



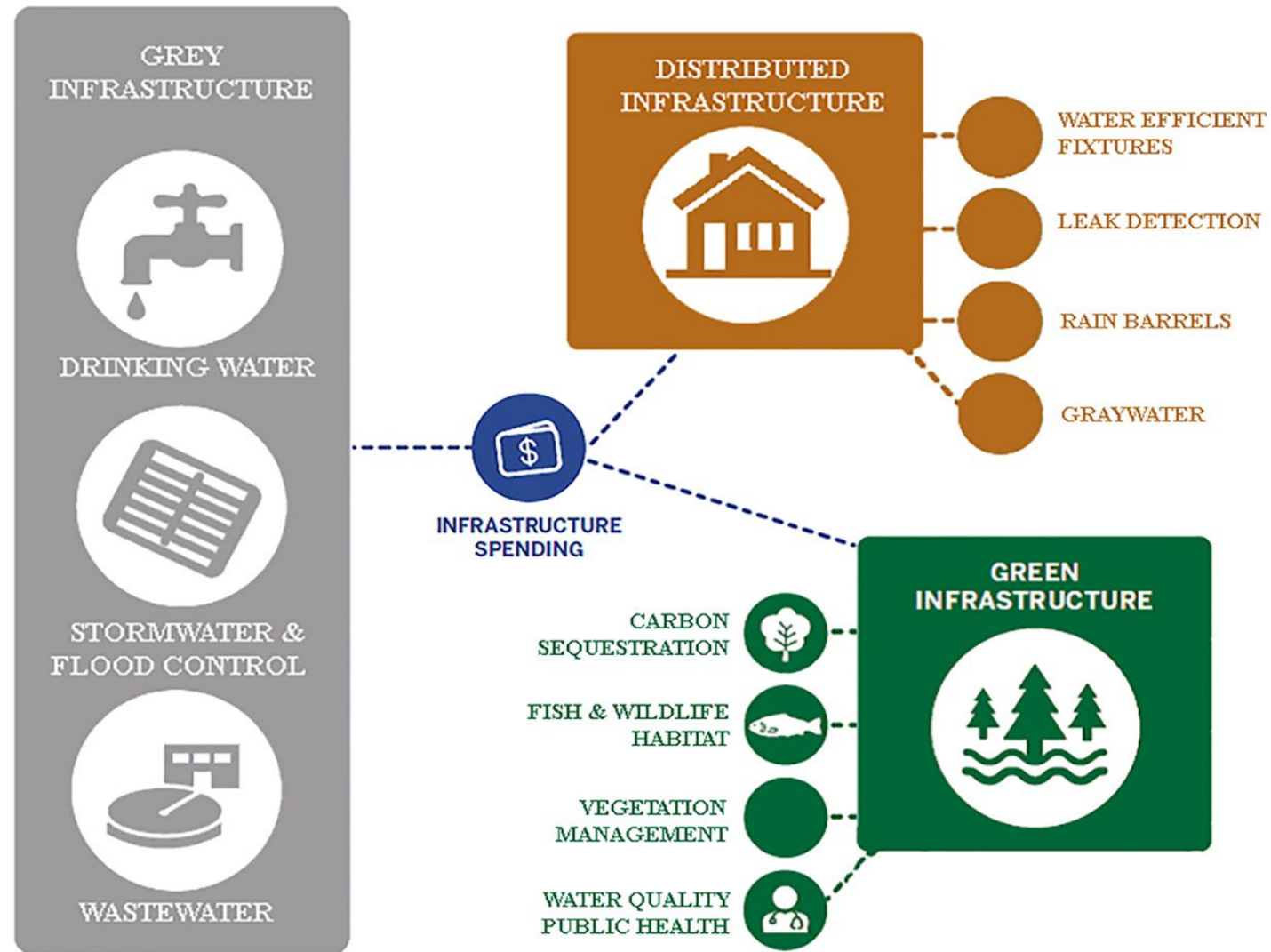
Distributed Infrastructure: Rainwater and Graywater Systems



Overview

- Marin Water Programs
- Graywater Program Customer Opinion Survey
- Graywater Ordinance
- Next Steps

Types of Infrastructure



Marin Water Programs

Rainwater and Graywater Programs

- **Incentives**

- Laundry-to-landscape systems
- Rainwater cisterns and barrels
- Raingardens

- **Graywater Installation Ordinance**

- Applies to new and “enlarged” residential and commercial services where practicable



Program Objectives

- Increase awareness
- Change perceptions
- Provide education
- Encourage or require participation
- Promote water use efficiency
 - High potential for offsetting outdoor water use
 - Emerging barriers of uptake
- Offset some of the cost



Rebate Program Participation

- Rebate Program Participation

Type	Current Rebate Activity (2020 – Present)	Past Rebate Activity (pre-2020)	Rebate Activity TOTAL
Rainwater	98	162	260
Graywater	49	19	68

- Pre-2020 (2014-2019) Rebate Program: 5 x 50 Incentive
- Current Rainwater Rebate Program Average Storage Capacity: 840 gallons
- Past Rainwater Rebate Program Average Storage Capacity: 90 gallons

Barriers to Implementation

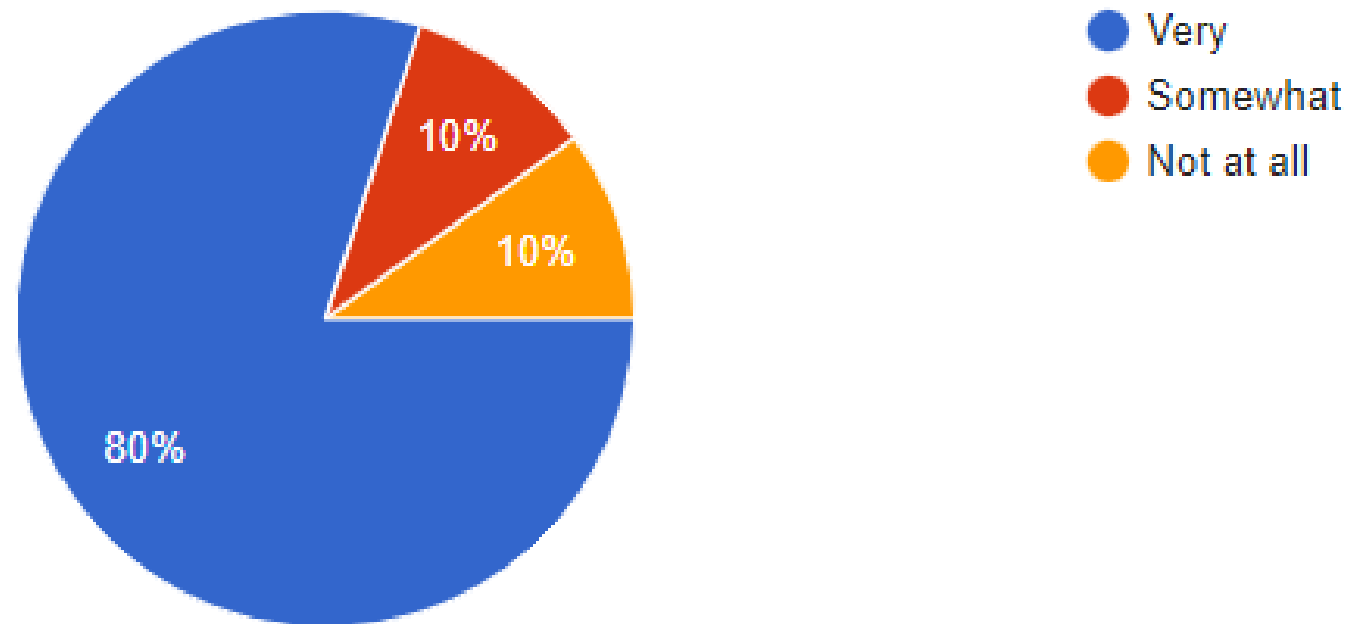
- Backflow prevention requirement for all sites with auxiliary water supply
- Difficult to retrofit existing infrastructure
- Ongoing system maintenance and operational complexities
- Plumbing code requirements
 - Proximity to creeks
 - Setback requirements
 - Poor soil drainage
- Perception (e.g., dirty, harmful to plants, etc.)
- Finding qualified local installers

Graywater Program Customer Opinion Survey

Graywater Customer Opinion Survey

How satisfied are you with your Laundry-to-Landscape System?

10 responses



Graywater Customer Opinion Survey

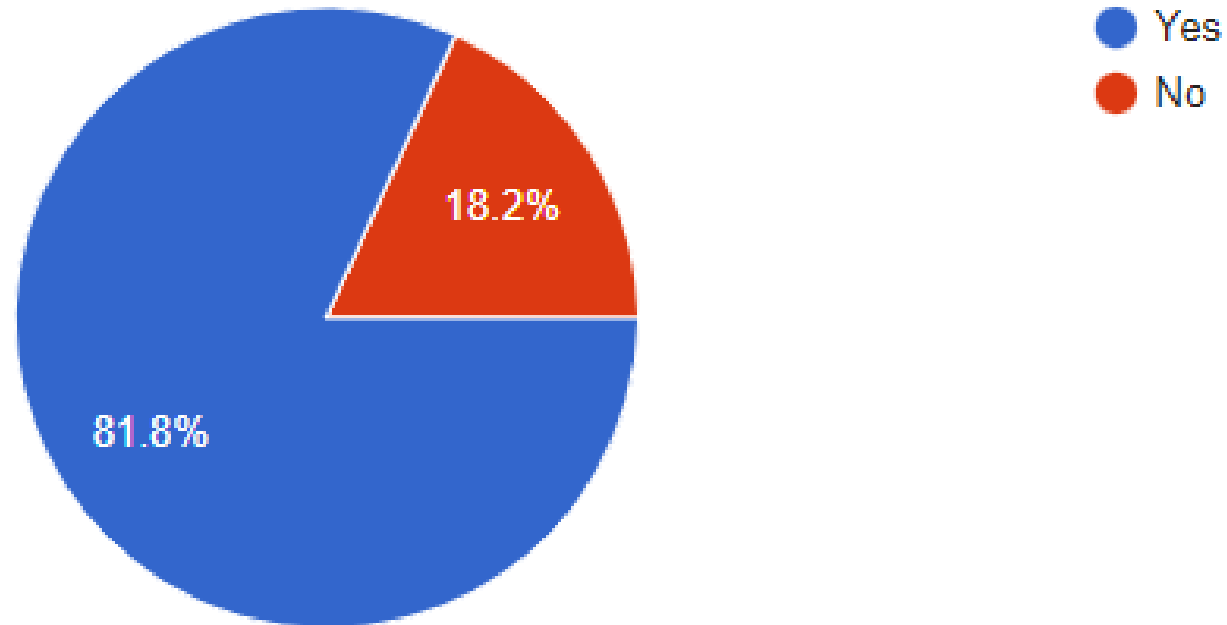
Main Concerns Expressed About Laundry-to-Landscape Graywater Systems

- "A backup irrigation plan is needed while I'm away."
- "It is inconvenient to operate the diverter valve."
- "I am concerned about possible impacts to plant health."
- "It's difficult to get the graywater to plant locations given hilly terrain."

Graywater Customer Opinion Survey

Is this your first experience using a graywater system?

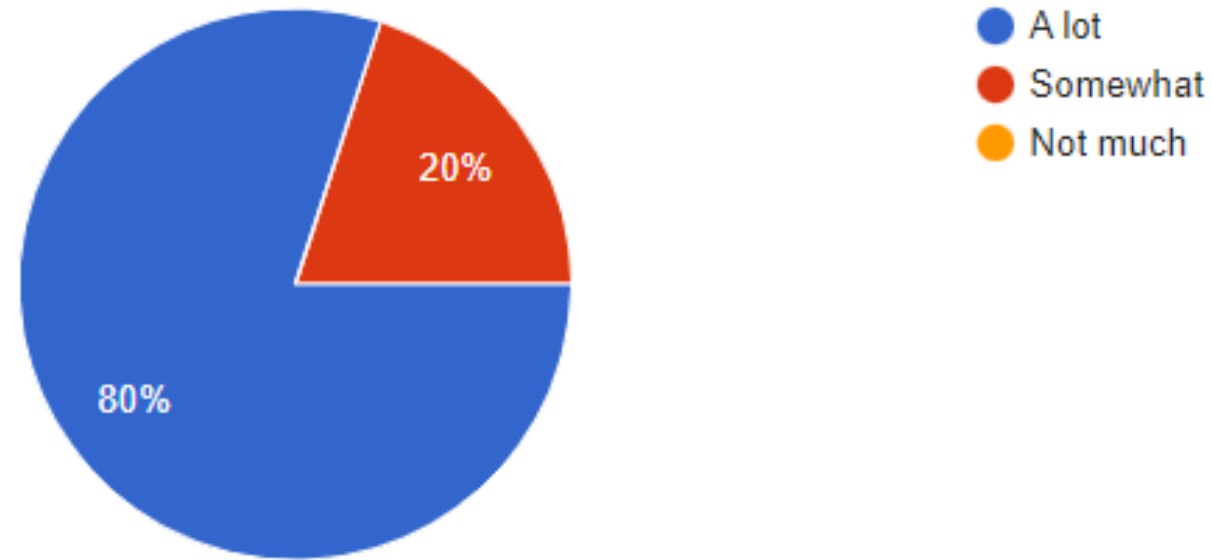
11 responses



Graywater Customer Opinion Survey

How much did the drought emergency impact your decision to install a laundry-to-landscape system?

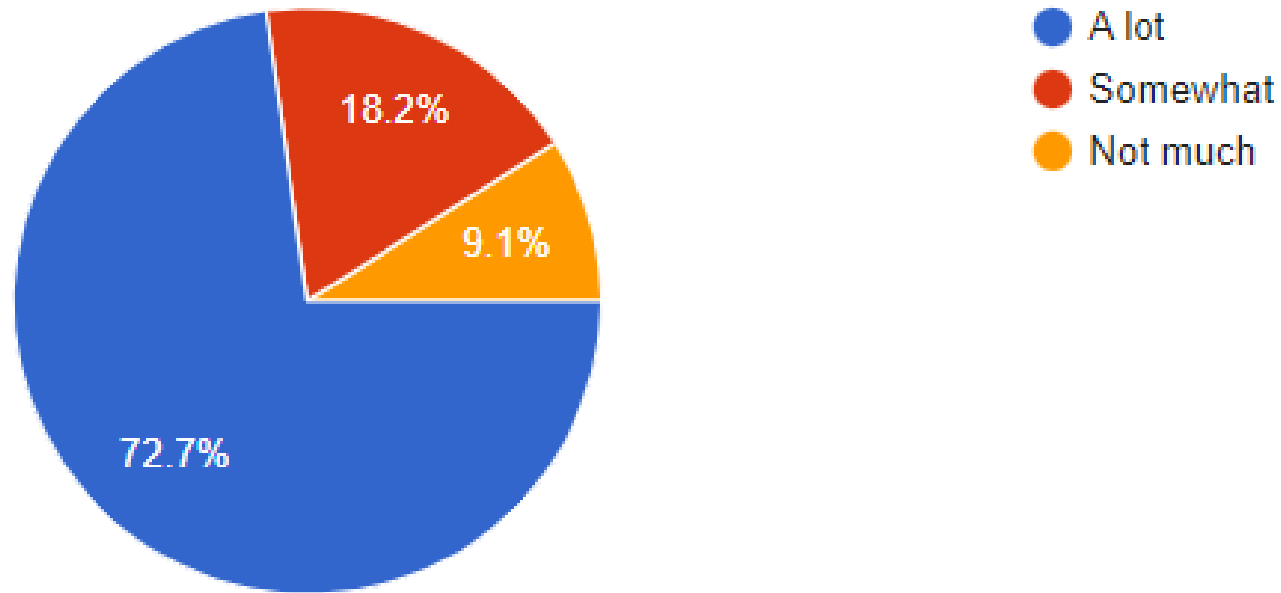
10 responses



Graywater Customer Opinion Survey

How much did the rebate influence you to install a laundry-to-landscape system?

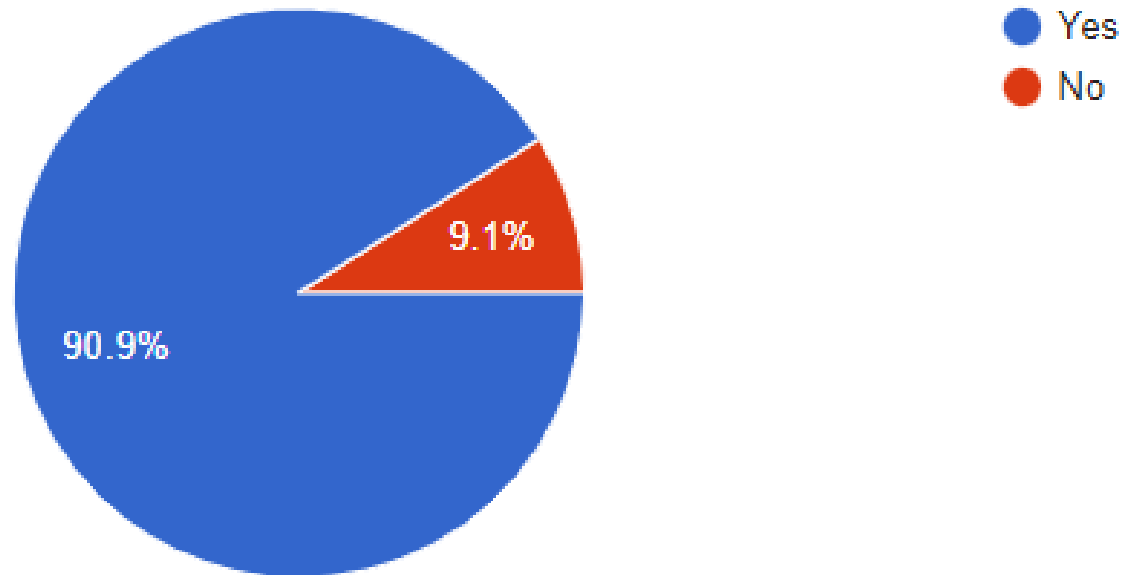
11 responses



Graywater Customer Opinion Survey

Would you recommend installing a laundry-to-landscape system to a friend?

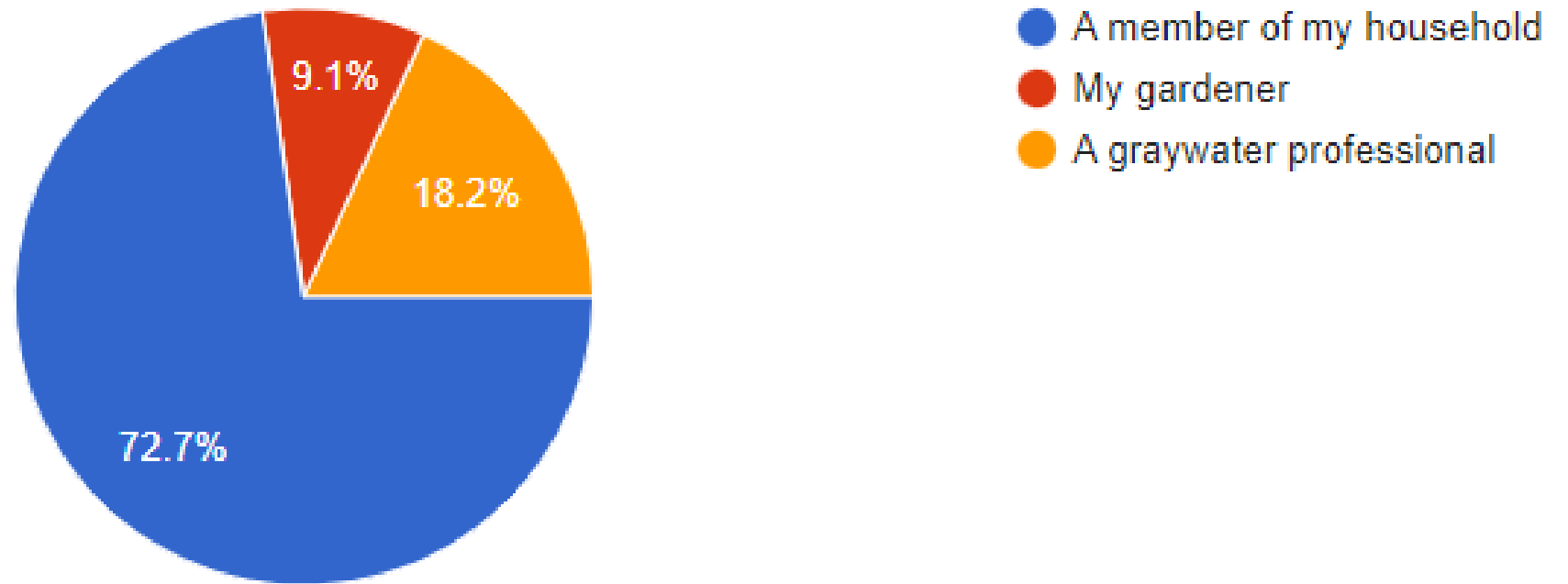
11 responses



Graywater Customer Opinion Survey

Who installed your laundry-to-landscape system?

11 responses



Summary

- Majority of customers are satisfied with their graywater system
 - These customers could be used as trusted messengers
- New barriers to adoption continue to be discovered
 - As barriers are discovered, program design needs to adapt
- Training qualified professional installers will encourage adoption and increase uptake

Graywater Ordinance

Graywater Ordinance

All applicants requesting a water service for a new residential or commercial structure which requires the **installation of a new service**, and all applicants requesting an **enlarged water service** for a “substantial remodel” to an existing residential or commercial structure.... shall install a gray water recycling system to reuse the maximum practicable amount of gray water on site.

- "Substantial remodel" is the renovation of any structure, which, combined with any additions to the structure, affects a floor area which exceeds fifty percent of the existing floor area of the structure within any thirty-six-month period.



Graywater Ordinance Installations

Activity FY 2020 – Present

- Service Connections Subject to Graywater Ordinance: 272
- Graywater System Installations: 28 (10 simple systems; 18 Laundry to Landscape)
- Administrative process of self-certification has resulted in 90% of sites 'not-feasible'

Self-Certified Justifications:

- 50% Not being a good fit for the site (e.g., landscape uphill from home/washer, plants not suited for graywater, poor drainage, no setbacks, in close proximity to a creek, etc.)
- 25% Project not including any changes to landscaping or irrigation
- 20% Real/perceived conflict with graywater rules and regulations
- 5% Costs are too high

Opportunities to Increase Installation through the Graywater Ordinance

Administrative changes to minimize the exemptions.

- Applicants shall submit documentation of evidence for review by District to determine the status of 'Not-Feasible'. District shall have sole authority in determining the adequacy and technical merit of submitted documentation.
- Limit 'Not-Feasible' determination to specific parameters:
 - Soil testing performed by accredited independent testing agency determines the soil at the site is unable to absorb the graywater at an adequate rate to prevent run-off or pooling
 - Average daily graywater production is projected to be less than 50 gallons per day for the home
 - Area of irrigated landscape and potential irrigated landscape is less than 500 square feet
 - Federal or State laws prohibit the use of gray water due to site conditions. Rules of home owner associations, property owner associations, cooperatives, subdivisions and neighborhood organizations shall not be deemed adequate evidence in determining gray water system feasibility.
 - Where the wastewater drain lines of existing home or building are encased in a concrete slab foundation and the building renovations do not include new wastewater drain lines to be installed.

Expand Graywater Ordinance to Leverage Distributed Infrastructure

Considering 90% of graywater installations are being avoided should other options for compliance be available?

- Rainwater Catchment Systems
- Offset use with other landscape practices
 - Plant mostly natives
 - Limit turf area
 - Installation of a rain garden

Next Steps

Opportunities and Next Steps

- **Incentive Programs**

- Leverage trusted messengers who have experience with rainwater and/or graywater systems
- Provide professional installer training
- Continue to develop program changes to minimize the known barriers

- **New construction and substantial remodels**

- Update administrative process to provide clarification on situations that do not warrant an exemption
- Provide additional outreach materials to customers and local jurisdictions to better explain the requirements early in site design schedule
- Consider a revamp the District Code to provide alternative compliance options