

TITLOW SHORELINE AND ESTUARY RESTORATION PROJECT – DESIGN DEVELOPMENT

Request for Qualifications

South Puget Sound Salmon Enhancement Group with EarthCorps and Metro Parks Tacoma

Request for Qualifications:

The South Puget Sound Salmon Enhancement Group in partnership with EarthCorps and Metro Parks Tacoma, is requesting Statements of Qualifications for design and engineering services for the Titlow Shoreline and Estuary Restoration Project. The project site is located at Titlow Park in Tacoma, Washington and includes properties owned and managed by Metro Parks Tacoma, the City of Tacoma, and BNSF Railway Company. This design effort will build upon previous work that included: 1) a feasibility study that explored fish passage alternatives beneath the railroad tracks at the mouth of Titlow Lagoon and other beach and estuarine enhancements and; 2) a public Titlow Park Master Planning process that will guide future park improvements. The Titlow Park master Plan can be accessed at: <http://www.metroparkstacoma.org/titlow-park-improvements/>. The feasibility study can be accessed at <http://www.metroparkstacoma.org/titlow-park-improvements/>.

The South Puget Sound Salmon Enhancement Group is announcing this Request for Qualifications (RFQ) as part of a grant issued by the National Oceanic and Atmospheric Administration, (NOAA) and Restore America’s Estuaries’ Community Restoration Program and the National Estuary Program via the Estuary and Salmon Restoration Program (ESRP). The scope of work under a final negotiated contract will include:

- Site analysis and review of existing information.
- Preparation of 60% level design-document plans, outline specifications ,and estimates for restored fish passage to the Lagoon and standard 3-track rail crossing structure under the BNSF Railroad, MP 9.5 to 9.6 Seattle Subdivision, Line Segment 0052.
- Preparation of 60% design-document plans, outline specifications, and estimates for estuarine enhancements within Titlow Park including removal of shoreline fill and some park infrastructure.
- Preparation of final design-document plans, outline specifications, and estimates for armor removal/shoreline restoration work in the Tacoma Narrows to the north of the Lagoon outlet including removal of a seawall, rip rap armor, and a house, herein collectively referred to as ‘Kay’s House’.
- Stakeholder coordination including agencies owning property within the project area; Metro Parks Tacoma, City of Tacoma, and BNSF Railway Company; as well as agency staff forming a technical advisory group including, but not limited to: NOAA, USFWS, WDFW, Department of Ecology, Puyallup Tribe, Nisqually Tribe, Squaxin Island Tribe, Pierce County, Port of Tacoma, Citizen’s for Healthy Bay, and Tahoma Audubon.

The full scope of work proposed for this contract by project partners is included in Appendix A of this document. Additional scope may include preparation of final construction plans and specification, bid documents, and construction observation services to be negotiated and added by way of amendment to the original contract.

An optional site visit is scheduled for **Wednesday, October 16th, 2013** at Titlow Park from 10am to Noon in front of Titlow Lodge at 8425 6th Avenue in Tacoma. Statements of Qualifications are due by **3pm on October 30th, 2013**.

Project Objective:

To obtain technical services in pursuit of 60% to final design documents for an expanded and enhanced Titlow Lagoon with daylighted tidal waterway and BNSF railroad bridge connecting the Lagoon to Puget Sound, and armor removal/shoreline restoration north of the Lagoon outlet. The deliverables of this design contract will be used to pursue funding for additional design and implementation of project elements.

Design Team Capabilities:

The firm / team selected must have:

- Demonstrated ability in designing habitat restoration projects, with an emphasis on nearshore ecosystems, using an interdisciplinary approach.
- Demonstrated ability designing rail crossings and bridge structures within the BNSF right of way.
- Expertise in estuarine systems, hydraulic modeling, sediment transport modeling, fish passage design, coastal geomorphology, and structural and rail engineering.
- Expertise with BNSF standard bridge plans and specifications, and construction means and methods.
- Demonstrated ability to work collaboratively with other consulting firms and diverse stakeholder groups.
- Demonstrated availability to complete deliverables within the designated timeframe.

Submittals:

Written qualifications will be accepted by the South Puget Sound Salmon Enhancement Group until 3pm on **October 30th, 2013**. Your submittal should not to exceed a total of 10 pages, and should include the following:

- A brief cover letter and statement of interest in conducting this work and qualifications to provide the required services.
- Your reaction and approach to this scope of work (Appendix A), proposed deliverables, and schedule. Describe any departures from our requested services you would recommend in light of available resources.
- Identification of the principal engineer/project manager who will lead the effort and description of his/her professional qualifications.
- A description of your firm(s) and proposed team structure, identifying key professionals and their responsibilities (resumes are not included in the 10 page limitation).

Qualifications should be submitted electronically in PDF format either via email or on a CD to:

South Puget Sound Salmon Enhancement Group
c/o Kristin Williamson
6700 Martin Way East, Suite 112
Olympia, WA 98516
Phone: 360-412-0808 ext 103- Email: kristinw@spsseg.org

Criteria for Selection:

South Puget Sound Salmon Enhancement Group, EarthCorps, and Metro Parks Tacoma will convene a review panel. Qualifications submittals will be reviewed based upon the related experience/qualifications of the project team and key staff, record of past performance, and the demonstrated ability to meet the objectives outlined in the Scope of Work within the estimated timeframe. Interviews will be requested of the top ranked design teams by the review panel.

<u>Criteria</u>	<u>Points</u>
Project Understanding and Overall Approach	0-40
Related Experience of Project Team	0-30
Qualifications/Experience of Project Manager and Key Staff	0-10
References/Past Experience with Similar Project	0-10
Ability to provide the services within the project time frame	0-10
Maximum Points	100

Any firm failing to submit information in accordance with the procedures set forth in the RFQ may be subject to disqualification. South Puget Sound Salmon Enhancement Group reserves the right to change the schedule or to issue amendments to the RFQ at any time. South Puget Sound Salmon Enhancement Group reserves the right, at its sole discretion, to waive immaterial irregularities contained in the RFQ. South Puget Sound Salmon Enhancement Group reserves the right to reject any and all proposals at any time, without penalty. South Puget Sound Salmon Enhancement Group reserves the right to refrain from contracting with any respondent. South Puget Sound Salmon Enhancement Group encourages disadvantaged, minority, and women-owned firms to respond.

Dates of Publication:

Seattle Daily Journal of Commerce: October 10th, 2013

Appendices

- A) Proposed Titlow Shoreline and Estuary Restoration Project Proposed Scope of Work
- B) Attachments and Figures
 1. Historical 1931 Aerial photo of Titlow Lagoon
 2. 2006 Aerial of Titlow Park
 3. 2010 Titlow Park Master Plan Rendering
 4. Artist's rendering of a restored Titlow Lagoon

APPENDIX A: TITLOW SHORELINE AND ESTUARY RESTORATION PROPOSED PROJECT SCOPE OF WORK

Project Background:

About Titlow Park

Titlow Park is located at 8425 6th Avenue in Tacoma. The Park is an important part of the Metro Parks Tacoma inventory and provides key services to citizens throughout the Tacoma area. It is also an important conservation area that occupies a critical stretch of rare natural shoreline along the Tacoma Narrows. The park features a waterfront shoreline and an estuarine lagoon and has been identified as one of five “Signature Parks” operated by Metro Parks Tacoma. Information concerning Titlow Park can be accessed on the Metro Parks website at: <http://www.metroparkstacoma.org/titlow-park/>

Project Sponsors

The South Puget Sound Salmon Enhancement Group and EarthCorps are nonprofit organizations committed to protecting and restoring fish and wildlife habitat. Collectively, the Salmon Enhancement Group and EarthCorps have been working closely with Metro Parks Tacoma and local citizens over the last four years to incorporate estuarine restoration goals into Titlow Park’s Master Plan adopted in 2011. Metro Parks Tacoma is the agency responsible for conducting public meetings and for decision-making around park plans and improvements, and will participate in selecting and guiding the consultant and in evaluating all work products.

Project Overview

The Titlow Shoreline and Estuary Restoration Project will advance restoration goals at Titlow Lagoon, a degraded estuarine embayment within Titlow Park. Historically, the lagoon was relatively large (>5.5 acres), with extensive marsh and forested wetlands (>25 acres). Currently, the outlet to the lagoon is impounded by a 4 ft diameter pipe culvert beneath the railroad grade, and a tide gate controls tidal flow. The now-brackish northern portion of the lagoon was separated from the main tidal inlet with a dike. Fill and riprap were added to intertidal areas around the southern and eastern sides of the lagoon, so the total acreage has been reduced from its historic size.

This project seeks to restore natural estuarine and nearshore processes at Titlow Lagoon by: 1) enhancing fish passage, sediment transport, and tidal flow at the mouth of the lagoon through replacement of the existing tide gate/culvert structure with an open tidal channel and 2) increasing the quantity and quality of habitat available to juvenile salmonids and other nearshore species through removal of fill, shoreline armor and some park infrastructure and planting of native riparian vegetation. These actions are expected to benefit salmonids, forage fish, and marine-obligate birds, among other native species. The first project phase (hereafter ‘Phase 1’) completed feasibility and conceptual designs for restoration of estuarine structure and function. The current project phase will resolve uncertainties identified in Phase 1 and advance designs towards a 60% to final planning stage.

Expected Benefits to Fish

Titlow Lagoon and its tributaries, in their current altered state, do not support a natal population of spawning salmonids. However, Coded Wire Tag (CWT) recovery studies conducted by the Nisqually Tribe in the Nisqually estuary and surrounding nearshore sites have revealed that the Tacoma Narrows and Titlow shoreline represent an important salmon migration corridor. These studies documented use of this shoreline by Snohomish River, Duwamish River, Puyallup River, and Chambers Creek Chinook, implicating the importance of the nearshore habitat at Titlow as a migration, rearing, and foraging

corridor for multiple stocks. Therefore, restoring fish passage and tidal hydrology to Titlow Lagoon and improving overall shoreline function will benefit multiple populations across the Puget Sound region.

The beach to the south of the Lagoon outlet has documented surf smelt spawning activity. The project could help to restore sediment delivery to the beach and dampen energy discharge out of the Lagoon, reducing mean grain size on the beach and promoting surf smelt and sand lance spawning.

Progress to Date

A feasibility study and conceptual designs were prepared by Parametrix, Inc. in 2010. The feasibility study evaluated three fish passage alternatives (rehabilitation of the existing 4 ft diameter pipe culvert, a new 8 ft diameter pipe culvert, and a 40 ft span rail bridge), described potential beach and estuarine enhancements, and included a flood analysis. Although all fish passage alternatives were deemed feasible, a span bridge was identified as the preferred ecological option by a project technical advisory group convened in spring 2012. In order to inform design of the preferred restoration alternative, this announcement seeks a qualified team to provide technical services for design of an expanded and enhanced Titlow Lagoon, a daylighted tidal channel to Puget Sound, a standard 3-track rail crossing, and restored shoreline to the north of the Lagoon outlet channel.

Project Goals:

The consultant will assist the South Puget Sound Salmon Enhancement Group, Earthcorps, Metro Parks Tacoma, and project stakeholders in the design of restoration project components at Titlow Park that will improve fish passage and estuarine structure and function while protecting existing site uses. We are seeking a multi-disciplinary team inclusive of a licensed engineer, rail engineer familiar with BNSF bridge design and construction standards, fish biologist, and hydro-geomorphologist with expertise in tidal flow modeling, estuarine restoration techniques, shoreline armor removal, and design of constructed tidal waterways. The team will prepare 60% to final designs for:

1. Reclamation/expansion of Titlow Lagoon to better reflect its historic extent and tidal elevations through removal of fill, armoring, and designated park infrastructure.
2. Creation of an open tidal channel from Titlow Lagoon to the Tacoma Narrows with a 3-track rail crossing/overpass structure that maximizes tidal flow, is suitable for fish passage, and meets operations and construction standards of BNSF Railway Company.
3. Protection and possible modification of an existing City of Tacoma surface water outfall to Puget Sound occurring in the vicinity of the proposed tidal channel.
4. Establishment of improved connection of the northern and southern portions of the Lagoon through a sill or constructed riffle.
5. Re-establishment of riparian and salt marsh vegetation and addition of wood to provide biotic and structural diversity along the Lagoon shoreline.
6. Restoration of shoreline structure and function to the north of the Lagoon outlet through removal of a house, seawall, and rip rap armor ('Kay's House') and design of a passive recreation area in its place.

Available Funding:

The project is funded by the National Oceanic and Atmospheric Administration and Restore America's Estuaries' Community Restoration Program and the National Estuary Programs through the Estuary and Salmon Restoration Program. The estimated budget for this design work is \$80,000-\$100,000. A final scope and budget will be negotiated during the contract award process.

Scope of Work:

Task 1: Site Analysis and Review of Existing Information

The consultant will become familiar with existing information and site conditions by reviewing the feasibility study and conceptual designs prepared by Parametrix, Inc. in 2010, the Titlow Park Master Plan adopted by Metro Parks Tacoma in 2011, and property data, including a 1 ft contour topographic and bathymetric site survey to 0 ft MLLW Tidal Datum (AHBL 2009) and 2 ft contour LiDAR data available from the Puget Sound LiDAR Consortium. The consultant will visit the site to perform a field reconnaissance to visibly document conditions.

Task 2: Draft Design Report

Based on information generated through the Site Analysis above and with input from project stakeholders, the consultant will prepare a 60% plan set for expansion and reconnection of Titlow Lagoon to Puget Sound through a daylighted tidal channel, and a restored shoreline and recreation area to the north of the Lagoon outlet. The design analysis will need to be sufficient to evaluate the hydraulic response of the system to removal of the tide gate, increased tidal flushing, expanded Lagoon capacity, erosional response of the shoreline to armor removal. The resulting design report shall include the following:

2.1 60% Plans and Outline Specifications for Lagoon Enhancement and Tidal Reconnection

The designs should utilize information gathered in Phase 1. They should include a contour and grading plan showing proposed grades for the tidal channel and reclamation of the Lagoon area. The designs should identify quantities of materials extracted/imported to the site for construction and focus on final elevations to maximize estuarine function and salt marsh footprint. They should also explore areas for input of salmonid habitat structure and complexity, namely large woody debris. The designs should take into account public access and public use, as well as interpretive opportunities posed by the Lagoon and beach. The designs will need to fit into the Titlow Park Master Plan.

2.2 60% Plans and Outline Specifications for Construction of Tidal Channel and Rail Bridge

The designs should utilize BNSF standard bridge design including but not limited to the following guidance documents:

- BNSF RAILWAY – UNION PACIFIC RAILROAD “Guidelines for Railroad Grade Separation Projects”, published January 24, 2007.
- BNSF Standard Bridge Plans and Bridge Standards, published September, 2009
- BNSF Timetable, Northwest Division, Seattle Subdivision
- BNSF Track Chart, Seattle Subdivision
- American Railway Engineering and Maintenance of Way Association “Manual for Railway Engineering”, 2009 Edition.

The plans and specifications should include a narrative of mobilization and demobilization strategies and well as construction means and methods for installation of the bridge structure at this location. Design of the tidal channel should meet WDFW fish passage standards (WAC 220-110).

2.3 Final Plans and Outline Specifications for Shoreline Restoration

The designs should utilize existing data to perform a coastal engineering evaluation for armor removal to the north of the Lagoon outlet including historical/existing bluff retreat and sediment drift patterns on shoreline adjacent to ‘Kay’s House’ and predicted shoreline retreat response to armor removal and shoreline restoration. The designs should identify quantities of existing material

to be extracted, disposed of and imported to the site including plan and section view grading profiles for the proposed work. The designs should take into account public access and planned public use of this area for passive recreation, as well as interpretive opportunities posed by the restored shoreline. The designs should be consistent with the Titlow Park Master Plan.

2.4 Construction Sequencing and Staging Strategy

The report should develop a general plan for the sequence of construction activities and required access, including methodologies for water diversion, water management, temporary erosion control, clearing, grading, staging, and site restoration. The sequencing strategy should assume a three-track rail bridge will be constructed separately by BNSF construction crews, and excavation of the tidal channel will be accomplished under live track.

2.5 Cost Estimates

The report should include planning level estimates for construction costs based on the above designs and sequencing. The costs estimates should be itemized and include cut, fill, import and export quantities for the proposed activities.

2.6 Presentation of Draft Design Plans

Upon preparation of the above draft design report, the consultant shall meet with project stakeholders including representatives of the South Puget Sound Salmon Enhancement Group, Earthcorps, Metro Parks Tacoma, City of Tacoma, BNSF Railway Company, and the project technical advisory group to present the draft design findings. Following a review period, the South Puget Sound Salmon Enhancement Group will provide the consultant team with written comments and direction for any required design changes and/or modifications to be made to the draft design.

Task 3: Coordination with BNSF Railway Company

Throughout the course of this design contract, the consulting team will be expected to refer to BNSF technical guidance documents and seek input and/or approval from BNSF engineering staff on elements of project design and specifications.

Task 4: Coordination with City of Tacoma

Development of the project plan set will require coordination with the City of Tacoma's Environmental Services Staff to determine how this project fits with the City's storm water system and storm water outfall pipe through the BNSF causeway. The consulting team should work with City staff to identify possible realignment and retrofit alternatives for the stormwater pipe as it relates to design of the Lagoon enhancement and tidal reconnection plans.

Task 5: Final Design (60% to Final) Report

Following presentation and review of the draft design report by the project partners and project stakeholders, the consultant shall make agreed-upon modifications and clarifications to the report and submit a final report for use by project sponsors in promoting the project to funding agencies.

Task 6: Stakeholder Coordination and Meetings (assumed 5 meetings)

Design of the Lagoon enhancement and shoreline restoration must be consistent with the Titlow Park Master Plan. The consultant will work closely with Metro Parks Tacoma staff to ensure restoration components align with the plan. The consultant will also attend periodic meetings in Tacoma with

project sponsors and stakeholders to discuss progress (an estimated 5 meetings over the course of the contract).

Deliverables

At the conclusion of each of the above-described tasks, the consultant shall provide the South Puget Sound Salmon Enhancement Group with all required documents as digital copies in PDF format. Cost estimates shall be provided in MS Excel format and drawings in .dwg or similar format so that project stakeholders can adapt them for subsequent use in upcoming funding applications.

- In Task 1, the consultant shall provide a brief technical memorandum describing existing conditions and outlining design criteria.
- In Task 2, the consultant shall provide draft and final design documents as follows:
 - 60%-level grading plan describing the proposed modifications to Titlow Lagoon and the surface water outfall to achieve habitat objectives.
 - Site cross sections and details necessary to describe general construction methods for the proposed enhancements of Titlow Lagoon.
 - 60%-level plans of daylighted tidal channel to restore tidal hydrology and fish passage to the Lagoon.
 - Site cross sections and details necessary to describe the general construction of the tidal channel.
 - 60% level plans and outline specifications for 3-track crossing/overpass structure on BNSF rail road.
 - Site cross sections, structure details, and general construction notes.
 - Final plans and outline specifications for demolition of 'Kay's House' and associated shoreline armor and site restoration/grading of the shoreline.
 - Site cross sections and details necessary to describe demolition of structures and general construction and grading of the shoreline.
 - Outline specifications and/or a design narrative describing the proposed materials, methods, and construction sequence required to construct all elements of the proposed design package.
 - Estimates of anticipated construction costs, including proposed cut-fill quantities, estimated materials quantities, and documented assumptions regarding the construction process.
- In Task 3, the consultant shall provide summary notes documenting communications and comments obtained from coordination discussions with BNSF staff, representatives, and contractors.
- In Task 4, the consultant shall provide summary notes documenting communications and comments obtained from coordination discussions with City of Tacoma staff, representatives, and contractors.
- In Task 5, the consultant shall provide an updated final version of the design documents prepared in Task 2.
- In Task 6, the consultant shall provide Powerpoint presentations and meeting handouts as necessary.

Project Schedule:

The contract shall be awarded by December 1st, 2013 and shall be completed by November 1st, 2014. Work on this project is expected to begin immediately following award of contract. Projected deadlines for key deliverables include:

Key Deliverables	Deadline
Technical memo/field notes detailing review of existing information and site analysis	January 1 st 2014
Draft plans and specifications for Lagoon enhancements, fish passable tidal channels, rail bridge, and shoreline restoration components	March 30 th 2014
Draft design report prepared	May 1 st 2014
Final design report completed	July 1 st 2014

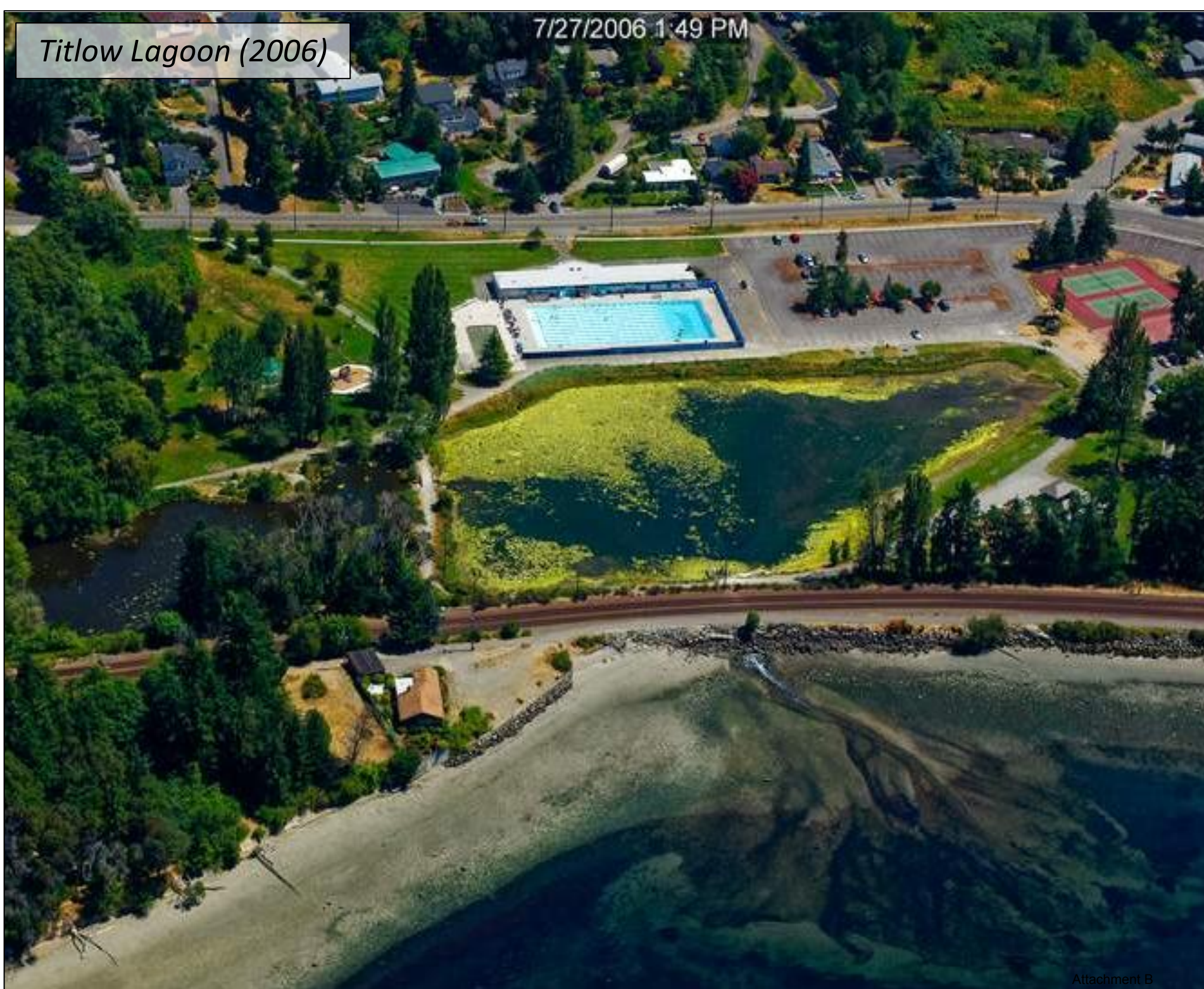
APPENDIX B: ATTACHMENTS

Titlow Lagoon (1931)



Titlow Lagoon (2006)

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Attachment B

Titlow Park Master Plan 2010



Titlow Lagoon (2017)



Artist's rendering of a restored Titlow Lagoon (S. Bower)