



STAFF REPORT

Meeting Type: Operations Committee/Board of Directors
Title: Loma Alta Landslide and North Marin Line Valve Isolation Project Update
From: Alex Anaya, Director of Engineering
Through: Ben Horenstein, General Manager
Meeting Date: January 12, 2024

TYPE OF ACTION: Action X Information Review and Refer

RECOMMENDATION: Receive a staff update related to the Loma Alta Landslide and the North Marin Line Valve Isolation Project

SUMMARY: Staff will provide an update to the Board on the Loma Alta Landslide and the North Marin Line Valve Isolation Project, located near White Hill in the unincorporated area in Fairfax.

DISCUSSION: Significant rainfall in January 2023 caused a landslide to develop on Old Railroad Grade Road, an unimproved road located near White Hill in Fairfax on Marin County Open Space District land. The slide threatens the integrity of the District’s existing 27-inch North Marin Line transmission pipe, which is located within a 20-foot easement across Marin County Open Space District (MCOSD) property. The pipeline is the primary transmission line from the San Geronimo Treatment Plant that supplies water into the Districts system via the North Marin Line.

The North Marin Line (NML) conveys finished water from the District’s San Geronimo Treatment Plant over White Hill along Old Railroad Grade to the District’s two 5-million-gallon Smith Saddle Tanks located in Fairfax. Between the San Geronimo Treatment Plant and Smith Saddle Tanks is the Fairfax Transmission Line (FTL), which is tapped off of the NML near the intersection of Old Railroad Grade and Sunrise Fire Road. The FTL supplies water into the Ross Valley and Central Marin service areas, which flows south via the FTL into Pine Mountain Tunnel (located in Fairfax), Hawthorne Hills Upper Tank (located in San Anselmo), and Forbes Reservoir (located in San Rafael).

The NML has isolation valves on either side of the slide area: one valve located west of the landslide near the crest of White Hill, and one valve located just east of the landslide and the junction of the FTL. The FTL has one isolation valve located downstream of the NML/FTL junction. The NML and FTL systems are critical in directing flows as needed to various sectors of the District’s service area in the event that the San Geronimo Treatment Plant (SGTP) is taken offline.

While assessing the risk to the District's NML and its supply reliability as a result of the Loma Alta Landslide, staff identified a system vulnerability at the NML and FTL junction. The old valve configuration did not allow the system to isolate the feed from the SGTP and allow the FTL to be back-fed from Smith Saddle Tanks. This vulnerability needed to be addressed, as any failure of the NML at the landslide area would not only take out our largest treatment plant but also put a significant strain on our Bon Tempe Treatment plant to provide water to the entire District, since during this same time, the North Marin Aqueduct from Sonoma County was either offline or running at minimal flows due to a landslide in that location. This made installing new isolation valves at the junction of the NML and FTL a key component to mitigate risk of failure due to the landslide and ensure operational flexibility and reliability to move water through our system if needed during planned and unplanned system shutdowns.

Staff formulated a plan for an emergency bypass and ordered materials to ensure the District would be ready to install a temporary transmission bypass around the landslide in the event that the landslide worsened or damaged the NML. After identifying the need for a valve cluster at the NML and FTL junction, staff ordered materials to cut in a new tee with valves and fittings to allow the District to better control the movement of water to our system through this junction.

The North Marin Line Valve Isolation Project involved the excavation and removal of a section of the existing pipe and tee at the NML and FTL junction, and installation of a new 24-inch welded steel tee with three new 24-inch butterfly valves, and welded steel reducers at the junction of the NML and FTL pipelines, and then backfilling and restoring the area. District staff determined that this project could be expedited using the District's On-Call Capital Maintenance and Repair Construction Contract (CN-2009). The District's Contractor, Piazza Construction, performed the installation of the tee, and valves, and was paid on a time and materials basis in accordance with the Contract terms.

On October 10, 2023, the SGTP and NML Booster Pumps were taken offline, and District Facilities Maintenance staff shutdown and drained the pipelines. The Contractor cut and removed sections of the existing pipeline and tee, and successfully installed the new three-valve cluster after which water service, treatment operations, and transmission system functions were restored later in the evening.

Staff has continued working with MCOSD to cover the landslide and protect it from additional rain damage and District staff has been monitoring the landslide since February 2023 to determine if immediate action is needed to protect the transmission line. Miller Pacific Engineering Group has designed the landslide repair for MCOSD in coordination with the District to ensure the transmission line is protected. Staff will be meeting with MCOSD to discuss the landslide repair schedule and anticipate that MCOSD will be conducting the landslide repair in the summer of 2024. District staff will work closely with MCOSD during construction to ensure the District's transmission main is protected.

ENVIRONMENTAL REVIEW: Not Applicable.

FISCAL IMPACT: The North Marin Line Valve Installation Project has an approved budget for FY24 and FY25 totaling \$200,000 in Fund Center A1A03.

ATTACHMENT(S): None.