

Attachment 1

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ATTACHMENT 1

Carmel Lagoon Project (EPB/SRPS) Report REF120051 July 2018

Location

The Carmel Lagoon project is located within and adjacent to the Carmel River State Beach and Lagoon between State Route (SR) 1 and the Pacific Ocean in the unincorporated Carmel area of Monterey County, California. The Carmel River drains approximately 250 square miles of the Santa Lucia and Sierra de Salinas Mountains into the Carmel Bay. Approximately 270 acres of the Carmel River State Beach are owned by the California Department of Parks and Recreation (State Parks). Other property owners adjacent to the Lagoon include, but are not limited to: the Carmel Area Wastewater District (CAWD; 16 acres); Carmel Unified School District (CUSD; 9 acres); City of Carmel-by-the-Sea (City; 6 acres); and Homestead Inn/Mission Ranch (Mission Ranch; 16 acres).

History of Management and Environmental Regulations in Carmel Lagoon Area

Agriculture had an impact on the Lagoon and surrounding land since the late 1700's. In the 1920's, the Odello family grew artichokes on both the east and west side of State Route 1 (SR1), mechanically breaching to open river and lower the Lagoon's water level to below flood stage. Mechanical breaching in turn allowed development to occur within the floodplain, with the establishment of the lagoon-adjacent "Fourth Addition" neighborhood in the early 1900's.

From the 1920's to the 1970's the Carmel River, including the Lagoon, was the site of several sand and gravel mining operations, reducing the supply of sand to the Carmel River Beach.

On June 17, 1937, now State Route 1 (formerly Route 56) from Carmel to San Simeon was opened after 18 years of construction.

In 1939, construction began on what is today's Carmel Area Wastewater District (CAWD) Wastewater Treatment Facility in the floodplains adjacent. CAWD's infrastructure of pipe and pumps extend from neighborhoods south and north across the Lagoon.

In 1953, the Carmel River State Beach was established, which includes the 1-mile -long state beach and adjacent Carmel River Lagoon.

In 1970, the California Environmental Quality Act (CEQA) was enacted. CEQA is the statute that requires state and local agencies to identify the significant environmental impacts of their actions and to avoid or mitigate those impacts, if feasible.

In 1972, the California Coastal Commission (CCC) was established by voter initiative, and later made permanent by the Legislature through adoption of the California Coast Act of 1976. The Coastal Commission, in partnership with coastal cities and counties, plans and regulates the use of land and water in the coastal zone.

In the 1970's, State Parks contracted out for the opening of the Carmel River mouth. By the late 1970's, the responsibility of emergency sandbar management was taken over by the County

ATTACHMENT 1

Public Works Department under direction of the Monterey County Water Resources Agency (WRA) and the County Board of Supervisors.

In 1984, Monterey County Code Chapter 16.16 was amended to establish regulations for floodplains in Monterey County (Chapter 16.16 was also updated in 2009.) .

In 1992, the USACE and NOAA Fisheries informed the County that its ongoing sandbar management did not qualify as emergency actions due to the predictability of flooding at the lagoon. However, mechanical breaching continued without permits.

In 1995 and 1998, floods resulted in repetitive flooding of homes in low lying areas (Fourth Addition, Mission Fields, and Rio Rd. neighborhoods). Monterey County Code Section 16.16.050.c states that “New construction and substantial improvement of any structure shall have the lowest floor, including basement, elevated to at least one (1) foot above the base flood elevation.” There are 27 residential structures within the repetitive loss area of the mapped flood zone affected by the Carmel Lagoon. Of these, only three have received elevation certificates with finished floor elevations above the base flood elevation. No homes have been elevated out of the floodplain since 2009.

In 1995, the Lagoon and surround area totaling about 300 acres were designated the Carmel River Lagoon and Wetlands Natural Preserve

In 2004, State Parks completed a project to restore south arm of the Lagoon. State Parks’ project expanded the 1997 CalTrans work to excavate in the south arm of the lagoon in conjunction with its mitigation bank, which subsequently filled in following the 1998 floods.

In 2010, and again in 2016, the Carmel River Steelhead Association filed a 60-day Notice of Intent to file lawsuit against the County for sandbar management activities.

Background for the SRP/EPB Project

In 2005, various agencies, organizations, and individuals came together with the intent of developing a long-term solution to the breaching, and in 2007 resulted in identifying baseline studies needed to find a long-term solution.

In 2010, the WRA applied to the US Army Corps of Engineers (USACE) for a permit to manage the sandbar. The USACE consulted with NOAA Fisheries through the required Section 7 consultation process under the Endangered Species Act (ESA). During the consultation, NOAA Fisheries affirmed that annual mechanical breaching as proposed would likely jeopardize the Carmel River population of the South-Central California Coast steelhead (S-CCC steelhead), and had drafted a Draft Jeopardy Opinion. As an alternative to issuance of the Jeopardy Opinion, the County developed the proposed EPB/SRPS with the ISMP project to maintain the flood protection of the lagoon-adjacent neighborhoods while enhancing steelhead habitat and protection in the lagoon. The County also entered into the MOU with USACE and NOAA Fisheries to demonstrate its commitment to assess the proposed project and implement a long-term solution to mechanical breaching.

ATTACHMENT 1

Beginning 2011, the County through RMA assumed lead to work with regulatory agencies and apply for permits to manage the sandbar by lowering a portion of the sandbar to allow the lagoon to breach on its own, but at an elevation that avoids flooding the lagoon-adjacent neighborhoods. RMA does not breach the sandbar under the current management regime.

In 2013, the Carmel River Lagoon Ecosystem Protective Barrier (EPB) and Scenic Road Protection Structure (SRPS) Projects Feasibility Report (dated May 29, 2013) was completed, and the Board of Supervisors selected the EPB (Alternative 2A and 3B with a top wall elevation of 17.5 feet) and SRPS (Alt1) as the preferred project alternatives for further review on June 25, 2013 (Resolution No. 13-206).

In an effort to demonstrate the commitment to assess the project components and implement a long-term solution to mechanical breaching, the County of Monterey (County), U.S. Army Corps of Engineers (USACE), National Oceanic and Atmospheric Administration National Marine Fisheries Service (NMFS, aka NOAA Fisheries) entered into a 2013 Memorandum of Understanding (MOU). The MOU project involves three proposed project components: 1) Ecosystem Protective Barrier (EPB); 2) Scenic Road Protection Structure (SRPS); and 3) Interim Sandbar Management Plan (ISMP). The three project components are located within the following areas:

- Scenic Road Protection Structure (SRPS) – from the toe of slope of the embankment to Scenic Road, from approximately Valley View Avenue to the southern end of the Carmel River State Beach (State Beach) parking lot;
- Ecosystem Protective Barrier (EPB) – Carmelo Street between the State Parks parking lot and 17th Avenue and continuing east along the southern boundary of the Fourth Addition neighborhood (between 16th and 17th Avenues) terminating at the eastern boundary of the Carmel River Elementary School property; and
- Interim Sandbar Management Plan (ISMP) – various management activities within the Carmel River State Beach and Lagoon.

Pursuant to the MOU, the County can conduct sandbar management with proper permits to reduce flood risk by following the Interim Sandbar Management Plan (ISMP) while it applies for permits to the US Army Corps of Engineers in consultation with NMFS to investigate, plan, design and construct the structural project components (SRPS/EPB).

Project Overview

The Carmel Lagoon project is a multi-objective, multi-year, multi-organizational effort to improve habitat for threatened and endangered species in the lower Carmel River area, improve natural floodplain function, and protect public infrastructure, while maintaining or improving flood risk protection to existing developed areas. Consideration for how to restore the natural breaching regime in the Lagoon while maintaining current flood protection to low-lying areas has been a cooperative effort between multiple Federal, State, regional, and local agencies, as well as conservation organizations, for more than a decade, and has included evaluating numerous project alternatives to get to the proposed Ecosystem Protective Barrier (EPB) and Scenic Road Protection Structure (SRPS) options. The County's long-range goal is to work collaboratively with agencies and other interested parties to develop a comprehensive strategy that allows the Carmel River watershed to operate as naturally as possible.

ATTACHMENT 1

The SRPS project component would provide protection to Scenic Road from erosive forces caused when the lagoon is open to the Carmel Bay/Pacific Ocean, should the lagoon breach or migrate to the north end of the beach and threaten Scenic Road. The EPB project component would provide at least the current level of flood protection to the lagoon-adjacent properties accounting for sea level rise over 50 years, while allowing the lagoon to breach the sandbar conditions naturally (without sandbar management).

Project Status – SRPS/EPB

An Environmental Impact Report (EIR) on the project is currently being prepared. The EIR is analyzing three project components: 1) EPB; 2) SRPS; and 3) Interim Sandbar Management Plan (ISMP). The EIR is also analyzing alternatives. To facilitate the environmental analysis thirty-percent (30%) designs are complete for the EPB and three SRPS alternatives (rock rip rap at toe of slope, full-height secant pile wall, and low toe soldier pile wall).

The Notice of Preparation (NOP) was circulated to local, State, and Federal agencies and other interested parties from July 14 to August 15, 2014, for a 30-day review period. A public scoping meeting was held on Wednesday, August 6, 2014. The County maintains on-going communication and closely coordinates with all of the regulatory agencies regarding the proposed project. The County has conducted annual public meetings regarding flooding and the development of this proposed project in the community. In addition, staff has attended numerous County Service Area 1 (CSA-1) Advisory Committee meetings to discuss this matter. County has coordinated individually with key landholder stakeholders, including State Parks and the Carmel Area Wastewater District.

The County received early comments on the project from CSA-1 and the Carmel Area Wastewater District (CAWD) prior to the public release of the Draft EIR. Due to the risk of potential litigation on this project and the nature of the early comments received, the County engaged its consultant team to prepare technical responses to these comments. This information was then integrated into the numerous DEIR sections (alternatives, aesthetics, land use and policy consistency table, biological resources, hydrology/water quality, geology/soils and noise) prior to public release delaying the public release until December 2016. Additionally, the passing of AB52 required additional revisions to the cultural resources section to address tribal cultural resources.

The Draft EIR was released for a 60-day public review period beginning December 2, 2016 and ending on January 31, 2017. The County received 45 comment letters in response to the DEIR, many of which came from legal firms representing various stakeholders. The quantity and nature of public comment received to date on this project has brought to light a number technical, legal and policy challenges (some were previously identified) that may influence how the County decides to respond to comments and ultimately proceed with respect to the project.

The proposed EPB or other EPB alternatives would result in a more naturally functioning lagoon ecosystem, as the need to mechanically breach the Lagoon to prevent flooding would diminish, which meets the expressed goal of NOAA Fisheries and other regulatory agencies. The EPB would allow an increased depth and duration of inundation within the lagoon, which has the

ATTACHMENT 1

potential to increase river and lagoon surface water elevations and effect low-lying buildings and other facilities adjacent to the lagoon (e.g. those not protected by the proposed EPB project component).

A number of technical, institutional and policy challenges have been identified related to the EPB project component. The proposed EPB is situated on California Department of Parks and Recreation (State Parks) property that is designated as the Carmel Lagoon State Natural Preserve. State Parks has stated that the EPB is not consistent with State Parks mission and the Natural Preserve designated lands should not be used for a project to protect privately owned homes from flooding. State Parks does not support the EPB being installed on the State Natural Preserve, and State Parks staff has stated that should special legislation be proposed to condemn the State Natural Preserve lands for the purposes of the EPB, State Parks would oppose such legislation. Additionally, the California Coastal Commission (CCC) staff objects to an EPB located in wetlands. An alternative to locating the EPB on State Parks land would be to locate it on the private properties and within the public right of way.

The Draft EIR analyzed the EPB at the Property Line Alternative. Since essentially no stormwater detention would be provided, a larger pumping station would be required, in addition to the construction of a bypass storm drain system. Therefore, noise impacts would likely increase as well as the costs of operation and maintenance. Visual impacts would also likely increase as the EPB would not be screened by lagoon vegetation and would be at a higher elevation, blocking more public and private viewpoints. Property would have to be acquired from 14 property owners. Additionally, on-going sandbagging at open street ends would be required to provide flood protection. Such a solution brings with it a number of technical, regulatory and other challenges, but such an option could be further explored.

The Carmel Area Wastewater District (CAWD) has expressed concern that the increase in sustained water surface elevation would limit their use of an 8-acre area on their property and create additional regulatory burdens to CAWD. In addition, CAWD contends the EPB would raise groundwater levels adjacent to the CAWD facilities, potentially resulting in seepage where ground surface in locations within the CAWD facilities are below 16 feet. At this time, no feasible mitigation measure to reduce these impacts have been identified. CAWD has proposed installation of a floodwall similar to the proposed EPB at the CAWD facility to address these impacts, which would require: additional funding; additional environmental analysis; State Parks and/or CAWD permission; additional technical studies; and agreement between the parties on funding, operation and maintenance. To address the groundwater impacts the County proposed the installation and operation of a high capacity pump at the CAWD facility; CAWD has not thus far agreed to the installation of the pumps.

To provide reasonable alternatives given the technical, institutional and policy challenges of the EPB project component, the Draft EIR included and analyzed two other project alternatives. One alternative includes the SRPS, ISMP, with a delayed EPB (Delayed-EPB Alternative). A second alternative includes SRPS with on-going Sandbar Management Plan only (No-EPB Alternative).

ATTACHMENT 1

On June 8, 2018, RMA staff coordinated a meeting with all Carmel Lagoon Project regulatory agencies and key stakeholders to gain a better understanding of each agency's position regarding the Carmel Lagoon EPB/SPRS project status and alternative options.

In previous discussions, NOAA Fisheries has been opposed to an option that included on-going sandbar management, which would arguably prevent the County with moving forward with the second alternative under the 2013 MOU. NOAA Fisheries recently expressed willingness to consider an amendment to the MOU enabling an alternative to move forward with a proposal that includes SRPS with on-going sandbar management, with management informed to provide maximum benefits to species.

A number of challenges have been identified related to the SRPS project component, and the County continues to work through those issues as part of the environmental analysis process. Upon review of the public comments received for the Draft EIR, the need to conduct additional technical studies has been identified for the SRPS with respect to coastal processes, sediment transport, additional preliminary design and geotechnical recommendations. Should the Board desire, funding and an amendment to the consultant agreement are needed to conduct these technical studies. Additionally, CAWD and CSA I Advisory Committee are considering possible allocation of funds for floodwall and geotechnical analysis for the SRPS.

State Parks is opposed to the SRPS as currently proposed on State-owned lands. The State requests that the County propose a project that is within its own jurisdiction, further stating State Parks does not endorse the SRPS within the State Beach. The County held several meetings with representatives from State Parks to gain a full understanding of State Parks' position that the SRPS must be located entirely off State Parks' property.

At the June 8, 2018 stakeholder meeting, State Parks representatives expressed they would consider a viable like-for-like, contiguous land swap proposal to accommodate a mid-slope SRPS. While there are regulatory issues that must be addressed for a land swap to occur, Landowner representatives are in the process of making a land swap proposal for State Parks consideration. If a viable land swap alternative cannot be identified, other design options that involve the SRPS located off State Park lands would be needed. Of the SRPS alternative designs that are analyzed in the environmental document, the full-height wall alternative could feasibly be located entirely within the County right-of-way (ROW) at the base of Scenic Road.

The SRPS Full-Height Wall Alternative would consist of a wall approximately 25 feet (exposed) within the footprint of the existing Scenic Road. The alternative may require some construction activity within State Parks property, but the construction would primarily occur within the County ROW. The type of retaining wall would be a secant pile wall embedded into the marine terrace layer and tied back with earth anchors at the top of the wall extending under Scenic Road. The tiebacks would likely extend beyond the ROW and an easement would be needed for the tiebacks to extend onto private property. After construction is completed, the roadway would be reconstructed and repaved and any impacted infrastructure (i.e., sewer, wastewater, telecom lines) would be replaced as needed. The completed pile wall would be completely below grade. The wall would be completely buried until large riverine flow events or large wave events scour away the bluff toe. As the bluff toe scours, more of the pile wall becomes visible; eventually the

ATTACHMENT 1

entire retained height could be exposed. After the storm event has passed, normal wave action or mechanical sand movement would only partially recover the pile wall with sand, leaving the top portion visible. Public access, including vehicles and pedestrians, would be prohibited along Scenic Road during construction.

The SRPS Full Height Wall Alternative would need further analysis, but our preliminary analysis is that with this alternative, the wall may be exposed after storm events and may not be recovered by the sand, and, therefore, visual impacts would be increased. However, this impact could be mitigated through application of an architectural facing on the pile wall after it has been exposed. This alternative would result in the smallest footprint, providing the maximum beach width for riverine flow and beach users. It would also have the highest potential wall height and project cost. It would create significant barriers to beach access and safety once the beach is eroded from the toe and a 30- to 40-foot vertical drop occurs. As a result, this alternative may have the most significant impact on public access from Scenic Road since pedestrian and vehicular guard railing would be required along the top of the wall (which would be at level of Scenic Road).

Any SRPS alternative faces regulatory hurdle that need to be addressed with the Coastal Commission for sand replenishment and coastal access (physical and visual). As part of the proposed technical studies, the potential scour/erosion that may occur as a result of the full height wall would be analyzed.

Project Status - ISMP

Taking place separately yet in tandem with this project, and pursuant to the 2013 MOU, County staff took steps necessary to permit and conduct sandbar management at the Carmel River Lagoon for the 2017-2018 rainy season. In order to alleviate flood risk to the lagoon adjacent properties, the County conducted sandbar management on January 9, 2018 and again on January 23, 2018. Sandbar management consisted of construct a pilot channel to lower a portion of the sandbar so the lagoon could overtop the sandbar and breach at an elevation that would not flood the lagoon-adjacent properties.

The County held multiple consultations with the regulatory agencies, as well as conducted a community outreach meeting in the fall 2017. County staff coordinated with the regulatory agencies to ensure permits were obtained and appropriate action taken to alleviate flood risk this rainy season. The following were applied for and received for the 2017-2018 ISMP:

- Regional Water Quality Control Board, Water Quality Certification No. 32717WQ19
- California Coastal Commission, Emergency Coastal Development Permit No. G-3-17-0033
- California Department of Fish and Wildlife, Notification of Lake or Streambed Alteration No. 1600-2017-0150-R4
- US Army Corps of Engineers, 404 Permit File No. 190890S
 - o National Oceanic and Atmospheric Administration/National Marine Fisheries Service (NOAA Fisheries) Concurrence Letter Issued November 22, 2017
 - o US Fish and Wildlife Service Final Biological Opinion Issued May 8, 2017

As of this report, County staff is in the process of submitting applications to and coordinating with the above regulatory agencies to obtain permits for the upcoming 2018-2019 rainy season.

ATTACHMENT 1

Project Finances

The County has spent a total of \$779,099 in FY13, 14, 15, 16, and 17 toward planning and analyzing the long-term project. The total estimated cost to complete the project is \$17,445,470, with the following remaining activities and associated costs:

Technical Studies = \$360,470
Recirculate and Final EIR = \$160,000
Design = \$500,000
Permitting = \$190,000
Construction = \$15,500,000
Total Estimated Remaining Cost = \$16,710,470

Pending direction and future funding, the County could process an amendment to its consultant's contract to continue the environmental analysis for the project by providing additional technical studies regarding the Scenic Road Protection Structure. The technical study activities are broken out into three stages and generally include the following:

- *Stage 1:* Establishment of a Technical Advisory Committee (TAC), evaluation of natural stream alignment and breach location (draft), evaluation impacts of wall options on the beach (draft), preliminary 60% design (draft)
- *Stage 2:* Ongoing TAC activities, sediment transport analysis
- *Stage 3:* Complete TAC activities, evaluation of natural stream alignment and breach location (final), evaluation impacts of wall options on the beach (final), preliminary 60% design (final)

Anticipated cost to complete the additional technical studies is estimated to be:

Stage 1 = \$ 99,780
Stage 2 = \$188,310
Stage 3 = \$ 72,380
TOTAL = \$360,470

Staff submitted an Augmentation Request for \$360,470 for FY19; this augmentation was not supported and is not part of the adopted budget for FY19. If Stages 1, 2 and 3 were to be completed concurrently, the technical studies could be completed within 9 months; if they are completed sequentially, the timeline expands out to 18 months.

It is anticipated that the additional technical studies, once complete, would cause the DEIR to be updated and recirculated. Once the technical studies are near completion, staff would then work with the consultant to prepare a scope of work and budget for DEIR recirculation, and update cost estimates for Final EIR and project permitting. Additional funding would be needed for DEIR recirculation, Final EIR, and project permitting. Pending Board direction, RMA staff will continue to work with the County's Strategic Grant Program to identify and apply funds necessary to complete the planning, construction and post construction monitoring phases of this project.

Once the Final EIR would be completed and a project were selected, staff would complete a cost estimate, timeline and funding strategy to complete the design, construction and post-

ATTACHMENT 1

construction monitoring of the project. Should the Board direct staff to pursue a different alternative, then staff will develop a revised project scope and cost estimates.

Sandbar management has cost the County on average \$200,000 per year, including permits, staff costs, contract services and equipment. Some years the County has not managed, and in other years it has costs as much as approximately \$500,000 to conduct sandbar management activities. Expenditures for FY2017-18 sandbar management totaled \$77,655.23, not including RMA management staff time which is part of the RMA baseline budget for General Fund 001-Unit 8170-Appropriation Unit RMA011. RMA also funded submittal of permits for 2018-2019 sandbar management from fund 002-3000-8443-RMA012 in FY 2017-2018. No funds are available for sandbar management activities for FY 2018-2019.

Next Step Options

Staff requests direction as to how to proceed with management in the Carmel Lagoon. Some of the possible alternatives include, but are not limited to, the following:

- 1) Continue the environmental document process for the long-term project, conduct the technical studies for the full-height SRPS in the County right of way, and complete the environmental review process to bring the EIR to the Board for project selection and adoption. Habitat and natural floodplain functions would be improved, public infrastructure would be protected, flood protection to existing structures would be improved and the natural breaching regime in the lagoon would be restored. To continue the analysis of the long-term project, permitting, design and ultimately construction of a long-term project, and subsequently be able to secure permits sandbar management, the County would need to: identify funding for the approximately \$16.7M gap; address the technical, institutional and policy challenges; and risk of possible litigation.
- 2) Continue the environmental document process for the long-term project, conduct the full-height SRPS technical analysis, and explore possible alternatives to the property-line EPB that may reduce impacts identified in the EIR (e.g. discontinuous property line EPB and annually sandbag in the public road ROW to establish a continuous EPB during the rainy season). Discussions with the regulatory agencies will be needed to agree on the alternative. NMFS has expressed willingness to consider a SRPS with sandbar management option. A number of County's sandbar management permits from other agencies are conditioned upon the County making progress to advance the long-term project, so advancing any project involves discussion with those agencies. The County would need to: identify costs and funding for an alternative; address any technical, institutional and policy challenges
- 3) Discontinue the long-term project (SRPS/EPB) and sandbar management, except for implementing the sand bag flood protection barrier, if property owners allow. Installing and managing a sand bag wall at the property lines and in the public right of way adjacent to the lagoon would provide some level of flood protection to the adjacent neighborhood when sandbar conditions would naturally allow a breach at a lagoon water elevation below the maximum height of the sandbag wall (approximately between 10 – 11 ft. elevation NAV29).
- 4) Discontinue the long-term project (SRPS/EPB) and sandbar management. Discontinuing the long-term project and sandbar management would save the County millions of dollars in project costs and make staffing resources available for other priority projects.

ATTACHMENT 1

Cessation of developing the long-term project could result in the challenges obtaining permits for sandbar management, resulting in the surrounding properties being subject to natural flood/breach cycle of the lagoon.

- 5) Discontinue the long-term project (SRPS/EPB) and pursue options to elevate the private homes out of the floodplain. Discontinuing the long-term project, and pursuing options to elevate the lagoon-adjacent homes to protect them from flooding trigger all the same issues as above. Depending on how this were to be approached, the County may need to identify costs and funding for an alternative (e.g. grant programs for homeowners) and address any technical, institutional and policy challenges.
- 6) Other alternatives

Each option has varying levels of risk for possible litigation.