Memorandum of Agreement

Concerning

Administration of Hydraulic Project Approvals for Transportation Activities
(Chapter 77.55 RCW and Chapter 220-110 WAC)

and

Implementation of the Fish Passage Retrofit Program
(Chapter 77.57 RCW)

and

Implementation of the Chronic Environmental Deficiency Program

Agreement Between
Washington State Department of Fish and Wildlife
and
Washington State Department of Transportation

May, 2008
Table of Contents

Objectives ..................................................................................................................................3
Definitions..................................................................................................................................3
I. Early Coordination on Construction Projects: Planning, Scoping, & Design .......................9
II. Coordination on Maintenance Activities .............................................................................10
   A. Scheduled Maintenance ...........................................................................................10
   B. Unscheduled Maintenance .......................................................................................11
III. Coordinating Hydraulic Project Approvals .......................................................................12
   A. Application for HPAs...............................................................................................12
   B. Processing HPAs ......................................................................................................14
IV. Hydraulic Code Compliance ..............................................................................................19
V. Training..............................................................................................................................21
VI. Fish Passage.......................................................................................................................21
VII. Chronic Environmental Deficiency Program (CED) .......................................................25
VIII. Mitigation for Impacts to Fish Life and Fish Habitat Resulting From Routine and Emergency Maintenance Work .......................................................................................29
IX. Work Related To Emergency Culvert and Barrier Replacement ......................................30
X. Conflict Resolution ............................................................................................................33
XI. Duration of MOA ..............................................................................................................33
Signatures.................................................................................................................................34
Appendix A..............................................................................................................................35

FIGURES

Figure 1: Example of a River, Stream, Altered Natural (Channelized) Stream and Ditch ......4
Figure 2: Cross-Section of a Typical Road Structure (Open Drainage System) ......................8
Figure 3: Cross-Section of a Typical Road Structure (Closed Drainage System) ................. 9
Figure 4: HPA Application Process .......................................................................................18
Figure 5: Fish Passage Barrier Removal Process – I4 Program .............................................24
Figure 6: Chronic Environmental Deficiency (CED) Process - I4 Program ..........................28

TABLES

Table 1: HPA Timelines and SEPA Requirements ................................................................ 17
This Memorandum of Agreement (MOA) is made between the Washington State Department of Fish and Wildlife, hereafter referred to as WDFW, and Washington State Department of Transportation, hereafter referred to as WSDOT.

The purpose of this MOA is to establish and promote mutual agreement of the needs and mandates of the respective agencies, to facilitate the consistent and efficient administration of Hydraulic Project Approvals (HPAs) for transportation projects under Chapter 77.55 RCW (Construction Projects in State Waters), and Chapter 220-110 WAC (Hydraulic Code Rules); to ensure that fish passage at transportation projects is facilitated through Chapter 77.57 RCW (Fishways, Flow, and Screening); and facilitate the implementation of the Chronic Environmental Deficiency Program. This agreement replaces the MOA Concerning Construction of Projects in State Waters, June 2002.

Objectives

1. Work cooperatively to ensure that state transportation projects protect fish life and habitats, and ensure the consistent and efficient administration of Chapter 77.55 RCW (Construction Projects in State Waters), Chapter 220-110 WAC (Hydraulic Code Rules), and Chapter 77.57 RCW (Fishways, Flow, and Screening) for transportation projects.

2. Work cooperatively to ensure that WSDOT can fulfill its mission to safely, effectively, and efficiently build, operate, and maintain state transportation systems, and WDFW can fulfill its mission to provide sound stewardship for fish and wildlife.

3. Work cooperatively to identify and evaluate potential project impacts on fish life and habitat, and to reach accord on mitigation measures early in the design process to facilitate project design and construction while ensuring protection of fish life.

4. Work cooperatively to provide active support, funding, training and guidance within and between WDFW and WSDOT to meet the intent of this agreement.

Definitions

For purposes of this MOA the following definitions apply:

**Altered Natural (channelized) Stream**: A natural stream that has been altered by man into a feature that intercepts and conveys the natural stream parallel or perpendicular to the roadway structure (Figure 1, pg. 4).
Figure 1: Example of a River, Stream, Altered Natural (Channelized) Stream and Ditch.

**Best Management Practices (BMPs):** Schedules of activities, prohibitions of practices, physical structures, maintenance procedures and other management practices to reduce pollution or to provide habitat protection. Some examples of BMPs for WSDOT projects can be found in the Regional Road Maintenance Endangered Species Act Program document available from WSDOT or on WSDOT’s website at: http://www.wsdot.wa.gov/maintenance/pdf/Guidelines/Part2.pdf

**Construction project:** WSDOT projects that fall under the Capitol Budget category which include the following budget programs; Improvement (I), Preservation (P), New Building Construction (D3), Ferry Construction (W4), Highways and Local Programs (Z2), and Rail (Y/V). Capitol project activities are typically bid out to contract. Capitol project activities may involve the construction or acquisition of new assets or work that results in the improvement and/or addition to a highway that increases capacity or utilization, extends the useful life, or changes the function. Maintenance or repair of a currently serviceable structure is not a capitol project.

**Chapter 77.55 RCW:** The statutory authority for Hydraulic Project Approvals; requires persons and government agencies to secure WDFW approval for hydraulic projects prior to conducting work. Also known as the Hydraulic Code.

**Chapter 77.57 RCW:** The statutory authority for fish passage requirements, and for screening of water diversions.

**Chapter 220-110 Washington Administrative Code (WAC):** The administrative and technical rules to implement Chapter 77.55 RCW. Also known as the Hydraulic Code Rules.
**Chronic Danger:** A condition that may be declared by the County Legislative Authority for any property, except for property located on a marine shoreline, that has experienced at least two consecutive years of flooding or erosion that has damaged or has threatened to damage a major structure, water supply system, septic system, or access to any road or highway (RCW 77.55.021 (11)).

**Chronic Environmental Deficiency (CED):** Locations along the state highway system where recent, frequent, and chronic maintenance and/or repairs to the state transportation infrastructure are causing impacts to fish and/or fish habitat (e.g., more than three repairs or maintenance activities are made to the highway or associated infrastructure within a 10 year timeframe at the same location).

**County Legislative Authority:** The elected body in each county, typically the county commission, within the state of Washington with legal authority to enact the laws of the county. County Legislative Authority does not include appointed administrators or other county employees.

**Ditch:** A man-made open conveyance system (wholly artificial watercourse) that collects, carries, holds, inhibits or diverts the movement of storm water or groundwater from the facility or adjacent properties (Figure 1).

**Emergency:** an immediate threat to life, the public, property, or of environmental degradation (RCW 77.55.011 (6)).

**Emergency Maintenance:** Maintenance activities that are required to alleviate an emergency condition. Emergency maintenance activities may be the same as, or similar to, scheduled maintenance activities except that they may be greater in magnitude and scope depending upon the nature and intensity of the emergency. All maintenance repair activities (emergency or otherwise) are limited in scope in order to restore the facility to its pre-existing condition. The activity entails only that work necessary to stabilize the integrity of the roadway or structure.

**Environmental Compliance Assurance Procedure (ECAP):** WSDOT procedure outlining reporting, communication, and notification requirements for all instances of non-compliance with environmental permits.


**Fish Life:** All fish species, including but not limited to food fish, shellfish, game fish, and other non classified fish species and all stages of development of those species (WAC 220-110-020 (31)).
**Hydraulic Project:** The construction or performance of other work that will use, divert, obstruct, or change the natural flow or bed of any of the salt or fresh waters of the state (RCW 77.55.011 (7)).

**Hydraulic Project Approval (HPA):** A written approval issued by WDFW for a hydraulic project, or a verbal approval issued by WDFW for an emergency hydraulic project (WAC 220-110-020 (44)). There are four types of HPAs that WDFW can issue to WSDOT—standard, chronic danger, expedited, and emergency - described as follows:

1. **Standard HPA:** A written approval for a hydraulic project that does not meet the criteria for an expedited or emergency HPA (RCW 77.55.021). There are three standard HPAs—Individual, Consolidated, and General – based on project location.
   a. **Individual:** For work at a single, specified project location under one HPA.
   b. **Consolidated:** For work at multiple, specified project locations under one HPA.
   c. **General:** For work at multiple, unspecified locations under one HPA. Statewide general HPAs (GHPA) supersede existing regional or area specific GHPAs. A statewide GHPA does not typically supersede individual or consolidated standard HPAs.

2. **Chronic Danger HPA:** A written approval for a hydraulic project where a declared chronic danger exists (RCW 77.55.021 (11), effective June 12, 2008).

3. **Expedited HPA:** A written approval for a hydraulic project where a declared imminent danger exists per RCW 77.55.021 (10), or when WDFW determines that normal permit processing would result in significant hardship for the applicant or unacceptable damage to the environment (RCW 77.55.021 (12)).

4. **Emergency HPA:** A verbal or written approval for a hydraulic project where a declared immediate threat exists (RCW 77.55.021 (8)).

**Immediate Threat:** A threat to life, the public, property, or of environmental degradation that is likely to occur within 24 hours or less, derived from RCWs 77.55.011 (6) and 77.55.021 (8).

**Imminent Danger:** A threat by weather, water flow, or other natural conditions that is likely to occur within 60 days of a permit application (RCW 77.55.011 (8)).

**Improvement Project (Program):** Projects that provide solutions to identified deficiencies in the state highway system.

1. **Mobility (M-1)** which mitigates congestion on urban highways; provides uncontested conditions on rural highways; provide bicycle connections of state highways within urban growth areas; completes the Freeway HOV Lane system in the Puget Sound region.
2. **Safety (1-2)** which is for collision reduction.
3. **Economic Initiatives (I-3)** which includes all weather highways; new Safety Rest Areas; Bridges that restrict movement of trucks (low clearance or load restrictions); 4 foot bike paths on shoulders of designated rural bicycle-touring routes; freight corridors that experience delays due to avalanche and flood closures.
4. **Environmental Retrofit (I-4)** that includes fish barrier removal and chronic environmental deficiency projects.
**Joint Aquatic Resource Permits Application (JARPA):** The written application form to be used when requesting an HPA.

**Maintenance:** Those activities directed and/or funded by WSDOT Maintenance and Operations Program that are conducted on currently serviceable road structures, facilities, and equipment involving no expansion or use beyond that previously existing.

1. **Scheduled Maintenance:** Budgeted and anticipated work performed on a regular basis. Scheduled maintenance is intended to maintain the road facility so that it substantially retains its original intended use and function.
2. **Unscheduled Maintenance:** Unanticipated work that occurs due to unusual weather conditions, vandalism, accidents, or other unexpected factors. Unscheduled maintenance work activities are similar to scheduled maintenance activities except that work is unanticipated.

**Mitigation:** Actions which shall be required as provisions of the HPA to avoid or compensate for impacts to fish life resulting from the proposed project activity. The type(s) of mitigation required shall be considered and implemented, where feasible, in the following sequential order of preference:

1. Avoiding the impact altogether by not taking a certain action or parts of an action;
2. Minimizing impacts by limiting the degree or magnitude of the action and its implementation;
3. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
4. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action;
5. Compensating for the impact by replacing or providing substitute resources or environments; or
6. Monitoring the impact and taking appropriate corrective measures to achieve the identified goal.

For projects with potentially significant impacts, a compensatory mitigation agreement may be required prior to approval. Replacement mitigation may be required to be established and functional prior to project construction (WAC 220-110-020 (54)).

**Plans, Specifications, and Estimate: (PS&E Package):** The set of final project design documents, also known as the PS&E package, used to prepare the Joint Aquatic Resource Permits Application (JARPA). These documents are created during the PS&E stage, which refers to the final months of detailed project design, during which HPA permitting generally occurs.

**Preservation Project (Program):** Projects that preserve the highway infrastructure that cost effectively protect the public investment.

1. **Paving (P-1)** which includes repaving highways and restoring existing safety features;
2. **Structures (P-2)** which includes preserving existing structures for operational and structural integrity; and reducing catastrophic failure from naturally occurring events; and,
3. Other Facilities (P-3) which includes refurbishing rest areas; stabilizing unstable slopes; construction of weigh stations; and rehabilitation or replacement of existing major drainage features to preserve operational and structural integrity.

**Priority Habitat and Species (PHS) Data:** The means by which WDFW provides important fish, wildlife, and habitat information to local governments, state and federal agencies, private landowners and consultants, and tribal biologists for land use planning purposes.

**Protection of fish life:** Prevention of loss or injury to fish or shellfish, and protection of the habitat that supports fish and shellfish populations (WAC 220-110-020 (63)).

**PS&E Package:** See definition for Plans, Specifications, and Estimate.

**PS&E Stage:** The final months of detailed project design, during which HPA permitting generally occurs.

**Road Structure:** The components of a road, including roadway, shoulders, drainage features, sediment containment, retention/detention, utilities permits/franchises (telecommunication, gas, electrical, etc.), street lights, and traffic signals. Typical road structure cross-sections are depicted in Figures 2 & 3, pages 8 & 9.

![Figure 2: Cross-Section of a Typical Road Structure (Open Drainage System)](image-url)
I. Early Coordination on Construction Projects: Planning, Scoping, & Design

WSDOT and WDFW encourage early coordination during the planning, scoping, and design of construction transportation projects. Early coordination helps to identify and address important environmental considerations before significant design decisions are made. Close coordination between WSDOT and WDFW in the early stages of project development helps to ensure fish habitat considerations are adequately addressed, and that subsequent permitting actions are predictable, timely and effective. Therefore:
WSDOT Shall
1. Solicit WDFW input during the project scoping and planning phases.
2. Review WDFW’s current Priority Habitat Species (PHS) and Fish Distribution data relevant to the project boundaries and vicinity.
3. Contact WDFW for information on resource protection needs and possible measures to mitigate potential project impacts, including work windows for sampling and construction activity.
4. Update WSDOT’s PHS database at least every six months by contacting WDFW’s PHS Program for new data.
5. Consult WDFW Fish Passage and Diversion Screening Inventory (FPDSI) Database to determine if fish passage problems are identified in the project area. If barriers are identified, then refer to Section VI - Fish Passage of this MOA for further guidance.
6. Use existing best management practices in designing projects that potentially affect fish life or fish-bearing water bodies.

WDFW Shall
Review information submitted by WSDOT to provide early input and recommendations for potential mitigation measures. Early project planning and design dialogue should address:
1. Project design and alternatives that avoid and minimize, and mitigate for remaining impacts to fish life. Early involvement by WDFW during the design phase helps to ensure that the alternative analysis considers WDFW regulatory expectations, such that the final design is permitted under Chapter 77.55 RCW.
2. Data gaps.
3. Applicability of existing interagency agreements, guidance, and permits to project design.
4. Potential permit conditions and mitigation, including opportunities to restore or enhance habitat at other sites.

II. Coordination on Maintenance Activities

A. Scheduled Maintenance
Each spring, WSDOT and WDFW shall jointly preview scheduled maintenance activities for the upcoming year. Meetings should be held in each of the WSDOT regions, either at each Maintenance Area, or in a combination of Maintenance Areas when appropriate. The WSDOT Maintenance Area Superintendent or Regional Maintenance Environmental Coordinator (RMEC) shall schedule meetings in coordination with the WDFW Regional Habitat Program Manager (RHPM) and Area Habitat Biologists (AHBs) responsible for the maintenance area. Representatives from the WSDOT Maintenance Office should include the Area Maintenance Superintendent, Assistant Maintenance Superintendent, Supervisors, and Lead Techs. WSDOT and WDFW may invite other representatives from their agencies, if deemed beneficial to the overall purpose of the meeting, such as WDFW’s Liaison, WSDOT Regional Maintenance Engineer (or representative), and WSDOT Permit Program Staff.

If, in the opinion of the Area Maintenance Superintendent, there is not a sufficient number of proposed scheduled maintenance activities to warrant a meeting, specific projects will be discussed with the AHB by phone, or email, and site reviews will be set up as necessary.
The intent of the meeting is to discuss
1. Upcoming maintenance projects that may involve work adjacent to, or within a water body under the jurisdiction of WDFW.
2. Establish if WDFW feels a site review for a particular project is warranted.
3. Whether planned projects are covered under an existing GHPA, Consolidated HPA, or will require an Individual HPA.
4. Chronic repair/maintenance problems encountered, and that should be recommended for the CED program.
5. Ways to improve the coordination between WDFW and WSDOT in the permit process (notification, JARPA, existing permits, and methods to simplify and expedite the processes for both agencies).
6. Lessons learned from the previous year’s maintenance projects and areas for improvement.
7. Any other topics of joint concern.

WSDOT Spring Meeting Responsibilities
1. Provide a location for the meeting.
2. Prior to the meeting provide WDFW with a list of work that may require HPAs.
3. Prior to, or at the meeting, provide:
   a. Pictures, and other information, of proposed projects to be discussed.
   b. Information on why the proposed work needs to be accomplished and the method that will be used to accomplish the work.
   c. Copies of any General, Consolidated, or Individual HPAs that may cover proposed work.
4. Take minutes of meeting and provide copies to attendees.

WDFW Spring Meeting Responsibilities
1. Ensure the AHBs who are responsible for the proposed projects listed by WSDOT are in attendance.
2. Provide feedback as to whether the proposed project is covered by an existing General, Consolidated, or individual HPA, or will require a new HPA.
3. Determine whether a field review of a project is necessary, to decide what type of permit will be required, if any. This includes determining whether the water body falls under WDFW’s jurisdiction (stream versus ditch).
4. Provide information regarding anticipated fish resources that may be impacted by project activities and potential mitigation for those impacts.

B. Unscheduled Maintenance
Unscheduled maintenance may be required for any number of reasons or events. Unscheduled maintenance may require a standard, expedited or an emergency HPA, depending upon the nature and urgency of the problem to be addressed. In the event of unscheduled maintenance:

1. WSDOT shall use the process and procedures identified in Figure 4 and guidance in this MOA to identify whether a standard, expedited or emergency HPA should be requested from WDFW.
2. Unless a specific HPA exists that authorizes it, WSDOT shall submit the appropriate application for the proposed unscheduled maintenance activity to WDFW.
   a. **Standard HPA:** Unless the criteria for a chronic danger, expedited, or emergency HPA exist, WDFW will process the application as a standard HPA. WSDOT should arrange for a site review with the AHB, and the procedures for a standard HPA will be followed.
   b. **Chronic Danger HPA:** If a chronic danger exists, and has been declared by the County legislative authority, WDFW will process the application as a chronic danger HPA. WSDOT should arrange for a site review with the AHB, and the procedures for a chronic danger HPA will be followed.
   c. **Expedited HPA:** If an imminent danger situation exists, and has been declared by the County legislative authority or WDFW, WDFW will process the application as an expedited HPA. If no imminent danger exists but processing the application as a standard HPA would result in significant hardship to WSDOT or unacceptable damage to the environment, WSDOT may request an expedited HPA. WDFW will determine whether issuing an expedited HPA is warranted in cases of significant hardship or unacceptable damage to the environment. For either type of expedited HPA, WSDOT should arrange for a site review with the AHB, and the procedures for an expedited HPA will be followed.
   d. **Emergency HPA:** In rare circumstances, the problem may meet the criteria for an immediate threat. WSDOT shall immediately contact WDFW by phone or in person, and the procedures for an emergency HPA will be followed.
3. WSDOT shall not begin unscheduled maintenance work until it receives a written standard, expedited, or emergency HPA or a verbal emergency HPA, and the allowable work window is reached.

**III. Coordinating Hydraulic Project Approvals**

**A. Application for HPAs**

WSDOT shall submit a complete application whenever applying for an HPA. With the exception of emergency HPAs, which may be applied for verbally or in writing, WSDOT shall use the most recent version of the JARPA to apply for HPAs.

A complete standard HPA application shall include information generally derived from the PS&E package—project design, construction methods, and proposed mitigation. This information is required so that the AHB can assess project impacts and complete mitigation needs based on a thorough understanding of the project design. An application for a standard HPA shall be submitted to WDFW when final project plans are near completion.

Because of the need for rapid application for and processing of expedited and emergency HPAs, the procedures for these HPAs differ from those for standard HPAs. WSDOT shall submit complete JARPAs or verbal requests, as required below, that contain sufficient information to allow WDFW to process the requests as quickly as possible.
WDFW and WSDOT will attempt to agree on design and mitigation issues prior to final HPA application submittal. Unresolved design and mitigation issues shall be addressed per Section X – Conflict Resolution.

Neither WSDOT’s application for HPA nor WDFW’s acknowledgment of receipt of an application constitutes approval by WDFW of the proposed project. Work on any hydraulic project shall not occur until WSDOT receives written approval for standard and expedited HPAs, or verbal or written approval for emergency HPAs.

**Application for Standard HPA:** RCW 77.55.021(1) specifies the requirements for a complete application for standard HPA. A complete application for WSDOT hydraulic projects shall be in writing, and contain the following:

1. A set of complete drawings for the project in general;
2. Detailed plans for those parts of the project to be constructed within the ordinary high water line in freshwater and the mean higher high water line in saltwater;
3. Detailed plans for construction or installation of mitigation features for identified project impacts to fish life and fish habitat;
4. Discussion of construction techniques which will or may be used;
5. Monitoring and reporting schedule for mitigation, or experimental techniques (if required);
6. Alternative and contingency plans should experimental techniques prove unsuccessful;
7. Notice of compliance with SEPA; and
8. Proposed Timeline for project progress and completion.

**Application for Chronic Danger HPA**
A complete, written application that contains all the elements identified for a standard HPA is required for chronic danger HPA. However, if the project is for the restoration of an eroded or unstable streambank employing the principle of bioengineering as provided in RCW 77.55.021 (11) (b), the project is not subject to SEPA. In those cases, a JARPA must be submitted simultaneously to WDFW and the local government.

**Application for Expedited HPA**
A complete, written application that contains all the elements identified for a standard HPA is required for expedited HPA, except SEPA compliance is not required.

**Application for Emergency HPA:**
1. Emergency HPA may be requested verbally or in writing.
2. SEPA compliance is not required for an emergency HPA.

**SEPA Compliance**
An application for standard or chronic danger HPA must include a notice of compliance with SEPA (RCW 77.55.021), except when the chronic danger project qualifies under RCW 77.55.021 (11)(b). SEPA compliance includes an exemption under RCW or WAC, a Determination of Non-Significance (DNS), a mitigated DNS, a Final Environmental Impact Statement, or notice of Adoption of a NEPA (National Environmental Policy Act) action.
Notice of SEPA compliance is not a requirement for a qualifying chronic danger or expedited HPA, and emergency HPA approval is exempt from SEPA.

B. Processing HPAs

Processing Standard HPAs
1. WDFW must approve or deny an application for standard HPA within 45 days of receiving a complete, written application, unless certain exceptions allowed by statute apply (RCW 77.55.021 and WAC 220-110-030).
2. If WDFW receives an incomplete application, the AHB shall notify WSDOT in writing, within 10 working days of receipt of that application, why the application is incomplete and what information is needed to make it complete. The incomplete application may be returned to WSDOT, or kept on file with WDFW.
3. If WDFW receives an application that is complete for review purposes but does not fully mitigate direct and indirect impacts to fish life, the AHB shall identify where mitigation is deficient, and work with WSDOT within the 45-day review period to modify the application to ensure impacts to fish life are mitigated. If WSDOT disagrees and anticipates that mitigation measures cannot be agreed upon within the 45-day review period, WSDOT may request a suspension of the review period in writing or by email and continue working with WDFW. Either party may seek mediation of the disagreement (see Section X - Conflict Resolution) during the application review period.
4. If WDFW and WSDOT cannot resolve design and mitigation issues through direct discussions or mediation, the HPA will be issued with conditions to protect fish life that are considered unacceptable to WSDOT, or will be denied. If the HPA is denied, WDFW will provide WSDOT with a written statement of the specific reason(s) why and how the proposed project would adversely affect fish life (RCW 77.55.021(4)).
5. WDFW may issue a standard HPA for a period of up to five years.
6. If the HPA is issued with conditions unacceptable to WSDOT or the HPA is denied, WSDOT may appeal WDFW’s decision within 30 days of HPA issuance or denial (See Conflict Resolution).
7. Approval by WDFW must be in writing, and must be received by WSDOT prior to conducting work.

Processing Chronic Danger HPAs
1. If qualifying conditions occur the County Legislative Authority may declare that a chronic danger exists as defined in RCW 77.55.021 (11) (effective June 12, 2008).
2. WDFW must approve an application for a chronic danger for work necessary to abate the chronic danger by removing any obstructions, repairing existing structures, restoring banks, restoring road or highway access, protecting fish resources, or protecting property within 45 days of receiving a complete, written application unless certain exceptions allowed by statute apply (RCW 77.55.021 and WAC 220-110-030).
3. If WDFW receives an incomplete application, the AHB shall notify WSDOT in writing, within 10 working days of receipt of that application, why the application is incomplete and what information is needed to make it complete. The incomplete application may be returned to WSDOT, or kept on file with WDFW.
4. If WDFW receives an application that is complete and the chronic danger project qualifies for streamlined processing under RCW 77.55.021 (11)(b), WDFW shall provide a 15-day comment period to the local government. If adverse impacts that cannot be mitigated by the conditioning of a permit are not identified within the comment period, WDFW shall issue an HPA. If WDFW determines that streamlined processing is not appropriate for the project, WSDOT will be notified and may reapply for processing as a regular chronic danger HPA.

5. If WDFW receives an application that is complete for review purposes but does not fully mitigate direct and indirect impacts to fish life, the AHB shall identify where mitigation is deficient, and work with WSDOT within the 45-day review period to modify the application to ensure impacts to fish life are mitigated. If WSDOT disagrees and anticipates that mitigation measures cannot be agreed upon within the 45-day review period, WSDOT may request a suspension of the review period in writing or by email and continue working with WDFW. Either party may seek mediation of the disagreement (see Section X - Conflict Resolution) during the application review period.

6. If WDFW and WSDOT cannot resolve design and mitigation issues through direct discussions or mediation, the HPA will be issued with conditions to protect fish life that are considered unacceptable to WSDOT.

7. WDFW may issue a chronic danger HPA for a period of up to five years.

8. If the HPA is issued with conditions unacceptable to WSDOT, WSDOT may appeal WDFW’s decision within 30 days of HPA issuance or denial (See Conflict Resolution).

9. Approval by WDFW must be in writing, and must be received by WSDOT prior to conducting work.

**Processing Expedited HPAs**

1. Imminent danger situation
   a. If an imminent danger exists, either the County Legislative Authority or WDFW may declare that an imminent danger as defined in RCW 77.55.011(8) exists.
   b. WDFW must approve the application for expedited HPA within 15 days of receiving a complete, written application (RCW 77.55.021 (10)).
   c. If WDFW receives an application that is complete for review purposes but does not fully mitigate direct and indirect impacts to fish life, the AHB shall identify where mitigation is deficient, or how impacts might be avoided or reduced, and work with WSDOT within the 15-day review period to modify the application to ensure impacts to fish life are mitigated. Either party may initiate the Pre-Issuance Dispute Resolution process (see Section X - Conflict Resolution) during the 15-day review period. The 15-day review period cannot be suspended.
   d. If WDFW and WSDOT cannot resolve design and mitigation issues, either party may request mediation of the disagreement (see Section X - Conflict Resolution) within the 15-day review period. If direct discussions or mediation fail to resolve the disagreement, WDFW will issue the HPA with conditions to protect fish life that are considered unacceptable to WSDOT. WSDOT may appeal WDFW’s decision within 30 days of HPA issuance (See Section X - Conflict Resolution).

2. Significant hardship for applicant or unacceptable environmental damage situation
   a. If an imminent danger does not exist but processing an application for standard HPA will cause increased economic costs, unacceptable project delays, other hardships on
WSDOT, or unacceptable environmental damage, WSDOT may request WDFW to process the application for issuance of an expedited HPA.
b. WSDOT shall include written justification for the request with the application.
c. If WDFW concurs, the application will be processed per steps (1)(b) to (d) above.
d. If WDFW does not concur, the application will be processed as a standard HPA. The requirements of SEPA must be met before the application will be accepted for processing.

3. Expedited HPAs may be written for a period of not more than 60 days and cannot be renewed.
4. Approval by WDFW must be in writing, and must be received by WSDOT prior to conducting work.

**Processing Emergency HPAs**

1. While WSDOT is mandated the authority of RCW 47.28.170 and RCW 47.32.130 (1) to protect and restore highways in the event of an emergency, WSDOT emergency response actions that fall under WDFW jurisdiction shall be consistent with RCW 77.55.021 (8) and this MOA. In these cases, emergency means “an immediate threat to life, the public, property, or of environmental degradation, arising from weather or stream flow conditions or other natural conditions,” and immediate means: “…likely to occur within 24 hours or less.”
2. When an immediate threat exists, either the County Legislative Authority or WDFW may declare that an emergency as defined in RCW 77.55.011(6) exists.
3. If no valid HPA for the activity to address the declared emergency exists, WSDOT shall contact WDFW and WDFW shall immediately grant verbal approval before work begins. WSDOT shall specifically identify that a hydraulic project emergency exists.
   a. During normal business hours WSDOT will contact the AHB. If unable to contact the AHB, WSDOT will contact the WDFW regional office. If unable to contact either the AHB or WDFW regional office, WSDOT will call the Emergency Hotline at (360) 902-2537.
   b. After normal business hours WSDOT will call the Emergency Hotline at (360) 902-2537. The first WDFW emergency responder reached by the Hotline operator will contact WSDOT for emergency HPA approval.
4. Although RCW 77.55.021 (8) provides for verbal approval, by agreement, WSDOT will secure written emergency approval to the extent practicable while not impeding the emergency response. In these cases, WDFW will provide that written approval within 24 hours or less of request.
5. Written approval will be secured if work is not scheduled to start for at least 24 hours.
6. If verbal approval must be given, all conditions issued verbally shall be put in writing within 30 days of the verbal approval.
7. Whenever possible WDFW will conduct a site visit before issuing an emergency HPA.
8. Emergency work will typically be the minimum necessary to eliminate the emergency condition. Repairs will be limited to emergency fixes necessary to maintain the safety and serviceability of the facility.
9. If compensatory mitigation is necessary to properly protect fish life, such mitigation shall be applied per Section VIII or IX. Additional repair and mitigation work that may be necessary will require separate submittal of an application for a standard HPA.
10. WSDOT shall conduct its emergency repair work in the most environmentally sensitive manner possible, using the menu of Best Management Practices (BMPs) outlined in the most current version of the Regional Road Maintenance Endangered Species Act Program Guidelines, except as modified in the HPA.

Timelines for processing HPA applications and SEPA requirements are summarized in Table 1.

<table>
<thead>
<tr>
<th>Application Type</th>
<th>Review time by WDFW</th>
<th>Valid for</th>
<th>Renewable</th>
<th>SEPA Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Standard</strong></td>
<td>Typically, approve or deny within 45 days of receipt of complete, written</td>
<td>Maximum of 5 years</td>
<td>Yes, within 5 year time limit</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>application and notice of compliance with SEPA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Chronic Danger</strong></td>
<td>Typically, approve or deny within 45 days of receipt of complete, written</td>
<td>Maximum of 5 years</td>
<td>Yes, within 5 year time limit</td>
<td>Yes, if typical project</td>
</tr>
<tr>
<td></td>
<td>application and notice of compliance with SEPA. SEPA not required if a qualifying</td>
<td></td>
<td></td>
<td>No, if qualifying bioengineered bank protection project</td>
</tr>
<tr>
<td></td>
<td>bioengineered bank protection project under RCW 77.55.021 (11)(b)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Expedited</strong></td>
<td>Approve or deny within 15 days of receipt of complete, written application</td>
<td>Maximum of 60 days</td>
<td>Yes within 60 day time limit</td>
<td>No</td>
</tr>
<tr>
<td><strong>Emergency</strong></td>
<td>Immediately (i.e. same day as request)</td>
<td>For duration of emergency</td>
<td>Yes, if emergency declaration continues and emergency not yet completed</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>If work will not start for at least 24 hours, written HPA issued within 24 hours.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>If work to start immediately, issue verbal immediately, with written follow up</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>within 30 days</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1: HPA Timelines and SEPA Requirements
Figure 4: HPA Application Process

- **Inminent Danger?**
  - **Yes:** Allowed Inminent Danger Activities
    - Moving obstructions
    - Repair existing structures
    - Restore banks
    - Protect property
    - Protect fish resources
  - **No:**
    - **Yes:** Inminent Danger
      - **Yes:** Expeditied HPA
        - HPA shall be issued within 15 days following submittal of complete application. HPA valid for up to 60 days.
      - **No:** HPA Application Process
    - **No:**
      - **Yes:** Chronic Danger
        - Has county legislative authority declared a chronic danger — properties with at least two consecutive years of flooding or erosion that has damaged or has threatened to damage a major structure, water supply system, access to any road or highway?
          - **Yes:** Chronic danger HPA shall be issued by WDFW within 45 days following receipt of complete application.
          - **No:** SEPA compliance not required.
    - **No:**
      - **Yes:** Significant Hardship or Unacceptable Damage to the Environment?
        - Does the AHB agree that normal permit processing would result in a significant hardship or unacceptable damage to the environment?
          - **Yes:** SEPA compliance required.
          - **No:** SEPA compliance required except for qualifying engineered bank protection project.
      - **No:**
        - **Yes:** Written Emergency HPA
          - HPA provisions will be issued in writing by AHB and delivered to WSDOT within 24 hours, if emergency is declared by county or WDFW. Work must start within 15 days.
          - **No:**
            - **Yes:** Can written HPA be provided within 24 hours without involving emergency response?
              - **Yes:** Written Emergency HPA
                - HPA shall be issued by AHB immediately upon request if emergency is declared by county or WDFW. Work must start immediately upon receipt.
              - **No:** Written HPA provided within 24 hours following request. SEPA not required.
IV. Hydraulic Code Compliance

WSDOT Conduct of Hydraulic Project Work
Because WSDOT understands that it is obligated under Chapter 77.55 RCW to obtain and follow the conditions of an HPA for any hydraulic project it undertakes, WSDOT agrees that it will not begin work on any hydraulic project prior to an HPA being issued by WDFW. WSDOT also shall comply with all the conditions of the HPA and require any entity operating under contract with WSDOT to also comply with all the conditions of the HPA. If WSDOT or any of its contractors are confused about any HPA conditions they will consult with the AHB that wrote the HPA to clarify them (in writing if appropriate) prior to engaging in any work related to those conditions.

Streams and Ditches
WSDOT agrees that WDFW shall determine whether a water body is classified as a stream, a channelized stream, or ditch for HPA purposes and to abide by those determinations. The presence of fish in a ditch does not necessarily subject the ditch to jurisdiction under the Hydraulic Code.

To avoid and minimize downstream impacts to fish life, maintenance work by WSDOT in ditches shall follow the BMPs outlined in the most recent version of the Regional Road Maintenance ESA Program Guidelines.

Use of Fish Screens
WSDOT is obligated to, and shall protect fish life, using fish screens during hydraulic projects involving diversion devices in accordance with RCW 77.57.010.

WSDOT Contract Provisions
The HPA is an agreement between WSDOT and WDFW. WSDOT must incorporate the provisions of the HPA into the construction contract between WSDOT and its contractor. The incorporation of permit provisions into the contract provisions ensures the project is biddable, constructible, and enforceable by WSDOT. WSDOT shall incorporate all applicable conditions of the HPA into transportation project contract documents per WSDOT policy. A copy of the HPA and any plans or other documents required by the HPA shall also be retained on the jobsite.

Pre-Construction Meetings
The Area Habitat Biologist shall have opportunity to attend all appropriate preconstruction meetings between the contractor and WSDOT to discuss the provisions of the HPA. The purpose of these meetings is to review the requirements and expectations related to all aspects of the construction project, including environmental elements, with the contractor prior to beginning work.

Site Inspections
WDFW will coordinate site inspections of hydraulic projects with the WSDOT Project Engineer (PE). WDFW reserves the ability to conduct site inspections without notification.
All site visitors must abide by Department of Labor and Industry requirements for proper Personal Protective Equipment (PPE) while on site. This equipment generally consists of a hardhat, safety vest, and proper footwear. WDFW shall consult with the Project PE to ensure consistency with all applicable safety requirements for the job site.

**Modifying HPA Provisions**

If at any time after the HPA is issued the project design changes or circumstances arise during construction that require modifications to design or construction methods, WSDOT shall contact the WDFW AHB to discuss the changes to the design and potential modifications to the HPA that may be requested, and to determine if additional SEPA review is required. Requests for changes to any HPA must be submitted to WDFW in writing. Authorized changes to any HPA must be in writing.

The AHB shall notify WSDOT anytime conditions of the HPA may need to be modified due to changed conditions per RCW 77.55.021 (6). AHBs may modify or revoke an existing HPA when new biological or physical information indicates the need for such action. Such changes shall be discussed with WSDOT prior to issuing a revised permit, or revoking an existing permit.

**Monitoring and Reporting Compliance with HPAs**

WSDOT shall adhere to the Environmental Compliance Assurance Procedure (ECAP) to report, resolve, and prevent future non-compliance with laws, regulations, permits, and fish kill.

In the event of non-compliance, corrective actions shall be taken by WSDOT. WSDOT corrective actions in all cases may include stop work, improved BMPs, additional training, providing improved information (i.e. sensitive area maps) to WSDOT personnel, and conducting additional performance assessments. While WDFW will defer to WSDOT to conduct voluntary compliance, WDFW reserves the right to take any enforcement action that may be appropriate.

In the event that damage to fish life or fish habitat occurs as a result of work on WSDOT projects, WSDOT will consult with WDFW to develop approved plans to repair damage and shall complete repair projects as required by WDFW. WSDOT shall be held responsible for damage and restoration of fish life. WSDOT shall be responsible for working with the contractor to repair damage done to fish life and to prevent future violations. Work to repair damage will likely require additional HPA. Efforts should be made to resolve violations and complete mitigation prior to project completion.

WSDOT shall provide trained personnel to ensure compliance with all HPA provisions, and the appropriate use of the ECAP system. WSDOT Regions shall adhere to their Regional Environmental Compliance Plans, which will be provided by WSDOT upon request of WDFW, or are available on the WSDOT Environmental Program website at: [http://www.wsdot.wa.gov/Environment/EMS/ems_construction.htm](http://www.wsdot.wa.gov/Environment/EMS/ems_construction.htm)
V. Training

Representatives from WDFW (WSDOT liaison) and WSDOT (Permit Program Manager) will meet annually during the month of June to identify training opportunities for respective staff.

Training opportunities should ensure contractors, staff, and others have functional knowledge of:

- Ecological and transportation issues,
- WDFW and WSDOT programs, and
- Roles, responsibilities, and methods in terms of fieldwork, technical support, permits, and documentation.

Training of appropriate staff will be encouraged by both agencies. Training will be funding-dependent and conducted with an adaptive management philosophy with future needs addressed as questions and issues arise during program implementation. Cross-training will be integrated into existing training programs within both agencies as appropriate.

VI. Fish Passage

WSDOT is required to install and maintain all culverts, fishways, and bridges to provide unrestricted fish passage as per RCW 77.57.030. Design of fish barrier correction will be based on the latest version of WDFW’s document *Design of Road Culverts for Fish Passage* or its successor. A copy of the manual is available upon request to WDFW or online at: [http://wdfw.wa.gov/hab/engineer/cm/culvert_manual_final.pdf](http://wdfw.wa.gov/hab/engineer/cm/culvert_manual_final.pdf). Through use of this design guidance and in coordination with WDFW, it is expected that new highway construction at stream crossings will not result in additional barriers to fish passage. In addition to fish passage, passage for other aquatic and terrestrial species may be considered and addressed when designing crossing structures, but conditions for passage of these species will not be included in an HPA.

WSDOT recognizes that many existing highway culverts are barriers to fish passage and were installed years before we understood and recognized the needs of fish. WSDOT is committed to fixing its fish barrier culverts and does so using a three-pronged approach. First, WSDOT fixes many culverts through the construction of highway mobility and safety projects. Second, WSDOT operates an Environmental Retrofit program that funds stand alone fish barrier removal projects that targets correction of the highest priority culverts that would otherwise not be fixed by a highway construction project anytime in the near future. And third, some limited work on fish passage barrier correction and repair is done as part of road preservation projects.

WSDOT and WDFW formed a cooperative program in 1991, to inventory and assess WSDOT fish passage barriers statewide. WSDOT uses funds from its Highway Construction Program to contract with WDFW to inventory and prioritize for correction fish passage barriers at state highway crossings. WDFW identifies WSDOT culverts that are barriers to fish passage, assesses and quantifies the habitat upstream of each barrier and prioritizes
barriers. This prioritization is used for the stand-alone culvert retrofit program and does not apply to culverts fixed as part of highway construction projects. WSDOT and WDFW coordinate on the identification, scoping, design and construction of barrier correction projects. WDFW also evaluates and monitors the post construction effectiveness of fish barrier correction projects. Information on WSDOT culvert barriers is published annually by WDFW in the “WSDOT Fish Passage Inventory Progress and Performance Report”.

WSDOT’s Process for Correction of Fish Passage Barriers
The following sections outline WSDOT’s three-pronged approach to fixing fish barrier culverts.

1. Culverts fixed through highway safety and mobility construction projects

Many of WSDOT’s fish barrier culverts are corrected as a component of planned Safety and Mobility highway construction projects. Integration of fish passage correction with road project construction is a cost-effective way to accelerate barrier correction and reduce equipment and mobilization costs. The following list outlines the process WSDOT and WDFW uses to identify, select, and correct culvert barriers that will be fixed as part of highway construction projects.

- WSDOT Region contacts WSDOT Environmental Services Office (Fish Passage Coordinator) and WDFW Habitat Program early during the highway project scoping phase to request a list of culvert barriers that occur within the proposed project limits.
- WDFW Habitat Program sends the inventory list of barrier culverts to WSDOT and the AHB.
- As design work continues, WSDOT determines which culverts will be affected by the proposed highway construction work.
- If a transportation (safety or mobility) project involves work on a fish barrier culvert that requires an HPA, then WSDOT is required to fix the barrier as part of that project.
- If the highway project includes a fish barrier culvert within the project limits, but the culvert does not require an HPA, WSDOT is not required to fix the culvert, but may exercise discretion and fix the barrier on a case-by-case basis depending on the quality and quantity of the habitat gained and cost of the culvert replacement.
- In rare cases, an exception may be made if it is determined that a barrier correction requiring an HPA would provide an extremely minimal gain for fish and require extraordinary high cost. Consideration of this exception would require agreement with WDFW and would not be based on the presence of other human caused barriers in the stream. In this case, it is understood that WSDOT is ultimately responsible to correct the barrier in the future, and will be required to provide mitigation to compensate for the habitat loss resulting from the presence of the barrier until it is corrected.

2. Fish Passage Barriers Corrected Through the Stand Alone Fish Passage Retrofit (I-4) Program

WSDOT’s highest priority fish passage barriers are fixed as stand-alone projects, as identified by WDFW, and funded through WSDOT’s I-4 Environmental Retrofit funding category. Stand-alone fish barrier removal projects are prioritized by WDFW to target
sequential correction of barriers that have the largest gains in fish habitat and the greatest production benefits for both anadromous and resident fish species.

WDFW prepares a prioritized list of fish passage projects (called the Ten Year Plan) to be constructed and evaluated over the next five biennia. The Ten Year Plan is regularly updated as fish barrier correction projects are scoped and correction designs refined. Project scoping of the stand-alone barrier projects is a multi-phased process that is carried out by WDFW’s Habitat Program staff, Environmental Engineers, and AHBs, and staff from WSDOT’s Ecological Retrofit Program, Region Environmental staff and Region Project Offices. WSDOT and WDFW developed and agreed to follow the process and procedures identified in Figure 5. The I-4 Fish Barrier Retrofit process involves close coordination between WSDOT and WDFW and includes the following list of steps:

- WDFW, WSDOT, Tribes or others may identify candidate fish barrier projects.
- WDFW verifies and prioritizes barriers.
- WDFW biologists and engineers scope future fish passage projects and meet with WSDOT regional and headquarters staff to agree on conceptual designs and cost estimates.
- WSDOT project office scopes the fish barrier project based on the agreed upon conceptual design. WSDOT agrees that this is the project that will be put forward for funding and WDFW commits to permit this design.
- Agreed upon projects are put on the Ten-Year Plan for funding by the I-4 Environmental Retrofit Program.
- WSDOT prepares plans, with WDFW approval, and contractors build the fish passage projects.
- WDFW Habitat Program performs a final inspection of the fish passage project and removes the barrier from the master inventory list.

3. Fish Passage Barriers Corrected Through Other WSDOT Programs

WSDOT has other program categories such as the use of Emergency Funds or under the Preservation program in which culverts are occasionally corrected at the discretion of WSDOT.

- Emergency Maintenance Work - Culverts that are repaired during a Maintenance emergency follow the procedures outlined in Section VIII - Mitigation for Impacts to Fish Life and Fish Habitat Resulting from Routine and Emergency Maintenance Work.
- Highway Preservation Program - The purpose of highway preservation projects is to preserve the roadway, and fish barriers are typically not fixed during construction of these projects (paving is an example of a typical preservation project). This program does allow for minor, spot safety improvements, with a dollar limit of $25,000. Low cost barriers may be fixed under this allowance, at the discretion of WSDOT.
VII. Chronic Environmental Deficiency Program (CED)

Chronic environmental deficiencies (CEDs) are locations along the state highway system where recent, frequent, and chronic maintenance and/or repairs to the state transportation infrastructure are causing impacts to fish and/or fish habitat. In 2002, WSDOT established a collaborative process with WDFW to move away from the repetitive repair of infrastructure and instead, concentrate on long-term solutions to optimize environmental improvements for fish and fish habitat, while also addressing transportation infrastructure needs.

WDFW and WSDOT are supportive of, and committed to the overall goals of the CED Program. The program, even though relatively young, has already resulted in correction of some significant problems that may not have otherwise been possible to correct. WDFW and WSDOT recognize that there may be relatively few projects on the CED list that continue to require frequent repairs for which WDFW would typically require compensatory mitigation. WDFW and WSDOT agree to jointly discuss at the administrative level the possibility of accelerating the placement of those projects higher on the priority list for funding and construction.

WSDOT uses funds from its Highway Construction Improvement (I-4) Program to identify CED projects on state highways. A repetitive maintenance project becomes a CED when there are at least three or more repairs or maintenance activities to the highway or associated infrastructure within a ten-year period that are causing impacts to fish and/or fish habitat. WSDOT and WDFW Habitat Program coordinate on the identification, scoping, design, and construction of CED correction projects. WSDOT funds CED correction projects through a stand-alone retrofit program, as part of highway safety and mobility construction projects, and occasionally through other programs such as highway preservation projects or emergency funds.

No later than March 1 of each year, WSDOT will produce and distribute to WDFW an annual report of the CED Program, including the status and history of funded projects, a description of proposed projects, and details of completed projects.

WSDOT’s Process for Correction of CEDs
The following sections outline WSDOT’s process for fixing CEDs.

1. Deficiencies fixed through highway safety and mobility construction projects

CED projects may be corrected as a component of planned Safety and Mobility highway projects. Integration of a CED correction with a road construction project is a cost-effective way to accelerate correction and reduce equipment mobilization costs. The following list outlines the process WSDOT and WDFW use to identify, select, and correct deficiencies that will be fixed as part of highway construction projects.

- WSDOT project office contacts WSDOT Environmental Services Office CED Coordinator early during the highway project scoping phase to request a site visit to determine if there is a potential for the project to have a CED site within the project limits (i.e. typically the project is adjacent to or crosses a river or stream).
CED Coordinator sends the list of identified deficiencies located within or adjacent to the project area to the Project Office, AHB, Habitat Program staff, and the Regional Maintenance Environmental Coordinator (RMEC).

As design work continues, WSDOT project office determines which deficiencies would be corrected during the proposed highway construction work.

A scope of work for a reach analysis is prepared by WSDOT (for those sites that meet the CED criteria) and reviewed by WDFW.

The reach analysis is then conducted by WSDOT technical staff and, upon completion, reviewed by WDFW Habitat Program.

WSDOT project office will work with CED Coordinator to develop the CED correction design.

WSDOT and WDFW coordinate on design and construction review.

2. CEDs Corrected Through the Stand Alone Retrofit (I-4) Program

WSDOT’s CED stand-alone ecological retrofit program targets correction of the highest priority deficiencies that would otherwise not be fixed by a highway construction project anytime in the near future. Project scoping of CED stand-alone deficiency projects is a multi-phased process that is led by the WSDOT’s CED Coordinator and carried out by WSDOT technical staff (hydrology, engineering and biology), WDFW Habitat Program staff, AHBs, WSDOT Region Environmental staff, and Region Project Office staff. WSDOT and WDFW developed and agree to follow the I-4 CED Project process outlined in the process and procedures identified in Figure 6. The I-4 CED process involves close coordination between WSDOT and WDFW.

Candidate CED sites are nominated by WSDOT, WDFW, Tribes or others. Each nomination is screened by WSDOT to determine if the site meets the CED program criteria. To qualify three factors must be present: (1) adverse habitat conditions related to fish or fish habitat are associated with repetitive repairs to WSDOT infrastructure, (2) the infrastructure at the site has a history of maintenance actions within the last ten years, and (3) the infrastructure has been repaired and/or maintained at least three times within the last 10 years.

A scope of work for a reach analysis is prepared by WSDOT (for those sites that meet the CED criteria) and reviewed by WDFW.

The reach analysis is then conducted by WSDOT technical staff and upon completion reviewed by WDFW Habitat Program.

A Priority Index (PI) is assigned to each CED after completion of the Reach Analysis.

CED Coordinator schedules a pre-scoping meeting on site for all stakeholders. Outcome of the meeting is completion of a stakeholder concurrence form.

Upon signing of concurrence form the final reach analysis is forwarded to WSDOT region for project development, programming, cost estimates and scheduling.

Funding is received and project gets assigned to a WSDOT project office.

Project constructed with continual oversight from CED Coordinator and WDFW.

Project office conducts effectiveness monitoring measured through reduction in maintenance.
3. **CEDs corrected through other WSDOT Programs**

WSDOT has other program categories where CEDs are occasionally corrected at the discretion of WSDOT.

- **Highway Preservation Program** - The purpose of highway preservation projects, such as paving projects, is to preserve the roadway, and CEDs are typically not fixed during construction of these projects. This program does allow for minor, spot safety improvements, with a dollar limit of $25,000. Low cost repetitive deficiencies may be fixed under this allowance, at the discretion of WSDOT.

- **Emergency funds** - CED projects are occasionally fixed through use of state or federal emergency dollars.
Figure 6: Chronic Environmental Deficiency (CED) Process - I4 Program
VIII. Mitigation for Impacts to Fish Life and Fish Habitat Resulting From Routine and Emergency Maintenance Work

WSDOT and WDFW agree to the following when conditioning HPAs for routine (scheduled), unscheduled and emergency maintenance work:

1. HPA conditions requiring mitigation will be consistent with WAC 220-110-020 (54) “Mitigation”.
2. WSDOT will incorporate Best Management Practices for avoiding and minimizing impacts into all maintenance activities. In most instances, measures to avoid and minimize impacts to fish life will be adequate mitigation for maintenance work. WSDOT will apply avoidance and minimization measures into maintenance activities following the Regional Road Maintenance ESA Program Guidelines or as directed in the Hydraulic Project Approval. Column 3 of the Table in Appendix A identifies many of the avoidance and minimization measures that may be appropriately applied to the listed maintenance activities in order to protect fish life.
3. In relatively infrequent instances, WDFW may condition an HPA to require compensatory mitigation for maintenance activities for which avoidance and minimization measures do not sufficiently mitigate impacts to fish life. Column 4 of the Table in Appendix A identifies many types of compensatory mitigation that may be applied to certain maintenance activities. WSDOT may not be able to complete the compensatory mitigation listed in Column 4 as a part of and/or at the same time as the proposed maintenance activity because the mitigation listed requires a Corps permit, additional engineering/design beyond the scope of the proposed activity, additional resources and expertise beyond what is available to WSDOT Maintenance, and/or acceptance of liability or risk greater than what is common practice. Area Habitat Biologists proposing compensatory mitigation for maintenance activities will first consult their Regional Habitat Program Manager and the Habitat Program at WDFW Headquarters. When WDFW determines that compensatory mitigation is required for a maintenance activity (e.g. Appendix A Mitigation Table Column 4), compensatory mitigation will be applied as follows, in sequential order:
   a. Defer to Existing CED Project: If the maintenance activity occurs on a structure or facility that is funded under the I-4 Chronic Environmental Deficiency (CED) Program, defer the compensatory mitigation to the CED project. The HPA will be conditioned with a note that the mitigation will be completed through the CED project.
   b. Defer to CED Project in Watershed: For maintenance work occurring on a structure or facility that is located within the same Water Resource Inventory Area (WRIA) as a project funded under the CED program, WDFW will consider whether the compensatory mitigation for the maintenance activity can be deferred to that CED project. WDFW will consider the value of the CED project in relation to the compensatory mitigation triggered by the maintenance activity. If WDFW deems that this type of compensatory mitigation is appropriate, the HPA for the maintenance
activity will be conditioned with a note that the mitigation will be completed through an off-site project listed in CED program.

c. Defer to New Project Added to CED List: If the options listed above in a and b cannot be implemented, the WDFW will coordinate with WSDOT’s CED Program Manager to determine whether a new project should be added to the I-4 CED Program to cover the compensatory mitigation of the maintenance activity. WDFW and WSDOT will consider whether the compensatory mitigation needed for the maintenance activity is critical enough that it warrants listing on the CED program even if it does not meet the CED project criteria of three repairs in 10 years. If the WDFW and WSDOT agree to add a new project to the CED program list, the HPA will be conditioned with a note that the mitigation will be completed through the new CED project.

d. Elevate to WDFW Habitat Program and WSDOT Environmental and Engineering Services for Resolution: If the options listed above in a-c cannot be implemented, the executive managers within the WDFW Habitat Program and WSDOT Environmental and Engineering Services will consult to determine how the compensatory mitigation for the maintenance activity will be addressed. Options for consideration may include exploring whether there are other funded WSDOT projects in the same WRIA that could be expanded upon to provide the compensatory mitigation of the maintenance activity or to fund the mitigation through an existing program budget, such as the I-4 Environmental Retrofits/CED Program. Other options may also be considered. The final decision of the executive managers will be included as a condition of the HPA for the maintenance activity.

IX. Work Related To Emergency Culvert and Barrier Replacement

Work involving culvert and barrier replacement shall be consistent with the following Statement of Principles Regarding Barnes Creek and Other WSDOT Culvert/Barrier Replacement Work.

During a meeting held on February 23, 2006, John Conrad, WSDOT Assistant Secretary for Engineering and Regional Operations, and Larry Peck, WDFW Deputy Director, committed to the following principles:

1. Replacement or lengthening of a culvert or other barrier, whether pursuant to an emergency or otherwise, is ordinarily not “maintenance” for purposes of WDFW fish passage requirements, and ordinarily requires that the replacement culvert or barrier meet current fish passage requirements as a condition of the HPA. Replacement means replacing the entire culvert or slip-lining the entire culvert. However, if WSDOT takes some action that is less than replacement or lengthening in the course of a repair, the life of that culvert is ordinarily not over, and the HPA for the repair or maintenance work associated with that existing culvert will ordinarily not require that the existing culvert be replaced or upgraded to meet current fish passage requirements.
If there is a partial culvert replacement that is followed by a subsequent project(s) that replaces the remainder of the culvert within 10 years, the culvert must meet current fish passage or alternative mitigation requirements and those requirements will be included in the HPA for the subsequent project.

2. WDFW has some discretion regarding fish passage requirements, but cannot relieve the barrier owner of the obligation to provide fish passage when legally required.

3. WDFW may defer enforcement of fish passage requirements when WDFW concludes that compensatory mitigation in lieu of providing for immediate fish passage at the culvert or barrier will be more beneficial to fish life. Given that the conditions in an HPA must provide proper protection of fish life and must be reasonable and in proportion to the impacts of the proposed work, when a culvert or barrier is replaced, if providing for fish passage will produce minimal benefits to fish life relative to the cost of such work, WDFW and WSDOT staff will carefully consider alternatives for compensatory mitigation that may be more beneficial for fish life. In making these decisions, WDFW will consult with WSDOT to determine whether fish passage requirements can be met.

During emergency culvert replacement, the consultation will occur before the emergency HPA is issued. In those situations where fish passage requirements can be immediately achieved as part of the emergency culvert replacement, the emergency HPA will be so conditioned. In those situations where fish passage requirements cannot be achieved as part of the emergency culvert replacement, the HPA will require that a fish passage retrofit or compensatory mitigation acceptable to WDFW in lieu of such retrofit be conducted as a follow-up action to the emergency response.

In the cases where fish passage cannot be provided during the course of the emergency response, regulatory staff and fish passage program staff from both WSDOT and WDFW will jointly conduct a follow up review to determine whether a fish passage retrofit or compensatory mitigation is the most appropriate course of action. The follow-up review will be conducted within thirty days of issuance of the emergency HPA in the event that the habitat has been assessed using current WDFW protocol, and will be conducted within sixty days of issuance of the emergency HPA in the event that the habitat has not been assessed using current WDFW protocol. The protocol for the assessment is set forth in the Fish Passage Barrier and Surface Water Diversion Screening Assessment and Prioritization Manual.

4. Compensatory mitigation that is provided for deferring enforcement of an obligation to correct an on-site barrier may be in the form of on-site or off-site mitigation, restoration or enhancement work. WDFW prefers on-site mitigation work, but may approve off-site work if greater resource benefits would be realized. When evaluating compensatory mitigation alternatives, the mitigation should compensate for the future habitat loss measured from the date of installation of the replacement culvert that does not comply with fish passage requirements to the date that the culvert or barrier is corrected. Mitigation requirements will compensate for fish habitat lost upstream from the WSDOT culvert to the following locations:
a. To the next culvert that does not meet WDFW fish passage requirements and that is not scheduled to be retrofitted to meet WDFW fish passage requirements in the next 10 years, or
b. If subparagraph a. does not apply, to the first natural barrier blocking fish passage, or
c. If neither subparagraphs a. nor b. apply, to the end of upstream fish habitat.

Preference shall be given to the selection of mitigation projects that have demonstrated success rates and are self-sustaining.

5. If continued maintenance of the mitigation is necessary to derive the continued benefit for fish life, WSDOT will be responsible for such maintenance, and the mitigation agreement will specify who will conduct such maintenance. If the mitigation site is on WSDOT property, WSDOT will perform the maintenance. If the mitigation site is not on WSDOT property, the agencies will attempt to reach agreement on alternative arrangements for on-going maintenance.

6. In evaluating whether to accept compensatory mitigation in lieu of requiring immediate fish passage as a condition of an HPA, WDFW and WSDOT will take into consideration the projects, priorities, schedules, and budgets for the I-4 fish passage retrofit program.

7. WDFW and WSDOT recognize that there may be circumstances in which WDFW is unwilling to accept alternative compensatory mitigation in lieu of replacement of a culvert or barrier with a fish passable structure or there may be circumstances in which WSDOT disagrees with WDFW’s imposition of a requirement for fish passage. The agencies each reserve the right to disagree in such circumstances, and to assert their respective positions. However, the agencies hope that by setting forth the principles above, such disagreements will be avoided.

8. WDFW and WSDOT staff shall revise the 2002 MOA between WDFW and WSDOT Construction of Projects in State Waters, consistent with the above principles. Consistent with the MOA, WDFW or WSDOT may withdraw its commitment to these principles upon sixty days written notice to the other party.

In regard to Barnes Creek, WDFW is willing to accept off-site compensatory mitigation consistent with the above principles. WSDOT supports off-site compensatory mitigation of this situation. WDFW and WSDOT staff are directed to re-engage in discussions of alternatives, and to attempt to reach agreement on an appropriate mitigation scope of work by March 27, 2006.

Dated this 27th day of April, 2006.

John Conrad
Assistant Secretary
Washington State
Department of Transportation

Larry Peck
Deputy Director
Washington Department of
Fish and Wildlife
X. Conflict Resolution

It is expected that conflicts will be resolved at the field level in a cooperative and professional manner.

When issues associated with a WSDOT-proposed hydraulic project cannot be resolved at the local level, personnel from either agency may request that the WDFW/WSDOT liaison mediate discussions, or may proceed up their agency chain-of-command to resolve them before an HPA is issued or denied. If mediation or chain-of-command discussion is successful in resolving the issues, WDFW and WSDOT shall implement any agreements reached. If agreement is not reached, WDFW will issue or deny the HPA, as appropriate. WSDOT may request an informal appeal, per WAC 220-110-340 with WDFW in writing within 30 days of the issuance or denial of an HPA for that project. Should informal appeal fail to resolve the dispute, WSDOT may request a formal appeal of the issuance or denial of the HPA, per WAC 220-110-350.

If disputes associated with the Fish Passage Retrofit Program and the CED program cannot be resolved at the local level, personnel from either agency may proceed up their agency chain-of-command to resolve it. WDFW and WSDOT shall implement any agreements reached.

XI. Duration of MOA

This MOA becomes effective upon signature by both parties and remains in effect until:
1. Either party terminates the agreement with 60 days written notice to the other party, or
2. Both parties sign a new MOA.

The conditions of this MOA may also be reassessed at any time when:
1. A condition or section of this MOA is found to be ineffective, or
2. The workload for either party under this MOA becomes problematic.

Either agency may propose changes at any time by supplying a copy of the proposed changes to the other agency for review. The agencies shall meet and discuss proposed revisions within 60-days. No revision to this MOA is valid except by written amendment signed by both parties.
Memorandum of Agreement
Washington State Department of Fish and Wildlife
Washington State Department of Transportation

APPROVED AS TO FORM

Kathryn B. McLeod
Assistant Attorney General
Department of Fish and Wildlife
Date: 5/30/08

Steve Klassen
Assistant Attorney General
Department of Transportation
Date: 5/30/08

[Signature]
ASSISTANT DIRECTOR
HABITAT PROGRAM
Department of Fish and Wildlife
Date: 5/30/08

[Signature]
DIRECTOR
ENVIRONMENTAL SERVICES OFFICE
Department of Transportation
Date: 5/30/08

[Signature]
L. Brooks, C.P.M.
Contracts Officer

Memorandum of Agreement
Page 34
Appendix A
Maintenance Mitigation Tables
(Applies to Section VIII 2 and 3)

<table>
<thead>
<tr>
<th>Maintenance Activity</th>
<th>Potential Impacts</th>
<th>Potential Mitigation WSDOT Maintenance Program Can Do</th>
<th>Potential Mitigation WSDOT Cannot Do and Will Require Deferral and Special Funding Per Section XIII</th>
</tr>
</thead>
</table>
| **Culvert Repair / Fix**
(Bent culvert ends, sinkholes, repairing protective armoring, spall repair, and splash pads, and replacing eroded fill material.) | • Extending the life of a structure.  
• Fish passage  
  o Long term blockage  
  o Temporary migration delay  
• Changed hydraulics (in response to watershed changes)  
• Perpetuation of depressed baseline conditions  
  o channel simplification,  
  o undersized for current watershed hydrology  
• Direct loss of riparian habitat due to temporary work areas  
• In channel loss of aquatic habitat due to footprint change.  
• Redd scour  
• Direct fish impacts  
  o Stranding  
  o Harm, harass, etc.  
• Water Quality Impacts | • GHPA for culvert maintenance  
• Woody debris placements (non-engineered/not needing a corps permit)—Design based on AHB recommendation.  
• Fish moving / exclusion  
• Temporary by-pass  
• TESC  
• Riparian planting  
• Timing of work  
• Equipment limitations  
• Water quality provisions  
• Notification requirements  
• Annual Reporting for GHPAs  
• Spawning gravel above OHWL.  
• Timed/staged ramp-down release of backed-up water. | • Woody debris placements involving engineering and/or placement of backfill\(^3,4,5\)  
• Grade control structure new\(^3,4\).  
• Spawning gravel below OHWL\(^3\)  
• Structural upgrade/Betterment\(^3,4,5\)  
  o Requirement to meet 100 yr flood event  
  o Fish passage  
  o Double pipe to Single  
• Monitoring of fish life and/or habitat\(^5\)  
• Perpetual maintenance of mitigation structure  
• Mitigation off of Right-of-Way\(^6\) |

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\(^3\) Requires a Corps permit  
\(^4\) New engineering/design required  
\(^5\) Lack of resources and expertise  
\(^6\) Liability; risk; common practice
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<tbody>
<tr>
<td><strong>Culvert Cleaning</strong></td>
<td>• Extending the life of a structure.</td>
<td>• GHPA for culvert maintenance</td>
<td>• Woody debris placements involving engineering and/or placement of backfill&lt;sup&gt;3,4,5&lt;/sup&gt;</td>
</tr>
</tbody>
</table>
| (May include but not limited to vactoring, jetting, mechanical and manual, and rodding). | • Fish passage  
  o Long term blockage  
  o Temporary migration delay | • Woody debris placements (non-engineered/not needing a corps permit)—Design based on AHB recommendation. | • Grade control structure new<sup>3,4</sup>. |
| | • Perpetuation of depressed baseline conditions  
  o channel simplification,  
  o undersized for current watershed hydrology | • Fish moving / exclusion  
  • Temporary by-pass  
  • TESC  
  • Timing of work  
  • Equipment limitations  
  • Water quality provisions  
  • Notification requirements  
  • Annual Reporting for GHPAs  
  • Dig temporary low-flow channel to address temporary sump dewatering.  
  • Spawning gravel above OHWL.  
  • Timed/staged ramp-down release of backed-up water. | • Spawning gravel below OHWL<sup>3</sup>. |
| | • Direct loss of riparian habitat due to temporary work areas  
  • Redd scour  
  • Direct fish impacts  
  o Stranding  
  o Harm, harass, etc.  
  • Water Quality Impacts  
  • Loss of coarse/fine sediments & wood.  
  • Temporary dewatering of upstream of work area due to sump. | | • Structural upgrade/Betterment<sup>3,4,5</sup>  
  o Requirement to meet 100 yr flood event  
  o Fish passage  
  o Double pipe to Single |
| | | • Monitoring of fish life and/or habitat | • Monitoring of fish life and/or habitat<sup>6</sup>. |
| | | • Perpetual maintenance of mitigation structure | • Perpetual maintenance of mitigation structure |
| | | • Mitigation off of Right-of-Way<sup>6</sup> | • Mitigation off of Right-of-Way<sup>6</sup>. |

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<sup>3</sup> Requires a Corps permit  
<sup>4</sup> New engineering/design required  
<sup>5</sup> Lack of resources and expertise  
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</tr>
</thead>
</table>
| **Channel cleaning**  | • Extending the life of a structure.  
|                       | • Fish passage  
|                       |   o Long term blockage  
|                       |   o Temporary migration delay  
|                       | • Changed hydraulics (in response to watershed changes)  
|                       | • Perpetuation of depressed baseline conditions  
|                       |   o Channel simplification,  
|                       |   o Undersized for current watershed hydrology  
|                       | • Direct loss of riparian habitat due to temporary work areas  
|                       | • In channel loss of aquatic habitat due to footprint change.  
|                       | • Redd scour  
|                       | • Direct fish impacts  
|                       |   o Stranding  
|                       |   o Harm, harass, etc.  
|                       | • Water Quality Impacts  
|                       | • Loss of coarse/fine sediments & wood.  | • GHPA for channelized stream maintenance  
|                       | • Maintenance of existing mitigation structures (e.g., maintenance of fishways that were constructed as part of mitigation)  
|                       | • Fish moving and exclusion  
|                       | • Temporary by-pass  
|                       | • TESC  
|                       | • Riparian planting  
|                       | • Timing of work  
|                       | • Equipment limitations  
|                       | • Water quality provisions  
|                       | • Notification requirements  
|                       | • Woody debris placements (non-engineered/not needing a corps permit)—Design based on AHB recommendation.  
|                       | • Annual Reporting for GHPAs  
|                       | • Short-term reporting for individual HPAs (e.g., fish exclusion or quantity of fill removed)  | • Timed/staged ramp-down release of backed-up water.  
|                       | | • Woody debris placements involving engineering and/or placement of backfill\(^{3,4,5}\)  
|                       | | • Grade control structure new\(^4,5\)  
|                       | | • Spawning gravel below OHWL\(^3\)  
|                       | | • Structural upgrade/Betterment\(^3,4,5\)  
|                       | |   o Requirement to meet 100 yr flood event  
|                       | | • Monitoring of fish life and/or habitat\(^5\)  
|                       | | • Studies and Surveys\(^5\)  
|                       | | • Mitigation off the Right-of-Way\(^6\)  |

3 Requires a Corps permit  
4 New engineering/design required  
5 Lack of resources and expertise  
6 Liability; risk; common practice
**Maintenance Activity**

### Slide and Slope Repairs

(May include but not limited to slide/rock debris containment, rip rap and cribbing repair, and shoulder washout repair)

<table>
<thead>
<tr>
<th>Potential Impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Extending the life of a structure.</td>
</tr>
<tr>
<td>• Changed hydraulics</td>
</tr>
<tr>
<td>• Perpetuation of depressed baseline conditions o channel simplification,</td>
</tr>
<tr>
<td>• Direct loss of riparian habitat due to temporary work areas</td>
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<tr>
<td>• In channel loss of aquatic habitat due to footprint change.</td>
</tr>
<tr>
<td>• Direct fish impacts o Harm, harass, etc.</td>
</tr>
<tr>
<td>• Water Quality Impacts</td>
</tr>
<tr>
<td>• Loss of wood.</td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>Potential Mitigation WSDOT Maintenance Program Can Do</th>
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</thead>
<tbody>
<tr>
<td>• Maintenance of existing mitigation structures (e.g. maintenance of fishways that were constructed as part of mitigation)</td>
</tr>
<tr>
<td>• Fish moving / exclusion</td>
</tr>
<tr>
<td>• Temporary by-pass</td>
</tr>
<tr>
<td>• TESC</td>
</tr>
<tr>
<td>• Riparian planting</td>
</tr>
<tr>
<td>• Timing of work</td>
</tr>
<tr>
<td>• Equipment limitations</td>
</tr>
<tr>
<td>• Water quality provisions</td>
</tr>
<tr>
<td>• Notification requirements</td>
</tr>
<tr>
<td>• Woody debris placements (non-engineered/not needing a corps permit)—Design based on AHB recommendation.</td>
</tr>
<tr>
<td>• Annual Reporting for GHPAs</td>
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<tr>
<td>• Short term reporting for individual HPAs (e.g. fish exclusion or quantity of fill removed)</td>
</tr>
<tr>
<td>• Spawning gravel above OHWL</td>
</tr>
<tr>
<td>• Timed/staged ramp-down release of backed-up water.</td>
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</thead>
<tbody>
<tr>
<td>• Woody debris placements involving engineering and/or placement of backfill3,4,5</td>
</tr>
<tr>
<td>• Grade control structure new4,5</td>
</tr>
<tr>
<td>• Spawning gravel below OHWL3</td>
</tr>
<tr>
<td>• Structural upgrade/betterment3,4,5</td>
</tr>
<tr>
<td>o Requirement to meet 100 yr flood event</td>
</tr>
<tr>
<td>• Monitoring of fish life and/or habitat5</td>
</tr>
<tr>
<td>• Studies and Surveys5</td>
</tr>
<tr>
<td>• Mitigation off the Right-of-Way6</td>
</tr>
</tbody>
</table>

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3 Requires a Corps permit
4 New engineering/design required
5 Lack of resources and expertise
6 Liability; risk; common practice
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</table>
| **Streambank Stabilization** | • Extending the life of a structure.  
• Changed hydraulics  
• Perpetuation of depressed baseline conditions  
  o channel simplification,  
• Direct loss of riparian habitat due to temporary work areas  
• In channel loss of aquatic habitat due to footprint change.  
• Direct fish impacts  
  o Harm, harass, etc.  
• Water Quality Impacts  
• Loss of coarse/fine sediments & wood. | • Maintenance of existing mitigation structures (e.g. maintenance of fishways that were constructed as part of mitigation)  
• Fish moving / exclusion  
• Temporary by-pass  
• TESC  
• Riparian planting  
• Timing of work  
• Equipment limitations  
• Water quality provisions  
• Notification requirements  
• Woody debris placements (non-engineered/not needing a corps permit)—Design based on AHB recommendation.  
• Short-term reporting for individual HPAs (e.g. fish exclusion or quantity of fill removed)  
• Spawning gravel above OHWL  
• Timed/staged ramp-down release of backed-up water. | • Woody debris placement involving engineering and/or placement of backfills\(^3\)\(^5\)\(^4\)  
• Grade control structure new\(^4\)\(^5\)  
• Spawning gravel below OHWL\(^3\)  
• Structural upgrade/betterment\(^3\)\(^4\)\(^5\)  
  o Requirement to meet 100 yr flood event  
• Monitoring of fish life and/or habitat\(^5\)  
• Studies and Surveys\(^5\)  
• Mitigation off the Right-of-Way\(^6\)  
• Perpetual maintenance of mitigation structure |

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\(^3\) Requires a Corps permit  
\(^4\) New engineering/design required  
\(^5\) Lack of resources and expertise  
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</tr>
</thead>
</table>
| **Rip rap and cribbing repairs** | • Extending the life of a structure.  
• Changed hydraulics  
• Perpetuation of depressed baseline conditions  
  ○ channel simplification,  
• Direct loss of riparian habitat due to temporary work areas  
• In channel loss of aquatic habitat due to footprint change.  
• Direct fish impacts  
  ○ Harm, harass, etc.  
• Water Quality Impacts  
• Loss of coarse/fine sediments & wood.  | • Maintenance of existing mitigation structures (e.g. maintenance of fishways that were constructed as part of mitigation)  
• Fish moving / exclusion  
• Temporary by-pass  
• TESC  
• Riparian planting  
• Timing of work  
• Equipment limitations  
• Water quality provisions  
• Notification requirements  
• Woody debris placements (non-engineered/not needing a corps permit)—Design based on AHB recommendation.  
• Short-term reporting for individual HPAs (e.g. fish exclusion or quantity of fill removed)  
• Spawning gravel above OHWL  
• Timed/staged ramp-down release of backed-up water.  | • Woody debris placements involving engineering and/or placement of backfills 3,4,5  
• Grade control structure new 3,4  
• Spawning gravel below OHWL 3  
• Structural upgrade/Betterment 3,4,5  
  ○ Requirement to meet 100 yr flood event  
• Monitoring of fish life and/or habitat 5  
• Studies and Surveys 5  
• Mitigation off the Right-of-Way 6  
• Perpetual maintenance of mitigation structure  |

3 Requires a Corps permit  
4 New engineering/design required  
5 Lack of resources and expertise  
6 Liability; risk; common practice
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</tr>
</thead>
</table>
| Minor culvert extension and sump digging and maintenance (minor is defined as an activity that has little to no potential for changing the hydraulics or habitat structure of the system) | - Extending the life of a structure.  
- Fish passage  
  - Long term blockage  
  - Temporary migration delay  
- Changed hydraulics (in response to watershed changes)  
- Perpetuation of depressed baseline conditions  
  - Channel simplification, undersized for current watershed hydrology  
- Direct loss of riparian habitat due to temporary work areas  
- In channel loss of aquatic habitat due to footprint change.  
- Redd scour  
- Direct fish impacts  
  - Stranding  
  - Harm, harass, etc.  
- Water Quality Impacts  
- Loss of coarse/fine sediments & wood.  
- Temporary dewatering of upstream of work area due to sump. | - Maintenance of existing mitigation structures (e.g. maintenance of fishways that were constructed as part of mitigation)  
- Fish moving / exclusion  
- Temporary by-pass  
- TESC  
- Riparian planting  
- Timing of work  
- Equipment limitations  
- Water quality provisions  
- Notification requirements  
- Woody debris placements (non-engineered/not needing a corps permit)—Design based on AHB recommendation.  
- Short-term reporting for individual HPAs (e.g. fish exclusion or quantity of fill removed)  
- Spawning gravel above OHWL  
- Timed/staged ramp-down release of backed-up water. | - Woody debris placements involving engineering and/or placement of backfills\(^3\),\(^4\),\(^5\)  
- Grade control structure new\(^3\),\(^4\)  
- Spawning gravel below OHWL\(^3\)  
- Structural upgrade/betterment\(^3\),\(^4\),\(^5\)  
  - Requirement to meet 100 yr flood event  
  - Fish passage  
- Monitoring of fish life and/or habitat\(^5\)  
- Studies and Surveys\(^5\)  
- Mitigation off the Right-of-Way\(^6\) |

\(^3\) Requires a Corps permit  
\(^4\) New engineering/design required  
\(^5\) Lack of resources and expertise  
\(^6\) Liability; risk; common practice