

Alternatives for EIS Scoping

September 2018



CAPITOL LAKE/LOWER DESCHUTES WATERSHED

Long-Term Management Project **Environmental Impact Statement**



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List of Acronyms and Abbreviations

| Acronyms/ Abbreviations | Definition |
|----------------------------|---------------------------------------|
| CLAMP | Capitol Lake Adaptive Management Plan |
| DELI | Dual Estuary/Lake Idea |
| EIS | Environmental Impact Statement |
| RPB | Rotating Photo Bioreactor |
| SEPA | State Environmental Policy Act |

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1.0 Introduction and Background

Capitol Lake/Lower Deschutes Watershed includes the 260-acre Capitol Lake Basin, located on the Washington State Capitol Campus, in Olympia, Washington. The Washington State Department of Enterprise Services (hereafter referred to as Enterprise Services) is responsible for the stewardship, preservation, operation, and maintenance of the Capitol Lake Basin. Enterprise Services maintains Capitol Lake as part of the Capitol Campus under a long-term lease agreement with the Washington State Department of Natural Resources.

This waterbody is an important recreational resource and valued amenity; however, it suffers from numerous environmental issues including water quality standards violations, inadequate sediment management, and the presence of invasive species, all of which have restricted active community use for more than 20 years. Long-term management strategies and actions are needed to address these issues in the Capitol Lake basin and surrounding watershed. In 2016, stakeholders, in collaboration with Enterprise Services, identified common goals that should be satisfied by any long-term management alternative. This planning effort also included review and identification of existing options and alternate options, and new concepts that could meet the goals for long-term management.

In 2018, Enterprise Services was directed by the state legislature to develop an Environmental Impact Statement (EIS) that evaluates alternatives for long-term management. Enterprise Services is now preparing the EIS to document the potential environmental impacts of various alternatives and determine how these alternatives meet the long-term management objectives. The EIS is Phase 2 of the long-term planning process for Capitol Lake/Lower Deschutes Watershed Long-Term Management.

The EIS will identify a preferred environmentally and economically sustainable long-term management alternative for the Capitol Lake/Lower Deschutes Watershed Long-Term Management Project.

1.1 PURPOSE OF REPORT

The purpose of this report is to summarize the primary alternatives being carried into EIS scoping, and to describe the process used to identify them. The alternatives described in this memo serve as a

foundation for beginning the EIS process. Enterprise Services will solicit input on alternatives in a systematic and inclusive way through the State Environmental Policy Act (SEPA) EIS scoping process. This input will be used to help identify a range of reasonable alternatives and options for review in the EIS. Enterprise Services acknowledges that the alternatives described in this report may be modified, changed, or replaced during the EIS scoping process or preparation of the EIS, and that additional alternatives or options may be identified.

1.2 BACKGROUND

1.2.1 2015 Legislative Proviso and Phase 1

A 2016 planning effort began in response to a proviso within the capital budget for the 2015-2017 biennium. The Washington State Legislature, through the proviso, directed Enterprise Services to “make tangible progress on reaching broad agreement on a long-term plan” for the Capitol Lake/Lower Deschutes Watershed.

The proviso included additional tasks to support the overarching goal of reaching broad agreement, such as; identifying and summarizing best available science related to water quality and habitat; identifying hybrid options and the range of public support for the options; providing general cost estimates for construction and maintenance; and evaluating the potential for shared funding and governance. During the early months of 2016, Enterprise Services considered the opportunity to conduct this process as the initial phase of a more comprehensive planning effort. As a result of these internal agency discussions and the interest of Enterprise Services to pursue a long-term management approach, a three-phased process was developed.

- Phase 1 was designed to meet the proviso elements (or “directives”) and to serve the dual-purpose of assembling information to support a future project-specific EIS.
- Phase 2 consists of the EIS and technical analyses required to select a long-term management alternative, and required by the SEPA.
- Phase 3 consists of the funding, design, permitting, and construction of the selected long-term management alternative.

Phase 1 was completed in 2016. Phase 1 satisfied objectives of the proviso and also built upon elements of the Capitol Lake Adaptive Management Plan (CLAMP), a planning process that occurred between 1997 and 2010. The Phase 1 Report on the Capitol Lake/Lower Deschutes Watershed Long-Term Management Planning documents work completed in Phase 1, and was submitted at year-end in accordance with the proviso (see website library at www.CapitolLakeWatershedEIS.org). Phase 1 laid the groundwork for Phase 2 (project-specific EIS) and Phase 3 (funding, design, permitting, and construction of the selected long-term management alternative).

1.2.2 Phase 1 Stakeholder Involvement and Alternatives Development Process

As part of Phase 1, Enterprise Services brought together, and actively engaged, the Squaxin Island Tribe, the Port of Olympia, community groups, interested individuals, and local and state government

agencies (City of Olympia, City of Tumwater, Thurston County, Washington State Department of Natural Resources, Washington State Department of Ecology, and the Washington Department of Fish and Wildlife) to identify goals, interests and visions for the future of Capitol Lake. Representatives from these entities comprised the Executive Work Group, Technical Committee, and Funding and Governance Committee. These entities and the community served as the primary stakeholder groups throughout the Phase 1 process. Representatives of many of these entities also served as part of the formerly convened CLAMP Steering Committee (1997 through 2009), with a similar goal of identifying a long-term management option for this resource.

The purpose of the Phase 1 stakeholder groups was to provide a forum that would generate robust input from diverse stakeholders focused on long term management of the lake. This Phase 1 process led to consensus that multiple scenarios must be analyzed through an EIS, and included identification of existing options and alternate options, and new concepts that could meet the goals of long-term management.

The identification of options was informed by the previous CLAMP alternatives analysis process and the 2015 proviso. The CLAMP alternatives analysis process identified three options, including a Managed Lake, a Dual Basin Hybrid Option, and a Restored Estuary. The 2015 proviso directed Enterprise Services to identify hybrid options for future long-term management of Capitol Lake/Lower Deschutes Watershed, with particular attention to those that would substantially improve fish and wildlife habitat and ecosystem functions, and that would maintain a historic reflecting pool at the north end of the basin. In concept, an option is considered a "hybrid" when it (1) restores tidal flow and estuarine conditions within the basin, and (2) maintains a portion of the historic reflecting pool.

An extended opportunity for stakeholders to submit concept options that satisfy the 2015 proviso elements began in April 2016 and continued through June 2016. Several additional hybrid options and new concepts similar to but different than the CLAMP Managed Lake and Restored Estuary options were submitted by stakeholders. During the June and July meetings, stakeholders reviewed the proposed hybrid options for long-term management and also discussed the existing options that were evaluated as part of the CLAMP alternatives analysis. Incorporating the existing options provided context on the range of potential long-term management options and is consistent with the proviso element to build upon previous recommendations, to ensure a comprehensive approach.

Phase 1 implementation and stakeholder participation around the proviso elements are further described in the Phase 1 Report (www.CapitolLakeWatershedEIS.org).

1.2.3 2018 Legislative Proviso and Phase 2

The EIS (Phase 2) was authorized in a proviso in the capital budget for the 2017-2019 biennium. The proviso requires that the EIS consider the three primary and existing options at a minimum. From Engrossed Substitute Senate Bill 6095, Section 1034 (Chapter 2, Laws of 2018):

"The department shall develop an environmental impact statement to consider alternatives for Capitol Lake. The alternatives considered must include, at a minimum, a lake option, an estuary option, and a

hybrid option. The environmental impact statement will also consider sediment transport and locations within lower Budd Inlet. The department must work with affected stakeholders to develop mitigation plans. The environmental impact statement must also consider an expanded area around Capitol Lake and Budd Inlet including the Port of Olympia for the economic analysis. The environmental impact statement must consider the use of equal funding from non-state entities including, but not limited to, local governments, special purpose districts, tribes, and not-for-profit organizations.”



2.0 Alternatives for EIS Scoping

2.1 EIS SCOPING

Scoping is the first step in the EIS process (and the first step in Phase 2 of this three-phased effort). EIS scoping is a formal process to solicit comments from the public and project stakeholders on alternatives, environmental impacts and mitigation measures to focus on in the EIS. Scoping began with the scoping notice, which was issued by Enterprise Services on September 26, 2018. The scoping notice included a description of the proposal and preliminarily identified environmental elements for review. The scoping notice also included a description of the primary alternatives.

After scoping, a screening process will be used to identify a range of alternatives to move forward for detailed technical review in the EIS. As required by SEPA, the range of alternatives will include reasonable alternatives that meet or approximate the objectives of the proposal.

2.2 DESCRIPTION OF ALTERNATIVES FOR EIS SCOPING

The long-term management options identified during the CLAMP process and reviewed during the Phase 1 process (a Managed Lake, a Restored Estuary, and a Hybrid) will be carried forward into EIS scoping. As directed by the 2017 proviso, these are the primary alternatives to be evaluated, at a minimum, in the EIS.

- **A Managed Lake** would maintain the existing reflecting pool.
- **A Restored Estuary** would remove the existing Fifth Avenue Dam to restore the historical tidal estuary.

Long-Term Management Objectives

In 2016, Enterprise Services, in collaboration with stakeholders, identified the following objectives:

- Improve water quality
- Manage sediment accumulation and future deposition
- Enhance ecological functions
- Restore active community use
- Use an approach that is environmentally and economically sustainable for long-term management

- **A Hybrid** would include elements of both—a smaller reflecting pool would be developed near Heritage Park and a barrier would be constructed to support a restored tidal estuary west of the barrier.
- **A No Action Alternative**, as required by SEPA.

Each alternative would include strategies and actions to satisfy the long-term management objectives. These alternatives received at least preliminary feasibility screening during the earlier CLAMP planning work.

As required by SEPA, a no action alternative will also be evaluated in the EIS.

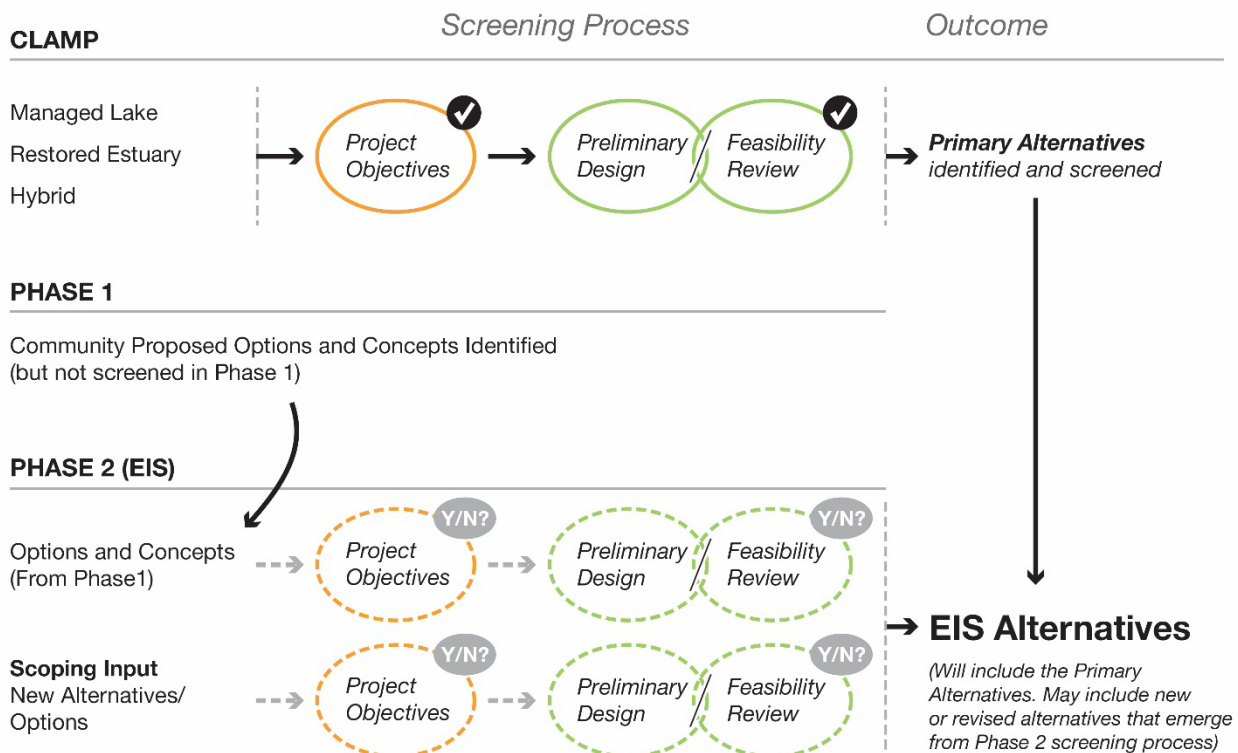
Several options or variations of the primary alternatives were also proposed by the community and stakeholders during Phase 1. A screening process will be used to identify the range of alternatives that move forward for detailed technical review in the EIS. Options and concepts will be screened for their ability to meet project objectives and their feasibility.

These primary alternatives and options are further described below. For additional information, see the Phase 1 Report (www.CapitolLakeWatershedEIS.org).

Primary Alternatives

The 2018 legislative proviso directs that certain alternatives be evaluated in the EIS. These include a **Managed Lake Alternative**, a **Restored Estuary Alternative**, and a **Hybrid Alternative**. In addition, SEPA requires the evaluation of a **No Action Alternative**. These are considered the primary alternatives for the EIS. Additional alternatives may be identified during scoping.

Figure 2-1 Alternative Screening Process



2.2.1 Primary Alternatives

2.2.1.1 Managed Lake Alternative

The Managed Lake Alternative is similar to existing conditions, with additional strategies to manage sediment accumulation and future deposition, including maintenance dredging within the North and Middle Basins and selective dredging within the South Basin. The Managed Lake Alternative would retain the Fifth Avenue Dam and tide gate in its current configuration to maintain the historic reflecting pool and the Capitol Lake Basin. The Managed Lake is depicted on Figure 6a of the Phase 1 Report (www.CapitolLakeWatershedEIS.org).

2.2.1.2 Restored Estuary Alternative

Under the Restored Estuary Alternative, full tidal hydrology would be restored throughout the entire basin. An opening in the Fifth Avenue Dam would be constructed sufficient in size to allow tidal exchange within newly formed mudflats. This opening would allow tidal flow (saltwater) within North Basin during approximately 75 percent of tidal elevations. Sediment would be managed through initial dredging in Capitol Lake Basin and recurring maintenance dredging in Budd Inlet. The Restored Estuary is depicted on Figure 6a of the Phase 1 Report (www.CapitolLakeWatershedEIS.org).

2.2.1.3 Hybrid Alternative

The Hybrid Alternative allows management of the basin by establishing a tidal estuary in the western portion of the North Basin, and throughout the Middle and South Basins. An opening at the Fifth Avenue Dam would be constructed to allow for tidal flow. A retaining wall also would be constructed, at approximately the centerline of the North Basin, to develop a 39-acre saltwater reflecting pool adjacent to Heritage Park in the North Basin. Construction and maintenance of the smaller reflecting pool, in addition to restored estuarine conditions in part of the basin, gives this option its classification as a hybrid. Sediment would be managed through initial dredging in the Capitol Lake Basin, and recurring maintenance dredging in Budd Inlet. The Hybrid is depicted on Figure 6a of the Phase 1 Report (www.CapitolLakeWatershedEIS.org).

2.2.1.4 No Action Alternative

In an EIS, SEPA requires analysis of the "No Action Alternative," against which the effects of the action alternatives can be evaluated and compared. The No Action Alternative is intended to represent the likely future for the project area if the project is not implemented. Operations and maintenance activities to retain the existing Fifth Avenue Dam and tide gate in its current configuration would continue. Enterprise Services would continue to implement invasive species management strategies. Sediment management strategies, like maintenance dredging, would not occur. The No Action Alternative would also include planned and funded actions that have been identified by the Washington State Department of Ecology and approved by the U.S. Environmental Protection Agency as part of a water-quality improvement strategy.

2.2.2 Additional Options and Concepts for Consideration

One option (the Dual Estuary/Lake Idea Hybrid Option) was put forward by the community during the Phase 1 stakeholder review period. Several additional concepts were submitted during the extended opportunity for input on this topic during Phase 1. The options and concepts are described below, using descriptions provided by the community members and Technical Committee members that proposed them. Collectively, these options and concepts represent a range of interests from the community, and satisfy the directive of the proviso to “identify multiple hybrid options for future management of Capitol Lake.”

Preliminary technical analysis, design, and/or feasibility review have not been completed on these options and concepts. Similarly, reported environmental benefits have not been verified by the regulatory agencies. Therefore, data gaps exist and some option components are included on assumption and would likely be modified or removed altogether as design develops and feasibility reviews are conducted. In contrast, the primary alternatives described above have previously undergone a preliminary design review as part of the CLAMP process. These, and any additional alternatives or options put forward during the EIS scoping process, will be screened to identify a range of reasonable alternatives and options for review in the EIS.

2.2.2.1 Dual Estuary/Lake Idea Hybrid Option

The Dual Estuary/Lake Idea (DELI) Hybrid Option. The DELI Hybrid Option is similar to the Hybrid Alternative, in that it would establish a tidal estuary in the western portion of the North Basin, and throughout the Middle and South Basins by constructing a 500-foot opening beneath a reconstructed Fifth Avenue. It differs from the Hybrid Alternative primarily in the approach used to maintain the historic reflecting pool. The DELI Hybrid Option proposes construction of a rock containment wall (instead of a sheet pile containment wall) to maintain a 48-acre freshwater reflecting pool near Heritage Park. The historic reflecting pool under the DELI Hybrid Option is slightly larger than that in the Hybrid Alternative, and instead of saltwater, is proposed as a freshwater lake fed by wells along the east and south shores. Additionally, DELI includes the installation of a sediment trap with a pumping station to manage sediment, along with annual maintenance dredging. This DELI Hybrid Option was proposed for long-term management by a community member, with considerable support from the larger community. The DELI Hybrid Option is depicted on Figure 7a of the Phase 1 Report (www.CapitolLakeWatershedEIS.org).

2.2.2.2 Concepts

In addition to the DELI Hybrid Option, several concepts were submitted for consideration as options or variations of the primary alternatives. Visual representations of these concepts are provided in Appendix C of the Phase 1 Report (www.CapitolLakeWatershedEIS.org).

2.2.2.3 Managed North Basin Lake/Wetland

The Managed North Basin Lake/Wetland concept has some similarities to the Managed Lake Alternative, with the existing Fifth Avenue Dam retained to maintain the historic reflecting pool. The primary difference between the Managed Lake Alternative, originating from the CLAMP process, and the Managed North Basin Lake/Wetland is reduced dredging quantities and shallower lake conditions with a different geometry. The current Managed North Basin Lake/Wetland initial dredging quantities would be comparable to the Restored Estuary Alternative, with the initial dredging focused in the North Basin. Routine maintenance dredging would continue in the North Basin, and would be conducted from a permanently installed dredge system. Periodic dredging would be focused in the Middle Basin and in Budd Inlet. Dredging in the Middle Basin would occur in the river channel to allow wetlands to naturally form along the shorelines. Dredging in Budd Inlet would be completed to reduce potential impacts to recreational and operational uses in that area. The current Managed North Basin Lake/Wetland was proposed by the Capitol Lake Improvement & Protection Association (CLIPA) and is similar to the concept proposed by this group in 2010.

2.2.2.4 Nutrient Harvesting

This concept proposed by a community member would serve as an option or variation to the Managed Lake Alternative. The Nutrient Harvesting concept would implement mechanized removal of soluble phosphorus and dissolved nitrogen from surface waters by way of three to four Rotating Photo Bioreactors (RPBs) installed in the Middle Basin. Collectively, the RPBs are intended to improve water quality and ecological functions within the watershed by removing phosphorous and nitrogen through the growth and harvesting of cyanobacteria grown on partially submerged rotating plates. Sediment would be managed through its removal at the entrance to Capitol Lake, and proposed to be sold as nutrient rich topsoil. Importantly, it should be noted that the technology associated with this Nutrient Harvesting concept is experimental, and the pilot phase was conducted in an indoor environment with a smaller pilot RPB.

2.2.2.5 Expanded Park Space

This concept proposed by a community member would serve as an option or variation to the Managed Lake Alternative. The concept would fill a significant portion of the North Basin to provide expanded park space.

2.2.2.6 Seasonal Hybrid

A new hybrid concept was proposed by a Phase 1 Technical Committee member and a member of the community and was entitled "Seasonal Hybrid" or "Capitol Lagoon." This concept was not reviewed alongside the DELI Hybrid Option because it was not developed during the stakeholder review period for the other long-term management options. The Seasonal Hybrid would establish a tidal estuary through lowering of a reconstructed Fifth Avenue Dam during the fall and winter seasons. Dredging would be completed from specified areas with reasonable access, targeting certain locations throughout the basins for sediment accumulation and later removal. The dredged sediment would be

used to create shoreline enhancements along Deschutes Parkway. During times of peak recreational activity, typically occurring during the spring and summer seasons, the dam would be raised to allow for the formation and retention of a reflecting pool. In the description of this concept, the proponent stated that the dam could also be lowered more frequently during those months, such as nightly, to ensure adequate mixing of freshwater and saltwater. Throughout the seasons, boardwalks and overlooks would be available for community use and viewing of the water below.

2.2.2.7 Expanded Freshwater Wetlands

This concept proposed by a community member would serve as an option or variation to the Restored Estuary Alternative. This concept proposes to protect the existing freshwater wetlands within the South Basin by limiting the mixture of marine water to this freshwater habitat, potentially through construction of a retaining wall, while the North and Middle Basins are restored to a tidally influenced estuary.