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| http://wwwi.wsdot.wa.gov/NR/rdonlyres/80B55A53-72C6-49A3-8D09-2B6F6C72A153/0/WSDOTacronymBlack.jpg | Site Visit 2 Field Report | Project Number: |
|  |
| Project Name: | Date: |
|  |  |
| Project Office:**HydraulicsSection** | Time of Arrival: |
|  |  |
| Stream Name: | Time of Departure: |
|  |  |
| WDFW ID Number: | Tributary to:  | Weather: |
|  |  |  |
| State Route/MP: | Township/Range/Section/ ¼ Section: | Prepared By: |
|  |  |  |
| County: | Purpose of Site Visit: | WRIA: |
|  |  |  |
| Meeting Location: |
|  |
| Attendance List: |
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| --- | --- | --- |
| **Name** | **Organization** | **Role** |
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| Existing Structure: |
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| --- | --- |
| Material: | *Material type: CMP, PVC, etc. If multiples, be specific on locations* |
| Condition: | *Describe the condition of the pipe* |
| Slope: | *Survey slope or field measured slope. Not WDFW Report slope. Note if multiple* |
| Size: | *Opening size (diameter, height/width, etc) and length* |

*Describe known history, any other relevant information, summarize on site discussion.* |
| Upstream Existing Conditions: |
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| --- | --- |
| Slope: | *Survey slope or field measured slope. Not WDFW Report slope.* |
| Average Bankfull Width & Depth: | *Average measured bankfull upstream* |
| Planform: | *Upstream planform* |
| Anthropogenic Impacts: | *Are there any noticeable impacts from human activity* |
| Structure Impacts: | *Are there any noticeable impacts from the structure*  |

*Describe channel geomorphology, habitat types/locations, flow splits, LWM locations/quantity, measurements/locations, known history, sediment size, etc. Describe any constraints that may directly impact design.* |
| Downstream Existing Conditions: |
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| --- | --- |
| Slope: | *Survey slope or field measured slope. Not WDFW Report slope.* |
| Average Bankfull Width & Depth: | *Average measured bankfull downstream* |
| Planform: | *Downstream planform* |
| Anthropogenic Impacts: | *Are there any noticeable impacts from human activity* |
| Structure Impacts: | *Are there any noticeable impacts from the structure*  |

*Describe channel geomorphology, habitat types/locations, flow splits, LWM locations/quantity, measurements/locations, known history, sediment size, etc. Describe any constraints that may directly impact design.* |

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| --- |
| Anticipated Proposed Conditions: |
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| --- | --- |
| Slope: | *Survey slope or field measured slope. Not WDFW Report slope.* |
| Average Bankfull Width & Depth: | *Average measured bankfull within reference reach (minimum of 3 total taken)* |
| Planform: | *Proposed planform* |
| Grading Extents: | *Approximately how far up/downstream will grading extend* |

*Based on the information available, what are the proposed conditions likely to look like? This may change as the design progresses and more information is known. This section is meant to prompt a designer to think about whether and why a reference reach is a appropriate, hopefully aiding in choosing an appropriate reference reach.* |
| Reference Reach: |
|

|  |  |
| --- | --- |
| Location: | *Where is the reference reach* |
| Slope: | *Survey slope or field measured slope. Not WDFW Report slope.* |
| Average Bankfull Width & Depth: | *Average measured bankfull within reference reach (minimum of 3 total taken)* |
| Planform: | *Reference reach planform* |
| Anthropogenic Impacts: | *Are there any noticeable impacts from human activity* |

*Describe location, channel geomorphology, habitat types/locations, flow splits, LWM locations/quantity, measurements/locations, known history, sediment size, etc. How does this reference reach compare to the anticipated proposed conditions. Why is it appropriate?* |
| Bankfull Width & Bankfull Depth: |
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| --- | --- | --- | --- |
| **Location** | **Width** | **Depth** | **Include in Average?** |
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*Describe who was involved, extents collection occurred within.* |
| Data Collection: |
| *Provide a sketch showing location of data collected including pebble counts, bankfull measurements, any other relevant information.* |
| Pebble Counts: |
| *Pebble count data. Photos of the pebble count locations with a standard Gravelometer for scale should be provided* |
| Photos: |
| *Any relevant photographs placed here with descriptions.* |
|  |
| Samples: |
| Work within the wetted perimeter may only occur during the time periods authorized in the APP ID 21036 entitled "Allowable Freshwater Work Times May 2018". Work outside of the wetted perimeter may occur year-round. APPS website: <https://www.govonlinesaas.com/WA/WDFW/Public/Client/WA_WDFW/Shared/Pages/Main/Login.aspx> |
| *Were any sample(s) collected from below the OHWM?* | *No* [ ]  *If no, then stop here.* |
| *Yes* [ ]  *If yes, then fill out the proceeding section for each sample; as well as log the sample for GHPA annual reporting in the 202x Fish Passage Streambed Sediment Sample Log spreadsheet located on ProjectWise****Field Resources*** *folder.* |
| Sample #: | Work Start: | Work End: | Latitude: | Longitude: |
|  |  |  |  |  |
| Summary/description of location: |
| Summarize/describe the sample location. |
| Description of work below the OHWL: |
| *Describe the work below the OHWL, including equipment used and quantity of sediment sampled.* |
| Description of problems encountered: |
| *Describe any problems encountered, such as provision violations, notification, corrective action, and impacts to fish life and water quality from problems that arose.* |
| http://wwwi.wsdot.wa.gov/NR/rdonlyres/80B55A53-72C6-49A3-8D09-2B6F6C72A153/0/WSDOTacronymBlack.jpg**HydraulicsSection** | Project Complexity Field Form | Prepared By: | Page: |
|  | 1 |
| Project Name: | Date: |
|  |  |
| Stream Name: | WDFW ID Number: |
|  |  |
| Tributary to:  | State Route/MP: |
|  |  |
| Site Visit Type: |
|  |
| Anticipated Level of Complexity: |
| Low [ ]  Medium: [ ]  High: [ ] **Additional Notes:** |
| In Water Work Window: |
|  |
| General Instructions: |
| The following elements of projects should be discussed before the production of a Preliminary Hydraulic Design by members of WSDOT and WDFW to identify the level of complexity for each site, and corresponding communication and review. While certain elements may be categorized as indicators of a low/medium/high complexity project, these are only suggestions, and newly acquired information may change the level of complexity during a project. The ultimate documentation category for a given site is up to both WSDOT and Comanagers, considering both site characteristics and synergistic effects. Discuss the following elements as they apply to the project. Rank each element as low, medium, or high in complexity.  |

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| --- | --- | --- | --- |
| Category | Project Elements | Levels of Complexity | Follow up/Observations |
| Low | Med | High |  |
| Stream Design Factors (alignment, profile, bed mix) | Channel realignment |  |  |  |  |
| Stream grading extents |  |  |  |  |
| Expected stream movement (migration) |  |  |  |  |
| Gradient (morphology) |  |  |  |  |
| Slope ratio |  |  |  |  |
| Sediment supply |  |  |  |  |

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| http://wwwi.wsdot.wa.gov/NR/rdonlyres/80B55A53-72C6-49A3-8D09-2B6F6C72A153/0/WSDOTacronymBlack.jpg**HydraulicsSection** | Project Complexity Field Form | Prepared By: | Page: |
|  | 2 |
| Project Name: | Date: |
|  |  |
| Stream Name: | WDFW ID Number: |
|  |  |
| Tributary to:  | State Route/MP: |
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| --- | --- | --- | --- |
| Category | Project Elements | Levels of Complexity | Follow up/Observations |
| Low | Med | High |
| Structure Factors | Stream size and bankfull width |  |  |  |  |
| Meeting requirements for freeboard |  |  |  |  |
| Fill depth above barrier |  |  |  |  |
| Risk of degradation/aggradation |  |  |  |  |
| Long culvert criteria/openness ratio |  |  |  |  |
| Channel confinement & Floodplain Utilization Ratio (FUR) |  |  |  |  |
| Meeting Stream Simulation |  |  |  |  |
| Tidal influence |  |  |  |  |
| Alluvial fan |  |  |  |  |
| Presence of other barriers nearby |  |  |  |  |
| Potential for backwater impacts |  |  |  |  |
| Presence of infrastructure nearby |  |  |  |  |
| Need for bank protection |  |  |  |  |
| Geotech or seismic considerations |  |  |  |  |

Complexity Field Forms Instructions to Hydraulics Lead

**Project Element Definitions:**

If elements are not applicable, write N/A under Follow up/observations

Stream Design Factors

* Channel Realignment: Is there a horizontal channel realignment anticipated? (High = significant; Medium = Moderate; Low = Remain in place)
* Stream grading extents: How far upstream and downstream is grading expected? (High = significant; Medium = Moderate; Low = Minor Grading)
* Expected Stream Movement (Migration): How much movement is expected by the creek both in relation to the stream overall and the potential structure. (High = Channel lateral migration is expected; Medium = Some movement expected, particularly in newly exposed roadway fill slopes; Low = No movement expected, and geotechnical data is available to back up this assessment)
* Gradient: What type of morphology is expected as a result of gradient? (High = Step-pool or greater; Medium = upper end of plane bed trending toward step-pool; Low = Plane bed/pool riffle)
* Slope ratio: Is it possible to meet the slope ratio (High = No; Medium = Probably/Maybe; Low = Yes)
* Sediment supply: Are there any risks to the project overall due to sediment supply or will sediment supply impact any of the design elements for the project, for example, a high sediment supply or upstream sediment trap (High = Yes; Medium = Probably/Maybe; Low = No)

Structure Factors

* Stream size and bankfull width: How large is the stream? (High = 30’ +; Medium = 15’-30’ Low = 2’-15’)
* Meeting freeboard requirements: Can freeboard above the 100-year be met? (High = No, not without a significant roadway raise; Medium = minor roadway raise may be necessary; Low = Yes)
* Fill depth above barrier: Will the depth of fill above the crossing make things complicated? (High = Yes, either high fill or low fill; Medium = moderately low or high, may cause complications but won’t know until further analysis is done; Low = No)
* Risk of degradation/aggradation: Is there a risk for the stream to aggrade or degrade? (High = Yes; Medium = Probably/Maybe; Low = No)
* Channel confinement & Floodplain Utilization Ratio (FUR): (High = unconfined; Medium = borderline of confined/unconfined; Low = confined)
* Meeting Stream Simulation: Can stream simulation be met? Look at the other design factors that have been identified already and rate. If systems is tidal this is N/A. (High = unlikely to meet stream sim; Medium = some elements of risk have been identified and more evaluation is necessary; Low = stream simulation can be met)
* Tidal Influence: (High = below head of tide; medium = above head of tide; low = non-tidal).
* Alluvial Fan: (High = on alluvial fan; medium = possibly on fan or fan not expected to impact design; low = no fan)
* Presence of other barriers nearby: Are there other barriers nearby that could impact the design of the crossing in question. (High = yes; medium = maybe; low = no)
* Potential for backwater impacts: Is there a risk for backwater impacts either by the WSDOT crossing onto other properties (High = yes; medium = maybe; low = no)
* Presence of infrastructure nearby: Are there design constraints at this location that limit the design and possibly the compliance with stream simulation? Note them in the notes if there are. (High = yes; medium = maybe; low = no)
* Need for bank protection: Is bank protection expected. If in deep fill the answer is yes unless geotechnical data supports otherwise. (High = yes; medium = maybe; low = no)
* Geotech and/or seismic considerations: Are there geotechnical concerns at this site either through the already received Geotech or perceived as part of the site visit? (High = yes; medium = maybe; low = no)

Complexity Field Forms Instructions to Hydraulics Lead Cont.

**Prior to Site Visits:**

* Fill in headings of Complexity Field Form
* Do desktop assessment of the elements in the list using all available resources such as the WDFW habitat survey notes, LiDAR, As-Builts, survey, etc.
* Understand Project Element Definitions. Please reach out to HQH if unsure of what Project Element Covers.
* Think about what your proposed conditions might look like based on what you know

**Site Visit 2:**

* Fill out field form in the field and/or adjust any project elements that were assessed during the desktop assessment. Recommend bringing the Project Elements Definitions on site as reference.
* Update electronic version of form and attach to Site Visit 2 Field Report Form for review/distribution.
* Estimate the anticipated level of complexity using the field report elements.

**Site Visit 3:**

* Prior to Site Visit 3, update any elements that have changed as a result of additional information
* Bring the Project Elements Definitions on site as reference.
* Go over each element of complexity in the field and obtain concurrence. Note any additional information, concerning factors, or other notes on each element. If there are additional notes in general, add those to the additional notes under anticipated level of complexity.
* Obtain concurrence on anticipated level of complexity.

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| http://wwwi.wsdot.wa.gov/NR/rdonlyres/80B55A53-72C6-49A3-8D09-2B6F6C72A153/0/WSDOTacronymBlack.jpg | Site Visit 3 Field Report | Project Number: |
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| Project Name: | Date: |
|  |  |
| Project Office:**HydraulicsSection** | Time of Arrival: |
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| Stream Name: | Time of Departure: |
|  |  |
| WDFW ID Number: | Tributary to:  | Weather: |
|  |  |  |
| State Route/MP: | Township/Range/Section/ ¼ Section: | Prepared By: |
|  |  |  |
| County: | Purpose of Site Visit: | WRIA: |
|  |  |  |
| Meeting Location: |
|  |
| Additional Data Collection: |
| *Describe who was involved, extents collection occurred within. If no additional data was collected on this visit, delete* |
| Observations: |
| *Describe site conditions, channel geomorphology, habitat type and location, flow splits, LWM location and quantity, etc.* |
| Photos: |
| *Any relevant photographs placed here with descriptions.* |

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| http://wwwi.wsdot.wa.gov/NR/rdonlyres/80B55A53-72C6-49A3-8D09-2B6F6C72A153/0/WSDOTacronymBlack.jpg**HydraulicsSection** | Site Visit 3 Concurrence Form | Prepared By: |
|  |
| Project Name: | Date: |
|  |  |
| Stream Name: | WDFW ID Number: |
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| Tributary to:  | State Route/MP: |
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| Bankfull Measurements: |
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| **Location** | **Width** | **Depth** | **Include in Average?** |
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**Additional Notes:****Average Bankfull Width:** *­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_* **Concurrence Reached:** Yes:[ ] No: [ ]  |
| Reference Reach Location and Morphology: |
| **Reference Reach Morphology:** *­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_* **Concurrence Reached:** Yes:[ ] No: [ ]  |
| Additional Information Requested by Comanagers: |
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| Project Next Steps/Additional Notes: |
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| Comanager/WSDOT/Hydraulic Lead Initials: |
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| **Name** | **Organization** | **Initials** | **Name** | **Organization** | **Initials** |
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| http://wwwi.wsdot.wa.gov/NR/rdonlyres/80B55A53-72C6-49A3-8D09-2B6F6C72A153/0/WSDOTacronymBlack.jpg**HydraulicsSection** | Site Visit 3 Attendance List | Prepared By: |
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| Project Name: | Date: |
|  |  |
| Stream Name: | WDFW ID Number: |
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| Tributary to:  | State Route/MP: |
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| Bankfull Measurements: |
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| **Name** | **Agency/Tribe/Firm** | **E-mail** | **Present** |
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Site Visit 3 Forms Instructions to Hydraulics Lead

**Prior to Site Visit:**

* Fill in headings of Site Visit 3 Field Report, Site Visit 3 Concurrence Form, Site Visit 3 Attendance List, and Site Visit 3 Complexity Form
* Determine whether a habitat connectivity memo is expected on the project. If yes, check the received or in process box on Site Visit 3 Concurrence Form
* Determine who the representatives from WDFW, Tribes, HQ Hydraulics, and Hydraulics Lead will be, fill in names/organizations under Comanager/WSDOT Initials
* Obtain attendance list from WSDOT PEO or Scoping Team. Fill in Site Visit 3 Attendance List. Make sure to leave extra space in case there are unexpected people. Leave “present” blank.
* Bring survey print out or other long profile information and know the slope of the reference reach AND approximate design slope.
* Determine what the approximate bankfull flow depth is.
* If available, have rough idea of what the structure size might be (is it stream sim or will it be larger?)

**During Site Visit:**

* Complete the Site Visit 3 Complexity Form. See Site Visit 3 Complexity Form instructions for further information.
* Note where bankfull widths were taken and what the measurements are. Make sure comanagers are present and agree with the measurements as they are being pulled. Make sure measurement pulled are accurate and in accordance with the WAC/WCDG. Consult HQH Representative in the field if there are concerns. If additional width should be accounted for in the final Minimum Hydraulic Opening Width due to uncertainties in planform, wood, etc., note that here. Note whether or not concurrence was reached. If concurrence is not reached it must be noted as to why it is not and whether additional steps need to be taken.
* Discuss and note reference location, any features that are expected to be replicated, the reference reach morphology, and any other defining details. Ensure comanager concurrence on these details.
* Discuss whether a habitat connectivity memo is expected on the site. Note whether one is requested by the team and if it is requested, note any reasoning behind this. (noted critter utilization of existing crossing, green belts, other evidence, etc.) If request is due to smaller creatures, discuss whether the group thinks the proposed structure would automatically accommodate those.
* Note any additional information that the comanagers want
* Discuss any additional steps or any additional site notes.

**After Site Visit:**

* Scan Site Visit 3 Concurrence Form and Attendance List
* Update Site Visit 3 Complexity form by either scanning field copy or electronically updating
* Add any additional data collection, observations, or photographs to the Site Visit 3 Field Report
* Compile Site Visit 3 Field Report Form, Complexity Form, Concurrence Form, and Attendance List into single document and provide to WSDOT through project specified channels for review