

BEFORE THE METRO COUNCIL

FOR THE PURPOSE OF AUTHORIZING)
THE EXECUTIVE OFFICER TO REPLACE)
THE DAM AT SMITH AND BYBEE LAKES)
WITH A WATER CONTROL STRUCTURE)

RESOLUTION NO. 01-3125

Introduced by Mike Burton
Executive Officer

WHEREAS, the Natural Resources Management Plan for Smith and Bybee Lakes (the "Plan") was adopted by the Metro Council and the City of Portland; and

WHEREAS, the Plan created a Trust Fund for the Smith and Bybee Lakes Wildlife Area and designated Metro to be the Trust Fund Manager; and

WHEREAS, the Goal Statement of the Plan also states that the lakes are to be maintained and enhanced, to the extent possible, in a manner that is faithful to their original natural condition; and

WHEREAS, Plan objectives include controlling water levels to manage the lakes' environment and maintaining habitat diversity representative of lower Columbia River floodplain wetlands; and

WHEREAS, results of biological and hydrological studies have shown that the existing dam has deleteriously altered the lakes' condition, reduced and eliminated wildlife habitat, and reduced biodiversity; and

WHEREAS, biological studies have recommended restoring tidal and seasonal fluctuations, and hydrological studies have evaluated replacing the dam with a water control structure; and

WHEREAS, Plan Policy No. 5 calls for the Smith and Bybee Lakes Management Committee to serve as the principle advisory body to the Metro, and to recommend environmental programs within the wildlife area; and

WHEREAS, Plan Policy No. 11 calls for a Wetland Technical Advisory Committee to assist the Management Committee and Metro in implementing management plan programs; and

WHEREAS, the Wetland Technical Advisory Committee and Smith and Bybee Lakes Management Committee recommended that the dam be replaced with a more versatile water control structure that will enable the lakes to be managed in a manner more faithful to their original natural condition and will restore habitat; and

WHEREAS, locating a structure at the East end of the North Slough will restore its historic connection to the lakes; approximate the original natural condition, including hydrology; and allow regulation of water levels and flow when needed; and

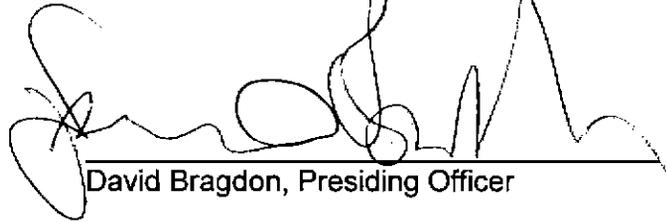
WHEREAS, Plan Policy No. 10 calls for Metro to implement environmental enhancement projects consistent with the management plan; and

WHEREAS, Ducks Unlimited has committed to securing funds for the project, managing construction and delivering the completed project at no cost to Metro; now therefore

BE IT RESOLVED,

That the Metro Council authorizes the Executive Officer to proceed with removal of the existing dam and replace with a more effective water control structure at Smith and Bybee lakes.

ADOPTED by the Metro Council this 29th day of November, 2001

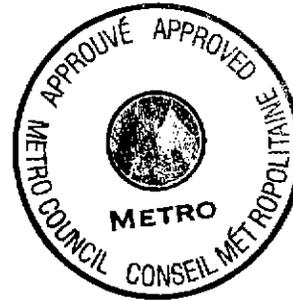


David Bragdon, Presiding Officer

Approved as to Form:



Daniel B. Cooper, General Counsel



NATURAL RESOURCES COMMITTEE REPORT

CONSIDERATION OF RESOLUTION NO. 01-3125, FOR THE PURPOSE OF AUTHORIZING THE EXECUTIVE OFFICER TO REPLACE THE DAM AT SMITH AND BYBEE LAKE WITH A WATER CONTROL STRUCTURE

Date: November 29, 2001

Presented by: Councilor Hosticka

Committee Action: At its November 21, 2000 meeting, the Natural Resources Committee voted 3-0 to recommend Council adoption of Resolution 01-3125. Voting in favor: Councilors Atherton, McLain and Hosticka

Background: Charlie Ciecko, Director of the Regional Parks and Greenspaces Department, gave the staff presentation. Smith and Bybee Lakes is operated under a management plan adopted by both the Metro Council and City of Portland in 1991. The plan calls for managing the resource in a manner faithful to its original and natural condition. A Smith and Bybee Lakes Management Committee oversees management of the Lakes.

A dam now exists which restricts the natural movement of water in and out of the lakes. Without the dam the lakes would more naturally operate as a tidal marsh. The Smith and Bybee Lakes Management Committee agrees that the removal of the dam and replacement with a different structure would be consistent with the management plan. This action will have the effect of reducing boating opportunities on the lake, but help restore native vegetation and offer better seasonal habitat for fish and fauna as well.

Jim Morgan, biologist for the Parks department also testified relative to the effects on plant and animal life and possible negative affects of the St. Johns Landfill.

Several individuals and organizations testified in favor of this action. One individual objected to the placement of the control structure relative to the nearby land fill. He also questioned Metro's authority relative to that of the City of Portland in management of the lakes.

- **Budget Impact:** Removal of the dam will require no Metro funds. While Metro will own and manage the new structure, Ducks Unlimited will be providing funds for its design and construction.
- **Existing Law:** Management of the Smith and Bybee Lakes is performed by Metro, subject to a management plan approved by Metro and the City of Portland in 1991.

Committee Issues/Discussion: Councilor McLain emphasized that Metro has managed the lakes since 1991, and does not agree that there is a question as to Metro's authority to manage the lakes under an intergovernmental agreement with the City of Portland. Dan Cooper said he had reviewed the agreements with the City of Portland, found no reason to

question Metro's authority in this area, and believes that Resolution 01-3125 is consistent with the management plan. At the request of the committee he will conduct further analysis.

Councilor Atherton expressed concern about possible deleterious effects of the landfill including leachate and groundwater concerns. Mr. Cieccko and Morgan addressed these concerns and Councilor McLain reminded the committee that the department had worked extensively with the Solid Waste department on these issues as well.

Staff Report

CONSIDERATION OF RESOLUTION NO. 01-3125 FOR THE PURPOSE OF AUTHORIZING THE EXECUTIVE OFFICER TO REPLACE THE DAM AT SMITH AND BYBEE LAKES WITH A WATER CONTROL STRUCTURE.

Date: November 9, 2001

Presented by: Charles Ciecko
Jim Morgan

Description

Resolution #01-3125 requests authorization for replacing the existing dam that impounds Smith and Bybee Lakes with a water control structure that would provide more versatility and control in managing water levels for fish and wildlife habitat. This resolution is placed before the Metro Council because the action will implement part of the management plan for the first time. Because there is some opposition to this management measure, this resolution before the Metro Council will provide an opportunity for public review of the issues and input from concerned parties.

Background

Smith and Bybee Lakes and their associated sloughs and wetlands are remnants of an extensive river bottomland area located near the confluence of the Willamette and Columbia rivers. The Natural Resources Management Plan for Smith and Bybee Lakes, adopted by Councils of Metro and City of Portland in 1991, established nearly 2,000 acres as a wildlife area to be managed primarily for wildlife habitat protection and enhancement while providing passive recreational opportunities.

Considerable changes have occurred in the lakes' watershed that have had significant impacts on the lakes' system: construction of dams and dikes, filling with dredge spoils and introduction of exotic species of plants and animals. The most recent significant alteration of this system occurred with the construction of a dam in 1982 that separated the lakes from the North Slough arm of the Columbia Slough, and thus the Willamette River. The dam was built in reaction to waterfowl die-off in the lakes. Some wildlife officials believed that avian botulism outbreaks occurred in the lakes and caused the birds' deaths. The dam was built under the belief that maintaining permanent, deep water would deter future disease outbreaks.

Since the dam's construction and two subsequent modifications, the lakes have essentially functioned as reservoirs. Except for rare, severe flood events, daily tidal forces and seasonal floods that were formally the driving forces in the marsh lake system no longer influence the marsh and lakes. Rainfall and evaporation are the principle factors in the lakes' water budget. A flap gate on the slough side of the earth dam allows water to slowly drain out, but prevents it from entering the lakes.

The dam has had a number of deleterious effects, including the following:

- Off-channel habitat for downstream migrating juvenile salmon has been eliminated.
- The constant inundation has killed hundreds of acres of ash-willow forest, reducing habitat for migrating and nesting songbirds and waterfowl.
- Prolonged inundation also prevents natural recruitment of native trees and shrubs in areas of historical distribution.

- Cut off from the Willamette and Columbia Rivers' dynamics, the artificial reservoir conditions have disrupted the balance of the former scour/depositional balance and created a net depositional condition.
- Without daily and seasonal exchange with Willamette River waters, water quality in the lakes has deteriorated to the point of violation of water quality standards.
- Noxious pest plants and animals, such as reed canarygrass and bullfrogs, have become more prolific due to static water levels, thereby, reducing biodiversity within the marsh ecosystem.
- The lakes' fish community is dominated by carp, which have re-suspended sediment throughout the lakes and decimated the smartweed beds that provided food for waterfowl and substrate for aquatic insect communities.
- The availability of mudflat habitat for migrating shorebirds has been greatly reduced.
- The reservoirs are ideal habitat for a burgeoning beaver population that is felling trees in the remaining forest.
- The lakes are unable to provide important wetland functions such as flood storage and water quality enhancement because they are cut off from the slough and river.

Positive effects of the dam include:

- Year-round canoeing, except during very dry years (such as summer 2001).
- A small but popular sport fishery for largemouth bass and other warmwater game fish that are held in the lakes by the dam; anecdotal information indicates some bass are record size. However, recent drought conditions have eliminated this fishery.

A wetland technical advisory committee (TAC) was formed in 1991 to review the situation at Smith and Bybee lakes and recommend management actions. The committee was composed of scientists and managers from natural resource agencies and the private sector. After reviewing information from biological studies and hydrologic modeling, the committee in 1995 recommended replacing the dam with a more versatile design that would restore the habitat by reinstating some of the marsh/lakes' historic flooding regime.

The Smith and Bybee Lakes Management Committee adopted the TAC recommendation in 1996 and reiterated its support for the project in August 2000. Specific recommendations were to:

1. Remove the existing dam;
2. Replace the dam with a structure that would allow unobstructed flow both on a seasonal and daily basis through the North Slough into the lakes;
3. Retain the ability to pump water back into the lakes;
4. Retain the ability to raise the water level in the event of management needs, such as responding to an occurrence of avian botulism.

The two components to follow if and when feasible were:

5. Directly connect the western arm of Bybee Lake to the Columbia Slough with an adjustable weir tidegate
6. Separate the western arm of Bybee Lake from the rest of the lake with an adjustable weir.

This resolution addresses the first two items above. A tentative plan to deal with items three and four would use an irrigation pump to bring North Slough or Columbia Slough water into the lakes if needed. Staff will review this plan this winter, and revise it, if necessary, in order to meet the objective in the most cost-effective manner. The first four items are to be pursued first, while the feasibility of the fifth and sixth items is studied.

Anticipated Effects

The most important result of the proposed action is the restoration of the marsh and lakes' connection to the Columbia Slough and Willamette River, and associated restoration of seasonal and tidal flooding patterns to the extent possible. The proposed structure will allow water to flow freely between Bybee Lake and North Slough; it can also impound water at a variety of levels, or release it gradually or quickly, providing the most cost effective tool available for managing this wetland system.

Anticipated benefits of the new structure include:

- Provide fish passage to enable migrating juvenile salmonids to use the lakes for feeding and resting habitat, increasing the rearing capacity of the lower Willamette River.
- Ability to retain water at times to control reed canarygrass and other pest plants.
- Reduce the number and distribution of bullfrogs and beaver that have caused loss of native amphibians and native forest, respectively.
- Re-establishment of forest and emergent plant communities on hundreds of acres, benefiting wading birds, raptors, neo-tropical songbirds, waterfowl, amphibians, and reptiles.
- Seasonally expose mudflats for use by migrating shorebirds.
- Reduction in the carp population and recovery of smartweed beds.
- Long-term improvement in water quality, including reducing rate of eutrophication.
- Reduce rate of net sediment accumulation, especially the organic portion.
- Increase flood storage capability.
- Provide the most cost-effective mechanism for control of invasive plant species.

Possible drawbacks of the new structure are:

- Loss of canoe access to the lakes from the north side in late summer and early fall. This occurs in dry years even with the existing dam in place, but would occur in most years with an open structure. Canoe access is always available though the structure, except at times when the flashboards are installed.
- Reduced angling success for large warmwater game fish (i.e. largemouth bass). The more open system will no longer promote year-round residence for large predator fish in the lakes. Low water levels during most years will reduce survival or promote out-migration and keep the population lower than it was in the late 1990s.

Possible Opposition

Possible opposition to the project arises from three concerns:

1. Anglers report catching big largemouth bass in the lakes, and they believe that they will lose their fishery. The existing dam has trapped warmwater fish in the lakes with the impoundment providing good growing conditions. Anglers are concerned that the large fish will move out of the lakes when the water control structure is open or remain in the lakes and die as water recedes in the summer. A modified trash rack intended to prevent adult carp from entering the lakes during the spring might also exclude large game fish from entering the lakes when it is deployed. Although warmwater game fish will continue to be available for anglers, Smith and Bybee lakes will no longer function as a trophy bass pond.
2. The second concern relates to whether improved water circulation and greater changes in water levels could result in the movement of contaminants from the North Slough into the lakes, possibly causing water quality deterioration in the lakes. Based on (1) water quality monitoring in the area's surface and ground waters and (2) surface and groundwater

modeling studies, potential negative impact of the adjacent landfill on water quality in the North Slough and Smith and Bybee lakes after dam removal is expected to be insignificant. On the contrary, water quality in the North Slough is expected to improve significantly when the dam is removed due to increased flow of water. In accordance with permits and policies related to St. Johns Landfill and the wildlife area, the Metro Regional Environmental Management Department (REM) routinely monitors surface water and sediments in the lakes and Columbia Slough (including the North Slough), and groundwater around the perimeter of the landfill. In addition, REM has modeled groundwater and surface water flow in the vicinity of the landfill. Data from these ongoing efforts allows Metro to detect significant changes in water quality, and where required, to implement the management options necessary to address those changes.

3. Actions that could result in decreasing the stability of the North Slough banks adjacent to the landfill are a concern. Replacing the dam with a water control structure will allow more flow at different water levels in the North Slough adjacent to the landfill which conceivably could accelerate bank erosion. Results of extensive modeling efforts show that by operating the proposed water control structure, the maximum velocities observed in the North and Lower Columbia Sloughs will be reduced, compared to an un-regulated condition.

Budget Impact

No funding from Metro is required for this project. Sufficient funds are currently available from sources external to Metro. Funds are being raised by Ducks Unlimited, a non-profit organization dedicated to wetland restoration and enhancement. Design, engineering and construction management will be performed by Ducks Unlimited, which has built hundreds of water control structures in North America. The structure will be owned, operated and maintained by Metro.

Outstanding Questions

None.

Executive Officer's Recommendation

The Executive Officer recommends passage of Resolution No. 01-3125.