2020010357

Notice of Exemption

21-2020-014

MARIN MUNICIPAL WATER DISTRICT

To: Office of Planning and Research
P.O. Box 3044, Room 113
Sacramento, CA 95812-3044
Via US Mail and email: state.clearinghouse@opr.ca.gov

County Clerk
County of Marin
3501 Civic Center Drive, Suite 234
San Rafael, CA 94903

From: Marin Municipal Water District
220 Nellen Avenue
Corte Madera, CA 94925
Attn: Alex Anaya, P.E., Associate Engineer

FILED
JAN 23 2020
SHELLY SCOTT
MARIN COUNTY CLERK
BY: J. MANNION Deputy

Project Title: Ross Reservoir Landslide Repair Project

Project Location – City: Unincorporated Marin County, APN 197-120-04

Project Location – County: Marin

Project Description: The proposed Ross Reservoir Landslide Repair Project involves stabilization of an active slide downslope from the existing Ross Reservoir. The landslide stabilization requires removal of trees and vegetation in the landslide repair area, construction of two tie-ins to the existing 24-inch outlet pipe installation of benches cut into the bedrock, installation of a drainage system within the slide stabilization area, construction of a slope buttress, revegetation of the slide area, relocation of a water transmission line, and construction of a new access road and access improvements. The full project description and avoidance measures are included as Appendix A of this Notice of Exemption. Additional information on the project is provided in Appendix B of this Notice of Exemption. As an initial step in furtherance of the Ross Reservoir Landslide Repair Project, the District has approved the removal of trees and vegetation obstructing the landslide repair area.

Public Agency Approving Project: Marin Municipal Water District

Name of Person or Agency Carrying Out Project: Marin Municipal Water District

CEQA Exemption Status: Emergency Project (Sec. 21080(b)(4); 15269(b)(c))

Reason for Exemption: The project qualifies for exemption pursuant to Section 21080(b)(4) and 15269(b)(c) because the project involves an emergency repair to publicly owned services facilities necessary to maintain service essential to public health and safety, and represents specific actions needed to prevent an emergency. Further discussion of why this project is exempt from CEQA is provided in Appendix C of this Notice of Exemption.

Project Approval: The Marin Municipal Water District Board of Directors approved Resolution No. 8551 at a meeting of the Board of Directors on January 21, 2020.

Lead Agency Contact Person: Alex Anaya, P.E. Associate Engineer **Telephone:** (415) 945-1588

January 23, 2020

Alex Anaya, P.E., Associate Engineer **Date**

Governor's Office of Planning & Research

JAN 23 2020

STATE CLEARINGHOUSE

POSTED 1/23/20 TO 2/22/20

1 Project Description

1.1 Project Title

Ross Reservoir Landslide Repair Project (proposed project)

1.2 Lead Agency Name and Address

Marin Municipal Water District
220 Nellen Avenue
Corte Madera, CA 94925

1.3 Contact Person and Phone Number

Alex Anaya, P.E.
Associate Engineer
(415) 945-1588
aanaya@marinwater.org

1.4 Project Location

The proposed project is located in unincorporated Marin County just west of the town of Ross, California (Figure 1). The Assessor Parcel Number (APN) for the land on which the project would occur is 197-120-04.

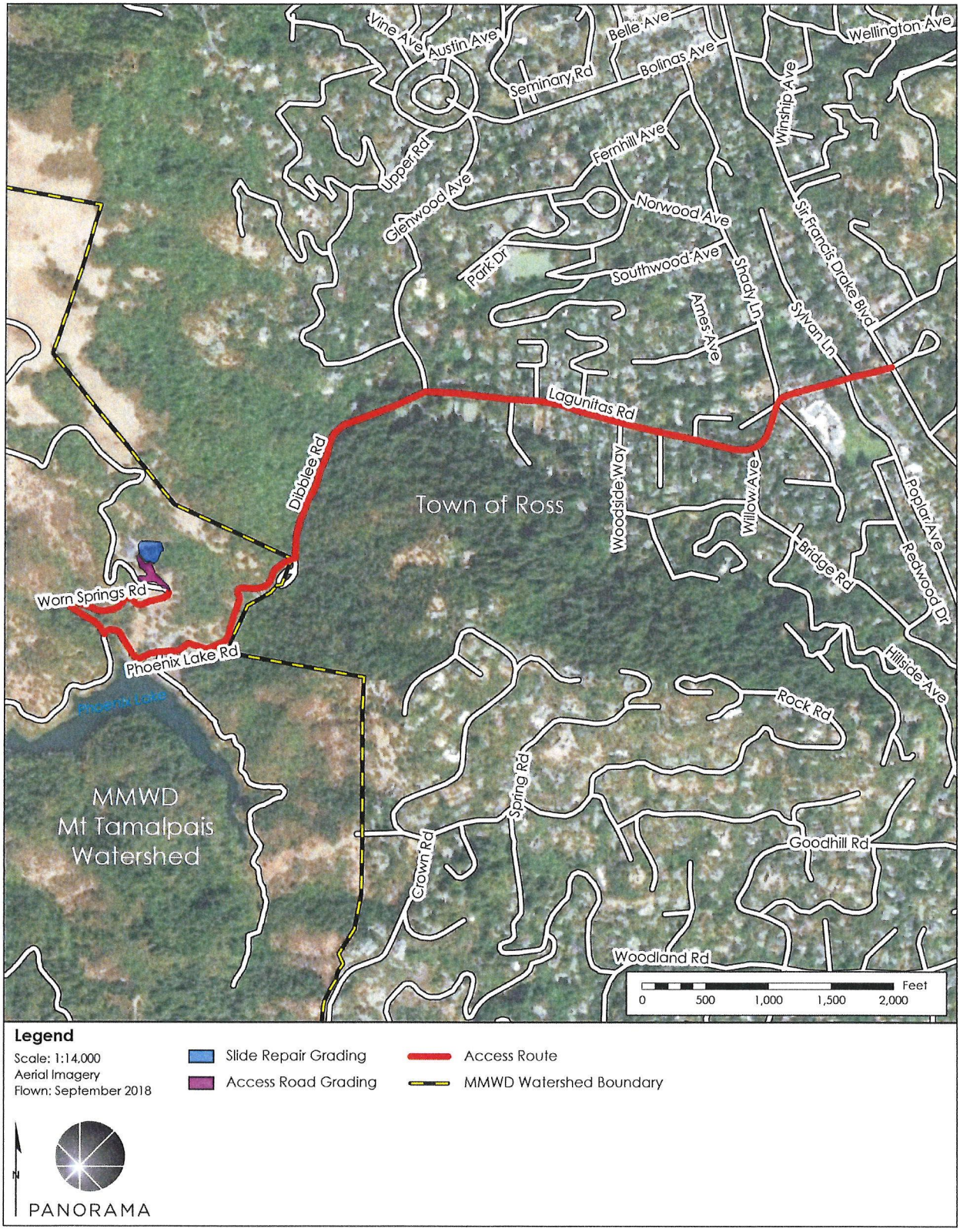
The project is located on Marin Municipal Water District (MMWD or District) watershed land on the southern hillside of Bald Hill, north of Phoenix Lake. The project site can be accessed from Sir Francis Drake Boulevard using Lagunitas Road and Dibblee Road from the Town of Ross and Phoenix Lake Road and Worn Springs Road from Watershed land (Figure 2).

1.5 General Plan Designation and Zoning

The project area is defined in the Marin Countywide Plan as Open Space (OS) and zoned as Open Area (OA).

Figure 1 Project Location

Figure 2 Access Route to the Project Site from the Town of Ross



1.6 Project Background

1.6.1 Ross Reservoir and Water Supply

Ross Reservoir is a 1-million gallon partially-buried concrete potable water storage facility built in 1927. It currently provides treated water for approximately 20 percent of MMWD's service area. The reservoir facility is located on a hillside north of Phoenix Lake. A series of treated water transmission pipelines extend downslope from the eastern side of Ross Reservoir toward the town of Ross (Figure 3). The treated water transmission pipelines entering the reservoir from the southern side bring treated water from the Bon Tempe Treatment Plant for storage in the reservoir. The pipelines bring treated water to different termini for distribution and include a:

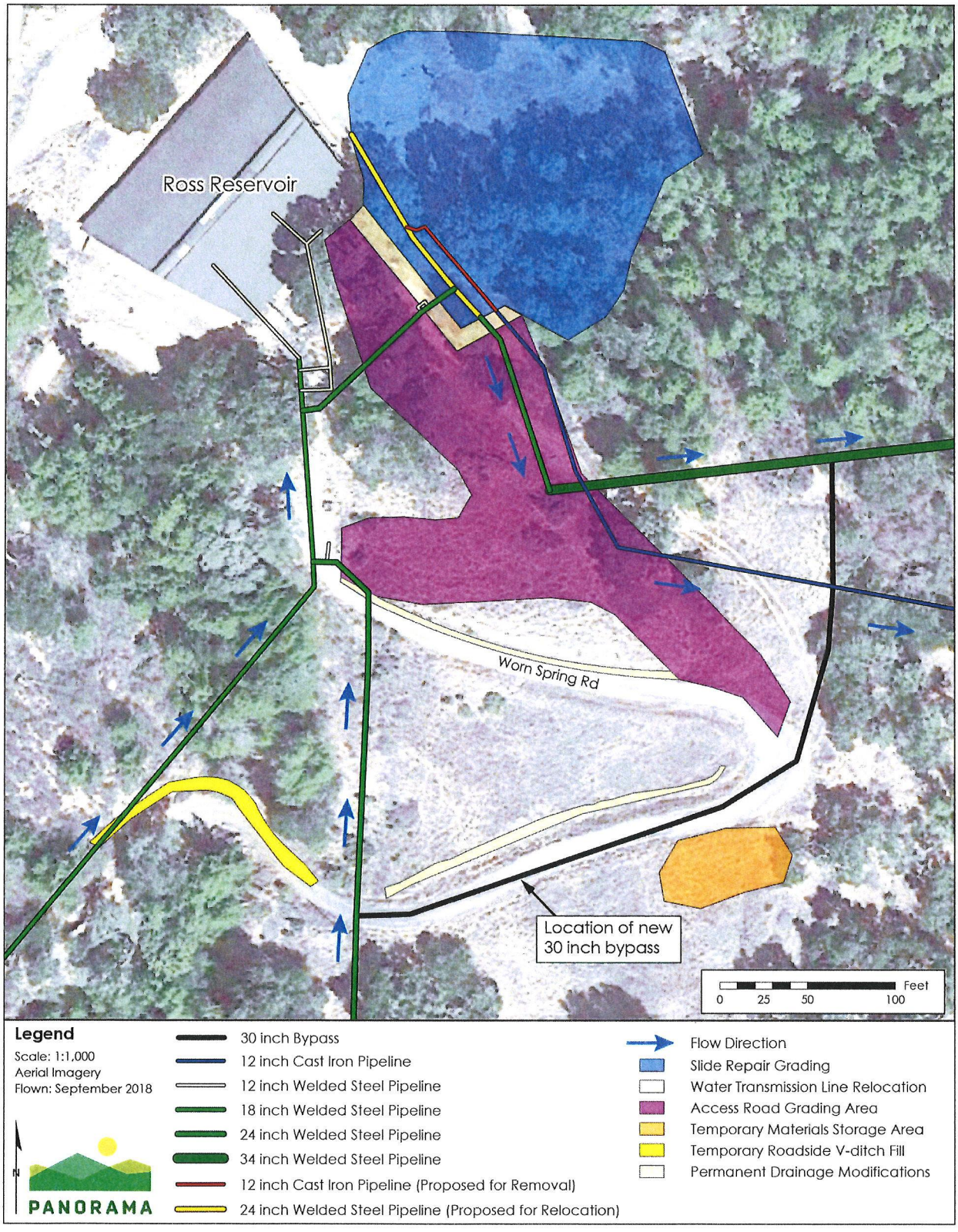
- 34-inch diameter welded steel pipeline headed east; a
- 24-inch diameter welded steel pipeline headed southeast; and a
- 12-inch diameter cast iron pipeline head southeast.

Under existing maintenance work, a new, 30-inch bypass pipeline is being constructed during the winter of 2019. The bypass will connect the existing 34-inch welded steel pipe headed east from Ross Reservoir to the existing 24-inch welded steel pipe heading north into the reservoir (Figure 3). The new, permanent bypass will allow treated water to flow between the Bon Tempe Treatment Plant towards the Town of Ross to maintain supply to customers below the reservoir in the event of future tank maintenance or an emergency.

1.6.2 Landslide

A landslide has formed near the reservoir's southeastern corner. A geotechnical evaluation of the Ross Reservoir site was performed in 2000 and included investigation of the landslide (Dames & Moore, 2000). Another geotechnical investigation conducted in 2011 and 2012 included a review of historic aerial photographs and found that the landslide has likely been active and moving since around or before 1960 (Miller Pacific Engineering Group, 2012). Historic photographs also indicated that slide area became active again around 2006. In 2012, the landslide was mapped as approximately 80 feet across and 10 feet deep. The landslide undermined a portion of the level parking/access area on the east side of the reservoir and encroached to within 10 feet of the facility's southeastern corner. Significant water seepage was observed downslope from the facility and within the landslide during very dry weather conditions in 2011. This observation indicated that the reservoir facility or buried pipes may have been leaking (Miller Pacific Engineering Group, 2012).

Figure 3 Existing Pipelines and Bypass Project



The landslide became active again during the rainy season of 2017. District staff covered the top portion of the landslide near the reservoir using plastic tarps to prevent further saturation and movement of the landslide. Movement of the slide was also thought to be exacerbated by leaks from the system piping associated with Ross Reservoir, which were increasing hydrostatic pressures in the soils and causing additional slippage in the landslide. A leak was observed from a 12-inch cast iron pipe outlet (see Figure 3). The valve to the 12-inch pipe (Valve VA-0420A) was shut off to cease flows to the pipe and the pipe has been put out of service. Water services were re-routed using existing, redundant pipelines near Lagunitas Road. To further reduce potential for leaks around the reservoir, MMWD staff also lowered the reservoir water level. Restricting flows from the 12-inch pipe and lowering the reservoir levels appeared to have reduced some of the moisture in the slide that was previously visible during the dry season. During biological surveys in August 2019, however, moisture and a seep were still seen in the slide.

1.7 Purpose and Need for the Project

The purpose of the project is to stabilize the landslide area before it causes further structural damage or loss of Ross Reservoir and its piping system, to maintain water service which is essential to the public health, and to prevent an emergency. If the project were not constructed, additional movement of the landslide could result in a total loss of the 1-million-gallon Ross Reservoir, which serves approximately 20 percent of the MMWD service area. Failure of the Ross Reservoir would impact service to MMWD customers and cause a drop in pressure in the areas that are currently served by the reservoir, which would impact emergency services due to reduced pressure for fire hydrants. The landslide needs to be repaired by removing landslide debris to the bedrock base below, cutting benches into the bedrock layer, and backfilling with native and imported fill material to create a terraced earth buttress, with required drainage infrastructure.

1.8 Project Objective

The objectives of the project are to repair a landslide and prevent further erosion and slope destabilization in order to protect the Ross Reservoir and associated transmission and distribution pipes, to maintain water service which is essential to public health, and to prevent an emergency.

1.9 Project Design

1.9.1 Overview of Design

Slide repair would involve removal of trees and vegetation within the project element footprint, constructing tie-ins to the existing 24-inch pipeline bringing water from the reservoir, removal of loose landslide material from the active slide and the installation of slope benching along the bedrock that underlies the face of the active landslide. Compacted fill material would be

replaced atop the benched bedrock and revegetated to stabilize the area. A drainage system of underground pipes (subdrains) and surface-level swales and drain inlets would ensure that water is transported away from the slide stabilization area.

The project would include slide repair, relocation of water transmission pipelines and controls away from the slide, and various access improvements (Figure 4). Detailed components of the work are shown in Figure 5. The following sections summarize the components of the project design. All of the project components described below are directly responsive to the project objectives of stabilizing the landslide area before it causes further structural damage or loss of Ross Reservoir and its piping system, to maintain water service which is essential to the public health, and to prevent an emergency.

1.9.2 Material and Tree Removal from Landslide, Pipe Tie-Ins

Existing landslide material and any established vegetation growing within the landslide would be removed down to the bedrock. Approximately 6,300 cubic yards of material would be removed from the slide area. The top layer of soil that contains slumped and deleterious material would be trucked off site and transported to an appropriate facility that accepts earthen waste materials. The remaining soil would be stored on site at a temporary materials storage area, then used to fill the landslide and compacted in place during buttress construction, as recommended by the contracted geotechnical engineer. The ability to reuse the native material removed from the slide above the rock base would depend on its soil characteristics.

Approximately 50 trees occur within the project element footprint. Thirty-two trees and numerous shrubs would be permanently removed from the landslide surface and access road footprint. A summary of trees to be removed from the project site is included in Table 1.

Two tie-ins to the existing 24-inch pipeline would be constructed to facilitate relocation of the 24-inch pipeline that occurs within the limits of the landslide repair.

This element is within the scope of the emergency repair because removal of landslide material and vegetation must occur before the landslide can be repaired. Also, the tie-ins to the existing 24-inch pipeline are needed in order facilitate relocation of the 24-inch pipeline that occurs within the limits of the landslide repair.

1.9.3 Benches

Following removal of the landslide material, benches would be cut into the bedrock across the face of the slope (Figure 5). Benches would be approximately 5 feet high and 5 feet wide, with a maximum slope of 1:1, and would run the entire length of the stabilization area following the land contour. This element is within the scope of the emergency repair because construction of the benches is needed in order for the landslide to be repaired. Benches are an essential element of the design of the landslide repair.

Table 1 Tree Removal from Project Footprint

Common Name	Scientific Name	Number of Trees to be Removed	Size Range (inches) [a]	Health
Black Elderberry	*Sambucus nigra*	1	11	Fair
California Bay	*Umbellularia californica*	15	6-40	Fair to Excellent
California Buckeye	*Aesculus californica*	3	7-13	Fair to Good
Coast Live Oak	*Quercus agrifolia*	7	3-22	Good to Excellent
Pacific Madrone	*Arbutus menziesii*	2	8-9	Poor
Snag		4	8-38	Dead

[a] Size indicates inches in diameter at breast height (dbh)

Source: (Vollmar Natural Lands Consulting, 2019)

Figure 4 Project Elements

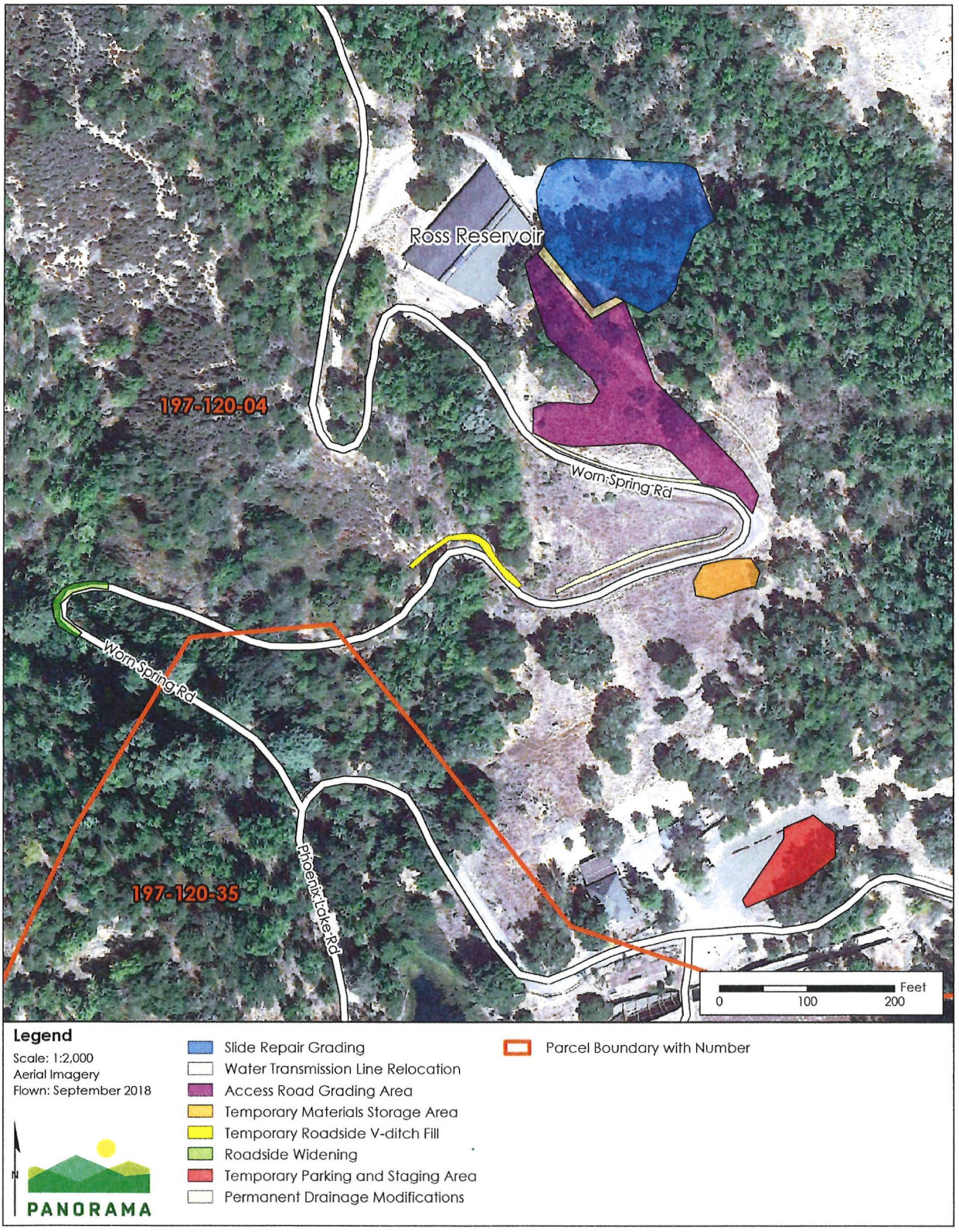
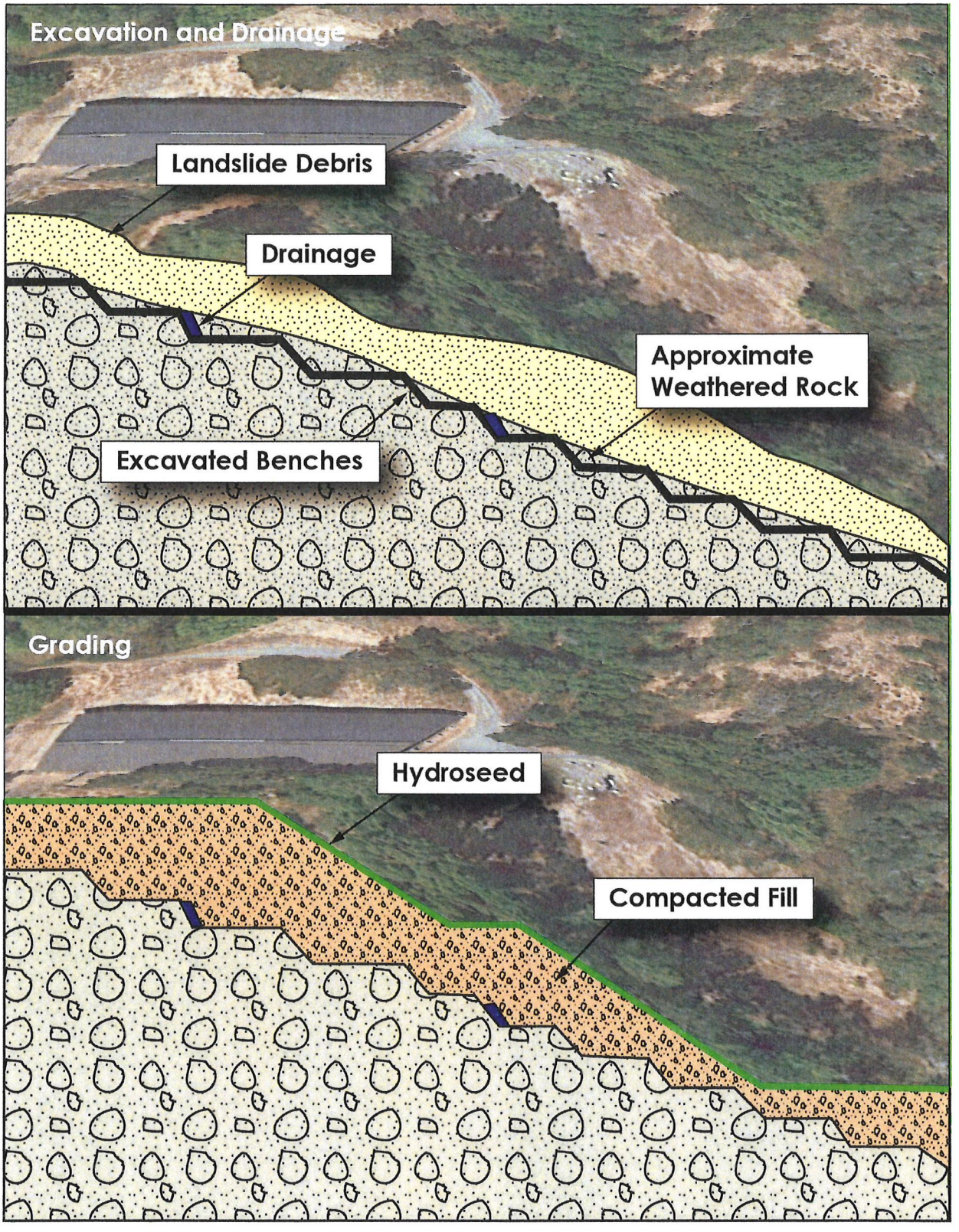


Figure 5 Slide Repair Design Schematic



1.9.4 Drainage System

A drainage system would be installed within the slide stabilization area. The drainage system would involve underground and aboveground components and would be comprised of crushed rock, polyvinyl chloride (PVC) pipe, concrete drain box inlets, and aboveground earthen swales. Underground drainage facilities would be installed at the time the benches are constructed. Aboveground facilities would be constructed after fill material is applied to the site and compacted to final grade.

Subdrains would be installed along the sloped face of five benches along the slide stabilization area to facilitate drainage of the benches (Figure 6). Subdrains would be constructed of ¾-inch crushed rock wrapped in filter fabric or similar permeable material that would allow water to filter down from the surface and eliminate ponding within the slide stabilization area. The crushed rock drainage would have a minimum thickness of 12 inches. A 4-inch-diameter perforated PVC pipe would be installed at the base of the crushed rock drainage to catch percolated water and convey it to a 6-inch PVC collector pipe located at each edge of the stabilization area. The collector pipe would transport the water to a riprap energy dissipator mat at the base of the stabilization area (Figure 7).

A 3-foot wide, lined (North American Green c350 or functional equivalent) earth swale would be constructed along the face of the buttress that would be installed over the benches and subdrainage system (see Section 1.9.5, below). The swale would be located within an 8-foot-wide bench approximately halfway up the face of the stabilization area. The bench would be graded to drop 1 percent grade from the middle of the stabilization area to the sides where the swale would discharge surface runoff to pre-cast concrete drain inlet boxes (approximately 2 feet by 2 feet) with a galvanized grate at ground level. The drain inlet boxes would drain to a 10-inch PVC pipe that would discharge to the existing flow line downslope via the riprap energy dissipator.

Materials that are anticipated to be installed on site as part of the drainage system include:

- Tensar BX 1200 geogrids
- 4-inch SDR 23.5 perforated subdrain
- 6-inch PVC drain pipe
- 10-inch SDR 35 drain pipe
- Pre-cast drainage inlets with ¼ inch thick grates (top and side)
- No.3 riprap
- ¾ inch crushed rock
- Mirafi 140N filter fabric

This element is within the scope of the emergency repair because construction of the drainage system is needed in order to allow moisture in the area to be drained away from the landslide area. Without a drainage system, the landslide repair will be unstable and prone to failure. Therefore this element is needed for the landslide to be repaired.

Figure 6 Bench Subdrain

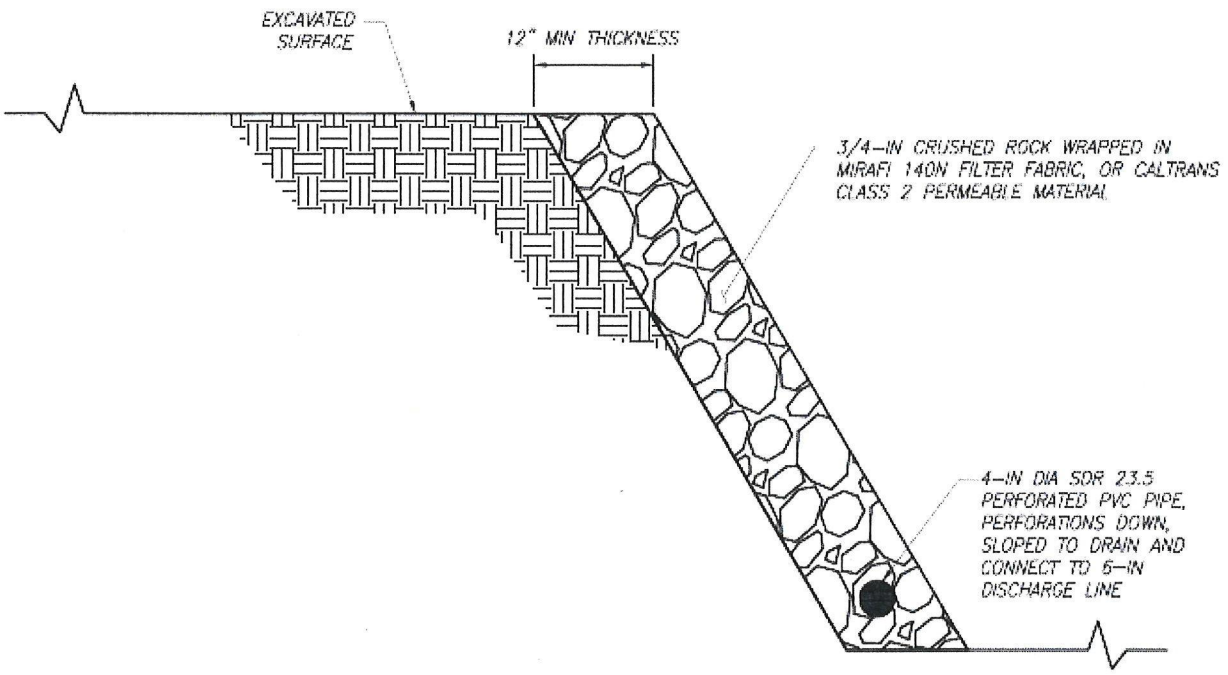
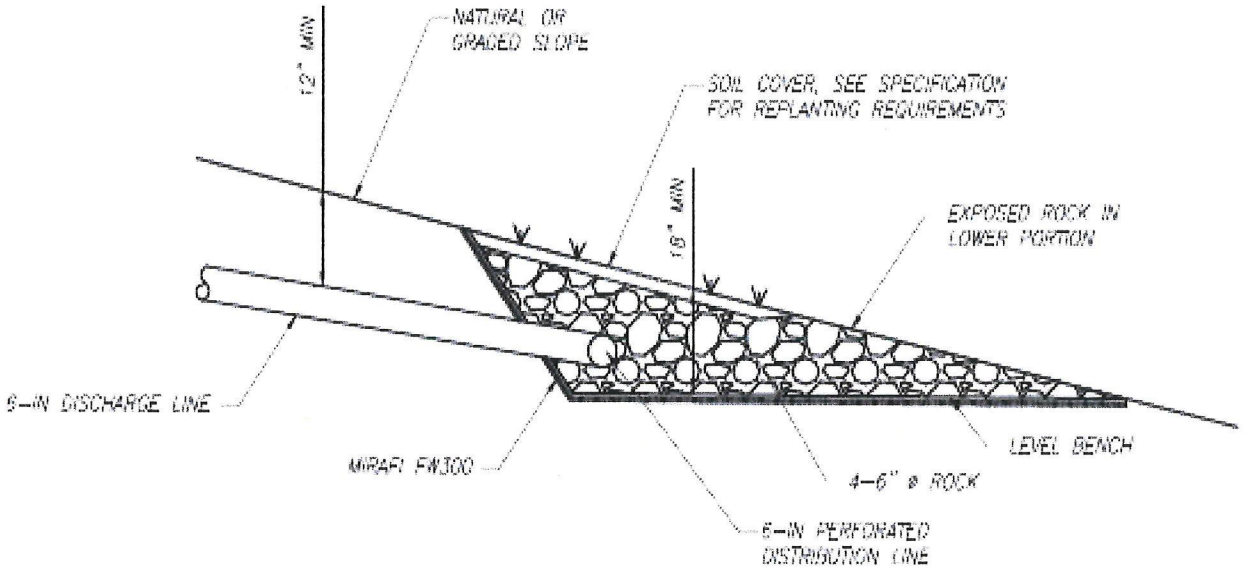


Figure 7 Riprap Energy Dissipator



1.9.5 Slope Buttress

A slope buttress would be constructed within the slide stabilization area on top of the newly constructed benches and subdrainage system as shown in Figure 5. Approximately 13,300 cubic yards of fill material would be applied to the stabilization area. Fill material would consist of soil and rock free of perishable material, rubble and building debris, and would meet the composition specified in Table 2. Random soil samples would be inspected to ensure the imported material meets the soil composition requirements. Native cut material would also be used to backfill the slope buttress if it meets the appropriate composition requirements (Table 2). Local borrow fill material from the construction of a new permanent access road (refer to Section 1.9.8) would also be used to construct the slope buttress if it meets the soil composition requirements. It is anticipated that approximately 6,200 cubic yards of native material and approximately 1,640 cubic yards of local borrow would be used to construct the buttress. The remaining approximately 5,460 cubic yards would be commercially obtained and trucked to the site. The slope buttress would be graded to no steeper than 1.8:1 (horizontal:vertical) and compacted to a minimum relative compaction of 90 percent. An 8-foot horizontal bench containing a 3-foot wide swale would be installed approximately halfway up the face of the hillside. This element is within the scope of the emergency repair because construction of the slope buttress is needed in order for the landslide to be repaired.

Table 2 Fill Material Composition Requirements

Size	Percent Finer
6 inch	100
4 inch	90-100
No. 200	10-70
*Plasticity index: 25 percent minimum	

Source: (MMWD, 2019)

1.9.6 Revegetation

The slide would be revegetated with a hydroseed mix after construction. Erosion control best management practices (BMPs) would be implemented within the stabilization area and would include erosion control mats (e.g., North American Green SC150 or similar), and certified weed-free straw wattles. Larger vegetation, including trees, would not be planted at the site, nor allowed to re-establish. Table 3 provides the composition of the hydroseed mix that would be applied to the site for permanent reestablishment of vegetation on the surface of the repair. This element is within the scope of the emergency repair because revegetation is needed in order to stabilize the area and prevent erosion and therefore is necessary for the landslide to be repaired.

Table 3 Composition of Hydroseed Mix

Name	Pounds per Acre
California brome (*Bromus carinatus*)	0.5
Blue wild rye (*Elymus glaucus*)	2.0
Purple needle grass (*Stipa pulchra*)	8.0
California poppy (*Eschscholzia californica*)	0.2
Douglas iris (*Iris douglasiana*)	1.0
Sky lupine (*Lupinus nanus*)	1.0
Yarrow (*Achillea millefolium*)	0.1

1.9.7 Water Transmission Line Relocation

Segments of existing 12-inch and 24-inch pipelines occur within the excavation limits, as shown in Figure 3. The pipeline system within the slide repair area would be turned off during project construction and the bypass system would be used to supply the 34-inch diameter pipeline heading to the east of the reservoir. MMWD staff shut off service to the 12-inch cast iron pipeline when the leak was identified near the landslide, as previously described. Service from the 12-inch pipeline has been rerouted from a redundant pipeline along Lagunitas Road and the 12-inch pipeline within the project area has been put out of service. The 24-inch conflict pipeline within the landslide repair area would be removed during excavation of the landslide repair and would not be replaced within the limits of the landslide repair area. The existing 24-inch pipeline within the slide limits (that feeds the 34-inch welded steel pipeline) will be removed and a new 24-inch pipeline will be installed to re-route the pipeline outside of the landslide repair limits.

An existing equipment control panel would be removed from the area immediately above the landslide. The control panel would be re-installed near the reservoir, away from the landslide repair area. This element is within the scope of the emergency repair because relocation of the water transmission line and control panel, which currently conflict with the landslide repair, are needed in order for the landslide to be repaired.

1.9.8 Permanent Access and Access Improvements

A new access road would be created for the construction of the landslide repair and would be left in place for access to the repair after construction is complete. The road would be in the area shown in Figure 4. It would be approximately 12 feet wide and 750 feet long and would allow for one-way ingress to the slide and separate egress back down the hill so that trucks do not need to back up. The road would be graded during construction with topsoil saved and stockpiled, and reapplied after completion of the slide repair. No aggregate fill would be applied to the access road. Following construction, the access road to the slide repair area would be allowed to revegetate with grasses but would remain an access road.

Improvements to existing segments of Worn Springs Road would also be necessary for large construction equipment and vehicles to access the site. Approximately 420 cubic yards of aggregate base would be added to Worn Springs Road in addition to road widening at two locations. Minor grading of a hairpin turn north of Phoenix Lake Road would be performed to allow dump trucks to navigate the turn on the way up to the slide repair. Grading would occur along the southwest and northern portions of the hillside to widen the turn to accommodate the turning radius of dump trucks.

Roadside v-ditches along Worn Springs Road would be filled in three locations to increase the road width on the way up to the landslide site and address existing erosion issues on Worn Springs Road. A segment of existing roadside v-ditch would be temporarily filled by installing approximately 170 feet of 12-inch pipe within the v-ditch. The ditch would then be backfilled with native fill material obtained from the construction of the new access road. Two other roadside ditch locations along Worn Springs Road would be permanently filled with native fill material to widen the road and address erosion from v-ditch drainage. Outsloping[1] is the District's preferred technique for road surface drainage to minimize erosion and environmental impacts. The road would be regraded to allow surface water to flow across the road and down the hillslope. Native material graded from the road would be used to fill the existing drainage ditches. Cut and fill quantities required for the new access road and improvements to existing access routes are provided in Table 4.

This element is within the scope of the emergency repair because construction of a permanent access road and access improvements are needed in order for the landslide to be repaired.

Table 4 Access Road Grading and Fill Amounts

Type	Cut Amount (cubic yards)	Fill Amount (cubic yards)
New Access	1,650	0
Existing access improvements	30	420
V-ditch	0	88

[1] Outsloping is the practice of reshaping roads to allow all surface water to flow across the road and drain downslope.

1.10 Project Construction

1.10.1 Construction Overview

Construction of the proposed project would include nine phases. The construction phases are summarized in Table 5 and described in detail below. Temporary and permanent disturbance areas for project construction are provided in Table 6.

Table 5 Construction Phases

Phase	Duration of Phase	Description of Work Performed During Phase
1. Tree Removal & Pipe Tie-Ins	2 weeks	Fell trees in the slide and access route footprint and chip on site. Stumps would remain in place. Construct tie-ins to existing 24-inch pipeline.
2. SWPPP Installation	2 weeks	Install erosion control measures per project plans.
3. Staging Equipment	1 week	Transport and stage equipment on site.
4. Clear and Grubbing	3 weeks	Remove vegetation and tree stumps in the area of the landslide and access route.
5. Access Road Excavation & Pipeline Relocation	3 weeks	Cut in and grade access road to landslide and make improvements along existing access road to the site for hauling of material up to the landslide area. Install relocated 24-inch water transmission line.
6. Clear and Grade Landslide	6 weeks	Grade down to bedrock, store and/or off haul spoils materials, and construct benching as per plan.
7. Import Backfill and Install Subdrains, Catch Basins and Geogrids	9 weeks	Install subdrains, catch basins, system pipe, import fill, install geogrids assuming 8-hour work shift, 24 trucks per day.
8. Finish Grading	2 weeks	Finish grading; install permanent erosion control; hydro seed exposed area.
9. Construction Clean up	2 weeks	Demobilize and clean up construction site; remove equipment, temporary BMP's, trash, portable bathrooms, and signs.
Total Duration	**22 weeks**	

Table 6 Acreage of Temporary and Permanent Impact

Project Work Area	Temporary Impact (Acre)	Permanent Impact (Acre)
Slide repair (vegetation removal, excavation, drainage)	--	0.59
Water transmission line relocation	--	0.03
Access road grading	--	0.54

Temporary parking and staging area	0.17	--
Roadside widening	--	0.167
Temporary roadside v-ditch fill	0.02	--
Temporary material storage area	0.06	--
Total	**0.25**	**1.327**

1.10.2 Tree Removal and Pipe Tie-Ins

Trees within the landslide repair footprint, water transmission line relocation footprint, and access road footprint would be felled prior to the nesting season (February-September). Trees would be limbed and chipped on site. The stumps would remain in place and would be removed during clearing and grubbing or excavation activities. Two tie-ins to the existing 24-inch pipeline would be constructed.

1.10.3 Erosion Control Installation

Erosion control best management practices (BMPs) would be implemented within the stabilization area during construction and would include erosion control mats (e.g., North American Green SC150 or similar), and certified weed-free straw wattles. Erosion control matting and hydroseed would be applied to all disturbed areas following construction. Straw wattles and silt fencing would be installed at the downslope limit of the stabilization area and along the access road and would contour to the site as much as possible to maximize the ponding and sediment retention efficiency. Silt fence would be constructed of extra strength filter fabric that would extend a minimum of 30 inches above grade and would be secured with a steel or wooden post every 6 feet along the fence line. Silt fence posts would extend a minimum of 18 inches below grade.

All erosion control BMPs would be installed prior to any clearing and grubbing or earthwork operations. BMPs would be inspected daily to ensure they are well-maintained and in proper working order. BMPs that are determined to be damaged or not functioning properly would be immediately corrected.

1.10.4 Staging and Spoils Pile Storage

Staging and storage areas would be established along Phoenix Lake Road and Worn Springs Road. Storage areas would be used to stage equipment and temporarily store soil and other construction materials. The maximum capacity of soil storage required at the Temporary Materials Storage Area would be approximately 100 cubic yards. If soil is stored in storage areas, silt fences and tarps would be installed to eliminate sediment transport from the stockpile location. Staging and storage areas are flat and accessible to construction equipment. No additional grading or stabilization would be needed and security fencing would not be required. Erosion control BMPs would be installed at the staging and storage areas as is standard MMWD practice.

1.10.5 Access Roads Construction

The new road that would provide access to the landslide repair site would be constructed by removing approximately 1,650 cubic yards of fill material. Topsoil would be separately stockpiled on site at the temporary materials storage area. Following construction of the landslide, topsoil would be reapplied to all disturbed areas.

Existing access roads would be improved to allow construction equipment and vehicles to safely access the landslide area. A hairpin turn on Worn Springs Road north of Phoenix Lake Road would be permanently widened by grading the upslope and downslope shoulders of the existing road (as previously described) using bladed heavy equipment. Several other segments of Worn Springs Road would be widened by installing pipe within a roadside v-ditch and backfilling additional roadside v-ditches using a dump truck and hand tools. No additional access road or bridge improvements are anticipated.

1.10.6 Water Needs

Once earthwork activities commence, it is anticipated that the project would require the use of a water truck for dust control and for conditioning the soil used in the landslide repair. The estimated daily use of water would be approximately 9,000 gallons. Based on the estimated time windows involving earthwork activities, it is estimated that this project would require at most 585,000 gallons of water for dust control, soil conditioning and miscellaneous use. Blow-off valves and a wharf hydrant located near Phoenix Lake would be used to obtain water from the District's water supply.

1.10.7 Truck Trips

Cleared and grubbed material including trees, non-usable landslide material, and woody vegetation would be hauled off site. Cut material would be transported using ten-wheel dump trucks with a 10-cubic-yard capacity. It is anticipated that approximately 100 cubic yards of material would be removed from the site and transported to a nearby landfill. Trees and woody vegetation would be chipped and spread on site. Approximately 10 truck trips would be required to remove cut material from the site.

Up to 5,500 cubic yards of fill material would be trucked in for the slope stabilization. Ten-wheel dump trucks with a 10-cubic-yard capacity are anticipated to be used to truck in fill material. It is anticipated that in an 8-hour workday, dump trucks running on a 20-minute interval rate can provide 24 truckloads per day. At this rate fill material import would take approximately 23 working days assuming no delays in transportation.

1.10.8 Equipment, Personnel, Schedule

Equipment and work force anticipated to be used to perform the work is identified in Table 7. All equipment would be compliant with California Air Resources Board regulations.

All workers (who are not operating dump trucks or delivering equipment) are expected to carpool in work pickup trucks and would park at either of the material storage or parking staging areas onsite (Figure 4).

APPENDIX A - PROJECT DESCRIPTION

Table 7 Equipment

Phase	Duration of Phase	Estimated Number of Workers	Type of Equipment Used (name, HP)	Number of Pieces of Equipment Used
1. Tree Removal	2 weeks	3-5	Chainsaw (Stihl MS 250, 45.4cc, 3 bhp)	4
			Wood chipper (Vermeer BC1000XL, 89 HP)	1
2. Pipe Tie-Ins	2 weeks	3-5	Bulldozer (CAT D8T, 354 HP)	2
			Excavator (CAT 352F, 417 HP)	2
			Backhoe loader (CAT 440, 104 HP)	1
			Pickup trucks (Ford -250, 450 HP)	4
			Welding unit (Miller Big Blue 400 PipePro, 24.7 HP)	1
3. SWPPP Installation	2 weeks	3-5	Shovel	6
			Pickaxe	6
			Sledgehammer	4
			Post drivers	4
			Powered trencher (Ditch Witch C12, 12 HP)	1
			Pickup trucks (Ford -250, 450 HP)	2
			Flatbed truck (International CV Series, 350 HP)	1
4. Staging Equipment	1 weeks	6-8	Flatbed truck (International CV Series, 350 HP)	3
5. Clear and Grubbing	3 weeks	6-9	Front end loader (CAT 980M, 373 HP)	2
			Bulldozer (CAT D8T, 354 HP)	1

Phase	Duration of Phase	Estimated Number of Workers	Type of Equipment Used (name, HP)	Number of Pieces of Equipment Used
			Excavator (CAT 352F, 417 HP)	2
			Chainsaw (Stihl MS 250, 45.4cc, 3 bhp)	4
			Wood chipper (Vermeer BC1000XL, 89 HP)	1
			Dump truck (International HV Series, 500 HP)	4
			Water truck (Peterbilt 348, 380 HP)	1
			Pickup trucks (Ford -250, 450 HP)	5
6. Access Road Excavation & Pipeline Relocation	3 weeks	9-13	Bulldozer (CAT D8T, 354 HP)	2
			Excavator (CAT 352F, 417 HP)	2
			Backhoe loader (CAT 440, 104 HP)	1
			Motor grader (CAT 140M, 183 HP)	1
			Water truck (Peterbilt 348, 380 HP)	1
			Pickup trucks (Ford -250, 450 HP)	4
			Welding unit (Miller Big Blue 400 PipePro, 24.7 HP)	1
7. Clear and Grade Landslide	6 weeks	10-15	Bulldozer (CAT D8T, 354 HP)	2
			Excavator (CAT 352F, 417 HP)	1
			Backhoe loader (CAT 440, 104 HP)	1
			Front end loader (CAT 980M, 373 HP)	2

Phase	Duration of Phase	Estimated Number of Workers	Type of Equipment Used (name, HP)	Number of Pieces of Equipment Used
			Dump truck (International HV Series, 500 HP)	6
			Water truck (Peterbilt 348, 380 HP)	1
			Pickup trucks (Ford -250, 450 HP)	5
8. Import Backfill and Install Subdrains, Catch Basins and Geogrids	9 weeks	10-15	Bulldozer (CAT D8T, 354 HP)	2
			Excavator (CAT 352F, 417 HP)	1
			Soil compactor (CAT 825K, 405 HP)	2
			Dump truck (International HV Series, 500 HP)	12
			Water truck (Peterbilt 348, 380 HP)	1
			Jumping Jack (Wacker BS50-4AS, 3.6 HP)	2
			Pickup trucks (Ford -250, 450 HP)	5
9. Finish Grading	2 weeks	4-6	Bulldozer (CAT D3K2, 80 HP)	1
			Soil compactor (CAT CP44B, 100 HP)	1
			Soil compactor (CAT CS34, 74HP)	1
			Water truck (Peterbilt 348, 380 HP)	1
			Jumping jack (Wacker BS50-4AS, 3.6 HP)	2
			Pickup trucks (Ford -250, 450 HP)	4
10. Construction Clean up	2 weeks	4-8	Pickup trucks (Ford -250, 450 HP)	2
			Flatbed truck (International CV Series, 350 HP)	3

The project schedule is contingent upon many factors, including weather conditions, red flag warnings, permitting, and unforeseen delays. Table 8 identifies the preliminary schedule for project construction.

Given the current work schedule of 8-hour days 6 days a week, the last day of construction would be September 24, 2020. Tree removal at the site is scheduled to occur before the start of northern spotted owl nesting season on February 1, 2020 to avoid potential for breeding on the site during construction. Anticipated rain days and red flag warning days are considered in the schedule based on the prior two years; however, any increase in rain or red flag warning days could delay the construction schedule into September or potentially into October.

Implementing a modified work schedule would allow additional construction time in the event of rain delays, red flag warning days, or unforeseen delays. If the work schedule were to consist of 10-hour days 5 days a week, one week of construction would be removed from the original end date. If the work schedule were to consist of 10-hour days 6 days a week, two weeks of construction would be removed from the original end date. However, the increased project cost due to overtime as well as impacts for reduced recreational use during the weekends would have to be considered if the project would be constructed with a schedule other than 8-hour workdays over 5 days a week.

No special construction processes are considered in the access road grading and construction of the landslide repair. With the installation of the new bypass and valve cluster at Ross Reservoir in the winter of 2019, there would be no disruption of water service to customers during the landslide repair project.

Table 8 Preliminary Schedule

Phase	Duration of Phase	Anticipated Start Date	Anticipated End Date
1. Tree Removal & Tie-Ins	2 weeks	January 15, 2020	January 30, 2020
2. SWPPP Installation*	2 weeks	April 15, 2020	April 30, 2020
3. Staging Equipment*	1 weeks	April 19, 2020	April 24, 2020
4. Clear and Grubbing*	3 weeks	May 1, 2020	May 21, 2020
5. Access Road Excavation & Pipeline Relocation*	3 weeks	May 10, 2020	May 31, 2020
6. Clear and Grade Landslide*	6 weeks	May 31, 2020	July 14, 2020
7. Import Backfill	9 weeks	July 1, 2020	August 31, 2020
8. Finish Grading	2 weeks	August 27, 2020	September 10, 2020
9. Construction Clean up	2 weeks	September 10, 2020	September 24, 2020

1.11 Maintenance

Ongoing maintenance of the landslide repair area would be conducted on an as-needed basis. Yearly inspection of the landslide repair would determine the level of maintenance necessary, which would likely involve removal of deposited material in the drains. Drain cleaning would be done manually with hand tools.

Ongoing monitoring of the landslide repair would be conducted on a yearly interval. The site would be inspected for seepage at the discharge locations of the subdrains; earth bank movement (cracking); vegetation establishment; and the overall condition of the drainage system. Any issues observed during annual inspections would be reported and addressed by District staff or a hired contractor.

1.12 Surrounding Land Uses and Setting

The project site is situated within the larger Mount Tamalpais Watershed, which is owned and managed by the District. Recreational uses are common in the general vicinity.

1.13 Other Public Agencies Whose Approval is Required

Table 9 lists the discretionary and ministerial approvals requested for the project.

Table 9 Potential Project Permits and Approvals

Agency	Permit/Approval
U.S. Army Corps of Engineers	Section 404 of the Clean Water Act Permit
U.S. Fish and Wildlife Service	Emergency consultation under Section 7 of the Endangered Species Act for impacts to northern spotted owls
San Francisco Bay Regional Water Quality Control Board	National Pollutant Discharge Elimination System (NPDES) General Permit (Order 2009-0009-DWQ, NPDES No. CAS000002)
San Francisco Bay Regional Water Quality Control Board	Section 401 of the Clean Water Act Water Quality Certification
California Department of Fish and Wildlife	Section 1600 Streambed Alteration Agreement

2 Avoidance and Minimization Measures

The following avoidance measures, presented in Table 10, would be included as part of the project.

Table 10 Avoidance and Minimization Measures

Avoidance and Minimization Measures
AIR-1: Dust Control Measures • All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day. • All haul trucks transporting soil, sand, or other loose material off-site shall be covered. • All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited. • All vehicle speeds on unpaved roads shall be limited to 15 mph. • Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points. • Construction equipment will be properly maintained by a certified mechanic. • Post a publicly visible sign with the telephone number and person to contact at the Marin Municipal Water District regarding dust complaints. This person shall respond and take corrective action within 48 hours. BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.
BIO-1: Special-status Plants A qualified botanist should conduct a pre-construction survey for rare plants prior to project start. The qualified botanist will either mark the species for avoidance and Environmentally Sensitive Area fencing will be installed to protect the plant or if the plant cannot be avoided, the plant will be transplanted under the direction of a qualified biologist. Transplanting would only occur if avoidance is not feasible and any transplanted special-status plants would be replanted within a suitable habitat area on Watershed lands under the direction of a qualified botanist.
BIO-2: Worker Environmental Awareness Training Prior to construction all contractor construction personnel shall attend an environmental training program provided by MMWD's biological contractor for up to 1 day for site supervisors, foremen, and project managers. Non-supervisory contractor personnel are required to attend training for up to 30 minutes. Contractor construction personnel shall receive worker environmental awareness training from a qualified biologist. The training shall discuss all sensitive habitats and sensitive species that may occur within the project work limits. The training shall include the responsibilities of contractor's construction personnel, applicable mitigation measures, and notification requirements. The training shall also address other measures that protect biological resources, such as limiting all vehicle speeds to fifteen (15) mph or less on the construction site and any adjacent unpaved roads during construction and post construction. The following information shall also be provided during the training:

- Specific information regarding the special-status species potentially present and their habitat needs
- Any information of occurrences in the project area
- An explanation of the status of each listed species and their protection under state and federal laws
- A list of measures being taken to reduce effects to the species during construction and implementation

Fact sheets conveying this information and an educational brochure containing color photographs of all special-status species potentially present shall be prepared for distribution to the above-mentioned people and anyone else who may enter the project area. Construction personnel shall be instructed to halt construction activities and contact the designated biologist if a wildlife species is observed in an area where it could be harmed by construction activities. A list of employees who attend the training sessions shall be maintained by MMWD and made available to USFWS and/or CDFW upon request. Following completion of the project, maintenance workers would enter the project site to conduct regular maintenance activities. These maintenance workers shall also be provided with the environmental awareness training described in this measure. Maintenance personnel would be instructed to observe the 15-mph speed limit and to halt maintenance activities and contact the designated MMWD biologist if a wildlife species is observed in an area where it could be harmed by maintenance activities.

BIO-3: Exclusion Fencing

Prior to the start of construction, construction fencing shall be placed along the lake-side of the portion of Phoenix Lake Road to be used to transport construction equipment and personnel. Large-mesh construction fencing shall be used to allow hatchlings, but not adults of the species, to pass through the fencing. Construction exclusion fencing shall also be placed along the perimeter of all area of site grading to prevent California giant salamander or foothill yellow-legged frog from moving into the work area. A designated biologist shall survey the work area prior to installation of the fence to ensure no foothill yellow-legged frog occur within the area for fence installation. If any do occur, they shall be allowed to move out of the area on their own.

BIO-4: Daily Biological Inspections

Prior to the start of construction each day, the designated biological monitor shall inspect the portion of Phoenix Lake Road used to transport construction equipment and personnel. Any pond turtles found on the upland side of the construction fencing shall be relocated to the lake-side of the construction fencing by a qualified biologist in possession of a valid scientific collecting permit.

BIO-5: Tree Replacement for Northern Spotted Owl Habitat

To the extent feasible, MMWD will design the project to avoid removal of any mature trees from northern spotted owl designated critical habitat. Upon finalization of the project design plans, the number of trees that provide suitable northern spotted owl habitat will be quantified. MMWD will provide replacement plantings for any coast live oak trees that will be removed at a 3:1 ratio and any bay or other mature trees that will be replaced at a 2:1 ratio, unless a higher or lower replacement ratio is determined to be appropriate by CDFW or USFWS. Replacement plantings will be located within suitable habitat on MMWD Watershed lands.

BIO-6: Northern Spotted Owl Preconstruction Surveys

The MMWD will commission two surveys for nesting northern spotted owls during the months of April and May preceding (or during) the commencement of construction. At a minimum, the survey area will include all suitable nesting habitats on and within 0.25 mile of the study area. If an active northern spotted owl nest is identified on or within 0.25 mile of the project area during the nest surveys, MMWD will implement measures to minimize impacts on northern spotted owl in consultation with CDFW and USFWS.

BIO-7: Roosting Bats

- A qualified biologist shall conduct a roosting bat habitat evaluation prior to the commencement of construction activities. The evaluation shall determine if an active roost occurs within any trees on the project site. Prior to the removal of trees, a qualified biologist shall conduct a focused tree habitat assessment. Trees containing suitable potential bat roost habitat features shall be clearly marked or identified. If day roosts are found to be potentially present, the biologist shall prepare a site-specific roosting bat protection plan to be implemented. Based on site-specific conditions, the plan should incorporate the following guidance as appropriate:
- If work with loud, mechanical equipment must occur near a known or potential roosting structure/building during the maternity or hibernation roosting periods, then a qualified bat biologist shall first conduct a focused assessment of the structure. The site-specific plan shall be implemented to prevent noise-related impacts on roosting bats.

BIO-8: Compensation of Wetland Impacts

The permanent loss of wetlands shall be compensated through enhancement or establishment of wetlands on watershed lands or acquisition of wetland mitigation credits through a mitigation bank. Permanent impacts to wetlands shall be compensated through enhancement of wetlands at a minimum 2:1 ratio (enhancement: impact) or creation of wetlands at a minimum 1:1 ratio if wetland mitigation is conducted by MMWD on watershed lands. MMWD will prepare a habitat mitigation plan that includes:

- Baseline conditions within the mitigation site
- Proposed mitigation site conditions
- Mitigation methods (e.g., habitat creation or enhancement)
- Performance standards/success criteria including a minimum of 70% vegetated cover with native wetland vegetation that are the target of the wetland creation and enhancement efforts and less than 3% invasive species cover
- Habitat maintenance including trash removal, invasive weed removal, and repair of any damage to the mitigation site
- Monitoring requirements including annual monitoring during the establishment period. The annual monitoring will include surveys for native vegetation cover, photo documentation at defined photo-monitoring locations, and monitoring for invasive species and any other habitat stressors. Monitoring will be conducted for the first five years or until success criteria are met.

Reporting requirements, including an annual report to be submitted by January 31st following the reporting year. The annual report will need to provide the results of annual habitat monitoring, recommendations for any corrective actions needed to meet success criteria, and a description of any corrective actions taken in the previous reporting year.

CUL-1: Previously Undiscovered Historical and Cultural

In the event of an unanticipated discovery of archaeological deposits during project implementation, the District shall ensure that construction crews shall stop all work within 100 feet of the discovery until a qualified archaeologist can assess the previously unrecorded discovery and provide recommendations. A qualified cultural resource specialist/archaeologist shall inspect the discovery and determine whether further investigation is required. If the discovery can be avoided and no further impacts shall occur, the resource shall be documented on California State Department of Parks and Recreation cultural resource record forms and no further effort shall be required. If work must commence in the sensitive area, it can only be performed using hand tools or powered hand tools, cannot include ground disturbance below the topsoil layer, and can only be accessed on foot. Alternatively, the cultural resource specialist/archaeologist shall evaluate the resource and determine whether it is:

- Eligible for the CRHR (and a historical resource for purposes of CEQA),
- A unique archaeological resource as defined by CEQA, or

- A potential tribal cultural resource (all archaeological resources could be a tribal cultural resource).

If the cultural resources specialist/archaeologist determines that the resource could be a tribal cultural resource, he or she shall, within 48 hours of the discovery, notify each Native American tribe identified by the NAHC to be traditionally and culturally affiliated with the geographic area of the project site of the discovery. A tribal monitor shall inspect the resource to determine whether it constitutes a tribal cultural resource. If the resource is determined to be neither a unique archaeological, an historical resource, or a potential tribal cultural resource, work may commence in the area.

If the resource meets the criteria for either a historical resource, unique archaeological resource, and/or tribal cultural resource, work shall remain halted and the cultural resources specialist/archaeologist shall consult with the District staff regarding methods to ensure that no substantial adverse change would occur to the significance of the resource pursuant to CEQA Guidelines Section 15064.5(b). The responding tribes shall be given an opportunity to participate in determining the appropriate mitigation methods for tribal cultural resources in consultation with the District.

Avoidance of the area, or avoidance of impacts on the resource, is the preferred method of mitigation for impacts on cultural resources and shall be required unless there are other equally effective methods. Other methods to be considered shall include evaluation, collection, recordation, and analysis of any significant cultural materials in accordance with a Cultural Resources Management Plan prepared by the qualified cultural resource specialist/archaeologist. The methods and results of evaluation or data recovery work at an archaeological find shall be documented in a professional level technical report to be filed with California Historical Resources Information System (CHRIS).

Work may commence upon completion of evaluation, collection, recordation, and analysis, as approved by the qualified archeologist and tribal monitor, for tribal cultural resources.

CUL-2: Discovery of Human Remains

In the event of an unanticipated discovery of human remains during project implementation, the District shall ensure that construction crews stop all work within 100 feet of the discovery. The District shall treat any human remains and associated or unassociated funerary objects discovered during soil-disturbing activities according to applicable State laws. Such treatment includes work stoppage and immediate notification of the Marin County Coroner, requisition of a qualified archaeologist, and in the event that the Coroner's determination that the human remains are Native American, notification of the Native American Heritage Commission (NAHC), according to the requirements in PRC Section 5097.98. The NAHC would appoint a Most Likely Descendant (MLD). A qualified archaeologist, the district, and the MLD shall make all reasonable efforts to develop an agreement for the treatment, with appropriate dignity, of any human remains and associated or unassociated funerary objects (CEQA Guidelines Section 15064.5[d]). The agreement would take into consideration the appropriate excavation, removal, recordation, analysis, custodianship, and final disposition of the human remains and associated or unassociated funerary objects. The PRC allows 48 hours to reach agreement on these matters.

HAZ-1: Fire Safety Procedures

- The District or its contractors shall check in daily by phone for the NWS daily fire hazard rating for the area. On days when the fire hazard rating is "Very High" or "Critical", use of two-stroke power tools, such as chainsaws and weed whips, are prohibited at the project site;
- There shall be no work on red flag days declared by Marin County;
- Earthmoving and portable equipment with internal combustion engines shall be equipped with a spark arrestor to reduce the potential for igniting a wildland fire;

- Appropriate fire suppression equipment shall be maintained and available at the construction site;
- Flammable materials shall be removed to a distance of 10 feet from any equipment that is either operating, a significant heat source, or which could produce a spark, fire, or flame;
- Construction personnel shall be trained in fire safe work practices (e.g., smoking in enclosed spaces or parking in designated parking locations), use of fire suppression equipment, and procedures to follow in the event of a fire including use of emergency radios provided by the District.

TRANS-1: Avoid School Drop-off and Pick-up Times

- Construction trucks shall not pass Ross School during student drop-off (8:00 am -8:30 am) and pick-up (Monday, Tuesday, Thursday, Friday: 2:00 pm – 3:15 pm; Wednesday: 1:40 pm – 2:00 pm) times during the school year.
- Prior to construction, MMWD would provide notification of construction commencement to Ross School. The notification shall include contact information for a District representative responsible for addressing construction issues related to traffic.

TRANS-2: Truck Traffic

No haul trucks will travel within the Town of Ross prior to 8am or after 5pm without prior approval from the Town of Ross. Haul trucks shall not line up or cue within the Town of Ross. Truck travel will be timed and flaggers will be used to ensure one direction truck travel along narrow roads. Flaggers will be positioned at locations where the access road is located within frequently used trails to allow for safe passage of pedestrians.

MILLER PACIFIC ENGINEERING GROUP

December 3, 2019
File: 187-46cltr.doc

Marin Municipal Water District
220 Nellen Avenue
Corte Madera, CA 94925-1169

Attn: Mr. Alex Anaya

Re: Geotechnical Engineering Recommendations
Ross Reservoir Landslide Stabilization
Ross, California

Ladies & Gentlemen;

This letter presents our geotechnical engineering recommendations and opinions regarding emergency measures for stabilization of the landslide located immediately downslope and east of Ross Reservoir. The landslide was evaluated in 2012 by Miller Pacific as part of our Geotechnical Investigation for the Ross Reservoir replacement project. Following additional subsurface investigation and analysis of the landslide, we prepared grading plans this past summer for a reinforced earth buttress to stabilize the landslide. We understand that the project will be constructed in the Spring of 2020.

The landslide is roughly 80-feet in width and has undermined a portion of the level parking/access area on the east side of the reservoir and has encroached to within 10-feet of the reservoir's southeastern corner. A large crack exists in the reservoir wall at the southeast corner of the structure. Leaks within the reservoir appear to be related to cracking within the southeast portion of the reservoir, as evidenced by seepage observed on the slope directly below this area. Recent slope movement, starting in 2017 has been observed downslope from the landslide and the new slope movement is undermining both the base of the slide and the adjacent northeast-facing slope. The new slide movement is likely related to the heavy winter rains observed in the past two winters and, to a lesser extent, leaks in the reservoir.

It is our professional opinion that the landslide is posing a significant threat to the Ross Reservoir and the reinforced earth buttress should be constructed as soon as practicable in order to stabilize the landslide. If the earth buttress is not constructed this year, additional landslide movement could undermine the reservoir, which could in turn cause additional damage to the already cracked reservoir structure. We believe the site is currently unstable as evidenced by the recent slope movement and the project should be considered an emergency repair.

We understand the upper portion of the slide and adjacent bench area has been covered with plastic sheeting to protect the area from winter rains. This is a standard temporary mitigation measure, however, it does very little to improve the overall slope stability of the hillside.

December 3, 2019

We hope this addresses your concerns at this time. If you have any questions, please do not hesitate to call.

Very truly yours,
MILLER PACIFIC ENGINEERING GROUP

Eric Dabanian
Geotechnical Engineer No. 2526
(Expires 6/30/21)

PANORAMA
ENVIRONMENTAL, INC.

APPENDIX C

MEMORANDUM

Date: October 8, 2019

To: Marin Municipal Water District

From: Panorama Environmental, Inc.

Subject: CEQA Emergency Exemption Justification

Purpose of this Memorandum

The purpose of this memorandum is to provide guidance to Marin Municipal Water District (MMWD) staff regarding the appropriate environmental review to satisfy the California Environmental Quality Act (CEQA) for MMWD's Ross Reservoir Landslide Repair Project (project). This memorandum explores the option of potential emergency statutory exemptions from CEQA and identifies recent case law around emergency exemptions. This memorandum reflects Panorama's current understanding of the project, deteriorating conditions of Ross Reservoir, and potential effects on public services if the Ross Reservoir is taken out of service due to further slope destabilization. This memo also reflects recent discussions with the U.S. Army Corps of Engineers (Corps), San Francisco Regional Water Quality Control Board (RWQCB) and California Department of Fish and Wildlife (CDFW) about jurisdictional resources and permitting approaches available.

Project Background

Ross Reservoir is a 1-million gallon partially-buried and covered concrete potable water storage facility built in 1927 near Phoenix Lake. The Reservoir provides treated water for approximately 20 percent of MMWD's service area (see Figure 1). A landslide adjacent to the reservoir in 2017 caused erosion of the hill slope to within a few feet of the reservoir foundation (Figure 2). The landslide also caused a crack in the wall of the reservoir causing water to leak from the reservoir into the surrounding area (Figure 3). In response to the crack in the reservoir and landslide, MMWD reduced the elevation of the reservoir so that it is currently operating at 75 percent capacity. MMWD also applied plastic sheeting to the hill slope to reduce stormwater infiltration into the soil and try to reduce the rate of further soil loss on the slope. Even with the corrective actions that were applied by MMWD further destabilization of the foundation was observed in 2019 with a larger gap in the foundation/wall where a crack was observed in 2017 (Figure 3).

Figure 1 Ross Reservoir Distribution Area

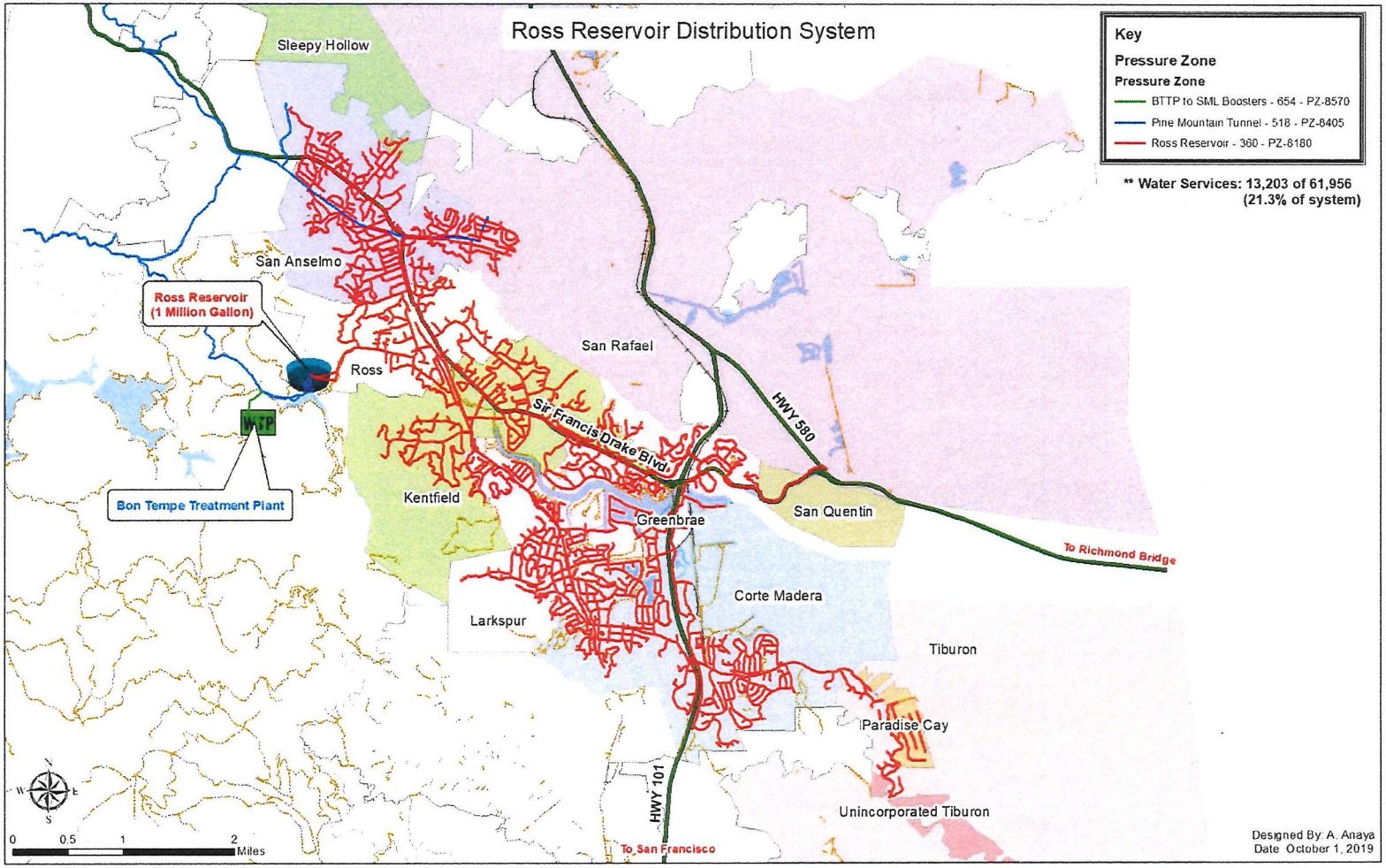


Figure 2 Location of Slide Relative to Reservoir Foundation

Figure 3 Damage to Reservoir Foundation in 2017 and 2019

2017

2019

Project Need

The purpose of the project is to stabilize the landslide area before it causes further structural damage or loss of Ross Reservoir and its piping system, to maintain water service which is essential to the public health, and to prevent an emergency. In the absence of the proposed slope repair and stabilization actions, the hill slope adjacent to the reservoir is at risk of further erosion. Further erosion threatens the integrity and continued operation of Ross Reservoir. Taking Ross Reservoir out of service would require MMWD to backfeed the area that is currently served by Ross Reservoir, which would cause a decline in pressure and impair emergency services due to reduced pressure at fire hydrants. Loss of Ross Reservoir would be catastrophic due to the significant impacts on MMWD's service and implications for emergency response. Actions to repair the slope need to be conducted as soon as practicable to avoid loss of reservoir operations.

Critical Timing Considerations

The fundamental purpose of the project is to stabilize the slope adjacent to Ross Reservoir to protect MMWD infrastructure, to maintain water service which is essential to the public health, and to prevent an emergency. Slope grading, filling, and compaction work all need to be conducted during the dry season to avoid further destabilization and loss of the hill slope. The construction is estimated to take approximately 5 to 7 months. Work cannot start in 2019 due to the impending rainy season. The soonest work can commence in the landslide footprint area is approximately April or May 2020 and after the rainy season ends. Assuming a 7-month construction period and a start date of May 1 for this phase of the project, slope stabilization would be complete by the end of November. Extending the date for slope compaction and final BMP installation after November 2020 would create a substantial erosion risk for areas that would be impacted during construction. To begin work in April or May 2020, MMWD must remove trees from the construction area in January 2020. Trees must be removed prior to the bird nesting season (February-September) in order to avoid the risk of substantial construction delays due to nesting activity in the trees that need to be removed. Tie-ins to the existing 24-inch pipeline will need to be constructed in January or February when flows from the reservoir are lower. MMWD will also need to start the contracting process in January 2020 to ensure a construction contract is in place by April/May. The CEQA review process for a Mitigated Negative Declaration will require a minimum of 3 months. There is not adequate time to complete that review process and bring the project to the Board prior to January when a decision needs to be made in order to meet the time schedule to start construction in 2020. Delaying construction until 2021 increases the risk of further slope failure and loss of the reservoir.

CEQA Review

Recent Changes in CEQA Definition of Emergency

The Office of Planning and Research updated the definition of Emergency Projects in the December 23, 2018 adopted updates to CEQA Guidelines. The definition of Emergency Projects

under the updated CEQA Guidelines Section 15269 includes the changes shown in underline below:

> *(b) Emergency repairs to publicly or privately-owned service facilities necessary to maintain service essential to the public health, safety or welfare.* ***Emergency repairs include those that require a reasonable amount of planning to address an anticipated emergency.***
> *(c) Specific actions necessary to prevent or mitigate an emergency. This does not include long-term projects undertaken for the purpose of preventing or mitigating a situation that has a low probability of occurrence in the short-term,* ***but this exclusion does not apply (i) if the anticipated period of time to conduct an environmental review of such a long-term project would create a risk to public health, safety or welfare, or (ii) if activities (such as fire or catastrophic risk mitigation or modifications to improve facility integrity) are proposed for existing facilities in response to an emergency at a similar existing facility.***

The project meets the criteria for an emergency project under part (b) because the project involves slope repair that is necessary to protect the reservoir, which is needed to maintain services essential to public health and safety. The change in CEQA Guidelines under part (b) clarifies that it can require time to plan the emergency project and that the planning and design of the slope repair in 2018 and 2019 (since the landslide in 2017) would not exclude MMWD from use of the exemption.

The project also meets the criteria for emergency project under part (c) because the project is necessary to prevent further slope failure and loss of the Ross Reservoir. The continued damage to the foundation of Ross Reservoir indicate that further destabilization is occurring in the absence of permanent slope repairs. In addition, the time required to complete the CEQA review process is expected to delay the slope repair work until 2021 due to the need to conduct the slope stabilization work during the dry season.

Case Law

Recent case law supports the use of an emergency exemption when a project involves a landslide that is a threat to life or property, per *Calbeach v. City of Solano Beach* (2002). This case specifically involved slope repair for the purpose of preventing loss of homes on the bluff above the hillslide. The court determined that, "Section 21080, subdivision (b)(4) exempts not only projects that mitigate the effects of an emergency but also projects that prevent emergencies. In order to design a project to prevent an emergency, the designer must anticipate the emergency." This case provides further support for the use of an emergency exemption on the proposed landslide repair project which is needed to prevent the anticipated future loss of the slope and subsequent loss of the reservoir, and to maintain services essential to public health and safety and to prevent an emergency.