



TO: Taysha Schroder

DATE: April 4, 2023

THRU: David Kershaw

FROM: Jason Ferrin *JF*

**RE: Moose Ridge Discovery
TMWA WO# 23-9017**

PURPOSE:

The purpose of this Discovery is to present a water service plan and an estimate of the associated costs for the proposed project (Project).

DISCUSSION:

The Project contemplates the development of 27 single family residential units on two lots totaling 43 acres. The area is within TMWA's retail service territory and is subject to TMWA's Charge Area 3.

Location:

The Project is located off Moose Ridge Drive. The Project parcels are listed in Table 1 and shown in Figure 1.

Table 1. Project Parcels

APN	ACREAGE
208-650-05	0.54
081-160-35	42.43

Total 42.97

Project Water Maximum Day Demands

The estimated project maximum day demand (MDD) is 16.5 gallons per minute (gpm). Common area irrigation demand was not included in this Discovery.

Major Water Facilities and Cost Opinion

There are currently no TMWA facilities serving the Project location and offsite water facilities will be required. The proposed primary supply to the Project is from the Beaumont Tank Zone. A 2021

Discovery showed the primary supply being made via a connection to the 16" Beaumont Tank main directly west of the project. Due to difficulties in making this connection, the developer has request TMWA analyze an alternative primary connection. This alternative primary supply connection can be made at a location just upstream of the pressure reducing station on Sierra Glen Circle. A secondary supply will be required for redundancy and reliability. The secondary supply can be obtained from a connection to the Upper Las Brisas Zone. Two pressure regulating station will be required to serve the Project. The water service plan is shown in Figure 1. A list of the major facilities and their associated cost opinion are listed in Table 2. Table 2 has been updated from the 2021 Discovery to include recent increases seen in construction costs and changes to TMWA Water Service Fees that occurred in January 2022.

The secondary supply main crosses City of Reno property. The applicant will be responsible for obtaining easements for the offsite water facilities. TMWA will benefit from a connection between the Beaumont Tank Zone and the Upper Las Brisas Zone. For this reason, TMWA will agree to contribute the following:

- 50% of the cost of the secondary supply main.
- The cost of the parallel main located between the two pressure regulating stations.

Table 2. Project Cost Opinion

Facility Description	Qty	Unit	Unit Cost	Total Cost	Comments
10" Primary Supply Main in Fox Trail/Sierra Glen	2,000	Linear Feet	250	\$500,000	Estimated at \$25/in-diameter
8" Secondary Supply Main	1,450	Linear Feet	100	\$145,000	Includes a TMWA contribution of 50%.
8" Parallel Main within Project	930	Linear Feet	0	\$0	TMWA will pay for this parallel section of main
Pressure Regulating Stations	2	Each	\$125,000	\$250,000	
Area 3 Charge	16.5	MDD gpm	\$3,258	\$53,757	WSF charge
Storage Charge	16.5	MDD gpm	\$1,287	\$21,236	WSF charge
Supply and Treatment Charge	16.5	MDD gpm	\$6,957	\$114,791	WSF charge

Total Estimated Cost

\$1,084,783

1. All facilities would be permitted, designed, and built by the developer and then dedicated to TMWA.
2. All costs are the responsibility of the developer, unless otherwise noted.
3. The cost opinion does not include all onsite water mains, meters and meter assemblies.

Supply and Storage Capacity

There is adequate storage to serve this project.

Project Pressures

Maximum Day pressures are shown in Figure 1. A new regulated pressure zone will be required for this project based on topography to comply with TMWA design pressure criteria summarized in the assumptions section of this report and NAC 445A criteria. This will require the installation of a pressure reducing station from the higher regulated pressure zone (Beaumont 2 Zone) to provide the primary supply source, and installation of a pressure reducing station from the higher pump

zone (Upper Las Brisas Zone) to provide a secondary supply source. The Upper Las Brisas Zone connection will include a normally closed valve that will only be opened when the primary supply is out of service. The primary supply source, Beaumont 2 Zone, is part of the Water Service Facility Fee Area 3. Installation of individual service pressure reducing valves on each water service in the new regulated pressure zone is required.

Dead Ends and Looping

Nevada Administrative Code section 445A.6712 requires systems to be designed, to the extent possible, to eliminate dead ends. In accordance with direction from the Health Authority, TMWA standards limit the length of a dead-end water main to 800 feet or less. The water facility layout proposed in this Discovery meets the dead end and looping requirements.

Fire Flows

Fire flow requirements are established by the fire department. The assumed fire flow requirement for this project is 1,500 gpm for two hours. The water facility layout identified in this Discovery can convey the estimated maximum day demands and provide up to 1,500 gpm fire flow for 2 hours while maintaining a residual pressure greater than 20 psi.

ASSUMPTIONS:

1. The applicant shall be responsible for all application, review, inspection, storage, treatment, permit, easements, and other fees pertinent to the Project as adopted by the TMWA at the time of application.
2. The cost opinions contained herein do not include new business fees, cost of water rights, sustainability fees and related fees.
3. Project pressure criteria are:
 - a. Maximum day pressure of 45 pounds per square inch (psi) at building pad elevation with tank level at top of emergency storage,
 - b. Peak hour pressure of 40 psi at building pad elevation with tank level at top of emergency storage, and
 - c. Maximum day plus fire flow pressure of 20 psi at center of street elevation with tank level at bottom of fire storage.
4. For new systems, unregulated distribution system pressures should not exceed 100 psi anywhere in the system. Individual water service pressure regulators are required for system service pressures over 80 psi and on all individual water services in regulated system pressure zones and pump zones. For new developments, TMWA standards require two sources of water supply. Lot layout and elevations used for this Discovery were submitted by the applicant.
5. Main alignments shown are conceptual and were not checked for conformance to TMWA construction standards.
6. Minimum easements and access road widths over the mains are 20-ft and 15-ft, respectively (10% max grade).

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7. Facility requirements for the Project are based on assumed elevations, maximum day demand and fire flow requirements. Changes in elevation, demand or fire flow requirements may affect facility requirements.
 8. Easements, permits and all pertinent Agency approvals are obtained for the design and construction of the water infrastructure necessary to serve the proposed Project.
 9. All cost opinions are preliminary and subject to change. The costs presented in this study are planning level estimates based on the information available. Actual costs will be determined at the time of application for service.
 10. Future development may alter the conclusions of this Discovery. Capacity in TMWA's system is available on a first-come, first-served basis, and commitment to provide service is not established until a contract for service is executed and all fees are paid.
 11. This area is in TMWA Charge Area 3.

Review of conceptual site plans or tentative maps by TMWA does not constitute an application for service, nor implies a commitment by TMWA for planning, design, or construction of the water facilities necessary for service. The extent of required off-site and on-site water infrastructure improvements will be determined upon TMWA receiving a specific development proposal or complete application for service and upon review and approval of a water facilities plan. After submittal of a complete Application for Service, the required facilities, the cost of these facilities, which could be significant, and associated fees will be estimated and will be included as part of the Water Service Agreement for the project. All fees must be paid to TMWA prior to water being delivered to the project.

Please contact Jason Ferrin (834-8242) with any questions or comments regarding this Discovery.