | | http://www.ecy.wa.gov/Programs/AquaticResources/Assessment/AssessmentData/AssessmentData.aspx | | PHS Listed | | |
| Freshwater Forested/Shrub | N/A | Aquatic Habitat | NA | N/A | N | US Fish and Wildlife Service |
| | NWIIWetlands | Aquatic habitat | | N/A | AS MAPPED | Polygons |
| | | http://www.ecy.wa.gov/Programs/AquaticResources/Assessment/AssessmentData/AssessmentData.aspx | | PHS Listed | | |
| Freshwater Forested/Shrub | N/A | Aquatic Habitat | NA | N/A | N | US Fish and Wildlife Service |
| | NWIIWetlands | Aquatic habitat | | N/A | AS MAPPED | Polygons |
| | | http://www.ecy.wa.gov/Programs/AquaticResources/Assessment/AssessmentData/AssessmentData.aspx | | PHS Listed | | |
| Freshwater Forested/Shrub | N/A | Aquatic Habitat | NA | N/A | N | US Fish and Wildlife Service |
| | NWIIWetlands | Aquatic habitat | | N/A | AS MAPPED | Polygons |
| | | http://www.ecy.wa.gov/Programs/AquaticResources/Assessment/AssessmentData/AssessmentData.aspx | | PHS Listed | | |
| Freshwater Forested/Shrub | N/A | Aquatic Habitat | NA | N/A | N | US Fish and Wildlife Service |
| | NWIIWetlands | Aquatic habitat | | N/A | AS MAPPED | Polygons |
| | | http://www.ecy.wa.gov/Programs/AquaticResources/Assessment/AssessmentData/AssessmentData.aspx | | PHS Listed | | |
| Freshwater Forested/Shrub | N/A | Aquatic Habitat | NA | N/A | N | US Fish and Wildlife Service |
| | NWIIWetlands | Aquatic habitat | | N/A | AS MAPPED | Polygons |
| | | http://www.ecy.wa.gov/Programs/AquaticResources/Assessment/AssessmentData/AssessmentData.aspx | | PHS Listed | | |
| Freshwater Forested/Shrub | N/A | Aquatic Habitat | NA | N/A | N | US Fish and Wildlife Service |
| | NWIIWetlands | Aquatic habitat | | N/A | AS MAPPED | Polygons |
| | | http://www.ecy.wa.gov/Programs/AquaticResources/Assessment/AssessmentData/AssessmentData.aspx | | PHS Listed | | |

| Common Name Scientific Name Notes | Site Name Source Dataset Source Record Source Date | Priority Area Occurrence Type More Information (URL) Mgmt Recommendations | Accuracy | Federal Status State Status PHS Listing Status | Sensitive Data Resolution | Source Entity Geometry Type |
|---|---|---|----------|--|------------------------------|--|
| Freshwater Forested/Shrub | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa.gov | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Freshwater Forested/Shrub | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa.gov | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Freshwater Forested/Shrub | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa.gov | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Freshwater Forested/Shrub | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa.gov | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Freshwater Forested/Shrub | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa.gov | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Freshwater Forested/Shrub | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa.gov | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Freshwater Forested/Shrub | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa.gov | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Freshwater Forested/Shrub | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa.gov | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |

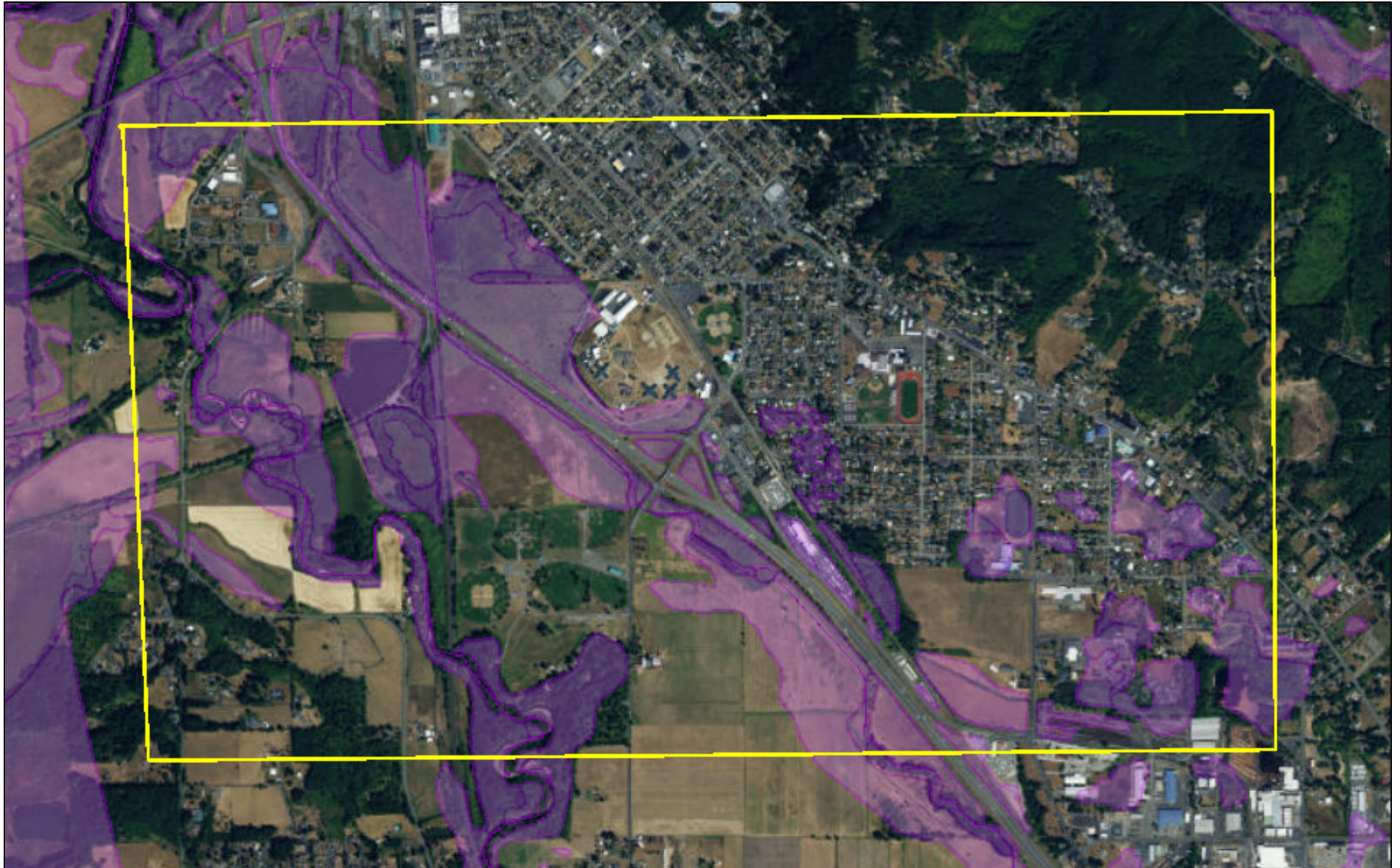
| Common Name Scientific Name Notes | Site Name Source Dataset Source Record Source Date | Priority Area Occurrence Type More Information (URL) Mgmt Recommendations | Accuracy | Federal Status State Status PHS Listing Status | Sensitive Data Resolution | Source Entity Geometry Type |
|---|---|--|-------------------|--|------------------------------|---|
| Freshwater Forested/Shrub | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa.gov/publications/pub.php? | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Freshwater Forested/Shrub | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa.gov/publications/pub.php? | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Oak Woodland | LEWIS COUNTY OAK PHSREGION 902189 | Terrestrial Habitat N/A http://wdfw.wa.gov/publications/pub.php? | 1/4 mile (Quarter | N/A N/A PHS LISTED | N AS MAPPED | WA Dept. of Fish and Wildlife Polygons |
| Resident Coastal Cutthroat Oncorhynchus clarki | Newaukum River SWIFD 56228 | Occurrence/Migration Occurrence/migration http://wdfw.wa.gov/wlm/diversty/soc/soc.htm http://wdfw.wa.gov/publications/pub.php? | NA | N/A N/A PHS LISTED | N AS MAPPED | Lines |
| Resident Coastal Cutthroat Oncorhynchus clarki | Dillenbaugh Creek SWIFD 56268 | Occurrence/Migration Occurrence/migration http://wdfw.wa.gov/wlm/diversty/soc/soc.htm http://wdfw.wa.gov/publications/pub.php? | NA | N/A N/A PHS LISTED | N AS MAPPED | Lines |
| Resident Coastal Cutthroat Oncorhynchus clarki | Chehalis River SWIFD 63831 | Occurrence/Migration Occurrence/migration http://wdfw.wa.gov/wlm/diversty/soc/soc.htm http://wdfw.wa.gov/publications/pub.php? | NA | N/A N/A PHS LISTED | N AS MAPPED | Lines |
| Riverine | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa.gov/publications/pub.php? | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Riverine | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa.gov/publications/pub.php? | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |

| Common Name Scientific Name Notes | Site Name Source Dataset Source Record Source Date | Priority Area Occurrence Type More Information (URL) Mgmt Recommendations | Accuracy | Federal Status State Status PHS Listing Status | Sensitive Data Resolution | Source Entity Geometry Type |
|--|---|--|-------------------|--|------------------------------|---|
| Riverine | N/A NWIWetlands | Aquatic Habitat Aquatic habitat http://www.ecy.wa.gov/publications/pub.php? | NA | N/A N/A PHS Listed | N AS MAPPED | US Fish and Wildlife Service Polygons |
| Spring Chinook Oncorhynchus tshawytscha | Newaukum River SWIFD 56230 | Breeding Area Breeding area http://wdfw.wa.gov/wlm/diversty/soc/soc.htm http://wdfw.wa.gov/publications/pub.php? | NA | N/A N/A PHS LISTED | N AS MAPPED | Lines |
| Spring Chinook Oncorhynchus tshawytscha | Chehalis River SWIFD 63838 | Occurrence/Migration Occurrence/migration http://wdfw.wa.gov/wlm/diversty/soc/soc.htm http://wdfw.wa.gov/publications/pub.php? | NA | N/A N/A PHS LISTED | N AS MAPPED | Lines |
| Spring Chinook Oncorhynchus tshawytscha | Chehalis River SWIFD 63839 | Breeding Area Breeding area http://wdfw.wa.gov/wlm/diversty/soc/soc.htm http://wdfw.wa.gov/publications/pub.php? | NA | N/A N/A PHS LISTED | N AS MAPPED | Lines |
| Steelhead Oncorhynchus mykiss | Newaukum River SASI 6609 | Occurrence Occurrence http://wdfw.wa.gov/wlm/diversty/soc/soc.htm | NA | Not Warranted N/A PHS Listed | N AS MAPPED | WDFW Fish Program Lines |
| Steelhead Oncorhynchus mykiss | Chehalis River SASI 6574 | Occurrence Occurrence http://wdfw.wa.gov/wlm/diversty/soc/soc.htm | NA | Not Warranted N/A PHS Listed | N AS MAPPED | WDFW Fish Program Lines |
| Steelhead Oncorhynchus mykiss | Chehalis River SASI 6609 | Occurrence Occurrence http://wdfw.wa.gov/wlm/diversty/soc/soc.htm | NA | Not Warranted N/A PHS Listed | N AS MAPPED | WDFW Fish Program Lines |
| Waterfowl Concentrations | TUNE ROAD PHSREGION 913853 | Regular Concentration Regular concentration http://wdfw.wa.gov/publications/pub.php? | 1/4 mile (Quarter | N/A N/A PHS LISTED | N AS MAPPED | WA Dept. of Fish and Wildlife Polygons |








| Common Name | Site Name | Priority Area | Accuracy | Federal Status | Sensitive Data | Source Entity |
|---|--|---|-------------------|------------------------------|----------------|---|
| Scientific Name | Source Dataset | Occurrence Type | | State Status | Resolution | Geometry Type |
| Notes | Source Record | More Information (URL) | | PHS Listing Status | | |
| | Source Date | Mgmt Recommendations | | | | |
| Waterfowl Concentrations | CHEHALIS WETLANDS PHSREGION 902195 | Regular Concentration Regular concentration http://wdfw.wa.gov/publications/pub.php? | 1/4 mile (Quarter | N/A N/A PHS LISTED | N AS MAPPED | WA Dept. of Fish and Wildlife Polygons |
| Winter Steelhead Oncorhynchus mykiss | Newaukum River SWIFD 56232 | Breeding Area Breeding area http://wdfw.wa.gov/wlm/diversty/soc/soc.htm | NA | N/A N/A PHS LISTED | N AS MAPPED | Lines |
| Winter Steelhead Oncorhynchus mykiss | Newaukum River SWIFD 56233 | Breeding Area Breeding area http://wdfw.wa.gov/wlm/diversty/soc/soc.htm | NA | N/A N/A PHS LISTED | N AS MAPPED | Lines |
| Winter Steelhead Oncorhynchus mykiss | Chehalis River SWIFD 63850 | Occurrence/Migration Occurrence/migration http://wdfw.wa.gov/wlm/diversty/soc/soc.htm | NA | N/A N/A PHS LISTED | N AS MAPPED | Lines |

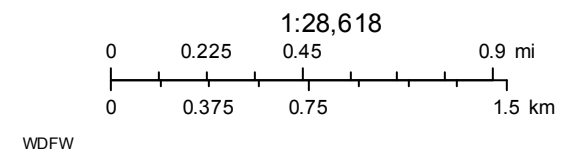
DISCLAIMER. This report includes information that the Washington Department of Fish and Wildlife (WDFW) maintains in a central computer database. It is not an attempt to provide you with an official agency response as to the impacts of your project on fish and wildlife. This information only documents the location of fish and wildlife resources to the best of our knowledge. It is not a complete inventory and it is important to note that fish and wildlife resources may occur in areas not currently known to WDFW biologists, or in areas for which comprehensive surveys have not been conducted. Site specific surveys are frequently necessary to rule out the presence of priority resources. Locations of fish and wildlife resources are subject to variation caused by disturbance, changes in season and weather, and other factors. WDFW does not recommend using reports more than six months old.

WDFW Test Map



September 20, 2016

- | | | | | | |
|---|----------------------|---|-----------|---|----------|
|  | PHS Report Clip Area |  | AS MAPPED |  | TOWNSHIP |
|  | PT |  | SECTION |  | QTR-TWP |
|  | LN | | | | |



ATTACHMENT G

Construction Estimate

Rice Road Dillenbaugh Creek Culvert Replacement Construction Estimate

| Item No. | Quantity | Unit | Item | Unit Cost | Total Cost |
|-------------------------------------|----------|------|-------------------------------------|--------------|--------------|
| PREPARATION | | | | | |
| 1 | 1 | LS | Mobilization | \$110,000.00 | \$110,000.00 |
| 2 | 2 | ACRE | Clearing and Grubbing | \$10,000.00 | \$20,000.00 |
| 3 | 6000 | SY | Removing Asphalt Pavement | \$13.00 | \$78,000.00 |
| 4 | 1 | LS | Remove Existing Culvert | \$20,000.00 | \$20,000.00 |
| 5 | 700 | LF | Remove Existing Guardrail | \$3.25 | \$2,275.00 |
| 6 | 2 | EACH | Remove Existing GR Anchor | \$200.00 | \$400.00 |
| GRADING | | | | | |
| 7 | 500 | CY | Unsuitable Exc Incl Haul | \$10.00 | \$5,000.00 |
| 8 | 9000 | CY | Select Borrow Incl Haul | \$20.00 | \$180,000.00 |
| STRUCTURE | | | | | |
| 9 | 5500 | CY | Structure Exc Class A Incl Haul | \$25.00 | \$137,500.00 |
| 10 | 1 | LS | Shoring or Extra Exc Class A | \$5,000.00 | \$5,000.00 |
| 11 | 1000 | CY | Gravel Backfill for Foundation Cl A | \$40.00 | \$40,000.00 |
| 12 | 3300 | SF | Concrete Box Culvert | \$150.00 | \$495,000.00 |
| SURFACING | | | | | |
| 13 | 750 | TON | Crushed Surfacing Top Course | \$25.00 | \$18,750.00 |
| 14 | 3200 | TON | Crushed Surfacing Base Course | \$25.00 | \$80,000.00 |
| HOT MIX ASPHALT | | | | | |
| 15 | 1250 | TON | HMA Cl 1/2 Inch PG 64-22 | \$85.00 | \$106,250.00 |
| EROSION CONTROL AND PLANTING | | | | | |
| 16 | 30 | DAY | ECS Lead | \$100.00 | \$3,000.00 |
| 17 | 1000 | CY | Topsoil Type B | \$8.00 | \$8,000.00 |
| 18 | 2 | ACRE | Seeding and Mulching | \$5,000.00 | \$10,000.00 |
| 19 | 500 | LF | Check Dam | \$15.00 | \$7,500.00 |
| 20 | 500 | LF | Wattle | \$5.00 | \$2,500.00 |
| 21 | 2600 | LF | Silt Fence | \$6.00 | \$15,600.00 |
| 22 | 1 | EST | Erosion/Water Pollution Control | \$20,000.00 | \$20,000.00 |
| TRAFFIC | | | | | |
| 23 | 750 | LF | Beam Guardrail Type 1 | \$40.00 | \$30,000.00 |
| 24 | 2 | Each | Beam Guardrail Terminal | \$2,500.00 | \$5,000.00 |
| 25 | 1 | LS | Detour Signing | \$10,000.00 | \$10,000.00 |
| 26 | 4000 | LF | Paint Line | \$0.20 | \$800.00 |
| 27 | 1 | LS | Project Temp Traffic Control | \$20,000.00 | \$20,000.00 |
| OTHER ITEMS | | | | | |
| 28 | 1 | LS | Type B Progress Schedule | \$5,000.00 | \$5,000.00 |
| 29 | 1 | LS | Roadway Surveying | \$5,000.00 | \$5,000.00 |
| 30 | 1 | EST | Roadside Cleanup | \$10,000.00 | \$10,000.00 |
| 31 | 1 | LS | Trimming and Cleanup | \$5,000.00 | \$5,000.00 |
| 32 | 1 | LS | SPCC Plan | \$500.00 | \$500.00 |

| | |
|------------------------------|---------------------|
| Total less Mobilization | \$1,346,075.00 |
| Mobilization = 8% | \$107,686.00 |
| Use | <u>\$110,000.00</u> |
| Construction Estimate | \$1,456,075.00 |
| Construction Contingency 30% | \$436,822.50 |
| Subtotal Construction | \$1,892,897.50 |
| Sales Tax @ 8.0% | \$151,431.80 |
| TOTAL CONSTRUCTION | \$2,044,329.30 |
| Design Engineering 20% | \$408,865.86 |
| Construction Engineering 20% | <u>\$408,865.86</u> |
| TOTAL PROJECT COST | \$2,862,061.02 |

ATTACHMENT H

Site Photos

Dillenbaugh Culvert Replacement Project (Rice Road)

P#16135



Upstream side (east) of box culvert



Downstream side from top of culvert



North barrel from upstream end



Upstream side looking upstream 100 ft from culvert showing natural conditions



Beaver dam located 200ft upstream from culvert facing upstream



200 ft upstream from culvert facing downstream

Dillenbaugh Culvert Replacement Project (Rice Road)

P#16135



Upstream side east side of culvert facing downstream



100 ft downstream from culvert facing downstream,
natural setting between culvert and bridge



North barrel standing east facing downstream



High water marks