

# INTRODUCTION TO STATE REGULATION 86 FOR GRAYWATER

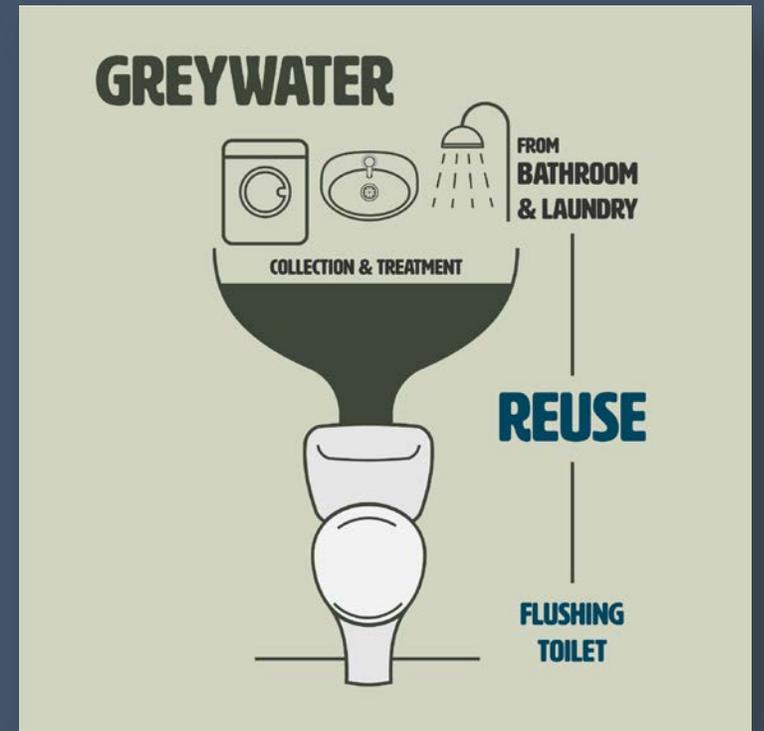
Routt County Board of County Commissioners

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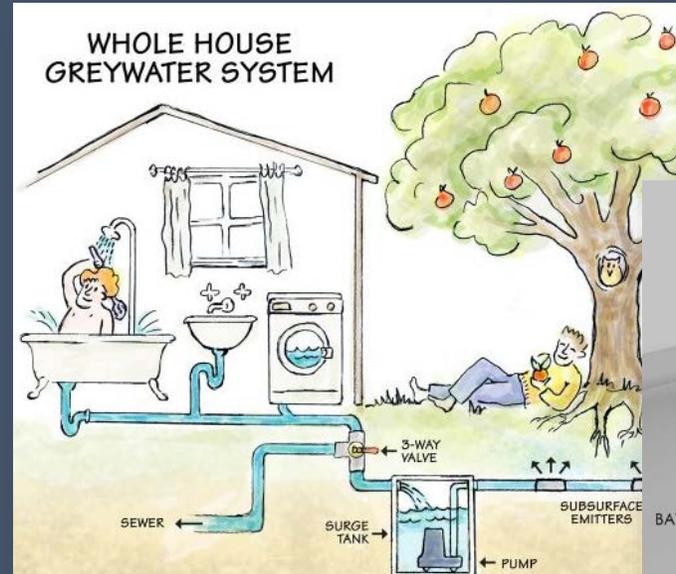
# WHAT IS GRAYWATER?

- Graywater is a part of the water used in a residential, commercial, or industrial building that may be collected after the first use and put to a second beneficial use.
- Graywater sources **may** include water discharged from: bathroom and laundry-room sinks, bathtubs, showers, and laundry machines.
- Graywater **may not** include water discharged from: toilets, kitchen sinks, dishwashers, non-laundry utility sinks.



# GRAYWATER USE/REUSE

- **Laundry to Landscape:** Graywater pumped to underground irrigation system.
- Requires suitable soils (and analysis) – at least 24” between subsurface irrigation and restrictive soils layers
- **Gray to Black:** Reuse in toilets, eventually treated via OWTS or municipal facility



## REGULATORY INFORMATION

- As a result of 2013 legislation, the Water Quality Control Commission adopted Regulation 86: Graywater Control Regulation on November 9, 2015.
- Regulation 86 outlines requirements, prohibitions, and standards for graywater use for non-drinking purposes but is only one component of a larger legal framework that all must be in place for graywater to be used legally:
  - In addition to Regulation 86, the Colorado Plumbing Board adopted a version of the Colorado Plumbing Code (3 CCR 720-1) that allows for graywater piping within structures.
  - Any graywater use also needs to be in conformance with Colorado water rights, which is regulated by the Department of Natural Resources, Division of Water Resource.
- COVID has caused delay of the stakeholder review process as part of the triennial review

## ADOPTION BY LOCAL JURISDICTIONS

- The statute made graywater an **"opt-in" program** for local jurisdictions and not a statewide program.
- To allow graywater use, a local jurisdiction will have to adopt an **ordinance or resolution** to allow graywater use within its jurisdiction by developing a graywater control program that meets the requirements of Regulation 86.
- Requires **operator certification** per Regulation 100: *Water and Wastewater Facility Operators Certification Requirements*
- Requires permittee to have an approved **Operation and Maintenance Manual**
- **Oversight/Graywater Control Program** – could be similar to OWTS
- To date four other jurisdictions have adopted Regulation 86 for Graywater: Pitkin County, Denver, Golden, and Castle Rock.
  - No known permits issued in jurisdictions that have adopted the regulation (not verified)
  - Demonstration/research program and special allowance at CU Boulder (Williams Village)

# OPERATION, MAINTENANCE, CONTROLS AND OVERSIGHT

- All graywater systems must operate in accordance with an approved O&M manual and system controls: (list generalized)
  - Equipment list and design basis data.
  - Maintenance information for the graywater treatment works.
  - Operational ranges (filter replacement, pressures, tank levels, valve status, etc...)
  - Step-by-step instructions for starting and shutting down the graywater treatment works.
  - A guide for visually evaluating the graywater treatment works and narrowing any problem scope based on alarm activations, effluent characteristics, system operation, and history.
  - A list of graywater control measures in which the graywater treatment works must be operated.
  - Disinfection requirements
  - Graywater for toilet and urinal flushing must be dyed
  - Operator certification

# SUMMARY

- Future water supply for Colorado is uncertain - the Colorado Water Plan recognizes graywater as one tool to help conserve water
- **Pros:**
  - Use less water overall through re-use
  - Reduce potable water used for irrigation
  - Local issues: reduced water needs for those depending on cisterns and/or reduce frequency of pumping vaults (Morrison Creek)
- **Cons:**
  - Results in higher strength wastewater and potential challenges for treatment
  - Complexity of plumbing (interior and exterior) and costs
  - O&M requirements and regulatory oversight
  - Water rights??

TYPICAL HOUSEHOLD  
WATER USE (EPA)



## CONCLUSIONS & NEXT STEPS

- The belief is that due to the complications of the regulation and plumbing codes (and subsequent costs), interested parties and local jurisdictions aren't seeing sufficient benefit.
- Staff time (Building & EH) to administer a Graywater Program (review plans, inspection and conduct oversight).
- Interested parties might not understand permitting and maintenance requirements, system requirements and complexity, costs, or administrative burden on local jurisdictions.
- Next Steps:
  - Coordinate meeting with Building Department to discuss plumbing, inspection, and training requirements
  - Get information on any planned updates to existing regulations (triennial review)
  - Acquire feedback from the public
  - Issue decision for adoption of regulation
- Questions? Direction?