

## CITIZENS' WATER ADVISORY COMMITTEE (CWAC) AGENDA

April 12, 2022, 6:00 p.m.

Aspen Room, 2<sup>nd</sup> Floor, Aurora Municipal Center  
Or Hybrid option below

Microsoft Teams Link:

[Click here to join the meeting](#)

Or go to

<https://bit.ly/3iTRz8o>

Call in (audio only) - 720-388-8447

Phone Conference ID: 595 739 077#

Members: Angie Binder - Chair, Richard "Dick" Eason -Vice Chair, Jay Campbell, Tom Coker  
Dennis Dechant, William Gondrez, Janet Marlow, David Patterson, Daniel Widrich

- |     |  |                |           |
|-----|--|----------------|-----------|
| 1.  | Approval of Minutes – March 8, 2022                  | Chair          | 6:00 p.m. |
| 2.  | Introductions/Public Invited to be Heard             | Chair          | 6:05 p.m. |
| 3.  | New/Old Business                                     | Chair          | 6:10 p.m. |
| 4.  | Communications Update                                | Greg Baker     | 6:15 p.m. |
| 5.  | Legislative Update                                   | Kathy Kitzmann | 6:20 p.m. |
| 6.  | Aurora Water Drought Response                        | Lauren Maggert | 6:40 p.m. |
| 7.  | Water Management Plan                                | Greg Baker     | 7:00 p.m. |
| 8.  | Economic Work Group Status                           | Janet Marlow   | 7:15 p.m. |
| 9.  | Summer Tours   | Greg Baker     | 7:20 p.m. |
| 10. | Review Follow-Up Questions Generated at this Meeting | Greg Baker     | 7:25 p.m. |
| 11. | Confirm Next Meeting – Tuesday, May 10, 2022         | Chair          | 7:30 p.m. |
| 12. | Adjourn  | Chair          | 7:35 p.m. |

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**Citizens' Water Advisory Committee (CWAC) Minutes**  
**March 8, 2022, 6:00 p.m.**  
Held virtually via Microsoft Teams

Minutes for your review/revisions: ____ Greg ____ Marshall
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Members Present: Angie Binder – Chair, Dick Eason - Vice Chair, Jay Campbell, Tom Coker, Dave Patterson, Bill Gondrez, Janet Marlow, Daniel Widrich

Absent: Dennis Dechant

Staff Present: Greg Baker, Leiana Baker, Tim York, Rory Franklin, James DeHerrera, Marshall Brown, Swirvine Nyirenda

Visitors Present: None

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The meeting was called to order at 6:04 p.m.

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**1. Approval of February 8, 2022 Minutes**

The February 8, 2022, minutes were approved.

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**2. Introductions/Public Invited to be Heard**

None.

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**3. New/Old Business**

None.

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**4. Communications Update**

None.

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**5. Nonfunctional Turf Ordinance**

T. York gave a presentation. The Mayor will present this item to the Water Policy Committee and to Council. J. Campbell asked, is that 10 feet or wider on the curb side? T. York replied, the 10 feet wide is the distance from the sidewalk to the curb. T. Coker asked, regarding no more new golf courses, is Kings Points grandfathered? M. Brown replied, yes. T. Coker what would be the water source, M Brown potentially groundwater, as well as a sustainable water source. D. Eason – Ordinance Section 3 – city employees aren't subject to fine. G. Baker stated he will ask city attorney for a response and share it via email to the committee. D. Eason what is the comparison cost for turf and non-turf. T. York replied, it was less than \$1,000 per landscape during a previous study. D. Eason asked, can low water use warm grasses be used for golf courses? T. York replied, warm season grasses don't tolerate foot traffic well. A. Binder asked, what about trees and are there recommendations on type of trees? T. York replied, the ordinance doesn't impact planting trees. Forestry department would have more information on tree types. D. Widrich asked, how can we better irrigate trees? T. York replied, irrigating with drip irrigation and/or low flow irrigation and move the irrigation as the tree grows out to the tree canopy edge. A Binder asked, where are

we on the timing of the ordinance? M. Brown replied, it's going to study session in May. A Binder asked, is Aurora the first municipality to do this? M. Brown replied, yes and other municipalities are looking at doing this.

Action: Does the Committee support the Ordinance? Committee voted unanimously to support the Ordinance.

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**6. Integrated Water Master Plan (IWMP) Overview**

J. DeHerrera gave a presentation. D. Eason asked, what is Everst and Walker? J. DeHerrera replied, they are gravel pit storage reservoirs within the North Campus System. J. Campbell asked, how much do you get into fees down the road in the IWMP? J. DeHerrera replied, there will be a 20 year capital improvement plan. A. Binder asked, do we do any kind of projection or forecast on the non-functional turf and how to use that in the IWMP? M. Brown replied, some of the conservation goals is to come up with about 10% additional water savings and that's built into some of our planning in the IWMP.

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**7. Review Follow-up Questions Generated at this Meeting**

G. Baker will reach out to the city attorney regarding the Ordinance Section 3 regarding city employees aren't subject to fine and report back to the committee. City Attorney response: Section 3, penalty is intended to protect City employees from being prosecuted/subjected to the general penalty (\$2650 fine, and up to a year in jail) for mistakes in administering the City Code.

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**8. Confirm Next Meeting – Tuesday, April 12, 2022 Hybrid meeting Aspen room.**

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**10. Adjourn**

The meeting was adjourned at 7:12 p.m.

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Angie Binder, Chair  
Citizens' Water Advisory Committee

Adopted: \_\_\_\_\_

**TO:** Citizens' Water Advisory Committee

**THROUGH:** Marshall P. Brown, General Manager, Aurora Water  
Greg Baker, Manager of Public Relations  
Alex Davis, Deputy Director of Water Resources

**FROM:** Kathy Kitzmann, Water Resources Principal

**DATE:** April 12, 2022

**SUBJECT:** 2022 State Legislative Review

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The second regular session of the 73rd Colorado General Assembly convened on January 12<sup>th</sup> and is scheduled to adjourn on May 11<sup>th</sup>. At the time of this writing, the legislature is two-thirds of the way through the 2022 session and has introduced 542 bills plus 38 resolutions/memorials and counting. Aurora Water is currently tracking 37 introduced bills and aware of 5 conceptual bills in various stages of development (more detail in attached March 30<sup>th</sup> Legislative Tracking Sheet). Following are a few highlighted bills:

[HB22-1151](#) *Turf Replacement Program*. Aurora Water is in support of this bill that creates a turf replacement program within the Colorado Water Conservation Board to incentivize voluntary removal of nonessential irrigated turf on residential, commercial, and industrial properties across the state. There will be a \$4.0 million transfer from the General Fund to the newly created Turf Replacement Fund for use in FY2022-23 and FY2023-24. Local governments that already administer a turf replacement program will be eligible for matching grants from this program. Third party administrators can be used for areas without existing programs throughout the state.

[SB22-114](#) *Fire Suppression Pond Water Rights*. Aurora Water is in support of this bill that allows a county to apply to the State Division of Water Resources to designate ponds as fire suppression ponds. This bill provides a solution for critical fire suppression ponds that may be at risk of being drained for not having a water right or water augmentation source. In order to be designated, the pond must meet narrow criteria including existence prior to 1975, cannot create injury to an existing valid water right, completed analysis demonstrating the pond is critical to fire response, as well as other restrictions. Although this creates a water use exempt from the prior appropriation system, Aurora Water is supportive of keeping these small, but critical fire suppression ponds for efficient response to small fires and prevention of wildfires within Colorado's watersheds.

[HB22-1345](#) *Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS)*. Aurora Water is reviewing this recently introduced bill which aims to reduce PFAS contamination sources. Proponents of this bill worked with multiple stakeholders, including water and wastewater treatment providers, to revise the initial draft concepts. The bill requires manufacturers to notify the state of products that contain intentionally added PFAS and are sold or distributed in Colorado. The bill also phases out the sale or distribution of products that contain intentionally added PFAS chemicals.

After this 2022 legislative session ends, there will be the legislative Interim Water Resources Review Committee and Interim Wildfire Matters Review Committee that will focus on a few items to bring forth in the 2023 session. This summer and fall will also be a significant election season. Colorado's 2021 state redistricting concluded last November with final approved plans and maps available at <https://redistricting.colorado.gov/> . Elected offices on Colorado's 2022 Ballot will include:

- U.S. Senate 1 seat
- U.S. House all 8 seats
- Governor, Lt. Governor, Secretary of State, Treasurer, Attorney General
- State Senate 17 of 35 seats
- State House all 65 seats

Aurora Water also monitors state ballot initiatives and state court cases that may impair or enhance the ability to provide safe, dependable and sustainable water, sewer, and stormwater services for today and the future. Currently, there are no ballot initiatives of concern, but there is one court case that Aurora Water is following along with Colorado Water Congress and other water providers. *Hill v. Warsewa* is a fishing access dispute that was filed in 2018. The complaint included a claim that a portion of Arkansas River was the property of the State of Colorado and "to be held in trust for the public". Arguments revolve around a federal standard of navigability to river access and if the disputed section of river was used for commerce, such as beaver pelts or tree products/materials being floated, when Colorado became a state in 1876. A determination in favor of Public Trust may create a conflict with Colorado's Prior Appropriation Doctrine. Colorado Water Congress has additional information on both water related ballot initiatives and the *Hill v Warsewa* case at <https://www.cowatercongress.org/ballot-issues.html>.

### **Federal request - FY23 Congressionally Directed Spending Recommendations**

Colorado's federal delegation have the opportunity to submit Congressionally Directed Spending (CDS) requests for Fiscal Year 2023 requests for consideration to be a part of the federal budget. This process allows Senators and Representatives to request funding for community projects within their state to receive federal funds. The city is submitting several projects for consideration for a CDS. Aurora Water included a large waterline replacement, which is highlighted in the attached memo. Support letters are being gathered from our state delegation (sample also attached).

#### Attachments:

- 2022 State legislation tracking spreadsheet
- FY23 Congressionally Directed Spending Recommendations letter sample
- Proposed waterline replacement memo

<b>BILL NUMBER</b>	<b><a href="#">BILL TITLE (CO General Assembly Bill Search)</a></b>	<b><a href="#">AURORA WATER</a></b>	<b><a href="#">CML</a></b>	<b><a href="#">CWC</a></b>
	<b><a href="#">Senate Status Sheet</a></b>			
<a href="#">SJR22-002</a>	Water Projects Eligibility Lists	support if asked	support	support
<a href="#">SB22-002</a>	Resources For Volunteer Firefighters	monitor	support	
<a href="#">SB22-007</a>	Increase Wildfire Risk Mitigation Outreach Efforts	actively support	monitor	monitor
<a href="#">SB22-013</a>	Boards & Commisions	monitor	monitor	monitor
<a href="#">SB22-015</a>	Douglas County On Urban Drainage Flood Control District	support if asked	support	
<a href="#">SB22-028</a>	Groundwater Compact Compliance Fund	support if asked	support	support
<a href="#">SB22-029</a>	Investment Water Speculation	monitor	monitor	monitor
<a href="#">SB22-030</a>	Water Resources Review Committee To Include Agriculture	monitor	monitor	monitor
<a href="#">SB22-080</a>	Wildland Fire Investigations	monitor	monitor	
<a href="#">SB22-114</a>	Fire Suppression Ponds Water Rights	actively support	monitor	monitor
<a href="#">SB22-115</a>	Clarifying Terms Related To Landowner Liability	support if asked		monitor
<a href="#">SB22-126</a>	Prioritize South Platte Basin Storage Projects	support		oppose
<a href="#">SB22-131</a>	Protect Health of Pollinators and People	amend		monitor
<a href="#">SB22-138</a>	Reduce Greenhouse Gas Emissions in Colorado	monitor	neutral	
<a href="#">SB22-158</a>	Species Conservation Trust Fund	support if asked		support
<a href="#">SB22-169</a>	Sensitive Species Data & Public Records	monitor	monitor	
<a href="#">SB22-174</a>	Sunset Review Criteria	in review		
<a href="#">SB22-175</a>	Mobile Electronic Devices & Motor Vehicle Driving	in review	support	
	<b><a href="#">House Status Sheet</a></b>			
<a href="#">HB22-1007</a>	Assistance Landowner Wildfire Mitigation	monitor	support	monitor
<a href="#">HB22-1011</a>	Wildfire Mitigation Incentives for Local Government	actively support	support	monitor
<a href="#">HB22-1012</a>	Wildfire Mitigation and Recovery	monitor	support	monitor
<a href="#">HB22-1092</a>	Loans from Irrigation Districts to Landowners	monitor	monitor	monitor
<a href="#">HB22-1097</a>	Dissolution of Special Districts	monitor	support	monitor
<a href="#">HB22-1132</a>	Regulation & Services For Wildfire Mitigation	support if asked	monitor	
<a href="#">HB22-1148</a>	Wildfire Camera Pilot Program	monitor	monitor	monitor
<a href="#">HB22-1151</a>	Turf Replacement Program	actively support	no position	support
<a href="#">HB22-1152</a>	Prohibit Employer Adverse Action MJ Use	monitor	n/a	monitor
<a href="#">HB22-1166</a>	Incentives Promote CO Timber Industry	support if asked	oppose/amend	
<a href="#">HB22-1249</a>	Electric Grid Resilience & Reliability Roadmap	monitor	monitor	
<a href="#">HB22-1297</a>	Daylight Savings Time	monitor	no position	

<a href="#">HB22-1301</a>	Environmental Agricultural Facility As Agricultural Property	in review	monitor	monitor
<a href="#">HB22-1316</a>	CWCB Construction Fund Project	support if asked	support	monitor
<a href="#">HB22-1322</a>	Regulation of Water Quality in the State	in review	deliberating	monitor
<a href="#">HB22-1323</a>	Updates to CSFS Nursery	in review	monitor	
<a href="#">HB22-1329</a>	Long Bill (Budget)	in review	no position	
<a href="#">HB22-1345</a>	Perfluoroalkyl and Polyfluoroalkyl Chemicals	in review	monitor	
<a href="#">HB22-1348</a>	Oil & Gas Chemicals (includes PFAS)	in review	deliberating	
	<b>Bill drafts/concepts:</b>			
	Draft RIVR (Recreation Instream Values Reach)			
	Get the Lead Out of School Drinking Water			
	Water Conservation Differential Tap Fees			
	Biodiversity			
	Water Conservation Enterprise Grant Program (Bottle Bill)			
	<b>Color Coding:</b>			
	Passed, Governor Signed			
	Passed, Awaiting Signature			
	Failed, Postponed Indefinitely			



April 7, 2022

The Honorable Michael Bennet  
United States Senate  
261 Russell Senate Office Building  
Washington, DC 20510

RE: FY23 CDS Request – Original Aurora Waterline Replacement Project

Dear Senator Bennet,

I am writing in support of the City of Aurora’s FY23 Congressionally Directed Spending request for the *Original Aurora Waterline Replacement Project* that invests in the City's drinking water infrastructure and community resilience. The need for replacing and upgrading aging infrastructure is common in older communities as pipelines reach their end of designed use. The *Original Aurora Waterline Replacement Project* is located in North Aurora and Del Mar Parkway Neighborhoods that were developed in the 1950s. These neighborhoods have a higher percentage of residents who are 65+ with disabilities, a lower median home value and lower median income in comparison to other parts of the City.

The City of Aurora is proud to be one of the most diverse cities in the nation and is a minority-majority city, where the total population of the minority groups is larger than the white, non-Hispanic group. Thirty percent of Aurora residents claim a native language other than English and twenty percent of our population is foreign born. A large number of foreign-born residents from the Americas, Africa, and Asia call the northwest Aurora neighborhoods home.

The *Original Aurora Waterline Replacement Project* will replace and upgrade 13,260 feet of aging pipe. This replacement project will greatly reduce water service outages due to waterline breaks and will reduce health risks to the City. The City’s funding request of \$4 million will assist the City's public water system with keeping the City's service rates reasonable for these disadvantaged neighborhoods while aging infrastructure replacement costs continue to rise annually.

I strongly urge that Congress includes this Congressionally Directed Spending request for the *Original Aurora Waterline Replacement Project* that will assist to complete this project.

Sincerely,

**TO:** John Bruneau, Project Manager, P&E

**cc:** Mike Mills, Gary Edwards, Marc Tamburro, Dean Bedford

**THROUGH:** Swirvine Nyirenda, Manager, PS

**FROM:** Shiva Sapkota, Engineer, AM

**DATE:** 09/03/2021

**SUBJECT:** Asset Management 2023 Waterline Replacement Program Recommendation

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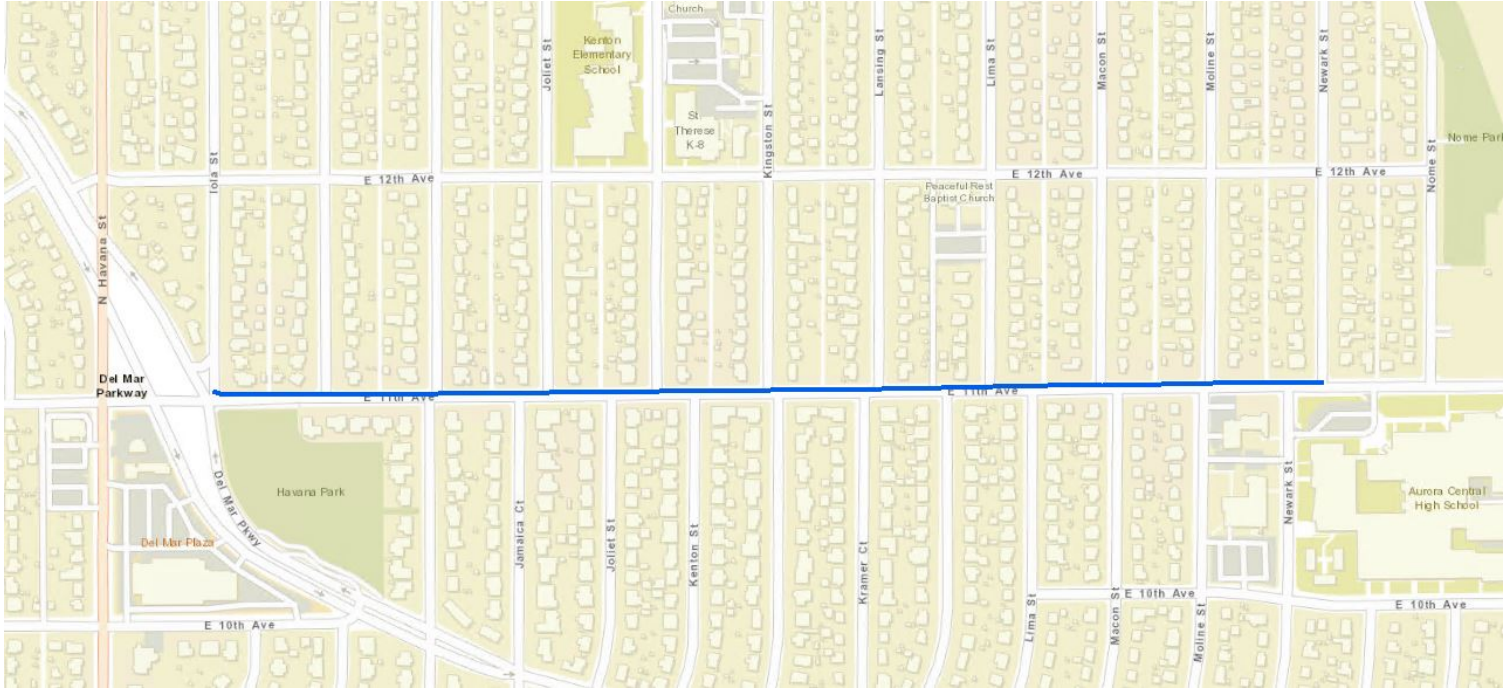
Water Asset Management in co-ordination with T&D Operations recommends the following replacement of approximately 13,260 ft of 6” and 8” Cast Iron Pipe (CIP) in 3 different locations. This recommendation is based on an elevated break history and failure risks.

**2023 Waterline Replacement Recommendation – Vicinity Map**



**Replacement Area 1 – 11<sup>th</sup> Ave (Del Mar Pkwy to Newark St) – 3,288 ft**

This section contains 6” Cast Iron Pipe built in the 1950s. This line have/had multiple breaks over the years. CIP pipes are the oldest water pipes in Aurora Water’s system and historic data suggests higher break rates on CIP pipes. This pipeline is in a vicinity of a school and other critical facilities.



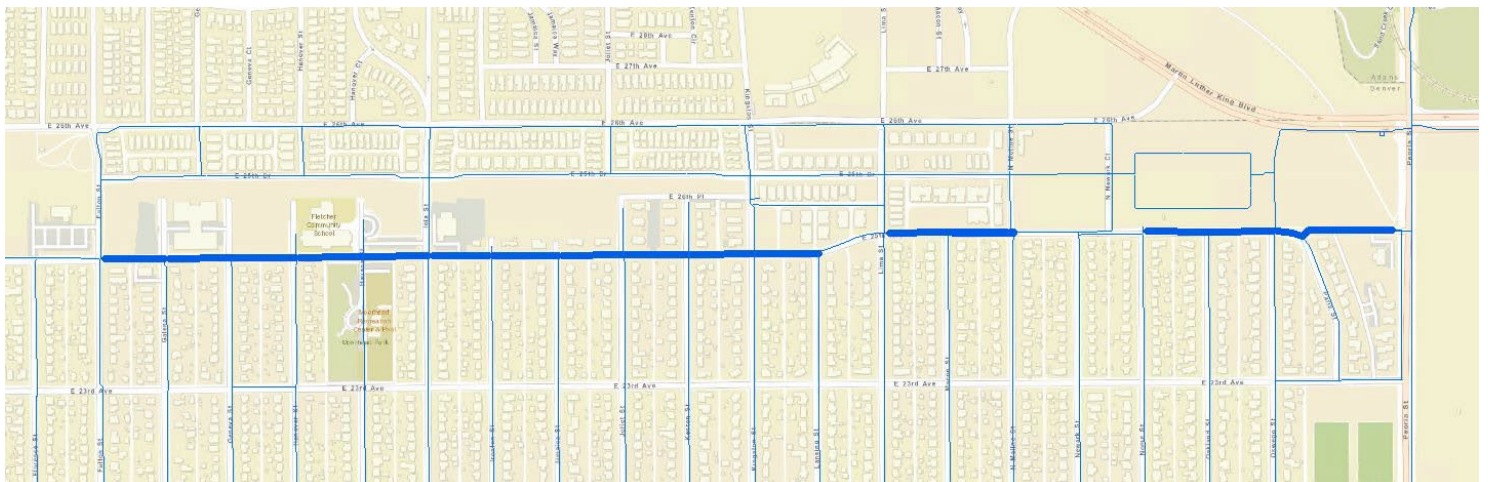
### Replacement Area 2 – Montview Blvd (From Havana to Peoria) – 4,221 ft

This is a 6” CIP line that was built in the 1950s. It runs through a busy road and next to a school among other critical and commercial facilities. This line had multiple complicated breaks in the past. Each of those breaks resulted in significant resources due to the location, proximity to other infrastructure and repair complications. Aurora Water T&D team has replaced several sticks of pipeline in this section due to repeated past failures.



### Replacement Area 3 – 25<sup>th</sup> Ave (From Havana to Peoria) – 5,751 ft

This is an 8” CIP line that was built in the 1950s. It runs through a busy road and in vicinity of commercial properties as well as new development. Aurora Water T&D team has replaced several sticks of pipeline in this section due to repeated past failures. Records obtained from past break show severe pipeline damage due to corrosion.



**TO:** Citizens' Water Advisory Committee

**THROUGH:** Marshall Brown, General Manager, Aurora Water  
Alexandra Davis, Deputy Director of Water Resources, Aurora Water  
Rich Vidmar, IBES Water Resources Supervisor, Aurora Water

**FROM:** Lauren Maggert, Water Resources Project Manager, Aurora Water

**DATE:** April 12, 2022

**SUBJECT:** Aurora Water Drought Response Presentation

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**Purpose:**

Aurora Water initiated the Drought Action Team in early 2021 with the objective of bringing together staff from across divisions to develop recommendations and propose actions to mitigate drought risks. The Drought Action Team vetted over 40 mitigation options and developed a feasible list of options to implement. The team also provided recommendations on how to improve Aurora's future drought planning and response. The team put together a 2021 Drought Action Team report that summarized the 2021 drought conditions, Aurora's response, as well as detailed discussion of the team's recommendations. Drought conditions have improved since 2021, but the Drought Action Team continues to meet on a regular basis to monitor conditions and track progress on their recommended projects and actions.

**Action Required:**

No action required. Informational item only.

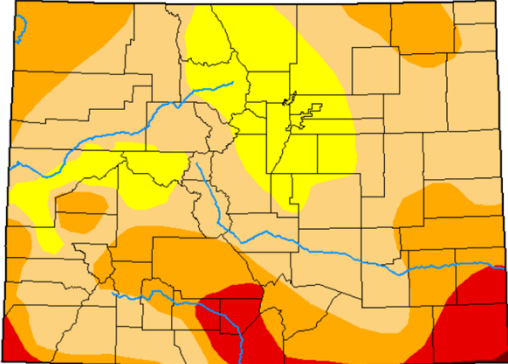

# AURORA WATER DROUGHT RESPONSE

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*Lauren Nance Maggert  
Citizen Water Advisory Committee  
April 12, 2022*

**U.S. Drought Monitor**  
**Colorado**


**March 22, 2022**  
*(Released Thursday, Mar. 24, 2022)*  
Valid 8 a.m. EDT

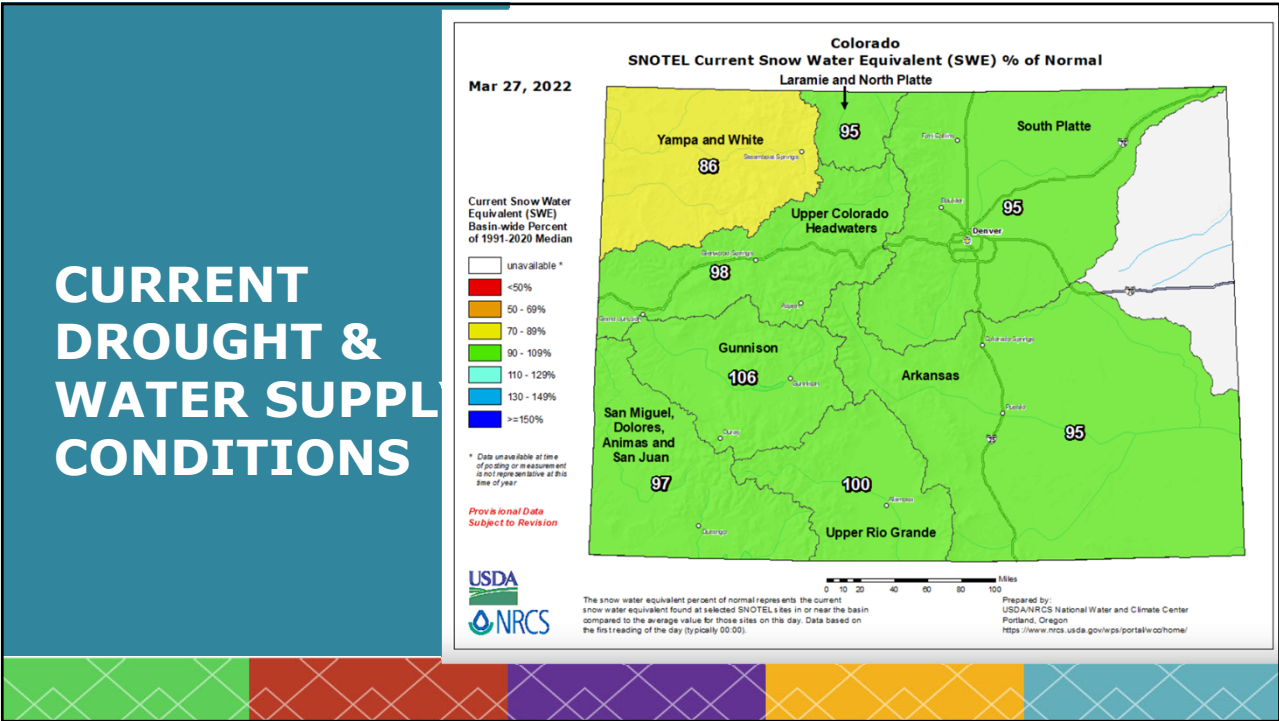
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# AGENDA

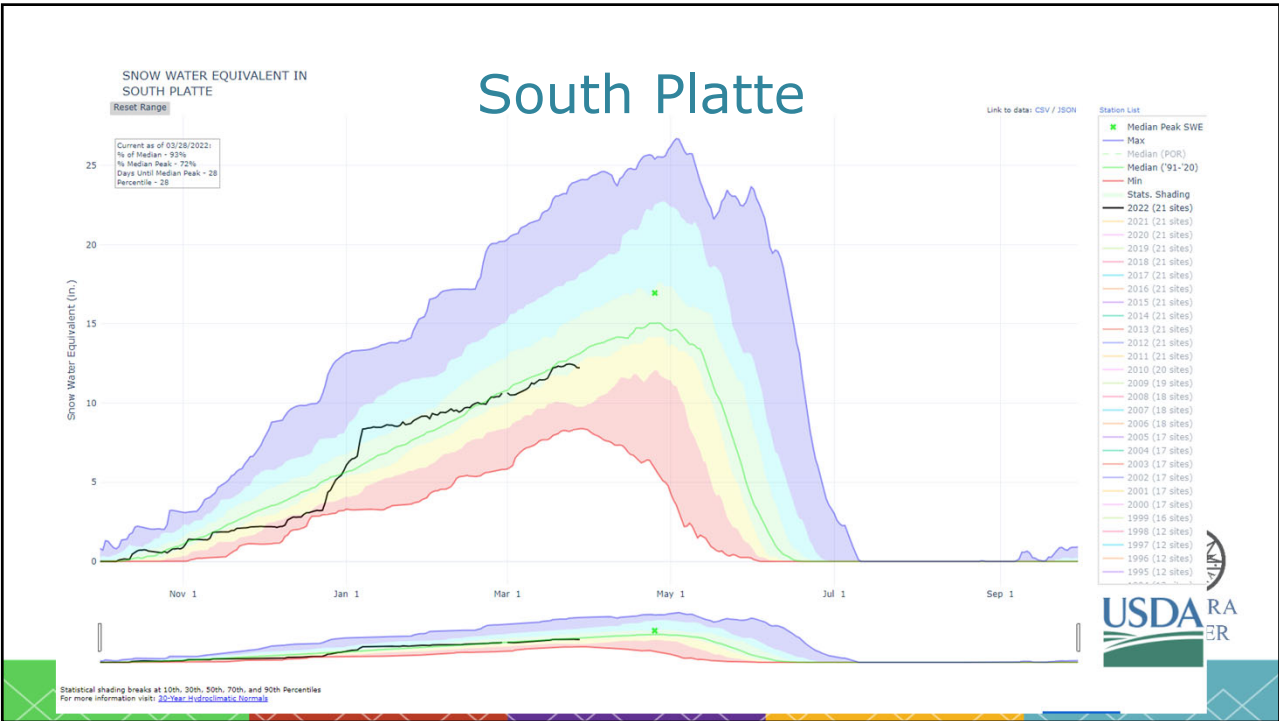
- Current Drought and Water Supply Conditions
- Aurora’s Drought Action Team
  - 2021 Accomplishments and current priorities



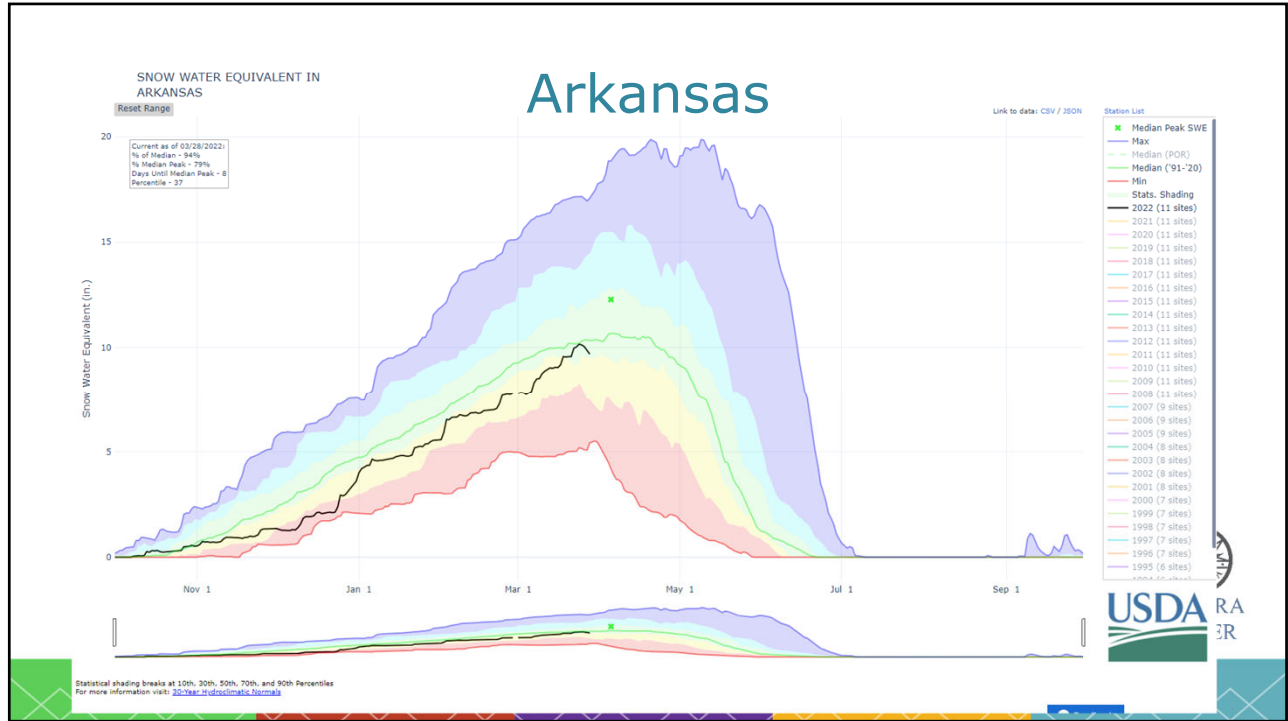
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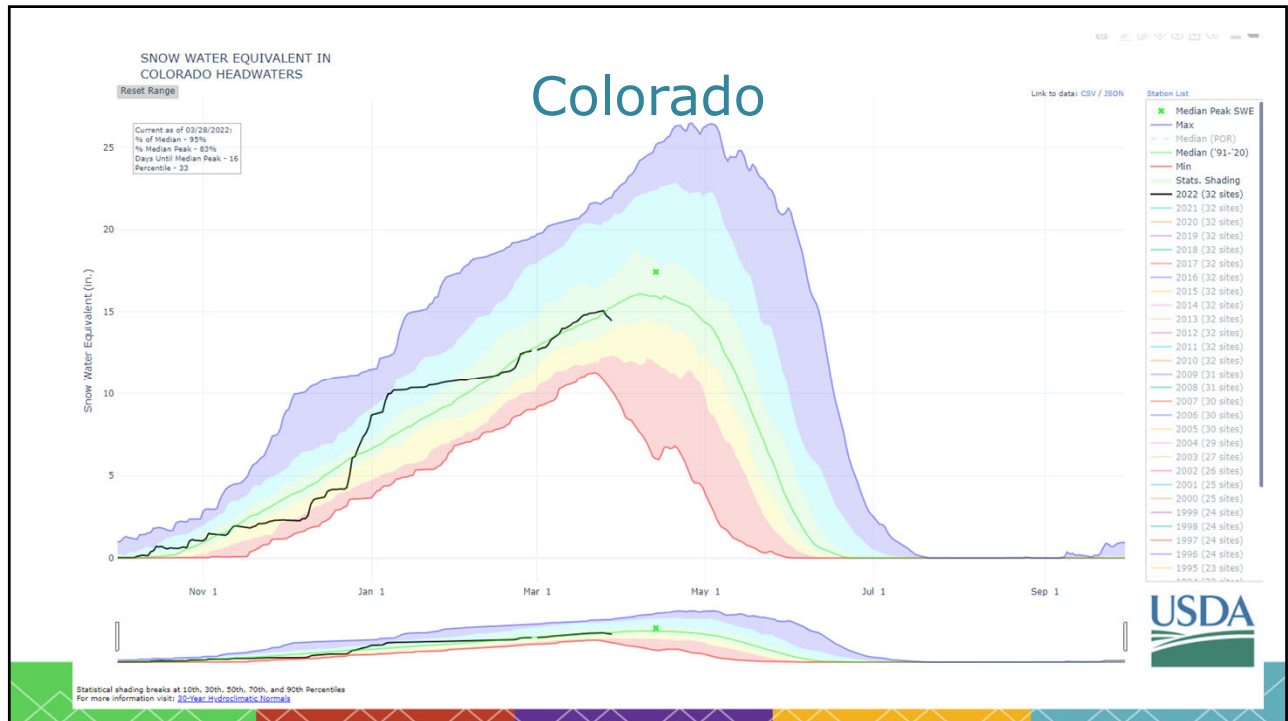
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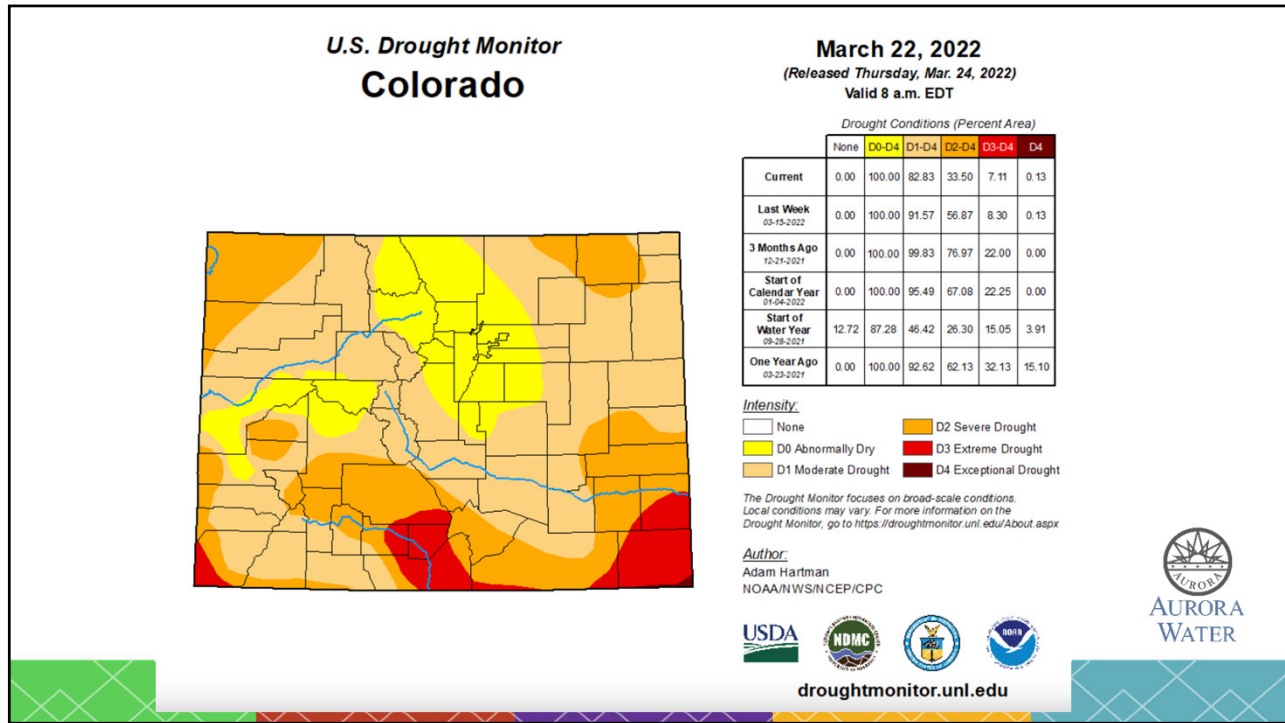
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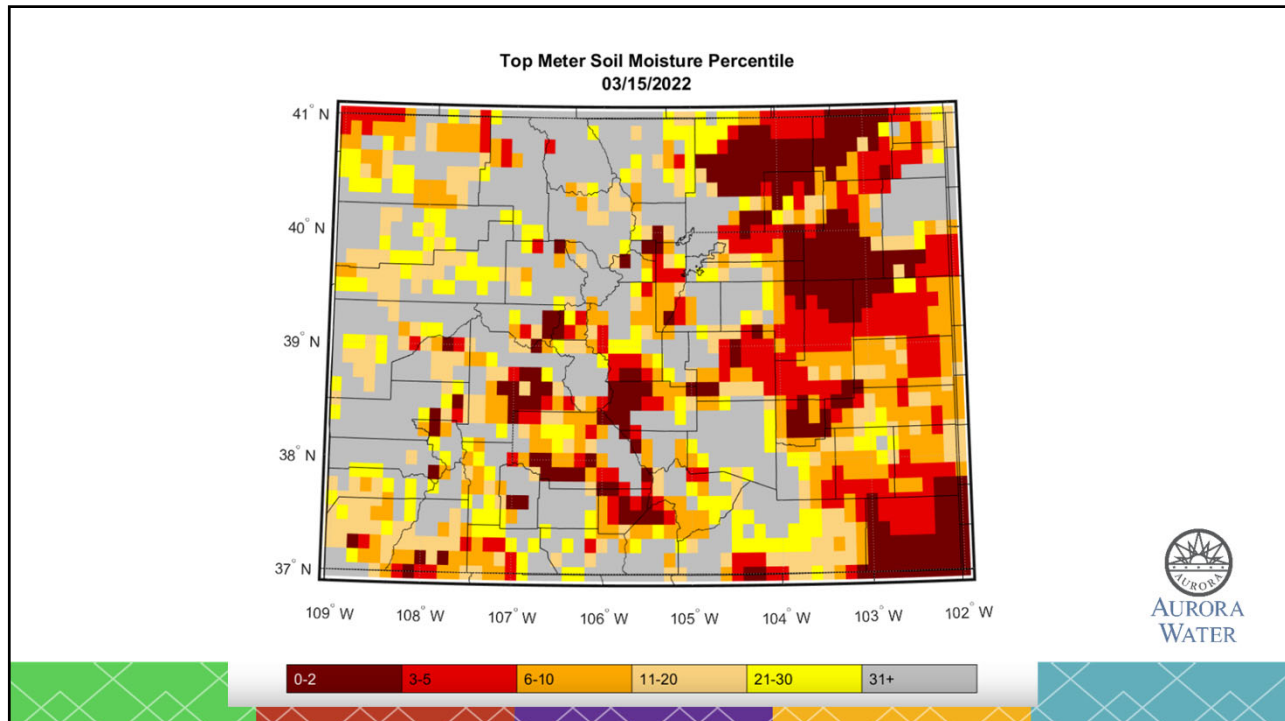
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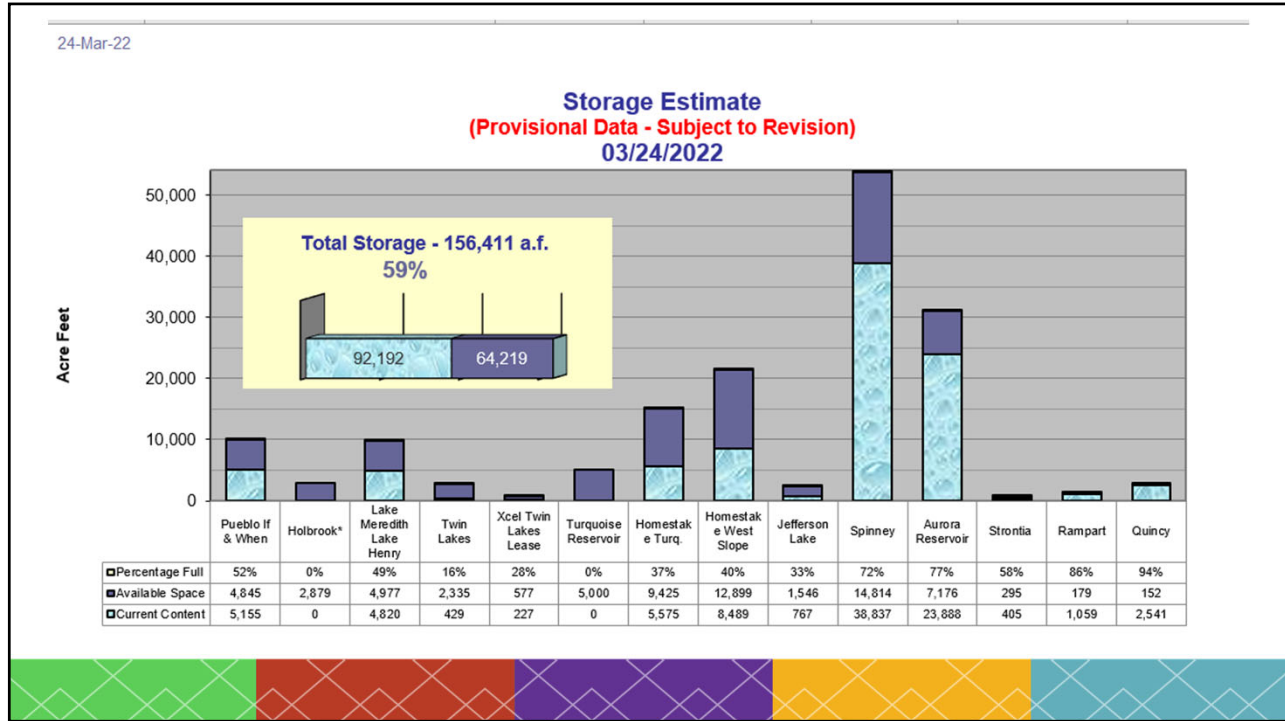




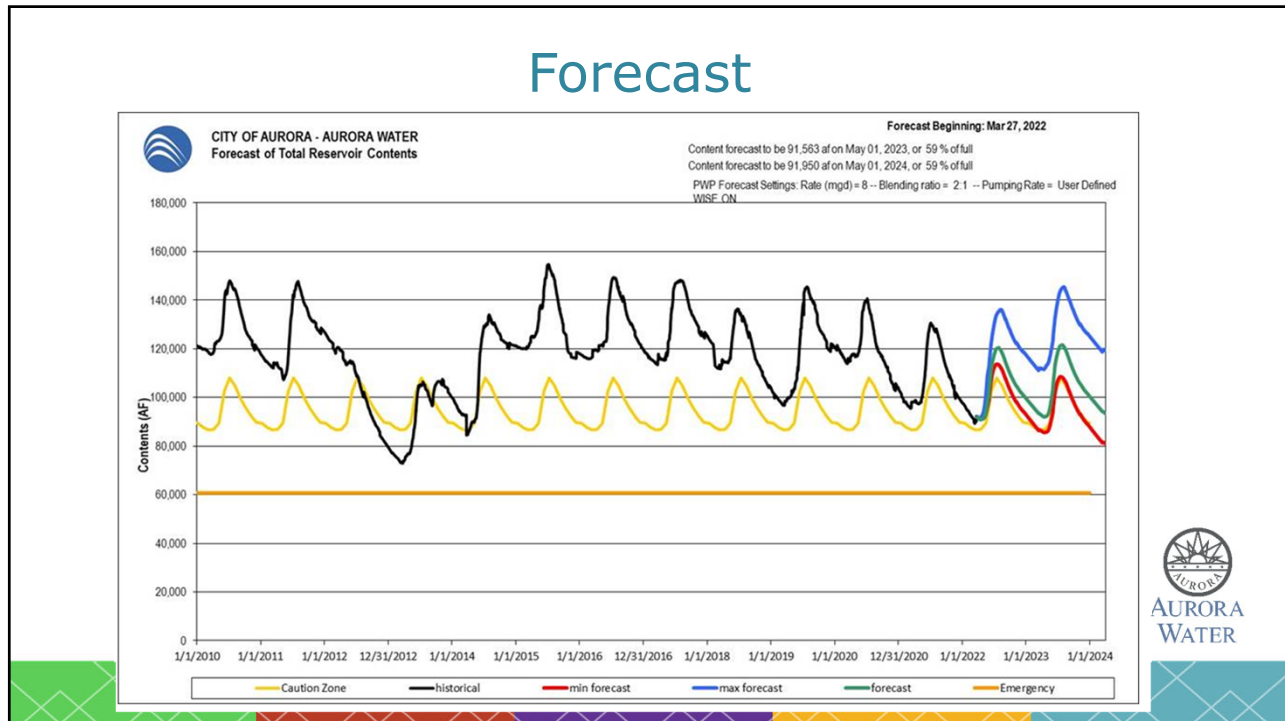
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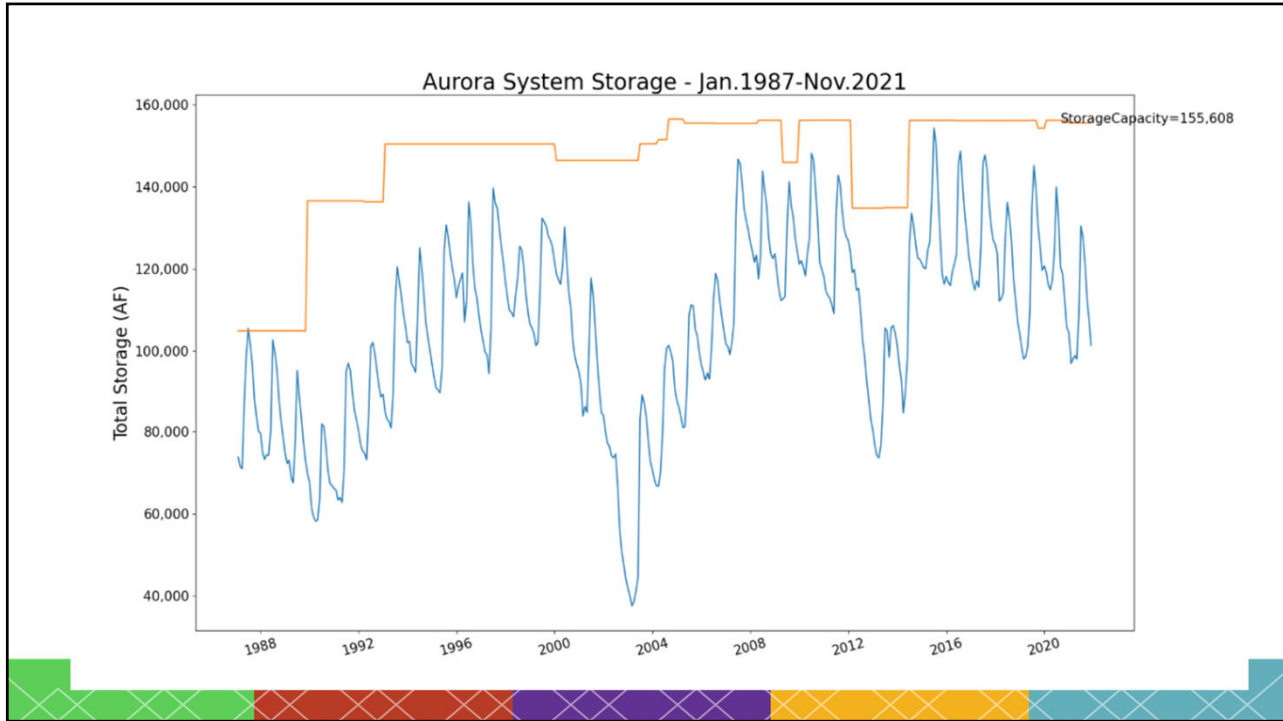
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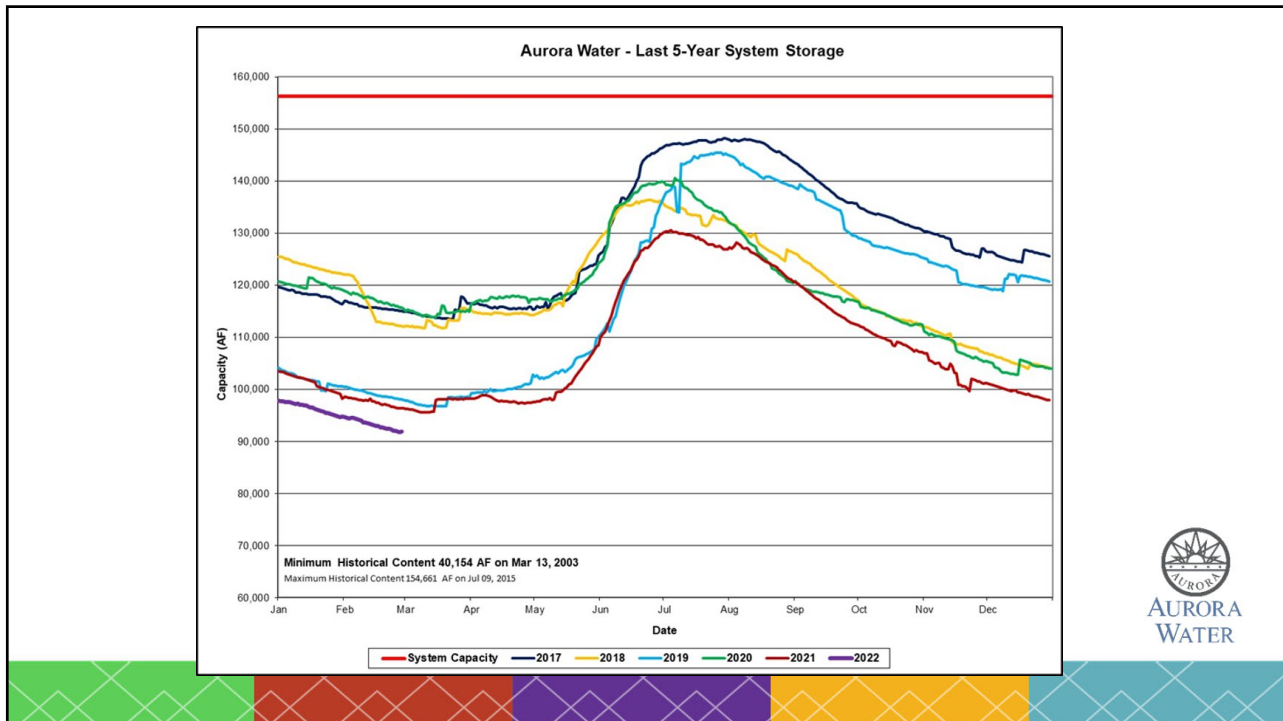
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**DROUGHT ACTION TEAM**




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## Aurora Water’s Drought Action Team

**Objective:** Bring together staff from across Aurora Water to develop recommendations and propose actions to mitigate drought risks.

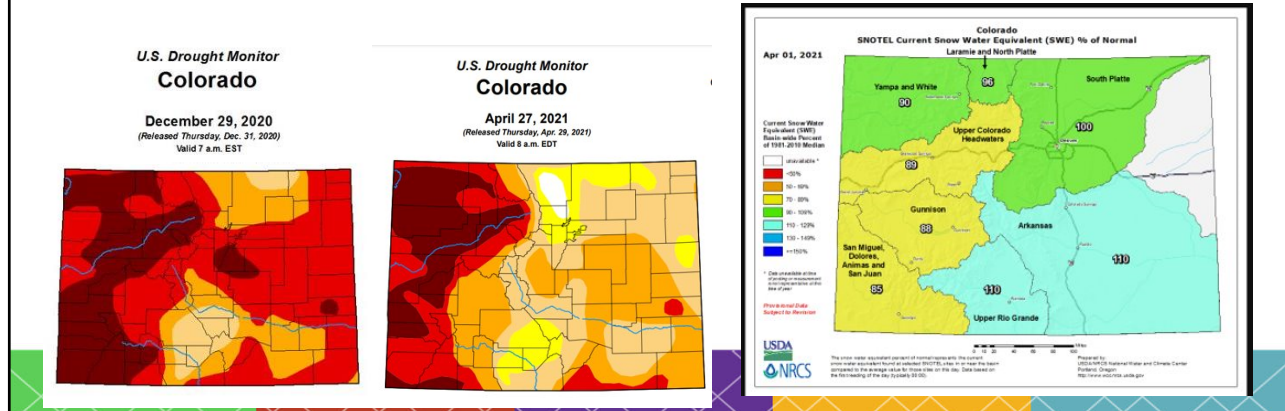
**Who:** 26 team members including Deputy Directors, key personnel and technical staff from each division



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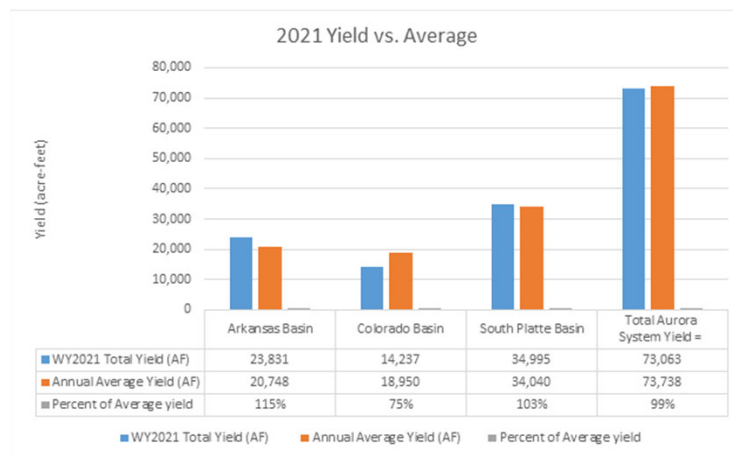
# Drought Indicator Monitoring

- Provided regular drought update presentations at bi-monthly DAT meetings
- The DAT did not recommend implementing watering restrictions in 2021 due to average snowpack and forecasted average yield.



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# 2021 Yield = 99% of Average



\* The long-term average was calculated as the average yield from 2002 through 2020



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# Drought Mitigation Options

- DAT vetted over 40 Drought Mitigation Option to narrow down feasible options

Drought Mitigation Options										
By: Lauren Hanco, 5/17/2021										
Option ID	Type of Project	Option Name	Brief Description	POC Responsible for Developing Option	Aurora Department Responsible for Implementation	Anticipated Capacity / Yield	Cost Estimate	Implementation Duration/ Date available	Operational Notes	Status
1	Groundwater	Groundwater Master Plan	Master plan to figure out how to incorporate Denver Basin groundwater as a drought-resilient supply. It is recommended that the master plan address long-term operations and maintenance of Aurora's existing Denver Basin wells and how future wells would integrate into Aurora's water supply system. A groundwater operations and maintenance plan would help determine how to approach utilization of these Denver Basin wells on an on-going basis, and how to balance the short-term cost of operating the wells with the long-term need of a drought-hardening water supply.	Swintine	Planning & Engineering	N/A	\$100K	Plan for 2023 Duration 1 yr	3/10/2021 - Memo to Planning Eng Groundwater Study	Planning & Engineering to put together RFP in 2022. Recommended to be completed in the next 1-3 years
2	Groundwater	Denver Basin Well Assessment	Assess the viability of using Aurora's existing Denver Basin wells to supplement the City's water supplies during extended periods of drought. Scope: review each well's design & operational history, condition assessment of each well's casing, production string, associated appurtenances, and electrical and control systems. Aquifer performance testing, water quality testing, recommendations regarding each well's suitability for the intended purpose, and recommendations regarding any necessary well or system improvements.	Swintine	Planning & Engineering	N/A	\$900K	Plan for 2022 Duration 1-2 yrs	3/10/2021 - Memo to Planning Eng Groundwater Study	Planning & Engineering to put together RFP in 2022. Recommended completing in the next 1-2 years
3	Groundwater	Rehab Existing Wells: Seneca, Quincy, Cherry Creek	Seneca Wells: Drill from Denver Basin, within the Aquapine basin. There are 3 existing wells located by Aurora Reservoir using non-tributary groundwater. Need complete overhaul within the well-rehab, controls, scales, etc. Well A-9 is in legal limbo. Quincy Wells: 1 well: Rehab Laramie Fav-Wells well at Quincy. Just casing and screen rehab. Located near Quincy Reservoir. Need pipeline, pumps, electronics, and connection to Quincy. Cherry Cr. Deep Wells: Cherry Creek Deep (head near controls, but already being planned). DA-1 inoperable (will require rehab to become operational). Other wells available, but for unknown duration (will need rehab). LHM-1 produces ~250 GPD.	Ted H. Swintine Joshua Godwin Matt Allgood Sherry J.	Operations / Source of Supply P&E	1100-400 AFY assuming 100-400 AFY/well Seneca - 489 AFY Quincy Cr - 400 AFY/well	\$900K (\$1.3M) - 3-6 months	3-6 months	Seneca: 5100K x 5 wells + 5500K + 5100K VFDs + 5100K Controls + 250K Quickest Win: Water Quality implications, 550K acid & scrubbing, just existing equipment back in hole. 5100K acid scrubbing, replacement of all groundwater equipment Quincy: Build infrastructure to connect into Quincy Water Quality implications Cherry: Wells restricted to going to Griswold. Water Quality implications. Griswold blending ratio constrains pumping. 5100K 4 wells + 5400K for total rehab.	Wait until completion of Denver Basin Well Assessment, where this option will be evaluated
4	Groundwater	Rehab - Seneca Griswold Well	1 well: Rehab Laramie Fav-Wells well at Griswold. Just casing and screen rehab. Located south of Cherry Cr. Spillway. Need pipeline, pumps, electronics	Joshua Godwin Matt Allgood	Source of Supply P&E	200-400 AFY	~ 3-6 months	3-6 months	Planned to be abandoned 5/1 of work at Griswold. Water Quality implications	Not a feasible option. Well to be abandoned.
5	Groundwater	Drill New Wells	Drill new Denver Basin (non-tributary) wells throughout the City. - Quincy - New well near Quincy, which already has transformer and meter set on left abutment of Quincy Reservoir. - Griswold - New well near Griswold, which already has a transformer set. - Cherry Cr - add additional deep wells and utilize existing pipeline to Griswold - Near Distribution Storage well where water could be directly introduced into the distribution system after chlorination. Other - Aurora Water already has the legal right to use nontributary groundwater beneath city limits.	Joshua Godwin Matt Allgood Sherry J. Swintine	Operations / Source of Supply P&E	Varies Griswold - 500AF/well Cherry Cr - 500-800AF/well	\$1-\$1.5M/well est. equipment cost	~ 6-8 months	Implementation Time long - to complete engineering analysis, permitting, and construction -Water Quality implications should be considered -Costs will be higher and implementation longer during drought -Hydraulic analysis recommended to better understand drought implications, esp for Cherry Cr. -New system controls recommended for Cherry Cr to allow pumping for a longer duration	Wait - until completion of the Groundwater Master Plan to determine how to incorporate new wells into Aurora's water supply system.



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# Drought Response Options Implemented & Recommended

Drought Option	Water Available (AFY)	Option Status	Implementation Timeline
Total Dissolved Solids (TDS) Blending Change at Binney WTP	0, but reduced portion of mountain supply blend water by 7-17% Blend TDS target changed from 400ppm up to 480ppm.	<u>Approved &amp; Implemented</u>	Began early 2021, and still in place in 2022
Denver Basin Groundwater Assessment	TBD, but assuming 11 wells could produce between 100-400 AFY, the yield would range 1,100 - 4,400 AFY	<u>Recommendation memo sent to Planning &amp; Engineering on 4/2/2021</u>	Start 2022, take 2-3 years Well rehab dependent on well assessment recommendations
Denver Basin GW Master Plan	TBD	Not Started	After IWMP2 and budget dependent. ~ 2024
Super Ditch Lease from the Lower Arkansas Basin	5,000-10,000 AFY (3 in 10 years)	Water Resources staff & external counsel developing term-sheet for legal agreement with Super Ditch	2022 or 2023, pending execution of legal agreement
Patty Water lease from Denver Water	300 AFY of additional supply at Spinney or direct potable connection	Not started. Water Resources & internal legal counsel to develop term-sheet for IGA. Currently delayed due to shortage of legal staff.	2022 or 2023, pending execution of legal agreement



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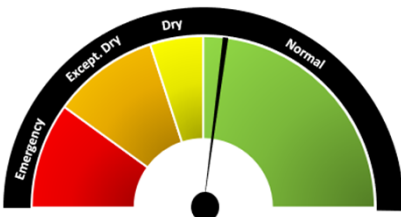
## DAT Recommendations to Improve Drought Planning & Response

Recommendation	Description	Option Status as of March 2022	Implementation Timeline
Forecast Model Update and Training	Update forecast model, train staff, revise forecast to use snowpack data, and to match Water Management Plan triggers.	Completed	Completed Feb 2022.
Forecast Tool RFI	Request information about forecast models and/or tools to determine whether to develop something new.	Not started	Start Summer 2022, complete < 1 year
Communication Plan	Communication plan for internal and external stakeholders regarding drought and water shortage.	<u>Draft started</u>	In progress, complete by end of 2022
Schedule 3 DAT meetings annually	Discuss water supply conditions, drought conditions, project plans & schedules, and review past demand and yields	Implemented 2021, and will be scheduled for 2022	Ongoing, DAT to meet 3x year: early April, late August, early November
Water Shortage Indicators	Indicators to define drought and water shortage conditions	Not Started, to be task as part of Drought Management Plan project	Initiate with Drought Management Plan project
Drought Management Plan	Internal plan to outline drought indicators, when to activate DAT, drought response options with implementation plan	On Hold	Initiate after completion of IWMP2

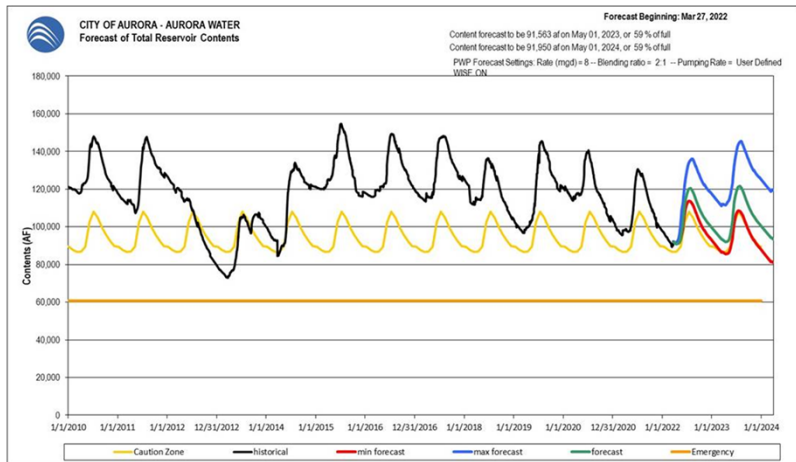


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## Forecast Model



Drought Trigger from Storage + Projected Inflow



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# QUESTIONS



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**TO:** Citizens' Water Advisory Committee  
**THROUGH:** Marshall Brown, General Manager, Aurora Water  
**FROM:** Greg Baker, Manager of Public Relations, Aurora Water  
**DATE:** April 12, 2022  
**SUBJECT:** Water Management Plan overview

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**Purpose:**

The Aurora Water Management Plan (WMP) provides a framework for Aurora's water demand reductions in the event of drought or other water emergencies. This plan identifies supply and demand triggers that would require the implementation of drought stages. These stages define day per week watering restrictions and, at certain levels, result in rate surcharges as a means of reducing water demand across all customer classes. The WMP primarily impacts outdoor water use and is implemented by City Council through a "Water Availability" Resolution. This plan supports the outcome of the Drought Action Team's recommendations.

**Background:**



Water Management Plans have been in place in Aurora since 2003. From 2004 to 2012, the plan was revised and presented to council for approval on an annual basis. In 2013, an on-going WMP was approved that is active until an amendment is required. At the time of approval, the City Council requested that Aurora Water simplify the plan's language and presentation. Based on this request, as well as lessons learned from a drought from 2012 to 2013, Aurora Water presented a WMP to be in effect beginning in 2017 that reduced the water availability stages from six to four. This resulted in the removal of several intermediate stages that projected minimal water savings, yet required substantial outreach.

**Action Required:**

No action required. Informational item only.

# Water Management Plan



**Greg Baker**  
Public Relations Manager  
Aurora Water



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## Purpose

The purpose of the Aurora Water Management Plan is to provide a framework for the City of Aurora’s water demand reductions in the event of drought or other water emergencies.



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## Authorization

### Aurora City Code 138-223 (b)

- (2) The allowable citywide outdoor allocation shall be determined by city council and is a function of the reservoir levels, usage, and the projected yield of the water supply system and will be described in the current water management plan.
- (3) The water management plan shall refer to the rules and regulations established by the director of water regarding water allocation, usage restrictions, and conservation adopted pursuant to section 2-3.



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## Water Management Plan History

- Pre-2003
  - Reactive measures to drought & system emergencies
- 2002-03
  - Outdoor Water Use Program
  - Series of reactive restrictions
- 2004 – 2012
  - Annual Water Management Plan
- 2013 – 2016
  - On-going Water Management Plan
  - Six stages
- 2017 – Present
  - Reduced stages for six to four
  - Direction from Council – Simplify the plan



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## Water Management Plan Implementation

- “Water Availability” Resolution from City Council
- Use of “Water Availability” Stages
  - Limits outdoor water use only - Irrigation primarily
    - Day per week restrictions
    - Enforceable through fines attached to water bill
  - Can result in surcharges to rates



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## Demand Reduction

- Assumption
  - Days per week restrictions result in reduced outdoor use without need for rate surcharges
- Lesson learned in 2013
  - Many residents watered 2 day/week, but increased watering time per zone to compensate
  - Increased water wasting calls due to inefficient irrigation
  - Minimal water use reductions



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## Water Management Plan Implementation

- Current WMP Four stages
  - Normal – 3 day per week, non-fixed
  - Stage I – 2 day week, fixed days, surcharge, 20% reduction
  - Stage II – 1 day week, fixed day, surcharge, 50% reduction
  - Stage III – No outdoor water use, surcharge, 100% reduction
- Watering Variance Program for large properties



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## Triggers

- Previously based on complex formula including reservoir levels, expected yield and demands
  - Public messaging challenging
- Now based on projected months of supply based on current demands



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## Current Triggers

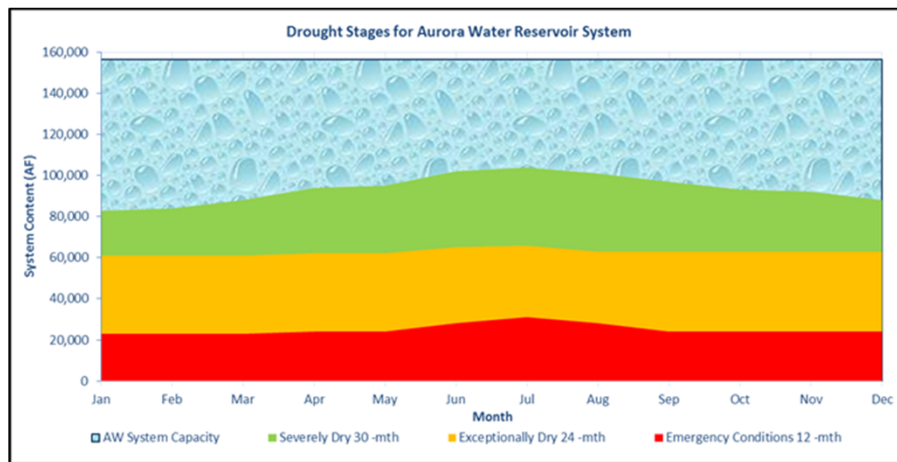
Water Availability Stage Conditions and Demand Reduction Recommendation				
Water Availability Stage	NORMAL	Stage I SEVERELY DRY	Stage II EXCEPTIONALLY DRY	Stage III EMERGENCY CONDITIONS
Trigger - Months of supply based on current demand	Above 30 months	30-25 months	24-13	12 months or less
Demand Reduction Recommendation (outdoor use only)	0%	20%	50%	100%



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## Current Triggers

Example based on 2015 reservoir levels



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# Water Management Plan

## Delineate restrictions by customer class

Water Management Plan - Program Elements				
ELEMENT	NORMAL	SEVERELY DRY Stage I	EXCEPTIONALLY DRY Stage II	EMERGENCY CONDITIONS Stage III
<b>Residential (Single-Family, Multi-Family)</b>				
Turf Lawns  Irrigation of existing lawns (in place prior to May 1) is permitted throughout the year unless restricted by Water Availability Resolution.	Irrigation of existing lawns, in place prior to May 1, is not to exceed 3 days per week from May 1 to Sept 30. No watering is permitted between 10 am and 6 pm from May 1 to September 30.	Irrigation of existing lawns, in place prior to May 1, is allowed on a 2 day per week schedule to be based on the home address (even/odd). No watering is permitted between 10 am and 6 pm from May 1 to September 30.	Allowed on 1 day/wk schedule based on address (even/odd). No watering is permitted between 10 am and 6 pm from May 1 to September 30.	No irrigation of lawns.
Annuals (flowers), Home Vegetable Gardens, Trees, Shrubs and Perennials  <i>Gardens, when properly managed, typically require 50% less water than cool weather turf.</i>	May be watered by automatic system on any day, and by hand at any time. No automatic system irrigation from 10 am and 6 pm between May 1 and September 30.	May be watered by automatic system on any day, and by hand at any time. No automatic system irrigation between 10 am and 6 pm from May 1 and September 30.	May be watered by hand, drip, deep root mechanical bubblers or subsurface irrigation only.	No irrigation of plant material.
Car Washing at Home	Allowed with shut off nozzle and bucket.			Not allowed



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# Questions?



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