The City of Folsom, Folsom Lake, and Drought Conditions in California
April 20, 2015

As California enters its fourth year of below normal rain and snow, water supply, water use, and water conservation remain important topics. The drought is a western-region phenomenon, and water conservation is a state-wide concern. In California, everyone can help by using water wisely, and Governor Brown has issued an Executive Order requiring a 25% reduction in potable water use statewide during this drought emergency. When considering conservation efforts in general, and especially where the conserved water goes, context is important. This briefing paper provides important local context to a state-wide topic.

Folsom Dam is a multi-purpose facility -- water supply, flood control, and power generation are its primary purposes. The Folsom Dam is managed by the United States Army Corps of Engineers, and the water resources behind Folsom Dam are managed by the United States Bureau of Reclamation and the California State Department of Water Resources (DWR). Historically, the lake is purposefully drawn down in the fall to prepare for winter storms and runoff, protecting Sacramento and points west from devastating floods, such as those experienced in years past. Mid-winter, water levels in Folsom Lake are held at below-capacity levels to allow for storm runoff and provide for flood protection. This happens every year, even during the past several drought years. Fortunately, the project to add the auxiliary spillway at Folsom Dam provides an opportunity to modify flood control parameters that may effectively increase water supply by allowing for later, faster releases prior to and during storm events.

In 2000, the DWR reported that urban uses constituted just 11 percent of water use statewide, with agricultural use at 42 percent and environmental use at 47 percent, rounding out the total. Folsom Lake water supply demands are also multi-faceted. These demands include urban supplies to local residents in Folsom, Roseville, Sacramento, and Sacramento County, and to water consumers as far away as the Bay Area and Southern California. Folsom Lake water is also used for agricultural and environmental purposes to support farmers, ensure thriving fish populations, and maintain delta water quality. Delta water quality is important to sustain the ecosystem, protect agricultural interests, and facilitate water exports to other urban users. When all uses are considered, the City of Folsom consumes less than two percent of the water that passes through Folsom Dam each year. On average, approximately 2.7 million acre feet pass through the Dam. If Folsom Lake were to be looked at as a static resource, just for comparative purposes, the City of Folsom water supply represents less than four percent of the lake's capacity.

Every year, the water that flows down the American River is used to support other users and purposes outside Folsom. Realistically, there is never any circumstance where Folsom residents can preserve lake levels (and presumably, drinking water) through their own conservation efforts alone. For every ten feet of lake level drop, the City of Folsom's usage represents just 1.625 inches. If, theoretically, the City stopped using all water (turned off the tap in the Dam) the maximum impact it would have on the Folsom Lake and American River water flows is two percent. Of course, no one is proposing to turn off the tap, and the City has always delivered all

water necessary for municipal purposes. The City has rights to divert 34,000 acre feet of water, and last year, the City used less than two-thirds of this allocated supply. Water service in the Ashland and American River Canyon areas are served with a different supply.

In spite of Folsom's relatively low water consumption, conserving natural resources is not only the right thing to do, but also is required by law. The City of Folsom did its part by reducing water use on several hundred acres of public property -- in parks by 27 percent and in landscape median areas by 31 percent, all while preserving its valuable trees and non-turf landscapes. Folsom residents sacrificed as well, contributing to an overall reduction in water consumption of 21 percent in 2014. This is quite an achievement, and among the most impressive in the state. In fact, the Sacramento region as a whole was among the best in the state, conserving 19.3 percent.

In 2014, Folsom residents were required to conserve primarily as a result of two state-wide requirements. State law SBx7-7 was enacted in November, 2009, and requires all municipalities to reduce water consumption by 20 percent by the year 2020, with phased-in milestones. In anticipation of this requirement, the City ramped up its water system optimization program to fix significant leaks in its decades-old water system, including the Willow Hills Pipeline, originally built in the 1960s to serve AeroJet industrial purposes. Under that state mandate, this conserved water would not be available for existing uses within the City, and presumably left to travel down the river for use by others. The Governor's emergency declarations of 2014 required immediate reduction of 20 percent in response to the extra-ordinary drought circumstances the State then faced.

California remains in the grip of a multi-year drought. On April 1, the Governor Issued Executive Order B-29-15 (Executive Order) proclaiming a continued state of emergency and requiring a number of specific actions. Among those actions, the State Water Resources Control Board (SWRCB) shall "impose restrictions to achieve a statewide 25% reduction in potable urban water usage through February 28, 2016." This conservation declaration is different than those in 2014 in that, "These restrictions should consider the relative per capita water usage of each water suppliers' service area, and require that those areas with higher per capita use achieve proportionally greater reductions than those with low use." This is a significant departure from previous conservation mandates, in that it results in specific, household by household water use targets that create a community's overall conservation target.

On April 7, 2015, the SWRCB issued a proposed regulatory framework for implementation of the Governor's required 25% reduction in potable urban water use. This proposed regulation was updated on April 18, 2015, and the SWRCB anticipates issuing its final proposed regulation on April 27, 2015. In this regulation, the SWRCB calculated residential per capita water use for urban water suppliers, serving more than 3,000 customers or delivering more than 3,000 acre feet of water within each water supplier's water service area, using the formula: **R-GPCD = [(TMP × PRU × C) ÷ TPS] ÷ number of days per month**

Where: TMP = Total monthly potable water production
PRU = Percent residential use (residential potable water use divided by non-residential potable water use and includes multi-family)
C = Unit conversion factor (325,851 to convert acre-feet to gallons)
TPS = Total population served (water service area)

Based upon the result of this calculation, water suppliers were placed into one of nine different conservation categories, each with required conservation levels as shown in Table 1.

Tier	R-GPCD Range (Sept 2014)	# of Suppliers within Range	Conservation Standard
1	Reserved	0	4%
2	Under 65	23	8%
3	65-79.99	21	12%
4	80-94.99	42	16%
5	95-109.99	41	20%
6	110-129.99	51	24%
7	130-169.99	73	28%
8	170-214.99	66	32%
9	215-612	94	36%

Table 1
Conservation Standards

Using Folsom's specific parameters to calculate R-GPCD, SWRCB placed Folsom in Tier eight with a conservation mandate of 32%.

An important distinction with this calculation is that it focuses on existing households (PRU), and does not consider non-residential uses, such as industrial uses, golf courses, and commercial centers, to calculate water savings targets. Presumably, the Governor is relying on other specific provisions of the Executive Order, such as in Directive 5 where the SWRCB shall "impose restrictions to require that commercial, industrial, and institutional properties, such as campuses, golf courses, and cemeteries, immediately implement water efficiency measures to reduce potable water use in an amount consistent with the reduction targets mandated by Directive 2 of the order," and in Directive 6 where the SWRCB shall "prohibit irrigation with potable water of ornamental turf in public street medians."

What the Executive Order does not say is just as instructive as what is does say. Of the 31 directives in the Executive Order, none limit new housing development. The Executive Order does, however, prohibit "Irrigation with potable water outside of newly constructed homes and buildings that is not delivered by drip or microspray systems" (Directive 7). In new developments, City of Folsom promotes responsible use of natural resources by adopting the California Green Building Standards Code which requires that all new development adhere to the conservation guidelines outlined in CALGreen, ensuring that new developments are models for water conservation and efficiency. Folsom's implementation of the State Model Water

Efficient Landscape Ordinance requires water-efficient and drought-tolerant landscaping in new developments. In addition, development south of Highway 50 will have pipeline infrastructure that could use non-potable and recycled water for landscaping, parks, playgrounds, medians, open spaces -- reducing the reliance on potable water. Due to these new requirements, new homes and buildings built today are far more water-efficient than they were in previous decades, and Executive Order Directive 11 directs the DWR to update the State Model Water Efficient Landscape Ordinance to provide for additional conservation.

Context remains important when considering the impacts of new development on water supply. Between now and 2036, residential building in Folsom includes 12,625 housing units, both North and South of Highway 50, and constitutes just four percent of the 284,558 housing units contemplated for the entire Sacramento region. While Folsom's growth represents a small portion of growth in the region, responsible and carefully-planned growth is a part of Folsom's legacy.

Since its founding in the 1850's, the City of Folsom has been a growing, master-planned community. Building on this history of good planning and prudent growth, the City expanded into the East Area in 1984, including the neighborhoods of Broadstone, Empire Ranch, and The Parkway. While 30 years have elapsed since that time, development of the East Area is not yet complete. The proposed growth in the Folsom Plan Area (FPA) south of Highway 50 is similarly prudent in design, planning, scope, and timing, and will be developed in a similarly careful, deliberate, and long-term manner -- likely spanning more than 20 years.

As previously established, much of the region's housing shares the water resources in the Sacramento River watershed with Folsom. The water supply for the FPA was made available largely through two initiatives: 1) the City's Central Valley Project (CVP) water acquired for the East Area; and 2) the City's water system optimization program.

The East Area's CVP water was acquired in the late 1990's and has been used intermittently as the City has reached build out north of Highway 50. The East Area has been served by another water allocation of pre-1914 water that was purchased from Golden State Water Company (GSWC) by the East Area developers prior to securing the CVP contract.

The City's water system optimization program has, and continues to, repair leaks in its water delivery system. Water system leaks are not uncommon among water purveyors, and while this water may be considered usage, this water that goes to ground, not benefiting water customers. Under existing water laws, the City of Folsom passed resolution 8457 in 2009 that enables the City's to retain this conserved water for other beneficial uses. It is important to note that these are uses that, under the law, would exclude existing uses or users in the area where the conservation took place, as these would fall under SBx7-7's conservation requirements, and may otherwise be forfeited for others to use.

The combination of these two initiatives allowed for the transfer of the GSWC Water to the FPA. On January 23, 2013, the City of Folsom filed an action with the Superior Court to validate

that the water supply agreement that implemented the FPA water strategy met the rigid constraints of Measure W regarding water supply for development south of Highway 50, and on October 13, 2013, Judge Raymond Cadei declared the Agreement consistent with Measure W and therefore valid and binding. It is important to note that as of April, 2015, there has been no development in the FPA, and not be a single drop of Folsom's water supply consumed in the FPA.

Conserving water is the right thing to do, and it is required by law. The Governor's conservation mandate requires existing household by household water conservation in Folsom, proposed at 32%, but it does not limit development of new households. The Governor's conservation mandates are aggressive by design, especially for suburban households. State policy has long favored high density, transit oriented development over the lower-density suburban style development with front and back yards typical in Folsom. Any more extreme localized conservation efforts, such as limiting new housing construction in Folsom, would only serve to harm Folsom's housing opportunity and local economy to benefit others downstream. Remember, Folsom's projected housing development over the next 20 years represents only 4% of the regional projection, and the maximum amount current Folsom residents could ever conserve is two percent of the lake's outflow. The remaining water flows west and south to other users for other purposes.

While this is just a brief accounting of a very broad and complex water situation, it is very important to note that Folsom's water use as a percentage of that which passes through the dam is extremely low, and new housing demand as it relates to the region as a whole, is also very low. In contrast, Folsom's conservation efforts in 2014 rank among the State's best. The City has rights to divert 34,000 acre feet of water, and last year, the City used less than two-thirds of its allocated supply. The City's water rights on the American River date back to 1851, among the oldest in the State, and while the City of Folsom remains committed to protecting those rights for the benefit of Folsom residents, current and future, the City and its residents must do their part to conserve water during this drought emergency.

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