City of Centennial, CO

Incorporating Sustainable Water Practices into Centennial's Municipal Code

Project at-a-Glance

Community Overview

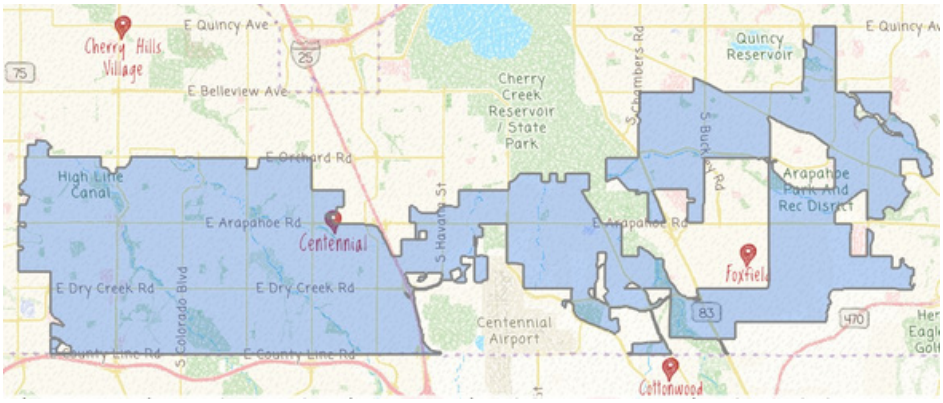
- Utility/Community: City of Centennial, CO
- Location: Centennial, CO
- Population served: 110,000
- Service area: 29.87 square miles

Project Partners

Centennial COLORADO

waternow alliance
water leaders. resilient solutions.

WESTERN RESOURCE ADVOCATES



Project Benefits

- Influences the use of sustainable stormwater management and water efficiency practices during the construction of new developments, infill developments, and retrofits.
- Provides resources for other communities interested in implementing similar code updates – particularly, those cities that want to improve their climate resiliency, but do not own and operate their own water, wastewater, or stormwater systems.
- Updating water efficiency, stormwater management, and water reuse policies can increase a communities' resiliency to drought and flooding events.

Project Challenges

Drought

Climate change

Changing Population

Urban Flooding

Strategies for Success

Through a robust research and stakeholder engagement process WaterNow Alliance (WaterNow) and Western Resource Advocates (WRA) developed a set of recommendations for updating Centennial's Land Development code–and other relevant municipal codes–to reduce water use, increase water reuse, and improve stormwater management.

Project Spotlight

The City of Centennial (Centennial) is home to a population of 110,000 people in the South Denver Metro area. As a Front Range Community, Centennial is increasingly at risk of water resource insecurity. The City is invested in improving its building and land development regulations to support community resiliency and water efficiency by memorializing best practices, and supporting waterwise landscapes. This commitment was solidified by the City's adoption of their 2018 Comprehensive Plan, Centennial NEXT, which identified various sustainable stormwater and water efficiency goals and strategies. The City is interested in moving forward expeditiously with water-related updates to its Land Development Code in order to influence The District, a 40-acre mixed use area along the I-25 Corridor. Development Code updates also have the potential to impact the rest of the 110,000-person City, including infill development and water use retrofits. Prior to WaterNow and WRA's involvement in the project, the City had very limited formal interaction with their 12 water and sanitation providers. Additionally, compared to some other mid-sized Front Range communities, the City had less of an emphasis in their Land Development Code (LDC) on outdoor water efficiency, on-site reuse, and/or green stormwater infrastructure.

To assist Centennial with developing regulatory reforms to promote water efficiency in its Land Development Code, WaterNow and WRA implemented a phased approach:

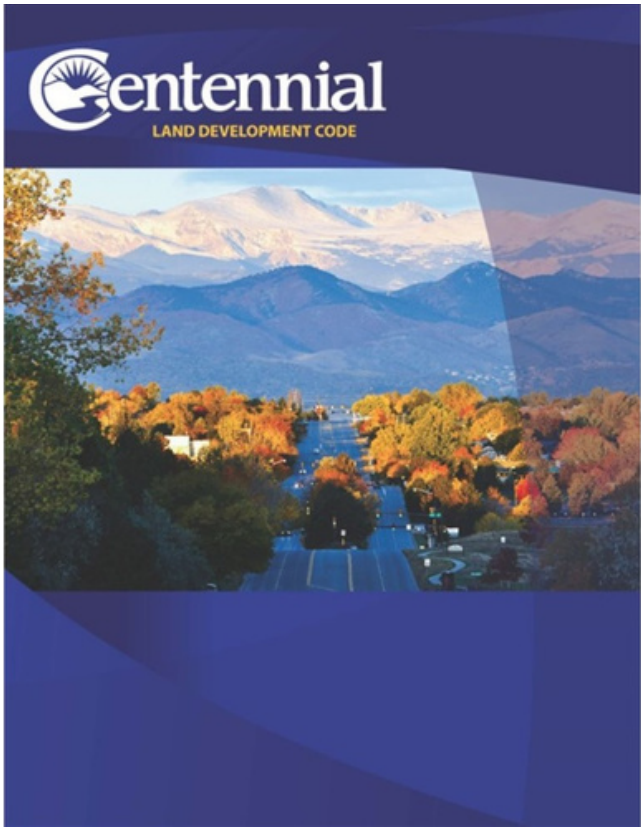
Phase 1: Interviews with Centennial Staff and Officials

WaterNow and WRA first conducted interviews with the Mayor of Centennial, Stephanie Piko, and with Michael Gradis, Centennial's Land Use planner, to develop a better understanding of the community's existing water and land use planning challenges, opportunities, and goals. WaterNow and WRA were interested in more fully understanding the City's drivers and objectives for including water efficiency, stormwater management,

and water reuse in its land use planning code, priorities for inclusion, and potential barriers to adopting code amendments. The conversations provided useful information about Centennial's community development in the coming years, and what water issues and topics were most important to the community.

Phase 2: Land Development Code Review

Following the informational interviews, WaterNow and WRA conducted an extensive review of: (1) the City's Land Development Code, (2) the remaining chapters of the Municipal Code, and (3) the SEMSWA's Stormwater Management Manual. Search terms were identified to review the code for relevant entries and the project team methodically worked through the code and classified all applicable entries with the code section, a summary of the section, and analysis as to whether or not the code section was relevant to indoor water efficiency, water reuse, and/or stormwater retention. This comprehensive review of the current Land Development Code, Municipal Code and SEMSWA manual served the project team in having an in-depth understanding of what was included in the City's codes, as well as supporting the key focus areas of the community research phase.



Centennial's Land Development Code.

Phase 3: Research on Successful Sustainable Water-Related Code Language

The project team selected five Front Range communities to conduct comparative research on how various elements of their municipal codes compared to Centennial's existing code. The communities were selected because they: (1) were known by the project team to have strong sustainable water development codes or (2) like Centennial, do not own or operate their water system. The five communities selected were: the City of Denver and Denver Water, the Town of Castle Rock, the City of Aurora, the Town of Parker, and the City of Broomfield. The project team also reviewed the South Metro Water Supply Authorities Model Landscape Ordinance for guidance around best practices for water efficient outdoor water use.

The research database, which was developed in Excel, focused on 31 key metrics across three categories: indoor and outdoor water efficiency, green stormwater retention, and on-site water reuse. The project team developed a summary of findings for each category and shared these results with City of Centennial and SEMSWA staff. These conversations honed in on the highest priority opportunities to update Centennial's code and influenced the development of the draft code recommendations.

Phase 4: Stakeholder Meetings

WaterNow and WRA held two stakeholder engagement meetings to review Centennial's current Land Development Code and explore other examples of Colorado cities water sustainability-related codes and to identify participants' priorities for updating Centennial's Land Development Code. The first meeting included representatives of Centennial's landscape professional and development community and the second meeting included the City's water provider representatives.

In advance of the stakeholder meetings, the project team developed a draft set of recommendations that focused on 16 priority recommendations that arose during the research phase. Each of the 16 recommendations included: (1) the existing Centennial code language, (2) the recommended update to the code, and (3) example communities with similar requirements.

These meetings utilized audience polling data to gauge support on each recommended code amendment. Given their hands-on industry knowledge, participant feedback was valuable to further refining the policy recommendations. They shared expertise on which types of code amendments resulted in the most water savings and were easiest to implement and enforce, as opposed to those that typically were not very impactful or were very difficult to enforce. Participants were generally supportive of most of the recommendations, but the concerns they had about enforcement challenges with a landscape certification program, graywater ordinance, and a landscape water budget, were taken into consideration when making the final Code update recommendations.

Phase 5: Recommendations

Based on feedback gathered from the stakeholder meetings – and in conversation with City staff – the project team honed in on a final set of 11 high priority recommendations for updates to the City's municipal code to advance water efficiency, on-site reuse, and sustainable stormwater management practices. Major topics in these recommendations include indoor water efficiency, outdoor water efficiency, plant lists, mulch, hydrozones, irrigation system requirements and audits, and street trees. The recommendations also included details on the existing code requirement, the recommended code to update, Front Range communities with similar code requirements, sample code language from these communities, and the appropriate place to include the new code language.

The final recommendations also included a section for future consideration and nonregulatory recommendations which was developed in response to stakeholder feedback. For example, it was determined that a professional landscaper certification and a graywater program would be advanced more effectively through education and incentive options, whereas a landscape water budget should be considered for a future code update if/when more of Centennial's water providers have moved in this direction for new development.

The project team presented these findings to Centennial City Council during a work session where Council expressed positive feedback on the recommendations and asked engaging questions related to potential affordability impacts of the proposed recommendations and the point at which a redevelopment project would trigger code compliance. The Council also tasked Centennial staff with working with their Communications department to garner additional public feedback on the standards, prior to returning to Council for code adoption.

Through this phased approach, WaterNow and WRA achieved the goal of identifying key opportunities for updating Centennial's code with best practices for water efficiency, green stormwater infrastructure, and on-site water reuse. These updates also serve as a model for other communities in Colorado that are considering expanding their regulatory oversight of water use and management.

Project Impacts

Once successfully implemented, this project has the potential to significantly reduce indoor and outdoor water use and improve other sustainable water policies in Centennial. The comparative research database developed for this project has been shared with many other Colorado communities as they embark on similar water wise landscape code updates. The recommendations given to Centennial can also aid these communities in developing best practices for water management within their Land Development Codes. These best practices broadly focus on adding content and language that would either require or encourage water efficient landscaping materials and techniques, such as the establishment of hydrozones or the installation of water-saving irrigation systems.

Lessons Learned

- Utilize both narrative and data to inform code update recommendations. The combination of robust research on existing code language regarding sustainable water policies with conversations with City officials and stakeholders provided a thorough understanding of optimal code updates rooted in the City's unique needs.
- Using land development codes to reduce indoor and outdoor water use can be iterative and customizable. Analysis of other city codes demonstrated that responses to increasing water efficiency can vary in intensity level based on the community's priorities and circumstances.
- Involve stakeholders, with a variety of perspectives, to provide feedback on what the implementation of a code update would look like to best inform priority recommendations. Through stakeholder meetings the project team was able to identify code updates that had broad support from affected industries and agencies, allowing them to suggest initial recommendations that would effectively influence sustainable water use. This process also brought together stakeholders who previously had few formal interactions to start dialogues and reveal similarities in sustainable approaches to water management.