

SAN FRANCISCO BAY CONSERVATION AND DEVELOPMENT COMMISSION

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August 19, 2010

Application Summary

(For Commission consideration on September 2, 2010)

Number: Material Amendment No. One to Consistency
Determination No. CN 5-04
Date Filed: 8/19/10
75th Day: 11/2/10
Staff Assigned: Max Delaney (415/352-3668, maxd@bcdc.ca.gov)

Summary

Applicant: U.S. Fish and Wildlife Service (USFWS)

Location: In a wildlife refuge priority-use area that includes work within a certain waterway and within the 100-foot shoreline band, at the former Cullinan Ranch located within the San Pablo Bay National Wildlife Refuge, in Napa and Solano Counties. The project site is bordered to the north by South Slough and Dutchman Slough, to the west by Pond 1 (owned by the California Department of Fish and Game), to the east by the Guadalcanal Village tidal marsh (owned by the California Department of Transportation), and to the south by Highway 37 (Exhibit C).

Cullinan Ranch site location.



Project: The proposed project would restore 1,575 acres of former diked baylands to create approximately 1,549 acres of tidal marsh and 26 acres of associated upland habitat. Restoration would involve: (1) excavating new tidal channels within the former ranch; (2) lowering the levee along Dutchman and South Sloughs and excavating four 100-foot-wide breaches in the levee; (3) lowering the levee between Cullinan Ranch and the Guadalcanal Village marsh and excavating one 100-foot-wide breach; (4) placing ditch blocks in old agricultural drainage channels and filling borrow ditches; (5) constructing a 3,500-foot-long buttress levee along the southeastern corner of the site to prevent the flooding of Highway 37; (6) placing rip rap protection along the northern edge of Highway 37; (7) strengthening and resurfacing the Pond 1 levee and installing water control structures within the levee; and (8) placing material, including the possible use of imported dredged material, to raise portions of the site to elevations appropriate for vegetation colonization (Exhibit B).

The project would provide public access improvements to the site including acceleration and deceleration lanes along State Route 37, new viewing, fishing and kayaking facilities along the Pond 1 levee and resurfacing of the Pond 1

levee trail, a new trail at the Guadalcanal Village site, and kiosks and interpretive signage at both ends of the project site (Exhibit C).

Habitat Type	Acres
Tidal Marsh Habitat	1,549
Upland Habitat	26
TOTAL	1,575

**Issues
Raised:**

The staff believes that the application raise six primary issues: (1) whether the project would provide maximum feasible public access consistent with the project; (2) whether the project is consistent with the Bay Plan policies on natural resources including fish, other aquatic organisms and wildlife; tidal marshes and tidal flats; and subtidal areas; (3) whether the project is consistent with the Bay Plan policies on water quality; (4) whether the project is consistent with the priority use designation for the site; and (5) whether the project is consistent with the Bay Plan policies on Sea Level Rise and Safety of Fills.

Background

The 1,579-acre site was historically a tidal marsh. Much of the site and many surrounding sloughs were diked off in the late nineteenth century so the site could be used for agriculture, primarily oat and hay production. Consequently, portions of the site have subsided by as much as six feet. Agricultural uses of the site continued through the 1980s until the parcel was purchased by the USFWS in 1991 under the authority of Endangered Species Act. The site is currently a mix of seasonal wetlands, freshwater marsh, open water, degraded tidal marsh, and upland areas (Exhibit A).

On July 16, 2004, the Commission approved BCDC Consistency Determination No. CN 5-04 authorizing the constructing of three boardwalks covering a total of 3,340 square feet of the wildlife refuge priority-use area to maintain access to PG&E towers within the parcel. The proposed Material Amendment No. One to BCDC Permit Consistency Determination No. CN 5-04 would authorize the restoration of former diked baylands within the Cullinan Ranch site to tidal marsh and associated upland habitat as well as public access improvements throughout the site. Once restored, the Cullinan Ranch site would be managed as part of the existing San Pablo Bay National Wildlife Refuge.

Project Description

Project Details:

The applicant describes the project as follows:

1. **Within a wildlife refuge priority-use area (certain waterway):**
 - a. Excavate approximately 14,600 cubic yards of material (below MHW) over an approximately 88,100-square-foot area (2.0 acres) to create four 100-foot-wide breaches in the South Slough and Dutchman Slough levees; and
 - b. Excavate approximately 110,500 cubic yards of material over an approximately 3,314,000-square-foot area (76.1 acres) to lower approximately 26,000 linear feet of the outboard levee along South and Dutchman Sloughs.
2. **Within a wildlife refuge priority-use area (including shoreline band):**
 - a. Place approximately 92,000 cubic yards of rip rap over an approximately 611,000-square-foot area (14.0 acres) to armor the levee on the north side of Highway 37;
 - b. Excavate approximately 46,400 cubic yards of material (above MHW) over an approximately 263,700-square-foot area (6.1 acres) to create four 100-foot-wide breaches in the South Slough and Dutchman Slough levees;
 - c. Excavate approximately 1,000 cubic yards of material over an approximately 5,000-square-foot area (0.11 acres) to create one 100-foot-wide breach in the levee bordering the Guadalcanal Village marsh;
 - d. Place approximately 101,600 cubic yards of material over an approximately 504,425-square-foot area (11.6 acres) to construct a 3,500-foot-long buttress levee for flood protection;
 - e. Excavate approximately 94,800 cubic yards of material to lower internal levees, create pools for deep water habitat, excavate tidal channels, perform site grading, and generate material for levee construction and strengthening;
 - f. Import up to 100,000 cubic yards of dredged material from Pond 1 (owned by DFG) and import up to 405,000 cubic yards of dredged material to use as fill on-site;
 - g. Place up to 650,000 cubic yards of imported material and material excavated from on-site over an approximately 5,500,000-square-foot area (126 acres) to raise portions of the site to the appropriate elevation for marsh plant colonization, create upland and transition habitat, create ditch blocks, and raise and strengthen the Pond 1 levee;
 - h. Install two water control structures in the Pond 1 levee (to partially be authorized under BCDC Permit 8-04);

- i. Place approximately 15,200 cubic yards of material over an approximately 126,324-square-foot area (2.9 acres) adjacent to Highway 37 to construct a 750-foot-long acceleration lane and a 650-foot long deceleration lane (to be partially authorized under BCDC Permit 8-04 issued to the California Department of Fish and Game);
 - j. Place approximately 6,200 cubic yards of material over an approximately 47,000-square-foot area (1.1 acres) to construct a viewing platform near the Pond 1 parking area;
 - k. Construct a 650-square-foot earthen kayak pull-out ramp by lowering an existing berm;
 - l. Construct, use, and maintain a 1,350-square-foot (0.03 acres) overlook at the north end of the Pond 1 levee (to be partially authorized under BCDC Permit 8-04);
 - m. Improve, use and maintain a total of approximately 7,000 linear feet of existing levee trail by installing 600 linear feet of ADA-compliant surfacing at the southern end and 6,400 linear feet of gravel along the remaining trail (to be partially authorized under BCDC Permit 8-04);
 - n. Construct a 1,200-square-foot (0.03 acres) wooden pile-supported fishing pier (to be partially authorized under BCDC Permit 8-04);
 - o. Construct a 1,950-square-foot (0.04) wooden pile-supported kayak launch (to be partially authorized under BCDC Permit 8-04); and
 - p. Install, use, and maintain a wooden kiosk and interpretive signage.
3. **Within the former Guadalcanal Village (once title has been transferred):**
- a. Construct, use and maintain a 1,760-foot-long by eight- to ten-foot-wide (approximately 0.04 acres) ADA-compliant trail on top of an existing levee; and
 - b. Construct, use and maintain a 1,200-square-foot (0.03 acres) wooden pile supported fishing pier at the terminus of the levee trail.

Fill: The proposed restoration project would involve placing approximately 779,496 cubic yards of fill over an approximately 7,026,429-square-foot area (161 acres) within a wildlife refuge priority-use area. Most of the fill would be placed to raise elevations to accelerate the colonization of tidal marsh and transitional habitat, recontour the site, shape the flow of tidal waters, etc. Some fill is needed to protect Highway 37 from flooding once tidal action is returned to the site and to construct acceleration and deceleration lanes to improve the safety for users of the existing Pond 1 public parking lot.

**Public
Access:**

Currently, there is a 7,000-foot-long public access trail along the Pond 1 levee. A small paved parking area with approximately ten spaces is at the south end of the levee to the east, within the neighboring Guadalcanal Village site, there is a public access seating area and a parking lot with approximately eight spaces, both owned and maintained by Caltrans (BCDC Permit No. 2-00). At the west

end, on and adjacent to the Pond 1 levee, the project proposes to construct: 1) acceleration and deceleration lanes along State Route 37 to improve the safety of public access uses, 2) a kayak launch and a kayak haul-out area, 3) one pile supported wooden fishing pier, 4) an overlook and three benches, 5) a viewing platform, and 6) to provide ADA-accessible surfacing on approximately 600 linear feet of the Pond 1 levee trail and provide surface improvements for the remaining 6,400 linear feet of trail (Exhibits C, D, E and F). At the east end of Cullinan Ranch pending transfer of title from Caltrans to the USFWS (in process), the project proposes to construct an ADA-accessible trail on an existing levee within the Guadalcanal Village site and a wooden pile-supported fishing pier at the terminus (Exhibit G). In addition, the project would provide two new kiosks and interpretive and directional signage in various locations around the site. The project proposes no new public access parking.

Type of Public Access	Square Feet	Acres	Shoreline Length (feet)	Amount (US\$)	Yes/No
On-Site (new)	6,100	0.14	NA		
Off-Site (new)	17,600 *	0.40	1,760		
Protected or Maintained	0	0	0		
Monetary Contribution	na	na	na		
View Corridor	na	na	na		
<i>Total</i>	23,700 sq. ft.	.54 ac.	NA		

**For the Guadalcanal levee trail based on an average trail width of ten feet.*

Priority

Use: The proposed project is located in an area designated as a Wildlife Refuge priority use area on Bay Plan Map No. 2.

Schedule and Cost:

The USFWS is proposing to begin construction in late Fall 2010. Construction phasing would depend on funding and attaining enough suitable material to raise the Pond 1 levee and construct the buttress levee. Project construction is broken down into four main components for phasing purposes: interior site work, Highway 37 improvements, Pond 1 levee improvements, and levee lowering and breaching. The first three components would need to be completed prior to levee lowering and breaching. The total cost of the project would be \$8,000,000.

Staff Analysis

A. **Issues Raised:** The staff believes that the application raise six primary issues: (1) whether the project would provide maximum feasible public access consistent with the project; (2) whether the project is consistent with the Bay Plan policies on natural resources including fish, other aquatic organisms and wildlife; tidal marshes and tidal flats; and sub-tidal areas; (3) whether the project is consistent with the Bay Plan policies on water quality; (4) whether the project is consistent with the priority use designation for the site; and (5) whether the proposed project is consistent with the Bay Plan policies on Sea Level

Rise and Safety of Fills and whether the applicant has done an adequate job of addressing this issue.

1. **Maximum Feasible Public Access.** Section 66602 of the McAteer-Petris Act states that "...existing public access to the shoreline and waters of the...[Bay] is inadequate and that maximum feasible public access, consistent with a proposed project, should be provided." The Bay Plan Public Access policies state that "a proposed fill project should increase public access to the Bay to the maximum extent feasible" (Policy No. 1).

Public access opportunities are limited within the Refuge since the area consists of large expanses of wetland habitat and networks of sloughs and islands, with few public roads. Public access at the Cullinan Ranch site currently exists along a 7,000-foot-long gravel trail atop the Pond 1 levee at the west end of the site. At the south end of this trail, there is a small paved parking lot with spaces for approximately ten vehicles. A locked gate precludes public vehicles from driving out onto the Pond 1 levee and an ADA-compliant pedestrian gate allows access for bikers and pedestrians onto the levee. The parking lot can only be accessed by vehicles traveling west along Highway 37. Given the high rate of speed that vehicles typically travel along the highway, making the sudden right turn into the lot can be dangerous. At the west end of the site, the USFWS is proposing new acceleration and deceleration lanes along State Route 37, new viewing, fishing and kayaking facilities along the Pond 1 levee and resurfacing of the Pond 1 levee trail, a new trail at the Guadalcanal Village site, and kiosks and interpretive signage at both ends of the project site (Exhibits C, D, E, and F).

There is currently no public access within the Cullinan Ranch site at the east end. There is a public access area seating area and parking lot for eight vehicles, within the neighboring Guadalcanal Village site, however, both of these areas are owned and maintained by the California Department of Transportation (CalTrans). CalTrans is currently in the process of transferring ownership of the remaining portion of the Guadalcanal Village marsh site to the USFWS (not including the seating area and parking lot). Once this property is acquired, the USFWS proposes to construct a new ADA-compliant trail on an existing levee within the Guadalcanal Village and a wooden pile-supported fishing pier at the terminus of the trail (Exhibit G). In order to access this new trail, the public would need to cross through the CalTrans public access seating area.

- a. **Previously Required Public Access Improvements.** In 2004, the California Department of Fish and Game (CDFG) was required to construct two 75-square-foot kayak launches as a condition of BCDC Permit 8-04. In 2006, when it was determined that the average depth of Pond 1 is too shallow for kayaks, the permit was amended to allow the CDFG to construct the kayak launches as part of the Cullinan Ranch restoration project instead. The USFWS would receive funds from the CDFG to construct an approximately 1,950-square-foot wooden, pile-supported kayak launch on the east side of the Pond 1 levee (Exhibit D). BCDC Permit 8-04 also required that CDFG improve, use and maintain the Pond 1 levee trail for public access by placing approximately 2,740 tons of aggregate base rock to a 4-inch depth. The CDFG would provide funding and support for the USFWS to make these trail surface improvements as part of the proposed project.

- b. **Kayak Launch.** The interior of Cullinan Ranch is currently closed to the public. The project proposes to open the site to non-motorized human-powered boats once the initial restoration work has been completed (i.e., the site has been breached to allow tidal action). In 2004, BCDC Permit 8-04 required CDFG to construct two 75-square-foot kayak launches in Pond 1 as part of the restoration of former salt ponds 1, 2 and 3. The site has subsided considerably over the past century, as much as six feet in some areas, and it is expected that most of the site will remain as open water and accessible to kayaks and small crafts for decades after the site is breached. The USFWS is proposing to excavate a channel connecting the proposed kayak launch to a nearby tidal channel in an effort to extend the time that kayak access would be maintained as sediment accretes and marsh plain forms throughout the site (Exhibit D). If sedimentation occurs faster than expected and the kayak channel becomes too shallow for boats, the kayak launch may be relocated.
- c. **Guadalcanal Trail and East End Improvements.** The USFWS is proposing to provide a new trail on top of an existing levee within the neighboring Guadalcanal Village site, pending their acquisition of the site (Exhibit G). The Guadalcanal Village site is currently owned by CalTrans who has communicated their intent to transfer this parcel to the USFWS. While it appears that this land transfer is imminent, the USFWS has not yet acquired the land and it is uncertain as to when the transfer will occur. If for unforeseen reasons, the USFWS does not acquire the Guadalcanal Village site, the USFWS would provide an alternative public access component for the east end of the site, which may include an ADA-compliant, public access trail and improvements on the proposed buttress levee along Highway 37, a monetary contribution to future public access improvements at River Park in Vallejo, a monetary contribution to future public access sites in the CDFG's Napa-Sonoma Marshes Area (such as Ponds 9 and 10), and/or the construction of a public access trail or area somewhere else in the vicinity.

The Commission should determine whether the proposed public access is the maximum feasible public access consistent with the project.

- d. **Minimize Public Access Impacts to Wildlife.** Access to some wildlife areas allows visitors to discover, experience and appreciate the Bay's natural resources and can foster public support for Bay resource protection. However, in some cases, public access may have adverse effects on wildlife (including flushing, nesting or foraging birds, increasing stress, and/or nest abandonment), and may result in adverse long-term population and species effects. The type and severity of effects on wildlife depend on many factors, including site planning, the type and number of species present and the intensity and nature of the human activity. The Bay Plan Public Access policies state in part, "[p]ublic access to some natural areas should be provided to permit study and enjoyment of these areas. However, some wildlife are sensitive to human intrusion. For this reason, projects in such areas should be carefully evaluated in consultation with appropriate agencies to determine the appropriate location and type of access to be provided..." (Policy No. 3) The policies further state, in part, that "siting, design, and management strategies should be employed to avoid or minimize adverse impacts on wildlife..." (Policy No. 4) and that "public access should be integrated early in the planning and design of Bay habitat restoration projects to maximize public access opportunities and to avoid significant adverse effects to wildlife" (Policy No. 12). Lastly,

the policies state, in part, that "...improvements should be designed and built to encourage diverse Bay-related activities and movement to and along the shoreline, should permit barrier free access for the physically handicapped, and should be identified with appropriate signs." (Policy No. 6).

At the west end of the site, the 7,000-foot-long Pond 1 levee owned and operated by the CDFG has a gravel trail on top of it and is already open to the public. The project is proposing to construct improvements along the levee, including new trail surfacing, an overlook, a viewing platform, a fishing pier and two kayak launches. Current conditions along the levee consist of ponded open water and shallow mudflat to the west (in Pond 1) and freshwater and ruderal habitat to the east (within Cullinan Ranch) (Exhibit A). There is little wildlife use and habitat value for the Pond 1 levee currently. In addition, since most of the site has significantly subsided since being diked off for agricultural use, as much as six feet in some places, the site is going to be mainly open water succeeded by mudflats for 15-30 years after the site is returned to tidal action. At that time, as marsh habitat begins to develop along the edge of the Pond 1 levee, wildlife use may increase and the USFWS will likely have a better understanding of what management measures are needed to minimize conflicts between the public and wildlife.

The Guadalcanal Village site was breached in 2001 and is still accumulating sediments and being colonized by marsh vegetation. Salt marsh harvest mice, an endangered species, have been observed using portions of the site in the last few years. The 1,760-foot-long public access trail proposed for this site would be located on an existing levee (Exhibit G) that is currently used as informal access by the public, especially fisherman. The proposed trail would create a designated public access area that would hopefully minimize intrusion into the marsh. As tidal marsh within Guadalcanal Village continues to develop, the USFWS would assess the level of wildlife use in and around the levee and evaluate the impact of humans on such use, as part of their monitoring program. The USFWS may propose management measures to reduce potential conflicts between humans and wildlife. Further, if large-scale restoration efforts like Cullinan Ranch, Sears Point, and South Bay salt ponds are successful around the Bay, populations of currently listed species, such as the salt marsh harvest mouse and the California clapper rail, may increase significantly and these species may be delisted.

The Commission should determine whether the proposed public access has been designed to sufficiently address issues of public access and wildlife compatibility.

2. **Natural Resources Policies**

The Bay Plan policies on Tidal Marshes and Tidal Flats state, "where and whenever possible, former tidal marshes and tidal flats that have been diked from the Bay should be restored to tidal action in order to replace lost historic wetlands or should be managed to provide important Bay habitat functions...." The policies also state, "[a]ny tidal restoration project should include clear and specific long-term and short-term biological and physical goals, and success criteria and a monitoring program to assess the sustainability of the project. Design and evaluation of the project should include an analysis of: (a) the effects of sea level rise; (b) the impact of the project on the Bay's sediment budget; (c) localized sediment erosion and accretion; (d) the role of tidal flows; (e) potential invasive species introduction, spread and their control; (f) rates of colonization by vegetation, where applicable; (g) expected use of the site by fish, other aquatic

organisms and wildlife; and (h) site characterization. If success criteria are not met, corrective measures should be taken....”

The Bay Plan policies on Subtidal Areas state that, “[s]ubtidal restoration projects should be designed to: (a) promote an abundance and diversity of fish, other aquatic organisms and wildlife; (b) restore rare subtidal areas; (c) establish linkages between deep and shallow water and tidal and subtidal habitat in an effort to maximize habitat values for fish, other aquatic organisms and wildlife; or (d) expand water open areas in an effort to make the Bay larger....” (Policy No. 3.) The Bay Plan policies on subtidal habitats also state that subtidal restoration projects should be monitored for the same components that are required in the tidal marsh and tidal flats policy described above.

Before being diked for agriculture, Cullinan Ranch was a tidal marsh. The site is currently a mix of freshwater and seasonal wetlands, upland, ruderal habitat, emergent marsh, open water and degraded tidal and remnant tidal marsh.

The consistency determination states that “seasonal wetlands characterized by cattails and other wetland plants now occur through approximately 1/3 of the site” and “upland non-native grasses occur over most of the remainder of the site.” Consequently, there is currently little wildlife use and habitat value throughout much of the site. The proposed project would restore the site to tidal marsh, tidal channels, transitional habitat, and upland habitat. The consistency determination states that “the purpose and need of the project is to fulfill the federal mandate to protect and create habitat for endangered and threatened salt marsh-dependent species. The property was purchased under the authority of the ESA by the Refuge with the intent that it would be restored to support tidally influenced habitats. In addition, the site would provide migratory bird habitat for several decades as the site accretes to marsh plain elevation.” It will likely take up to 60 years to develop into a fully vegetated tidal marsh. Much of it will remain open water and mudflat habitat for decades, providing valuable habitat for diving ducks and shorebirds. The consistency determination states that “in order to expedite the establishment of tidal marsh, the northern levee would be lowered, interior levee slopes would be flattened, and selected areas within the site raised with imported and/or on-site soil.” The USFWS further states that the “[material] would be placed to...create a minimum 30-acre area along Dutchman and South Sloughs and Guadalcanal Village that would be available for near-term establishment of mid to high marsh vegetation” and “up to 50 acres of additional marsh habitat may be created adjacent to Guadalcanal Village if sufficient material and budget are available.” The restoration project would result in greater hydraulic connectivity among habitats within and adjacent to the project site, including the previously restored Guadalcanal Village tidal marsh, South and Dutchman Sloughs. Improved tidal circulation would allow for healthier habitat in all these sites as well as increased movement of wildlife between habitat types.

The USFWS has completed a Section 7 consultation with the USFWS Endangered Species Branch (ESB). The ESB issued a biological opinion (BO) on May 7, 2010 that found the proposed project would not likely to adversely affect the endangered salt marsh harvest mouse (*Reithrodontomys raviventris*) (harvest mouse) or the endangered California clapper rail (*Rallus longirostris obsoletus*) (clapper rail). This BO also found that the project would be unlikely to adversely affect the threatened delta smelt (*Hypomesus transpacificus*) as long as specific conservation and mitigation measures are met, such as

limiting construction to the work window of August 31 to January 31, diluting any waters containing low dissolved oxygen concentrations prior to breaching, and implementing other best management practices. Further, the BO anticipates the project would benefit delta smelt by flushing nutrients and food into the Napa River once the site is breached. In the event that the project would result in temporary impacts to the harvest mouse or clapper rail, the USFWS has issued an Incidental Take Statement for these two species. Conservation measures recommended by the USFWS ESB would be incorporated into pre-construction and construction activities associated with the project in order to minimize any impacts.

On April 5, 2010, NOAA National Marine Fisheries Service (NMFS) issued a biological opinion (BO) that found that the proposed action was not likely to adversely affect threatened steelhead, endangered winter run Chinook salmon, threatened spring run Chinook salmon, or threatened green sturgeon. Further, the BO found that the project has the potential to result in impacts to Essential Fish Habitat (EFH). However, NMFS states that the conservation and mitigation measures proposed by the USFWS should be adequate to offset any adverse impacts and ultimately the project would result in an increase in quantity and quality of EFH within the project area.

To ensure the successful restoration of tidal and upland habitat within Cullinan Ranch, the USFWS has prepared a draft habitat mitigation and monitoring plan for the restoration project that includes both biotic and abiotic parameters, performance standards, habitat targets, protocols, and sampling frequencies for the site. This plan also identifies potential adaptive management triggers. Monitoring would continue for 15 years following the completion of the breaching and include data collection on water quality (temperature, turbidity, DO (dissolved oxygen), pH, and salinity), wildlife surveys (birds, fish, small mammals), native vegetation percent cover and colonization success, preserve and control of invasive species, tidal channel development and sedimentation rates, and mosquito abatement success. Biennial monitoring reports would be generated and submitted to the Commission staff.

The Commission should determine whether the project is consistent with its policies regarding Fish, Other Aquatic Organisms, and Wildlife, Tidal Marshes and Tidal Flats, and Subtidal Areas.

3. **Water Quality Policies.** The Bay Plan policies on water quality state that “[B]ay water pollution should be prevented to the greatest extent feasible. The Bay’s tidal marshes, tidal flats, and water surface area and volume should be conserved and, whenever possible, restored and increased to protect and improve water quality. Fresh water inflow into the Bay should be maintained at a level adequate to protect Bay resources and beneficial uses. “The policies also state that “[w]ater quality in all parts of the Bay should be maintained at a level that will support and promote the beneficial uses of the Bay as identified in the San Francisco Bay Regional Water Quality Control Board’s Basin Plan and should be protected from all harmful or potentially harmful pollutants. The policies, recommendations, decisions, advice, and authority of the State Water Resources Control Board and the Regional Board should be the basis for carrying out the Commission’s water quality responsibilities” (Policy No. 2).

The Regional Water Quality Control Board (RWQCB) has prepared a draft Tentative Order for the Cullinan Ranch project. BCDC has reviewed the draft Tentative Order and

had communications with RWQCB staff regarding the project. The Tentative Order found that “potential water quality impacts, their applicable proposed mitigation measures, and whether the impact duration is ongoing or only during the construction phase were found to be insignificant with the exceptions of dissolved oxygen (DO) and pH which could be adversely impacted by the project.” The Tentative Order contains special conditions which require the USFWS to address the topics of low DO and pH as well as other water quality parameters in order to ensure that water quality impacts are avoided or minimized.

- a. **Dissolved Oxygen / pH.** The USFWS states that “the project has the potential short-term construction related impacts to water quality. These include the potential for low dissolved oxygen (DO) and methyl-mercury.” Before breaching the South and Dutchman Slough levees, the USFWS propose to slowly pre-flood the site in stages using water from CDFG Pond 1 delivered through the new water control structures. The goal would be to pre-flood the site between October 1 and December 31, not more than one month prior to breaching, to a minimum water depth of 12 inches. The water delivered from Pond 1 would likely be brackish, and the combined depth of water and slight brackish character would begin to kill the existing vegetation within the site. The decaying vegetation may deplete dissolved oxygen (DO) in the standing water, and may also lower pH (make it more acidic) relative to the incoming water pH levels. The degree of depletion will depend on a number of factors including: rates of precipitation and vegetation decay, daily temperatures, amount of wind-induced mixing of the standing water, and time the standing water remains on the site. To avoid potential impacts from reduced DO and pH in the water, the levees will be breached on an incoming rising tide. This would allow the standing water from early flooding to mix with water from the sloughs prior to discharge back into the sloughs on the ebb tide. The RWQCB’s Tentative Order states that “the DO concentrations in the site, once the incoming water has mixed with the water from the sloughs, would still be well above the minimum threshold of 5.0 mg/L that has been the standard for recent permits in this area. The potential impact of the discharge from the site would be further reduced because the initial discharge (i.e., from the first breach) would be relatively small and the breaches would widen over time.” The USFWS further comments that “breaching would occur before January 30 when salmonids are expected to migrate through the area...” and that “as the site continues to accumulate sediment and the tidal prism increases, the water quality conditions will improve as the exchange of water to and from the site improves.” In addition to the above measures, the USFWS would monitor DO concentrations within the site over the course of the 15-year monitoring period and employ different management measures if concentrations exceed target thresholds.
- b. **Mercury.** Mercury occurs naturally in the San Francisco Bay environment and has been introduced in various chemical forms from a variety of anthropogenic sources. Restoring tidal marshes around the Bay can sometimes increase the potential for the methylation of mercury in Bay sediments. The remobilization of mercury-contaminated sediments into the water column, either directly (e.g., during excavation of pilot channels) or indirectly (through increased sediment scour after a pond is opened to tidal action), can cause increased mercury concentrations in the Bay and have impacts on water quality, and fish and wildlife. In 2006, the RWQCB approved

a total maximum daily load (TMDL) plan for mercury in San Francisco Bay specifying that mercury levels cannot exceed 0.2 part per million (ppm) in large fish and 0.03 ppm in small fish. The Bay mercury TMDL also requires that activities avoid releasing sediments into the Bay that have a median mercury concentration greater than 0.2 ppm, and that existing water quality objectives (0.025 - 0.050 µg/L) for mercury be attained. The RWQCB Tentative Order states that “breaching levees at the Cullinan Ranch Site could contribute methyl-mercury (MeHg) to the environment, even though the site does not have high levels of existing total mercury.” The Tentative Order further states, however, that is unlikely that MeHg will be an issue at Cullinan Ranch given that “mercury levels in the Napa River are below those considered impaired by the US EPA, the site is likely to be flooded once initially and remain under water for many years and sites remaining under water for a relatively long time may have low methyl-mercury levels, and preliminary results from a US ACOE [U.S. Army Corps of Engineers] study of mercury in the nearby Hamilton Restoration project also found levels to be lower in permanently flooded areas.” In order to address the potential increased MeHg concentrations within the site, the USFWS will monitor mercury and methyl-mercury concentrations in sediment, water, and/or methyl-mercury bioaccumulation in appropriate biosentinel species (e.g., water birds, fish, resident marsh birds, or brine flies) and report their findings in the biennial monitoring reports

The USFWS would also prepare a Storm Water Pollution Prevent Plan (SWPPP) prior to construction. The SWPPP would outline Best Management Practices and procedural control measures, such as sediment control, soil and material storage locations, equipment fueling, and responding to and managing accidental spills, in order to prevent to the maximum extent practicable the release of non-storm water discharge of pollutants.

The Commission should determine whether the proposed project is consistent with the policies on Water Quality.

4. **Priority Use Designation.** The proposed project is located in an area designated as a Wildlife Refuge priority use area on Bay Plan Map No. 2. The project would be consistent with the priority use designation for the site as it would restore 1,575 acres of tidal marsh and associated upland habitat and would be managed by the USFWS as part of the San Pablo Bay National Wildlife Refuge.
5. **Sea Level Rise.** There is some evidence that there is a potential sediment debt in the Bay. Current sea level rise projections predict that water levels in the Bay may increase 16 inches by 2050 and 55 inch by 2100. With sea level rising and available sediment decreasing, during the EIS/EIR Public Comment period the question was raised as to whether sedimentation within the Cullinan Ranch site, once breached, would be able to keep pace with sea level rise. The Final EIS/EIR states that “the CALFED Independent Science Board recommended that ‘given the inability of current physical models...it is prudent to...use the range of 70 to 100 cm [or higher] in planning flood management.” Current predictions of sea level rise and sediment budgets are highly varied and there is no agreement about the actual levels of sea rise and sediment accretions within the time period covered by the scope of this project. The EIR further states that “immediate restoration of tidal flow, coupled with the predicted moderate rate of sea level rise would give the site the greatest opportunity to accrete to a level where it can keep pace with accelerating sea level rise...” The USFWS further states that monitoring data from the

restoration of CDFG's Pond 3 site, which was breached in the early 2000's, found a sedimentation increase of approximately 1.9 feet over five years, higher than expected by the project proponents." In addition, the USFWS comments that much of the site is expected to remain as open water for decades. If sedimentation does occur at a slower rate and the site is not able to convert entirely to tidal marsh, the project would still be providing significant benefits in the form of open water habitat.

The Commission should determine whether the proposed project has done an adequate job of addressing the issue of Sea Level Rise.

B. Review Boards

1. **Engineering Criteria Review Board.** As there is no Bay fill proposed by the project, the Engineering Criteria Review Board did not evaluate the proposed project.
2. **Design Review Board.** The Commission's Design Review Board (DRB) reviewed the proposed project on August 9, 2010. The DRB recommended that the USFWS:

(1) consider the possibility of planting trees in the site to provide shaded areas and some vertical relief; (2) change the color of the yellow ADA gate at the Pond 1 levee parking area to a color that's more in-tune with the natural landscape; (3) consider sea level rise in their levee designs (e.g. possibly stockpile material near levees to raise them in the future); (4) construct railings on the wooden kayak launch; and (5) consider installing fencing along the Guadalcanal trail to help keep the public on the designated trail surface. The USFWS responded that planting trees is likely not feasible given that they can destabilize levees (if planted too close) and that they would function as raptor perches, which would undermine the protection of the harvest mice and clapper rail within the site. The USFWS said they will look into changing the colors of the yellow ADA gate and find out if railings will be required on the kayak ramp to make it ADA-compliant. If railings are not required, they would install a low bull-rail along either side to keep the public safely on the ramp.

- C. **Environmental Review.** In May 2010, the California Department of Fish and Game and the U.S. Fish and Wildlife Service, acting as joint lead agencies under the California Environmental Quality Act, certified the Final Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the project. A summary of the Final EIS/EIR is attached to this summary (Exhibit H).

D. Relevant Portions of the McAteer-Petris Act

1. Section 66602
2. Section 66605
3. Section 66632

E. Relevant Portions of the San Francisco Bay Plan

1. *San Francisco Bay Plan* Policies on Fish, Other Aquatic Organisms, and Wildlife (page 15)
2. *San Francisco Bay Plan* Policies on Water Quality (page 17)
3. *San Francisco Bay Plan* Policies on Water Surface Area and Volume (page 20)
4. *San Francisco Bay Plan* Policies on Tidal Marshes and Tidal Flats (page 21)
5. *San Francisco Bay Plan* Policies on Subtidal Areas (page 26)

6. *San Francisco Bay Plan Policies on Public Access* (page 50)
7. *San Francisco Bay Plan Policies on Sea Level Rise and Safety of Fills* (page 31)

Exhibits

- A. **Proposed Construction, Exhibit A**
- B. **Proposed Public Access Plan, Exhibit B**
- C. **Existing Site Conditions, Exhibit C**
- D. **Pond 1 Levee Public Access Improvements (Trailhead), Exhibit D**
- E. **Cross Sections of Kayak Facilities, Exhibit E**
- F. **Pond 1 Levee Public Access Improvements (Terminus), Exhibit F**
- G. **Guadacanal Village Public Access Improvements, Exhibit G**
- H. **Summary of Final EIR, Exhibit H**