STAFF REPORT

Meeting Type:	Board of Directors
Title:	Amendment No. 2 to MA-6120 with Hazen and Sawyer for Kastania Pump Station Rehabilitation Project – Phase 2 (D21027)
From:	Alex Anaya, Director of Engineering
Through:	Ben Horenstein, General Manager
Meeting Date:	December 17, 2024

TYPE OF ACTION: X Action Information Review and Refer

RECOMMENDATION: Approve and Authorize the General Manger to execute Amendment No. 2 to Professional Services Agreement No. 6120 with Hazen and Sawyer, for additional engineering services in support of the Kastania Pump Station Rehabilitation Project – Phase 2 (D21027) in the amount of $142,342 with a staff requested contingency of $65,000

SUMMARY: On July 22, 2022, Marin Water and Hazen and Sawyer entered into contract for the Kastania Pump Station Rehabilitation Project – Phase 2. The agreement tasked Hazen and Sawyer with designing a new electrical motor control center, new pump station roof, new pump station drainage upgrades, new pump station security fencing and a new surge relief valve installed at the Ignacio Pump Station.

Amendment No. 1 added additional scope services and fees to perform a pump system hydraulic assessment and preliminary design for pump improvements at Kastania Pump Station and a preliminary design of a pressure relief tank at Ignacio Pump Station. The Amendment was executed by the General Manager utilizing the original Board approved contingency of $35,000.

Amendment No. 2 will add additional design scope services and fees, including new pumps, pump cans, motors, an electrical equipment preselection package, and surge relief tank, to the existing contract and extend of the contract performance date of December 31, 2024 to December 31, 2027. Amendment No. 2 will increase the current contract of $384,800 by $142,342 to a new not-to-exceed contract amount of $527,142.

DISCUSSION: The District supplies water to approximately 191,000 customers throughout Marin County. Approximately 75 percent of the District's water supply comes from seven reservoirs within the Mount Tamalpais Watershed and in west Marin, and 25 percent of the water supply is imported from the Sonoma County Water Agency (Sonoma Water) via the North Marin Aqueduct.

The Kastania Pump Station, located in Petaluma California, was built by the District in 1977 to increase flow and pressure in the North Marin Aqueduct and to offset the hydraulic impact of increased consumption of imported water by Petaluma and the North Marin Water District. The Kastania Pump Station pumped water via a 30-inch discharge pipe which was connected to the North Marin Aqueduct at a point further south on Kastania Road. The North Marin Aqueduct originated at a connection to SCWA's Petaluma Aqueduct in McNear Road near the intersection of Petaluma Blvd.

The District owned and operated Kastania Pump Station until 1999 when it transferred ownership to the Sonoma County Water Agency. Approximately five years later, the California Department of Transportation began planning its Marin-Sonoma Narrows US 101 highway-widening project (CalTrans MSN Project), which required the relocation of portions of the North Marin Aqueduct. This led to the development of North Marin Water District's Aqueduct Energy Efficiency Project (AEEP). The AEEP included installation of a new pipeline connecting the existing Kastania Pump Station to an enlarged and relocated North Marin Aqueduct. Upon completion of the AEEP in August 2015, the Kastania Pump Station was decommissioned.

In 2020 and 2021, Marin County and much of California faced an exceptional drought, and after two successive dry winters with significantly below average rainfall, District reservoir storage volumes were at historical low levels. In response to the emergency drought conditions in Marin County, the District pursued transfer of the Kastania Pump Station property back to Marin Water where it would rehabilitate and recommission the pump station. This booster pump station along the North Marin Aqueduct provides operational flexibility for the District to meet its imported water supply needs when they cannot be met by gravity flow through the Aqueduct.

In order to get the pump station in operation as expeditiously as possible, the District pursued rehabilitating and recommissioning the Kastania Pump Station with a two-phase approach. The first phase of the project was completed in 2021 and installed new yard piping along with minor alterations to the existing Kastania Pump Station in order to place it back into service. The Phase 1 project installed approximately 200 linear feet of 30-inch diameter welded steel pipe including a 30-inch diameter hot tap of the existing 42-inch diameter North Marin Aqueduct. After piping was installed the District started, tested and recommissioned the pump station.

The Kastania Pump Station Phase 2 (Phase 2) focus is on ensuring reliable and adequate pump station operation capacity that will be achieved by replacing the aging electrical equipment currently powering the pump station. The pump station's new motor control center will feature variable frequency drives, which will allow the District flexibility in regulating the desired flow rates through the North Marin Aqueduct. Phase 2 will also replace the leaking pump station roof, address localized flooding inside the pump room, install security perimeter fencing and install a new surge relief valve at the Ignacio Pump Station.

During Phase 2 design, Staff identified three areas of additional design scope required for the successful completion the Kastania Pump Station Rehabilitation Project. Amendment No. 2. will allow Hazen and Sawyer to execute the three areas of additional design scopes under the existing Professional Services Agreement.

The first area of additional scope is in relation to the existing pumps. Staff performed field testing at Kastania Pump Station which revealed flow and vibration issues for both Pumps 1 and 2. The flow

issues are due to changed hydraulics in the North Marin Aqueduct and the vibrational issues are due to poorly designed pump suction cans. The measured flow and vibrational issues are considered significant and are causing premature wear on the pumps that will eventually fail. To correct these issues, hydraulic modeling, new efficient pumps, motors and new pump suction cans will be incorporated into the design. These additions will ensure the pump station will operate efficiently and significantly increase reliability for the District's use.

The second area of additional design scope is in relation to the new pressure relief valve at Ignacio Pump Station. A Surge Analysis was performed for Kastania Pump Station and the installation of a new pressure relief valve upstream of Ignacio Pump Station is necessary to protect the North Marin Aqueduct from high pressures which will occur if Ignacio Pump Station unexpectedly losses power and is shut off while Kastania Pump Station is running. This value is modeled to release approximately 6,700 gallons of water during a power outage event at Ignacio Pump Station. This volume of water is not practical to dechlorinate and surface flow to nearby storm drains. In order to capture and safely discharge the water, a new 8,000 gallon surge relief holding tank and sewer drainage system will be designed and installed.

The third area of additional design scope is in relation to the new electrical equipment layout sizing. Detailed manufacture equipment shop drawings are required in order to accurately select electrical equipment that will properly fit within the footprint of the existing electrical room. These shop drawings will eliminate uncertainty in equipment layout dimensions. Amendment No. 2 additional design scope includes the creation of preselection electrical equipment specifications that will allow the District to solicit shop drawings from major manufacturers prior to the construction phase. The detailed drawings will be purchased from approved manufacturer(s) and will be incorporated in the design which will remove uncertainty and potential for costly change orders during the construction phase.

Amendment No. 2 will add additional design scope items as discussed to the existing contract and extend of the contract performance date from December 31, 2024 to December 31, 2027. Amendment No. 2 will increase the current contract of $384,800 by $142,342 to a new not-to-exceed contract amount of $517,142. The new total design fee is approximately 10% of the current construction estimate of $5,150,000 and within industry standards.

District staff recommends the Board approve and authorize the General Manger to execute Amendment No. 2 to Professional Services Agreement No. 6120 with Hazen and Sawyer, for additional engineering services in support of the Kastania Pump Station Rehabilitation Project – Phase 2 (D21027) in the amount of $142,342 with a Staff requested contingency of $65,000.

Project Implementation**:**

Executed Professional Services Agreement:	July 22, 2022
Design Phase:	August 2022 – April 2025*
Construction Phase:	May 2025 – October 2027

**Design Phase was paused for 12 months*

ENVIRONMENTAL REVIEW: Not Applicable.

FISCAL IMPACT: The existing Professional Services Agreement with Hazen and Sawyer for MA-6120 is for a total of $384,800. Amendment No. 2 to MA-6120 will increase the existing amount by $142,342 to a new contract amount of $517,142. Funding for this amendment is identified in FY 25 adopted budget under the Kastania Pump Station Rehabilitation Project in the Replacement of Transmission Pumps fund center.

Task Description	Budget
Task 9 – Additional Services: This task includes additional services for project management activities, hydraulic modeling, pump design, electrical equipment preselection package, pressure relief tank, and construction support.	$142,342
Amendment No 2. Contingency	$65,000
New Total Not-to-Exceed Contract	$527,142

ATTACHMENT(S): None.

DEPARTMENT OR DIVISION	DIVISION MANAGER	APPROVED
Engineering	**Alex Anaya** **Engineering Director**	**Ben Horenstein** **General Manager**