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April 11, 2017

Marin County Board of Supervisors
3501 Civic Center Drive
San Rafael, CA 94903

SUBJECT: MCINNIS MARSH RESTORATION PROJECT FEASIBILITY STUDY

Dear Board Members:

RECOMMENDATION:

1. Accept the McInnis Marsh Restoration Project Feasibility Study.
2. Direct staff to move forward with design and environmental review of Alternative D.

SUMMARY:

McInnis Marsh is a 180-acre diked wetland east of McInnis Park between Miller and Gallinas Creeks. Historically, these creeks were connected through a system of small channels. This connectivity was lost in the early 1900's with the construction of levees to make the marsh area suitable for agricultural use. Under current high tide conditions, high water flows into the diked wetland and portions of McInnis Park over the existing levees. With current sea level rise projections, it is likely that flooding could damage the existing park and adjacent Las Gallinas Valley Sanitary District facilities.

Additionally, the mature natural wetlands on the bayside of the levees support several federal and state listed endangered and threatened species, including the Ridgway's rail (*Rallus obsoletus*), California black rail (*Laterallus jamaicensis coturniculus*), and the saltmarsh harvest mouse (*Reithrodontomys raviventris*). The baylands at the mouth of Gallinas Creek support some of the most important habitat for these species in the San Francisco Bay area. As sea level rises, these areas will transform into low marsh and subtidal areas destroying the existing breeding and high tide refuge habitat that is currently present.

Finally, sea level rise is also threatening recreational trails in this area. These levee trails provide users with hiking trails with views of Gallinas and Miller Creeks and San Pablo Bay. Under current sea levels, there are sections of the levee trails that are flooded during high tides. As sea level rise continues, the tides will continue to flood recreational trails, making it more difficult for the public to use this area.

In order to protect these existing park and other facilities from flooding and to enhance habitat for the federal and state listed species, Marin County Parks, in partnership with the Las Gallinas Valley Sanitary District and the Marin County Flood Control and Water Conservation District, proposes to restore the intertidal marsh and estuarine habitat. Marin County Parks contracted with Kamman Hydrology and Engineering (KHE) to study existing conditions within the area and prepare a feasibility study for restoring the habitat. This study evaluated existing conditions of the project site and opportunities for and constraints to its restoration. KHE established six goals for the project including:

1. Address issues related to accelerated sea level rise and other climate change impacts.
2. Protect and improve habitat for special status species by expanding intertidal, subtidal, and transitional upland habitat.
3. Provide area to accommodate the movement of marsh habitat as sea level rises.
4. Improving the salmonid migratory corridor to Miller Creek.
5. Protection of existing park and water treatment facilities from the damaging impacts of sea level rise.
6. Maintain and improve public access to the marsh area and improve San Francisco Bay Trail connection to the Las Gallinas Valley Sanitary District property to the north.

Based on these goals, the report identifies five different conceptual alternatives for restoration of these wetlands, including:

- A. Modifying management of the marsh to improve habitat.
- B. Removing the high marsh levees on the south side of the marsh and building a levee between the golf course and the marsh.
- C. Remove eastern and southern levees, construct a breach into Gallinas Creek, and build a horizontal levee between the golf course and the marsh.
- D. Remove all external and internal levees, construct breaches into both Gallinas and Miller Creeks, and construct a horizontal levee between the golf course and the marsh.
- E. Remove all external and internal levees, construct two breaches into Miller Creek, and construct a horizontal levee between the golf course and the marsh.

The horizontal levee is a living shoreline shaped like a gently sloping ramp that gradually transitions from salt marsh habitat to upland habitat. The elongated, toe of the levee slows wave action and prevents overtopping in a flood or storm surge, while the upper area provides transitional habitat and upland refugia for marsh wildlife. The new levee will also allow for the completion of an important segment of the San Francisco Bay Trail, interpretive signage, and viewing areas.

In its feasibility study, KHE is recommending that Marin County Parks accept Alternative D as its preferred approach. This alternative includes breaches into both Miller and Gallinas Creeks and achieves all project goals, including improving the migratory corridor for steelhead trout (a federally listed threatened species) which inhabit Miller Creek, in a manner consistent with recommendations of the National Oceanic and Atmospheric Administration's Coastal Multispecies Recovery Plan.

FISCAL IMPACT:

The California State Coastal Conservancy funded the feasibility study with a \$90,000 grant and the California Department of Fish and Wildlife has approved a \$550,000 grant to prepare project designs and environmental review. Additionally, your board has approved \$350,000 for this project in its Measure A budget. Finally, the Las Gallinas Valley Sanitary District has agreed to provide \$100,000 towards this planning effort. It is anticipated that the construction phase of this restoration project will cost between \$5,000,000 - \$10,000,000. Marin County Parks will utilize Measure A funding to leverage funds from additional sources such as Measure AA, Prop 1 funds and any future Statewide Park Bonds that become available.

REVIEWED BY:

<input type="checkbox"/> Department of Finance	<input checked="" type="checkbox"/> N/A
<input type="checkbox"/> County Counsel	<input checked="" type="checkbox"/> N/A
<input type="checkbox"/> Human Resources	<input checked="" type="checkbox"/> N/A

Senior Open Space Planner James Raives is the principal author of this report.

Respectfully submitted,



Chris Chamberlain
Assistant Director