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MONTEREY COUNTY

RESOURCE MANAGEMENT AGENCY

Carl P. Holm, AICP, Director



1441 Schilling Place, 2nd Floor
Salinas, CA 93901

www.co.monterey.ca.us/rma

MEMORANDUM

Date: March 12, 2019

To (via email): U.S. Army Corps of Engineers, Attn: Greg Brown and Katerina Galacatos
NOAA – National Marine Fisheries, Attn: Joel Casagrande and Brian Meux
California State Water Resources Control Board, Attn: Elizabeth Payne
California Regional Water Quality Control Board, Attn: Phillip Hammer and Kim Sanders
California Coastal Commission, Attn: Michael Watson
U.S. Fish and Wildlife Service, Attn: Glen Knowls and Chad Mitcham
California Department of Fish and Wildlife, Attn: Carrie Swanberg and Linda Connolly
California Department of Parks and Recreation, Attn: Stephen Bachman

From: Carl P. Holm, AICP, Director Resource Management Agency

Subject: Post Activity Report - Carmel River Lagoon Sandbar Management: January 4, 2019

Reference: Army Corps 404, File No. 1996-19089
Memorandum of Understanding between County of Monterey, U.S. Army Corps of Engineers, and National Marine Fisheries Service, regarding Flood Prevention and Habitat Protection at the Carmel Lagoon” (2013 MOU), fully executed on September 6, 2013

Permits: US Army Corps 404, File No. 1996-19089S
CDFW, Lake or Streambed Alteration Notification No. 1600-2018-0170-R4
CCC, Emergency Coastal Development Permit No. G-3-18-0021
RWQCB, Water Quality Certification No. 32717WQ19
NOAA Fisheries, Concurrence Letter dated Nov 22, 2017
USFWS, Biological Opinion dated May 8, 2017

Permittee: Monterey County Resource Management Agency
1441 Schilling Place, 2nd Floor South
Salinas, CA 93901
Carl Holm, Applicant
831-755-5103

1. Description of Situation:

In early January 2019, The weather conditions, rate of river in-flow, rise of lagoon level, and sandbar height presented a clear and imminent threat to the property and demanded immediate action to prevent or mitigate loss. Primary property at risk included residences along the northern edge of the Carmel Lagoon, as well as the parking lot and restroom facilities at the Carmel River State Beach. The Carmel Area Wastewater District treatment facility was also at risk if there were sustained high water levels.

2. Purpose of Activity:

To address the above threat, Monterey County Resource Management Agency mobilized resources shortly after 8:00am on January 4, 2019 for the purpose of creating a pilot channel on the ocean side of the sandbar to facilitate a natural breach of the lagoon prior to reaching flood stage.

3. Location of Activity:

A pilot channel was created at the south end of the Carmel River Beach State Park, approximately 30 feet (ft) north of the stairs leading from the beach to the bluff in a southwest direction. The eastern edge of the pilot channel began at a point approx. 20 ft west of the then western edge of the Lagoon Water Line. See attached Carmel Lagoon Sandbar Management Project Extent map. The pilot channel alignment was designed adjacent to the cliffs where the rock base would help to minimize scouring.

4. Size and Description of Project Area:

The total pilot channel area excavated was approximately 3,000 square feet. The excavated material was stockpiled to the south of pilot channel estimated to occupy an area of approximately 2,000 sq. ft. The surface water elevation of the lagoon was measured 13.26 ft NAVD 88 (10.53 ft NVGD 29). A plug was left in the sandbar at 13.7 ft elevation NAVD 88 (11.0 ft NVGD 29), and the pilot channel was at an elevation of 12.8 ft NAVD 88 (10.1 ft NVGD 29). See attached photos.

5. Type and Quantities of Materials:

Approximately 278 Cubic Yards (CY) of local sand was pushed by a dozer from the pilot channel to a stockpile area on the south side of the pilot channel.

6. Water Bodies Impacted:

Water quality/water body protection training was provided to all County staff and contractor crew members. No water bodies were impacted. The pilot channel was excavated between the Carmel River Lagoon and the Pacific Ocean, and the pilot channel excavation did not result in any impacts to either water body. The pilot channel excavation commenced at a point approximately 20 ft west of the western edge of the Carmel Lagoon and continued 150 ft southwest, stopping before the mean high-water line. The equipment did not come into contact with any water body, and the operation did not impact any water body.

7. Water Quality:

Beach Advisory signage was posted on January 4th, prior to sandbar management activity and was removed on January 12th, once water quality monitoring sample results for enterococcus were below the threshold level of 104 MPN/100mL.

1/8/19 enterococcus sample result: 110 MPN/mL (exceeds threshold)

1/10/19 enterococcus sample result: 41 MPN/mL (below threshold)

8. Endangered Species-Critical Habitat:

Approved biologists conducted environmental education for all County staff and contractor crew members prior to activity regarding steelhead, red-legged frogs and snowy plover, as they are species known to be in this area.

- Monterey Peninsula Water Management District staff fisheries biologists were on site before, during and after the sandbar management operation. No steelhead were observed.
- An approved biologist conducted surveys for California red-legged frog adults, tadpoles and egg masses in the lagoon. No CRLF of any life stage were identified during the construction-phase monitoring.
- The approved biologist confirmed four (4) adult snowy plovers were identified prior to management event but were absent during the construction-phase monitoring.

No endangered species or critical habitat was impacted by this activity.

Additional Notes:

See attached photos and accompanying map with photo locations and direction identified by photo number, as relevant.

The pilot channel was established between 8:00 AM - 4:30 PM January 4, 2019, at which time the work was completed, and the equipment and personnel demobilized.

Upon completion of the activity on January 4, the western edge of the Carmel Lagoon was approximately 20 ft east of the beginning of the pilot channel and approximately 0.5 ft below the elevation of the sand plug left in the sandbar (Lagoon elevation: 13.26 ft NAVD 88, plug: 13.7 ft NAVD 88, pilot channel: 12.8 ft NAVD 88).

During the early morning hours of January 5th, the lagoon naturally opened the sandbar creating a channel approximately 10 ft wide with a flow rate of approximately 2 cubic feet per second (cfs). On January 6th, river inflows from heavy rain reached 300 cfs and allowed the channel to fully develop. After starting out in a southwesterly direction, given the limited sand and relatively narrow sandbar, the Lagoon evacuated at a straight out (westerly) alignment. Consistent with prior discussions with NOAA Fisheries, due to the lack of sand to form a closure plug, the County did not attempt to close the Lagoon opening after this management event. The County will continue to monitor through the winter into the spring to determine possible need and feasibility to close the sandbar heading into the dry summer months.

Carmel Lagoon Sandbar Mgmt Photos

January 2019

Before
Work –
1/4/19



After
Work –
1/4/19



Pre-Construction: Signage posted and emergency supplies on hand



Carmel Lagoon Sandbar Management

Map of Picture Locations



1

Pre-Construction

a

z

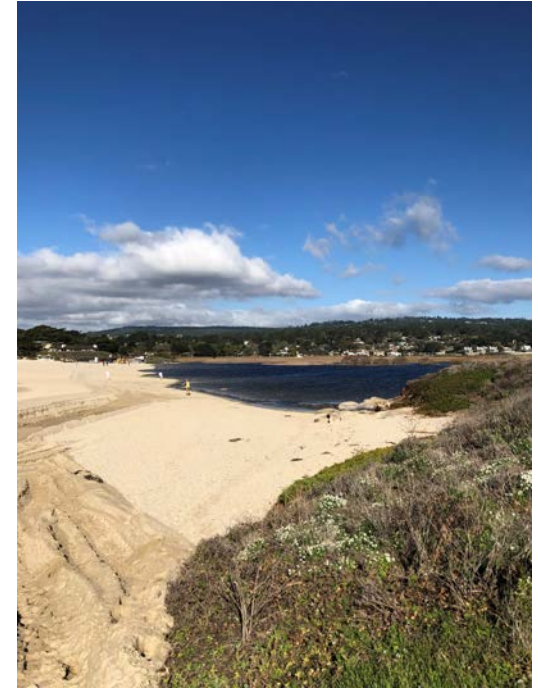


During Construction

1

a

z



During Construction – showing southerly direction of pilot channel

4

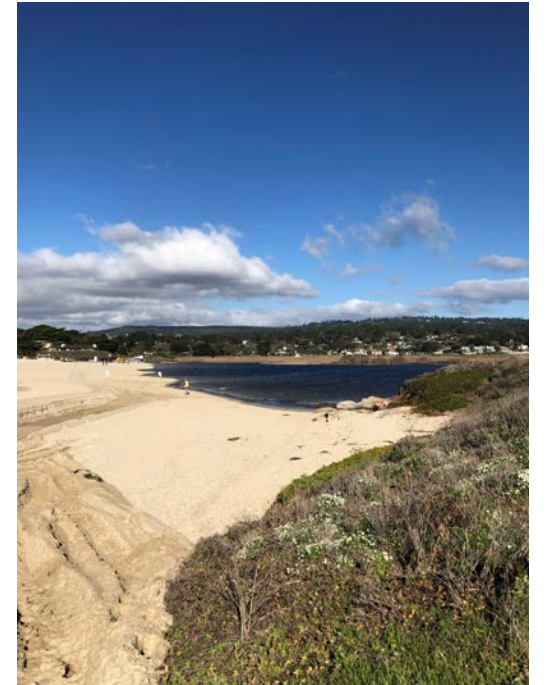


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Post-Construction

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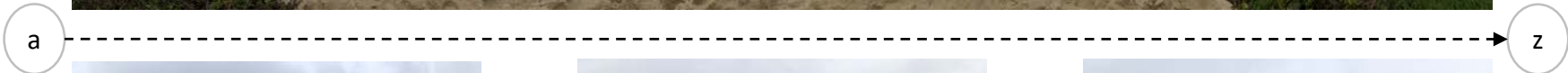
After Construction - Removal of equipment

2



After natural breach - January 6, 2019.

1



3



After natural breach - January 8, 2019.

3

a



z

MONTEREY COUNTY

RESOURCE MANAGEMENT AGENCY

Carl P. Holm, AICP, Director



1441 Schilling Place, 2nd Floor
Salinas, CA 93901

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MEMORANDUM

Date: August 14, 2019

To (via email): U.S. Army Corps of Engineers, Attn: Greg Brown and Katerina Galacatos
NOAA – National Marine Fisheries, Attn: Joel Casagrande and Brian Meux
California State Water Resources Control Board, Attn: Elizabeth Payne
California Regional Water Quality Control Board, Attn: Phillip Hammer and Kim Sanders
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From: Carl P. Holm, AICP, Director Resource Management Agency

Subject: Post Activity Report - Carmel River Lagoon Sandbar Management: July 2019 Closure Activities

Reference: Army Corps 404, File No. 1996-19089
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July 1, 2019 – Day 1: Stockpile

1. Description of Situation:

In late June and early July 2019, the weather conditions, rate of river in-flow, lagoon level, and sandbar height suggested the possibility of unfavorable conditions for steelhead habitat in the Carmel River Lagoon.

2. Purpose of Activity:

In anticipation of lagoon closure to protect natural habitat during the dry season, the County mobilized crews for the purpose of stockpiling sand to create a sandbar berm (“plug”), which would stop outflow through the channel that goes through Carmel River State Beach.

3. Location of Activity:

A stockpile of sand was created at the south end of the Carmel River Beach State Park, approximately 100 feet (ft) north of the channel. See attached Carmel Lagoon Sandbar Management Project Extent map.

4. Size and Description of Project Area:

The total sand harvesting area was approximately 5,000 square feet. The material was stockpiled to the north of flow channel. See attached photos.

5. Type and Quantities of Materials:

Approximately 1200 Cubic Yards (CY) of local sand was pushed by a bulldozer from the northeast area of the sandbar to a stockpile area on the north side of the flow channel.

6. Water Bodies Impacted:

Water quality/water body protection training was provided to all County staff and contractor crew members. The sand harvesting commenced at a point approximately 100 ft west of the Carmel Lagoon between the Carmel River Lagoon and the Pacific Ocean and continued 150 ft southwest, stopping before the mean high-water line. The equipment did not come into contact with any water body, and the operation did not impact any water body.

7. Water Quality:

Water quality monitoring and associated Beach Advisory signage was unnecessary for the stockpiling operation.

8. Endangered Species-Critical Habitat:

Approved biologists conducted environmental education for all County staff and contractor crew members prior to activity regarding steelhead, red-legged frogs and snowy plover, as they are species known to be in this area.

- Monterey Peninsula Water Management District staff fisheries biologists were on site before, during and after the sandbar management operation. No steelhead were observed.
- The approved biologist observed no snowy plover prior to or during the construction-phase monitoring.
- The approved biologist observed no red-legged frog prior to or during the construction-phase monitoring.

No endangered species or critical habitat was impacted by this activity.

Additional Notes:

See attached photos and accompanying map with photo locations and direction identified by photo number, as relevant.

July 10, 2019 – Day 2: Closure

1. Description of Situation:

In late June and early July 2019, the weather conditions, rate of river in-flow, lagoon level, and sandbar height presented as unfavorable to steelhead habitat in the lagoon and required action to prevent or mitigate species loss.

2. Purpose of Activity:

In accordance with permits acquired for sandbar management activities, when the County implements sandbar management for flood protection in the rain season, the County is required to close the Carmel Lagoon in the dry months to promote habitat for listed species in the lagoon.

3. Location of Activity:

A sand berm (“plug”) was created at the south end of the Carmel River Beach State Park, across the Carmel River channel in a north/south orientation approximately 30 feet (ft) north of the stairs that lead up to the bluff south of the beach. See attached Carmel Lagoon Sandbar Management Project Extent map. The berm alignment was placed adjacent to the cliffs where the rock base would help minimize scouring.

4. Size and Description of Project Area:

The previously stockpiled material was used to create a sand berm measuring approximately 15 feet wide on average, and built to an average height elevation of 12.74 ft NAVD 88. The surface water elevation of the lagoon was measured at 4.71 ft NAVD 88 (1.97 ft NVGD 29). See attached photos.

5. Type and Quantities of Materials:

Approximately 1200 Cubic Yards (CY) of local sand was pushed by a bulldozer to create a sand berm across the Carmel River channel to close the lagoon.

6. Water Bodies Impacted:

Water quality/water body protection training was provided to all County staff and contractor crew members. No water bodies were impacted. The sand berm was created between the Carmel River Lagoon and the Pacific Ocean, and the operation did not result in any impacts to either water body. The equipment used to create the sand bar did not come into contact with any water body.

7. Water Quality:

Beach Advisory signage was not posted for this operation as water quality monitoring was not required.

8. Endangered Species-Critical Habitat:

Approved biologists conducted environmental education for all County staff and contractor crew members prior to activity regarding steelhead, red-legged frogs and snowy plover, as they are species known to be in this area.

- Monterey Peninsula Water Management District staff fisheries biologists were on site before, during and after the sandbar management operation. No steelhead were observed.
- The approved biologist observed no snowy plover prior to or during the construction-phase monitoring.
- The approved biologist observed no red-legged frog prior to or during the construction-phase monitoring.

No endangered species or critical habitat was impacted by this activity.

Additional Notes:

See attached photos and accompanying map with photo locations and direction identified by photo number, as relevant.

July 24, 2019 – Day 3: Closure

1. Description of Situation:

Following the Carmel Lagoon closure operations on July 10, 2019, staff closely monitored lagoon conditions to ensure the structural integrity of the newly constructed sandbar berm (“plug”). On July 22, staff observed increased deterioration and subsidence of the plug. The width had been reduced from 15ft to 8ft in some areas and the height reduced from 12.74 ft NAVS88 to 11.5 ft NAVD 88. It was determined that further action was needed to fortify the sandbar plug to prevent the Carmel Lagoon from releasing into the ocean. The County mobilized on July 24, 2019 to proceed with fortification of the sandbar plug.

During this operation, the bulldozer used to fortify the sandbar plug was immobilized in loose sand on the southern portion of the existing plug. The bulldozer was safely removed using an excavator brought in on-site. After the recovery effort, it was determined that it was no longer safe to operate heavy machinery on top of the sandbar. County crews would return on July 27, 2019 to complete the fortification of the sandbar plug (see below).

2. Purpose of Activity:

Fortification of the initial sandbar plug constructed on July 10, 2019 is needed to prevent potential evacuation of the Carmel Lagoon, which could result in loss of sensitive wildlife habitat and aquatic species.

3. Location of Activity:

A sandbar plug was created at the south end of the Carmel River Beach State Park, across the Carmel River channel in a north/south orientation approximately 30 feet (ft) north of the stairs that lead up to the bluff south of the beach.

4. Size and Description of Project Area:

The sandbar plug spans approximately 110 feet, running from north to south across the Carmel River channel that developed in the winter. The Project Area occupied an area no

more than one tenth of the recreational areas of the Carmel River State Beach. The average surface water elevation at the Carmel Lagoon on July 24 was 10.24 ft NAVD 88 (7.50 ft NVGD 29). See attached photos.

5. Type and Quantities of Materials:

Sand used to fortify the plug came from excess sand stockpiled on July 1, 2019, which was located to the north of the existing sandbar plug. Before operations were halted due to the unsafe conditions, approximately 200 Cubic Yards (CY) of local sand was pushed by a bulldozer to fortify the sandbar plug.

6. Water Bodies Impacted:

Water quality/water body protection training was provided to all County staff and contractor crew members. At no point did the bulldozer touch waters from the lagoon or the ocean. No water bodies were impacted.

7. Water Quality:

Water quality monitoring and associated Beach Advisory signage was unnecessary for the operation. A small amount of diesel fuel was leaked onto the sand while the bulldozer was immobilized, however, staff was careful to ensure no diesel was released into the lagoon or ocean waters, and the spill was contained without further issues.

8. Endangered Species-Critical Habitat:

Approved biologists conducted environmental education for all County staff and contractor crew members prior to activity regarding steelhead, red-legged frogs and snowy plover, as they are species known to be in this area.

- Monterey Peninsula Water Management District staff fisheries biologists were on site before, during and after the sandbar management operation. No steelhead were observed.
- The approved biologist observed no snowy plover prior to or during the construction-phase monitoring.
- The approved biologist observed no red-legged frog prior to or during the construction-phase monitoring.

No endangered species or critical habitat was impacted by this activity.

Additional Notes:

Monterey County Resource Management Agency mobilized resources from 7:15am to 2:00 pm on July 24, 2019 to complete the reinforcement of the previously constructed sand berm. At 9:50am, the bulldozer was immobilized. Shortly after, staff noticed a small amount of pink fluid dripping down the rear side of the bulldozer, which was determined to be diesel dripping from the fuel cap. This was due to angle of the bulldozer, which allowed for a small amount of diesel to overtop and leak from the fuel cap. No diesel was observed flowing or leaching into the lagoon waters. Staff immediately placed a container under the observed drip to contain the fluid. Absorbent pads were used to soak up residual diesel fuel that leaked onto the sand. The local firefighter office was notified (Calfire, Cypress Fire Protection District) of the potential diesel leak. The bulldozer was removed without any contact with the lagoon waters. Once the bulldozer was removed, staff removed the surface sand that potentially held residual diesel and safely placed it into a spill pan/container, along with the soiled absorbent pads and diesel collected in

the plastic container. Once the cleanup was complete, CalFire Officers determined the leak was less than 5 gallons with no risk of tidal impacts. The appropriate agencies were notified of these findings, including the California Office of Emergency Services. Central Coast Regional Water Board staff was notified later that day of the incident. Staff observed no visible diesel fluid and observed no diesel odor in or around the area.

See attached photos and accompanying map with photo locations and direction identified by photo number, as relevant.

July 27, 2019 – Day 4: Closure

1. Description of Situation:

Due to unsafe conditions during the July 24, 2019 operations, County crews were unable to complete the fortification of the sandbar plug. While some progress was made, it was determined that further action was needed to fortify the sandbar plug to prevent the Carmel Lagoon from releasing into the ocean. County crews mobilized on July 27, 2019 to complete the fortification operations. A different approach was used, which involved moving sand across the lagoon channel against the west side (ocean facing side) of the sandbar plug. This effectively doubled the width the plug, which increased the vertical and horizontal load capacity, and allowed crews to place more sand on top of the plug to increase the height.

2. Purpose of Activity:

Fortification of the initial sandbar plug constructed on July 10, 2019 is needed to prevent potential evacuation of the Carmel Lagoon, which could result in loss of sensitive wildlife habitat and aquatic species.

3. Location of Activity:

The sandbar plug is located at the south end of the Carmel River Beach State Park, across the Carmel River channel in a north/south orientation approximately 30 feet (ft) north of the stairs that lead up to the bluff south of the beach. A new berm was created along the western side, directly adjacent to the berm constructed on July 10, 2019.

4. Size and Description of Project Area:

The sandbar plug spans approximately 110 feet, running from north to south across the Carmel River channel that developed in the winter. The Project Area occupied an area no more than one tenth of the recreational area of the Carmel River State Beach. The average surface water elevation at the Carmel Lagoon on July 27 was 10.35 ft NAVD 88 (7.61 ft NVGD 29). See attached photos.

5. Type and Quantities of Materials:

Sand used to fortify the plug came from excess sand stockpiled on July 1, which was located to the north of the existing sandbar plug. Approximately 750 CY of local sand was moved for this operation.

6. Water Bodies Impacted:

Water quality/water body protection training was provided to all County staff and contractor crew members. No water bodies were impacted during this operation.

7. Water Quality:

Water quality monitoring and associated Beach Advisory signage was unnecessary for the operation. At no point did the bulldozer touch waters from the lagoon or the ocean. No water bodies were impacted.

8. Endangered Species-Critical Habitat:

Approved biologists conducted environmental education for all County staff and contractor crew members prior to activity regarding steelhead, red-legged frogs and snowy plover, as they are species known to be in this area.

- Monterey Peninsula Water Management District staff fisheries biologists were on site before, during and after the sandbar management operation. No steelhead were observed.
- The approved biologist observed no snowy plover prior to or during the construction-phase monitoring.
- The approved biologist observed no red-legged frog prior to or during the construction-phase monitoring.

No endangered species or critical habitat was impacted by this activity.

Additional Notes:

See attached photos and accompanying map with photo locations and direction identified by photo number, as relevant.

Day 1: Stockpile

July 1, 2019

Carmel Lagoon Sandbar Management

Map of Picture Locations



GoogleEarth aerial; not to be representative of January 2019 conditions.

1a



1b







Day 2 – Closure

July 10, 2019

Carmel Lagoon Sandbar Management

Map of Picture Locations



GoogleEarth aerial; not to be representative of January 2019 conditions.

1a



1b



2a



2b



Day 3 – Closure

July 24, 2019

Carmel Lagoon Sandbar Management

Map of Picture Locations



GoogleEarth aerial; not to be representative of January 2019 conditions.

1a



1b



2a



2b



3a



3b



3c



Day 4 – Closure

July 27, 2019

Carmel Lagoon Sandbar Management

Map of Picture Locations



GoogleEarth aerial; not to be representative of January 2019 conditions.

1



2a



2b



2c





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