Attachment 21 Preferred Alternative Identification Process



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INTRODUCTION

This appendix summarizes the process used by Enterprise Services to identify a Preferred Alternative for the Capitol Lake – Deschutes Estuary Long-Term Management Project. The process to identify a Preferred Alternative relied on findings from the range of technical analyses included as part of the Environmental Impact Statement (EIS), other information important to decision-making (e.g., project costs), and stakeholder feedback regarding the ability of the alternatives to achieve long-term support. The process, which is depicted in Figure 1, was carefully developed to ensure a comprehensive evaluation of the alternatives.

In early 2022, Enterprise Services identified the Estuary Alternative as the likely Preferred Alternative for long-term management of the Capitol Lake – Deschutes Estuary. The process and rational for identifying the Estuary Alternative and the Preferred Alternative are described below. The Estuary Alternative was confirmed as the Preferred Alternative following this process and completion of the Final EIS.

EVALUATION OF THE LONG-TERM MANAGEMENT ALTERNATIVES

Enterprise Services evaluated the Managed Lake, Estuary, Hybrid, and No Action Alternatives against the selection criteria provided below. Before the alternatives evaluation, these selection criteria were reviewed with the governmental and agency partners that comprise the Executive and Technical Work Groups, and the Community Sounding Board. These stakeholders also provided input to Enterprise Services on the relative importance of these criteria and how the criteria may be weighted.

- Performance Against Project Goals. The degree to which the long-term management alternatives would meet project goals.
- Other Environmental Disciplines. The potential significant impacts and benefits across the other environmental disciplines analyzed in the EIS but not directly associated with the project goals.
- Construction Impacts. The duration and magnitude of construction impacts.
- Environmental Sustainability. The ability to provide net environmental benefits over a 30-year horizon, considering relative contribution to project goals; resiliency to climate change (including sea level rise), and the level of active management required to achieve the project goals.
- **Economic Sustainability.** Measured by the relative cost-effectiveness in constructing and operating the alternative in a way that would meet the project goals; and the severity of economic impacts if there is a lapse in long-term funding.
- **Decision Durability.** Enterprise services sought input on this selection criterion from the Squaxin Island Tribe, governmental and agency partners, and the Community Sounding Board convened for this project regarding the relative ability of the alternatives to achieve long-term support from local tribes, stakeholders and communities. These groups collectively represent the communities most likely to be affected by this decision.



Identifying a Preferred Alternative based on relative performance against these criteria supports informed decision-making and ensures a comprehensive review of the long-term management alternatives, incorporating findings from a range of environmental analyses and other important information. Documentation of the alternatives evaluation is intended to improve transparency in the decision-making process and to support durability of the final decision on the project by demonstrating the rigorous review and overall performance of the alternatives. Enterprise Services will not make a final decision on the project to be implemented until after completion of the Final EIS.

Initial Technical Evaluation

The Draft EIS (issued June 30, 2021) is a body of technical work that discloses potential impacts and benefits of the project for each of the alternatives. Comments on the Draft EIS informed Enterprise Services and the EIS Project Team on the range of potential updates needed for the Final EIS, and whether technical findings may change. Following review of Draft EIS comments, Enterprise Services concluded that the technical analyses within the Draft EIS were sufficient to begin an initial evaluation of the alternatives against the selection criteria.

An initial evaluation of alternatives was conducted in winter 2022, in three discrete steps:

- 1. Subject matter experts from the EIS Project Team, the EIS Management Team, and Enterprise Services independently evaluated each long-term management alternative relative to the technical criteria, which include a range of sub-criteria.
- 2. The subject matter experts participated in a multi-day workshop, where separate meeting sessions were facilitated by the EIS Management Team to review the long-term management alternatives against each sub-criteria. During these meetings, individual scores and scoring rationale were discussed and, following careful consideration, the subject matter experts recommended a final score for each metric within their discipline-specific evaluation.
- 3. The EIS Management Team and Enterprise Services participated in a similar workshop during which they discussed scores from the subject matter experts and Enterprise Services, and reached consensus on a score for each metric.

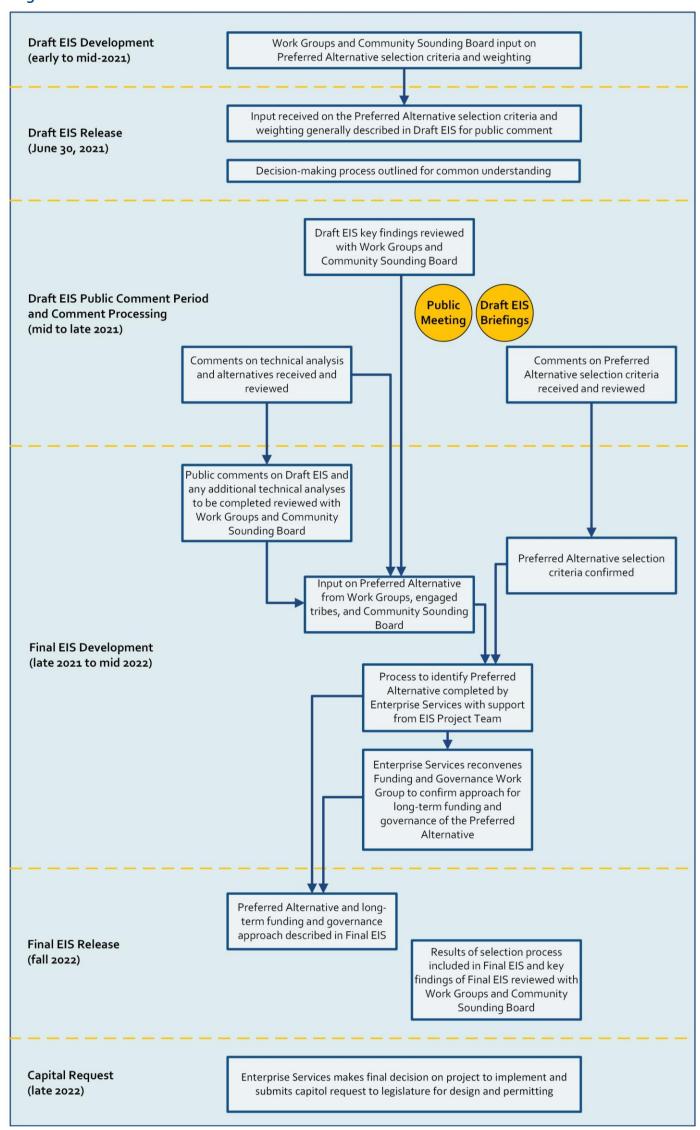
This resulted in initial scores for all technical metrics. Scores for each metric were then averaged resulting in a single score for each sub-criteria (where necessary) and/or for each criteria.

Technical Evaluation Criteria

The technical evaluation criteria include sub-criteria that allow for a closer review of the long-term management alternatives based on areas of potential significant impacts or benefits. These criteria are defined in greater detail in the following sections. The long-term management alternatives were evaluated against each of these criteria and were assigned a numeric score on a scale of 1 to 10.



Figure 1 Preferred Alternative Identification Process





Project Goals

Project goals represent the degree to which the long-term management alternatives would meet project goals as described in Supporting Chapter 1.0 (Section 1.9) of the Draft and Final EIS.

Sub-Criteria	Evaluation Metrics
Water Quality	WQ1: Ability to meet water quality standards and TMDL allocations ¹
	WQ2: Conditions experienced by aquatic life
	WQ3: Frequency and extent of aquatic plants and algae
Sediment Management	SM1: Frequency of dredging required to maintain recreational uses in Capitol Lake Basin
	SM2: Frequency of dredging required to maintain navigation in Budd Inlet
	SM3: Impacts to federal navigation channel ² and navigation if maintenance dredging is delayed due to long-term funding lapses
	SM4: Dredging complexity and level of disruption
	SM5: Dredge material disposal complexity and uncertainty
Ecological Functions	EF1: Presence and extent of invasive and nuisance species
	EF2: Diversity and quality of in-water habitats
	EF3: Anadromous fish passage, migratory conditions, and/or rearing habitat presence
	EF4: Native fish predation pressures
	EF5: Freshwater habitat for bats and other non-marine, water-dependent mammals
	EF6: Habitat for foraging birds, including nesting and foraging
	EF7: Consistency with adopted conservation and/or recovery plans (listed species)
	EF8: Function and extent, type, and/or distribution of wetlands
Community Use	CU1: Availability and access to recreational opportunities/facilities
	CU2: Management complexity due to presence of aquatic invasive species

¹ This sub-criterion was added based on information provided by Washington State Department of Ecology (Ecology) during the Draft EIS comment period related to the ability of the alternatives to meet water quality standards and total maximum daily load (TMDL) allocations. Because Ecology has jurisdiction over water quality in the project area and provides the interpretation of water quality standards; scoring of this sub-criterion reflects findings from Ecology.

² As regulated by the U.S. Army Corps of Engineers (USACE) under Section 408 of the Rivers and Harbors Act of 1899. This sub-criterion is intended to consider potential regulatory feasibility relative to sediment management.



Other Environmental Disciplines

Other Environmental Disciplines allow for consideration of the potential significant impacts and substantial benefits across the other environmental disciplines analyzed in the EIS but not directly associated with the project goals. Not all technical analyses resulted in a finding of potential significant impacts or substantial benefits, and therefore, were not included in this evaluation. Other Environmental Disciplines includes an evaluation of potential impacts and benefits to Tribal Resources; this utilized findings from other analyses in the EIS that had not otherwise been considered, and supported a focused review of potential changes to Tribal Resources as part of the decision-making process.

Sub-Criteria	Evaluation Metrics	
Cultural Resources	CR1: Effects to historic resources (listed or potentially eligible)	
	CR2: Potential to affect integrity of archaeological resources	
	CR3: Restoration and preservation of pre-colonization landscapes	
Visual Resources	VR1: Visual impacts to the landscape setting and unity	
Environmental Health	EH1: Sediment quality improvement in project area	
Transportation	TS1: Transportation network improvement opportunities	
	TS2: Traffic impacts during maintenance dredging	
Public Services and Utilities	PS1: Utility infrastructure impacts from flooding and/or saltwater exposure	
	PS2: Financial impacts to local utility providers/customers	
Tribal Resources	TR1: Presence/abundance of fish/shellfish species protected by tribal treaties	
	TR1: Access to Usual and Accustomed Fishing Areas for tribes	
	TR1: Access to areas of cultural and spiritual significance for tribal members	

Construction Impacts

Construction impacts evaluate the duration and magnitude of construction impacts. Including this in the evaluation allowed Enterprise Services to consider whether the long-term benefits of the project would outweigh the temporary impacts from construction.

Sub-Criteria	Evaluation Metrics	
No sub-criteria identified	CI1: Construction duration	
	CI2: In-water construction impacts and mitigation complexity	
	Cl3: Duration/impacts of construction-related closure of 5 th Avenue	



Environmental Sustainability

Environmental Sustainability represents the ability to provide net environmental benefits over the 30-year horizon, considering relative contribution to project goals; resiliency to climate change (including sea level rise), and the level of active management required to achieve the project goals. This, combined with the review of ecological functions completed under the Project Goals criterion, ensured that Enterprise Services evaluated overall environmental performance and sustainability of the long-term management alternatives.

Sub-Criteria	Evaluation Metrics
No sub-criteria identified	EV1: Resiliency to climate change (SLR, temperature, adaptation, sequestration)
	EV2: Level of active management required to achieve project goals

Economic Sustainability

Economic Sustainability represents the relative cost effectiveness in constructing and operating the alternatives in a way that would meet the project goals; and the severity of economic impacts if there is a lapse in long-term funding.

Sub-Criteria	Evaluation Metrics	
No sub-criteria identified	EC1: Initial construction costs	
	EC2: Potential for diversified construction funding	
	EC3: Maintenance dredging costs	
	EC4: Potential for diversified long-term funding, and funding certainty	
	EC5: Impacts to downstream commercial activity if maintenance dredging is delayed due to long-term funding lapses	

Technical Criteria Scoring Range

The scoring range for technical criteria relates to the structure of the technical analyses, where findings are expressed in terms of significant impacts, less than significant impacts, substantial benefits, or minor-to-moderate substantial benefits. This numerical scoring range helped to translate narrative findings from the EIS; the numerical scoring largely reflects significance findings in the EIS but allows for differentiation between similar findings (e.g., if two alternatives had significant impacts but the magnitude of difference varied, different numerical scores could be assigned).

Significance Criteria	Score Range
No Benefits to Minor Benefits -OR- Significant Impacts	1–3
Minor to Moderate Benefits -OR- Less than Significant Impacts	4–7
Substantial Benefits -OR- No impact	8–10



Numeric Results of Technical Evaluation

The table below reflects numeric scoring from the initial evaluation of alternatives, completed in winter 2022, and reflective of findings from the technical analyses at that time.

Since then, the Estuary and Hybrid Alternatives have been modified to include a new design and construction approach for the 5th Avenue Bridge that would avoid the need for a multi-year closure of the 5th Avenue Bridge. This meaningfully reduces construction impacts, which would result in an improved score for these alternatives relative to that criterion.

The scoring has not been adjusted because doing so would not result in a change to the outcome of the alternatives evaluation. If the scoring were changed, the Estuary and Hybrid Alternatives would have a higher score than what is shown here.

Category		Hybrid	Managed Lake	No Action	
Project Goals (average)	6.6	5.9	5.1	3.8	
Water Quality (average)	5.7	4.7	4.2	2.0	
WQ1: Ability to meet water quality standards and TMDL allocations	8.0	5.0	3.0	2.0	
WQ2: Conditions experienced by aquatic life	3.5	3.5	3.5	2.0	
WQ3: Frequency and extent of aquatic plants and algae	5.5	5.5	6.0	2.0	
Sediment Management (average)	5.6	5.0	5.9	9.2	
SM1: Frequency of dredging required to maintain recreational uses in Capitol Lake basin	10.0	10.0	7.0	10.0	
SM2: Frequency of dredging required to maintain navigation in Budd Inlet	3.0	2.0	9.0	8.0	
SM3: Impacts to federal navigation channel and navigation if maintenance dredging is delayed due to long-term funding lapses	2.0	1.0	8.5	8.0	
SM4: Dredging complexity and level of disruption	6.0	5.0	3.0	10.0	
SM5: Dredge material disposal complexity and uncertainty	7.0	7.0	2.0	10.0	
Ecological Functions (average)	7.8	6.3	4.4	2.2	
EF1: Presence and extent of invasive and nuisance species	7.5	6.0	4.0	1.0	
EF2: Diversity and quality of in-water habitats	9.0	7.0	4.0	1.0	
EF3: Anadromous fish passage, migratory conditions, and/or rearing habitat presence	9.0	7.0	3.0	1.0	
EF4: Native fish predation pressures	8.0	7.0	4.0	2.0	
EF5: Freshwater habitat for bats and other non-marine, water-dependent mammals	3.0	4.0	6.0	4.0	
EF6: Habitat for foraging birds, including nesting and foraging	7.5	6.5	6.0	4.5	
EF7: Consistency with adopted conservation and/or recovery plans (listed species)	9.0	6.0	3.0	1.0	
EF8: Function and extent, type, and/or distribution of wetlands	9.0	7.0	5.0	3.0	
Community Use (average)	7.5	7.5	6.0	1.8	
CU1: Availability and access to recreational opportunities/facilities	8.0	9.0	9.0	2.0	
CU2: Management complexity due to presence of aquatic invasive species	7.0	6.0	3.0	1.5	
Other Disciplines (average)	7.3	5.7	4.4	4.0	
Cultural Resources (average)	4.7	3.5	5.2	6.7	
CR1: Effects to historic resources (listed or potentially eligible)	3.0	3.0	8.5	8.0	
CR2: Potential to affect integrity of archaeological resources	3.0	3.0	6.0	9.0	
CR3: Restoration and preservation of pre-colonization landscapes	8.0	4.5	1.0	3.0	



Category	Estuary	Hybrid	Managed Lake	No Action
Visual Resources (average)	8.5	3.0	8.5	5.0
VR1: Visual impacts to the landscape setting and unity	8.5	3.0	8.5	5.0
Environmental Health (average)	6.5	7.0	3.0	2.0
EH1: Sediment quality improvement in project area	6.5	7.0	3.0	2.0
Transportation (average)	9.0	9.0	3.5	5.5
TS1: Transportation network improvement opportunities	9.0	9.0	5.0	1.0
TS2: Traffic impacts during maintenance dredging	9.0	9.0	2.0	10.0
Public Services and Utilities (average)	6.0	5.5	4.0	3.8
PS1: Utility infrastructure impacts from flooding and/or saltwater exposure	4.0	5.0	6.0	6.0
PS2: Financial impacts to local utility providers/customers	8.0	6.0	2.0	1.5
Tribal Resources (average)	9.0	6.3	2.0	1.2
TR1: Presence/abundance of fish/shellfish species protected by tribal treaties	9.0	7.0	2.0	1.0
TR1: Access to Usual and Accustomed Fishing Areas for tribes	9.0	7.0	3.0	1.0
TR1: Access to areas of cultural and spiritual significance for tribal members	9.0	5.0	1.0	1.5
Construction Impacts (average)	2.3	1.5	7.2	10.0
CI1: Construction duration	2.0	1.0	6.5	10.0
CI2: In-water construction impacts and mitigation complexity	4.0	2.5	6.0	10.0
CI3: Duration/impacts of construction-related closure of 5 th Avenue ³	1.0	1.0	9.0	10.0
Environmental Sustainability (average)	7.5	4.8	3.5	1.0
EV1: Resiliency to climate change (SLR, temperature, adaptation, sequestration)	8.0	6.5	3.0	1.0
EV2: Level of active management required to achieve project goals	7.0	3.0	4.0	1.0
Economic Sustainability (average)	6.3	3.2	4.9	5.8
EC1: Initial construction costs	4.0	1.0	8.0	10.0
EC2: Potential for diversified construction funding	9.0	5.0	2.5	1.0
EC3: Maintenance dredging costs	8.0	5.5	3.0	10.0
EC4: Potential for diversified long-term funding, and funding certainty	8.5	3.5	2.0	1.0
EC5: Impacts to downstream commercial activity if long-term funding lapses	2.0	1.0	9.0	7.0

Summary of Key Rationale for Numeric Scoring in the Technical Evaluation

The following tables summarize key rationale identified by the subject matter experts, EIS Management Team, and Enterprise Services during the evaluation of the long-term management alternative and assignment of numeric scoring.

³ This sub-criterion was scored conservatively, assuming a 4- to 5-year closure of the 5th Avenue Bridge provided in the Draft EIS. City of Olympia and stakeholders have described such a long-term closure as "unacceptable," and the Estuary and Hybrid Alternatives have subsequently been modified to avoid a long-term closure of the 5th Avenue corridor during construction. This scoring has not been changed, to preserve the initial evaluation. If the scores were changed, the Estuary and Hybrid Alternatives would have a higher scoring here and therefore, a higher score overall.



Project Goals – Water Quality

WQ1: Ability to meet water quality standards and TMDL allocations

Score Range	No to Minor Benefits -OR-	Minor to Moderate Benefits -OR-	Substantial Benefits -OR-
	Significant Impacts	Less than Significant Impacts	No impact or minor impact
	Score Range = 1–3	Score Range = 4–7	Score Range = 8–10
Range Descriptions	No or minimal progress toward meeting water quality	Moderate progress toward meeting water quality	Substantial progress toward meeting water quality
	standards or TMDL allocations	standards and TMDL allocations	standards and TMDL allocations

Rationale

Alternative	Score	Summary Rationale
Estuary	8.0	Meets narrative water quality standards and TMDL allocations based on Ecology definitions and Ecology interpretation of modelled outcomes
		• Ecology modeling suggests that elimination of Capitol Lake would substantially reduce human-caused nutrient inputs that impact dissolved oxygen (DO) levels in Budd Inlet
		Ecology modelling predicts some continued numeric water quality standards excursions (violations) in Budd Inlet
		More frequent DO excursions in the former Capitol Lake Basin relative to existing conditions (appropriate in estuary where marine standards apply)
Hybrid	5.0	Unclear if waterbody would meet narrative water quality standards and TMDL allocations based on Ecology definitions (alternative has not been modeled by Ecology)
		Ecology modeling suggests that elimination of Capitol Lake would substantially reduce human-caused nutrient inputs that impact DO levels in Budd Inlet
		• Scored similar to the Estuary Alternative but reduced given 20% of the basin would be retained as a freshwater lake, and given that regulatory compliance is uncertain
		More frequent DO excursions in the former Capitol Lake Basin relative to existing conditions (appropriate in estuary where marine standards apply)
Managed Lake	3.0	Cannot meet narrative water quality standards and TMDL allocations based on Ecology definitions and Ecology interpretation of modelled outcomes
		• Lake management actions would reduce nutrient supply to Budd Inlet resulting in potential minor improvements, based on Ecology assumption that Capitol Lake increases nutrient input to Budd Inlet
No Action	2.0	Cannot meet narrative water quality standards and TMDL allocations based on Ecology definitions and Ecology interpretation of modelled outcomes
		There would be no lake management actions under the No Action Alternative, so this scoring is adjusted downward from the Managed Lake Alternative

WQ2: Conditions experienced by aquatic life

Score Range	No to Minor Benefits -OR-	Minor to Moderate Benefits -OR-	Substantial Benefits -OR-
	Significant Impacts	Less than Significant Impacts	No impact or minor impact
	Score Range = 1–3	Score Range = 4–7	Score Range = 8–10
Range Descriptions	No or minor improvement in water quality conditions	Moderately improves water quality conditions	Substantially improves water quality conditions
	experienced by aquatic life	experienced by aquatic life	experienced by aquatic life



Rationale

Alternative	Score	Summary Rationale	
Estuary	3.5	Decreased DO in lake basin. Fish may experience extended low DO in estuary; however, fish are well adapted to low DO conditions that are common in South Sound inlets	
		Minor improvement in bottom DO conditions in Budd Inlet	
		Freshwater aquatic vegetation would be replaced with estuarine conditions with tidal exchange, benefiting native marine life	
Hybrid	3.5	Decreased DO in lake basin. Fish may experience extended low DO in estuary; however, fish are well adapted to low DO conditions that are common in South Sound inlets	
		Minor improvement in bottom DO conditions in Budd Inlet	
		Freshwater aquatic vegetation would be replaced with estuarine conditions with tidal exchange, benefiting native marine life	
		Freshwater reflecting pool may provide slightly improved conditions for aquatic life, with adaptive lake management practices	
Managed Lake	3.5	Lake management actions would control aquatic plants and reduce nutrient input to Budd Inlet	
		No change in DO concentrations in Capitol Lake Basin	
		Ongoing measures in the watershed and lake basin would continue improving conditions in the Capitol Lake Basin over time	
		No change or minimal change to bottom DO conditions in Budd Inlet	
No Action	2.0	No change from existing conditions	
		Ongoing measures in the watershed and lake basin would continue improving conditions in the Capitol Lake Basin over time	
		No change to conditions in Budd Inlet	
		Sedimentation and shallowing would continue over time, and open water areas would transition to freshwater wetlands	

WQ3: Frequency and extent of aquatic plants and algae

Score Range	No to Minor Benefits -OR-	Minor to Moderate Benefits -OR-	Substantial Benefits -OR-
	Significant Impacts	Less than Significant Impacts	No impact or minor impact
	Score Range = 1–3	Score Range = 4–7	Score Range = 8–10
Range Descriptions	No or minor improvement in frequency and extent of	Moderate / localized reduction in frequency and extent of	Substantially reduces frequency & extent of aquatic
	aquatic plants / algae	aquatic plants / algae	plants / algae

Rationale

Alternative	Score	Rationale	
Estuary	5.5	No change in algae or plants in Budd Inlet; blooms would generally occur with the same frequency and extent as existing conditions	
		No change in algae blooms in Capitol Lake Basin, though algal community may be different	
		Substantial benefit from reduced aquatic plants in Capitol Lake Basin	
Hybrid	5.5	 No change in algae or plants in Budd Inlet; blooms would generally occur at the same frequency and extent as existing conditions 	
		Periodic algal blooms in estuary portion may be marginally greater than Estuary Alternative	
		Freshwater reflecting pool would require active management to prevent algae blooms and manage aquatic plants	
		Substantial benefit from reduced aquatic plants in Capitol Lake Basin	



Alternative	Score	Rationale		
Managed Lake	6.0	 No change in algae conditions; blooms would generally occur with the same frequency and extent as existing conditions 		
		Dredging would remove phosphorous-rich sediments and deepen the North Basin, which could reduce aquatic plants		
		Lake management actions would control nuisance or toxic algae blooms		
		ake management actions would control aquatic plants		
No Action	2.0	No change in frequency or extent of algae		
		No change in the range of aquatic plants present		
		Increase in plant growth over time with further shallowing		

Project Goals – Sediment Management

SM1: Frequency of dredging required to maintain recreational uses in Capitol Lake Basin

Score Range	No to Minor Benefits -OR-	Minor to Moderate Benefits -OR-	Substantial Benefits -OR-
	Significant Impacts	Less than Significant Impacts	No impact or minor impact
	Score Range = 1–3	Score Range = 4–7	Score Range = 8–10
Range Descriptions	Relatively high frequency of dredging and maintenance	Moderate frequency of dredging and maintenance	Relatively low frequency of dredging and maintenance
	required to maintain recreational uses in the lake basin	required to maintain recreational uses in the lake basin	required to maintain recreational uses in the lake basin

Rationale (see Supporting Chapter 4.0 [Section 4.2] of EIS for discussion of impacts)

Alternative	Score	Rationale	
Estuary	10.0	Eliminates need for maintenance dredging in basin beyond initial construction dredging (see Construction Impacts)	
Hybrid	10.0	Eliminates need for maintenance dredging in basin beyond initial construction dredging (see Construction Impacts)	
Managed Lake	7.0	Requires dredging after 20 years and thereafter in perpetuity	
		Each dredge event would occur over three in-water work windows (years)	
		Dredging would occur infrequently but frequency would increase as South and Middle Basins reach sediment equilibrium	
No Action	10.0	No dredging would occur	

SM2: Frequency of dredging required to maintain navigation in Budd Inlet

Score Range	No to Minor Benefits -OR-	Minor to Moderate Benefits -OR-	Substantial Benefits -OR-
	Significant Impacts	Less than Significant Impacts	No impact or minor impact
	Score Range = 1–3	Score Range = 4–7	Score Range = 8–10
Range Descriptions	Relatively high frequency of dredging and maintenance	Moderate frequency of dredging and maintenance	Relatively low frequency of dredging and maintenance
	required to maintain commercial and recreational	required to maintain commercial and recreational	required to maintain commercial and recreational
	navigation in Budd Inlet	navigation in Budd Inlet	navigation in Budd Inlet



Rationale (see Supporting Chapter 4.0 [Section 4.2] of EIS for discussion of impacts)

Alternative	Score	Rationale	
Estuary	3.0 • Increased sediment deposition compared to existing conditions		
		More frequent dredging (approximately every 6 years), but less than Hybrid Alternative	
		Similar maintenance dredging requirements to historical conditions	
Hybrid	2.0	• Increased sediment deposition compared to existing conditions and greater than Estuary Alternative due to presence of reflecting pool, which reduces sediment deposition capacity in basin	
		Most frequent dredging (approximately every 5 years), compared to Estuary Alternative, due to increased rate of sediment deposition in West Bay	
Managed Lake	9.0	Minimal changes to existing conditions in Budd Inlet; continued throughput of sediment through 5 th Avenue Dam	
		Less sediment deposition relative to No Action Alternative because of increased settling capacity in North Basin	
		No project responsibility for Budd Inlet maintenance dredging, but dredging would still be needed to maintain navigation	
No Action	8.0	• Continued and accelerating throughput of sediment through the dam; rates would increase over time due to reduced settling capacity in the Capitol Lake Basin as the basin continues to shallow	
		No project responsibility for Budd Inlet maintenance dredging, but dredging would still be needed to maintain navigation	

SM3: Impacts to federal navigation channel and navigation if long-term funding lapses

Score Range	No to Minor Benefits -OR-	Minor to Moderate Benefits -OR-	Substantial Benefits -OR-
	Significant Impacts	Less than Significant Impacts	No impact or minor impact
	Score Range = 1–3	Score Range = 4–7	Score Range = 8–10
Range Descriptions	High potential for impacts to the federal navigation	Moderate potential for impacts to the federal navigation	Low potential for impacts to the federal navigation
	channel and navigation in the project area, if long-term	channel and navigation in the project area, if long-term	channel and navigation in the project area, if long-term
	funding lapses	funding lapses	funding lapses

Rationale (see Supporting Chapter 4.0 [Sections 4.2 and 4.14] of EIS for discussion of impacts)

Alternative	Score	Rationale		
Estuary	2.0	If funding lapses, maintenance dredging at marinas would be unlikely		
		Over time, sediment accumulation in Budd Inlet would impact navigation and in-water recreational uses; up to 50% of leased moorage could be impacted at Olympia Yacht		
		Club if no maintenance dredging occurred over 30 years, based on average sediment deposition		
		Impact would occur slower than Hybrid Alternative		
Hybrid	1.0	If funding lapses, maintenance dredging at marinas would be unlikely		
		Over time, sediment accumulation in Budd Inlet would impact navigation and in-water recreational uses; up to 60% of leased moorage could be impacted at Olympia Yacht		
		Club if no maintenance dredging occurred over 30 years, based on average sediment deposition		
		Impact would occur more quickly than Estuary Alternative due to increased rate of sediment deposition		
Managed Lake	8.5	Sediment would continue to move through the 5 th Avenue Dam but rates would be similar to existing conditions		
		Less throughput of sediment relative to No Action Alternative due to increased settling capacity in the Capitol Lake Basin		
		 Recreational boating could continue in Capitol Lake Basin for many years, though water depths would shallow over time 		
No Action	8.0	Long-term funding is not anticipated but sediment would continue to accumulate and impact navigation and in-water recreational uses similar to current conditions		



SM4: Dredging complexity and level of disruption

Score Range	No to Minor Benefits -OR-	Minor to Moderate Benefits -OR-	Substantial Benefits -OR-
	Significant Impacts	Less than Significant Impacts	No impact or minor impact
	Score Range = 1–3	Score Range = 4–7	Score Range = 8–10
Range Descriptions	High dredging complexity and disruption to maintain	Moderate dredging complexity and disruption to maintain	Minimal dredging complexity and disruption to maintain
	recreational uses and navigation	recreational uses and navigation	recreational uses and navigation

Rationale (see Supporting Chapter 4.0 [Section 4.2] of EIS for discussion of impacts)

Alternative	Score	Rationale
Estuary	6.0	 Requires sediment monitoring program, with bathymetric surveys at least annually Moderately complex dredging due to temporary vessel relocation and maneuvering dredging equipment in and out of marinas and navigation channel; however, dredging is a common and necessary practice in and around Puget Sound ports and marinas Dredging in Budd Inlet is less complex than dredging under the Managed Lake Alternative given that Capitol Lake cannot be accessed with water-based equipment and sediment cannot be removed by barge
Hybrid	5.0	 Requires sediment monitoring program, with bathymetric surveys at least annually Moderately complex dredging due to temporary vessel relocation and maneuvering dredging equipment in and out of marinas and navigation channel; however, dredging is a common and necessary practice in and around Puget Sound ports and marinas Dredging in Budd Inlet is less complex relative to dredging under the Managed Lake Alternative, but slightly more complex than Estuary Alternative due to increased frequency and increased rate of sediment deposition
Managed Lake	3.0	 Interrupts recreational access to North Basin and to some upland park space over 3 in-water work windows per dredge event (occurring in summer for 3 consecutive years) Complex process requiring upland staging area, equipment access, sediment dewatering and loading area, and overland sediment transport Navigation in Budd Inlet would not be impacted
No Action	10.0	 Dredging is not anticipated therefore there would be no disruption In-water uses in the basin would remain restricted

SM5: Dredge material disposal complexity and uncertainty

Score Range	No to Minor Benefits -OR-	Minor to Moderate Benefits -OR-	Substantial Benefits -OR-
	Significant Impacts	Less than Significant Impacts	No impact or minor impact
	Score Range = 1–3	Score Range = 4–7	Score Range = 8–10
Range Descriptions	High complexity and uncertainty associated with handling	Moderate complexity and uncertainty associated with	Low complexity and uncertainty associated with handling
	and regulatory compliance for dredge disposal	handling and regulatory compliance for dredge disposal	and regulatory compliance for dredge disposal



Rationale (see Supporting Chapter 4.0 [Section 4.2] of EIS for discussion of impacts)

Alternative	Score	Rationale
Estuary	7.0	 Removes sediment that has been recently deposited from the Deschutes River into Budd Inlet; assumes sediment quality suitable for in-water disposal based on sediment sampling conducted for this project and findings that New Zealand mudsnail are unlikely to establish a population in the deep-water areas to be dredged for navigation Although in-water disposal is assumed, there is inherent uncertainty and potential for new contamination exists from ongoing marine activities There could be moderately complex disposal logistics due to potential presence of clean and contaminated sediment
Hybrid	7.0	 Removes sediment that has been recently deposited from the Deschutes River into Budd Inlet; assumes sediment quality suitable for in-water disposal based on sediment sampling conducted for this project and findings that New Zealand mudsnail are unlikely to establish a population in the deep-water areas to be dredged for navigation Although in-water disposal is assumed, there is inherent uncertainty and potential for new contamination exists from ongoing marine activities There could be moderately complex disposal logistics due to potential presence of clean and contaminated sediment
Managed Lake	2.0	 Dredged sediment likely unsuitable for in-water disposal due to presence of New Zealand mudsnail, requiring upland disposal Upland disposal requires dewatering, transloading, stockpiling, and use of truck, rail, or both In-water disposal, if authorized, would be complex; requires overland or engineered transport of sediment over or around 4th and 5th Avenues
No Action	10.0	Dredging not anticipated, therefore there is no complexity associated with dredged material disposal

Project Goals – Ecological Functions

EF1: Presence and extent of invasive and nuisance species

Score Range	No to Minor Benefits -OR-	Minor to Moderate Benefits -OR-	Substantial Benefits -OR-
	Significant Impacts	Less than Significant Impacts	No impact or minor impact
	Score Range = 1–3	Score Range = 4–7	Score Range = 8–10
Range Descriptions	No or minimal reduction of invasive or nuisance species in	Some reduction of invasive or nuisance species in lake	Substantial reduction of invasive or nuisance species in
	lake basin and Budd Inlet	basin and Budd Inlet	lake basin and Budd Inlet

Rationale (see Supporting Chapter 4.0 [Section 4.4] of EIS for discussion of impacts)

Alternative	Score	Rationale	
Estuary	7.5	 Saline environment substantially reduces density and distribution of aquatic invasive species Low potential for freshwater aquatic invasive species to establish in Budd Inlet; sediment and debris currently pass through the dam with no evidence of invasive species spread into Budd Inlet 	
		Low potential for marine invasive species to migrate into the estuary because they are not generally present in Budd Inlet	
Hybrid	6.0	Saline environment substantially reduces density and distribution of aquatic invasive species	
		• Low potential for freshwater aquatic invasive species to migrate into Budd Inlet; sediment and debris currently pass through the dam with no evidence of invasive species spread into Budd Inlet	
		Low potential for marine invasive species to migrate into the estuary because they are not generally present in Budd Inlet	
		Freshwater reflecting pool would provide opportunity for some aquatic invasive species to persist; though others could be eradicated with continued treatment	



Alternative	Score	Rationale	
Managed Lake	4.0	 Reduces aquatic invasive species abundance compared to No Action Alternative but relies on active management; active management focuses on spread prevention through decontamination, education, and monitoring Freshwater aquatic invasive species would persist with population sizes greater than Estuary and Hybrid Alternatives Low potential for aquatic invasive species to migrate into Budd Inlet; sediment and debris currently pass through the dam and there is no evidence of invasive species spread into Budd Inlet 	
No Action	1.0	Low potential for marine invasive species to migrate into basin No meaningful management strategies would be implemented aside from continued containment via lake closure	
		Aquatic invasive species would continue to proliferate in the Capitol Lake Basin	

EF2: Diversity and quality of in-water habitats

Score Range	No to Minor Benefits -OR-	Minor to Moderate Benefits -OR-	Substantial Benefits -OR-
	Significant Impacts	Less than Significant Impacts	No impact or minor impact
	Score Range = 1–3	Score Range = 4–7	Score Range = 8–10
Range Descriptions	No change or decrease in diversity and quality of in-water	Slight increase in diversity and quality of in-water	Substantial increase in diversity and quality of in-water
	habitats, resulting in worsening conditions for	habitats, resulting in no or moderate improvement in	habitats, resulting in improved conditions for
	anadromous and resident native species	conditions for anadromous and resident native species	anadromous and resident native species

Rationale (see Supporting Chapter 4.0 [Section 4.5] of EIS for discussion of impacts)

Alternative	Score	Rationale
Estuary	9.0	Increases marine and estuarine habitat suitable for native fish by more than 200 acres
		Habitat islands nominally limit amount of new estuarine habitat, but provide benefits, including rearing habitat and ecological diversity
		Habitat quality would improve over time as macroinvertebrate populations and saltwater-tolerant aquatic vegetation become established
		Resident fish species would be impacted by transition from freshwater to saltwater
Hybrid	7.0	Increases marine and estuarine habitat suitable for native fish by more than 150 acres
		Habitat islands nominally limit amount of new estuarine habitat, but provide benefits, including rearing habitat and ecological diversity
		Habitat quality would improve over time as macroinvertebrate populations and saltwater-tolerant aquatic vegetation become established
		Resident fish species would be impacted by transition from freshwater to saltwater
		Freshwater reflecting pool would be less valuable to native species
Managed Lake	4.0	Habitat enhancements and active management would provide minor benefits to fish and other aquatic species, although fish and wildlife distribution and use patterns would remain similar to existing conditions
		Minor improvement to habitat quality for anadromous fish from active removal of aquatic plants; does not benefit piscivorous fish that prey on salmonids
		Buttressing berm in West Bay would reduce nearshore available habitat for marine species compared to existing conditions
No Action	1.0	Lake shallowing from continued sedimentation and lack of dredging slowly impacts and reduces habitat for anadromous fish
		Continued aquatic plant growth and invasive species presence and growth would negatively impact fish
		Increasing sedimentation would reduce habitat diversity over time
		Shallowing, from increasing sedimentation, would increase water temperature and decreases dissolved oxygen, negatively impacting anadromous fish



EF3: Anadromous fish passage, migratory conditions, and/or rearing habitat presence

Score Range	No to Minor Benefits -OR-	Minor to Moderate Benefits -OR-	Substantial Benefits -OR-
	Significant Impacts	Less than Significant Impacts	No impact or minor impact
	Score Range = 1–3	Score Range = 4–7	Score Range = 8–10
Range Descriptions	No improvement to fish passage, migratory conditions,	Some improvement to fish passage, migratory conditions,	Substantial improvement to fish passage, migratory
	and rearing habitat for anadromous fish	and rearing habitat for anadromous fish	conditions, and rearing habitat for anadromous fish

Rationale (see Supporting Chapter 4.0 [Section 4.5] of EIS for discussion of impacts)

Alternative	Score	Rationale
Estuary	9.0	Dam removal would improve anadromous fish passage and migratory conditions
		A natural transition between freshwater and saltwater is physiologically favorable to salmon, particularly for juvenile salmonids
		Improves rearing habitat for salmonids; benefits marginally reduced due to presence of habitat islands
Hybrid	7.0	Dam removal would improve anadromous fish passage and migratory conditions
		A natural transition between freshwater and saltwater is physiologically favorable to salmon, particularly for juvenile salmonids
		Improves rearing habitat for salmonids; benefits marginally reduced due to presence of habitat islands
		Scoring is proportionally reduced relative to Estuary Alternative given presence of the freshwater reflecting pool that would not be accessible to anadromous fish
Managed Lake	3.0	No change to fish passage or migratory conditions
		Habitat islands would enhance nearshore rearing opportunities
		Over time, sediment accumulation in the Middle and South Basins could disconnect river channel from adjacent wetlands resulting in a simplified system with less habitat
		heterogeneity; this would impact rearing habitat for anadromous fish
No Action	1.0	No change to fish passage and migratory conditions
		Sediment accumulation would result in increasingly shallowing conditions, loss of habitat, and increased predation
		Over time, sediment accumulation in the Middle and South Basins could disconnect river channel from adjacent wetlands resulting in simplified system with less habitat
		heterogeneity; this would impact rearing habitat for anadromous fish

EF4: Native fish predation pressures

Score Range	No to Minor Benefits -OR-	Minor to Moderate Benefits -OR-	Substantial Benefits -OR-
	Significant Impacts	Less than Significant Impacts	No impact or minor impact
	Score Range = 1–3	Score Range = 4–7	Score Range = 8–10
Range Descriptions	Increased predation pressures on native fish	No change in predation pressures on native fish	Decreased predation pressures on native fish



Rationale (see Supporting Chapter 4.0 [Section 4.5] of EIS for discussion of impacts)

Alternative	Score	Rationale
Estuary	8.0	 Estuarine habitat would eliminate predation on juvenile salmonids from freshwater predators and would provide full range of prey generally found in estuarine habitats Dam removal would eliminate a chokepoint in the system that supports predation, although other chokepoints exist but to a lesser degree Bird and mammal predation may change in type/species New in-water structures would introduce predator habitat
Hybrid	7.0	 Estuarine habitat would eliminate predation on juvenile salmonids from freshwater predators and would provide full range of prey generally found in estuarine habitats Dam removal would eliminate a chokepoint in the system that supports predation, although other chokepoints exist but to a lesser degree Bird and mammal predation may change in type/species Predation on native fish may be reduced in a groundwater-fed reflecting pool that is not accessible to anadromous species New in-water structures, including barrier wall, would introduce predator habitat
Managed Lake	4.0	 Predation pressures may be nominally reduced from aquatic vegetation removal Predation on native fish may be reduced by additional depth created from dredging in the North Basin New in-water structures would introduce predator habitat
No Action	2.0	 No direct changes to predation pressures Over time, sedimentation would increase water temperature and aquatic vegetation growth; these conditions would be more beneficial to predatory fish

EF5: Freshwater habitat for bats and other non-marine, water-dependent mammals

Score Range	No to Minor Benefits -OR-	Minor to Moderate Benefits -OR-	Substantial Benefits -OR-
	Significant Impacts	Less than Significant Impacts	No impact or minor impact
	Score Range = 1–3	Score Range = 4–7	Score Range = 8–10
Range Descriptions	Freshwater habitat for bats and other non-marine, water-	Freshwater habitat for bats and other non-marine, water-	Freshwater habitat for bats and other non-marine, water-
	dependent mammals would substantially decrease	dependent mammals would remain at current levels or	dependent mammals would expand and become
		decrease slightly	enhanced

Rationale (see Supporting Chapter 4.0 [Section 4.5] of EIS for discussion of impacts)

Alternative	Score	Rationale	
Estuary	3.0	Loss of freshwater habitat would reduce foraging habitat for bats and other non-marine, water-dependent mammals	
		Increase of riparian habitat could benefit bats, offsetting some freshwater habitat loss	
		Neutral effect to otters and other non-marine mammals	
Hybrid	4.0	Loss of freshwater habitat would reduce foraging habitat for bats and other non-marine, water-dependent mammals	
		• Freshwater reflecting pool would retains some habitat for bats and partially offsets impacts, though freshwater reflecting pool is not large enough to avoid all impacts to local	
		bat colonies	
		Increase of riparian habitat could benefit bats, offsetting some freshwater habitat loss	
		Neutral effect to otters and other non-marine mammals	



Alternative	Score	Rationale	
Managed Lake	6.0	Habitat islands and slow transition of Middle and South Basins to freshwater wetlands would reduce open freshwater habitats that are used for foraging by bats	
		Reduction in deep water habitat may reduce fish productivity but would not significantly affect other mammals	
No Action	4.0	No measurable change to existing conditions	
		Slow and passive transition to wetlands could impact bat foraging over the long-term	

EF6: Habitat for foraging birds, including nesting and foraging

Score Range	No to Minor Benefits -OR-	Minor to Moderate Benefits -OR-	Substantial Benefits -OR-
	Significant Impacts	Less than Significant Impacts	No impact or minor impact
	Score Range = 1–3	Score Range = 4–7	Score Range = 8–10
Range Descriptions	Habitat for foraging birds would be reduced or eliminated	Habitat for foraging birds would be maintained at current	Habitat for foraging birds would increase in quantity and
		levels or improved slightly in quantity and diversity	diversity

Rationale (see Supporting Chapter 4.0 [Section 4.5] of EIS for discussion of impacts)

Alternative	Score	Rationale
Estuary	7.5	Estuary would substantially increase diversity and range of foraging opportunities for shore and wading birds, such as heron
		Minor to moderate benefits for other foraging birds
		Reduces prey for insectivorous birds
Hybrid	6.5	Estuary would substantially increase diversity and range of foraging opportunities for shore and wading birds, such as heron
		Minor to moderate benefits for other foraging birds
		Reduces prey for insectivorous birds
		Less benefit than Estuary Alternative due to less estuarine habitat (value for bats, provided by freshwater reflecting pool, accounted for in EF5)
Managed Lake	6.0	Habitat islands would increase/improve quantity and diversity of foraging habitat for shorebirds, wading birds, dabbling ducks, raptors, and passerine birds
		Reduction in deep water habitat would nominally affect diving ducks
		Transition to vegetated wetlands in South and Middle Basins would moderately benefit some birds, such as passerines
		Slow transition from deep water shoreline to vegetated wetlands in Middle and South Basins would eventually eliminate foraging habitat for species that use shallow open water for foraging
No Action	4.5	
NO ACTION	4.5	• Gradual transition to wetlands would reduce and potentially eliminates foraging habits for shorebirds, wading birds, diving, dabbling ducks, insectivorous birds, and some raptors
		Eventual transition to wetlands would moderately benefit some birds, such as passerines



EF7: Consistency with adopted conservation and/or recovery plans (listed species)

Score Range	No to Minor Benefits -OR-	Minor to Moderate Benefits -OR-	Substantial Benefits -OR-
	Significant Impacts	Less than Significant Impacts	No impact or minor impact
	Score Range = 1–3	Score Range = 4–7	Score Range = 8–10
Range Descriptions	Inconsistent with / does not support adopted	Partially consistent with / supports adopted conservation /	Consistent with / supports adopted conservation /
	conservation / recovery plans for listed species,	recovery plans for listed species, including Orca, Chinook	recovery plans for listed species, including Orca, Chinook
	including Orca, Chinook salmon	salmon	salmon

Rationale (see Supporting Chapter 4.0 [Section 4.5] of EIS for discussion of impacts)

Alternative	Score	Rationale	
Estuary	9.0	Advances goals and recommendations in adopted conservation and recovery plans for Orca or Chinook salmon	
		Supports goals related to restoring degraded habitat; improves fitness of outmigrating hatchery salmon	
		This area historically did not, and would not in the future, support wild, Chinook salmon runs; score is reduced for that reason	
Hybrid	6.0	Advances goals and recommendations in adopted conservation and recovery plans for Orca or Chinook salmon	
		Supports goals related to restoring degraded habitat; improves fitness of outmigrating hatchery salmon	
		This area historically did not, and would not in the future, support wild, Chinook salmon runs; score is reduced for that reason	
		Less consistent with goals and recommendations compared to Estuary Alternative given the presence of freshwater reflecting pool	
Managed Lake	3.0	 Would not further goals or recommendations in adopted conservation and recovery plans for Orca or Chinook salmon 	
		Would not meaningfully benefit local salmon populations, which Resident orcas are highly dependent on	
		Would continue to provide minimal, but quantifiable, contribution to Chinook salmon populations	
No Action	1.0	Would not further the goals and recommendations in adopted conservation and recovery plans for Orca and Chinook salmon	

EF8: Function and extent, type, and/or distribution of wetlands

Score Range	No to Minor Benefits -OR-	Minor to Moderate Benefits -OR-	Substantial Benefits -OR-
	Significant Impacts	Less than Significant Impacts	No impact or minor impact
	Score Range = 1–3	Score Range = 4–7	Score Range = 8–10
Range Descriptions	Maintains current level of wetland function, including	Provides a net gain in wetland functions, including	Provides a substantial net gain in wetland functions,
	hydrologic, water quality, and habitat functions. Reduces	hydrologic, water quality, and habitat functions.	including hydrologic, water quality, and habitat functions.
	or minimally increases extent, type, and/or distribution of	Moderately increases extent, type, and/or distribution of	Significantly increases extent, type, and/or distribution of
	high value or unique wetland habitats.	high value or unique wetland habitats.	high value or unique wetland habitats.



Rationale (see Supporting Chapter 4.0 [Section 4.5] of EIS for discussion of impacts)

Alternative	Score	Rationale
Estuary	9.0	Reestablishes natural, historic estuarine wetlands that have been disproportionately impacted by development across Puget Sound
		• Improves wetland functions, such as denitrification, carbon transformation, nutrient cycling, primary production and food web support, sediment deposition and erosion, and
		fish and wildlife habitat, particularly for reproduction and feeding
		Establishes greatest extent of high value wetlands (estuarine) relative to other alternatives
Hybrid	7.0	Reestablishes natural, historic estuary wetlands that have been disproportionately impacted by development across Puget Sound, but less so than Estuary Alternative
		• Improves wetland functions, such as denitrification, carbon transformation, nutrient cycling, primary production and food web support, sediment deposition and erosion, and
		fish and wildlife habitat, particularly for reproduction and feeding, but less so than Estuary Alternative
		Establishes high value wetlands (estuarine), but less so than Estuary Alternative
Managed Lake	5.0	Habitat islands and lake management support improved ecological function, habitat complexity, and diversity
		Ongoing sediment deposition in Middle and South Basins incrementally improves wetland habitat conditions over time; conversion from deepwater habitats to more complex
		vegetated wetland types improve wetland functions related to water quality, hydrologic function, and wildlife habitat but to a lesser extent than other alternatives
No Action	3.0	Ongoing sediment deposition would result in gradual conversion to more valuable wetland habitat over time
		Year-round vegetation improves water quality by filtering or absorbing pollutants, absorbing nutrients, and reducing algae blooms
		Hydrologic functions provided by year-round vegetation reduce shoreline erosion and increase bank protection

Project Goals – Community Use

CU1: Availability and access to recreational opportunities/facilities

Score Range	No to Minor Benefits -OR-	Minor to Moderate Benefits -OR-	Substantial Benefits -OR-
	Significant Impacts	Less than Significant Impacts	No impact or minor impact
	Score Range = 1–3	Score Range = 4–7	Score Range = 8–10
Range Descriptions	No improvement in diversity, availability, or access to	Improves diversity, availability, and access to passive and	Substantially improves diversity, availability, and access to
	recreational opportunities, or a permanent loss of	active recreational opportunities and facilities	passive and active recreational opportunities and facilities
	recreational opportunities		

Rationale (see Supporting Chapter 4.0 [Section 4.8] of EIS for discussion of impacts)

Alternative	Score	Rationale	
Estuary	8.0	New bike/pedestrian facilities and boardwalks provide substantial benefit	
		No significant long-term impacts to recreation access	
		Improved habitat would benefit passive wildlife viewing	
		• Improves diversity of recreational opportunities compared to existing conditions; however, summertime peak recreational season coincides with lowest tide levels	
		Tidal variability could be challenging to boaters, but boating opportunity in the Capitol Lake Basin would be restored	
		• Impacts to marinas due to more frequent recurring maintenance dredging; though, dredging would occur when ≤ 10% of slips are impacted and boats in those slips would be	
		temporarily relocated	



Alternative	Score	Rationale
		Less likelihood of future swimming facilities (if pursued by another entity)
Hybrid	9.0	New bike/pedestrian facilities and boardwalks provide substantial benefit; trail atop barrier wall provides additional benefit that does not exist with other action alternatives
		No significant long-term impacts to recreation access
		Improved habitat would benefit passive wildlife viewing
		Improves diversity of recreational opportunities compared to existing conditions; however, summertime peak recreational season coincides with lowest tide levels
		Tidal variability in estuary side of Hybrid Alternative could be challenging to boaters, but boating opportunity in the Capitol Lake Basin would be restored
		• Impacts to marinas due more frequent recurring maintenance dredging; though, dredging would occur when ≤ 10% of slips are impacted and boats in those slips would be temporarily relocated
		 Freshwater reflecting pool provides greater opportunity for boat use during summer low tides (relative to Estuary Alternative)
		 Maintains possibility of future swimming facility (if pursued by another entity)
Managed Lake	9.0	New bike/pedestrian facilities and boardwalks provide substantial benefit
		No significant long-term impacts to recreation access
		Improved habitat would benefit passive wildlife viewing; though, this may be less than Estuary or Hybrid Alternatives
		Greater diversity of boat usage in North Basin relative to other alternatives; however, active recreation would be constrained in Middle and South Basins
		Maintains possibility of future swimming facilities (if pursued by another entity)
No Action	2.0	No improvement to availability or diversity in recreational opportunities
		No new recreational access or facilities would be constructed
		Capitol Lake remains closed due to presence New Zealand mudsnails
		Area continues to be used for upland recreation

CU2: Management complexity due to presence of aquatic invasive species

Score Range	No to Minor Benefits -OR-	Minor to Moderate Benefits -OR-	Substantial Benefits -OR-
	Significant Impacts	Less than Significant Impacts	No impact or minor impact
	Score Range = 1–3	Score Range = 4–7	Score Range = 8–10
Range Descriptions	High complexity of overall management to provide	Moderate complexity of overall management to provide	Low complexity of overall management to provide
	recreation due to presence of aquatic invasive species	recreation due to presence of aquatic invasive species	recreation due to presence of aquatic invasive species

Rationale (see Supporting Chapter 4.0 [Section 4.8] of EIS for discussion of impacts)

Alternative	Score	Rationale	
Estuary	7.0	Lowest complexity and level of attention needed for decontamination stations relative to the other alternatives given findings of aquatic invasive species analysis and WDFW conclusion that high-priority aquatic invasive species are not expected to establish populations in the saline environment of Budd Inlet	
Hybrid	6.0	Greater complexity of aquatic invasive species management relative to Estuary Alternative but less than Managed Lake Alternative	
		Freshwater reflecting pool may require permanently staffed decontamination station	
Managed Lake	3.0	Greatest complexity of aquatic invasive species management relative to other alternatives	
		New Zealand mudsnail would persist, requiring permanently staffed decontamination stations	



Alternative	Score	Rationale	
No Action	1.5	Capitol Lake remains closed permanently	
		Although not highly complex, fails to meet project goals of enhanced community use, resulting in significant impact	

Other Environmental Disciplines – Cultural Resources

CR1: Effects to historic resources (listed or potentially eligible)

Score Range	No to Minor Benefits -OR-	Minor to Moderate Benefits -OR-	Substantial Benefits -OR-
	Significant Impacts	Less than Significant Impacts	No impact or minor impact
	Score Range = 1–3	Score Range = 4–7	Score Range = 8–10
Range Descriptions	Impacts to historic resources permanently diminish the integrity of the essential physical features such that the resource is no longer able to convey its significance for which it is listed or potentially eligible for listing in a historic register	Impacts were assessed as either significant or not- significant, consistent with best practices for historic resources, therefore no values from 4 to 7 were used	Indirect impacts to historic resources do not permanently diminish the integrity of the essential features for which a historic resource is listed or is potentially eligible for listing in a historic register, such that the historic resource is no longer able to convey its significance or if impacts to its integrity can be sufficiently mitigated through design choices or BMPs

Rationale (see Supporting Chapter 4.0 [Section 4.9] of EIS for discussion of impacts)

Alternative	Score	Rationale	
Estuary	3.0	 Significant impacts to eligible properties (Olympic St. W Bridge, 5th Avenue Dam, and 5th Avenue Bridge); although the properties would be demolished, mitigation in the form of interpretive displays could preserve the history Would reduce future flood impacts to historic resources 	
Hybrid	3.0	 Significant impacts to eligible properties (Olympic St. W Bridge, 5th Avenue Dam, and 5th Avenue Bridge); although the properties would be demolished, mitigation in the form of interpretive displays could preserve the history Would reduce future flood impacts to historic resources 	
Managed Lake	8.5	 Dam restoration would preserve an eligible historic property Not expected to diminish the integrity of the essential features of any eligible historic resources in the project area Sediment management maintains ability for many historic resources to convey their significance Potential for significant effects from flooding to low-lying historic resources; though, impacts could be mitigated 	
No Action	8.0	 Lack of significant upgrades to the dam would eventually impact viability Sedimentation could affect the setting of historic resources in the project area Flooding could affect low-lying structures 	



CR2: Potential to affect integrity of archaeological resources

Score Range	No to Minor Benefits -OR-	Minor to Moderate Benefits -OR-	Substantial Benefits -OR-
	Significant Impacts	Less than Significant Impacts	No impact or minor impact
	Score Range = 1–3	Score Range = 4–7	Score Range = 8–10
Range Descriptions	High potential to affect the depositional integrity of	Moderate potential to affect the depositional integrity of	Low potential to affect the depositional integrity of
	recorded and unrecorded archaeological resources	recorded and unrecorded archaeological resources	recorded and unrecorded archaeological resources

Rationale (see Supporting Chapter 4.0 [Section 4.9] of EIS for discussion of impacts)

Alternative	Score	Rationale	
Estuary	3.0	High potential to impact unrecorded archaeological sites due to ground disturbance (e.g., reconfiguration of Deschutes Parkway)	
		Low potential for disturbance of unrecorded archaeological sites from future flooding	
Hybrid	3.0	High potential to impact unrecorded archaeological sites due to ground disturbing (e.g., reconfiguration of Deschutes Parkway)	
		Low potential for disturbance of unrecorded archaeological sites from future flooding	
Managed Lake	6.0	Lower potential to encounter unrecorded archaeological resources during construction, relative to other action alternatives, due to less ground disturbance	
		Increased flooding could result in increased shoreline erosion potentially affecting the depositional integrity of resources	
No Action	9.0	No potential to encounter unrecorded archaeological resources	
		Increased flooding could result in increased shoreline erosion potentially affecting the depositional integrity of resources	

CR3: Restoration and preservation of pre-colonization landscapes

Score Range	No to Minor Benefits -OR-	Minor to Moderate Benefits -OR-	Substantial Benefits -OR-
	Significant Impacts	Less than Significant Impacts	No impact or minor impact
	Score Range = 1–3	Score Range = 4–7	Score Range = 8–10
Range Descriptions	No restoration or preservation of pre-colonization	Partial restoration and preservation of pre-colonization	Restoration and preservation of pre-colonization
	landscapes	landscapes	landscapes

Rationale (see Supporting Chapter 4.0 [Section 4.9] of EIS for discussion of impacts)

Alternative	Score	Rationale		
Estuary	8.0	Significant progress toward restoring Deschutes Estuary to pre-colonization conditions but altered elements remain		
		Addition of boardwalks, habitat areas, and other constructed features would not be consistent with pre-colonization landscapes		
Hybrid	4.5	• Deschutes Estuary would be partially restored to pre-colonization landscape; however, part of the basin would retain modern recreational amenities (freshwater reflecting pool and barrier wall)		
		Addition of boardwalks, habitat areas, and other constructed features would not be consistent with pre-colonization landscapes		
Managed Lake	1.0	Preserves and enhances existing dam and lake, formally precluding restoration of pre-colonization landscapes indefinitely		
		Addition of boardwalks, habitat areas, and other constructed features would not be consistent with pre-colonization landscapes		
No Action	3.0	Retains existing dam and lake, at least temporarily, thereby making no progress toward restoration of pre-colonization landscapes		
		Does not formally preclude future restoration of pre-colonization landscapes		



Other Environmental Disciplines – Visual Resources

VR1: Visual impacts to the landscape setting and unity

Score Range	No to Minor Benefits -OR-	Minor to Moderate Benefits -OR-	Substantial Benefits -OR-
	Significant Impacts	Less than Significant Impacts	No impact or minor impact
	Score Range = 1–3	Score Range = 4–7	Score Range = 8–10
Range Descriptions	Visual impacts of project elements would be severe and incompatible with the unity of the landscape setting	Visual impacts of project elements would be moderate and somewhat compatible with the unity of the	Visual impacts of project elements would be minimal and compatible with the unity of the landscape setting
		landscape setting	

Rationale (see Supporting Chapter 4.0 [Section 4.10] of EIS for discussion of impacts)

Alternative	Score	Rationale		
Estuary	8.5	Improves natural landscape consistent with state and local policies		
		Provides improved views of natural landscape		
		Tidal fluctuations change the appearance of waterbody substantially, but landscape remains unified and harmonious with the natural setting		
Hybrid	3.0	Reflecting pool barrier wall would block views across North Basin, from east to west; scale of wall would be significant		
		arrier wall design could potentially be modified to mitigate visual impacts, including the addition of concrete panels, but impacts would still be significant		
		Pathway along top of barrier wall would provide new and unique views		
Managed Lake	8.5	Consistent with adopted plans and policies		
		Aquatic vegetation and sedimentation would be reduced, improving overall visual aesthetics compared to existing conditions		
		Improvements would be visually coherent with the landscape unity; landscape would remain unified and harmonious with the natural setting		
No Action	5.0	No visual access improvements with gradual degradation over time due to continued or worsening aquatic plant growth		

Other Environmental Disciplines – Environmental Health

EH1: Sediment quality improvement in project area

Score Range	No to Minor Benefits -OR-	Minor to Moderate Benefits -OR-	Substantial Benefits -OR-
	Significant Impacts	Less than Significant Impacts	No impact or minor impact
	Score Range = 1–3	Score Range = 4–7	Score Range = 8–10
Range Descriptions	Minimal to no change in sediment quality in the project	Limited improvement in sediment quality in the project	Substantial improvement to sediment quality in the
	area	area	project area



Rationale (see Supporting Chapter 4.0 [Section 4.11] of EIS for discussion of impacts)

Alternative	Score	Rationale	
Estuary	6.5	Clean sediment from river system deposited into Budd Inlet provides some improvement	
		No change in lake sediment quality	
Hybrid	7.0	Clean sediment from river system deposited into Budd Inlet provides some improvement at a rate greater than the Estuary Alternative, so score is adjusted proportionally	
		No change in lake sediment quality	
Managed Lake	3.0	No meaningful change in sediment quality in Budd Inlet	
		Some short-term improvement in North Basin from dredging	
No Action	2.0	No meaningful change in sediment quality in Budd Inlet	
		No change in sediment quality in lake basin	

Other Environmental Disciplines – Transportation

TS1: Transportation network improvement opportunities

Score Range	No to Minor Benefits -OR-	Minor to Moderate Benefits -OR-	Substantial Benefits -OR-
	Significant Impacts	Less than Significant Impacts	No impact or minor impact
	Score Range = 1–3	Score Range = 4–7	Score Range = 8–10
Range Descriptions	Minimal opportunities for vehicle, and pedestrian and	Some opportunities for vehicle, and pedestrian and	Substantial opportunities for vehicle, and pedestrian and
	bicycle network improvements; long-term reduction in	bicycle network improvements; modest improvement or	bicycle network improvements; long-term improvements
	traffic system efficiency and operation	maintenance of existing level of efficiency and operation	in regional transportation system efficiency and operation
		of regional transportation network	

Rationale (see Supporting Chapter 4.0 [Section 4.12] of EIS for discussion of impacts)

Alternative	Score	Rationale	
Estuary	9.0	5 th Avenue Bridge replacement extends design life of major transportation network element and reduces overall maintenance needs	
		New 5 th Avenue bike and pedestrian facilities and boardwalks would provide improved access and connections	
Hybrid	9.0	• 5 th Avenue Bridge replacement extends design life of major transportation network element and reduces overall maintenance needs	
		New 5 th Avenue bike and pedestrian facilities and boardwalks would provide improved access and connections	
Managed Lake	5.0	5 th Avenue Bridge repair extends design life of major transportation network element and reduces overall maintenance needs, but to a lesser degree than Estuary and Hybrid Alternatives	
		No vehicle transportation improvements or pedestrian circulation improvements at 5 th Avenue Bridge	
		New 5 th Avenue bike and pedestrian facilities and boardwalks would provide improved access and connections	
No Action	1.0	No new facilities constructed therefore no transportation improvements	



TS2: Traffic impacts during maintenance dredging

Score Range	No to Minor Benefits -OR-	Minor to Moderate Benefits -OR-	Substantial Benefits -OR-
	Significant Impacts	Less than Significant Impacts	No impact or minor impact
	Score Range = 1–3	Score Range = 4–7	Score Range = 8–10
Range Descriptions	Potentially significant impacts on traffic during	Minimal impacts on traffic during maintenance dredging	Avoidable traffic impacts during maintenance dredging
	maintenance dredging		

Rationale (see Supporting Chapter 4.0 [Section 4.12] of EIS for discussion of impacts)

Alternative	Score	Rationale	
Estuary	9.0	No traffic impacts would result from in-water disposal, which is the likely disposal scenario based on existing data	
		Upland disposal, if required, would include transloading to truck or rail	
Hybrid	9.0	No traffic impacts would result from in-water disposal, which is the likely disposal scenario based on existing data	
		Upland disposal, if required, would include transloading to truck or rail	
Managed Lake	2.0	Truck hauling of dredged material would have significant impacts on area transportation and pavement degradation	
		Some potential for rail transport of dredge materials exists, which could reduce transportation impacts	
		Limited potential for in-water disposal via barge exists, but this would reduce transportation impacts	
No Action	10.0	No maintenance dredging would occur, therefore no traffic-related impacts	

Other Environmental Disciplines – Public Services and Utilities

PS1: Utility infrastructure impacts from flooding and/or saltwater exposure

Score Range	No to Minor Benefits -OR-	Minor to Moderate Benefits -OR-	Substantial Benefits -OR-
	Significant Impacts	Less than Significant Impacts	No impact or minor impact
	Score Range = 1–3	Score Range = 4–7	Score Range = 8–10
Range Descriptions	Impacts to utility infrastructure from flooding and / or	Impacts to utility infrastructure from flooding and / or	Impacts to utility infrastructure from flooding and / or
	saltwater exposure would be potentially substantial, with	saltwater exposure would be moderate, but effectively	saltwater exposure would be minimal, or effectively
	mitigation difficult	managed with mitigation	managed with mitigation

Rationale (see Supporting Chapter 4.0 [Section 4.13] of EIS for discussion of impacts)

Alternative	Score	Rationale	
Estuary	4.0	Tidal hydrology would introduce saltwater into locations where existing utility infrastructure is vulnerable to saline conditions	
		ility infrastructure within extent of flooding under relative sea level rise would also be vulnerable	
		esign measures included to replace existing metal stormwater outfalls, but other low-lying utilities remain vulnerable	
		Overland flooding related to extreme river flooding reduced compared to Managed Lake and No Action Alternatives	



Alternative	Score	Rationale	
Hybrid	5.0	 Tidal hydrology introduces saltwater into locations where existing utility infrastructure is vulnerable to saline conditions; these impacts would be reduced by the barrier wall and freshwater reflecting pool on eastern side of the North Basin Utility infrastructure within extent of flooding under relative sea-level rise would also be vulnerable; impacts reduced by barrier wall Design measures included to replace existing metal stormwater outfalls, but other low-lying utilities remain vulnerable Overland flooding related to extreme river flooding reduced 	
Managed Lake	6.0	 Overland flooding related to extreme river flooding reduced Overland flooding results in water surface elevations that exceed the flood-proofing elevations set in the Olympia Sea Level Response Plan resulting in significant impacts to stormwater and other utilities, but mitigation exists to offset these impacts No impacts (e.g., corrosion) from saltwater 	
No Action	6.0	 Overland flooding results in water surface elevations that exceed the flood-proofing elevations set in the Olympia Sea Level Response Plan resulting in significant impacts on stormwater and other utilities, but mitigation exists to offsets these impacts No impacts (e.g., corrosion) from saltwater 	

PS2: Financial impacts to local utility providers/customers

Score Range	No to Minor Benefits -OR-	Minor to Moderate Benefits -OR-	Substantial Benefits -OR-
	Significant Impacts	Less than Significant Impacts	No impact or minor impact
	Score Range = 1–3	Score Range = 4–7	Score Range = 8–10
Range Descriptions	Financial impacts to local utility providers/customers	Financial impacts to local utility providers/customers	Financial impacts to local utility providers/customers
	would be potentially substantial	would be moderate	would be minimal

Rationale (see Supporting Chapter 4.0 [Section 4.13] of EIS for discussion of impacts)

Alternative	Score	Rationale	
Estuary	8.0	Ecology not expected to require local utility dischargers, such as LOTT and City of Olympia, to implement more stringent actions to improve water quality and meet regulatory standards because estuary would restore natural conditions that may improve water quality in Budd Inlet Additional costs may be required to address saltwater impacts to utility infrastructure	
Hybrid	6.0	 Ecology may require local utility dischargers, such as LOTT and City of Olympia, to implement more stringent actions to improve water quality and meet regulatory standards because regulatory compliance of Hybrid Alternative is unknown Additional costs may be required to address saltwater impacts to utility infrastructure 	
Managed Lake	2.0	 More stringent actions to improve water quality and meet regulatory standards would likely be needed by local utility dischargers, such as LOTT and City of Olympia, because water quality conditions would not be improved by changes in the project area Costs to address saltwater impacts to utility infrastructure would be avoided 	
No Action	1.5	 More stringent actions to improve water quality and meet regulatory standards would likely be needed by local utility dischargers, such as LOTT and City of Olympia, because water quality conditions would not be improved by changes in the project area Costs to address saltwater impacts to utility infrastructure would be avoided 	



Other Environmental Disciplines – Tribal Resources

TR1: Presence/abundance of fish/shellfish species protected by tribal treaties

Score Range	No to Minor Benefits -OR-	Minor to Moderate Benefits -OR-	Substantial Benefits -OR-
	Significant Impacts	Less than Significant Impacts	No impact or minor impact
	Score Range = 1–3	Score Range = 4–7	Score Range = 8–10
Range Descriptions	Maintains or reduces abundance of species important to	Modestly improves abundance of species important to	Substantially improves abundance of species important to
	tribes	tribes	tribes

Rationale (see Supporting Chapter 4.0 [Section 4.14] of EIS for discussion of impacts)

Alternative	Score	Rationale	
Estuary	9.0	Substantially benefits species that are important to tribes, particularly salmon, although the estuary would not fully restore historic conditions	
Hybrid	7.0	Substantially benefits species that are important to tribes, particularly salmon; freshwater reflecting pool reduces extent of estuarine restoration and associated benefit	
Managed Lake	2.0	Maintains current habitat conditions, which are not optimal for species important to tribes	
No Action	1.0	No improvement; fish habitat and productivity may gradually decline over time due to transition to freshwater wetlands in South and Middle Basins	

TR2: Access to Usual and Accustomed Fishing Areas for tribes

Score Range	No to Minor Benefits -OR-	Minor to Moderate Benefits -OR-	Substantial Benefits -OR-
	Significant Impacts	Less than Significant Impacts	No impact or minor impact
	Score Range = 1–3	Score Range = 4–7	Score Range = 8–10
Range Descriptions	Reduces or maintains access to Usual and Accustomed	Modestly improves access to Usual and Accustomed	Substantially improves access to Usual and Accustomed
	Fishing Areas for tribes	Fishing Areas for tribes	Fishing Areas for tribes

Rationale (see Supporting Chapter 4.0 [Section 4.14] of EIS for discussion of impacts)

Alternative	Score	Rationale	
Estuary	9.0	Restores water access to Deschutes Estuary, which is a Usual and Accustomed Fishing Area for tribes	
		Relative to all other alternatives, provides greatest physical access to Usual and Accustomed Fishing Areas for tribes	
Hybrid	7.0	Restores water access to Deschutes Estuary; freshwater reflecting pool reduces extent of benefit by approximately 20%	
Managed Lake	3.0	Physical access to Usual and Accustomed Fishing Areas restored, but does not restore historic conditions of the area	
		Retains current conditions that restrict access at and across 5 th Avenue	
No Action	1.0	No steps taken to provide or improve access to Usual and Accustomed Fishing Areas	



TR3: Access to areas of cultural and spiritual significance for tribal members

Score Range	No to Minor Benefits -OR-	Minor to Moderate Benefits -OR-	Substantial Benefits -OR-
	Significant Impacts	Less than Significant Impacts	No impact or minor impact
	Score Range = 1–3	Score Range = 4–7	Score Range = 8–10
Range Descriptions	Maintains or reduces access to areas of cultural and	Modestly improves access to areas of cultural and	Substantially improves access to areas of cultural and
	spiritual significance to tribes	spiritual significance to tribes	spiritual significance to tribes

Rationale (see Supporting Chapter 4.0 [Section 4.14] of EIS for discussion of impacts)

Alternative	Score	Rationale	
Estuary	9.0	 Restores Deschutes Estuary to pre-colonization estuarine conditions, although pre-colonization conditions would not be fully restored due to other changes in the landscape and environment Relative to other alternatives, provides greatest opportunity for access to landscape of cultural and spiritual significance; benefit is somewhat reduced by shoreline improvements and infrastructure 	
Hybrid	5.0	 Restores portion of Deschutes Estuary to estuarine conditions; reflecting pool reduces extent of estuarine restoration and associated benefit by approximately 20% Barrier wall and freshwater reflecting pool would represent a significant new feature on the landscape that is inconsistent with pre-colonization estuarine conditions 	
Managed Lake	1.0	Retains constructed lake landscape, which does not have cultural or spiritual significance to tribes	
No Action	1.5	Retains current landscape, which does not have cultural and spiritual significance to tribes Indefinitely precludes access to areas of cultural and spiritual significance for tribes, although not formally	

Construction Impacts

CI1: Construction duration

Score Range	No to Minor Benefits -OR-	Minor to Moderate Benefits -OR-	Substantial Benefits -OR-
	Significant Impacts	Less than Significant Impacts	No impact or minor impact
	Score Range = 1–3	Score Range = 4–7	Score Range = 8–10
Range Descriptions	Longest construction duration	Middle construction duration	Shortest construction duration

Rationale (see Supporting Chapter 2.0 [Section 2.4] of EIS for discussion of impacts)

Alternative	Score	Rationale	
Estuary	2.0	Requires 7 to 8 years but slightly less complex construction sequencing compared to Hybrid Alternative	
Hybrid	1.0	Requires 7 to 8 years and most complex construction sequencing	
Managed Lake	6.5	Requires 4 to 5 years and complex construction sequencing	
No Action	10.0	No construction activities	



Cl2: In-water construction impacts and mitigation complexity

Score Range	No to Minor Benefits -OR-	Minor to Moderate Benefits -OR-	Substantial Benefits -OR-
	Significant Impacts	Less than Significant Impacts	No impact or minor impact
	Score Range = 1–3	Score Range = 4–7	Score Range = 8–10
Range Descriptions	In-water construction would result in widespread impacts to water quality and fish and wildlife; mitigation would address most impacts but would be relatively complex to implement and may not effectively mitigate all adverse impacts	In-water construction impacts would result in localized impacts to water quality and fish and wildlife; mitigation would address most impacts	In-water construction impacts would be minor and could be effectively mitigated to avoid adverse impacts to water quality and fish and wildlife; mitigation of construction impacts relatively straightforward to implement

Rationale (see Supporting Chapter 5.0 [Section 5.5] of EIS for discussion of impacts)

Alternative	Score	Rationale		
Estuary	4.0	All alternatives may have a mitigation requirement to address temporary impacts from dredging		
		Dam removal and bridge reconstruction could involve blasting and pile driving activities, which would have additional impacts and potential mitigation requirements		
Hybrid	2.5	All alternatives may have a mitigation requirement to address temporary impacts from dredging		
		Dam removal and bridge reconstruction could involve blasting and pile driving activities, which would have additional impacts and potential mitigation requirements		
		Barrier wall construction would have additional impacts and complex mitigation requirements		
Managed Lake	6.0	All alternatives may have a mitigation requirement to address temporary impacts from dredging		
		The type of in-water construction elements would be similar to Estuary Alternative but less extensive (no dam removal)		
No Action	10.0	No construction activities		

Cl3: Duration/impacts of construction-related closure of 5th Avenue

Score Range	No to Minor Benefits -OR-	Minor to Moderate Benefits -OR-	Substantial Benefits -OR-
	Significant Impacts	Less than Significant Impacts	No impact or minor impact
	Score Range = 1–3	Score Range = 4–7	Score Range = 8–10
Range Descriptions	Longest duration of construction-related closure to 5 th	Middle duration of construction-related closure to 5 th	Shortest duration of construction-related closure and
	Avenue Bridge and accompanying impacts to traffic	Avenue Bridge and accompanying impacts to traffic	accompanying traffic-related impacts to 5 th Avenue
	operation	operation	Bridge



Rationale (see Supporting Chapter 5.0 [Section 5.12] of EIS for discussion of impacts)

Alternative	Score	Rationale
Estuary	1.0	• Requires 5 th Avenue closure for 4 to 5 years ⁴
Hybrid	1.0	• Requires 5 th Avenue closure for 4 to 5 years ⁴
Managed Lake	9.0	Requires approximate 7-week closure of 5 th Avenue for jet grouting
No Action	10.0	No construction activities

Environmental Sustainability

EV1: Resiliency to climate change (SLR, temperature, adaptation, sequestration)

Score Range	No to Minor Benefits -OR-	Minor to Moderate Benefits -OR-	Substantial Benefits -OR-
	Significant Impacts	Less than Significant Impacts	No impact or minor impact
	Score Range = 1–3	Score Range = 4–7	Score Range = 8–10
Range Descriptions	 Lowest performing in terms of ability to adapt to climate change, in consideration of: Increased flooding due to sea level rise or due to increased precipitation / river flooding Ability of habitat to respond, recover and adapt to climate change and sea level rise Greenhouse gas sequestration potential / methane emission potential 	 Moderate performance in terms of resilience to climate change, in consideration of: Increased flooding due to sea level rise or due to increased precipitation / river flooding Ability of habitat to respond, recover and adapt to climate change and sea level rise Greenhouse gas sequestration potential / methane emission potential 	 Highest performing in terms of resilience to climate change, in consideration of: Increased flooding due to sea level rise or due to increased precipitation / river flooding Ability of habitat to respond, recover and adapt to climate change and sea level rise Greenhouse gas sequestration potential / methane emission potential

Rationale (see Supporting Chapter 4.0 [Section 4.8] of EIS for discussion of impacts)

Alternative	Score	Rationale			
Estuary	8.0	More resilient against riverine and compound riverine and coastal flooding because system works as connected body of water			
		Most consistent with sea level rise and climate change plans for City of Olympia/region			
		reased salinity results in less methane release compared to other alternatives			
		/egetated marshes sequester more carbon through soil biomass soil than would be expected in open water habitats			
Hybrid	6.5	Most resilient against riverine and compound riverine and coastal flooding because system works as connected body of water			
		Consistent with sea-level rise and climate change plans for City of Olympia/region			
		 Increased salinity results in less methane release compared to fresh-water alternatives but less so than Estuary Alternative 			
		Vegetated marshes sequester more carbon through soil biomass soil than would be expected in open water habitats but less so than Estuary Alternative			

⁴ This sub-criterion was scored conservatively, assuming 4 to 5-year closure of the 5th Avenue Bridge provided in the Draft EIS. City of Olympia and stakeholders have described such a long-term closure as "unacceptable," and the Estuary and Hybrid Alternatives have subsequently been modified to avoid a long-term closure of the 5th Avenue corridor during construction. This scoring has not been changed, to preserve the initial evaluation. If the scores were changed, the Estuary and Hybrid Alternatives would have a higher scoring here and therefore, a higher score overall.



Alternative	Score	Rationale	
Managed Lake	3.0	 Continued and increased extreme river flooding; highest flood level elevations would occur under river flooding Not consistent with sea level rise and climate change plans for City of Olympia/region; current adaptation strategies would not address highest flood level elevations of this alternative 	
		Lower potential to sequester carbon; higher potential for methane emissions compared to the Estuary and Hybrid Alternatives	
No Action	1.0	 Continued and increased extreme river flooding; highest floods occur under river flooding Not consistent with sea-level rise and climate change plans for City of Olympia/region; current adaptation strategies would not address highest flood level elevations of this alternative 	
		 Dam operations could become impaired over time, exacerbating flood risks Lowest potential to sequester carbon; highest potential for methane emissions compared to the Estuary and Hybrid Alternatives 	

EV2: Level of active management required to achieve project goals

Score Range	No to Minor Benefits -OR-	Minor to Moderate Benefits -OR-	Substantial Benefits -OR-
	Significant Impacts	Less than Significant Impacts	No impact or minor impact
	Score Range = 1–3	Score Range = 4–7	Score Range = 8–10
Range Descriptions	Highest level of active management within project area to	Moderate level of active management within project area	Low level of active management within project area to
	achieve project goals	to achieve project goals	achieve project goals

Rationale (see Supporting Chapter 2.0 of EIS for discussion of management approach)

Alternative	Score	Rationale
Estuary	7.0	 Water Quality: No active management Sediment Management: Annual bathymetric surveys required in Budd Inlet; dredging anticipated on 6-year frequency Ecological Function: Adaptive management assumed, consistent with all other action alternatives Community Use: Decontamination stations staffed initially at project onset; saline environment may require more frequent recreational infrastructure maintenance (relative to freshwater alternatives)
Hybrid	3.0	 Water Quality: Active water quality and stormwater management required for freshwater reflecting pool Sediment Management: Annual bathymetric surveys required in Budd Inlet; dredging anticipated on 5-year frequency Ecological Function: Adaptive management assumed, consistent with all other action alternatives; may be more complex due to presence of freshwater and saltwater Community Use: Decontamination station in freshwater reflecting pool may need permanent staffing; saline environment may require more frequent recreational infrastructure maintenance (relative to freshwater alternatives)
Managed Lake	4.0	 Water Quality: Active water quality and stormwater management required Sediment Management: Long-term commitment to continual dam operations and periodic maintenance dredging with complex upland staging (every 20 to 30 years) Ecological Function: Adaptive management assumed, consistent with all other action alternatives Community Use: Decontamination stations likely to be permanently staffed; freshwater environment may require less frequent recreational infrastructure maintenance (relative to saltwater alternatives)



Alternative	Score	Rationale	
No Action	1.0	/ater Quality: No active management, goal is not achieved	
		diment Management: No active management, goal is not achieved	
		cological Function: No active management, goal is not achieved	
		Community Use: No active management, goal is not achieved	

Economic Sustainability

EC1: Initial construction costs

Score Range	No to Minor Benefits -OR-	Minor to Moderate Benefits -OR-	Substantial Benefits -OR-
	Significant Impacts	Less than Significant Impacts	No impact or minor impact
	Score Range = 1–3	Score Range = 4–7	Score Range = 8–10
Range Descriptions	Highest initial construction costs	Mid-range initial construction costs	Lowest initial construction costs

Rationale (see Supporting Chapter 7.0 [Section 7.1] of EIS for discussion of impacts)

Alternative	Score	Rationale	
Estuary	4.0	Construction costs estimated to be 1.5 times greater than Managed Lake Alternative	
		Potential additional costs associated with 5 th Avenue Bridge mitigation	
Hybrid	1.0	Highest up front total construction cost	
		Potential additional costs associated with 5 th Avenue Bridge mitigation	
Managed Lake	8.0	Lowest up front total construction cost compared to action alternatives	
		Does not factor cost to local dischargers to address implications of TMDL allocations	
No Action	10.0	No initial construction costs; minimal ongoing and increasing maintenance and management costs	
		Does not factor cost to local dischargers to address implications of TMDL allocations	

EC2: Potential for diversified construction funding

Score Range	No to Minor Benefits -OR-	Minor to Moderate Benefits -OR-	Substantial Benefits -OR-
	Significant Impacts	Less than Significant Impacts	No impact or minor impact
	Score Range = 1–3	Score Range = 4–7	Score Range = 8–10
Range Descriptions	Lowest potential for construction funding to be	Some potential for construction funding to be diversified	Highest potential for construction funding to be
	diversified beyond the state capital budget	beyond the state capital budget	diversified beyond the state capital budget



Rationale (see Supporting Chapter 7.0 [Section 7.1] of EIS for discussion of impacts)

Alternative	Score	Rationale	
Estuary	9.0	Most likely to obtain a range of tribal, federal, state, and local funding	
		Highest likelihood to obtain federal infrastructure funding opportunities, which prioritize ecosystem services and equity considerations	
Hybrid	5.0	Reduced ability to obtain a range of tribal, federal, state, and local funding compared to Estuary Alternative	
		Some potential to obtain federal infrastructure funding opportunities, which prioritize ecosystem services and equity considerations	
Managed Lake	2.5	Likely inability to obtain a range of tribal, federal, state, and local funding consistent with other action alternatives	
		Some potential to obtain federal infrastructure funding opportunities; likely limited to transportation-specific grants	
No Action	1.0	No opportunity for diversified funding	

EC3: Maintenance dredging costs

Score Range	No to Minor Benefits -OR-	Minor to Moderate Benefits -OR-	Substantial Benefits -OR-
	Significant Impacts	Less than Significant Impacts	No impact or minor impact
	Score Range = 1–3	Score Range = 4–7	Score Range = 8–10
Range Descriptions	Highest maintenance dredging costs	Mid-range maintenance dredging costs	Lowest maintenance dredging costs

Rationale (see Supporting Chapter 7.0 [Section 7.1] of EIS for discussion of impacts)

Alternative	Score	Rationale	
Estuary	8.0	• Lowest maintenance dredging costs relative to the other action alternatives, assuming in-water disposal, which is supported by existing data and analysis	
		Uncertainty in maintenance dredging costs exists across all action alternatives	
Hybrid	5.5	Maintenance dredging costs 1.5 times greater than Estuary Alternative	
		Uncertainty in maintenance dredging costs exists across all action alternatives	
Managed Lake	3.0	Highest maintenance dredging costs relative to action alternatives; assuming upland disposal, which is required based on existing environmental regulations and conditions	
		Rail transport could potentially reduce costs	
		Uncertainty in maintenance dredging costs exists across all action alternatives	
No Action	10.0	No maintenance dredging costs as project-related maintenance dredging would not occur	

EC4: Potential for diversified long-term funding, and funding certainty

Score Range	No to Minor Benefits -OR-	Minor to Moderate Benefits -OR-	Substantial Benefits -OR-
	Significant Impacts	Less than Significant Impacts	No impact or minor impact
	Score Range = 1–3	Score Range = 4–7	Score Range = 8–10
Range Descriptions	No diversification of funding and no substantive increase	Moderate diversification of funding and / or and	Diversified funding and / or and improved certainty for
	in certainty for long-term funding relative to existing	moderately improved certainty for long-term funding	long-term funding relative to existing conditions
	conditions	relative to existing conditions	



Rationale (see Supporting Chapter 7.0 [Section 7.1] of EIS for discussion of impacts)

Alternative	Score	Rationale	
Estuary	8.5	• Diversified across federal, state, and local governments likely; local governments are expected to provide shared funding based on recommendations from the Funding and Governance Work Group, as outlined in the Draft EIS ⁵	
Hybrid	3.5	Diversified across federal, state, and local governments unlikely; local governments do not have interest in shared funding and governance for the Hybrid Alternative based on ecommendations from the Funding and Governance Work Group, as outlined in the Draft EIS	
Managed Lake	2.0	 Long-term funding responsibility to be borne by state; not diversified, based on recommendations from the Funding and Governance Work Group, as outlined in the Draft EIS Local entities have firmly stated no support for long-term funding of the Managed Lake Alternative Some small, unique opportunities for long-term funding may exist 	
No Action	1.0	No opportunity for diversified funding	

EC5: Impacts to downstream commercial activity if long-term funding lapses

Score Range	No to Minor Benefits -OR-	Minor to Moderate Benefits -OR-	Substantial Benefits -OR-
	Significant Impacts	Less than Significant Impacts	No impact or minor impact
	Score Range = 1–3	Score Range = 4–7	Score Range = 8–10
Range Descriptions	If long-term funding lapses, impacts of sedimentation to	If long-term funding lapses, impacts of sedimentation to	If long-term funding lapses, impacts of sedimentation to
	downstream commercial activity would be high	downstream commercial activity would be moderate	downstream commercial activity would be relatively low

Rationale (see Supporting Chapter 7.0 [Section 7.1] of EIS for discussion of impacts)

Alternative	Score	Rationale	
Estuary	2.0	ignificant impacts to Port of Olympia, private marinas in West Bay, and other commercial businesses that rely on marine activities	
Hybrid	1.0	significant impacts to Port of Olympia, private marinas in West Bay, and other commercial businesses that rely on marine activities; impacts would occur more quickly and with greater intensity than Estuary Alternative	
Managed Lake	9.0	• Impacts less than those under the No Action Alternative, although some sediment still moves through 5 th Avenue Dam	
No Action	7.0	Dam continues to impound sediment to some extent, but that ability would diminish over time resulting in increasing annual sediment throughput rates	

⁵ Since this evaluation was completed, the Funding and Governance Work Group has developed a Memorandum of Understanding that outlines areas of agreement to provide shared funding for maintenance dredging through 2050. Please refer to Supporting Chapter 7.0 and Attachment 23 of the Final EIS for more detail.



Decision Durability

In addition to a technical evaluation of the long-term management alternatives, Enterprise Services engaged key stakeholders to provide input on the ability of each alternative to achieve long-term support from local tribes, stakeholders, and communities. Input on this selection criterion was solicited from Executive Work Group members (City of Olympia, City of Tumwater, LOTT Clean Water Alliance, Port of Olympia, Squaxin Island Tribe, Thurston County) and the Community Sounding Board convened for this project. These entities collectively represent the communities most likely to be affected by this decision and have been meaningfully engaged in the EIS process over several years. Decision Durability feedback was requested and obtained in fall 2021.

Decision Durability Scoring

In December 2021, Enterprise Services met with each Executive Work Group entity to answer questions they may have in the process to score the alternatives. Meetings included the Executive Work Group member from each entity, as well as their staff and representatives from other work groups (Technical Work Group and Funding and Governance Work Group). Each of the member entities provided a single numerical score for each alternative to indicate the level of long-term support they forecast for the alternatives. This numerical score was supplemented with a narrative response that described the factors that increased or decreased their support (provided as Exhibit 1).

Category	Estuary	Hybrid	Managed Lake	No Action
Decision Durability (average)	8.1	3.9	3.2	1.1
City of Olympia	10.0	1.0	1.0	1.0
City of Tumwater	9.0	6.0	2.0	1.0
LOTT Clean Water Alliance	9.0	3.0	2.0	1.0
Port of Olympia	5.0	3.3	5.3	1.3
Squaxin Island Tribe ⁶	10.0	N/A	N/A	N/A
Thurston County	6.7	5.3	4.7	1.0
Community Sounding Board ⁷	6.9	4.8	4.3	1.4

Decision Durability Rationale

The responses provided by Executive Work Group members and the Community Sounding Board regarding Decision Durability are included at the end of this document. The responses were carefully reviewed by Enterprise Services and the EIS Project Team. The Squaxin Island Tribe provided input to the Decision Durability process verbally and stated that the Estuary Alternative is the only alternative they can support; and that, the Squaxin Island Tribe cannot support to any degree an alternative that fails to meet the minimum requirements of the law.

Note: The comments submitted are the perspectives shared by Executive Work Group members and Community Sounding Board members and may not reflect the findings disclosed in the Draft EIS. Inclusion of these comments is to ensure transparency but were not and should not be interpreted as factual confirmation or agreement by Enterprise Services.

⁶ Squaxin Island Tribe provided a score of zero for all non-Estuary alternatives. Because zero is not a value in the overall scoring range (1 to 10) no value is included.

⁷ Average of scores provided by Community Sounding Board members (22 responses).



FINAL SCORING

The combined scores for all alternatives and all six criteria resulted in the identification of the Estuary Alternative as the Preferred Alternative for the Capitol Lake – Deschutes Estuary Long-Term Management Project.

Category	Estuary	Hybrid	Managed Lake	No Action
Project Goals	6.6	5.9	5.1	3.8
Other Disciplines	7.3	5.7	4.4	4.0
Construction Impacts	2.3	1.5	7.2	10.0
Environmental Sustainability	7.5	4.8	3.5	1.0
Economic Sustainability	6.3	3.2	4.9	5.8
Decision Durability	8.1	3.9	3.2	1.1
Total	38.1	25.0	28.3	25.7

Weighting Scenarios

In parallel to the evaluation exercises, Enterprise Services also solicited feedback from the Executive Work Group, Technical Work Group, and Community Sounding Board on if and how weighting should be applied to the scores to prioritize criteria (i.e., should project goals be weighted more heavily [given priority] over other criteria). During meetings in May 2021, members participated in an exercise where they compared evaluation criteria individually using a pairwise process. The results of those discussion and exercises are summarized in the table below. In an unweighted (or equal weight) scenario, each criteria represents approximately 16.7% of the total score and represents the baseline. The table presents the aggregated scores for each group and the resulting average of the three groups.

Topic	Unweighted	EWG	TWG	CSB	Average
Project Goals	16.7%	33%	23%	27.2%	28%
Other Environmental Disciplines	16.7%	26%	24%	9.6%	20%
Construction Impacts	16.7%	0%	0%	10.8%	4%
Environmental Sustainability	16.7%	20%	20%	18.0%	19%
Economic Sustainability	16.7%	8%	12%	18.8%	13%
Decision Durability	16.7%	13%	21%	15.6%	16%



Following completion of the scoring process, the weighting scenarios were applied to the raw scores to determine whether weighting would alter or otherwise impact identification of the Preferred Alternative. As illustrated in the table below, under all weighting scenarios the Estuary Alternative scored highest. The various weighting schemes do alter the margins and serve as a functional stress test of the scoring exercise by ensuring the selected alternative meets the priorities of a wide variety of audiences.

Description	Estuary	Hybrid	Managed Lake	No Action	Preferred Alternative Margin
Raw Score (Unweighted)	38.1	25.0	28.3	25.7	9.8
EWG Weighting	42.8	30.8	26.0	18.6	12.0
TWG Weighting	43.3	29.3	25.1	17.8	14.0
CSB Weighting	39.3	26.2	27.8	23.6	11.5
Average of EWG, TWG and CSB Weighting	41.7	28.8	26.4	20.3	12.9

Exhibit 1 Decision Durability Narrative Responses

Exhibit 1
Decision Durability Narrative Responses—
City of Olympia

RESOLUTION NO. M-2284

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF OLYMPIA, WASHINGTON, SUPPORTING THE DECISION DURABILITY SCORECARD IDENTIFYING THE CITY'S LEVEL OF SUPPORT FOR ALTERNATIVES FOR LONG-TERM MANAGEMENT OF CAPITOL LAKE – DESCHUTES ESTUARY

WHEREAS, the Washington State Department of Enterprise Services (DES) is conducting an environmental review process under the State Environmental Policy Act for the Capitol Lake – Deschutes Estuary Long-Term Management Project; and

WHEREAS, through Engrossed Substitute Senate Bill 6095, the Washington State legislature required DES to 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 nonstate entities including, but not limited to, local governments, special purpose districts, tribes, and not-for-profit organizations; and

WHEREAS, through Engrossed Substitute Senate Bill 6248, the Washington State legislature required DES to complete a draft environmental impact statement with at least the three options of a managed lake, an estuary, and a hybrid lake by June 30, 2021, with the intent of a final environmental impact statement that includes identification of a preferred alternative for Capitol Lake management be completed by June 30, 2022; and

WHEREAS, on June 30, 2021, DES released the Draft Environmental Impact Statement, for the Capitol Lake – Deschutes Estuary Long-Term Management Project including information on long-term management alternatives and key findings from the technical analyses; and

WHEREAS, on August 10, 2021, the Olympia City Council passed Resolution M-2248 supporting the Estuary Alternative for long-term management of Capitol Lake – Deschutes Estuary; and

WHEREAS, with Resolution M-2248 the Olympia City Council requested the ability to provide additional input on selection of the Preferred Alternative to be identified in the final Environmental Impact Statement for the Capitol Lake – Deschutes Estuary Long-Term Management Project; and

WHEREAS, through an accord between the Squaxin Island Tribe and the City of Olympia, the City has expressed a commitment to support the restoration of the Deschutes Estuary, restore treaty-protected salmon populations, and coordinate and cooperate to protect natural resources and respond to climate change; and

WHEREAS, as part of the Preferred Alternative Identification Process, DES is requesting input from stakeholders (including the City of Olympia) by December 17, 2021, on the Decision Durability selection criteria (which alternative(s) are most likely to achieve long-term support from local tribes, stakeholders, and the

community). Input has been requested in the form of completing a scorecard to identify stakeholders' level of support for each alternative for long-term management of Capitol Lake - Deschutes Estuary; and

WHEREAS, this will be the City's last opportunity to provide input on the Preferred Alternative Identification Process for long-term management of Capitol Lake - Deschutes Estuary prior to issuance of the final Environmental Impact Statement.

NOW, THEREFORE, BASED ON THE RECITALS ABOVE, THE OLYMPIA CITY COUNCIL DOES HEREBY RESOLVE as follows:

- 1. The Olympia City Council hereby supports the Decision Durability scorecard, attached hereto as Exhibit A, identifying the City's level of support for alternatives for long-term management of Capitol Lake – Deschutes Estuary.
- 2. The Olympia City Council hereby requests that, given the impacts to the Squaxin Island Tribe and to address equity and social justice impacts, the Squaxin Island Tribe's input in the Decision Durability selection criteria be weighted more heavily than other partners given treaty rights under the Medicine Creek Treaty of 1854 and Tribal interests in the health of the Budd Inlet ecosystem as a whole.
- 3. The Olympia City Council hereby thanks DES for the opportunity to provide input on the Decision Durability selection criteria as part of the Preferred Alternative Identification Process for the Capitol Lake - Deschutes Estuary Long-Term Management Project.

PASSED BY THE OLYMPIA CITY COUNCIL this	L4th day of	December	_ 2021.	
	Self	-y		
ATTEST:				
Sean Krier				
APPROVED AS TO FORM:				
Mark Barber				

Decision Durability is the ability of an alternative to achieve long-term support from local tribes, stakeholders, and communities. Please use the scoring below to provide your entity's feedback on Decision Durability for each alternative.

Please submit your feedback via email to <u>carrie.martin@des.wa.gov</u> no later than Dec. 17, 2021. Please include a score and narrative response for each alternative; complete responses for each alternative are needed to include your feedback in Enterprise Services evaluation of the alternatives.

Please identify the level of support by you/the constituents that you represent for each alternative.

Alternative	Fully support or mostly support			, , , , , , , , , , , , , , , , , ,				rtially	Low support or cannot support		
Estuary	10	9	8	7	6	5	4	3	2	1	
Hybrid	10	9	8	7	6	5	4	3	2	1	
Managed Lake	10	9	8	7	6	5	4	3	2	1	
No Action	10	9	8	7	6	5	4	3	2	1	

Please include with your rating a brief narrative describing your reasons for this score and answers to the following questions.

What about each alternative **INCREASES** your/your constituencies support of this alternative?

What about each alternative **DECREASES** your/your constituencies support of this alternative?

Estuary Alternative

What increases the City of Olympia's support for the Estuary Alternative?

- Through an accord between the Squaxin Island Tribe and the City of Olympia, the City has expressed a commitment to support the restoration of the Deschutes Estuary, restore treaty-protected salmon populations, and coordinate and cooperate to protect natural resources and respond to climate change.
- The Estuary Alternative would beneficially affect tribal populations through the cultural, heritage, spiritual, and educational value that an estuarine environment provides. (page 4-118)
- The draft EIS Water Quality Discipline Report (page 5-14) estimates that with the Estuary Alternative there will be an improvement in dissolved oxygen in Budd Inlet over the Managed Lake and Hybrid Alternatives.

- The Estuary Alternative would pose the least risk of potential increased utility and ratepayer costs associated with water quality regulation would occur if new TMDL allocations shift additional responsibilities for nutrient reduction to wastewater and stormwater dischargers.
- Reintroducing tidal hydrology to the Capitol Lake Basin would benefit many of the species of importance to local area tribes, including salmon and shellfish, and potentially other fish and wildlife, as well as plants. (Executive Summary page 35)
- Estuarine habitat in the South Sound has experienced severe reductions in both the quantity and quality of such key habitats for fish. Because of this, the transition in habitat type from freshwater lake to estuary would be highly valuable. (Executive Summary pages 4 and 5)
- The mixing of freshwater and saltwater in estuarine environments creates some of the most productive and valuable habitat on earth. The reestablishment of estuarine conditions by reintroducing saltwater and tidal influences to the Capitol Lake Basin would substantially improve ecological functions in the Project Area. In addition to supporting key ecological processes, estuarine conditions would provide productive habitat for shellfish, salmon, other anadromous species, and marine fish in the area, potentially including Endangered Species Actlisted Chinook.salmon (non-hatchery) and steelhead trout. Shallow water habitats with salt marsh vegetation along the shoreline would provide preferred forage and rearing habitat for juvenile salmon. (Executive Summary page 17)
- Under the Estuary Alternative, the conversion of freshwater lake habitat to a tidally influenced brackish estuary would substantially benefit anadromous fish and marine fish, potentially including ESA-listed Chinook salmon and steelhead trout, as well as shellfish. (page 4-63)
- Under the Estuary Alternative, aquatic invasive species that are intolerant to saltwater (e.g., New Zealand mudsnail, Eurasian watermilfoil, curly pondweed) would be largely eradicated from the area with the transition from freshwater to saltwater. (page 4-69)
- Maximum water levels for the Estuary Alternative would be slightly (≤1 foot [≤0.3 meters]) lower than those of the No Action and Managed Lake Alternatives. (Page 4-106)
- During extreme river floods (with 2 feet [0.61 meters] of RSLR), the Estuary Alternative would reduce the extent and intensity of flooding compared to the No Action and Managed Lake Alternatives. (Page 4-106)
- The total cost of Estuary Alternative over 30 years would be \$70 to \$271 million dollars less than the Managed Lake and Hybrid Alternatives. (page 4-184)
- The Estuary and Hybrid Alternatives would provide more opportunity for carbon sequestration and less methane emissions than the Managed Lake Alternative, with the Estuary providing slightly more storage capacity than the Hybrid Alternative. (Economics Discipline Report page ES-7).
- The Estuary alternative promotes the greatest levels of consistency with Guiding Principles in the 2017 Thurston Climate Adaptation Plan.
- With the Estuary Alternative, enhancements to trails, habitat areas, and restored water-based recreation would increase the value of recreation in the Capitol Lake Basin.
- Construction of a temporary 5th Avenue bridge could mitigate construction impacts and provide redundancy and provide improved traffic flow in this vital part of the City's transportation and utility network.

What **decreases** the City of Olympia's support for the Estuary Alternative?

Not applicable.

Hybrid Alternative

What **increases** the City of Olympia's support for the Hybrid Alternative?

Not applicable.

What decreases the City of Olympia's support for the Hybrid Alternative?

- Improvements in ecological functions with the Hybrid Alternative would be less substantial than for the Estuary Alternative.
- Over 30 years, the Hybrid Alternative would cost \$70 to \$127 million more than the Estuary Alternative.
- Of the three action alternatives, the Hybrid Alternative would generate the highest levels of GHG emissions during construction (Attachment 11, page 5-14)
- The Hybrid Alternative would have slightly less net carbon sequestration when compared to the Estuary Alternative because of the decreased area of saline marsh in the North Basin (Attachment 11, page 5-16).
- The Budd Inlet sediment deposition for the Hybrid Alternative would be approximately 23% greater than the predicted deposition for the Estuary Alternative. (page 4-8).
- The Department of Enterprise Services indicates that the final Environmental Impact
 Statement may include a freshwater (groundwater fed) rather than saltwater reflecting pool for
 the Hybrid Alternative. The City is concerned with the feasibility of a groundwater fed
 freshwater reflecting pool. Flow rates from existing artesian wells in downtown Olympia would
 not support sufficient water exchange to maintain water quality in a reflecting pool. Water
 rights for groundwater to feed the reflecting pool would also be highly speculative.

Managed Lake Alternative

What **increases** the City of Olympia's support for the Managed Lake Alternative?

Not applicable.

What **decreases** the City of Olympia's support for the Managed Lake Alternative?

- The Managed Lake Alternative would have no change in impact on water quality in Lower Budd Inlet compared to existing conditions based on there being no changes in DO or general condition of habitat for cold water fish and no change in the extent or frequency of algae blooms. Budd Inlet would continue experience low DO concentrations that do not meet DO standards each summer especially in the lower water column. (Water Quality Discipline Report Page 5-9)
- 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. (page 7-11)
- Improvements in ecological functions with the Managed Lake Alternative would be substantially less than for the Estuary Alternative.
- Potential utility and ratepayer costs associated with water quality regulation would occur if new TMDL allocations shift additional responsibilities for nutrient reduction to wastewater and stormwater dischargers.

- Over 30 years, the Managed Lake Alternative would cost \$158 to \$271 million more than the Estuary Alternative.
- With the Managed Lake alternative, Tribal values would continue to be adversely impacted by the loss of connection to the natural environment and anthropogenic harm to natural ecosystems.
- The water quality improvements from a yet to be developed adaptive lake management plan are uncertain.
- The Managed Lake Alternative would not promote consistency with the Guiding Principles in the 2017 Thurston Climate Adaptation Plan, capturing and storing GHG emissions (page 4-86)
- Under the No Action and Managed Lake Alternatives, impacts would be significant if Ecology requires LOTT and other dischargers to implement more stringent actions for stormwater and wastewater discharges to improve water quality and meet regulatory standards in the basin.
- Among all alternatives, the highest maximum water levels and greatest extent of flooding would occur for the Managed Lake Alternative during extreme river floods. (page 4-2)

No Action Alternative

What increases the City of Olympia's support for the No Action Alternative?

• Not applicable.

What decreases the City of Olympia's support for the No Action Alternative?

- The No Action Alternative is not sustainable.
- The No Action Alternative would not improve water quality.
- The No Action Alternative would not manage sediment or future deposition.
- The No Action Alternative would not improve ecological functions.
- The No Action Alternative would not enhance community use of the resource.
- The No Action Alternative would not provide net environmental benefits.
- Under the No Action and Managed Lake Alternatives, impacts would be significant if Ecology requires LOTT and other dischargers to implement more stringent actions for stormwater and wastewater discharges to improve water quality and meet regulatory standards in the basin.
- Among all alternatives, the highest maximum water levels and greatest extent of flooding would occur for the Managed Lake Alternative during extreme river floods. The No Action Alternative would experience similar, although slightly lower, water levels during extreme river floods. (page 4-2)

Exhibit 1 Decision Durability Narrative Responses— City of Tumwater



City Hall 555 Israel Road SW Tumwater, WA 98501-6515 Phone: 360-754-5855

Fax: 360-754-4138

December 16, 2021

Department of Enterprise Services Capitol Lake – Deschutes Estuary EIS PO Box 41476 Olympia, Washington 98504-147

RE: City of Tumwater Feedback on Decision Durability

Thank you for the opportunity to provide feedback regarding decision durability as part of the process for identifying a preferred alternative for the Capitol Lake – Deschutes Estuary Long-Term Management Project Environmental Impact Statement. Tumwater appreciates the time and effort being taken to gather this feedback from stakeholders to inform this important decision. We also appreciate all the work the Department of Enterprise Services and the project team has put into this process thus far.

At your request, attached is our decision durability matrix and a discussion of factors that we believe increase and decrease our community's support for each alternative. This information has been reviewed by the Tumwater City Council and our Finance & Governance and Technical Committee representatives. We believe this reflects our community's values and vision as well, although, we have not issued a poll to confirm this.

On a personal level, I have enjoyed working with DES staff and the project team over the years as the various studies have been completed. I have been impressed with the professionalism, openness, and technical acumen of the project team. I hope I have been able to contribute in some small way to a better project.

The future Tumwater Executive Committee representative will be Councilmember Michael Althauser with Mayor Debbie Sullivan as his backup. Our Finance and Governance Committee representative remains City Administrator John Doan and our Technical Committee representative remains Dan Smith, Director of Water Resources & Sustainability.

Again, thank you for the opportunity to provide meaningful input into this decision-making process. I look forward to a successful alternative selection and implementation.

Sincerely

Pete Kmet

Mayor, City of Tumwater

Pita Knext

c: Tumwater City Council
Mayor Elect Debbie Sullivan
John Doan, City Administrator
Dan Smith, Director of Water Resources and Sustainability



Decision Durability is the ability of an alternative to achieve long-term support from local tribes, stakeholders, and communities. Please use the scoring below to provide your entity's feedback on Decision Durability for each alternative.

Please submit your feedback via email to <u>carrie.martin@des.wa.gov</u> no later than Dec. 17, 2021. Please include a score and narrative response for each alternative; complete responses for each alternative are needed to include your feedback in Enterprise Services evaluation of the alternatives.

Please identify the level of support by you/the constituents that you represent for each alternative.

Alternative	Fully support or mostly support			Mostl	y suppo sup	rt or pa port	rtially	Low su	pport or support	cannot
Estuary	10	9	8	7	6	5	4	3	2	1
Hybrid	10	9	8	7	6	5	4	3	2	1
Managed Lake	10	9	8	7	6	5	4	3	2	1
No Action	10	9	8	7	6	5	4	3	2	1

Please include with your rating a brief narrative describing your reasons for this score and answers to the following questions.

Please note that these rankings primarily reflect the perspectives of the Tumwater City Council and Mayor. While we believe these rankings also reflect the views of an informed community, we have not surveyed our constituents to confirm this.



What about each alternative INCREASES your/your constituency's support of this alternative?

Estuary

- That lower Budd Inlet will be returned most closely to its natural state
- That it's likely we will be able to secure permits to implement this alternative, since the Tribe and Natural Resource permitting agencies are in favor of this alternative
- That it should be easier to secure state and federal funding to implement this alternative, since the Tribe and Natural Resource permitting agencies are in favor of this alternative
- That there will be a plan and financing for managing sediment that will accumulate in lower Budd Inlet so that navigation is maintained to the Port and Percival Landing
- That water quality in lower Budd Inlet will be improved, reducing the need for expensive upgrades to the LOTT treatment plant
- That salmon migration will be enhanced by removing the dam
- That public access to the water will be improved
- That removing the dam would return the falls to a direct plunge into Puget Sound, restoring a
 unique geologic and cultural feature, supporting public recreation and tourism. This direct
 plunge would also inject much needed oxygen directly into lower Budd Inlet and restore an
 important cultural site for local tribes
- That removing the dam would restore navigable access to Puget Sound from Tumwater, an important cultural feature that drew the Bush-Simmons party to this location to establish the first American pioneer settlement in Washington State
- That preservation of the Historic Brewery buildings and restoration of the waterfront at the Historic Brewery in Tumwater's Historic District are enhanced by this option
- Assuming regional trails are incorporated into the final EIS and receive support of the Tribe, their inclusion will significantly broaden support for this alternative

Hybrid (the following assumes the reflecting pool is a fresh water lake)

- That there will be a permanent reflecting pool
- That there will be a plan and financing for managing sediment that will accumulate in lower Budd Inlet so that navigation is maintained to the Port and Percival Landing
- That water quality in lower Budd Inlet will be improved, reducing the need for expensive upgrades to the LOTT treatment plant
- That salmon migration will be enhanced by removing the dam
- That public access to the water is improved and the potential for a future swimming area
- That removing the dam would return the falls to a direct plunge into Puget Sound, restoring a
 unique geologic and cultural feature, supporting public recreation and tourism. This direct
 plunge would also inject much needed oxygen directly into lower Budd Inlet and restore an
 important cultural site for local tribes
- That removing the dam would restore navigable access to Puget Sound from Tumwater, an important cultural feature that drew the Bush-Simmons party to this location to establish the first American pioneer settlement in Washington State
- That preservation of the Historic Brewery buildings and restoration of the waterfront at the Historic Brewery in Tumwater's Historic District are enhanced by this option
- Assuming regional trails are incorporated into the final EIS and receive support of the Tribe, their inclusion will significantly broaden support for this alternative
- That there will be a public pathway on top of the dike separating the lake from the estuary



• The potential for the dike to help protect the downtown area from flood events

Managed Lake:

- That this alternative maintains the largest, consistent reflecting pool
- This alternative represents the least amount of change from the current condition

No Action:

- This is the least fiscally expensive alternative and as such, a local tax increase may not be needed to support it
- Perceived lack of urgency by many that don't frequent the lake area or have a direct interest

What about each alternative **DECREASES** your/your constituency's support of this alternative?

Estuary:

- The potential need for a local tax increase to implement this alternative
- By proposing to not remove much of the sediment in the lake, the uncertainty that this option could result in transfer of costs for managing sediment from a capital cost, largely paid for by the state/federal governments, to an operating cost, largely paid for by local residents and businesses
- The uncertainty that navigation of lower Budd Inlet can be maintained at a reasonable cost
- The uncertainty that this option will truly result in a reflecting pool most of the time and that it will be able to be maintained as such over time
- As presented in the draft EIS, the islands in the North Basin block reflection views of the Capitol
- The potential impacts of sediment deposition on the viability of the Yacht Club and other existing water front uses
- As presented in the draft EIS, the failure to incorporate the regional trail system

Hybrid (the following assumes the reflecting pool is a fresh water lake)

- The uncertainty that we will be able to secure permits for this alternative, since it incorporates only a partial estuary and may not gain support of the Tribe
- Given that this is more expensive than a full estuary, and that the Tribe has not concurred with this alternative, it may be more difficult to secure state and federal funding to implement this alternative
- The potential need for a local tax increase to implement this alternative
- By proposing to not remove much of the sediment in the lake, the uncertainty that this option could result in transfer of costs for managing sediment from a capital cost, largely paid for by the state/federal governments, to an operating cost, largely paid for by local residents and businesses
- The uncertainty that navigation of lower Budd Inlet can be maintained at a reasonable cost
- As presented in the draft EIS, the islands in the North Basin block reflection views of the Capitol
- The potential impacts of sediment deposition on the viability of the Yacht Club and other existing water front uses
- As presented in the draft EIS, the failure to incorporate the regional trail system
- The uncertainty that enough fresh water is available to maintain a fresh water lake
- The uncertainty that the lake will meet water quality standards and not contribute to continued degradation of lower Budd Inlet (through discharge of organic matter)

- The uncertainty as to whether this option will significantly adversely affect salmon migration (vs. a full estuary)
- The unattractive appearance of the sheet pile wall and dike separating the lake from the estuary

Managed Lake

- That it will be very difficult, if not impossible to secure permits to dredge the lake, given the Tribes objection to this alternative because it fails to remove the dam
- The higher capital cost of this alternative, given the need for upland sediment disposal
- That without tribal concurrence with this alternative, it will be nearly impossible to secure
 Federal funding to implement this alternative, and may be more difficult to secure State
 funding
- The potential need for a local tax increase to implement this alternative
- Vegetation blocking views and water access to Tumwater's Historic District, making this area less attractive for restoration
- That this alternative will likely not improve water quality, resulting in the need for LOTT to make expensive upgrades

No Action

- The eventual loss of the lake as a reflecting pool due to sediment accumulation
- The continued degradation of water quality in the lake and Budd Inlet
- The lack of lake access now and in the future
- Vegetation blocking views and water access to Tumwater's Historic District, making this area less attractive for restoration
- That this alternative will likely not improve water quality, resulting in the need for LOTT to make expensive upgrades

Exhibit 1 Decision Durability Narrative Responses— LOTT Clean Water Alliance



December 15, 2021

Department of Enterprise Services Capitol Lake – Deschutes Estuary EIS PO Box 41476 Olympia, Washington 98504-147

RE: LOTT Feedback on Decision Durability

Thank you for the opportunity to provide feedback regarding decision durability as part of the process for identifying a preferred alternative for the Capitol Lake – Deschutes Estuary Long-Term Management Project Environmental Impact Statement. The LOTT Clean Water Alliance appreciates the time and effort being taken to gather this feedback from stakeholders to inform this important decision. We commend the Department of Enterprise Services and the project team for all the work that has gone into the process thus far.

The LOTT Board of Directors met December 8 to discuss the feedback request. The Board agrees that the information that follows accurately reflects LOTT's level of support for each of the four management alternatives. As the narrative explains, these levels of support are based primarily on potential to improve water quality in Budd Inlet, as the issue of greatest importance to LOTT and LOTT ratepayers.

LOTT Board of Directors:

DocuSigned by:

Pete Kmet

Pete Kmet, LOTT Board President City of Tumwater Representative

─DocuSigned by:

Cynthia Pratt, LOTT Board Vice President

City of Lacey Representative

DocuSigned by:

lisa Parshley

Lisa Parshley, LOTT Board Member City of Olympia Representative

-DocuSigned by:

Tye Menser —38280580324C4C4...

Tye Menser, LOTT Board Member Thurston County Representative

LOTT Clean Water Alliance – Level of Support for Alternatives

Alternative	Fully support or mostly support						Low support or cannot support			
Estuary	10	9	8	7	6	5	4	3	2	1
Hybrid	10	9	8	7	6	5	4	3	2	1
Managed Lake	10	9	8	7	6	5	4	3	2	1
No Action	10	9	8	7	6	5	4	3	2	1

The following narratives describe the rationale for the scores above, and are based primarily on comments previously provided in response to the DEIS.

Estuary Alternative

Factors that INCREASE LOTT's support of the estuary alternative:

The estuary option significantly improves water quality in Budd Inlet. This is of greatest importance to LOTT and LOTT ratepayers because LOTT is subject to stringent water quality discharge permit requirements and an active TMDL for Budd Inlet.

Dissolved inorganic nitrogen in the inlet has contributed to low dissolved oxygen and an impaired water designation. Department of Ecology modeling shows that approximately 2/3 of the excess dissolved inorganic nitrogen loading is attributable to the existence of the Capitol Lake dam (Roberts 2015). In addition, the Ecology report offers this conclusion: Overall, the Capitol Lake dam has the single largest impact on Budd Inlet DO concentrations. The negative impact results from the combined effects of circulation in southern Budd Inlet, carbon loading from Capitol Lake, and nitrogen loading from Capitol Lake. The net effect is to decrease DO concentrations by over 0.2 mg/L throughout much of Budd Inlet and as much as 2 mg/L in portions of East Bay (Roberts 2015).

The upcoming TMDL will apportion waste load allocations to each of the various sources. Because Capitol Lake is the greatest anthropogenic source to low dissolved oxygen in Budd Inlet, the removal of the dam and the estuary solution is predicted to significantly increase the level of dissolved oxygen in Budd Inlet.

In the absence of the estuary solution, a greater portion of the TMDL burden will fall on LOTT and require costly investment in additional treatment infrastructure. The cost of these additional requirements is estimated to be as high as \$208 million. That would result in significant and disproportionate impact to LOTT ratepayers, who have already invested approximately \$60 million over the last three decades on the construction of nutrient removal treatment system upgrades.



LOTT contends that the benefit of improved dissolved oxygen from the estuary solution would be substantial from a water quality perspective, as well as from a utility ratepayer perspective.

Factors that DECREASE LOTT's support of the estuary alternative:

None. Of all of the alternatives, the estuary is the only alternative that has been modeled to improve water quality in Budd Inlet. For this reason, LOTT supports the estuary alternative as the preferred option.

Hybrid Alternative

Factors that INCREASE LOTT's support of the hybrid alternative:

The hybrid alternative includes both a smaller lake and a smaller estuary. LOTT has partial support for this alternative because there may be some benefit to water quality in Budd Inlet given the removal of the dam and the free flow of the Deschutes River.

There has not been a model for this alternative, so it is unclear what impact the hybrid would have on dissolved oxygen levels and water quality in Budd Inlet. Modeling by Ecology for this alternative would be needed to assess its relative benefit. If modeling showed a significant improvement in Budd Inlet dissolved oxygen levels, LOTT's level of support for this alternative would increase.

Factors that DECREASE LOTT's support of the hybrid alternative:

The hybrid alternative includes a lake that would still contribute nitrogen and carbon to Budd Inlet, thereby decreasing dissolved oxygen. The full extent of this potential depletion is not known.

The total estimated cost of this alternative is more than that of the estuary, while its water quality benefit will likely be less.

Managed Lake Alternative

Factors that INCREASE LOTT's support of the managed lake alternative:

None. The managed lake will not address water quality impairment in Budd Inlet that is the result of the lake and the dam. Costs for this alternative are also higher than either the estuary or hybrid alternative.

Factors that DECREASE LOTT's support of the managed lake alternative:

If the lake remains in place, its contribution to water quality impairment in Budd Inlet would not be adequately addressed. This could leave Ecology with no choice but to place added requirements on LOTT's discharge. The cost of these additional requirements would be a significant impact to LOTT ratepayers. For these reasons, LOTT finds that the managed lake or no action alternatives would have significant detrimental impact on water quality in Budd Inlet and on LOTT ratepayers.

A decision about future management of the lake presents an opportunity to improve water quality in Budd Inlet. If Capitol Lake is allowed to remain, its negative impacts to Budd Inlet water quality will continue and this critical opportunity to improve water quality will have been lost.



No Action Alternative

Factors that INCREASE LOTT's support of the no action alternative:

None. This alterative does not address the contribution of the existing lake and dam to water quality impairment in Budd Inlet.

Factors that DECREASE LOTT's support of the no action alternative:

This alternative does not address any of the goals stated in the draft EIS Purpose Statement: 1) Improve water quality, 2) Manage sediment accumulation and future deposition, 3) Improve ecological functions, and 4) Enhance community use of the resource.

Exhibit 1
Decision Durability Narrative Responses—
Port of Olympia



606 Columbia St NW, Suite 300 | Olympia, WA 98501 360.528.8000 | F: 360.528.8090 | portolympia.com

December 17, 2021

Department of Enterprise Services Capitol Lake – Deschutes Estuary Long-Term Management Project EIS carrie.martin@des.wa.gov

SUBMITTED VIA EMAIL

RE: Port of Olympia DEIS Alternatives Decision Durability feedback

Dear Ms. Martin,

With this letter we are transmitting the Port of Olympia's Decision Durability feedback on the Capitol Lake – Deschutes Estuary (CL-DE) Long-Term Management Project Draft Environmental Impact Statement (DEIS) project alternatives, as requested by the Washington State Department of Enterprise Services (DES). It is our understanding "Decision Durability" is one of six Evaluation Criteria that will be used by DES to select a Preferred Alternative for long-term management of the CL-DE. DES is working with their discipline leads to evaluate the various alternatives against the identified criteria, and has requested feedback from engaged tribes, governmental and agency partners, the Community Sounding Board convened for the project, and the State Capitol Committee specifically on the "Decision Durability" criterion.

"Decision Durability" is described in the DEIS as the ability of an alternative to achieve long-term support from local tribes, stakeholders, and communities. As requested by DES, for each alternative evaluated in the DEIS the Port is providing both a numeric score and a narrative description of what increases and decreases support for each alternative. This feedback was developed during a Port Commission work session on December 6, 2021. At this work session, each commissioner discussed the scores and thoughts they had on all four alternatives described in the DEIS. The scores have been averaged and presented, below, along with the Commissioners' individual thoughts regarding each alternative (please note: not all narrative comments are uniformly supported by all of the commissioners, but rather are reflective of their individual perspectives). Lastly, the Commission reviewed and refined this letter at the regular Port Commission meeting on December 13, 2021.

Managed Lake Alternative

Averaged Numeric Score: 5.33

What increases support for this alternative?

- If it did a better job of improving water quality, ecological function, other environmental disciplines and environmental sustainability.
- If it had any potential to contribute to restoration of salmon habitat.
- If additional information regarding dredging and navigational impacts were provided, particularly related to consistent and comparable dredge disposal cost estimates, and as requested in the Port's comment letter.

What decreases support for this alternative?

- If it didn't do an adequate job of sediment disposal.
- A lack of information regarding dredging and navigational impacts, particularly related to consistent and comparable dredge disposal cost estimates.

Estuary Alternative

Averaged Numeric Score: 5

What *increases* support for this alternative?

- If DES did a better job of convincing us of community benefit.
- If additional information regarding dredging and navigational impacts were provided, particularly related to consistent and comparable dredge disposal cost estimates, and as requested in the Port's comment letter.

What decreases support for this alternative?

• A lack of information regarding dredging and navigational impacts, particularly related to consistent and comparable dredge disposal cost estimates.

Hybrid Alternative

Averaged Numeric Score: 3.33

What *increases* support for this alternative?

- If it included a more natural berm as opposed to the proposed sheetpile wall.
- If it included a freshwater lake.
- If it included swimming and additional boating resources, in addition to kayaking.
- If it were less costly.
- If it included a saltwater lake.
- If additional information regarding dredging and navigational impacts were provided, particularly related to consistent and comparable dredge disposal cost estimates, and as requested in the Port's comment letter.

What decreases support for this alternative?

- If it included the freshwater lake because of impacts to the aquifer needed for drinking water.
- A lack of information regarding dredging and navigational impacts, particularly related to consistent and comparable dredge disposal cost estimates.

No Action Alternative

Averaged Numeric Score: 1.33

What increases support for this alternative?

• If it could at least solve the New Zealand mud snail issue.

What decreases support for this alternative?

- It shouldn't be considered, it is what is being experienced now and it isn't getting better.
- It would be disappointing if nothing happened.
- It doesn't fulfill any project goals.

Conclusion

The Port remains dedicated to partnering with DES and the community to develop an environmentally and economically sustainable long-term management plan for this significant community resource. Our staff are available and committed to providing assistance in addressing the requested additional investigations, analyses and collaborative discussions with regulatory agencies, particularly USACE. We appreciate the recent opportunity to meet with DES and its consultants to discuss the Port's DEIS comment letter, and look forward to working collaboratively to address the complex issues of dredging, navigation, federal permitting, cost estimates and funding and governance models.

Respectfully,

Joe Downing, President

Port of Olympia Board of Commissioners

Exhibit 1 Decision Durability Narrative Responses— Thurston County



COUNTY COMMISSIONERS

Carolina Mejia
District One
Gary Edwards
District Two
Tye Menser
District Three

BOARD OF COUNTY COMMISSIONERS

December 8, 2021

Ms. Carrie Martin Environmental Planner Washington State Department of Enterprise Services 1500 Jefferson Street SE – MS 41476 Olympia WA 98504

Re: Decision Durability for Capitol Lake – Deschutes Estuary (CLDE)

Dear Ms. Martin,

This correspondence is regarding your email dated November 1, 2021, to the CLDE Executive Work Group requesting a written response from Thurston County on the alternatives listed in the Draft Environmental Impact Statement (EIS) using the Decision Durability matrix you provided.

Thurston County implemented a similar process outlined on your November 1, 2021 email, that is, averaging different perspectives related to the alternatives. As a result, each County Commissioner (3) provided individual scores on the three alternatives, I compiled all three scores and used a simple averaging method, resulting in the following:

Estuary Alternative: 6.7 pointsHybrid Alternative: 5.3 points

Managed Lake Alternative: 4.7 points

No Action Alternative: 1 point

I would like to emphasize, the scores provided are not the reflection of individual Commissioners perspectives and opinions, but rather a simple scoring mechanism that does not involve a legislative action.

In addition, the scores provided to you don't preclude the Board of County Commissioners from taking future legislative action(s) on this matter. Further, this letter does not bind the County on any present or future financial obligations related to any of the proposed alternatives listed on the Draft EIS.

If you have any questions, please contact me, at ramiro.chavez@co.thurston.wa.us or at (360) 754-2960. Thank you.

Sincerely,

Ramiro Chavez, PE, PgMP

County Manager

chavezr@co.thurston.wa.us

(360) 754-2960

Exhibit 1 Decision Durability Narrative Responses— Community Sounding Board



Community Sounding Board Member Responses: Decision Durability Questionnaire

ESTUARY ALTERNATIVE

Response ID	Level of support for Estuary Alternative (1-10)	What about the Estuary Alternative increases your/your organization's support of this alternative?	What about the Estuary Alternative decreases your/your organization's support of this alternative?
1	10	It is the best option for ecological restoration, for salmon habitat, and is the least costly option in the long run.	Long project timeline, disruption to traffic on the 5th avenue bridge.
2	3	The claims, if true, of benefits to Bud Bay with regard to water quality and benefits to fish and wildlife. Potential for an option like this to attract Federal funding. Support of Tribes, Dept. of Ecology, DFW and DNR	Upon reviewing the comments, I was left with many questions about the analysis and assumptions that led me to believe the sacrifices of the bats, the costs to stakeholders in Bud Bay, the Heritage groups was not warranted. CLPPA points out questions about cost analysis, for example industrial design for 5th avenue bridge (bad) and in water disposal for estuary option. Lack of funding mechanism and impacts from sediment and debris washed into Bud Bay. Who will fund dredging every 6 to 7 years? The Bats are a major concern. There is no mitigation mentioned, or information to suggest the colony will still thrive. They are not a charismatic or economically valuable animal, thus have few advocates. Comments from old timers suggest that historically



Response ID	Level of support for Estuary Alternative (1-10)	What about the Estuary Alternative increases your/your organization's support of this alternative?	What about the Estuary Alternative decreases your/your organization's support of this alternative?
		It would be beneficial envitonmentally	(before the dam) this was a poor smelling mudflat. How do we know that will change. The dam was put in as an overall design feature, but also as a settling pond for sediment. So how is the current solution better for managing sediment, when it must be removed from a less concentrated area and pilings must be removed to do so? It seems the design is functioning as intended and this problem is created by neglect, not bad design.
3	3	It would be beneficial envitonmentally.	It doesn't support the lake as a focal point for the capital campus, the walk around the lake, and the city. Though very environmentally sound, it seems too small to have a big impact on climate change, or salmon habitat. To me, it feels like it will turn into a "walk in the woods" rather than a large attractive spot in the center of town. It also increases dredging needs as I understand them.
4	8	Re-creating a fresh-water waterfall into the salt water of Puget Sound is a compelling feature of the Estuary alternative. Among other things, it would allow canoe/kayak access from Budd Inlet to the foot of the falls. The managed lake option is often cast as a preservation of history but, obviously, the estuary, as a natural feature, has a longer history.	My principal reservation about the Estuary alternative is the lack of dredging and other mitigation steps in the south basin; principally, no conscious steps to re-create the wide open water vista in front of the historic brewery that existed before the dam.
5	6	It's a good option environmentally. Wildlife and water quality would be greatly improved. It is a good function	Though there will always be water in the estuary, it is not the natural river flow people like to see. It won't be



Response ID	Level of support for Estuary Alternative (1-10)	What about the Estuary Alternative increases your/your organization's support of this alternative?	What about the Estuary Alternative decreases your/your organization's support of this alternative?
		system that would reduce serious flooding, restore salmon and the most historical.	visually appealing to most people. It would require a lot of expensive dredging for many years.
6	2	Native American input/historic fish runs	Visual and olfactory impact of mudflats in the middle of downtown Olympia at low tide. Sediments washing into West Bay. Economic impact on downtown businesses during lengthy construction and closure of 5th Ave.
7	9	As someone who grew up in the south puget sound region I have a deep love of the ephemeral beauty of tidal landscapes. I love the energy, vitality, and sensory qualities of salt marshes and mud flats. I also understand them as foundational, precious and incredibly biodiverse landscapes that are being lost at alarming rates just about everywhere they exist. As a student of landscape architecture I spend a lot of time thinking about how people relate to and connect with place. Rather than rallying to preserve colonial aesthetics that attempt to control ancient flows and processes, I love the idea of community members rediscovering and connecting with their estuary as a source of health, beauty and unique regional identity. When friends and family members come to visit I don't take them to see Capitol Lake. I take them to Nisqually, to Mud Bay, to Totten Inlet interesting and dynamic landscapes that are full of life and change. I have been to the headwaters of the Deschutes. The water is clean and beautiful. I have	The estuary's beauty depends on its health. In recent history estuaries have been perceived as wastelands and dumping grounds. I suspect that much of the odor and perceived ugliness that prompted the condemnation of Little Hollywood and the construction of the 5th Ave dam was due to trash and raw sewage that was being dumped in the estuary. I'm concerned that if we don't care for and find ways to shelter those living in encampments along its banks and don't work to address sources of point and non-point source pollution throughout the watershed, we may be presented with similar problems.



Response ID	Level of support for Estuary Alternative (1-10)	What about the Estuary Alternative increases your/your organization's support of this alternative?	What about the Estuary Alternative decreases your/your organization's support of this alternative?
		watched it tumble joyfully down from the mountains on its way to the sound only to end up sitting stagnant in Capitol Lake. The sediment it brings with it is not going where it needs to go. It has become a problem, rather than a source of life. I would really like to see the fresh water of the river and the salt water of the sound reconnected and the sediment once more allowed to flow through in support of a healthy and vibrant tidal ecosystem.	
8	10	It is an estuary! The lake is an artificial, man made impoundment causing significant environmental and economic problems.	Nothing.
9	10	Estuaries are systems which have evolved for millions of years to fill a critical ecosystem function. The Deschutes estuary needs to be fully restored from the falls to the bay in order to best support salmon and other species, improve water quality and take a small step toward decolonization of the area. The Deschutes estuary has been an important cultural site for local Tribes for thousands of years. Washington State needs to both weigh the interests and recommendations of local Tribes above all other considerations and do everything possible to restore salmon habitat in support of our Treaty obligations.	Nothing.



Response ID	Level of support for Estuary Alternative (1-10)	What about the Estuary Alternative increases your/your organization's support of this alternative?	What about the Estuary Alternative decreases your/your organization's support of this alternative?
10	10	Beast value. As nature intended. increases diversity. Most elegant - solves the most issues with the least amount of work. Safest for adapting to local effects of climate change such as sea heating and expansion (rise), increase in precipitation, species loss,	They need to rely more on native environmental planners such as Candace.
11	1	There is no support in the North Capitol Campus Heritage Park Development Association for the removal of the historic tide lock and the destruction of Capitol Lake. The 1911 Wilder and White design and plan, in collaboration with the Olmsted Brothers, which included the reflecting lake as a significant and integral feature of the City Beautiful Movement design is protected under section 106 of the National Historic Preservation Act and other state statutes as they relate to the State Capitol Campus National Historic District. If the Deschutes River had a natural salmon run that had been destroyed by the creation of Capitol Lake then there would likely be more support for the removal of the historic tide lock. However, because Tumwater Falls prevented a natural wild salmon run, the creation of the tide lock and Capitol Lake along with the salmon ladders actually created a hatchery based salmon run that the tide lock and Lake continue to support and enhance.	The North Capitol Campus Heritage Park which is an integral part of the nationally historic Wilder and White design of the Capitol Campus is incompatible with the removal of the tide lock and the destruction of Capitol Lake. The Capitol Campus National Historic District would be irreparably damaged and the investment in the most beautiful State Capitol Campus in the United States would be wasted. The estuary water quality would be worse than the current good water quality of the Lake which is swimmable under the Clean Water Act. Capitol Lake also supports and created the current salmon run with the installation of the salmon ladders. Regulation of the water level of Capitol Lake through use of the tide lock prevents flooding in downtown Olympia and the North Capitol Campus. Retention of the tide lock will be useful to mitigate and alleviate the effects of sea level rise. The estuary would also allow the sediment which is currently collected in Capitol Lake to migrate into Budd Inlet where the sediment would become contaminated with the toxic sediment in Budd Inlet thus making



Response ID	Level of support for Estuary Alternative (1-10)	What about the Estuary Alternative increases your/your organization's support of this alternative?	What about the Estuary Alternative decreases your/your organization's support of this alternative?
			sediment management in the estuary much more expensive and frequent than sediment management in the Lake.
12	4	My support for the Estuary Alternative would increase if modified to retain a reflection pond in the north basin. A pond without any vegetated islands so a significant body of water would be retained at high tide and medium tide. My support would also increase if the cultural significance and historic presence of the local tribes was acknowledged and recognized in some way.	The north basin is not a reflective or lake like body of water. The mudflats would be a dominate feature at low tide. The peace and tranquility of a still water body, reflecting the capitol dome, city lights at night, or the sun's reflections on a sunny day is lost. There is not an aesthetically pleasing transition from city scape to the natural setting of the estuary. Recreational activities are more limited without a consistent body of water.
13	10	Return of more wildlife to the area, restoration to how it was naturally, more dynamic feature	N/A
14	10	Returning the estuary to its natural state will help the restore balance to Budd Bay. It will allow more feeder fish to survive along with the rest of the natural food chain to rebuild. This will be good for both salmon and Orca recovery. I also believe that this choice will be the least expensive choice.	We believe that this is the best overall choice.
15	8	It seems this is the only option where dreding would no longer be needed which has been the biggest challenging to maintaining the existing lake. This option would be very beneficial to salmon, environmental impacts - similar to the hybrid option. So many of the benefits of the estuary and hybrid are similar, including recreational	Both the estuary and hybrid alternatives indicate there would be water in them 80% of the time - at varying depths. The unknown of what varying depths looks like on a day-to-day basis is concerning. Seeing the models and graphs isn't the same as understanding what jogging



Response ID	Level of support for Estuary Alternative (1-10)	What about the Estuary Alternative increases your/your organization's support of this alternative?	What about the Estuary Alternative decreases your/your organization's support of this alternative?
		uses, however the maintance seems to be more	around a mudflat is like vs. a lake. I think that will be a
		manegable with the estuary alternative.	serious public concern.
16	10	Gains in ecological function and habitat diversity.	Nothing.
17	2	One of the most significant deficiencies of the overall DES structure of the EIS process, and in particular for the Estuary Alternative, is that DES has reported that the final preferred alternative selection is required before any work can begin. This precludes the inclusion of any new information that might be developed during the early stages of the project that might impact a valid decision. However, developing an Adaptive Management plan specifically designed for the Estuary Alternative could improve the decision-making process. This would allow adjustment of the plan as outstanding questions are resolved. These questions could include specific items such as sampling results, impact of invasive species and detailed construction cost estimates, as well as the overall sustainability of the entire project. The Adaptive Management plan would have clearly defined criteria for each area of study that support the overall project objectives. This would be particularly beneficial during the initial stages of the Estuary Alternative before any irreversible changes take place. One option would be to recognize that if the Estuary Alternative is selected, there is substantial engineering	The apparent mixed comparisons of "best case vs worst case" eliminates the appearance of an objective comparison using science based and factual data. See the list below. Most of these also apply to the Hybrid Alternative. If this alternative is implemented, it is important to note that dozens of negative effects of the Estuary Alternative will not be realized until many years after the alternative is constructed. There is no adaptive review of the key impacts and there will be no second chance to correct the probable impacts. No adaptive management and phased implementation is incorporated in the current design for the Estuary Alternative. The DEIS projects enormous cost differential between the Estuary and Managed Lake Alternatives using unsubstantiated assumptions and poor data reporting. There currently exists an alternative for disposal of lake sediment within the Deschutes River Basin at a much reduced costs. It is likely that competent, creative and unbiased scientists and engineers can develop an acceptable in-basin design during the 30 years before the first maintenance dredge of the Managed Lake



Response ID	Level of support for Estuary Alternative (1-10)	What about the Estuary Alternative increases your/your organization's support of this alternative?	What about the Estuary Alternative decreases your/your organization's support of this alternative?
		and preliminary work that must be completed before the actual, irreversible step of dam removal takes place. This preliminary work is likely to take several years, during which time many of the unresolved issues could be confirmed or clarified. Some of these include: Confirmation of improved water quality in Capitol Lake and assessment of water quality in Budd Inlet. Analysis of the loss of nitrogen removal capability of Capitol Lake and the impact on LOTT's requirements for discharge under the Estuary Alternative.	Alternative will be required. This option completely changes the cost comparisons in the DEIS, with the Managed Lake much lower and easier to construct than the Estuary. This will also continue to provide equal or better environmental and community benefits including the public's long held desire for freshwater recreation and aesthetics in the middle of the urban area.
17, contd.		Further sampling and research regarding New Zealand Mud Snails and their impact on both marine and freshwater sediment disposal. Establishment of funding sources for short and long-term sediment disposal from Budd Inlet as a result of dam removal. Completion of detailed engineering cost estimates for the Estuary Alternative and concurrence and acceptance by the City of Olympia for the design and construction schedule. Concurrence with the Federal Corps of Engineers on the impacts with the Port of Olympia. Analysis of the ecological and social impacts of toxic contaminants and marine invasive species in the projected intertidal mudflats created with this alternative. As the project progresses, but before an irreversible step takes place, the team could create a pause programmed into the	By disposing of the freshwater lake sediments, both from the first dredge in the North Basin and the next time 30 years later for routine maintenance dredging on farm or forest land in the Deschutes Basin, the concern for NZMS transport outside the basin is eliminated. Using the Capital Lake rail transportation system directly linked to the farm land location will significantly reduce cost and transportation disruptions in the City of Olympia. This inbasin sediment disposal benefit is true for the Estuary and the Managed Lake Alternative, for fresh water sediments. This is not true for marine water impacted sediments. The DEIS Executive Summary did not display realistic pictorials of the scheduled daily summer mudflats that will replace the current lake surface. Consequently the DEIS is not a realistic presentation to



Response ID	Level of support for Estuary Alternative (1-10)	What about the Estuary Alternative increases your/your organization's support of this alternative?	What about the Estuary Alternative decreases your/your organization's support of this alternative?
		schedule to formally evaluate the status of these or any other currently unresolved issues. Should new information raise significant questions that would alter the decision to proceed, this would provide an off-ramp to avoid or delay making a disastrous, irreversible error	the general public. The aesthetic comparison of alternatives are not fairly displayed. All alternative presentations should provide both "best case and worst case comparisons and let the reviewers make their own subjective decisionsthe DEIS should be objective and neutral. The DEIS did not present the known negative impacts of the continuous aqueous flow of hydrocarbon toxics (some which are carcinogenic) currently contaminating Budd Inlet that will invade the "very clean" waters of Capitol Lake basin under the Estuary Alternative. The warning signs now posted in the Budd Inlet mud flats will also be necessary for the new Capital Lake Estuary. These warning signs will be a strong negative for the reputation of Washington's capitol city. Also, there was no discussion in the DEIS of habitat impairment by mixing marine waters with existing Lake environmental conditions (vegetation die-off).
17, contd.			The mudflat entrapment danger in the new Estuary Mudflats, as noted by the Thurston County Health Department in other Budd Bay mudflats that currently exist, was not mentioned in the DEIS. The public's well documented desire for aesthetics and recreation (particularly swimming) was discussed and dismissed as a DES management decision—and not discussed as a realistic potential project benefit under the Managed



Response ID	Level of support for Estuary Alternative (1-10)	What about the Estuary Alternative increases your/your organization's support of this alternative?	What about the Estuary Alternative decreases your/your organization's support of this alternative?
			Lake Alternative. Under an Estuary or Hybrid Management Plan these benefits will be eliminated. The concepts of Aesthetics and Quality of Life regarding this issue should be of major importance. Two public surveys favoring the Lake (one from DES and the other from Thurston County) corroborate this. Yet, the DEIS has virtually ignored
18	10	The Estuary Alternative works to meet all four goals at an overall lower financial cost with the highest environmental benefit. Highest referring to the most environmentally sustainable option that supports a range of ecological functions and diversity. The estuary alternative provides the lowest ecological cost with the highest ecological and environmental return on investment.	If the dredging is unable to be recycled and needs to be transported upstream the significant increase in cost is clearly unappealing, though we support, as mentioned in the guiding principles, "those who help create the problem should fund the solution."
19	8	Once the investments are made to restore the mudflats to a more natural environment, there should be little human involvement necessary to keep the estuary in check. Restoration should have a positive effect on fish, wildlife, water quality, and recreation in the water, and walking/biking the paths around the estuary.	Spring and early summer day tides are primarily the lowest low tides so without the damn, the mudflats will be exposed during daytime limiting recreation and being the principal view. Selfishly I like enjoy seeing the water in the lake in the summer but I'm sure the mudflats will offer some new views that will be nice.
20	1	N/A	Lack of clarity on who pays and how much future costs will be for future sediment deposition and dredging needs in West Bay. As noted in comments on the DEIS, we believe the possible sediment deposition



Response ID	Level of support for Estuary Alternative (1-10)	What about the Estuary Alternative increases your/your organization's support of this alternative?	What about the Estuary Alternative decreases your/your organization's support of this alternative?
			estimates, and possible corresponding costs, by DES were grossly underestimated in the DEIS. Without an adequate, sustainable and long-term funding solution and dredging plan from state and/or federal governments, removal of the 5th Ave. dam could threaten the future existence of OYC, the other marinas in West Bay, and Olympia's working waterfront. In addition, the Estuary Alternative and removal of the 5th Ave. dam could remove the Deschutes River "nitrogen sink" (biofilter), which could lead to diminished water quality in West Bay. Increased mudflats also pose new safety risks.
21	10	The opportunity to let the river delta be shape and function that it was meant to be.	n/a
22	6	The all-Estuary Alternative restores the natural tidal ecosystem that will benefit fish, wildlife and water quality issues as well as Tribal restitution.	The fact that a significant number of people will oppose the all-Estuary approach. While it is scientifically sound and environmentally beneficial, it is not socially acceptable.



HYBRID ALTERNATIVE

Response ID	Level of support for Hybrid Alternative (1-10)	What about the Hybrid Alternative increases your/your organization's support of this alternative?	What about the Hybrid Alternative decreases your/your organization's support of this alternative?
1	5	Some estuary restoration.	Cost of lake management
2	5	This seems to satisfy a number of interest and has the greatest possibility for funding (especially Federal) and support.	The appearance of the wall is a huge issue. Suggestions of a vegetated island to soften the view may work as mitigation. This is a project that if well funded with and executed could be great. Given the history of funding for Capitol lake, the lack of promised cooperative ongoing funding for Bud Bay impacts, I have low confidence that the long term execution of this project will be successful. And, well, the Bats.
3	8	I think this is the "best of both worlds." It allows for healthy water for a much larger area than just a lake.	I could live with a lake.
4	5	The re-creation of a fresh-water waterfall into salt water and water-born access to Tumwater Historical Park and the old brewery from Budd Inlet, and arguably, more distant points.	the absence of any mitigation plan for the south basin that would reverse the long term damages created during the lake era



Response ID	Level of support for Hybrid Alternative (1-10)	What about the Hybrid Alternative increases your/your organization's support of this alternative?	What about the Hybrid Alternative decreases your/your organization's support of this alternative?
5	10	To support this project you will need the backing of long time Olympians. The "Lake" is what people want to see. A freshwater reflecting pool will bring the community together for celebrations and local festivals. It's the best of both worlds; an estuary to restore habitats, improved water quality, including the freshwater pool, fishing and boating. It's a project people will put their money into.	It requires more money than the estuary and restoring wildlife and reducing major flooding is a priority for our future so it's hard to give that alternative up.
6	2	Native American input/historic fish runs	Visual and olfactory impact of mudflats and an ugly retaining wall for the reflecting pool in the middle of downtown Olympia at low tide. Sediments washing into West Bay. Economic impact on downtown businesses during lengthy construction and closure of 5th Ave
7	3	I appreciate the attempt at political compromise and the fact that some ecological function would be restored to the waterbody. I appreciate the attempt at preserving some of the recreational uses that capitol lake provided in its early days.	I hate the idea of a huge wall running through the middle, cutting the landscape in half. Aesthetically, it feels very tacky to me.



Response ID	Level of support for Hybrid Alternative (1-10)	What about the Hybrid Alternative increases your/your organization's support of this alternative?	What about the Hybrid Alternative decreases your/your organization's support of this alternative?
8	3	Not in favor of this alternative especially with the estuary opening staying the same width. That is a disaster waiting to happen. At least a 500 ' opening is required.	While a hybrid model might seem to please everyone because it is a "compromise" - it doesn't. This model will just add another layer of maintenance and cost. There is no guarantee fresh water from artesian flows are significant in volume let alone available through a water right permit. The science behind it is non-existent, but just opinion based on political whims.
9	3	Because this option allows for partial restoration of ecological function of the estuary I believe it is better than what we have now. However, I do not believe it is worth the cost or the disruption to build this option. The boardwalks of the estuary option would be adequate as a walking pathway, there is no need to build an elaborate and deeply rooted structure for a hybrid option.	The hybrid option adds unnecessary cost and complexity and does not add anything necessary to the efforts at improving ecological or economic or cultural function.
10	1	Although it appears to be the most cooperative alternative on the surface, it doesn't follow through on financial and ecological goals.	Increases costs. Decreases habitat and biodiversity. Least responsive to effects of climate change. Honors flooding out of the Chinese workers who lived in the park before the lake was there. enslavement and genocide of workers who built lake.



Response ID	Level of support for Hybrid Alternative (1-10)	What about the Hybrid Alternative increases your/your organization's support of this alternative?	What about the Hybrid Alternative decreases your/your organization's support of this alternative?
11	3	The Hybrid would at least allow for a smaller reflecting water body which would be more consistent with the nationally historic design by Wilder and White and the Olmsteds which is protected under the National Historic Preservation Act and other state statutes.	The expense and that it destroys the unobstructed reflection of the Capitol Group of buildings on the bluff which is the critical element of the historic City Beautiful Movement design of the Campus. Also the Hybrid, with the removal of the historic tide lock, would allow the currently trapped sediment to migrate into the polluted sediment of Budd Inlet and would exacerbate the flooding in downtown and the North Campus which can currently be controlled by manipulating the tide lock. The Hybrid would also do nothing to enhance or improve the existing human made salmon run.
12	10	Having a fresh water full circle reflection pool with an improved more natural visually appealing impermeable rock wall. This provides more freshwater habitat for waterfowl and bats and a more fish friendly environment on the river/ estuary side of the wall. Also, additional recreational opportunities can happen on the wall trail as well as the potential for swimming in the pool itself. Adding recognition of the cultural significance and historic presence of local tribes.	A smaller oval shaped pool that doesn't continue the circle of the Heritage Park wall. An unattractive barrier wall that is not fish friendly.



Response ID	Level of support for Hybrid Alternative (1-10)	What about the Hybrid Alternative increases your/your organization's support of this alternative?	What about the Hybrid Alternative decreases your/your organization's support of this alternative?
13	3	Keeps a reflection pool even during low tide, still beautiful	Seems large and untested. Solves a problem that only exists periodically(reflection of the capitol during low tide)
14	2	We do not support the Hybrid Alternative because trying to do both will increase cost and cause complex and difficult to manage systems.	We do not support the Hybrid Alternative because trying to do both will increase cost and cause complex and difficult to manage systems.
15	7	It is a positive compromise between estuary and the managed lake alternative. expanded opportunities for recreational uses - especially with the retaining wall trail and the boardwalks in the south and middle basins.	The continued need for ongoing dredging. I can easily see the costs becoming prohibitive and the dreding not happening, leaving us in another similar situation. Although with the new guidance of dreding only once every 15 years it may be more manageble.
16	6	There are still gains in ecological function and habitat diversity.	Benefits are less than in estuary option, at a greater cost.



Response ID	Level of support for Hybrid Alternative (1-10)	What about the Hybrid Alternative increases your/your organization's support of this alternative?	What about the Hybrid Alternative decreases your/your organization's support of this alternative?
17	1	Should the Hybrid be selected as the preferred alternative, then our previous comments regarding the potential to improve the Estuary Alternative by using an Adaptive Management plan to provide an off-ramp to avoid a disastrous, irreversible error should be considered. A possible improvement for the Hybrid Alternative to accommodate the public desire for swimming would be to utilize freshwater for the basin. The source of this freshwater could be through a bypass pipe from near the last section of Tumwater Falls to the new reflective basin. This gravity flow on a continuous basis could keep the water in the basin fresh and easier to maintain for its designated purpose.	In addition to the problems with the Estuary Alternative, previously identified, that are common to the Hybrid Alternative, our concerns include: the barrier wall eliminates the Capitol Dome reflection from most vantage points, it is unattractive, aesthetically unacceptable and expensive.
18	4	The hybrid alternative may reduce costs to the city and port with the reduction in flooding- bringing the question-if increasing sea level may eventually change that regardless? Additionally, the hybrid also focuses on ecological restoration.	In the hybrid alternative, habitat restoration would primarily be tidal flats, decreasing the efforts to increase the overall biodiversity/ ecological diversity of the entire area. It also appears to be the highest financial costing option.



Response ID	Level of support for Hybrid Alternative (1-10)	What about the Hybrid Alternative increases your/your organization's support of this alternative?	What about the Hybrid Alternative decreases your/your organization's support of this alternative?
19	6	I really believe the reflecting pool and the smaller loop trail will be very appealing and popular.	The reflecting pool area receives a lot of stormwater from downtown. Its size isn't very large. These and probably more factors could lead to poor water quality and unwanted plant growth as we see in the lake today. If the freshwater can't be kept clean and free of invasive species I don't think it's worth the effort to build. Maybe a saltwater holding pond that can flush with the tides could be a solution?



Response ID	Level of support for Hybrid Alternative (1-10)	What about the Hybrid Alternative increases your/your organization's support of this alternative?	What about the Hybrid Alternative decreases your/your organization's support of this alternative?
20	1	N/A	Similar to the Estuary Alternative, the lack of clarity on who pays and how much future costs will be for future sediment deposition and dredging needs in West Bay. As noted incomments on the DEIS, we believe the possible sediment deposition estimates, and possible corresponding costs, by DES were grossly underestimated in the DEIS. Without an adequate, sustainable and long-term funding solution and dredging plan from state and/or federal governments, removal of the 5th Ave. dam could threaten the future existence of OYC, the other marinas in West Bay, and Olympia's working waterfront. In addition, the Hybrid Alternative and removal of the 5th Ave. dam could remove the Deschutes River "nitrogen sink" (biofilter), which could lead to diminished water quality in West Bay. Increased mudflats also pose new safety risks.
21	8	It allows the river function to return while still having a lake component.	n/a



Response ID	Level of support for Hybrid Alternative (1-10)	What about the Hybrid Alternative increases your/your organization's support of this alternative?	What about the Hybrid Alternative decreases your/your organization's support of this alternative?
22	10	The Hybrid Alternative will provide 100% of the environmental benefits that the Estuary Alternative will while also providing 100% of the benefits that the Managed Lake Alternative will. Plus, the combination of a freshwater habitat adjacent to an estuary will provide a functional lift to the ecosystem. Finally, the Hybrid Alternative will also garner the widest support of any Alternative from all stakeholders, something that will be absolutely necessary to obtain future funding to design and build the chosen Alternative.	Nothing about the Hybrid Alternative decreases my support for this option.



MANAGED LAKE ALTERNATIVE

Response ID	Level of support for Managed Lake Alternative (1-10)	What about the Managed Alternative increases your/your organization's support of this alternative?	What about the Managed Alternative decreases your/your organization's support of this alternative?
1	2	Some action is preferable to none	Continued presence of the lake and unsanitary conditions, the zebra snail infestation.





Response ID	Level of support for Managed Lake Alternative (1-10)	What about the Managed Alternative increases your/your organization's support of this alternative?	What about the Managed Alternative decreases your/your organization's support of this alternative?
4	3	The perpetuation of the capitol reflecting pool is a nice attribute	As with the other alternatives, lack of south mitigation in the south basin to reverse decades of sediment build up; no freshwater waterfall into salt water and therefore no waterborne access to that basin from distant points.
5	3	If we had all the money we wanted and could show long term support for this project including constant dredging, it would be nice to have a managed lake. We would still have a habitat area but I don't think it would be enough to make a difference in restoration. It would mean less disruption for the project.	We would always be chasing after the problems just as we did in the past. It doesn't work and we need to look to the future.
6	10	Would not require the removal of the 5th Ave dam. Sediments would be managed, rather than left for the users of West Bay to deal with.	NA



Response ID	Level of support for Managed Lake Alternative (1-10)	What about the Managed Alternative increases your/your organization's support of this alternative?	What about the Managed Alternative decreases your/your organization's support of this alternative?
7	3	The aesthetics of the lake and the loop trail around the lake are valued by many community members.	The lake is kind of serene from a distance, but as a landscape that one experiences up close I find it stagnant and uninteresting. As a novel ecosystem it does support some species that would lose habitat were the estuary to be restored but in general freshwater lakes are not being lost at the same rate as estuaries and estuaries are known to support some important keystone species that are having an especially hard time right now. Symbolically this lake continues to reflect a recent colonial history, both aesthetically and functionally and I think we can do better.
8	1	Nothing	This "managed" lake is a disaster. It will never be managed to clean water, public access or lack invasive species. The ability to dredge forever is a pipe dream at best - costing billions over time. And - there are no permits available to maintain a managed lake as opposed to estuary restoration. The dam is old and will never be permitted for replacement.
9	1	Nothing.	I do not believe maintaining the lake is acceptable from an ecological, economic or cultural perspective.



Response ID	Level of support for Managed Lake Alternative (1-10)	What about the Managed Alternative increases your/your organization's support of this alternative?	What about the Managed Alternative decreases your/your organization's support of this alternative?
10	1	Nothing.	Increases costs. Decreases habitat and biodiversity. Least responsive to effects of climate change. Honors religious/immigration status enslavement and genocide of workers who built it. Doesn't optimize water dispersion, nor protect the population, downtown, from climate change impacts nor does it restore the native topography nor habitat. By supporting this, it does not say that I actively denounce the violence against the women and children and workers and men and ecosystems that occurred in the Puget Sound



11	10	There is full support in the North Capitol Campus Heritage Park Development Association for retention of the historic tide lock and Capitol Lake. The 1911 Wilder and White design and plan, in collaboration with the Olmsted Brothers, which included the reflecting lake as a significant and integral feature of the City Beautiful Movement design is protected under section 106 of the National Historic Preservation Act and other state statutes as they relate to the State Capitol Campus National Historic District. Because Tumwater Falls prevented a natural wild salmon run, the creation of the tide lock and Capitol Lake along with the salmon ladders created a hatchery based salmon run that the tide lock and Lake continue to support and enhance. The historic tide lock, prevents the currently trapped sediment in the Lake to migrate into the polluted sediment of Budd Inlet and prevents the flooding in downtown and the North Campus which can currently be controlled by manipulating the tide lock. The tide lock will be increasingly important as downtown and the North Capitol Campus face sea level rise. The current good water quality of the Lake which is swimmable under the Clean Water Act would be diminished with the destruction of the tide lock. Dredging the sediment in Capitol Lake will be much less frequent and expensive than dredging in Budd Inlet.	If the Deschutes River had a natural salmon run that had been destroyed by the creation of Capitol Lake then there would likely be more support for the removal of the historic tide lock. However, because Tumwater Falls prevented a natural wild salmon run, the creation of the tide lock and Capitol Lake along with the salmon ladders actually created a hatchery based salmon run that the tide lock and Lake continue to support and enhance.
12	2	The water quality improvements, habit restoration, and additional recreational opportunities above current conditions.	Maintaining the dam prevents reestablishing the natural tidal flow and function of the estuary. Maintaining a managed lake is much more expensive than the other two alternatives.



Response ID	Level of support for Managed Lake Alternative (1-10)	What about the Managed Alternative increases your/your organization's support of this alternative?	What about the Managed Alternative decreases your/your organization's support of this alternative?
13	6	Last experience of managing the lake would allow for expertise, preserves the current local ecosystem	Limits the potential for wildlife to be restored to the area
14	3	We do not support this alternative it at least would provide a tourist opportunity and a transition area for wildlife. While better than the Hybrid plan it would still be very expensive and difficult to maintain. It would also require frequent dredging.	We would prefer the lake be allowed to return back to a natural estuary so the wildlife can be restored to the center of our town. Thereby making Olympia a special place with a living estuary right in the middle of town.
15	3	The mainteance dreding was surprisingly needed at a 20 year frequency vs. a 15 year frequency of the hybrid alt.	The managed lake alternative is similar to the lake status now and it hasn't gone very well so a significant change needs to be made in how the make is managed.
16	1	Nothing.	This option maximizes costs and minimizes benefits.



17

10

The Managed Lake Alternative allows for the use of adaptive management to make course corrections as more information is developed. Unlike the other

alternatives, there are no irreversible steps that prevent making course corrections as needed. In fact, if changing conditions or new information should favor one of the

conditions or new information should favor one of the other alternatives, reversing the decision to select another alternative remains an option. Higher water

quality than Estuary or Hybrid. Higher DO than with Estuary or Hybrid. Zero contamination of habitat from invading Budd Inlet toxics (some of which are

carcinogenic). Enormous community savings regarding marine nitrogen removal.

by biased contrivance.

Ability to reduce Budd Inlet nitrogen even further via timely, inexpensive harvesting of aqueous plants in Capitol Lake. Avoidance of the well-known negative effects of a Terminal Urban Estuary. Enormous aesthetic benefit to community 100% of time. Via Thurston County and DES surveys, this Plan is the most popular. Maintenance of Community's Quality of Life. No "bathroom" odor associated with mudflats. No need for "Toxic Water" warning signs as posted by Thurston County throughout Budd Inlet. No need for "Human and Animal entrapment warning signs as posted by county in Budd Inlet. No danger of severe tidal currents under rail Road Bridge, which minimizes the attractive nuisance legal exposure. Enormous community use benefit. (especially swimming). Significantly less expensive with logical and creative sediment disposal plans unimpaired

none



Response ID	Level of support for Managed Lake Alternative (1-10)	What about the Managed Alternative increases your/your organization's support of this alternative?	What about the Managed Alternative decreases your/your organization's support of this alternative?
17, contd.		Ability to use enormous cost savings for much needed Salmon Habitat improvement in Puget Sound, additional Puget Sound research and marine waters clean-up. Continued sustenance of Chinook juveniles with natural foods. Larger and healthier juvenile Chinook benefitting fisher persons, Tribes and Southern Resident Orcas. Less predation of Chinook juveniles and adults benefitting fisher persons, Tribes and Southern Resident Orcas. Greatly reduces community and business disruption time compared to Estuary and Hybrid. This Alternative best meets the four major goals as described in the DEIS. Those being: improve water quality, improve sediment management, improve ecological functions, and improve community use (Quality of Life). This Alternative avoids the populating of marine water invasive species in the Capitol Lake basin.	



Response ID	Level of support for Managed Lake Alternative (1-10)	What about the Managed Alternative increases your/your organization's support of this alternative?	What about the Managed Alternative decreases your/your organization's support of this alternative?
18	1	The south and middle basins will ideally transition to freshwater wetlands and promote ecological diversity, however, the managed lake alternative is not supported.	The main issues that decrease support of the managed alternative are the environmental and tribal impacts, as stated in the EIS "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." The included excerpt should have a significant amount of weight in multiple areas of the selection criteria. As the original stewards of this land they have taken the brunt of the negative impacts from the lake and deserve to be heard and greatly considered and included in this process.
19	4	Because I've used the lake in its managed era, I understand the benefits it could provide to visitors. Sailing, boating, paddling, swimming, fishing, regattas, light displays, and festivals were great events that happened 30+ years ago that had a very positive impact on me as a youth. The drteam that some or most of these could return is appealing.	I don't fully believe that the recreation uses that had occurred on the lake can be restored permanently. This body of water isn't a lake; it is the transition point between Puget Sound and the Deschutes River. Trying to maintain it as one does a lake doesn't seem financially feasible nor environmentally reasonable.



Response ID	Level of support for Managed Lake Alternative (1-10)	What about the Managed Alternative increases your/your organization's support of this alternative?	What about the Managed Alternative decreases your/your organization's support of this alternative?
20	10	We appreciate that the DEIS contains some information that had not been in prior studies, including positive statements about the Lake's improving water quality. It was encouraging to read that "monitoring data indicate that water quality conditions have actually been improving in the lake and are relatively good in terms of physical and chemical characteristics important to aquatic life. These improving water quality trends reduce the level of management that would be needed under a Managed Lake Alternative to meet lake management objectives."	N/A
		Furthermore, unlike the Hybrid or Estuary Alternatives, ongoing maintenance and dredging and associated costs with the Managed Lake Alternative are more predictable and more manageable for and the marinas in West Bay. Other reasons include the lower construction costs, the shorter time frame for community disruption, and the much-reduced scope of impacts in the event of lapsed funding post-construction.	



Response ID	Level of support for Managed Lake Alternative (1-10)	What about the Managed Alternative increases your/your organization's support of this alternative?	What about the Managed Alternative decreases your/your organization's support of this alternative?
21	6	The fact that it'll be dredged and actively managed.	Not sure if the lake would be open for use as it still feels like there isn't a solution for the mudsnails.
22	1	The Managed Lake Alternative could potentially provide a freshwater swimming area in the north basin.	The Managed Lake Alternative will prevent tidal flows from being restored to southern Budd Inlet which in turn would harm fish, wildlife and water quality issues here. It will also garner widespread stakeholder opposition from estuary proponents. Finally, the Managed Lake Alternative will do nothing towards Tribal restitution.



NO ACTION ALTERNATIVE

Response ID	Level of support for No Action Alternative (1-10)	What about the No Action Alternative increases your/your organization's support of this alternative?	What about the No Action Alternative decreases your/your organization's support of this alternative?
1	1	Nothing	Action needs to be taken. Even a managed lake is preferable to no action.
2	1	This does not seem feasible As suggested above, we at least need to dredge.	The current situation is untenable. Otherwise, the legislature would not have directed this thoughtful exercise.
3	1	Nothing - we've spent all this effort learning what can be done. It's way overdue to take some action. The lake as it is now is just a great home for invasive snails.	Everything - After all this effort, we can't just walk away.
4	1	Nothing: something need to happen, one way or another.	no environmental mitigation in ANY of the basins.
5	1	Nothing supports this choice. In the long run we're going to lost money in the downtown area and attract more homeless.	Nothing could decrease it more.
6	1	NA	Clearly something needs to be done - the lake is what, 2" deep now?
7	1	I suppose that if we do nothing for long enough, the estuary will restore itself.	There is no good reason not to take action, unless we want to preserve a huge source of pollution and spend a lot of money for violating water quality standards.



Response ID	Level of support for No Action Alternative (1-10)	What about the No Action Alternative increases your/your organization's support of this alternative?	What about the No Action Alternative decreases your/your organization's support of this alternative?
8	1	Waiting and watching the basin fill up with sediment, the river running through a marsh and the dam failing to support the weight and pressure any longer. Knowing eventually the estuary will have to be restored.	It is unsustainable.
9	1	Nothing.	I do not believe maintaining the lake is acceptable from an ecological, economic or cultural perspective. We absolutely must act to restore the function of the Deschutes estuary as quickly and completely as possible.
10	1	"Nature will handle it," attitude. Cool, if wrong.	Doesn't optimize water dispersion, nor protect the population, downtown, from climate change impacts nor does it restore the native topography nor habitat. By supporting this, it does not say that I actively denounce the violence against the women and children and workers and men and ecosystems that occurred in the Puget Sound
11	1	No action is unacceptable for all of the reasons stated above.	No action would destroy the nationally historic design of the State Capitol Campus and would continue to further damage the water quality, recreation, flood control, the salmon, and sediment control capabilities.



Response ID	Level of support for No Action Alternative (1-10)	What about the No Action Alternative increases your/your organization's support of this alternative?	What about the No Action Alternative decreases your/your organization's support of this alternative?
12	1	The no action alternative does not meet project goals. I can't think of what would increase my support for this alternative. Without having a long-term management plan, the lake will fill up with sediment, water quality will continue to decline, invasive species won't go away, and the lake will remain un-useable to the public.	There is no support to decrease.
13	4	N/A	Current space is underutilized by humans for recreation and wildlife
14	4	We do not like the No Action plan as it is expensive however it is the plan we have now, and we know what it looks like. It's difficult to manage and hard to dispose of the dredge waste but at least we know the what's and how's. So, we just keep doing what we have always done in the past. It will just COST more, and the environment will continue to suffer.	The issues with the lack of space to dispose of the dredge waist other contaminate along with the lack of improvements to the environments are the main reasons that we cannot support the NO Action Plan.
15	1	Not much but if I am foced to give an answer - no money being spend on it an no conflicts on finding a solution.	It doesn't meet the project goals or solve any of the ongoing problems.
16	1	Nothing.	This is not a serious solution to the identified problems in the study area.



Response ID	Level of support for No Action Alternative (1-10)	What about the No Action Alternative increases your/your organization's support of this alternative?	What about the No Action Alternative decreases your/your organization's support of this alternative?
17	3	With all due respect to DES, the DEIS fails terribly in dozens of its crucial assessments. Searching for a more functional interim solution could be best fulfilled by the No Action Alternative. If the City of Olympia and the State are unwilling to select and fund the Managed Lake Alternative, which is truly the first step of all the alternatives, then having the lake basin revert to a freshwater wetland over time at essentially no cost would be preferable to spending several hundred million scarce dollars to create an intertidal mudflat. The money could be put to more productive environmental and community needs	The current condition of an un-dredged Capitol Lake speaks to the failure of our state government to comprehend the value of basic asset maintenance and to that government's vulnerability to abide by the wishes of those opposed to basic maintenance and sediment dredging. The community and state citizens suffer.
18	1	The No Action alternative is not supported.	The response would be similar to the statement above regarding the managed lake. As well as, the no-action alternative does not support any of the project goals.
19	1	The upper lake from the I5 bridge to the falls appears to be turning into a beautiful natural estuary in part from a lack of maintenance of the lower lake. I see opportunities to use this portion of the lake for recreation immediately with very little investment nor negative impacts to the nature that is thriving there now.	The entire lower lake system feels increasingly unhealthy. As someone that regularly walks the entire lake, I don't believe the experience will be pleasurable in the near future. Action should be taken to preserve the asset for both wildlife and human experiences which would be achieved if any of the proposed alternatives was executed.



Response ID	Level of support for No Action Alternative (1-10)	What about the No Action Alternative increases your/your organization's support of this alternative?	What about the No Action Alternative decreases your/your organization's support of this alternative?
20	1	N/A	supports the intent of the DEIS, which is to "identify and implement an environmentally and economically sustainable long-term management approach that meets project goals to improve water quality, manage existing sediment accumulation and future deposition, improve ecological functions, and enhance community use of the resource." The No Action Alternative does not appear to support this intent.
21	2	if the lake would at least be dredged here and there it would help.	if the trail wouldn't be maintained
22	1	No response provided	No response provided