Appendix L

Wetland Modeling and Analysis

Herrera Environmental Consultants, Inc.

Memorandum

To	Tish Eaton
cc	Nancy Wittpenn
From	Herrera Environmental Consultants/Golder Associates Inc.
Date	March 5, 2012
Subject	BPA I-5 Corridor Reinforcement Project, GIS Modeling Methods Used to Update Wetland Boundary Maps and Assess Wetland Functions

Bonneville Power Administration (BPA) requested development of a geographic information system (GIS) model to accomplish two objectives:

- Improve accuracy of wetland boundary maps in a systematic, automated, and detailed manner in the I-5 Corridor Reinforcement Project study area
- Evaluate wetland functions for those wetlands

This memo includes descriptions of methods used to develop and apply the GIS models to accomplish BPA's objectives.

Existing mapping resources used for these analyses included:

- Broad coverage aerial photography (USDA 2009)
- Project corridor high-resolution aerial photograph (0.5-foot pixels) and LiDAR (3-foot pixels) (BPA 2011)
- LANDSAT imagery (USGS 2001)
- National Wetlands Inventory (NWI) (USFWS 2010)
- Hydrography data (stream locations) for Cowlitz County and Clark County (WDNR 2006)
- Clark County and Cowlitz County soil surveys (NRCS 2009)
- Hydric soils list for Washington (NRCS 2010)
- Washington Department of Fish and Wildlife (WDFW) Priority Habitats and Species (PHS) data (WDFW 2010)

Update Wetland Boundary Maps

The GIS model analyzed several spatial datasets strongly correlated with wetland presence to generate a map showing the relative aggregate potential (High, Medium, or Low) for a given area to contain wetlands. This model and the parameters used in its development are described in detail in the following section.

The model was run in six test sites: Test Site 1 is along the Cowlitz River (Segment 3); Test Site 2 includes the Coweeman River crossing (Segment 9), Test Site 3 includes the East Fork of the Lewis River (Segment 25), Test Site 4 is near Chilatchie (Segment 28), Test Site 5 is the Casey Substation site, and Test Site 6 is the Baxter Road Substation site. Wetlands at test sites 1 through 4 had been mapped previously using existing available information including hydric soil and wetland inventory maps, topographic maps, and recent aerial photographs, and had not been delineated on the ground. Wetlands at the Casey and Baxter Road Substation sites (test sites 5 and 6) had been mapped previously by wetland delineations conducted on those sites.

Following model output and map generation, Herrera wetland scientists compared the results of the GIS model to previous mapping results. Wetland scientists visited the four test sites that had not been previously delineated to compare wetland conditions on the ground to the model output and the wetland mapping completed previously. These site visits were completed on November 9 and 10, 2011. The results of the GIS model mapping effort and comparisons to previously mapped wetlands at the six test sites are described in the section of this memo titled *Compare Results of Original Wetland Mapping and GIS Wetland Potential Model*.

GIS Mapping Model

BPA acquired LiDAR data and high-resolution aerial imagery (BPA 2011) within 400 feet of the four proposed project alternatives to support its design process. Herrera, Golder, and BPA discussed options for using this data to improve the accuracy of the predicted wetland acreage in the discipline reports prepared in 2010. LiDAR data were not available when the wetland report was written. Applying LiDAR to the same alternatives allows additional information to be applied to the wetland mapping and assumptions.

One limitation of relying primarily on aerial photography to map wetland boundaries is that canopy cover makes it difficult to identify wetlands in forested areas. LiDAR data that penetrates canopy and detects bare-ground depressions is a valuable addition to a wetland boundary analysis, because it provides the potential for detecting more forested wetland and confirming the presence of previously mapped wetlands. Herrera incorporated the new LiDAR data into a wetland prediction GIS model intended to refine the previous wetland mapping conducted in 2010. The GIS model is a matrix-based analysis approach for identifying wetland presence potential through the following steps:

- Identify available spatial datasets that are most predictive of wetland presence

- Apply scientific expertise to rank each dataset into low-to-high categories based on correlation with wetland presence

- Overlay and add the ranked datasets together to obtain an overall assessment of wetland presence potential

The following sections describe these steps in more detail, including data sources used and model methodology.

Spatial Datasets

The following five data sets were identified by Herrera biologists and the GIS analyst as having a strong correlation with on-the-ground wetland presence and were used to develop the wetland prediction GIS model.

National Wetland Inventory (NWI) Wetland Boundaries

NWI wetlands mapped by USFWS are a very useful dataset for predicting wetland presence. This data was obtained from the original GIS mapping effort for incorporation into the model.

Hydric Soils

Soil data classified as non-hydric, hydric, or partially hydric was obtained from NRCS for incorporation into the model. Both hydric and partially hydric soil types are correlated with wetland presence.

LiDAR Topographic Depressions

A percentage of topographic depressions in LiDAR indicate areas that may flood such as lakes and wetlands. Although some topographic depressions may not be wetlands and may be data anomalies or other types of graded areas, using topographic depression information can help to determine whether a specific location in the overall aggregate model is likely to be a wetland.

LiDAR Topographic Wetness Index (TWI)

The Topographic Wetness Index is derived from LiDAR data and combines slope and upslope contributing drainage area on a pixel-by-pixel basis to determine where water is most likely to accumulate when it is present in the landscape. TWI is not a direct measure of on-the-ground wetness, but instead indicates overall potential for wetness.

Landsat Band 5 Spectral Data

Band 5 (near-infrared spectral band) of remotely sensed Landsat satellite is extremely sensitive to water presence. Herrera extracted this data for the month of March for multiple years from data with 30-meter pixel resolution. The March timeframe was selected because it represent the

early part of the growing season in western Washington and Oregon, when wetland plants are growing and water presence is detectable. Several known wetland areas were mapped, and the Band 5 data was used to run statistical analysis on minimum, maximum, and standard deviation brightness values correlated with each wetland. The results of this analysis were used to extract the brightness values most strongly correlated with on-the-ground wetland presences.

Ranking and Matrix Development

Herrera biologists prepared a scoring scheme for each spatial dataset based on potential for wetland presence. Each dataset is scored on a scale of '0' to '3'. A value of '0' indicates a low probability of wetland presence for that variable, while a value of '3' indicates a high probability. The spatial datasets used for this analysis and their associated scores are provided in Table 1.

Table 1. Analysis scores and scoring criteria for each spatial dataset used in the wetland presence GIS model.

Spatial Dataset	Analysis Score			
	0	**1**	**2**	**3**
NWI Wetlands	Not present			Present
Hydric Soil Classification	Non-hydric	Partially-hydric		Hydric
LiDAR Topographic Depressions	Not present			Present
LiDAR Topographic Wetness Index (wetness probability)	No wetness indicated	< 25%	25 - 50%	> 50%
Landsat Band 5 Wetlands	Not present			Present

Process and Analyze Data

Each spatial dataset was processed by the GIS analyst as a separate map layer and every pixel in each spatial dataset was assigned an analysis score of '0' to '3' based on the scoring criteria shown in Table 1. The map layers were combined and the analysis scores for each pixel were added together to determine the aggregate potential wetland presence score for each pixel. The range of aggregate scores was then mapped using a color gradient to depict low-to-high probability of wetland presence and that was overlaid on aerial photography to aid the visual assessment of wetland boundaries. These results were then compared against on-the-ground field observations to determine if the GIS wetland potential model would provide sufficiently improved wetland mapping accuracy for BPA. This is discussed in more detail in the next section.

Compare Results of Original Wetland Mapping and GIS Wetland Potential Model

Test sites 1, 2, 3, and 4 were visited on November 9 and 10, 2011, because these sites had not been visited during the original mapping phase for the project and delineations had not been conducted at these sites. Reconnaissance-level analysis of the test sites was conducted from

public roadways. Within parcels where property access was provided, hydrologic, vegetation, and soil conditions were studied in detail. In all areas, previously mapped wetlands and GIS model output were compared to on-site conditions. The results for each study area are presented below.

Test Area 1: Cowlitz River

Overall, previously-mapped wetlands that had been mapped via aerial photo interpretation, NWI data and soil type coincided well with ground conditions. On-site wetlands occur in roughly the same pattern as the mapped wetlands, although the actual wetland areas are more extensive than previously mapped. There are small areas where wetlands occur that were not previously mapped (typically in irregular vegetation patches isolated by roadways).

The GIS model output coincided very well with the on-site conditions and identified wetlands in areas (as noted above) that were not detected using only the soil mapping, NWI and aerial photos used during initial mapping. The model's sensitivity to subtle topographic features and flow concentrations makes it an excellent tool in identifying wetlands in most areas.

In one area (a sand and gravel quarry), the model output indicated major topographic depressions as having a high potential for being wetland. In fact, the soils in this area are so coarse and well-drained that wetland conditions do not occur. Integration of soil moisture data from raw LiDAR data could help reduce these anomalous areas.

Test Area 2: Coweeman River Crossing and Vicinity

Previously-mapped wetlands coincided well with ground conditions. On-site wetlands occur in roughly the same pattern as the mapped wetlands, with the actual wetland areas slightly more extensive than previously mapped.

The GIS model output coincided very well with the on-site conditions and identified wetlands in areas that were not detected used during initial mapping. The model's sensitivity to subtle topographic features and upslope contributing drainage area makes it an excellent tool in identifying wetlands in most areas.

The model output was limited in its ability to detect *slope* wetlands, especially forested wetlands.

The model output indicated a moderate likelihood of wetlands in some developed residential areas. Overall flat topography and drainage concentration results due to small topographic features in yards may have contributed to this result. Integration of soil moisture data from raw LiDAR data could help reduce these anomalous areas.

Test Site 3: East Fork of Lewis River

Overall, previously-mapped wetlands coincided well with ground conditions. On-site wetlands occur in roughly the same pattern as the mapped wetlands, with the actual wetland areas more

extensive than previously mapped. One exception to this trend is the extent of wetlands in forested ravines appears to be less than the previously mapped polygons. Rather, these polygons contain 30 to 40 percent wetland areas consisting of *riverine* wetlands, *slope* wetland in the ravines, and wetlands that flow into the ravines from surrounding terraces.

The GIS model output coincided very well with the on-site conditions and identified wetlands in areas that were not detected during initial mapping. The model's sensitivity to subtle topographic features and flow concentrations makes it an excellent tool in identifying wetlands in most areas. It does an excellent job of identifying wetland area in pastures in which subtle topographic features distinguished wetland from non-wetland areas. It also identified wetlands in shallow topographic features on the glacial terraces that are the highest elevations in this area.

The model output was limited in its ability to detect *slope* wetlands, especially forested wetlands. Integration of soil moisture data from raw LiDAR data could help reduce these anomalous areas.

Test Site 4: Segment 28

Overall, previously-mapped wetlands coincided well with ground conditions. On-site wetlands occur in roughly the same pattern as the mapped wetlands, with the actual wetland areas more extensive than previously mapped.

The GIS model output coincided very well with the on-site conditions and identified wetlands in areas that were not detected used during initial mapping. The model's sensitivity to subtle topographic features and flow concentrations makes it an excellent tool in identifying wetlands in most areas. It does an excellent job of identifying wetland area in pastures in which subtle topographic features distinguished wetland from non-wetland areas. It also provided accurate information on wetland conditions on a series of valley-floor terraces.

Much of this study area was forested land without property access. Therefore this analysis was restricted to the two valleys that occur in the test site and immediately adjacent areas.

Test Site 5: Casey Road Substation

In this area, the model output was reflective of wetland distribution. The overall pattern of modeled wetland potential coincided well with the location of the delineated wetlands. There is some wetland potential noise in the model output in the extensive forested areas. Re-examining these areas with the model recalibrated, both by class breaks, as well as by integrating soil moisture LiDAR data may increase resolution in these areas.

Test Site 6: Baxter Road Substation

This area is an excellent example of the challenges in using romote sensing data to identify wetlands, particularly *slope* and *riverine* wetlands with a forested canopy. The model output confirmed the presence of surface flow patterns, but did not highlight the areas previously delineated on the ground.

Revisions to Wetland Mapping Based on Model Output

Following the field ground-truthing of the model output, the model was revised by:

- Calibrating extracted Landsat brightness values to account for geographic variations in the project area
- Overlaying land use data to help refine criteria for identifying topographic depressions that are truly wetlands

The model was then run for the entire project area that was covered by the LiDAR mapping. Using this model output, the previously mapped wetlands were re-evaluated throughout the project study area.

Within the portion of the study area for which LiDAR data was collected (and therefore where the wetland model was run), wetland boundaries were refined to more closely match anticipated ground conditions, based on the model output and understanding of the model's strengths and limitations, based on the field verification. The high-resolution aerial photos (collected within the LiDAR data area) were also used to identify features that would indicate wetland boundaries (vegetation patterns, evidence of surface water, etc.). These revised wetland boundaries were then extrapolated to cover the entire study area (i.e., those areas outside of the LiDAR coverage). The criteria for extrapolation were: vegetation signatures, other evidence resolved on the aerial photos (e.g., surface water), and topographic features that extended from within the LiDAR coverage to the remainder of the study area. Using these criteria, the wetland boundaries throughout the study area were re-evaluated, and refined where appropriate.

Evaluate Wetland Functions

The U.S. Army Corps of Engineers requested an evaluation of wetland functions within the BPA I-5 Corridor Reinforcement Project study area. This assessment was based entirely on existing information sources and not field assessments. To accommodate this approach, *The Washington State Rating System for Western Washington* (Hruby 2004) was used as a foundation that was modified for this assessment. This approach (Hruby 2004) is commonly referred to in Washington as "the state rating system" and is the established method for evaluating wetland functions in Washington State. A copy of the state rating system data form is included at the end of this memorandum (see Attachment A). Modifications to the state rating system methods used for this functional assessment and the results of the functional assessment are discussed below.

Determine Wetland Rating Units

The state rating system requires that the functional assessment be conducted on what are considered "functional units." This is to create consistency in evaluations by establishing the appropriate limits for evaluation. Otherwise, a "wetland" could theoretically extend from headwaters to tidelands, severely limiting the ability of the state rating system to evaluate

functional processes of different portions of the watershed. As such, a set of wetland functional unit determination criteria are provided in the system. Those relevant to this project are: Wetland units do not extend through culverts or bridges where water surface elevations are different between the two sides. In addition, *riverine* wetland units are broken at waterfalls and major tributary confluences (for the wetlands along the smaller tributary).

Determine HGM Classification

The initial step in the state rating system is to determine the hydrogeomorphic (HGM) classification of the wetland. The HGM classification system describes wetlands based on their landscape position, water source, and hydrodynamics. The HGM classes relevant to the wetlands in the project study area are: *depressional* (wetlands located in topographic depressions), *riverine* (wetlands whose water source is flooding from adjacent streams), and *slope* (wetlands such as seeps and springs where water flows through the site but is not stored). The other HGM classes in the state rating system (*lacustrine fringe*, *flats*, and *tidal fringe*) do not occur in the study area.

The state rating system also recognizes the common situation in which multiple HGM classes are included in one wetland system (e.g., *slope* wetlands on the hillslopes above a stream join *riverine* wetlands in the floodplain). In these situations, the state rating system establishes a dominant HGM class on which to base the remainder of the evaluation. This is primarily relevant to the project with regards to *slope* wetlands which, in complexes with other HGM classes, is the subordinate HGM class (the other HGM class in the complex is used for evaluation criteria). Given the nature of the wetlands within the four alternatives and access roads, *slope* wetlands abutted other HGM wetland classes in almost every location. Therefore, for the purposes of this evaluation, all *slope* wetlands were assumed to be in complexes with either *depressional* or *riverine* HGM classes, and those classes were used for evaluation criteria, eliminating the need to apply the *slope* wetland evaluation criteria.

The HGM classification of each wetland as either *depressional* or *riverine* was evaluated first by the Herrera GIS analyst to determine the intersection of wetland polygons with streams, as well as reviewing LiDAR features for topographic depressions. Herrera wetland biologists then reviewed the initial HGM classification and confirmed or modified the class based on features evident in aerial photographs and other data sets.

Assess Wetland Functions

The State's rating system assesses wetland functions using a series of questions related to functional categories including water quality, hydrology, and habitat, and generates a score for each function category based on the wetland's potential and opportunity for providing the function. Herrera wetlands scientists evaluated each question on the state rating form to determine the feasibility of answering the question using available information (including the LiDAR data) and without conducting site visits. Several questions could not be answered without visiting the wetland and were not included on the modified rating form developed for this project. The modified rating form questions and scoring criteria (see Attachment B) includes:

- List of questions from the state rating system for *depressional* and *riverine* wetlands
- Analysis method to answer each question ("automated" GIS process or "manual" review of wetland and datasets visually by wetland scientists), or indication that analysis was not feasible (NF)
- Variable to be assessed
- Datasets used in the evaluation
- Description of the scoring criteria and the scoring associated with each answer

With the HGM class for each wetland established and the modified rating form developed, the functions of each wetland were assessed through automated GIS and manual processes.

Automated GIS Processes

Seven questions from the rating system were answered using automated methods for riparian (R.1.1, R.1.2, R.3.1), *depressional* (D.1.2), and habitat (H.1.1, H.2.3, H.2.4) (see Attachment B).

R.1.1 evaluates the potential for the wetland to improve water quality based on the presence of topographic depressions in the floodplain that could slow water velocities, sequestering sediment and the pollutants that bind to sediment. LiDAR coverage was used to determine the extent of topographic depressions. The score is based on the percent cover of depressions in the wetland. Since LiDAR data was only available within 400 feet of each alternative centerline, the functional assessment wetland polygons were clipped to the LiDAR extent prior to calculating percentage of area with topographic depression presence.

R.1.2 evaluates the potential of the wetland to improve water quality based on the complexity of woody vegetation in the wetland. This assessment used the project wetland basemap (which is broken into vegetation types: forested, scrub/shrub, etc.). Wetlands with over 66 percent cover of forest or scrub/shrub vegetation received the highest score (8). Wetlands with between 33 and 66 percent cover of forest or scrub/shrub vegetation or over 66 percent emergent vegetation received an intermediate score (6). Wetlands with over 33 percent vegetation cover, but without any of these characteristics received the lowest score (3). There were no wetlands with less than 33 percent vegetation cover in the study area.

R.3.1 evaluates the potential for the wetland to improve hydrology to downstream systems. In order to increase the fidelity of this portion of the assessment, an initial estimate of wetland width compared to stream width was conducted in GIS, followed by a visual review by wetland scientists to confirm or modify this value. The ratio of wetland width expected to flood (perpendicular to the stream) to estimated stream width determines the score (20:1 or more = 9 points; 10-20:1 = 6 points; 5-10:1 = 4 points, 1-5:1 = 2 points; 1:1 or less = 1 point).

D.1.2 evaluates the potential for the wetland to improve water quality based on soil characteristics. Organic soils and fine-textured mineral soils have a large surface area per unit volume and therefore have a large surface for the microbial processes that reduce nutrients and pollutants. As such, wetlands with these soils have a greater capacity to provide these functions. The wetlands were compared to mapped NRCS soil types. Those that occurred within mapped soil types that met the parameters dictated by the state rating system received a score of 4. Those that did not received a score of zero (0).

H.1.1 evaluates vegetation structure. Points are assigned for each Cowardin (1979) vegetation class that is represented in the wetland. Those points are aggregated for each wetland.

H.2.3 evaluates the proximity of Priority Habitats and Species (PHS) as defined by WDFW within 100 meters of the wetland boundary. Mature forests mapped for this project, as well as PHS spatial data sets were used to determine proximity.

H.2.4. evaluates connectivity with other wetlands. Wetlands along riparian corridors were assumed to have good connectivity. These wetlands, and *depressional* wetlands with three or more wetlands within 0.5 mile, received the highest score (5). *Depressional* wetlands with one or two wetlands within 0.5 mile scored 2 points. No wetlands within 0.5 mile received zero (0) points.

Manual Assessments

Seven questions from the rating system were answered using manual methods (R.2, R.4, D.2, D.3.3, D.4, H.1.4, H.2.1, and H.2.2) (see Attachment B).

R.2 and D.2 evaluate the opportunity for the wetland to provide water quality improvements. To provide this function, there must be pollution, stormwater and/or sediment sources from an upgradient origin or adjacent source. If land uses that could generate these inputs were determined to be present in a location that could convey these materials into the wetland, then it was assumed that the wetland had the opportunity to provide a water quality improvement function. Having this opportunity doubles the score assigned to the wetland for water quality improvement potential (see questions R.1.2 and D.1.2 above).

D.3.3 evaluates the potential for the wetland to provide hydrologic functions based on the relative size of the wetland compared to its upstream watershed. The watershed extents were estimated based on topographic features and roughly measured to place the watershed/wetland/ratio into one of these categories: less than 10:1 (5 points); between 10:1 and 100:1 (3 points); and 100:1 or greater (zero (0) points).

R.4 and D.4 evaluate the opportunity for the wetland to provide hydrologic (flood attenuation and groundwater recharge) functions. Having this opportunity doubles the score assigned to the wetland for hydrologic potential (see questions R.3.1 and D.3.3 above). To provide this function in *riverine* wetlands, there must be human development or natural resources downstream that could be affected by flooding or erosion. To provide this function in *depressional* wetlands there

cannot be any flood attenuation structures (e.g., dams operated for flood control) within 2,500 feet downstream.

H.1.4 evaluates the complexity of the habitat by assessing the interspersion of different vegetation types as well and vegetation with water and gravel bar features. The scale was simplified to provide two levels of habitat complexity: "high" and "low". Wetlands were considered highly complex (score of 3) if they met any of the following criteria: Forested (an understory was assumed), Riparian (based on typical riparian configurations), or composed of multiple vegetation (Cowardin 1979) classes. Typical wetlands that scored "low" were wetlands in fields and other structurally simple vegetation types (score of 1).

H.2.1 evaluates the condition of the buffer surrounding the wetland. The buffer evaluation area is 100 meters from the wetland boundary. If the vegetation within 95 percent of the buffer was considered intact and unlikely to receive daily human visits (no roads, except old logging spurs; no golf courses, farms, houses, etc.), then the wetland received the highest possible score (5). If there was minimal intact buffer (perimeter of the wetland largely developed, or surrounded by roads), the wetland received the minimum score (zero [0]). Intermediate buffer conditions received a score of 2.

H.2.2 evaluates wildlife passage corridors between the wetland and relatively large patches (greater than 25 acres) of vegetation. Aerial photos were reviewed to determine if corridors greater than 50 feet wide, with over 30 percent vegetation cover, connected the wetland to the large vegetation patches. If a corridor exists, a score of 4 was assigned. If not, the wetland received a score of zero (0).

Score Compilation and Ranking

Wetland function scores were calculated for each wetland (see Attachment C). The maximum potential wetland function value was calculated for both *riverine* and *depressional* wetlands. Functional scores derived for each wetland were divided by the maximum potential functional score for the HGM type of the wetland. This value represents the proportion of the maximum possible function provided by each individual wetland. This process also normalizes the results from the two HGM types, allowing for a direct comparison of functional impacts, regardless of HGM type. The functional value, multiplied by impact acreage, provides an estimate of the wetland functional loss that would result from the proposed actions.

The overall trends that resulted from this analysis include:

- Wetlands in less-developed forested areas tended to have higher habitat functions, as a result of more intact buffers and connected wildlife corridors.
- Wetlands in less-developed forested areas that were located in the upper portions of the watersheds in some cases provided lower levels of water quality improvements, based on lack of opportunity if the contributing watershed was roadless.

- Wetlands in developed areas tended to have lower habitat functions due to compromised buffers and lack of connected wildlife corridors.
- Wetlands in pastures and other simplified plant communities tended to have lower water quality, hydrologic, and habitat functions due to the lack of complex vegetation that filters water, reduces floodwater velocities, and provide varied habitat niches.

References

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ATTACHMENT A

Wetland Function Rating Form
Western Washington

WETLAND RATING FORM – WESTERN WASHINGTON

Version 2 - Updated July 2006 to increase accuracy and reproducibility among users
Updated Oct 2008 with the new WDFW definitions for priority habitats

Name of wetland (if known): _____ Date of site visit: _____

Rated by_____ Trained by Ecology? Yes__No___ Date of training_____

SEC: ___ TWNSHP: ____ RNGE: ____ Is S/T/R in Appendix D? Yes___ No___

Map of wetland unit: Figure ____ Estimated size _____

SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

I___ II___ III___ IV___

Category I = Score >=70
Category II = Score 51-69
Category III = Score 30-50
Category IV = Score < 30

Score for Water Quality Functions	
Score for Hydrologic Functions	
Score for Habitat Functions	
TOTAL score for Functions	

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ Does not Apply___

Final Category **(choose the "highest" category from above)**

Summary of basic information about the wetland unit

Wetland Unit has Special Characteristics		**Wetland HGM Class used for Rating**	
Estuarine		**Depressional**	
Natural Heritage Wetland		**Riverine**	
Bog		**Lake-fringe**	
Mature Forest		**Slope**	
Old Growth Forest		**Flats**	
Coastal Lagoon		**Freshwater Tidal**	
Interdunal			
None of the above		Check if unit has multiple HGM classes present	

Does the wetland unit being rated meet any of the criteria below?

If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. *Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered **animal or plant** species (T/E species)?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		
SP2. *Has the wetland unit been documented as habitat for any State listed Threatened or Endangered **animal** species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category I Natural Heritage Wetlands (see p. 19 of data form).		
SP3. *Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?*		
SP4. *Does the wetland unit have a local significance in addition to its functions*? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		

To complete the next part of the data sheet you will need to determine the Hydrogeomorphic Class of the wetland being rated.

The hydrogeomorphic classification groups wetlands into those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands.

Classification of Wetland Units in Western Washington

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)?
NO – go to 2 **YES** – the wetland class is **Tidal Fringe**

If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)? **YES – Freshwater Tidal Fringe NO – Saltwater Tidal Fringe (Estuarine)**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is rated as an **Estuarine** wetland.* Wetlands that were called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p.).

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.
NO – go to 3 **YES** – The wetland class is **Flats**

If your wetland can be classified as a "Flats" wetland, use the form for **Depressional** wetlands.

3. Does the entire wetland unit **meet both** of the following criteria?
___The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) at least 20 acres (8 ha) in size;
___At least 30% of the open water area is deeper than 6.6 ft (2 m)?
NO – go to 4 **YES –** The wetland class is **Lake-fringe (Lacustrine Fringe)**

4. Does the entire wetland unit **meet all** of the following criteria?
____The wetland is on a slope (*slope can be very gradual*),
____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
____The water leaves the wetland **without being impounded**?
NOTE: *Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3ft diameter and less than 1 foot deep).*
NO - go to 5 **YES –** The wetland class is **Slope**

5. Does the entire wetland unit **meet all** of the following criteria?

____ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river

____ The overbank flooding occurs at least once every two years.

NOTE: The riverine unit can contain depressions that are filled with water when the river is not flooding.

NO - go to 6 **YES** – The wetland class is **Riverine**

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

NO – go to 7 **YES –** The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding. The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

NO – go to 8 **YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM clases. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM Classes within the wetland unit being rated	*HGM Class to Use in Rating*
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

If you are unable still to determine which of the above criteria apply to your wetland, or if you have more than 2 HGM classes within a wetland boundary, classify the wetland as **Depressional** for the rating.

D	**Depressional and Flats Wetlands** **WATER QUALITY FUNCTIONS** - Indicators that the wetland unit functions to improve water quality	**Points** (only 1 score per box)
D	**D 1. Does the wetland unit have the <u>potential</u> to improve water quality?**	***(see p.38)***
D	D 1.1 Characteristics of surface water flows out of the wetland: Unit is a depression with no surface water leaving it (no outlet) points = 3 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit has an unconstricted, or slightly constricted, surface outlet (*permanently flowing*) points = 1 Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow **and no obvious natural outlet** and/or outlet is a man-made ditch points = 1 (*If ditch is not permanently flowing treat unit as "intermittently flowing"*) Provide photo or drawing	**Figure** ___
D	S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic *(use NRCS definitions)* YES points = 4 NO points = 0	
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class) Wetland has persistent, ungrazed, vegetation > = 95% of area points = 5 Wetland has persistent, ungrazed, vegetation > = 1/2 of area points = 3 Wetland has persistent, ungrazed vegetation > = 1/10 of area points = 1 Wetland has persistent, ungrazed vegetation <1/10 of area points = 0 Map of Cowardin vegetation classes	**Figure** ___
D	D1.4 Characteristics of seasonal ponding or inundation. *This is the area of the wetland unit that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 yrs.* Area seasonally ponded is > ½ total area of wetland points = 4 Area seasonally ponded is > ¼ total area of wetland points = 2 Area seasonally ponded is < ¼ total area of wetland points = 0 Map of Hydroperiods	**Figure** ___
D	**Total for D 1** *Add the points in the boxes above*	
D	**D 2. Does the wetland unit have the <u>opportunity</u> to improve water quality?** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. *Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.* — Grazing in the wetland or within 150 ft — Untreated stormwater discharges to wetland — Tilled fields or orchards within 150 ft of wetland — A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential, urban areas, golf courses are within 150 ft of wetland — Wetland is fed by groundwater high in phosphorus or nitrogen — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	***(see p. 44)*** multiplier _____
D	**<u>TOTAL</u> - Water Quality Functions** Multiply the score from D1 by D2 ***Add score to table on p. 1***	

D	**Depressional and Flats Wetlands** HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream degradation	**Points** (only 1 score per box)
	D 3. Does the wetland unit have the <u>potential</u> to reduce flooding and erosion?	***(see p.46)***
D	D 3.1 Characteristics of surface water flows out of the wetland unit Unit is a depression with no surface water leaving it (no outlet) points = 4 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow **and no obvious natural outlet** and/or outlet is a man-made ditch points = 1 (*If ditch is not permanently flowing treat unit as "intermittently flowing"*) Unit has an unconstricted, or slightly constricted, surface outlet (*permanently flowing*) points = 0	
D	D 3.2 Depth of storage during wet periods *Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry).* Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 Unit is flat (yes to Q. 2 or Q. 7 on key) but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points = 0	
D	D 3.3 Contribution of wetland unit to storage in the watershed *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.* The area of the basin is less than 10 times the area of unit points = 5 The area of the basin is 10 to 100 times the area of the unit points = 3 The area of the basin is more than 100 times the area of the unit points = 0 Entire unit is in the FLATS class points = 5	
D	**Total for D 3** *Add the points in the boxes above*	
D	**D 4. Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion?** Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. *Note which of the following indicators of opportunity apply.* — Wetland is in a headwater of a river or stream that has flooding problems — Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	***(see p. 49)*** multiplier _____
D	**TOTAL - Hydrologic Functions** Multiply the score from D 3 by D 4 ***Add score to table on p. 1***	

Wetland name or number _____

R	**Riverine and Freshwater Tidal Fringe Wetlands** WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality	**Points** (only 1 score per box)
R	**R 1. Does the wetland unit have the <u>potential</u> to improve water quality?**	***(see p.52)***
R	R 1.1 Area of surface depressions within the riverine wetland that can trap sediments during a flooding event: Depressions cover >3/4 area of wetland points = 8 Depressions cover > 1/2 area of wetland points = 4 If depressions > ½ of area of unit draw polygons on aerial photo or map Depressions present but cover < 1/2 area of wetland points = 2 No depressions present points = 0	**Figure** ___
R	R 1.2 Characteristics of the vegetation in the unit (areas with >90% cover at person height): Trees or shrubs > 2/3 the area of the unit points = 8 Trees or shrubs > 1/3 area of the unit points = 6 Ungrazed, herbaceous plants > 2/3 area of unit points = 6 Ungrazed herbaceous plants > 1/3 area of unit points = 3 Trees, shrubs, and ungrazed herbaceous < 1/3 area of unit points = 0 Aerial photo or map showing polygons of different vegetation types	**Figure** ___
R	*Add the points in the boxes above*	
R	**R 2. Does the wetland unit have the <u>opportunity</u> to improve water quality?** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity*. — Grazing in the wetland or within 150ft — Untreated stormwater discharges to wetland — Tilled fields or orchards within 150 feet of wetland — A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential, urban areas, golf courses are within 150 ft of wetland — The river or stream linked to the wetland has a contributing basin where human activities have raised levels of sediment, toxic compounds or nutrients in the river water above standards for water quality — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	***(see p.53)*** multiplier _____
R	**<u>TOTAL</u> - Water Quality Functions** Multiply the score from R 1 by R 2 ***Add score to table on p. 1***	

Comments

R	**Riverine and Freshwater Tidal Fringe Wetlands** HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream erosion	**Points** (only 1 score per box)
	R 3. Does the wetland unit have the <u>potential</u> to reduce flooding and erosion?	***(see p.54)***
R	R 3.1 Characteristics of the overbank storage the unit provides: *Estimate the average width of the wetland unit perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (average width of unit)/(average width of stream between banks).* If the ratio is more than 20 points = 9 If the ratio is between 10 – 20 points = 6 If the ratio is 5 - <10 points = 4 If the ratio is 1 - <5 points = 2 If the ratio is < 1 points = 1 Aerial photo or map showing average widths	**Figure** ___
R	R 3.2 Characteristics of vegetation that slow down water velocities during floods: *Treat large woody debris as "forest or shrub". Choose the points appropriate for the best description.* (polygons need to have >90% cover at person height NOT Cowardin classes): Forest or shrub for >1/3 area OR herbaceous plants > 2/3 area points = 7 Forest or shrub for > 1/10 area OR herbaceous plants > 1/3 area points = 4 Vegetation does not meet above criteria points = 0 Aerial photo or map showing polygons of different vegetation types	**Figure** ___
R	*Add the points in the boxes above*	
R	**R 4. Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion?** Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. *Note which of the following conditions apply.* — There are human structures and activities downstream (roads, buildings, bridges, farms) that can be damaged by flooding. — There are natural resources downstream (e.g. salmon redds) that can be damaged by flooding — Other_____ *(Answer NO if the major source of water to the wetland is controlled by a reservoir or the wetland is tidal fringe along the sides of a dike)* **YES** multiplier is **2** **NO** multiplier is **1**	***(see p.57)*** multiplier _____
R	**TOTAL - Hydrologic Functions** Multiply the score from R 3 by R 4 ***Add score to table on p. 1***	

Comments

L	**Lake-fringe Wetlands** WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to improve water quality	**Points** (only 1 score per box)
L	**L 1. Does the wetland unit have the <u>potential</u> to improve water quality?**	***(see p.59)***
L	L 1.1 Average width of vegetation along the lakeshore *(use polygons of Cowardin classes)*: Vegetation is more than 33ft (10m) wide points = 6 Vegetation is more than 16 (5m) wide and <33ft points = 3 Vegetation is more than 6ft (2m) wide and <16 ft points = 1 Vegetation is less than 6 ft wide points = 0 Map of Cowardin classes with widths marked	**Figure** ___
L	L 1.2 Characteristics of the vegetation in the wetland: *choose the appropriate description that results in the highest points, and do not include any open water in your estimate of coverage. The herbaceous plants can be either the dominant form or as an understory in a shrub or forest community. These are not Cowardin classes. Area of Cover is total cover in the unit, but it can be in patches. NOTE: Herbaceous does not include aquatic bed.* Cover of herbaceous plants is >90% of the vegetated area points = 6 Cover of herbaceous plants is >2/3 of the vegetated area points = 4 Cover of herbaceous plants is >1/3 of the vegetated area points = 3 Other vegetation that is not aquatic bed or herbaceous covers > 2/3 unit points = 3 Other vegetation that is not aquatic bed in > 1/3 vegetated area points = 1 Aquatic bed vegetation and open water cover > 2/3 of the unit points = 0 Map with polygons of different vegetation types	**Figure** ___
L	*Add the points in the boxes above*	
L	**L 2. Does the wetland have the <u>opportunity</u> to improve water quality?** Answer YES if you know or believe there are pollutants in the lake water, or polluted surface water flowing through the unit to the lake. *Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity*. — Wetland is along the shores of a lake or reservoir that does not meet water quality standards — Grazing in the wetland or within 150ft — Polluted water discharges to wetland along upland edge — Tilled fields or orchards within 150 feet of wetland — Residential or urban areas are within 150 ft of wetland — Parks with grassy areas that are maintained, ballfields, golf courses (all within 150 ft. of lake shore) — Power boats with gasoline or diesel engines use the lake — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	***(see p.61)*** multiplier _____
L	**<u>TOTAL</u> - Water Quality Functions** Multiply the score from L1 by L2 ***Add score to table on p. 1***	

Comments

	Lake-fringe Wetlands HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce shoreline erosion	**Points** (only 1 score per box)
L	**L 3. Does the wetland unit have the <u>potential</u> to reduce shoreline erosion?**	***(see p.62)***
L	L 3 Distance along shore and average width of Cowardin classes along the lakeshore (**do not** include aquatic bed): *(choose the highest scoring description that matches conditions in the wetland)* > ¾ of distance is shrubs or forest at least 33 ft (10m) wide points = 6 > ¾ of distance is shrubs or forest at least 6 ft. (2 m) wide points = 4 > ¼ distance is shrubs or forest at least 33 ft (10m) wide points = 4 Vegetation is at least 6 ft (2m) wide (any type except aquatic bed) points = 2 Vegetation is less than 6 ft (2m) wide (any type except aquatic bed) points = 0 Aerial photo or map with Cowardin vegetation classes	**Figure ___**
L	*Record the points from the box above*	
L	**L 4. Does the wetland unit have the <u>opportunity</u> to reduce erosion?** Are there features along the shore that will be impacted if the shoreline erodes? *Note which of the following conditions apply.* — There are human structures and activities along the upland edge of the wetland (buildings, fields) that can be damaged by erosion. — There are undisturbed natural resources along the upland edge of the wetland (e.g. mature forests other wetlands) than can be damaged by shoreline erosion — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	***(see p.63)*** multiplier _____
L	**TOTAL - Hydrologic Functions** Multiply the score from L 3 by L 4 ***Add score to table on p. 1***	

Comments

S	**Slope Wetlands** WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to improve water quality	**Points** (only 1 score per box)
S	**S 1. Does the wetland unit have the <u>potential</u> to improve water quality?**	***(see p.64)***
S	S 1.1 Characteristics of average slope of unit: Slope is1% or less *(a 1% slope has a 1 foot vertical drop in elevation for every 100 ft horizontal distance*) points = 3 Slope is 1% - 2% points = 2 Slope is 2% - 5% points = 1 Slope is greater than 5% points = 0	
S	S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic *(use NRCS definitions)* YES = 3 points NO = 0 points	
S	S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: *Choose the points appropriate for the description that best fits the vegetation in the wetland. Dense vegetation means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 inches.* Dense, uncut, herbaceous vegetation > 90% of the wetland area points = 6 Dense, uncut, herbaceous vegetation > 1/2 of area points = 3 Dense, woody, vegetation > ½ of area points = 2 Dense, uncut, herbaceous vegetation > 1/4 of area points = 1 Does not meet any of the criteria above for vegetation points = 0 Aerial photo or map with vegetation polygons	**Figure ___**
S	**Total for S 1** *Add the points in the boxes above*	
S	**S 2. Does the wetland unit have the <u>opportunity</u> to improve water quality?** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. *Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity*. — Grazing in the wetland or within 150ft — Untreated stormwater discharges to wetland — Tilled fields, logging, or orchards within 150 feet of wetland — Residential, urban areas, or golf courses are within 150 ft upslope of wetland — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	***(see p.67)*** multiplier _____
S	**TOTAL - Water Quality Functions** Multiply the score from S1 by S2 ***Add score to table on p. 1***	

Comments

S	**Slope Wetlands** HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream erosion	**Points** (only 1 score per box)
	S 3. Does the wetland unit have the <u>potential</u> to reduce flooding and stream erosion?	***(see p.68)***
S	S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms. *Choose the points appropriate for the description that best fit conditions in the wetland. (stems of plants should be thick enough (usually > 1/8in), or dense enough, to remain erect during surface flows)* Dense, uncut, **rigid** vegetation covers > 90% of the area of the wetland. points = 6 Dense, uncut, **rigid** vegetation > 1/2 area of wetland points = 3 Dense, uncut, **rigid** vegetation > 1/4 area points = 1 More than 1/4 of area is grazed, mowed, tilled or vegetation is not rigid points = 0	
S	S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows: The slope wetland has small surface depressions that can retain water over at least 10% of its area. YES points = 2 NO points = 0	
S	*Add the points in the boxes above*	
S	**S 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?** Is the wetland in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows? *Note which of the following conditions apply.* — Wetland has surface runoff that drains to a river or stream that has flooding problems — Other_____ *(Answer NO if the major source of water is controlled by a reservoir (e.g. wetland is a seep that is on the downstream side of a dam)* **YES** multiplier is **2** **NO** multiplier is **1**	***(see p. 70)*** multiplier _____
S	**TOTAL - Hydrologic Functions** Multiply the score from S 3 by S 4 ***Add score to table on p. 1***	

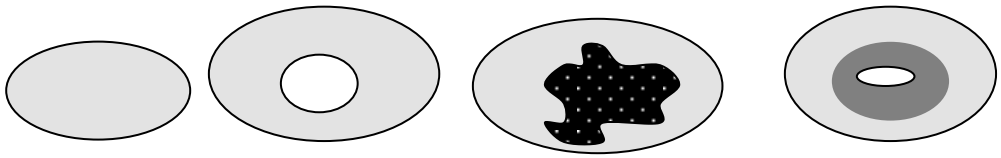
Comments

These questions apply to wetlands of all HGM classes. HABITAT FUNCTIONS - Indicators that unit functions to provide important habitat	**Points** (only 1 score per box)
H 1. Does the wetland unit have the <u>potential</u> to provide habitat for many species?	
H 1.1 <u>Vegetation structure</u> ***(see p. 72)***	**Figure** ___
Check the types of vegetation classes present (as defined by Cowardin)- Size threshold for each class is ¼ acre or more than 10% of the area if unit is smaller than 2.5 acres. ____Aquatic bed ____Emergent plants ____Scrub/shrub (areas where shrubs have >30% cover) ____Forested (areas where trees have >30% cover) *If the unit has a forested class check if:* ____The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon *Add the number of vegetation structures that qualify. If you have:* 4 structures or more points = 4 3 structures points = 2 2 structures points = 1 1 structure points = 0 Map of Cowardin vegetation classes	
H 1.2. <u>Hydroperiods</u> ***(see p. 73)***	**Figure** ___
Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ acre to count. (see text for descriptions of hydroperiods) ____Permanently flooded or inundated — 4 or more types present points = 3 ____Seasonally flooded or inundated — 3 types present points = 2 ____Occasionally flooded or inundated — 2 types present point = 1 ____Saturated only — 1 type present points = 0 ____ Permanently flowing stream or river in, or adjacent to, the wetland ____ Seasonally flowing stream in, or adjacent to, the wetland ____ ***Lake-fringe wetland* = 2 points** ____***Freshwater tidal wetland* = 2 points** Map of hydroperiods	
H 1.3. <u>Richness of Plant Species</u> ***(see p. 75)*** Count the number of plant species in the wetland that cover at least 10 ft^2. (*different patches of the same species can be combined to meet the size threshold)* *You do not have to name the species.* *Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle* If you counted: > 19 species points = 2 *List species below if you want to:* 5 - 19 species points = 1 < 5 species points = 0	

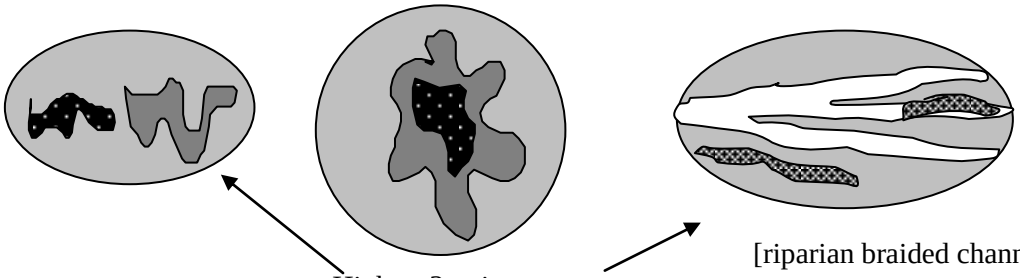
Total for page _____

H 1.4. Interspersion of habitats ***(see p. 76)*** **Figure ___**

Decide from the diagrams below whether interspersion between Cowardin vegetation classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



None = 0 points Low = 1 point Moderate = 2 points



[riparian braided channels]

High = 3 points

NOTE: If you have four or more classes or three vegetation classes and open water the rating is always "high". Use map of Cowardin vegetation classes

H 1.5. Special Habitat Features: ***(see p. 77)***

Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.

____Large, downed, woody debris within the wetland (>4in. diameter and 6 ft long).

____Standing snags (diameter at the bottom > 4 inches) in the wetland

____Undercut banks are present for at least 6.6 ft (2m) and/or overhanging vegetation extends at least 3.3 ft (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft (10m)

____Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet turned grey/brown)*

____At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated.*(structures for egg-laying by amphibians)*

____ Invasive plants cover less than 25% of the wetland area in each stratum of plants

NOTE: The 20*% stated in early printings of the manual on page 78 is an error*.

H 1. TOTAL Score - potential for providing habitat
Add the scores from H1.1, H1.2, H1.3, H1.4, H1.5

Comments

H 2. Does the wetland unit have the opportunity to provide habitat for many species?	
H 2.1 Buffers ***(see p. 80)*** *Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed."* — 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% of circumference. No structures are within the undisturbed part of buffer**.** (relatively undisturbed also means no-grazing, no landscaping, no daily human use) **Points = 5** — 100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference. **Points = 4** — 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference. **Points = 4** — 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference, . **Points = 3** — 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference. **Points = 3** **If buffer does not meet any of the criteria above** — No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — Heavy grazing in buffer. **Points = 1** — Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0**. — Buffer does not meet any of the criteria above. **Points = 1** Aerial photo showing buffers	**Figure ___**
H 2.2 Corridors and Connections ***(see p. 81)*** H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (*dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor*). YES = **4 points** (*go to H 2.3*) NO = go to H 2.2.2 H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? **OR** a **Lake-fringe** wetland, if it does not have an undisturbed corridor as in the question above? YES = **2 points** (*go to H 2.3*) NO = H 2.2.3 H 2.2.3 Is the wetland: within 5 mi (8km) of a brackish or salt water estuary OR within 3 mi of a large field or pasture (>40 acres) OR within 1 mi of a lake greater than 20 acres? YES = **1 point** NO = **0 points**	

Total for page_____

H 2.3 Near or adjacent to other priority habitats listed by WDFW ***(see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm)***

Which of the following priority habitats are within 330ft (100m) of the wetland unit? *NOTE: the connections do not have to be relatively undisturbed.*

____**Aspen Stands:** Pure or mixed stands of aspen greater than 0.4 ha (1 acre).

____**Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report p. 152*).

____**Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

____**Old-growth/Mature forests:** (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. **(**Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.

____**Oregon white Oak:** Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158*).

____**Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

____**Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161*).

____**Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

____ **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A).*

____**Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

____**Cliffs:** Greater than 7.6 m (25 ft) high and occurring below 5000 ft.

____**Talus:** Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

____**Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) long.

If wetland has **3 or more** priority habitats **= 4 points**
If wetland has **2** priority habitats = **3 points**
If wetland has **1** priority habitat **= 1 point** No habitats = 0 points

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H 2.4)

H 2.4 Wetland Landscape *(choose the **one** description of the landscape around the wetland that best fits*) ***(see p. 84)***	
There are at least 3 other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development. points = 5	
The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ mile points = 5	
There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbed points = 3	
The wetland is Lake-fringe on a lake **with** disturbance and there are 3 other lake-fringe wetland within ½ mile points = 3	
There is at least 1 wetland within ½ mile. points = 2	
There are no wetlands within ½ mile. points = 0	
H 2. TOTAL Score - opportunity for providing habitat *Add the scores from H2.1,H2.2, H2.3, H2.4*	
TOTAL for H 1 from page 14	
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland meets the attributes described below and circle the appropriate answers and Category.

Wetland Type *Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.*	**Category**
SC 1.0 Estuarine wetlands *(see p. 86)* Does the wetland unit meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO ___	
SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO go to SC 1.2	**Cat. I**
SC 1.2 Is the wetland unit at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual rating I/II**

SC 2.0 Natural Heritage Wetlands ***(see p. 87)*** Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland unit being rated in a Section/Township/Range that contains a Natural Heritage wetland? *(this question is used to screen out most sites before you need to contact WNHP/DNR)* S/T/R information from Appendix D ___ or accessed from WNHP/DNR web site ___ YES____ – contact WNHP/DNR (see p. 79) and go to SC 2.2 NO ___ SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as or as a site with state threatened or endangered plant species? YES = Category I NO ____not a Heritage Wetland	**Cat. I**
SC 3.0 Bogs ***(see p. 87)*** Does the wetland unit (**or any part of the unit**) meet both the criteria for soils and vegetation in bogs? *Use the key below to identify if the wetland is a bog.* ***If you answer yes you will still need to rate the wetland based on its functions.*** 1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of the soil profile? (See Appendix B for a field key to identify organic soils)? Yes - go to Q. 3 No - go to Q. 2 2. Does the unit have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? Yes - go to Q. 3 No - Is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? Yes – Is a bog for purpose of rating No - go to Q. 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. *1.* Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine, WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover *(> 30% coverage of the total shrub/herbaceous cover)?* 2. YES = Category I No___ Is not a bog for purpose of rating	**Cat. I**

SC 4.0 Forested Wetlands *(see p. 90)* Does the wetland unit have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority habitats? *If you answer yes you will still need to rate the wetland based on its functions.* — **Old-growth forests**: (west of Cascade crest) Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm) or more. NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter. — **Mature forests**: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old OR have average diameters (dbh) exceeding 21 inches (53cm); crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth. YES = Category I NO ___not a forested wetland with special characteristics	**Cat. I**
SC 5.0 Wetlands in Coastal Lagoons *(see p. 91)* Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks — The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom)* YES = Go to SC 5.1 NO___ not a wetland in a coastal lagoon SC 5.1 Does the wetland meets all of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74). — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland is larger than 1/10 acre (4350 square feet) YES = Category I NO = Category II	**Cat. I** **Cat. II**

SC 6.0 Interdunal Wetlands ***(see p. 93)*** Is the wetland unit west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? YES - go to SC 6.1 NO __ not an interdunal wetland for rating ***If you answer yes you will still need to rate the wetland based on its functions.*** In practical terms that means the following geographic areas: • Long Beach Peninsula- lands west of SR 103 • Grayland-Westport- lands west of SR 105 • Ocean Shores-Copalis- lands west of SR 115 and SR 109 SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is once acre or larger? YES = Category II NO – go to SC 6.2 SC 6.2 Is the unit between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre? YES = Category III	**Cat. II** **Cat. III**
Category of wetland based on Special Characteristics *Choose the "highest" rating if wetland falls into several categories, and record on p. 1.* If you answered NO for all types enter "Not Applicable" on p.1	

ATTACHMENT B

Modified Wetland Function Rating Form Questions and Scoring Criteria I-5 Corridor Reinforcement Project

Table 2. BPA I-5 Corridor Reinforcement Project Wetland Functions Assessment
Questions and Scoring Criteria

Rating Form Questions		Method (Automated Manual Not Feasible)	Variable	Datasets and Parameters	Scoring Criteria
HGM Class Determination: What is the hydrogeomorphic classification of the wetland?					
	HGM class	M	HGM Class	• WDNR hydrography dataset	• ***Riverine:*** wetland abuts/intersects stream • ***Depressional:*** wetland does not abut/intersect stream, OR wetland does abut/intersect stream and is leveed, OR wetland is situated at the headwaters of a stream • ***Slope:*** class not used for this functions analysis. All slope wetland function indicators require site visit to assess.
Riverine Wetlands - Water Quality Functions: Does the wetland unit have the potential and opportunity to improve water quality?					
Water Quality Potential	R.1.1	A	Topographic depressions	• LiDAR	• ***8 pts*** **:** when depressions cover >75% area • ***4 pts:*** when depressions cover >50% area • ***2 pts:*** when depressions cover 1-50% of area • ***0 pts:*** no depressions
Water Quality Potential	R.1.2	A	Vegetation cover	• Herrera-digitized wetland polygons with Cowardin class attributes	• ***8 pts:*** PFO or PSS >2/3 area • ***6 pts:*** PFO or PSS >1/3 area • ***6 pts:*** PEM >2/3 area [assume PEM areas ungrazed] • ***3 pts:*** PEM >1/3 area
Water Quality Opportunity	R.2	M	Development/water quality impairment in contributing basin	• Within 150 feet of grazing/fields/orchards/residential/urban areas/golf courses? • Contributing basin – any development/logging/farming/roads upstream within basin?	• ***Yes:*** multiplier of 2 • ***No:*** multiplier of 1 [manually review any wetland that gets a "1"]
Riverine Wetlands - Hydrologic Functions: Does the wetland unit have the potential and opportunity to reduce flooding and erosion?					
Hydrologic Potential	R.3.1	A + M	Floodplain width relative to stream width (ratio)	• Ratio of average wetland width perpendicular to stream channel width	• ***9 pts:*** 20+ • ***6 pts:*** 10-20 • ***4 pts:*** 5 - <10 • ***2 pts:*** 1 - <5 • ***1 pt:*** <1
Hydrologic Potential	R.3.2	A	Vegetation cover	• Herrera-digitized wetland polygons with Cowardin class attributes	• ***7 pts:*** PFO or PSS >1/3 area OR PEM >2/3 • ***4 pts:*** PFO or PSS >1/10 area OR PEM >1/3 • ***0 pts:*** none of the above
Hydrologic Opportunity	R.4	M	Opportunity to reduce flooding and erosion	• Visual evidence of presence of downstream development or natural resources that could be impacted by flooding or erosion	• ***Yes:*** multiplier of 2 [human development or natural resources downstream] • ***No:*** multiplier of 1
Depressional Wetlands - Water Quality Functions: Does the wetland unit have the potential and opportunity to improve water quality?					
Water Quality Potential	D.1.1	NF	Surface water flows	Site visit required	
Water Quality Potential	D.1.2	A	Soils characterstics	• NRCS soils data (mucks/peats or clay loam or finer)	• ***Yes:*** 4 pts [soil types are mucks, peats, clay loam or finer] • ***No:*** 0 pts
Water Quality Potential	D.1.3	NF	Persistent vegetation	Site visit required	
Water Quality Potential	D.1.4	NF	Seasonal ponding or inundation	Site visit required	
Water Quality Opportunity	D.2	A + M	Development/water quality impairment in contributing basin	• Within 150 feet of grazing/fields/orchards/residential/urban areas/golf courses? • Contributing basin – any development/logging/farming/roads upstream within basin?	• ***Yes:*** multiplier of 2 [If wetland meets any of the parameters] • ***No:*** multiplier of 1 [Biologist should review manually any wetland that gets a "1"]

Table 2. BPA I-5 Corridor Reinforcement Project Wetland Functions Assessment
Questions and Scoring Criteria

Rating Form Questions		Method (Automated Manual Not Feasible)	Variable	Datasets and Parameters	Scoring Criteria
Depressional Wetlands - Hydrologic Functions: Does the wetland unit have the potential and opportunity to reduce flooding and erosion?					
Hydrologic Potential	D.3.1	NF	Surface water flow	Site visit required	
Hydrologic Potential	D.3.2	NF	Storage depth during wet periods	Site visit required	
Hydrologic Potential	D.3.3	M	Contribution to wetland storage	Drainage basin ratio: area of upstream contributing drainage basin to area of wetland unit itself	• ***Ratio less than 10:*** 5 pts • ***10 to 100:*** 3 pts • ***More than 100:*** 0 pts
Hydrologic Opportunity	D.4	M	Opportunity to reduce flooding and erosion	• Dam locations • Wetland unit helps protect downstream propert and aquatic resources from flooding or excessive erosive flows.	• ***Yes:*** multiplier of 2 [dam not immediately downstream] • ***No:*** multiplier of 1 [dam immediately downstream]
Habitat Functions - Does the wetland unit have the potential and opportunity to provide habitat for many species?					
Habitat Potential	H.1.1	A	Vegetation structure	• Herrera-digitized wetland polygons with Cowardin class attributes	• ***PFO present:*** 2 pts • ***PSS present:*** 1 pt • ***PEM present:*** 1 pt • ***PAB present:*** 1 pt *sum the above for a given wetland unit (maximum score = 4 pts)
Habitat Potential	H.1.2	NF	Hydroperiods	Site visit required	
Habitat Potential	H.1.3	NF	Plant species richness	Site visit required	
Habitat Potential	H.1.4	M	Interspersion of habitats	• Visual assessment by biologist	• ***High:*** 3 pts • ***Low:*** 1 pt
Habitat Potential	H.1.5	NF	Special habitat features	Site visit required	
Habitat Opportunity	H.2.1	M	Buffers	• Visual assessment by biologist	• ***Buffer intact:*** 5 pts • ***Buffer compromised:*** 2 pts • ***Buffer highly altered:*** 0 pts
Habitat Opportunity	H.2.2	M	Corridors and Connections	• Visual assessment by biologist	• ***Corridor present*** : 4 pts • ***Corridor not present:*** 0 pts
Habitat Opportunity	H.2.3	A	Proximity to priority habitats	• WDFW PHS data • Herrera-digitized polygons for riverine wetlands, mature forest, and oak woodland	• ***Riverine wetland:*** PHS polygon within 100m = 4 pts • ***Depressional wetland:*** PHS polygon within 100m, tally number up to 4 points
Habitat Opportunity	H.2.4	A	Wetland landscape	• WDNR hydrography layer • Herrera-digitized wetland polygons	• ***Wetland connects to stream:*** 5 pts If wetland is <u>not</u> connected to stream, then: • ***3+ other wetlands within ½ mile of rated wetland:*** 5 pts • ***1 or 2 other wetlands within ½ mile:*** 2 pts • ***No other wetlands within ½ mile:*** 0 pts

ATTACHMENT C

Wetland Function Scores
I-5 Corridor Reinforcement Project

			Riverine Wetlands						Depressional Wetlands										Habitat Functions									
	Analysis methods * (A) automated/GIS (M) manual/visual (NF) not feasible, site visit req'd		Water Quality Functions			Hydrologic Functions			Water Quality Functions					Hydrologic Functions														
Alternative/Option	WETID	HGM class	R.1.1 (A) *	R.1.2 (A)	R.2 (M)	R.3.1 (M)	R.3.2 (A)	R.4 (M)	D.1.1 (NF)	D.1.2 (A)	D.1.3 (NF)	D.1.4 (NF)	D.2 (M)	D.3.1 (NF)	D.3.2 (NF)	D.3.3 (M)	D.4 (M)	H.1.1 (A)	H.1.2 (NF)	H.1.3 (NF)	H.1.4 (M)	H.1.5 (NF)	H.2.1 (M)	H.2.2 (M)	H.2.3 (A)	H.2.4 (A)	Total Score
Central Alternative	WET-162	Riverine	2	8	2	4	7	2										3			3		2	4	4	5	63
Central Alternative	WET-199	Riverine	2	8	2	2	7	2										1			1		2	4	4	5	55
Central Alternative	WET-200	Riverine	2	8	2	2		2										2			3		2	4	4	5	44
Central Alternative	WET-201	Riverine	2	3	2	9	4	2										4			3		2	4	4	5	58
Central Alternative	WET-202	Depressional								0			2			3	2	2			3		0	4	1	5	21
Central Alternative	WET-204	Riverine	2	8	2	2	7	2										2			3		0	0	4	5	52
Central Alternative	WET-205	Riverine	2	8	2	4	7	2										2			3		5	4	4	5	65
Central Alternative	WET-214	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Central Alternative	WET-216	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Central Alternative	WET-217	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Central Alternative	WET-218	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Central Alternative	WET-219	Riverine	2	8	2	4	7	2										2			3		5	4	4	5	65
Central Alternative	WET-220	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Central Alternative	WET-221	Depressional								0			2			3	2	2			3		2	4	0	5	22
Central Alternative	WET-222	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Central Alternative	WET-223	Depressional								0			2			0	2	2			3		2	4	0	5	16
Central Alternative	WET-224	Riverine	2	8	2	6	7	2										2			3		2	4	4	5	66
Central Alternative	WET-225	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Central Alternative	WET-226	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Central Alternative	WET-227	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Central Alternative	WET-228	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Central Alternative	WET-230	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Central Alternative	WET-231	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Central Alternative	WET-232	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Central Alternative	WET-233	Riverine	2	8	2	6	7	2										2			3		2	4	4	5	66
Central Alternative	WET-234	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Central Alternative	WET-235	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Central Alternative	WET-236	Riverine	2	8	2	4	7	2										2			3		5	4	4	5	65
Central Alternative	WET-237	Depressional								0			2			3	2	2			3		2	4	1	5	23
Central Alternative	WET-238	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Central Alternative	WET-239	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Central Alternative	WET-262	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Central Alternative	WET-263	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Central Alternative	WET-264	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Central Alternative	WET-265	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Central Alternative	WET-266	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Central Alternative	WET-268	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Central Alternative	WET-269	Depressional								0			2			0	2	2			3		2	4	0	5	16
Central Alternative	WET-270	Depressional								0			2			3	2	2			3		5	4	1	5	26
Central Alternative	WET-278	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Central Alternative	WET-280	Riverine	2	8	2	9	7	2										3			3		5	4	4	5	76
Central Alternative	WET-282	Riverine	2	8	2	6	7	2										3			3		0	0	4	5	61
Central Alternative	WET-283	Riverine	2	3	2	6	4	2										4			3		5	4	4	5	55
Central Alternative	WET-285	Riverine	2	6	2	2	7	2										3			3		2	4	4	5	55
Central Alternative	WET-286	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Central Alternative	WET-287	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Central Alternative	WET-289	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Central Alternative	WET-290	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Central Alternative	WET-291	Depressional								0			2			3	2	2			3		2	4	4	5	26
Central Alternative	WET-304	Riverine	2	6	2	4	7	2										3			3		2	4	4	5	59
Central Alternative	WET-305	Riverine	2	8	2	2	7	2										1			3		2	4	4	5	57
Central Alternative	WET-306	Riverine	2	8	2	1	7	2										1			3		2	4	2	5	53
Central Alternative	WET-307	Riverine	2	8	2	1	7	2										2			3		2	4	4	5	56
Central Alternative	WET-308	Riverine	2	8	2	1	7	2										2			3		2	4	4	5	56
Central Alternative	WET-309	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Central Alternative	WET-311	Riverine	2	8	2	4	7	2										2			3		5	4	4	5	65
Central Alternative	WET-312	Riverine	2	8	2	6	7	2										2			3		2	4	4	5	66
Central Alternative	WET-313	Riverine	2	8	2	6	7	2										2			3		2	4	4	5	66
Central Alternative	WET-314	Riverine	2	8	2	2	7	2										3			3		5	4	4	5	62
Central Alternative	WET-315	Riverine	2	8	2	6	7	2										2			3		2	4	4	5	66

	Analysis methods * (A) automated/GIS (M) manual/visual (NF) not feasible, site visit req'd		Riverine Wetlands						Depressional Wetlands									Habitat Functions									Total Score
			Water Quality Functions			Hydrologic Functions			Water Quality Functions					Hydrologic Functions													
Alternative/Option	WETID	HGM class	R.1.1 (A) *	R.1.2 (A)	R.2 (M)	R.3.1 (M)	R.3.2 (A)	R.4 (M)	D.1.1 (NF)	D.1.2 (A)	D.1.3 (NF)	D.1.4 (NF)	D.2 (M)	D.3.1 (NF)	D.3.2 (NF)	D.3.3 (M)	D.4 (M)	H.1.1 (A)	H.1.2 (NF)	H.1.3 (NF)	H.1.4 (M)	H.1.5 (NF)	H.2.1 (M)	H.2.2 (M)	H.2.3 (A)	H.2.4 (A)	
Central Alternative	WET-316	Depressional								0			2			5	2	3			3		5	4	4	5	34
Central Alternative	WET-317	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Central Alternative	WET-318	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Central Alternative	WET-319	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Central Alternative	WET-320	Riverine	2	8	2	4	7	2										2			3		5	4	4	5	65
Central Alternative	WET-321	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Central Alternative	WET-323	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Central Alternative	WET-324	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Central Alternative	WET-327	Riverine	2	8	2	4	7	2										2			3		5	4	4	5	65
Central Alternative	WET-328	Riverine	2	8	2	6	7	2										2			3		2	4	4	5	66
Central Alternative	WET-330	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Central Alternative	WET-332	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Central Alternative	WET-334	Riverine	2	8	2	6	7	2										3			3		2	4	4	5	67
Central Alternative	WET-335	Riverine	2	8	2	6	7	2										2			3		2	4	4	5	66
Central Alternative	WET-336	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Central Alternative	WET-338	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Central Alternative	WET-339	Riverine	2	8	2	4	7	2										2			3		5	4	4	5	65
Central Alternative	WET-340	Riverine	2	8	2	4	7	2										2			3		5	4	4	5	65
Central Alternative	WET-342	Depressional								0			2			3	2	2			3		2	4	4	5	26
Central Alternative	WET-344	Riverine	2	8	2	6	7	2										2			3		5	4	4	5	69
Central Alternative	WET-374	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Central Alternative	WET-375	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Central Alternative	WET-378	Riverine	2	8	2	6	7	2										2			3		2	4	4	5	66
Central Alternative	WET-379	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Central Alternative	WET-382	Depressional								0			2			0	2	2			3		0	0	1	5	11
Central Alternative	WET-383	Riverine	2	8	2	9	7	2										2			3		2	4	4	5	72
Central Alternative	WET-384	Riverine	2	8	2	9	7	2										2			3		2	4	4	5	72
Central Alternative	WET-385	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Central Alternative	WET-386	Riverine	0	8	2	4	7	2										2			3		5	4	4	5	61
Central Alternative	WET-388	Riverine	2	8	2	6	7	2										2			3		2	0	4	5	62
Central Alternative	WET-390	Riverine	2	8	2	4	7	2										2			3		5	4	4	5	65
Central Alternative	WET-392	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Central Alternative	WET-393	Riverine	2	8	2	4	7	2										2			3		5	4	4	5	65
Central Alternative	WET-394	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Central Alternative	WET-395	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Central Alternative	WET-397	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Central Alternative	WET-398	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Central Alternative	WET-399	Riverine	2	8	2	4	7	2										2			3		5	4	4	5	65
Central Alternative	WET-401	Riverine	2	8	2	6	7	2										3			3		2	4	4	5	67
Central Alternative	WET-405	Riverine	2	8	2	4	7	2										2			3		5	4	4	5	65
Central Alternative	WET-408	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Central Alternative	WET-411	Riverine	2	8	2	4	7	2										2			3		5	4	4	5	65
Central Alternative	WET-412	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Central Alternative	WET-413	Riverine	2	6	2	4	7	2										3			3		2	4	4	5	59
Central Alternative	WET-420	Riverine	2	8	2	6	7	2										2			3		5	4	4	5	69
Central Alternative	WET-422	Depressional								0			2			3	2	2			3		0	0	1	5	17
Central Alternative	WET-425	Riverine	2	8	2	4	7	2										2			3		2	0	4	5	58
Central Alternative	WET-426	Riverine	2	8	2	4	7	2										3			3		2	4	4	5	63
Central Alternative	WET-427	Riverine	2	8	2	6	7	2										2			3		2	4	4	5	66
Central Alternative	WET-428	Depressional								0			2			3	2	2			3		2	4	1	5	23
Central Alternative	WET-430	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Central Alternative	WET-431	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Central Alternative	WET-432	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Central Alternative	WET-434	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Central Alternative	WET-435	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Central Alternative	WET-436	Riverine	2	8	2	4	7	2										3			3		2	4	4	5	63
Central Alternative	WET-443	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Central Alternative	WET-444	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Central Alternative	WET-445	Riverine	8	8	2	2	7	2										2			3		2	4	4	5	70
Central Alternative	WET-446	Riverine	4	8	2	2	7	2										2			3		2	4	4	5	62

			Riverine Wetlands						Depressional Wetlands									Habitat Functions									
	Analysis methods * (A) automated/GIS (M) manual/visual (NF) not feasible, site visit req'd		Water Quality Functions			Hydrologic Functions			Water Quality Functions					Hydrologic Functions													
Alternative/Option	WETID	HGM class	R.1.1 (A) *	R.1.2 (A)	R.2 (M)	R.3.1 (M)	R.3.2 (A)	R.4 (M)	D.1.1 (NF)	D.1.2 (A)	D.1.3 (NF)	D.1.4 (NF)	D.2 (M)	D.3.1 (NF)	D.3.2 (NF)	D.3.3 (M)	D.4 (M)	H.1.1 (A)	H.1.2 (NF)	H.1.3 (NF)	H.1.4 (M)	H.1.5 (NF)	H.2.1 (M)	H.2.2 (M)	H.2.3 (A)	H.2.4 (A)	Total Score
Central Alternative	WET-448	Riverine	2	6	2	6	7	2										3			3		2	4	4	5	63
Central Alternative	WET-450	Riverine	4	8	2	4	7	2										2			3		5	4	4	5	69
Central Alternative	WET-451	Depressional								0			2			3	2	3			3		2	0	1	5	20
Central Alternative	WET-452	Riverine	2	8	2	2	7	2										1			3		0	0	4	5	51
Central Alternative	WET-454	Riverine	2	8	2	6	7	2										2			3		2	4	4	5	66
Central Alternative	WET-455	Riverine	2	8	2	6	7	2										2			3		2	4	4	5	66
Central Alternative	WET-456	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Central Alternative	WET-457	Riverine	8	8	2	2	7	2										2			3		2	4	4	5	70
Central Alternative	WET-458	Depressional								0			2			3	2	2			3		5	4	1	5	26
Central Alternative	WET-459	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Central Alternative	WET-460	Depressional								0			2			0	2	2			3		2	4	1	5	17
Central Alternative	WET-461	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Central Alternative	WET-464	Depressional								0			2			0	2	3			1		2	4	1	5	16
Central Alternative	WET-467	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Central Alternative	WET-468	Riverine	2	8	2	4	7	2										2			3		5	4	4	5	65
Central Alternative	WET-469	Riverine	2	6	2	6	7	2										4			3		5	4	4	5	67
Central Alternative	WET-472	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Central Alternative	WET-475	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Central Alternative	WET-515	Riverine	2	8	2	2	7	2										3			3		5	4	4	5	62
Central Alternative	WET-537	Riverine	2	8	2	4	7	2										3			3		2	4	4	5	63
Central Alternative	WET-561	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Central Alternative	WET-578	Riverine	2	8	2	2	7	2										3			3		2	4	4	5	59
Central Alternative	WET-595	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Central Alternative	WET-62	Depressional								0			2			5	2	3			3		2	4	0	5	27
Central Alternative	WET-63	Depressional								0			2			5	2	3			3		2	4	0	5	27
Central Alternative	WET-634	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Central Alternative	WET-636	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Central Alternative	WET-67	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Central Alternative	WET-70	Riverine	2	8	2	4	4	2										3			3		2	4	4	5	57
Central Alternative	WET-722	Riverine	2	8	1	2	7	2										2			3		2	4	4	5	48
Central Alternative	WET-736	Riverine	2	8	2	2	7	2										3			3		2	4	4	5	59
Central Alternative	WET-737	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Central Alternative	WET-738	Riverine	2	8	2	2	7	2										3			3		2	4	4	5	59
Central Alternative	WET-742	Depressional								0			2			0	2	2			1		5	4	1	5	18
Central Alternative	WET-743	Depressional								0			2			0	2	1			1		2	4	1	5	14
Central Alternative	WET-744	Depressional								0			2			0	2	1			1		2	4	1	5	14
Central Alternative	WET-748	Depressional								0			2			0	2	2			3		5	4	1	5	20
Central Alternative	WET-75	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Central Alternative	WET-751	Riverine	2	8	2	1	7	2										4			3		2	4	0	5	54
Central Alternative	WET-755	Riverine	2	6	2	1	7	2										4			3		2	0	1	5	47
Central Alternative	WET-756	Riverine	2	6	2	2	7	2										4			3		2	0	4	5	52
Central Alternative	WET-757	Depressional								0			2			0	2	1			1		0	0	0	5	7
Central Alternative	WET-758	Riverine	2	6	2	1	7	2										3			3		5	0	2	5	50
Central Alternative	WET-761	Riverine	2	8	2	1	7	2										3			3		2	0	4	5	53
Central Alternative	WET-762	Riverine	2	6	2	2	7	2										4			3		2	0	4	5	52
Central Alternative	WET-763	Depressional								0			2			0	2	3			3		0	0	1	5	12
Central Alternative	WET-764	Depressional								0			2			3	2	2			3		0	0	4	5	20
Central Alternative	WET-766	Depressional								0			2			0	2	3			3		0	0	0	5	11
Central Alternative	WET-767	Depressional								0			2			0	2	1			1		0	0	1	5	8
Central Alternative	WET-768	Depressional								0			2			0	2	1			1		0	0	1	2	5
Central Alternative	WET-771	Depressional								0			2			0	2	1			1		0	0	0	5	7
Central Alternative	WET-772	Depressional								0			2			0	2	1			1		0	0	0	5	7
Central Alternative	WET-773	Depressional								0			2			0	2	1			3		0	0	0	5	9
Central Alternative	WET-774	Depressional								0			2			0	2	1			1		0	0	0	5	7
Central Alternative	WET-776	Depressional								0			2			0	2	1			1		0	0	0	5	7
Central Alternative	WET-778	Depressional								0			2			0	2	4			1		2	4	0	5	16
Central Alternative	WET-78	Riverine	2	6	2	2	7	2										4			3		2	4	4	5	56
Central Alternative	WET-785	Depressional								0			2			0	2	1			1		0	0	0	5	7
Central Alternative	WET-79	Riverine	2	8	2	4	7	2										1			3		2	4	4	5	61
Central Alternative	WET-811	Depressional								0			2			0	2	1			3		2	0	2	5	13

	Analysis methods * (A) automated/GIS (M) manual/visual (NF) not feasible, site visit req'd		Riverine Wetlands						Depressional Wetlands									Habitat Functions									Total Score
			Water Quality Functions			Hydrologic Functions			Water Quality Functions					Hydrologic Functions													
Alternative/Option	WETID	HGM class	R.1.1 (A) *	R.1.2 (A)	R.2 (M)	R.3.1 (M)	R.3.2 (A)	R.4 (M)	D.1.1 (NF)	D.1.2 (A)	D.1.3 (NF)	D.1.4 (NF)	D.2 (M)	D.3.1 (NF)	D.3.2 (NF)	D.3.3 (M)	D.4 (M)	H.1.1 (A)	H.1.2 (NF)	H.1.3 (NF)	H.1.4 (M)	H.1.5 (NF)	H.2.1 (M)	H.2.2 (M)	H.2.3 (A)	H.2.4 (A)	
Central Alternative	WET-812	Depressional								0			2			0	2	2			1		2	0	2	5	12
Central Alternative	WET-813	Riverine	2	6	2	4	7	2										3			3		2	0	4	5	55
Central Alternative	WET-814	Riverine	2	6	2	2	7	2										4			3		2	0	4	5	52
Central Alternative	WET-815	Depressional								0			2			0	2	1			1		0	0	0	5	7
Central Alternative	WET-816	Depressional								0			2			0	2	1			1		0	0	0	5	7
Central Alternative	WET-818	Riverine	2	6	2	1	7	2										4			3		2	4	2	5	52
Central Alternative	WET-819	Riverine	2	8	2	1	7	2										4			3		2	4	4	5	58
Central Alternative	WET-821	Depressional								0			2			0	2	4			3		0	0	0	5	12
Central Alternative	WET-822	Riverine	2	8	2	1	7	2										1			3		2	0	0	5	47
Crossover Alternative	WET-1	Riverine	2	6	2	9	7	2										3			3		2	4	4	5	69
Crossover Alternative	WET-100	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Crossover Alternative	WET-102	Riverine	2	8	2	4	7	2										3			3		2	4	4	5	63
Crossover Alternative	WET-103	Riverine	2	8	2	6	7	2										3			3		2	4	4	5	67
Crossover Alternative	WET-108	Riverine	2	8	2	6	7	2										2			3		2	4	4	5	66
Crossover Alternative	WET-109	Depressional								0			2			5	2	2			3		2	4	0	5	26
Crossover Alternative	WET-110	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Crossover Alternative	WET-111	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Crossover Alternative	WET-112	Riverine	2	6	2	4	7	2										3			3		2	4	4	5	59
Crossover Alternative	WET-113	Riverine	2	8	2	4	7	2										1			3		2	4	4	5	61
Crossover Alternative	WET-114	Riverine	2	8	2	4	7	2										3			3		2	4	4	5	63
Crossover Alternative	WET-115	Riverine	2	8	2	2	7	2										1			1		0	4	4	5	53
Crossover Alternative	WET-116	Riverine	2	8	2	4	7	2										3			3		2	4	4	5	63
Crossover Alternative	WET-117	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Crossover Alternative	WET-118	Riverine	2	6	2	4	7	2										4			3		2	4	4	5	60
Crossover Alternative	WET-119	Riverine	2	8	2	2	7	2										2			1		2	4	4	5	56
Crossover Alternative	WET-121	Riverine	2	8	2	2	7	2										3			3		2	4	4	5	59
Crossover Alternative	WET-122	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Crossover Alternative	WET-124	Riverine	2	8	2	6	7	2										3			3		2	0	4	5	63
Crossover Alternative	WET-143	Riverine	2	6	2	6	7	2										4			1		2	4	4	5	62
Crossover Alternative	WET-162	Riverine	2	8	2	4	7	2										3			3		2	4	4	5	63
Crossover Alternative	WET-163	Riverine	2	8	2	4	7	2										3			3		2	4	4	5	63
Crossover Alternative	WET-165	Riverine	2	8	2	4	7	2										3			3		2	4	4	5	63
Crossover Alternative	WET-166	Riverine	2	8	2	6	7	2										3			3		2	4	4	5	67
Crossover Alternative	WET-168	Depressional								0			2			0	2	1			1		0	0	0	5	7
Crossover Alternative	WET-169	Riverine	2	6	2	6	7	2										1			3		0	4	4	5	59
Crossover Alternative	WET-170	Riverine	2	6	2	6	7	2										1			3		2	4	4	5	61
Crossover Alternative	WET-172	Depressional								0			2			3	2	2			1		0	4	1	5	19
Crossover Alternative	WET-173	Riverine	2	6	2	4	7	2										1			3		2	4	4	5	57
Crossover Alternative	WET-174	Riverine	2	6	2	4	7	2										2			3		2	4	4	5	58
Crossover Alternative	WET-176	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Crossover Alternative	WET-177	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Crossover Alternative	WET-178	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Crossover Alternative	WET-179	Riverine	2	8	2	2	7	2										3			3		2	4	4	5	59
Crossover Alternative	WET-181	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Crossover Alternative	WET-182	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Crossover Alternative	WET-183	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Crossover Alternative	WET-197	Riverine	4	8	2	2	7	2										1			3		2	4	4	5	61
Crossover Alternative	WET-198	Depressional								0			2			3	2	3			1		2	4	2	5	23
Crossover Alternative	WET-199	Riverine	2	8	2	2	7	2										1			1		2	4	4	5	55
Crossover Alternative	WET-2	Riverine	2	8	2	2	7	2										3			3		2	4	4	5	59
Crossover Alternative	WET-200	Riverine	2	8	2	2		2										2			3		2	4	4	5	44
Crossover Alternative	WET-242	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Crossover Alternative	WET-285	Riverine	2	6	2	2	7	2										3			3		2	4	4	5	55
Crossover Alternative	WET-286	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Crossover Alternative	WET-287	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Crossover Alternative	WET-304	Riverine	2	6	2	4	7	2										3			3		2	4	4	5	59
Crossover Alternative	WET-305	Riverine	2	8	2	2	7	2										1			3		2	4	4	5	57
Crossover Alternative	WET-306	Riverine	2	8	2	1	7	2										1			3		2	4	2	5	53
Crossover Alternative	WET-307	Riverine	2	8	2	1	7	2										2			3		2	4	4	5	56
Crossover Alternative	WET-308	Riverine	2	8	2	1	7	2										2			3		2	4	4	5	56

			Riverine Wetlands						Depressional Wetlands									Habitat Functions									
	Analysis methods * (A) automated/GIS (M) manual/visual (NF) not feasible, site visit req'd		Water Quality Functions			Hydrologic Functions			Water Quality Functions					Hydrologic Functions													
Alternative/Option	WETID	HGM class	R.1.1 (A) *	R.1.2 (A)	R.2 (M)	R.3.1 (M)	R.3.2 (A)	R.4 (M)	D.1.1 (NF)	D.1.2 (A)	D.1.3 (NF)	D.1.4 (NF)	D.2 (M)	D.3.1 (NF)	D.3.2 (NF)	D.3.3 (M)	D.4 (M)	H.1.1 (A)	H.1.2 (NF)	H.1.3 (NF)	H.1.4 (M)	H.1.5 (NF)	H.2.1 (M)	H.2.2 (M)	H.2.3 (A)	H.2.4 (A)	Total Score
Crossover Alternative	WET-309	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Crossover Alternative	WET-311	Riverine	2	8	2	4	7	2										2			3		5	4	4	5	65
Crossover Alternative	WET-374	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Crossover Alternative	WET-375	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Crossover Alternative	WET-378	Riverine	2	8	2	6	7	2										2			3		2	4	4	5	66
Crossover Alternative	WET-379	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Crossover Alternative	WET-382	Depressional								0			2			0	2	2			3		0	0	1	5	11
Crossover Alternative	WET-4	Riverine	2	8	2	4	7	2										3			3		2	4	4	5	63
Crossover Alternative	WET-416	Riverine	2	6	2	6	7	2										3			3		2	4	4	5	63
Crossover Alternative	WET-417	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Crossover Alternative	WET-426	Riverine	2	8	2	4	7	2										3			3		2	4	4	5	63
Crossover Alternative	WET-427	Riverine	2	8	2	6	7	2										2			3		2	4	4	5	66
Crossover Alternative	WET-428	Depressional								0			2			3	2	2			3		2	4	1	5	23
Crossover Alternative	WET-430	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Crossover Alternative	WET-431	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Crossover Alternative	WET-432	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Crossover Alternative	WET-434	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Crossover Alternative	WET-435	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Crossover Alternative	WET-437	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Crossover Alternative	WET-468	Riverine	2	8	2	4	7	2										2			3		5	4	4	5	65
Crossover Alternative	WET-483	Riverine	2	8	2	4	7	2										4			3		2	4	4	5	64
Crossover Alternative	WET-501	Riverine	2	8	2	2	7	2										2			3		2	0	4	5	54
Crossover Alternative	WET-514	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Crossover Alternative	WET-515	Riverine	2	8	2	2	7	2										3			3		5	4	4	5	62
Crossover Alternative	WET-541	Riverine	2	8	2	4	7	2										4			3		2	4	4	5	64
Crossover Alternative	WET-542	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Crossover Alternative	WET-558	Riverine	2	8	2	2	7	2										1			3		2	0	4	5	53
Crossover Alternative	WET-559	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Crossover Alternative	WET-563	Riverine	2	8	2	2	7	2										3			3		2	4	4	5	59
Crossover Alternative	WET-564	Riverine	2	8	2	2	7	2										1			3		5	4	4	5	60
Crossover Alternative	WET-565	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Crossover Alternative	WET-567	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Crossover Alternative	WET-568	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Crossover Alternative	WET-570	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Crossover Alternative	WET-571	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Crossover Alternative	WET-572	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Crossover Alternative	WET-573	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Crossover Alternative	WET-574	Riverine	2	8	2	6	7	2										3			3		2	4	4	5	67
Crossover Alternative	WET-575	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Crossover Alternative	WET-576	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Crossover Alternative	WET-577	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Crossover Alternative	WET-578	Riverine	2	8	2	2	7	2										3			3		2	4	4	5	59
Crossover Alternative	WET-579	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Crossover Alternative	WET-581	Riverine	2	8	2	2	7	2										3			3		2	4	4	5	59
Crossover Alternative	WET-582	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Crossover Alternative	WET-583	Depressional								0			2			5	2	3			1		2	4	0	5	25
Crossover Alternative	WET-594	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Crossover Alternative	WET-595	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Crossover Alternative	WET-596	Depressional								0			2			3	2	2			1		2	4	0	5	20
Crossover Alternative	WET-597	Riverine	2	8	2	2	7	2										3			3		5	4	4	5	62
Crossover Alternative	WET-598	Depressional								0			2			3	2	1			1		5	4	1	5	23
Crossover Alternative	WET-599	Depressional								0			2			3	2	2			3		5	4	0	5	25
Crossover Alternative	WET-607	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Crossover Alternative	WET-608	Riverine	2	8	2	2	7	2										1			3		5	4	4	5	60
Crossover Alternative	WET-609	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Crossover Alternative	WET-610	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Crossover Alternative	WET-611	Riverine	2	8	2	2	7	2										1			3		2	4	4	5	57
Crossover Alternative	WET-612	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Crossover Alternative	WET-614	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Crossover Alternative	WET-615	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62

			Riverine Wetlands						Depressional Wetlands									Habitat Functions								
	Analysis methods * (A) automated/GIS (M) manual/visual (NF) not feasible, site visit req'd		Water Quality Functions			Hydrologic Functions			Water Quality Functions					Hydrologic Functions												
Alternative/Option	WETID	HGM class	R.1.1 (A) *	R.1.2 (A)	R.2 (M)	R.3.1 (M)	R.3.2 (A)	R.4 (M)	D.1.1 (NF)	D.1.2 (A)	D.1.3 (NF)	D.1.4 (NF)	D.2 (M)	D.3.1 (NF)	D.3.2 (NF)	D.3.3 (M)	D.4 (M)	H.1.1 (A)	H.1.2 (NF)	H.1.3 (NF)	H.1.4 (M)	H.1.5 (NF)	H.2.1 (M)	H.2.2 (M)	H.2.3 (A)	H.2.4 (A)	Total Score
Crossover Alternative	WET-616	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Crossover Alternative	WET-617	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Crossover Alternative	WET-619	Riverine	2	6	2	2	7	2										3			3		2	4	4	5	55
Crossover Alternative	WET-62	Depressional								0			2			5	2	3			3		2	4	0	5	27
Crossover Alternative	WET-620	Riverine	2	8	2	4	7	2										1			3		2	4	4	5	61
Crossover Alternative	WET-621	Riverine	2	8	2	4	7	2										4			3		2	4	4	5	64
Crossover Alternative	WET-63	Depressional								0			2			5	2	3			3		2	4	0	5	27
Crossover Alternative	WET-638	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Crossover Alternative	WET-640	Riverine	2	8	2	1	7	2										2			3		2	4	4	5	56
Crossover Alternative	WET-643	Riverine	0	8	1	2	7	2										2			3		5	4	4	5	49
Crossover Alternative	WET-645	Riverine	2	6	2	2	7	2										3			3		2	4	4	5	55
Crossover Alternative	WET-646	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Crossover Alternative	WET-647	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Crossover Alternative	WET-649	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Crossover Alternative	WET-650	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Crossover Alternative	WET-653	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Crossover Alternative	WET-654	Riverine	2	8	2	1	7	2										1			3		2	4	4	5	55
Crossover Alternative	WET-655	Riverine	2	8	2	1	7	2										2			3		2	4	4	5	56
Crossover Alternative	WET-656	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Crossover Alternative	WET-67	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Crossover Alternative	WET-7	Riverine	2	6	2	6	7	2										3			3		2	4	4	5	63
Crossover Alternative	WET-70	Riverine	2	8	2	4	4	2										3			3		2	4	4	5	57
Crossover Alternative	WET-723	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Crossover Alternative	WET-724	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Crossover Alternative	WET-725	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Crossover Alternative	WET-728	Depressional								0			2			5	2	3			1		2	4	0	5	25
Crossover Alternative	WET-729	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Crossover Alternative	WET-730	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Crossover Alternative	WET-75	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Crossover Alternative	WET-751	Riverine	2	8	2	1	7	2										4			3		2	4	0	5	54
Crossover Alternative	WET-755	Riverine	2	6	2	1	7	2										4			3		2	0	1	5	47
Crossover Alternative	WET-756	Riverine	2	6	2	2	7	2										4			3		2	0	4	5	52
Crossover Alternative	WET-757	Depressional								0			2			0	2	1			1		0	0	0	5	7
Crossover Alternative	WET-758	Riverine	2	6	2	1	7	2										3			3		5	0	2	5	50
Crossover Alternative	WET-761	Riverine	2	8	2	1	7	2										3			3		2	0	4	5	53
Crossover Alternative	WET-762	Riverine	2	6	2	2	7	2										4			3		2	0	4	5	52
Crossover Alternative	WET-763	Depressional								0			2			0	2	3			3		0	0	1	5	12
Crossover Alternative	WET-764	Depressional								0			2			3	2	2			3		0	0	4	5	20
Crossover Alternative	WET-766	Depressional								0			2			0	2	3			3		0	0	0	5	11
Crossover Alternative	WET-767	Depressional								0			2			0	2	1			1		0	0	1	5	8
Crossover Alternative	WET-768	Depressional								0			2			0	2	1			1		0	0	1	2	5
Crossover Alternative	WET-771	Depressional								0			2			0	2	1			1		0	0	0	5	7
Crossover Alternative	WET-772	Depressional								0			2			0	2	1			1		0	0	0	5	7
Crossover Alternative	WET-773	Depressional								0			2			0	2	1			3		0	0	0	5	9
Crossover Alternative	WET-774	Depressional								0			2			0	2	1			1		0	0	0	5	7
Crossover Alternative	WET-776	Depressional								0			2			0	2	1			1		0	0	0	5	7
Crossover Alternative	WET-778	Depressional								0			2			0	2	4			1		2	4	0	5	16
Crossover Alternative	WET-78	Riverine	2	6	2	2	7	2										4			3		2	4	4	5	56
Crossover Alternative	WET-785	Depressional								0			2			0	2	1			1		0	0	0	5	7
Crossover Alternative	WET-79	Riverine	2	8	2	4	7	2										1			3		2	4	4	5	61
Crossover Alternative	WET-8	Riverine	2	6	2	6	7	2										1			3		2	4	4	5	61
Crossover Alternative	WET-811	Depressional								0			2			0	2	1			3		2	0	2	5	13
Crossover Alternative	WET-812	Depressional								0			2			0	2	2			1		2	0	2	5	12
Crossover Alternative	WET-813	Riverine	2	6	2	4	7	2										3			3		2	0	4	5	55
Crossover Alternative	WET-814	Riverine	2	6	2	2	7	2										4			3		2	0	4	5	52
Crossover Alternative	WET-815	Depressional								0			2			0	2	1			1		0	0	0	5	7
Crossover Alternative	WET-816	Depressional								0			2			0	2	1			1		0	0	0	5	7
Crossover Alternative	WET-818	Riverine	2	6	2	1	7	2										4			3		2	4	2	5	52
Crossover Alternative	WET-819	Riverine	2	8	2	1	7	2										4			3		2	4	4	5	58
Crossover Alternative	WET-821	Depressional								0			2			0	2	4			3		0	0	0	5	12

			Riverine Wetlands						Depressional Wetlands									Habitat Functions								
	Analysis methods * (A) automated/GIS (M) manual/visual (NF) not feasible, site visit req'd		Water Quality Functions			Hydrologic Functions			Water Quality Functions					Hydrologic Functions												
Alternative/Option	WETID	HGM class	R.1.1 (A) *	R.1.2 (A)	R.2 (M)	R.3.1 (M)	R.3.2 (A)	R.4 (M)	D.1.1 (NF)	D.1.2 (A)	D.1.3 (NF)	D.1.4 (NF)	D.2 (M)	D.3.1 (NF)	D.3.2 (NF)	D.3.3 (M)	D.4 (M)	H.1.1 (A)	H.1.2 (NF)	H.1.3 (NF)	H.1.4 (M)	H.1.5 (NF)	H.2.1 (M)	H.2.2 (M)	H.2.3 (A)	H.2.4 (A)	Total Score
Crossover Alternative	WET-822	Riverine	2	8	2	1	7	2										1			3		2	0	0	5	47
Crossover Alternative	WET-84	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Crossover Alternative	WET-87	Riverine	4	8	2	2	7	2										2			3		2	4	4	5	62
Crossover Alternative	WET-88	Depressional								0			2			5	2	2			3		2	4	0	5	26
Crossover Alternative	WET-89	Riverine	4	6	2	6	7	2										3			3		2	4	4	5	67
Crossover Alternative	WET-9	Riverine	2	6	2	2	7	2										2			1		0	0	4	5	46
Crossover Alternative	WET-90	Riverine	4	6	2	6	7	2										1			1		2	4	4	5	63
Crossover Alternative	WET-91	Riverine	2	3	2	9	4	2										4			3		2	0	4	5	54
Crossover Alternative	WET-92	Riverine	2	8	2	4	7	2										1			3		5	4	4	5	64
Crossover Alternative	WET-93	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Crossover Alternative	WET-94	Depressional								0			2			3	2	2			3		0	0	0	5	16
Crossover Alternative	WET-96	Depressional								0			2			3	2	1			1		2	4	0	5	19
Crossover Alternative	WET-97	Riverine	2	8	2	4	7	2										4			3		2	4	4	5	64
Crossover Alternative	WET-98	Riverine	2	8	2	6	7	2										3			3		2	4	4	5	67
Crossover Alternative	WET-99	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-162	Riverine	2	8	2	4	7	2										3			3		2	4	4	5	63
East Alternative	WET-199	Riverine	2	8	2	2	7	2										1			1		2	4	4	5	55
East Alternative	WET-200	Riverine	2	8	2	2		2										2			3		2	4	4	5	44
East Alternative	WET-201	Riverine	2	3	2	9	4	2										4			3		2	4	4	5	58
East Alternative	WET-202	Depressional								0			2			3	2	2			3		0	4	1	5	21
East Alternative	WET-204	Riverine	2	8	2	2	7	2										2			3		0	0	4	5	52
East Alternative	WET-205	Riverine	2	8	2	4	7	2										2			3		5	4	4	5	65
East Alternative	WET-214	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-216	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
East Alternative	WET-217	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
East Alternative	WET-218	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
East Alternative	WET-219	Riverine	2	8	2	4	7	2										2			3		5	4	4	5	65
East Alternative	WET-220	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
East Alternative	WET-221	Depressional								0			2			3	2	2			3		2	4	0	5	22
East Alternative	WET-222	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-223	Depressional								0			2			0	2	2			3		2	4	0	5	16
East Alternative	WET-224	Riverine	2	8	2	6	7	2										2			3		2	4	4	5	66
East Alternative	WET-225	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-226	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-227	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
East Alternative	WET-228	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-230	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-231	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
East Alternative	WET-232	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-233	Riverine	2	8	2	6	7	2										2			3		2	4	4	5	66
East Alternative	WET-234	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-235	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-236	Riverine	2	8	2	4	7	2										2			3		5	4	4	5	65
East Alternative	WET-237	Depressional								0			2			3	2	2			3		2	4	1	5	23
East Alternative	WET-238	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
East Alternative	WET-239	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
East Alternative	WET-268	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
East Alternative	WET-269	Depressional								0			2			0	2	2			3		2	4	0	5	16
East Alternative	WET-270	Depressional								0			2			3	2	2			3		5	4	1	5	26
East Alternative	WET-405	Riverine	2	8	2	4	7	2										2			3		5	4	4	5	65
East Alternative	WET-408	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
East Alternative	WET-416	Riverine	2	6	2	6	7	2										3			3		2	4	4	5	63
East Alternative	WET-417	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
East Alternative	WET-443	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-444	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-445	Riverine	8	8	2	2	7	2										2			3		2	4	4	5	70
East Alternative	WET-446	Riverine	4	8	2	2	7	2										2			3		2	4	4	5	62
East Alternative	WET-448	Riverine	2	6	2	6	7	2										3			3		2	4	4	5	63
East Alternative	WET-450	Riverine	4	8	2	4	7	2										2			3		5	4	4	5	69
East Alternative	WET-451	Depressional								0			2			3	2	3			3		2	0	1	5	20

	Analysis methods * (A) automated/GIS (M) manual/visual (NF) not feasible, site visit req'd		Riverine Wetlands						Depressional Wetlands									Habitat Functions									Total Score
			Water Quality Functions			Hydrologic Functions			Water Quality Functions					Hydrologic Functions													
Alternative/Option	WETID	HGM class	R.1.1 (A) *	R.1.2 (A)	R.2 (M)	R.3.1 (M)	R.3.2 (A)	R.4 (M)	D.1.1 (NF)	D.1.2 (A)	D.1.3 (NF)	D.1.4 (NF)	D.2 (M)	D.3.1 (NF)	D.3.2 (NF)	D.3.3 (M)	D.4 (M)	H.1.1 (A)	H.1.2 (NF)	H.1.3 (NF)	H.1.4 (M)	H.1.5 (NF)	H.2.1 (M)	H.2.2 (M)	H.2.3 (A)	H.2.4 (A)	
East Alternative	WET-452	Riverine	2	8	2	2	7	2										1			3		0	0	4	5	51
East Alternative	WET-454	Riverine	2	8	2	6	7	2										2			3		2	4	4	5	66
East Alternative	WET-455	Riverine	2	8	2	6	7	2										2			3		2	4	4	5	66
East Alternative	WET-456	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-457	Riverine	8	8	2	2	7	2										2			3		2	4	4	5	70
East Alternative	WET-458	Depressional								0			2			3	2	2			3		5	4	1	5	26
East Alternative	WET-459	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
East Alternative	WET-460	Depressional								0			2			0	2	2			3		2	4	1	5	17
East Alternative	WET-461	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
East Alternative	WET-516	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
East Alternative	WET-519	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
East Alternative	WET-520	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
East Alternative	WET-521	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-522	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
East Alternative	WET-524	Riverine	2	8	2	1	7	2										2			3		2	4	4	5	56
East Alternative	WET-525	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-526	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-534	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-535	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-536	Depressional								0			2			5	2	4			3		2	4	1	5	29
East Alternative	WET-539	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-540	Riverine	2	8	2	2	7	2										3			3		2	4	4	5	59
East Alternative	WET-541	Riverine	2	8	2	4	7	2										4			3		2	4	4	5	64
East Alternative	WET-542	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-544	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-545	Riverine	2	8	2	2	7	2										1			3		2	4	4	5	57
East Alternative	WET-546	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-547	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-549	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-550	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-552	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-554	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-555	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-557	Depressional								0			2			3	2	2			3		2	4	0	5	22
East Alternative	WET-558	Riverine	2	8	2	2	7	2										1			3		2	0	4	5	53
East Alternative	WET-563	Riverine	2	8	2	2	7	2										3			3		2	4	4	5	59
East Alternative	WET-564	Riverine	2	8	2	2	7	2										1			3		5	4	4	5	60
East Alternative	WET-565	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
East Alternative	WET-567	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-568	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-570	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-571	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-572	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-573	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
East Alternative	WET-574	Riverine	2	8	2	6	7	2										3			3		2	4	4	5	67
East Alternative	WET-575	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
East Alternative	WET-576	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
East Alternative	WET-577	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-578	Riverine	2	8	2	2	7	2										3			3		2	4	4	5	59
East Alternative	WET-579	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-581	Riverine	2	8	2	2	7	2										3			3		2	4	4	5	59
East Alternative	WET-582	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
East Alternative	WET-583	Depressional								0			2			5	2	3			1		2	4	0	5	25
East Alternative	WET-595	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
East Alternative	WET-596	Depressional								0			2			3	2	2			1		2	4	0	5	20
East Alternative	WET-597	Riverine	2	8	2	2	7	2										3			3		5	4	4	5	62
East Alternative	WET-598	Depressional								0			2			3	2	1			1		5	4	1	5	23
East Alternative	WET-599	Depressional								0			2			3	2	2			3		5	4	0	5	25
East Alternative	WET-607	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
East Alternative	WET-608	Riverine	2	8	2	2	7	2										1			3		5	4	4	5	60

	Analysis methods * (A) automated/GIS (M) manual/visual (NF) not feasible, site visit req'd		Riverine Wetlands						Depressional Wetlands									Habitat Functions									Total Score
			Water Quality Functions			Hydrologic Functions			Water Quality Functions					Hydrologic Functions													
Alternative/Option	WETID	HGM class	R.1.1 (A) *	R.1.2 (A)	R.2 (M)	R.3.1 (M)	R.3.2 (A)	R.4 (M)	D.1.1 (NF)	D.1.2 (A)	D.1.3 (NF)	D.1.4 (NF)	D.2 (M)	D.3.1 (NF)	D.3.2 (NF)	D.3.3 (M)	D.4 (M)	H.1.1 (A)	H.1.2 (NF)	H.1.3 (NF)	H.1.4 (M)	H.1.5 (NF)	H.2.1 (M)	H.2.2 (M)	H.2.3 (A)	H.2.4 (A)	
East Alternative	WET-609	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-610	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-611	Riverine	2	8	2	2	7	2										1			3		2	4	4	5	57
East Alternative	WET-612	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
East Alternative	WET-614	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-615	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
East Alternative	WET-616	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-617	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-619	Riverine	2	6	2	2	7	2										3			3		2	4	4	5	55
East Alternative	WET-62	Depressional								0			2			5	2	3			3		2	4	0	5	27
East Alternative	WET-620	Riverine	2	8	2	4	7	2										1			3		2	4	4	5	61
East Alternative	WET-621	Riverine	2	8	2	4	7	2										4			3		2	4	4	5	64
East Alternative	WET-63	Depressional								0			2			5	2	3			3		2	4	0	5	27
East Alternative	WET-638	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-640	Riverine	2	8	2	1	7	2										2			3		2	4	4	5	56
East Alternative	WET-643	Riverine	0	8	1	2	7	2										2			3		5	4	4	5	49
East Alternative	WET-645	Riverine	2	6	2	2	7	2										3			3		2	4	4	5	55
East Alternative	WET-646	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-647	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
East Alternative	WET-649	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-650	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
East Alternative	WET-653	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-659	Depressional								0			2			3	2	2			3		2	4	1	5	23
East Alternative	WET-661	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
East Alternative	WET-663	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-669	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
East Alternative	WET-67	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-671	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-673	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-674	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
East Alternative	WET-675	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
East Alternative	WET-676	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-678	Riverine	2	8	2	1	7	2										2			3		2	4	4	5	56
East Alternative	WET-681	Riverine	2	8	2	1	7	2										2			3		2	4	4	5	56
East Alternative	WET-685	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-690	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-691	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
East Alternative	WET-693	Riverine	2	8	2	2	7	2										2			1		5	4	4	5	59
East Alternative	WET-694	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-698	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
East Alternative	WET-699	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-70	Riverine	2	8	2	4	4	2										3			3		2	4	4	5	57
East Alternative	WET-700	Riverine	2	8	1	2	7	2										2			3		5	4	4	5	51
East Alternative	WET-701	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-702	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
East Alternative	WET-703	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-704	Riverine	2	8	1	4	7	2										2			3		5	4	4	5	55
East Alternative	WET-705	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-716	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-717	Riverine	2	8	2	1	7	2										2			3		2	4	4	5	56
East Alternative	WET-723	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-724	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-725	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-728	Depressional								0			2			5	2	3			1		2	4	0	5	25
East Alternative	WET-729	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-730	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
East Alternative	WET-736	Riverine	2	8	2	2	7	2										3			3		2	4	4	5	59
East Alternative	WET-737	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
East Alternative	WET-738	Riverine	2	8	2	2	7	2										3			3		2	4	4	5	59
East Alternative	WET-742	Depressional								0			2			0	2	2			1		5	4	1	5	18

	Analysis methods * (A) automated/GIS (M) manual/visual (NF) not feasible, site visit req'd		Riverine Wetlands						Depressional Wetlands									Habitat Functions									Total Score
			Water Quality Functions			Hydrologic Functions			Water Quality Functions					Hydrologic Functions													
Alternative/Option	WETID	HGM class	R.1.1 (A) *	R.1.2 (A)	R.2 (M)	R.3.1 (M)	R.3.2 (A)	R.4 (M)	D.1.1 (NF)	D.1.2 (A)	D.1.3 (NF)	D.1.4 (NF)	D.2 (M)	D.3.1 (NF)	D.3.2 (NF)	D.3.3 (M)	D.4 (M)	H.1.1 (A)	H.1.2 (NF)	H.1.3 (NF)	H.1.4 (M)	H.1.5 (NF)	H.2.1 (M)	H.2.2 (M)	H.2.3 (A)	H.2.4 (A)	
East Alternative	WET-743	Depressional								0			2			0	2	1			1		2	4	1	5	14
East Alternative	WET-744	Depressional								0			2			0	2	1			1		2	4	1	5	14
East Alternative	WET-748	Depressional								0			2			0	2	2			3		5	4	1	5	20
East Alternative	WET-75	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
East Alternative	WET-751	Riverine	2	8	2	1	7	2										4			3		2	4	0	5	54
East Alternative	WET-755	Riverine	2	6	2	1	7	2										4			3		2	0	1	5	47
East Alternative	WET-756	Riverine	2	6	2	2	7	2										4			3		2	0	4	5	52
East Alternative	WET-757	Depressional								0			2			0	2	1			1		0	0	0	5	7
East Alternative	WET-758	Riverine	2	6	2	1	7	2										3			3		5	0	2	5	50
East Alternative	WET-761	Riverine	2	8	2	1	7	2										3			3		2	0	4	5	53
East Alternative	WET-762	Riverine	2	6	2	2	7	2										4			3		2	0	4	5	52
East Alternative	WET-763	Depressional								0			2			0	2	3			3		0	0	1	5	12
East Alternative	WET-764	Depressional								0			2			3	2	2			3		0	0	4	5	20
East Alternative	WET-766	Depressional								0			2			0	2	3			3		0	0	0	5	11
East Alternative	WET-767	Depressional								0			2			0	2	1			1		0	0	1	5	8
East Alternative	WET-768	Depressional								0			2			0	2	1			1		0	0	1	2	5
East Alternative	WET-771	Depressional								0			2			0	2	1			1		0	0	0	5	7
East Alternative	WET-772	Depressional								0			2			0	2	1			1		0	0	0	5	7
East Alternative	WET-773	Depressional								0			2			0	2	1			3		0	0	0	5	9
East Alternative	WET-774	Depressional								0			2			0	2	1			1		0	0	0	5	7
East Alternative	WET-776	Depressional								0			2			0	2	1			1		0	0	0	5	7
East Alternative	WET-778	Depressional								0			2			0	2	4			1		2	4	0	5	16
East Alternative	WET-78	Riverine	2	6	2	2	7	2										4			3		2	4	4	5	56
East Alternative	WET-785	Depressional								0			2			0	2	1			1		0	0	0	5	7
East Alternative	WET-79	Riverine	2	8	2	4	7	2										1			3		2	4	4	5	61
East Alternative	WET-811	Depressional								0			2			0	2	1			3		2	0	2	5	13
East Alternative	WET-812	Depressional								0			2			0	2	2			1		2	0	2	5	12
East Alternative	WET-813	Riverine	2	6	2	4	7	2										3			3		2	0	4	5	55
East Alternative	WET-814	Riverine	2	6	2	2	7	2										4			3		2	0	4	5	52
East Alternative	WET-815	Depressional								0			2			0	2	1			1		0	0	0	5	7
East Alternative	WET-816	Depressional								0			2			0	2	1			1		0	0	0	5	7
East Alternative	WET-818	Riverine	2	6	2	1	7	2										4			3		2	4	2	5	52
East Alternative	WET-819	Riverine	2	8	2	1	7	2										4			3		2	4	4	5	58
East Alternative	WET-821	Depressional								0			2			0	2	4			3		0	0	0	5	12
East Alternative	WET-822	Riverine	2	8	2	1	7	2										1			3		2	0	0	5	47
Option C1	WET-205	Riverine	2	8	2	4	7	2										2			3		5	4	4	5	65
Option C1	WET-207	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Option C1	WET-211	Riverine	2	8	2	2	7	2										3			3		2	4	4	5	59
Option C1	WET-212	Riverine	2	8	2	2	7	2										3			3		2	4	4	5	59
Option C1	WET-213	Riverine	2	6	2	2	7	2										3			3		2	4	4	5	55
Option C1	WET-214	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Option C1	WET-216	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Option C1	WET-410	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Option C1	WET-440	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Option C1	WET-441	Riverine	2	8	2	2	7	2										1			3		2	0	4	5	53
Option C1	WET-443	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Option C1	WET-444	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Option C1	WET-445	Riverine	8	8	2	2	7	2										2			3		2	4	4	5	70
Option C1	WET-446	Riverine	4	8	2	2	7	2										2			3		2	4	4	5	62
Option C1	WET-448	Riverine	2	6	2	6	7	2										3			3		2	4	4	5	63
Option C1	WET-478	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Option C1	WET-479	Depressional								0			2			0	2	2			3		2	4	1	5	17
Option C1	WET-737	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Option C1	WET-742	Depressional								0			2			0	2	2			1		5	4	1	5	18
Option C1	WET-746	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Option C1	WET-747	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Option C2	WET-143	Riverine	2	6	2	6	7	2										4			1		2	4	4	5	62
Option C2	WET-240	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Option C2	WET-241	Riverine	2	8	2	4	7	2										2			3		5	4	4	5	65
Option C2	WET-242	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58

	Analysis methods * (A) automated/GIS (M) manual/visual (NF) not feasible, site visit req'd		Riverine Wetlands						Depressional Wetlands									Habitat Functions									Total Score
			Water Quality Functions			Hydrologic Functions			Water Quality Functions					Hydrologic Functions													
Alternative/Option	WETID	HGM class	R.1.1 (A) *	R.1.2 (A)	R.2 (M)	R.3.1 (M)	R.3.2 (A)	R.4 (M)	D.1.1 (NF)	D.1.2 (A)	D.1.3 (NF)	D.1.4 (NF)	D.2 (M)	D.3.1 (NF)	D.3.2 (NF)	D.3.3 (M)	D.4 (M)	H.1.1 (A)	H.1.2 (NF)	H.1.3 (NF)	H.1.4 (M)	H.1.5 (NF)	H.2.1 (M)	H.2.2 (M)	H.2.3 (A)	H.2.4 (A)	
Option C2	WET-244	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Option C2	WET-245	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Option C2	WET-246	Riverine	2	8	2	2	7	2										3			3		2	4	4	5	59
Option C2	WET-247	Riverine	2	8	2	2	7	2										3			3		2	4	4	5	59
Option C2	WET-248	Riverine	2	8	2	4	7	2										2			3		5	4	4	5	65
Option C2	WET-250	Riverine	8	8	2	2	7	2										2			3		5	4	4	5	73
Option C2	WET-252	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Option C2	WET-254	Riverine	2	8	2	2	7	2										2			3		2	4	1	5	55
Option C2	WET-256	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Option C2	WET-260	Riverine	2	8	2	4	7	2										2			3		5	4	4	5	65
Option C2	WET-261	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Option C2	WET-272	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Option C2	WET-273	Depressional								0			2			3	2	2			3		5	4	4	5	29
Option C2	WET-4	Riverine	2	8	2	4	7	2										3			3		2	4	4	5	63
Option C2	WET-437	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Option C2	WET-438	Riverine	2	8	2	2	7	2										3			3		2	4	4	5	59
Option C2	WET-439	Riverine	2	6	2	2	7	2										2			3		5	4	4	5	57
Option C2	WET-462	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Option C2	WET-463	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Option C2	WET-482	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Option C2	WET-483	Riverine	2	8	2	4	7	2										4			3		2	4	4	5	64
Option C2	WET-501	Riverine	2	8	2	2	7	2										2			3		2	0	4	5	54
Option C2	WET-745	Riverine	2	8	2	6	7	2										3			3		2	4	4	5	67
Option C2	WET-84	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Option C2	WET-87	Riverine	4	8	2	2	7	2										2			3		2	4	4	5	62
Option C3	WET-292	Riverine	2	8	2	4	7	2										3			3		2	4	4	5	63
Option C3	WET-293	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Option C3	WET-294	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Option C3	WET-295	Riverine	2	8	2	6	7	2										2			3		2	4	4	5	66
Option C3	WET-296	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Option C3	WET-297	Riverine	2	8	2	4	7	2										2			3		5	4	4	5	65
Option C3	WET-298	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Option C3	WET-299	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Option C3	WET-300	Riverine	2	6	2	6	7	2										4			3		2	4	4	5	64
Option C3	WET-301	Riverine	2	8	2	4	7	2										2			3		5	4	4	5	65
Option C3	WET-302	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Option C3	WET-303	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Option C3	WET-305	Riverine	2	8	2	2	7	2										1			3		2	4	4	5	57
Option C3	WET-307	Riverine	2	8	2	1	7	2										2			3		2	4	4	5	56
Option C3	WET-344	Riverine	2	8	2	6	7	2										2			3		5	4	4	5	69
Option C3	WET-347	Riverine	2	8	2	9	7	2										2			3		2	4	4	5	72
Option C3	WET-348	Depressional								0			2			5	2	2			3		5	4	1	5	30
Option C3	WET-349	Riverine	2	8	2	4	7	2										3			3		2	4	4	5	63
Option C3	WET-351	Riverine	2	8	2	4	7	2										2			3		2	4	1	5	59
Option C3	WET-352	Riverine	2	8	2	9	7	2										2			3		2	4	4	5	72
Option C3	WET-354	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Option C3	WET-355	Riverine	2	8	2	9	7	2										3			3		2	4	4	5	73
Option C3	WET-356	Riverine	2	6	2	6	7	2										3			3		2	4	4	5	63
Option C3	WET-361	Riverine	2	8	2	9	7	2										3			3		2	4	4	5	73
Option C3	WET-362	Riverine	2	8	2	6	7	2										2			3		2	4	4	5	66
Option C3	WET-364	Riverine	2	8	2	4	7	2										2			3		5	4	4	5	65
Option C3	WET-367	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Option C3	WET-371	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Option C3	WET-372	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Option C3	WET-373	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Option C3	WET-473	Riverine	2	6	2	4	7	2										3			3		0	0	4	5	53
Option E1	WET-240	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Option E1	WET-242	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Option E1	WET-250	Riverine	8	8	2	2	7	2										2			3		5	4	4	5	73
Option E1	WET-252	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61

			Riverine Wetlands						Depressional Wetlands									Habitat Functions									
	Analysis methods * (A) automated/GIS (M) manual/visual (NF) not feasible, site visit req'd		Water Quality Functions			Hydrologic Functions			Water Quality Functions					Hydrologic Functions													
Alternative/Option	WETID	HGM class	R.1.1 (A) *	R.1.2 (A)	R.2 (M)	R.3.1 (M)	R.3.2 (A)	R.4 (M)	D.1.1 (NF)	D.1.2 (A)	D.1.3 (NF)	D.1.4 (NF)	D.2 (M)	D.3.1 (NF)	D.3.2 (NF)	D.3.3 (M)	D.4 (M)	H.1.1 (A)	H.1.2 (NF)	H.1.3 (NF)	H.1.4 (M)	H.1.5 (NF)	H.2.1 (M)	H.2.2 (M)	H.2.3 (A)	H.2.4 (A)	Total Score
Option E1	WET-254	Riverine	2	8	2	2	7	2										2			3		2	4	1	5	55
Option E1	WET-256	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Option E1	WET-260	Riverine	2	8	2	4	7	2										2			3		5	4	4	5	65
Option E1	WET-261	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Option E1	WET-4	Riverine	2	8	2	4	7	2										3			3		2	4	4	5	63
Option E1	WET-437	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Option E1	WET-462	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Option E1	WET-463	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Option E1	WET-482	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Option E1	WET-483	Riverine	2	8	2	4	7	2										4			3		2	4	4	5	64
Option E1	WET-485	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Option E1	WET-487	Riverine	2	6	2	2	7	2										3			3		2	4	4	5	55
Option E1	WET-488	Riverine	2	6	2	1	7	2										4			3		0	0	4	5	48
Option E1	WET-491	Depressional								0			2			0	2	3			1		0	0	1	5	10
Option E1	WET-492	Riverine	2	8	2	1	7	2										1			3		2	0	4	5	51
Option E1	WET-493	Riverine	2	6	2	2	7	2										3			3		2	0	4	5	51
Option E1	WET-501	Riverine	2	8	2	2	7	2										2			3		2	0	4	5	54
Option E1	WET-502	Riverine	8	8	2	4	7	2										2			3		2	4	4	5	74
Option E1	WET-507	Riverine	2	8	2	2	7	2										2			3		0	0	4	5	52
Option E1	WET-508	Depressional								0			2			0	2	2			1		0	0	0	5	8
Option E1	WET-509	Depressional								0			2			0	2	1			1		2	0	1	5	10
Option E1	WET-510	Riverine	2	6	2	4	7	2										1			1		0	0	4	5	49
Option E1	WET-511	Riverine	2	6	2	4	7	2										2			1		2	0	4	5	52
Option E1	WET-512	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Option E1	WET-513	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Option E1	WET-517	Riverine	2	8	2	2	7	2										3			3		2	4	4	5	59
Option E1	WET-518	Riverine	2	8	2	1	7	2										3			3		2	4	4	5	57
Option E1	WET-589	Riverine	8	8	2	2	7	2										1			3		2	0	4	5	65
Option E1	WET-591	Depressional								0			2			0	2	3			1		0	0	0	5	9
Option E1	WET-592	Depressional								0			2			0	2	2			1		0	0	0	5	8
Option E1	WET-593	Riverine	2	8	2	2	7	2										2			3		2	0	4	5	54
Option E1	WET-711	Depressional								0			2			0	2	2			3		2	0	1	5	13
Option E1	WET-712	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Option E1	WET-713	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Option E2	WET-162	Riverine	2	8	2	4	7	2										3			3		2	4	4	5	63
Option E2	WET-199	Riverine	2	8	2	2	7	2										1			1		2	4	4	5	55
Option E2	WET-200	Riverine	2	8	2	2		2										2			3		2	4	4	5	44
Option E2	WET-280	Riverine	2	8	2	9	7	2										3			3		5	4	4	5	76
Option E2	WET-290	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Option E2	WET-291	Depressional								0			2			3	2	2			3		2	4	4	5	26
Option E2	WET-312	Riverine	2	8	2	6	7	2										2			3		2	4	4	5	66
Option E2	WET-313	Riverine	2	8	2	6	7	2										2			3		2	4	4	5	66
Option E2	WET-314	Riverine	2	8	2	2	7	2										3			3		5	4	4	5	62
Option E2	WET-315	Riverine	2	8	2	6	7	2										2			3		2	4	4	5	66
Option E2	WET-316	Depressional								0			2			5	2	3			3		5	4	4	5	34
Option E2	WET-317	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Option E2	WET-318	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Option E2	WET-319	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Option E2	WET-320	Riverine	2	8	2	4	7	2										2			3		5	4	4	5	65
Option E2	WET-328	Riverine	2	8	2	6	7	2										2			3		2	4	4	5	66
Option E2	WET-330	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Option E2	WET-332	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Option E2	WET-334	Riverine	2	8	2	6	7	2										3			3		2	4	4	5	67
Option E2	WET-335	Riverine	2	8	2	6	7	2										2			3		2	4	4	5	66
Option E2	WET-336	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Option E2	WET-338	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Option E2	WET-339	Riverine	2	8	2	4	7	2										2			3		5	4	4	5	65
Option E2	WET-340	Riverine	2	8	2	4	7	2										2			3		5	4	4	5	65
Option E2	WET-342	Depressional								0			2			3	2	2			3		2	4	4	5	26
Option E2	WET-344	Riverine	2	8	2	6	7	2										2			3		5	4	4	5	69

	Analysis methods * (A) automated/GIS (M) manual/visual (NF) not feasible, site visit req'd		Riverine Wetlands						Depressional Wetlands									Habitat Functions								Total Score
			Water Quality Functions			Hydrologic Functions			Water Quality Functions					Hydrologic Functions												
Alternative/Option	WETID	HGM class	R.1.1 (A) *	R.1.2 (A)	R.2 (M)	R.3.1 (M)	R.3.2 (A)	R.4 (M)	D.1.1 (NF)	D.1.2 (A)	D.1.3 (NF)	D.1.4 (NF)	D.2 (M)	D.3.1 (NF)	D.3.2 (NF)	D.3.3 (M)	D.4 (M)	H.1.1 (A)	H.1.2 (NF)	H.1.3 (NF)	H.1.4 (M)	H.1.5 (NF)	H.2.1 (M)	H.2.2 (M)	H.2.3 (A)	H.2.4 (A)	
Option E2	WET-411	Riverine	2	8	2	4	7	2										2			3		5	4	4	5	65
Option E2	WET-412	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Option E2	WET-413	Riverine	2	6	2	4	7	2										3			3		2	4	4	5	59
Option E2	WET-472	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Option E2	WET-475	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Option E2	WET-538	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Option E2	WET-541	Riverine	2	8	2	4	7	2										4			3		2	4	4	5	64
Option E2	WET-578	Riverine	2	8	2	2	7	2										3			3		2	4	4	5	59
Option E2	WET-595	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Option E2	WET-630	Riverine	2	8	1	2	7	2										2			3		2	4	4	5	48
Option E2	WET-631	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Option E2	WET-633	Depressional								0			2			3	2	2			3		2	4	1	5	23
Option E2	WET-634	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Option E2	WET-721	Riverine	2	8	1	2	7	2										2			3		5	4	4	5	51
Option E3	WET-580	Riverine	2	8	2	4	7	2										3			3		5	4	4	5	66
Option E3	WET-600	Depressional								0			2			3	2	2			3		2	4	1	5	23
Option E3	WET-604	Riverine	2	8	2	2	7	2										3			3		2	4	4	5	59
Option E3	WET-605	Depressional								0			2			5	2	3			1		2	4	1	5	26
Option E3	WET-606	Riverine	2	8	2	2	7	2										3			3		2	4	4	5	59
Option E3	WET-732	Riverine	2	8	1	2	7	2										2			3		5	4	4	5	51
Option E3	WET-734	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Option E3	WET-735	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Option W1	WET-158	Depressional								0			2			3	2	1			1		0	0	0	5	13
Option W1	WET-159	Riverine	2	6	2	9	7	2										1			1		0	0	4	5	59
Option W1	WET-52	Riverine	2	3	2	9	7	2										4			3		2	4	4	5	64
Option W1	WET-55	Depressional								0			2			3	2	4			3		2	4	3	5	27
Option W2	WET-158	Depressional								0			2			3	2	1			1		0	0	0	5	13
Option W2	WET-161	Depressional								0			2			0	2	1			1		0	0	0	5	7
Option W2	WET-50	Riverine	2	6	2	2	4	2										4			3		2	4	4	5	50
Option W2	WET-52	Riverine	2	3	2	9	7	2										4			3		2	4	4	5	64
Option W2	WET-62	Depressional								0			2			5	2	3			3		2	4	0	5	27
Option W2	WET-63	Depressional								0			2			5	2	3			3		2	4	0	5	27
Option W2	WET-67	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Option W2	WET-70	Riverine	2	8	2	4	4	2										3			3		2	4	4	5	57
Option W2	WET-75	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Option W2	WET-78	Riverine	2	6	2	2	7	2										4			3		2	4	4	5	56
Option W2	WET-79	Riverine	2	8	2	4	7	2										1			3		2	4	4	5	61
Option W2	WET-80	Depressional								0			2			0	2	1			1		2	4	0	5	13
Option W3	WET-158	Depressional								0			2			3	2	1			1		0	0	0	5	13
Option W3	WET-162	Riverine	2	8	2	4	7	2										3			3		2	4	4	5	63
Option W3	WET-199	Riverine	2	8	2	2	7	2										1			1		2	4	4	5	55
Option W3	WET-200	Riverine	2	8	2	2		2										2			3		2	4	4	5	44
Option W3	WET-52	Riverine	2	3	2	9	7	2										4			3		2	4	4	5	64
Option W3	WET-56	Riverine	2	6	2	4	7	2										4			3		2	4	4	5	60
Option W3	WET-57	Riverine	2	8	2	4	7	2										3			3		2	4	4	5	63
Option W3	WET-58	Riverine	2	6	2	4	7	2										3			3		2	4	4	5	59
Option W3	WET-59	Riverine	2	8	2	2	7	2										1			3		2	4	4	5	57
Option W3	WET-595	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Option W3	WET-60	Riverine	2	8	2	2	7	2										3			3		2	4	4	5	59
Option W3	WET-62	Depressional								0			2			5	2	3			3		2	4	0	5	27
Option W3	WET-63	Depressional								0			2			5	2	3			3		2	4	0	5	27
Option W3	WET-67	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Option W3	WET-70	Riverine	2	8	2	4	4	2										3			3		2	4	4	5	57
Option W3	WET-75	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Option W3	WET-78	Riverine	2	6	2	2	7	2										4			3		2	4	4	5	56
Option W3	WET-79	Riverine	2	8	2	4	7	2										1			3		2	4	4	5	61
Option X1	WET-52	Riverine	2	3	2	9	7	2										4			3		2	4	4	5	64
Option X1	WET-65	Depressional								0			2			5	2	4			3		2	4	1	5	29
Option X1	WET-67	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Option X1	WET-69	Riverine	2	6	2	4	7	2										4			3		2	4	4	5	60

	Analysis methods * (A) automated/GIS (M) manual/visual (NF) not feasible, site visit req'd		Riverine Wetlands						Depressional Wetlands									Habitat Functions									Total Score
			Water Quality Functions			Hydrologic Functions			Water Quality Functions					Hydrologic Functions													
Alternative/Option	WETID	HGM class	R.1.1 (A) *	R.1.2 (A)	R.2 (M)	R.3.1 (M)	R.3.2 (A)	R.4 (M)	D.1.1 (NF)	D.1.2 (A)	D.1.3 (NF)	D.1.4 (NF)	D.2 (M)	D.3.1 (NF)	D.3.2 (NF)	D.3.3 (M)	D.4 (M)	H.1.1 (A)	H.1.2 (NF)	H.1.3 (NF)	H.1.4 (M)	H.1.5 (NF)	H.2.1 (M)	H.2.2 (M)	H.2.3 (A)	H.2.4 (A)	
Option X1	WET-75	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Option X1	WET-80	Depressional								0			2			0	2	1			1		2	4	0	5	13
Option X2	WET-205	Riverine	2	8	2	4	7	2										2			3		5	4	4	5	65
Option X2	WET-214	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Option X2	WET-216	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Option X2	WET-443	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Option X2	WET-444	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Option X2	WET-445	Riverine	8	8	2	2	7	2										2			3		2	4	4	5	70
Option X2	WET-446	Riverine	4	8	2	2	7	2										2			3		2	4	4	5	62
Option X2	WET-448	Riverine	2	6	2	6	7	2										3			3		2	4	4	5	63
Option X2	WET-483	Riverine	2	8	2	4	7	2										4			3		2	4	4	5	64
Option X2	WET-495	Depressional								0			2			5	2	1			1		2	4	1	5	24
Option X2	WET-496	Riverine	2	8	2	6	7	2										4			3		2	4	4	5	68
Option X2	WET-499	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Option X2	WET-500	Riverine	2	6	2	2	7	2										3			3		2	4	4	5	55
Option X2	WET-585	Riverine	2	8	2	2	7	2										1			3		2	4	4	5	57
Option X2	WET-586	Riverine	2	8	2	2	7	2										1			3		2	4	4	5	57
Option X2	WET-707	Riverine	2	6	2	2	7	2										3			3		2	4	4	5	55
Option X2	WET-708	Riverine	2	8	2	4	7	2										3			3		2	4	4	5	63
Option X2	WET-736	Riverine	2	8	2	2	7	2										3			3		2	4	4	5	59
Option X2	WET-737	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Option X2	WET-738	Riverine	2	8	2	2	7	2										3			3		2	4	4	5	59
Option X2	WET-740	Depressional								0			2			0	2	2			3		2	4	1	5	17
Option X2	WET-742	Depressional								0			2			0	2	2			1		5	4	1	5	18
Option X2	WET-743	Depressional								0			2			0	2	1			1		2	4	1	5	14
Option X2	WET-744	Depressional								0			2			0	2	1			1		2	4	1	5	14
Option X2	WET-748	Depressional								0			2			0	2	2			3		5	4	1	5	20
Option X3	WET-205	Riverine	2	8	2	4	7	2										2			3		5	4	4	5	65
Option X3	WET-214	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Option X3	WET-216	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Option X3	WET-443	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Option X3	WET-444	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
Option X3	WET-445	Riverine	8	8	2	2	7	2										2			3		2	4	4	5	70
Option X3	WET-446	Riverine	4	8	2	2	7	2										2			3		2	4	4	5	62
Option X3	WET-448	Riverine	2	6	2	6	7	2										3			3		2	4	4	5	63
Option X3	WET-483	Riverine	2	8	2	4	7	2										4			3		2	4	4	5	64
Option X3	WET-496	Riverine	2	8	2	6	7	2										4			3		2	4	4	5	68
Option X3	WET-498	Depressional								0			2			5	2	2			1		2	4	0	5	24
Option X3	WET-500	Riverine	2	6	2	2	7	2										3			3		2	4	4	5	55
Option X3	WET-586	Riverine	2	8	2	2	7	2										1			3		2	4	4	5	57
Option X3	WET-707	Riverine	2	6	2	2	7	2										3			3		2	4	4	5	55
Option X3	WET-708	Riverine	2	8	2	4	7	2										3			3		2	4	4	5	63
Option X3	WET-709	Riverine	2	8	2	2	7	2										2			3		5	4	4	5	61
Option X3	WET-736	Riverine	2	8	2	2	7	2										3			3		2	4	4	5	59
Option X3	WET-737	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
Option X3	WET-738	Riverine	2	8	2	2	7	2										3			3		2	4	4	5	59
Option X3	WET-742	Depressional								0			2			0	2	2			1		5	4	1	5	18
Option X3	WET-743	Depressional								0			2			0	2	1			1		2	4	1	5	14
Option X3	WET-744	Depressional								0			2			0	2	1			1		2	4	1	5	14
Option X3	WET-748	Depressional								0			2			0	2	2			3		5	4	1	5	20
West Alternative	WET-1	Riverine	2	6	2	9	7	2										3			3		2	4	4	5	69
West Alternative	WET-10	Riverine	2	6	2	2	7	2										4			3		2	4	4	5	56
West Alternative	WET-100	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
West Alternative	WET-102	Riverine	2	8	2	4	7	2										3			3		2	4	4	5	63
West Alternative	WET-103	Riverine	2	8	2	6	7	2										3			3		2	4	4	5	67
West Alternative	WET-108	Riverine	2	8	2	6	7	2										2			3		2	4	4	5	66
West Alternative	WET-109	Depressional								0			2			5	2	2			3		2	4	0	5	26
West Alternative	WET-11	Riverine	2	6	2	2	7	2										4			3		2	4	4	5	56
West Alternative	WET-110	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
West Alternative	WET-111	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62

			Riverine Wetlands						Depressional Wetlands										Habitat Functions									
	Analysis methods * (A) automated/GIS (M) manual/visual (NF) not feasible, site visit req'd		Water Quality Functions			Hydrologic Functions			Water Quality Functions					Hydrologic Functions														Total Score
Alternative/Option	WETID	HGM class	R.1.1 (A) *	R.1.2 (A)	R.2 (M)	R.3.1 (M)	R.3.2 (A)	R.4 (M)	D.1.1 (NF)	D.1.2 (A)	D.1.3 (NF)	D.1.4 (NF)	D.2 (M)	D.3.1 (NF)	D.3.2 (NF)	D.3.3 (M)	D.4 (M)	H.1.1 (A)	H.1.2 (NF)	H.1.3 (NF)	H.1.4 (M)	H.1.5 (NF)	H.2.1 (M)	H.2.2 (M)	H.2.3 (A)	H.2.4 (A)	
West Alternative	WET-112	Riverine	2	6	2	4	7	2										3			3		2	4	4	5	59
West Alternative	WET-113	Riverine	2	8	2	4	7	2										1			3		2	4	4	5	61
West Alternative	WET-114	Riverine	2	8	2	4	7	2										3			3		2	4	4	5	63
West Alternative	WET-115	Riverine	2	8	2	2	7	2										1			1		0	4	4	5	53
West Alternative	WET-116	Riverine	2	8	2	4	7	2										3			3		2	4	4	5	63
West Alternative	WET-117	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
West Alternative	WET-118	Riverine	2	6	2	4	7	2										4			3		2	4	4	5	60
West Alternative	WET-119	Riverine	2	8	2	2	7	2										2			1		2	4	4	5	56
West Alternative	WET-12	Riverine	2	8	2	6	7	2										3			3		2	4	4	5	67
West Alternative	WET-121	Riverine	2	8	2	2	7	2										3			3		2	4	4	5	59
West Alternative	WET-122	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
West Alternative	WET-124	Riverine	2	8	2	6	7	2										3			3		2	0	4	5	63
West Alternative	WET-125	Riverine	2	8	2	6	7	2										3			3		2	0	4	5	63
West Alternative	WET-126	Riverine	2	6	2	9	7	2										4			1		0	0	4	5	62
West Alternative	WET-128	Depressional								0			2			3	2	4			1		0	0	0	5	16
West Alternative	WET-129	Riverine	2	6	2	2	7	2										1			1		2	0	4	5	47
West Alternative	WET-13	Riverine	2	6	2	4	7	2										3			3		2	4	4	5	59
West Alternative	WET-130	Riverine	2	6	2	9	7	2										1			1		0	0	4	5	59
West Alternative	WET-131	Depressional								0			2			0	2	2			1		0	0	0	5	8
West Alternative	WET-132	Riverine	2	8	2	4	7	2										2			3		2	0	4	5	58
West Alternative	WET-133	Depressional								0			2			3	2	1			1		0	0	0	5	13
West Alternative	WET-134	Depressional								0			2			3	2	4			1		0	0	0	2	13
West Alternative	WET-135	Depressional								0			2			3	2	1			1		0	0	0	5	13
West Alternative	WET-136	Depressional								0			2			3	2	1			1		0	0	1	5	14
West Alternative	WET-137	Depressional								0			2			3	2	1			1		0	0	1	5	14
West Alternative	WET-138	Depressional								0			2			3	2	1			1		0	0	1	5	14
West Alternative	WET-139	Depressional								0			2			0	2	1			1		0	0	1	5	8
West Alternative	WET-14	Depressional								0			2			5	2	4			3		2	4	0	5	28
West Alternative	WET-140	Depressional								0			2			0	2	1			1		0	0	1	5	8
West Alternative	WET-143	Riverine	2	6	2	6	7	2										4			1		2	4	4	5	62
West Alternative	WET-145	Depressional								0			2			3	2	1			1		0	0	0	5	13
West Alternative	WET-146	Riverine	2	8	2	6	7	2										3			3		2	0	4	5	63
West Alternative	WET-147	Depressional								4			2			5	2	4			3		0	0	0	5	30
West Alternative	WET-15	Riverine	2	6	2	2	7	2										2			3		2	4	4	5	54
West Alternative	WET-150	Depressional								4			2			3	2	4			3		2	0	0	5	28
West Alternative	WET-151	Riverine	2	6	2	9	7	2										3			1		0	0	4	5	61
West Alternative	WET-152	Riverine	2	8	2	2	7	2										1			3		0	0	4	5	51
West Alternative	WET-153	Riverine	2	8	2	4	7	2										2			3		2	0	4	5	58
West Alternative	WET-154	Riverine	2	8	2	4	7	2										2			3		0	0	4	5	56
West Alternative	WET-155	Riverine	8	8	2	6	7	2										2			3		2	0	4	5	74
West Alternative	WET-157	Riverine	2	8	2	6	7	2										3			3		0	0	4	5	61
West Alternative	WET-158	Depressional								0			2			3	2	1			1		0	0	0	5	13
West Alternative	WET-16	Riverine	2	6	2	2	7	2										4			3		2	4	4	5	56
West Alternative	WET-160	Depressional								0			2			3	2	1			1		0	0	1	5	14
West Alternative	WET-163	Riverine	2	8	2	4	7	2										3			3		2	4	4	5	63
West Alternative	WET-165	Riverine	2	8	2	4	7	2										3			3		2	4	4	5	63
West Alternative	WET-166	Riverine	2	8	2	6	7	2										3			3		2	4	4	5	67
West Alternative	WET-168	Depressional								0			2			0	2	1			1		0	0	0	5	7
West Alternative	WET-169	Riverine	2	6	2	6	7	2										1			3		0	4	4	5	59
West Alternative	WET-170	Riverine	2	6	2	6	7	2										1			3		2	4	4	5	61
West Alternative	WET-172	Depressional								0			2			3	2	2			1		0	4	1	5	19
West Alternative	WET-173	Riverine	2	6	2	4	7	2										1			3		2	4	4	5	57
West Alternative	WET-174	Riverine	2	6	2	4	7	2										2			3		2	4	4	5	58
West Alternative	WET-176	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
West Alternative	WET-177	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
West Alternative	WET-178	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
West Alternative	WET-179	Riverine	2	8	2	2	7	2										3			3		2	4	4	5	59
West Alternative	WET-18	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
West Alternative	WET-181	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
West Alternative	WET-182	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62

	Analysis methods * (A) automated/GIS (M) manual/visual (NF) not feasible, site visit req'd		Riverine Wetlands						Depressional Wetlands									Habitat Functions									Total Score
			Water Quality Functions			Hydrologic Functions			Water Quality Functions					Hydrologic Functions													
Alternative/Option	WETID	HGM class	R.1.1 (A) *	R.1.2 (A)	R.2 (M)	R.3.1 (M)	R.3.2 (A)	R.4 (M)	D.1.1 (NF)	D.1.2 (A)	D.1.3 (NF)	D.1.4 (NF)	D.2 (M)	D.3.1 (NF)	D.3.2 (NF)	D.3.3 (M)	D.4 (M)	H.1.1 (A)	H.1.2 (NF)	H.1.3 (NF)	H.1.4 (M)	H.1.5 (NF)	H.2.1 (M)	H.2.2 (M)	H.2.3 (A)	H.2.4 (A)	
West Alternative	WET-183	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
West Alternative	WET-188	Riverine	2	3	2	9	4	2										4			3		2	4	4	5	58
West Alternative	WET-189	Depressional								0			2			5	2	2			1		0	0	0	5	18
West Alternative	WET-190	Riverine	2	6	2	9	7	2										4			3		2	4	4	5	70
West Alternative	WET-192	Riverine	2	6	2	2	7	2										4			3		2	4	4	5	56
West Alternative	WET-194	Riverine	2	6	2	9	7	2										4			3		2	4	4	5	70
West Alternative	WET-197	Riverine	4	8	2	2	7	2										1			3		2	4	4	5	61
West Alternative	WET-198	Depressional								0			2			3	2	3			1		2	4	2	5	23
West Alternative	WET-2	Riverine	2	8	2	2	7	2										3			3		2	4	4	5	59
West Alternative	WET-20	Riverine	2	6	2	2	7	2										3			3		2	4	4	5	55
West Alternative	WET-21	Riverine	2	8	2	1	7	2										2			3		2	4	4	5	56
West Alternative	WET-22	Riverine	2	6	2	9	7	2										4			3		2	4	4	5	70
West Alternative	WET-24	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
West Alternative	WET-242	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
West Alternative	WET-25	Riverine	2	8	2	2	7	2										1			3		2	4	4	5	57
West Alternative	WET-26	Riverine	2	8	2	2	7	2										3			3		2	4	4	5	59
West Alternative	WET-27	Riverine	2	8	2	2	7	2										3			3		5	4	4	5	62
West Alternative	WET-28	Riverine	2	8	1	2	7	2										3			3		5	4	4	5	52
West Alternative	WET-29	Depressional								0			2			5	2	4			3		0	4	0	5	26
West Alternative	WET-30	Depressional								4			2			5	2	2			1		2	4	2	5	34
West Alternative	WET-31	Depressional								0			2			3	2	1			1		0	0	0	5	13
West Alternative	WET-32	Depressional								0			2			3	2	3			1		0	0	0	5	15
West Alternative	WET-34	Depressional								0			2			3	2	1			1		0	0	0	5	13
West Alternative	WET-35	Depressional								0			2			5	2	2			3		0	0	0	5	20
West Alternative	WET-36	Depressional								0			2			3	2	4			3		0	0	1	5	19
West Alternative	WET-37	Depressional								0			2			3	2	3			1		0	0	0	5	15
West Alternative	WET-38	Depressional								0			2			3	2	3			1		2	0	0	5	17
West Alternative	WET-39	Riverine	2	8	2	2	7	2										4			3		2	4	4	5	60
West Alternative	WET-4	Riverine	2	8	2	4	7	2										3			3		2	4	4	5	63
West Alternative	WET-40	Depressional								0			2			3	2	2			3		2	0	1	5	19
West Alternative	WET-41	Depressional								0			2			5	2	4			3		2	0	0	2	21
West Alternative	WET-437	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
West Alternative	WET-44	Riverine	2	8	2	2	7	2										4			3		2	4	4	5	60
West Alternative	WET-46	Depressional								0			2			5	2	1			1		0	0	1	2	15
West Alternative	WET-47	Depressional								0			2			3	2	1			1		2	0	0	5	15
West Alternative	WET-483	Riverine	2	8	2	4	7	2										4			3		2	4	4	5	64
West Alternative	WET-501	Riverine	2	8	2	2	7	2										2			3		2	0	4	5	54
West Alternative	WET-52	Riverine	2	3	2	9	7	2										4			3		2	4	4	5	64
West Alternative	WET-53	Depressional								0			2			5	2	2			3		0	0	2	5	22
West Alternative	WET-65	Depressional								0			2			5	2	4			3		2	4	1	5	29
West Alternative	WET-67	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
West Alternative	WET-69	Riverine	2	6	2	4	7	2										4			3		2	4	4	5	60
West Alternative	WET-7	Riverine	2	6	2	6	7	2										3			3		2	4	4	5	63
West Alternative	WET-751	Riverine	2	8	2	1	7	2										4			3		2	4	0	5	54
West Alternative	WET-755	Riverine	2	6	2	1	7	2										4			3		2	0	1	5	47
West Alternative	WET-756	Riverine	2	6	2	2	7	2										4			3		2	0	4	5	52
West Alternative	WET-757	Depressional								0			2			0	2	1			1		0	0	0	5	7
West Alternative	WET-758	Riverine	2	6	2	1	7	2										3			3		5	0	2	5	50
West Alternative	WET-761	Riverine	2	8	2	1	7	2										3			3		2	0	4	5	53
West Alternative	WET-762	Riverine	2	6	2	2	7	2										4			3		2	0	4	5	52
West Alternative	WET-763	Depressional								0			2			0	2	3			3		0	0	1	5	12
West Alternative	WET-764	Depressional								0			2			3	2	2			3		0	0	4	5	20
West Alternative	WET-766	Depressional								0			2			0	2	3			3		0	0	0	5	11
West Alternative	WET-767	Depressional								0			2			0	2	1			1		0	0	1	5	8
West Alternative	WET-768	Depressional								0			2			0	2	1			1		0	0	1	2	5
West Alternative	WET-771	Depressional								0			2			0	2	1			1		0	0	0	5	7
West Alternative	WET-772	Depressional								0			2			0	2	1			1		0	0	0	5	7
West Alternative	WET-773	Depressional								0			2			0	2	1			3		0	0	0	5	9
West Alternative	WET-774	Depressional								0			2			0	2	1			1		0	0	0	5	7
West Alternative	WET-776	Depressional								0			2			0	2	1			1		0	0	0	5	7

	Analysis methods * (A) automated/GIS (M) manual/visual (NF) not feasible, site visit req'd		Riverine Wetlands						Depressional Wetlands									Habitat Functions									Total Score
			Water Quality Functions			Hydrologic Functions			Water Quality Functions					Hydrologic Functions													
Alternative/Option	WETID	HGM class	R.1.1 (A) *	R.1.2 (A)	R.2 (M)	R.3.1 (M)	R.3.2 (A)	R.4 (M)	D.1.1 (NF)	D.1.2 (A)	D.1.3 (NF)	D.1.4 (NF)	D.2 (M)	D.3.1 (NF)	D.3.2 (NF)	D.3.3 (M)	D.4 (M)	H.1.1 (A)	H.1.2 (NF)	H.1.3 (NF)	H.1.4 (M)	H.1.5 (NF)	H.2.1 (M)	H.2.2 (M)	H.2.3 (A)	H.2.4 (A)	
West Alternative	WET-778	Depressional								0			2			0	2	4			1		2	4	0	5	16
West Alternative	WET-785	Depressional								0			2			0	2	1			1		0	0	0	5	7
West Alternative	WET-8	Riverine	2	6	2	6	7	2										1			3		2	4	4	5	61
West Alternative	WET-811	Depressional								0			2			0	2	1			3		2	0	2	5	13
West Alternative	WET-812	Depressional								0			2			0	2	2			1		2	0	2	5	12
West Alternative	WET-813	Riverine	2	6	2	4	7	2										3			3		2	0	4	5	55
West Alternative	WET-814	Riverine	2	6	2	2	7	2										4			3		2	0	4	5	52
West Alternative	WET-815	Depressional								0			2			0	2	1			1		0	0	0	5	7
West Alternative	WET-816	Depressional								0			2			0	2	1			1		0	0	0	5	7
West Alternative	WET-818	Riverine	2	6	2	1	7	2										4			3		2	4	2	5	52
West Alternative	WET-819	Riverine	2	8	2	1	7	2										4			3		2	4	4	5	58
West Alternative	WET-821	Depressional								0			2			0	2	4			3		0	0	0	5	12
West Alternative	WET-822	Riverine	2	8	2	1	7	2										1			3		2	0	0	5	47
West Alternative	WET-84	Riverine	2	8	2	4	7	2										2			3		2	4	4	5	62
West Alternative	WET-87	Riverine	4	8	2	2	7	2										2			3		2	4	4	5	62
West Alternative	WET-88	Depressional								0			2			5	2	2			3		2	4	0	5	26
West Alternative	WET-89	Riverine	4	6	2	6	7	2										3			3		2	4	4	5	67
West Alternative	WET-9	Riverine	2	6	2	2	7	2										2			1		0	0	4	5	46
West Alternative	WET-90	Riverine	4	6	2	6	7	2										1			1		2	4	4	5	63
West Alternative	WET-91	Riverine	2	3	2	9	4	2										4			3		2	0	4	5	54
West Alternative	WET-92	Riverine	2	8	2	4	7	2										1			3		5	4	4	5	64
West Alternative	WET-93	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58
West Alternative	WET-94	Depressional								0			2			3	2	2			3		0	0	0	5	16
West Alternative	WET-96	Depressional								0			2			3	2	1			1		2	4	0	5	19
West Alternative	WET-97	Riverine	2	8	2	4	7	2										4			3		2	4	4	5	64
West Alternative	WET-98	Riverine	2	8	2	6	7	2										3			3		2	4	4	5	67
West Alternative	WET-99	Riverine	2	8	2	2	7	2										2			3		2	4	4	5	58