

Work Element ID, Name	Work Element Definition	Maintenance Comments
WE 30: Realign, Connect, and/or Create Channel	<p>Active attempts to directly add sinuosity, meanders, side channels, and/or off-channel habitats (e.g., sloughs or oxbows). May include reconnection of historical channels (either via excavation or diversion of existing streamflow), excavation of new channels, and/or significantly improving the functionality of existing channels (e.g., creating a "natural" spawning channel for chum). If work is solely to add structures/features that change hydraulic conditions and that may eventually cause channel realignment or create a pool, then use WE# 29: Instream Habitat Complexity and Stabilization. If the work includes removal of a barrier for fish passage into upstream reaches of the existing channel, then use WE# 84: Remove/Install Diversion, WE# 85: Remove/Breach Dam, or WE# 184: Install Fish Passage Structure, since the miles of opened habitat must be recorded as a metric. If work is to create, restore, or enhance wetland function then use WE # 180: Create, Restore, and/or Enhance Wetland.</p>	6/15/2009: Modified definition to address Katz et al (i.e., NOAA) requirements as part of the FY10 annual WE review
WE 33: Decommission Road/Relocate Road	<p>Any activity that makes a road or trail unusable including adding berms, pits, boulders or logs, and/or ripping or obliterating the road or trail with heavy equipment that may involve re-contouring the slope. Also use for building a road or trail in a more appropriate location to replace a decommissioned road or trail. If decommissioning by planting vegetation or seeding use WE# 47: Plant Vegetation. If removal of fish barrier (e.g., culvert) is included, also use WE# 84: Remove/Install Diversion, WE# 85: Remove/Breach Dam, or WE# 184: Install Fish Passage Structure. If work also involves channel realignment, use WE# 30: Realign, Connect, and/or Create Channel in addition to this work element.</p>	*6/16/2009: Updated definition to conform with Katz et al (NOAA) as part of the FY10 WE review
WE 34: Develop Alternative Water Source	<p>Provision of water supply for livestock that is out of the riparian zone. Also called livestock water development or livestock water supply. Includes, but not limited to, watering troughs, spring and well development, and guzzler installation.</p>	6/16/2009: Updated definition to conform to Katz et al (NOAA) as part of the FY10 WE review

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WE 38: Improve Road	Work designed to eliminate or reduce erosion, sediment, and/or toxic run-off from reaching streams, rivers, or wetlands from roads or trails currently in use. This includes road projects that reduce or eliminate inter-basin transfer of water; and placement of structures to contain/ control run-off from roads, road reconstruction or reinforcement, surface and peak-flow drainage improvements, and roadside vegetation. These roads may extend into or are in the riparian zone.	6/16/2009: Updated definition to conform with Katz et al (NOAA) as part of the FY10 WE review
WE 40: Install Fence	Work to install various types of fence and/or gates. Can also include cattle guards or water gaps for livestock. This work is not generally intended to be used for upland fencing for pasture rotation purposes. Upland fencing for fish will be considered on a case by case basis. Upland fencing is authorized for parcels managed for wildlife if this is part of a management plan to exclude livestock. If work is to repair a fence or exclusion device, then use WE# 186: Operate and Maintain Habitat/Passage Structure	5/18/2009: Updated definition. Refined use cases, in particular regarding upland fencing.***6/19/2009: Expired Metric# 1488, # of river miles treated***6/19/2009: Created new metric# 1526, # of left bank river miles treated***6/19/2009: Created new metric# 1527, # of right bank river miles treated
WE 44: Enhance Nutrients Instream	Addition of fish carcasses, or direct nutrient introduction methods to improve biological diversity in a stream or river.	6/16/2009: Updated definition to conform with Katz et al (NOAA) as part of FY10 WE review (changed "via fertilizer" to "methods")
WE 47: Plant Vegetation	Install terrestrial or aquatic plants for purposes such as cover, erosion control, roughness recruitment, shading, restoring native habitat, forage enhancement, road removal, or run-off reduction. May be riparian or upland and includes seeding. If maintaining vegetation, use WE# 22: Maintain Vegetation.	6/16/2009: Updated definition to conform with Katz et al (NOAA) as part of FY10 WE Review (Added run-off reduction)

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WE 48: Practice No-till and Conservation Tillage Systems	Includes establishing conservation tillage systems that focus on increased crop residue during subsequent crop seeding, and/or the reduction or elimination of traditional tilling practices. Work may also include the purchase of chaff chopper/spreaders and other equipment (generally co-operatively purchased) designed to aid in no- or reduced- till operations and crop residue enhancement.	6/9/2009: Updated definition
WE 52: Remove Mine Tailings	Work to remove or re-contour remnant landscape effects from old mining operations. Could be terrestrial or aquatic in nature.	6/19/2009: Added existing Metric# 1441, # of miles of habitat accessed to the next barrier(s) or likely limit of habitable range***6/19/2009: Added new Metric#1505, # of barriers addressed
WE 63: Rear Fish	Includes work performed under contracts solely for rearing of fish, e.g., contracts for net pen rearing of kokanee. Also describes captive rearing work. If the full range of hatchery fish culture activities is performed under a contract, use WE# 176: Produce Hatchery Fish.	6/19/2009: Added new Metric #'s 1506, 1507, 1508, 1509, 1510, 1511, 1512***6/19/2009: Inactivated Metric # 1494
WE 69: Install Fish Screen	Work to install or replace a fish screen associated with a diversion or pump. Typical screen types include rotary drum, flat plate or traveling. The design of complex or large-scale screens is typically a separate work element. See WE# 175: Produce Design and/or Specifications.	6/19/2009: Modified Metric # 1436 to read acre-feet/year
WE 84: Remove/Install Diversion	Work that removes, replaces, or avoids creating a fish passage barrier associated with a stream diversion, including push-up dams. May be part of a diversion consolidation effort that reduces the number of diversion sites. Includes installation of alternative ways to divert stream flow without creating passage barriers caused by traditional diversion structures. Examples include, but are not limited to, infiltration galleries, instream diversion pumps, and lay-flat stanchions.	6/19/2009: Added Metric # 1505: # of barriers addressed

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WE 85: Remove/Breach Dam	Work that facilitates fish passage over a natural (e.g., beaver) or human-made dam by breaching or removal. If the dam is part of a diversion, use WE# 84: Remove/Install Diversion.	6/19/2009: Added Metric # 1505: # of barriers addressed
WE 99: Other	In rare instances, a contractor may be performing a type of work that is fundamentally different than anything described by existing work elements. In such a case, the contractor should consult with his or her BPA project manager to determine if using the "Other" work element is appropriate.	5/7/2009: Changed WE owner to Branum
WE 100: Construction Management	Oversight of construction activities. Usually only used on larger construction activities where the construction and construction management are split out in separate contracts.	6/19/2009: Template Milestones were changed from "Suggested" to "Recommended"
WE 156: Develop RM&E Methods and Designs	Work to identify and/or develop monitoring methods, designs, or associated tools. This includes statistical and sampling designs; protocols for field or remote sampling, data analysis, lab procedure, reporting standards, and quality assurance/quality control; development of data definitions and metadata; conceptual or simulation models; software development; tagging and other monitoring equipment; and generally any other work that prepares for the implementation of actual data collection/generation. Does not apply to producing an RM&E plan itself (see WE# 174: Produce Plan). Does not apply to models that are developed in the course of analyzing and interpreting existing data, such as multivariate models (see WE# 162: Analyze/Interpret Data).	6/16/2009: Updated definition to conform to Katz et al (NOAA) as part of the FY10 WE review

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WE 157: Collect/Generate/Validate Field and Lab Data	<p>Work to collect, create, generate, or capture source data; collecting new empirical data; entering data into a computer spreadsheet/database; developing automated data capture programs/routines and related hardware/software (e.g., PDAs, data loggers, thermographs); preparing metadata; and quality assurance/quality control processes. This includes any preparations for collecting data if not covered by another work element.</p> <p>This work element covers the collection of field samples/specimens (e.g., tissue, macroinvertebrate, or water quality samples), remote sensing data and the subsequent laboratory analyses of field samples/specimens and generation of data summaries. If work is to analyze the data or work to derive indicators then use WE# 162: Analyze/Interpret Data.</p>	6/16/2009: Updated definition to conform with Katz et al (NOAA) as part of the FY10 WE review
WE 162: Analyze/Interpret Data	<p>Data analysis that goes beyond generation of data summaries from data collected or generated in the field or through remote sensing. These activities apply analytical tools to derive variables, or indicators to inform management decisions. Often involving tests of statistical significance, this work element also may include modeling, indices, and synthesis. Typically culminates in resource management recommendations presented in a report of research/evaluation findings or analyses presented as formal publications. Also use the "Reporting" WE category if the project generates reports or publications from the analyzed data.</p>	6/16/2009: Updated definition to conform with Katz et al (NOAA) as part of the FY10 WE review

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WE 164: Acquire Water Instream	Covers final aspects to complete implementation of water transactions through the Columbia Basin Water Transactions Program process to maintain and/or increase the flow of water to provide needed habitat conditions. Work includes steps for payment of funds to water right holder and/or completion of agreement for securing protected water instream. The work element involves the purchase of water rights, and these water allocations are not withdrawn from the stream. This work element is generally linked with WE# 154: Develop and Negotiate Water Right Transaction.	5/18/2009: Updated work element definition***6/19/2009: Change SUGGESTED milestones to RECOMMENDED, and added milestone descriptions
WE 165: Produce Environmental Compliance Documentation	Covers any work by the Contractor to assemble, gather, acquire, or prepare documents in support of obtaining environmental compliance from BPA, providing maps, drafting a Biological Assessment, obtaining permits, conducting public involvement activities, completing an archaeological survey, etc.). In all cases, environmental compliance work done by the Contractor must be separated from all other work. It is not permitted to combine environmental compliance activities with any other work element.	5/18/2009: Added 2 recommended milestones related to herbicide use documentation
WE 172: Conduct Pre-Acquisition Activities	This work element includes the majority of the steps that are required before fee title or a conservation easement can be acquired for a tract of land. The steps are: perform appraisal, perform title searches, perform land boundary surveys, provide legal descriptions, perform hazardous waste assessment, and identify minimum habitat units. For easements, this work element would also include the definition of the easement terms and conditions.	6/19/2009: Changed template milestones to RECOMMENDED from SUGGESTED; Added template Milestone, Attach completed water survey form

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WE 176: Produce Hatchery Fish	This work element includes the fish culture activities associated with a "typical" hatchery O&M contract: obtaining broodstock, spawning broodstock, incubating fertilized eggs, rearing juveniles, acclimating the juveniles offsite prior to release, and releasing the juveniles into a stream or lake, either onsite or from a separate acclimation facility. Includes maintaining fish health and transportation of fish or eggs between various locations. Most hatchery O&M contractors can use this work element, "Produce Hatchery Fish," along with WE# 61: Maintain Hatchery, in their SOWs. However, there are hatchery contracts that involve only one or two of these fish culture activities, e.g., acclimation contracts. In this case, select the work element (or possibly several) that best describes the specific fish culture work associated with the contract.	6/19/2009: Inactivated Metric #'s: 1420, 1421, 1422, 1423, 1424, 1425, 1457, 1494***6/19/2009: Added new Metric #'s: 1506, 1507, 1508, 1509, 1510, 1511, 1512, 1513, 1514
WE 180: Enhance Floodplain/Remove, Modify, Breach Dike	Refers to the removal, breaching, or alteration/set-back of a dike to restore riparian/floodplain or wetland habitat. This may also involve the installation of a tidegate or culvert. Also includes re-contouring of habitat to restore or enhance wetland or floodplain functionality and connectivity, as well as to allow for fish passage into previously blocked tributary habitat. If the wetland was created/restored/enhanced from fill removal, or a water control structure other than a tidegate or culvert is involved, use WE # 181: Create, Restore, and/or Enhance Wetland.	6/16/2009: Updated definition to conform with Katz et al (NOAA) as part of the FY10 WE review***6/19/2009: Added existing Metric# 1441, # of miles of habitat accessed to the next barrier(s) or likely limit of habitable range***6/19/2009: Added new Metric#1505, # of barriers addressed

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WE 181: Create, Restore, and/or Enhance Wetland	<p>Refers to the creation, restoration, or enhancement of a wetland area or function. This may be from the installation of a water control structure, re-contouring, and excavation to improve habitat connectivity. If the wetland was created from dike removal, breaching or modification; or the installation of a tidegate or culvert to improve fish passage use WE # 180: Enhance Floodplain; if additional actions or techniques are implemented make sure you properly document associated work elements i.e., WE# 35: Develop Pond, or WE# 36: Develop Terrestrial Habitat Features. Habitat Creation (Establishment) is defined as the manipulation of the physical, chemical, or biological characteristics present to develop a wetland on an upland or deepwater site, here a wetland did not previously exist. Creation results in a gain in wetland acres. Habitat Restoration (Re-establishment) is defined as the manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to former wetland that may have been filled or subsided. Restoration results</p>	6/16/2009: Updated definition to conform with Katz et al (NOAA) as part of the FY10 WE review
WE 184: Install Fish Passage Structure	<p>Install, replace or modify structures when the intent is to improve fish passage and/or flow, typically by removing or modifying a full or partial instream barrier. Includes the following types of structures: fish ladders, bridges, culverts, jump pools, and weirs. Where anadromous fish are present, structure must meet current NOAA specifications and USFWS specifications for bull trout and USFWS recommendations for lamprey. Use WE # 180: Enhance Floodplain if the installation of a passage structure is associated with a dike removal, breaching and modification; and may create additional acres of habitat as well as provides access to instream habitat. Use WE# 70: Install Fish Monitoring Equipment, for weirs installed primarily to restrict fish passage for the purpose of monitoring or collecting fish (e.g., picket weirs). Design of complex or large-scale fish passage structures is often a separate work element (see WE# 175: Produce Design and/or Specifications).</p>	6/12/2009: Work Element definition modified. Added, " Where anadromous fish are present, structure must meet current NOAA specifications and USFWS specifications for bull trout and USFWS recommendations for lamprey".***6/16/2009: Updated definition to conform to Katz et al (NOAA) as part of the FY10 WE review

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WE 190: Remove, Exclude, and/or Relocate Animals	<p>Removal or relocation of non-native or undesirable fish and wildlife species and/or any actions employed to exclude non-native or undesirable fish and wildlife species from a particular area. Removal, which may include physical relocation or lethal removal, does not apply to marine mammals.*****Examples of removal include the removal of bullfrog egg masses and adults or removal of Northern Pikeminnows. ***Examples of exclusion activities include the installation of a fish passage barrier to exclude non-native fish from high mountain lakes. For marine mammals, exclusion refers to hazing. Fencing activities designed to exclude livestock should use WE# 40 Install Fence. An example of a relocation activity would include the relocation of beavers.</p>	<p>11/19/2008: Updated definition to specifically address hazing of marine mammals***5/19/2009: Updated definition: added an example of relocation***6/19/2009: Modified WE title: added "and/or Relocate" to be compliant with Katz (NOAA) metrics</p>