



## STAFF REPORT

**TO:** TMWA Board of Directors  
**THRU:** John Erwin, Dir Natural Resources  
**FROM:** Laine Christman, Resource Economist  
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**DATE:** March 2, 2015  
**SUBJECT:** 2015 Water Supply Projections, Demands and Demand-Side Management

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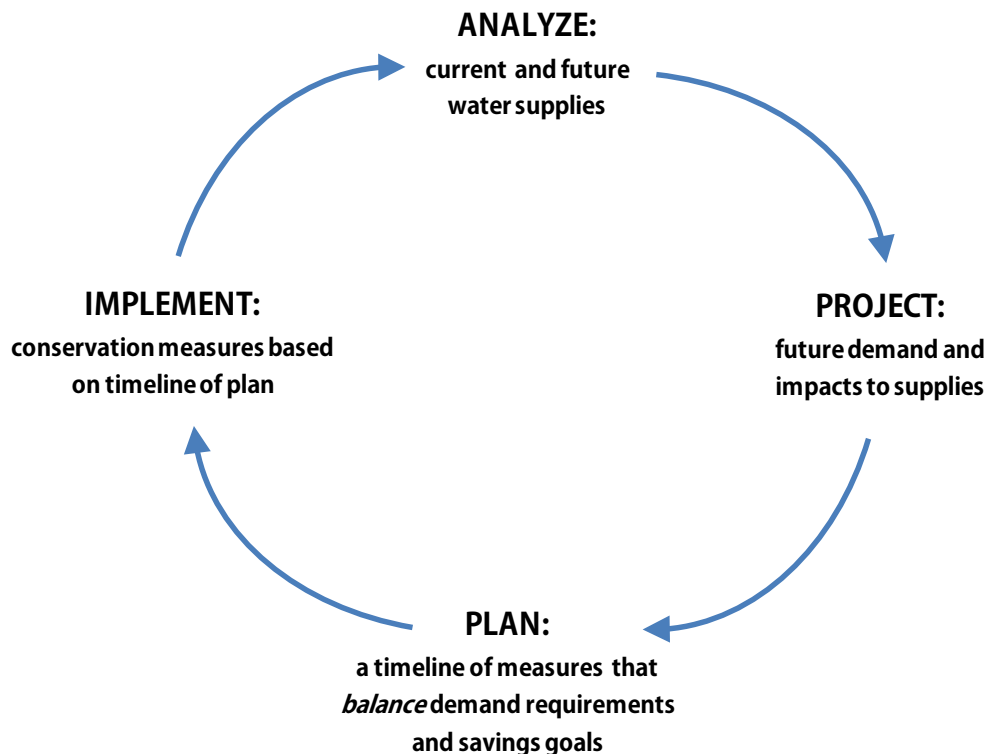
### Introduction

Nevada is part of the Great Basin and for the most part is classified as a high desert. Few places in Nevada are as fortunate as the Truckee Meadows which has a river running through it, but that does not change the fact it is a desert with annual average rainfall of 7.5 inches per year. In essence, the region is in perpetual drought interrupted by wetter precipitation years. That is one reason why it is harder during dry years to explain to customers: (1) how climatological conditions have led to reduced precipitation, reduced snowpack accumulations, and resulting lower Truckee River supplies; (2) the need to use water more efficiently; and (3) the degree to which TMWA water supplies may or may not be affected. Except for extreme dry year events, TMWA's conjunctive management of its available raw-water supplies successfully avoids or minimizes disruption to customers and the local economy over the course of a year. However, coming off the dry-year supply of 2014, staff began in October 2014 analyzing potential supply scenarios with associate communication strategies in the event 2015 may be a low precipitation year like 2014.

TMWA's demand-side management program ("DMP" or conservation program) is one tool available to address the timing of use of raw water supplies for customer demands while meeting TMWA's revenue/cost targets, working within the constraints of various rules and regulations of the river system, and meeting the stated needs of the local community (i.e., economic vitality, quality of life, and response to local entity land use objectives). TMWA's DMPs target (a) responsible water use; (b) water waste; (c) maximum day demand reduction to reduce new investment in facilities; (d) distribution system leak detection, water theft, and repair; and (e) low-water-year river supply or an on-river emergency. TMWA's DMP educates consumers through all media forms as well as on-site service visits on the efficient and responsible use of water and is flexible to respond to annual water supply variations during drought cycles. A DMP must also balance annual flows of water from the Truckee River system against TMWA's customer demands, its contractual obligations, and their negative impact on revenues. Aggressive demand reductions are timed so that reductions in water use minimize customer disruption while achieving the local community's quality of life and/or economic objectives and minimizing use of dry-year supplies should successive dry years occur.

For planning purposes, a DMP consists of strategies, actions, measures, processes or programs undertaken by water utilities to influence the use of water by its customers so as to achieve efficient, responsible and sustainable use of water resources. DMP attempts to change a customers' use of water, such as decrease the daily amount used, decrease the annual amount used, change the manner in which water is used, change the time in which water is used, or any combination of these. TWMA seeks to influence customer consumption to meet annual demands, to avoid waste of water, to minimize disruption of the community's quality of life, and depending on the amount of water available from its water sources in a given year, principally the Truckee River, to reduce the amount used to preserve upstream water storage reserves in case water is not available from the Truckee River the next year.

DMP is a continual process that requires an analysis of current supplies as well as forecasted supplies. The demand side must be projected to determine the impact to supplies moving into the summer months. A plan that details a timeline that reflects a balance between meeting annual demand and anticipating future supply requirements must be developed. Finally the plan's tactics must be implemented according to the timeline specified. Since weather and precipitation vary year to year, the DMP process is cyclical in nature in that it must be done on an annual basis.



DMP are subject to legal/regulatory, geographic, and environmental constraints. Understanding the following key constraints influence how the DMP is and can be utilized effectively by TMWA:

### *Legal/Regulatory Constraints*

The Truckee River is one of the more highly regulated rivers in the United States. The following outline some of the operating requirements TMWA must adhere to over the course of the year.

1. When water is available, water in Lake Tahoe and/or Boca Reservoir **must** be released to meet a daily flow requirement at the California-Nevada Stateline.
2. Beginning in September of each year, water **must** be released by November from **all** upstream reservoirs to make room for the upcoming snow season to capture potential winter storm/flood events and runoff that will occur next spring.
3. Per dam safety requirements, the gates at the upstream reservoirs can be closed in April to capture spring run-off.

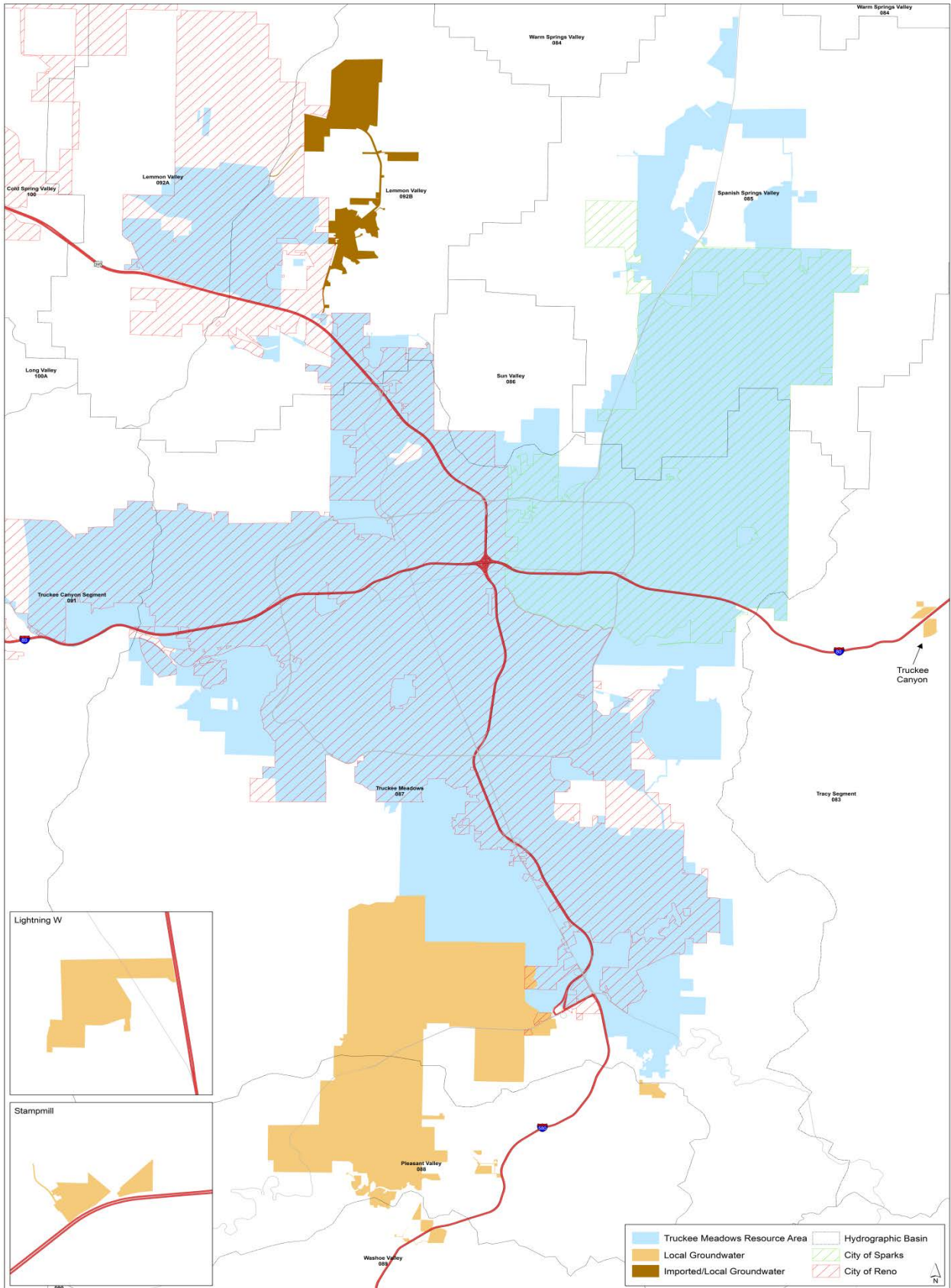
### *Geographic Constraints*

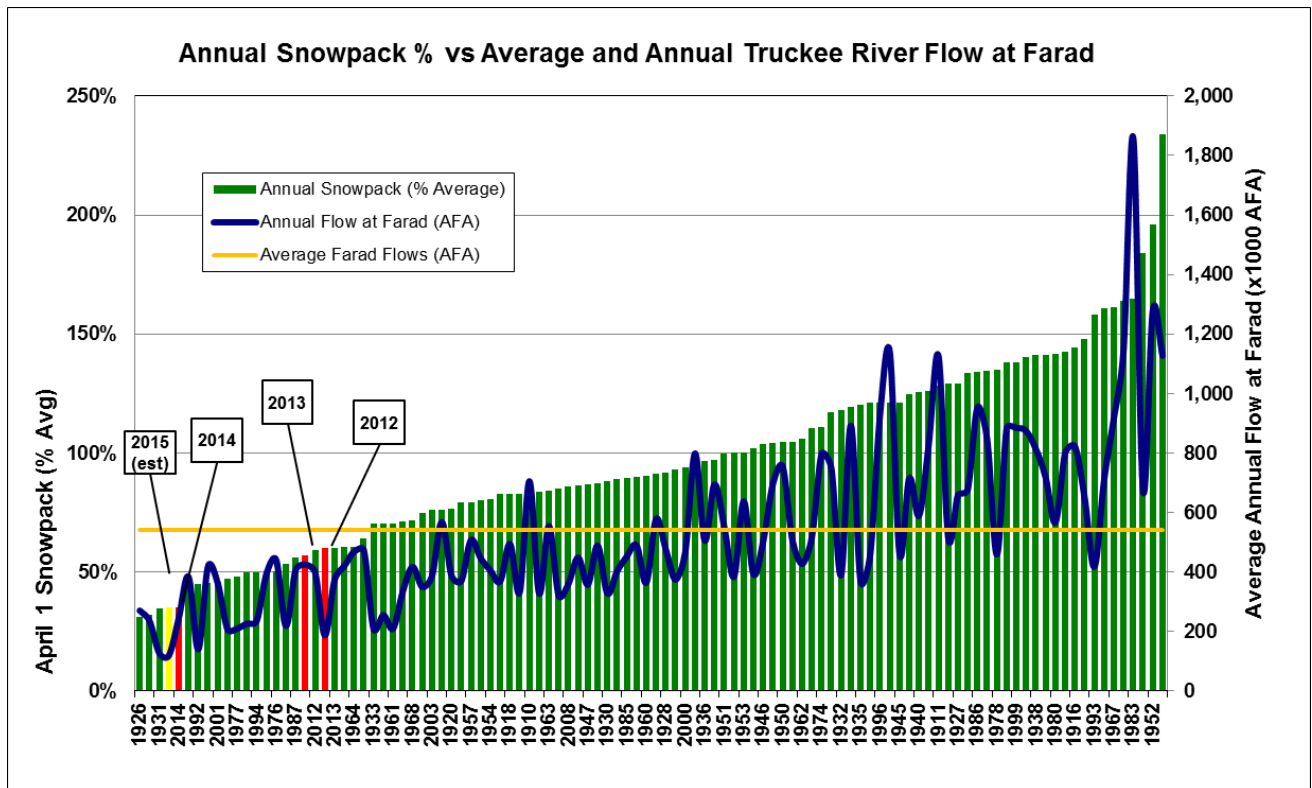
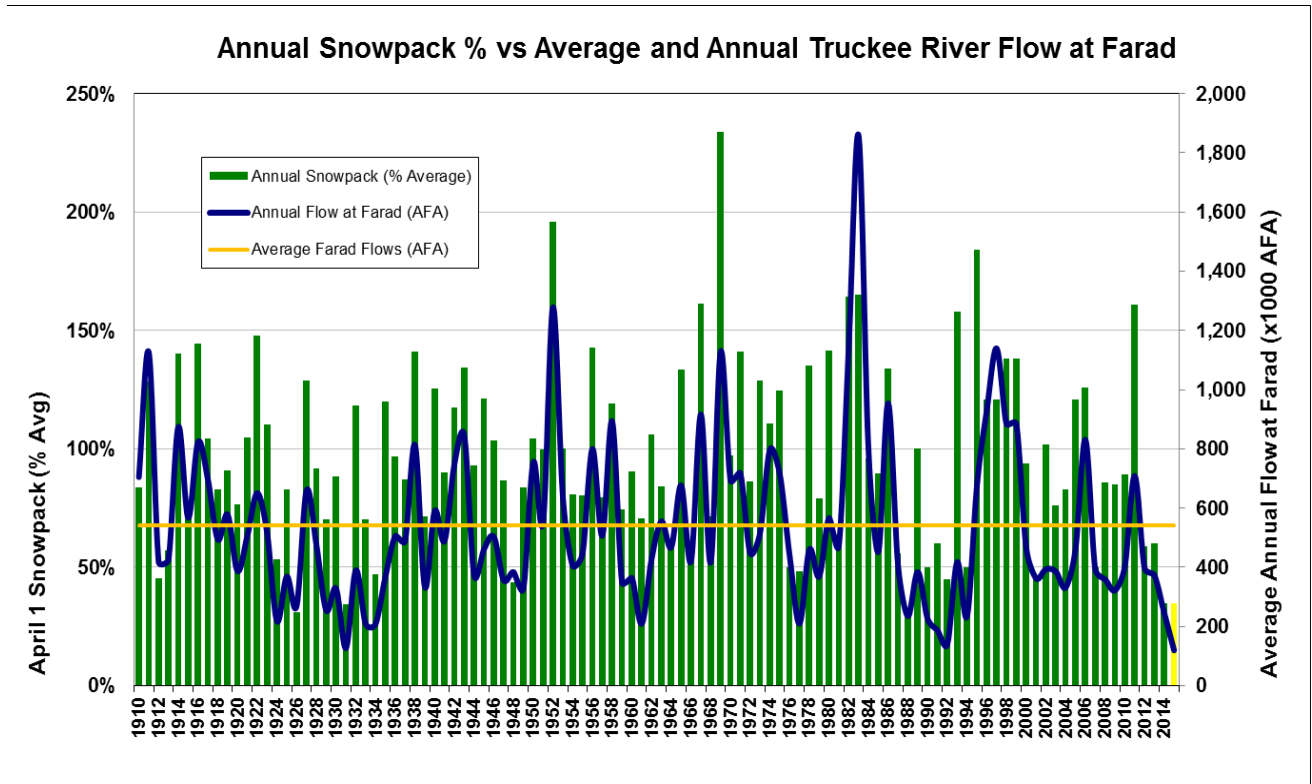
With the merger of water systems in December 2014, the regions where TMWA serves water now includes service areas that can conjunctively use both the Truckee River and groundwater resources (the Truckee River Resource Area (“TRA”)) and service areas that are strictly groundwater based systems (“non-TRA”). The majority of TMWA’s service area is within the TRA as illustrated in the map on page 4. The TRA includes most of the Truckee Meadows, Spanish Springs, and Lemmon Valley. Supply sources for the TRA include Truckee River flows, upstream reservoir supplies, and groundwater (both native and recharged water).

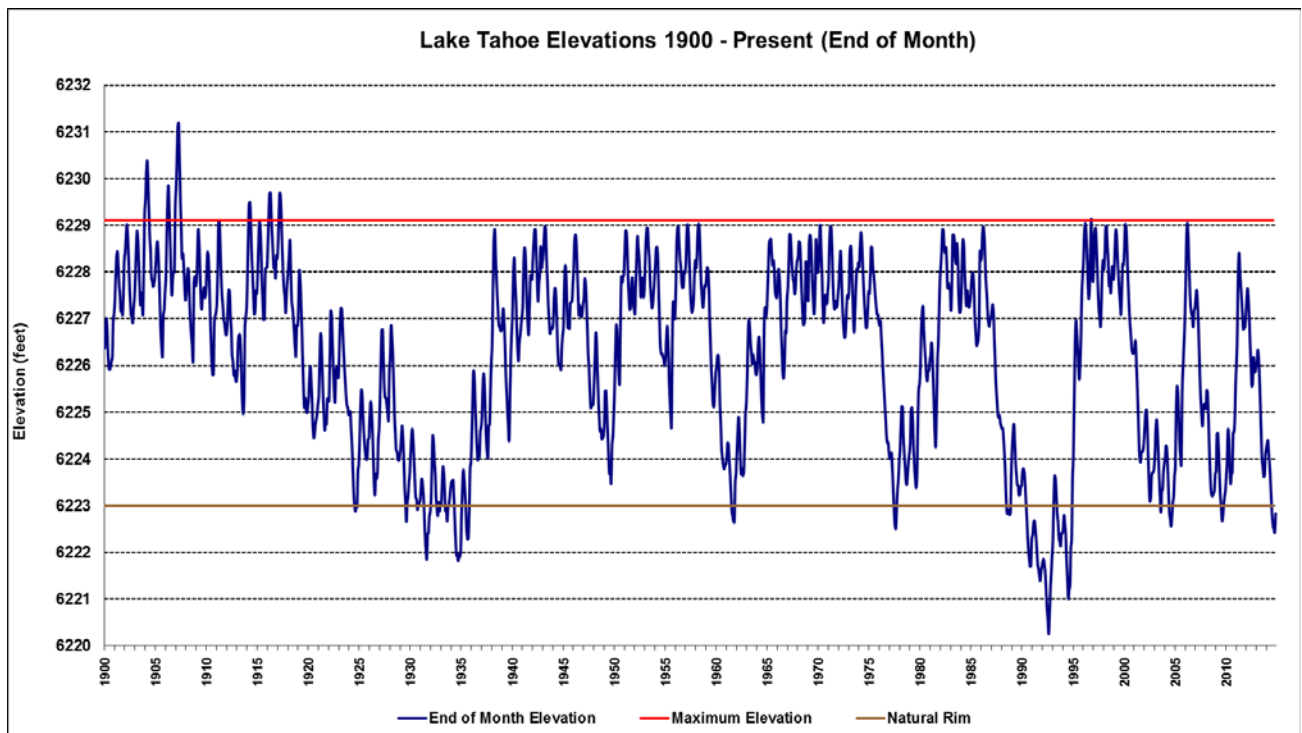
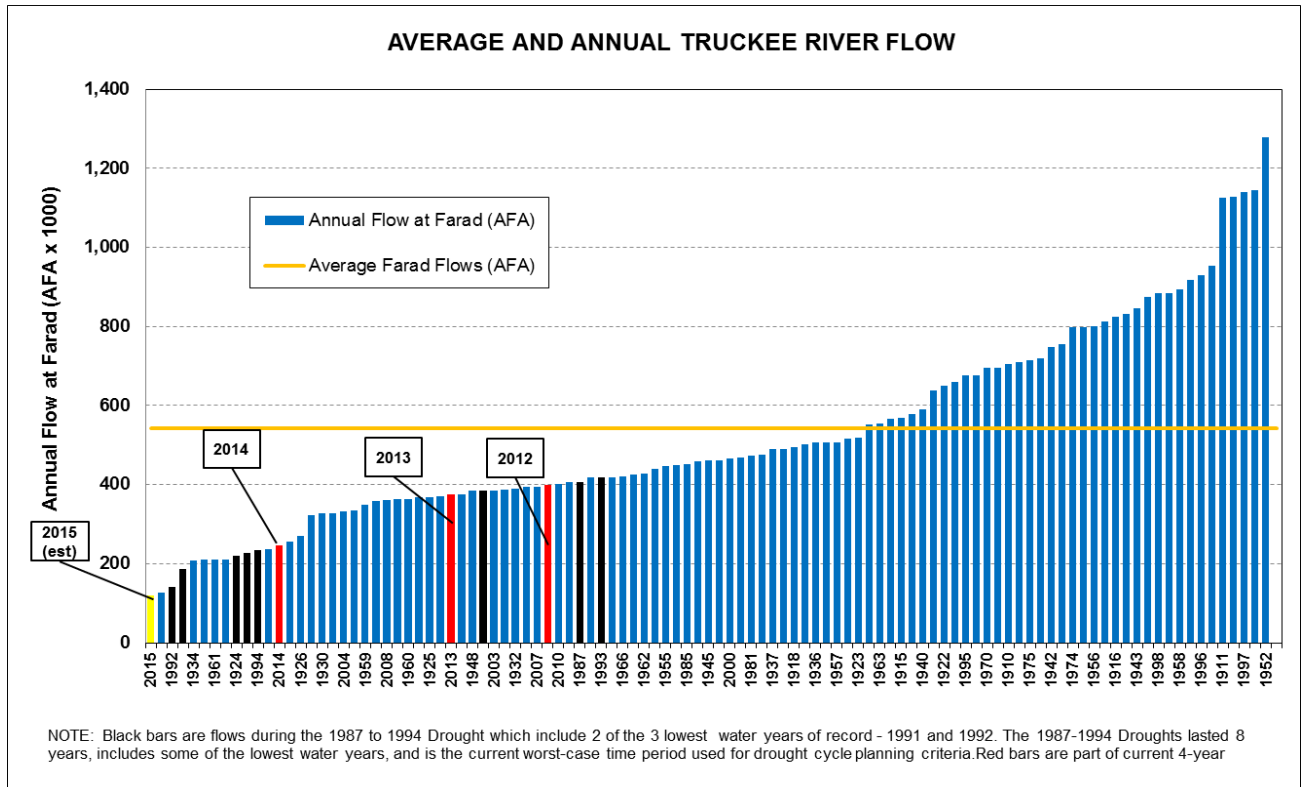
TMWA’s current source of water for the **non-TRAs**, i.e., service areas recently acquired as a result of the merger with Washoe County Department of Water Resources Water Division (DWR) and South Truckee Meadows General Improvement District (STMGID) is groundwater. These areas include small water systems in hydrographic Basin 89 - Washoe Valley (Lightning W and Old Washoe Estates); Basin 88 – Pleasant Valley (Sunrise Estates, St James Villages, and Mt Rose/Callamont/Tessa/Timberline); Basin 87 - Truckee Meadows (southwest corner of the basin includes the Arrowcreek, Thomas Creek and parts of the former west portion of STMGID); and Basin 83 – Truckee Canyon (Truckee Canyon and Stampmill Estates)

### *Weather Constraints*

The Truckee River and, therefore, TMWA’s annual water supplies are dependent upon the amount of snow and rain that fall each year. The annual flow of water from the Truckee River system is dependent on the amount or size of the preceding years’ snowpack and can be highly variable from year-to-year. Simply stated, the larger the snowpack the greater the Truckee River flows; conversely, the smaller the snowpack the smaller the Truckee River flows. To illustrate this variability the figures on pages 5 and 6 compare annual snowpack accumulations to annual Truckee River flows.

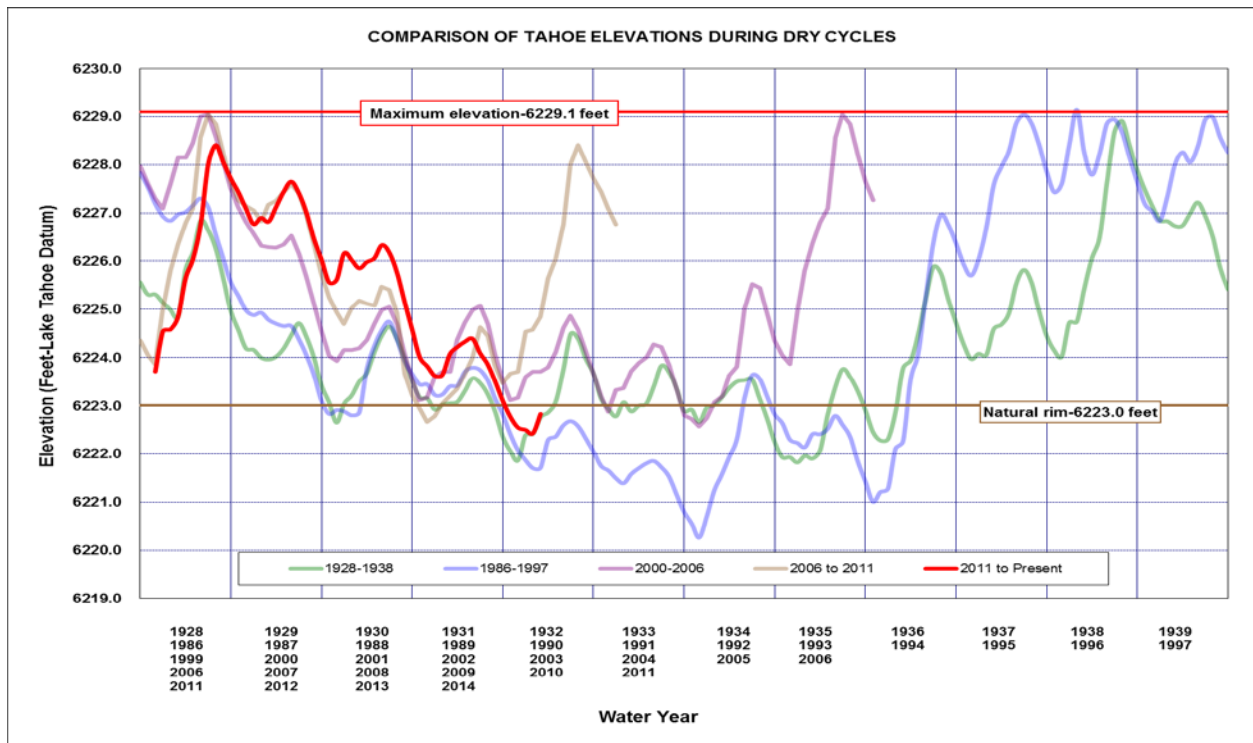








Lake Tahoe is the largest reservoir on the Truckee system. The level of stored water in Lake Tahoe is directly affected by the variability in annual precipitation. Water captured during annual Spring run-off increases the level of stored water in the lake while mandatory releases and direct evaporation from the lake's surface reduce the level of stored water in the lake. The following figure depicts the elevation of Lake Tahoe within five persistent droughts between 1928 and present time is presented to illustrate the cyclical nature of dry and wet years in the Truckee Meadows.



Some immediate observations about Lake Tahoe elevations include<sup>1</sup>:

- Lake Tahoe elevation is a key indicator of the severity of drought cycles.
- Lake levels can recover in one good snowpack year (most recently 1995, 2005, and 2011).
- Starting with a full Lake Tahoe it takes about 3 years of consecutive less-than-average snowpacks for the level to drop to or below the natural rim of the lake.

From the previous discussion annual flows in the Truckee River are both weather dependent and reservoir level dependent. The fluctuation in river flows can vary significantly.

<sup>1</sup> It is striking how similar the drought patterns are to one another. Each drought begins with a full or near full Lake Tahoe, then over a three year period of consecutive less-than-average snowpack years the level of the lake falls to at or near its natural rim. Then, in one good snowpack season, the lake may recover to at or near its capacity and at some future time, the cycle begins again. Over the 113 years of record, the longest length of a drought cycle experienced has been eight (8) years, followed by recovery/maintenance years. It is impossible to say whether the current cycle began in 2006 with an interruption by the 2011 tremendous snowpack, or whether the region is experiencing two back-to-back short cycle droughts, or whether the region is in the middle of another 8-year cycle.

Annually, the Truckee River system always produces a flow that TMWA is able to divert as part of its resource mix. However, when the region experiences consecutive years of below average snowpack, flows in the river can diminish to levels that TMWA must increase its groundwater pumping and/or begin releasing water from its upstream reserves. That process began this past August 2014.

## 2015 WATER SUPPLY ANALYSIS

The mold has been cast for the region's fourth straight below average runoff year. It remains to be determined how much below average 2015 will be, which will determine exactly *when* TMWA will have to call on increased groundwater pumping and releases from our upstream drought reserves in order to meet our customer demands this summer.

The region's snowpack is still lagging far behind what could be considered average for this time of year. As of this writing snowpack in the Truckee River Basin is 34% of average, and snowpack in the Lake Tahoe Basin is 16% of average. Storms in March may add some snowpack and improve the water supply outlook, but with the three primary snowpack producing months passed, the chances for any meaningful improvement are diminishing. There is statistically no chance of pulling out an average-type snowpack year by April 1. As such, the 2015 water supply outlook for the region is not promising.

- Snowpack conditions as of this writing are actually worse than last year through this same point in time. Snowpack in the Truckee River Basin is virtually the same as 2014 at 34% of average, but snowpack in the Tahoe Basin is considerably worse than last year (45%) at just 16% of average.
- The most recent runoff forecasted for the Truckee River is 37% of average between April and July. This is the most likely projection assuming average hydrologic conditions over the next couple of months. And the forecast for Lake Tahoe is also below average once again. Tahoe's projected rise this year is just 26% of average or 0.45 feet between now and its peak.
- Upstream reservoir storage is worse than last year through this same point in time. As of this writing the elevation of Tahoe is 6222.83 feet, which is 0.17 feet below the invert of the outlet gates (-20,614 acre-feet storage). This make releases of water into the Truckee River impossible. Last year on this day, the elevation of Lake Tahoe was 6224.14 feet elevation (or 1.14 feet above the rim) and there was 138,400 acre-feet in storage behind the dam. There is more water in storage in Boca Reservoir this year, but it is not a significant amount, and doesn't come close to outweighing the fact that Lake Tahoe is still 0.17 feet below the outlet gates. Right now there is just 11,000 acre-feet of reservoir storage that can be used to provide river flows later in the year, compared to 143,000 acre-feet in storage on this same day last year.

On a much more positive note, TMWA has or will have virtually the same amount of privately owned stored water (POSW) between our upstream reservoirs to start the summer of 2015 as in 2014. Donner Lake which was able to be filled in 2014, will fill again this year (especially since TMWA received a variance from California Safety of Dams and began filling operations on February 20). Independence Lake which was 98% full to begin the summer of



2014 should start this summer with approximately 16,500 acre-feet in storage (94% full). There is also a pool of Non-Project Water (stored under the Interim Storage Agreement) between Boca and Stampede reservoirs that is, remarkably, even better than last year (8,050 acre-feet vs. 7,346 acre-feet, respectively). Projected total upstream drought reserves going into the summer of 2015 are 27,050 acre-feet, compared to 27,000 acre-feet to begin the summer of 2014. So, even though the region has experienced four straight significantly below average water years, TMWA's upstream storage is in amazingly good shape. By filling the reservoirs early to ensure maximum storage, moving water around to store it in the safest place and only releasing what TMWA needed to meet customer demand, TMWA has actually managed to put itself in a better position (from an upstream drought storage perspective) going into the fourth dry year than going into our third. The utility is in solid shape from an upstream drought storage perspective.

2014, the third exceptionally dry year, was the first time in 20 years that upstream drought reserves had to be used in order to meet customer demand. The region had been living off the banner snowpack year of 2011 (161% of average) in which runoff helped to refill the level of Lake Tahoe. The lake elevation rose 4.72 feet over the winter and springtime runoff period of 2011, gaining over 575,000 acre-feet of usable storage behind the dam. The lake was close to full (89% capacity) by August 2011 at 6228.42 feet. Fortunately for our community the 2011 water year (WY) was so good that it took three exceptionally dry years in row (2012, 2013 and 2014) for the carry-over water to be used up. The Truckee River system of reservoirs are operated (particularly Lake Tahoe) so that runoff is basically captured and stored in average and better-than-average water years and carried over into the next year to help provide flows in the Truckee River. Lake Tahoe had basically been draining for three straight years as its stored water is released to provide required rates of flow at the CA/NV state line.

The Truckee River flowed normally in 2011 and through 2012 (even though the snowpack on April 01, 2012 was below average at 59% of average). But after another exceptionally dry water year in 2013 with an April 01 snowpack at just 60% average, the lake finally began to show signs of stress in the fall and winter. The Truckee River flowed normally in 2013, but by the end of October the lake was just 16% of capacity (elevation 6224.00 feet) and was quickly approaching the natural rim of 6223.00 feet. The low precipitation of 2014 with an April 01 snowpack of just 35% of average, made it the driest of the last three exceptionally below-average snowpack years. These were the three driest consecutive water years in the 113 years of recorded history as measured at Tahoe City, CA, and it had negative impacts on Lake Tahoe and the Truckee River system. By July, releases from the lake were hydraulically restricted as the elevation of Tahoe approached its natural rim once again. And by September, only 50 cubic feet per second was being released. Lake Tahoe went below its natural rim on October 15, 2014 and has remained below 6223.00 feet elevation since.

TMWA's customer demands in 2011, 2012 and 2013 were satisfied with the utility taking as much surface water as possible throughout the year between its two water treatment plants and augmenting with groundwater pumping during in the peak demand summer months. But by the spring of 2014 it was apparent that Truckee River flows would be dropping off sometime later in the summer and that drought reserves would be needed to augment natural river flow in order to keep the water treatment plants on-line. Releases from Boca Reservoir were shut off on July 30 as the water used to make the required rate of flow at the CA/NV state line was exhausted; Floriston Rates could no longer be met. There was, however, enough natural flow in the river to meet TMWA's needs until August 18 due to a significant rainstorm event in early August that

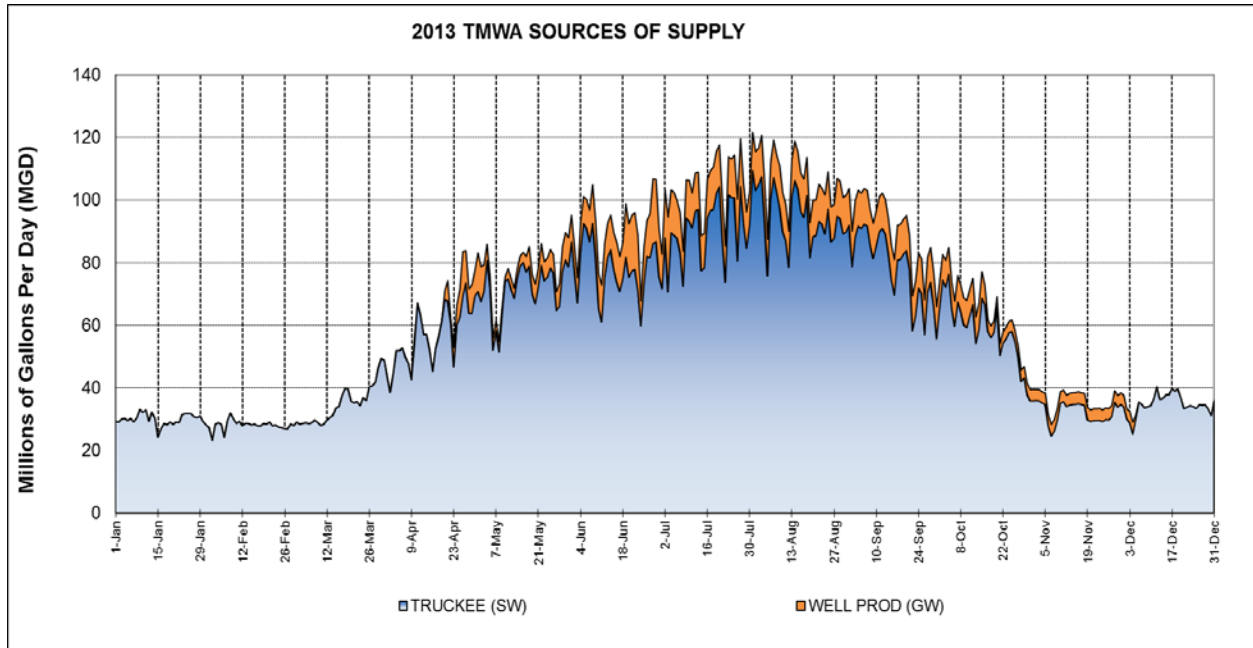
boosted (extended) river flows about two weeks. If not for that precipitation event, TMWA would have begun releasing water from its drought reserves two weeks earlier to meet demand.

On August 18 TMWA had to begin releasing water from its upstream drought reserves (reservoirs) in order to keep the surface water treatment plants on-line and produce the necessary amount of water required to meet customer demands. At the same time groundwater pumping was increased in order to minimize the use of POSW. The goal was to maximize groundwater pumping, utilize the available natural flow of the Truckee River, and augment or supplement those flows with just enough POSW in order to meet TMWA customer demand.

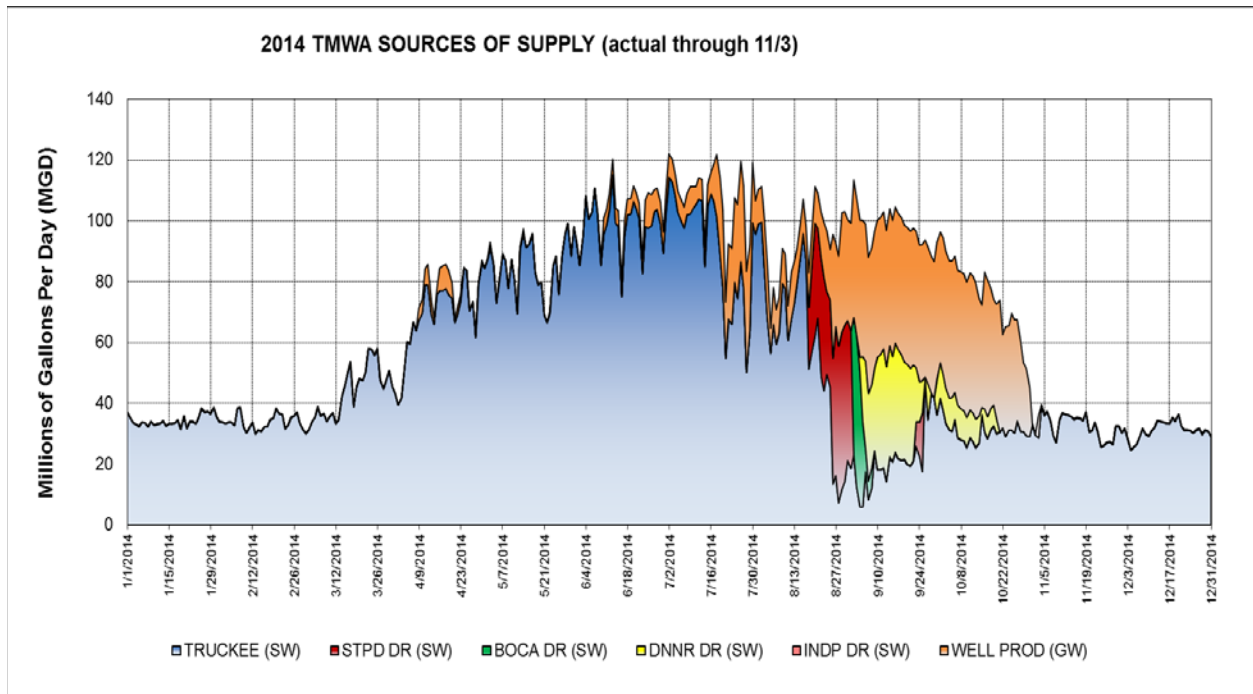
Between August 18 and October 20, 2014, TMWA used 4,907 acre-feet (AF) of drought reserves to meet the demands of our customers after flows in the Truckee River could no longer meet our needs. That included 1,495 AF from Stampede Reservoir, 800 AF from Boca Reservoir, and 2,612 AF from Donner Lake. This represented about 18% of TMWA's total upstream drought storage.

TMWA total production from all sources in 2014 was 74,727 acre-feet. Approximately 85% of that was surface water from the Truckee River (63,540 AF), and the remainder was groundwater pumping 15% or 11,186 AF. This is a deviation from normal operations when generally only 8-10% of total annual water production comes from groundwater.

The following two graphics compare the sources of supply TMWA used in 2013 and 2014. Although 2013 was a below-average precipitation year, groundwater pumping did not exceed average pumping rates and no releases of upstream reserves were necessary to meet customer demands.



In contrast to 2013, the 2014 graphic depicts the various sources used to make a potable water supply<sup>2</sup>. Releases of upstream reserves were timed as close as possible to occur when typical releases are made during the Fall release season. Besides increases to groundwater pumping, releases of TMWA reserves in Boca, Stampede and Donner were needed between mid-August to mid-October to meet customer demands. The impact to TMWA's reserves was *not* an extraordinary event anticipating that the volumes of water release from upstream reserves will likely refill in Spring 2015.



## 2015 WATER SUPPLIES PROJECTION

By extracting groundwater in the critical months of a drought year, the releases from upstream reserves in those months is reduced which: (1) delays the use of limited reservoir storage, (2) improves drought year supply capability, and (3) increases the yield of TMWA's combined resources. TMWA's resource management strategy ("RMS") can be summarized as follows:

### *Non-Dry Year:*

- Surface water production is the first supply to use. Maximize surface water diversions every month.
- Limit groundwater use to the critical months: July, August, and September, and eliminate its use as early as possible in October. No groundwater should be used in April, and if possible, delay its use until May or June preferably.

<sup>2</sup> This figure shows use of supplies for the area able to be served by Truckee River and groundwater resources. It does not include the recently acquired, groundwater only water systems.

- Maximize opportunities to establish or add to TMWA reserves and credit water.
- Maintain upstream reserves and credit stored water during the year.
- Artificial recharge should occur as early in October as possible and continue through April to store water underground for future use.

*Dry Year:*

- Maximize surface water diversions every month *while available*. Surface water production is the first supply to use. This may include bringing the Glendale Water Treatment Plant on-line earlier in the spring and implementing artificial recharge operations early in the fall.
- Maximize opportunities to store water upstream including requesting early filling of reservoirs.
- Maximize groundwater use during the months of June through October, which reduces the use of upstream reserves and any other TMWA storage in surface reservoirs.
- If necessary and to the extent possible, meet remaining demand with groundwater use. Some groundwater supplies will need to be reserved to meet peaking demands later in the year.
- Some upstream reserves or credit water may be required to meet summer peak day demands in extended droughts, but this use should be delayed and minimized if possible to the months of June through October.
- Time enhancement of water conservation measures to reduce customer use thereby delaying use of dry-year reserves.

In extended drought conditions such as the region has been experiencing since 2012, TMWA has deployed its RMS. Only in this third year of the current drought cycle has TMWA had to use any of its upstream reserves which is a direct result of the fact that 2014 ranks as the twelfth lowest Truckee River flow of record. This occurrence is not very different than what occurred in the 1987-1994 drought cycle, the worst on record, which serves as the basis of TMWA's current water resource planning criteria.

Based on the latest snowpack numbers and hydrological data, Truckee River flows are forecasted only through the end of June 2015<sup>3</sup>; this compares to 1992 when river flows could not be met beginning June 6. Even though the most likely scenario has Truckee River flows falling off by the end of June, actual flows could be extended weeks longer into the season or drop off sooner. For planning purposes TMWA is planning on having "normal" river flows only through the month of June 2015. This means that TMWA is planning on ramping up groundwater production and making releases from upstream drought reserves on July 01 (a full month and a half earlier than 2014) in order to meet the demand of our water customers.

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<sup>3</sup> It is still early in streamflow runoff forecasting season and present prediction are subject to future weather conditions and revisions monthly.

TMWA drought operations in 2014 and 2015 will be similar to operations during the drought of record (1987-1994) when Floriston Rates could no longer be met during the peak summer demand months. In the critical years of 1991 and 1992 releases from upstream reserves from Donner and/or Independence lakes were used to make up the difference between what groundwater pumping and the natural flow of the Truckee River alone could not provide in order to meet customer demand. TMWA's water resource planning will again use these upstream reserves, and in addition, TMWA now has stored water available under the terms of the Interim Storage Contract ("ISC") stored between both Boca and Stampede reservoirs. This negotiated "interim contract" between Sierra Pacific Power Company, the Pyramid Lake Paiute Tribe, the Washoe County Water Conservation District, and the U.S. Bureau of Reclamation was a direct result of the Negotiated River Settlement of 1991. In essence, the ISC is an early but smaller installment of the soon to be implemented Truckee River Operating Agreement ("TROA"). The ISC allows TMWA to store up to 14,000 acre-feet of Non-Project Water between Boca and Stampede reservoirs in any given year to be used any time Floriston Rates aren't being met. As mentioned previously, TMWA has 8,050 acre-feet of water in storage at the moment, which will go a long way towards helping us meet the demands of our customers this summer.

As discussed in 2014, 78 percent of TMWA's potable supplies came from the Truckee River, 15 percent from groundwater, and about 7 percent (~4,900 af) from upstream reserves. Based on the fact that approximately 20 percent of TMWA's approximate 27,500 acre feet of upstream reserves fill every year, use of the upstream reserve water was timed to be used after Floriston Rates could no longer be met and the water *had to be released* from TMWA's upstream reserves to (1) meet demands and (2) during the Fall/Winter release season to create storage in all upstream reservoirs for the upcoming snow season. TMWA targeted for use only that portion of its upstream reserves that had a high probability of replenishment during the upcoming winter. From August 20 to October 20 TMWA released 800 acre feet from Boca, 1,495 acre feet from Stampede, and 2,612 acre feet from Donner, approximately 18 percent of our upstream reserves. It was not necessary to release water from Independence.

### Water Demand Projections

The total retail water demand projection for 2015 is developed using actual retail water billings of the two most recent drought years, 2013 and 2014. Table 1 shows the actual retail sales by revenue months for 2013 and 2014 for TMWA, DWR areas, and the DWR areas broken down by TRA and non-TRA. Since the billing takes place after water is used by the customer, the billing data will lag the production data by about a month, for example August's billing reflects a large portion of July's water production. Thus, calculation of water use from total billings compared to recorded production of water from all wells and treatment plants will always be slightly different; in addition to the fact that billing data does not include system losses measured between production and sales data. The sales data clearly shows last summer's conservation efforts in the months of August and September.

**Table 1: Retail Water Sales (AF)**

TMWA Retail Water Sales													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2013	2,437	2,420	2,243	3,398	6,042	7,523	8,225	9,377	8,884	6,691	4,372	2,540	64,151
2014	2,489	2,384	2,389	3,563	6,228	7,140	8,848	8,759	7,908	7,176	5,398	2,361	64,641
TMWA % Change	2%	-1%	6%	5%	3%	-5%	8%	-7%	-11%	7%	23%	-7%	1%
DWR Retail Water Sales													
2013	357	376	321	728	1,311	1,707	1,760	2,154	2,100	1,486	886	371	13,556
2014	418	394	323	748	1,775	2,090	2,403	2,320	2,230	1,993	1,197	411	16,302
DWR % Change	17%	5%	1%	3%	35%	22%	37%	8%	6%	34%	35%	11%	20%
DWR Truckee River Resource Area													
2013	247	292	237	445	818	1,035	1,067	1,327	1,229	907	570	264	8,437
2014	324	293	239	490	1,069	1,270	1,429	1,418	1,348	1,121	752	280	10,032
DWR % Change	31%	0%	1%	10%	31%	23%	34%	7%	10%	24%	32%	6%	19%
DWR Non-Truckee River Resource Area													
2013	110	84	84	283	493	673	693	827	871	579	316	107	5,119
2014	94	101	84	258	706	820	974	902	882	872	445	131	6,271
DWR % Change	-15%	20%	0%	-9%	43%	22%	41%	9%	1%	51%	41%	22%	22%

Table 2, shows the 2015 projected retail water demand. In this case short term demand is taken as the maximum sales by revenue month from 2013 or 2014. The maximum month sales was used in an effort to filter out 2014's conservation effects and develop a water demand projection that would best approximate typical water use patterns. The TRA is projected to demand 76,400 AF, while non-TRA is projected to demand 6,300 AF. This demand projection reflects what customers would likely consume if TMWA were not in a drought with the normal request to use water responsibly. Since it is based on actual water sales, this demand projection will serve as a baseline for measuring the effectiveness of TMWA's demand management programs used in 2015 as part of TMWA's drought response.

**Table 2: Projected 2015 Retail Water Demand.**

2015 Retail Water Demand Projections													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Total	2,924	2,812	2,712	4,336	8,003	9,377	11,251	11,606	10,996	9,169	6,595	2,935	82,715
TRA	2,813	2,712	2,628	4,053	7,297	8,557	10,276	10,703	10,113	8,297	6,150	2,803	76,403
Non-TRA	110	101	84	283	706	820	974	902	882	872	445	131	6,312
Truckee River Resource Area Sales													
2013	2,684	2,712	2,480	3,843	6,859	8,557	9,292	10,703	10,113	7,598	4,942	2,803	72,588
2014	2,813	2,677	2,628	4,053	7,297	8,409	10,276	10,177	9,256	8,297	6,150	2,640	74,673
Non-Truckee River Resource Area Sales													
2013	110	84	84	283	493	673	693	827	871	579	316	107	5,119
2014	94	101	84	258	706	820	974	902	882	872	445	131	6,271

The actual raw water demand is estimated from retail demand using a two-step process. First, the retail demand is time shifted back one month to remove some of the lag between the time of water use and the time of water billing. Second, the estimates of system losses are added to retail demand. For TMWA the system losses have been estimated at 7% and it is assumed that DWR system will have similar losses. Table 3 projects the demand for raw water, applies a water saving target of 10% to the irrigation season months, and computes 2015 monthly water production.



**Table 3: Projected Required Supply****2015 Raw Water Supply Requirements (Time Shifted)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Demand 2015	3,009	2,902	4,640	8,563	10,034	12,038	12,418	11,765	9,811	7,057	3,140	3,128	88,505
Demand TRA	2,902	2,812	4,337	7,807	9,156	10,995	11,453	10,821	8,878	6,581	3,000	3,010	81,751
Demand Non-TRA	108	90	303	756	877	1,043	965	944	934	476	141	118	6,754

Inflate retail demand by 7% for system losses

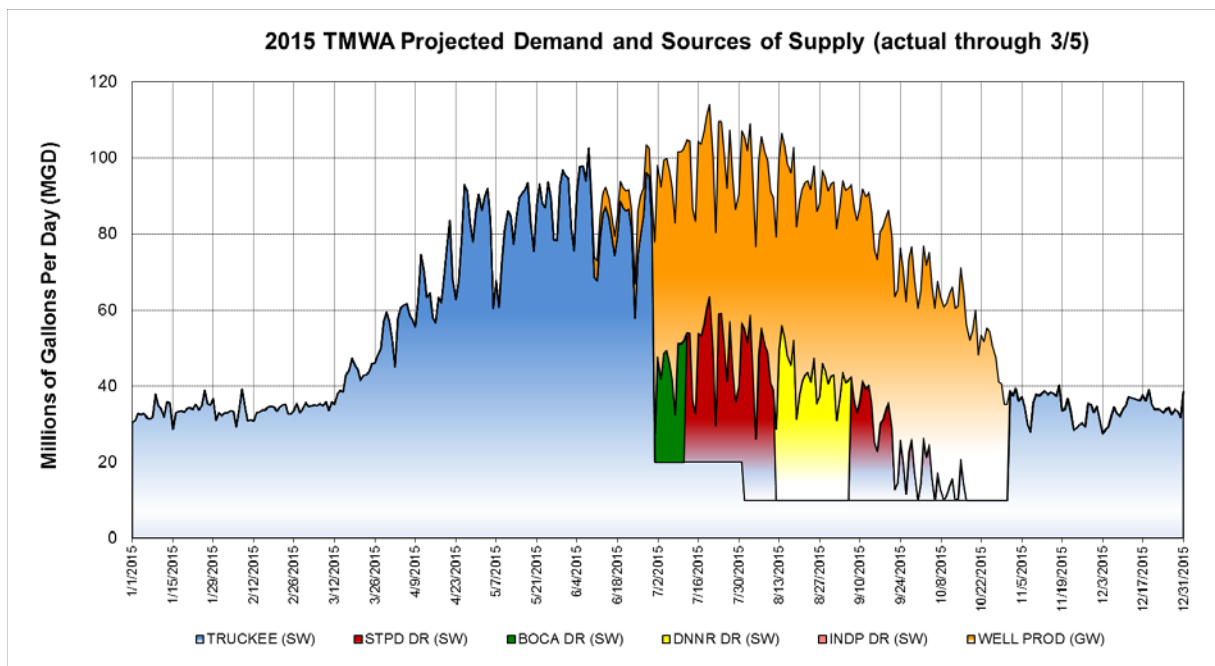
**2015 Water Savings Target is 10% for all Customers**

Saving Rate	0%	0%	0%	0%	0%	10%	10%	10%	10%	10%	0%	0%	
TRA	-	-	-	-	-	(1,100)	(1,145)	(1,082)	(888)	(658)	-	-	(4,873)
Non-TRA	-	-	-	-	-	(104)	(97)	(94)	(93)	(48)	-	-	(436)
Total acft	-	-	-	-	-	(1,204)	(1,242)	(1,177)	(981)	(706)	-	-	(5,309)

**2015 Demand Managed Targets**

TRA	2,902	2,812	4,337	7,807	9,156	9,896	10,307	9,739	7,990	5,923	3,000	3,010	76,878
Non-TRA	108	90	303	756	877	938	869	850	840	429	141	118	6,318
Total Demand	3,009	2,902	4,640	8,563	10,034	10,834	11,176	10,589	8,830	6,351	3,140	3,128	83,196

Total projected 2015 customer demand for combined TRA and non-TRA is approximately 83,000 acre-feet. It is projected that 52% or 43,000 AF will be met from available Truckee River flows, and the remainder (particularly during the period July through October) will have to be met from groundwater pumping (38%) or 32,000 AF, and 10% of the total or 8,000 AF with releases from TMWA's upstream drought storage. The following graphic depicts 2015 sources of supply to meet projected demands.



## 2015 SUPPLY PLAN

The previous narrative was provided to give the reader a sense of the Truckee River's complexity, constraints, and challenges when it comes to making a potable water supply for TMWA's customers. The balance of this report discusses TWMA's DMP goals and programs, and their inherent costs and benefits.

Some utilities deploy demand management programs to conserve water that is then reallocated to serve new growth (a common practice in California and southern Nevada). However, with this approach to conservation there is no reduction in the use of water since the water is used to serve new consumers. TMWA's demand management program, particularly when it is anticipated that back-up or reserve supplies may be used/impacted, seeks to conserve water and save it so it can be used later during a dry-year. Additionally, TMWA's DMP must fulfill certain specific provisions of the Nevada Revised Statutes ("NRS"), the Truckee River Operating Agreement ("TROA"), and Western Regional Water Commission ("WRWC"). The WRWC is charged with overseeing and coordinating water resource planning and management in Washoe County including responsible water use planning.

Care must be taken to define the benefits from reducing overall water use through water conserving actions along with consideration of the consequences to customers, TMWA and the community. Water conserving actions, or lack of thereof, undertaken by customers have a direct impact on a customer's utility bills, the need for future facilities and/or timing of those facilities, TMWA's revenues, drought protection for the community, and the rate at which new resources are needed.

Demand management programs reap many benefits, the most obvious of which are:

- Delayed need for future facilities or deferred timing of those facilities, and the cost associated with those facilities
- Increased drought protection for the community as conserved water can be stored in upstream reservoirs when storage space is available.
- Environmental benefits as a result of increased river flows (benefits riparian habitat and wildlife)
- Less water consumed means less energy required to produce and deliver water to customers as well as less energy consumed to process wastewater
- More stable and predictable consumption of water
- Reduction in system leaks and losses thereby reducing operating costs

To understand TMWA's motivation to conserve water TMWA must look at the history behind conservation in Northern Nevada. TMWA's DMP dates back to an era when Sierra Pacific Power (Sierra) was the main water purveyor in Northern Nevada. Sierra's DMP, the first 20-year Water Resource Plan (WRP), was completed in 1985. Sierra's DMP was put to a trial by fire during the drought of 1987-1993. To mitigate water shortages Sierra implemented a multi-faceted DMP that consisted of public education, billing restructuring, acquisition of new resources, infrastructural improvements, and efficient storage practices during months prior to heavy use. Much like today, during heavy use periods when river flows were diminished, Sierra increased groundwater production to offset use of surface water storage. It also asked that customers reduce their use by 10%. The result was an average *23% reduction* in per connection usage over the six years of the drought.

In 2001, TMWA was formed after Sierra's sale of their water utility. Building on the past, TMWA continued to hone its DMP in order to become even more drought-resilient. By 2004, to bolster its reserves and meet expanding demand, TMWA increased production well capacity. TMWA also expanded the Chalk Bluff treatment plant's capacity to treat raw water supply. The expansion of its treatment facilities has allowed TMWA to be less reliant on groundwater production during the winter months, hence saving those reserves for summer demand use. Moreover, TMWA has continued the installation of meters on service connections, and as of 2014, nearly all TMWA's customers were on metered rates.

As of December 31, 2014 TMWA completed a merger with DWR and STMGID. Combining the three purveyors under one roof will allow for a consistent DMP to be implemented across the entire Reno-Sparks area. However, while the merger allows for greater efficiency in conservation planning, it also poses additional challenges of being able to provide adequate supply to new, non-TRA customers. Since TMWA, DWR and STMGID's infrastructure are not fully interconnected, future capital projects will be necessary to link these customers and allow seamless transfers of water between surface and groundwater supplies. Once in place, these infrastructural improvements will allow for greater flexibility in TMWA's capacity to meet the overall demand

As the largest water purveyor in Washoe County, serving over 95% of the region's residents, TMWA is a key player in shaping the region's responsible water use mission and will be integral in implementing programs that support that mission. TWMA's dedication to water conservation extends even to non-drought years. On average, the average household under TMWA's jurisdiction uses 15% less water than 10 years ago. TMWA's programs will continue to serve as the cornerstone of the region's efforts. Some key concepts to understanding TMWA's DMP include:

1. Educate customers on the efficient and responsible use of water: use what you need and avoid waste.
2. Assist customers with on-site review of water use that eliminates waste and reduces water bills.
3. Detect, repair and maintain the distribution system to avoid leaks and waste.
4. Provide timely and useful information to consumers to achieve reductions in water use that minimize potential use of dry-year reserves in order to maximize dry-year reserves for the next year.
5. Minimize disruption to the local community quality of life and economy.
6. Comply with state law and contractual obligations.
7. Maintain flexibility in DMP to develop appropriate education and action strategies to deploy as water supply conditions change and evolve.
8. Aggressive demand reductions are timed to preserve and protect upstream reserves.

As staff planned its 2014 source-of-supplies, its upstream reserves were full but it was determined that they could be impacted as river flows were expected to drop-off before Labor Day. It was impossible to determine in the spring of 2014 how early before Labor Day river supplies would diminish. Staff, per the guidelines shown in the table, expanded no watering times from 12-6 PM to 11 AM - 7 PM and enhanced its communications to request customers to be more aware of their water use this year. This past summer's call for a 10 percent reduction in outdoor water use did not go out until a week before it was anticipated the river flows would decline. Calling for more reductions in water use earlier in the spring or summer would not have added to upstream reserves as they were full and would have had a more negative affect on the community and TWMA's revenues earlier that necessary. The 10 percent target was insurance to safeguard so the projected use of reserves in 2014 would not exceed the amount expected to refill in spring 2015. The community responded and the goal of not using more reserves than planned was achieved. The companion reports under this Agenda Item discuss the actions and results of the 2014 DMP and outline staff's proposed actions for 2015.

TMWA's water DMP is comprised of many measures grouped under three headings: System Management; Public Education and Other Demand Management Measures. The specific measures that comprise TMWA's DMP, the target audiences, and the primary benefit to TMWA of each program are summarized in this table:

DMP Category	Primary Benefit	Target Audience
<b>A. System Management</b>		
Coordination of Treated Effluent Use	3, 4	Irrigation
Leaks and System Repairs	1, 4	All users
Meter Replacement	1	All users
Non-Potable Water Service	3, 4	Irrigation
System Pressure Standards	1, 4	All users
Unauthorized Use of Water	1, 4	Construction
<b>B Public Education</b>		
Assigned-Day Watering	1, 2, 3, 4	All users
Distribution of Water Savings Devices & Information	1, 2	Residential
Education Programs for Kids	2	Children
Homeowner Workshops	1, 2	Residential
Landscape Retrofit	1, 3	Irrigation & residential
Water Audits	1, 2	Residential & business
Water Waste Prevention	1	All users
<b>C. Other Measures</b>		
Codes and Ordinances	1	All users
Program Management and Droughts	1, 2, 3, 4	All users
Program Management and Emergency Supply Conditions	1, 2, 3, 4	All users
Water Management Programs	1, 3	Large water users
Water Rates	1, 4	All users

1 - Reduces water waste

2 - Education

3 - Peak day savings

4 - Minimize operation and maintenance to distribution facilities

Specific measures under the aforementioned items undertaken in 2014 included distribution of Assigned-Day watering information, Keep Truckee Meadows Beautiful Sponsorship, Earth Day Sponsorship, Landscape and irrigation maintenance workshops, community events such as Kids Free Fishing, Program planning, website maintenance, public education & outreach including arborist services in support of the Truckee Meadows Community Forestry Coalition, Hug High Garden project, DRI REDD house, and various turf removal and landscape efficiency projects. These and other measures are evaluated and assessed each year depending on the projected supply, timing of supplies and summer precipitation events. The detailed report from the 2014 Conservation Campaign was presented to the Board at its Nov. 19, 2014 that described many of these measures.

In 2014, TMWA asked its customers to reduce their outdoor water use by 10 percent starting August 1. The campaign for 2014 was focused on residential users. This was the first time since TMWA's founding in 2001 that TMWA asked for a specific reduction in use beyond the every-year demand-side measures and messages TWMA deploys. The water use change, compared to 2013, was:

	August	September
Residential	-10.98%	-11.24%
Commercial	-0.77%	-9.26%

## **2015 DMP ACTION PLAN**

Developed for prior water resource plans, the following classification table is a simplified representation to improve customer understanding between climatologically induced droughts and its effect on Truckee River water supplies. This classification system suggests enhancements to the annual, baseline conservation measures that can be deployed depending on the water available from the Truckee system as a drought cycle progresses and oscillates year-over-year.

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	Non-Drought Situation Supplies are Normal	Drought Situation		
		Supplies are Adequate [River Flows Drop-Off After Labor Day]	Supplies are Impacted [River Flows Drop-Off Before Labor Day]	
	-----a-----	-----b-----	-----c-----	-----d-----
A Assigned Day Watering				
Monday	No water day	No water day	No water day	No water day
Even addresses:	Tuesday, Thursday and Saturday	Tuesday, Thursday and Saturday	Tuesday, Thursday and Saturday	Tuesday, Thursday and Saturday
Odd addresses:	Wednesday, Friday, and Sunday	Wednesday, Friday, and Sunday	Wednesday, Friday, and Sunday	Wednesday, Friday, and Sunday
B Water Day Time Restrictions				
Between Memorial Day and Labor Day	12 to 6 PM	12 to 6 PM	11 AM to 7 PM	
C Public Education & Advertising	Standard programs	Standard programs	Increased programs	
D Water Waste Prevention	Standard enforcement	Standard enforcement	Increased enforcement	
E Other Actions				
Though not inclusive, these enhancements could be deployed depending on the severity of the circumstances and the potential impact to supplies			Expand water day time restrictions Reduce the number of watering days Set daily watering allotments Drought rates	

NOTE: The term "supplies" refers to (1) Truckee River water available from natural flows plus releases from Federally operated reservoirs to support Floriston Rates and (2) TMWA's Privately Owned Stored Water held in Independence and Donner Lakes and Federal reservoirs.

The above classification system is further delineated to provide general guidelines on when enhanced DMP measures need to be deployed and when, at the least, associated media-messaging on water supply conditions and enhanced calls for reductions in water use need to begin. Those guidelines are presented below.

State of Supply to Truckee Meadows Service Areas	Month					
	May	Jun	Jul	Aug	Spt	Oct
Non-Drought Situation	SCP	SCP	SCP	SCP	SCP	SCP
Drought Situation						
Supplies Adequate (Floriston rate drops off after Labor Day)	SCP	SCP	SCP	SCP	SCP	SCP
Supplies Impacted (Floriston rate drops off before Labor Day)						
Level 1	SCP	SCP	EMB	ECB	ECB	NA
Level 2	SCP	EMB	ECB	ECB	ECB	NA
Level 3	EMB	ECB	ECB	ECB	ECB	NA

SCP - standard conservation program, upstream reserves not used

ECB - enhanced conservation program, upstream reserves used

EMB - enhanced message begins at least a month prior to loss of Floriston Rates



Based on the preceding discussions and current projection of 2015 Truckee River supplies for the region, the current classification is for a drought situation and supplies (i.e., upstream reserves and underground reserves) to be impacted at Level 2 within the TRA. However, the enhanced DMP TMWA will undertake in 2015 will apply to all TMWA customers (TRA and non-TRA) to make customers aware of current conditions as low precipitation years have just as severe an impact on upstream reservoir supplies as it does on underground supplies.

Specific actions to be deployed for 2015 include 1) targeting at least a 10% reduction in water use during the irrigation season months beginning June through October, 2) no watering between 11 AM and 7 PM from Memorial Day thru Labor Day, 3) increased enforcement of no-waste, and 4) increased advertising and messaging about current supply conditions. Specifics on how these items 3 and 4 will be deployed and implemented are addressed in more detail in the companion report on the proposed 2015 Communication Plan.

## SUMMARY

Nevada is part of the Great Basin and for the most part is classified as a high desert. Few places in Nevada are as fortunate as the Truckee Meadows which has a river running through it, but that does not change the fact it is a desert with annual average rainfall of 7.5 inches per year. In essence, the region is in perpetual drought interrupted by wetter precipitation years. When the water year ended in October 2014, the community was hopeful the winter of 2014/2015 would be well above average. As it happened, the winter of 2014/2015 may end up being one of the lowest snowpack seasons of record.

TMWA's drought-period planning is based on the worst drought of record from 1987 through 1994. The operating strategy developed based on that drought is being followed for the current drought period. The results thus far indicate the plan is working. However, prudence dictates that TMWA plan for additional water use reductions in 2015 in preparation for what water supply may or may not be available for 2016. The analyses, projections, proposed water use reductions, and DMP enhancements will meet 2015 demands while preserving as much of TMWA's upstream and groundwater reserves as reasonably practicable and minimizing disruption to the communities lifestyle and economy. Some of the key "take-aways" from this report include:

- The region has experienced four straight significantly below average water years.
- 2012, 2013, 2014 were the three driest, consecutive water years in the 113 years of recorded history.
- There is statistically no chance of pulling out an average-type snowpack year by April 1, 2015.
- Heading into the 2015 irrigation season, TMWA's upstream reserves are near capacity.
- Based on the latest snowpack and hydrological data, Truckee River flows are forecasted only through the end of June 2015.
- TMWA's 2015 total **water production** for all its service area is projected to be approximately 88,000 AF.

- TMWA's 2015 total **retail sales** of water for all its service area is projected to be approximately 83,000 AF.
- Targeting at least a 10% water use reduction for 2015 is estimated to save over 5,000 AF of water June through October.
- As previous DMPs have shown, a 10 percent reduction by customers can conserve enough surface storage to manage through additional dry years.
- Additional water use reductions by customers will impact TMWA's budget<sup>4</sup>.
- Further communication and outreach components will assist in successful management of TMWA's 2015 water supplies.

Specifics on what communication and media activities that will be deployed and implemented are addressed in more detail in the companion report in the proposed 2015 Communication Plan.

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<sup>4</sup> The total cost of this dry-year operation will increase due to the number of wells that will be operated in 2015. In addition, the projected revenue reduction losses are estimated to be approximately \$1 million for every 1,000 acre-feet of water not sold. TMWA could experience a \$4-5 million loss in revenues in 2015 coupled with a 5 percent increase in operating expenses.



## STAFF REPORT

**TO:** Chairman and Board Members  
**THRU:** Kim Mazeres, Director of Customer Relations  
**FROM:** Robert Charpentier, Communications Specialist  
 Marlene Olsen, Goodstanding  
**DATE:** March 6, 2015  
**SUBJECT:** **Proposed 2015 Drought Communication Plan**

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### INTRODUCTION

In periods of drought, a plan for effective communication is essential to address and help mitigate drought impacts to the environment, economy and community. TMWA's staff has been meeting since November 2014, planning communications strategies for summer 2015. Staff has reviewed and analyzed a broad range of possible tactics, messaging, and timing. These recommendations are consistent with the demand management component of TMWA's 2010-2030 Water Resource Plan.

This communications plan consists of the following components: background, situational analysis, communication objectives, identification of target audiences, communication strategies, key messages, and communication tactics and timeline.

### **Background:**

The detailed report from the 2014 Conservation Campaign, presented to the TMWA Board of Directors on Nov. 19, 2014 is attached to this report. In 2014, TMWA asked its customers to reduce their outdoor water use by 10 percent starting August 1<sup>st</sup>. This was the first time since TMWA's founding in 2001 that TMWA asked for a specific reduction in use beyond the every-year demand-side measures and messages TMWA deploys. The water use change, compared to 2013, was:

	August	September
Residential	-10.98%	-11.24%
Commercial	-0.77%	-9.26%

The campaign was focused on homeowners. What we learned last year is that if we ask our residential customers to conserve, they will respond very quickly. Commercial customers also respond, but results indicated that they generally need more lead time, approximately a

month, to implement conservation measures. That timing is reflected in the planning for the 2015 irrigation season.

**Situation Analysis:**

Submitted by Natural Resources in separate report.

**Communications Plan Goal:**

Compliance to the conservation target of *at least* 10% reduction of all water use between April 1 and October 30. This will be measured by the amount of reduction in use from 2013.

**Values and Standards:**

- Have accurate information about the drought situation and how TMWA will meet demand and future demand—candid, no sugar coating
- Be responsive and timely
- Retain confidence and trust through acknowledging the situation and describing actions that have been and will be taken

**Key Messages to Include:**

- What customers should do, how they can participate and make a difference
- Minimize impact to landscaping: how to preserve landscaping this summer
- Congratulate customers on conservation efforts
- Relevant and timely updates, i.e. how much water was saved in June?
- Awareness of the region's drought preparedness efforts
- A sense of urgency that's consistent with the actual situation

**Communications Objectives:**

1. To communicate the water conservation target (Save *at Least* 10%) to meet our water supply goal
2. To promote responsible water use (and best practices identified by Nevada Landscape Association and Nevada Cooperative Extension)
3. To provide information on water supply and drought conditions that will foster the understanding that "we are all in this together"

**Objective 1--** To communicate the water conservation target (Reduce water use by *at least* 10%) to meet water supply goal

Measurable targets, as proposed, are an important part of communications during a drought. Included in the messaging will be descriptions or indicators to water users as to how much their water use has changed in response to diminishing flows of the Truckee River and/or preserving groundwater.

**Objective 2--** To promote responsible water use and best practices as identified by Nevada Landscape Association (NLA) and University of Nevada Cooperative Extension (UNCE).

Responsible water use needs to be practiced at all times by all residents and businesses. We will continually communicate that the Truckee Meadows is an arid, high-desert environment. Responsible water use can mitigate some of the drought impacts. TMWA will be partnering with the NLA and UNCE to provide more information on how residents and businesses can use less water than usual and still preserve their landscaping.

**Objective 3--** To provide information on water supply and drought conditions that will foster the understanding that “we are all in this together.”

Better decisions are made and behaviors change when data and information are provided that justify conservation recommendations. Knowledge of TMWA’s water system and water supply help people connect their efforts to overall results.

**Target Audiences:**

This year, messages will be delivered with varied communication methods and timing to the audiences identified below. For each audience, the message is educational and tailored to how they use water. Education about best practices, drought updates and where interested persons can learn more about these topics forms the basis of the messages.

- TMWA customers—residential (homeowners 25+ years)  
Advertising campaign-mass media, news coverage, direct customer communications (bills, emails, etc.), social media
- TMWA customer—commercial  
Direct communications, advertising, news coverage
- TMWA customers—Home Owners Associations (HOAs)  
Direct communications
- Domestic Well Owners—direct communications
- Community at large  
Advertising campaign, news coverage, social media
- Local media  
Direct communications

**Communications Strategies:**

Communication strategies are overall approaches used to achieve stated objectives and are explained below.

Advertising Campaign: Our creative direction is in production. The media buy is expanded this year and will be based on a strategic media mix to effectively reach TMWA’s target audience of age 25+, single family homeowners. Advertisements will be placed in local print,

radio, television, billboards, venues and social media channels. We require added value (contributed space) to all placements either in more space, website content, on-air contests, etc. Television stations will be offering weather sponsorships where forecasters can provide up-to-date information. The campaign will utilize a new creative team this year, who will be focused on acknowledging the problem and inviting people to be part of the solution. Campaign dates: May-September.

Content/Messaging: TMWA will convey our conservation message (*Save at Least 10%*), and the actions or changes in water use required – including expanded no-watering times (11 a.m. – 7 p.m.), sprinkler run-time guidelines, and required watering schedules (assigned days). Other content to be distributed includes landscaping best practices to achieve our goal, all facets of drought information, water supply updates, promotion of water audits, etc. These messages will appear in all forms of communication strategies—online, news releases, FAQ's, videos, infographics, emails, bill inserts, etc. Our partnership with the NLA and UNCE will establish best practices for preserving landscaping during a drought. Staff will be using this information to inform the community. Staff will begin with “landscaping preparation helps” the first week of April. Staff will keep Board Members informed so they have information needed for answers for their constituents and to encourage conservation in the community. This will not only include monthly Board Reports, but updates from the General Manager, as needed.

News Coverage: The local media and weather forecasters play an important role in conveying the conservation and drought message to the community. Staff will start with desk sides this month and are always responsive to incoming requests. Tools used to convey our message include: editorial board meetings, desk sides, interviews, press release, media, FAQ's infographics, tours, etc. This effort has already begun.

Direct Customer Communications: Monthly inserts, envelope backers, bill messages, etc. will contain all messages. Conservation messages will begin with the April bill insert. In addition to traditional direct customer mailing, customer specific (social-norm type messaging) mailing will be used in some areas. Social-norms direct-mail programs provide customers with additional information about their personal water use and how their use compares over time, with similar users, and/or compares with other users in their own neighborhood. As part of this messaging the customer could be given a water use target and how their current use compares.

Website: TMWA.com will be linked to a specific microsite for our all drought information and landscaping resources. Staff will promote this through all forms of media, including our blog and social media. A new conservation video and an infographic/app will be developed which would compare our available inventory of water resources (groundwater and drought reserves) to the savings goal and show how we are doing as a community.

Social Media: To foster conversations and sharing, staff will utilize daily postings, paid and boosted ads, videos, photos, and infographics on various social media channels, including local media, Facebook and Twitter. Active listening is also part of what staff does every



day—answering what needs to be answered, looking for trends for future content, and sharing good content from others.

**Conservation Staff Program:** TMWA will have an enhanced presence in the community this year for two primary reasons. First, there is a heightened awareness of water usage due to our fourth year of drought. Second, the addition of the former Washoe County Department of Water Resources and South Truckee Meadows General Improvement District customers adds a significant base to our area, most of which have not been exposed to assigned watering days and TMWA's conservation programs in general. We are going to double the amount of conservation staff from previous summers, and will have an increased focus on waste. We are going to wrap our conservation vehicles in drought graphics so that they are highly visible in the community.

**Internal Communications:** An educated staff helps manage interactions with customers in and outside of work. TMWA staff will be fully briefed on all drought topics through staff meetings and our internal *from the source* e-mail communications.

**Customer Workshops:** TMWA workshops will feature irrigation and landscaping best practices. New this year will be a water supply workshop at the beginning of the season to help our customers understand how TMWA responds to drought conditions and what customers can do to help. These will be promoted in all forms of customer communications, news coverage and social media. Staff is also working to add more technical workshops through partnerships with NLA and UNCE.

**Community Engagement:** Staff will schedule additional presentations to community groups, citizens' advisory groups and be present at community events to dispense drought information. Constant updates on supply and conservation will go out in all forms of communication, including our e-newsletter. Tree consultations will be promoted, as well as the Community Forestry and TMWA Landscape websites.

**Restaurant and Business Outreach:** Tent cards for restaurants will be distributed, promoting conservation and ordering water, "only if you need it." In several bigger venues, like the Aces Baseball Stadium, staff is exploring mirror stickers above the restroom sinks, to have a friendly reminder about saving water.

**"Conservation Heroes"/Good Water User Program:** TMWA is targeting the media and our partners (NLA and UNCE) to help us recognize those who are saving water, and doing things right. This includes residential customers as well as commercial and HOA's. Staff is also exploring a Top 100 *Savers* list.

**Public Service Billboards:** Staff will be contacting entities that have billboards to ask for a conservation message to be included, i.e., NDOT highway readers, hotel billboards, etc.

**Commercial Customer and HOA Engagement:** Through the data collected last year on water use, a program will be started to communicate directly with commercial customers and HOA's. Staff has conducted a focus group with members of our Standing Advisory

Committee, as well as met with the NLA and UNCE. Using what we learned, staff will be implementing the following tactics: direct communications to association managers, establishing a network of contacts of all large users, partnering to institute more technical workshops for landscapers, etc. On the schedule is a presentation to the presidents of HOA's/Associations on March 20<sup>th</sup>. We will be engaging this group to determine best time, tactics and practices to encourage conservation.

Engagement of Governmental Agencies: Work directly with the local agencies encouraging them to set the example for the community at parks, schools, etc. Staff will also be approaching the fire departments to request they curtail fire hydrant flushing where they can. Also, on a longer-term basis, TMWA will be engaging the planning departments to look at landscaping requirements.

### **If Conditions Worsen (from situational analysis):**

Other actions mentioned below may be considered (not included in this year's timeline at this time) depending on how the water supply conditions unfold during the 2015 irrigation season.

- Drought rates, increasing water violation fines, etc.
- Water-use restrictions that would be considered: no sod or seed planting, no fountain operation, and car wash limits
- Expand advertising campaign through October
- Direct mail campaign to areas suffering more impacts than others
- Direct mail from the General Manager and/or Board Chairman to targeted audiences encouraging conservation
- Town Hall Meetings
- Moderated web chats
- Bus advertising
- Press conference(s)

### **Tactics, Tools and Timeline**

The below tactics and tools carry the message to the target audiences, the “blueprint” for the plan.

#### **March**

Main communications:

- Board approves drought communications plan
- Respond to media inquiries, desk sides, interviews
- Website page on conservation and drought
- Presentation to presidents of HOA's/ Associations
- Social media updates
- Blogs on drought planning
- Distribute FAQ's – media

Supporting:

- Bill insert
- Workshop insert (February)
- Envelope Backer
- Workshops
- New Magnet for welcome packet and event handouts
- Topic papers
- Meeting w/ NLA and UNCE
- Water violation card ready
- TMWA employees - at all-employee meetings and *from the source* E-News

**April**

Main communications:

- Press Release – How to change your clock to save 10%, or as needs dictate
- Workshop media alerts
- Keep scheduling desk side visits
- RGJ Editorial Board meeting
- Presentations scheduled – Rotaries, Kiwanis, Soroptimists, CAB's, etc.
- FAQ's – Distribute to forecasters, anchors, at presentations, etc.
- Social media updates
- Contact billboard owners to request space (NDOT, hotels, etc.)
- Direct communications to association managers and HOA's
- Contact local governments and fire departments
- Blog

Supporting:

- Quarterly E-news to customers and community leaders
- Envelope Backer – Spring Start Up—Save *at least* 10%
- Workshops
- Board Meeting Update
- Meeting w/ NLA and UNCE
- Conservation hotline message
- On-Hold message for customer service line
- TMWA employees - - at all-employee meetings and *from the source* E-News

**May**

Main communications:

- Advertising starts
- Morning Television Weather Sponsorships start
- Your Turn column
- Website microsite launched

- Social media updates (new conservation video)
- Press release: Infographic on the *At Least* 10% savings and conservation goal, or as needs dictate
- Conservation updates in all forms of communication
- Conservation staff trained and ready for patrolling
- Restaurant tent cards and mirror stickers to be distributed
- Blog

Supporting:

- Envelope – Assigned Day watering
- Events
- Workshops
- Board Meeting Update
- On-Hold Messages
- TMWA employees - - at all-employee meetings and *from the source* E-News

**June**

Main communications:

- Advertising continues
- Press Release: Reminder about watering when it's hot or water watcher-day in the life, or unveil new water supply/goal app
- Conservation updates in all forms of communication
- Presentations continue
- E-News to customers and community leaders
- Social media updates
- Media: Conservation Staff ride-along
- Direct Mail/social norms (placeholder)
- Blog

Supporting:

- Envelope Backer – Save *at Least* 10%
- Events
- Workshops—on Water Supply
- Website
- Board Meeting Update
- On-Hold Messages
- TMWA employees - - at all-employee meetings and *from the source* E-News

**July**

Main communications:

- Advertising continues

- Press Release – How is the community saving? (Results from June). About river flows dropping
- Conservation updates in all forms of communication
- Presentations continue
- Social media updates
- Blog

Supporting:

- Envelope backer—Save *at Least* 10%
- Events
- Website
- Board Meeting Update
- On-Hold Messages
- TMWA employees - - at all-employee meetings and *from the source* E-News

**August --- Stronger message if needed**

Main communications:

- Advertising – Stronger message or keep it going, based on results
- Issue conservation reminders
- Media Desk Sides/Editorial Board Meetings
- Media Interviews, Etc.
- Press Release – encourage community to keep saving
- More Workshops?
- E-News
- Blog
- Social media updates

Supporting:

- Envelope – Save *at least* 10%
- Events
- Website
- On-Hold Messages
- Board Meeting Update
- On-Hold Messages
- TMWA employees - at all-employee meetings and *from the source* E-News

**September**

Main Communications

- Advertising – Conservation
- Press Release – Update on results
- Blog
- Social Media updates

Supporting

- Board Meeting Update
- Website
- On-Hold Messages

**Evaluation:**

- Overall water usage savings
- Monitor customer satisfaction
- Monitor customer service inquiries and comments
- Monitor conservation staff customer interactions and comments
- Monitor workshop participation





## STAFF REPORT

**TO:** Chairman and Board Members  
**THRU:** Kim Mazeres, Director of Customer Relations  
**FROM:** Robert Charpentier, Communications Specialist  
Marlene Olsen, Goodstanding  
**DATE:** November 10, 2014  
**SUBJECT:** **2014 Drought Communication Summary – Results from Conservation/Drought Communications and Advertising Campaign, 2014**

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### INTRODUCTION

This report addresses the results of the annual conservation/drought campaign, including advertising, news coverage, and digital and customer communications. The initial plan was presented to the TMWA Board of Directors at its June meeting. See plan for detail on messaging, standards & values, and timeline.

### ADVERTISING

**Objective:** Through a combination of reach and frequency, the campaign should foster awareness and compliance with TMWA's watering days, promote responsible water use and inform customers of additional conservation measures when needed.

**Strategy:** The media plan is based on a strategic media mix to effectively reach TMWA's target audience of 25+, single family homeowners.

**Media selection:** It was based on the respective ability for the media outlet to reach TMWA's target market and considers the following:

- Media outlets with an audience that self-identifies as homeowners who have participated in lawn and garden activity in the last six months
- Promotional/added value opportunities
- Ability to reach TMWA's target when they are most likely to consider their yard's watering needs (radio and weather sponsorships)
- Support to other advertising mediums through digital media ads
- Ability to drive traffic to a workshop or TMWA's website

<b>Budget:</b>	Main Summer Campaign:	\$61,606
	Drought Extension 9/1-10/12:	\$26,238
	Thank You ads: 11/9-11/13:	<u>\$ 5,540</u>

**Total Paid Media:** **\$ 93,384**

Added Value: \$35,000  
**Total Media Value:** **\$ 128,384**

**Ad Production:** **\$8,875**

**Timing:** The 2014 advertising campaign ran from June 1 – October 12. This year’s campaign ran 1½ months longer (Drought Extension) than our Main Summer Campaign, which typically runs no later than Labor Day. This was due to the messaging required as we started using drought reserves – “Reduce Your Use by 10%.” The campaign was purchased in two schedules: June 1 – August 31 and September 1 – October 13. The strategy was one of cost savings: if the drought situation turned around, TMWA was not obligated to place ads in the time period when the messaging would not be effective. We will finish up with a third schedule of print ads with a Thank You concept in mid-November to run in the local newspapers along with supporting digital media.

**Media Types:** All forms of advertising media were used: television, radio, print, digital and social media, including Hispanic media. When we could, we purchased around or in the weather reports.

**Added Value:** We required all media to provide added value, which this year is over \$35,000, plus media website content. We also purchased live reads and produced spots utilizing the forecasters in the weather reports, reaching our target when they are considering their watering and gardening plans. For television, TMWA is the only entity that is allowed to be in the local television weather reports. This is an opportunity created for TMWA that cannot be quantified. We appreciate the local TV stations’ willingness to work with us.

**Messaging:** Our first flight of ads focused on responsible water use — a reminder campaign of watering days, when not to water and eliminating waste. The second part of the campaign began August 1<sup>st</sup>, when we started using our drought reserves, focused on reducing outdoor water use by 10% and widening the non-watering hours to 11 a.m. – 7 p.m. The messaging, “Reduce Your Use by 10%,” was meant to be uncomplicated and easily implemented.

**Post-Buy Analysis:** Media buys are negotiated weeks, and even months, prior to actual delivery or run dates. The buys are based on statistical information provided by Nielsen Media Research on recent, but past, consumer habits. Each post-buy is based on reported media delivery for the period in which the buy ran. For example, a September television buy should be analyzed using the October Nielsen Station Index.

Radio	Reach	Frequency	Gross Impressions	Cost Per Impression
	73.4%	21.4x	4,845,760	\$0.0102

Online	Circulation/Impressions
Rgj.com/Yahoo	717,834 Impressions
FACEBOOK	249,294 People Reached/211,834 Paid Reach

Print	DATE	Readership
Reno News & Review	6/9, 9/23, 7/7, 7/21 & 8/4	270,000 Readership
Edible Reno	July and August Issues	150,000 Readership

Television	Reach	Frequency	Gross Impressions	Cost Per Impression
	93.1%	5.5x	1,569,856	\$0.0098

This campaign received more positive and unprompted compliments by our customers via phone calls than any other year.

### **NEWS COVERAGE AND PUBLICITY**

**Objective:** The campaign should maintain awareness, promote responsible water use, inform the region of additional conservation measures when needed, and educate the community and media about the uniqueness of our water system.

**Timing:** We began briefing the media about snowpack and drought in January and the effort continues today.

**Strategy:** Dispel anxiety in the community by predicting any milestones affecting our water supply – changes in river flow, water supply and source, use of drought reserves, etc. – and be in front of the issue. Use the TMWA subject-matter experts who are best able to address the issues. Promote TMWA workshops on landscape and irrigation.

**Media Involved:** Any media that have a newsroom or reporter: radio, TV, newspaper, magazines and blogs.

**Tactics:** Frequently Asked Questions (FAQ's) constantly updated and distributed to all media, including reporters, weather forecasters and news anchors. The FAQ's were posted on TMWA's website front page, as well as all local governmental agencies' websites. Press releases were distributed, as needed. Desk sides were used to inform whole newsrooms. Interview requests were responded to as soon as possible, including ensuring TMWA was the appropriate entity to respond. Editorial boards were used to background multiple staff in same media outlet.

**RESULTS:** 107 hits (stories filed), 53 direct interviews with TMWA staff. This is the equivalent of over \$50,000 in earned media value. We also filed a 5-Part Drought series with ThisIsReno, and dedicated drought programs on Face the State and House Detective. The resulting news coverage has been accurate and well paced throughout the summer. The complete file can be found here:

<http://www.goodstandingoutreach.com/uncategorized/tmwa-news-clips/>

### **DIRECT CUSTOMER COMMUNICATIONS**

**Objective:** The campaign should maintain awareness, promote responsible water use and compliance of TMWA's watering days, inform of additional conservation measures when needed, and educate customers of the uniqueness of our water system.

#### **Tactics:**

- **Bill inserts (Jan. 1-Oct 30)**-Mailed to an average of 79,000 customers per month (Note: per our Customer Satisfaction Survey results, 68% of these customers read the bill insert)
  - Drought/Water Supply Updates: Seven articles

- Conservation (leaks, water waste, hot line, etc): Four articles
  - Responsible Water Use: Seven articles
  - Tree Care: Two articles
  - Workshops: Five articles
- **Billing Envelope Backers:**
  - Drought: Two months
  - Workshops: three months
  - Responsible water use: two months
- **Special One-panel insert in all customer bills: (Dedicated to the 10% message only)**
  - Two months, for a total of approximately 158,000 bills
- **Bill messages:** Every bill has a message printed on the statement. An average of 79,000 customers per month receive printed bills. (Note: per our Customer Satisfaction Survey, 62% of these customers read the bill message.)
  - Winterization – 1 month
  - Drought – 3 months
  - Conservation-3 months
- **E-bill messages**
  - Three months, for a total of 85,955 e-bill notifications that included the 10% message
- **Workshops:** 12 customer workshops were conducted on irrigation start-up, efficient landscape planning, tree care, sprinkler maintenance, drip system maintenance, and winterization. Average attendance was 25.
- **Customer Lobby:** Both signage and printed materials were displayed in the lobby promoting the conservation message. They included “Reduce Your Use” and the Assigned-Day Watering schedule. We distributed one-panel brochures, topic papers, magnets for watering days, etc.
- **Topic Papers/FAQ’s:** Were promoted on TMWA.com and supplied to customers and media on the topics of drought, drought planning, aquifer recharge, leaks and weather-wise watering.
- **How-To Videos:** The following videos were produced and promoted in Social Media and Bill Inserts — Detecting Leaks, Winterizing Your Sprinkler System and How To Save 10%
- **Magnet:** 5,000 watering days magnets were distributed to new customers and at community events
- **Materials for conservation consultants including water violation cards and responsible water use:** distributed throughout the watering season.
- **On-hold messages:** on conservation were utilized at our customer service center, as well as corporate offices.
- **Employee meetings:** our employees were updated on water supply, drought and drought planning at every employee meeting since January 1<sup>st</sup>.
- **Speakers Presentations:** Staff presents to many organizations in the local area. 37 speaking engagements during summer and fall addressed drought and our water system.
- **Buttons:** one hundred “Reduce Your Use” buttons were handed out to employees and customers.

**Results:** An average customer, who did not call into TMMA, received from TMWA *at least* **41** direct messages from us since January about responsible water use, the drought, our water supplies, hot line workshops and Reduce Your Use. The total does not include news coverage managed by TMWA, social media or on-hold messages. Hot Line calls: 2,462 customers called in or emailed us to report water waste.

## DIGITAL COMMUNICATIONS

**Objective:** To foster awareness of TMWA’s drought/conservation messaging by using a combination of “push” and “pull” digital-communications tactics. Though TMWA’s drought and conservation messaging was substantially ramped-up prior to the official drought-communications window, the numbers below reflect activity during the Aug 1 – Sept 30 campaign period, except where otherwise noted.

### Tactics/Results:

- **Website (Aug 1 – Sept 30)**– 54,796 views of conservation content
  - 48,513 passive views of conservation banners
  - 6,283 click-throughs to conservation content
- **Social Media (Aug 1 – Sept 30)**
  - Facebook – 145,933 views of conservation messaging
    - 61 conservation-related posts – 132,312 views
    - 18 “boosted” conservation posts – 129,719 views
    - Facebook page conservation banner – 13,681 views
  - Twitter – views not available
    - 61 conservation-related posts
- **YouTube Videos (Aug 1 – Sept 30)**
  - Four conservation-related videos, 357 views
- **Blog (June 30 – Sept 25)**
  - Conservation-related posts – 7
  - Views - 877
- **E-Newsletter – 152,224 sent.**
  - April – 50,326 recipients
    - Water Supply Update
    - Conservation Through Weather-Wise Watering
  - June – 50,589 recipients
    - TMWA to Meet Summer Water Needs
    - Are you Even or Odd? (banner with link to ADW page)
    - How to Use Your Water Meter to Determine if You Have a Leak (link to video)
  - August-51,309 recipients
    - The Water You Conserve NOW Can be Saved for Later
    - How do You Report Water Waste?
    - TMWA is Always Prepared for Drought
    - ADW Banner with link to page

**OVERALL RESULTS OF CAMPAIGN:** Through advertising within the community, news coverage, direct customer communications and digital communications, our customers could not avoid the messaging regarding responsible water use, drought and conservation. We measure through impressions, hits, open rates and views. We know that per-capita water use is trending down. We fielded 2,462 hot-line calls to report waste, workshop participation was up over last year, and customers responded to reducing their outdoor water use by 7.5%, in spite of the hotter weather.