WASHINGTON STATE Recreation and Conservation Office

Project Review Comments

PROJECT: 20-1056 P, Edmonds Marsh Estuary Restoration Design

Sponsor: Edmonds City of Program: SALMON ST PROJ Status: Wastebasket

MEETING: Initial Review

Shared: 6/30/2020

Review Status: Project of Concern (POC)

Topics	Comments
Review Panel Comments - Initial	
Questions (response required)	
	Can you determine the potential sources of *E. coli* contamination in the Edmonds Marsh project area? Will the current design proposal assess potential sources and possible solutions for addressing the source of contamination?
	Reply: Fecal coliform bacteria levels exceeded water quality criteria at multiple stations during multiple sampling events in 2017, particularly in the late Summer sampling event. The highest concentration was at the sampling station (WC-02) in the existing outlet channel near the pipe outlet draining the marsh (see Fig A in the Water Quality Sampling Results Report, 2019). It was recommend as part of the Expanded Marsh Concept Design and Hydraulic Modeling Report (2019) in the Fish Habitat section (pg. 31) and in the Water and Sediment Analysis Report (pg. 34) to continue data collection for water quality during storm events, especially first-flush portions of storm events, to better understand contaminant inputs from the contributing watersheds. It was also recommended to conduct Microbial Source Tracking (MST) sampling to determine if the sources are natural in origin, domestic pets, or human nature and to inform the best practices for addressing the source pollution. We also question the impact of this comment as it pertains to evaluation of a salmon restoration project.
	Would you please provide more information about the sources of road runoff to the Edmonds Marsh project area? The Review Panel is concerned that toxic contaminants in stormwater runoff from the roads could cause significant and potentially lethal impacts to salmonids, particularly juvenile coho salmon.

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	Reply: See Figure 2 in the Expanded Marsh Concept Design and Hydraulic Modeling report (2019) in the attachments for exact locations of road runoff. Summarized here: The largest volume of road runoff that enters the marsh is from SR-104 on the eastern edge of the marsh, followed by runoff entering the marsh on the north side from Harbor Square/Dayton Ave, on the south side from Pt Edwards stormwater overflow in the existing daylight channel and from the west side from a portion of Admiral Way and adjacent to the BNSF RR. Also, there is road runoff that constitutes a portion of the freshwater flow entering the marsh from both Shellabarger and Willow Creeks. Water and sediment quality collected in 2017 found presence of the VOC carbon disulfide and exceedances of diesel and gas range organics, heavy metal nickel, copper, wet chemistry sulfide, and a single exceedance of lead (pg 6 Water Quality Sampling Results Report 2019). The section of SR-104 where stormwater primarily enters the marsh is 'limited access' highway which means that WSDOT fully controls all maintenance of this roadway section including road runoff. Staff have thus far been unsuccessfully at urging WSDOT improvements to water quality in this vicinity, going so far as to offer to write, submit, and manage an entire grant project on their behalf. That said, this section will require additional flood protection measures as part of the overall restoration project, and water quality treatment measures could be added when the flood protection berms are installed. In addition, the two existing 72-inch pipe arch culverts beneath SR-104 are in poor condition and need to be replaced. This action is not part of the scoped restoration project. The culverts are not currently listed on WSDOT's fish passage program, but this condition could change with the Edmonds Marsh restoration Project. It should also be mentioned that given the tidal spectrum that will be introduced with an open tidal channel, is significantly larger than the current tidal inflow or storm water inputs. With storm inflows ranging from 0.8 cfs in the low flow conditions and 138 cfs in the peak conditions, and tidal inflows approaching 2,000 cfs with the new tidal channel (based on cross-section and 6' depth), storm water inputs will range from a fraction of a percent to a peak nearing 7% of the flows in the marsh. Stormwater quality will not be the largest factor of water quality within the marsh.
	Would you please provide more details about the proposed tidal channel excavation in the tidal marsh? What are the expected sedimentation rates in the marsh area? Will water velocities in the marsh be sufficient to maintain the tidal channels? What is the expected longevity of the tidal channels?

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	Reply: The conceptual design of the Edmonds Marsh restoration project includes excavation of channels from the upper edge of existing saltmarsh vegetation through the cattail thickets to the SR-104 culverts and Shellabarger Creek. This action is to address the current condition of full sedimentation of historical channels over time due to lack of tidal water velocity in the marsh. Following the reintroduction of tidal velocities within the marsh through the restoration action of daylighting a tidal channel connection, unvegetated mudflat and vegetated low-marsh areas will expand, while the vegetated high-marsh area (including cattails) will shrink. However, the rates of change are unknown. Sedimentation rates have not been part of research conducted in previous phases of the project feasibility and conceptual design. However, tidal prisms and tidal flow have been well studied and modeled for this project, including projected sea-level rise, storm surge and king tide and 100-year flood rates. Results of hydraulic modeling indicate velocities to be 0.4 f/s to 1.0 f/s within the proposed excavated interior marsh channels (see figure 34B and 35A for Alternative 6 in the Expanded Marsh Concept Design and Hydraulic Modeling Report 2019). It is anticipated that the excavation of the tidal channel and the increased velocity of tidal flows will help preserve the channels longer that under current conditions by keeping sediment suspended. However, it is understood that these system are not without some degree of maintenance being required and future dredging of channels could be needed to maintain channel capacities in out years.
	Would you please provide more information about the purpose of the proposed Environmental Contamination sampling? Does the sampling relate to potential contamination from the Unocal site? What contaminants are being assessed? Is there a sampling design plan? Do you have a sense of where, on the property, samples will be needed? How many samples will be examined in total?

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	Reply: Based on a review by the City's project engineering consultant (Shannon&Wilson) of available documentation along with discussions with ARCADIS and Ecology (2014 and 2015), it is likely that intermittent levels of contaminated soil will be encountered during the Willow Creek daylight excavations through the Unocal property, and its presence will likely impact the approach to design and construction and overall cost of the project. A thorough understanding of soil contamination is required in order to plan for handling and disposal of spoils generated by the restoration project. A thorough review of existing information has been conducted but the ultimately concluded that the reports from the Interim Action Work Plan (IAWP) for the clean-up site indicated the Unocal may leave areas in the site with residual contamination, so the project should not rely solely on existing data or information form the clean-up effort. The cleanup was performed on a statistical basis; therefore, select areas of the site may have residual contamination in excess of the calculated cleanup criteria (Dave South, Ecology 2015). Contamination encountered during construction that exceeds the calculated cleanup criteria will need to be disposed of at an off-site facility. Other areas having residual contamination may not exceed the calculated cleanup criteria but have levels high enough to have staining or odors needing special consideration for on-site reuse, or special disposal locations if on-site reuse were not allowed. As part of the preliminary design process (Final Feasibility Study Willow Creek Daylighting Report 2015), it was recommended that additional soil samples be collected along the preferred daylight alignment and perform testing to allow for characterization of the soil excavation areas, and refinement of the soil handling and disposal estimates. To date, Chevron has not allowed access to the Unocal site to perform sampling. A sampling plan will be developed and implemented as part of the next preliminary design work phase and will be used to direct design/alignment changes for maximum cost-benefit, refine cost estimates and quantities for contaminate soils handling, and refine the limits of HDPE liner anticipated to separate residual contamination. Sampling would occur along the preferred channel alignment to determine areas having residual contamination. A series of geoprobe borings or test pits would be completed along the preferred daylight alignment corridor to estimate the location and quantity of soil suitable for replacement on site versus requiring off-site disposal. In addition, a limited number of monitoring wells would be required to understand the volume and level of contamination to design treatment for dewatering, calculate groundwater pressures for liner design, and if special dewatering water quality treatment measures are needed. Contaminants being tested for would be total petroleum hydrocarbons (TPH), benzene, total carcinogenic polynuclear aromatic hydrocarbons (cPAHs), and arsenic. A specific sampling plan has not been designed to date.
Improvements to Make Project Technically Sound (response required)	
	The project sponsor will need to provide greater certainty about when the Unocal property will be transferred to WSDOT. An updated landowner acknowledgement form will also be needed from WSDOT. Ownership is a critical element in the process of moving this project forward and clarity on this issue is needed in order to optimize the benefits of the design process.

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	Reply: Unfortunately we do not have anything further to provide to this effect at this time. This application is intended to align the project for success when the project transfer happens but we remain unable control this piece of the equation. It is our hope that the committee understands the rare opportunity this project has to contribute to Orca health and recovery and will sees benefit to not adding a minimum of two more years to the project timeline. Again, we cannot act until the property ownership has transferred to WSDOT but hope to be ready to role as soon as it does. We believe there may be creative ways (such as conditions prior to award, or awarding as an alternate with access to any returned or unused funds from this year's grant cycle) to align our project for this type of success without detracting from other project which can make immediate use of this funding and ask for the committee help in thinking a bit outside of the box for this particular application. We have been able to obtain a draft updated lack owner acknowledgment form; see attachment under "land owner acknowledgement form" for more information.
General Comments (response not required)	
	The Review Panel is concerned about moving forward with channel design work unless there is more certainty about site ownership. The current channel design and minimal riparian buffer to the north of the channel are significantly constrained by the uncertainty around the Unocal property, but these design constraints could go away once the site is transferred to WSDOT ownership. We recognize the desire to move forward with project design, but the preliminary channel design work appears to be out of sequence with the proposed property transfer.
	Reply: As noted in previous responses, the City cannot move forward with the next phase until the property ownership is transferred and we have learned that the channel section mattered more than channel alignment from a hydraulics perspective. The channel alignment can be moved and manipulated a fair amount without major impacts to the hydraulics and thus we believe we are prepared to move forward once we know our limits approved by the future property owner. It should be noted that the current preferred alignment is within a footprint that has been acceptable to WSDOT Ferries, who remain the most likely future owner, but that Ferries had rejected several other concepts and has made clear that cannot simply have all the space in the world. It should also be noted that WSDOT, or any future owner, will require some degree of compensation for the property we make use of. Additionally, it is believed that more contamination will be encountered to the east of the current alignment on top of increasing general earth work quantities. So shifting the alignment further east is likely to add significant project costs, without adding much measurable benefit. Final alignment will be driven by what can be negotiated with the property owner, and a balancing of cost-to-benefit ratios as more detailed information becomes available.
	A previous SRFB grant proposal for final designs in the Edmonds Marsh project area (16-1214) was reviewed by the Review Panel. The Review Panel highlighted concerns about creating a more fish-friendly channel design and receiving landowner acknowledgement from WSDOT before moving forward with preliminary designs. The grant proposal was withdrawn, but a scope change was initiated for the conceptual design project (14-1299) to develop more fish-friendly channel designs and allow for progress in the transfer of the Unocal property to WSDOT.

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	Reply: Yes. The City put in a pre-proposal in 2016 (16-1214) when we still had funds left in our 14-1299 contract. It was decided between the City and RCO to withdraw the 16-1214 application and submit a scope change for the remainder of funds in 14-1299 to address the Technical Committee's recommendations that came out of the site visit during the 2016 grant round. The findings of that scope change to 14-1299 are the Expanded Marsh Concept Design and Hydraulic Modeling Report (2019) and the Water Quality Sampling Results Report (2019). The study presents the hydraulic assessment of four additional Willow Creek daylight channel alternatives (alternatives 1-4) and evaluates the certain channel alignments under extreme tide conditions and sea level rise (SLR) conditions. The study then looked at alternative flood responses (alternatives 5-7). The study also assessed channel habitat modifications such as habitat benches, LWD and buffer widths.

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MEETING: LE Review

Shared: 4/13/2020

Topics	Comments
Lead Entity Comments	
Questions For Applicant	
	Has the city reached out to any tribal governments for support on this project—specifically the Tulalip Tribes? If they view this project as a priority, they could be an important ally in motivating parties to act. Likewise, large environmental groups with a strong regional presence may be able to lend support to this project.
	Reply: The project has always had strong regional support and past applications have included multiple letters of support from several regional groups. Having recently bothered our partners for new support letters for a separate grant package, new letters were not included with this application originally. We have attached copies of the most recent letters (submitted with the NFWF grant)to these responses. Letters are provide by Lake Washington/Cedar/Sammamish Watershed (WRIA 8), the Tulalip Tribes, Save the Edmonds Marsh (non-profit), and the Port of Edmonds. Tulalip Tribes, along with Muckleshoot Indian Tribe, Snohomish Tribe, Snoqualmie Nation, Stillaguamish Tribe, Suquamish Tribe, and Swinomish Tribe were also made aware of this project through their respective Cultural Resources staff per Cultural Resource Consultants Technical memo 1405F-2 (provided in attachments). In addition, the project team at the City has been in communication with the Marine and Nearshore Program Manager at Tulalip Tribes regarding this project for the past four years. This Manager has conveyed information to other staff persons and tribal members as he has seen fit. The Manager has provided project staff with research information on juvenile fish response to nearshore estuary restoration, which has supported our grant applications. This project is aligned with the latest research on juvenile salmon life processes and the importance of near-shore embayment's. Other large environmental groups who are aware of this project include Snohomish Marine Resources Committee, EarthCorps and People For Puget Sound (which is now a subsidiary of Washington Environmental Council). The Nature Conservancy was informed of this project in the initial feasibility stages and it is unclear at this point (due to staff turnover) if current staff at TNC are aware. To date, none have approached the City to proactively support the project, but City staff will be reaching out to as many groups as possible as we begin the final design process; the push for construction funding will be a major part of the effort for the next phase and will require many partnerships in order to execute.

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General Comments	
	This project presents a tremendous opportunity to offer vital juvenile Chinook rearing habitat and is a priority for WRIA 8. Because the adjacent property's status remains in flux, so too does the approach to the project. The city should consider this a one-shot opportunity to maximize the ecological potential at the site. Allow for resolution of the property/land ownership issue on the Unocal/Chevron site, then design the preferred alternative based on the greatest restoration potential. Allowing the contamination/acquisition issue to resolve will provide greater certainty over restoration outcomes, and this step should be completed before advancing the design any further. Consider the project area from the marsh to the shoreline within a comprehensive scope. The entire area from the mouth into the marsh will benefit fish, and a comprehensive approach will ensure the greatest benefit is realized.
	Reply: We agree that the project should wait for the property ownership issue to be resolved and is, as stated in the application, the proposed plan. However, if we do not apply for funding in this cycle, we risk having to sit idle after those items are completed. The requested application ensures that the project can begin as soon as the property ownership and site remediation is complete. While the initial setting of the hydraulics is likely a one-shot opportunity, we do not see this as a one-shot project for full restoration of all habitats associated with the Marsh; we understand the this project to be the initial hydraulic portion which is but step one in a long process of recovery and restoration. The hydraulics are the most critical step as it will actually establish a connection to the Sound and thus open of the marsh as fish habitat that it currently cannot provide. Additionally areas which are currently dry for a majority of the time, will end up under several feet of salt water on a daily basis after the project; it will take time to allow the salt water conditions to transform the soils and plant life to push habitat areas around. The City can continue to adapt new planting and management plans as the patterns in the marsh begin to develop. We believe this natural process to be critical to habitat management and do not believe efforts to over engineer this into the project up front, would be beneficial for the project or the benefits the Edmonds Marsh can provide. These natural processes cannot begin, and salmon cannot make use of any degree of habitat provided within the Marsh, until the hydraulic phase of restoration (this project) is completed. The project has always taken a comprehensive approach for its hydraulic function and aquatic habitat provided and actually already extends evaluations from the Puget Sound all the way through the marsh into the upland wetlands. The project has included analysis of shoreline conditions and geomorphology, analysis of in-stream impacts and velocities, analysis of upstream flows and inundation impacts, and the impacts of future sea-level rise. We would like to draw reviewers attention to the Expanded Marsh Concept Design and Hydraulic Modeling report (2019) that highlights how the project team has taken a comprehensive approach and has laid out several channel design alternatives, channel shapes, and flood mitigation methods. The final alternatives were refined and analyzed for both low and high flow conditions along with their impacts on habitat velocities and conditions, flooding impacts, and impacts on upstream flows. The report represent nearly 8 years worth of comprehensive evaluation and assessments. We have attached a slide show presentation that was given to our City Council this winter (2019 City Council Slide Show), which gives a condensed version of the history and development steps that went into reaching this point. If reviewers cannot find time to read the full report, we

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ask that they at least review this presentation for an abridged version.
The result of this comprehensive approach is that the project has identified the most effective flood control method and the most effective channel cross sectional shape. We also now know that these two elements are more critical to the hydraulics than the channel alignment itself. This leaves the project fairly adaptable to future site conditions, whatever they may be, as we can meander the channel around relatively easily during final design based on allowable space and/or contamination findings. Thus the City of Edmonds believes we have taken a thoroughly comprehensive approach for an initial hydraulics project which will be the first critical step to begin the larger process of restoration of the Edmonds Marsh and which is now ready to begin design as soon as the site clean-up is completed and property transferred. Final alignment will be driven by what can be negotiated with the property owner, and a balancing of cost-to-benefit ratios as more detailed information becomes available. However, it is generally believe that additional excavation and contaminated soils handling likely mean that the benefit gains by any alternative revisions will have significant cost increases which likely cannot be justified as adding value.

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Sponsor: Edmonds City of Program: SALMON ST PROJ Status: Wastebasket

MEETING: Final Review

Shared: 7/27/2020

Review Status: Project of Concern (POC)

Topics	Comments
Review Panel Comments - Final	
General Comments	
	Lack of access to Unocal Property and continued uncertainty about timing of ownership remain as concerns for the success of this project. Funding of the preliminary design without clarity on ownership, additional clarity on the status of contamination at the site, as well as ongoing water quality concerns would still be out of sequence. Information provided in responses was helpful in understanding plans for data collection on fecal coliform during storm events and Microbial Source Tracking, but it is unclear whether these are currently being implemented. Identifying and treating the source of contamination would result in a long-term benefit, rather than a continued, ongoing threat to fish health. WSDOT's lack of willingness to address the five contaminants with exceedences is also troubling and presents another continuous source of water quality degradation. Further, the likely need to replace the two culverts under SR 104 limits the potential for upstream habitat use should these become impassable in the future. The point about the contribution of stormwater as compared to tidal influx is a good one, but at low tides, when the influx is below average, the relative contribution of stormwater would likely to be higher, thus the water quality concerns remain relevant. Longevity of the tidal channels remains an important question in terms of the long-term function of the project. The estimates of proposed condition velocity are helpful, but lack of knowledge about the sedimentation rates at the site currently hamper the understanding of channel function over time. Lack of access to the Unocal property to further determine the extent and severity of contamination levels affects the certainty of cost estimates for the construction action, and thus limits the utility of the alternatives analysis that generally accompanies the preliminary design development in terms of cost/benefit. Removal and off-site disposal of contaminated soil can be costly, and a better estimate of the level of effort associated with this potential action would be needed. Without certainty regarding access to the property, as stated by the sponsor, this cannot be achieved. A potential condition for the project could be identified if the ownership and access issues become resolved, but as written, the proposal does not address these concerns.