

# WSDOT Wetland Mitigation Design Evaluation Checklist

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## Note:

1. The biologist preparing the mitigation report should be able to answer all these questions except those related to irrigation; the project landscape architect should respond to those questions.
2. This is a general checklist and may not address the concerns of all wetland mitigation projects.

## General Design Questions

- Does the site have the opportunity to provide the desired functions (BPJ and ECY) by the end of the monitoring period?
- What is the source of hydrology (groundwater, lake, stream – is it affected by a reservoir and irrigation?
- Will the design provide appropriate compensation for the impacted functions?
- Are we overcompensating for impacted functions?
- Is education or interpretive signage a permit requirement? If so, is there an appropriate location available?
- Will adjacent or upstream land uses affect the site functions or site success?

## General Plan Sheet Items

- Is the North arrow present and correct?
- Is the Scale bar present and correct?
- Is it possible to understand all line types, features, and patterns in black and white, or in a copy? Are they identified correctly in the legend?
- Does the plan sheet identify a known point(s) on the site? Are all roads identified? Streams?
- Is topography provided and are elevations clearly marked?
- Is there adequate site access for construction, monitoring, and site management?

## Schematic Design Plan Sheet

- Is the plan legible?
- Do the acreage areas listed per zone (buffer and wetland) match in the areas noted in the mitigation report?
- Is the buffer width correct and in agreement with the mitigation report and local Critical Areas Ordinance?
- Is the design appropriate for the landscape location? Are the communities identified in agreement with the existing communities (are existing plant communities shown)?
- Does the concept meet the regulatory requirements? Does it provide sufficient mitigation and buffer area?
- Does the site design meet the intended interspersions of habitats?

## **Grading Plan Sheet**

- Will the proposed grading design satisfy the "wetland hydrology" performance measure/standard? (compare the finish grade elevations and groundwater or ordinary high and low water elevation data in the mitigation areas)
- Are the finish grade elevations appropriate for the proposed plant communities? (compare the groundwater data and proposed plant community composition)
- Do the slopes exceed 5:1 in the buffer and 10:1 in the mitigation area? (buffers should not exceed 5:1; wetlands should not exceed 10:1, unless necessary)
- Are the soils appropriate for the anticipated source of hydrology?
- Is there adequate access for excavation and haul vehicles?
- Does the grading design provide the proposed water quality functions? (e.g., flood water storage, flood flow alteration, etc.)
- Does the grading design support the proposed water quality functions? (e.g., sediment trapping, nutrient and toxicant removal)
- Are the soils appropriate for the proposed plant communities? Will they support plant growth?
- Area there compacted soils on-site? Will they be tilled and/or ripped? (i.e., existing roads, structures, retaining walls, etc.)
- Are soil amendments required and are they appropriate to the site conditions?
- Will the site receive flows from significant storm events? If so, how will it be affected by the high flows?
- Are the storm flows potentially erosive? Does the site design address this condition?
- What are the depth, duration, and frequency of the storm flows or high water events?
- What is the lowest water elevation recorded in the data? What is the highest?
- Will the grading design permit fish refuge during high storm events? If so, does the site have the potential to entrap fish following high storm events?
- Does the design provide the intended amphibian habitat functions? Will there be standing water in the summer sufficient to encourage bullfrog breeding habitat?
- Does the grading design provide the type and quantity of intended hydroperiods?

## **Cross-section Plan Sheet**

- Are the cross-sections in agreement with the grading plan?
- Verify that the vertical scale is not exaggerated.
- Are the wetland communities and buffer properly identified?
- Is the original ground line shown?
- Are the elevations identified?

## **Planting Plan**

- Is the composition of the proposed plant communities appropriate for the site? Watershed location? Geographic region? Hydrologic conditions?
- Is the composition of the proposed plant communities appropriate for the intended functions? (i.e., water quality and wildlife habitat) Does this agree with the Wetland Mitigation Plan?

- Is the composition of the proposed plant communities appropriate for the soil conditions?
- Is the proposed plant community composition and planting density appropriate for existing invasive species on-site and on adjacent properties?
- Do the proposed plant communities support the intended wildlife functions (e.g., thin-stemmed emergent vegetation for amphibians)?
- Does the buffer community provide sufficient screening and buffering functions?
- Is browse protection shown or specified, and is it adequate for expected wildlife?
- Is bark or wood chip mulch, or are weed mats or sheeting specified or shown in the details for weed control?

### **Irrigation Plans**

- Is the irrigation plan appropriate for the plant communities?
- Is the irrigation permanent or temporary?
- What is the water source?
- If the water is from a well, are a pump and filter specified? Is the pump size adequate?
- If the water is from an irrigation district, is a filter specified? Is a booster pump needed?
- If the water is from a city source, is a backflow prevention device specified?
- Is it a drip system or a spray system?
- Do the heads provide 100% coverage and account for wind direction and speed?
- Are the risers at an appropriate height for the location and plant community?
- If the irrigation system is expected to last more than 3 years, are the lines UV protected?
- Will the system provide enough PSI and GPM to operate the farthest head?
- Are there isolation valves in front of and behind each valve?
- Is there a fitting to attach a compressor to blow out the lines in preparation for winter at each valve?
- Is there a relief valve at the lowest point?
- Are the irrigation heads appropriate for the job and agreeable to the Maintenance Supervisor?
- Is a proprietary item request needed or are the heads and timer performance specified?
- Is the irrigation timer sized appropriately for the number of valves?
- How is the timer powered? Is that connection shown on the plans?
- If casing pipe is needed to cross a road or driveway, is it shown on the plans and appropriately sized?

### **Wildlife Habitat Structures**

(Wildlife habitat structures are typically located on the Planting Plan sheets, though they may be included on a detail sheet. Please refer to both sheets to answer these questions.)

- Do the habitat structures provide appropriate compensation for the impacted wildlife functions?
- Are the structures appropriate for the anticipated wildlife species?

- Are the habitat structures sited in the correct locations, at appropriate heights, and at densities recommended in WSDOT guidance, *Wildlife Habitat in Wetland Mitigation Sites*?