

Alternatives Analysis

1. No Action: if no action were taken, the lakes would remain impounded and the present situation would continue. This alternative fails to meet the project purpose of enhancing the historic functions and values of the wetlands by restoring the seasonal emergent and bottomland forest habitats, and providing fish access to and passage from the rearing and refuge habitats. Approximately 350 acres of bottomland forest were killed when the dam was installed, permanently impounding the lakes. This forest cannot regenerate under existing conditions. The present structure provides no ability to use hydrology to control reed canarygrass, an invasive species on the site that is degrading wildlife habitat and wetland function. The existing structure does not provide fish passage that is needed to make the wetlands available as off-channel refugia and rearing habitat for juvenile salmonids. This "no-action" alternative is not the least environmentally damaging alternative and fails to meet the project's purpose.
2. Smaller Project Designs
 - a. Eliminate fishway: the fishway could be eliminated to save on costs, however, this would fail to meet one of the project objectives (fish access to and from the wetlands).
 - b. Build fewer large culverts (bays), or use smaller culverts: this alternative could eliminate the box culvert that would provide canoe passage (the culvert with all boards and no tidegate). This would not meet a social objective of the project, to provide canoe passage during part of the year. Eliminating one or more culverts would reduce the ability of the structure to bring water into the wetland quickly and provide tidal exchange during summer and fall months. Large culverts are needed to reduce velocity and reduce the erosion potential along the perimeter bank of the adjacent St. Johns Landfill. Thus this alternative does not meet the project purpose and would not be the least environmentally damaging option.
3. Larger Project Designs
 - a. Additional culverts: this alternative would provide the ability to manage hydrology in the wetlands and would meet the project purpose. However, the increased cost would be prohibitive, exceeding the amount of funds raised from U.S. Fish and Wildlife Service and Oregon Watershed Enhancement Board grants for the project. This alternative is not practicable.
4. Different Project Designs
 - a. Use only stoplogs (boards), no tidegates: this alternative would still meet project objectives by allowing water to pass into and out of the wetlands, and the stoplogs would provide control over water movement. However, stoplogs alone are not the optimal technology to use in this project. The tidegates will reduce the amount of active maintenance and operation required for the structure by allowing the wetland to receive water at any time; they do not depend on the presence of wildlife area staff to install and remove stoplogs. Thus the tidegates require less frequent operation and are less costly over the long term because of reduced staff costs. The use of stoplogs alone is not practicable when compared to the design with tidegates.

5. Other Sites Available

- a. Southwest corner of Bybee Lake: this site was considered for the project but rejected. The lake bottom's elevations are higher at this site than at the selected project site; this alternative would not allow full drawdown of the lakes and the accompanying restoration of emergent and forested wetland habitats. Locating the structure at this site could cause fish entrapment, because fish may enter during high water and become stranded in the wetlands when drawdown would separate Bybee Lake from the slough. A channel would have to be dredged to offset this problem. Building the water control structure at this site would not be the least environmentally damaging alternative, and if dredging were to occur it would be costly also. The selected site is located at the historical channel leading into the wetlands and has the lowest bottom elevation, therefore it is the optimum location for the structure.

6. Other Sites Not Available

- a. There are no other sites for this project.