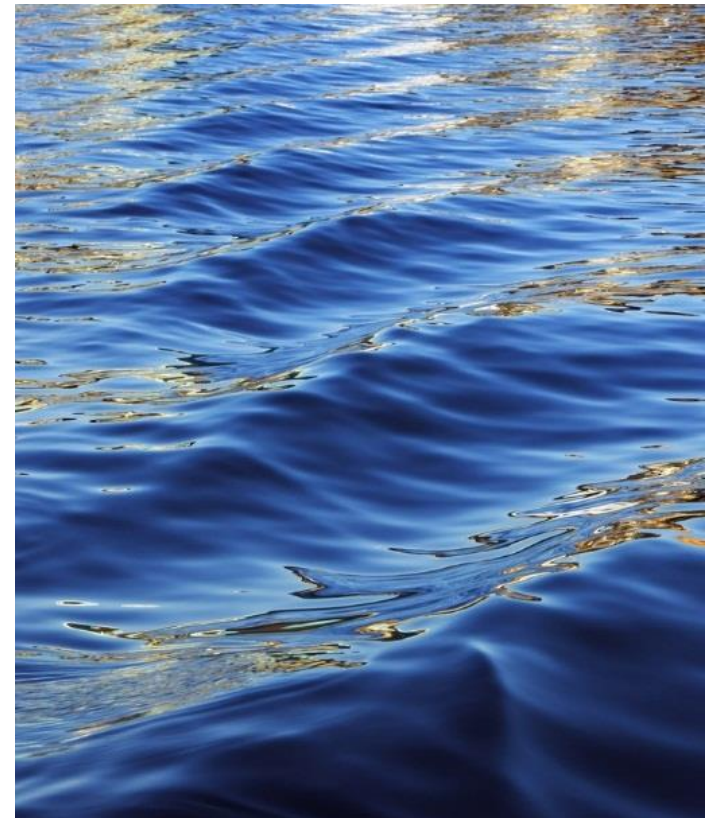




Water Wise Landscaping and Water Conservation Policy in Edgewater

Sustainability Board & Planning & Zoning Commission
Joint Work Session | July 25, 2023



Outline

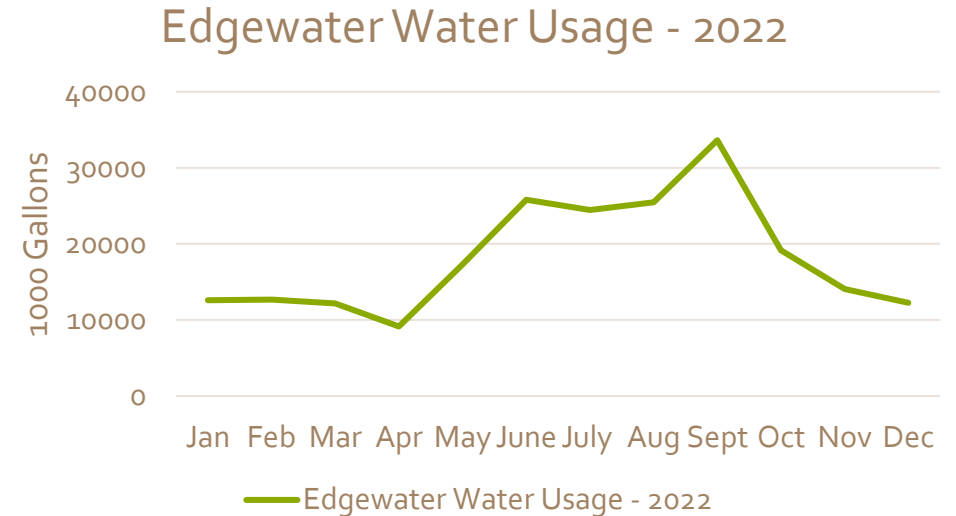
- **Background & Existing Programs**
- **Options to Explore in Edgewater**
- **Next Steps**



Background & Overview

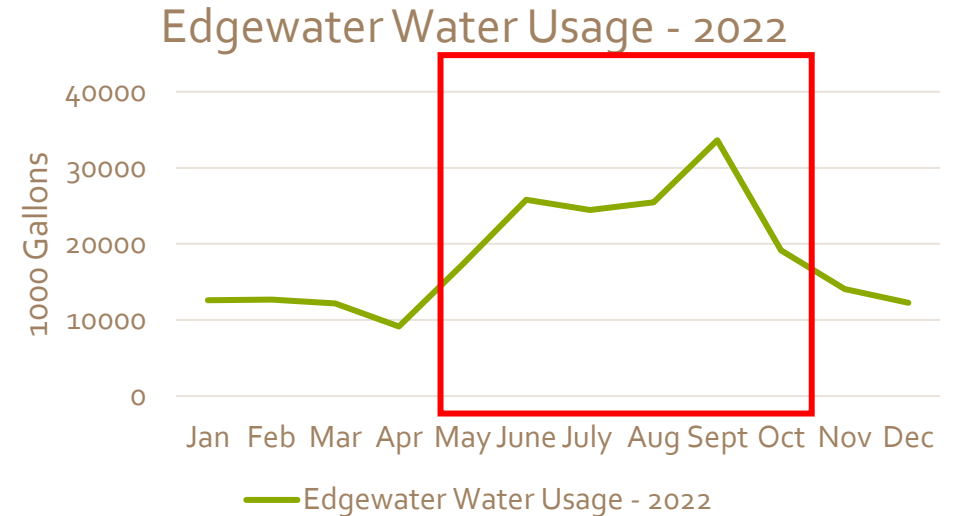
How did we get here?

- **Sustainability Plan – 2019**
 - **Land & Water Goal:** Save and protect our water for current and future residents.
- **City Council Retreat – January 2023**
 - Pursue timely policies and opportunities to reduce water use in Edgewater while encouraging beautiful and responsible landscapes.
- **City Council Work Session – March 2023**
 - Provided comments on water wise options for future landscaping code draft (integrated into this presentation)



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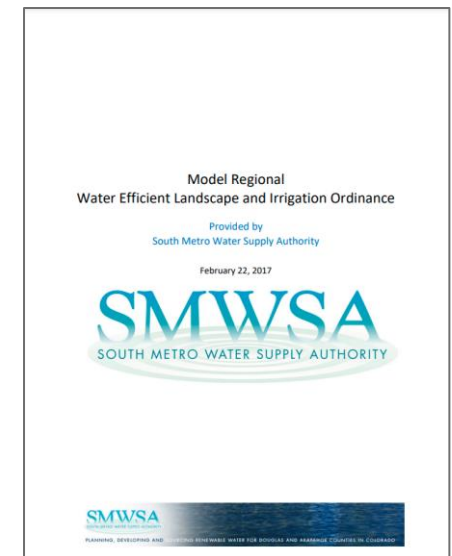
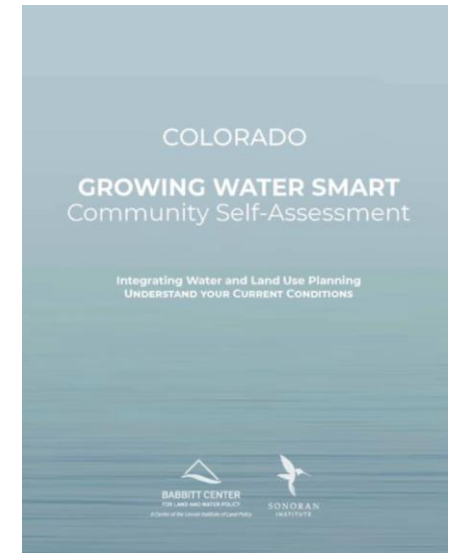
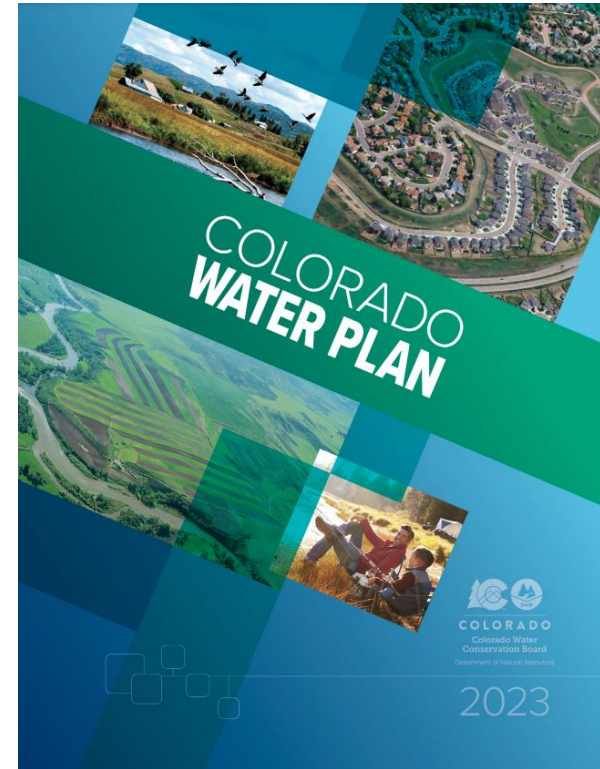
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Summer Months that correspond to Denver Water's summer watering restrictions (May-October)

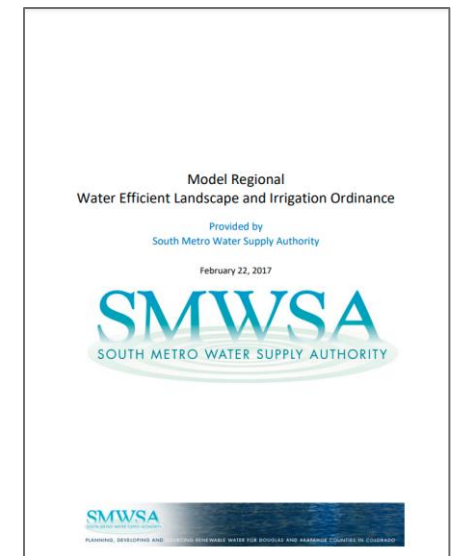
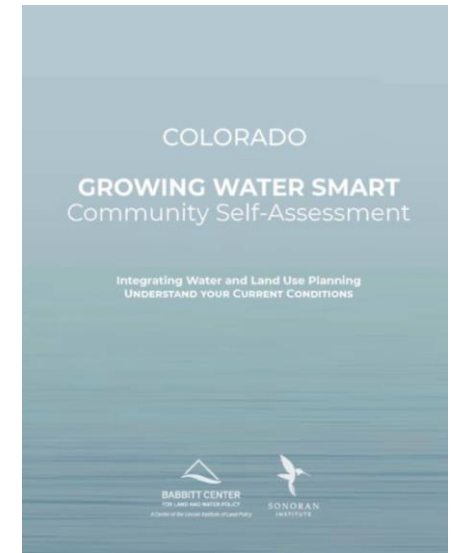
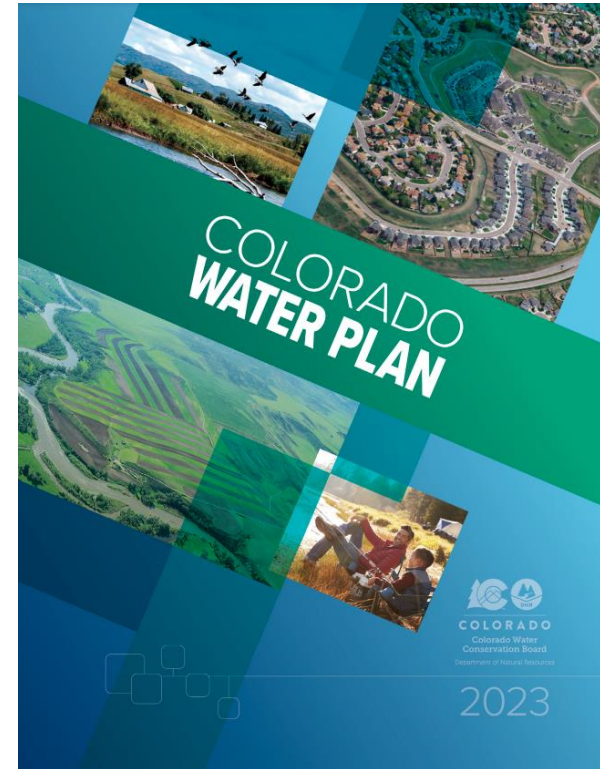
Great Time to Discuss This

- **2023 Colorado Water Plan**
 - Demands on water are increasing:
 - If nothing changes, Colorado communities could need 230,000-740,000 additional acre-feet of water by 2050
 - Water conservation efforts are critical:
 - Water conservation and efficiency efforts could reduce future annual water needs by 300,000 acre-feet per year by 2050
- **Denver Water Efforts**
 - Denver Water Efficiency Plan Sets goals to reduce per capita water use by 22 percent
 - Signed a Colorado River Basin MOU committed to reducing non-functional turf grass in their service area by 30%



Great Time to Discuss This

- **Recent regional efforts to move in this direction**
 - Town of Castle Rock and City of Aurora raised the bar in 2022 by significantly limiting the installation of non-functional turfgrass in new and redevelopment
 - Colorado Water Conservation Board funding for turf replacement – Edgewater awarded \$24,000 to expand Garden In A Box and Lawn Replacement Program
- **LOTS of best practice resources and technical assistance available**
 - DOLA, CWCB, WRA, Sonoran Institute, etc.



Existing Water Conservation Programs

- **Garden In A Box Program**
 - \$25 Discounts on low-water, perennial garden kits
 - Expanded program in 2023 due to high demand
- **Lawn Replacement Program**
 - New in 2023
 - At least Nine (12) \$500 lawn replacement applicants and growing
 - Expanding this program in 2024 using CO Turf Replacement Program funds



Example of Established Garden In A Box Landscape

Existing Water Conservation Programs

- **Community Education + Programs**
 - Sticks to Chips free mulch giveaway – Spring and Fall
 - Sustainability Seminar Series
 - **March Seminar:** Sustainable Landscaping Course with Denver Botanic Gardens had over 40 participants
 - **April Seminar:** Rain Barrel Workshop filled up and had over 15 people on a wait list
- **Denver Botanic Gardens Sustainable Landscaping Partnership**
 - Providing free design consultation services for Edgewater to help with creating low-water landscaping on city properties
 - Designed to reduce water, promote pollinators, and improve aesthetics



Example of Denver Botanic Garden-designed Sustainable Landscape Design – Before & After Colfax Median, Lakewood, CO

Existing Water Conservation Programs

Denver Water Residential Programs & Resources

- Summer Watering Restrictions between May-October
- **Residential Rebates:** WaterSense toilets, high-efficiency sprinkler nozzles, and WaterSense smart irrigation controllers
- **Outdoor Water Use Reports:** Personalized water use reports and recommended tips based on usage available to customers.
- **Tips & Resources for Efficiently Watering Your Lawn**
- **Water Wise Landscaping Handbook**
- **Xeriscape Plans and Resources**

Residential

[Home](#) > [Rebates & Efficiency Tips](#)

Rebates & Efficiency Tips

Creating a culture of conservation and water efficiency in Denver dates back to 1936 when Denver Water advertised on street trolleys asking customers to help save water. The modes of transportation have changed, but the message remains the same as does our commitment to helping customers use this precious resource wisely.



Residential Rebates

We want to help you improve your property – and save water – by picking up part of the tab for a higher-efficiency model.



WaterSense

WaterSense is a national program that makes it easy to choose products that use less water without sacrificing quality or product performance.



Rules for Outdoor Water Use

Summer watering rules are enforced May 1 to Oct. 1.



Outdoor Water Use Report

We send personalized water use reports and recommended tips during the summer to your email.



Watering Your Lawn

By only giving your lawn what it needs, you can have a green, healthy lawn while cutting down on your water consumption.



Remodel Your Yard









Your yard could be a lot more interesting than grass alone.

Denver Water Residential Rebates and Efficiency Tips Webpage

Existing Water Conservation Programs

Denver Water Business Programs & Resources

- Applies to businesses and multifamily complexes
- **Commercial Rebates:** Rebates for select products meeting high efficiency standards (toilets, urinals, laundry equipment, irrigation, warewashing, etc.)
- **Business Efficiency Tips for tree care, lawn care, swimming pools, and maintenance repairs**
- **Free, professionally installed pre-rinse spray valve for restaurants**

 Commercial Indoor Water Use Issues Nip these indoor water-wasting problems in the bud.	 Commercial Outdoor Water Use Issues Beautify your complex's landscape and cut down on your water bill.
 Commercial Rebates Earn rebates for efficient laundry and warewashing equipment, as well as urinals, toilets, submeters and more.	 Rules for Outdoor Water Use Summer watering rules are enforced May 1 to Oct. 1.
 WaterSense WaterSense is a national program that makes it easy to choose products that use less water without sacrificing quality or product performance.	 Hotels We can help hotels save water in almost all segments of business: laundry, landscape and guest rooms, among others.
 Restaurants Get a free, professionally installed pre-rinse spray valve for your restaurant.	 Commercial Car Washes Self-service, in-bay automatic and conveyor car washes can benefit from these tips and rebates.

Denver Water Business Rebates and Efficiency Tips Webpage

Current Land & Zoning Regulations

- Minimal regulations in place for landscaping and no water wise requirements
 - Some case-by-case reviews of landscaping for PUDs and Commercial Parking Lots (minimal impact)
- Chapter 16, Article 29 of Zoning Code
 - Regulations for Drainage, Stormwater Management, & Erosion Control during construction
 - Post-construction requirements to manage stormwater runoff quality using accepted Best Management Practices (BMPs)
 - Primary purpose: to reduce impacts on stormwater systems and neighboring properties

The screenshot displays the City of Edgewater Municipal Code website. The header includes the city logo and a search bar. The main content area shows the navigation structure for Chapter 16 - Zoning. The version is noted as 'JAN 20, 2023 (CURRENT)'. The structure is as follows:

- Edgewater, Colorado - Municipal Code / CHAPTER 16 - Zoning
 - VERSION: JAN 20, 2023 (CURRENT)
 - HOME RULE CHARTER AND CODE OF THE CITY OF EDGEWATER, COLORADO
 - EDGEWATER HOME RULE CHARTER
 - Charter Comparative Table
 - SUPPLEMENT HISTORY TABLE **modified**
 - CHAPTER 1 - General Provisions
 - CHAPTER 2 - Administration
 - CHAPTER 4 - Revenue and Finance
 - CHAPTER 6 - Business Licenses and Regulations
 - CHAPTER 7 - Health, Sanitation and Animals
 - CHAPTER 8 - Vehicles and Traffic
 - CHAPTER 10 - General Offenses
 - CHAPTER 11 - Streets, Sidewalks and Public Property
 - CHAPTER 13 - Municipal Utilities
 - CHAPTER 16 - Zoning**
 - ARTICLE 1 - General Provisions
 - ARTICLE 2 - Administration, Construction and Enforcement
 - ARTICLE 3 - Districts and District Regulations
 - ARTICLE 4 - R-A, Residential A District

On the right side of the page, a list of sections under Chapter 16 is visible, including:

- CHAPTER 16 - Zoning
 - ARTICLE 1 - General Provisions
 - Sec. 16-1-10. - Short title.
 - Sec. 16-1-20. - Scope.
 - Sec. 16-1-30. - Purpose.
 - Sec. 16-1-40. - Interpretation.
 - Sec. 16-1-50. - Definitions.
 - Sec. 16-1-60. - Penalty.
 - ARTICLE 2 - Administration, Construction and Enforcement
 - Sec. 16-2-10. - Application of regulations.
 - Sec. 16-2-20. - Application to existing buildings.
 - Sec. 16-2-30. - Interpretation.
 - Sec. 16-2-40. - Validity.
 - Sec. 16-2-50. - Enforcement.
 - Sec. 16-2-60. - Building compliance.
 - Sec. 16-2-70. - Building permit compliance.
 - Sec. 16-2-80. - Land use compliance.
 - Sec. 16-2-90. - Fees and deposits.
 - Sec. 16-2-100. - Preapplication meeting.
 - Sec. 16-2-110. - Application completion; abandonment.
 - ARTICLE 3 - Districts and District Regulations
 - Sec. 16-3-10. - Districts established.
 - Sec. 16-3-20. - Zoning map.
 - Sec. 16-3-30. - Annexations.
 - Sec. 16-3-40. - Use and density schedules.
 - Sec. 16-3-50. - Lot area or width less than required.
 - Sec. 16-3-60. - Reserved. **modified**
 - Sec. 16-3-70. - Reserved. **modified**

Regulatory and Policy Gaps

- Land use planning and regulation does not currently account for water efficiency standards or needs
- Proactive policy is more cost effective than retroactive turf replacements
- If we're investing in landscape change-outs on existing development, then why would we allow for new high-water and non-functional turfgrass installations on new development?



Water Wise Landscaping Concept Options



Questions & Discussion

Consider with each option:

- Questions or a need for further discussion
- Are there options that would make sense to prioritize for Edgewater?
- Are there any options that would not make sense in Edgewater?
- Are there options that would directly promote Edgewater Sustainability Plan goals?
- Other thoughts or needs for next steps?

NOTE: *Concepts discussed would only apply to new development and potentially some forms of redevelopment (TBD). Changes would not mandate that all existing property owners comply with new standards.*

Living Plant Material Standards

Require a minimum amount of living plant material at maturity in landscaped areas for all development types

Example: Minimum 50% living landscape/plant material for all development types



Non-Living, Permeable Groundcover Standards

Allowances and limits for landscaped areas to be non-living, permeable materials (e.g., organic mulches, gravel, decorative and permeable pavement)

Example: Allow up to 50% of landscaped areas can be non-living permeable materials

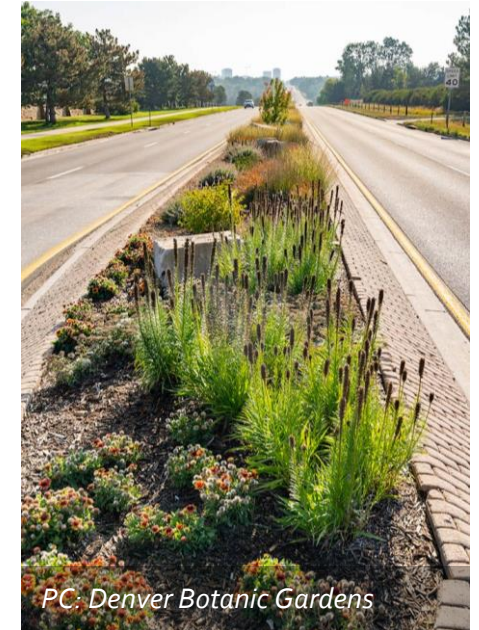


Non-functional Turf Limitations

For all new development, set requirements for maximum amounts of an area where traditional, cool season turf grass is allowed

For example, turf could be:

- Limited, or prohibited, in non-functional front yard areas, medians, commercial and/or institutional properties, curbside landscaping
- Limited to a set amount of space in the backyard (e.g. 50% or 500 SF of the rear yard)
- Not allowed in spaces narrower than 10 feet wide (e.g., along curbside planting strip or medians)
- Limited to areas with suitable shade
- Not to be allowed on slopes greater than 33%
- Artificial turf and other artificial plants are prohibited
- Exemptions for active or passive recreation areas (e.g., ball fields, playgrounds, picnic area, etc.)



Example areas that could have turf limitations (medians, non-functional front yards, curbside planting strips)

Approved Grass List

Require that a portion or all turf grass being installed in listed non-functional areas be from a City-approved species list.

- Lots of new technologies to support low-water and warm-season turf grasses being used – increased availability
- Local and regional resources available already to support this
- **Examples:** Tahoma 31, Dog Tuff, blue grama, buffalo grass, bermuda grass, fescue hybrids ...



Dog Tuff grass

Photo credit: Idaho Firewise



Tahoma 31 grass

Photo credit: Green Valley Turf Company

Recommended Plant List

Can be categorized by water use and help homeowners and developers select appropriate plant types and varieties for western climate

E.g. Denver Botanic Garden's Recommended Western Plant List (example to the right)

Xeric and Xeric Native Full Sun					
Plant Select	Genus	species	Cultivar	Common Name	Water Use
	<i>Achillea</i>	<i>millefolium</i>		Yarrow	moderate to xeric
yes	<i>Agastache</i>	<i>cana</i>	'Sinning'	SONORAN SUNSET® Hyssop	moderate to xeric
yes	<i>Agastache</i>	<i>rupestris</i>		Sunset Hyssop	moderate to xeric
	<i>Agave</i>	<i>parryi</i>		Parry's Agave	dry to xeric
	<i>Amelanchier</i>	<i>utahensis</i>		Utah Serviceberry	moderate to xeric
yes	<i>Amorpha</i>	<i>canascens</i>		Leadplant	dry to xeric
yes	<i>Amorpha</i>	<i>nana</i>		Dwarf Leadplant	dry to xeric
yes	<i>Amsonia</i>	<i>jonesii</i>		Colorado Desert Blue Star	moderate to xeric
yes	<i>Aquilegia</i>	<i>chrysantha</i>	DENVER GOLD®	DENVER GOLD® Columbine	moderate to xeric
yes	<i>Arctostaphylos</i>	× <i>coloradensis</i>	'Panchito'	Panchito Manzanita	moderate to xeric
yes	<i>Arctostaphylos</i>	× <i>coloradensis</i>	'Chieftain'	Chieftain Manzanita	moderate to xeric
	<i>Artemisia</i>	<i>filifolia</i>		Sand Sage	dry to xeric
	<i>Berberis/Mahonia</i>	<i>aquifolium</i>		Oregon Grape Holly	moderate to xeric
	<i>Berberis/Mahonia</i>	<i>aquifolium</i>	'Compacta'	Compact Oregon Grape Holly	moderate to xeric
yes	<i>Berlandiera</i>	<i>lyrata</i>		Chocolate Flower	dry to xeric
yes	<i>Bouteloua</i>	<i>gracilis</i>	'Blonde Ambition'	Blonde Ambition Blue Grama Grass	dry to xeric
yes	<i>Callirhoe</i>	<i>involucrata</i>		Winecups	dry to xeric
	<i>Caryopteris</i>	× <i>clandonensis</i>	'Blue Mist'	Blue Mist Spirea	moderate to dry
yes	<i>Cercocarpus</i>	<i>intricatus</i>		Little Leaf Mountain Mahogany	dry to xeric
	<i>Cercocarpus</i>	<i>montana</i>		Curly Leaf Mountain Mahogany	dry to xeric
yes	<i>Chamaebatiaria</i>	<i>millefolium</i>		Fernbush	dry to xeric

Water Wise Plant Requirements

Require that a minimum amount (e.g., 25%, 50%, etc.) of living plant material in identified landscaped areas be selected from the non-irrigated/very low- or low-water use category of an approved Plant List

Could require different amounts for commercial vs residential properties



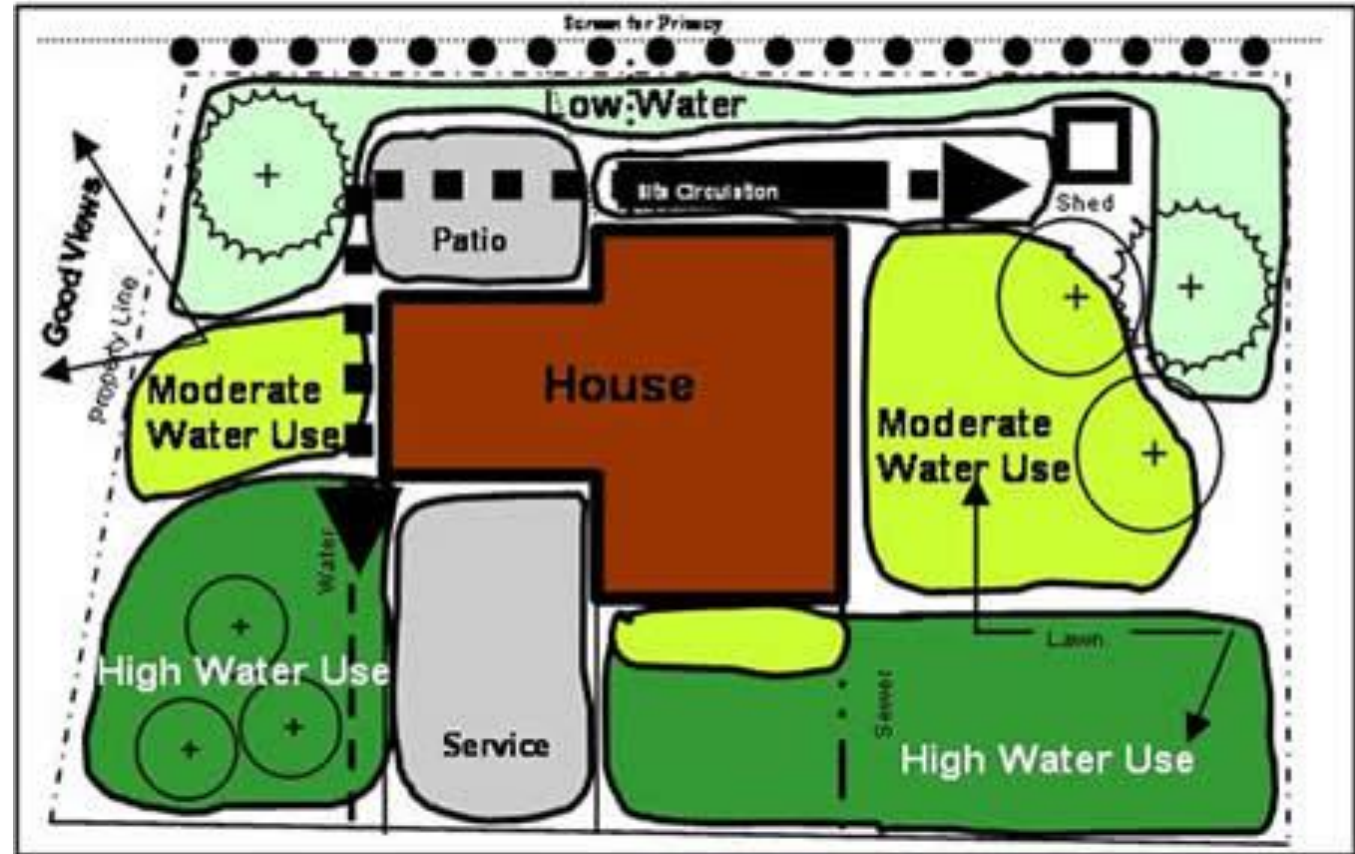
Example Colorado Plant Selection page on [PlantSelect.org](https://www.plantselect.org)

Hydrozone Requirements

Requirements for certain developments or development areas where “hydrozoning” is required

Hydrozones group plants with similar water use in the same areas

- Groups plants in landscaping according to watering needs
- Common standard and could be easy to facilitate with a recommended plant list setup



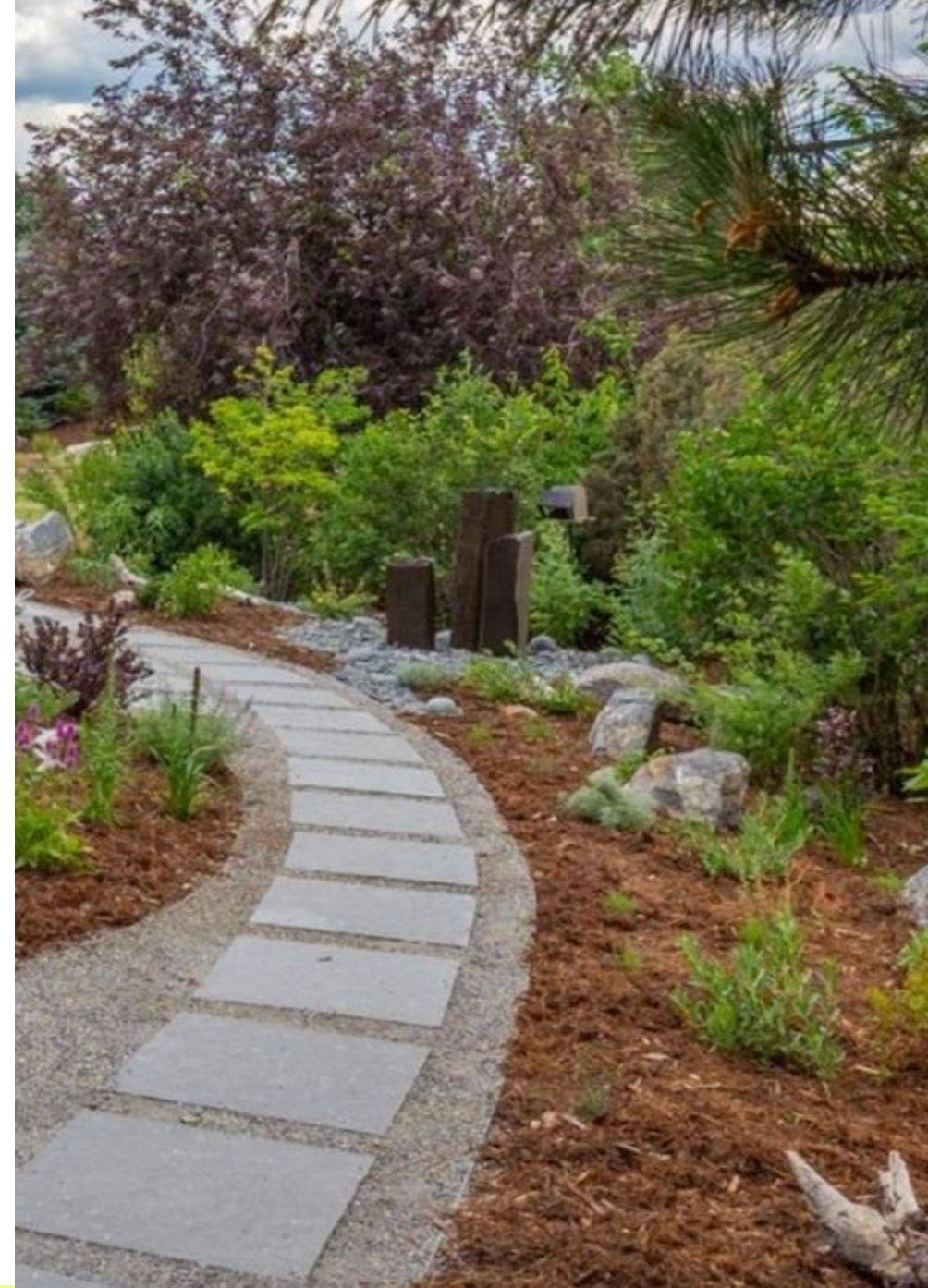
Example of Hydrozones from ResourceCentral.org

Landscape Water Budget

Require that the average landscape water demand of all development is below a specific gallons/sq ft/growing season.

Example: Since high water use plant material uses ~18 gal/sq ft in Edgewater, require landscapes be designed to use <10 gal/sq ft/season.

(Exemptions for edible produce production & food forests and opportunity to incentivize rainwater capture)



Soil Amendment Requirements

Requirements to add physical material to the soil to improve porosity, permeability, aeration, and draining.

- Can be hard to enforce but can at least encourage best practices for planting and landscaping.
- Could include a list of best practices for soil amendments (organic and non-organic materials that can be best to use)



Example garden with amended soil at Denver Botanic Gardens

Mulching Requirements

Set requirements for landscaped areas, including depth and volume requirements (e.g., minimum depth of 3 inches for shrubs and 2 inches for annuals and perennials.)

Irrigation Efficiency Options

Irrigation System Criteria

Set requirements for commercial and large-scale developments. Example criteria includes:

- Smart, weather-based irrigation controllers
- Designed to prevent runoff, overspray, and low head drainage
- Minimum pop-up height in turf grass
- Overhead irrigation within 24 inches of any non-permeable surface prohibited
- Check valves and anti-drain valves required for all sprinkler heads

Landscape/Irrigation Certified Professionals

- Require certified landscape/irrigation professionals to perform some landscape/irrigation activities in the city (e.g., on large projects or commercial properties for landscape and/or irrigation design)
- Becoming best practice regionally

Irrigation Maintenance Requirements

- All irrigation systems shall be maintained including backflow assembly testing, leak repair, head adjustment, etc.
- All replacement plants shall conform to the city's approved plant list and landscaping standards
- Set recommendations for turf mowing height (e.g., 3 1/2 Inches)

Other Sustainability Considerations

How can we encourage the reduction of Fertilizer & Pesticide Applications? What tools do we have?

- E.g., incentivize natural fertilizers vs. phosphorus fertilizers

Other stormwater runoff / green stormwater features?

- E.g., green stormwater quality infrastructure requirements for certain developments – could be best suited for discussion during upcoming Development Code updates (2024)

Development & Redevelopment Compliance Thresholds

A landscape will have to comply with the code requirements if:

- It's on vacant land or cleared land
- When the property is completely redeveloped, including demolition and construction.
- Redevelopment of a site that involves replacement of an existing structure or expansion of the gross floor areas by more than 25%.
- Projects which impact 25% or greater of landscaped area associated with a single water service connection.
- Irrigation maintenance: Through the course of routine maintenance, all replacement irrigation equipment shall meet current criteria.

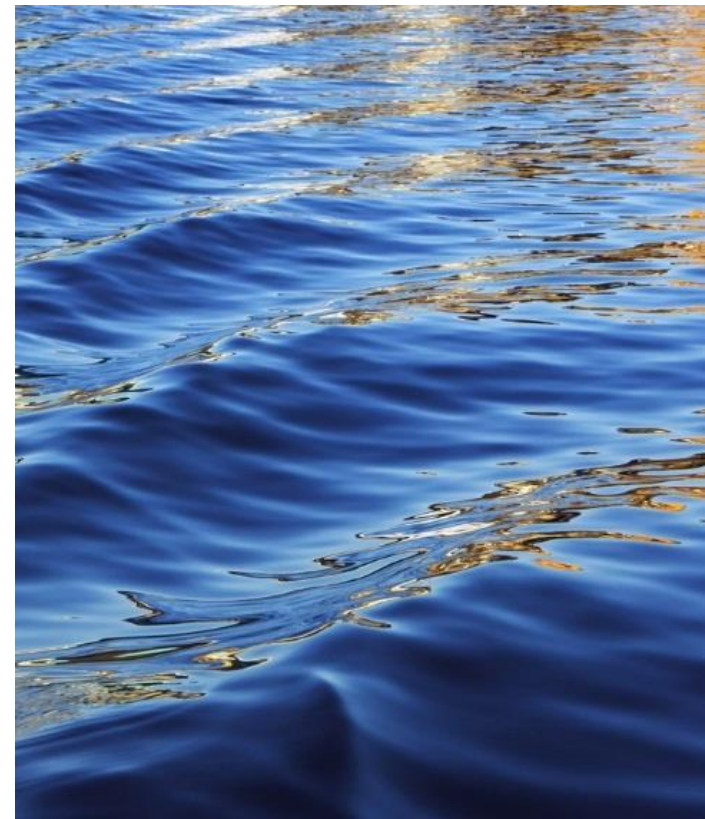
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- Are there options that would directly promote Edgewater Sustainability Plan goals?
- Required for NEW development, but at what point (if any) should standards apply to redevelopment?
 - **Example:** Home or property additions of 30% or greater than the existing footprint



Next Steps



Next Steps

- Consolidate feedback and best practices (August)
 - Edgewater Staff, WRA Staff
- Community Input (September)
 - Survey and Education Opportunities to get public input and build support
- Develop Draft Code (September)
 - Finalize Draft Code with Planning & Zoning Commission incorporating Council, Sustainability Board, and P&Z input as well as public input
 - Finalize Draft for recommendation to City Council
- Present Final Code Recommendation to Council (October)

**Additional direction from Urban Forestry Management Plan RE: Tree Planting requirements may be incorporated after plan completion (estimated plan completion: early 2024)*



Thank You

