

Citizens' Water Advisory Commission (CWAC) Agenda

April 17, 2024, 6:00 p.m.
Spinney Mountain Conference Room, SEAM/Hybrid

Microsoft Teams Link:
[Click here to join the meeting](#)
or
<https://shorturl.at/aoNW6>



Call in (audio only) - 720-388-8447
Phone Conference ID: 435 111 290#

Members: Janet Marlow - Chair, Richard “Dick” Eason -Vice Chair, Angie Binder, Jay Campbell, Tom Coker, Dennis Dechant, Daniel Widrich

- | | | |
|----|----------------------------------------------|-----------------|
| 1. | Approval of Minutes – March 12, 2024 | Chair |
| 2. | Introductions/Public Invited to be Heard | Chair |
| 3. | Communications Update | Greg Baker |
| 4. | Water-wise Day Expo | Tim York |
| 5. | Legislative Update | Kathy Kitzmann |
| 6. | Integrated Water Master Plan | James DeHerrera |
| 7. | Confirm Next Meeting – Tuesday, May 14, 2024 | Chair |
| 8. | Adjourn | Chair |

**Citizens’ Water Advisory Commission (CWAC) Minutes
March 12, 2024, 6:00 p.m.
Spinney Mtn. Reservoir Room/Microsoft Teams**

Members Present: Janet Marlow, Dick Eason, Daniel Widrich, Tom Coker, Dennis Dechant, John Dingess, Angie Binder (Teams)

Absent: Jay Campbell

Staff Present: Alex Gagliardi, Greg Baker, Marshall Brown, Kathleen Kitzman, Cat Olukotun, Shonnie Cline, Alex Davis, Melissa Grove, Melina Bourdeau (Teams), Sarah Young (Teams), Michael Valdiris (Teams)

Visitors Present: Gregory Gibson

The meeting was called to order at 6:05PM.

1. Approval of February 13, 2024 Minutes

The February 13, 2024 minutes were approved.

2. Introductions/Public Invited to be Heard

None

3. Communications Update

None

4 Large Water Purchase

Alex Davis gave a presentation on the purchase of a large farming operation in the Arkansas Basin. A brief history of the Arkansas Basin Agricultural/Municipal Partnership Project was provided. The idea is to lease up to 10,000 acre feet of water per year for three out of ten years and allow the farmers to continue utilizing the land. The purchase price of approximately \$80 million, including land, water and farming. The purchase will significantly reduce the cost to Aurora for drought recovery alternative of leasing from multiple farmers.

J. Bender asked what they are farming currently.

A. Davis answered that they are currently growing alfalfa mostly.

D. Dechant asked if Aurora would be making money off leasing the land.

A. Davis explained the money will pay for our assessments as well as operation and maintenance costs.

J. Dingess asked what feedback has been like from that area.

A. Davis answered that Rick Kienitz has been doing a lot of outreach in the area and so far the feedback has been very positive. The plan to not permanently dry out the land has generated positive feedback.

T. Coker asked where we got the \$80 million.

M. Brown explained that it is a combination of reserves, cash on hand and issuing debt. The revenue to pay for a majority of this will come from connection fees, not rate money.

5. 2024 Business Services Proposals

C. Olukotun introduced three items that Aurora Water is proposing to take effect in 2025. These proposed changes are to continue to better serve our customers, align with Aurora’s mission and vision, and to provide more transparency regarding our rates and fees process. The proposals include a Multi-Family water and sewer connection fee study, Multi-Family class study, and implementing water allocations. Based on these changes, Aurora water is expecting Ordinance changes to Division 3 – Rates and Charges.

G. Gibson asked how the studies are funded and who determines the criteria of the study.

C. Olukotun answered that a lot of this comes from our data and we are looking closer at it.

M. Brown added that some of the criteria came from Council during last year’s Rate and Fee process. They specifically asked to look at the multifamily class to see if data supported our fee structure and methodology.

J. Dingess stated that it would be beneficial to have a sort of historical cheat sheet on the topic of allocations.

J. Dingess asked why pursue this instead of raising the rates or adding more increments to our tier structure.

M. Brown answered that could be an option also. With these accounts, there isn’t a significant cost difference between tiers though.

6. Legislative Update

K. Kitzmann provided an update on recent legislation to the commission. The Second Regular Session of the Seventy-fourth General Assembly convened on January 10th and is scheduled to adjourn on May 8th. Aurora Water is tracking several bills this session, a few that are being followed closely were shared with the commission. HB 241362 is meant to incentivize grey water. Current regulation by CDPHE is not a statewide program and local jurisdictions have to opt in. Proponents of this bill would like it to be opt out and for there to be tax incentives. Aurora Water is opposed to this because we already have basically a 100% reuse system and we currently have debt that we are paying that is on the ratepayers, so it wouldn’t make sense for individuals to build a redundant system at a localized scale when we already have a large scale system. SB 24171, the restoration of Wolverines is being monitored by Aurora Water also. We do have suitable habitats in some of our watersheds.

7. Aurora Water Technology Landscape

M. Grove provided a presentation on current and future technologies being utilized. Aurora Water strives to enhance services, improve efficiency and address critical challenges (i.e. succession planning) with the implementation of technology. In this presentation, we explore the key aspects of Aurora Water’s digital journey, provide examples of Aurora Water is leading the way in the utility industry, explain that digital is the new standard, and look at what is coming. The presentation included information regarding paper map book to digital map transformation, use of pipe assessment technologies, digital workflows and enhanced mapping applications, cloud-based CCTV and CIS solutions, artificial intelligence uses, 3D facility models, business intelligence, real time and remote asset monitoring, technology for regulatory compliance, asset inspections, EMMS System, as well as drone implementation and uses.

D. Dechant asked if size of pipe matters when estimating which pipes need replaced.

M. Grove answered that the AI software uses two values, probability of failure and consequence of failure to suggest replacements.

T. Coker asked how archiving works.

M. Grove explained that we don't delete from the database so records will not disappear.

D. Widrich asked if water collaborates with other departments in the city when utilizing this technology.

M. Grove answered yes, multiple departments take part in these discussions and planning.

J. Dingess asked if there are any security requirements.

M. Grove described some of the security standards and shared that most utilities have the same standards so most software have those standards built into them, even blurring out sensitive information. Because we are a critical infrastructure, our security standards are in accordance with the FBI and Homeland Security.

8. Review Follow-Up Questions

None.

9. Confirm Next Meeting

There will be several staff and commission members that will be out of town at the time of the next meeting so a poll will be sent out to determine the next meeting date.

10. Adjourn

The meeting was adjourned at 8:10PM

Janet Marlow, Chair
Citizens' Water Advisory Committee

Adopted: _____



To: Citizens’ Water Advisory Commission

Through: Marshall P. Brown, General Manager, Aurora Water
Alexandra Davis, Assistant General Manager, Water Supply and Demand

From: Tim York, Manager of Water Conservation

Date: April 17, 2024

Subject: Water-wise Day Expo

Purpose:

Aurora Water will be hosting its first Water-wise Day Expo on May 18, 2024. This event will be held in the Water-wise Garden located on the Aurora Municipal Center campus. Open to the public, this event focuses on water-wise landscapes and outdoor water efficiency with an emphasis on smart technology.

Action Required:

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

Cc: File Copy

Water-wise Day Expo

Tim York, Manager of Water Conservation



1

Water-wise Day Expo

Community event focused on water efficiency and water-wise landscapes. Sponsored by CM Jurinsky.

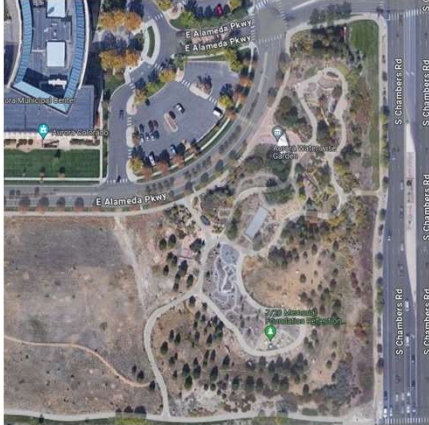
- Five educational sessions beginning at 9:00 AM
- Three Garden Tours
- Approximately 15 Booths/Vendors
- Giveaways/Raffles
- Food provided (limited quantity)



2

Water-wise Day Expo

- Saturday, May 18th
- Water-wise Garden at AMC
- 8:30 AM – 2:00 PM



3

Currently Committed Partners/Vendors

- City of Aurora Forestry
- Aurora Water PR
- Aurora Water EE&O
- Orbit
- Rachio
- Cox Professional Landscape
- Butterfly Pavilion
- Denver Urban Gardens
- American Design & Landscape
- Resource Central
- Cactus and Succulent Society
- Wompost
- Plant Select



4

MEMORANDUM



City of Aurora

Worth Discovering • auroragov.org

TO: Citizens' Water Advisory Commission

THROUGH: Marshall P. Brown, General Manager, Aurora Water
Greg Baker, Deputy Director Internal/External Relations, Aurora Water

FROM: Kathy Kitzmann, Aurora Water Intergovernmental Affairs Principal

DATE: April 17, 2024

SUBJECT: 2024 State Legislative Review

The Second Regular Session of the Seventy-fourth General Assembly convened on January 10th and is scheduled to adjourn on May 8th. Staff will update the Commission throughout the session on bills that Aurora Water is monitoring.

Action Required

No action is required. Informational item only.



TO: Citizen’s Water Advisory Commission

THROUGH: Marshall P. Brown, General Manager, Aurora Water
 Sarah Young, Assistant General Manager of Planning & Engineering Services, Aurora Water
 Alexandra Davis, Assistant General Manager of Water Supply and Demand, Aurora Water
 Greg Baker, Deputy Director of Internal and External Relations, Aurora Water

FROM: James DeHerrera, Planning Services Manager, Aurora Water

DATE: April 17, 2024

SUBJECT: Integrated Water Master Plan 2 Update

Purpose:

In order to plan for the future, Aurora Water takes a proactive, integrated master planning approach. To meet the needs of current and future customers alike, the various disciplines within the utility must coordinate planning efforts to ensure alignment, consistent assumptions, and optimal capital utilization. The utility completed its first Integrated Water Master Plan (IWMP) in 2017. The IWMP integrated short- and long-range planning across the Water Resources, Source of Supply, Water Treatment, and Water Transmission disciplines within Aurora Water. The result was a multi-discipline Capital Improvement Plan (CIP) focused on growth-related projects using consistent key assumptions and the same planning horizon for all disciplines.

An important aspect of implementing a scenario-based master plan is to periodically revisit and update it to ensure planning efforts continue to be based on the best available information. The Integrated Water Master Plan 2 (IWMP2) has been underway over the past two years and results from recent studies, new technologies, and updated climate information have been evaluated and incorporated into the analysis to produce an updated capital improvement project list with the end goal of an adaptable 20-year CIP and buildout roadmap. With the IWMP2 nearing completion, summarized results from the study will be presented.

Action Required:

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

cc: File Copy

Integrated Water Master Plan Update (IWMP2) Summary

CWAC Workshop, April 17, 2024

James DeHerrera, P.E., Planning Services Manager



1

1

Agenda

- Purpose and components of an Integrated Water Master Plan
- IWMP2
 - Approach
 - Demand Planning
 - 20-Year Capital Improvement Plan (CIP)
 - Water Resources and Source of Supply (SOS)
 - Treatment
 - Transmission & Distribution (T&D)
- Questions

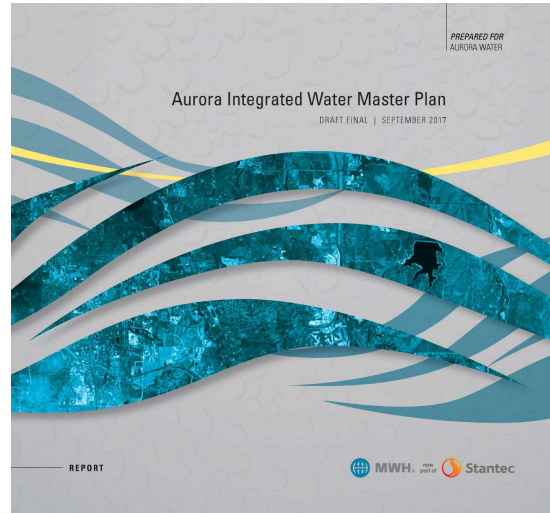


2

2

2017 IWMP

- Aurora Water's first integrated master plan
 - Demands
 - Scenarios
 - Discipline analyses
 - CIP

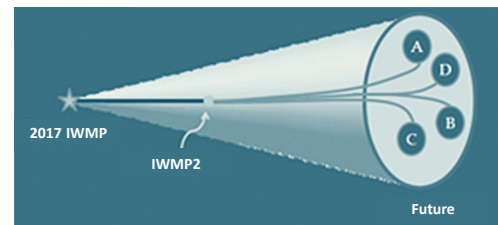


3

3

IWMP2

- Update to 2017 IWMP
 - Utilize information to the largest extent possible
 - Update with recent studies/plan information
- Goals
 - Updated, prioritized, multi-discipline Capital Improvement Plan
 - Consistent assumptions
 - Adaptable




4


4

IWMP2 Purpose

- Integrated Water Management Plan Update (IWMP2) developed 20-year capital improvement plan (CIP) for the following Aurora Water systems:

 Water resources and Source of supply (SOS)

 Treatment

 Transmission and distribution (T&D)

- The 20-year plan is informed by a longer-term vision through buildout



5

IWMP2 Approach

- Four-step process
- Target level of service (LOS) goals define the desired state
- Minimum LOS goals provide flexibility to adapt to resource constraints (funding or staffing) while ensuring appropriate service levels



6

Example LOS Goals

Type of LOS Goals	IWMP2 Purpose
Demands met during raw water infrastructure outage	Identify storage/pipeline projects needed for resiliency
Frequency of watering restrictions	Identify water supply projects to avoid excessive restrictions
Dissolved solids concentrations	Identify timing of projects to improve blending
Demands met during treatment plant outages	Identify treatment/pipeline projects needed for resiliency
Finished water quality	Identify treatment projects needed to meet water quality goals
Distribution system storage volume	Identify timing and location of required storage
Distribution system pressures	Identify size and timing of future transmission pipelines

A broad range of LOS goals were used to ensure reliability and resiliency through the entire planning period



7

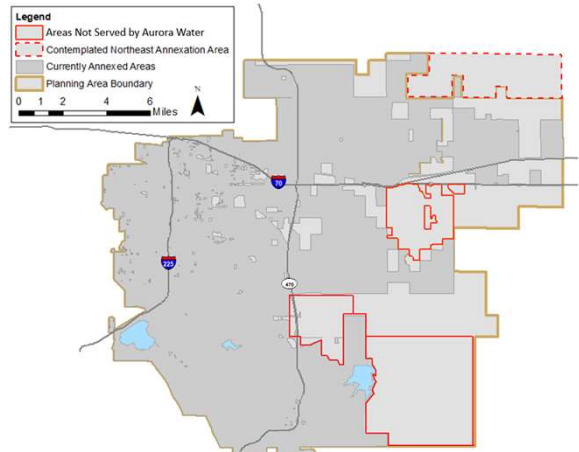
DEMAND PLANNING



8

Demand Planning

- Future water demands consider:
 - City’s planning area excluding areas not served by Aurora Water
 - 40% population growth over the next 20 years
 - Continuation of on-going conservation
 - Non-functional turf ban (NFTB)
- The result is a 26% increase in water demands over the next 20 years



*Demands do not include potential Northeast Annexation area

9

Demand Planning Key Findings

Variable	Key Finding
Population	• 40% increase in population over the next 20 years
Future water use	• 26% increase in potable water demands over next 20 years
Non-functional turf ban	<ul style="list-style-type: none"> • 25% reduction in water use by future homes • Also results in reduced water use in commercial/industrial areas • No water for future golf courses or turf in medians
Industrial water use	• Allowance for 60% light, 30% moderate, and 10% heavy water use by future industrial water users
City water leased to others	• Most temporary leases expire over next 20 years without renewal
Evaporation and stream losses	<ul style="list-style-type: none"> • Raw water lost to evaporation or stream losses are considered • There is limited opportunity to reduce these losses



10

Water Resources Demand versus T&D Water Demand

- Water resources must secure significantly more water than is directed to the T&D system to account for:
 - Non-potable system use
 - Commitments to others
 - Water left in the river to mitigate changed water impacts
 - Water needed to facilitate trades
 - Water lost to evaporation and stream losses

System	2020 (AFY)	2045 (AFY)
Potable T&D demands	55,400	66,300
Water resources need	93,200	106,100
Percent of supplies needed above T&D demands	68%	60%



11

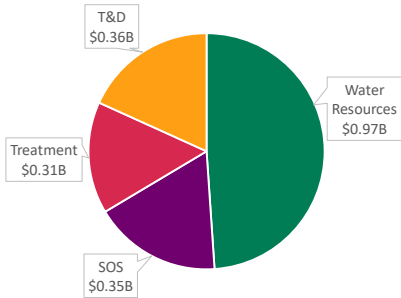
20-YEAR CAPITAL IMPROVEMENT PLAN



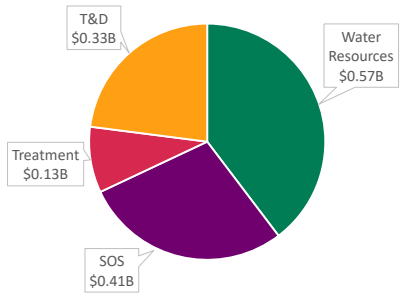
12

20-Year Capital Improvement Plan

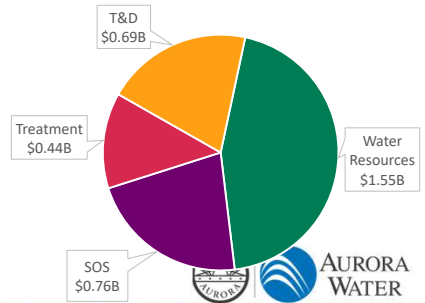
First 10 Years \$2.0B



Second 10 Years \$1.5B



Full 20 Years \$3.5B



13



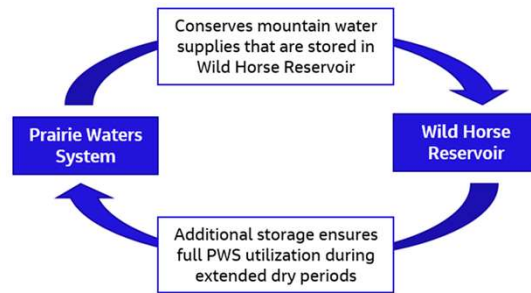
WATER RESOURCES AND SOURCE OF SUPPLY



14

System 2045 Needs

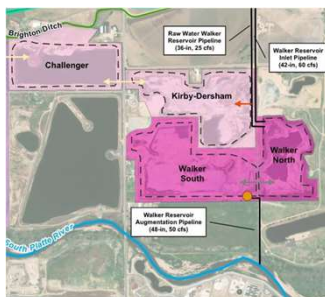
- Increase use of Prairie Waters System (PWS)
- Increase ability to store:
 - Conserved mountain water
 - Wet year water
 - Water for emergencies/outages
- Be resilient against climate change
- Prepare to meet longer-term demands



15

Prairie Waters System Expansion

Need	Projects
Increase PWS raw water supply	<ul style="list-style-type: none"> • All planned gravel pits converted to usable storage by 2040 • PWS – 8 radial wells • PWS – 19 vertical 3-day wells • PWS – 2 to 7 mgd of direct potable reuse (pending additional studies) • PWS – Additional wells or surface diversion (if well sites are difficult to acquire)



Walker Gravel Pits Partial Site Plan



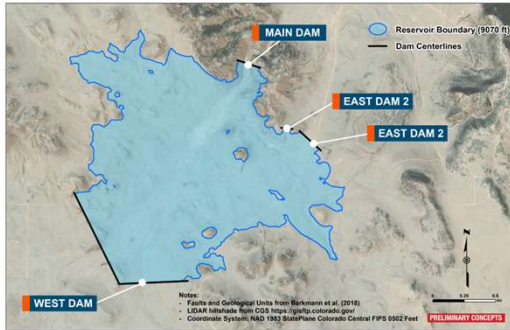
Everist Gravel Pits Partial Site Plan



16

Wild Horse Project

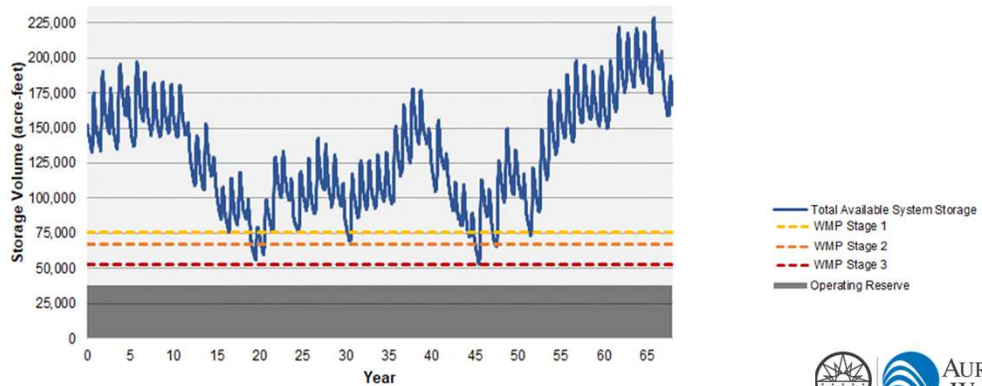
Need	Projects
Increase ability to store: <ul style="list-style-type: none"> Conserved mountain water Wet year water Water for emergencies/outages 	<ul style="list-style-type: none"> Wild Horse Reservoir by 2038, allowing for initial fill cycle to be complete by 2045 Smaller Wild Horse Reservoir with aquifer storage and recovery (ASR) also potentially feasible but more expensive, more complex, more energy, more impacts



17

Additional Water Rights

Need	Projects
Resilient against climate change	<ul style="list-style-type: none"> Acquire and convert ~7,000 acre-feet (AF) of water rights by 2040 Acquire and convert additional ~12,000 AF water rights by ~2055 Denver Basin groundwater not used due to unsustainability



18

Rampart System Expansion

Need	Projects
Limit drawdown of terminal storage Address aging infrastructure	<ul style="list-style-type: none"> Phase 1A target online by 2026, \$99M Phase 1B target online by 2028, \$47M Phase 2 target online by 2030, \$27M Phase 3 target online by 2034, \$166M Phase 4 target online by 2037, \$49M



19

Wemlinger Blended Water Pipeline

Need	Projects
Manage dissolved solids	<ul style="list-style-type: none"> Wemlinger Blend Pipeline between 2030 and 2035
Capture available water	<ul style="list-style-type: none"> Operate PWS year-round (high winter deliveries to WISE/high summer deliveries to City)



20

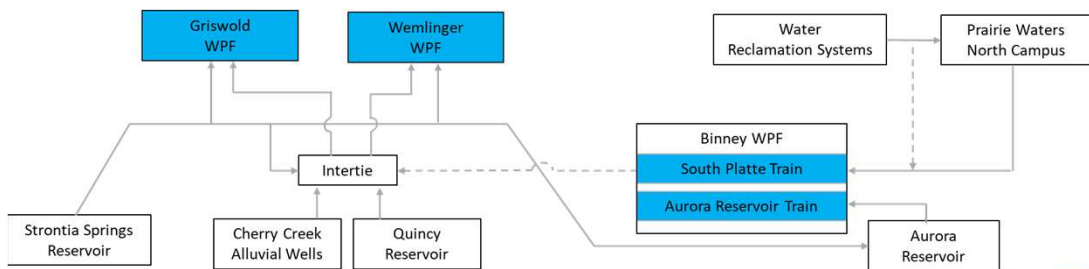
TREATMENT



21

Treatment Facilities 2045 Needs

- Cherry Creek wells returned to service
- New processes to treat new/changing water sources
- Reduce risk of chemical system failure
- Replace aging infrastructure



*WPF = Water Purification Facility



22



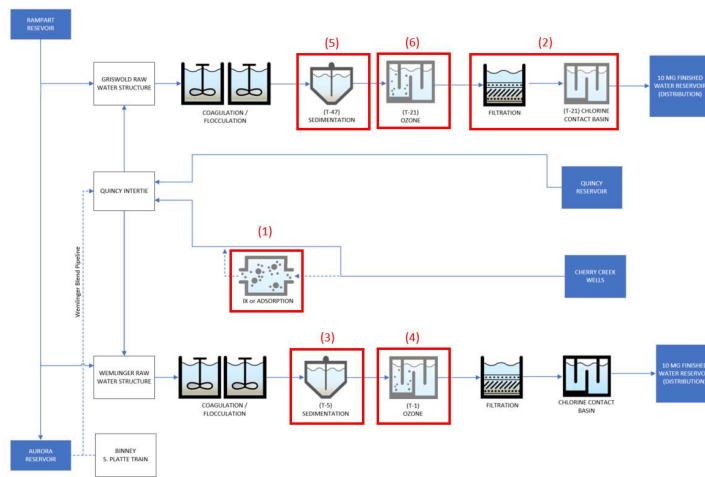
Cherry Creek Wells Return to Service



23



Wemlinger/Griswold WPF Process Improvements



Processes likely added in the following order:

- (1) Return Cherry Creek wells to service
- (2) Replace aging filter building
- (3) Improve ability to treat wider range of sources
- (4) If in-reservoir treatment does not control algae
- (5) Further reduces risk of wildfires
- (6) If blending needs to occur in summer



24

Rebuild Griswold WPF Filters



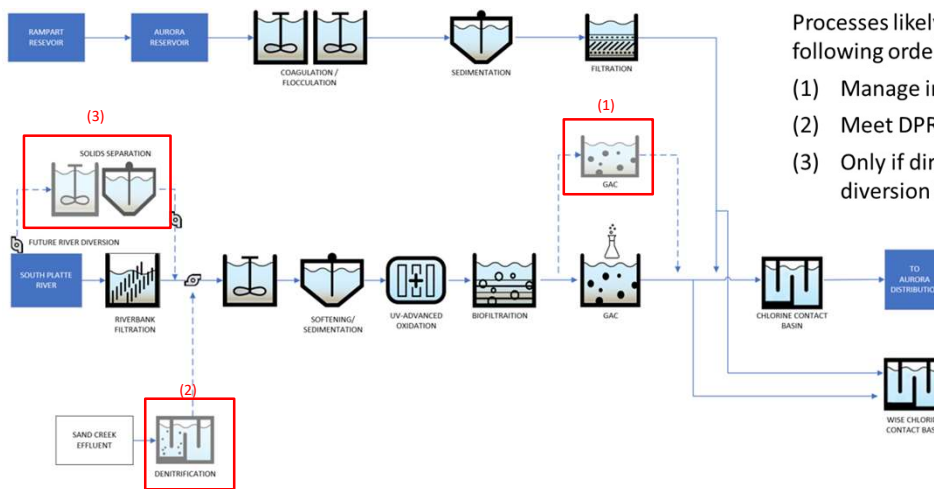
Griswold improvements likely occur in following order:

- (1) Build new filters
- (2) Build new Chlorine Contact Basin (CCB)
- (3) Build new flocculation/ sedimentation in location of existing filters
- (4) Complete chemical improvements as part of flocculation/sedimentation
- (5) Build future ozone (if needed) in location of existing flocculation



25

Binney WPF Process Improvements



Processes likely added in the following order:

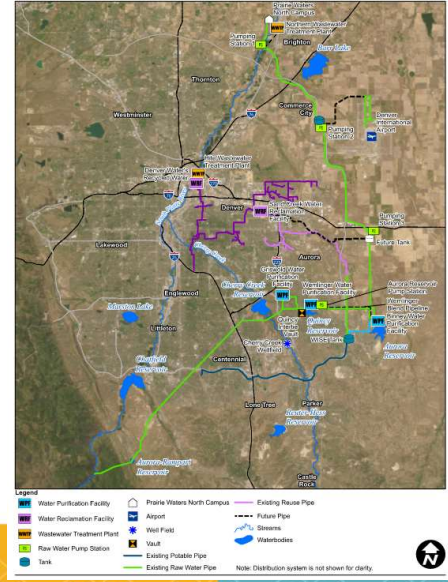
- (1) Manage increasing TOC
- (2) Meet DPR regulations
- (3) Only if direct river diversion is needed



26

Direct Potable Reuse (DPR) Evaluation

- Issued study (Fall 2023)
 - Define treatment requirements
 - Develop feasible alternatives
 - Explore permitting needs
- Technical expert working group
- Regional DPR study with Metro Water Recovery and Denver Water



27



TRANSMISSION AND DISTRIBUTION



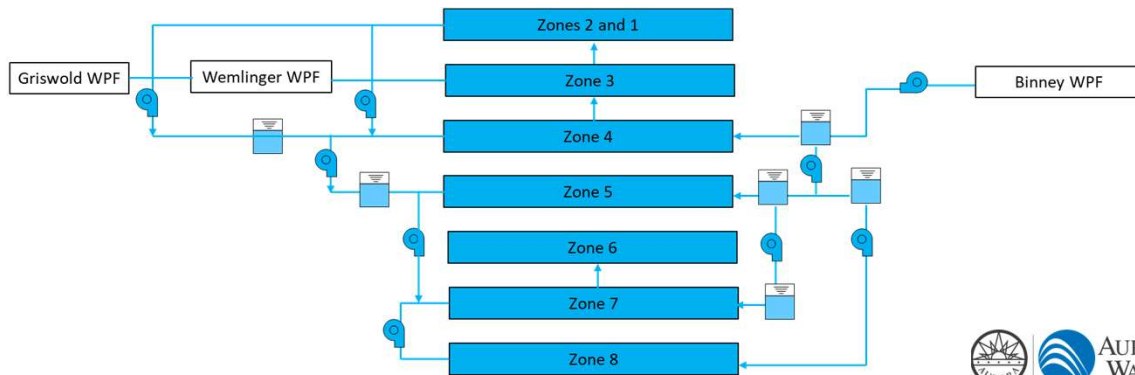
28

28



Transmission and Distribution (T&D) System 2045 Needs

- Increase potable system storage and pumping for growth and resiliency
- Extend potable distribution system to new growth



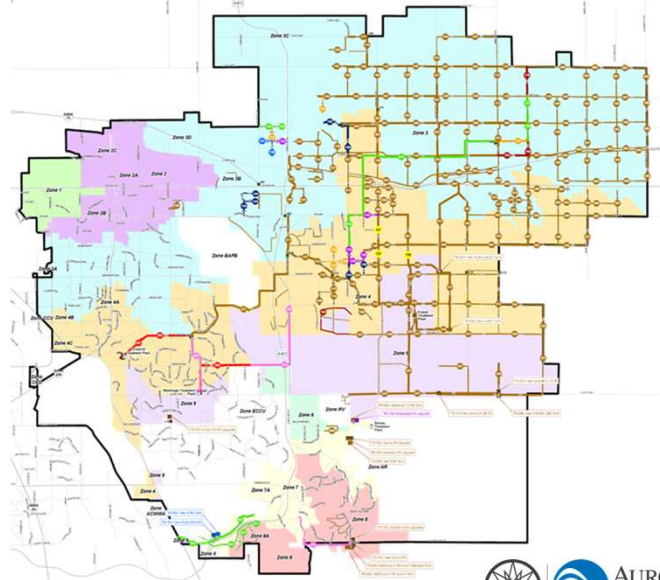
29

29



T&D System

- Future system expansion
 - Pressure, velocity, water quality considerations
 - Pipes, pumps, and tanks
 - Redundancy for unplanned WPF outages



30

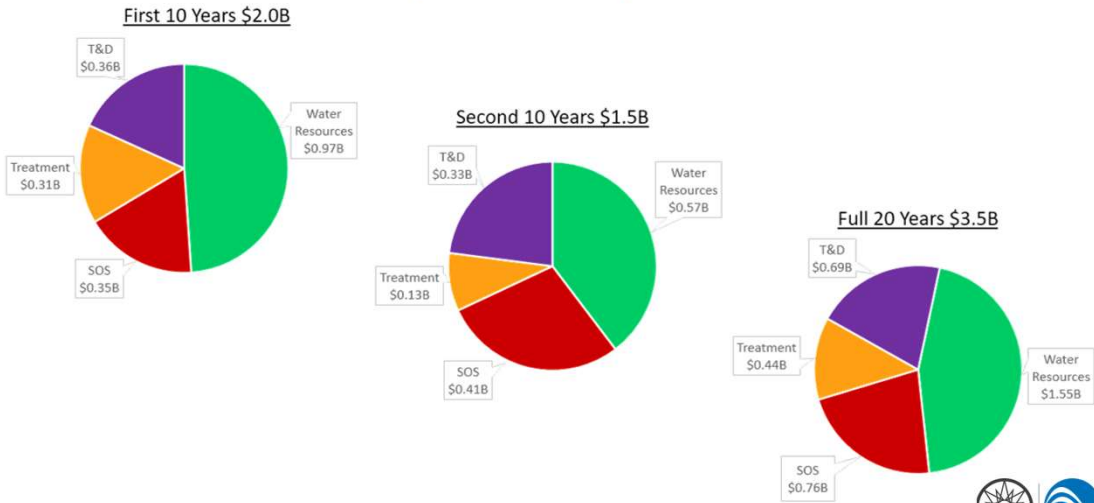
30

20-YEAR CAPITAL IMPROVEMENT PLAN



31

20-Year Capital Improvement Plan



32

Questions?

