

**WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
WETLAND COMPENSATION BANK PROGRAM
MEMORANDUM OF AGREEMENT**

FEBRUARY 15, 1994

SIGNATORIES

**US Army Corps of Engineers
US Environmental Protection Agency
US Fish and Wildlife Service
National Marine Fisheries Service
Federal Highway Administration
Washington State Department of Ecology
Washington State Department of Fish and Wildlife
Washington State Department of Transportation**

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I. PURPOSE AND SCOPE OF THE AGREEMENT

A. PURPOSE

The purpose of the Washington State Department of Transportation Wetland Compensation Bank Program Memorandum of Agreement (Agreement) is to set forth the principles and procedures that all signatories to the Agreement will adhere to in establishing, implementing, and maintaining the Washington State Department of Transportation Wetland Compensation Bank Program (Program).

Signatories to the Agreement are:

1. US Army Corps of Engineers (COE)
2. US Environmental Protection Agency (USEPA)
3. US Fish and Wildlife Service (USFWS)
4. National Marine Fisheries Service (NMFS)
5. Federal Highway Administration (FHWA)
6. Washington State Department of Ecology (Ecology)
7. Washington State Department of Fish and Wildlife (WDFW)
8. Washington State Department of Transportation (WSDOT)

B. SCOPE

The Agreement applies only to activities initiated, accomplished, or sponsored by the WSDOT. Specifically, those activities are:

1. WSDOT activities, as defined in the Agreement, adversely impacting a wetland.
2. Identification and selection of a Candidate Wetland Compensation Bank Site (Candidate WCB Site).
3. Proposals to develop, as defined in the Agreement, a Candidate WCB Site.
4. Development of a Candidate WCB Site.
5. Management, maintenance, and protection, as defined in the Agreement, of a Wetland Compensation Bank Site (WCB Site).
6. Inspection and monitoring, as defined in the Agreement, of a WCB Site.
7. Assessments, as defined in the Agreement, of a WCB Site.
8. WSDOT proposals to compensate for adverse impacts to wetlands, after mitigation sequencing has occurred, by using credits available at a WCB Site.
9. Review and permit actions by resource and regulatory agencies associated with WSDOT activities adversely impacting wetlands.

II. RELATIONSHIP OF THE AGREEMENT TO EXISTING AUTHORITIES

The Agreement recognizes the following existing authorities:

1. National Environmental Policy Act (42 USC 4321 *et seq.*)
2. Federal Water Pollution Control Act (Clean Water Act) (33 USC 1251 *et seq.*)
3. Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 USC 661 *et seq.*)
4. Coastal Zone Management Act of 1972 (16 USC Part 1451 *et seq.*)
5. Executive Order 11990 - Protection of Wetlands (42 FR 26961)
6. Executive Order 11988 - Floodplain Management (42 FR 26951)
7. Council on Environmental Quality Regulations for Implementing the Procedural Provision of the National Environmental Policy Act (40 CFR Parts 1500-1508)
8. USEPA 404 (b) (1) Guidelines (40 CFR Part 230)
9. COE Permit Rules and Regulations (33 CFR Parts 320-330)
10. USEPA and COE MOA Concerning Mitigation Under 404(b)(1) Guidelines (FR Vol. 55, No. 48)
11. Preservation of the Nation's Wetlands (DOT Order 5660.1A)
12. Mitigation of Environmental Impacts to Privately Owned Wetlands (23 CFR 777)
13. National Pollutant Discharge Elimination System Permit Application Regulation for Storm Water Discharges (40 CFR Parts 122, 123, and 124)
14. State Environmental Policy Act (Chapter 43.21C RCW)
15. Growth Management Act (Chapter 36.70A RCW)
16. Shoreline Management Act (Chapter 90.58 RCW)
17. Hydraulic Act (Chapter 75.20 RCW)
18. Water Pollution Control Act (Chapter 90.48 RCW)
19. Governor's Executive Order (EO 89-10)
20. Governor's Executive Order (EO 90-04)
21. State Environmental Policy Act Rules (Chapter 197-11 WAC)
22. Growth Management Act Rules (Chapter 365-190 and 195 WAC)
23. Shoreline Management Act Rules (Chapter 173-14 through 28 WAC)
24. Hydraulic Project Rules (Chapter 220-110 WAC)
25. Water Pollution Control Act Rules (Chapter 173-201A WAC)
26. State Federal Water Pollution Control Act Procedure Rules (Chapter 173-225 WAC)
27. WSDOT Protection of Wetlands Action Plan (D 31-12)

Nothing in the Agreement is intended to diminish, modify, or otherwise affect any of the statutory or regulatory authorities of Federal or State of Washington agencies, local governments, or Indian tribes.

III. GOALS OF THE AGREEMENT AND THE WETLAND COMPENSATION BANK PROGRAM

A. GOALS OF THE AGREEMENT

1. Maximize opportunities for wetland compensation that ensure no net loss and that may result in a long-term net gain of wetland area, and functions and values.
2. Facilitate implementation of rules and regulations controlling WSDOT activities that adversely impact wetlands.
3. Facilitate compliance with Federal and State of Washington laws controlling WSDOT activities that adversely impact wetlands.
4. Coordinate and maximize the efficient use of agency resources for better protection of wetlands.
5. Streamline and increase the predictability of the process of obtaining Federal and State of Washington permits within the jurisdiction of the signatories for WSDOT activities that adversely impact wetlands.
6. Make it feasible for the WSDOT to compensate for adverse impacts to wetlands in off-site and non-contiguous locations.
7. Maximize the benefits and minimize the environmental and economic risks of implementing, operating, and managing the Program.

B. GOALS OF THE PROGRAM

1. Provide off-site compensation in advance of adverse impacts to wetlands after all appropriate and practicable measures have been taken to: first, avoid the impacts to wetlands; second, minimize the impacts to wetlands; third, repair, rehabilitate, and restore the affected wetlands; fourth, reduce or eliminate the adverse impacts to wetlands over time by maintenance and preservation; and fifth, provide in-kind, on-site compensation for adverse impacts to wetlands.
2. Consolidate compensation sites for future, small and isolated wetland impacts at appropriate locations to better ensure their performance and to more economically construct and maintain them.
3. Provide appropriate compensation for adverse impacts to wetlands when impacts are small in area and magnitude.
4. Provide appropriate compensation for adverse impacts to wetlands when impacts are temporal or interim.
5. Locate wetland compensation sites within the landscape to maximize the functions and values of the wetland and adjacent interacting ecosystems.
6. Reduce the effort expended by resource, regulatory, and review agencies to respond to and act on proposed WSDOT activities that adversely impact wetlands.

7. Increase opportunities to add to the public's awareness and understanding of wetlands and of the Program.
8. Provide the required professional expertise for successful management and maintenance of wetland compensation sites.
9. Generate information that provides a better understanding of wetland functions and values, and methods of successfully compensating for wetland impacts.

IV. DEFINITIONS

Adverse Impacts to Wetlands - Any loss or degradation of wetland area, and/or functions and values attributable to WSDOT activities.

Analysis of Risk - An analysis of land use, population growth, and development trends to determine the risk of loss or degradation of wetlands over time.

Appropriate - Consistent with the scope and degree of environmental impacts of a project [adapted from FR Vol. 55, No. 48].

As-Built Condition - The physical, chemical, and biological characteristics of a Candidate WCB Site after complete implementation of a development plan.

Assessment - A systematic evaluation by qualified person(s) of any or all wetland functions and values at a Candidate WCB Site, WCB Site, or wetland that may be adversely impacted by WSDOT activities.

Buffer - A designated area along the perimeter of a wetland that lessens adverse impacts to wetlands attributable to adjacent land uses.

Candidate Wetland Compensation Bank Site (Candidate WCB Site) - Property proposed by the WSDOT expressly for the purchase and/or development of a WCB Site, or actually purchased and/or developed by the WSDOT to earn Program credits.

Compensation - The restoration, creation, or enhancement of wetlands and, in limited circumstances, the preservation of wetlands to replace wetland area, and functions and values adversely impacted by WSDOT activities. Preservation of wetlands is acceptable compensation only when used in conjunction with restoration, creation, or enhancement of wetlands.

Consensus - General agreement resulting from negotiations among members of the Oversight Committee. The goal of negotiations is to reach a resolution agreeable to all members.

Creation - Establishment of wetland area, and functions and values where none previously existed.

Credits - The acres, or other agreed upon unit of currency, available at a WCB Site for use as compensation.

Currency - The medium of exchange of credits for debits. The currency represents an amount of wetland area, and functions and values.

Debits - The acres, or other agreed upon unit of currency, adversely impacted by WSDOT activities.

Development - Restoration or creation of wetland area, and functions and values at a Candidate WCB Site, or the enhancement of wetland functions and values at a Candidate WCB Site.

Development Plan - A formal plan for development of a Candidate WCB Site leading to establishment of a WCB Site. A development plan contains the elements shown in Section VI C - Figure 2 of the Agreement and described in Appendix C of the Agreement.

Ecosystem - All of the organisms in a given place in interaction with their non-living environment.

Enhancement - Actions taken to intentionally augment one or more functions and values of an existing, degraded wetland, where wetland hydrology is currently present.

Functions and Values - Functions are the physical, chemical, and biological characteristics of a wetland. Values are those characteristics that are beneficial to society. Specific wetland functions and values include ground water recharge, ground water discharge, flood flow alteration, sediment stabilization, sediment and toxicant retention, nutrient removal and transformation, production export, fish and wildlife habitat, wildlife diversity and abundance, aquatic diversity and abundance, uniqueness and heritage value, and recreation [Wetland Evaluation Technique (WET); Volume II: Methodology].

General Permit - Department of the Army authorization for the discharge of dredged or fill material in waters of the United States that is issued on a nationwide or regional basis for a category or categories of activities when: (1) Those activities are substantially similar in nature and cause only minimal individual and cumulative environmental impacts; or (2) The general permit would result in avoiding unnecessary duplication of the regulatory control exercised by another Federal, state, or local agency, provided it has been determined that the environmental consequences of the action are individually and cumulatively minimal [33 CFR 323.2(h)].

Individual Permit - Department of the Army authorization for the discharge of dredged or fill material in waters of the United States, issued following a case-by-case evaluation of a specific project involving a proposed discharge(s) in accordance with the procedures of 33 CFR Part 323 and 33 CFR Part 325 and a determination that the proposed discharge is in the public interest pursuant to 33 CFR Part 320 [33 CFR 323.2(g)].

In-Kind Compensation - Development of wetlands that are of the same system and class, as defined by Cowardin et al., and that provide the same wetland functions and values as those adversely impacted by WSDOT activities.

Inspection - A review and examination of a WCB Site by qualified WSDOT personnel or other qualified person(s) contracted by the WSDOT.

Interim Wetland Impacts - A temporary or short-term loss or degradation of wetland area, or functions and values. Examples include temporary or short-term impacts associated with staging areas for construction materials and equipment, temporary access and haul roads, and temporary alterations of drainage.

Landscape - A heterogeneous land area composed of a cluster of interacting ecosystems that are repeated in similar form throughout.

Limiting Factor - Environmental factor that limits the growth or activities of an organism or that restricts the size of a population or its geographical range.

Management - Fiscal and administrative actions by the WSDOT to preserve and protect WCB Sites.

Maintenance - Physical actions by the WSDOT to preserve and protect WCB Sites.

Mitigation - In accordance with Council on Environmental Quality regulations (40 CFR §1508.20) and Governor's Executive Order 90-04, mitigation includes, in the following 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, by using appropriate technology, or by taking affirmative steps to avoid or reduce impacts.
3. 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, enhancing, or providing substitute resources or environments.
6. Monitoring the impact and taking appropriate corrective measures.

Mitigation for individual actions may include a combination of the above measures.

Monitoring - A systematic evaluation of a WCB Site by qualified WSDOT personnel or other qualified person(s) contracted by the WSDOT to determine the degree to which the site meets its performance standards, and to determine modifications in management and maintenance of the WCB Site needed to achieve performance standards.

Off-site - Outside and not adjacent to the limits of the project area.

On-site - Within or adjacent to the limits of the project area.

Out-of-Kind Compensation - Development of wetlands that are not of the same system and class, as defined by Cowardin et al., or that do not provide the same wetland functions and values as those adversely impacted by WSDOT activities.

Oversight Committee - An interagency committee composed of one representative from each of the agencies that are signatories to the Agreement.

Performance Standards - Quantifiable standards capable of measuring the degree of success of a WCB Site when compared to previously established goals and objectives.

Practicable - Available and capable of being done after considering cost, existing technology, and logistics in light of overall project purposes [40 CFR §230.3].

Preservation - Acquisition of existing wetlands with high quality functions and values and/or acquisition of wetland buffers, and the management and maintenance of wetlands and wetland buffers.

Protection - Legal measures to prevent harm, injury, or degradation to a wetland or wetland buffer (e.g. acquisition in fee simple, conservation easement, deed restriction).

Restoration - Actions taken to intentionally reestablish wetland area, and functions and values where wetlands previously existed, but are currently absent because of the absence of wetland hydrology or hydric soils. Reestablishment of historic wetland types with high quality functions and values where degraded wetlands are currently present may also be considered restoration (e.g. conversion of diked, palustrine wetland to estuarine wetland).

River Reach - A segment of river and associated riparian area defined by geomorphic features with similar environment and aquatic habitat.

Temporal Wetland Impacts - A loss or degradation of wetland area, or functions and values that occurs between the time adverse impacts to wetlands occur and mitigation becomes fully operational.

Watershed - A three dimensional geomorphic or landscape unit defined by surface water flows and ground water discharges to a common outlet over a specified time.

Wetland - Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas [33 CFR §323.2C and 40 CFR §230.3].

Wetland Compensation Bank Site (WCB Site) - Property purchased and developed by the WSDOT to earn Program credits and for which the as-built condition has been accepted by the Oversight Committee. Also, property purchased and preserved in conjunction with wetland restoration, creation, or enhancement by the WSDOT to earn Program credits and for which the as-built condition has been accepted by the Oversight Committee. Both actions result in the availability of credits at a WCB Site.

WSDOT Activities - Construction, operation, and maintenance activities sponsored or accomplished by the Washington State Department of Transportation.

V. OVERSIGHT COMMITTEE

A. MEMBERS AND ACTIONS

An interagency committee, to be known as the Oversight Committee, is established by the Agreement. The Oversight Committee will be composed of one representative from each agency that is a signatory to the Agreement. Representatives from signatory agencies will be voting members of the Oversight Committee.

The Oversight Committee may agree by consensus to accept new members. A Federal or State of Washington agency with interest in the Program may request to be a member of the Oversight Committee. A representative of the requesting agency will be a voting member of the Oversight Committee only: (1) with the unanimous affirmative vote by all existing members of the Oversight Committee, and (2) if the requesting agency signs the Agreement.

One representative from each local government and Indian tribe having jurisdiction over a Candidate WCB Site, WCB Site, or wetland adversely impacted by a WSDOT activity will be invited to participate in discussions of the Oversight Committee.

A signatory agency other than WSDOT may choose not to participate in reviews and discussions that are unrelated to its review, resource, or regulatory responsibilities.

WSDOT will be responsible for convening and facilitating meetings of the Oversight Committee.

B. PURPOSE AND RESPONSIBILITIES

The purpose of the Oversight Committee is to review all information required by the Agreement and to make recommendations to the WSDOT and Federal and State of Washington resource and regulatory agencies. The Oversight Committee may recommend acceptance or recommend modifications needed for acceptance pursuant to Federal and State of Washington law.

The Oversight Committee's review and recommendation responsibilities include, but are not limited to, the activities shown in Figure 1 and Appendix A of the Agreement. The Oversight Committee may review and recommend acceptance, or review and recommend modifications needed for acceptance of these activities.

**Figure 1 - Partial List of the Oversight Committee's
Review and Recommendation Responsibilities**

Oversight Committee Activity #1a - Review and recommend acceptance, or review and recommend modifications needed for acceptance of:

- a. Rationale for the location of a Candidate WCB Site.
- b. Rationale for exceptions to the locational requirements for a Candidate WCB Site.

Oversight Committee Activity #1b - Review and recommend acceptance, or review and recommend modifications needed for acceptance of a preliminary development plan for a Candidate WCB Site including:

- a. Compensation goals and objectives.
- b. Quantitative performance standards.
- c. Description of the proposed WCB Site.
- d. Conceptual design plan.
- e. Protection plan.
- f. Implementation schedule.
- g. Management and maintenance plan.
- h. Analysis of risk.
- i. Analysis of limiting factors.
- j. Information provided by local governments and Indian tribes.

Oversight Committee Activity #1c - Review and recommend acceptance, or review and recommend modifications needed for acceptance of methodologies recognized in the Agreement, including:

- a. Assessment methods for a Candidate WCB Site and WCB Site.
- b. Inspection checklist and schedule for a Candidate WCB Site and WCB Site described in Appendix E of the Agreement.
- c. Monitoring protocol and schedule for a Candidate WCB Site and WCB Site described in Appendix F of the Agreement.

Oversight Committee Activity #2 - Review and recommend acceptance, or review and recommend modifications needed for acceptance of:

- a. Documents describing the as-built condition of a Candidate WCB Site.
- b. Justification for changes to final development plans for a Candidate WCB Site.

Figure 1 - (Continued)

Oversight Committee Activity #3 - Review and recommend acceptance, or review and recommend modifications needed for acceptance of:

- a. Estimate of the reasonably attainable wetland category, as described by Ecology (Washington State Department of Ecology 1991), of a WCB Site.
- b. Justification for modifying the inspection checklist and schedule described in Appendix E of the Agreement.
- c. Justification for modifying the monitoring protocol and schedule described in Appendix F of the Agreement.
- d. Assessment reports.

Oversight Committee Activity #4 - Review and recommend acceptance, or review and recommend modifications needed for acceptance of:

- a. **Monitoring reports.**

Oversight Committee Activity #5 - Review and recommend acceptance, or review and recommend modifications needed for acceptance of:

- a. Use of fifty per cent of the area of each wetland system/class, as described by Cowardin et al., within a WCB Site and preserved area for compensation after acceptance of the as-built condition.

Oversight Committee Activity #6 and #9 - Review and recommend acceptance, or review and recommend modifications needed for acceptance of:

- a. Documents describing the following:
 - Wetland area, and functions and values adversely impacted by a WSDOT activity.
 - Credits available at a WCB Site and debits attributable to a WSDOT activity.
- b. Also, when appropriate, documents describing the rationale for the following:
 - Out-of-kind compensation.
 - Use of currency other than area.
 - Modification of credit ratios based on the results of assessments.
- c. Information provided by local governments and Indian tribes.

Oversight Committee Activity #7 - Review and recommend acceptance, or review and recommend modifications needed for acceptance of:

- a. Documents demonstrating that performance standards for a WCB Site have been met.

Figure 1 - (Continued)

Oversight Committee Activity #8 - Review and recommend acceptance, or review and recommend modifications needed for acceptance of:

- a. Use of the remaining fifty per cent of the area of each wetland system/class, as described by Cowardin et al., within a WCB Site and preserved area for compensation after agreement that performance standards have been met, and a minimum of five years after acceptance of the as-built condition.

Oversight Committee Activity #10 - Review and recommend acceptance, or review and recommend modifications needed for acceptance of:

- a. Modifications to the Agreement.

Oversight Committee Activity #11 - Review and recommend acceptance, or review and recommend modifications needed for acceptance of:

- a. Exchange ratios for wetlands dominated by invasive or exotic plant species.

Oversight Committee Activity #12 - Review and recommend acceptance, or review and recommend modifications needed for acceptance of:

- a. Exchange ratios for out-of-kind compensation.

The Oversight Committee will recommend acceptance, or recommend modifications needed for acceptance, for each of these activities within thirty days after receipt of complete information.

C. DECISION MAKING

Recommendations by the Oversight Committee will be agreed to by consensus. If consensus cannot be achieved, an issue will be resolved by a vote of members of the Oversight Committee participating in negotiations. If two or more members of the Oversight Committee participating in negotiations are not in agreement with the other participating members, the result is no resolution. When resolution cannot be achieved, a signatory may choose to elevate the issue through equivalent levels of each agency including, if necessary, agency directors.

Members of the Oversight Committee will normally participate in negotiations and vote in person. Members unable to attend a meeting in person may participate by conference call or other means of telecommunicating, or may vote by designee of participant's agency.

The WSDOT will document all Oversight Committee discussions, recommendations, and dissenting opinions in a written record. The WSDOT will distribute the written record to each member of the Oversight Committee and each invited representative of local governments and Indian tribes within thirty days of each action of the Oversight Committee.

The written record of all dissenting opinions will be included with all documents prepared by or for the Oversight Committee over the life of a WSDOT activity or project.

Each member of the Oversight Committee will provide, and each participating representative of local governments and Indian tribes may provide, the WSDOT with a letter indicating acceptance of, or suggested modifications to, the written record. The letter will be provided to the WSDOT within thirty days after a member of the Oversight Committee receives the written record.

VI. ESTABLISHMENT OF WETLAND COMPENSATION BANK SITES

A. IDENTIFICATION AND SELECTION OF CANDIDATE WETLAND COMPENSATION BANK SITES

The WSDOT will identify and select Candidate WCB Sites based on their potential to provide sustainable, quality wetland functions and values with development, management, and maintenance, and for their potential to compensate for anticipated adverse impacts to wetlands attributable to WSDOT activities.

The WSDOT and the Oversight Committee will consider, in the following order of preference, the following criteria for the identification and selection of a Candidate WCB Site:

1. A site where one or more of the three criteria used to determine if a site is a wetland (i.e. hydrophytic vegetation, hydric soils, and wetland hydrology), especially wetland hydrology, have been completely lost and can be restored.
2. A site where one or more wetland functions and values have been eliminated by prior human activity and can be restored to their previous type, size, and vigor.
3. A site where wetland functions and values have been severely degraded by prior human activity and can be enhanced to their previous type, size, and vigor.
4. A site that is not a wetland, but where a wetland can be created that is adjacent to and has high potential to complement existing wetlands. Examples include areas adjacent to existing riparian corridors, Washington Natural Heritage Sites, Washington State Wildlife Areas, and National Wildlife Refuges.
5. A site that is not wetland, but where a wetland can be created.
6. A site where development, management, and maintenance could appropriately enhance one or more existing wetland functions and values.

A site where there are unresolved violations of §404 of the Clean Water Act will not be identified and selected as a Candidate WCB Site.

The WSDOT and the Oversight Committee will also consider, in no particular order of preference, the following criteria for the identification and selection of a Candidate WCB Site:

1. Distance between a site and wetlands adversely impacted by proposed WSDOT activities.
2. Ability of a site to compensate for adverse impacts to wetlands attributable to proposed WSDOT activities.
3. Ability to protect existing and/or proposed wetland functions and values at a site from direct, indirect, and cumulative impacts attributable to adjacent, current, and foreseeable land uses.
4. Potential for a site to provide a broad range of wetland functions and values.
5. Potential for a site to improve the functions of the ecosystem within the watershed.
6. Potential for a site to contribute to restoration of the historic composition of the ecosystem and to biodiversity.
7. Potential for a site to be self-sustaining with minimum maintenance and other human intervention.
8. Appropriateness of the size of a site.
9. Potential for a site to complement the existing geographic distribution of fish and wildlife habitat.
10. Potential for a site to favorably maintain or alter trends in the quantity and quality of fish and wildlife habitat.
11. Potential for a site to maintain or enhance fish and wildlife habitat diversity.
12. Potential for a site to restore fragmented habitats and migratory corridors.
13. Potential for a site to restore, create, or enhance fish and wildlife habitats for Federal and State of Washington threatened and endangered species; Federal species of special concern; and State of Washington priority species.
14. Compliance with local, regional, State of Washington, or national goals for the protection of wetlands.
15. Compliance with local, regional, or State of Washington restoration, creation, enhancement, or preservation plans.
16. Compliance with applicable local government comprehensive plans, development regulations, and shoreline master programs.
17. The results of an analysis of risk.
18. The results of an analysis of limiting factors.

B. LOCATION, NUMBER, AND SIZE OF WETLAND COMPENSATION BANK SITES

The Agreement does not limit the location, number, and size of Candidate WCB Sites and WCB Sites.

C. DEVELOPMENT PLANS FOR CANDIDATE WETLAND COMPENSATION BANK SITES

The WSDOT will complete the activities shown in Figure 2 for each Candidate WCB Site proposed for development.

Figure 2 - List of Activities Required for Development of a Candidate WCB Site

WSDOT Activity #1 - Identify and select a Candidate WCB Site

- a. Develop rationale for the location of a Candidate WCB Site.
- b. If appropriate, develop rationale for exceptions to the locational requirements for a WCB Site.

WSDOT Activity #2 - Develop preliminary development plan for the Candidate WCB Site

including appropriate elements of the following:

- a. Compensation goals and objectives.
- b. Quantitative performance standards.
- c. Description of the proposed WCB Site.
- d. Conceptual design plan.
- e. Protection plan.
- f. Implementation schedule.
- g. Management and maintenance plan.
- h. Analysis of risk.
- i. Analysis of limiting factors.
- j. Information provided by local governments and Indian tribes.

WSDOT Activity #3 - Review methodologies recognized in the Agreement, and, if needed, revise:

- a. Assessment methods.
- b. Inspection schedule and checklist.
- c. Monitoring protocol and schedule.

These activities will conform to the guidance found in Appendix C, Appendix E, and Appendix F of the Agreement. The Oversight Committee will recommend acceptance of these activities, or recommend modifications needed for acceptance.

The WSDOT will prepare a final development plan for each Candidate WCB Site that incorporates the recommendations of the Oversight Committee. The final development plan will be provided to Federal, State of Washington, and local permitting agencies and Indian tribes for review.

The WSDOT will develop each Candidate WCB Site in accordance with the final development plan and approved Federal, State of Washington, and local permits.

The WSDOT will document the as-built condition of each Candidate WCB Site. The Oversight Committee will recommend acceptance of the as-built condition, or recommend modifications needed for acceptance.

The WSDOT will provide justification for changes to final development plans for each Candidate WCB Site. The Oversight Committee will recommend acceptance of changes to final development plans, or recommend modifications needed for acceptance.

The WSDOT will be responsible for the costs of developing Candidate WCB Sites, documenting the as-built conditions, and justifying changes to final development plans of Candidate WCB Sites.

D. MANAGEMENT, MAINTENANCE, AND PROTECTION OF WETLAND COMPENSATION BANK SITES

It is the intent of signatories to the Agreement that the WSDOT appropriately manage, maintain, and protect WCB Sites in perpetuity. Management and maintenance of a WCB Site will be guided by information generated by monitoring, and modified to best achieve performance standards.

The WSDOT is committed to permanently retaining, in their natural condition, all WCB Sites that are established in accordance with the Agreement.

The WSDOT will establish legal instruments to ensure protection of a WCB Site in perpetuity before the Oversight Committee can recommend acceptance of a Candidate WCB Site as a WCB Site, and the subsequent use of a WCB Site for compensation. This may be accomplished by acquisition in fee simple, conservation easement, deed restriction, or by other means.

WCB Sites will not be altered, except as authorized by signatories to the Agreement. WCB Sites will not be placed into surplus, traded, or used for any other purpose, except as authorized by signatories to the Agreement. WCB Sites will be protected from human development or disturbance that impairs their functions and values.

A WCB Site will be identified and the Agreement referenced on WSDOT right-of-way plans to protect WCB Sites from adverse impacts attributable to WSDOT activities, disposal of property, or conversion of use. Additionally, the Agreement will be referenced on the conveyance document for the property, which will be recorded with the county auditor.

The WSDOT will be responsible for the costs of management, maintenance, and protection of WCB Sites. The WSDOT may develop formal partnerships to share costs with, and may transfer management and maintenance of a WCB Site to, other agencies or entities. However, in all cases the WSDOT will have ultimate responsibility for costs, and for the operation of each WCB Site to ensure it meets the performance standards described in the preliminary development plan and/or conditions of Federal, State of Washington, and local permits.

VII. CRITERIA FOR USE OF WETLAND COMPENSATION BANK SITES

The Oversight Committee will consider the following locational requirements before recommending acceptance of the use of a WCB Site, or recommending modifications needed for acceptance:

1. When adverse impacts to wetlands attributable to a WSDOT activity occur in a single watershed, the WCB Site will be located within the same watershed and associated ecosystem.
2. When adverse impacts to wetlands attributable to a WSDOT activity occur in multiple watersheds, the WCB Site will be located within the most appropriate watershed and associated ecosystem, as determined by the Oversight Committee.
3. When adverse impacts to wetlands attributable to WSDOT activities include alterations of flood flows or impacts to fish habitat, the WCB Site will be located within the same river reach and watershed where the wetland impacts occur, unless those specific impacts to flood flows and fish habitat are mitigated for separately.

The Oversight Committee may recommend acceptance of exceptions to locational requirements 1 and 2 described above, based on the following criteria:

1. A WCB Site provides wetland area and/or functions and values that meet regional, State of Washington, or local restoration, creation, enhancement, or preservation priorities or planning efforts.
2. A WCB Site located within a watershed adjacent to the watershed in which adverse impacts to wetlands attributable to WSDOT activities occur supports significantly greater quantity or quality of wetland area, and functions and values for the region than a WCB Site within the same watershed.

VIII. CURRENCY, CREDITS, AND DEBITS

A. RELATIONSHIP OF CURRENCY TO WETLAND FUNCTIONS AND VALUES

Currency will be capable of equitable exchanges of wetland area, and functions and values between WCB Sites and wetlands adversely impacted by WSDOT activities.

The currency for exchange of credits and debits will normally be area, by wetland system/class, as defined by Cowardin et al. Other currency may be used at the request of the WSDOT after the Oversight Committee recommends acceptance of its use.

Wetland functions and values may be assessed by formal methods to confirm the use of area as the appropriate currency for exchange of credits and debits, and the appropriateness of the exchange ratios identified in Section VIII C of the Agreement. Selection of formal assessment methods will be based on their availability, applicability, and practicability and the following order of preference:

1. Objective, quantitative assessment methods.
2. Objective, qualitative or objective, semi-quantitative assessment methods.

Formal assessment methods that may be used include, but are not limited to, the following:

1. COE *Wetland Evaluation Technique (WET); Volume II: Methodology and the Indicator Value Assessment (IVA)* may be used to assess recognized wetland functions and values in most wetland environments.
2. USFWS *Habitat Evaluation Procedure (HEP)* may be used to assess wildlife habitat, excluding anadromous fishery and aquatic resources. Evaluation species selected for HEP will include species indigenous to each environment of concern including upland, wetland, and deepwater habitats.
3. *Estuarine Habitat Assessment Protocol* may be used to assess wetland functions in the Puget Sound and the coastal estuarine environment.
4. USEPA Region 10 *In-Stream Biological Monitoring Handbook* may be used for riverine systems.
5. USEPA *Rapid Bioassessment Protocols for Use in Streams and Rivers* may be used for riverine systems.
6. Parameters identified in Appendix F of the Agreement, *Elements of a Monitoring Plan and Report*.

Several formal methodologies may be used in combination to provide the most comprehensive assessment.

Best professional judgment may be used to assess wetland functions and values in one or more of the following circumstances:

1. Upland environments considered for wetland creation where wetland functions and values are not present.
2. Severely degraded sites considered for wetland restoration.
3. Sites where wetland functions and values are nominally present and will be adversely impacted by WSDOT activities.
4. When use of a formal assessment would provide little relevant information.
5. When no objective method is available to assess functions and values for a particular wetland type.
6. To supplement formal methods.

Formal assessments and applications of best professional judgments will be performed by qualified WSDOT personnel or other qualified person(s) contracted by the WSDOT. Written documentation will be provided to the Oversight Committee.

The WSDOT will be responsible for the costs of assessments.

The Oversight Committee will recommend acceptance of the results of assessment methods, or recommend modifications needed for acceptance.

The Oversight Committee may recommend new assessment methods as they become available to the WSDOT.

In all circumstances, the currency for an existing WCB Site will remain the same from the time the first credit is withdrawn to the time the last credit is withdrawn from the WCB Site.

B. CALCULATION OF CREDITS AND DEBITS

Credits will be established only after development, management, and maintenance of a WCB Site according to a development plan recommended for acceptance by the Oversight Committee and approved by Federal and State of Washington resource and regulatory agencies, and only after the Oversight Committee recommends acceptance of the as-built condition.

Credits resulting from restoration or creation of wetlands at a WCB Site will be calculated by measuring the difference between wetland area prior to development, management, and maintenance and wetland

area at the time of a proposed exchange of credits and debits. Wetland area will be quantified by the formal delineation method(s) required by signatories to the Agreement.

Credits resulting from enhancement of wetlands at a WCB Site will be calculated by measuring the wetland area enhanced by development, management, and maintenance.

Credits resulting from preservation of high quality wetlands within a WCB Site, preservation of wetlands and stream buffers neighboring a WCB Site, or preservation of areas other than wetlands and stream buffers required to maintain the ecological integrity of a WCB Site will be calculated by measuring the area preserved.

Debits at wetlands adversely impacted by WSDOT activities will be calculated by measuring the difference between wetland area prior to the occurrence of impacts, and wetland area after the occurrence of impacts.

The Oversight Committee will recommend acceptance of calculated credits and debits, or recommend modifications needed for acceptance.

Normally, credits and debits will be exchanged according to the ratios identified in Section VIII C of the Agreement when area is the currency. Credits and debits may be exchanged according to modified exchange ratios at the request of the WSDOT when the Oversight Committee recommends acceptance of their use. Modification of exchange ratios must be justified by assessment data indicating WCB Sites are more successful than other forms of wetland compensation.

C. USE OF CREDITS TO COMPENSATE FOR WETLAND IMPACTS

1. Mitigation Sequencing

Credits at a WCB Site may be used to compensate for unavoidable adverse impacts to wetlands attributable to WSDOT activities only after all appropriate and practicable measures have first been taken, in sequence, to mitigate impacts.

Those measures include, in the following order of preference, the following:

- a. Avoiding the impact altogether by not taking a certain action or parts of an action.
- b. Minimizing impacts by limiting the degree or magnitude of the action and its implementation, by using appropriate technology or by taking affirmative steps to avoid or reduce impacts.
- c. Repairing, rehabilitating, or restoring the affected environment.
- d. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- e. Compensating on site for the impact by replacing, enhancing, or providing substitute resources or environments.

2. Accounting Procedures

Prior to using credits available at a WCB Site to compensate for adverse impacts to wetlands not regulated by Federal and State of Washington resource and regulatory agencies, or for activities that are exempted by Federal and State of Washington resource and regulatory agencies, the WSDOT will provide the Oversight Committee with a current accounting of credits available at the WCB Site and debits at the impacted wetland. The table on the second page of the Public Notice Attachment Form and Transaction Notice (Appendix D) will be completed to report the current accounting of credits and debits.

No review or recommendation by the Oversight Committee is required for use of a WCB Site to compensate for adverse impacts to wetlands not regulated by Federal and State of Washington resource and regulatory agencies, or for activities that are exempted by Federal and State of Washington resource and regulatory agencies.

Prior to using credits available at a WCB Site to compensate for adverse impacts to wetlands permitted by a §404 General Permit, the WSDOT will provide the COE - Seattle District and the Oversight Committee with a current accounting of credits available at the WCB Site and debits at the impacted wetland. The table on the second page of the Public Notice Attachment Form and Transaction Notice (Appendix D) will be completed to report the current accounting of credits and debits.

No review or recommendation by the Oversight Committee is required for use of a WCB Site to compensate for adverse impacts to wetlands permitted by a §404 Nationwide Permit.

Prior to using credits available at a WCB Site to compensate for adverse impacts to wetlands requiring a §404 Individual Permit, Shoreline Permit, or Hydraulic Project Approval, the WSDOT will provide the

COE - Seattle District and the Oversight Committee with background information and a current accounting of credits available at the WCB Site and debits at the impacted wetland. All items shown on the first page of the Public Notice Attachment Form and Transaction Notice (Appendix D) and the Elements of a Wetland Impacts Report (Appendix B) will be completed to report background information. The table on the second page of the Public Notice Attachment Form and Transaction Notice (Appendix D) will be completed to report the current accounting of credits and debits.

The Oversight Committee will recommend acceptance, or recommend modifications needed for acceptance, of calculated credits and debits when a §404 Individual Permit, Shoreline Permit, or Hydraulic Project Approval is required.

3. Availability of Credits and Compensation Ratios

The Oversight Committee will recommend acceptance, or recommend modifications needed for acceptance of the as-built condition of a WCB Site, or as-built condition with changes to final plans.

At the time the Oversight Committee recommends acceptance of the as-built condition, or the as-built condition with changes to final plans, fifty per cent of the area of each wetland system/class, as described by Cowardin et al., within each WCB Site and preserved areas will be available for exchange with debits.

The remaining fifty per cent of the area of each wetland system/class, as described by Cowardin et al., within each WCB Site and preserved areas will be available for exchange with debits at the time the Oversight Committee agrees that all performance standards specified in the development plan have been met. Additionally, at least five years must have elapsed from the time the monitoring plan has been implemented and the Oversight Committee has recommended acceptance of the as-built condition, or as-built condition with changes to final plans.

The exchange of credits and debits to compensate for adverse impacts to wetlands will be based on the ratios identified in Table 1 for the period before performance standards are met, and on the ratios in Table 2 for the period after performance standards are met. The ratios identified in Table 2 that are less than 1:1 will be changed to 1:1 to compensate for adverse impacts to wetlands within the jurisdiction of the NMFS and Washington Department of Fish and Wildlife.

Compensation ratios are based on the category of the wetland adversely impacted by WSDOT activities and the category of the WCB Site. Categories are those described in the Washington State Wetland Rating System for Western Washington (1991) and the Washington State Wetland Rating System for Eastern Washington (1991).

For the period before performance standards have been met, the WCB Site category will be that identified in the development plan recommended for approval by the Oversight Committee. For the period after performance standards have been met, the WCB Site category will be that reasonably attainable based on the results of monitoring. The ratios shown in Table 1 and Table 2 are for in-kind compensation only.

Table 1 - Mitigation Ratios for the Period Before Performance Standards are Met

Category of Impacted Wetland	Type of Mitigation					
	Restoration or Creation			Enhancement		
	Category I*	Category II*	Category III*	Category I*	Category II*	Category III*
IV	1.2:1	1.5:1	1.8:1	2:1	2:1	3:1
III	1.5:1	1.8:1	2:1	2.5:1	3:1	4:1
II	1.8:1	2:1	3:1	3:1	4:1	6:1
I	2:1	4:1	6:1	4:1	8:1	10:1

*Category of a WCB Site identified in the development plan recommended for approval by the Oversight Committee.

Table 2 - Mitigation Ratios for the Period After Performance Standards are Met

Category of Impacted Wetland	Type of Mitigation					
	Restoration or Creation			Enhancement		
	Category I*	Category II*	Category III*	Category I*	Category II*	Category III*
IV	0.5:1**	0.7:1**	1:1	1:1	1.5:1	2:1
III	1:1	1:1	1:1	1.5:1	2:1	2:1
II	1:1	1:1	2:1	1.5:1	2:1	4:1
I	1:1	1.5:1	3:1	2:1	4:1	6:1

*Category of a WCB Site reasonably attainable based on the results of monitoring.

**The ratio for a Category IV wetland impacted by a single WSDOT activity is < 1:1 when replaced by a portion of a Category I or II WCB Site. However, in no case may the total wetland area created, restored, or enhanced at a WCB site be less than the total wetland area adversely impacted by all WSDOT activities for which compensation is accomplished at the WCB Site (i.e. the ratio for all WSDOT activities making use of the entire WCB Site will not be < 1:1).

Exchange ratios for wetlands dominated by invasive or exotic plant species (i.e. > 80 percent cover of species listed in Appendix G) will be reviewed by the Oversight Committee on a case-by-case basis. The

Oversight Committee will recommend acceptance, or recommend modifications needed for acceptance, of exchange ratios for wetlands dominated by invasive or exotic plant species.

4. Preservation Credits

The WSDOT will receive credit for preservation as an incentive to develop more comprehensive development plans for Candidate WCB Sites, to achieve higher quality wetland categories, and to establish greater quantity and quality of wetland functions and values.

The exchange of credits and debits to compensate for adverse impacts to wetlands will be based on the ratios identified in Table 3 and the following requirements when development plans include the preservation of high quality wetlands within a WCB Site, the enhancement and/or preservation of wetlands or stream buffers neighboring a WCB Site, and the enhancement and/or preservation of areas other than wetlands and stream buffers required to maintain the ecological integrity of a WCB Site:

- a. The balance of the area required to meet the ratio identified in Table 1 and 2 is met by preserving an existing Category I wetland within a WCB Site at a ratio of 5:1 or by preserving an existing Category II wetland within a WCB Site at a ratio of 10:1; or
- b. The balance of the area required to meet the ratio identified in Table 1 and 2 is met by enhancing and preserving the functions of a neighboring wetland or stream buffer at a ratio of 5:1, or by preserving a neighboring wetland or stream buffer at a ratio of 10:1; or
- c. The balance of the area required to meet the ratio identified in Table 1 and 2 is met by enhancing the functions of an upland buffer area, required to maintain the ecological integrity of a WCB Site at a ratio of 5:1; or by preserving an area, other than a neighboring wetland or stream buffer, at a ratio of 10:1.

The WSDOT will not receive credit for preservation when the exchange of credits and debits to compensate for adverse impacts to wetlands is accomplished by restoration or creation at a ratio \leq 1:1 as shown in Table 1 and 2, or accomplished by enhancement at a ratio \leq 2:1 as shown in Table 1 and 2. The ratios shown in Table 3 are for in-kind compensation only.

Table 3 - Mitigation Ratios for the Periods Both Before and After Performance Standards Are Met When Development Plans Include Preservation

Category of Impacted Wetland	Type of Mitigation					
	Restoration or Creation			Enhancement		
	Category I*	Category II*	Category III*	Category I*	Category II*	Category III*
IV	1:1	1:1	1:1	2:1	2:1	2:1
III	1:1	1:1	1:1	2:1	2:1	2:1
II	1:1	1:1	1:1	2:1	2:1	2:1
I	1:1	1:1	1:1	2:1	2:1	2:1

*Category of a WCB Site reasonably attainable based on the results of monitoring.

Preservation is acceptable as compensation only when it is used in conjunction with restoration, creation, or enhancement of a neighboring Candidate WCB Site.

Any preservation credit remaining at a WCB Site at the time all restoration, creation, and enhancement credits have been used will be available to the WSDOT, at the discretion of the Oversight Committee, for other mitigation projects that include creation, restoration, or enhancement within the watershed.

After all preservation credits available within a WCB site or an area neighboring a WCB Site have been used, the exchange of credits and debits to compensate for adverse impacts to wetlands will be based on the ratios identified in Table 1 for the period before performance standards are met, and on the ratios in Table 2 for the period after performance standards are met.

D. USE OF CREDITS FOR IN-KIND AND OUT-OF-KIND COMPENSATION

A WCB Site used to compensate for adverse impacts to wetlands attributable to WSDOT activities will normally be of the same system and class, as defined by Cowardin et al., and provide the same wetland functions and values as the impacted wetlands. Use of a WCB Site that is not of the same system and class, as defined by Cowardin et al., as the impacted wetland or that does not provide the same wetland functions and values may be appropriate for compensation in special circumstances. Those circumstances include the following:

1. When in-kind compensation is not practicable.
2. When out-of-kind compensation meets the goals of a regional, State of Washington, or local wetland restoration strategy or wetland conservation plan.

The Oversight Committee will review exchange ratios for out-of-kind compensation on a case-by-case basis. The Oversight Committee will recommend acceptance, or recommend modifications needed for acceptance, of a proposal for out-of-kind compensation and associated exchange ratios.

E. ACCOUNTING OF CREDITS AND DEBITS

The WSDOT will maintain a record of all Program transactions and provide a copy of the record of each transaction to all members of the Oversight Committee. The WSDOT will also provide an annual summary of transactions to all members of the Oversight Committee by December 31st of each year.

IX. REQUIREMENTS FOR INSPECTIONS AND MONITORING

A. INSPECTIONS

Inspections of WCB Sites will be required to accomplish the following:

1. Detect vandalism and other adverse modifications to WCB Sites.
2. Ensure proper maintenance of each WCB Site.

WCB Sites will be inspected semi-annually for the five year period after the Oversight Committee recommends acceptance of the as-built condition, and annually thereafter, by qualified WSDOT personnel or other qualified person(s) contracted by the WSDOT.

The WSDOT will normally use the inspection checklist shown in Appendix E to document inspections.

The WSDOT will provide justification to the Oversight Committee for modifying the inspection checklist described in Appendix E and the inspection schedule described above. The Oversight Committee will review and recommend acceptance, or review and recommend modifications needed for acceptance, of the use of a modified inspection checklist and inspection schedule.

The WSDOT will provide the Oversight Committee with completed inspection checklists.

The WSDOT will be responsible for performing or funding inspections and documenting results. The WSDOT will retain responsibility for inspections if management and maintenance of a WCB Site are transferred to another agency or entity.

B. MONITORING

Monitoring of WCB Sites will be required to accomplish the following:

1. Determine the degree to which a WCB Site meets its performance standards.
2. Identify potential problems and recommend corrective measures.
3. Provide a record of site progress.
4. Evaluate the appropriateness and practicability of restoration, creation, enhancement, and preservation measures.
5. Evaluate assessment methodologies.
6. Evaluate monitoring protocols.

Monitoring will provide objective, quantifiable data and will conform to the monitoring protocol guidance in Appendix F.

Sufficient information should be generated to assess compliance with permit conditions and project goals and objectives, and to provide a baseline for future evaluations. Differences between project plans and the as-built condition will be documented to the Oversight Committee.

WCB Sites will be monitored by qualified WSDOT personnel or other qualified person(s) contracted by the WSDOT.

WCB Sites will be monitored at a frequency sufficient to accomplish the following:

1. Document current conditions.
2. Determine significant changes in hydrology, soils, and vegetation.
3. Record the development of wetland functions and values.
4. Determine attainment of performance standards.

The WSDOT will provide justification to the Oversight Committee for altering the monitoring protocol described in Appendix F and the monitoring schedule described below:

1. Emergent, scrub-shrub, and forested wetlands will be monitored at the time the Oversight Committee recommends acceptance of the as-built condition and in years two, four, six, eight, and ten after the Oversight Committee recommends acceptance of the as-built condition.
2. Monitoring will occur for a period of thirty years at ten-year intervals after performance standards have been met.

The Oversight Committee will review and recommend acceptance, or review and recommend modifications needed for acceptance, of the use of standard methods and the monitoring protocol shown in Appendix F and the monitoring schedule described above, or modifications to them.

The WSDOT will provide the Oversight Committee with a report summarizing results of each monitoring effort.

The Oversight Committee will recommend acceptance of monitoring reports, or recommend modifications needed for acceptance.

The WSDOT will be responsible for performing or funding monitoring and documenting results. The WSDOT will retain responsibility for monitoring if management and maintenance of a WCB Site are transferred to another agency or entity.

X. MAINTENANCE OF THE AGREEMENT

A. RESOLUTION OF ISSUES, CONCERNS, AND CONFLICTS

It is the intent of signatories to the Agreement that all reasonable effort be made to ensure the provisions of the Agreement are implemented in a timely and cooperative manner. Issues arising during the implementation of the Agreement should be resolved at the staff level. Issues that cannot be resolved at the staff level in a timely fashion will be elevated through equivalent levels of each organization including, if necessary, agency directors.

B. MODIFICATION OF THE AGREEMENT

The Agreement will be periodically reviewed by all signatories for its appropriateness and relevance and may be modified at any time with the written approval of all signatories. The Agreement will initially be reviewed within two years after it is signed by all signatories.

All proposed modification will be submitted in writing to the WSDOT. Within thirty days of receiving proposed modifications, the WSDOT will distribute them to all signatories for a sixty day review period. Each signatory will submit written comments and/or approvals to the WSDOT by the last day of the sixty day review period. The WSDOT will provide written notice to each signatory of any approved modifications to the Agreement.

C. DURATION OF THE AGREEMENT

The Agreement will remain valid for a signatory until the time it chooses to withdraw from the Agreement. A signatory may withdraw from the Agreement by providing all remaining signatories with written notice of its intent to withdraw, and waiting thirty days for all remaining signatories to resolve issues and concerns. If, after thirty days, the withdrawing signatory continues to choose to withdraw, it will send a final written notice of withdrawal to all remaining signatories.

D. EXECUTION OF THE AGREEMENT

Each signatory to the Agreement intends to commit the resources required to implement and maintain the Agreement.

The Agreement will be in force and put into effect with the signatures of agency directors or equivalent authorities.

Approved:

US Army Corps of Engineers
Date

Washington Department of Ecology
Date

US Environmental Protection Agency
Date

Washington Department of Wildlife
Date

US Fish and Wildlife Service
Date

Washington Department of Fisheries
Date

National Marine Fisheries Service
Date

Washington State Department of
Transportation
Date

Federal Highway Administration
Date

XI. REFERENCES

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APPENDIX B - ELEMENTS OF A WETLAND IMPACT REPORT

A document to describe a wetland adversely impacted by a Washington State Department of Transportation (WSDOT) activity will be prepared by a qualified wetland professional and will contain, at a minimum, the following elements:

- A. Location and Description of the WSDOT Activity Adversely Impacting Wetlands
- B. Description of the Wetland Adversely Impacted by the WSDOT Activity
 - 1. Map indicating the area of jurisdictional wetlands and the area of proposed fill
 - 2. Habitat types and functions and values impacted
 - a. Cowardin classification (Cowardin et al. 1979)
 - b. Hydrogeomorphic setting (Brinson 1992)
 - c. Ecoregion (Omernik 1987, Washington State Department of Ecology 1991)
 - d. Soil characterization (e.g. soil survey classification and series, organic content, structure, texture, and permeability)
 - e. Functional characterization
 - Note: Acceptable methods include best professional judgment and/or Ecology rating system (Washington State Department of Ecology 1991).*
 - f. Relationship to aquatic and upland resources within the watershed
 - g. Relevant hydrologic factors (e.g. water depths, velocity, hydroperiod)
 - h. Water quality assessment (e.g. nutrients, temperature, fecal coliform)
 - i. Perimeter-to-area ratio
- C. Description of the Wetland Functions and Values Directly and Indirectly Impacted by the WSDOT Activity
- D. Temporal Impacts or Losses
- E. Justification for Using the Wetland Compensation Bank Site for Compensation Including Compliance with Mitigation Sequencing
- F. Identification of the Federal, State of Washington, or Local Rules and Regulations Requiring Mitigation for Impacts to Wetlands (e.g. Conditions of Approval for a General or Individual §404 Permit, DOT Order 5660.1A, etc.)

APPENDIX C - ELEMENTS OF A DEVELOPMENT PLAN FOR A
CANDIDATE WETLAND COMPENSATION BANK SITE

A development plan for a Candidate Wetland Compensation Bank Site (Candidate WCB Site) will contain all or some of the elements listed below. The contents of the development plan may vary depending on the goals and objectives, and the characteristics of a particular Candidate WCB Site. It will be prepared by a qualified wetland professional.

A. Compensation Goals and Objectives

1. Habitat types and wetland functions and values to be created, restored, or enhanced
2. Historic habitat assessment
3. Relevant hydrologic factors (e.g. water depths, velocity, hydroperiod, reliability, consistency)
4. Hydrogeomorphic setting
5. Estimate the reasonably attainable category (Washington State Department of Ecology 1991) of the Candidate WCB Site.
6. Rational for the location of a Candidate WCB Site or exceptions to locational requirements
7. Analysis of risk
8. Analysis of limiting factors

B. Quantitative Performance Standards

1. Target wildlife, aquatic resources, and vegetation characteristics
 - a. Wildlife, aquatic resources, and vegetation target species
 - b. Wildlife and aquatic resources habitat attributes
 - c. Wildlife, aquatic resources, and vegetation species diversity and richness
 - d. Required vegetation survival rates
 - e. Vegetation cover estimate
 - f. Vegetation structure and canopy stratification
 - g. Above and below ground vegetative biomass after establishment of vegetation
2. Target hydrologic regime
 - a. Water sources
 - b. Discharge points
 - c. Water depths
 - d. Water velocity
 - e. Hydroperiod
 - f. Affected areas
 - g. Flow directions
3. Target morphometry
 - a. Area
 - b. Slope
 - c. Perimeter-to-area ratio
4. Target soil characteristics
 - a. Organic content
 - b. Texture
 - c. Structure
 - d. Color
 - e. Permeability

5. Target water quality (e.g. nutrients, pH, alkalinity, total suspended solids, temperature, dissolved oxygen, heavy metals, fecal coliforms)

C. Description of the Proposed Wetland Compensation Bank Site

1. Location and size
2. Location of the watershed
3. Existing habitat types and wetland functions and values
4. Hydrogeomorphic setting
5. Ecoregion
6. Buffer area location, size, and type
7. Existing and proposed, adjacent and watershed land uses
8. Potential site constraints (e.g. contaminated soils, adjacent land uses, soils, water quality and quantity, utility lines)
9. Current ownership
10. Water quality
11. Existing seasonal high and low, surface and groundwater levels

D. Conceptual Design Plan

1. Plan view drawing (1' contours with specific spot elevations)
2. Grading plan
3. Hydrologic alterations
4. Seasonal high and low, surface water levels and groundwater levels
5. Structure locations and elevations (e.g. water control, large organic debris, nesting boxes)
6. Soil amendments
7. Erosion control
8. Bank stabilization
9. Planting plan
 - a. Species list (common and scientific name)
 - b. Source
 - c. Density and spacing
 - d. Planting dates
 - e. Plant material type and minimum size
 - f. Required survival rates
 - g. Landscape contractor responsibilities (e.g. fertilization, plant replacement, irrigation schedule, supply, and delivery methods)
10. Upland buffer locations
11. Special maintenance features (e.g. fences and signage)
12. Transect, data collection, and photographic locations
13. Map locating distinct land areas for inspections

E. Protection Plan

1. Legal instruments to protect Candidate WCB Sites and WCB Sites
(e.g. acquisition in fee simple, conservation easement, and deed restriction)

F. Implementation Schedule

1. Development tasks
2. Development task initiation and completion dates
3. Development plan page reference

G. Management and Maintenance Plans

1. Responsible parties
2. Funding mechanism

3. Initiating procedures

H. Monitoring Plan (see Appendix F)

I. Information Provided by Local Governments and Indian Tribes

APPENDIX D - PUBLIC NOTICE ATTACHMENT FORM AND TRANSACTION NOTICE

1. Name of the Wetland Compensation Bank Site (WCB Site):

2. Description of the location of the WCB Site, including its location within and adjacent to ecologically distinct environments:

3. Description of the Washington State Department of Transportation (WSDOT) activity adversely impacting wetlands:

4. Description of the wetland adversely impacted by the WSDOT activity:

5. Description of the wetland functions and values directly and indirectly impacted by the WSDOT activity:

6. Justification for using the WCB Site for compensation including compliance with mitigation sequencing:

7. Identification of the Federal, State of Washington, or local rules and regulations requiring mitigation for impacts to wetlands (e.g. Conditions of Approval for a General or Individual §404 Permit, DOT Order 5660.1A, etc.):

8. Oversight Committee recommendations:

9. Dissenting opinions of members of the Oversight Committee:

APPENDIX E - INSPECTION CHECKLIST

Name of the Wetland Compensation Bank Site:

Unit Number:

Name, Title, and Telephone Number of the Inspector:

Inspection Date:

Inspection Time (Start):

Inspection Time (Finish):

Description of Weather Conditions at the Time of the Inspection:

The purpose of the inspection is to identify and report unusual, artificial, or unwanted conditions at the Wetland Compensation Bank Site (WCB Site). Do not attempt to fix or change these conditions. Instead, report these conditions on this form and return it to the WSDOT Environmental Branch after you complete the inspection.

Inspect the following items throughout the site, circle the appropriate response, and mark the location of the ITEM NUMBER on the right-of-way plans or other map.

ITEM NUMBER	ARE THERE PROBLEMS OR UNWANTED CONDITIONS?		IS THE ITEM NUMBER SHOWN ON THE MAP?	
	Yes	No	Yes	No
1. Fencing.	Yes	No	Yes	No
2. Signage.	Yes	No	Yes	No
3. Litter.	Yes	No	Yes	No
4. Vandalism.	Yes	No	Yes	No
5. Dumping or filling.	Yes	No	Yes	No
6. Encroachment from activities not on WSDOT property.	Yes	No	Yes	No
7. Unofficial human use trails (e.g. trampled plants worn ground).	Yes	No	Yes	No
8. Other area of bare ground.	Yes	No	Yes	No
9. Water diversions to and from the site.	Yes	No	Yes	No
10. Water control structures functioning properly (e.g. condition of weirs, check dams, gates).	Yes	No	Yes	No
11. People observed on-site (note numbers and activities).	Yes	No	Yes	No
12. Domestic animals and livestock observed on-site (note numbers and type).	Yes	No	Yes	No
13. Wildlife observed on-site:				
Direct observation.	Yes	No	Yes	No
Indirect observation (e.g. tracks, droppings).	Yes	No	Yes	No
14. Evidence of browsing of vegetation by wildlife.	Yes	No	Yes	No
15. Unusual smells (note sources).	Yes	No	Yes	No
16. Obtrusive noise (note sources).	Yes	No	Yes	No
17. Dead and dying vegetation.	Yes	No	Yes	No
18. Missing and removed vegetation.	Yes	No	Yes	No
19. Weedy and invasive vegetation (see appendix I of the Agreement).	Yes	No	Yes	No

20. Sedimentation.
21. Erosion.

Yes No
Yes No

Yes No
Yes No

OTHER OBSERVATIONS:

COMMENTS:

APPENDIX F - ELEMENTS OF A MONITORING PLAN AND REPORT

INTRODUCTION

A monitoring plan for a Candidate Wetland Compensation Bank Site (Candidate WCB Site) will contain all or some of the elements listed below. The contents of the monitoring plan may vary depending on the goals and objectives, and the characteristics of a particular Candidate WCB Site. It will be prepared by a qualified wetland professional.

Monitoring plans will be capable of generating data that allows investigators to best measure the site characteristics of a WCB Site and evaluate if it meets its goals and objectives. Individualized monitoring plans will reference or describe methods and procedures for sampling, sample analysis, and data analysis.

Monitoring plans should provide the following general information:

justification for the time and frequency of monitoring.

- Persons or organizations responsible for monitoring.
- Persons or organizations responsible for performing and overseeing corrective actions.
- Time between completion of the project and the start of monitoring.
- Reference site establishment (Kentula, M.E., R.P. Brooks, S.E. Gwin, C.C. Holland, A.D. Sherman and J.C. Sifneos 1992).

Data generation methods will be standardized between sites and years. The WSDOT *Guide for Wetland Mitigation Project Monitoring, Operational Draft* (Horner and Raedeke 1989) and *An Approach to Improving Decision Making in Wetland Restoration and Creation* (Kentula, M.E., R.P. Brooks, S.E. Gwin, C.C. Holland, A.D. Sherman and J.C. Sifneos 1992) will be used to establish data collection, evaluation, and presentation methods. References are provided for select parameters.

The data generated during each stage of monitoring will be hierarchical to facilitate comparative evaluations over time and among similar sites (Kentula, M.E., R.P. Brooks, S.E. Gwin, C.C. Holland, A.D. Sherman and J.C. Sifneos 1992). Data generated during an evaluation of as-built conditions will be the basis for both Phase I and Phase II monitoring.

Schedules for Phase I and Phase II monitoring are described below.

DOCUMENTATION OF AS-BUILT CONDITIONS

Sufficient information should be generated to assess compliance with permit conditions and project goals and objectives, and to provide a baseline for future evaluations.

A. General

1. Small scale baseline map, aerial photographs, and 8 1/2" x 11" field review maps
 - a. Locate property boundaries, scale, datum, north arrow, date.
 - b. Locate permanent transects (baseline, site characterization, wetland morphology, buffer) and sample plot locations.
 - c. Locate permanent photo points.
2. Wetland types
 - a. Describe type (Cowardin et al. 1979).
 - b. Describe hydrogeomorphic setting (Brinson 1992).
 - c. Describe ecoregion (Omernik 1987, Washington State Department of Ecology 1992).
3. Drainage area
 - a. Shown drainage area on a topographic map.
 - b. Show position in the watershed (e.g. stream order).

4. Surrounding land use and other potential inputs to the WCB Site

a. Estimate the per cent cover of surrounding land uses. Photograph major land use types within 300 meters of the site.

- ___ % trees
- ___ % shrubs
- ___ % herbaceous vegetation
- ___ % and type of open water
- ___ % human land use:
 - ___% crops
 - ___% fallow
 - ___% grazing
 - ___% and type of industrial use
 - ___% commercial
 - ___% transportation corridor
 - ___% single family housing
 - ___% multiple family housing
 - ___% recreation

B. Morphometry

1. Area

a. Determine jurisdictional wetland boundary and show on project map.

2. Depths and slopes

a. Determine minimum, maximum, and mean depths and slopes.

b. Establish a bench mark as a reference elevation.

c. Measure elevation changes along site characterization and morphology transects (Kentula, M.E., R.P. Brooks, S.E. Gwin, C.C. Holland, A.D. Sherman and J.C. Sifneos 1992, modified Horner and Raedeke 1989).

3. Determine perimeter to area ratio.

C. Hydrology

1. Water dimensions

a. Determine hydroperiod, flood storage capacity, and proportion of open water.

b. Measure inundation above ground by staff gauge or crest gauge (Horner and Raedeke 1989).

c. Measure depth to water below ground by willow well (Horner and Raedeke 1989).

2. Flow rates

a. Identify and evaluate water sources and, if appropriate, conduct hydrologic modeling.

b. Measure inflow and outflow discharge by flume, weir, or continuous flow meter.

3. Flow patterns

a. Indicate major pathways by direct observation.

4. Indirect hydrology indicators

a. Indicate presence or periodicity of hydrology by indirect indicators (e.g. drift lines, water stained leaves, oxidized root channels).

D. Substrate

1. Soils sources

a. Document location of soils sources, presence of plant propagules, and additions of soil amendments.

2. Soil depth

a. Determine depth to compacted soil or liner by soil auger or shovel.

3. Soil color

- a. Determine extent of hydric soils and delineate boundaries by observing chroma and hue of soil matrix and mottles and comparing them to a Munsell color chart.
 - 4. Soil texture
 - a. Classify soil by feel as compared to a soil texture triangle (Horner and Raedeke 1989).
 - 5. Organic matter
 - a. Compare to reference wetland.
 - b. Sample as-built condition if salvaged marsh surface or other organic materials are added.
 - c. Determine ash free dry weight from samples (Horner and Raedeke 1989).
 - 6. Sediment flux
 - a. Measure rates of sediment accretion and erosion for comparison to reference wetland by installing feldspar clay pads at substrate surface as reference points (Cahoon et al. 1989).
 - 7. Hydrogen sulfide presence or absence
 - 8. Soil horizon description
- E. Vegetation
 - 1. Species list
 - a. Identify species, wetland indicator status, and origin (i.e. native, naturalized, exotic).
 - b. Document plant sources, planting density, species locations, planting dates, plant material type, and minimum size.
 - 2. Species cover estimate by canopy cover, line intercept, and basal area methods (Horner and Raedeke 1989)
 - 3. Map of plant communities
 - 4. Survivorship
 - a. Evaluate planting success by visually determining per cent plant survival to the nearest 10%.
- F. Fauna
 - 1. Evaluate use by wildlife, fish, and invertebrates by direct and indirect observations; record results by species; and determine common and rare, threatened and endangered status of each species.
- G. Water Quality
 - 1. Sample the WCB Site and measure appropriate water quality parameters (e.g. pH, alkalinity, conductivity, total suspended solids, nutrients, heavy metals, fecal coliform).
- H. Additional Information
 - 1. Photographic record
 - a. Photograph in color WCB Site and surrounding landscape from several directions (Horner and Raedeke 1989).
 - 2. Descriptive narrative
 - a. Describe and explain notable features and changes for each major parameter.
 - b. Describe advice offered by project managers, wetland managers, project biologists and others with hands-on project involvement.

PHASE I MONITORING REPORT REQUIREMENTS

Phase I monitoring begins immediately after development of a Candidate WCB Site is complete.

Emergent, scrub-shrub, and forested wetlands will be monitored at the time the Oversight Committee recommends acceptance of the as-built condition and in years two, four, six, eight, and ten after the Oversight Committee recommends acceptance of the as-built condition.

A. General

1. Wetland types

- a. Describe type (Cowardin et al. 1979).
- b. Describe hydrogeomorphic setting (Brinson 1992).
- c. Describe ecoregion (Omernik 1987, Washington State Department of Ecology 1992).

2. Surrounding land use and other potential inputs to the WCB Site

- a. Estimate the per cent cover of surrounding land uses. Photograph major land use types within 300 meters of the site.

- ___ % trees
- ___ % shrubs
- ___ % herbaceous vegetation
- ___ % and type of open water
- ___ % human land use:
 - ___% crops
 - ___% fallow
 - ___% grazing
 - ___% and type of industrial use
 - ___% commercial
 - ___% transportation corridor
 - ___% single family housing
 - ___% multiple family housing
 - ___% recreation

B. Morphometry

1. Area

- a. Determine jurisdictional wetland boundary and show on project map.

2. Depths and slopes

- a. Determine minimum, maximum, and mean depths and slopes.
- b. Establish a bench mark as a reference elevation.
- c. Measure elevation changes along site characterization and morphology transects (Kentula, M.E., R.P. Brooks, S.E. Gwin, C.C. Holland, A.D. Sherman and J.C. Sifneos 1992, modified Horner and Raedeke 1989).

3. Determine perimeter to area ratio.

C. Hydrology

1. Water dimensions

- a. Determine hydroperiod, flood storage capacity, and proportion of open water.
- b. Measure inundation above ground by staff gauge or crest gauge (Horner and Raedeke 1989).
- c. Measure depth to water below ground by shallow well (Horner and Raedeke 1989).

2. Flow rates

- a. Identify and evaluate water sources and, if appropriate, conduct hydrologic modeling.
- b. Measure inflow and outflow discharge by flume, weir, or continuous flow meter.

3. Flow patterns

a. Indicate major pathways by direct observation.

4. Indirect hydrology indicators

- a. Indicate presence or periodicity of hydrology by indirect indicators (e.g. drift lines, water stained leaves, oxidized root channels).

D. Vegetation

1. Species list

- a. Identify species, wetland indicator status, and origin (i.e. native, naturalized, exotic).
- b. Document plant sources, planting density, species locations, planting dates, plant material type, and minimum size.

2. Species cover estimate by canopy cover, line intercept, and basal area methods (Horner and Raedeke 1989)

3. Map of plant communities

4. Survivorship

- a. Evaluate planting success by visually determining per cent plant survival.

E. Fauna

1. Evaluate use by wildlife, fish, and invertebrates by direct and indirect observations; record results by species; and determine common, rare, or exotic status of each species.

F. Water Quality

1. Sample the WCB Site and measure appropriate water quality parameters (e.g. pH, alkalinity, conductivity, total suspended solids, nutrients, heavy metals, fecal coliform).

G. Additional Information

1. Photographic record

- a. Photograph in color WCB Site and surrounding landscape from several directions (Horner and Raedeke 1989).

2. Descriptive narrative

- a. Describe and explain notable features and changes for each major parameter.
- b. Describe advice offered by project managers, wetland managers, project biologists and others with hands-on project involvement.

PHASE II MONITORING REQUIREMENTS

Phase II monitoring begins immediately after performance standards have been met. All wetland types should be monitored for a period of 30 years at 10-year intervals after performance standards have been met.

Phase II monitoring should include all Phase I monitoring requirements and the following additional substrate and vegetation parameters.

A. Substrate

1. Soil depth

- a. Determine depth to compacted soil or liner by soil auger or shovel.

2. Soil color

- a. Determine extent of hydric soils and delineate boundaries by observing chroma and hue of soil matrix and mottles and comparing them to a Munsell color chart.

3. Soil texture

- a. Classify soil by feel as compared to a soil texture triangle (Horner and Raedeke 1989).

4. Organic matter

- a. Compare to reference wetland.
- b. Sample as-built condition if salvaged marsh surface or other organic materials are added.

c. Determine ash free dry weight from samples (Horner and Raedeke 1989).

5. Sediment flux

- a. Measure rates of sediment accretion and erosion for comparison to reference wetland by installing feldspar clay pads at substrate surface as reference points (Cahoon et al. 1989).

6. Hydrogen sulfide presence or absence

7. Soil horizon description

B. Vegetation parameters

1. Species diversity (Horner and Raedeke 1989, Pielou 1986)

2. Productivity studies (Horner and Raedeke 1989)

3. Individual tree and shrub tagging

4. Above and below ground biomass

DATA EVALUATION AND PRESENTATION

Data should be analyzed and graphically presented according to methods described by *An Approach to Improving Decision Making in Wetland Restoration and Creation* (Kentula, M.E., R.P. Brooks, S.E. Gwin, C.C. Holland, A.D. Sherman and J.C. Sifneos 1992). Monitoring reports should present graphics including descriptive graphs, summary graphs, performance curves, time series graphs, and characterization curves.

APPENDIX G - PARTIAL LIST OF INVASIVE AND EXOTIC
PLANT SPECIES IN THE STATE OF WASHINGTON

Scientific Name	Common Name
Agropyron repens	quackgrass
Alopecurus pratensis	meadow foxtail
Alopecurus aequalis	short awn foxtail
Arctium minus	burdock
Bambusa spp.	bamboo
Bromus brizaeformis	rattlesnake chess
Bromus commutatus	hairy chess
Bromus erectus	brome
Bromus inermis	smooth brome
Bromus japonicus	Japanese brome
Bromus mollis	soft chess
Bromus rigidus	riggut grass
Bromus secalinus	chess
Bromus tectorum	cheat grass
Cenchrus longispinus	sandbur
Centaurea cyanus	knapweed
Centaurea diffusa	thistle
Centaurea maculosa	knapweed
Centaurea repens	knapweed
Centaurea solstitialis	St. Barnaby's thistle
Cirsium vulgare	bull thistle
Cirsium arvense	creeping thistle
Cynosurus cristatus	dogtail
Cynosurus echinatus	dogtail grass
Cytisus scoparius	Scot's broom
Dactylis glomerata	orchardgrass
Dipsacus sylvetris	teasel
Digitaria sanguinalis	crab grass
Echinochloa crusgalli	barnyard grass
Elaeagnus angustifolia	Russian olive
Euphorbia peplus	spurge
Euphorbia esula	spurge
Festuca arundinacea	Kentucky fescue
Festuca pratensis	meadow fescue
Holcus lanatus	velvet grass
Holcus mollis	velvet grass
Hordeum jubatum	foxtail barley
Hypericum perforatum	St. John's wart
Juncus effusus	soft rush
Lolium perenne	English ryegrass
Lolium multiflorum	Italian ryegrass
Lolium temulentum	ryegrass
Lotus corniculatus	birdsfoot trefoil
Lythrum salicaria	purple loosestrife
Matricaria matricarioides	pineapple weed
Medicago sativa	alfalfa
Melilotus alba	white clover
Melilotus officinalis	yellow clover

Scientific Name	Common Name
Myriophyllum spicatum	Eurasian milfoil
Phalaris arundinacea	reed canary grass
Phleum pratense	timothy
Phragmites communis	common reed
Poa compressa	Canada bluegrass
Poa palustris	fowl bluegrass
Poa pratensis	Kentucky bluegrass
Polygonum aviculare	knotweed
Polygonum convolvulus	black bindweed
Polygonum cuspidatum	Japanese knotweed
Polygonum lapathifolium	willow weed
Polygonum persicaria	lady's thumb
Rubus discolor	Himalayan blackberry
Rubus laciniatus	cut leaf blackberry
Rubus macrophyllus	blackberry
Rubus vestitus	blackberry
Salsola kali	Russian thistle
Setaria viridis	green bristle grass
Sisymbrium altissimum	tumble mustard
Sisymbrium loeselii	tumble mustard
Sisymbrium officinale	tumble mustard
Spartina spp.	spartina
Tanacetum vulgare	tansy
Trifolium arvense	clover
Trifolium dubium	clover
Trifolium hybridum	alsike clover
Trifolium pratense	red clover
Trifolium repens	white clover
Trifolium subterraneum	clover
Ulex europaeus	gorse

Some cultivated species such as wheat, corn, barley, and rye.