

CITIZENS' WATER ADVISORY COMMITTEE (CWAC) AGENDA

February 9, 2021, 6:00 p.m.

Webex Link:

<https://auroragov.webex.com/auroragov/j.php?MTID=mc7ad3b2cf90a63e77057ae3d0a1c9237>

Public Participation through call in number (listen only)

1-720-650-7664

Access code: 187 859 8957

Members: Janet Marlow-Chair, Tom Coker-Vice Chair, Angie Binder, Jay Campbell, Richard Eason, William Gondrez, David Patterson

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|-----|--|-----------------|-----------|
| 1. | Approval of Minutes – January 12, 2021 | 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. | 4 th Quarter Financial Update | Jo Ann Giddings | 6:20 p.m. |
| 6. | Service Line Warranties follow-up discussion | Marshall Brown/ | 6:35 p.m. |
| 7. | Quincy Reservoir Comprehensive Analysis Presentation | James DeHerrera | 6:50p.m. |
| 8. | Aurora Water Drought Response | Lauren Nance | 7:10 p.m. |
| 9. | Colorado's Interstate Compacts | Alex Davis | 7:30 p.m. |
| 10. | Review Follow-Up Questions Generated at this Meeting | Chair | 7:50 p.m. |
| 11. | Reminder of Committee Orientation, March 9, 2021
Confirm Next Meeting – Tuesday, April 13, 2021 | Chair | 7:55 p.m. |
| 12. | Adjourn | Chair | 8:00 p.m. |

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CITIZENS' WATER ADVISORY COMMITTEE (CWAC) MINUTES

January 12, 2021, 6:00 p.m.

Webex

Public Participation through call in number (listen only)

1-720-650-7664

Access code: 146 834 1694

Members Present: Janet Marlow (Chair), Angie Binder (Vice-Chair), Tom Coker, Richard Eason, David Patterson, William Gondrez

Absent: Jay Campbell.

Staff Present: Nancy Freed, Marshall Brown, Greg Baker, Jo Ann Giddings, Elizabeth Roberts, Rory Franklin, Brian Davis, Mike McHugh, Mary Dawson, Jessica Roode

Visitors Present: Brandy DeLange, Mike Spatter

The meeting was called to order at 6:02 p.m.

1. Elections – 2021 Chair and Vice-Chair

Nominated and approved J. Marlow for CWAC Chair.

Nominated and approved A. Binder for CWAC Vice Chair.

2. Approval of Minutes – November 10, 2020

The November 10, 2020 minutes were approved.

3. Introductions/Public Invited to be Heard

Introductions of the attending committee meeting participants were made for new CWAC members, with terms beginning February 15, 2021: Brandy DeLange and Mike Spatter.

There were no members of the public present for the meeting.

4. New/Old Business

None.

5. Communications Update

G. Baker stated that Aurora Water is currently waiting for responses back from the forest service about a permit to complete technical work at Whitney Reservoir and the State Engineer's Office to hear back about both in the next couple of weeks.

6. Service Line Warranties

M. Brown began by introducing B. Davis, a representative from HomeServe USA, to the committee and outlined the areas of service line responsibility for the city versus the customer when it comes to repairs on home water distribution and sewage systems. He stated that for those stretches of the water lines that are not supported by the City, there are companies which offer warranty service options for the public. Per M. Brown, Aurora Water has informed the public periodically of the existence of such coverage plans. These plans can be accessed by the customer by going directly to service provider or in the case of some companies such as HomeServe, through a partnership with local municipalities, cities, and water providers which affords a lower cost plan for their service areas.

M. Brown requested that the committee consider the information provided in the presentation in order to provide feedback on a possible partnership with a company such as HomeServe or the continuation of the current process of public notification about the services.

B. Davis presented information on the National League of Cities (NLC) service line warranty program. He highlighted the lower cost plan the public would receive with a city partnership, the coverage limit and the lack of annual or lifetime coverage limits, deductibles and service fees, though there was an \$8,500 per incident limit. The work would be completed by licensed technicians from a pool of pre-vetted and selected local contractors. B. Davis advised that a partnership with the City of Aurora would entail two to four mailings a year from the City of Aurora to Aurora residents. In the City of Aurora envelope would be a letter from the City stating their participation in the voluntary HomeServe NLC warrant program and a business reply card for HomeServe. All mailing costs would be covered by HomeServe. A low-income assistance escrow fund would be established and available for Aurora residents for purposes such as the payment of water or repair bills.

A. Binder asked, how does the program work in multi-family properties?

B. Davis responded, if the residence has a dedicated water and sewer line the service is available. In the case of condominiums or apartment complexes there is not a product available to provide coverage.

R. Eason asked, if in-home plumbing was included in the coverage?

B. Davis advised, the coverage can be included if the customer would like it included in their service package.

J. Marlow asked, is there a contract the customer would need to sign to be a part of the coverage?

B. Davis stated, there is no contract. The customer can start and stop service at any time and there are no pre-existing condition clauses. In addition, when a household signs-up for service, there is an initial thirty day wait time before coverage begins.

G. Baker asked, how do you conduct marketing for this product and what is expected from the partner cities?

B. Davis advised, that they would request a mailing list of the city's owner-occupied addresses that would be utilized for mailings. If a listing was not available, HomeServe would be able to garner the information from other sources. Basic marketing is approximately three to four letters per year and would include the City of Aurora envelop, a note card and a HomeServe offer letter. In addition, HomeServe would provide any requested materials for press releases or press conference.

J. Marlow, is the service offered as a stand-alone coverage without a connection to a city?

B. Davis responded, yes, it is offered separately. The difference would be seen in the cost of the coverage with the stand-alone agreement being about double the cost of a City participant agreements due to economy of scale.

R. Eason asked, who would control how the escrow fund would be used?

B. Davis stated that its completely customizable. HomeServe would make the City aware of the amount of money available in the fund each month and the City would decide who their point of contact would be for the account and where those funds would be allocated. The contact would advise HomeServe where the money needed to go, and they would pay that company the determined amount.

D. Patterson asked, does the pricing policy stratify depending upon the number of individuals who participate?

B. Davis responded, that pricing is not dependent upon the number of participants and there is no threshold that needs to be met. Cost is based upon the age of a city's existing infrastructure.

R. Eason asked, do we know what the average street cut costs?

N. Freed stated, that they could work with Public Works to get the information and provide it at later meeting.

M. Brown also advised, that it would be a very broad range that is based upon the extent of a cut that would need to be made into the street.

R. Eason asked, would the coverage include the cost of a street cut?

B. Davis stated, yes.

7. Watersheds/Forest Health

M. McHugh and M. Dawson presented on Aurora's watershed health and public education programs.

Per M. McHugh, Aurora's watershed collection system is comprised of five areas that stretch across the South Platte, Arkansas and Colorado river basins and into three national forests, they

are: Prairie Waters, the Colorado River, Upper Arkansas River, Upper South Platte River, and the Lower Arkansas River Exchange. In order to ensure Aurora's water supply is clean, there is a need to invest in preventative forestry practices to maintain the health of its headwaters. In doing so, such efforts will reduce the expense and necessity of suppression and recovery efforts. Mitigation strategies include handling issues such as the infestations, drought, fire, and urban stormwater runoff in conjunction with our watershed partners. Proactive efforts to manage such issues assist with the production and storage of clean water, and the regulation and control of the timing of runoff. As a result, Aurora participates in programs such as, the Rocky Mountain Restoration Initiative (RMRI), the Collaborative Forest Landscape Restoration Program (CFLRP), and the Southwest Wildfire Impact Fund (SWIF). Currently, the barriers to increasing the general pace and scale of forest health treatments in Colorado include limited funding, a lack of coordination between public and private lands and a decreasing number of people with the necessary forestry expertise.

M. McHugh indicated that Aurora is funding its watershed activities by including watershed restoration and protection in its operations budget. The city also works with partners by matching contributions with in-kind or cash contributions, and through education programs to expand the understanding of forest health issues. These partnerships also extend to forest health research, policy and outreach with federal and state agencies, counties, fire districts, non-profits and homeowners associations. Per M. Dawson, Aurora Water conducts several public outreach and education programs based upon Aurora's watersheds and the effects that types of natural events and personal behaviors have on the water systems locally and downstream. Most education programs currently in place are directed towards students and teachers, such as "Climate Change and Water," for high school students and "Forests to Faucets," for teachers. These programs focus on climate change science (i.e. carbon dioxide and drought levels, water quality, effects of forest fires) and the social/economic effects it has on Aurora's water supply. Future programing goals include establishing a "Citizens' Water Academy" for the general public along with expanding outdoor watershed programing in partnership with established environmental organizations and groups such as the Coalition for Upper South Platte (CUSP) and Coalitions and Collaboratives (COCO).

8. Discuss CWAC Quarterly Report to WPC in January

G. Baker provided a general overview of the quarterly report for new committee members. G. Baker requested J. Marlow add an item to the next meeting for providing a brief introduction for the new members of the CWAC rules, functions and request for topic reviews on their behalf.

9. 2021 Volunteer Agreements

G. Baker advised that the 2021 volunteer agreement is located at the end of the packet sent out for this meeting and requested that committee members complete and e-mail the form to him.

10. Review/Verification of 2020 Attendance Records

J. Marlow confirmed that everyone had reviewed the attendance records attached to the CWAC packet for the current meeting. G. Baker advised that if there are any errors, members should contact him via e-mail in order to correct any issues.

11. Review Follow-Up Questions Generated at this Meeting

A. Binder asked, can staff reach out to other cities that are participating in the service line warranty program to find out what their experiences have been with the service?
G. Baker advised that he can gather that information and that he will attempt to gather some anecdotal information about the number of water line breaks in the city.

12. Confirm Next Meeting – Tuesday, February 9, 2021

J. Marlow confirmed the next committee meeting date with the CWAC members.

13. Adjourn

The meeting was adjourned at 7:43 p.m.

Janet Marlow, Chair
Citizens' Water Advisory Committee

Submitted by Jessica Roode
Administrative Specialist, Aurora Water

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To: Citizens' Water Advisory Committee

Through: Marshall P. Brown, General Manager, Aurora Water _____

From: JoAnn Giddings, Deputy Director Water Financial Administration _____

Date: February 9, 2021

Subject: Quarterly Financial Report –Fourth Quarter December 2020

Highlights

Combined operating revenues (Water, Sewer, and Stormwater): Through the Fourth quarter were 5.0% higher than plan and 7% higher than 2019. The increase from 2019 is due to customer growth, a very dry spring and summer, and the approved 4% sewer rate increases implemented in 2020.

Combined Development revenues (Water, Sewer, and Stormwater) in the Fourth quarter of 2020 were 20% higher than plan and 46% higher than 2019 marking a record year for development for the City.

Staff is continuing to monitor the revenue collected during this uncertain time. Customers have continued to make payments on their accounts, although at a slower rate than in past years.

Operating expenses (Water, Sewer and Stormwater combined), excluding debt service, are under plan by \$14.6 million or 11.0 percent. This variance is mainly driven by lower than anticipated expenses in Supplies and Services due to the timing of Professional & Technical Services, as well as lower than anticipated Utilities for Homestake electricity costs. Operating expenses, excluding debt service, were higher than 2019 (same period) by \$2.4 million or 2.1 percent. The debt service was lower due to a prepayment made in 2019. Statements showing the budget to actual results and the year to year comparison can be found at the end of this memo on pages 8 and 9. Capital details can be found on pages 5 and 6.

Water, Sewer, and Stormwater as of End of Fourth Quarter

Item	YTD Plan	2020	2019	Q4 2020 vs YTD Plan	Year Over Year Difference
Operating Revenue	\$202,822,404	\$213,001,135	\$199,810,014	\$10,178,731	\$13,191,121
Development Revenue	55,358,097	66,572,579	45,693,763	11,214,482	20,878,816
Bond Proceeds and Restricted Assets	0	0	500,000	0	(500,000)
Interest Income	2,775,540	5,390,667	6,384,206	2,615,127	(993,539)
Total Revenue	\$260,956,041	\$284,964,381	\$252,387,983	\$24,008,340	\$32,576,398
Operating Expense	(\$132,832,822)	(\$118,213,585)	(\$115,794,372)	(\$14,619,237)	\$2,419,213
Capital Projects	(181,231,009)	(155,651,477)	(101,801,225)	(25,579,532)	53,850,252
Debt Service	(23,547,643)	(24,034,334)	(66,777,991)	486,691	(42,743,657)
Total Expense	(\$337,611,474)	(\$297,899,396)	(\$284,373,588)	(\$39,712,078)	\$13,525,808

Cash Balances

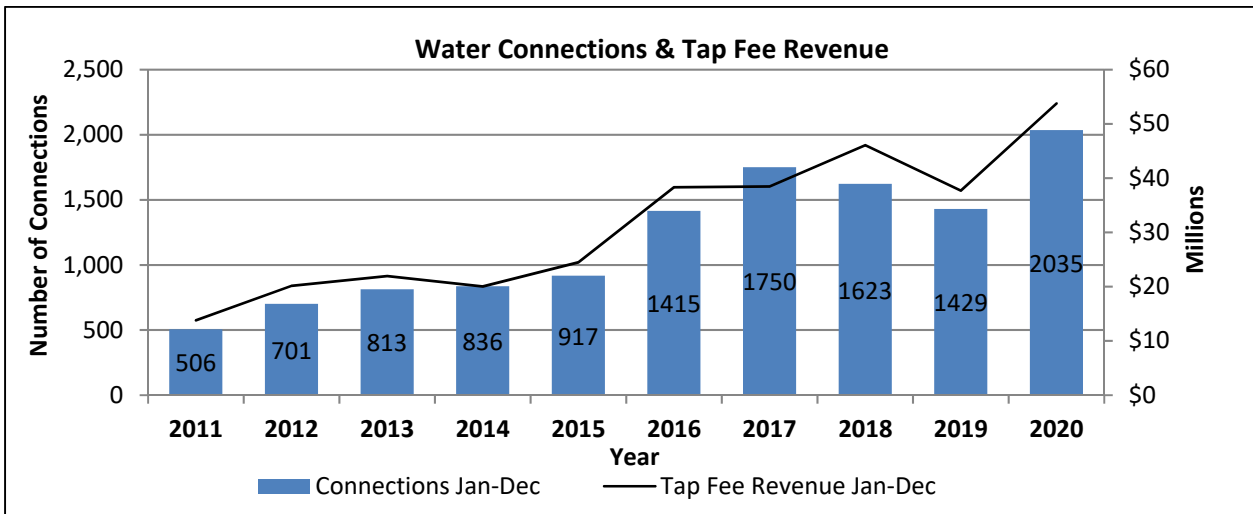
Total cash in the Water Fund increased in the Fourth quarter by \$15.9 million. The increase is associated with an increase in development revenues in the last quarter. Total cash in the Wastewater Fund increased by \$550 thousand in the Fourth quarter. Reserves detail and cash balances are shown in table below.

	<u>Water</u>	<u>Wastewater</u>
Total Cash	\$184.5M	\$84.8M
Reserve & Commitment Type		
Debt Service Policy Reserve (next fiscal year debt payment)	\$22.9M	\$3.3M
Operating Reserve (25% of adopted operating budget excl debt service)	\$17.3M	\$14.5M
Water Resources Reserve (\$20 Million)	\$20.0M	
Capital Reserve (0.5% of Net Fixed assets)	\$8.8M	\$3.0M
Capital and Operating Encumbrances	\$59.6M	\$19.0M
TOD Incentive Program*	\$1.0M	
Pass-Thru Commitments (METRO and CC Basin)		\$5.3M
WISE Liability to Denver Water	\$5.0M	
Loan Proceeds for SEAM		\$6.9M
Total Reserves and Commitments	\$134.6M	\$52.0M
Cash after Reserves & Commitments	\$49.9M	\$32.8M

* Final \$1.0M of the TOD Incentive has been approved and waiting for Developer to submit building permit.
 This program ended 12/31/2020

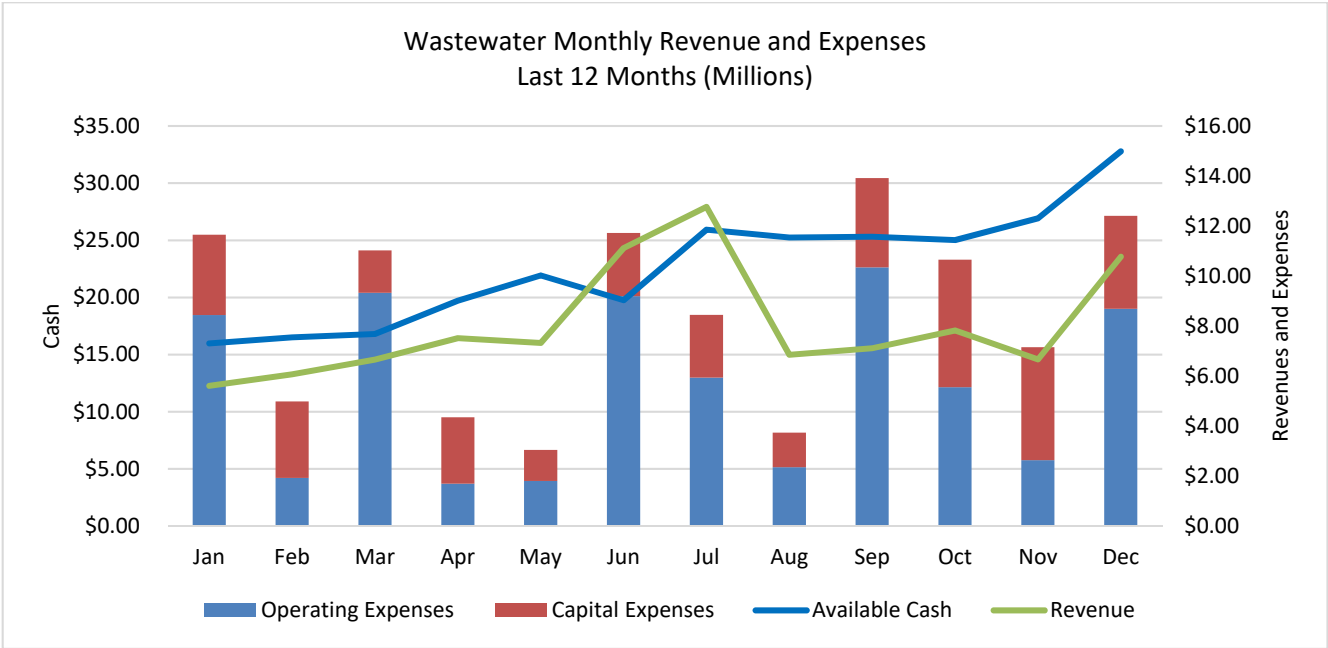
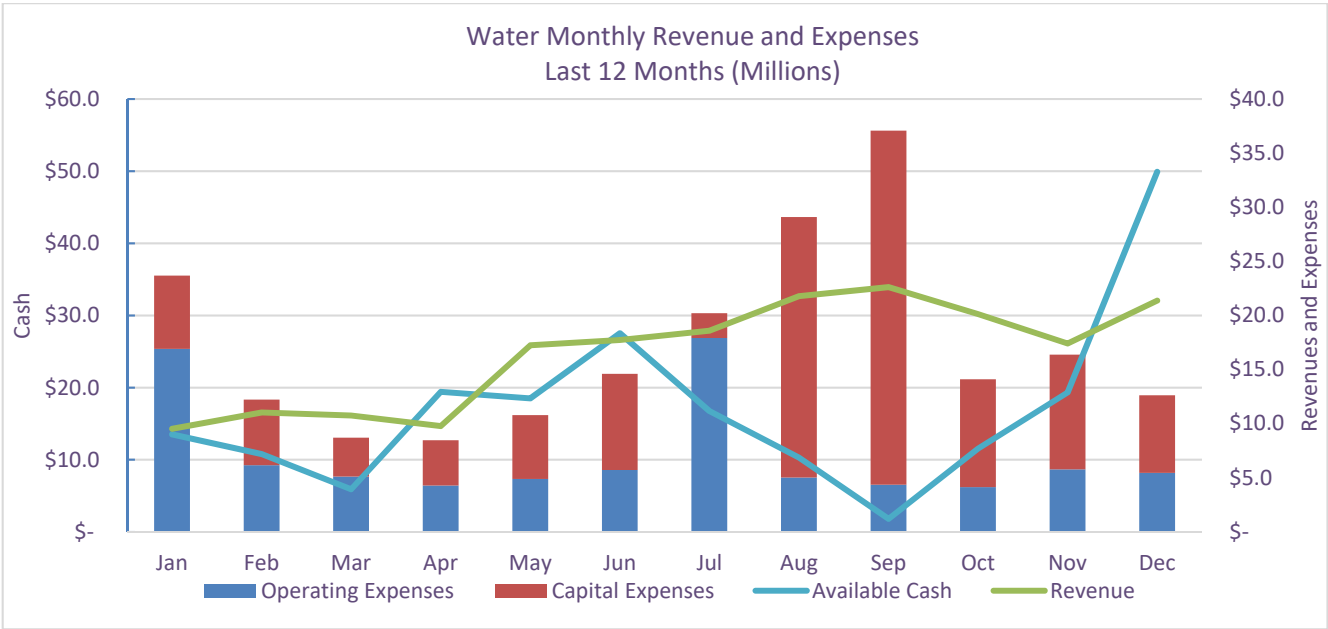
Water Connections

Total number of water connections (single family, commercial, irrigation and multifamily) and the corresponding Water Connection Fee revenue for 2011-2020 are shown on the following graph. The number of water connections through the Fourth quarter of 2020 increased by 606 connections or 42 percent compared to 2019. Total water connection fee revenues through the Fourth quarter of 2020 were \$16.1 million (43 percent) higher than 2019. The overall growth due to development is still above the ten-year average. Development activity in Aurora during 2020 represents a record in terms of revenues and the number of taps. The pandemic doesn't seem to have affected development in 2020.

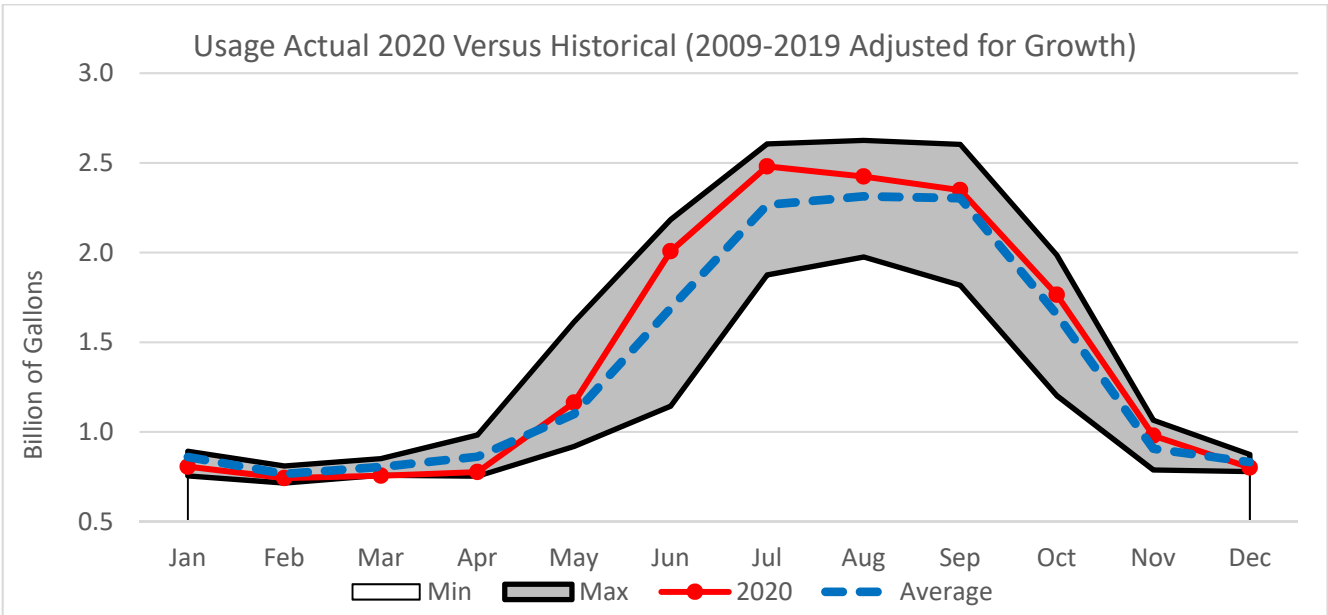
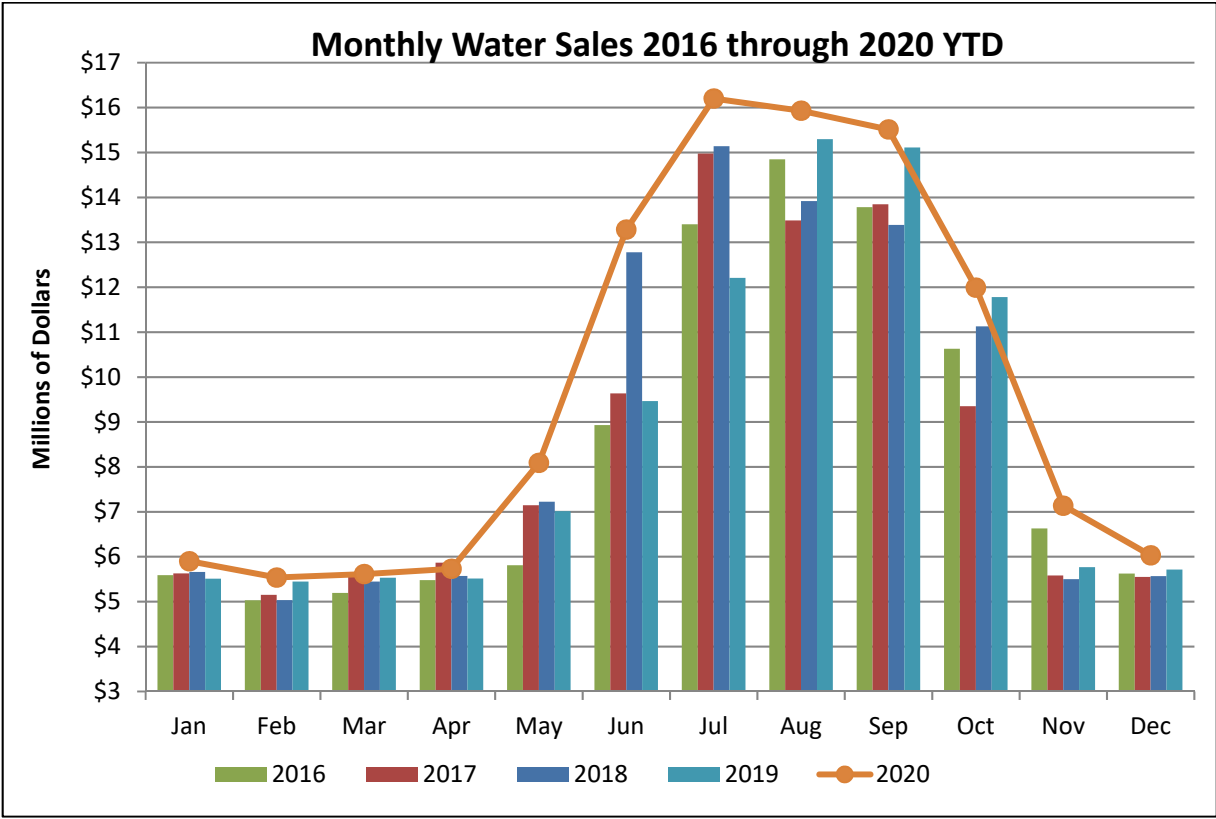


2020 Revenue, Expenses and Cash Flow

The following graphs present a summary of the last 12 months of monthly revenues, expenses, and cash flow.



The cash balance in the Water Fund increased by \$15.9M in the fourth quarter primarily due to a decrease in capital expenditures and increased development revenues. The cash available in the Water Fund increased from \$1.8M in the third quarter to \$48.7M in the fourth quarter primarily due to the decrease in capital expenditures and a reduction in capital encumbrances of \$28.4M. The Wastewater Fund experienced an increase in revenue during the fourth quarter caused by an increase in connection fees. The cash balance in the Wastewater Fund increased by \$0.5M in the fourth quarter. The cash available in the Wastewater Fund increased from \$25.3M in the third quarter to \$32.8M in the fourth quarter primarily due to a decrease of capital encumbrances of \$8.4M.



Usage adjusted for the growth in accounts has been above the 10-year average in the months of May through November. Usage in the winter months was below average which reflects the observed trend of more efficient indoor usage. April was below average and close to historical minimums this reflects the reduced usage during the lockdown in the commercial class.

Overall Capital Plan

Capital Projects Spending as of 12/31/2020

Program	Working Budget*	YTD Spending Plan	YTD Actual Spend	Encumbered**
<u>Water CIP</u>				
Operations & General Management	36,155,195	2,106,038	6,201,354	11,091,384
Pumping	9,885,614	6,929,726	8,096,837	4,497,673
SOS Other	30,543,389	10,001,864	3,210,204	3,059,841
SOS Storage	36,929,781	11,313,600	4,819,060	5,191,726
SOS Water	39,413,614	54,752,534	55,627,867	9,987,960
Transmission & Distribution	39,719,845	27,183,363	21,339,705	7,752,063
Treatment	45,905,646	27,067,314	22,528,924	15,130,272
Water Total	238,553,084	139,354,439	\$121,823,951	\$56,710,919
<u>Sewer CIP</u>				
Collection	19,591,866	14,945,588	8,452,325	5,833,437
Operations & General Management	17,448,758	1,463,799	3,695,036	7,666,220
Sewer Total	\$37,040,624	\$16,409,387	\$12,147,361	\$13,499,657
<u>Stormwater CIP</u>				
Stormwater	49,465,335	24,786,477	20,880,604	12,607,334
Operations & General Management	5,293,116	680,707	799,560	2,546,309
Stormwater Total	54,758,451	\$25,467,183	\$21,680,164	\$15,153,643
Wastewater Total	91,799,075	\$41,876,570	\$33,827,525	\$28,653,300
Water & Wastewater Total	\$330,352,159	\$181,231,009	\$155,651,476	\$85,364,219

*Working budget includes adopted budget, carry forward, transfers, lapsed appropriations, and supplementals.

**Encumbered amounts are PO contracts that may carry multiple years.

Capital Projects Spending

Total capital spending in the Water Fund through the Fourth quarter was \$121.8 million, which was \$17.5 million less than the year-to-date spending plan of \$139.3 million. This is due to timing differences of anticipated spending. The Griswold Water Plant Renovation project is \$7.5 million less than planned. This variance can be attributed to the Surge Tank construction being delayed until 2021 due to design taking more time than anticipated. The New Transmission & Distribution Water Main project is \$4.5 million less than planned. This variance is due to property acquisition issues related to a new 60" water main at 6th Ave and Colfax being split into two sections which delayed construction until the first quarter of 2021. In addition, the Prairie Water North Campus Well Field Expansion

project is under plan by \$3.4 million due to timing issues that delayed the start of the project. Many of the projects in the Water Fund are encumbered for a total of \$56.7 million.

Through the Fourth quarter, total capital spending in the Wastewater Fund was \$33.8 million, which was \$8.0 million less than the spending plan of \$41.9 million. There are also timing differences of anticipated spending in the Wastewater Fund. In the Collection program, reimbursements are \$3.0 million less than plan due to the Green Valley Ranch Sewer Interceptor Reimbursement being moved to the first quarter of 2021 from 2020. In addition, Interceptor Rehab is underspent by \$3.2 million due to timing issues related to the Cured-in-Place-Pipe (CIPP) at 33rd Place and 30th Ave. In addition, the Fitzsimmons Peoria Stormwater Outfall Project was \$4.6 million less than plan. This can be attributed to less expenditures than anticipated for phase 4 of the project. Many of the projects in the Wastewater Fund are also encumbered for a total amount of \$15.1 million.

Capital Improvement Project of the Quarter Gun Club Raw Water Expansion Project

In 2015, Heritage Eagle Bend Metro District asked Aurora Water if they could help with their water supplies to support their golf course irrigation needs. Aurora offered to develop a non-potable water source by expanding the **Gun Club Pump Station (GCPS)** fed raw water system that currently feeds Saddle Rock Golf Course.

Functionally the **GCPS** is a prototypical booster water pump station, although somewhat uncommonly **it pumps both potable and raw water**. Potable water to the GCPS is provided from Wemlinger Water Purification Facility Zone 5 pump station.

The Rampart Delivery System raw water supplied to the GCPS is via a 12-inch branch suction line from the 60-inch steel transmission line to Aurora Reservoir. Via the 12-inch supply main, two vertical turbine pumps (RWP-1 and -2) discharge to a pond at the Saddle Rock Golf Course, where the raw water is used for facility irrigation.

The Gun Club Raw Water Expansion Project upsized the raw water pumps to 100 Hp to increase capacity to not only feed **Saddle Rock Golf Course** but **Heritage Eagle Bend Golf Course** as well. The Heritage Eagle Bend Golf Course is now fed by a new 12-inch waterline that splits off from the Saddle Rock Golf Course and is installed along the Piney Creek drainage way to a Heritage Eagle Bend Flow Control Vault located east of E-470 and then on to the golf course.

There were many challenges to the project that included easement acquisitions, boring under Piney Creek & Gartrel Rds, and excavating under E-470 along Piney Creek as well as extensive coordination with other City departments and outside entities. Heritage Eagle Bend is very happy with this new supply that will help sustain their important community Golf Course asset.



2020 Financial Comparison

The following table presents a comparison of budget to revenues and expenses through the Fourth quarter for year 2020.

WATER as of 12/31/2020				
Revenues & Expenses	Working Budget*	YTD Plan	YTD Actual (Accrual Basis)	% Actual to Plan
Operating Revenue	\$128,634,325	\$128,634,325	\$138,861,099	8%
Development Revenue	46,217,956	46,217,956	54,675,191	18%
Bond Proceeds and Restricted Assets	-	-	-	0%
Interest Income	2,118,180	2,118,180	3,874,781	83%
Total Revenue	\$176,970,461	\$176,970,461	\$197,411,071	12%
Operating Expense	(\$73,842,817)	(\$73,842,817)	(\$63,164,181)	-14%
Capital Projects	(238,553,085)	(139,354,439)	(121,823,952)	-13%
Debt Service	(20,373,574)	(20,373,574)	(20,386,350)	0%
Total Expense	(\$332,769,476)	(\$233,570,830)	(\$205,374,483)	-12%
Net Revenue & Expense	(\$155,799,015)	(\$56,600,369)	(\$7,963,412)	
SEWER as of 12/31/2020				
Operating Revenue	\$51,253,967	\$51,253,967	\$50,087,006	-2%
Development Revenue	7,140,141	7,140,141	9,962,492	40%
Bond Proceeds and Restricted Assets	0	0	0	0%
Interest Income	520,360	520,360	914,014	76%
Total Revenue	\$58,914,468	\$58,914,468	\$60,963,512	3%
Operating Expense	(\$45,017,310)	(\$45,017,310)	(\$43,971,194)	-2%
Capital Projects	(37,040,624)	(16,409,387)	(12,147,361)	-26%
Debt Service	(2,272,759)	(2,272,759)	(2,534,064)	11%
Total Expense	(\$84,330,693)	(\$63,699,456)	(\$58,652,619)	-8%
Net Revenue & Expense	(\$25,416,225)	(\$4,784,988)	\$2,310,893	
STORMWATER as of 12/31/2020				
Operating Revenue	\$22,934,112	\$22,934,112	\$24,053,030	5%
Development Revenue	2,000,000	2,000,000	1,934,896	-3%
Bond Proceeds and Restricted Assets	0	0	0	0%
Interest Income	137,000	137,000	601,872	339%
Total Revenue	\$25,071,112	\$25,071,112	\$26,589,798	6%
Operating Expense	(\$13,972,695)	(\$13,972,695)	(\$11,078,210)	-21%
Capital Projects	(54,758,451)	(25,467,183)	(21,680,164)	-15%
Debt Service	(901,310)	(901,310)	(1,113,920)	24%
Total Expense	(\$69,632,456)	(\$40,341,188)	(\$33,872,294)	-16%
Net Revenue & Expense	(\$44,561,344)	(\$15,270,076)	(\$7,282,496)	

*Working budget includes adopted budget, carry forward, transfers, lapsed appropriations, and supplementals.

The following table presents a comparison of revenues and expenses through the Fourth quarter for years 2020 and 2019.

Year-to-date Comparison to Prior Year (Water, Sewer and Stormwater)

WATER Fourth Quarter Comparison			
Revenues & Expenses	2020	2019	% Change
Operating Revenue	\$138,861,099	\$128,662,002	8%
Development Revenue	54,675,191	38,443,648	42%
Bond Proceeds and Restricted Assets	-	500,000	-100%
Interest Income	3,874,781	4,691,000	-17%
Total Revenue	\$197,411,071	\$172,296,650	15%
Operating Expense	(\$63,164,181)	(\$62,894,453)	0%
Capital Projects	(121,823,952)	(72,642,463)	68%
Debt Service	(20,386,350)	(63,143,262)	-68%
Total Expense	(\$205,374,483)	(\$198,680,178)	3%
Net Revenue & Expense	(\$7,963,412)	(\$26,383,528)	
SEWER Third Fourth Comparison			
Operating Revenue	\$50,087,006	\$47,905,534	4.6%
Development Revenue	9,962,492	6,303,994	58%
Interest Income	914,014	1,033,728	-12%
Total Revenue	\$60,963,512	\$55,243,256	10%
Operating Expense	(\$43,971,194)	(\$42,314,629)	4%
Capital Projects	(12,147,361)	(10,354,538)	17%
Debt Service	(2,534,064)	(2,539,679)	0%
Total Expense	(\$58,652,619)	(\$55,208,846)	6%
Net Revenue & Expense	\$2,310,893	\$34,410	
STORMWATER Third Fourth Comparison			
Operating Revenue	\$24,053,030	\$23,242,478	3%
Development Revenue	1,934,896	946,121	105%
Interest Income	601,872	659,478	-9%
Total Revenue	\$26,589,798	\$24,848,077	7%
Operating Expense	(\$11,078,210)	(\$10,585,290)	5%
Capital Projects	(21,680,164)	(18,804,224)	15%
Debt Service	(1,113,920)	(1,095,050)	2%
Total Expense	(\$33,872,294)	(\$30,484,564)	11%
Net Revenue & Expense	(\$7,282,496)	(\$5,636,487)	

2020 Water Preliminary Quarterly Financial Report

*Deputy Director, Water
Financial
Administration
Jo Ann Giddings*



Background

- Enterprise Funds – similar to business - must cover all costs with rates and fees
 - Three Utilities (Water, Sewer, Storm)
 - Financial Statements issued in two Funds
 - Water
 - Wastewater (Sewer and Storm)
- Budget - same process as City
- Water Finance Staff perform day to day transactions, analysis and management.
- Information is consolidated with City Finance Department budget, audit and financial statements.



Financial Policies

- 2016 Water Department policies approved by Resolution through Council
- Reserves to maintain financial strength
 - Operating – 90 days
 - Capital for emergencies - 0.5% of Capital Assets
 - Water Resources - \$20 million for purchases that may not be planned and/or budgeted
 - Debt Service – cover the next payment



Quarterly Memo

Page 1

- Overview of all three utilities.
 - Revenue – a little higher than last year and budget plan, even with pandemic. Hot weather contributes to most of our variations in operating revenue year to year
 - Development Revenue – record year for water connections – no slow down.
 - Operating Expenses under budget
 - Homestake Electric
 - Purchases not made to COVID (chemical roundup, computers)
 - Other supplies and services

Highlights

Combined operating revenues (Water, Sewer, and Stormwater): Through the Fourth quarter were 5.0% higher than plan and 7% higher than 2019. The increase from 2019 is due to customer growth, a very dry spring and summer, and the approved 4% sewer rate increases implemented in 2020.

Combined Development revenues (Water, Sewer, and Stormwater) in the Fourth quarter of 2020 were 20% higher than plan and 46% higher than 2019 marking a record year for development for the City.

Staff is continuing to monitor the revenue collected during this uncertain time. Customers have continued to make payments on their accounts, although at a slower rate than in past years.

Operating expenses (Water, Sewer and Stormwater combined), excluding debt service, are under plan by \$14.6 million or 11.0 percent. This variance is mainly driven by lower than anticipated expenses in Supplies and Services due to the timing of Professional & Technical Services, as well as lower than anticipated Utilities for Homestake electricity costs. Operating expenses, excluding debt service, were higher than 2019 (same period) by \$2.4 million or 2.1 percent. The debt service was lower due to a prepayment made in 2019. Statements showing the budget to actual results and the year to year comparison can be found at the end of this memo on pages 8 and 9. Capital details can be found on pages 5 and 6.

Water, Sewer, and Stormwater as of End of Fourth Quarter					
Item	YTD Plan	2020	2019	Q4 2020 vs YTD Plan	Year Over Year Difference
Operating Revenue	\$202,822,404	\$213,001,135	\$199,810,014	\$10,178,731	\$13,191,121
Development Revenue	55,358,097	66,572,579	45,693,763	11,214,482	20,878,816
Bond Proceeds and Restricted Assets	0	0	500,000	0	(500,000)
Interest Income	2,775,540	5,390,667	6,384,206	2,615,127	(993,539)
Total Revenue	\$260,956,041	\$284,964,381	\$252,387,983	\$24,008,340	\$32,576,398
Operating Expense	(\$132,832,822)	(\$118,213,585)	(\$115,794,372)	(\$14,619,237)	\$2,419,213
Capital Projects	(181,231,009)	(155,651,477)	(101,801,225)	(25,579,532)	53,850,252
Debt Service	(23,547,643)	(24,034,334)	(66,777,991)	486,691	(42,743,657)
Total Expense	(\$337,611,474)	(\$297,899,396)	(\$284,373,588)	(\$39,712,078)	\$13,525,808

Quarterly Memo

Page 2

- Cash Balances
 - Total Balances
 - Less Reserves – per policy
 - Less other commitments
- Water Connections
 - Record Year
 - 10 Year Chart

Cash Balances

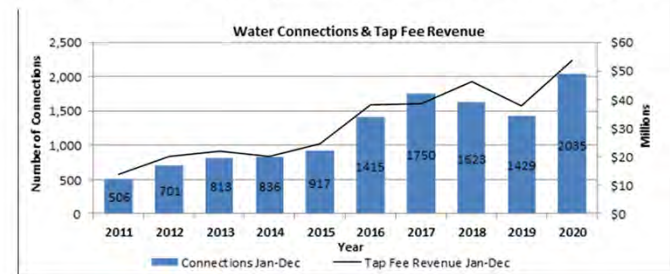
Total cash in the Water Fund increased in the Fourth quarter by \$15.9 million. The increase is associated with an increase in development revenues in the last quarter. Total cash in the Wastewater Fund increased by \$550 thousand in the Fourth quarter. Reserves detail and cash balances are shown in table below.

	Water	Wastewater
Total Cash	\$184.5M	\$84.8M
Reserve & Commitment Type		
Debt Service Policy Reserve (next fiscal year debt payment)	\$22.9M	\$3.3M
Operating Reserve (25% of adopted operating budget excl debt service)	\$17.3M	\$14.5M
Water Resources Reserve (\$20 Million)	\$20.0M	
Capital Reserve (0.5% of Net Fixed assets)	\$8.8M	\$3.0M
Capital and Operating Encumbrances	\$59.6M	\$19.0M
TOD Incentive Program*	\$1.0M	
Pass-Thru Commitments (METRO and CC Basin)		\$5.3M
WISE Liability to Denver Water	\$5.0M	
Loan Proceeds for SEAM		\$6.9M
Total Reserves and Commitments	\$134.6M	\$52.0M
Cash after Reserves & Commitments	\$49.9M	\$32.8M

* Final \$1.0M of the TOD Incentive has been approved and waiting for Developer to submit building permit. This program ended 12/31/2020

Water Connections

Total number of water connections (single family, commercial, irrigation and multifamily) and the corresponding Water Connection Fee revenue for 2011-2020 are shown on the following graph. The number of water connections through the Fourth quarter of 2020 increased by 606 connections or 42 percent compared to 2019. Total water connection fee revenues through the Fourth quarter of 2020 were \$16.1 million (43 percent) higher than 2019. The overall growth due to development is still above the ten-year average. Development activity in Aurora during 2020 represents a record in terms of revenues and the number of taps. The pandemic doesn't seem to have affected development in 2020.



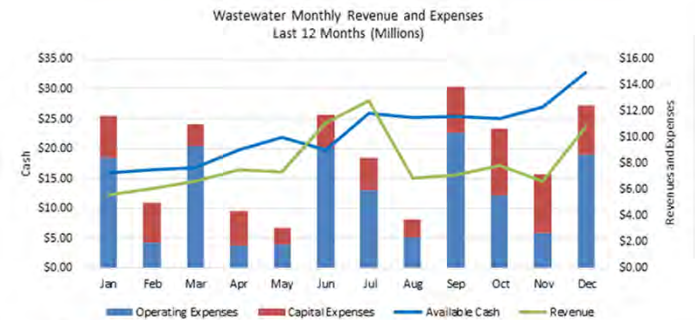
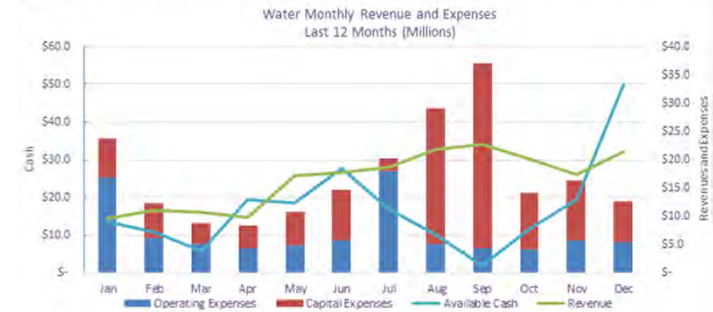
Quarterly Memo

Page 3

- Cashflow Chart by Fund
- Water Fund – Aug/Sep large Water Rights Purchases
- Wastewater – Quarterly payments to Metro

2020 Revenue, Expenses and Cash Flow

The following graphs present a summary of the last 12 months of monthly revenues, expenses, and cash flow.

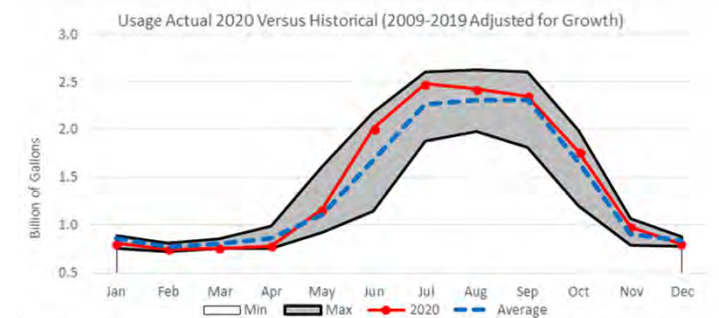
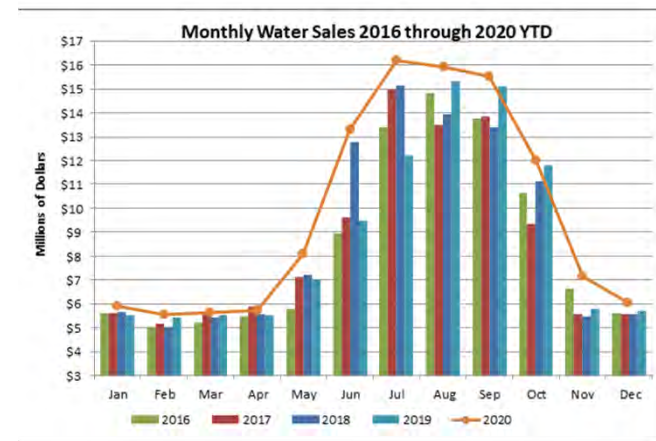


The cash balance in the Water Fund increased by \$15.9M in the fourth quarter primarily due to a decrease in capital expenditures and increased development revenues. The cash available in the Water Fund increased from \$1.8M in the third quarter to \$48.7M in the fourth quarter primarily due to the decrease in capital expenditures and a reduction in capital encumbrances of \$28.4M. The Wastewater Fund experienced an increase in revenue during the fourth quarter caused by an increase in connection fees. The cash balance in the Wastewater Fund increased by \$0.5M in the fourth quarter. The cash available in the Wastewater Fund increased from \$25.3M in the third quarter to \$32.8M in the fourth quarter primarily due to a decrease of capital encumbrances of \$8.4M.

Quarterly Memo

Page 4

- Monthly Water Sales
- Usage



Usage adjusted for the growth in accounts has been above the 10-year average in the months of May through November. Usage in the winter months was below average which reflects the observed trend of more efficient indoor usage. April was below average and close to historical minimums this reflects the reduced usage during the lockdown in the commercial class.

Quarterly
Memo
Page 5-9



Capital Results



Capital Project – different project added each quarter



Detail Budget to Actual



Detail Financials comparing 2020 to 2019

Questions?



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MEMORANDUM



City of Aurora

Worth Discovering • auroragov.org

To: Citizens' Water Advisory Committee

Through: Marshall P. Brown, General Manager, Aurora Water
Sarah Young, Deputy Director, Planning and Engineering Services

From: James DeHerrera, Project Engineer, Aurora Water

Date: February 9, 2021

Subject: Quincy Reservoir Comprehensive Analysis Presentation

Purpose:

The water quality in Quincy Reservoir has been slowly degrading over time and creating challenges to both treatment and recreation. As a result, the department identified the need for a comprehensive analysis to evaluate options for the reservoir. The study began in January 2020 and has evaluated short-, mid-, and long-term solutions to manage the reservoir. Short-term solutions were implemented in 2020 and included three (3) hydrogen peroxide treatments and an alum treatment. The goal of these treatments was to allow Quincy Reservoir to remain open to the public during the 2020 recreational season, as well as manage water quality to preserve mid- and long-term options for the analysis. The short-term solutions met their intended goal.

This update will focus on the evaluation including a description of the actions taken in 2020, as well as mid- and long-term solutions. The presentation will highlight the recommended next steps, the first of which being Phase I. This phase includes adding a hydroponic system, littoral zone restoration, and improving the existing aeration system. These projects are planned for design and implementation beginning in 2021. Water quality will be monitored and will trigger additional improvements if needed. Details of this trigger-based approach will also be presented.

Action Required:

No action at this time is required. This presentation is purely informative in nature.

cc: File copy

Hazen



Quincy Reservoir Comprehensive Study

Citizen's Water Advisory Committee Update – February 9, 2021
Prepared by: James DeHerrera, P.E.

Agenda

- History
- Comprehensive Study
- Evaluation
 - Short-term projects
 - Trigger-based approach
- Cost Evaluation
- Alternatives Analysis
- Recommended Alternative
- Questions



History

- Added to Aurora's water system in 1973
- Active Capacity
 - Quincy Reservoir: ~2,700 ac-ft
- Recreational Facility
 - Open annually March 1 – October 31
- Water Quality Issues
 - Increasing nutrient levels
 - Blue-green algae (cyanobacteria) → cyanotoxins
 - 2019 halt of treatment use & recreation closure
 - \$100M+ in planned projects

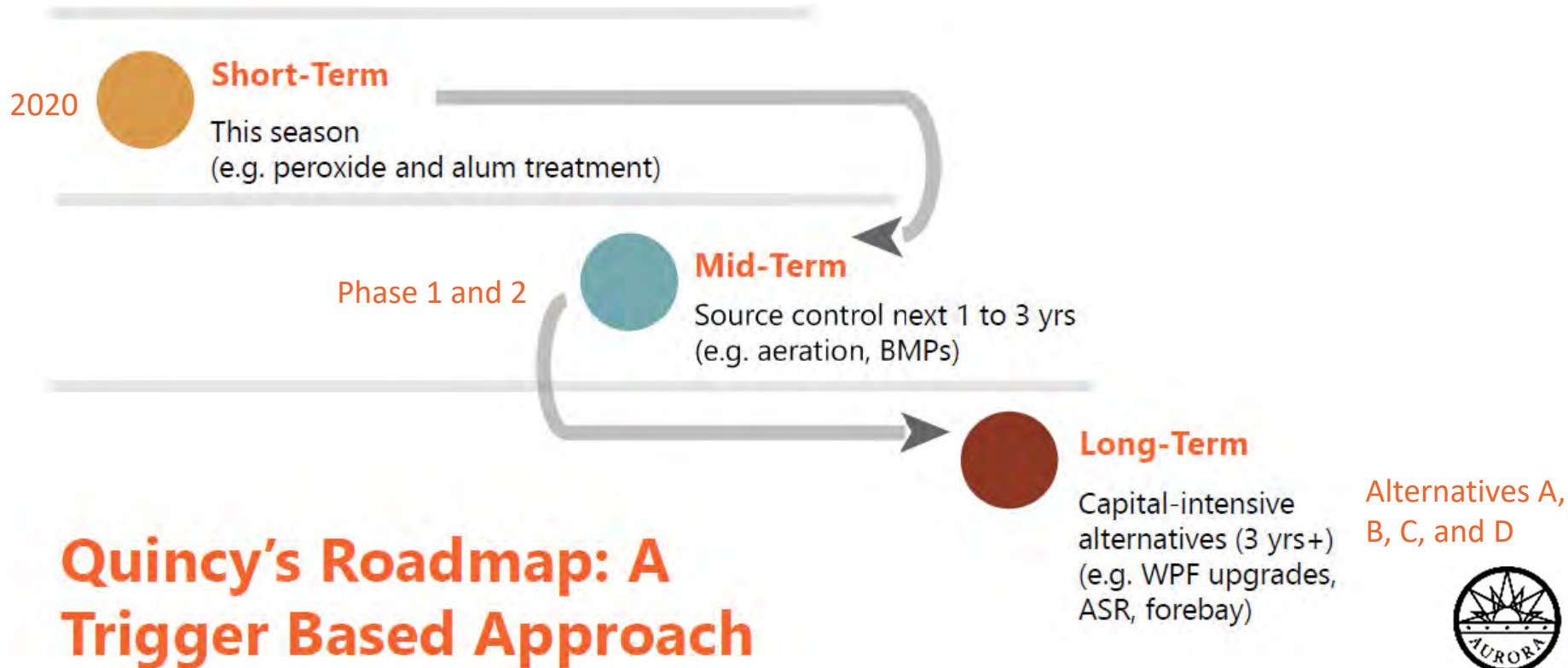


Comprehensive Study

- Evaluate possible future uses of Quincy Reservoir
 - Direct use water supply (DUWS) and recreational reservoir
 - Recreational reservoir only (not a DUWS)
 - DUWS only (no recreation)
 - Eliminate reservoir
- Cost Benefit Analysis Highlighting:
 - Operational Impact
 - Raw water supply and treatment capacity impact
 - Recreational impact
 - Permitting and regulatory considerations



Project



Quincy's Roadmap: A Trigger Based Approach



Short-term Projects



Hydrogen Peroxide Treatment (June, July, & Sept 2020)



Alum Treatment (Oct 2020)



Hydrogen Peroxide Treatment



Hydrogen Peroxide Treatment (Wednesday, July 15, 2020)



Hydrogen Peroxide Follow Up Observation (Friday, July 17, 2020)



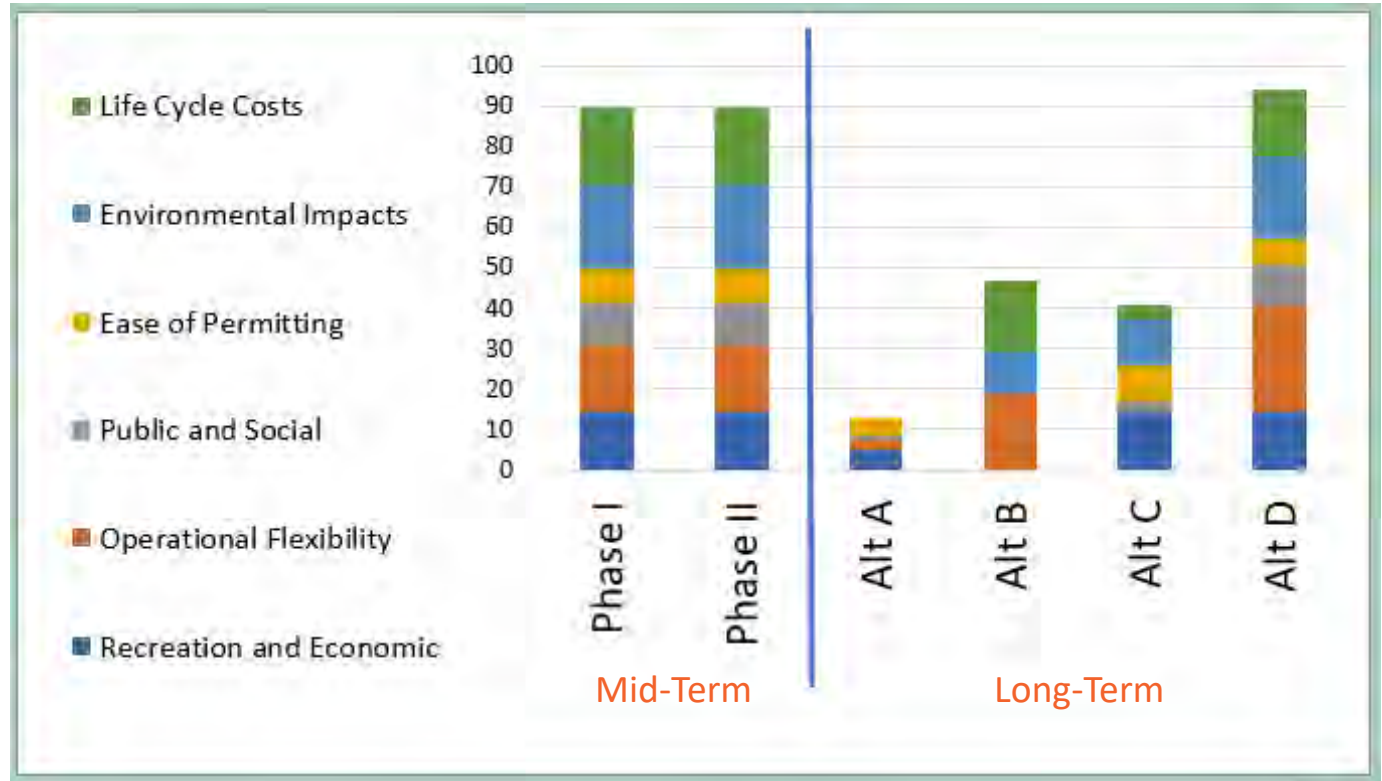
Alternatives Analysis

Alt A – New Supply, Convert to Passive Open Space

Alt B – Convert to Forebay, No Recreation

Alt C – New Supply, Recreation Only

Alt D – WPF Upgrades, Recreation Remains



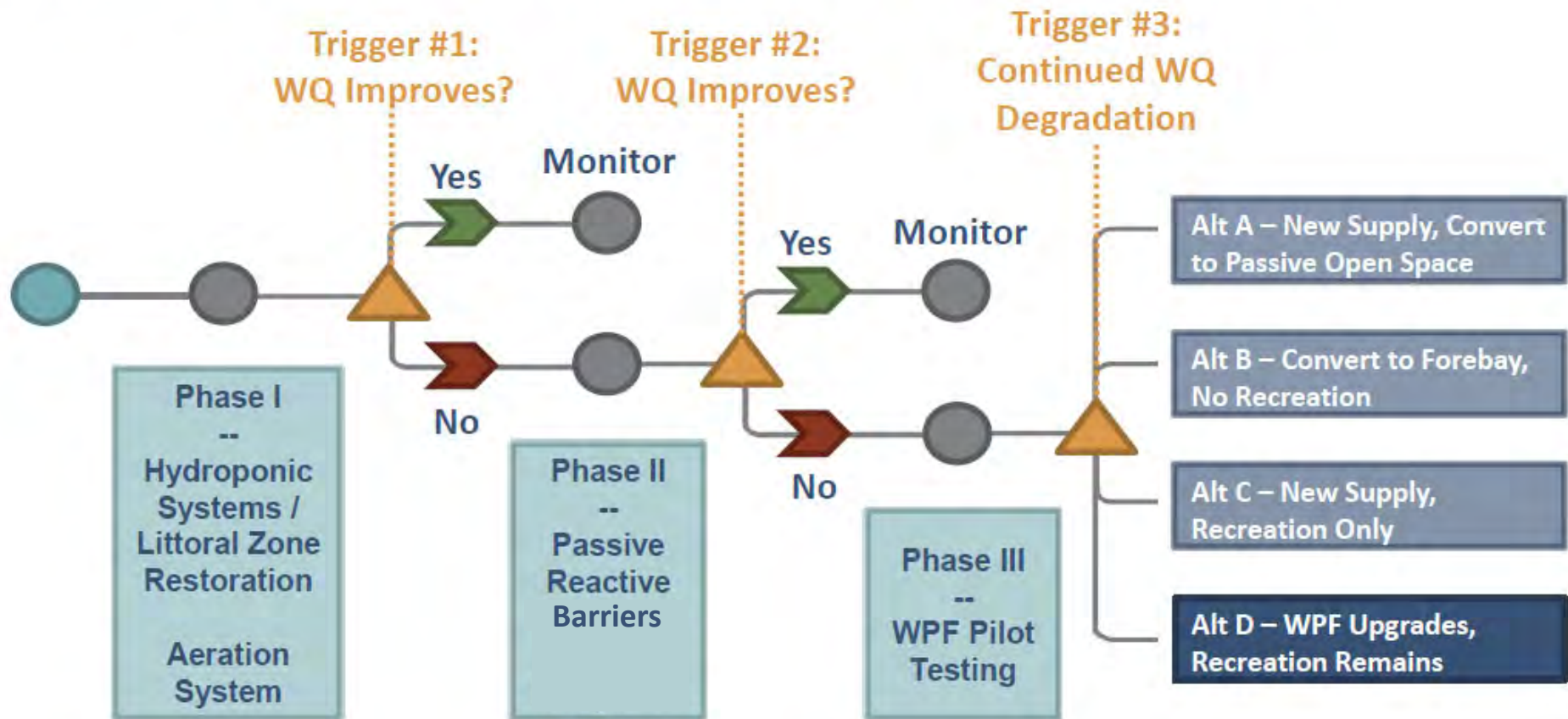
Cost Evaluation

	Mid-Term		Long-Term			
	Phase I: Hydroponic Systems, Littoral Zone Restoration, Aeration System	Phase II: Passive Reactive Barriers	Alternative A: New Supply, Convert to Passive Open Space	Alternative B: Convert to Forebay (No Recreation)	Alternative C: New Supply, Recreation Only	Alternative D: Water Purification Facility Upgrades (Recreation Remains)
Net Present Value Cost	\$5.2M	\$7.4M	\$260M	\$26M	\$210M	\$43M

*50 year life cycle



Trigger Based Approach Allows Aurora Water to Realize Treatment Benefits Prior to Large Capital Investments



Implementation of Best Management Practices (BMPs) Enhances Reservoir Water Quality Management Immediately

Phase I

Recommend Implementation of Short-Term Treatment Schemes

- Hydroponic Systems
- Littoral Zone Restoration
- Updated Aeration System
 - Target 6 mg/L dissolved oxygen in hypolimnion



Hydroponics



Littoral Zone

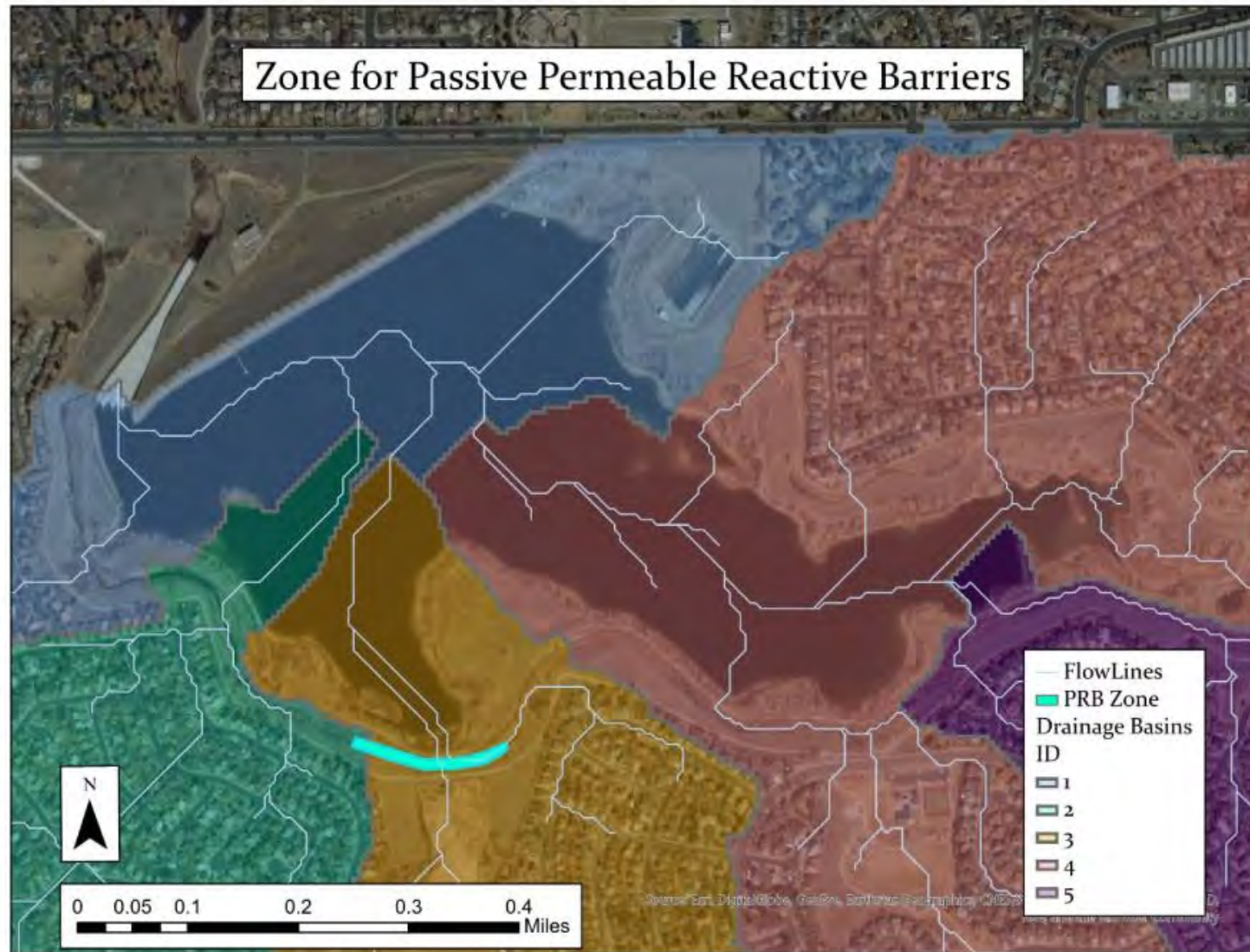
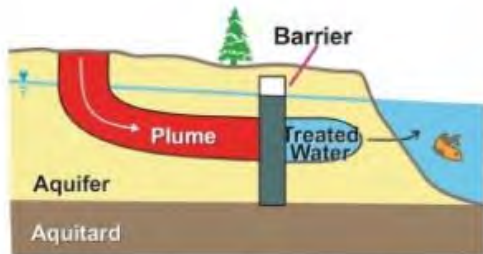


Proposed Aeration System

Bypass Channel Modifications

Phase II

- Permeable reactive barriers (PRB) are passive *in-situ* treatments zones
- Passive permeable reactive barriers
- Adsorption of biologically available phosphorus



Recommended Alternative

- Phase 1 (\$5.2M net present value cost)
 - Hydroponic Systems, Littoral Zone Restoration, Aeration System Improvements
 - Monitor & Evaluate
- Phase 2 (if triggered)
 - Passive Reactive Barriers
 - Monitor & Evaluate
- Alternative D (if triggered)
 - Water Purification Facility Upgrades



Questions?



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TO: Citizens' Water Advisory Council

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

FROM: Lauren Nance, Water Resources Project Specialist

DATE: January 26, 2021

SUBJECT: Aurora Water Drought Response

Colorado is currently experiencing drought conditions that may impact Aurora Water's raw water collection system for the 2021 water year, defined as November 2020 through October 2021. Drought conditions could lead to reductions in Aurora Water's storage supplies and could cause water supply shortages to Aurora Water customers. To prepare for drought, Aurora Water has initiated the Drought Action Team for 2021 with the objective of bringing together staff from across Aurora Water to develop recommendations and propose actions to mitigate drought risks.

The primary objective of Aurora Water's Drought Action Team will be to produce a Drought Action Plan that will recommend actions Aurora Water can take to mitigate drought risk during the 2021 water year. The Drought Action Plan may include recommendations to bring forward to City Council as deemed appropriate. The team will utilize the Water Management Plan, which was approved by City Council, to guide their recommendations to the General Manager on any changes to demand restrictions. The Water Management Plan is a council approved demand management protocol that is triggered by water supply availability. The Drought Action Team will utilize Aurora Water's data on reservoir levels and supply, and keep up to date on Colorado drought conditions, snowpack, and other available data to support recommendations to the General Manager. The team will ensure that adequate information is being collected and summarized to support the needs of the General Manager of Aurora Water, City Management and City Council. The Drought Action Plan will include recommendations and ideas on how to increase water supply and reduce water demands. The plan will discuss public messaging and will address operational complexities such as water quality and treatment, blending, and watershed health concerns. The Drought Action Team will work across divisions to discuss and brainstorm actions that Aurora Water can take this year to mitigate drought risks and to address operational changes that could improve our water system's flexibility, reliability and resiliency.

Aurora Water is also participating in local and state efforts to coordinate and plan for drought. Colorado is currently in Phase 3 of the state's Drought Mitigation and Response Plan. Phase 3 has activated the "Municipal Water Impact Task Force" whose purpose is to assess drought impacts on municipalities and to recommend and implement mitigation and response plans. This task force is currently organizing their members and determining their early objectives. Aurora Water is not a member of this statewide task force but will be staying engaged with the group. Aurora Water is also coordinating with Denver Water to co-chair a group called the "Metro Drought Coordination Group" that will collaborate on communication of drought messaging and watering restrictions across the Denver-Metro area. This group will share insights on drought and lessons learned regarding drought planning and response. The group is still forming and but plans to meet in the near future on a monthly basis.

Section 1 - Introduction

Policy Summary

The Aurora Water Management Plan provides a framework for the City of Aurora's water use to meet long-term sustainability, especially in the event of drought or other water emergencies. The Aurora Water Department promotes effective use of its water resources for the benefit of its citizens. Aurora operates, maintains and develops a complex, highly-integrated water supply system that balances reservoir storage, municipal demands and varying water supply conditions to meet the current and future long-term water needs of its customers. Water conservation and demand management, including the highest practicable utilization of reusable and reclaimable water sources, are integral elements of the City's water resource system.

The Water Management Plan recognizes the need to maintain an adequate operating reserve of stored water in the city's reservoirs to respond to future conditions, possible system breakdowns and other operational requirements while providing an adequate level of service to Aurora's water customers. The plan encourages efficient use of water supplies by establishing "normal" guidelines for outdoor water use in Aurora that are continually in place unless a more restrictive "stage" is implemented by council through the adoption of a Water Availability Resolution or required by emergency.

The Water Management Plan provides a series of responses to reduced water supply conditions to achieve progressively higher levels of water savings, or "stages" that result in reduced demand by restricting the use of water for landscape irrigation and other outdoor water uses. A stage declaration is based on the status of the water system and appropriate responsive action.

Authority to Enact and Enforce Program

As provided for by Section 138-188 and 138-190 of the Aurora City Code, the Director of Aurora Water has promulgated the Rules and Regulations contained in this Water Management Plan and will implement and enforce this plan and all applicable parts of the City Code to promote and facilitate maximum utilization of water and discourage waste of water.

Section 2 - Program Implementation

Implementation Review and Ability to Amend Stage

The Director of Aurora Water or designee shall monitor water supply and demand conditions. As conditions warrant, the Director will make recommendations to the City Council regarding the need for a resolution to modify the water availability stage. The primary reason for recommending a change in stage will be an unanticipated event or a projected reduction in Aurora's water supply, when severe operational restrictions are observed or forecasted, or community responses to the adopted Water Management Plan are not adequate given the near-term water supply conditions.

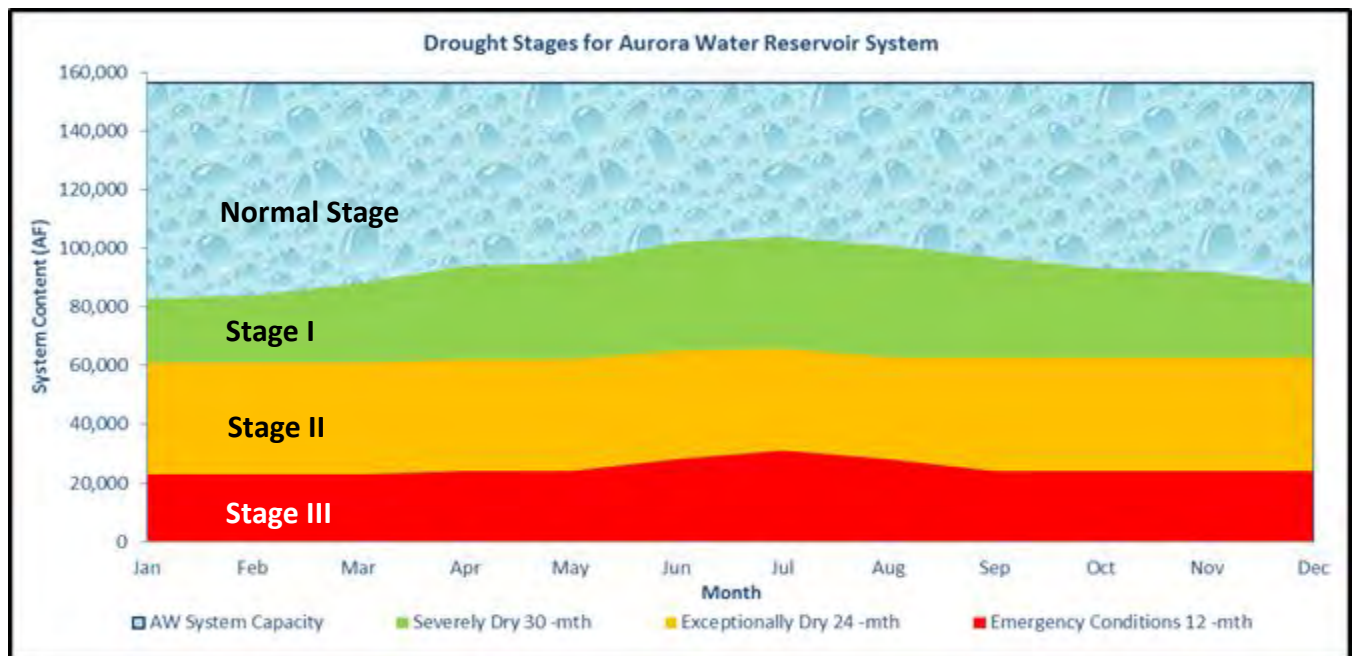
Stage Determination

Aurora Water maintains a water supply system that includes storage and terminal reservoirs, deep aquifer wells, shallow alluvial wells and the Prairie Waters system, which recaptures reusable return flows. At full capacity, Aurora can have more than 3 years of water supply available through this system. With the exception of emergency conditions, Aurora Water targets an operating reserve of no less than 12 months of water demand available in our system. Only under extreme short-term operating duress will this operating reserve requirement not be met. If such a condition is imminent or occurring, the Director of Aurora Water will make all possible

efforts to acquire other short-term water sources to minimize the potential of not meeting anticipated water needs.

If, after efforts to supplement Aurora’s water sources, and considering watershed conditions, storage levels in Aurora’s reservoirs remain at concerning levels, the Director of Aurora Water may recommend City Council consider adopting more stringent water use restrictions. Generally, stage I restrictions will be considered when reservoir levels are between 30 and 25 months of system demand, stage II restrictions will be considered when reservoir storage levels are between 24 and 13 months of system demand and stage III restrictions will be considered when reservoir storage levels are 12 months or less of system demand.

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 Goal (outdoor use only)	0%	20%	50%	100%



Drought stage representation based on water demands and system content in 2015

Stage declaration

Upon recommendation from the Director of Aurora Water that the city is facing a shortage in its supply of water or a problematic situation in regard to its ability to supply water, the City Council may pass a “Water Availability Resolution” that will create a stage declaration and institute rules and regulations affecting the uses, times of use or even prohibit all outdoor and nondomestic uses of water served by the water delivery system. Periodic adjustments can be made if the Director of Aurora Water determines that such changes are needed and the Aurora City Council amends the adopted stages by Water Availability Resolution. In the event of an imminent emergency, the City Manager shall also have the authority to institute a stage declaration, which, when published, shall have full force and effect and shall be enforceable until such time as City Council, meeting in regular session, directs the city manager as to what revisions, if any, it might wish to make to the stage declaration. Any revisions shall take effect and shall be enforceable when published.

Effective Dates

Unless otherwise stated, the Water Availability Resolution will remain in effect until removed or amended by resolution. All such rules and regulations, and revisions thereto, shall continue to remain in effect until such time as the water shortage or delivery system problem is found by the City Council to have ended, the Water Availability Resolution has been removed or an updated Water Availability Resolution has been passed and notice thereof has been published. The requirements of the Water Management Plan are mandatory and enforceable as provided for by City Code Section 138-189.

Water Rates and Water Availability Surcharges

For the rate structures and water availability surcharges refer to Sec. 138-223 of City Code of the City of Aurora, Colorado.

Significant program elements are described in the following tables:

Water Management Plan - Program Elements				
ELEMENT	NORMAL	SEVERELY DRY Stage I	EXCEPTIONALLY DRY Stage II	EMERGENCY CONDITIONS Stage III
		Surcharge in effect	Surcharge in effect	Surcharge in effect
Residential (Single-Family, Multi-Family)				
Turf Lawns <i>Irrigation of existing lawns is permitted throughout the year unless restricted by Water Availability Resolution.</i>	Irrigation of existing lawns, is not to exceed 3 days per week. No watering is permitted between 10 am and 6 pm from May 1 to September 30.	Irrigation of existing lawns 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.	Irrigation of existing lawns is 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
New Landscape Installation				
New landscapes must adhere to the City of Aurora Landscape Standards. All dry land seeding must comply with Sec. 146-1429 of the landscape standards.				
Turf/Seed <i>Lawn Permit is required if the installation is 250 sq. ft. or greater. The permit allows watering as needed outside of the normal restrictions. New seed is granted a watering exemption for 30 days, and new sod is granted a watering exemption for 20 days. Dry land seeding always permitted.</i>	Allowed with Lawn Permit.	Allowed with Lawn Permit.	New lawns from sod or seed not allowed.	New lawns from sod or seed not allowed.
Trees, Shrubs and Perennials <i>Xeriscape preferred.</i>	Permitted with automatic systems.	Permitted with automatic systems.	Hand watering only for new plantings.	No Watering.

Water Management Plan - Program Elements				
ELEMENT	NORMAL	SEVERELY DRY Stage I	EXCEPTIONALLY DRY Stage II	EMERGENCY CONDITIONS Stage III
		Surcharge in effect	Surcharge in effect	Surcharge in effect
Commercial and Irrigation Only Accounts				
Commercial and irrigation accounts are eligible to enroll in the Large Property Watering Variance Program for greater flexibility in irrigation practices. The requirements for this program are available by calling the Water Conservation Office at 303.739.7195. <i>For entities not enrolled in the Water Variance program, the program elements identified under Residential Customers applies.</i>				No Watering.
New Landscape Installation New landscapes must adhere to the City of Aurora Landscape Standards. All dry land seeding must comply with Sec. 146-1429 of the landscape standards.				
Turf/Seed <i>Lawn Permit is required if the installation are 250 sq. ft. or greater. The permit allows watering as needed outside of the normal restrictions. New seed is granted a watering exemption for 30 days, and new sod is granted a watering exemption for 20 days. Dry land seeding always permitted.</i>	Allowed with Lawn Permit.	Allowed with Lawn Permit.	New lawns from sod or seed not allowed.	New lawns from sod or seed not allowed.
Trees, Shrubs and Perennials <i>Xeriscape preferred</i>	Permitted with automatic systems.	Permitted with automatic systems.	Hand watering only for new plantings.	No Watering.
City of Aurora Municipal Use, including Parks and Golf Courses (includes Athletic Fields and Street Medians)				
Irrigated with Potable Water	Irrigated through a Parks Water Management Plan or Golf Water Management Plan approved by Aurora Water.			No Watering.
Irrigated with Alternative Water Sources	Irrigated according to industry approved evapotranspiration irrigation practices approved by Aurora Water.			No Watering.
Street Medians	Limited use of potable system based on volume allocation for each metered system.	Irrigated only with transported, reclaimed water, quick couplers, drip, and bubblers. Turf irrigated on a restricted volume allocation from potable system.	Irrigated only with transported, reclaimed water, quick couplers, drip, and bubblers. No turf watered.	No Watering.
New Landscape Installation New landscapes must adhere to the City of Aurora Landscape Standards. All dry land seeding must comply with Sec. 146-1429 of the landscape standards.				
Turf/Seed <i>Lawn Permit is required if the installation is 250 sq. ft. or greater. The permit allows watering as needed outside of the normal restrictions. New seed is granted a watering exemption for 30 days, and new sod is granted a watering exemption for 20 days. Dry land seeding always permitted.</i>	Allowed with Lawn Permit.	Allowed with Lawn Permit.	New lawns from sod or seed not allowed.	New lawns from sod or seed not allowed.
Trees, Shrubs and Perennials <i>Xeriscape preferred</i>	Permitted with automatic systems.	Permitted with automatic systems.	Hand watering only for new plantings.	No Watering.

Water Management Plan - Program Elements				
ELEMENT	NORMAL	SEVERELY DRY Stage I	EXCEPTIONALLY DRY Stage II	EMERGENCY CONDITIONS Stage III
		Surcharge in effect	Surcharge in effect	Surcharge in effect
Miscellaneous Uses				
Commercial Car Washes <i>All new automatic car washes must install recycling systems. For information on Car Wash Best Management Practices (BMPs) and Certification Standards, contact the Water Conservation Office at 303.739.7195.</i>	Noncertified car washes must incorporate BMPs.	Noncertified car washes must incorporate BMPs.	Noncertified car washes will not be allowed to operate. No new car washes can be installed.	Car washes will not be allowed to operate.
Power Washing <i>Power washing is regulated by the Colorado Dept. of Health, Water Quality Control Division.</i>	Approved for cleaning purposes as long as the maximum flow rate does not exceed three gallons per minute.	Approved for cleaning purposes as long as the maximum flow rate does not exceed three gallons per minute.	Extreme health and safety issues only. No routine washing; mechanical dry brushing only.	Not allowed.
Community Gardens <i>Gardens, when properly managed, typically require 50% less water than cool season turf.</i>	May be watered by hand or drip system method on any given day.	May be watered by hand or drip system method on any given day	May be watered by hand or drip system method on any given day.	No irrigation.
Fire Hydrant Usage	Per City of Aurora Code Sec. 138-156 - It shall be unlawful for any person to connect or in any way draw water from any fire hydrant located within the city which is served by city water unless such person has first obtained a permit issued by the director of water or his or her duly authorized representative designating the fire hydrant to be used for a specific period of time.			Not allowed.
Construction <i>Soil compaction, dust control, architectural uses, concrete mix</i>	Allowed with no wasting of water.	Allowed with no wasting of water.	Any request for construction water must be approved by the Director of Aurora Water.	Not allowed.
Water Pipeline Flushing	BMPs witnessed by City of Aurora personnel. Only use to meet health and safety requirements. When practical, use tanker trucks to capture and reclaim water during flushing.			
Pipeline Pressure Testing	BMPs witnessed by City of Aurora personnel. Only use to meet health and safety requirements. When practical, use tanker trucks to capture and reclaim water during flushing.			
Transportation of Water	Any request to transport potable water outside of the City of Aurora must be approved by the Director of Aurora Water. Any requests for water for oil and gas exploration must be reviewed and approved by City Council.			
Events	Water use for special events must be approved by the Director of Aurora Water or a designee. <i>See Appendix E for regulations/guidelines.</i>			
Fire Protection	Hose testing allowed using city ponds. All firefighting operations will be maintained under all conditions.			

Normal Stage

Residential Accounts

Customers may choose which days they water but watering shall not exceed three days per week

Multifamily, Commercial & Irrigation

Customers may choose which days they water but watering shall not exceed three days per week.

Commercial and irrigation customers are eligible to enroll in the Large Property Watering Variance Program for greater flexibility in irrigation practices. The requirements for this program are available by calling the Water Conservation Office at 303.739.7195.

Outdoor watering is prohibited between the hours of 10 am and 6 pm, from May 1 to September 30, even during a Normal Stage recommended schedule with the exception of new sod and seed installation with a city-issued permit. These periods of irrigation apply to the time of application and not the time an irrigation zone is started.

Stage I - Severely Dry

Stage I - Severely Dry - Mandatory Watering Schedule <i>drought surcharge in effect per City Ordinance Section 138-223 - Water rates and charges</i>						
Sun	Mon	Tue	Wed	Thurs	Fri	Sat
EVEN Address Single Family, Duplex, Triplex, and Fourplex	Additional City needs/or by Permit only No watering all other classes	OTHER Multi-family, HOA, Non- residential	ODD Address Single Family, Duplex, Triplex, and Fourplex	EVEN Address Single Family, Duplex, Triplex, and Fourplex	OTHER Multi-family, HOA, Non- residential	ODD Address Single Family, Duplex, Triplex, and Fourplex

Day/Address Assignment: Watering shall be limited to a maximum of two days per week in accordance with the following procedure:

Residential Accounts

1. Single family and duplex, triplex, and fourplex residences with addresses ending in an even number allowed to irrigate on Thursdays and Sundays.
2. Single family and duplex, triplex, and fourplex residences with addresses ending in an odd number allowed to irrigate on Wednesdays and Saturdays.

Multifamily, Commercial & Irrigation

1. Multi-family, homeowners' association (HOAs) common areas, nonresidential and other large unit or multiunit properties will be allowed to irrigate on Tuesdays and Fridays. Irrigation-only accounts will have their billing and watering variance program allocations reduced by 20%.
2. Mondays will be set aside for Aurora Parks and Open Space needs and Aurora Water needs. For all other customer classes, Mondays will be enforced as a no watering day.

Permitted hours of irrigation: Mandatory water schedules begin at 12:00 am and end at 11:59 pm on the assigned day when restrictions are in place.

Outdoor watering is prohibited between the hours of 10 am and 6 pm from May 1 to September 30, even during a Normal Stage recommended schedule with the exception of new sod and seed installation with a city-issued permit. These periods of irrigation apply to the time of application and not the time an irrigation zone is started.

Commercial and irrigation customers are eligible to enroll in the Large Property Watering Variance Program for greater flexibility in irrigation practices. The requirements for this program are available by calling the Water Conservation Office at 303.739.7195.

Stage II - Exceptionally Dry

Stage II - Exceptionally Dry Schedule - Mandatory Watering Schedule <i>drought surcharge in effect per City Ordinance Section 138-223 - Water rates and charges</i>						
Sun	Mon	Tue	Wed	Thur	Fri	Sat
EVEN Address	Additional City needs or by Permit only	OTHER	No watering	No watering	No watering	ODD Address
Single Family, Duplex, Triplex, and Fourplex	No watering all other classes	Multi-family, HOA, Non-Residential				Single Family, Duplex, Triplex, and Fourplex

Day/Address Assignment: Watering shall be limited to a maximum of one day per week in accordance with the following procedure:

Residential

1. Single family and duplex, triple and fourplex residences with addresses ending in an even number will be allowed to irrigate on Sundays.
2. Single family and duplex, triplex and fourplex residences with addresses ending in an odd number will be allowed to irrigate on Saturdays.

Multifamily, Commercial & Irrigation

1. Multifamily, homeowners' association (HOAs) common areas, nonresidential and other large unit or multiunit properties will be allowed to irrigate on Tuesdays. Irrigation-only accounts will have their billing and watering variance program allocations reduced by 50%.
2. Mondays will be set aside for Aurora Parks and Open Space needs and Aurora Water needs. For all other customer classes, Mondays will be enforced as a no-watering day.

Outdoor watering is prohibited between the hours of 10 am and 6 pm from May 1 to September 30, even during a Normal Stage recommended schedule with the exception of new sod and seed installation with a city-issued permit. These periods of irrigation apply to the time of application and not the time an irrigation zone is started.

Commercial and irrigation customers are eligible to enroll in the Large Property Watering Variance Program for greater flexibility in irrigation practices. The requirements for this program are available by calling the Water Conservation Office at 303.739.7195.

Stage III– Emergency Conditions

Stage III– Emergency Conditions <i>drought surcharge in effect per City Ordinance Section 138-223 - Water rates and charges</i>						
Sun	Mon	Tue	Wed	Thur	Fri	Sat
No outdoor irrigation will be permitted						

Posting of Irrigation Schedule:

1. The watering restrictions will be mailed first class to all account holders according to Aurora Water billing records
2. The City Clerk shall receive a copy of the watering schedule;
3. The watering schedule and a general outline of the policy will be posted on the Aurora Water website (<http://www.aurorawater.org>)
4. Watering schedules will be given out to all lawn permit and/ irrigation permit applicants.

New Customers

All new Aurora Water customers are given educational materials upon application for water service through the Water Department.

Large/Common Area/Public Area Irrigation - Large Property Watering Variance Program

Commercial properties and residential large properties with more than 20,000 square feet of irrigated landscape may qualify for the Watering Variance Program. The Watering Variance Program allocates a set amount of water to the customer and allows them to decide how, when and where to apply it to their landscape. Customers enrolled in the program are still prohibited from watering between 10:00 am and 6:00 pm without a permit. Aurora Water will give qualifying customers a volume allocation based on the landscape square footage and the historical value of 17.45 gallons per square foot (28” per square foot) of water per year for high-water turf grass and 9.345 gallons per square foot (15” per square foot) for low-water non-turf areas. If the annual allocation is exceeded, they may lose their watering variance privilege. Upon revocation of watering variance privileges, watering on assigned days based on the current restrictions will be enforced. If watering restrictions are implemented as the result of a drought, allocations will follow the current Water Management Plan reduction goals. Permitted hours of irrigation and waste of water ordinance still apply.

Appropriate signage indicating that the property is being irrigated under a Water Variance Program must be displayed in a prominent area throughout the irrigation season during mandatory day(s) of the week watering schedules. If this application has not been received, the property will be assumed to comply with the Multifamily, HOA, Nonresidential mandatory irrigation schedule along with the applicable requirements of the Water Wasting Ordinance. See www.aurorawater.org for current program.

Exemptions

Exemptions may be granted should the Water Conservation Division determine that a hardship or special

circumstance exists for an owner or responsible party due to an irrigation requirement that cannot be met under previously outlined criteria. Call the Water Conservation Office at 303.739-7195 for more information.

Prohibited Water Uses

Any violation of the Water Management Plan shall be a violation of Section 138-190, Waste of Water, of the Aurora City Code (see Appendix C). In addition, the following uses shall be violations of the Waste of Water Ordinance: 1) irrigation to any area resulting in ponding or pooling of water or runoff of water not absorbed into the ground or soil which flows away from the area being irrigated, 2) failure to repair any irrigation system that is leaking, 3) application of water intended for irrigation to an impervious surface, such as a street, parking lot, sidewalk, or driveway or using potable water to wash down outdoor impermeable surfaces, 4) letting water run unrestricted from a hose or faucet to drainage, 5) operation of any irrigation system in conflict with demand management tools authorized under Appendix B, 6) any usage of reclaimed water that is not in compliance with the city permit and the CDPHE Notice of Authorization for its use. Similar or repeating situations, as observed by water monitors, will also be cited using a standard of reasonableness and discretion.

Irrigation System Repair

Operation of any irrigation system outside of its established watering schedule may be allowed for repairs or routine maintenance without incurring a violation provided the following best management practices (BMPs) are incorporated:

Residential: a person is on site at all times and testing is limited to verifying proper operation and identifying problems of the irrigation system.

Commercial and City of Aurora properties: a person is on site at all times and testing is limited to verifying proper operation and identifying problems of the irrigation system. A sign must be posted in plain view indicating "irrigation repairs and system checks in progress".

Lawn and Irrigation Ordinance Violations (Residential/Commercial)

Compliance to the lawn permit and irrigation standards ordinances ensures uniform design/installation practices and results in the conservation of water.

Noncompliance to the lawn permit ordinance and/or the irrigation standards ordinance shall be a violation of the Water Management Plan and thus a violation of Section 138-190, Waste of Water, of the Aurora City Code. Such noncompliance may result in violations issued to the responsible party and the owner(s) if the owner's address differs from the responsible party's address. The following will be considered a violation:

- Lawn installed without a lawn permit.
- Lawn installed without an inspection.
- Irrigation installed without plans submittal and/or approval.
- Irrigation installed without an irrigation permit.
- Irrigation installed with a permit but without an inspection.
- Improper irrigation equipment used.
- Irrigating or attempt to irrigate without the water meter being set.
- Irrigation connection to incorrect water meter.

Violations to the lawn and/or the irrigation ordinances may result in charges being issued against the responsible party per section the Violations Appendix of the Water Management Plan.

The purpose of enforcement of the Water Management Plan is to promote wise water use of the City's available water resources. This enforcement is conducted by water monitors within Aurora Water Conservation to protect the interests of the public and protect public health and safety. As the focus of the program is to encourage compliance, first violations are issued a warning with no charges applied. Subsequent violations have charges assessed on a graduating scale.

Water Monitors

Water monitors are employed as seasonal part-time contingent positions. Monitors are hired by Aurora Water and receive training in customer service, public education, enforcement and safety.

Water monitors will document the date, time and type of watering schedule or water wasting violation. Monitors will note if personal contact was made with the owner or responsible party and what level of public education took place, including distribution of schedules and water conservation materials. Water monitors will make reasonable efforts to make personal contact with the responsible party.

Monitors will disseminate educational material to water customers regarding water conserving landscaping practices.

Evidence of Violation

Violations of the regular and approved alternative watering schedules are violations of Section 138-190 of the Aurora City Code and are subject to warnings, charges and potential discontinuance of service or the installation of a flow restrictor for continued noncompliance.

Monitors will typically take photographs of the violation(s), documenting date and time. Should the violation(s) be appealed, this data will serve as evidence that the violation actually occurred and will be supplied to the owner or responsible party upon request.

Warning/Charges Issuance Process

Charges for violations are applied to the appropriate water billing account. Violations are processed on a daily basis during regular business hours on standard forms that will be sent by U.S. mail to:

1. the responsible party with a copy being sent to:
2. the owner(s), if the owner's address differs from the responsible party's address

Water Department personnel will make a reasonable attempt to notify all involved parties of the noncompliance so that they will be informed of the violation and to provide the opportunity to address the situation as soon as possible. Although monitors document violations, private parties may use the H2O Tracker app, the PublicStuff App or website, the Access Aurora app or website, or contact Aurora Water Conservation 303.739.7195 to notify them that a violation is occurring. As staff are available, they will be dispatched to investigate the complaint and document it accordingly.

Due to the size, public exposure and potential negative impact to the water system of large, common and/or public areas, responsible parties, i.e. landscape contractors, may be immediately notified through office, cell or pager numbers (when available) of the violation so that the violation may be immediately addressed. This is accomplished during regular business hours. Notification will be made and charges issued for subsequent violations for the noncompliance. Charges shall be applied to customer accounts within two business days of the violation.

1st Violation – Warning, no charge incurred.

A notice is left at the property as well as being mailed to the responsible party and the property owner (if different from the responsible party). Also included in this notification are the specifics of the violation and information reminding the customer of the watering restrictions and their purpose. Where possible and appropriate, water monitors will attempt to notify the water customer by telephone or in person.

2nd Violation – Charge

A notice is left at the property as well as being sent using certified mail to the responsible party and the property owner (if different from the responsible party). Included in this notification are the specifics of the violation and information reminding the customer of the watering restrictions and their purpose. Where possible and appropriate, water monitors will attempt to notify the water customer by telephone or in person. Customers can have charges waived by attending a Water Conservation Workshop.

All Subsequent Violations – Charge and possible suspension of water service or installation of flow restrictor.

A notice is left at the property as well as being sent via certified mail to the responsible party and the property owner (if different from the responsible party). Also included in this notification are the specifics of the violation and information reminding the customer of the watering restrictions and their purpose. Where possible and appropriate, water monitors will attempt to notify the water customer by telephone or in person.

Subsequent Violations: The enforcement form is processed with the appropriate violation and mailed via certified mail with notice to the owner and the responsible party that water service will be discontinued. At the discretion of the Water Conservation Supervisor and approval of the Director of Aurora Water, a flow restrictor may be installed in lieu of discontinuance of service. This action will be done within the next seven business days following the observed and subsequent violation. To reinstate water service or have the flow restrictor removed, an appeal must be sent to the Director of Aurora Water in writing identifying the steps taken to correct the violation pattern.

Violation timeline

Upon being informed of committing a water waste violation, the owner or responsible party will be allowed a specified period of time to repair the condition or comply with the Water Management Plan without incurring subsequent violations:

If notified in person by Aurora Water personnel, residential customers shall have three (3) days to correct the identified problem. If notification is not in person, then residential customers shall have three (3) calendar days from receipt of notice to correct the identified problem. Customers with multi-family, commercial, irrigation or hydrant accounts have three (3) days from notification to correct the problem.

Violation Matrix – Residential Accounts

	Time period to fix problem (if notified in person)	Time period to fix problem (if notified by mail)	Result if not fixed in time period
Warning	3 days	3 days from receipt of notice	2nd violation and charge. Charges waived by attending a Water Conservation Workshop
Subsequent Violations	3 days	3 days from receipt of notice	Subsequent violations - charge and/or suspension of service

Violation Matrix - Multi-family, Commercial, Irrigation and Hydrant Accounts

	Time period to fix problem	Result if not fixed in time period
Warning	3 days	2nd violation and charge. Charges waived by attending a Water Conservation Workshop.
Subsequent Violations	3 days	Subsequent violations - charge and/or suspension of service

Charges

Per Section 138-190, charges will be issued against owners for noncompliance with the Water Management Plan. Aurora Water reserves the ability to immediately terminate irrigation or other water service for cause, and the service not be reinstated until the system or use comes into full compliance with the requirements of the Water Management Plan. Current policy outlines the following charges to be applied to the appropriate water billing account.

For nonpublic common areas, the private party that is owner for the project is responsible for adhering to the criteria outlined in this outdoor water use program and all charges incurred for noncompliance. Charges for noncompliance are based on the property type. Charges for the 2nd violation may be waived by attending a Water Conservation Workshop.

Appeal Process

Owners are responsible for ensuring that their properties meet the Water Management Plan regulations.

The appeal process does not apply to warnings that have been issued. A warning violation cannot be appealed. Appeals of violations with associated charges may be submitted to Aurora Water Conservation.

If an owner or responsible party feels that a charge has occurred by mistake or through extenuating circumstances, a completed written appeal letter must be received by the Aurora Water Conservation Supervisor within 20 days of the date on the notification letter. The written document should include the following information:

- Specific violation in question. Date and time of violation.
- Grounds for appeal.

Timing of Appeal Request: Appeals must be received within 20 calendar days of the date on the notification letter. Any appeal received after that date will not be considered and the associated charges will not be removed from the account.

Timing of Response to Applicant: Aurora Water Conservation must respond to the customer within 10 business days of receipt of an appeal request or the charge will be removed from the account.

Crediting Criteria: Associated charges must be paid by the customer by the billing due date of their water bill. If the customer's appeal is approved, the related charge will be credited to their water billing account within the subsequent billing cycle.

Should the appeal be denied, a further appeal may be made to the Director of Aurora Water for final disposition.

Rain barrels

Under House Bill 16-1005, any single family residence or multi-family residence with 4 or fewer units may install two 55 gallon rain barrels. These rain barrels must be sealed to prevent insects or pest from using the stored water. The water from these rain barrels may only be used for outdoor use, such as garden irrigation. The water cannot be used for drinking water or indoor household purposes. The use of rain barrels is not regulated by the Water Management Plan.

Wells - Public and Private

Water wells are controlled by the State of Colorado and are permitted exclusively to a specific property. Only water wells identified under 138-154 (b) may be utilized in Aurora. If a complaint is received, Water Conservation personnel will verify that the water source is from a permitted well.

When well water is used for irrigation purposes, the City of Aurora requests that a sign be displayed in a conspicuous place indicating well water is in use for irrigation purposes.

Water Availability Incentive Programs

Incentive programs may be implemented at the discretion of the Director of Aurora Water and through the use of approved and allocated funding mechanisms. Current incentive programs will run year round but are contingent upon available funding.

Demand Management Tools

Should circumstances require further demand management, the Director of Aurora Water can recommend, based on water availability, to the City of Aurora Council that additional demand management programs are required.

Commitment to Public Education and Awareness

Public education and awareness regarding water use management is part of the City of Aurora's ongoing water conservation program. It is recognized that Aurora is in a semi-arid climate zone and will periodically be exposed to severe and extended periods of drought. When extreme natural events occur, the city must impose progressively higher levels of water restrictions to ensure adequate levels of stored water are maintained to meet the basic needs for its residents and businesses. The City of Aurora will always be committed to educating the public about water conservation issues.

Citizens' Water Advisory Committee

Aurora Water coordinates the activities of the Citizens' Water Advisory Committee to solicit community feedback on water conservation and water management programs that may be considered as a part of a staged response to reduced water supply conditions and as an integrated element of the city's overall water management program.

Awareness Programs

Water personnel are available for presentations to HOAs, Ward meetings and other groups throughout the year. Prior to the start of the irrigation season, information is sent to all water accounts stating the schedules and any regulatory changes for the upcoming year. Detailed information is included in the city's newsletter, NewsAurora, the city's website and social media channels. Watering restrictions are also sent in a postcard.

Notification and Additional Information

Notification of new watering restrictions, new rate structures and other critical messages will be mailed to each customer account to ensure complete dissemination. Media will be asked to run public notices to advise customers of these conditions and requested responses.

Water Conservation Ordinances

An integral part of the Aurora Water Conservation program and water availability response is the adoption of ordinances designed to conserve water. Along with water restrictions, education programs and financial incentives, water conservation ordinances round out the multidisciplinary approach to water efficiency that Aurora Water promotes. As part of the Water Management Plan, these ordinances provide a context for a number of the restrictions and Best Management Practices outlined in the plan.

Waste of Water Ordinance - Article V. Section 138-190

Aurora City Code prohibits waste of water, characterized by excessive runoff of lawns, pooling of water and/or spraying of water onto impervious surfaces or failure to repair faulty or leaky irrigation equipment.

Lawn Permit Ordinance - Article V. Section 138-187

The ordinance requires the lawn installer to obtain a lawn permit from the Water Department, incorporate the proper amount of soil amendment and have the soil preparation inspected by a Water employee.

Car Wash Reclamation Ordinance - Water Engineering Design Standards

The ordinance requires that all new automatic car washes and/or those automatic car washes in Aurora undergoing a significant renovation (>50% of footprint), install a water reclamation system. The details of car wash requirements are found in Water Engineering Design Standards

Irrigation Standards Ordinance - Article V. Section 138-192

The ordinance requires that all new irrigation systems adhere to good design and efficiency standards and are inspected to ensure they are held to these standards.

Landscape Ordinance – Article 14

Turf Regulations - Article 14. Section 146-1427

The ordinance changes the landscape requirements for homeowners that limits the maximum amount of turf grass required.

Xeriscape Design – Article 14. Section 146-1437

The ordinance changes the landscape requirements for homeowners to allow an all-Xeriscape landscape.

Power Washing

- Mechanical brushing must be used as first treatment
- Use vacuums to remove or collect loose debris
- The maximum flow rate does not exceed 3 gallons per minute (high pressure/low volume nozzles)
- Use biodegradable soap (non-toxic and phosphate free)
- Do not pour wash water down the storm drain
- Eliminate or minimize runoff wash water from entering storm drain

Charity Car Wash

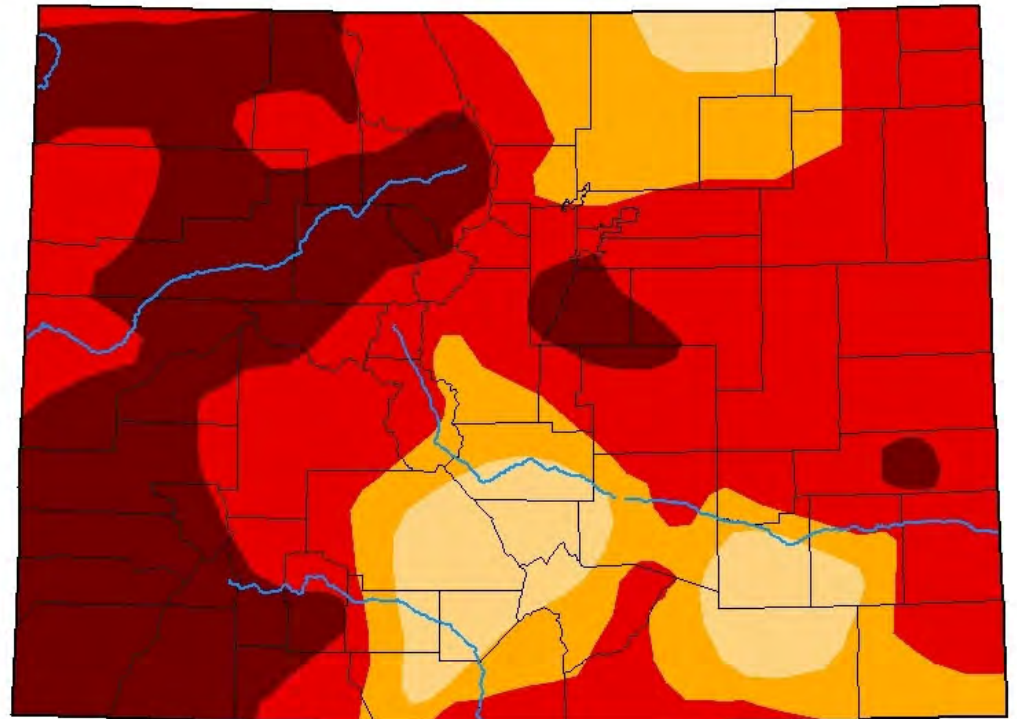
- Use automatic shut-off nozzles on the end of your hoses. Low volume/high pressure power washers with ≤ 3 gallons per minute output preferable.
- Use buckets for soaping up the cars.
- Only use biodegradable soap (non-toxic, phosphate free).
- Eliminate or minimize runoff wash water from entering storm drain by positioning wash area away from storm drains and/or blocking storm drains with sand or gravel bags.
- Never dispose of wash water in storm drain. Disposing of soapy wash water in the sanitary sewer (i.e. toilet) is the best option.

Swimming Pool Water Conservation

- Cover the pool when not in use to control evaporation and save energy from heat loss. Up to 95% of water loss from evaporation can be saved through the use of a pool cover when the pool is not in use.
- Reduce the temperature if possible, particularly when the pool is not in use.
- Limit the frequency of pool refilling. Only refill pool when required for water quality reasons.
- Backwash pool filters only when necessary. If the backwash cycle is controlled by a timer, check and adjust the frequency of the cycle to ensure optimal efficiency. Use head loss to determine backwash frequency (8-10 psi loss).
- Where feasible, use filter backwash for irrigating lawns or plants and shrubs or for cooling tower make-up.
- Lower the pool's water level as much as possible to reduce the amount of water that can be splashed out.
- Check the pool regularly for cracks and leaks and make repairs promptly. If pool drops more than 1 inch per day then investigate for problems.
- Replace shower heads in the changing area to low flow fixtures and post signs to encourage pool users to limit the time spent in the shower.
- Add a fence, trees or shrubs to provide a wind break to reduce evaporation.
- Utilize a pool vacuum that recycles water when cleaning the pool.

AURORA WATER DROUGHT RESPONSE

Lauren Nance
Citizens' Water Advisory
Committee February 9, 2021



January 19, 2021
(Released Thursday, Jan. 21, 2021)
Valid 7 a.m. EST



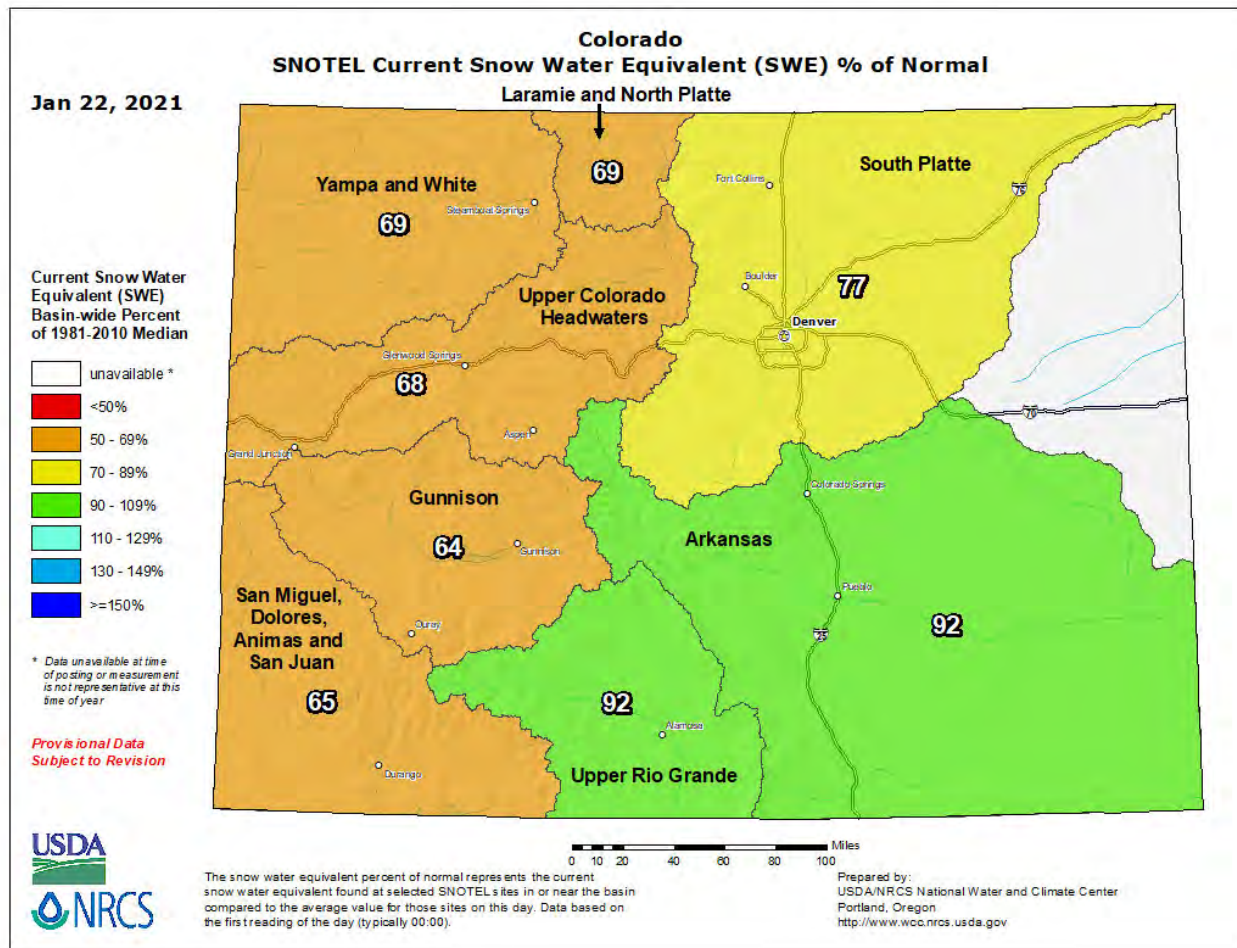
**AURORA
WATER**

AGENDA

- Current Drought and Water Supply Conditions
- State Drought Response
 - Stage 3 Activation
 - Colorado’s Municipal Water Task Force
- Metro Drought Coordination Team
- Aurora’s Drought Action Team
 - Drought Mitigation Options

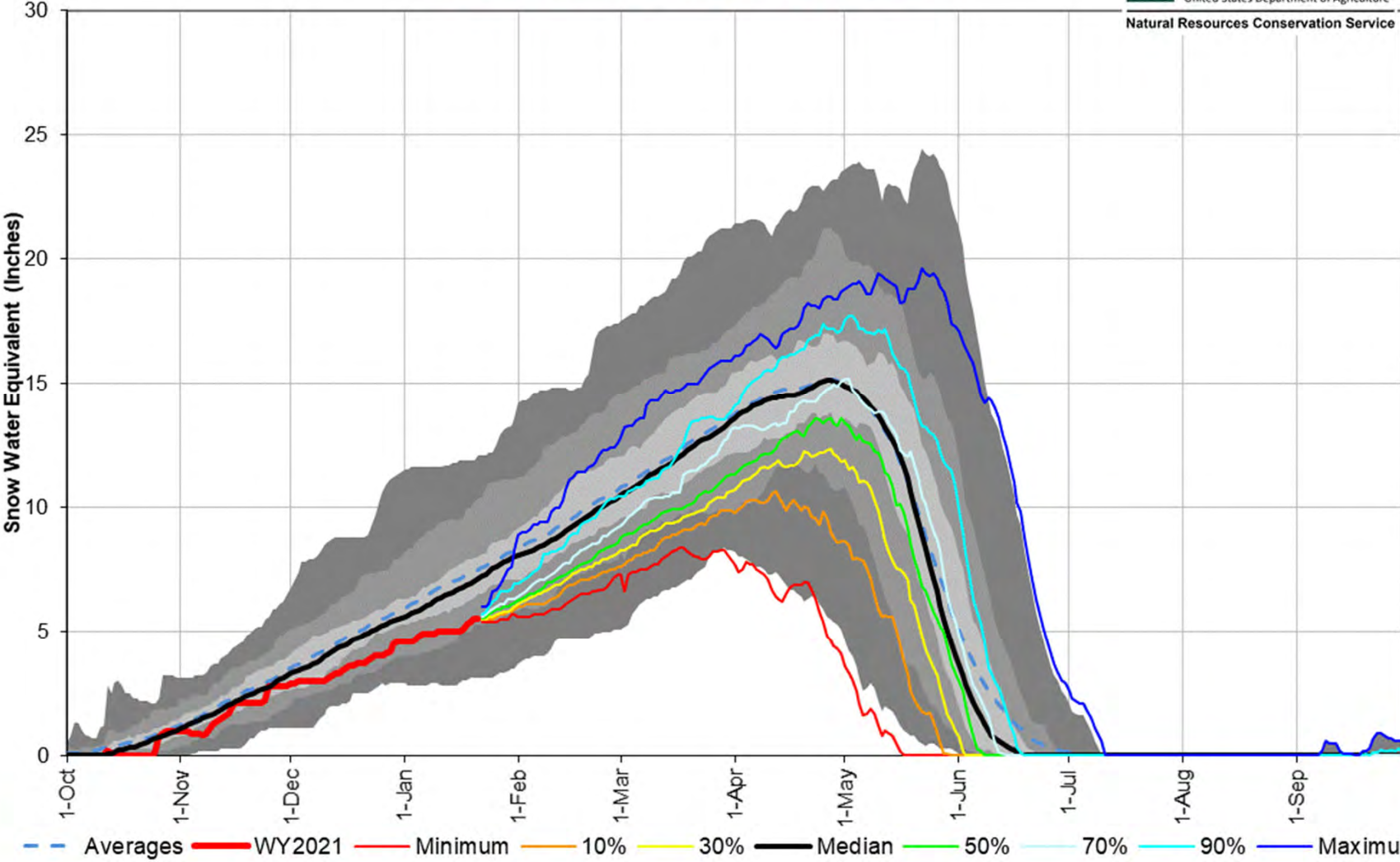


CURRENT DROUGHT & WATER SUPPLY CONDITIONS




South Platte River Basin with Non-Exceedence Projections

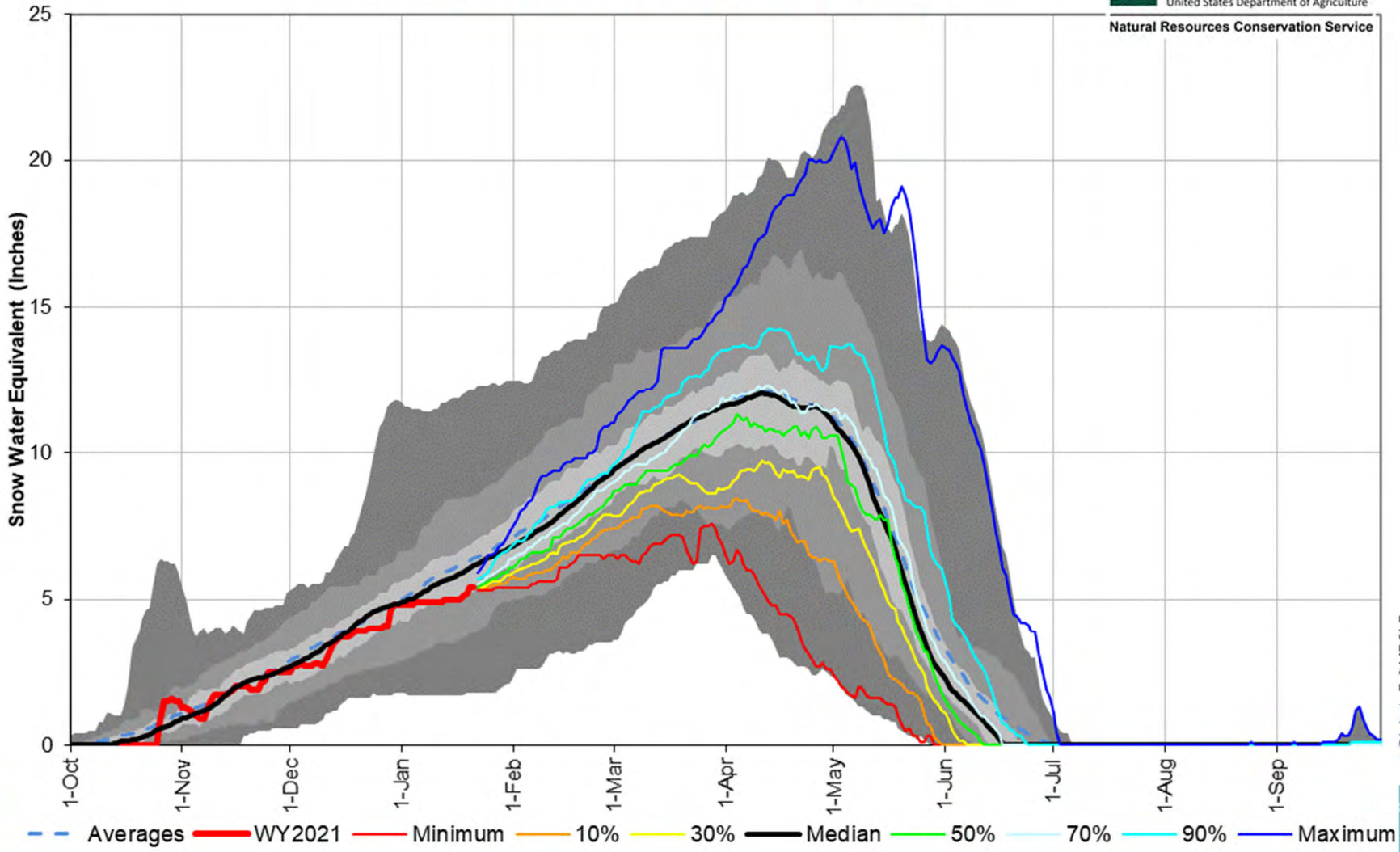
Based on Provisional SNOTEL Data as of Jan 21, 2021



Arkansas River Basin with Non-Exceedence Projections


Based on Provisional SNOTEL Data as of Jan 21, 2021

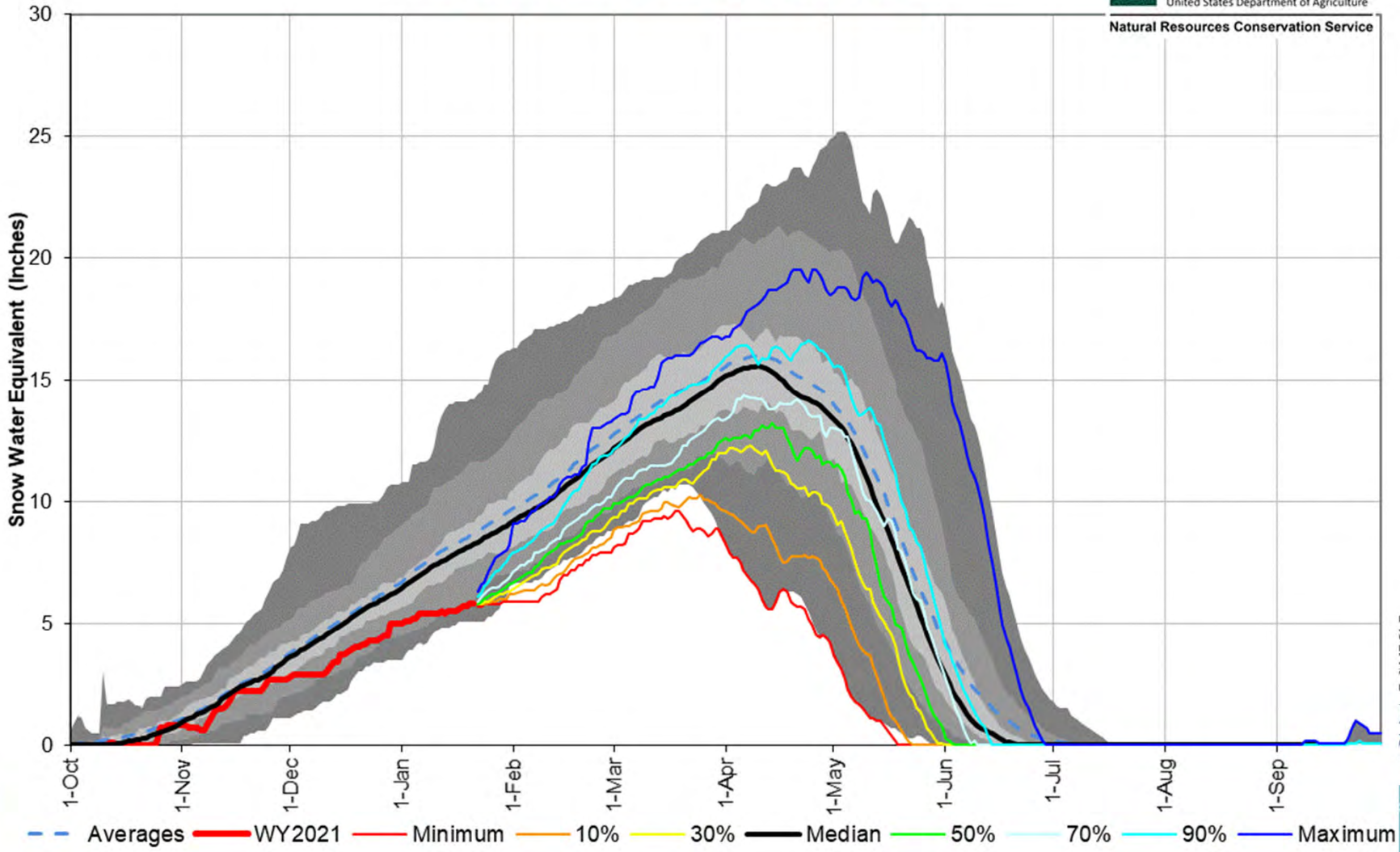
 United States Department of Agriculture
 Natural Resources Conservation Service



Colorado River Basin with Non-Exceedence Projections

Based on Provisional SNOTEL Data as of Jan 21, 2021

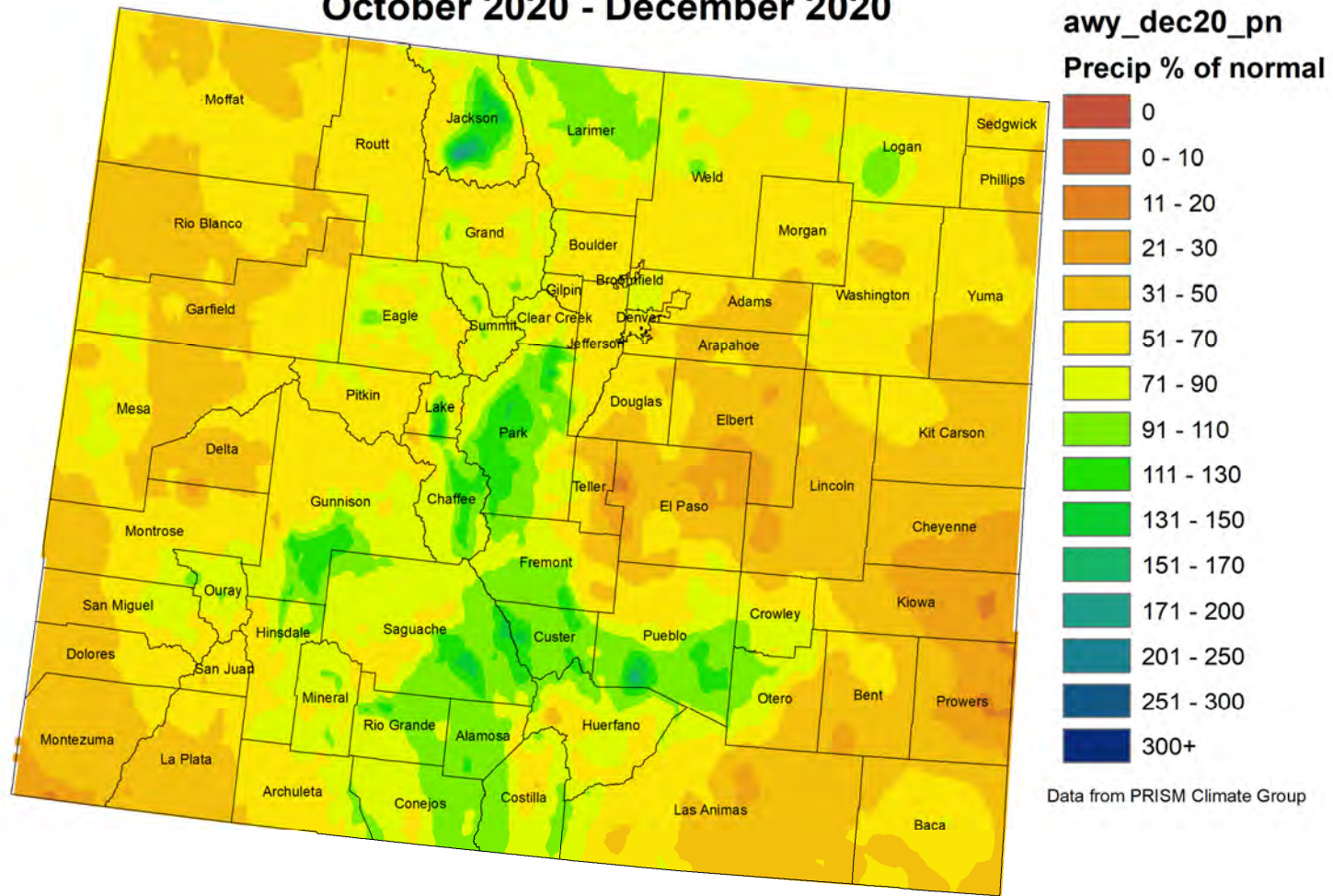

 United States Department of Agriculture
 Natural Resources Conservation Service



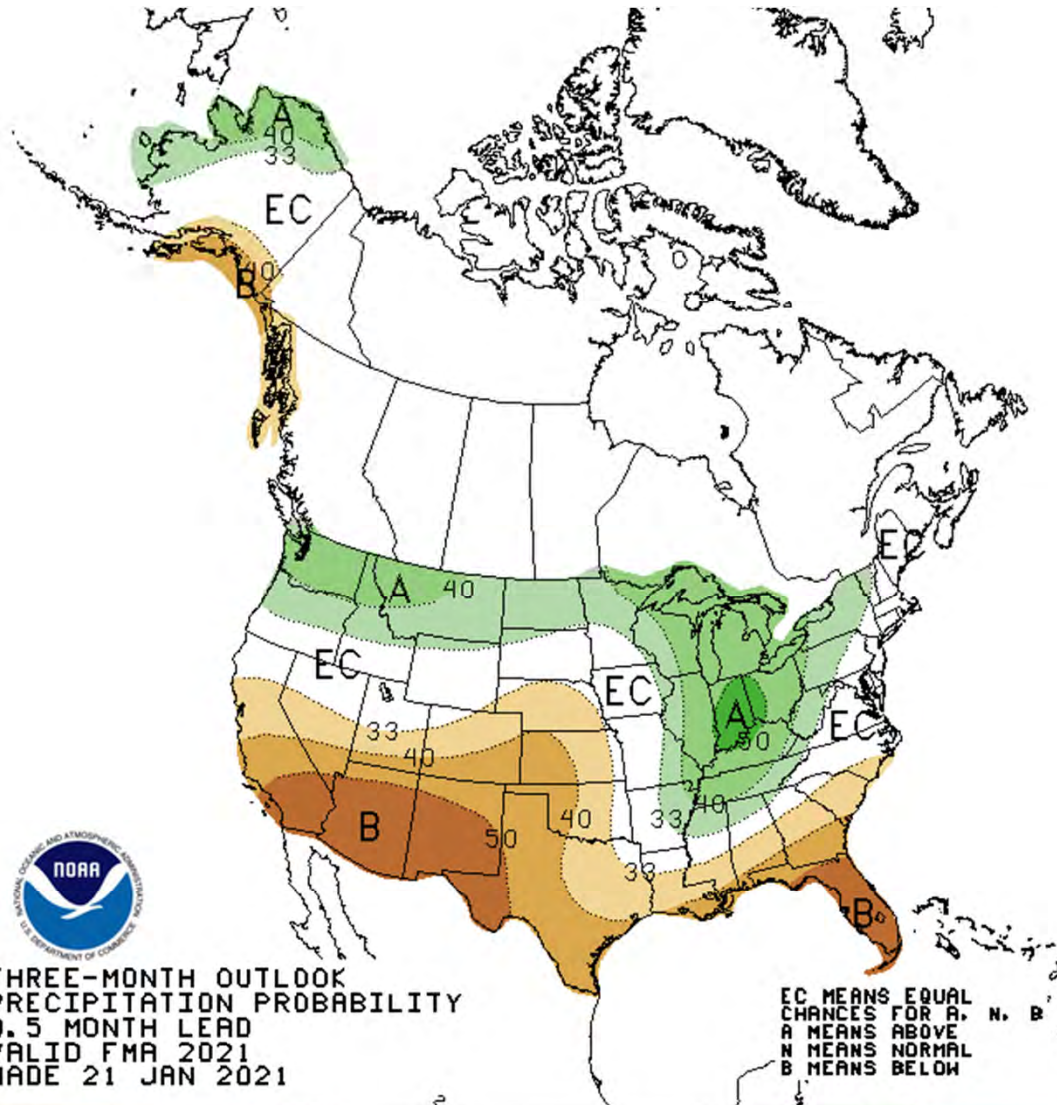
City of Aurora - Total Annual Distribution (Acre Feet)
Does not include deliveries to WISE



Colorado Water Year 2021 Precipitation as a Percentage of Normal October 2020 - December 2020

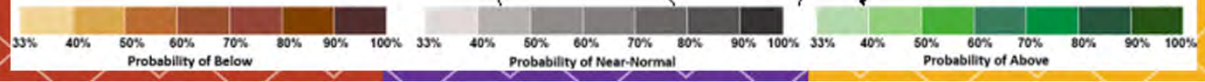


AURORA
WATER



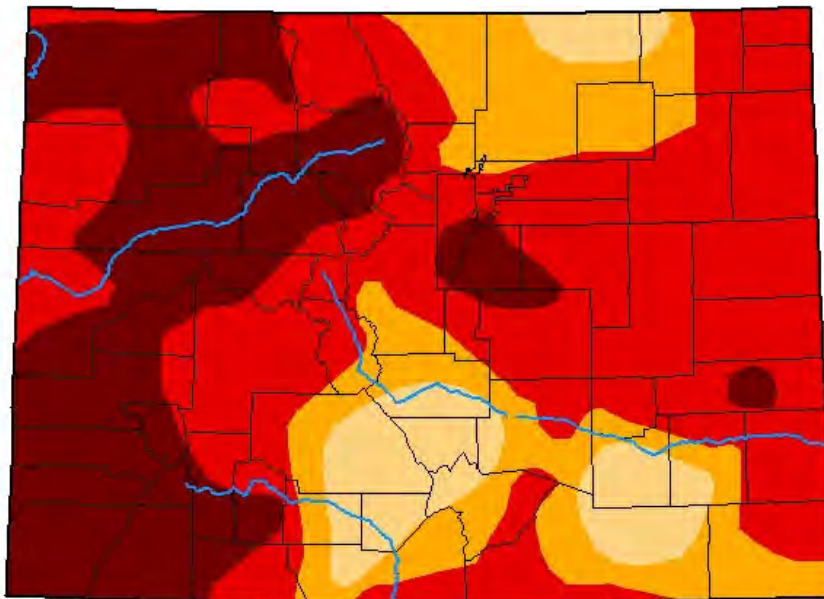
THREE-MONTH OUTLOOK
 PRECIPITATION PROBABILITY
 0.5 MONTH LEAD
 VALID FMA 2021
 MADE 21 JAN 2021

EC MEANS EQUAL
 CHANCES FOR A, N, B
 A MEANS ABOVE
 N MEANS NORMAL
 B MEANS BELOW



U.S. Drought Monitor Colorado

January 19, 2021
(Released Thursday, Jan. 21, 2021)
Valid 7 a.m. EST



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	100.00	91.06	73.63	27.59
Last Week <i>01-12-2021</i>	0.00	100.00	100.00	91.03	73.63	27.59
3 Months Ago <i>10-20-2020</i>	0.00	100.00	100.00	97.26	77.72	21.82
Start of Calendar Year <i>12-29-2020</i>	0.00	100.00	100.00	93.73	76.17	27.60
Start of Water Year <i>09-29-2020</i>	0.00	100.00	99.29	89.35	52.88	2.64
One Year Ago <i>01-21-2020</i>	22.39	77.61	51.19	13.84	0.00	0.00

Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

Author:

Richard Tinker
CPC/NOAA/NWS/NCEP

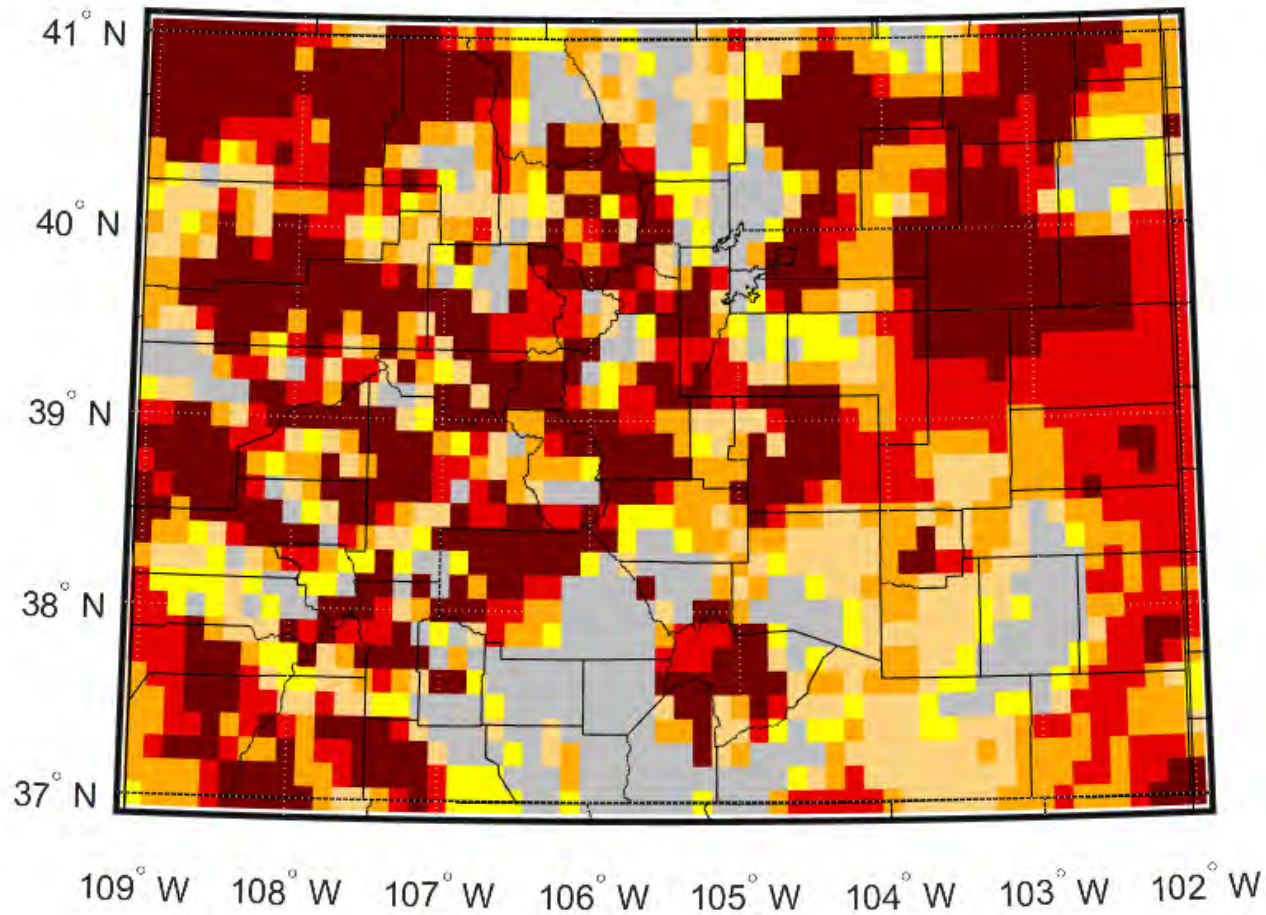


droughtmonitor.unl.edu



**AURORA
WATER**

Top Meter Soil Moisture Drought Category 01/13/2021



AURORA
WATER

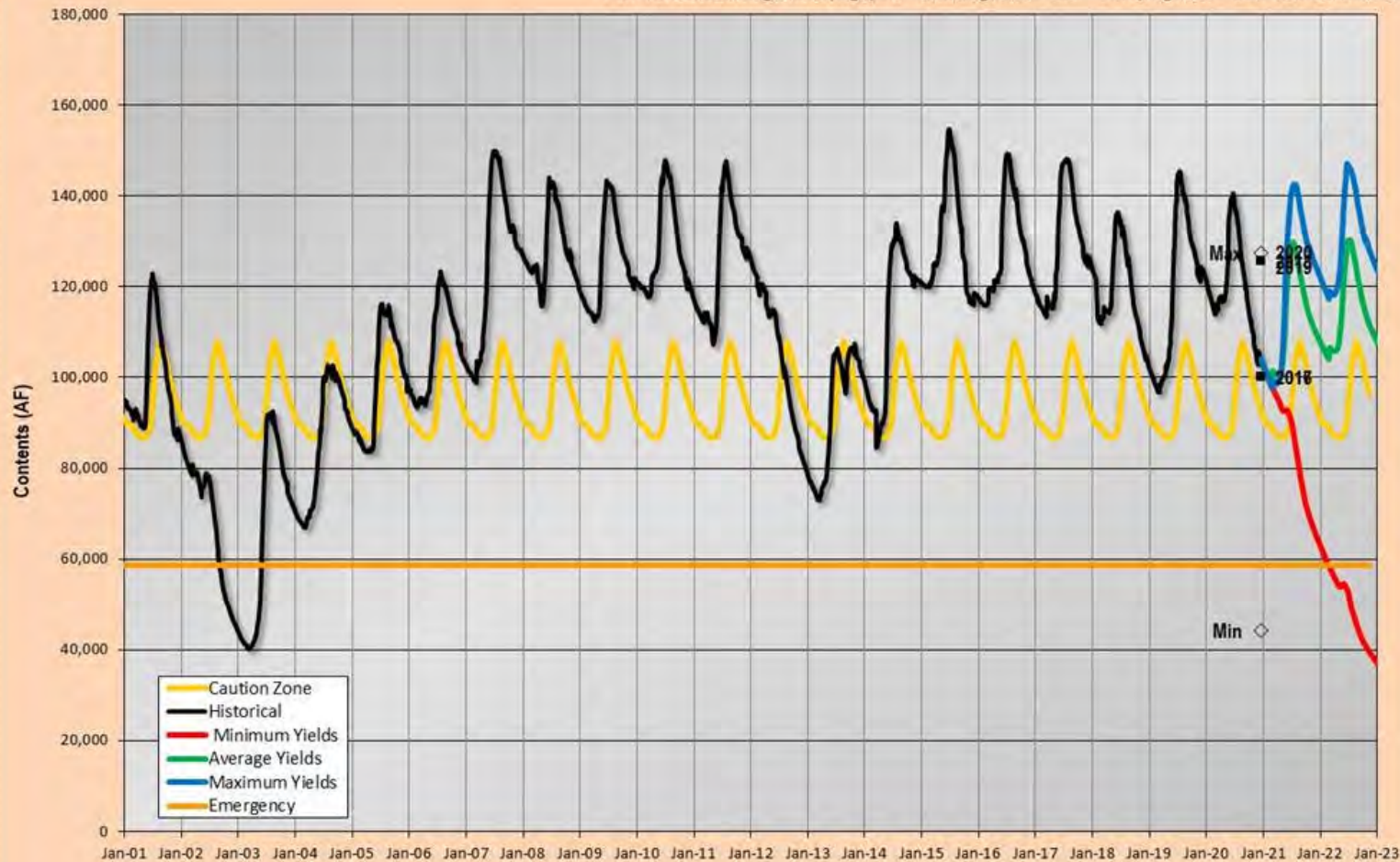


CITY OF AURORA - AURORA WATER Forecast of Total Reservoir Content

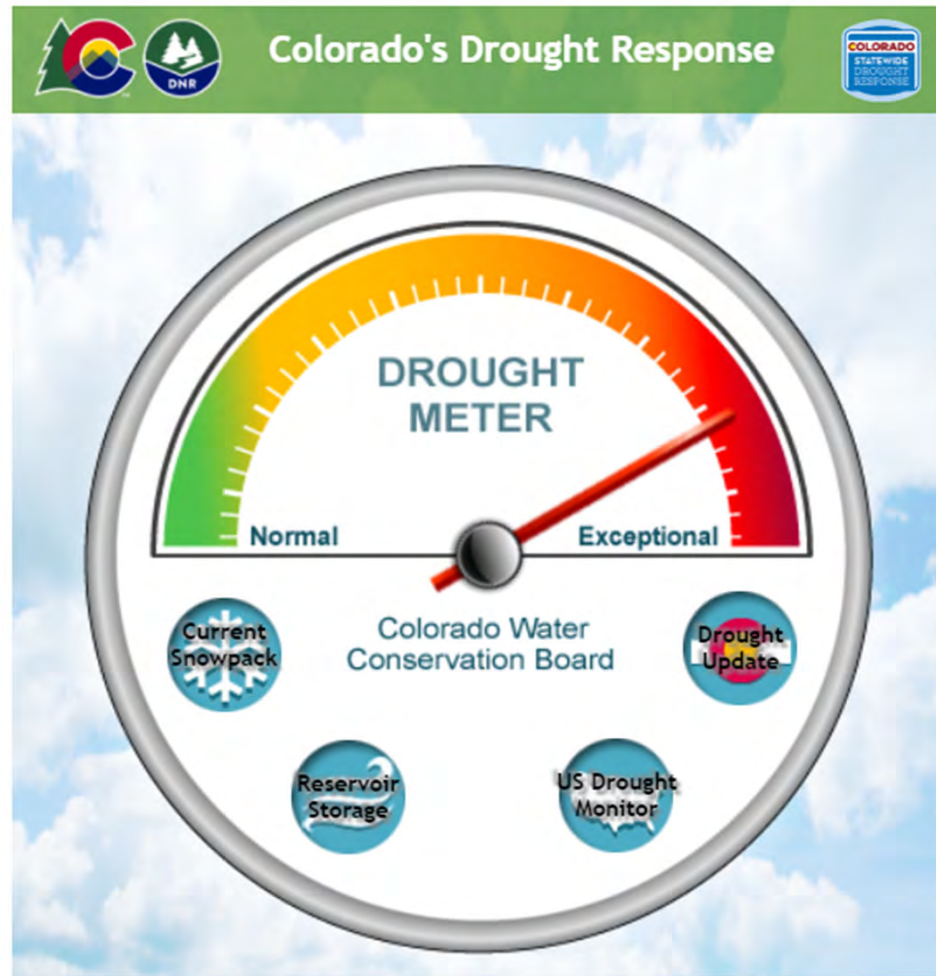
Forecast Beginning: Dec 31, 2020

Content forecast to be 99,976 af on May 01, 2021, or 64 % of full
Content forecast to be 105,065 af on May 01, 2022, or 67 % of full

PWP Forecast Settings: Rate (mgd) = 8 -- Blending ratio = 2:1 -- Pumping Rate = User Defined WISE ON



COLORADO'S DROUGHT RESPONSE



Colorado's Drought Response

- Colorado is in Phase 3 of Drought Plan
- Phase 3 activates the “Municipal Water Impact Task Force”
- Nov 30, 2020 – Governor Polis Transitioned State from Phase 2 to Phase 3 of “Full Plan Activation” of the Colorado Drought Mitigation and Response Plan

Links:

- [11/30/2020 Governor Polis Memo](#)
- [ANNEX A TO THE DROUGHT MITIGATION AND RESPONSE PLAN](#)

Drought Timeline

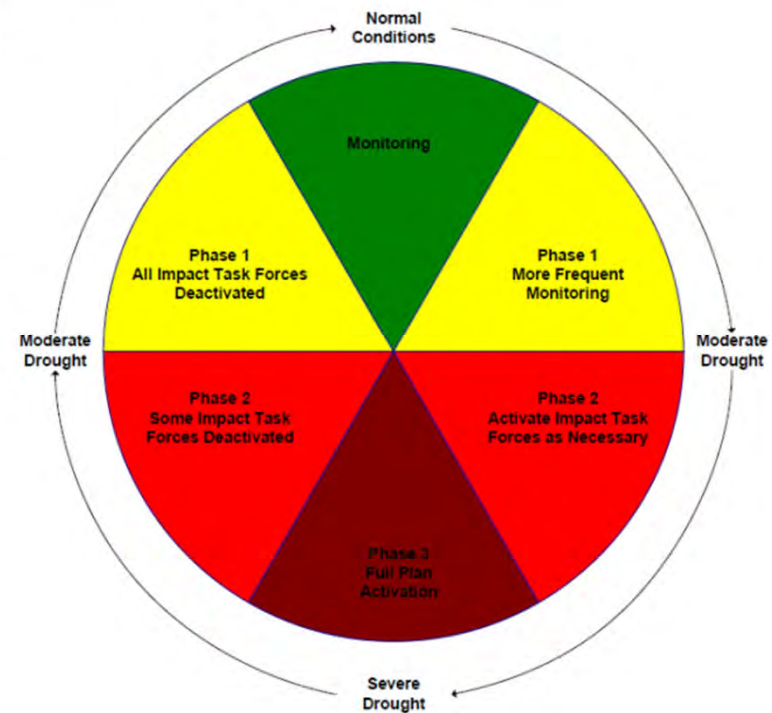
- ✓ April 23 - Drought Task Force Activated
- ✓ June 22 - Drought Plan Phase 2 and Agriculture Task Force Activation
Drought Plan Activation
- ✓ November 30 - Drought Plan Phase 3 and Municipal Water Task Force Activation
Drought Plan Expansion
- Organize task force members and determine early objectives



Phase 3 - Full Drought Plan Activation

Severity Indicators and Impacts (U.S. Drought Monitor, Palmer Drought Severity Index (PDSI), SWSI, SPI)	Drought Phase and Response Summary	Actions to be Considered
<p>Drought Monitor D3 Extreme Drought to D4 Exceptional Drought</p> <p>D 3 Ranges: CMPDSI or SWSI¹: -4.0 to -4.9 SPI²: -1.6 to -1.9 Indicator blend Percentile: 3-5 Impacts: Major crop/pasture losses; widespread water shortages or restrictions very likely to be imposed</p> <p>D4 Ranges: PDSI or SWSI: -5.0 SPI*: -2.0 or less Indicator blend Percentile: 0-2 Impacts: Exceptional and widespread crop/pasture losses; shortages of water in reservoirs, streams, and wells creating water emergencies</p> <p>PDSI Lowest reading at -2.0 to -3.9 in any river basin or modified Palmer climate division</p> <p>SPI Less than -1.0 to -1.99 SPI (six month)</p>	<p>Phase 3 Drought Emergency is declared by Proclamation of the Governor.</p>	<ul style="list-style-type: none"> • Governor's Memorandum updated to activate additional Impact Task Forces as necessary. • Activated ITFs continue to assess, report, and recommend response measures and incident mitigation. • Unmet needs are reported to the DTF Chairs. • DTF Chairs determine the unmet needs that can be met by reallocation of existing resources. Those which cannot be forwarded to the Governor with recommendations to support a request for a Presidential Drought Declaration. • Governor may request a Presidential Declaration. • If approved, Federal-State Agreement establishes Colorado DHSEM Director as the State Coordinating Officer (SCO). • Work with the Governor's office on long-term recovery operations

Figure 1 Drought Plan Implementation Cycle



Municipal Water Task Force

Purpose

The MWTF assesses pending and current drought impacts on municipal water supply and public health impacts and recommends and implements mitigation and response actions. Findings and recommendations of this task force facilitate effective response capabilities, as well as provide documentation for any emergency declaration.

Impact Assessment (Deliverable)

Collect, record, and analyze impacts from:

- Municipal water supply shortages
- Municipal water supply water quality impacts
- Overall economic impacts to the sector (present and projected)
- Social impacts from water rationing



Municipal Water Task Force - Who

Lead Agencies to Co-Chair:

- Department of Local Affairs (DOLA)
- Colorado Water Conservation Board (CWCB)

Core

- Colorado Department of Public Health and Environment (Water Quality Control Division and Air Pollution Control Division)
- DHSEM
- DWR
- Colorado Municipal League
- Colorado Counties, Inc.
- Special District Association
- USDA (Rural Development)
- Colorado Rural Water Association

Supporting Stakeholders

- US Army Corps of Engineers
- Department of Fire Science Technology (Red Rocks Community College)
- Colorado Water Utility Council
- Fire Chief's Association
- Fire Marshall's Association
- Economic Development Administration
- Water Resources and Power Development Authority
- Other agencies as needed

Municipal Water Task Force - Tasks

Tasks

- Review drought reporting in relationship to current and/or potential threats
- Identify the current or anticipated drought-related problems to the sector.
- Define and assess societal impacts, severity, loss, and costs.
- Collect and evaluate impact data.
- Assess current and potential severity of impacts.
- Identify sources of assistance related to municipal water.
- Evaluate state and local capacity for response.
- Identify and recommend response actions.
- Maintain supporting data and records of activities.
- Estimate and report on costs of needed water resource augmentation activities
- Analyze barriers and needs to meet projected threats.
- Identify key contact points with support service agencies.
- Coordinate with other task forces.
- Report findings and actions in the Drought Task Force Drought Situation Report.
- Determine ongoing and residual needs.
- Assess and prioritize impact of drought conditions on municipalities and report to the Drought Task Force and appropriate response and funding agencies.
- Develop and implement a follow-up process to determine health actions where impact is identified.
- Recommend bottled water advisories.
- Develop and assign reporting responsibilities where appropriate.
- Develop a method for periodic contact with municipalities noted in critical areas.
- The DOLA Division of Local Government will review and evaluate data to determine if the impact of the drought is beyond local capabilities in order to prepare appropriate response to an emergency situation.
- Co-chairs will work directly with municipalities/governments impacted by drought on their options such as substitute water supply plans or temporary water transfers and provide technical and financial assistance as appropriate.



LOCAL EFFORTS



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Metro Drought Coordination Group

Co-Chairs: Jason Finehout, Denver Water & Greg Baker, Aurora Water

Group Focus:

1. Share insights into current conditions, thoughts on restrictions and general observations;
2. Share lessons learned in regards to drought plans, drought response and organization of response;
3. Coordinate communications metro-wide
 - Ensure metro providers are on the same page and are kept up-to-date;
 - Understand the impact of one provider's communications on the operations of other providers;
 - Streamline communications for the benefit of customers both in understanding and action;
 - Coordinate restriction specifics if possible. I.e., all odd number houses water on a T/Th schedule as opposed to every provider having a different set of days.



DROUGHT ACTION TEAM



AURORA
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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: Deputy Directors, key personnel and technical staff from each division

Deliverables:

- Drought Action Plan that recommends actions Aurora Water can take to mitigate drought risk during the 2021 water year; completed by May 2021.
- Drought Mitigation Option List, a plug and play list of projects
- Recommendations to City Council on any changes to watering restrictions, which will be ready for an April or May 2021 Council Meeting
- Monthly drought update reports provided on the first week of the month to the Drought Task Force team



Drought Mitigation Options

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C46 Climate Change

Option ID	Type of Project	Option Name	Brief Description	POC Responsible for Developing Option	Aurora Department Responsible for Implementation	Anticipated Capacity / Yield	Implementation Duration, or Date available	Operational Notes	Action Items and questions to discuss w/ Drought Task Force team
16	Raw Water	Reduce Leases off Praire Pipeline	WISE, Crestone (Conoco Phillips)	John Muphy Dawn Jewell	Water Resources			Savings limited to capacity of Praire Pipeline.	
17	Raw Water	Reduce / Cut-off Leases South Platte reusable effluent leases	Delivery obligations can possibly be reduced or renegotiated. Flexibility in current agreements to relax deliveries to other entities will need to be investigated. - RMEC-Xcel Energy, buy-back - Arkansas continued farming (fallow)	John Muphy	Water Resources				Discuss w/ John M. & Rick K. Break down into specific option DMU: There is no current method for pulling our Reusable Raw Water back to the City other than through RBF and PW Line.
18	Raw Water	Arkansas Basin Leases	Opportunities such as the Pueblo West IGA lease, a Super Ditch lease request, and renewal of the Rocky Ford Highline Ditch lease can be investigated and pursued.	Rick Kientiz	Water Resources	1K to 10K /AF	12-18 months		Discuss w/ Rick K. Break into specific option
19	Raw Water	Colorado Basin Leases	Lease water and/or storage in Colorado Basin	Rick Kientiz	Water Resources	0 (as of today)	N/a		No opportunities at this time.
20	Raw Water	Cut off Arkansas Leases	Arkansas continued farming (fallow)	Rick Kientiz	Water Resources	350 - 400AF			
21	Water Operations	Pump Otero at full capacity	Increase Otero pumping to move as much water from the CO/Ark basin over to Spinny and the City	Rick Kientiz	Water Resources		2 days	Note - otero will be out 2 month	Discuss w/ Rick K
22	Water Operations	Lease CSU's excess Otero Capacity	Use Colorado Spring's excess pumping capacity at Otero to move more water down to the City.	Alex Davis Rick Kientiz	Water Resources / Homestake Committee			Can't get above 80cfs, tap at Spin	Ask Homestake Committee members is this is feasible (Dan, Alex, John C.). Is this physically possible or is the Spinney tap a restraint.
23	Water Operations	Walker Exchange	Store water in Walker and Exchange from Walker up to Strontia	John Muphy Dawn Jewell	Water Resources		Opportunistic, potentially in May-June		Discuss w/ John M & Rich.
24	Water Operations	Everist upstream	Utilize Everist exchange during runoff to move water up to Cherry Creek or Strontia.	John Muphy	Water Resources		Opportunistic, potentially in May-June		Discuss w/ John M whether feasible.
25	Water Operations	Maximize storage	Using storage allocated to others (e.g. CSU in Homestake)	Rick Kientiz Dawn Jewell	Water Resources				Are there specific options to consider?
	Water	Fill Aurora		Brian F.	Water Resources				

Mitigation Options Info Evaluation Criteria



QUESTIONS



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MEMORANDUM



City of Aurora

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To: Citizens' Water Advisory Committee

Through: Marshall P. Brown, Director, Aurora Water

From: Alexandra L. Davis, Deputy Director of Water Resources

Date: February 9, 2021

Subject: Interstate River Compacts in Colorado

Purpose:

The purpose of this memo and presentation is to provide information about Colorado's Interstate Compacts allocating water with river basins. This presentation will cover some foundational information and focus on the river basins of most significance to the City of Aurora.

Action Required:

No action at this time is required. This is informational only.

Colorado's Interstate Compacts

Citizen's Water Advisory Committee

Alexandra L. Davis



Mechanisms for Allocating Water Between States

- Litigation - U.S. Supreme Court Decision – A decree allocates water between states based on equitable apportionment and State allocation regimes.
- Congressional Action - Congress apportions the water between states. See e.g., Boulder Canyon Project Act which apportioned water among CA, AZ, & NV.
- Agreement - Interstate Compact – U.S. Constitution – Article I, Section 10, Paragraph 3 States agree to allocations of water; may enter into compact with approval of Congress.



Differences between Allocation Mechanisms

1. Lawsuit in United States Supreme Court
 - Unpredictable outcome
 - Difficult to enforce – federal intervention
2. Congressional legislation
 - Limited in scope – U.S. Constitution and Federalist
 - Government limits Congressional authority
3. Interstate Compact
 - Negotiated agreement usually with help of chosen experts
 - More control of the outcome



What is a Compact?

An agreement between two or more states approved by their state legislatures and Congress under the authority of the Compact Clause of the Constitution. (Art. I §10(3)).

- Purpose - To establish under state and federal law how the water of an interstate stream will be shared between users in different states in a manner that respects the states' sovereignty in a federalist system.
- Rationale - Authorizing compacts between states with sole limitation being consent by Congress respects states' inherent sovereignty in federalist system



What do Compacts Do?

- Resolve disputes among states by apportioning the right to use part of an interstate water supply
- Apportion use
 - ❖ Compacts can and do apportion use differently
 - ✓ Flow guarantees
 - ✓ Consumption limits
- Protect the rights of each state to use its apportionment of the water



WHY COLORADO NEGOTIATED INTERSTATE RIVER COMPACTS

1. Two U.S. Supreme Court Decisions

- a. Kansas v. Colorado (1907): Principal of Equitable Apportionment
- b. Wyoming v. Colorado (1922): Doctrine of Prior Appropriation applies across interstate boundaries, if both states rely upon the identical water allocation system

2. Delph Carpenter – Greeley water lawyer – lead negotiator on four interstate compacts

- a. Concern about cost and impacts of interstate litigation
- b. Preservation of future uses – development potential



Advantages of Compacts

- Mutually beneficial solution to all states
- Thorough discussion of issues outside of formal court proceedings – includes experts and users
- Binding agreement
 - allows certainty concerning future development
 - enforceable by U.S. Supreme Court
 - If a violation is found, damages can be assessed



19 States & Mexico Rely on Colorado Water



Colorado has 9 Interstate Compacts

- Colorado River 1922
- La Plata 1922
- South Platte 1923
- Río Grande 1938
- Republican 1942
- Costilla Creek 1944
- Upper Colorado 1948
- Arkansas 1948
- A-LP Project 1969



Treaties & Agreements

International Treaties

- 1945 Mexican Treaty on Rio Grande, Tijuana, and Colorado Rivers
- 1906 Convention with Mexico on the Rio Grande above Ft. Quitman, Texas

Agreements

- Pot Creek Memorandum of Understanding - 2005 (1958)
- Sand Creek Memorandum of Agreement - 1997



Methods of Allocating Water Among States

1. Allocates a portion of the long-term undepleted basin water supply to each state on the basis of consumptive use (man-made depletions)
 - Colorado River Compact - Acre-feet per year of depletions
 - Republican River Compact - Acre-feet per year of depletions
2. Delivery of a portion of an indexed supply to the stateline
 - Rio Grande Compact - Variable index and annual delivery obligation
 - La Plata River Compact - One-half of indexed flow to stateline the next day
3. Application of Doctrine of Prior Appropriation across stateline
 - Costilla Creek Compact
 - South Platte River Compact



COLORADO RIVER COMPACT

November 24, 1922

Signatory States: AZ, CA, CO, NV, NM, UT and WY

Commissioner: Governor Appointee

Major Purposes:

1. Equitable division of the waters of the Colorado River
2. Establish relative importance of different uses
3. Promote interstate comity
4. Remove causes of present and future controversies
5. Secure expeditious agricultural and industrial development of the basin



COLORADO RIVER COMPACT

November 24, 1922

Major Provisions

- Divides Colorado River Basin into the Lower Basin (California, Arizona, Nevada) and the Upper Basin (Colorado, Utah, New Mexico, Wyoming) at Lee Ferry, Arizona. (Art. I and II)
- Allocates 7,500,000 acre-feet of consumptive use to each basin per annum. (Art. III)
- Provides for Mexican allocation, first from surplus waters above the 15,000,000 acre-feet per year, and secondly splits obligation equally between the basins. (Art. III)
- Provides that Upper Basin shall not deplete 75,000,000 acre-feet in each consecutive 10-year period. (Art. III)



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COLORADO RIVER COMPACT

November 24, 1922

Signatory States: AZ, CO, NM, UT & WY

Commissioner: Appointed by the Governor

Major Purposes:

1. Equitable division of the Upper Basin waters allocated by the Colorado River Compact (Art. I)
2. Establish obligations of each Upper Basin State with respect to deliveries at Lee Ferry, as set forth in the Colorado River Compact (Art. I)
3. Promote interstate comity (Art. I)
4. Remove causes of present and future controversies (Art. I)
5. Secure the expeditious agricultural and industrial development of the Upper Basin (Art. I)



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UPPER COLORADO RIVER COMPACT

October 11, 1948

Important Provisions

- Water apportionment as follows:
 - Arizona 1st 50,000 acre-feet/yr.
 - Colorado 51.75%
 - Utah 23.00%
 - New Mexico 11.25%
 - Wyoming 14.00%

- Lower Basin call- curtailment determined as follows:
 - Curtailment extent and time shall assure full compliance with CR Compact.
 - States shall make up any overdraft first.
 - Curtailment -same ratio as beneficial use during the prior year
 - Excludes rights which predate November 24, 1922.



SOUTH PLATTE RIVER COMPACT

April 27, 1923

Signatory States: Colorado and Nebraska

Commissioner: State Engineer

Major Purposes:

1. Remove all causes of present and future controversy between the states and its citizens with respect to the South Platte River
2. Promote interstate comity



SOUTH PLATTE RIVER COMPACT

April 27, 1923

Important Provisions

- Colorado has full and uninterrupted use of all the waters in the "Lower Section" from October 15 to April 1.
(South Divide Canal exception – appropriation date of December 17, 1921)
- Between April 1 and October 15, Colorado must curtail diversions in the "Lower Section" junior to June 14, 1897, whenever the interstate gauge shows a mean flow of less than 120 cfs . (Art. IV)



ARKANSAS RIVER COMPACT

December 14, 1948

Signatory States: Colorado and Kansas

Commissioners: 1 resident from former Water District 14 or 17,
1 resident from former Water District 67, and
Director of the Colorado Water Conservation Board

Major Purposes:

1. Settle existing and future controversy between the states concerning the utilization of the waters of the Arkansas River
2. Equitably divide and apportion the waters of the Arkansas River between Colorado and Kansas as well as the benefits which arise from the construction of John Martin Reservoir





QUESTIONS?