

2.0 Capitol Lake History

Capitol Lake was created in 1951 for the purpose of serving as a reflecting pool for the State Capitol Building. Prior to the creation of the lake, the lake area was a tidal estuary of the Deschutes River. Capitol Lake was formed with the construction of the dam and tidal gate along 5th Avenue, making it a reservoir for the Deschutes River and separating it from the tidal influence from Budd Inlet. The lake is currently physically divided into four main areas or basins, which include the North Basin, Middle Basin, South Basin, and Percival Cove (Figure 1.1). Since its formation, DES, formerly the Washington State Department of General Administration (GA), has been responsible for the management activities in and around Capitol Lake.

This section focuses on presenting the historical information that is relevant to the Capitol Lake conceptual maintenance dredging scope and previous environmental permitting processes, including a summary of the sedimentation history of the lake and the previous maintenance dredging events that have been performed within the lake. It also briefly describes the regulatory history of the lake and evaluations that have been conducted regarding the long-term management of Capitol Lake. These long-term management evaluations are a separate process from the current conceptual maintenance dredging scope.

2.1 INPUT OF SEDIMENT TO CAPITOL LAKE

Approximately 35,000 cubic yards of sediment are deposited annually into Capitol Lake from the Deschutes River (Entranco 1997). Based on this annual rate of input, more than 2 million cubic yards of sediment have entered and settled into Capitol Lake since it was created.

An evaluation of the sediment input and its distribution within Capitol Lake was performed by Entranco in 1997. For this evaluation, Entranco evaluated sediment inputs to the lake that occurred over a 13-year period, between 1983 and 1996. Over this time, approximately 420,000 cubic yards of sediment was deposited in Capitol Lake, with the North Basin accumulating approximately 24 percent of the total sediment volume, the Middle Basin accumulating approximately 62 percent, and the South Basin accumulating the remaining 14 percent. It was also determined that the sediment trap located within the southern portion of the Middle Basin accumulated approximately 18 percent of the total sediment input into Capitol Lake during this timeframe (refer to Section 2.2 for additional information on Capitol Lake sediment traps; Entranco 1997). Sediment accumulating in the North Basin during this period appeared to primarily collect in the old tidal channels present within this basin (Moffatt & Nichol 2008).

In 2006, the United States Geological Survey (USGS) evaluated elevation changes within Capitol Lake between 1949 (just prior to the formation of the lake) and 2004 to understand the average depth and volume changes that had occurred in Capitol Lake over that timeframe. Based on this analysis, the USGS reported that there was a 60 percent reduction in the volume of Capitol Lake, with most of this reduction occurring in the South and Middle Basins. The reductions in volume noted for the South and Middle Basins was approximately 97 percent and 69 percent, respectively. The North Basin saw an approximate 42 percent reduction over this same timeframe; however, the depth of the former tidal channel within the North Basin showed large decreases in elevation, ranging typically from 2 to 3 meters (George et al. 2006).

A bathymetric survey of Capitol Lake was recently performed and general changes in the lake elevations between 2004 and 2013 are described in Section 4.1.

Draft Supplemental EIS. An updated Draft Supplemental EIS (Revised Maintenance Sediment Removal Plan) was issued with a modified scope in 1996. The proposed action in the 1996 updated Draft Supplemental EIS called for maintenance dredging to occur only in the Middle Basin sediment trap area over a 5-year period, potentially including two dredging events and the removal of up to 140,000 cubic yards of sediment (Entranco 1996). No state funding was available to perform this proposed maintenance dredging in 1996 and the proposal was challenged because it did not adequately consider estuary restoration as an alternative in the EIS. After a series of discussions with stakeholders, GA withdrew the dredge proposal. However, at that time the GA determined to move forward with reviewing options for a long-term management approach for Capitol Lake, as was specified as part of the 1996 Draft Supplemental EIS (GA 1996).

The 1996 Draft Supplemental EIS called for the development of an updated Capitol Lake Management Plan that would include participation by other agencies, Tribal interests, and the public, and would address the policies, goals, and specific operation management and maintenance measures for Capitol Lake over the next 10 to 20 years (Entranco 1996). As a result, in 1997 the CLAMP Steering Committee was formed. The committee included broad participation by multiple state and local agencies, the Squaxin Island Tribe, and the Port of Olympia. The key question that was to be addressed by the CLAMP Steering Committee was: Should Capitol Lake be restored to a tidal estuary or continue to be maintained as a freshwater lake? (Entranco et al. 1999). A final programmatic EIS for the CLAMP Steering Committee was developed in 1999 that evaluated five action alternatives and one no-action alternative. The action alternatives included an estuary alternative, a combined lake/estuary alternative (with a reflecting pool on the east side and an estuary on the west side of the North Basin), a managed lake alternative, and two lake/river wetland alternatives (the South and Middle Basins would become freshwater wetlands and the North Basin would be a managed lake in both alternatives, while one alternative also included a Middle Basin sediment trap and the other did not). This EIS contained the key aspects of the CLAMP and was to be used by the Steering Committee to guide development of the CLAMP (Entranco et al. 1999).

In 2002, a CLAMP 10-Year Plan for 2003–2013 was completed by the CLAMP Steering Committee. In this plan it was agreed to maintain Capitol Lake as a freshwater lake over the next 10 years. The plan outlined 14 objectives for adaptively managing the lake over this timeframe (GA 2002). One of these objectives included completing a Deschutes Estuary Feasibility Study to help determine if it would be feasible to restore a self-sustaining Deschutes Estuary as an alternative to the continued management and maintenance of Capitol Lake. This feasibility study and several technical studies to support the feasibility study were completed between 2006 and 2008 (Philip William & Associates et al. 2008).

Information from the Deschutes Estuary Feasibility Study, as well as additional technical information and studies on Capitol Lake, were collected and evaluated by the CLAMP Steering Committee and documented in the CLAMP Alternatives Analysis Report in 2009 (Herrera 2009). This alternative analysis report compared four long-term management alternatives, including a managed lake alternative, an estuary alternative, a dual-basin estuary alternative (includes a reflecting pool on the east side and an estuary on the west side of the North Basin), and a status quo lake alternative (allowing the lake to continue to fill with sediment). The analysis report stated that regardless of the management alternative selected, a long-term program for sediment management that involves dredging and disposal will be required. The long-term dredging frequency was estimated at every 10 years for the managed lake alternative and every 5 years for the estuary alternative (long-term dredging for the estuary alternative was expected to be performed at Budd Inlet marinas and at Port of Olympia facilities; Herrera 2009).

its final stages with the final release date yet to be determined. Upon completion, the full report will be submitted to USEPA.