

City of Golden, CO

Laundry to Landscape Ordinance



Project at-a-Glance

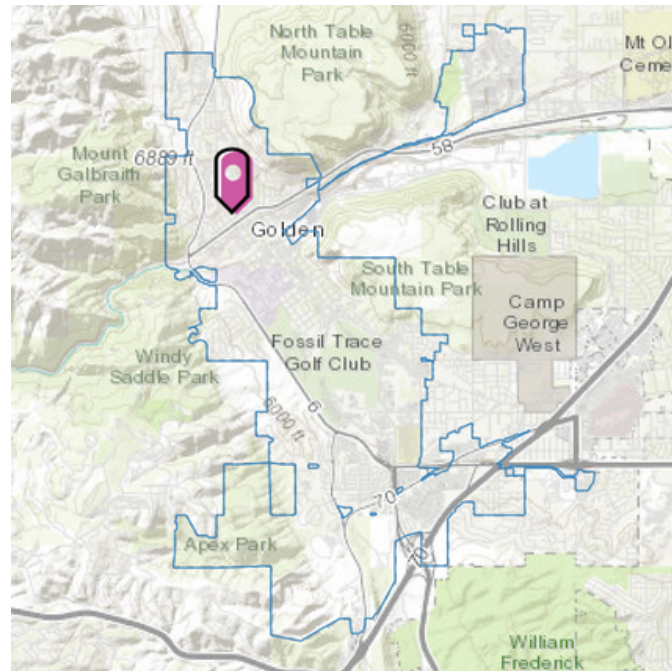
Community Overview

- Utility/Community: City of Golden, CO
- Location: Golden, CO
- Population served: 20,967
- Service area: 9.7 square miles

Project Partners



City of
Golden



Project Benefits

- In September 2021, the City of Golden approved the ordinance becoming the first L2L ordinance in Colorado.
- Assuming a 5% adoption rate among single-family homeowners, the ordinance would save approximately 514,000 gallons annually.
- Due to high public approval and support of the graywater ordinance, Golden could further incentivize or possibly require graywater systems in the future.
- This ordinance – the fourth graywater and first L2L ordinance in Colorado – offers a model for other communities interested in adopting graywater ordinances.

Project Challenges



Urban stormwater runoff
Climate change
Equity and affordability
Drought
Changing population
Lack of reliable water supply

Strategies for Success

The Project Accelerator program supported The City of Golden in developing a graywater ordinance and communication program. The goal of this project was to encourage the implementation of L2L graywater systems in residential homes to reduce peak potable water demands, as well as energy demands related to water and wastewater treatment. The process included engaging with community members and the Golden Sustainability Advisory Board to solicit input on a graywater ordinance; drafting ordinance language to be integrated into the current permitting process; and creating a robust community outreach and education plan which includes demonstration projects to inform the community.



Project Spotlight

In 2018, the City of Golden unanimously approved an update to the City's Sustainability Goals. Of the many goals, two focused on water issues: responsible use and drought planning. Responsible use required a 15% per capita reduction in water use by 2030. Drought planning outlined the need to plan for a warmer and drier climate. In addition to the many water efficiency programs already implemented, the City was interested in graywater systems to expand alternative sources of water.

In partnership with WRA and the City, WNA established a six-phase strategy to develop a graywater ordinance and a communication program:

- **Phase 1:** researched existing graywater programs and Colorado-specific regulations, including Colorado's Graywater Regulation 86 and the Colorado Water Quality Control Commission requirements. Informational interviews with five water agencies in Colorado, Arizona, and California, that have implemented similar graywater programs helped uncover strategies, lessons learned, and best practices for developing a graywater program.
- **Phase 2:** Draft ordinance language that incorporates feedback from phase one. Draft language closely follows Regulation 86 requirements while incorporating the City's narrower objectives.
- **Phase 3:** Engage with local stakeholders through participation in Golden's Community Sustainability Initiatives Public Meeting and the Sustainability Advisory Board meetings. Engagement with the public was critical in the effort to raise awareness and answer questions.

Graywater Reuse: Laundry-to-Landscape

Graywater is wastewater generated from domestic activities such as laundry and bathing, which can be recycled on-site for uses such as landscape irrigation and toilet flushing.

KNOW YOUR WATER

Benefits of Graywater:

- Save water & money on your water bill
- Save energy used to produce and distribute potable water
- Return nutrients to soil
- Reduce demand on wastewater treatment plant

Laundry-to-Landscape (L2L) is the simplest, most affordable graywater system

- Gravity-fed water discharges from a washing machine into mulch basins to water plants
- Does not require tanks, pumps, or filters
- ~\$200 - \$250 for all materials
- Very little maintenance required

Interested in installing an L2L System in your home?

Graywater reuse was legalized in Colorado in 2013 and Golden is currently exploring an ordinance to allow for Laundry-to-Landscape graywater systems in single family homes in Golden. If you're interested in learning more about installing a L2L system in your home, please contact Golden's Sustainability Coordinator, Theresa Worsham (TWorsham@cityofgolden.net)

Did you know that 12% of wastewater produced in a home comes from your washing machine and can be used to water your plants?

- **Phase 4:** Finalize graywater ordinance language and present to the City Council for consideration. Throughout this phase WRA, WNA, and the City of Golden completed several iterations to meet desired objectives.
- **Phase 5:** Develop graywater program outreach and educational plan. Outreach included op-eds, information on multiple city webpages, posts on NextDoor, Facebook and Twitter, inserts in water bills, and in-person events. Educational resources were posted on the City of Golden's web page under graywater information.
- **Phase 6:** Support demonstration projects to garner interest from community members. WNA and WRA will attend installations to improve technical experience.

The project set out with the immediate goal of reducing water use and planning for a drier and warmer climate. Although the goal of 5% adoption among single-family homes is not yet confirmed, the public engagement and approval is encouraging. This model will help similar communities create ordinances and regulations to implement graywater systems in the future.



Project Impacts

On September 10, 2020, the city council unanimously approved Ordinance 2143 - the first in Colorado to focus exclusively on L2L systems. The simplicity and affordability of the ordinance is an excellent example of beneficial use; where water from the laundry process is no longer a waste material, but instead a valuable commodity.

Golden's ordinance approves the capture of graywater from laundry machines and laundry room sinks to water non-edible outdoor plants. The affordable system utilizes gravity-fed water from laundry rooms to water outdoor plants. No tanks, pumps or filters are required, it needs little maintenance, and typically costs roughly \$250.

Residents were encouraged to apply to the pilot program, of which three were accepted. The Office of Sustainability plans to cover design, installation, and inspection costs. Ongoing support from the City encourages citizen participation.

The successful integration of community members, key stakeholder groups and the City helped to ensure the approval of Ordinance 2143. WNA and WRA conducted several interviews with government officials throughout the West, attended community meetings, and drafted ordinance language. We are proud of this collaborative effort which helped to pass the first Laundry to Landscape ordinance in Colorado.

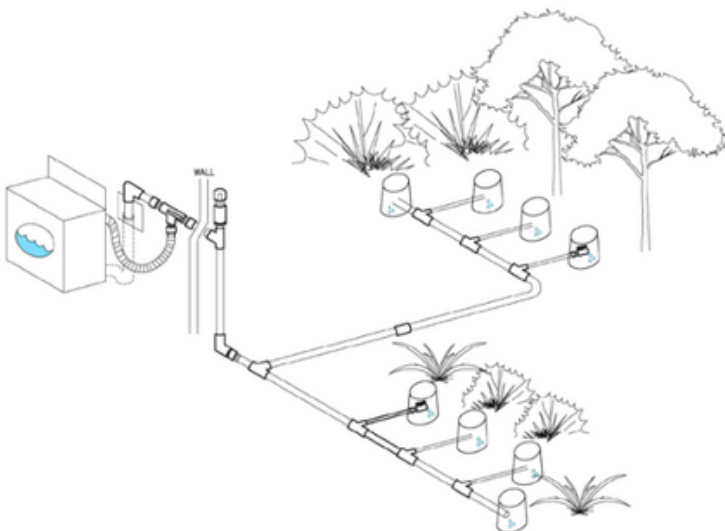
As of May 2022, the City has not announced the pilot program participants or quantified the number of permits issued. It is difficult to determine if citizens are bypassing the permitting process and installing systems themselves or are unaware of the program. This approach to incentivizing graywater also seems to be spreading throughout Colorado.

On September 14, 2021, Broomfield, CO approved Ordinance 2158, which approved graywater reuse in single family and non-single family facilities. Broomfield expanded on Golden's L2L ordinance and approved the reuse of graywater from laundry and bathroom sinks, bathtubs, showers, and laundry machines. Graywater can be used for subsurface irrigation and or indoor toilet and urinal flushing.



Lessons Learned

Open collaboration between the City of Golden, Western Resource Advocates and WaterNow Alliance was a determining factor in ensuring the L2L ordinance passed. The team outlined three key roadblocks: permitting, implementation and water rights. The ordinance resolved these challenges and it serves as a model for cities who see graywater reuse as difficult, costly and potentially illegal.



The council understood that in order for L2L systems to realistically contribute to the goal of per capita water use reduction it had to consider the permitting process. The City's desire to prioritize a simplified ordinance integrated into the existing building permit process was critical to the success of this project. Integration communicates to citizens that the proper review process is established. The Building Department is therefore ready to review applications to ensure proper design and construction on day one.

Implementation design requirements for a L2L gravity fed system are outlined in the City of Golden, Colorado Graywater System Design Criteria. The system material plus permitting fees and maintenance, was designed to have a minimal financial burden on citizens. A simplified design reviewed within an existing Department established a framework for the city to further develop and expand future graywater reuse offerings.

In 2013, Colorado legalized graywater reuse. Unfortunately, the implementation did not take off with homeowners or the utilities worried about cost and legality. Ensuring the compliance with Colorado's water law and consumptive use provisions was a key success. The legality of graywater capture and reuse is often cited by others as a major factor preventing the exploration of graywater reuse. Golden's ordinance was the fourth graywater and first L2L ordinance in Colorado and was a template for the City of Broomfield.

The City of Golden has not released data to confirm the quantity of graywater permits. We believe approving Ordinance 2143 is the first step in integrating graywater systems into single family homes. The City could incentivize or require graywater to maintain some or all of residential landscape water needs. However, to overcome sentiments that graywater reuse is difficult or too costly to install and maintain, further education and outreach are necessary to encourage implementation.

