**Biological Assessment**

Project Name

Prepared for:

WSDOT Office or Region

Date

# Executive Summary

***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, minimization measures and BMPs, and (most importantly) effect determinations.***

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# Introduction

***Include a very brief Introduction that identifies the project proponent, the federal nexus, the project purpose, and a simple overview of the project including its major components.***

1. Consultation History

***Provide a history of consultation up to that point with USFWS and NMFS, including pre-BA meeting details, site visits, previous versions of the BA, etc.***

***Include pre-BA meeting notes in the appendices. Provide information on how pre-BA comments were addressed.***

## 1.2 **Project Location**

***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, include river mile.***

**.**

## **Project Description**

General Project Description

* ***Provide overview of the existing conditions of the project (for example, existing street layout, existing bridge characteristics, etc.).***
* ***Describe size and configuration of project footprint (cut and fill amounts, acres of PGIS). Include permanent and temporary impacts.***
* ***Provide project timeline, including start date and overall length of construction if available.***
* ***Provide overview of construction activities and types of equipment.***
* ***Identify secondary project features such as staging areas, detours, stockpile areas, etc.***
* ***Identify/provide brief description of interrelated and interdependent actions (use the “but for” test).***

***Tables are often the best way to present some of this information (equipment, BMPs, timeline). 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.***

Detailed Project Description

* Provide 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.
* Provide project timeline, including start date and overall length of construction of construction, if available.
* Provide overview of construction activities and types of equipment.
* Identify secondary project features such as staging areas, detours, stockpile areas, etc.
* Identify/provide brief description of interrelated and interdependent actions (use the “but for” test)

Tables are often the best way to present some of this information (e.g., construction equipment, BMPs, construction timeline). 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.

***Describe in detail all major project elements. For example, for pile driving, describe if work will occur day nor 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.***

***Deconstruct the project into each of its primary elements, then describe each of the elements in detail, how they will be constructed, equipment to be used, timing, associated minimization measures, etc. The following links will walk the author through the expected level of detail for seven types of common WSDOT projects or common elements in WSDOT projects. These modules should be used as guidelines for providing the correct level of detail within the Detailed Project Description section of the BA. Do not cut and paste them into your project description.***

[***Culvert replacement***](#_Module_1_–)

[***Bridge replacement***](#_Module_2_–)

[***Bridge scour***](#_Module_3_-)

[***Pile driving***](#_Module_4_–)

[***Bank stabilization***](#_Module_5_–)

[***Safety improvement***](#_Module_6_–)

[***Slide abatement***](#_Module_7_–)

***Provide 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.***

***Be sure to:***

* ***Quantify new impervious surface and address how stormwater will be treated, what the associated stormwater BMPs are and where the discharge points are. The pollutant load information can be included here. The effects of the stormwater treatment will be addressed in the impacts section. Information should be presented by TDA.***
* ***Quantify and describe temporary and permanent impacts to vegetation (identify type of vegetation that will be affected, species, DBH, if applicable)***
* ***Describe noise generating activities and whether noise attenuation measures or monitoring will be implemented.***
* ***Describe in-water work; include stream bypass, dewatering, fish exclusion, 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), and duration.***

## 1.4 **Impact Avoidance and Minimization Measures**

***List the impact minimization measures, the appropriate BMPs, and for performance-based BAs, the performance standards.***

***Also provide a table compiled list of measures that summarizes all the avoidance and minimization measures in one place for easy reference. This should be included in the appendix of the document.***

## 1.5 **Action Area**

***Describe the geographic area affected by all direct and indirect effects, and effects from interrelated and interdependent activities. The action area should represent the full extent of project-related physical, chemical, and biological effects, taking into consideration all appropriate avoidance and minimization measures.***

***There should be a single action area defined for the project. It may include multiple zones of impact (water quality, terrestrial noise, aquatic noise) and/or geographically distinct or discrete areas of impact (project site and offsite wetland mitigation sites, borrow pits, disposal areas).***

***Be sure to consider the following:***

* ***The latest WSDOT land use indirect effects guidance (i.e., the “ten questions”). This indirect effects analysis must be included in the analysis of effects section. A brief synopsis can be included in this section.***
* ***Terrestrial and underwater noise. Consider the three-dimensional aspects of the action area. Noise models used to determine attenuation distances should be identified.***
* ***Downstream water quality effects (see BA Manual Chapter 17).***

# Status of Species and Critical Habitat in the Action Area

## **Species and Critical Habitat List and Listing Status**

***Provide a summary of species identified on USFWS and NMFS lists in the vicinity of the project. Include an explanation of why some species identified on the agency lists are not addressed in the BA. Do not include candidate species.***

***Include a table identifying listed and proposed species, and designated and proposed critical habitat under USFWS and NMFS jurisdiction that are addressed in the BA.***

* 1. Presence of Listed and Proposed Species in the Action Area

***Provide detailed and site-specific information on the occurrence of listed and proposed species in the action area.***

***The following information should be provided:***

* ***Identify life history stages of each species that may occur in the action area. Avoid placing detailed life history information in the main body of the BA, instead providing it in an appendix.***
* ***Identify species by ESU or DPS.***
* ***If applicable, provide 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.***
* ***Discuss presence or absence of suitable habitat for listed and proposed species in the action area.***
* ***Address terrestrial and aquatic species separately.***

## 2.3 **Presence of Designated Critical Habitat in the Action Area**

***Provide detailed and site-specific information on the occurrence of designated and proposed critical habitat in the action area, including primary constituent elements or physical and biological features.***

# Environmental Setting

***Include a brief characterization of the project vicinity and history that describes the influence of existing conditions and previous activities on the species and the functional condition of critical habitat within the action area. Describe development patterns, surrounding land use, wetlands, vegetation, geology, and soils (if pertinent for subsequent analysis) and provide a general description of the presence and condition of habitat features in the vicinity of the project as they pertain to species addressed in the BA. Include photographs and maps as necessary.***

***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 described or addressed in detail in the text of the BA. Include photographs and maps as applicable.***

* 1. Terrestrial

***For BAs addressing terrestrial species identify whether the following elements are present, describe the current conditions of each of the elements, and describe anticipated project impacts to each of the elements:***

* ***Foraging habitat***
* ***Nesting or dispersal habitat***
* ***Prey overwintering areas***
* ***Prey concentration areas***
* ***Migration corridors***
* ***Suitable habitat***
* ***Occupied habitat***

## 3.2 Aquatic

***For BAs addressing aquatic species identify whether the following elements are present, describe the current conditions of each of the elements, and describe anticipated project impacts to each of the elements:***

* ***If in-water work is involved, include a summary table of aquatic baseline conditions using the Matrix of Pathways and Indicators (MPI) table for appropriate species (particularly bull trout) in the body of the document.***
* ***Address only those indicators that are potentially affected in the text of the BA.***
* ***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.***
* ***If project will have stormwater impacts, be sure to characterize the baseline water quality conditions, if known.***

# Analysis of Effects

***Provide a thorough analysis of the effects of the proposed project on the species and their habitat in the action area. Only those impacts that potentially affect listed species and/or their critical habitat should be analyzed in detail. Analyze the potential for exposure of each species to project related impacts based on species occurrence information and project timing information provided earlier. Discuss the general response of each species to these potential impacts and how impacts would be affected by proposed minimization measures. Conclude each discussion of impacts with the overall anticipated response of the species to project-related impacts given all pertinent BMPs and minimization measures.***

* 1. Direct Effects

***All potential direct effects from the construction and/or operation of the project should be analyzed.***

* ***Identify all potential impacts from construction (habitat removal, elevated noise, fish exclusion, etc.).***
* ***Complete exposure-response analyses for each species for each of the impacts.***
* ***Consider and describe impacts to suitable habitat.***
* ***Consider and describe beneficial effects.***
* ***Are there any interrelated or interdependent actions or activities that would have direct effects? If so, describe impacts associated with them and complete exposure-response analyses for each species for each of the impacts.***
* ***Are additional minimization measures needed or feasible?***
* ***Address all primary constituent elements or physical and biological features.in the action area.***
* ***Consider the proposed project’s compliance with all pertinent species-specific recovery, management, and/or watershed plans.***

## 4.2 Delayed Consequences

***Analysis should follow WSDOT Indirect Effect Guidance for land use-related indirect effects. Other delayed consequences (stormwater, impacts to prey species, ecological impacts) need to be identified and addressed in this section as well.***

***Detailed answers to the ten indirect effects questions in the guidance should be included in this section.***

***The Delayed Consequences section should follow the same exposure-response framework as the direct effects section.***

***All project-related effects should be identified and analyzed, including:***

* ***All potential impacts from operation including stormwate4r. Repeat the pollutant load information here.***
* ***Complete exposure-response analyses for each species for each of the impacts.***
* ***Consider and describe impacts to suitable habitat.***
* ***All potential impacts from associated development.***
* ***Consider and describe beneficial effects.***
* ***Are there any interrelated or interdependent actions or activities that would have delayed consequences? If so, describe impacts associated with them and complete exposure-response analyses for each species for each of the impacts.***
* ***Are additional minimization measures needed or feasible?***
* ***Address all primary constituent elements or physical and biological features.in the action area.***
* ***Consider the proposed project’s compliance with all pertinent species-specific recovery, management, and/or watershed plans.***
	1. Cumulative Effects

***Cumulative effects analysis is only required for those projects undergoing formal consultation. Assuming that a cumulative effects analysis is required, include the following information:***

* ***Identify and briefly describe all future state and private actions that are reasonably certain to occur within the action area. Reasonably certain means that the projects have applied for permits or discussed and planned out at the local jurisdictional level.***
* ***Identify impacts associated with anticipated actions and complete exposure/response analyses for each species.***
* ***Consider and describe impacts to suitable habitat.***
* ***Consider and describe beneficial effects.***
* ***Consider the proposed project’s compliance with all pertinent recovery, management, and/or watershed plans.***

# Conclusions and Effect Determinations

***In conclusion, provide 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, delayed consequences, and cumulative effects discussed earlier.***

***The BA must 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 beneficial effect).***
* ***May affect, likely to adversely affect (measurable or significant effects – will require formal consultation).***
* ***The format of the effect determination for a listed species or designated critical habitat should follow the format outlined in Chapter 12 of the BA Manual.***

***For proposed species or critical habitat, the following conclusions must be made:***

* ***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 prior to project completion.***
* ***The format of the conclusion for a proposed species or proposed critical habitat should follow the format outlined in Chapter 12 of the BA Manual.***
* ***The conditional effect determinations provided for proposed species should be one of the three listed above (NE, NLTAA, LTAA).***

# Essential Fish Habitat Assessment

* 1. Essential Fish Habitat Background

The Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), requires federal agencies to consult with NOAA Fisheries on activities that may adversely affect essential fish habitat (EFH).

The objective of this EFH assessment is to determine whether or not the proposed action(s) “may adversely affect” designated EFH for relevant commercially, federally-managed fisheries species within the proposed action area. It also describes conservation measures proposed to avoid, minimize, or otherwise offset potential adverse effects to designated EFH resulting from the proposed action.

* 1. Description of the Proposed Action

***Describe the project, or reference the description presented in the previous sections of the BA. If a previous section is referenced, briefly describe the project in one or two lines.***

* 1. Potential Adverse Effects of Proposed Project

***The specific essential fish habitat discussed depends on the project location and the species present. The adverse effects discussed in the BA can be referenced, and additional effects can be discussed here. Unless the effects on an individual species are unique, it is not necessary to discuss the adverse effects on a species-by-species basis. Instead, discuss the project’s effects on EFH generally. However, if applicable, discuss the effects to salmonid, groundfish, and coastal pelagic EFH separately.***

* 1. EFH Conservation Measures

***Describe the conservation measures incorporated into the project to minimize potential adverse effects on EFH. If these measures have already been described, refer to that description in the BA.***

* 1. Conclusion and Effect Determination

***Summarize the potential effect that the project will have on EFH. This takes into account the conservation measures proposed as part of the project that were described above. 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.***

**Appendices**

***The order and content of appendices will vary but should appear in the order that they are referenced in the text.***

***Project Plan Sheets***

***WSDOT Fish Exclusion Protocols and Standards***

***Official Species Lists (IPaC)***

***Biology of Listed Species***

***Environmental Baseline for Aquatic Habitats***

***Pre-BA Meeting Notes***

## Detailed Project Description Prompts

## Module 1 – Culvert Replacement

***This module is intended primarily for fish passage culverts or culverts that may have impacts to listed species. Information on the WSDOT/WDFW culvert inventory, which identifies numerous barriers, can be found at:*** [**https://wsdot.wa.gov/engineering-standards/environmental-guidance/fish**](https://wsdot.wa.gov/engineering-standards/environmental-guidance/fish)

***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? 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 (outfall drop, slope, length).

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

The following are designed to function as prompts to the BA author on what kid of information should be included in the BA when describing project which will be engaging in any of these activities.

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

Description and dimensions (length, span, rise) of the existing culvert (indicate feet) (CMP, concrete, closed bottom, arch, etc.).

**Replacement Culvert**:

Has the replacement culvert been designed using the WDFW Manual titled Water Crossing Design Guidelines (WDFW 2013)? If yes, which design option was chosen for the replacement culvert?

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

Description and dimensions (length, span, rise) of the replacement culvert (indicate feet) (CMP, concrete, closed bottom, arch, etc.).

Will any other additional fish passage elements will be installed, such as weirs?

Describe any other in-water work (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 excavated, storage or disposal of the material, and disposal of the existing culvert.

**Culvert Installation and Backfilling**

Describe installation of the replacement culvert. Will fill for the new culvert exceed the original footprint? If yes, include the amount of material exceeding that which will be required to backfill the new culvert and its source. Will drop structures or other streambed elevation control structures be incorporated as part of the project?

***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 listed species that will result from the project.***

***If an existing barrier is being corrected, will it allow competing species (such as 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, 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.***

Indicate the type of existing bridge. Does the bridge span surface water? Does any part of the bridge occur below OHWM? Describe the materials the existing bridge is constructed of. Define the area of the bridge in square feet.

**Replacement Bridge:**

Indicate the type of replacement bridge. Describe the new bridge construction sequence.

**Removal of Existing Bridge:**

How will the existing bridge be removed? Provide information regarding the removal and disposal of the existing bridge. Include discussion on removal of puers, 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, treatment and discharge that will be associated with the new bridge.

***Considerations for Characterizing and Analyzing Effects:***

***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 pilings, abutments, footings, or riprap? Will there be increased shading of aquatic habitat?***

## Module 3 - Bridge Scour

***The BA Author should include figures that indicate the locations and dimensions of access roads and the location and dimensions of scour holes.***

**Existing Bridge Scour:**

Describe the general condition of the waterbody upstream and downstream of the site (bends, bank condition, riparian vegetation, LWD, 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? If yes, describe (include physical dimensions including streambank coverage).

Are the scour prevention or repair techniques that will be applied identified in the Integrated Streambank Protection Guidelines (ISPG). 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 bank line require reshaping. 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 and 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 piles to be installed intended to replace any existing piles. If yes, describe the existing piles to be removed and replaced (number, size, material, and treatment of existing piles. 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? If yes, describe method.

Describe general habitat/area where piling will be installed.

* Upland
* Freshwater
* Marine
* Estuarine
* Other

Will piles be installed in-water? If yes, describe.

Depth of water in which piles will be installed.

Number of piles to be installed.

Describe dimensions of the new piles (diameter and length) and what the piles are constructed of:

* Steel
* Wood
* Plastic
* Concrete
* Other

Will the piles be treated to promote preservation? If yes, describe.

Describe the substrate where piles will be installed.

Does the installation site contain contaminated sediments? Is it subject to a cleanup action (MTCA or CERCLA)?

Describe the depth to which the new piles will be driven.

Approximate duration for installing each pile. Total duration of pile installation. When will pile driving occur (time of year, tidal cycle)?

Number of piles driven per day. Number of days/hours required for pile installation.

Will pile driving activities occur during daylight hours only? If no, define the hours pile driving activities will occur.

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

Type of pile driver: vibratory, impact, or both? Describe if mounted on a truck or barge and anticipated noise levels.

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

If a vibratory pile driver is used, will proofing with an impact hammer be required?

**Removal and Disposal of Existing Piles**

If applicable, describe the removal and disposal of existing piles.

**Installation of New Piles**

Describe the installation of new piles.

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

***If the project will require the removal of any existing piles and the existing piles are treated with any preservatives, consider the effect to listed species of removal of the treated piles.***

***Consider impacts to both aquatic and terrestrial species from noise.***

## Module 5 – Bank Stabilization

**Existing Bank Condition**

Describe the bank, the erosion that is occurring and the cause of erosion. If bank erosion is occurring, is the erosion threatening the roadway? If yes, describe. If no, define the purpose of the project.

Is the project designed as a short-term or a long-term fix? 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)? 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 LWD)?

Will bank stabilization create hydraulic changes that may affect bank or channel stabilization elsewhere in the waterbody? 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? If yes, describe.

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

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

* ***Permanent stabilization of human-induced unstable streambanks that result in reduced quantities of erodible soils entering the system.***
* ***Donation of trees removed during clearing or bank stabilization activities to fish habitat improvement projects.***
* ***Incorporation of habitat features (LWM, boulders, etc.) in the bank stabilization project.***

## Module 6 – Safety Improvement Activities

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

* Signal improvement
* Illumination improvement
* Flattening slopes
* Removing trees from clear zone
* Vegetation alteration
* Improving sight distance
* Filling
* Brushing road prism
* Installing guard rail
* Paving shoulders
* Modifying alignment
* If others, describe

**Safety Improvement**

Will the safety improvement(s) occur in the vicinity of water. If yes, describe the activities, the water body and the distance between the safety improvement(s) and the waterbody.

Will the safety improvement(s) require the conversion of undisturbed lands to highway or other associated roadway features (i.e. unpaved shoulders)? 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 guardrail be installed? If yes, describe.

## Module 7 – Slide Abatement

**Slide Abatement Activities**

Has a slide occurred at the project site? 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? If yes, describe the project site and why a slide may occur, or is likely to occur.

**Subsurface Sampling/Testing (if applicable)**

Will subsurface sampling/testing occur? If yes, describe (areas, number of test sites, depth, etc.).

**Removal of Slide Material (if applicable)**

Has slide material been deposited on the roadway? 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? 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? If yes, describe (type and number of plantings, etc.).

**Installation of Buttresses (if applicable)**

Will a buttress be installed as part of the project? If yes, describe (dimensions, material, construction, etc.).

**Installation of Soldier Pile Wall**

Will a soldier pile wall be installed as part of the project? ***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 listed species? If the project will alter the flow and discharge of surface or groundwater consider the temporary or permanent effects to listed species.***