

DATE: August 20, 2018
TO: Bolinas Lagoon Advisory Council
FROM: Veronica Pearson, Open Space Planner
SUBJECT: California Department of Transportation Bolinas Lagoon Roadside Drainage Maintenance

RECOMMENDATION

Recommend to the Marin County Open Space District (MCOSD) Board of Directors that they approve a Permit to Enter and Construct to the California Department of Transportation (Caltrans) for work within the Bolinas Lagoon Open Space Preserve (Preserve).

Motion

The Bolinas Lagoon Advisory Council recommends to the Marin County Open Space District Board of Directors that they grant Caltrans a Permit to Enter and Construct with conditions.

DISCUSSION

On July 18, 2018 Caltrans contacted MCOSD, along with other regulatory and land management agencies, to discuss a project proposal to clean out culverts on State Route 1 (SR1) at four specific locations. Caltrans has requested that permits and access agreements be expedited so that work can be completed prior to the beginning of the rainy season. Caltrans hopes to start on September 1, 2018. At this time Caltrans is only asking for a one-time right to enter the preserve.

Proposed Project

The work would entail removing sediment and debris at four sites that Caltrans has identified as high priority, which includes eight culverts and approximately 4,050 feet of drainage ditches. Culvert clean out would focus on clearing of drainage channels/ditches, sediment/debris/vegetation in and outside of the State's right-of way. Work within Bolinas Lagoon is proposed at Priority Location #1 (Pike County Gulch), #2 (Garden Club Gulch), and #3 (Volunteer Gulch) along SR1 (Attachments 1 and 2).

The purpose of the project is to address closures of SR1 due to the deposition of sediment and stream flow. The Caltrans action plan calls for the project to have two phases. The near-term Phase 1 remedy is cleaning out eight culverts and ditches. Phase 2 would be to obtain programmatic maintenance agreements to conduct on-going necessary maintenance of the drainage systems on an as-needed basis. Currently, it does not appear that Caltrans proposes future maintenance within the Preserve. Equipment proposed includes, but is not limited to, excavators, dump trucks, graders, loaders, tunnel muckers, vactors, chainsaws, chippers and haul trucks.

The attached plans show the area of work, the estimated volume of debris material, and photos of the locations (Attachment 3). Caltrans is seeking permits from the following agencies to complete this work: U.S. Fish and Wildlife Service, National Marine Fisheries, U.S. Army Corps of Engineers, National Park Service, California Department of Fish and Wildlife, Regional Water Quality Control Board, California Coastal Commission, and the Greater Farallones National Marine Sanctuary. Caltrans is also seeking approval of a Permit to Enter and Construct from Audubon Canyon Ranch (ACR) and other private landowners.

Open Space District General Manager Max Korten, Open Space Planner Veronica Pearson and other regulatory representatives met with representatives of Caltrans at their district office on July 27 to review the project proposal. Veronica Pearson and MCOSD technical advisor Laurel Collins also met with representatives from Caltrans and ACR at ACR's office to walk Priority Sites #1 and #2. During the site visit Caltrans talked generally about the way the project would be implemented, and issues raised in the Watershed Sciences memorandum (Attachment 4).

Existing Conditions

As noted in the letter from the BLAC to Caltrans, SR1 has experienced chronic flooding with water and debris flowing across both lanes causing traffic slow-downs and driver safety issues. Flooding from the local tributaries across the highway are due to several reasons, one of which is that these creeks are located within steep drainages that are highly erosive due to their underlying material. Because of this the natural sediment supply is very high and this material is transported by the channels to a location where the slope gradient decreases to a point where gravity is outweighed, and the material is deposited, which is commonly referred to as the toe of the alluvial fan. State Route 1 is located at the toe of the alluvial fans of these channels. Naturally these channels have several distributary channels that transport surface flow and sediment. Overtime, sediment has continued to be carried downslope and has resulted in the bed of these channels being equal to or greater than the height of the roadbed.

The current condition at SR1 is that the culverts have not been maintained in over five years and they are all clogged. Ditches along the road have filled with sediment and vegetation. Culverts no longer align with distributary channels, which now flow across the highway. SR1 is also acting as a dam in some locations causing backwater flooding. In addition, upstream of the road and the culverts there is a large amount of sediment that is poised to be transported in the next large storm event. The last large storm event, which occurred on April 8, 2018, had numerous impacts along the alluvial fans, some of which were sediment deposition to the elevation of SR1 roadbed, and channel aggradation along Pike County Gulch and Garden Gulch for at least 700 feet upstream of SR1. During this event, MCOSD recorded approximately eight inches of rain over a 24-hour period. When compared with other gage locations, this storm was assessed to be about a five-year event, with tides below four feet NAVD88. Therefore, there was a minimal tidal influence on flooding.

MCOSD JURISDICTION

Bolinas Lagoon was designated a Marin County Nature Preserve in 1977 with management responsibility assigned to the MCOSD to manage the Lagoon as an Open Space Preserve. The MCOSD has the primary role in managing the natural resources of the tidelands MHHW (mean higher high water) within the Lagoon. MCOSD must consider the management goals and objectives for Bolinas Lagoon that were identified in the 1996 Bolinas Lagoon Management Plan, the Bolinas Lagoon Ecosystem Restoration Project: Recommendations for Restoration and Management (2008), and the agencies mission. In

accordance with the goals of these plans, MCOSD is reviewing all proposals for entry into the Lagoon to ensure that it is consistent with preserving and restoring the ecological values of the lagoon, which includes all Lagoon life, biological and physical processes, and water quality. The Bolinas Lagoon Advisory Council (BLAC) was established to advise the Board of Directors, and MCOSD on projects and plans that affect the Lagoon. Therefore, MCOSD seeks BLAC's recommendation on the proposed Caltrans project proposal that relate to Priority Locations #1, #2, and #3 and its compliance with the goals and objectives of the aforementioned plans.

Staff Analysis and Recommendations

MCOSD has reviewed the material provided to the agency and has requested complete plans that would include the site plan, profile, amount of sediment removal, amount of vegetation removal, best management practices (BMPs), excavated channel geometry, along with a detailed project description. To date, staff has only received the plans attached. Therefore, staff must rely on the attached documents for determining whether the project would align with MCOSD's management objectives. Staff has utilized its existing contract with Watershed Sciences (Laurel Collins) as a technical advisor. Attached is the memo (Attachment 4) from Watershed Sciences regarding the influence of the culverts along SR1 on the draining of creeks into the Lagoon.

Based on review of the documents, staff finds that the project documents do not provide sufficient detail to determine the extent of the project that is located within MCOSD's managed lands and the purview of this Council, as the material does not contain elevations relevant to MHHW. In addition, the plans are not survey accurate, meaning that no property line surveys have been conducted, and there is no way to determine whether the proposed work will remain within the Caltrans right-of-way as proposed. Therefore, this memo contains recommended language that could accompany the permit to ensure that the Lagoon's natural resources are not adversely affected, to improve the conveyance of water and sediment and hydrologic and geomorphic processes.

Potential Impacts to the Lagoon

Within the MCOSD's managed lands, there is potential for several special-status species that may be present and impacted. They include the California black rail, great blue heron, great egret, saltmarsh common yellow throat, red-legged frog, Coho salmon, Point Reyes bird's-beak, salt marsh owl's clover, and steelhead trout. Outside of MCOSD's managed lands, but within the area of potential project impact, the following special-status species may be present: Northern spotted owl, and California tiger salamander. The proposed work occurs in brackish and freshwater wetlands and will require removing or pruning of several alders, willows, and other wetland species. Many of these species can be protected by using best management practices (BMPs). Attached is a list of BMP's (Attachment 5) that MCOSD adheres to for projects within our lands and requires contractors to follow.

The new normal is annual flooding across the highway during the rainy season. The amount of flooding will only increase with sea level rise. Currently MHHW is approximately 5.6 feet NAVD88. It is approximated that the base of the culvert inlets is about seven feet NAVD88. Sea level rise is projected to increase by one foot by 2030. Upstream of the culverts, there is a tremendous amount of sediment that may be mobilized, transported, and deposited into the excavated ditches and culverts in the next large storm event. At this time, there is insufficient data to determine when this would occur, but based on the April 8 storm data, it is likely to occur within the next five years. Therefore, the culverts may be inoperable in the near future. In addition, in the past spoils from the culvert clean-out work were deposited

within the lagoon. This has resulted in berms that have altered the tidal prism and the flow and movement of sediment within the lagoon and are now a partial barrier to the dispersal of flow out of the culvert. The designs for Priority Locations #1, #2 and #3 only show removal of material directly upslope and downslope of the culverts and do not address the issue of sediment transport within the Lagoon.

Staff Analysis and Recommendation

Based on project plans, MCOSD's studies, and recent hydrologic studies completed for the lagoon, staff concludes that there is potential for adverse impacts to the Lagoon's species, biological and physical processes unless BMP's and conditions of approval are followed. There is an urgent need to address flooding on SR1 and the removal of sediment from the culverts and ditches will help convey flow in the immediate future, but the roadbed is now too low in locations to withstand flooding events even if the culverts are cleaned out. If the region receives an above average rain event, it is likely that sediment that is poised for transportation upstream will mobilize and be deposited in the newly excavated area. Therefore, it is likely that Caltrans proposed project would only improve conditions temporarily.

In a letter to Caltrans, the BLAC requested that Caltrans prioritize long-term solutions for road maintenance along SR1 to reduce flooding, prevent contamination of Bolinas Lagoon, and improve driver safety. The letter also requested Caltrans work with Marin County to address these issues, specifically through the North End Wetland Enhancement and Sea Level Rise Project. This project as proposed in Phase 1 only addresses work that may alleviate flooding during the upcoming rainy season. The long-term solution under Phase 2 is to continue to remove sediment on an ongoing basis. The proposed project does not fulfill the request of the BLAC. A long-term solution is needed in the immediate future if we wish to implement a solution to flooding and SLR within the next decade. This would require Caltrans identifying the need and to prioritize improvements to SR1 from Stinson-Bolinas within regional plans, to prepare a Project Initiation Document (PID), to secure State funding, and to enter into a Memorandum of Understanding (MOU) with the County of Marin for planning and design of Phase 2.

The project is consistent with Marin County Parks Nonconforming Use Policy. Although this policy prohibits the use of parks and open space areas for uses that do not support enhancement or protection of natural resources or support public recreation opportunities, it allows for exceptions to this prohibition provided that the non-conforming use:

1. Provides or supports a direct benefit to the public; and
2. Cannot be feasibly located in an area outside of the park or open space preserve; and
3. Will not significantly affect biological, geological, hydrological, cultural, visual, recreational, or other resources of the preserves, parks, and other areas; and
4. Complies with all appropriate federal, state, and local laws and regulations, including federal, state, and local regulatory permit requirements, and the requirements of the California Environmental Quality Act; and
5. Has received permission from other landowners with a real property interest directly affected by the nonconforming use through a lease, license, easement, or other similar instrument.

The proposal by Caltrans provides a benefit to the public in that it would temporarily reduce flooding on Highway 1 and improve traffic safety on the road. In addition, these drainage improvements cannot be located in an area outside of the Preserve because the culverts drain under Highway 1 and onto the Preserve. To improve water flow Caltrans must remove sediment, debris, and vegetation from the Preserve. In addition, the project has the potential to significantly affect natural resources of the Preserve.

However, with the conditions recommended in this memo, the project would reduce any potential effects to a level that is less than significant. With respect to the requirements to comply with federal, state, and local environmental regulations, as described elsewhere in this memo, Caltrans is working with the regulatory agencies to get the appropriate permits. Additionally, Caltrans is working with Audubon Canyon Ranch and other private property owners to get permission to work on their respective properties. Therefore, the proposed culvert maintenance and sediment removal project is consistent with Marin County Parks Nonconforming Use Policy.

Based on the above analysis, staff recommends that your council grant a permit to enter with conditions (Attachment 6). Based on Caltrans request, the permit would only be for a one-time entry. Staff also recommends that the BLAC consider adding the following conditions to the permit to protect biological and physical processes, and water quality.

From the attached BMPs For Contractors:

- BMP's #1, #2, #3, #4, #5, #6, #8, #10, #11, and #12.
- Caltrans shall remove spoils from former culvert clean-out work to achieve a grade consistent with the surrounding tidal plain to improve the dispersal of flow from the culverts.
- Grading work from the culvert into the Preserve will have a positive slope that is consistent with upstream/downstream reaches, with no abrupt slope changes.
- All material excavated must be removed from the Preserve.
- A copy of all survey work conducted within the Preserve shall be provided to MCOSD.
- This permit is only valid if Caltrans receives all the necessary permits and complies with CEQA.
- A copy of all permit approvals must be submitted to the MCOSD at least 72 hours prior to entry into the Preserve.

Final Action Items

Staff will schedule a meeting before the Open Space District Board of Directors for review and approval of the Permit to Enter and Construct and present the BLAC's recommendations. The earliest available meeting date is September 11, 2018. The community is encouraged to provide comments and recommendations regarding the permit. Comments will be submitted to the Board of Directors prior to and on the scheduled meeting date.

ATTACHMENTS

1. Caltrans Detailed Location Map and plans
2. Caltrans Project Summary (DRAFT)
3. Caltrans Project Photos
4. Watershed Sciences Memorandum
5. MCOSD's BMPs For Contractors
6. Draft Caltrans Permit to Enter and Construct (edited by Marin County)