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**LAGUNA de SANTA ROSA WETLANDS PRESERVE
DESIGN MEMORANDUM**

To: Kenyon Webster, Planning Director
Sue Kelly, Engineering Department
City of Sebastopol

From: Jeff Peters and Margaret Henderson *JPH*
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Date: March 19, 1999

Subject: Design Memorandum for Laguna de Santa Rosa Wetlands Preserve Implementation

The purpose of this Design Memorandum is to outline and summarize our understanding of the consensus regarding Laguna Wetlands Preserve capital improvement projects and their design elements, prioritize funding needs, and phasing. Following approval of this Memo, it will be used for preparation of permit applications, and subsequently to guide preparation of Plans and Specifications for individual project elements. The City will then be able to assemble the individual Plan elements into contract documents for bidding and construction, as sources of funding are identified and secured.

The projects have been selected, based on our work scope of implementing the City's adopted Laguna Master Plan, and all of the recommended projects described herein are consistent with elements contained in the Master Plan and covered by the City's CEQA document on the Plan. Minor changes and adjustments to the Master Plan are allowed, provided there are no significant changes in identified environmental impacts. The first Phase (Phase I) projects, now completed, were selected as kick-off projects that could be implemented quickly and without extensive permitting requirements. Many of the next phase projects will require permits from various state and federal agencies. This Memo and the associated drawings will be used in the permit applications.

The projects and recommended prioritization and phasing have been identified based on our discussions with City staff, presentations to the Laguna TAC and a workshop held on November 18, 1998 at Sebastopol City Hall. We believe a consensus was achieved at the workshop, and we are using our notes from this meeting along with the TAC meeting notes and City staff guidance to prepare this Design Memo. The Agenda that was used at the TAC and public workshop presentation is included as an attachment to this Memo.

The following pages provide an outline of the project elements which we propose to include in the

The following pages provide an outline of the project elements which we propose to include in the permit application and for which we will be developing detailed designs. These elements (along with the recommended priority or phasing) are summarized in **Table 1**.

In addition to the design and priority information, we have also presented our first cut at likely construction costs (**Table 2**), for preliminary planning and budgeting purposes. The costs are planning level costs, within 25 percent of construction costs. These first cut estimates are necessarily broad until designs are further along, but may be of use in preliminary planning. They will be updated as design proceeds. **Table 3** describes related projects and funding sources.

The recommended priority for construction of the various identified projects are shown below. These will need to be confirmed by various City review agencies. This prioritization ranks implementation or construction phasing as if all projects are competing for the same City dollars. In reality some of the projects may be funded by specific grants, and as such, may go to the "front of the line" for construction.

By way of this Memo we are inviting comments on our design assumptions and prioritization. Following receipt of comments we will revise this Memo as necessary and begin work on the permit application and design drawings. Please submit any comments in writing to Jeff Peters.

Implementation Priorities

- IA Highest Priority - construct/implement by August, 1999
- IB High priority - construct/implement by October, 1999
- II Medium Priority - construct/implement by October, 2000
- III Low Priority - construct/implement by October, 2001
- IV Very Low Priority - construct/implement by October, 2002

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TABLE 1: LAGUNA WETLANDS PRESERVE IMPROVEMENTS AND PHASING

Map No.	Description	Estimated Cost	Priority
1	Irrigation System for Fall 1998/Spring 1999 Plantings	\$ 8,000.00	IA
2	Terraced Overlook at Morris Street Wetlands	15,000.00	III
3	Enhance Morris Street Wetlands	50,000.00	II
4	Seasonal Spur Trail at Morris Street	15,000.00	IV
5	Wetland Boardwalk	20,000.00	III
6	Floating Bridge	75,000.00	IB
7A	Laguna East Side Access Trail: Bridge Access and Trail Grading	20,000.00	IB
7B	Laguna East Side Access Trail: Trail Improvements	40,000.00	II
8	Trailhead/Staging Area at Highway 12	25,000.00	IV
9	Restoration Plantings, East Side	N/A ¹	IA
10	Irrigation System, East Side, 1999 plantings	13,000.00	IB
11	Remove Picnic Area-Riparian Restoration	15,000.00	IV
12A	Renovate Central Area near Snack Bar: Improve Accessibility	10,000.00	II
12B	Renovate Central Area Near Snack Bar: Amenities & Planting	25,000.00	III
13A	Ponds 4 and 5 Enhancement: Circulation /Island/Planting	8,000.00	IB
13B	Ponds 4 and 5 Enhancement: Recontouring and Hydraulic Imp.	72,000.00	II
14	Reroute Power Poles around Amphitheater area	40,000.00	IV
15	Outdoor Educational Classroom and Parking Area	87,000.00	IV
16A	Interpretive Signage Program, 2000	7,500.00	II
16B	Interpretive Signage Program, 2001	7,500.00	III
17A	Restoration Plantings, West Side	10,200.00	II
17B	Restoration Plantings, West Side	10,000.00	III
Materials, Equipment and Maintenance			
A	Wheeled Weed Whacker	700.00	IB
B	Miscellaneous Hand Tools	2,600.00	II
C	All Terrain Maintenance Vehicle	7,500.00	IB
D	Native Plants	7,000.00	IA
E	Maintenance, Irrigation System & Plantings, Year One	6,000.00	IA
F	Maintenance, Irrigation System and Plantings, Year Two	6,000.00	II
G	Maintenance, Irrigation System and Plantings, Year Three	6,000.00	III

¹This project has been funded and will be implemented Spring, 1999.

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TABLE 2: LAGUNA WETLANDS PRESERVE COST PER PHASE

Priority	Estimated Cost
IA	\$ 21,000.00
IB	124,200.00
II	198,300.00
III	83,500.00
IV	182,000.00
Total Cost	\$609,000.00

TABLE 3: RELATED PROJECTS

Item No.	Description	Estimated Cost	Funding Source
AA	Rehabilitate Playground Area	\$20,000 to \$35,000	Undetermined
BB	Preparation of Implementation Plan for the Master Plan Projects south of Highway 12	\$30,000	Undetermined
CC	Design for public access trail connection of Laguna Preserve to Kelly Ponds and Occidental Road	\$20,000 to \$35,000	Undetermined
DD	Seasonally Install and Remove Floating Bridge	Undetermined	City of Sebastopol/ City of Santa Rosa

Project Design Elements

1. Irrigation System for Fall 1998/Spring 1999 Plantings (Phase IA)

This item consists of design and installation of a temporary drip irrigation system to serve the plantings already installed during the Fall of 1998 and Spring of 1999.

2. Terraced Overlook at Morris Street Wetlands (Phase III)

A small 20 to 25 seat wetlands interpretive and staging area would be constructed overlooking a restored wetland, near the entry arbor, in this element of the Implementation Plan. The project could involve installing benches or terraced areas above the wetland. Seating could make use of stacked concrete slabs uncovered in the grading, or of constructed wooden or recycled plastic benches. Additional signage would also be included with this element.

3. **Morris Street Wetlands Enhancement (Phase II)**

A historic wetlands arm of the Laguna fronting on Morris Street would be restored and enhanced in this project element. The wetlands is about one half acre in size. Restoration would entail removing about one to two feet of soil selectively in the wetlands to create more open water and extend seasonal flooding, and providing several small elevated habitat islands or refuges. The wetlands would be connected to the small un-named creek bordering on the south to secure a more extended water supply. The wetlands would also provide water quality treatment (bio-filtration) of urban runoff originating along Morris Street. A dedicated sediment removal trap, with a pre-engineered access point would also be designed into the treatment wetlands.

4. **Seasonal Spur Trail at Morris Street (Phase IV)**

This item would consist of construction of a seasonal spur trail connecting the area immediately north of the cement plant with City-owned lands on the west side of the Laguna at Highway 12.

5. **Wetlands Boardwalk (Phase III)**

This element of the trails plan would consist of construction of an elevated boardwalk across the restored Morris Street wetlands area. Part of the objective of the restoration is to provide treatment of urban stormwater runoff, which would be routed through the wetlands. The boardwalk would be 400-feet long, four-feet wide, with a 42-inch handrail. The design would likely feature plastic lumber decking on steel posts elevated about three feet above the wetlands surface. It would be designed for full ADA access. Interpretive signage would be placed along the boardwalk on the functions of wetlands for wildlife habitat, flood detention storage, and water quality treatment.

6. **Floating Bridge (Phase IB)**

This element of the public access trail system would consist of a floating (pontoon-style) bridge crossing the Laguna adjacent to the picnic area at the Laguna Wetlands Preserve. A specially designed pre-fabricated HDPE bridge would be utilized. The recommended bridge is manufactured by Superdeck Inc. of Minneapolis, Minnesota. The bridge would have a 90-foot span and would be six-feet wide with a 42-inch handrail. The bridge would come in ten-foot long sections, each hinged together with a quick coupling connection. The end units would be hinged to sleepers on the banks with their lower sections on wheels that could automatically adjust to the floating bridge elevations which would rise and fall with the level of the Laguna, similar to a floating dock ramp. The bridge and access ramp would be ADA accessible for most of the season. The bridge ramp area would also be designed to allow for launching of small kayaks and canoes, as well as easy portaging of small craft around the floating bridge.

Since the Laguna is subject to annual flooding, the floating bridge sections would be dismantled and pulled from the water using a pick-up truck mounted hoist each October and re-installed each May. The bridge sections, each of which would weigh about 450 lbs., would be loaded on trailers and hauled to a nearby City storage facility. The bridge would be specially designed to allow for quick deployment and removal.

The estimated construction costs for this element includes the following:

Access Ramp and Bridge Abutments	\$ 30,000.00
90-foot by 6-foot Floating Bridge	30,000.00
Construction Inspection of Ramp/Abutment/Bridge Installation	10,000.00
One-time Installation Charge	<u>5,000.00</u>
Subtotal	\$ 75,000.00

7A. Laguna East Side Access Trail - Bridge Access and Trail Grading (Phase 1B)

7B. Laguna East Side Access Trail - Trail Improvements (Phase II)

This portion of the Laguna Wetlands Preserve access trail system would consist of construction of the boardwalk/access to the floating bridge, and preliminary grading of the trail along the east side levee (parallel to the Laguna) and along Highway 12 within a City-owned strip south of the existing fence. Minor trail improvements such as culverts or small boardwalk crossings may be needed to complete this connection.

Completion of permanent trail improvements would be implemented during Phase II, and the trail would primarily follow an existing levee top, extending from Highway 12 to across from the Wetlands Preserve. This is a distance of about 1,800 feet. The four-foot wide trail would be constructed from stabilized quarry fines. Short sections of an elevated boardwalk would be necessary to connect the levee top trail with the floating bridge. The trail in this section would not necessarily be designed for ADA access, as a comparable experience exists on the west side. However, nearly all of the trail is accessible to those with partial disabilities.

This item would also include installation of four benches to be located on the east side of the Laguna, and may include trail extension to the north, as budget allows..

8. Trailhead/Staging Area at Highway 12 (Phase IV)

This item would consist of completion of a gravel or other soft-paved staging area adjacent to the now-closed Chevron station on Highway 12. Associated right of way costs, if applicable are not included.

9. Restoration Plantings, East Side (Phase IA)

This item consists of planting three areas on the east side of the Laguna where existing fencing and location will enable establishment of new plants without disturbance. These include the buffer area immediately adjacent to the Laguna and north of the Highway 12 bridge, where Valley oak, Oregon ash, Box elder, hawthorn, elderberry, rose and willow will be planted; the fenced oak woodland area within the irrigated pasture, where valley oaks will be added; and a buffer area between the Highway 12 right of way and the existing fence which will be planted with mixed riparian species. This item would include installation of tree protectors and weed cloth for each plant. This item has been funded as part of a 1999 grant and will be completed this spring.

10. Irrigation System, East Side (Phase IB)

This item includes design and installation of a temporary drip irrigation system to serve the planted areas described in item 9.

11. Remove Picnic Area–Riparian Restoration (Phase IV)

This item includes the demolition and removal of the paved areas within the designated area; salvage, as needed, tables and benches which will be installed elsewhere in the future; and eradication of existing grassed areas, capping existing irrigation lines, and preparation and restoration of these areas with native riparian species.

12A. Renovate Central Area near Snack Bar: Improve Accessibility (Phase II)**12B. Renovate Central Area near Snack Bar: Amenities and Planting (Phase III)**

This includes redesign of the park central area and incorporation of picnic and possibly playground facilities that are displaced as a result of the implementation of item 11. The existing concrete block building could either be demolished, or renovated to provide bathroom, and storage space for maintenance supplies and equipment. Phase II components would include removal of fencing and improvement of accessibility to provide a clear trail link between the Preserve trail and parking area; Phase III would include demolition, redesign and permanent facilities improvements.

13A. Ponds 4 and 5 Enhancement: Circulation, Island and Planting (Phase IB)**13B. Ponds 4 and 5 Enhancement: Recontouring and Hydraulic Improvements (Phase II)**

This item entails the renovation of Ponds 4 and 5 to provide active management of the ponds for habitat enhancement. Item 13A entails preliminary circulation improvements, such as use of pumps to fill and draw water for improved shorebird conditions. A small habitat island could also be developed utilizing spoils from the floating bridge installation. In 13B, the pond hydraulics would be further refined and a permanent management system installed. In Pond 4, the pond edges would be smoothed out with fill, to support strands of emergent marsh vegetation. The pond could be locally deepened, and a habitat island would be added. The pond would be supplied with water from the Laguna, or reclaimed water.

These pond restoration actions are not currently subject to CORPS permitting requirements, because they have been used industrially in recent years. However, it would be prudent to implement restoration actions within the next three years.

14. Reroute Power Poles around Amphitheater Area (Phase IV)

This includes either re-routing or under grounding the existing power lines that bisect the amphitheater area. The power lines could be re-routed around the recycling center.

15. Outdoor Educational Classroom (Phase IV)

A small 60 seat outdoor educational classroom would be constructed in the northwest part of the Laguna Wetlands Preserve. The classroom seating area would consist of a partial grassed bowl or amphitheater, with bench seating along the lower portion. The classroom design would be natural and rustic with wood or rough concrete bench seating. The outdoor classroom would have a small stage or presentation area, as well as up to 69 parking spaces (as called for in the Master Plan). No lighting or PA system is proposed.

16A and B. Interpretive Signage (Phases II and III)

This element includes interpretive sign boards which would be positioned along the Laguna nature trail, with each station telling a different story about the natural history of the Laguna system. This would be a part of a larger educational plan that the City and Laguna Foundation are undertaking that includes development of an outdoor natural science curriculum and self-guided interpretive trail brochure. This item is divided into a two-year program to reflect evolving signage needs.

17A and B. Restoration Plantings, West Side (Phases II and III)

This item would provide for additional restoration plantings within the Laguna Wetlands Preserve. Phase II plantings would supplement areas around the parking lot, amphitheater site, and at the lift station, while plantings in Phase III would focus on other areas such as the area east of the O'Reilly Buildings and adjacent to the Laguna.