



July 7, 2022

TO: LOCSO Board of Directors

FROM: Ron Munds, General Manager

SUBJECT: Agenda Item 8B - 07/07/2022 Board Meeting
Water Shortage Contingency Plan and Action Measures Review

STAFF RECOMMENDATION

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Staff recommends the Board adopt the following motion:

Motion:

- 1. Approve the two-phase approach for the implementation of the Water Shortage Contingency Plan (WSCP) measures as recommended by the Utility Advisory Committee; and***
- 2. Direct staff to provide monthly updates to the Board on the implementation status of the WSCP measures.***

DISCUSSION

Background

In 2014, the district adopted a significantly revised Water Shortage Contingency Plan (WSCP) in response to the extreme drought condition which started in 2012. Based on the “trigger” criteria in the Plan, the Board of Directors declared Stage III drought conditions in 2015, which is still in effect, which included water use prohibitions and penalties for non-compliance. The District has not actively pursued enforcement of the prohibitions and penalties since the overall water use within the District’s water service area has been consistent and relatively low, and additional resources would be needed, mainly personnel, to enforce the prohibitions and penalties.

In response to the statewide drought conditions, Governor Newsom issued Executive Order N-7-22 in March 2022, which requires certain actions by “urban water suppliers” and governmental agencies. Though the District is not considered by the State to be an urban water supplier because of our size (requirements apply to water purveyors with 3,000 plus connections or deliver 3,000 acre feet of water or more) it is important for the District’s water customers to understand the ongoing need to conserve water because of the vulnerability of the Los Osos Groundwater Basin to seawater intrusion.

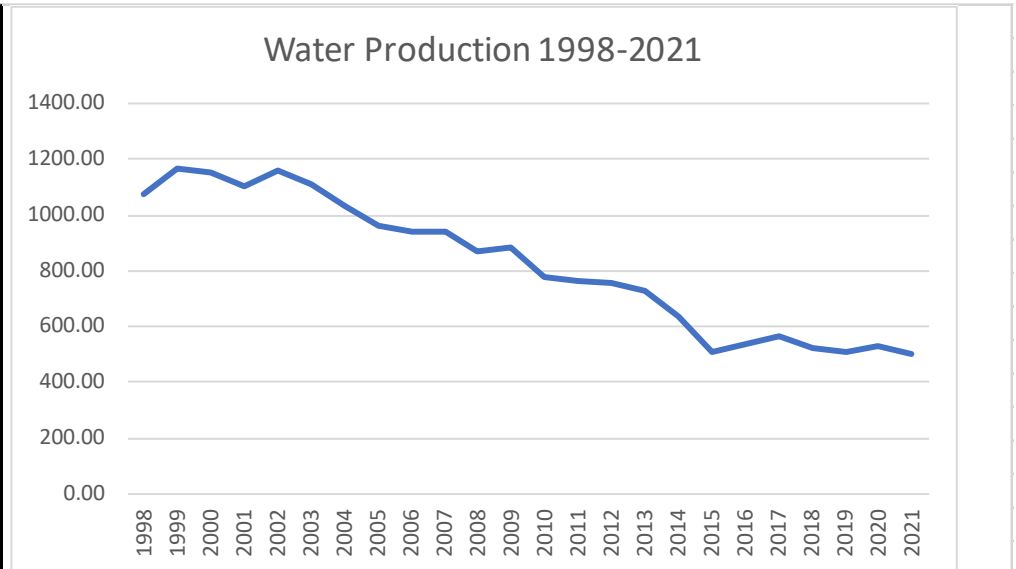
This report provides information on the District’s historical water production, per capita water use, estimated outdoor water use and a review of the water use prohibitions and climatic triggers to implement the various stages in the WSCP.

Historical Water Production

The District’s own water production history goes back to 1998, and some limited historic records are available from the Basin Management Committee (BMC) for prior years. Based on these production records, the water use in the service area peaked in 1990 at 1,260 acre feet and remained between 1,000 to 1,150 acre feet until 2005 (Los Osos Basin Plan 2015). Since 2005, there has been a steady downward trend in water use within the District’s water service area.

The following table shows water production since 1998.

Year	Acre Feet
1998	1072.54
1999	1168.20
2000	1149.42
2001	1102.17
2002	1159.19
2003	1112.03
2004	1030.86
2005	957.68
2006	938.71
2007	943.13
2008	870.09
2009	883.88
2010	774.52
2011	762.36
2012	754.79
2013	725.78
2014	634.07
2015	505.55
2016	534.24
2017	568.09
2018	521.56
2019	505.61
2020	526.96
2021	502.67

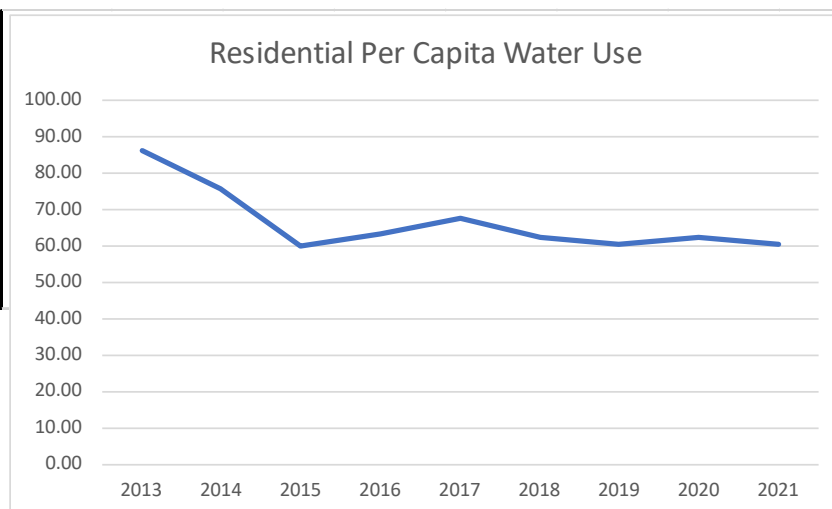


As indicated, there has been a steady decline in water production over this twenty-three-year period.

Per Capita Water Use

Per capita water use, also referred to as GPCD, can be defined as a metric representing an individual's share of a community's average daily residential water needs. This is an important metric when trying to determine trends in residential water and establishing goals when asking for water use reductions during time of droughts or other water emergency. For instance, during a level Stage III condition, the WSCP calls for a target of 50 GPCD. The District has been only tracking GPCD since 2013. The following table and chart show the trends since then.

Year	GPCD
2013	86.27
2014	75.53
2015	60.01
2016	63.44
2017	67.76
2018	62.25
2019	60.35
2020	62.30
2021	60.14



As displayed, the GPCD has remained fairly constant since 2015, around 60 GPCD.

Outdoor Water Use Estimations

In order to try to fully understand the water use patterns in the water service area, staff developed simple evaluation analysis based on the monthly water production data since 2018 to estimate outdoor water consumption. Staff chose this period since it is considered a good representation of the current water use trends. The lowest month's water production volume for this period was February 2019. Using this production number as the indoor baseline, meaning the best representation for indoor water use based on limited outdoor irrigation, this amount (10.33 million gallons) was subtracted from each monthly total from 2018 through 2021. The results of the analysis are in Attachment 1 to this report.

To summarize the data, the annual percent of the total water use for outdoor consumption is estimated to be from 24.32% to 27.81% with a four-year average of 25.99%. The annual range for estimated outdoor water use is between 39.83 million gallons (122.25 acre feet) to 47.75 million gallons (146.54 acre feet).

Water Shortage Contingency Plan Review

As previously indicated, the District's current WSCP was developed in 2013 and adopted in 2014. The plan layouts out climatic and water quality "triggers" to enter and exit the five stages in the plan. At the time, these triggers (climate and water quality) made the most sense because of our proximity to the ocean and the significant influence seawater intrusion has on the groundwater levels in the basin.

Within each stage there is a percent water use reduction target, a climate trigger to move through the stages, a water quality trigger which does the same, a trigger to exit a stage and prohibitions to be implemented at each stage. Attachment 2 describes each of these elements in more detail.

Water Shortage Contingency Plan "Stage Triggers"

There are two criteria or triggers for entering a stage in the WSCP. This first is based on rainfall (climatic) over one or multiple years. The second is based on Chloride (water quality) levels at the 8th and 10th Street wells. To date, the cumulative rainfall trigger has been the most relative trigger to track since the Chloride levels in the referenced wells have not been an issue. The exiting trigger is based on consecutive years of average rainfall or more. Attachment 2 describes how the triggers function. The following chart shows the annual rainfall and how it has influenced the District decision to remain in Stage III since 2015, and a table that provides the cumulative rainfall triggers for reference.

Los Osos Landfill #727 - all units are in inches					
Water Year	Annual	Cummulative Rainfall Totals			
	Total	2 year	3 year	4 year	5 year
2021-2022	13.2				76.66
2020-2021	13.52				89.47
2019-2020	13.23				83.56
2018-2019	23.09				86.78
2017-2018	13.62				63.69
2016-2017	26.01			50.07	
2014-2015	7.61		24.06	Stage III	
2013-2014	6.57				
2012-2013	9.88				
Receive rainfall >= median by March 31, for two consecutive years . If in Stage III due to water quality, two consecutive semi-annual samples must be below trigger concentrations to exit Stage III					

Climatic Triggers for Stages					
Stage	1 year	2 years	3 years	4 years	5 years
Stage I	<17 in.				
Stage II		<32 in.	<48 in.	<65 in.	<81 in.
Stage III		<29 in.	<43 in.	<58 in.	<72 in.
Stage IV		<26 in.	<38 in.	<51 in.	<64 in.
Stage V		<17 in.	<26 in.	<34 in.	<43 in.

The numbers in the Year 3, Year 4, etc. are for the cumulative rainfall amounts for years from the time Stage III was adopted and are for information only. The other nuance in exiting triggers is the reference to “median” rainfall. After discussing this with the District Engineer, the intent was for the “average” rainfall of 17 inches be applied as reference in Attachment 2. This is a minor issue that can be changed since this term is not in Title 2 of the District’s code (Attachment 4).

Prohibitions

The following are the prohibitions and measures associated with Stage III of the plan:

- All outdoor irrigation of vegetation shall occur only between dusk and dawn.
- The use of potable water to wash sidewalks, walkways, driveways, parking lots, open ground and other hard-surface areas by direct application shall be prohibited.
- The use of non-drinking-water fountains, except for those using recirculated water, shall be prohibited.
- Use of water which results in flooding or run-off in gutters or streets shall be prohibited.
- Use of water from fire hydrants shall be limited to fire suppression and/or other activities immediately necessary to maintain health, safety and welfare of residents within the boundaries of the Los Osos Community Services District.
- The use of District potable water for construction projects shall be prohibited.
- The washing of automobiles, trucks, trailers, boats and other types of mobile equipment not occurring upon the immediate premises of a commercial car wash and/or commercial service station shall be prohibited unless residents have an automatic shut-off hose nozzle and do not allow water to run off their property.
- The use of potable water to irrigate lawns, landscape plantings, groundcover, and shrubs shall be limited to prescribed days and hours. Irrigation shall only occur between dusk and dawn, and shall only occur on Wednesday and Sunday for even numbered addresses, and Tuesday and Saturday for odd numbered addresses. Community recreational facilities shall be exempt from this prohibition.
- Water main flushing shall only occur in emergency situations as declared by the General Manager.
- Irrigation of community recreational facilities shall be exempt from this prohibition.
- Penalties up to 2 times the established rate for usage above the allocation, may be applied. District will notify customer of usage above allocation. If the customer fails to modify usage, penalties may be applied.
- No new Intent to Serve applications
- No allocations may be transferred to another property

Though staff already include many of the prohibitions and measures in the messaging and communications to our water customers, the prohibitions and measures requiring enforcement and/or additional staff are only being passively enforced by existing staff meaning when a complaint is received, there is subsequent follow up.

Two key measures are the outdoor watering restrictions (days of the week, etc.) and the water usage allocations and penalties. Staff has considered these measures but have not moved forward based on the following:

- Enforcement of the even/odd water days would require additional staff working odd hours (dusk to dawn) to monitor compliance. Additionally, there are studies that indicated that this type of program doesn't necessarily save water since customers are inclined to over-water on the days that they have been allotted to.
- Implementing a water allocation-based system would also require additional staff to set up and implement. If the District truly wanted to make the program fair and equitable, verification of occupancy would be time consuming at the front end of the program and could be considered intrusive by our customers. There could be additional costs associated with activating the module in the billing system to perform the necessary functions to implement the program.

2014 Outdoor Water Conservation Plan

In 2014, the Board adopted, by resolution, an Outdoor Water Conservation Plan (Attachment 3). The elements in the plan include:

1. Target top 100 water users with outdoor water conservation information
2. Landscape and irrigation workshops (*not implemented*)
3. Develop seasonal irrigation messaging and direct mail to water customers with information
4. Analyze water consumption and track per capita water use
5. Purchase or develop landscape brochures (*not implemented*)
6. Attend public events and encourage water conservation to the public
7. Speaker's bureau
8. Water waste ordinance

Many of the elements are currently being implemented in some form.

Utilities Advisory Committee (UAC) Recommendations

At the June 15th UAC meeting, the committee received the same information and presentation as presented tonight. After much deliberation, the committee is recommending that the Board consider a two-phase approach for the implementation of the WSCP measures at this time.

Phase 1 - Short-term (until April 2023)

- Evaluate the current rebate program and make recommendations for modifications (indoor measures)
- Evaluate adding outdoor water conservation measures to the rebate program
- Increasing the messaging of the public education and outreach efforts
- Continue to implement the Outdoor Water Conservation Plan
- Encourage compliance with the Stage III prohibitions

Phase 2 – Full Implementation of Stage III Measures in April 2023

Direct staff to evaluate and provide cost estimations to implement all the prohibitions, including the customer water allocation measure, for possible implementation in April 2023. This would allow for a pragmatic approach to shift into an equitable water rationing program with full knowledge of the cost implications and impacts to water revenues.

Attachments

1. Outdoor Water Use Estimation
2. Water Shortage Contingency Plan Elements
3. 2014 Outdoor Water Conservation Plan
4. Title 2 of the District's code