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August 6, 2015

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**RE: TMWA's Plan for Groundwater Sustainability on the Mt. Rose Fan**

Since the successful completion of Truckee Meadows Water Authority's (TMWA's) merger with the Washoe County Department of Water Resources (DWR) and the South Truckee Meadows General Improvement District (STMGID) water systems, TMWA is working on enhancing groundwater resources in the Mt. Rose Fan area.

At TMWA we recognized that once the merger was completed, we would implement programs to move treated surface water from the Truckee River and various creeks into the former DWR and STMGID systems. This conjunctive management of surface and groundwater resources in the Mt. Rose Fan area helps to protect and restore groundwater supplies. **Conjunctive use management maximizes use of surface water when it's available, thereby reducing groundwater pumping. This approach allows us to meet demands with surface water, and to rest and recharge specific wells when enough surface water is available.** For example, from January through May of 2015, the Double Diamond #1 and STMGID #1, #2, #3 and #11 wells were not pumped; the areas that these wells serve were supplied with surface water. Compared to January through May of 2014, this operation reduced groundwater pumping by over 147 million gallons. In addition, we also recharged over 18 million gallons of surface water into the groundwater aquifer during this same period.

Due to dependence upon groundwater and the continued decline in water levels aggravated by the ongoing drought, it is necessary to provide a supplemental source of supply for the water systems located on the upper Mt. Rose and Galena fan areas as soon as possible. These areas currently rely on groundwater wells for 100 percent of their water supply and the continuing drought situation has severely limited the amount of natural recharge to local aquifers. TMWA's unique ability to provide conjunctive use management is something neither STMGID nor DWR could do with their more limited water resources. This program and the projects described below support one of the primary goals of consolidation: **to improve management of the area's water resources.**

*Truckee Meadows Water Authority is a not-for-profit, community-owned water utility, overseen by elected officials and citizen appointees from Reno, Sparks and Washoe County.*

With the full resources of a consolidated water utility now available, immediate construction of the facilities to implement conjunctive use management has begun. This will improve reliability for both TMWA customers and domestic well owners by mitigating the continued decline of groundwater levels in the area.

## **TMWA's Conjunctive Use Plan**

TMWA is implementing a \$7.8 million conjunctive-use plan for the Mt. Rose/Galena Fan area, consisting of three projects (see enclosed map) which will provide the ability to deliver treated surface water from the Truckee River to the area:

- Arrowcreek/Mt. Rose Conjunctive-Use Facilities
- Expanded Conjunctive-Use Facilities/Aquifer Storage and Recovery Program
- STMGID Conjunctive-Use Facilities

Note: these facility improvements are included in TMWA's existing budget and will not affect rates.

### **Arrowcreek/Mt. Rose Conjunctive-Use Facilities**

The Arrowcreek/Mt. Rose Conjunctive-Use Phase 1 Facilities will deliver up to 1,500 gallons per minute of surface water during the winter months. This allows TMWA to not pump its production wells in the Arrowcreek and Mt. Rose water systems. These facilities consist of three booster pump stations and about 3,600 feet of 10-inch pipe on Zolezzi Lane. When installed, the project will deliver water to the Arrowcreek #3 Tank, located below the Thomas Creek Trail parking lot off Timberline Drive. This \$2.8 million project is scheduled for construction in the summer of 2015; the facilities are planned to be operational by November of this year.

### **Expanded Conjunctive-Use Facilities/Aquifer Storage and Recovery Program**

TMWA is also expanding its Aquifer Storage and Recovery (ASR) Program. ASR occurs during the fall, winter and spring when water use in the community drops to approximately one-fourth of its peak summer usage, making Truckee River water available for recharge. ASR is the process of injecting treated surface water into the groundwater aquifer when the wells are not in use. The more water we can recharge and store during the off-peak season, the more we will have available when river flows are low. It's like money in the bank.

Since last winter, TMWA engineers, hydrogeologists and operations personnel have been identifying well sites for recharge in the Mt Rose/Galena Fan area. Staff is working as quickly as possible to test, design, permit, construct and implement recharge in at least three wells by this coming winter. The first wells scheduled to be equipped for recharge are Arrowcreek 2, Tessa West and Mt Rose 3.

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An additional component of the overall ASR program is Phase 2 of the Arrowcreek/Mt. Rose conjunctive-use facilities. Scheduled to be constructed in 2016-2017, Phase 2 will consist of an additional \$1.2 million of system improvements. This will allow delivery of surface water into the upper portions of the Mt. Rose/Galena water system for use in recharging additional wells.

### **STMGID Conjunctive-Use Facilities**

The third project, the \$3.8 million STMGID Conjunctive-Use Facilities, will provide an off-peak surface water supply for an area which primarily serves former STMGID customers, located in the vicinity of the Saddlehorn neighborhood. The facilities will be constructed in 2017-2018, benefiting TMWA customers and domestic well owners by providing surface water to protect and restore groundwater resources. The project will consist of a new booster pump station and about 8,100 feet of 10-inch pipe to be located on Arrowcreek Parkway. These facilities will deliver about 1,000 gallons per minute to the STMGID Tank 4 and Tank 5 zones during the winter months.

### **Addressing Water Demand Created by New Development**

Effective June 1, 2015, TMWA's Board of Directors adopted revisions to its rules, water rights dedication policies and Water Service Facility Charges for the Mt. Rose/Galena Fan area. These changes affect new development in the area.

It is important to note that TMWA is a water purveyor required to respond to development approved by local governments. TMWA does *not* promote or encourage development in one location versus another. When, where and what type of growth occurs is solely within the land-use entitlement and planning functions of cities, counties and regional planning agencies. By contrast, TMWA's water-supply planning is designed to facilitate delivery of safe and reliable water supplies—*if and when land-use entitlements are granted*. TMWA is obligated to provide retail water service to users in its service area, which it can only do by identifying present and future needs and doing the necessary planning to meet them. TMWA's integrated planning process ensures the long-term water resources, facility capacity and funding mechanisms are in place to meet current and future water supply and demand conditions.

The newly adopted rules, water rights dedication policies and Water Service Facility Charges for this area require developers to dedicate supplemental surface water (creek) supplies when dedicating groundwater for new service in the area. Supplemental surface water resources (Whites, Thomas and/or Galena creeks) are a key component of the conjunctive resource management plan and necessary to ensure a sustainable water supply for existing customers, domestic well owners and new development in these areas.

Surface water from Whites, Thomas and Galena creeks has historically been used for agricultural irrigation. These creeks remain a key part of the regional water resources for the South Truckee Meadows. For instance, the creeks are used to augment the South Truckee Meadows Water Reclamation Facility reclaimed water (purple pipe) supply. The State Engineer also permits the use of these creek rights for water service.

In order to develop supplemental surface water supplies that will provide for the long-term sustainability of the local groundwater aquifer, TMWA is implementing the plan to construct a small water treatment plant (WTP) off of Whites and Thomas Creeks—this plan was approved as part of Washoe County’s 2002 South Truckee Meadows Facility Plan. The County’s Facility Plan recognized that, “The upper treatment plant is an integral component of the recommended water supply plan ... Most importantly, it will provide recharge water and/or offset winter groundwater pumping in the upper Mt. Rose fan area.”

As part of the process of planning for this small WTP, biologists and scientists are evaluating creek habitat and biological resources, as well as its form, structure and functionality. This assessment will make it possible to estimate the amount and timing of water that could be supplied to the WTP. The WTP project will be vetted through various permitting agencies and Washoe County’s Special Use Permit process, taking into account public input and comments.

Lastly, TMWA is developing and expanding an updated groundwater model for the area. The new model will significantly improve estimates of water-level impacts from future pumping, climate variability and recharge scenarios. TMWA plans to use the model to optimize well-pumping rates and locations, as well as recharge locations. This will help reduce the drawdown that can be expected to occur, particularly in the months when the municipal wells are used the most.

I understand this is a lot of information. If you have questions or would like further explanation of TMWA’s plans, please contact me at [jenloe@tmwa.com](mailto:jenloe@tmwa.com) or 834-8250.

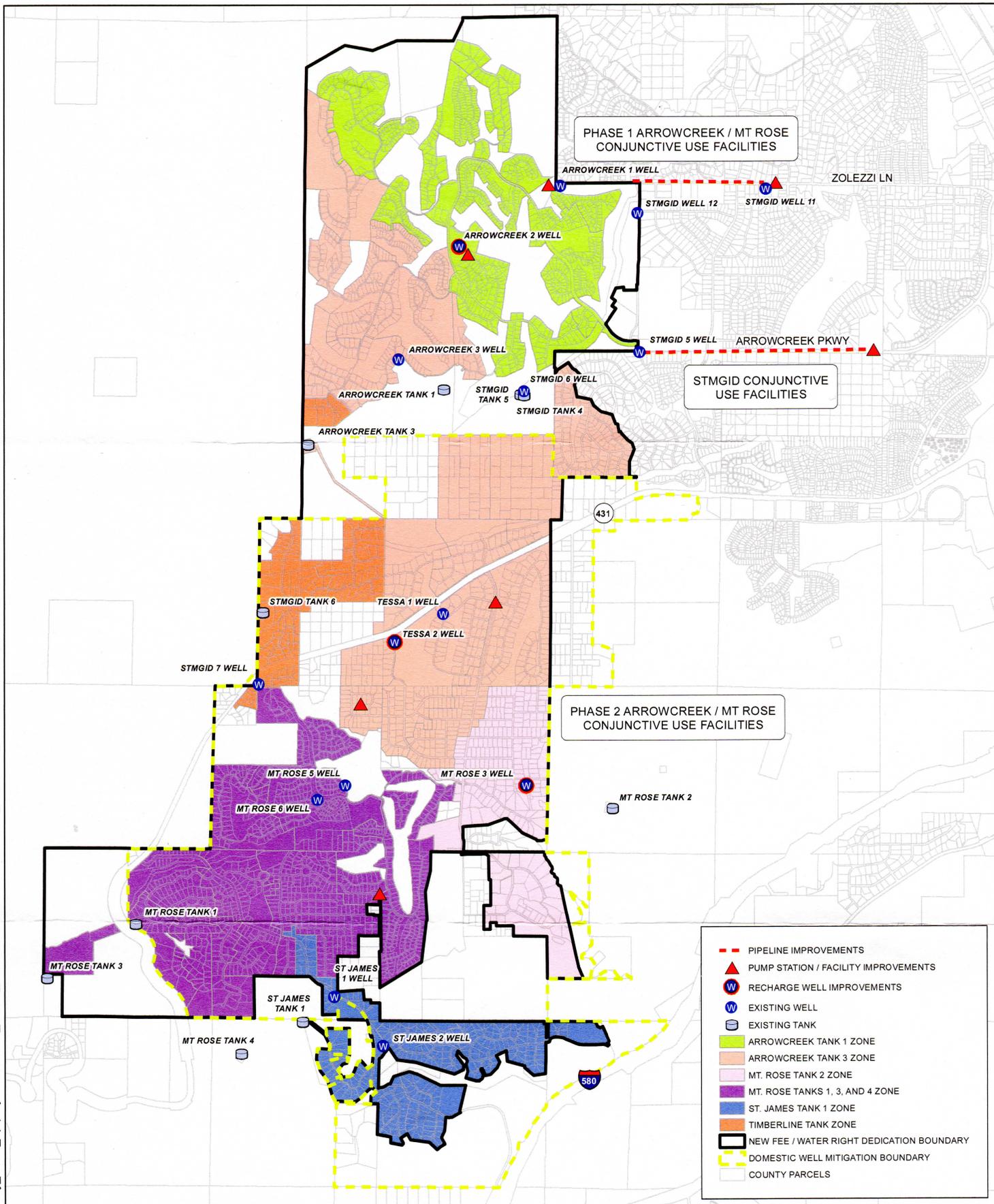
Sincerely,

A handwritten signature in black ink that reads "John Enloe". The signature is written in a cursive, flowing style.

John Enloe, P.E.  
Manager, Operational Strategies

Enclosure

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**TRUCKEE MEADOWS WATER AUTHORITY**  
Quality. Delivered.

**GROUNDSWATER SUSTAINABILITY PLAN**  
**ARROWCREEK / MT. ROSE CONJUNCTIVE USE FACILITIES**

|               |                     |
|---------------|---------------------|
| DATE          | 7/14/2015           |
| MAP BY:       | JK                  |
| REQUESTED BY: | JE                  |
| SCALE:        | 1 inch = 4,100 feet |

**NORTH**  
NAD 83 NEVADA STATE PLANE WEST FEET