

CITIZENS' WATER ADVISORY COMMITTEE (CWAC) AGENDA

March 8, 2022, 6:00 p.m.

Microsoft Teams Link:

[Click here to join the meeting](#)

Or go to

<https://bit.ly/3uYxHZ2>

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

Phone Conference ID: 595 739 077#

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

- | | | | |
|----|--|-----------------|-----------|
| 1. | Approval of Minutes – February 8, 2022 | Chair | 6:00 p.m. |
| 2. | Introductions/Public Invited to be Heard | Chair | 6:05 p.m. |
| 3. | New/Old Business | Chair | 6:10 p.m. |
| 4. | Communications Update | Greg Baker | 6:15 p.m. |
| 5. | Nonfunctional Turf Ordinance | Marshall Brown | 6:20 p.m. |
| 6. | Integrated Water Master Plan Overview | James DeHerrera | 6:50 p.m. |
| 7. | Review Follow-Up Questions Generated at this Meeting | Chair | 7:20 p.m. |
| 8. | Confirm Next Meeting – Tuesday, April 12, 2022 | Chair | 7:25 p.m. |
| 9. | Adjourn | Chair | 7:30 p.m. |

Immediately following adjournment will be a coordination meeting of the Economic Benefits Workgroup

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Citizens' Water Advisory Committee (CWAC) Minutes
January 11, 2022, 6:00 p.m.
Held virtually via Microsoft Teams

Members Present: Angie Binder – Chair, Dick Eason - Vice Chair, Jay Campbell, Tom Coker, Dennis Dechant, Bill Gondrez, Dave Patterson, Janet Marlow, Daniel Widrich

Absent:

Staff Present: Catherine Schumacher, Greg Baker, Leiana Baker, Jo Ann Giddings, Dean Bedford, Marshall Brown, Sonya Gonzalez, Gail Thrasher, Fernando Aranda Perozo, Alex Davis, Rory Franklin

Visitors Present: None

The meeting was called to order at 6:00 p.m.

1. Approval of January 11, 2022 Minutes

The January 11, 2022, minutes were approved.

2. Introductions/Public Invited to be Heard

None,

3. New/Old Business

None.

4. Communications Update

G. Baker stated, articles are showing how dry it is and Arapahoe county is in a severe drought. Snowpack has not recovered so far. D. Widrich asked, is there something published online regarding the extreme drought conditions? G. Baker replied, there is a drought a page on the city website <https://www.auroragov.org/drought> that shows the water storage, snowpack and has links to the Colorado climate center and the National Drought monitor. A. Binder asked, how is any of that going to interact with the new statewide campaign? G. Baker replied, this year the campaign is focusing on the Colorado River Compact the website is <https://water22.org/>. Colorado's mission is education on water issues that are partially funded by Colorado Water Conservation Board.

5. Fourth Quarter Financial Update

J. Giddings gave an update of the Fourth Quarter financials.

J Campbell asked, how does Aurora approach the new connections with the growth rate? J. Giddings replied, it's our policy that we keep a certain amount of extra water supply to be able to continue to grow. D. Widrich asked, in terms of the water conservation efforts are there any tracking mechanisms to identify whether an individual or an individual property where water

conservation efforts like xeriscaping are being implemented and what percentage is being used? G. Baker replied, it's a combination of both and we do a lot of data tracking. With the new AMI water meters being installed it will show water usage on a 15 minute bases rather than monthly. J. Campbell asked, is there a reason why tap fees are a lot more expensive with growth? M. Brown replied, when developers plan their projects there is a discussion about water use and how it affects the tap fees and how they might be able to reduce them.

6. Piney Creek Waterline Repair

C. Schumacher gave a presentation. D. Dechant asked, did one contractor do all three methods? C. Schumacher replied, yes.

7. Colorado Anti-Speculation Law Work Group

A. Davis gave a presentation. D. Eason asked, has California seen any impact on the water futures contracts and who determines the value of the water? A. Davis replied, transparency is one of the issues around the idea of water markets. It may not be an open market for long because cities are buying the water and I don't think they will ever sell that water. D. Widrich asked, the largest user of water in Aurora bottles the water. How does that work with these laws? A. Davis replied, they are buying the water as a consumer and don't own the water rights.

8. Review Follow-up Questions Generated at this Meeting

J. Marlow asked, what is slip lining? G. Baker replied, rather than dig up the pipe we are slipping a new steel pipe into it. A. Binder asked, will there be a Water Festival this year? G. Baker replied, yes, it will be smaller for about 150 students. A. Binder asked, will future meetings be hybrid or in person? M. Brown replied, in person maybe in couple of months and will continue to be hybrid as well.

9. Confirm Next Meeting – Tuesday, March 8, 2022

10. Adjourn

The meeting was adjourned at 7:35 p.m.

Angie Binder, Chair
Citizens' Water Advisory Committee

Adopted: _____

MEMORANDUM



City of Aurora

Worth Discovering • auroragov.org

To: Citizens' Water Advisory Committee
Through: Marshall P. Brown, General Manager, Aurora Water
From: Tim York, Water Conservation Supervisor, Aurora Water
Date: March 8, 2022
Subject: Nonfunctional Turf Update

Purpose:

Aurora's water conservation efforts have resulted in large and quantifiable water savings, yet about half of the city's water use is still used for outdoor irrigation. Water used in irrigation cannot be recaptured by Aurora Water's Prairie Waters potable reuse system. In order to meet future water needs due to climate change and population growth, increasing the amount of reusable water is a primary goal of the utility. Aurora Water staff closely followed an effort by the Southern Nevada Water Authority (SNWA) to create a definition for "nonfunctional turf" and regulate its use in the Las Vegas area, which created an advisory committee to release a report of findings and an implementation plan.

Aurora Water Conservation staff collaborated with the city's Planning and Park Recreation and Open Space (PROS) departments to develop a proposed ordinance with a similar turf restriction for new development. Staff also worked with these departments to identify and align any definitions for nonfunctional turf that would allow for programming areas that allow for recreational and social uses of turf, as well as any changes to the city's Unified Development Ordinance (UDO).

Background:

At the Oct. 12, 2021 CWAC meeting, staff presented on SNWA's efforts at creating a definition for nonfunctional turf and their directive to regulate its use, as well as a public engagement effort by Aurora Water on this topic using the city's Engage Aurora platform (EngageAurora.org). The engagement discussion closed on Jan. 3, 2022, and a survey to determine public acceptance or concerns for any proposal closed on Jan. 31, 2022. Preliminary survey results were presented to CWAC at the January 11, 2022 meeting, and final results were sent to the committee via email on February 1. There were 422 respondents to the survey, with an overwhelming majority supporting the prohibition of turf in front yards, common spaces and medians/curbside landscapes. A large majority also supported the probation of turf for new golf courses. At the January 11 CWAC meeting, the committee unanimously supported the development of an ordinance to prohibit turf in the aforementioned locations for new development

Question:

Is the committee supportive of the attached ordinance prohibiting the installation of nonfunctional turf in new development?

cc: File copy

Attachments: Draft ordinance language

ORDINANCE NO. 2022- ____

A BILL

FOR AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF AURORA, COLORADO, ENACTING SECTION 138-191 OF THE CITY CODE PERTAINING TO THE USE OF TURF AND ORNAMENTAL WATER FEATURES

WHEREAS, Aurora Water is responsible for providing water for the residents of the City of Aurora; and

WHEREAS, water scarcity in the arid west is compounded by water availability and population growth; and

WHEREAS, water used in irrigation and ornamental water features severely limits the amount of water that can be recaptured by Aurora Water's Prairie Waters potable reuse system; and

WHEREAS, low water-use landscapes are attractive, require less maintenance, save water and better withstand drought. Eliminating high water use turf in nonfunctional and aesthetic areas maximizes the amount of available reusable water, a primary goal of Aurora Waster.

WHEREAS, the intent of section 138-191 is to help Aurora Water meet future water needs and is in the interest of the health, safety and general welfare of the residents of Aurora.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF AURORA, COLORADO:

Section 1. Section 138-191 of the City Code of the City of Aurora, Colorado, is hereby amended to read as follows:

Sec. 138-191 Use of turf and ornamental water features.

(1) Definitions. As used in this section 138-191 the following words and phrases shall have the below meanings ascribed to them:

***Turf* means any cool season turf species, variety or blend, including but not limited to Kentucky bluegrass and Fescue with an annual irrigation water requirement greater than 15" (9.345 gallons per square foot).**

***Aesthetic Turf* means turf areas designed for aesthetic appeal only and are not conducive to active or programmed recreation.**

Water-wise landscape means landscapes designed with shrubs, perennials and warm-season grasses with an annual irrigation water requirement of less than 15” (9.345 gallons per square foot).

Median means the landscaped area between opposing directions street traffic lanes.

Curbside Landscape means the landscaped area between a sidewalk and curb.

Residential development perimeter or common landscape means any landscaped area within a residential development not irrigated by a residential water meter and not dedicated as a park per the City of Aurora’s Parks Recreation and Open Space Dedication and Development Criteria Manual.

Commercial development means any development that meets the commercial user definition in section 138-221.

Landscaped common area means areas within a private community designed for community use in section 138-151.

Multi-family residential development means developments that meet the multi-family user development definition in section 138-221.

Active or Programmed recreation area means an area with a primary function of sport field but can also accommodate secondary functions including but not limited to non-organized sporting events, cultural activities and organized social gatherings.

Ornamental water feature means any exterior decorative fountains, waterfalls, basins, ponds, lakes, waterways or other similar aesthetic structures unless required under Chapter 138, Article VIII – Stormwater of the City Code.

(2) The intent of this section 138-191 is to assist the City in meeting future water needs.

(3) Use of turf and ornamental water features. The provisions of this section 138-191 apply to all development and redevelopment within the City.

(a) Exemptions. Developments with Framework Development Plans (FDP) and Master Plans approved prior to January 1, 2023 are exempt from this section.

(4) Turf that serves primarily an aesthetic purpose shall not be permitted.

(5) The installation of new turf shall be restricted as follows:

- (a) Turf shall not be installed in the front or side yards of any single-family dwelling.
- (b) The installation of new turf in residential backyards shall not exceed the lesser of: forty-five percent (45%) of the backyard area as defined by the Unified Development Ordinance; or five hundred (500) square feet.
- (c) The removal of water-wise landscaping for the purpose of installing turf is prohibited, regardless of building permit issue date.
- (d) Turf shall not be installed in medians or curbside landscapes.
- (6) The installation of turf in the following developments shall be allowed only in active or programmed recreation areas:
 - (a) Multi-family developments;
 - (b) Commercial developments;
 - (c) Public and private schools;
 - (d) Interior landscaped common areas on a common irrigation meter designed for recreation and conforming to the City's Unified Development Ordinance, as modified from time to time; and
 - (e) Formal sports fields, informal play areas, active and reflective recreation areas only as defined in the City's Parks and Recreation and Open Space Dedication and Development Criteria Manual.
- (7) Turf shall not be installed for the development of golf courses.
- (8) Ornamental water features. The use of water in all public and private exterior ornamental water features and ponds is prohibited.
- (9) Median landscape. The installation of spray and/or sprinkler irrigation systems in median landscaping is prohibited.
- (10) Except as indicated in section 138-191(3)(a) above, there shall be no waivers or variances to this section 138-191 permitted.

Section 2. Severability. The provisions of this Ordinance are hereby declared to be severable. If any section, paragraph, clause, or provision of this Ordinance shall, for any reason, be held to be invalid or unenforceable by a court of competent jurisdiction, the invalidity or unenforceability of such section, paragraph, clause, or provision shall not affect any of the remaining provisions of this Ordinance.

Section 3. Penalty. City employees violating the terms, directives, or mandates of this Code are not subject to the general penalty provisions contained in Section 1-13 of this City Code.

Section 4. Pursuant to Section 5-5 of the Charter of the City of Aurora, Colorado, the second publication of this Ordinance shall be by reference, utilizing the ordinance title. Copies of this Ordinance are available at the Office of the City Clerk.

Section 5. Repealer. All orders, resolutions, or ordinances in conflict with this Ordinance or with any of the documents hereby approved, are hereby repealed only to the extent of such

conflict. This repealer shall not be construed as reviving any resolution, ordinance, or part thereof, heretofore repealed.

INTRODUCED, READ AND ORDERED PUBLISHED this _____ day of _____, 2022.

PASSED AND ORDERED PUBLISHED this _____ day of _____, 2022.

MIKE COFFMAN, Mayor

ATTEST:

KADEE RODRIGUEZ, City Clerk

APPROVED AS TO FORM:

Ian Best, Assistant City Attorney

Conservation

March 8th, 2022

Tim York

Water Conservation Supervisor



#1 in Customer Satisfaction with Midsize Water Utilities in the West
For J.D. Power 2021 award information, visit jdpower.com/awards



The Challenge

Create a conservation ordinance for new development that makes a significant difference in water sustainability.



#1 in Customer Satisfaction with Midsize Water Utilities in the West
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Current UDO Rules

Table 4.7-3 Residential Yard Landscape Requirements	
Front, side, and rear yard landscaping requirements for single-family detached and two-family (duplex) dwellings	
Front yards for lots of 4,500 square feet or larger.	
Areas located in front of the house elevation including the streetscape area between the sidewalk and street curbs.	
Side and rear yards visible to the public shall comply with front yard standards.	
A	Turf Water-wise option: 0% turf Turf option: Min. = 400 sq. ft. Max. = 40% or 1,000 sq. ft., whichever is less; must be contiguous
B	Trees[1] 1 shade tree (≥ 2.5 in. caliper) and either 1 ornamental tree (≥ 2 in. caliper) or 1 evergreen tree (≥ 6 ft. tall)
C	Shrubs Min # of shrubs = (front yard landscaped area in sq. ft. minus turf area in sq. ft.) x 0.025. At least 30% of shrub count can be ornamental grasses or perennials When 9 or more shrubs are required, at least 3 plant species must be included to provide seasonal/visual interest
D	Rock and Inorganic Mulches If Water-wise option is used, up to 50% of the area may be inorganic rock mulch
E	Pavers If the xeric or non-turf option is used, up to 40% of landscape area can be provided as pavers such as brick and natural stone
F	Features When the Water-wise option is used, one of the following shall be incorporated: a. Wall 1-2.5 ft. high made of decorative stone, stucco, or CMU b. Fence c. Earth berm ≤ 2.5 ft. tall with slopes not to exceed 1:4 rise:run d. Natural boulders ≥ 2 ft. x 2 ft. x 2 ft.
G	Side Yards Side yards with no public view: No plant material required; mulch required Side yards with public view: Front yard standards apply + 1 tree per 25 linear feet
H	Rear Yards Rear yards with no public view: No standards; ≤ 45% turf Rear yards with public view: Front yard standards apply

Note:
[1] This requirement may not be applicable based upon lot size and a reduction or exemption may be approved by the Planning Director based on lot and site constraints and other landscaping, screening, and buffering provided for the development.



Current UDO Rules

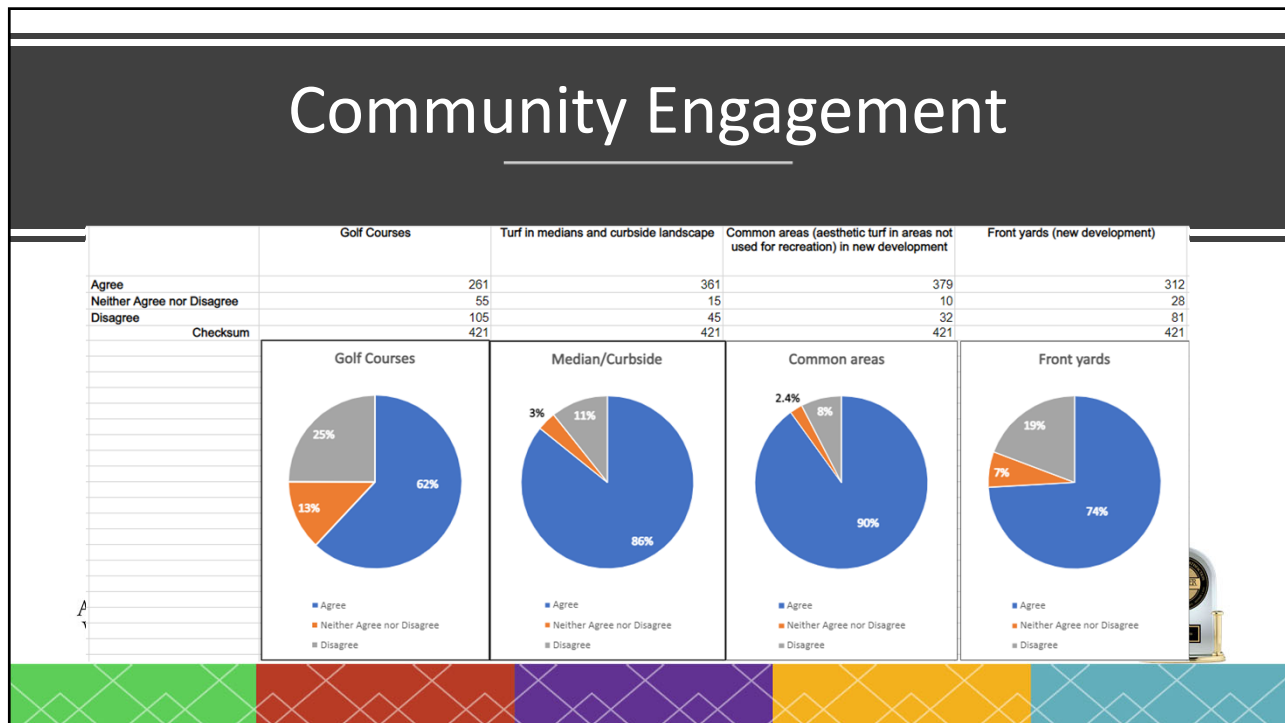
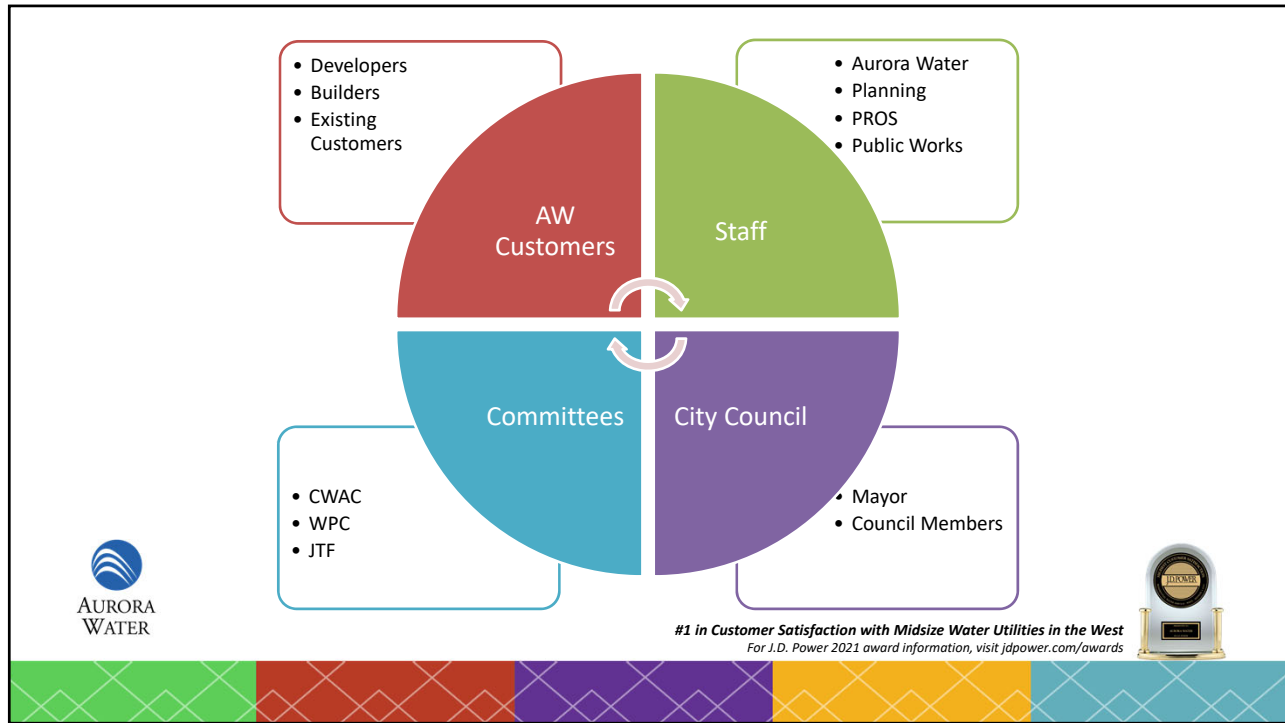
Turf allowed:

- Medians and Curbside Landscapes 10' wide or greater
- Commercial: 33% of landscape area
- Multi-family: 33% of landscape area
- Parks: Per PROS D&DC Manual



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Key Definitions

01 Turf: Any cool season turf species, variety of blend, including but not limited to Kentucky bluegrass and Fescue.	02 Aesthetic turf: Turf areas designed for aesthetic appeal only and are not conducive to active or programmed recreation areas.	03 Water-wise landscape: Landscapes designed with shrubs, perennials and warm-season grasses with an annual irrigation water requirement less than 15" (9.345 gallons per s.f.)
04 Median: The landscaped area between opposing directions of street traffic lanes.	05 Curbside Landscape: The landscaped area between a sidewalk and curb.	06 Active or Programmed recreation area: An area with a primary function of sport field but can also accommodate secondary functions including but not limited to non-organized sporting events, cultural activities and organized social gatherings.

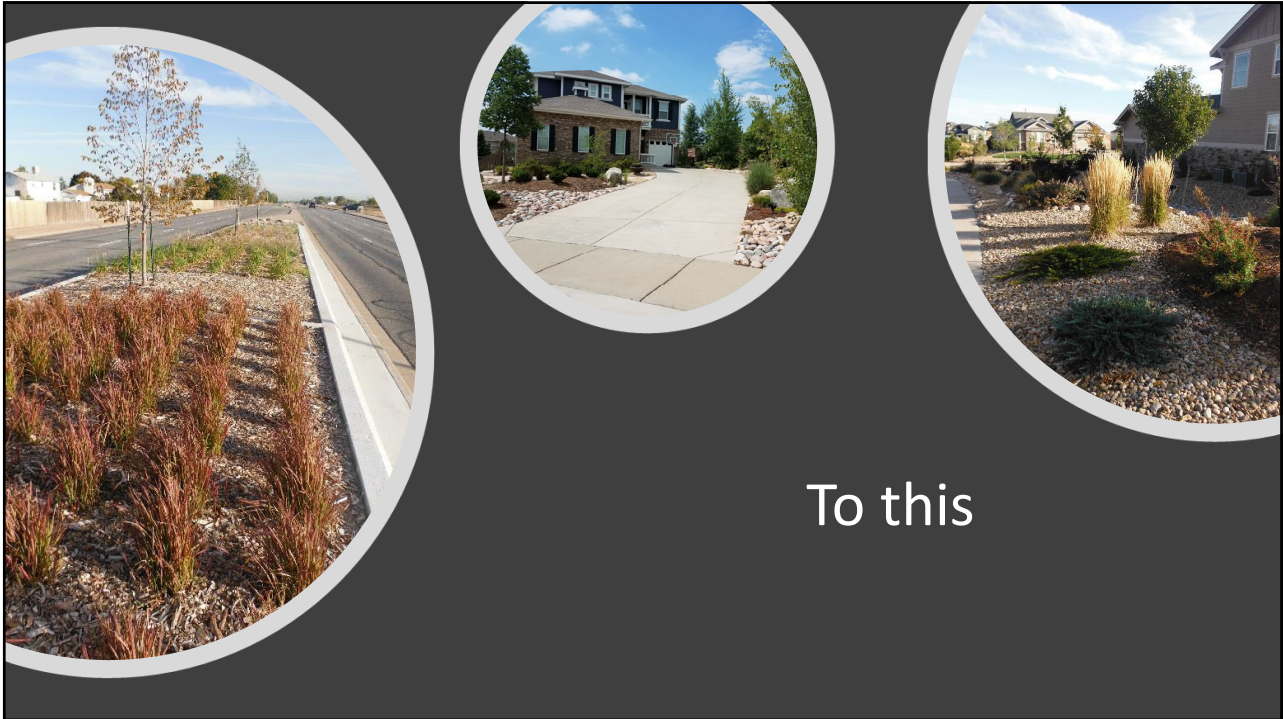
This ordinance is forward looking - for **NEW** development and re-development.



#1 in Customer Satisfaction with Midsize Water Utilities in the West
For J.D. Power 2021 award information, visit jdpower.com/awards

<h1>Elimination Of</h1>	<ul style="list-style-type: none">Turf in residential front yardsTurf in curbside landscape areasTurf in mediansPerimeter & Commercial landscape not designed as active recreation spaceNew Golf Courses
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<h1>Preservation Of</h1>	<ul style="list-style-type: none">Defined parks spaces per PROS D&DC ManualMulti-family active/recreation spacesSchools active/recreation spacesTurf in backyards. 45%, max of 500 s.f.Commercial active/recreation spaces
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Questions?



#1 in Customer Satisfaction with Midsize Water Utilities in the West
For J.D. Power 2021 award information, visit jdpower.com/awards





TO: Citizen’s Water Advisory Committee

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

FROM: James DeHerrera, Project Engineer, Aurora Water

DATE: March 8, 2022

SUBJECT: Integrated Water Master Plan Overview

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, 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 master plan is to periodically revisit and update it to ensure planning efforts continue to be based on the best available information. Typically, citywide master plans are updated every five years. Aurora Water is currently underway with an update to the 2017 IWMP. The IWMP2 will be revisiting assumptions, planning scenarios, and overall planning strategies to incorporate changes, updates, and new information since the completion of the 2017 IWMP. Results from recent studies, new technologies, and updated climate information will be evaluated and incorporated into the study to produce an updated, adaptable 20-year CIP and buildout roadmap. Details of the components of an integrated water master plan and the IWMP2’s planned schedule will be presented.

Action Required:

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

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Aurora Water Integrated Water Master Planning

CWAC Workshop, March 8, 2022

James DeHerrera, P.E., Project Engineer



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Agenda

- Existing master plans
- History of water master planning at Aurora Water
- Components of an Integrated Water Master Plan (IWMP)
- IWMP2
 - Goals
 - Schedule
- Questions



2

2

Existing Master Plans

Master Plan	Status
Integrated Water Master Plan (IWMP2)	In progress
Water Resources MP	Included in IWMP2
Treatment MP	Included in IWMP2
Distribution System MP	Included in IWMP2
Box Elder Creek Feasibility Study	In progress
Wastewater MP	Update scheduled for 2023
Lower South Platte MP	Completed
North Campus MP	Completed
Not-Potable MP	Completed
Original Aurora Mini MP	Completed
SCADA MP	Completed
Everist MP	Planned
Walker MP	Planned
Ground Water Resource Integration MP	Planned
Aurora Water Energy MP	Planned



3

History of Water Master Planning at Aurora Water

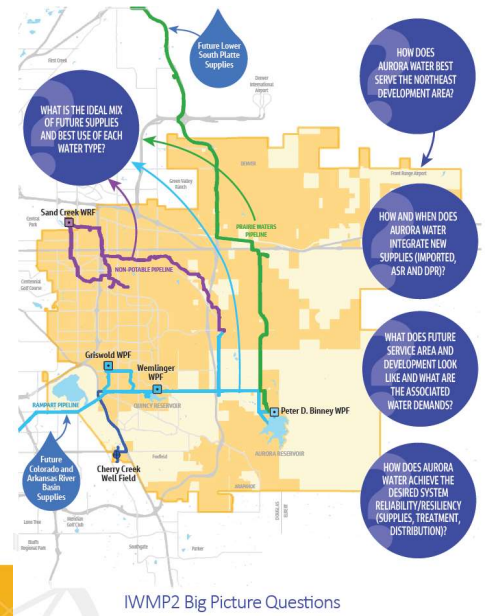
- Division specific master plans
 - Scope focused on one technical area
 - Developed capital improvement projects per discipline
 - Asynchronous timing of studies
- Industry standard transitioned to a more integrated approach
 - Interconnected study including all water disciplines
 - New, robust technology
 - Models
 - Prioritization tools



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Components of an Integrated Water Master Plan

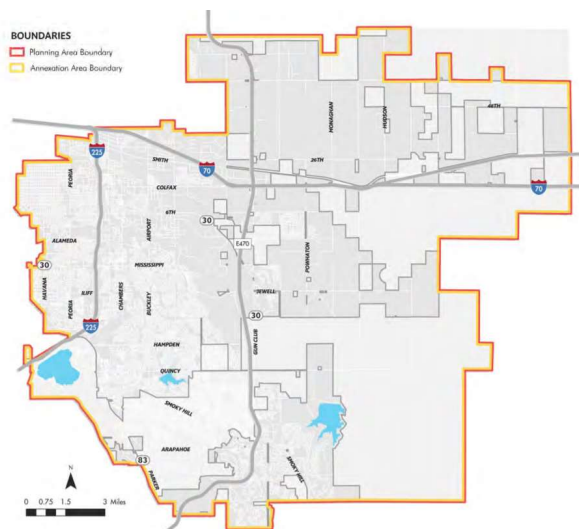
- Demands
- Scenario planning
- System analysis
- Capital Improvement Plan (CIP) development



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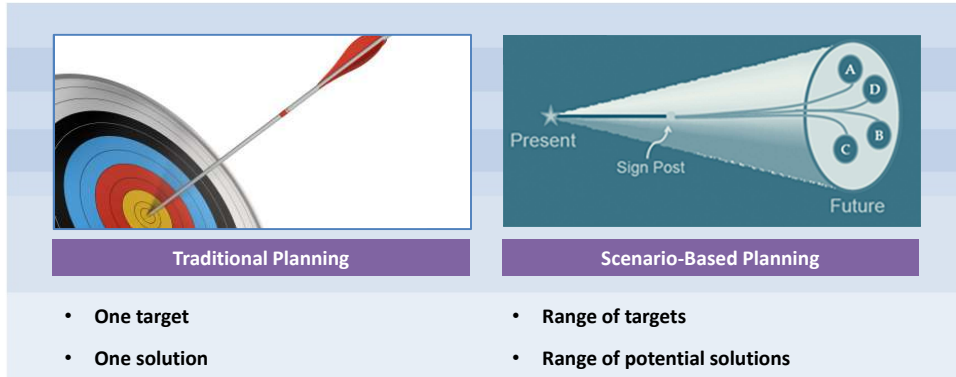
Demands

- Planning Area Boundary
- Land-used based demands
 - Zoning data
 - Planning Department’s Comprehensive Plan
 - Other land use plans (i.e. Colorado Air and Space Port Subarea Plan)
- Timing
 - Planning Department’s population projections
 - Denver Regional Council of Governments’ (DRCOG) employment projections
- Conservation



6

Scenario Planning



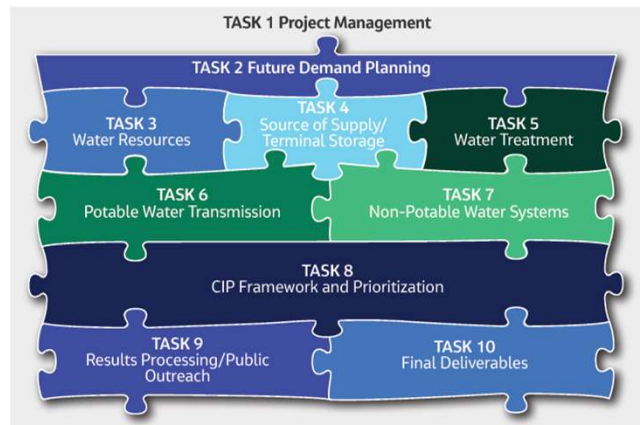
- Future is unknown
- Plan for multiple possibilities (hydrology and demands)



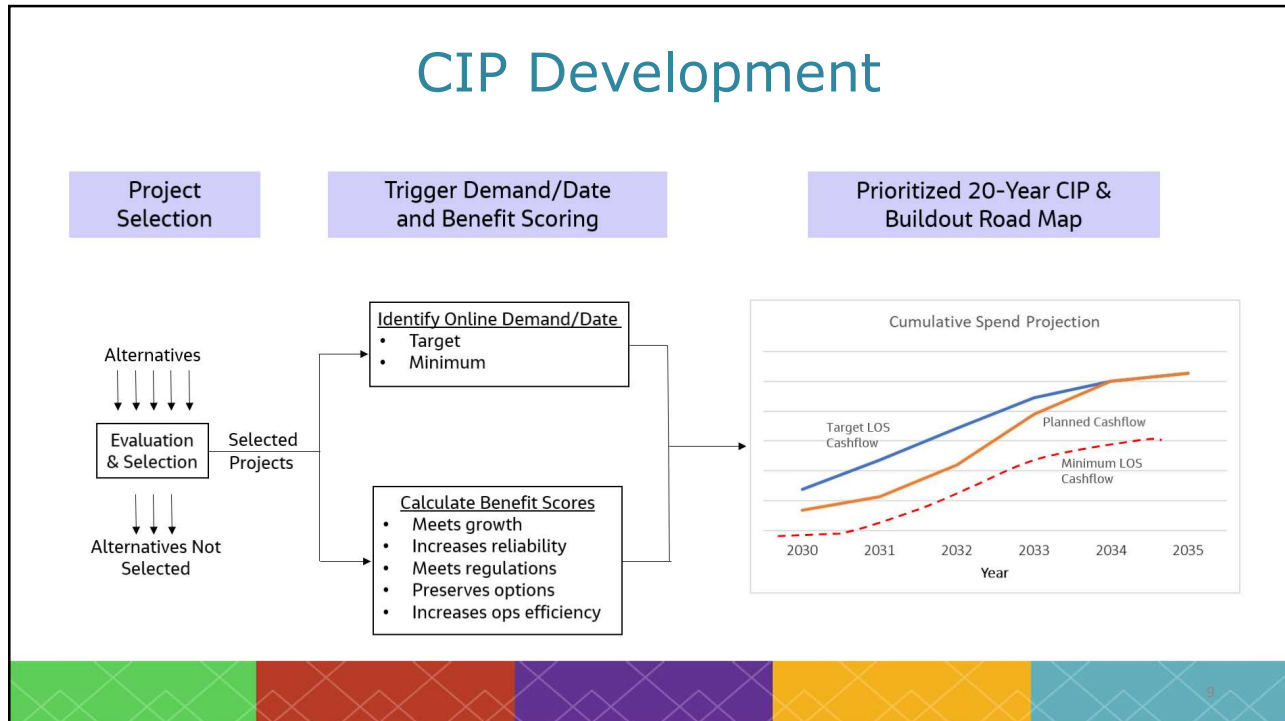
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System Analysis

- Technical disciplines
- Level of Service (LOS) goals
- Models
 - Central Resource Allocation Model (CRAM)
 - InfoWater model
 - ExtendSim model
- Identify system deficiencies
- Project identification



8



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2017 IWMP

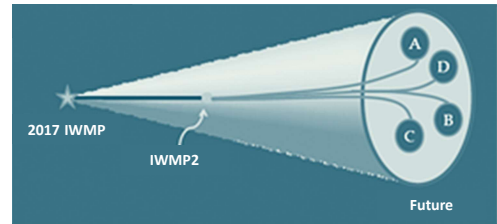
- Aurora Water’s first integrated master plan
 - Demands
 - Scenarios
 - Discipline analyses
 - CIP

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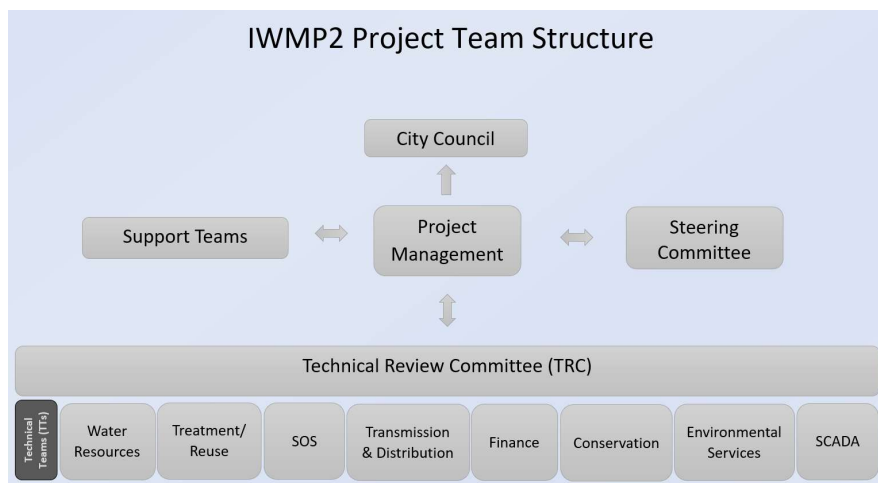
IWMP2

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



11

Internal Organizational Structure



12

IWMP2 Progress to Date

- TRC kickoff meeting – March 31, 2021
- Request for Proposal review – April 2021
- RFP issued – May 12
- Proposals received (4) – July 1
- Shortlist selection – July 28
- Shortlist Interviews – August 30
 - Top rated firm selected: Jacobs Engineering Group
- Scope development and negotiations –September 27
- Finalize scope, schedule, and fee – November 12
- Notice to proceed – December 19
- Kickoff and project initiation workshops – January 2022



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Schedule and Next Steps

	Workshop/Milestone	TIP
Project Initiation	IWMP2 Kick-off	Jan 10, 2022
	Scenarios & Climate Change	Jan 12, 2022
	Risk Evaluation & LOS Goals Methodology	Jan 24, 2022
	Alternatives Screening & Prioritization Criteria	Feb 8, 2022

	Workshop/Milestone	Water Resources	Source of Supply	Treatment	Transmission/Distribution
Technical Analysis	Kick-off/Methodology Refinement	Late Feb 2022	Late Feb 2022	Early Mar 2022	Mid Mar 2022
	LOS Goals	Early Mar 2022	Early Mar 2022	Mid Mar 2022	Mid Mar 2022
	Risks Identification	Early Apr 2022	Early Apr 2022	Late Apr 2022	Late Apr 2022
	System Deficiencies/Alternatives Identification	Early Jun 2022	Early Jun 2022	Early Jul 2022	Early Jul 2022
	Alternatives Findings	Late Sep 2022	Late Sep 2022	Late Nov 2022	Late Oct 2022
	Selected Projects and Triggers	Late Oct 2022	Late Oct 2022	Mid-Dec 2022	Late Nov 2022

	Workshop/Milestone	CIP
Living Plan	Kick-off	March 2022
	Prototype CIP Prioritization Tool	July 2022
	20-Year CIP & Buildout Roadmap	March 2023
	Executive Summary & Final Report	June 2023



14

Questions?

