### WSDOT Biological Assessment Review Checklist (May 2025)

*This checklist is used by WSDOT reviewers to determine whether all necessary information has been provided in sufficient detail in a BA.*

Project name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Region, city, or county: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Author name, affiliation, and phone number: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Reviewer name, agency/region, and phone number: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

General comments: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Notes to Reviewer:**

The following checklist follows the outline of a typical WSDOT BA. Some items will not always be necessary. Level of detail provided in the BA should be equivalent to the potential impacts of the action. Document should use plain language and avoid overly technical terms but should not be written in the reader friendly format. Further guidance on preparing a WSDOT BA can be found in the following resources:

* Biological Assessment Preparation Manual for Transportation Projects. Available at [Environmental guidance - Endangered Species Act & Essential Fish Habitat | WSDOT](https://wsdot.wa.gov/engineering-standards/environmental-guidance/endangered-species-act-essential-fish-habitat)
* Most current WSDOT Stormwater Guidance and associated files. Available at [BA Manual Chapter 17](https://wsdot.wa.gov/sites/default/files/2024-07/BA-Manual-Chapter17-24.pdf)

KEY: SUF = Sufficient – no comments or changes. INC = Incomplete – Reviewer has comments or suggested changes/edits. When INC has been checked, further details and comments should be provided in the right-hand column and in the Specific Comments section.

**EXECUTIVE SUMMARY AND FORMAT**

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| **SUF** **INC**  🞏 🞏 | Does the BA include a brief (one to two pages) summary that includes the proposed action, listed species and critical habitat addressed in the BA, project effects on species and habitat, conservation measures, and (most importantly) effect determinations?  Does the BA include a Table of Contents, List of Tables, and List of Figures with accurate page references? |

Specific Comments: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**INTRODUCTION**

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| **SUF** **INC**  🞏 🞏 | Does the BA include a very brief Introduction that identifies the project proponent, the federal nexus for the project, the project purpose and need, a simple overview of the project including its major components, and a history of consultation up to that point with USFWS and NOAA Fisheries (e.g., pre-BA meeting details, site visits, previous versions of the BA, etc.). |

Specific Comments: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**PROJECT LOCATION**

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| **SUF** **INC**  🞏 🞏 | Does the BA provide project location information including, but not limited to, state route, milepost start and end, Township/Range/Section numbers, and watershed information including WRIA and 6th field HUC? If doing in-water work, is the river mile provided?  Does the BA include a vicinity map? |

Specific Comments: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**PROJECT DESCRIPTION**

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| **SUF** **INC**  🞏 🞏 | **General Project Description**. Does the BA include the following items? Tables are often the best way to present some of this information (e.g., construction equipment, BMPs, construction timeline). Check any items that need attention from the author.   * Overview of the existing conditions of the project (for example, existing street layout, existing bridge characteristics, etc.). * Describe size and configuration of project footprint (e.g., cut and fill amounts, acres of impervious surface). Include permanent and temporary impacts. * Project timeline, including start date and overall length of construction of individual phases of construction, if available. * Construction activities and types of equipment. * Secondary project features such as staging areas, detours, stockpile areas, etc. * Detailed description of interrelated and interdependent actions (the “but for” test) * Include simple project plan figures in this section, showing where work is proposed relative to sensitive areas and/or habitat. Work items can include construction staging areas, clearing limits, location of BMPs, OHWM, primary and secondary project features. |
| **SUF** **INC**  🞏 🞏 | **Detailed Project Description**. Does the BA adequately describe in detail all major project elements? For example, for pile driving, describe if work will occur day or night, how long it will take to drive each pile, how many piles will be driven per day, and if a noise attenuation device will be employed. Check any items that need attention from the author.   * Quantify new impervious surface and associated BMPs. * Quantify and describe temporary and permanent impacts to vegetation. * Describe noise generating activities and whether noise attenuation measures or monitoring will be implemented. * Describe in-water work; include stream bypass, dewatering, fish exclusions, and fish moving. * Provide a detailed project timeline and sequence of when activities will occur, including start, stop and total number of working days for each project element. Provide in-water work window and identify the time work will occur in the water. Provide hours of operation, specify day or night, time of year (months and year), duration. Also include the equipment list. * Provide a detailed description of any interrelated or interdependent actions or activities that would not occur “but for” the proposed project. These actions or activities are considered part of the action to be analyzed in the BA.   Further details should be provided in the project description. The following links will walk the reviewer and the author through more detailed questions regarding seven types of common WSDOT projects at the end of this form.  [Culvert Replacement (Module 1)](#Module1)  [Bridge Replacement (Module 2)](#Module2)  [Bridge Scour (Module 3)](#Module3)  [Pile Driving (Module 4)](#Module4)  [Bank Stabilization (Module 5)](#Module5)  [Safety Improvement (Module 6)](#Module6)  [Slide Abatement (Module 7)](#Module7)  These modules can be used as guidelines for providing the correct level of detail, or they can be copied and used within the body of the BA. |

Specific Comments: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**IMPACT AVOIDANCE AND MINIMIZATION MEASURES**

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| **SUF** **INC**  🞏 🞏 | Does the BA list the impact minimization measures, the appropriate BMPs, and for performance-based BAs, the performance standards?  Does the BA include a table or similar that summarizes all the avoidance and minimization measures in one place for easy reference? |

Specific Comments: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**ACTION AREA**

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| **SUF** **INC**  🞏 🞏 | **Action Area.** Does the BA define the project action area accurately? That is, does the action area include the full extent of project effects described in the previous section, taking into consideration all appropriate avoidance and minimization measures? Does the action area encompass all appropriate impact zones (i.e., water quality impact zone, terrestrial noise impact zone, aquatic noise impact zone)?  Does the action area take all the following items into account? Check any items that need attention from the author.   * Terrestrial and underwater noise * Downstream water quality effects * Off-site areas, including wetland mitigation sites, borrow pits, disposal areas * Areas of associated development (i.e., delayed consequences) * Action area figure * Identification of noise model used * Addressing “three-dimensional” aspects of action area (e.g., noise travels up and out as well as away from a site). |

Specific Comments: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**SPECIES AND HABITAT INFORMATION**

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| **SUF** **INC**  🞏 🞏 | **List of Species and Habitats Addressed in the BA.** Does the BA include a table identifying listed and proposed species, and designated or proposed critical habitat under USFWS or NOAA jurisdiction that are addressed in the BA?  **USFWS listings should be obtained from the following website:**  [IPaC: Home](https://ipac.ecosphere.fws.gov/)  **NOAA listings should be obtained from reviewing the following website:**  [Endangered Species Conservation | NOAA Fisheries](https://www.fisheries.noaa.gov/topic/endangered-species-conservation)  **Rationale for Not Addressing Certain Species.** Does the BA include an explanation of why other species on the agency lists are not addressed in the BA? |
| **SUF** **INC**  🞏 🞏 | **Species Occurrence.** Does the BA provide detailed and site-specific information on the occurrence of listed and proposed species and their designated or proposed critical habitat in the action area?  Does this section take all the following items into account? Check any items that need attention from the author.   * Life history stages of each species that may occur in the action area * Identify fish by ESU or DPS * Do not include discussion of candidate species * If applicable, include information on methods, timing, and results of species-specific surveys * Include date(s) of field reviews by project personnel, persons involved, and results * Include information from local sources, including agency biologists, tribal biologists, or others with local knowledge and experience * Presence or absence of suitable habitat for listed and proposed species in the action area * Presence or absence of critical habitat in the action area, including specific Primary Constituent Elements (PCEs) * Address terrestrial and aquatic species separately   Avoid placing detailed information on life history of listed and proposed species in the main body of the BA, instead putting this information in an appendix |

Specific Comments: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**ENVIRONMENTAL CONDITIONS**

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| **SUF** **INC**  🞏 🞏 | **General Setting**. Does the BA include a general description of the presence and condition of habitat features as they pertain to species addressed in the BA? Only those features that are pertinent to species potentially present in the action area and that are necessary to complete the analysis of effects should be included. Include photographs and maps. |
| **SUF** **INC**  🞏 🞏 | **Terrestrial Habitat Conditions.** Does the BA include a detailed assessment of terrestrial habitat conditions in the action area? Only those aspects of the terrestrial environment relevant to listed species should be included. Include an assessment of project effects on existing terrestrial environmental conditions at the project site scale and/or the action area scale. Check any of the following items that need attention from the author.   * + Foraging habitat   + Nesting or roosting habitat   + Prey overwintering areas   + Prey concentration areas   + Suitable habitat   + Migration corridor   + Occupied habitat   + Perch trees   + Other(s) - identify |
| **SUF** **INC**  🞏 🞏 | **Aquatic Habitat Conditions.** Does the BA include a detailed assessment of aquatic habitat conditions (both marine and freshwater) in the action area? If a project will have no aquatic effects, then these habitat parameters need not be addressed.  Does the BA include the following elements? Check any items that need attention from the author.   * If in-water work is involved, include a summary table of aquatic conditions using Matrix of Pathways and Indicators (MPI) table for appropriate species in the body of the document * Address in the text of the BA only those indicators that are potentially affected * Provide background information on the MPI as an appendix using best available information * Identify indicators where data are lacking * Presence or absence of suitable habitat for listed and proposed species in the action area * Presence or absence of critical habitat and associated PCEs in the action area * Avoid placing detailed life history information in the main body of the BA, instead putting this information in an appendix |

Specific Comments: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**ANALYSIS OF EFFECTS**

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| **SUF** **INC**  🞏 🞏 | Does the BA provide a thorough analysis of the effects of the proposed project on the species and their habitat in the action area? The author should analyze the potential for *exposure* of each species to project-related impacts based on species occurrence information and project timing information provided earlier. The author should then discuss the *general* *response* of each species to these potential impacts and how impacts would be affected by proposed minimization measures. The author should conclude each discussion of impacts with the overall *anticipated response* of the species to project related impacts given all pertinent BMPs, minimization measures, etc. Only those impacts that potentially affect listed species and/or their critical habitat should be analyzed in detail. |
| **SUF** **INC**  🞏 🞏 | **Direct Effects.** Does the BA include a detailed analysis of the direct effects of construction and operation of the project?  Does this section take all the following items into account? Check any items that need attention from the author.   * All potential impacts from construction are considered (e.g., habitat removal, increased noise, increased human activity, etc.) * Exposure-response analyses are completed for each species. * Impacts to suitable habitat are considered. * Any beneficial effects are considered. * Are the minimization measures listed here consistent with those described earlier in the document? * Are all Primary Constituent Elements (PCEs) of critical habitat that occur in the action area addressed? * Are all pertinent species-specific recovery, management, and/or watershed plans addressed in terms of the proposed project’s compliance and recommendations?   For more information, refer to the WSDOT BA Preparation Manual: [Environmental guidance - Endangered Species Act & Essential Fish Habitat | WSDOT](https://wsdot.wa.gov/engineering-standards/environmental-guidance/endangered-species-act-essential-fish-habitat) |
| **SUF** **INC**  🞏 🞏 | **Delayed Consequences.** Does the BA include a detailed analysis of the delayed consequences of construction and operation of the project? Analysis should follow WSDOT Indirect Effect Guidance for development related delayed consequences. Other delayed consequences (i.e. impacts to prey species, ecological impacts) need to be identified in this section as well.  The WSDOT guidance is available in [BA Manual Chapter 10](https://wsdot.wa.gov/sites/default/files/2023-12/BA-Manual-Chapter10.pdf)  Detailed answers to the indirect effects questions in the guidance document should be included in this section. This section should follow the same exposure/response framework as the direct effects section.  Does this section take all of the following items into account? Check any items that need attention from the author.   * All potential impacts from operation are considered. * Exposure-response analyses are completed for each species. * Impacts to suitable habitat are considered. * All potential impacts from associated development are considered. * Any beneficial effects are considered. * Are all Primary Constituent Elements (PCEs) of critical habitat that occur in the action area addressed? * Are the minimization measures listed here consistent with those described earlier in the document? * Are all pertinent species-specific recovery, management, and/or watershed plans addressed in terms of the proposed project’s compliance and recommendations? |
| **SUF** **INC**  🞏 🞏 | **Cumulative Effects.** Cumulative effects analysis is *only* required for those projects undergoing formal consultation; that is, only those projects that have an effect determination of “likely to adversely affect.”  Assuming that cumulative effects analysis is required, does this section take all the following items into account? Check any items that need attention from the author.   * Does this section consider all future state and private actions that are reasonably certain to occur within the action area? * Analyses are completed for each species. * Impacts to suitable habitat are considered. * Any beneficial effects are considered. * Are all pertinent species-specific recovery, management, and/or watershed plans addressed in terms of the proposed project’s compliance and recommendations?   For more information, refer to [BA Manual Chapter 11](https://wsdot.wa.gov/sites/default/files/2021-10/Env-FW-BA_ManualCH11.pdf) |

Specific Comments: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**CONCLUSIONS AND EFFECT DETERMINATIONS**

|  |  |
| --- | --- |
| **SUF** **INC**  🞏 🞏 | Does the BA contain a distinct statement of the overall effect of the project on each species? This conclusion should follow logically from the exposure/response analysis for each of the direct effects and delayed consequences discussed earlier.  Does the BA contain a *determination of effect* for each threatened and endangered species as well as designated critical habitat? The following specific language must be used:   * *No effect* (absolutely no effect whatsoever, either positive or negative); * *May affect, not likely to adversely affect* (insignificant – never reaches the level where take occurs, or discountable – extremely unlikely to occur; or entirely a beneficial effect); * *May affect, likely to adversely affect* (measurable or significant effects – will require formal consultation)   In addition to these determinations, the following conclusions must be made for proposed species or critical habitat:   * For any proposed species or proposed critical habitat, the author should state whether or not the project will *jeopardize the continued existence* of the species, or *destroy or adversely modify* the proposed critical habitat. The author should also make a conditional effect determination if the species is listed or critical habitat is designated prior to project completion.   Check any items that need attention from the author:   * Is every determination followed by a bulleted list of reasons justifying the decision? * Are all determinations appropriately worded? * Do any determinations for critical habitat include PCEs that could potentially be affected? * Are any appropriate conditional effect determinations for proposed species or habitat not included?   For more information, refer to [BA Manual Chapter 12](https://wsdot.wa.gov/sites/default/files/2021-10/Env-FW-BA_ManualCH12.pdf) and [BA Manual Chapter 13](https://wsdot.wa.gov/sites/default/files/2023-12/BA-Manual-Chapter13.pdf) |

Specific Comments: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**END MATERIAL/APPENDICES**

|  |  |
| --- | --- |
|  | The exact composition and order of the end material can vary, depending on the exact nature of the proposed project. Some complex projects will require more background information in the appendices than others. |
| **SUF** **INC**  🞏 🞏 | **References.** Include all literature cited in the text of the BA. Include personal communications, websites, and other cited sources. For more information see [BA Manual Chapter 20](https://wsdot.wa.gov/sites/default/files/2023-03/BA-Manual-Chapter20.pdf) |
| **SUF** **INC**  🞏 🞏 | **Appendix A.**  [WSDOT Fish Exclusion Protocols and Standards](https://wsdot.wa.gov/sites/default/files/2021-12/FishMoving-Policy-StandardsProtocols.pdf) |
| **SUF** **INC**  🞏 🞏 | **Appendix B. Species Lists from USFWS and NOAA Fisheries.** Available at the following websites:  [IPaC: Home](https://ipac.ecosphere.fws.gov/)  [Endangered Species Conservation | NOAA Fisheries](https://www.fisheries.noaa.gov/topic/endangered-species-conservation)  These lists should be updated on average every six months of the project life. |
| **SUF** **INC**  🞏 🞏 | **Appendix C. Biology of Listed Species.** This section of the BA should include a discussion of habitat requirements and life history of those species that could occur in the project action area. Only those life history stages and elements that may be potentially affected by the project should be included (e.g., freshwater spawning habitat versus estuarine rearing habitat). Be sure to include pertinent ESU or DPS. Individual references for this section should be included at the end of this appendix and not in the general BA reference section. |
| **SUF** **INC**  🞏 🞏 | **Appendix D. Essential Fish Habitat (EFH) Assessment.** The entire EFH analysis can be included as the last chapter in the body of the BA or as a standalone document in this appendix. However, information in the BA can be referenced as appropriate, including effects analysis, BMPs, etc. Check any of the following items related to the EFH analysis that need attention from the author:   * EFH background and federal mandate (Magnuson-Stevens Act) * EFH-managed species potentially present in the action area * Elements of EFH present in the action area (i.e., habitat for EFH species) * Analysis of potential negative and beneficial effects to EFH from the project, including a description of relevant EFH, managed species or species groups, and prey species * Conservation measures and BMPs * A determination of *may adversely affect* should be made if the action results in the reduction of quantity or quality of EFH. Otherwise, a determination of *will not adversely affect* or *no adverse effect* is appropriate. References   For more information, refer to [BA Manual Chapter 16](https://wsdot.wa.gov/sites/default/files/2023-07/BA-Manual-Chapter16.pdf) |
| **SUF** **INC**  🞏 🞏 | **Appendix E. Environmental Conditions for Aquatic Habitats.** This appendix should describe in detail the supporting information for the current conditions and effects of the project on each aquatic pathways indicator, discussed in the body of the BA. Only those indicators that are potentially changing should be addressed in the body of the BA. For example, if the project will have no in-water impacts, then a thorough aquatic baseline analysis is not necessary. Use the most current and site-specific information available. Only include bull trout population indicators if bull trout could occur in the action area. |
| **SUF** **INC**  🞏 🞏 | **Other Background Information**? Check any of the following items that the author should consider including as an appendix:   * Project photographs; * Project design plans; * Field survey methods, protocols, and results; * HPA from WDFW; * Planting plans; * Hydraulic report; * Stormwater guidance; * Delayed consequences analysis; |

Specific Comments: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**DETAILED PROJECT DESCRIPTION MODULES**

**Module 1 - Culvert Replacement**

This module is intended primarily for fish passage culverts or culverts in stream and rivers that may have impacts to listed species. Information on the WSDOT/WDFW culvert inventory, which identifies numerous culverts that can be considered barriers, can be found at: [WSDOT Fish Passage Inventory](https://wsdot.maps.arcgis.com/apps/webappviewer/index.html?id=c2850f301118480fbb576f1ccfda7f47)

Culverts in non-fish bearing systems may also be addressed below as appropriate.

#### Existing Culvert:

Is the culvert listed as a barrier in the WSDOT/WDFW culvert inventory:  Yes  No

If yes, indicate the linear feet of potential habitat gain associated with replacing the barrier culvert:

If no, does the culvert appear to be a barrier and what are the parameters that make the culvert appear to be a barrier (i.e. outfall drop, slope, length):

|  |
| --- |
|  |

If the culvert is located in a non-fish bearing system, provide an explanation for why the culvert must be replaced and the environmental benefits for doing so:

|  |
| --- |
|  |

Culverts in non-fish bearing systems need only to address applicable questions below. Questions that are not relevant should be deleted from the BA document as needed.

Description and dimensions of the existing culvert (indicate feet) (e.g. CMP, concrete, closed bottom, arch, etc):

Length:  Span (diameter if round):  Rise (if not round):

***Replacement Culvert:***

Has the replacement culvert been designed using the most recent version of the WSDOT Hydraulic Manual or WDFW *Water Crossing Design Guidelines*:  Yes  No

If yes, which design option was chosen for the replacement culvert:

No Slope Design Option

Hydraulic Design Option

Stream Simulation Design Option

If no, indicate how the dimensions of the replacement culvert were determined and describe how fish passage will be provided:

|  |
| --- |
|  |

Provide the dimensions of the replacement culvert:

Length:  Span (diameter if round):  Rise (if not round):

Describe the material (i.e. concrete, steel, aluminum, pvc, etc.) and shape (i.e. round, box, bottomless box, bottomless arch, squash, etc.) of the culvert:

|  |
| --- |
|  |

Will any other additional fish passage elements required to be installed in addition to the culvert (i.e. weirs):  Yes  No

|  |
| --- |
| If yes, describe: |

Describe any other in-water work (i.e. weirs, LWM placement, riprap) and the location of the OHWM and the bankfull width:

|  |
| --- |
|  |

*Culvert Excavation and Removal*

Describe excavation and removal of the existing culvert. Include the amount of material that will be excavated, storage or disposal of the material, and disposal of the existing culvert:

|  |
| --- |
|  |

*Culvert Installation and Backfilling*

Describe installation of the replacement culvert:

|  |
| --- |
|  |

Will the fill for the new culvert exceed the original footprint:  Yes  No

If yes, include the amount of material exceeding that which will be required to backfill the new culvert and the source of the material.

|  |
| --- |
|  |

Will drop structures, or other streambed elevation control structures be incorporated as part of the project:  Yes  No

If yes, describe:

|  |
| --- |
|  |

**Considerations for Characterizing and Analyzing Effects**

If the existing culvert is a barrier to fish passage and the replacement culvert will restore access to previously inaccessible habitat, indicate the potential habitat gain for federally listed species that will result from this project.

If an existing barrier is being corrected, will it allow a competing species (e.g. brook trout) to access habitat that was previously unavailable?

**Module 2 - BRIDGE Replacement**

It is suggested that the BA author include a figure that indicates the width and length of the existing bridge and the replacement bridge, the OHWM of the stream or river to be crossed, locations of existing and replacement abutments, piling, piers, etc.

**Existing Bridge:**

Note: Contact the bridge information engineer or bridge information specialist for specific information on the bridge. Information is maintained in WA State Bridge Information System Inventory.

Indicate the type of existing bridge:

|  |  |  |  |
| --- | --- | --- | --- |
|  | Concrete arch |  | Pre-tensioned concrete beam |
|  | Concrete box girder |  | Post-tensioned concrete beam |
|  | Concrete T-beam |  | Culvert crossing with a span greater than 6 meters (20 feet) |
|  | Steel truss |  | Floating bridge |
|  | Timber trestle |  | Concrete slab |
|  | Concrete rigid frame |  | Other (describe below) |

Does the existing bridge span any type of surface water:  Yes  No

If yes, describe:

|  |
| --- |
|  |

Does any part of the existing bridge occur below the OHWM of the surface water:  Yes  No

If yes, describe:

|  |
| --- |
|  |

Describe the materials the existing bridge is constructed of:

|  |
| --- |
|  |

Define the area of the existing bridge in square feet or square meters:

|  |
| --- |
|  |

**Replacement Bridge:**

Indicate the type of the replacement bridge:

|  |  |  |  |
| --- | --- | --- | --- |
|  | Concrete arch |  | Pre-tensioned concrete beam |
|  | Concrete box girder |  | Post-tensioned concrete beam |
|  | Concrete T-beam |  | Culvert crossing with a span greater than 6 meters (20 feet) |
|  | Steel truss |  | Floating bridge |
|  | Timber trestle |  | Other (describe below) |

Describe the new bridge construction sequence:

|  |
| --- |
|  |

**Removal of Existing Bridge**

Check the appropriate method for the removal of the existing bridge:

Lowered into the water and dragged out

Dismantled segmenteally over the water and pieces lowered on to a barge or a shoreline dismantling site

Dismantled over water and sections removed by crane to trailers or containers to be towed off-site

False work will be built under and around the bridge, and the bridge will be dismantled by sections

Other (describe below)

Provide rationale for method being used:

|  |
| --- |
|  |

Provide additional information regarding the removal and disposal of the existing bridge. Include discussion on removal of piers, abutments, riprap, etc:

|  |
| --- |
|  |

**Construction of New Bridge**

Describe the installation and location of the new bridge supports:

|  |
| --- |
|  |

Describe the construction of the new bridge:

|  |
| --- |
|  |

**Pavement/Bridge Deck Installation**

Describe the installation of the new bridge deck:

|  |
| --- |
|  |

Describe any stormwater collection, conveyance and discharge that will be associated with the new bridge:

**Considerations for Characterization and Analysis of Effects Analysis**

Will the bridge replacement have any temporary or permanent effect to the hydraulics

of the waterbody it will span due to the placement or removal of piling, abutments,

footings or riprap?

**Module 3 - Bridge Scour**

The BA Author should include figures that indicate the location and dimensions of access roads and the location and dimensions of scour hole(s).

**Existing Bridge Scour:**

Describe the general condition of the waterbody upstream and downstream of the site (bends, bank condition, riparian vegetation, LWM, substrate):

|  |
| --- |
|  |

Describe inspections of the bridge and when scour was detected:

|  |
| --- |
|  |

Describe the scour that is occurring:

|  |
| --- |
|  |

Provide the dimensions of the scour hole(s):

|  |
| --- |
|  |

**Repair of Bridge Scour:**

Describe the technique(s) that will be applied to repair the bridge scour:

|  |
| --- |
|  |

Will any permanent in-water structures be added to the stream to repair the scour or prevent

future scour:  Yes  No

If yes, describe (include physical dimensions including streambank coverage):

|  |
| --- |
|  |

Are the scour prevention or repair techniques that will be applied identified in the BE C23 Manual (FHWA):   
 Yes  No

Are the scour prevention or repair techniques that will be applied identified in the Integrated Streambank Protection Guidelines (ISPG):  Yes  No

If yes, describe (include ISPG site and reach assessments):

|  |
| --- |
|  |

If no, describe techniques that will be used and how these methods were developed and decided upon:

|  |
| --- |
|  |

*Bridge Scour Repair Activities*

Describe bridge scour repair activities:

|  |
| --- |
|  |

Will the bankline require reshaping:  Yes  No

If yes, describe:

|  |
| --- |
|  |

**Considerations for Characterization and Analysis of Effects**

Will the bridge scour project have any temporary or permanent effect to the hydraulics of the waterbody in which it will occur due to the placement of riprap, the repair of footings, columns or abutments, the placement of concrete mattresses, the installation of concrete armor tetrapods, or from temporary access fills?

**Module 4 - Pile Driving**

**Pile Driving Activities**

Are the piling to be installed intended to replace any existing piling:  Yes  No

If yes, describe the existing piling to be removed and replaced (number, size, material and treatment of existing piling. Note: WSDOT standard specs do not allow use of treated wood):

|  |
| --- |
|  |

If no, describe the new structure.

|  |
| --- |
|  |

How will piles be removed?

Vibratory extractor  Direct pull  Clam shell dredge  Other

Will containment structures be used to minimize turbidity:  Yes  No

Describe method:

|  |
| --- |
|  |

General area/habitat where piling will be installed:

Upland  Freshwater  Marine  Estuarine  Other

Describe:

|  |
| --- |
|  |

Will piling be installed in-water:  Yes  No

If yes, describe:

|  |
| --- |
|  |

|  |
| --- |
| Depth of water piles will be installed in: |

Number of piles to be installed (since number of piles is normally a guess-add a 10% contingency):

|  |
| --- |
|  |

Provide the dimensions of the new piling (diameter, taper, length):

|  |
| --- |
|  |

Indicate the material the new piling will be constructed of:

Metal  Wood  Plastic  Concrete  Other

Indicate the type of metal, wood, or other materials (i.e. steel, Douglas fir):

|  |
| --- |
|  |

Will the piling be treated to promote preservation:  Yes  No

If yes, describe the treatment:

|  |
| --- |
|  |

Describe the substrate where the new piling will be installed:

|  |
| --- |
|  |

Does the installation site contain contaminated sediments:  Yes  No o

Is it subject to a cleanup action (MTCA or CERCLA):  Yes  No

|  |
| --- |
| Define the depth the new piling must be driven to: |

Approximate duration for installation of each piling:

|  |
| --- |
|  |

Will pile driving activities occur during daylight hours only:  Yes  No

If no, define the hours pile driving activities will occur :

|  |
| --- |
|  |

If work occurs at night, describe any lighting that will be required:

|  |
| --- |
|  |

When will pile driving occur (time of year, tidal cycle):

|  |
| --- |
|  |

Type of pile driver to be used:  Vibratory  Impact  Both

Describe [the pile driver (mounted on a truck or a barge) and anticipated noise levels]

|  |
| --- |
|  |

If an impact hammer is used what type is anticipated (drop, diesel, or hydraulic hammer):

|  |
| --- |
|  |

If vibratory pile driver is used, will proofing with an impact hammer be required:  Yes  No

**Removal and Disposal of Existing Piling**

If applicable, please describe the removal and disposal of any existing piling:

|  |
| --- |
|  |

**Installation of New Piling**

Describe the installation of new piling:

|  |
| --- |
|  |

**Considerations for Characterization and Analysis of Effects**

If the project requires the removal of any existing piling and the existing piling are treated with any preservatives, consider the effect to federally listed species of removal of the treated piling.

Consider impacts to both aquatic and terrestrial species, from sound waves and noise (the following table may be useful to provide an overview of pile driving activities):

|  |
| --- |
|  |

|  |  |  |  |
| --- | --- | --- | --- |
| **Structure** | **Depth (of water)** | **Piles/structures Removed** | **Piles/structures installed** |
|  |  | (# piles/type) | (# piles, type, and size) |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
| **Totals 🡪** |  |  |  |

**Module 5 - Bank Stabilization**

**Existing Bank Condition:**

Describe the bank, the erosion that is occurring and the cause of the erosion:

|  |
| --- |
|  |

If bank erosion is occurring, is the erosion threatening the roadway:  Yes  No

If yes, describe:

|  |
| --- |
|  |

If no, define the purpose of the project:

|  |
| --- |
|  |

Is the project designed as a  short-term or a  long-term fix? Please describe:

|  |
| --- |
|  |

Describe the current conditions of the waterbody in the area of the bank stabilization activities:

|  |
| --- |
|  |

**Bank Stabilization:**

Will bank stabilization methods incorporate appropriate recommendations as presented in the Integrated Streambank Protection Guidelines (ISPG) or HEC 23 (FHWA):  Yes  No

If yes, describe:

|  |
| --- |
|  |

If no, describe why not:

|  |
| --- |
|  |

Will bank stabilization require the removal of any existing, previously placed bank stabilization features (i.e. riprap or LWM):  Yes  No

Will bank stabilization create hydraulic changes that may affect bank or channel stabilization elsewhere in the waterbody:  Yes  No

If yes, describe:

|  |
| --- |
|  |

*Stabilization of Eroding Banks*

Describe the design and the methods for stabilizing eroding banks:

|  |
| --- |
|  |

*Repair/Reconstruction of Roadway and Associated Infrastructure (if applicable)*

Will repair of the roadway or associated infrastructure be required:  Yes  No

If yes, describe:

|  |
| --- |
|  |

**Considerations for Characterization and Analysis of Effects**

Will the bank stabilization project have any of the following beneficial effects to federally listed species:

Permanent stabilization of human-induced unstable stream banks that result in reduced quantities of erodable soils entering the system.

Donation of trees removed during clearing or bank stabilization activities to fish habitat improvement projects.

Incorporation of habitat features (large woody debris, boulders, etc.) in the bank stabilization project.

Will the project result in any temporary or permanent modification to the hydraulics of the waterbody where the project will occur?

**Module 6 - Safety Improvement**

**Safety Improvement Activities**

Check the safety improvement activity/activities associated with this project from the list below:

|  |  |  |  |
| --- | --- | --- | --- |
| **Safety Improvement Project Activity/Activities** | | | |
|  | Signal Improvement |  | Brushing Road Prism |
|  | Illumination Improvement |  | Installing Guard Rail |
|  | Flattening Slopes |  | Paving Shoulders |
|  | Removing Trees from Clear Zone |  | Modifying Alignment |
|  | Vegetation Alteration |  | Other, Describe |
|  | Improving Sight Distance |  | Other, Describe |
|  | Filling |  | Other, Describe |

***Safety Improvement:***

Will the safety improvement(s) occur in the vicinity of water:  Yes  No

If yes, describe the activities, the water body and the distance between the safety improvement(s) and the water body:

|  |
| --- |
|  |

Will the safety improvement(s) require the conversion of undisturbed lands to highway or other associated roadway features (i.e. unpaved shoulders):  Yes  No

If yes, define the area to be converted and what the conversion will consist of:

|  |
| --- |
|  |

*Installation of Safety Improvement Feature [illumination, signalization, guard rail, etc.   
(if applicable)]*

Describe the installation/construction of the safety improvement(s):

|  |
| --- |
|  |

Will a guard rail be installed:  Yes  No

If yes, describe the installation:

|  |
| --- |
|  |

**Module 7 - Slide Abatement**

**Slide Abatement Activities**

Has a slide occurred at the project site:  Yes  No

If yes, describe the slide (cause of slide, amount and type of material, slope, aspect and waters that may have been affected):

|  |
| --- |
|  |

If no, are slide abatement activities intended to prevent a slide from occurring or  
recurring:  Yes  No

If yes, describe the project site and why a slide may occur, or is likely to occur:

|  |
| --- |
|  |

Will slide abatement activities prevent a potential slide from entering a water body occupied by any federally listed species:  Yes  No

Will slide abatement activities occur at more than one location:  Yes  No

If yes, describe all areas where slide abatement activities will occur:

|  |
| --- |
|  |

*Subsurface Sampling/Testing (if applicable)*

Will subsurface sampling/testing occur:  Yes  No

If yes, please describe (areas, number of test sites, depth, etc.):

|  |
| --- |
|  |

*Removal of Slide Material (if applicable)*

Has slide material been deposited on the roadway:  Yes  No

If yes, please describe (type and amount of material):

|  |
| --- |
|  |

Describe the removal and disposal of slide material:

|  |
| --- |
|  |

*Recontouring of Land (if applicable)*

Will recontouring of land occur as part of the project:  Yes  No

If yes, please describe (amount of area to be recontoured, how it will be recontoured, etc.):

|  |
| --- |
|  |

*Vegetation Planting (if applicable)*

Will vegetation be planted as part of the project:  Yes  No

If yes, describe (type and number of plantings, etc.):

|  |
| --- |
|  |

*Installation of Buttresses (if applicable)*

Will a buttress be installed as part of the project:  Yes  No

If yes, describe (dimensions, material, construction, etc.):

|  |
| --- |
|  |

*Installation of Soldier Pile Wall*

Will a soldier pile wall be installed as part of the project:  Yes  No

If yes, complete and include Module 4 – Pile Driving.

**Considerations for Characterization and Analysis of Effects**

Will the project remove slide material from a waterbody containing federally listed species?

If the project will alter the flow and discharge of surface or groundwater consider the temporary or permanent effects to federally listed species.