CITY OF PALO ALTO

NOTICE OF EXEMPTION

PROJECT TITLE:

Palo Alto Baylands Boardwalk Repair Project

PROJECT LOCATION:

The project site is located within the Harriet Mundy Marsh immediately northeast of the Lucy Evans Baylands Nature Interpretive Center (at 2775 Embarcadero Road) near the eastern edge of the City of Palo Alto Baylands where it meets the San Francisco Bat. The proposed project is located on Assessor's Parcel Number (APN) 008-06-01 owned by the City of Palo Alto within the Baylands.

PROJECT DESCRIPTION:

The proposed Palo Alto Baylands Boardwalk Repair Project entails the repair of damaged pilings and protection of undamaged pilings (157 total pilings) of the existing Palo Alto Baylands boardwalk (boardwalk) adjacent to the Lucy Evans Baylands Nature Interpretive Center in Palo Alto, California. A more detailed project description is attached.

NAME OF PUBLIC AGENCY APPROVING THE PROJECT:

City of Palo Alto

NAME OF PERSON OR GROUP CARRYING OUT PROJECT:

Megha Bansal, Senior Engineer, Public Works Engineering Division

EXEMPT STATUS

(check one)

- ☐ Ministerial (Sec. 21080(b)(1); 15268)
- ☐ Declared Emergency (Sec. 21080(b)(3); 15269(a))
- ☐ Emergency Project (Sec. 21080(b)(4); 15269(b)(c))
- ☒ Categorical Exemption: 15301 (Repair of existing facilities)
- ☐ Statutory Exemptions.

REASONS WHY PROJECT IS EXEMPT:

The Class 1 exemption "consists of the…repair, maintenance, permitting, or minor alteration of existing public or private structures, facilities,…involving negligible or no expansion of existing or former use."The proposed project includes repair of damaged pilings and protection of undamaged pilings of the existing Palo Alto Baylands Boardwalk. The project addresses the undermining of existing pilings resulting from non-native aquatic invertebrates, specifically a non-native species of shipworm (*Teredo navalis*), and two species of isopod, one in the *Limonaria* genus and one in the *Gnorimosphaeroma* genus. The repair project would not involve an expansion of the use and therefore qualifies for a Class I exemption. None of the exceptions to the exemptions would apply. Although the project is located within sensitive habitat, the repair work would have a de minimis impact on the ecology of the area, as detailed further in the project description attached. The repair work would be carried out using minimization and avoidance measures, as detailed in the attached summary

PROJECT PLANNER:

Claire Raybould, AICP, Senior Planner

IF FILED BY APPLICANT:

1. Attach certified document of exemption finding.
2. Declare if a Notice of Exemption has been filed by the public agency approving the project

☐Yes
☒ N/A

DocuSigned by:
Claire Raybould
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Signature (Public Agency)	*Title*	*Date*
	AICP, Senior Planner	*7/7/2023*

Attachment 1: Baylands Boardwork Repair Project

The following summary is derived from a memorandum prepared by H.T. Harvey and Associates on behalf of the City of Palo Alto, the full memorandum of which is available upon request and is part of the administrative record. This summary is intended to provide additional detail to further document the purpose and overview of the proposed project to support the Class I categorical exemption.

Project Overview

The proposed Palo Alto Baylands Boardwalk Repair Project entails the repair of damaged pilings and protection of undamaged pilings (157 total pilings) of the existing Palo Alto Baylands boardwalk (boardwalk) adjacent to the Lucy Evans Baylands Nature Interpretive Center (APN 008-06-001) in Palo Alto, California.

The project is located in the Baylands Nature Preserve, a 1,940-acre open space tract of marshland that is owned by the City of Palo Alto. The study area contains the project site, the Lucy Evans Baylands Interpretive Center, and a 50-foot buffer that surrounds the proposed boardwalk repair area. The project site includes: the Lucy Evans Baylands Interpretive Center's wrap-around deck for the transport of small, hand tools and equipment, the boardwalk, a gravel parking lot that would serve as a staging area, a portion of Embarcadero Way that connects the gravel parking lot to the San Francisquito Creek Trail, and a portion of the San Francisquito Creek Trail that leads to the Interpretive Center. Only a small portion of the staging area would be used by the contractor. The boardwalk extends in a northeasterly direction from the northern end of the Lucy Evans Baylands Interpretive Center towards the San Francisco Bay.

Need for Repair

In the fall of 2022 (3 years after construction), the City observed at low tide that substantial degradation had occurred to several of the boardwalk's support pilings. The damage was most severe where pilings were typically under water, specifically, beneath the observation platform at the end of the boardwalk and at locations along the boardwalk where pilings extend into the tidal channel under the boardwalk. A marine ecologist with the Smithsonian Ecological Research Center visited the boardwalk during the winter of 2022-23 and identified that aquatic invertebrates were causing the damage, specifically a non-native species of shipworm (*Teredo navalis*), and two species of isopod, one in the *Limonaria* genus and one in the *Gnorimosphaeroma* genus. In December 2022, the City reinforced the 4 most damaged vertical support pilings to prevent boardwalk failure by bolting two 2 inch by 4 inch pieces of new lumber on opposite sides of the 4 damaged pilings to support the damaged sections. Those pilings had lost about 60% of their width over a 1-2 foot long vertical section of each piling. In May 2023, the City carried out an evaluation of the extent of damage to the boardwalk pilings and determined that 27 pilings had been damaged by aquatic invertebrates. They concluded that the damage is progressing at a rapid rate for pilings that are regularly exposed to water at the terminal observation platform and along the tidal channel under the boardwalk. By contrast, damage has not yet occurred to pilings that are not regularly exposed to bay water because pilings are encased in bay mud up to the elevation of the tidal marsh plain. However, because all pilings are occasionally exposed directly to bay water during high tides, and because sea level is expected to rise over the projected design life of the boardwalk (50 to 75 years), the City has concluded that all pilings are susceptible to damage by the aquatic invertebrates and that all of the 157 pilings should be modified to repair or prevent future damage.

Proposed Repair

The City's proposed repair consists of applying the PileMedic Pile Restoration System (PileMedic System) to all 157 pilings. The PileMedic System traps and destroys existing aquatic invertebrates in the pilings, restores piling flexural and axial strength, and provides a barrier to future degradation. The PileMedic System consists of installing a columnar Fiber Reinforced Polymer (FRP) sheet around the portion of the pilings within the elevation range on each piling that is damaged or likely to be damaged. This work includes placing spacers to separate the pilings from the FRP sheet, installing FRP reinforcement, and filling the FRP sheet with grout. The vertical length of the repair will be 4 feet along most of the boardwalk, which Biggs Cardosa Associates' structural engineers judges is sufficient to repair the section of the piling susceptible to damage. Where the tidal channel beneath the boardwalk deepens to 3-5 feet, and under the terminal observation platform, the vertical length of the repair may be up to 8 feet.

The repair methods are customized to avoid and minimize impacts to tidal marsh vegetation and associated wildlife. The repair work will be carried out when tides are sufficiently low to implement the repair, as specified by PileMedic. The condition of tides during repair work will be further detailed in permit applications with water resource agencies. The repair will be performed by a small crew with approximately two crew members operating from the boardwalk and approximately two crew members operating from the marsh plain surface. The repair work will be done using hand tools only. It is necessary for workers to walk onto the marsh plain surface, into the tidal channel under the boardwalk, and onto the mudflat under the terminal overlook in order to gain access the pilings to manually install the FRP System. Workers operating from the marsh plain, tidal channel, or mudflat will place plywood sheets onto the habitat surfaces to form pathways to access each piling. All work from the marsh plain, tidal channel surface, or bay mud surface will be done standing on plywood sheets reduce the impact to the vegetation growing on the marsh plain or mudflat/channel topography. Repairs will address the 2 (or 3) pilings along individual bents at the same time for efficiency. FRP wraps can be applied to approximately 4-5 piles during each suitable low-tide window with the anticipated crew size of approximately 4 people.

The repair will consist of the following steps (see Figure 4 above):

- Remove the existing cross bracing on the bent being repaired.
- Prepare the FRP sheet (or FRP wrap) from the boardwalk surface.
- From the marsh plain, tidal channel, or mudflat surface, excavate and stockpile marsh sod (where
  present) and bay mud from around the pilings using hand tools
- Typically, approximately 1 cubic yard of bay mud will be excavated from around each piling to form
  a hole that is up to 3 feet wide and 3 feet deep centered on each piling to perform the repair
  Embed the FRP sheet to a depth of approximately 6 inches below the depth of the adjacent tidal channel or mudflat bottom.
- Mix grout on the boardwalk.
- Grout the internal (annular) space by tremie pipe from boardwalk surface above.
- Reset existing cross bracing.

Schedule

Work will occur between September 1 and January 31, outside of the California Ridgway's rail breeding season. The City anticipates that up to two such 5 month-long work windows will be needed to complete installation of the FRP System on all 157 pilings. The City intends to start construction in 2023.

Project Impact Avoidance and Minimization Measures

The following measures will be taken to minimize impacts to sensitive habitats and wildlife species from the repair project. These measures are based upon the measures included in the permits for the prior Replacement Project:

- The repair work will be carried out when tides are lower than the elevation of the repair work area.
- Prior to accessing the tidal marsh, tidal channel, or mudflat on foot to perform the repair, lightweight plywood will be placed on the marsh, channel or mudflat surface to protect marsh vegetation from damage and provide a stable surface to work from. Placement of plywood paths will limit the impacts from marsh access to temporary compression of marsh vegetation, as demonstrated during construction of the Replacement Project which used the same method for accessing bents from the marsh plain surface (H. T. Harvey & Associates 2020).
- Temporary work areas to perform the repair will be established adjacent to each piling being repaired. The temporary work area for each piling will be approximately 100 square feet. In each work area, a combination of plywood and tarps (or equivalent material) will be laid on the marsh plain to protect vegetation and create a stable platform on which to perform the repair work. A tarp (or equivalent) would be used to place light weights items and materials, not as standing platform for workers.
- The marsh plain in the repair areas is vegetated primarily with perennial pickleweed (*Salicornia pacifica*). Prior to excavation of bay mud around each piling where marsh vegetation is present, the upper 4-6 inches of the marsh vegetation and roots in bay mud (i.e., the marsh sod) will be cut, removed and set aside using a shovel prior to excavation of bay mud around the piling.
- Clearing a 3 ft wide by 3 ft wide by (typically) 3 ft deep hole in bay mud around each piling will temporarily generate approximately 1 cubic yard of bay mud. This volume of mud will be temporarily stockpiled in the work area on plywood.
- Following installation of the FRP wrap, the bay mud will be backfilled into the excavated hole around the FRP wrap and the marsh sod will be replaced. This will allow for rapid revegetation of the work areas after work is complete.
- During bay mud replacement, the small amount of excess bay mud generated from the work (see “Project Impacts”, bullet #2 below) will be distributed on the top of the temporary impact area prior to sod replacement.
- On the boardwalk, all mixing of grout will be done in buckets on tarps to prevent grout from spilling into the marsh.
- Specific wildlife avoidance and minimization measures will be developed during preparation of the project’s Biological Assessment, Biological Opinion, and project permit applications.
- The entire repair of a set of pilings (4-5 per day) is expected to be completed during a single low tide cycle. Following the completion of the repair, replacement of bay mud, and replacement of sod, protective materials will be removed from the marsh plain surface before tides re-inundate the work area.