

Phase 1C Scope of Work

St. Helens Waterfront Redevelopment—
Lagoon Repurposing Project

Draft

February 27, 2024



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1 Introduction

This scope of work describes efforts to continue the Phase 1 Lagoon Repurposing initiated with funding from the April 10, 2019, State of Oregon Intergovernmental Agreement (IGA), and Phase 1B which was completed in 2022 and 2023 under a community resiliency grant from the Federal Emergency Management Agency (FEMA). Work completed under the Phase 1 scope included:

- Locations Restriction Report
- Phase 1 environmental and geotechnical site characterization
- Preliminary conceptual site development plan
- Preliminary risk assessment and air modeling
- Public engagement
- Initial governance assessment

Work completed under the phase 1B scope of work included:

- Supplemental geotechnical investigation
- Supplemental environmental investigation of lagoon

The next phase of the Lagoon Repurposing project (Phase 1C) will include additional geotechnical studies, evaluation of design alternatives based on the results of the Phase 1 and 1B site characterizations and investigations, market analysis update, advancement of the facility design, risk assessment and air modeling, wastewater treatment plant impact analysis, preparation of the Phase 2 work plan, and preparation and submittal of the solid waste permit application.

In addition to this scope of work, the City of St. Helens (the City) will continue to advance public engagement and governance processes. MFA is available to assist with these processes but scope to do so is not included herein.

2 Scope of Work

Summarized below are tasks that will define the scope of work.

Task 1—Market Study Update

The Market Study was initially prepared in 2016 to determine the economic viability of the Lagoon Repurposing Project. The plan was updated in 2021 to evaluate net present value calculations, as well as evaluate a new scenario that assumed clean fill was used for the project. Task 1 will incorporate estimated project costs based on the design elements that will be advanced as part of the site development plan (Task 3) and data collected in Phase 1 and 1B. Work items to be included in Task 1 are as follows:

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- Evaluate and update assumptions and economic factors used in the 2016 market study and 2021 study update, and update as necessary
- Update design, construction, operation, and closure/post-closure costs with current-day values
- Update net present value calculations for 4 scenarios described in the 2021 study update
- Update tipping rate calculations

Task 2—Geotechnical Studies

Task 2 will expand on analysis and design that was completed in Phase 1 and 1B. Analysis will incorporate information gathered to date and seek to further evaluate the facility design based on current understanding of subsurface conditions. Work items to be included in Task 2 are as follows:

- Seismic analysis of the existing lagoon configuration (current condition)
- Complete total and differential settlement analysis of the existing containment berm based on updated design configuration
- Evaluate static slope stability of berms constructed for construction phasing
- Prepare cost estimates for ground improvements identified in the Phase 1B geotechnical report

Task 3—Site Development Plan

The Site Development Plan will advance the preliminary design prepared under Phase 1 to describe necessary engineering, environmental controls, and operational components as follows:

- Facility operations, material characteristics (sources, fees, capacity, etc.), access, and proposed facilities.
- Conceptual design drawings and preliminary specifications for major components of the facility.
- Site phasing for fill placement for the anticipated life of the facility. The facility is anticipated to be constructed in multiple phases to stage construction efforts and costs over time.
- Leachate management for the operational and post-closure stages, including leachate characterization and analysis of options for collection, removal, treatment, and disposal.
- Surface water management methods and facilities for stormwater runoff and run-on.
- Preliminary wetland impacts and mitigation.
- Subsurface gas management analysis will be performed to verify the assumption that gas generation from the proposed facility is not anticipated due to the nature of the fill materials (e.g., soil, sediment). Management measures, if any, will be incorporated.
- Environmental monitoring strategies will be developed at the conceptual level; a final monitoring plan will be prepared in Phase 2 of the project.
- Final closure plans and anticipated end use. This is anticipated to be conceptual in nature and may present multiple options for the site after closure.

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- Leachate treatment and disposal feasibility study for treatment methods and disposal of leachate. This task may be completed as part of the Phase 2 assessment and final design pending approval by DEQ.
- Initial climate resiliency assessment of proposed facilities and design standards.
- Topographic and bathymetric surveys will be conducted to fill data gaps and support design.

Regulatory and stakeholder comments related to the documents completed and submitted under the Phase 1 and 1B will also be addressed under this task in order to finalize the Site Development Plan. This plan will be the basis of the solid waste permit application.

Task 4—Risk Assessment and Air Modeling

Under the Cleaner Air Oregon rules, a risk assessment will be required to evaluate the potential risks to human health from exposure to sediment and soil chemicals of concern (COCs) that may be handled at the facility. The risk assessment must address the potential for dust generation and volatilization of COCs such as polychlorinated biphenyls, semivolatile organic compounds, and volatile organic compounds to air during handling of sediment and soil (off-loading, handling, and placement). Work for this task will be completed according to the work plan developed under the Phase 1 scope of work (Maul Foster & Alongi, October 2, 2020).

Data Review and Emissions Estimation

Data from published sources, databases, and regulatory guidance will be evaluated in relation to anticipated COCs that could be received at the site. The following components will be part of the initial data review:

- Identify and assess chemical-specific information such as volatilization and toxicity factors for sediment COCs, including but not limited to polychlorinated biphenyls, semivolatile organic compounds, and volatile organic compounds.
- Review recent literature evaluating volatilization of COCs during sediment transportation, off-loading, and placement activities.
- Review chemical properties and toxicity databases such as the U.S. Environmental Protection Agency's integrated risk information system.
- Review peer-reviewed scientific literature for toxicity factors if these are unavailable from state or federal databases.
- Determine potential dust and volatile loss to air of COCs during soil and sediment offload, handling, and placement, based on Portland Harbor Superfund Site sediment COC concentrations, expected soil contaminant concentrations, and chemical-specific properties. The evaluation will include estimating sediment concentrations for modeling based on available data that are representative of sites in the service area to be dredged.
- Develop an emissions inventory that covers off-loading, handling, and material placement.

Conceptual Site Model

The conceptual site model developed in Phase 1 will be updated as the design advances through Phase 1C. Additional sediment data may also be incorporated as information becomes available

through current regional site investigations and off-site sediment project designs. The site model will include a qualitative description of site operations, methods of COC release, exposure pathways, receptor locations, and risk assessment procedures will be prepared for DEQ review.

Data Evaluation and Risk Assessment

The work plan prepared in Phase 1 describes the sources of emissions, their release rates, locations, nearby downwash structures, source of meteorology, terrain, and receptor locations. A new risk assessment work plan will be prepared for Phase 1C that describes the COCs, risk assessment types, risk-based concentrations, exposure pathways, zoning, receptor assumptions, and risk assessment calculation methods. Once the work plan and modeling protocols are approved by the DEQ, the City will proceed with a risk assessment for the site that will establish the likelihood and degree, if any, of potential risks to residents and workers in the vicinity of the project. A draft risk assessment report will be submitted to the DEQ for review under this scope of work.

Task 5—Wastewater Treatment Plant Impact Analysis

The City operates its wastewater treatment plant under a National Pollutant Discharge Elimination System (NPDES) permit administered by the DEQ. Understanding potential impacts to the wastewater treatment systems are integral to facility analyses; establishing a plan for the plant is an early planning need. City personnel most familiar with the wastewater treatment systems will direct and guide this analysis. The Phase 1C objectives and scope below build on work completed to date. Objectives include:

- Assessing impacts to and options for wastewater treatment plant alterations and relocation.
- Assessing permit ramifications, identify processes with DEQ.
- Identifying options for interim operation of the plant and lagoon during fill operations.
- Preparing feasibility study and predesign for new treatment plant and associated improvements to City infrastructure.

The following tasks will be completed to gather information to inform the City on the best course of action to address impacts to the wastewater treatment plant:

- Identify impacts of the landfill development to system layout and operations.
- Identify/assess reconfiguration options and costs.
- Identify/assess relocation options and costs.
- Prepare feasibility study outlining options.
- Select option(s) for Phase 2.

An initial analysis has been prepared generally addressing impacts, reconfiguration options, and relocation options. Continuation of these efforts and further examination of the costs, schedule, and additional treatment system options, as well as funding analysis, will be performed in this scope of work.

Phase 2 will develop detailed options identified in Phase 1C, and work towards selection of a preferred alternative. The scope of this phase is contingent upon the selected options and is

expected to include the design of moderate to extensive system modifications and a new NPDES permit or amendment to the current permit.

Task 6—Permitting

The City will work with the DEQ and other stakeholders throughout the design to ensure fluidity with the facility development process. Regular communications and meetings are anticipated. The final DEQ Solid Waste permit application will include a compilation of the following information:

- Site Development Plan (Task 3)
- Signed Land Use Compatibility Statement
- Recommendation from the local solid waste planning authority
- Demonstration of need (market analysis)
- List of other needed permits
- Certificate of Business Registry
- Fees
- Other information requested by DEQ

In addition to DEQ Solid Waste permitting, a Joint Permit Application (JPA) submittal will be prepared to address federal and state regulations regarding aquatic resources (e.g. in-water construction, wetland impacts). One site-wide JPA will be prepared to obtain necessary approvals to construct the lagoon conversion facility and ancillary infrastructure and facilities. The JPA will include:

- Project characterization and alternatives analysis
- Biological evaluation for Endangered Species Act consultation with the National Marine Fisheries Service
- Water quality impacts assessment to the Oregon Department of Environmental Quality Water Quality Division for Clean Water Act compliance
- Cultural resources evaluation for adherence to the Historic Preservation Act
- Wetland delineation and evaluation for compliance with Section 404 of the Clean Water Act
- Project mitigation status documentation
- Compiled design drawings and supporting information
- Federal, state, and local agency coordination

Task 7—Phase 2 Work Plan Development

Phase 2 of the Lagoon Repurposing project will include efforts to continue the design and permitting efforts through a final project design, final solid waste facility permit, and ancillary facilities design and permitting (support facilities, offload facilities). As part of the Phase 1C effort, a work plan will be prepared to identify and address data gaps, agency responses to the initial design submittal, and prepare a schedule and task list for completion of the project; the Phase 2 task (not currently scoped) will implement that work plan.

The Phase 2 Work Plan will identify tasks to prepare the following items:

- Final Design Report, 100% Design Plans and Specifications
- Final Risk Assessment
- Construction Work Plan addressing project team and organization, preparation of Quality Assurance/Quality Control Plans, and reporting requirements
- Operations Plan addressing long-term operation of the landfill facility
- Environmental Monitoring Plan
- Closure and Post Closure Plan
- Financial Assurance documentation

3 Budget and Deliverables

Task budget and deliverables are provided in the table below.

Task	Work Elements	Deliverables	Budget
Task 1—Market Study Update	Update project costs, assumptions, Net Present Value calculation	Market Study Update	\$43,700
Task 2—Geotechnical Studies	Seismic analysis of existing lagoon, seismic and settling calculations for facility	Geotechnical memorandum	\$109,300
Task 3—Site Development Plan	Facility operations, conceptual design, phasing, leachate management, surface water management, gas management, environmental monitoring, topographic survey	Site Development Plan	\$276,600
Task 4—Risk Assessment and Air Modeling	Update conceptual site model, data evaluation and risk assessment	Risk Assessment Report	\$141,100
Task 5—Wastewater Treatment Plant Impact Analysis	Assess operations and permit impacts of lagoon modification, identify options for modification and relocation of wastewater treatment facility	Wastewater Treatment Plant Impact Analysis Report	\$87,700
Task 6—Permitting	Solid waste permitting, In-water and aquatic resource permitting	Solid Waste Permit Application, Joint Permit Application	\$172,600
Task 7—Phase 2 Work Plan Development	Identify data gaps, prepare scope for Phase 2 site investigation and plans	Phase 2 Work Plan	\$32,200
Total Estimated Cost:			\$863,200