

WORK SESSION AGENDA ITEM SUMMARY

City Council



STAFF

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SUBJECT FOR DISCUSSION

Council Priorities for Landscape Standard Improvements Including Xeriscape, Soil Amendments, and Trees.

EXECUTIVE SUMMARY

The purpose of this item is to seek council feedback on the staff work attributed to three council priorities related to landscaping:

1. Council Priority 14. Effective soil amendment policies and compliance (water usage)
2. Council Priority 19. Xeriscape – Increase rebates and education, less green lawns with new development.
3. Council Priority 28. Improving Tree Policies

This discussion is in preparation for the first reading of ordinances related to this work scheduled for November 21, 2023, and January 2024.

GENERAL DIRECTION SOUGHT AND SPECIFIC QUESTIONS TO BE ANSWERED

1. What feedback or questions does Council have on applying landscape and irrigation standards to single-unit dwelling front yards?
2. On daytime watering restrictions, what feedback or questions does Council have regarding:
 - a. Application to all water districts within City limits?
 - b. Staff continuing conversations with raw water users and providers?
3. What feedback or questions does Council have on the proposed path forward?

BACKGROUND / DISCUSSION

In addition to visual appeal, landscapes serve several environmental and human health benefits that include improved air quality, passive stormwater management, heatsinking and cooling, wildlife habitat and outdoor

recreation opportunities. When landscapes are made more resilient and paired with community education and outreach, the community and community's landscapes are better prepared for challenges such as increasing water costs, a warming climate, and water restrictions resulting from declared water shortages.

The scope of this project intends to promote healthy, resilient landscaping practices in Municipal and Land Use Codes and program enhancements. The codes are proposed to apply to new development and significant redevelopment, such as scrape and rebuild, within City limits. Some of these updates will impact existing properties through programs and processes, such as the Xeriscape Incentive Program (XIP), or Parkway Amendments.

An overview of recommendations is listed under each of the three Council Priorities.

Council Priority 14. Effective Soil Amendment Policies and Compliance (Water Usage):

Soil preparation is the first and critical step for growing healthy resilient vegetation. The benefits of soil loosening include better water infiltration and strong root growth. Soil quality includes the physical and chemical conditions of the soil and is considered when evaluating existing soil conditions, plant species needs, and appropriate soil amendment. The following are key updates recommended for **Municipal Code Chapter 12**:

- Define standards for soil compaction and soil quality.
- Remove barriers for implementing soil standards in a way that is most beneficial and sustainable, allowing consideration of existing soil and/or plant type for optimum establishment and growth.
- Clearly define thresholds for applicability to include essentially everything except single-unit dwelling landscape renovations.
 - Residential seeking Certificate of Occupancy and > 1,000 square feet (sf) where plant materials will be installed.
 - Non-residential requiring development review and > 1,000 square feet (sf) where plant materials will be installed.

Soil loosening and amendments are fundamental to healthy and resilient landscapes. If not done properly to begin with, it is a significant effort to fix after the fact. To complement and enforce soil codes, staff proposes to implement a comprehensive field inspection program for all sites.

Council Priority 19. Xeriscape – Increase Rebates and Education, Less Green Lawns with New Development

- Continue to promote water efficiency in existing landscapes with incentive and rebate programs and greater Citywide outreach and education.
- Update **Land Use Code 3.2.1**
 - As it pertains to Landscape Standards:
 - For the purpose of reducing heat-island effect, require 50% living plant coverage on the surface of all landscaped areas
 - For the purposes of reducing heat-island effect, waste stream and pollution, restrict the use of artificial turf with limited exceptions, as approved by the Planning Director

- For the purpose of building landscapes that are resilient from the start, implement a limitation of high-water use turf grass such as Kentucky bluegrass
- For non-single-unit dwelling properties: high-water use grass may cover up to 30% of the total landscaped area but no greater than 10,000 square feet (sf)
- For single-unit dwelling properties: high-water use grass may cover up to 30% of the total landscaped area of a front yard but no greater than 1,000 sf.
 - As it pertains to Irrigation Standards:
 - For the purpose of protecting trees during times of water shortage, require dedicated irrigation to all new and existing trees for properties in development review
 - Irrigation equipment and efficient design standards for single-unit dwelling front yards
- **Update Municipal Code 12-123** to limit overhead irrigation of landscaping and turf between 10 a.m. and 6 p.m., May through September of every year.

Council Priority 28. Improving Tree Policies

Trees are an important part of the community infrastructure and provide many essential social, environmental, and economic benefits to everyone who live, work, and play in Fort Collins. It is important to note that tree-related policies have been strong in Fort Collins for several decades and have created the urban tree canopy that exists today. The **Land Use Code 3.2.1** policies have helped development preserve the character of Fort Collins and have also helped increase canopy as the community grows, including adding an average of 1,500 to 2,000 new street trees annually. With the continued demands of development, redevelopment, and additional pressures on the canopy, the proposed policy updates create a stronger focus around tree preservation and protection. The goal is to save more trees, to adequately replace canopy loss due to development, and create a more resilient urban forest related to, but not limited to, the pressures of the built environment, water shortages, a changing climate, and the introduction of future invasive pests. The following tree policy areas of focus are:

- Improved mitigation standards incentivizing tree preservation.
 - All trees 2-inches and greater will be mitigated for, sans current exception species.
 - Trees 13-inches and greater will be valued and mitigated at the full tree appraised value.
- Creation of separate street tree escrow to increase tree survivability.
 - 25% of the cost of all street trees to be planted within the LOD shall be posted before issuance of the Development Construction Permit.
- Strengthened penalties for tree damage violations or premature healthy tree removal to preserve trees longer.
 - Up to the full appraised value of the tree.
- Improved tree diversity requirements creating a more resilient canopy.
- Improved tree protection during construction.

DISCUSSION

Landscape and Irrigation Standards for Single-Unit Dwelling Front Yards

Landscape or irrigation standards do not currently apply to single-unit dwelling residential properties. Extending landscape and irrigation standards to single-unit front yards is one way the City can increase landscape resiliency in this type of development and reduce water use. Landscapes built smart from the start require less resources down the road to retrofit. A new front yard in Fort Collins consists of anywhere from 0-70% turfgrass with average size of total front yard landscape area in the range of 1,000-2,000 square feet.

Applying landscape standards to single-unit dwelling residential properties will require a new design review process, permitting process, and one or more inspections per site. Additional programs and processes to support review and inspection of landscape and irrigation standards on single-unit front yards require additional staffing equivalent to one full-time employee.

Initial estimates suggest a residential water savings of 79 million gallons per year assuming a 30% turf maximum in front yards. This is equivalent to the annual average water use of 985 homes and nearly half of the water savings reported by Water Conservation's 16 plus programs in 2022. As evidenced by participants' water use data collected through the Xeriscape Incentive Program, education and outreach that supports implementation and maintenance of these standards on single-unit and all other properties in the community is a critical component of realized water savings for water-wise landscapes. It is recommended that one full-time education position (see table 2 below – "Landscape Education Programming") support proposed landscape standards, as well as existing landscape standards throughout the community (Citywide).

Detailed in the "Cost Impacts" section is the cost comparison of installing a water-wise landscape versus typical grass landscape on a single-unit front yard. The cost impact illustrates little financial incentive to install water-wise landscaping but it can be assumed that the cost of installing a majority-turf landscape only to retrofit years later is far more wasteful and expensive.

Daytime Watering Restriction

Due to elevated evaporation and plant water loss by transpiration ("evapotranspiration"), watering during warmer daylight hours in the summer months is an inefficient use of water. Limiting the volume of water applied to landscapes by above-surface irrigation methods would reduce the volume of water lost to evapotranspiration. Uses such as agriculture, research, or nursery operations would not be subject to these restrictions. Exceptions for drip irrigation and activities such as sprinkler maintenance and seed/sod establishment for up to six weeks are proposed.

Depending on the level of enforcement, Citywide enforcement of a daytime watering restriction is estimated to require up to one half-time employee.

Daytime Watering Restriction in City Limits

Staff are recommending daytime watering limitations for all treated water within City limits, regardless of water provider. East Larimer County and Fort Collins Loveland water districts are aware of this proposal and are indifferent, with an understanding that staff are responsible for any enforcement measures.

Daytime Watering Restriction for Raw Water Users in City Limits

Expanding the daytime watering restriction to raw water users in City limits would extend the use of all water resources – treated or raw – for maximum benefit. Conversations are ongoing with several raw water users and providers (e.g., ditch and reservoir companies) to determine the impact, and support or opposition for the restriction on irrigation with raw water. The daily operational impacts seem to be minimal for most users, who state they do not currently irrigate during the day. However, to date, we have heard from two raw water users who stated that their system requires daytime watering for proper functionality. In addition, we have heard some concerns regarding whether this is an overreach by the City.

Cost Impacts

Impacts to Development

New standards will have a varying level of cost impact at time of development and beyond.

There is currently very little incentive to preserve trees during development. With the proposed tree mitigation standard, the new mitigation value could triple the cost. However, if a development decides to design around and preserve more existing trees, this will incentivize tree preservation, reduce the overall mitigation cost responsibility, and potentially reduce the cost impact. If the trees are still removed, then the new mitigation standards would adequately replace canopy back into the community via payment in lieu, and the Forestry Division would organize the tree replacements on public right-of-way. Regarding penalties around tree damage (above and below the ground) as well as premature healthy tree removal post development, violators could be responsible for up to the full appraised value of the trees damaged or removed.

The design and installation cost of landscapes is highly variable and dependent on materials selected. For all property types, landscapes with a lower water requirement will ultimately result in lower water bills if the landscape is managed appropriately. The cost difference to install and irrigate the typical grass landscape versus 30% maximum grass landscape has more of an impact on single-unit properties than on commercial properties. Initial installation costs and costs to irrigate over 20 years are both detailed in Table 1.

In some water districts, a significant incentive for commercial developments is reflected in water requirement development fees. New commercial projects in the water districts that base raw water or water supply requirement (WSR) costs on the landscape's water requirement¹ will pay lower water development fees when the landscape has a lower water requirement. This same water conservation incentive does not exist for single-unit homes, but could be developed in Fort Collins Utilities. If we assume the example below reduced the front yard water use by 50%, the reduction in the front yard WSR would be \$940, much less than the commercial example due to a smaller landscaped area. We would need to consider whether an allotment would then be applied to the property, like commercial properties, to ensure an ongoing reduction in water use. Utilities staff cannot ensure that the other water districts would also develop something similar.

¹ Fort Collins Utilities Water District and East Larimer County Water District use landscape types to determine Water Supply Requirement/Raw Water Requirement costs.

Table 1. Xeriscape Standards – Cost Comparison

Property, Landscape Type	Total Landscape Area (% high-water grass)	Design & Install. cost	Estimated Water Supply Req.*	20-year cost to irrigate**	Total	Water-wise cost difference over 20 years
Commercial, typical	26,000 (80%)	\$110,000	\$82,530	\$68,067	\$260,597	- \$15,536
Commercial, water-wise	26,000 (30%)	\$140,000	\$51,975	\$53,086	\$245,061	
Res. front yard, typical	900 (70%)	\$6,500	\$21,168	\$5,287	\$23,633	+ \$4,936
Res. front yard, water-wise	900 (30%)	\$12,000	\$21,168	\$4,723	\$28,569	

* Fort Collins Utilities 2023 Rates. Residential estimates based on 4-bedroom house on 7,300 sf lot with 5,200 sf outdoor area. Commercial assumes irrigation-only tap.

** Based on Fort Collins Utilities 10-year rates forecast. Residential water bill estimate is for front yard only with 3/4" tap. Indoor and remaining outdoor water use estimates are not included in 20-year cost to irrigate. Commercial water bill estimate is based on 1-1/2" irrigation-only tap.

Resource and Staffing Needs

The full list of improvements will create an increased workload that cannot be absorbed into existing operations. However, the three priority areas are at different stages of preparation and implementation.

During the 2023/2024 Budgeting for Outcomes process, three full-time landscape inspectors were requested, and two were funded to support inspections for new development. One inspector was hired in 2023 to support Forestry and the second, which was funded for 2024, will be hired next year to support Environmental Planning. Additional staffing is not being requested at this time; however ongoing needs will continue to be evaluated.

Soil standards code requirements have been in place since 2003, but the program does not include a standardized field inspection program. The current program is largely administrative and given the current workload, is not able to incorporate field inspections with existing resources. The added work to perform field inspections for all applicable sites is estimated to be one full-time employee (FTE). This additional FTE is similar to xeriscape and irrigation inspectors and is included in the evaluation, shown in Table 2.

Xeriscape and irrigation have new requirements that need additional resources. Two FTEs are estimated for plan review and field inspections. The workload to enforce the watering window restrictions is estimated to be 0.5 FTE. With significant changes to the code and requirements, it is vital to dedicate efforts to education and outreach and one FTE is estimated to implement a holistic program. Landscape Education Programming is a proposal to support landscape efforts Citywide. The employee in this position will coordinate with forestry, soil, xeriscape and other landscape expertise through the City organization and community to provide dedicated and comprehensive water-wise and climate resilient landscape education for those with an interest in existing and/or new landscapes. This position will provide education and resources to the public across all water service areas in Fort Collins to advance sound landscape principles.

Table 2 reflects the full-time in-house employee request based on the core updates recommended by staff, including xeriscape, irrigation and soil inspections. However, various funding and staffing sources were explored and are detailed in the subsection titled “Scalability and Other Alternatives.” Pending final policy direction from Council at this work session, the proposed staffing request will be adjusted accordingly.

Proposal	# FTE	Description of Role	Ongoing Cost	One-time Cost
Soil Inspection Program	1	Review plans and perform site inspections for sites required to meet soil standards.	\$93,300	\$3,000
Daytime Watering Restriction	0.5	Enforcement	\$53,760	\$3,000
Landscape Standards, non-single-unit residential	1	Review landscape and irrigation plans and perform inspections.	\$98,960	\$1,500
Landscape Standards, single-unit residential	1	Review landscape and irrigation plans and perform inspections.	\$87,334	\$38,000
Landscape Education Programming	1	Develop landscape resources; education and outreach	\$105,871	\$1,500
Total	4.5		\$439,225	\$47,000

100% General Fund assuming applicability throughout city limits and fully implemented inspections.

Funding is requested from the General Fund to implement these codes Citywide. Should any of these codes be recommended by Council to only apply to Fort Collins Utilities’ water service area, those expenses associated with water service area may only be funded by the Water Fund.

Scalability and Other Alternatives

- Plan reviewers and inspectors could be contracted instead of hired as staff. In looking at three FTEs for xeriscape, irrigation, and soils, hiring a third-party to complete landscape and irrigation design review and inspection tasks would eliminate an estimated ongoing cost of \$279,594 and one-time costs of \$42,500, but would come at a greater cost of approximately \$375,000 annually.
- The expense of funding three FTEs for xeriscape, irrigation, and soils could be recovered in permit fees. Requiring 100% of the ongoing expenses to be paid by development applicants with a permit fee would increase permits on average \$600 each - \$200 of which can be attributed to soil inspections - with a lesser amount likely being applied to residential vs. commercial development. Alternatively, a portion of the total amount could be paid for by permit fees and the remainder could be covered by the General Fund.
- The work and associated FTEs related to site inspections, enforcement, and education for xeriscape, irrigation, and soils could be scaled pending final direction from Council. Level of inspection and enforcement is most likely to be impacted by a reduction in recommended staffing.

- Eliminating the 0.5 FTE for enforcement of daytime watering restrictions could be achieved by only applying the daytime watering restriction to Fort Collins Utilities water service area. The level of enforcement would be reduced to monitoring by water meter data use patterns and incidents reported to the City's Save Water hotline and would likely result in little to no follow up, following a compliance notification.
- An expansion of the Xeriscape Incentive Program to serve customers in other water districts could incentivize new construction to install water-wise landscapes voluntarily. To rebate 100 single-unit new development projects throughout City limits (about 25% of Citywide average annual permits) would require an additional budget of \$100,000 for rebates and \$100,460 for 1 FTE. The cost burden to the General Fund would be greater compared to single-unit landscape regulations. Conversely, the cost burden to the owner/developer would be less.

Public Engagement

Public input and engagement are critical components for a successful outcome. A variety of engagement tools have been used including utilization of the OurCity platform, surveys, social media posts, focus groups, virtual meetings, workshops, in-person meetings, presentations, and direct communication with community members. Here are a few highlights from the engagement efforts:

- 929 responses and 5,878 comments on public survey
- 37 comments on boosted social media posts
- 166 hits on OurCity webpage
- 14 virtual opportunities for input (September 2022 – April 2023)
 - 56 attendees
 - 22 internal
 - 34 external
- 298 emails sent to 167 contacts
- 6 Boards and Commission meetings completed, 2 more scheduled

Over the past two years of engagement, we have seen varying levels of representation from groups including:

- Developers
- Landscape professionals
- Landscape architects and designers
- Realtors
- Property managers
- Nurseries and wholesalers
- Sod growers
- Special interest groups
 - Planning and Zoning Commission
 - Water Commission

- Natural Resource Advisory Board
- Parks and Recreation Board
- Downtown Development Authority staff
- Internal City of Fort Collins staff

General themes from engagement are listed below and broken up into areas of support and areas of concern.

Areas of Support:

- General support for improvement of landscape standards
- Applicability Citywide
- Importance of simple, predictable processes for implementation
- Tree protection
- Education and Outreach is needed and should cover wide ranging topics such as:
 - Pesticide impact to pollinators
 - Fertilizer and nutrient impact to waterways
 - Source water quality, including raw water or groundwater
 - Landscape contractor training

Areas of Concern:

- Cumulative development costs including impact to housing affordability
- Regulations on single-unit dwelling landscapes
- Funding sources for additional staff and processes
- Desire for streetscape standard changes to also limit turf
- Consideration of unique public sites such as parks, downtown core
- Artificial turf – what is the alternative?
- Watering window too narrow
- City overreach if applying daytime watering limitations to raw water use

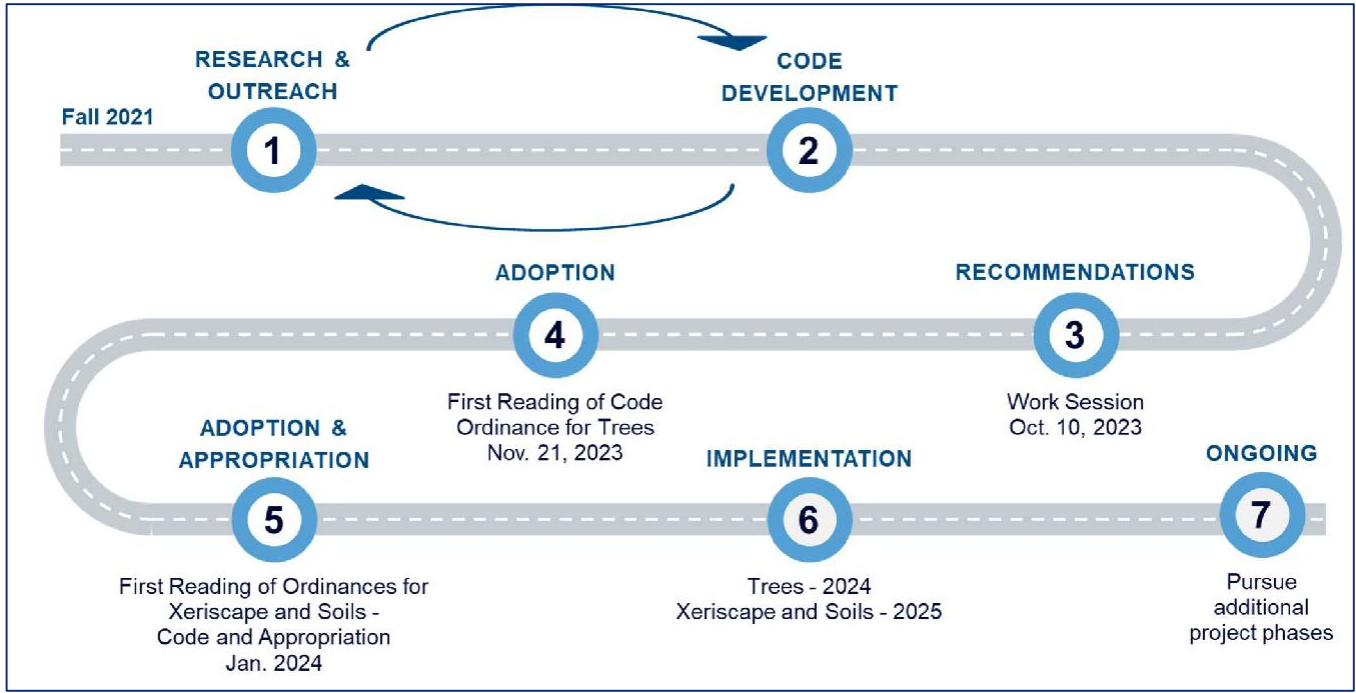
Timeline

Implementation Schedule

Forestry is prepared to begin implementation of new tree standards in early 2024.

Enforcement of xeriscape, irrigation and soil code updates are proposed to begin in 2025 to allow time to hire and onboard new staff in 2024, as well as fully develop new review and inspection processes and programs, including software updates and education and outreach materials.

Project Milestones



The proposed timing of adoption of ordinances for xeriscape, irrigation and soils has been adjusted to coincide with the associated appropriation request. Staff have been advised that any appropriation of funding for the hiring of new staff in 2024 would occur in 2024. At the first regular Council meeting in 2024, staff intends to bring the proposed code along with an appropriation ordinance to Council that is right-sized to Council-provided direction of the proposed code changes.

Table 3. Detailed Timeline	
COMPLETED	
Summer 2021	2021 – 2023 Council Priorities Adopted
May 2022	Clarion Associates: Targeted Best Practices Report (attached)
Summer 2022	Initial Internal/External Engagement including Water Commission and Natural Resources Advisory Board
1/10/2023	Council Work Sessions: Soil, Xeriscape
1/24/2023	Council Work Session: Trees
May 2023	Clarion Associates: Land Use Code Audit (attached)
April 2023	Identification of code changes
Apr. – Sept. 2023	Internal/External Engagement
July 2023	Begin code drafting
8/11/23	Planning and Zoning Commission Work Session
8/16/23	Natural Resources Advisory Board
8/17/23	Water Commission

Table 3. Detailed Timeline	
8/23/23	Parks and Recreation Board
8/30/23	Downtown Development Authority Staff
Aug. – Sept. 2023	Additional feedback received
Sept. 2023	Legal Review of Codes
Sept. 2023	Initial raw water discussions
UPCOMING	
10/10/23	Council Work Session
11/9/23	Planning and Zoning Commission Work Session
11/16/23	Planning and Zoning Commission Hearing
11/16/23	Water Commission
11/21/23	Council First Reading of Ordinance for trees
12/5/23	Council Second Reading of Ordinance for trees
1/1/24	Tree standards go into effect
Jan. 2024	Council First Reading of Ordinances for xeriscape and soil Council First Reading of appropriation of funding for staffing
1/1/2025	Soil program and additional landscape/irrigation standards go into effect

Future Phases and Exploration

As part of continual improvement, any implemented improvements will be monitored to understand how well they are working, what adjustments are needed, and what additional focus areas are needed. In addition to this ongoing evaluation, there are some projects that are currently planned, and topics for future exploration. All of these will cumulatively inform the next phases of landscape improvements and future efforts.

- The Assessment of Compliance with Local Environmental Policy will evaluate how the City can improve the current distributed approach to enforcing our environmental policies. This project will provide recommendations on how to better align related efforts such as permitting, inspection and enforcement and where additional resources, including FTEs, would provide the most benefit. Results of the assessment are anticipated in the first quarter of 2024. The increased workload associated with the proposed landscape improvements cannot be absorbed into existing programs. The hiring of any new FTE in 2024 will be informed by the recommendations of the assessment.
- The Urban Forest Strategic Plan will refine tree canopy goals and prioritize strategies to preserve, maintain, and expand our tree canopy. This project will consider a voluntary heritage tree program to encourage long-term commitment of tree preservation. It will also evaluate tree preservation and protection for single-unit dwellings. Both of these topics are currently a part of the strategic plan engagement process.
- The Water Efficiency Plan update continues the City’s commitment to ensuring efficient use of our natural resources. This project will redefine existing goals, build on existing programs, and identify effective strategies for future water conservation and efficiency.
- During this current landscape improvement effort for the three council priorities, topics were identified for consideration of future phases of this work.

- Evaluate streetscape standards to reduce irrigated turf in parkways. While this is an area that has significant room for improvement, there are numerous unique considerations and challenges for these areas that made it difficult to include within the timeline for this project.
- There are unique public areas - such as parks, and the downtown core - that might benefit from more detail specific to each unique situation, layout, and use.
- Expanding the daytime watering restriction to raw water users in City limits would extend the use of all water resources – treated or raw – for maximum benefit. Staff will continue to pursue conversations with users and providers pending Council direction.
- An evaluation by Fort Collins Utilities to scale residential single-unit property water supply requirements to match the estimated demand of that property.

NEXT STEPS

1. Provide recommendations/motions to Council, following Planning & Zoning Commission Hearing and Water Commission meeting in November.
2. November 21, 2023, City Council Regular Meeting: First reading of code ordinances for trees.
3. January 2024, City Council Regular Meeting: First reading of code ordinances for xeriscape, irrigation, and soils. First reading of appropriation ordinances for funding the code changes.

ATTACHMENTS

1. Clarion Associates: Additional Targeted Best Practices Report May 2022
2. Clarion Associates: Additional Land Use Code Audit May 2023
3. Xeriscape and Soil Work Session Summary, January 10, 2023
4. Urban Forest Strategy and Policy Work Session Summary, January 24, 2023
5. Soil Amendments and Artificial Turf Memo, June 27, 2023
6. Presentation