



7.0 Planning-Level Costs, Funding Recommendations, & Other Considerations

Planning-level costs have been developed to evaluate economic sustainability and feasibility of the long-term management alternatives, which are key components of the project purpose and will be considered during the process to identify a Preferred Alternative. This chapter provides initial recommendations from the Funding and Governance Work Group on how construction and long-term management may be funded, as well as other topics that may be considered during the decision-making process that are not otherwise captured in the technical analyses, but were identified during development of this Environmental Impact Study (EIS).

7.1 WHAT IMPORTANT FACTORS ARE ASSUMED IN THE PLANNING-LEVEL COSTS?

The planning-level costs were developed by civil, environmental, and coastal engineers on the EIS Project Team and are considered a Class 4 estimate, by standards established by the Association for the Advancement of Cost Engineering. They reflect an accuracy variation of - (minus) 25% and + (plus) 35%. They assume a 3.5% annual escalation. The planning-level costs include estimates for design and permitting, construction, and long-term sediment management.

7.1.1 Design and Permitting of the Preferred Alternative (Phase 3)

Costs for design and permitting are those required to advance conceptual design of the Preferred Alternative to a final design package. This includes all elements of a complete design (e.g., dredge design, design of the temporary coffercells to construct habitat areas, habitat areas and planting plans, boardwalks), and the associated specifications that will be required to construct and deliver the project in the next

phase. Costs in this phase also include the effort to prepare comprehensive permit applications, coordinate with the governmental and agency partners with jurisdiction, and obtain the suite of environmental permits that will be required for construction and long-term management of the Preferred Alternative.

Costs for design and permitting are typically within 10% to 12% of estimated construction costs. They are included in the estimated construction costs provided in Table 7.1.1. A separate capital request would be submitted to the State of Washington for this funding. The request could be made in the 2023–2025 biennium.

Design and permitting would occur over an approximately 3- to 5-year duration and would begin as early as 2023 pending funding.

7.1.2 Construction of the Preferred Alternative (Phase 4)

Planning-level cost estimates for construction were developed based on costs to construct the primary elements of each alternative, including dredging, habitat areas, work at the 5th Avenue Dam (as needed for each alternative), installation of the boardwalks, and the 5th Avenue Pedestrian Bridge.

Across all action alternatives, sediment management is the project component with the greatest influence on the planning-level construction costs. Sediment dredged during construction will be entirely or mostly reused within the Project Area to create wetland and shoreline habitat. This beneficial reuse results in a significant cost savings for the project—it avoids construction costs associated with hauling the material off-site and disposing of it upland, potentially saving hundreds of millions of dollars.

A capital request for construction of the Preferred Alternative could be submitted between 2026 and 2028, if funding is immediately available for the preceding design and permitting phase and that process is completed within the estimated 3 to 5 years.

Construction is estimated to occur over a 4-to-8-year duration, depending on the alternative.

7.1.3 Long-Term Sediment Management (after construction)

Planning-level estimates for long-term sediment management (i.e., maintenance dredging) were estimated over the 30-year project time horizon, beginning after construction (2040 or later depending on the Preferred Alternative selected and when construction begins). Given the numerical modeling that was conducted for the EIS, the costs of recurring maintenance dredging required for long-term sediment management can be estimated and represent the largest long-term maintenance cost. The long-term costs provided in Table 7.1.1 do not include other potential maintenance responsibilities, such as conditions within the alternative-specific adaptive management plans, habitat enhancement plans, or other operations and maintenance associated with restored recreation. Those requirements will be better understood during design and permitting for the Preferred Alternative and can be estimated at that time.

It is assumed that the sediment removed during maintenance dredging in the Estuary and Hybrid Alternatives would be disposed at an allowable in-water location within the Puget Sound. This assumption is based on the suitable chemical quality of the Deschutes River sediment, which would be deposited in West Bay under these alternatives and removed during recurring dredge events to avoid impacts associated with sediment accumulation. Additionally, sediment dredged under the Estuary and Hybrid Alternatives would be in a saltwater environment, and there is low potential for aquatic invasive species persistence in deeper waters where dredging would occur. Low population densities of the invasive New Zealand mudsnail are assumed in Budd Inlet because of salinity levels.

Sampling for chemical quality and invasive species would occur before future dredge events to confirm suitability of the dredged material for in-water disposal. See the Navigation Discipline Report (Attachment 6) for a description of the assumed dredging frequency and locations, the Aquatic Invasive Species Discipline Report (Attachment 8) for a discussion on the impact of saltwater on existing invasive species in Capitol Lake, and the Sediment Quality Discipline Report (Attachment 15) for sediment quality data.

If the sediment is determined unsuitable for in-water disposal due to chemical quality or invasive species, these planning-level costs assume that it would be transloaded into trucks and hauled to an upland site. This upland disposal would more than double the estimated cost of recurring maintenance dredging under the Estuary and Hybrid

When would maintenance dredging begin?

For the Estuary and Hybrid Alternatives, maintenance dredging would begin approximately 5 to 6 years after construction is complete, no earlier than 2040. For the Managed Lake Alternative, maintenance dredging would begin approximately 20 years after construction is complete, around 2050. See Section 2.5.1, Maintenance Dredging, for details.

Alternatives. Upland disposal is the only feasible disposal option for material dredged under the Managed Lake Alternative because invasive species are expected to persist in the freshwater environment, at high densities similar to existing conditions.

The planning-level costs associated with upland disposal assume transport to the upland site by truck, rather than by rail. However, transport by rail is not precluded and was evaluated in this EIS (see Attachment 11, Air Quality and Odor Discipline Report, and Attachment 16, Transportation Discipline Report). The feasibility of rail transport from the maintenance dredging events would depend on a number of factors, including equipment availability and whether or not the upland disposal location is adequately served by rail. Additionally, transport by rail requires a significant amount of land for temporary storage where dredged material would be placed and then loaded onto rail cars as they are available. Given that maintenance dredging would not occur for several decades, the availability of nearby suitable land could not be assumed, and neither could equipment availability or rail access. Transport by rail would be reevaluated in the future prior to maintenance dredging, where upland disposal is assumed, because it could reduce the estimated costs of sediment transport for disposal.

Sediment management is not the only cost associated with long-term maintenance, but it would account for the majority spending over a 30-year period after construction. Estimating it allows decision-makers to focus on the biggest cost differentiator between the long-term management alternatives.

7.1.4 What are the planning-level costs for the long-term management alternatives?

The planning-level cost estimates presented in Table 7.1.1 have been developed based on the conceptual design components for the project alternatives (Chapter 2.0, Project Alternatives and Construction Approach). The accuracy of these construction and long-term maintenance dredging estimates will increase as design is advanced further.

Table 7.1.1 Planning-Level Cost Estimates for the Project Alternatives

Project Alternative	Design, Permitting ⁽¹⁾ , & Construction Costs ⁽²⁾ <i>Design & Permitting = 2023 to 2026-28 Construction = as soon as 2026</i>	Maintenance Dredging Costs over 30 Years ⁽³⁾ <i>As soon as 2040</i>	Construction + 30-years Maint. Dredging	Funding Source for Construction & Maint.	Impact if There is a Funding Lapse after Construction	Potential Significant Additional Costs Not Associated with Construction or Maintenance Dredging
No Action	\$0	\$18M ⁽⁴⁾	\$18M	U.S. Army Corps of Engineers (USACE), Port of Olympia, and local marinas	Not applicable	Ongoing repairs and future replacement of the 5 th Avenue Dam, if permits could be obtained. Potentially significant costs to LOTT Clean Water Alliance (LOTT) because more extensive water quality treatment is likely to be required by the Washington State Department of Ecology (Ecology). Continued overland flooding events and associated costs to the City of Olympia, Port of Olympia, and other entities. These costs would be most significant under the No Action and Managed Lake Alternatives. Continued costs to address tribal and public concern regarding impacts and environmental impairments.
Managed Lake	\$89-\$160M	\$248-\$447M ⁽⁵⁾	\$337-\$607M	Majority of construction and maintenance costs assumed to be the primary responsibility of the State of Washington	Reduced recreational opportunities in the North Basin; over many years, Capitol Lake would look similar to today resulting in a sunk construction cost	Same as the No Action Alternative, but comparatively reduced costs associated with the 5 th Avenue Dam. Potential significant costs to compensate for tribal and ecological impacts.
Estuary	\$131-\$235M	\$48-\$101M ⁽⁶⁾	\$179-\$336M ⁽⁷⁾	Majority of construction costs assumed to be borne by the State of Washington Maintenance dredging costs assumed to be shared by Funding and Governance Work Group members (with one-quarter of the total costs funded by the USACE)	Impacted navigation in West Bay (up to 6 inches per year is deposited at the Olympia Yacht Club, less than 0.1 inch per year in the FNC)	Continued overland flooding events and associated costs to the City of Olympia, Port of Olympia, and other entities. Flooding impacts and costs under the Estuary Alternative would be less significant than those under the No Action and Managed Lake Alternatives.
Hybrid	\$177-\$319M	\$72-\$144M ⁽⁶⁾	\$249-\$463M ⁽⁸⁾	Majority of construction costs assumed to be borne by the State of Washington Maintenance dredging costs assumed to be shared by Funding and Governance Work Group members (with one-quarter of the total costs funded by the USACE)	Impacted navigation in West Bay (up to 7.5 inches per year is deposited at the Olympia Yacht Club, and 0.1 inches per year in the Federal Navigation Channel [FNC])	Same as Estuary Alternative, but reduced costs to the City of Olympia, Port of Olympia, and other entities given the flood reduction provided by the reflecting pool barrier wall.

Notes for Table 7.1.1 are provided on the following page.

Notes for Table 7.1.1:

2. Funding for design for design and permitting of the Preferred Alternative would be requested from and authorized by the State of Washington in the 2023 Legislative session.
3. Potential additional costs associated with future project permit conditions have not been estimated at this time because they cannot be predicted with certainty. The planning-level cost estimates do not include potential costs associated with compensatory mitigation to offset potential temporary or permanent impacts to wetlands, fish, or other ecological functions. This could be required if the regulatory agencies do not consider the project benefits to outweigh the potential impacts (if the project is not considered "self-mitigating").
4. Cost estimates for conditions of the alternative-specific adaptive management plans, habitat enhancement plans, and other operations and maintenance activities would be estimated during design and permitting once those requirements are better understood for the Preferred Alternative. Those long-term management costs are not included herein. The maintenance dredging cost estimates represent the largest long-term maintenance cost and help to differentiate the project alternatives.
5. This represents the estimated non-project costs associated with dredging-impacted areas of West Bay based on sedimentation rates and patterns modeled for the No Action Alternative. Numerical modeling shows that approximately one-quarter of the sediment that would be dredged would be from the FNC and turning basin, and those dredging costs (one-quarter of the total) would be the responsibility of the USACE. These costs assume that the Port of Olympia and the USACE have already dredged the existing contaminated sediment and have reestablished authorized depths. That dredging of contaminated accumulated sediment is not associated with this project, and those costs are not included in the assumed \$18M that would be spent by other entities over 30 years. The planned Port of Olympia and USACE dredging of contaminated sediments is also expected to allow the future dredged material under the No Action Alternative to be disposed in-water.
6. Dredged material under the Managed Lake Alternative is from within the North Basin and is expected to be disposed of upland. In-water disposal, which is often a lower cost option, is not feasible due to invasive species presence. This total cost reflects the assumed upland disposal, with truck transport. Rail transport could reduce costs from what is shown here, and feasibility of rail transport would be evaluated prior to maintenance dredging. It is possible for a small portion of the dredged material to be beneficially reused within the Capitol Lake Basin, if needed to replenish the habitat areas in the Middle Basin. Separately, non-project dredging paid for by separate entities would still be required in West Bay, consistent with the dredging costs that are estimated for the No Action Alternative.
7. These costs reflect the additional maintenance dredging costs beyond dredging costs that would be incurred under the No Action Alternative (\$18M over 30 years) to address impacted areas in West Bay. Approximately one-quarter of the sediment that would be dredged as part of the project would be from the FNC and turning basin, and that dredging is the responsibility of the USACE. Therefore, it is assumed that one-quarter of these total maintenance dredging costs would be paid by USACE. Baseline dredging in impacted areas of West Bay (estimated at \$18M over 30 years) would continue to be the responsibility of the Port of Olympia, private marinas, and the USACE; additional dredging requirements shown in this estimate, resulting from the project, is assumed to be the shared responsibility of members of the Funding and Governance Work Group and USACE.
8. Costs over 30 years for the Estuary Alternative would increase to \$367M to \$660M if dredged material was determined not suitable for in-water disposal. However, based on findings in this Draft EIS, the sediment is expected to be suitable for in-water disposal.
9. Costs over 30 years for the Hybrid Alternative would increase to \$513M to \$924M if dredged material was determined not suitable for in-water disposal. However, based on findings in this Draft EIS, the sediment is expected to be suitable for in-water disposal.

7.2 WHAT ARE THE RECOMMENDATIONS FOR FUNDING CONSTRUCTION & LONG-TERM MANAGEMENT?

Under a Managed Lake Alternative, long-term funding and governance would be needed to implement activities from an adaptive management plan designed to achieve lake management objectives, such as seasonal treatment or mechanical harvesting of aquatic plants. Actions to meet lake management objectives would be the primary ongoing management commitment. Funding and governance would also ensure that long-term maintenance dredging occurred at an approximately 20-year frequency to support recreation within the North Basin. Measures outlined in a Habitat Enhancement Plan would be implemented to maintain ecological functions.

Under the Estuary and Hybrid Alternatives, the primary focus for long-term funding and governance would be sediment management in impacted areas of West Bay. Recurring maintenance dredging, at a 5- to 6-year frequency, is critical to avoiding and minimizing significant impacts to downstream resources from sediment deposition. A governing body would oversee annual monitoring and ensure that dredging was coordinated across potentially impacted areas of West Bay. Long-term funding and governance would also be needed to implement measures outlined in a Habitat Enhancement Plan. A freshwater reflecting pool, if implemented instead of a saltwater pool under the Hybrid Alternative, would also require ongoing adaptive management (a saltwater reflecting pool is not expected to require ongoing adaptive management).

Without shared long-term funding and governance, these management actions may not be implemented. In past planning processes, the lack of committed funds in the State of Washington budget was frequently cited as a potential significant obstacle to adequate long-term management of the Capitol Lake – Deschutes Estuary.

The Funding and Governance Work Group was convened to evaluate opportunities for shared funding and governance; identifying viable shared funding opportunities would provide the clearest path for implementation of a long-term management alternative. It would also ensure that after the investment of construction funds, a governing body has oversight capabilities and long-term funding sufficient to manage the resource. Achieving these goals (construction funding and long-term management) would avoid a scenario where: (1) the No Action Alternative persists and environmental conditions continue to

worsen; and (2) the Preferred Alternative is constructed but long-term funding is not guaranteed, and environmental conditions deteriorate over time or downstream resources are significantly impacted.

7.2.1 Funding and Governance Guiding Principles

The following guiding principles for funding and governance were established collaboratively by the Funding and Governance Work Group in Phase 1.

The EIS Project Team developed a potential cost allocation framework using these guiding principles and feedback from the Funding and Governance Work Group.

Guiding Principles for Future Funding and Governance Model

1. Dedicated and secure funding sources
2. Those who contribute to the problem should participate in funding or paying for the solution
3. Those who benefit from the solution should participate in funding or paying for the solution
4. Shared distribution of costs
5. State participation
6. Watershed-wide in scale
7. Manageable governance
8. Commitment to a long-term collaborative process
9. Adequately resourced administration
10. Support the goals and objectives of the long-term management plan and the future of the overall watershed

7.2.2 Potential Cost Allocation Framework

Through a series of discussions and review of a potential cost allocation framework, the Funding and Governance Work Group indicated that the framework should operationalize, or focus most heavily on, guiding principle #2. In this scenario, the State of Washington, who built the dam and owns much of the surrounding area, would be primarily responsible for most construction costs, with potential partnerships and/or smaller contributions from the entities represented in the Funding and Governance Work Group to demonstrate local support. This emphasis on state contributions for construction costs would support the principle of having those entities that have contributed to the

existing environmental conditions participate in providing the solution. Any construction funding contributions by local entities would be subject to their respective funding authorities and capacities.

Balancing a potential contribution from a State legislative appropriation for construction costs, the Funding and Governance Work Group suggests that an equitable and efficient outcome could be that funding for long-term management is provided by those who benefit from the solution. This would operationalize guiding principal #3 with details to be determined based on the selected alternative once it is known and beneficiaries can be more clearly identified. Consensus on this outcome focused the attention of the Funding and Governance Work Group on long-term funding and governance (operations and ongoing costs after the Preferred Alternative is implemented).

7.2.3 Potential Long-Term Governance Models

Through a series of discussions, the Funding and Governance Work Group has initially indicated that governance for a Managed Lake would likely remain similar to existing conditions, with the State of Washington serving as the primary governing and funding body.

The Funding and Governance Work Group reviewed a range of potential governance models to identify models that may be most suitable for long-term management of the Capitol Lake – Deschutes Estuary if the Estuary or Hybrid Alternatives are selected as the Preferred Alternative. The Estuary and Hybrid Alternatives were the focus of these initial discussions because they represent the largest shift from existing conditions. A viable governance model with reliable funding will be critical to implementing either of these alternatives and the long-term management actions that would be needed to address impacts from sediment deposition in West Bay.

Of the potential governance models evaluated, the Funding and Governance Work Group identified an Interlocal Agreement under Washington’s Interlocal Cooperation Act (RCW 39.34) as well-suited for long-term governance of an Estuary or Hybrid Alternative. An Interlocal Agreement is a contract among its signatories for a specified purpose, such as implementing long-term management actions like maintenance dredging.

What is a cost allocation framework?

Cost allocation framework is a method for identifying and equitably assigning costs across entities to support an economically efficient outcome. Frameworks reviewed by the Funding and Governance Work Group included cost allocation by contribution/benefit ranking; by proxy variable; or equally across all entities.

Funding Participation by the State of Washington

Based on guiding principles and a cost allocation framework developed by the Funding and Governance Work Group, the State of Washington would be:

- Responsible for most construction costs.
- Expected to participate in the long-term management of the alternatives.

The Funding and Governance Work Group also suggested the State of Washington may have majority responsibility for funding and governance of a Managed Lake Alternative or the No Action Alternative.

If selected, an Interlocal Agreement regarding governance of a Capitol Lake – Deschutes Estuary project would outline functional and administrative requirements of the signatories, responsibilities for operations and maintenance of a resource, and the collection and contribution of funding. An example of an entity organized through an interlocal agreement is the LOTT Clean Water Alliance, which is an agreement among Lacey, Olympia, Tumwater, and Thurston County to manage and treat wastewater. The LOTT Clean Water Alliance Interlocal Agreement also creates a nonprofit corporation to hold assets and for the structure provided by Washington’s nonprofit corporations act; the Funding and Governance Work Group is exploring this, and other, details as appropriate.

Between the Draft and Final EIS, the Funding and Governance Work Group will continue to evaluate the suitability of an Interlocal Agreement as a governance model, and is prepared to explore other models if circumstances change or other suitable models are identified. Modifications to existing legislation or new legislation may also be required.

The Funding and Governance Work Group remains committed to engaging in this process in good faith to evaluate and negotiate a funding and governance model for long-term management of the Preferred Alternative, once the Preferred Alternative has been identified, and additional details regarding cost and maintenance are available.

7.3 WHAT OTHER FACTORS SHOULD BE CONSIDERED?

There are a few other important considerations not captured in the technical analyses provided in this EIS, but are relevant to the project context, that are helpful for stakeholders’ understanding of the long-term management alternatives, or are important in the decision-making process. These include the following:

- The technical analyses help to support decision-making for a Preferred Alternative. The technical analyses will not unanimously point to one alternative over another; and there will always be a level of subjectivity that cannot be resolved by the technical analyses. This has resulted and continues to result in strongly held positions across the community groups. Importantly, implementation of any of the long-term management alternatives will improve water quality, sediment management, and ecological functions

What is a governance model?

Governance models represent the type of government structure and reflect the interrelated relationships, factors, and other influences upon that structure. A governing body can be developed through a range of governance models, and based on what is being governed and the purpose of governance.

What governance models were evaluated by the Funding and Governance Work Group?

- Status quo (state governance)
- Special Purpose District
- Public Development Authority
- Interlocal Agreement
- Nonprofit
- Joint Municipal Utility Authority

- within the Capitol Lake – Deschutes Estuary compared to the No Action Alternative. It will also reopen the waterbody to active community use. Achieving these goals are important to all governmental partners, agencies, and community members.
- Consultation with and concurrence from local area tribes is an important part of the process to obtain a Department of the Army Permit from the USACE necessary for in-water work, including construction and dredging. The Managed Lake Alternative would have a continued impact on Usual and Accustomed Fishing Grounds and Stations, and on the Deschutes Estuary, which has religious and cultural significance. The Managed Lake Alternative would perpetuate historic inequities, particularly for tribal populations that have experienced ongoing adverse effects from changes to the ecosystem since non-Indigenous settlement of the region and continued loss of connection to the natural environment. Tribal populations would disproportionately experience adverse impacts from the Managed Lake Alternative, raising environmental justice concerns. The local area tribes have suggested that the Managed Lake Alternative would have a continued significant and unavoidable impact.
 - Ecology is preparing a Water Quality Improvement Plan (also known as a TMDL) for the marine waters of Budd Inlet and Capitol Lake. As part of that work, Ecology has evaluated a scenario that would maintain the 5th Avenue Dam and one that would remove the 5th Avenue Dam, similar to alternatives considered in this EIS. The work performed by Ecology is focused on the ability to meet water quality standards in Budd Inlet, whereas Enterprise Services is tasked with selecting the Preferred Alternative for long-term management of the Capitol Lake – Deschutes Estuary. After a Preferred Alternative is selected and implemented, Ecology would regulate discharges within the Project Area to achieve water quality standards based on how the Preferred Alternative impacts or benefits dissolved oxygen in Budd Inlet, and which water quality standards are applicable (freshwater or marine standards).
 - The FNC is currently impacted by sediment accumulation and needs to be dredged to reestablish authorized depths and unrestricted navigation in the waterway. Dredging has not been completed by the USACE and Port of Olympia

because of known sediment contamination within the FNC. These entities are evaluating potential approaches to conduct maintenance dredging despite the presence of contaminated sediment. This need for dredging and dredging action is separate from, and not related to, the long-term management alternatives for the Capitol Lake – Deschutes Estuary. If this dredging does not occur, and if the Estuary or Hybrid Alternative is selected as the Preferred Alternative and is implemented, then additional sediment deposition from the project is not expected to significantly impact the Port of Olympia because navigation is already impaired. Costs for the sediment dredging that is currently needed should not be added to this project.

- Project construction would require a substantial appropriation of funds from the Washington State Legislature. Funding has not yet been secured for project construction, or for design and permitting of the Preferred Alternative.