



# Enhancing Greeley's Water Conservation Portfolio through Performance Analysis

WaterNow Alliance & Western Resource Advocates  
April 2022



# AGENDA



1. Project Background



2. Survey Results



3. Trends in Participation



4. Water Savings



5. Questions / Discussion

# INTRODUCTIONS



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# WaterNow Alliance



WaterNow Alliance is a forum and network of local water leaders advancing sustainable, affordable, equitable and climate resilient water strategies





PROTECTING THE WEST'S LAND, AIR, AND WATER

## Western Resource Advocates

- We are a conservation organization with more than 30 years experience in the Intermountain West
- We use law, science, and economics to craft innovative solutions to the most pressing environmental challenges
- We work to conserve western lands, advance clean energy, ensure healthy rivers, and protect air quality throughout the region

**OUR MISSION:** Western Resource Advocates is dedicated to protecting the West's land, air, and water to ensure that vibrant communities exist in balance with nature.



# Project Accelerator

A WaterNow Alliance Initiative



Twice-a-year call for cities, towns, special districts and other public entities seeking additional bandwidth to develop affordable, sustainable, equitable, and climate-resilient water solutions

- 250 hours of program and technical assistance
- City/Agency identified project, driven by your priorities

# KEY PROJECT ELEMENTS



1. Understanding Program Background and Priorities



2. Review Water Conservation Program Portfolio and Data



3. Customer Survey on Water Conservation Programs



4. Quantitative Analysis of Water Conservation Programs

# SURVEY BACKGROUND

- Focused on 4 categories of programming:
  - Education programs
  - Water audits
  - Incentives/rebates
  - Online water efficiency tools
- Included optional demographic questions
- 45 questions (~10-15 minute completion time)
- Advertised through a bill stuffer, emails, social media, WaterSmart portal & water conservation webpage
- Raffle prizes for local restaurants
- 720 completed responses



## *Your opinions on Greeley's water conservation efforts matter!*

The City of Greeley is conducting an evaluation of its water conservation programs to determine which programs are most effective in helping the city meet its conservation goals.

Your feedback on these programs, regardless if you have participated or not, will help ensure that we can continue to improve our conservation programs and help you *save water and money*.

For participating in this 5-15 minute survey, you will be entered to win a \$100 gift card to a local restaurant and other prizes!

Type the URL below into a web browser or use the QR code with your smartphone camera to access the survey.

<http://bit.ly/GreeleyWater>

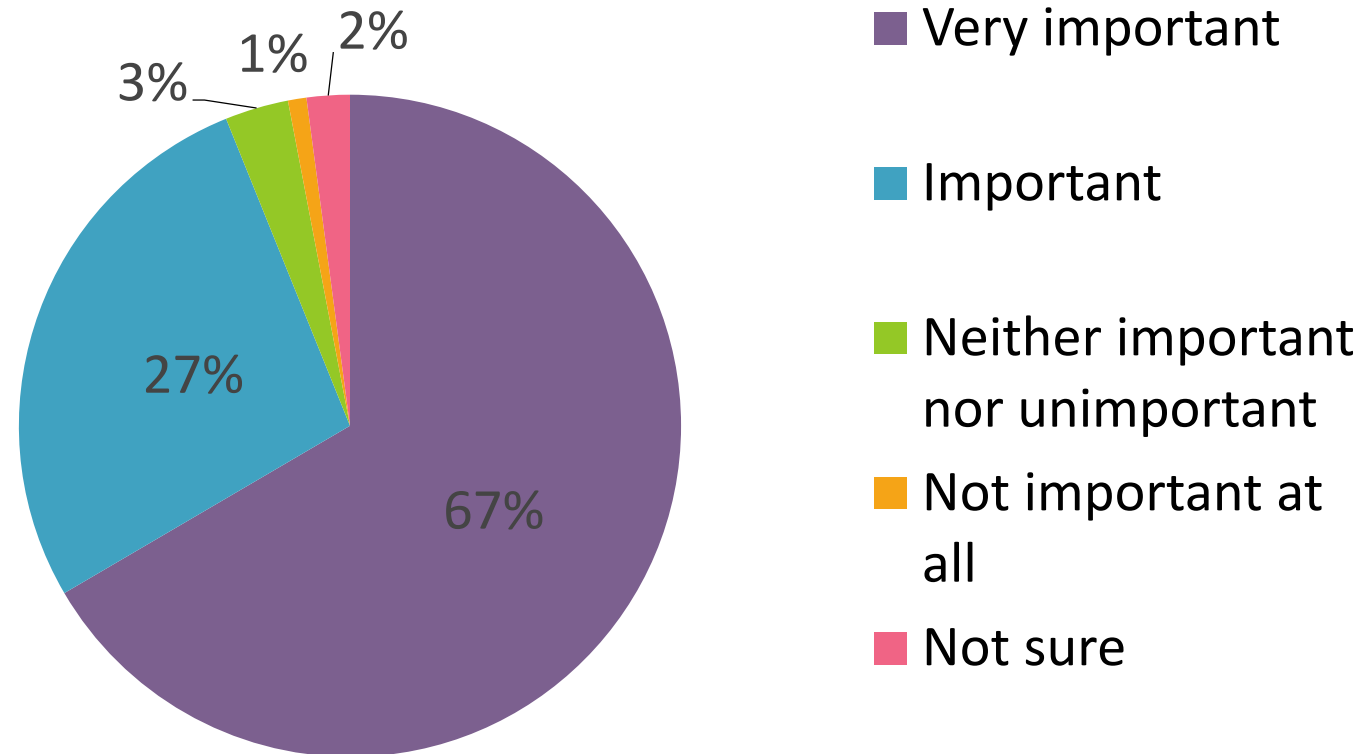


*Thank you!*



# IMPORTANCE OF WATER CONSERVATION PROGRAMS

How important do you feel the City of Greeley's water conservation programs are?



# WATER CONSERVATION MOTIVATION

*What would motivate you to participate in Greeley's Water Conservation Program?*

## Top Responses:

1. To save money on my water bill (85%)
2. To protect our limited water resources (65%)
3. To reduce my personal water use (47%)
4. To pay for a fixture/appliance (43%)
5. To support community values (38%)

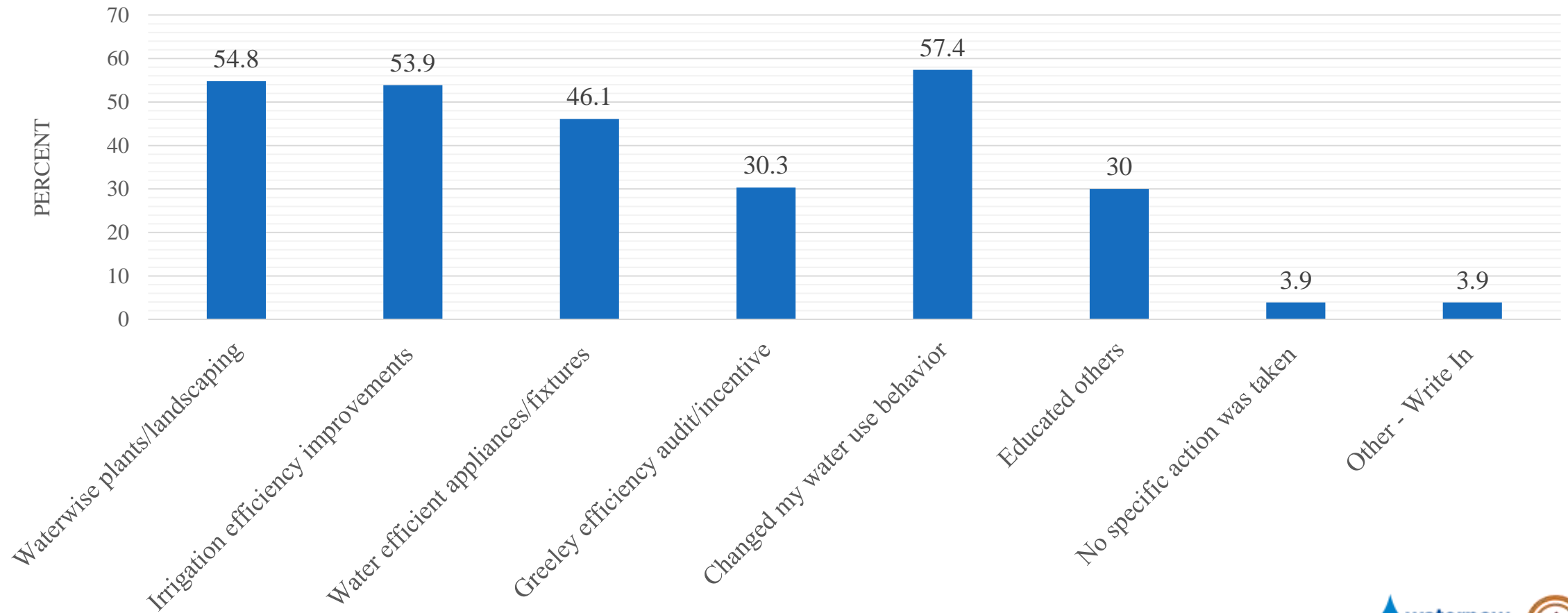
# CONSERVATION PROGRAM AWARENESS

*Percentage of respondents aware of the 4 primary categories of conservation programming:*

- Water Efficiency Incentive Programs (80%)
- Educational Programs (76%)
- Water Audits (70%)
- Online Water Efficiency Tools (55%)

# EDUCATIONAL PROGRAMS: WATER SAVING ACTIONS

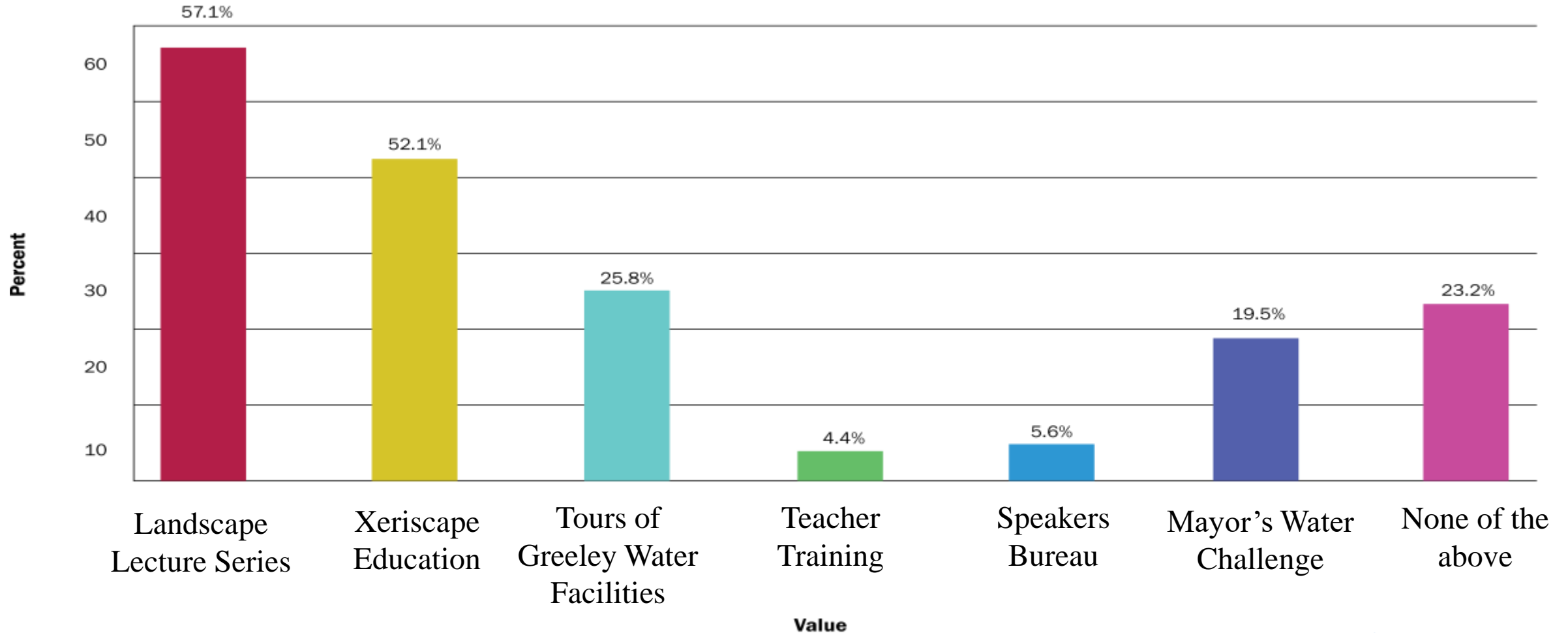
*What type of action, if any, was taken as a result of participating in an educational program?*





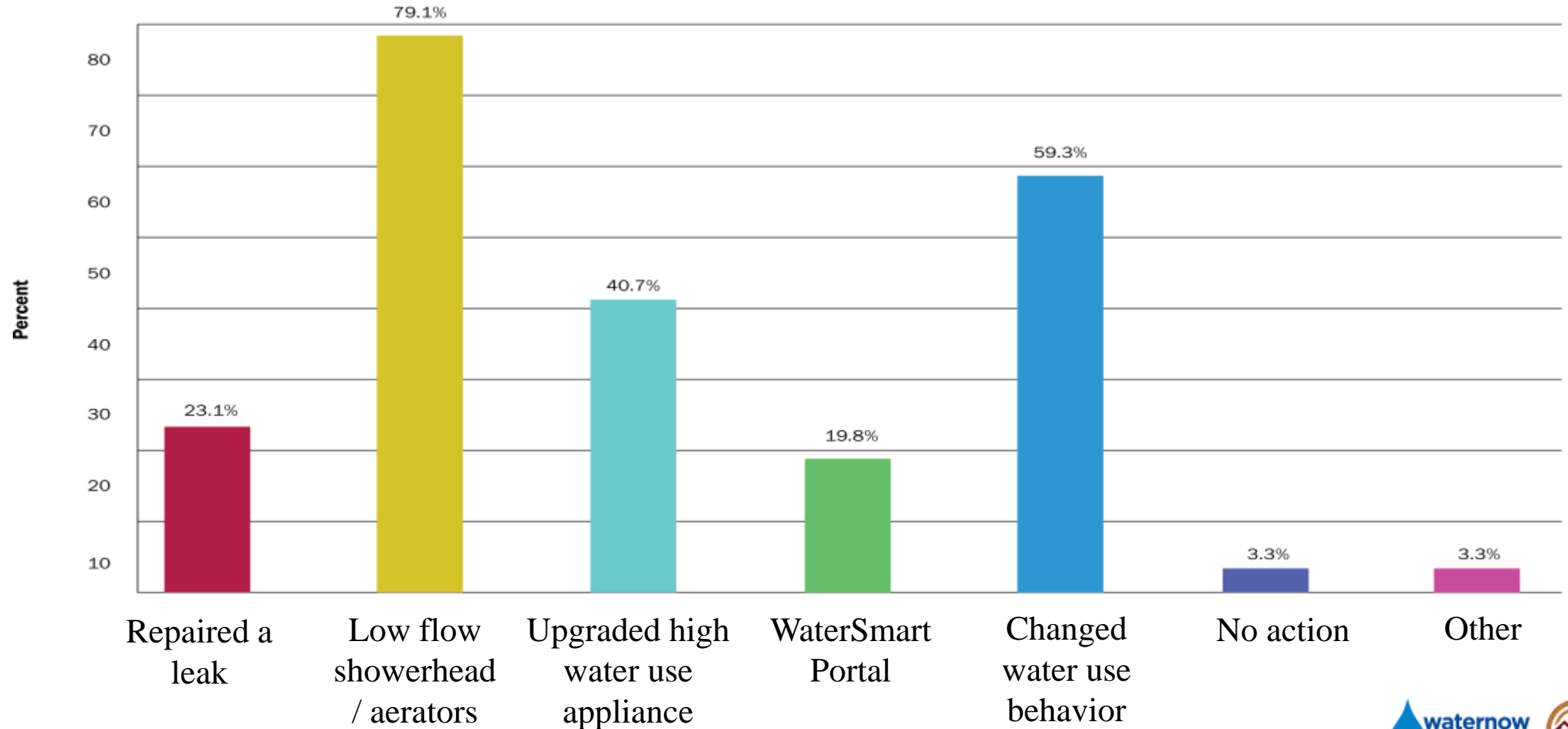
# EDUCATIONAL PROGRAMS: FUTURE PARTICIPATION

*Which educational programs, if any, are you most interested in participating in within the next 3 years?*



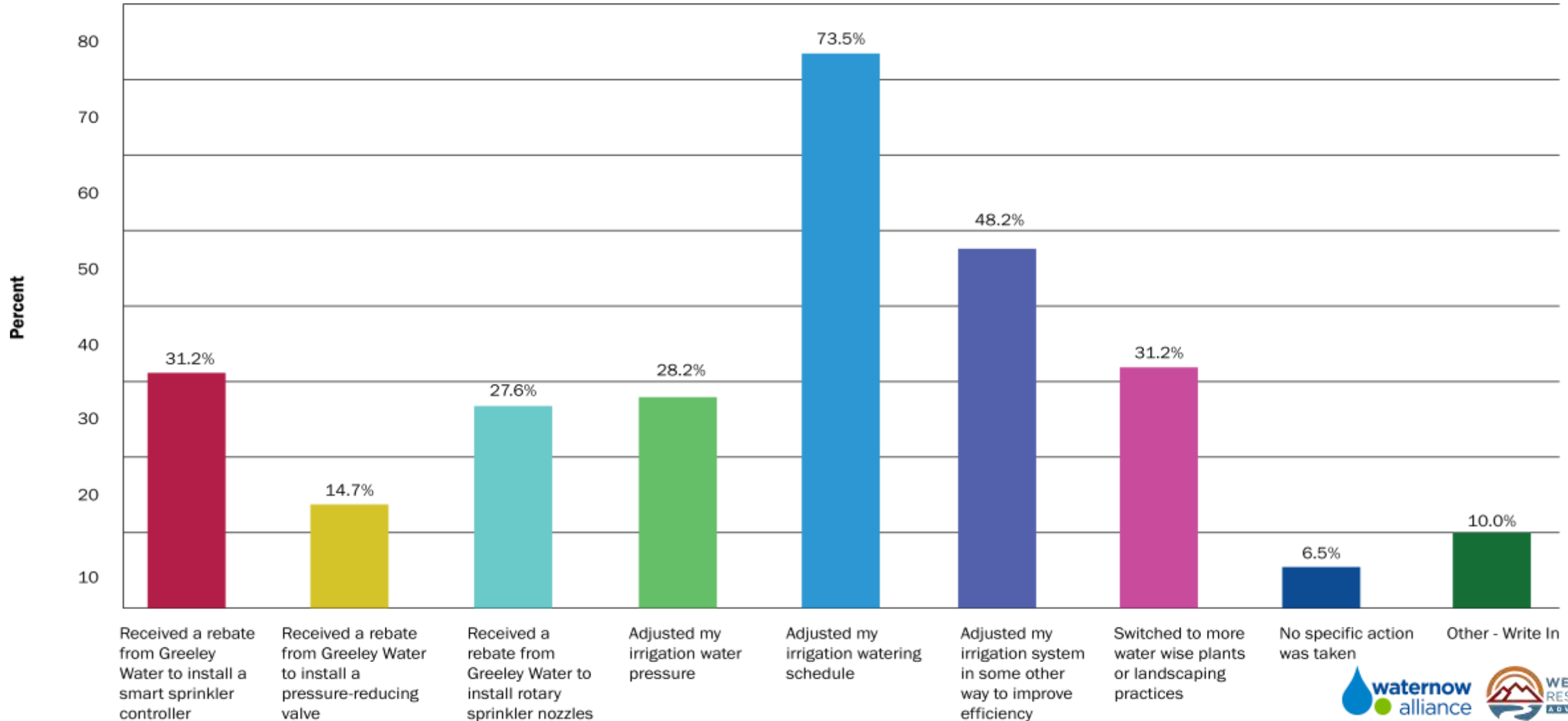
# WATER AUDITS: INDOOR WATER SAVING ACTIONS

*What action, if any, did you take a result of your participation in an indoor water audit?*



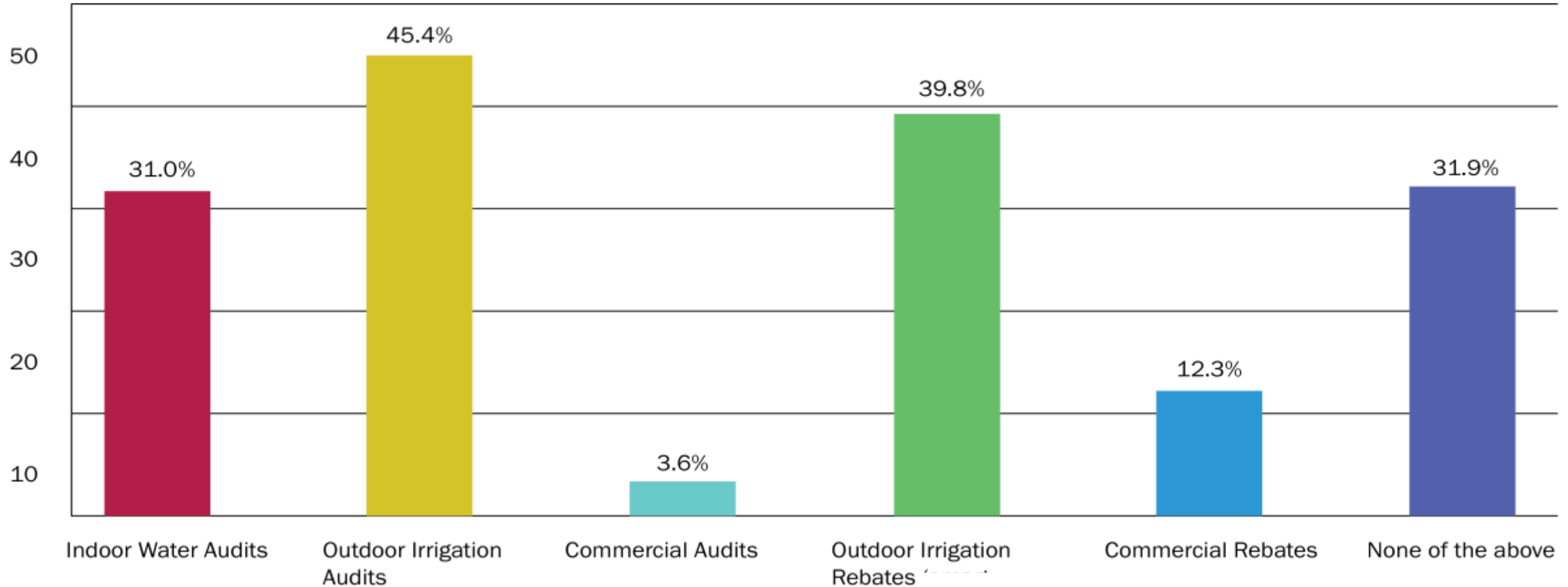
# WATER AUDITS: OUTDOOR WATER SAVING ACTIONS

*What action, if any, did you take a result of your participation in an indoor water audit?*



# WATER AUDITS: FUTURE PARTICIPATION

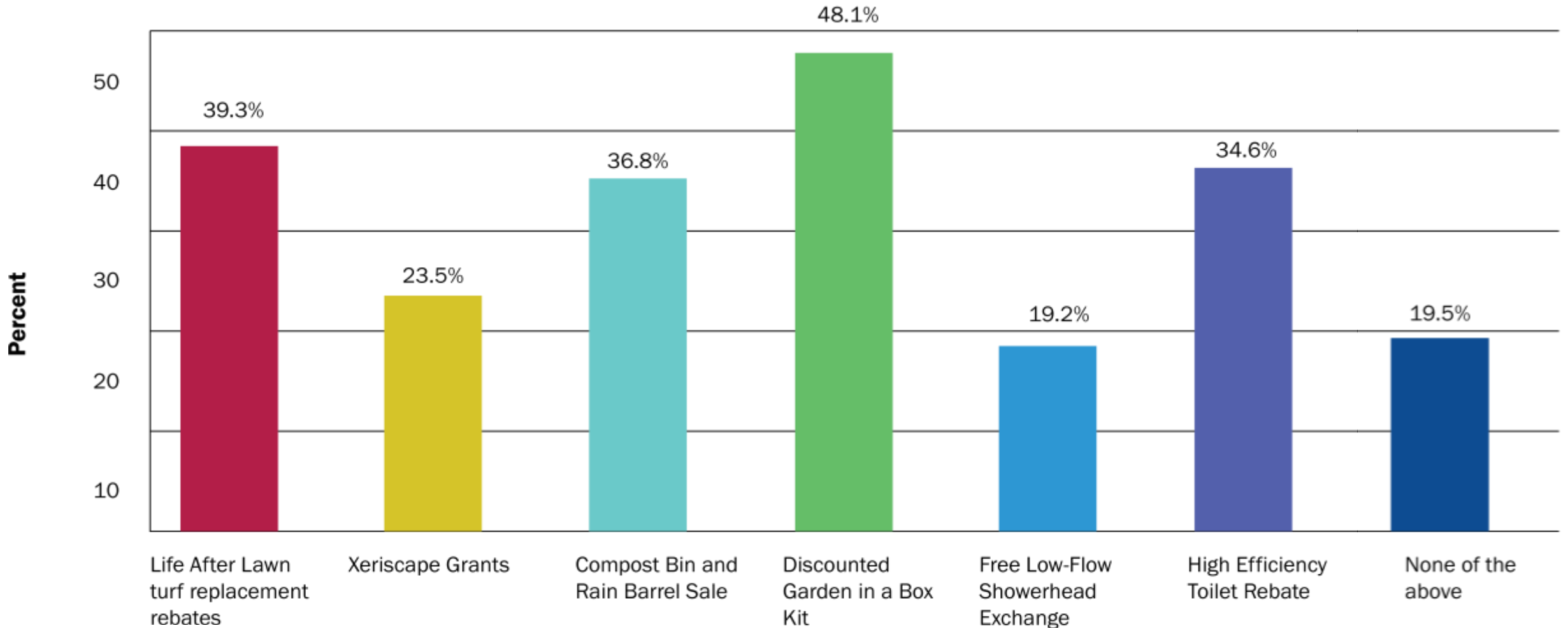
*Which water audit programs, if any, are you most interested in participating in within the next 3 years?*





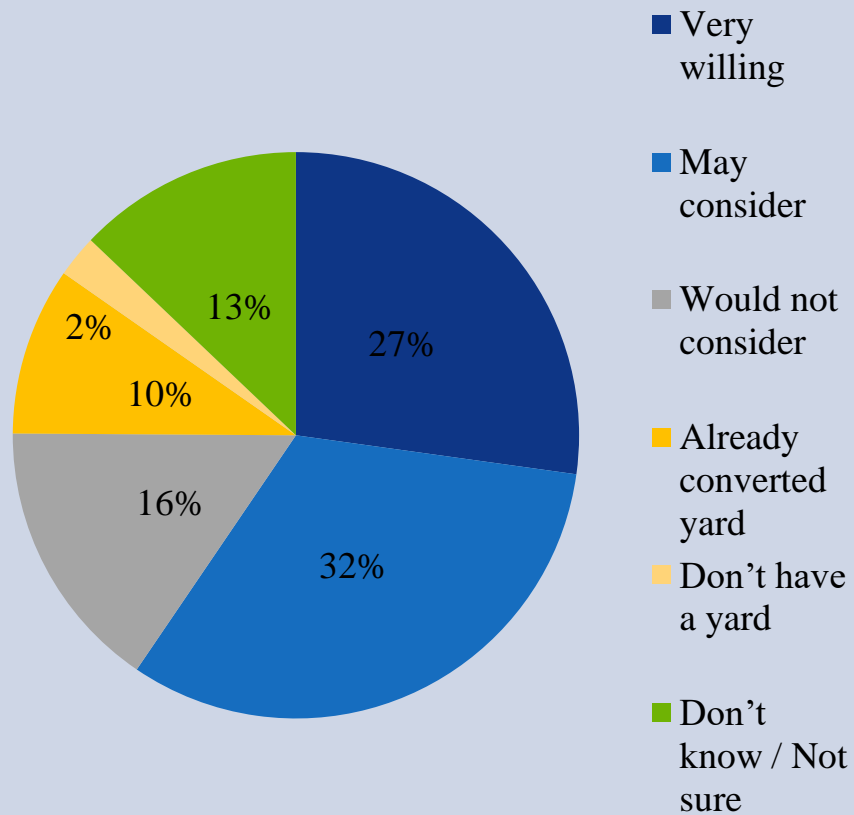
# WATER EFFICIENCY INCENTIVES: FUTURE PARTICIPATION

*Which water efficiency incentive programs, if any, are you most interested in participating in within the next 3 years?*

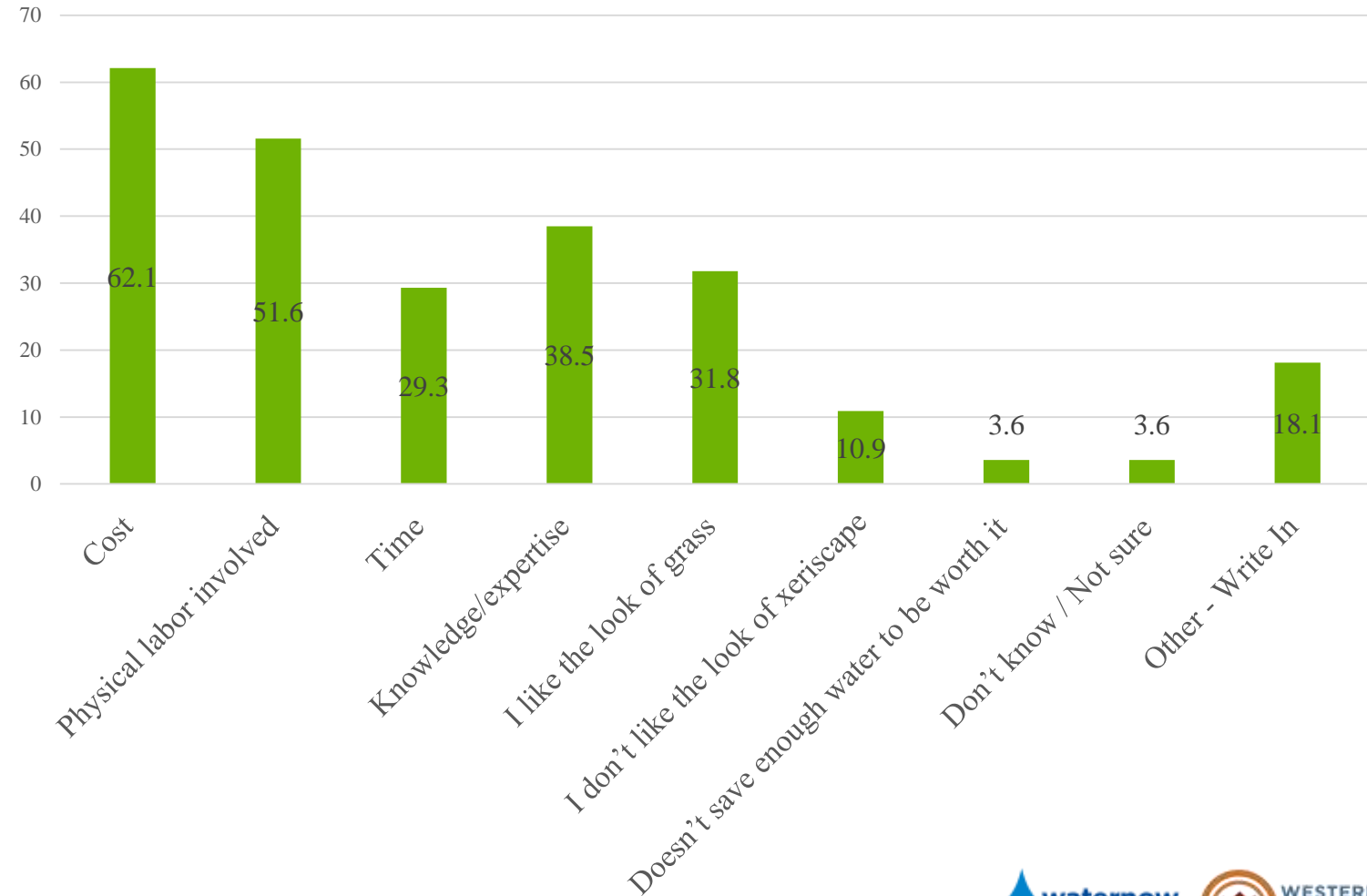


# LIFE AFTER LAWN RESULTS

*Willingness to remove grass from front yard*

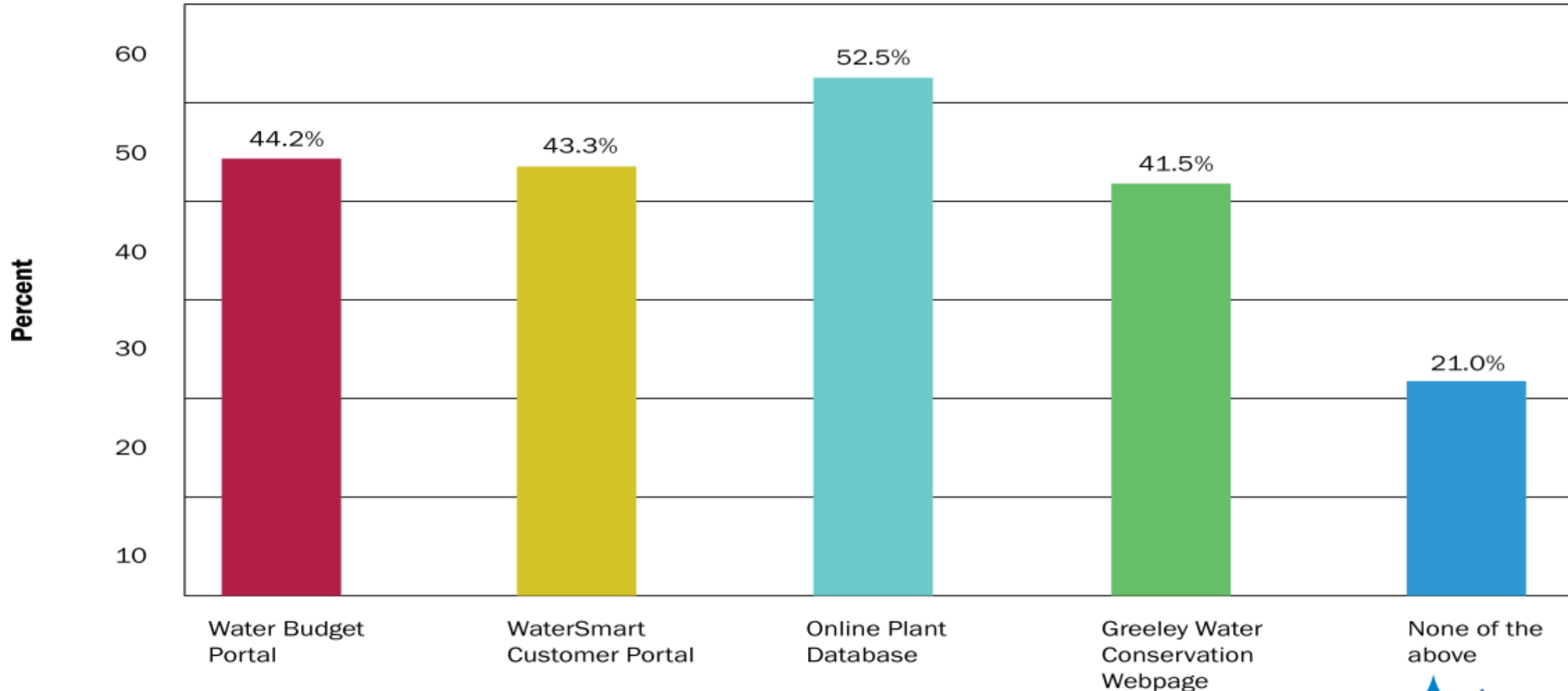


*Primary barriers to turf replacement*



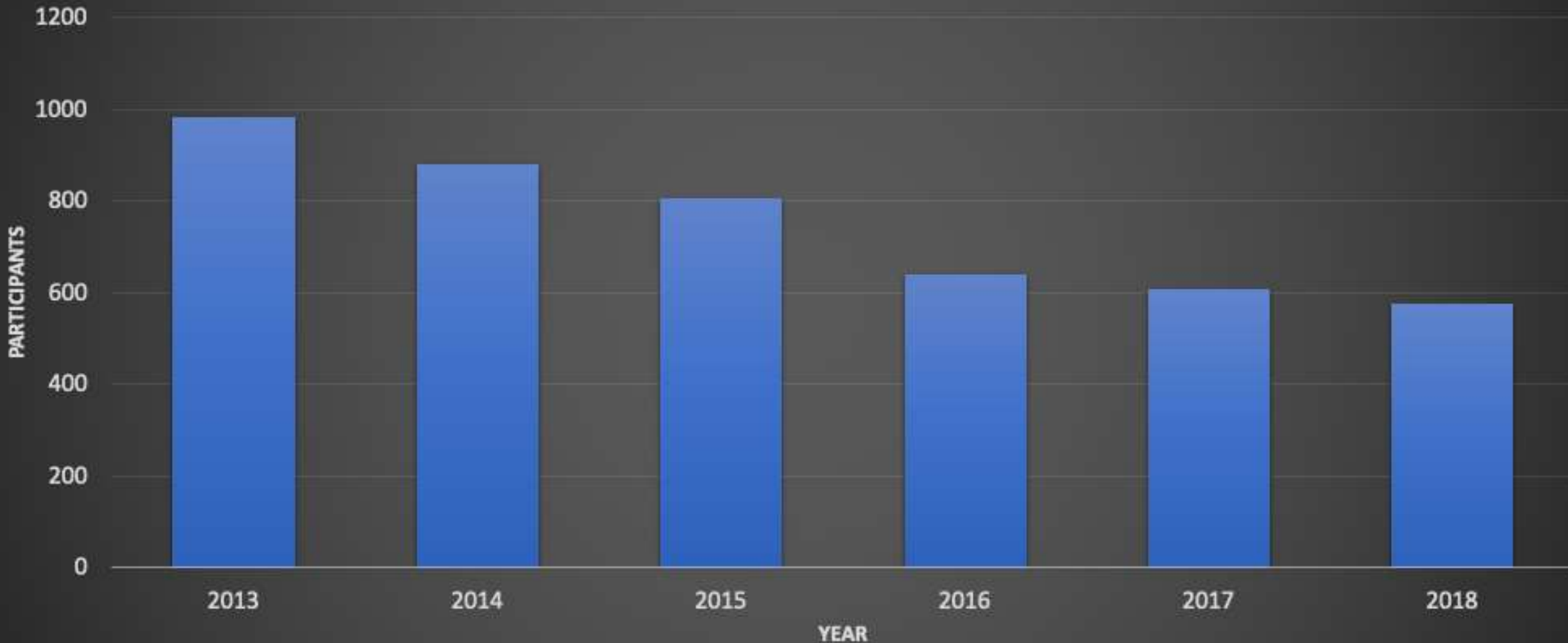
# ONLINE EFFICIENCY TOOLS: FUTURE UTILIZATION

*Which online efficiency tools, if any, are you most interested in using within the next 3 years?*



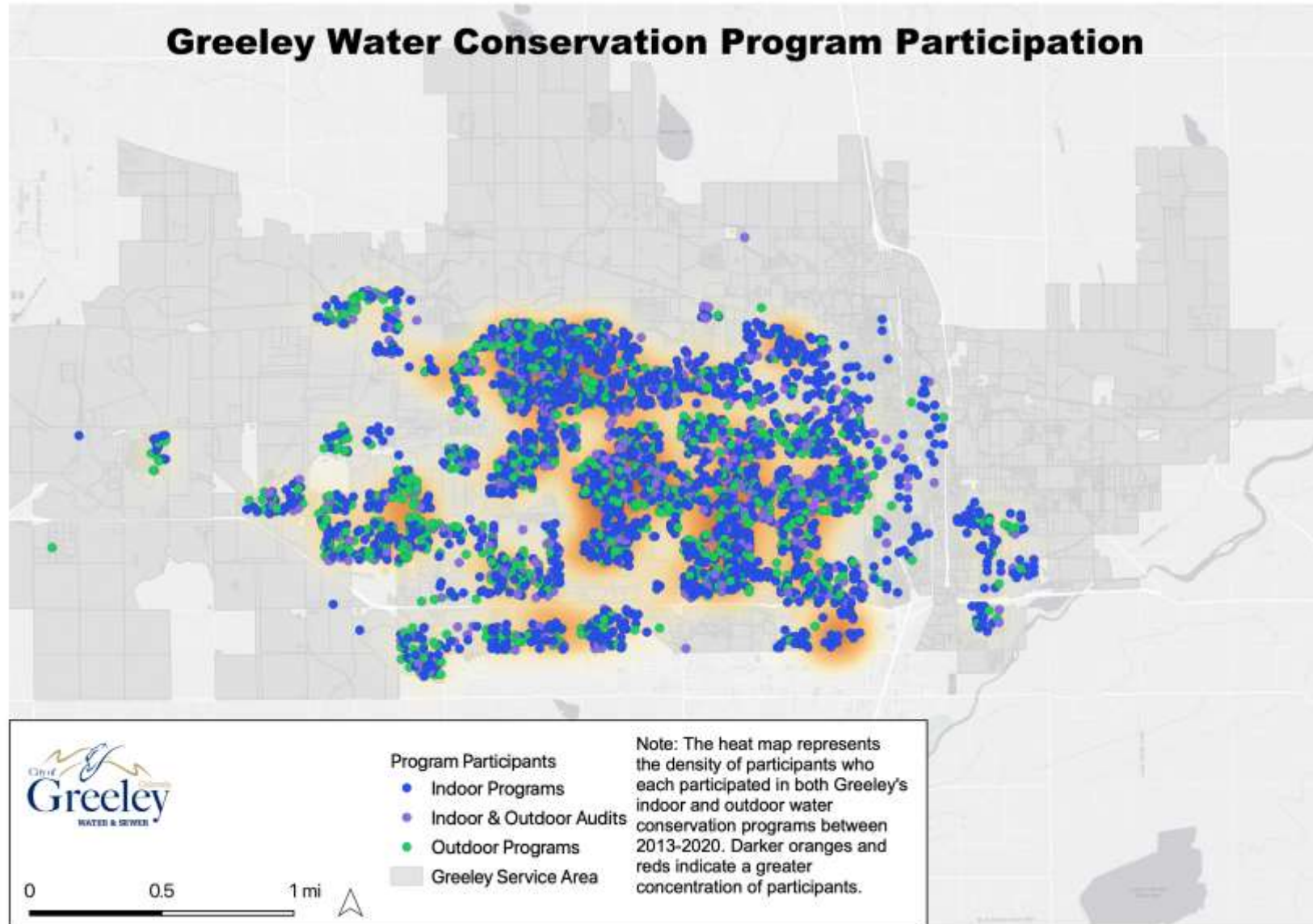
# PROGRAM COSTS & PARTICIPATION

**Participation in Greeley's Water Conservation Programs, 2013-2018**





# PARTICIPANT DISTRIBUTION



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Water conservation program participation is generally **lower** in neighborhoods with **higher** percentages of these demographics:



Renter-Occupied Housing



Median Household Income



% Population Speaking Spanish

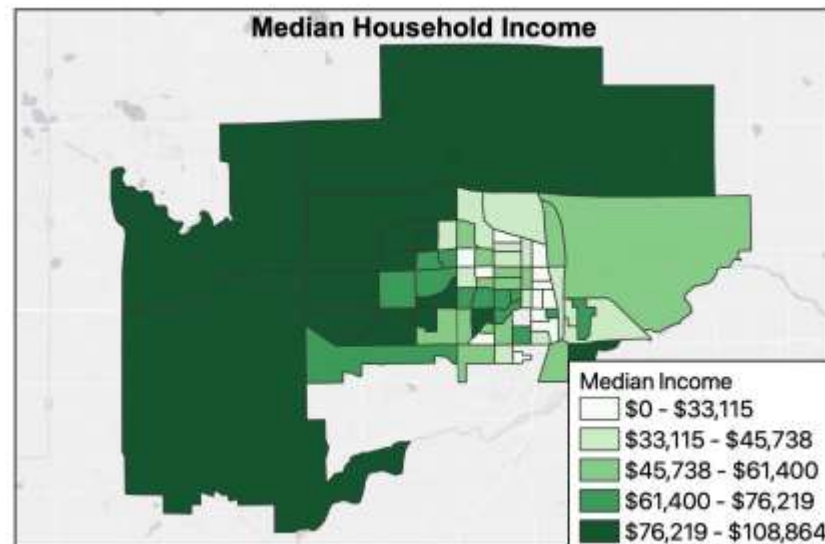
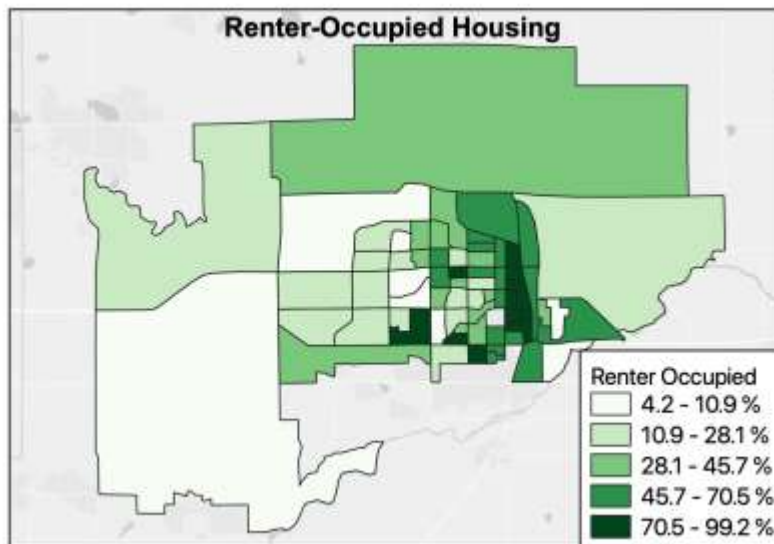
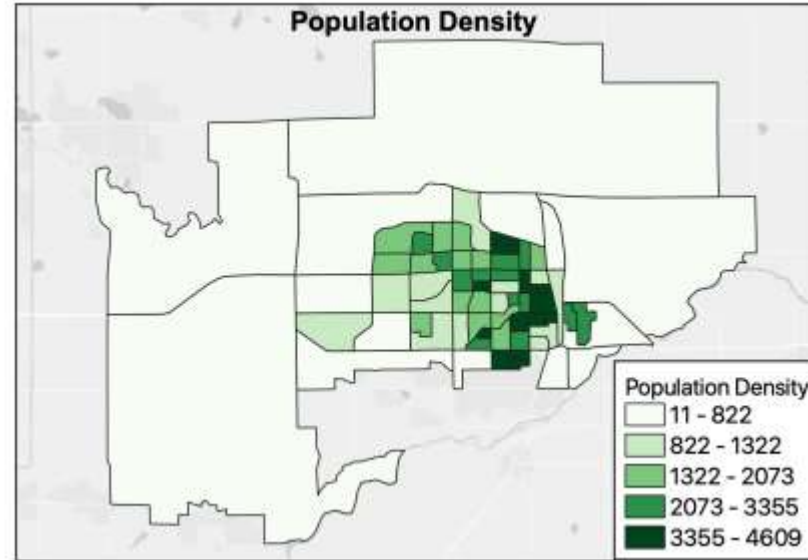
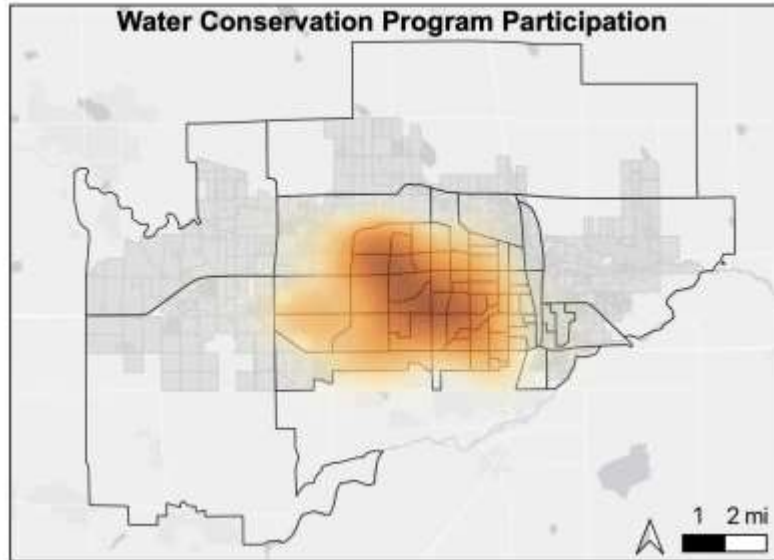


% Population Speaking an AAPI Language

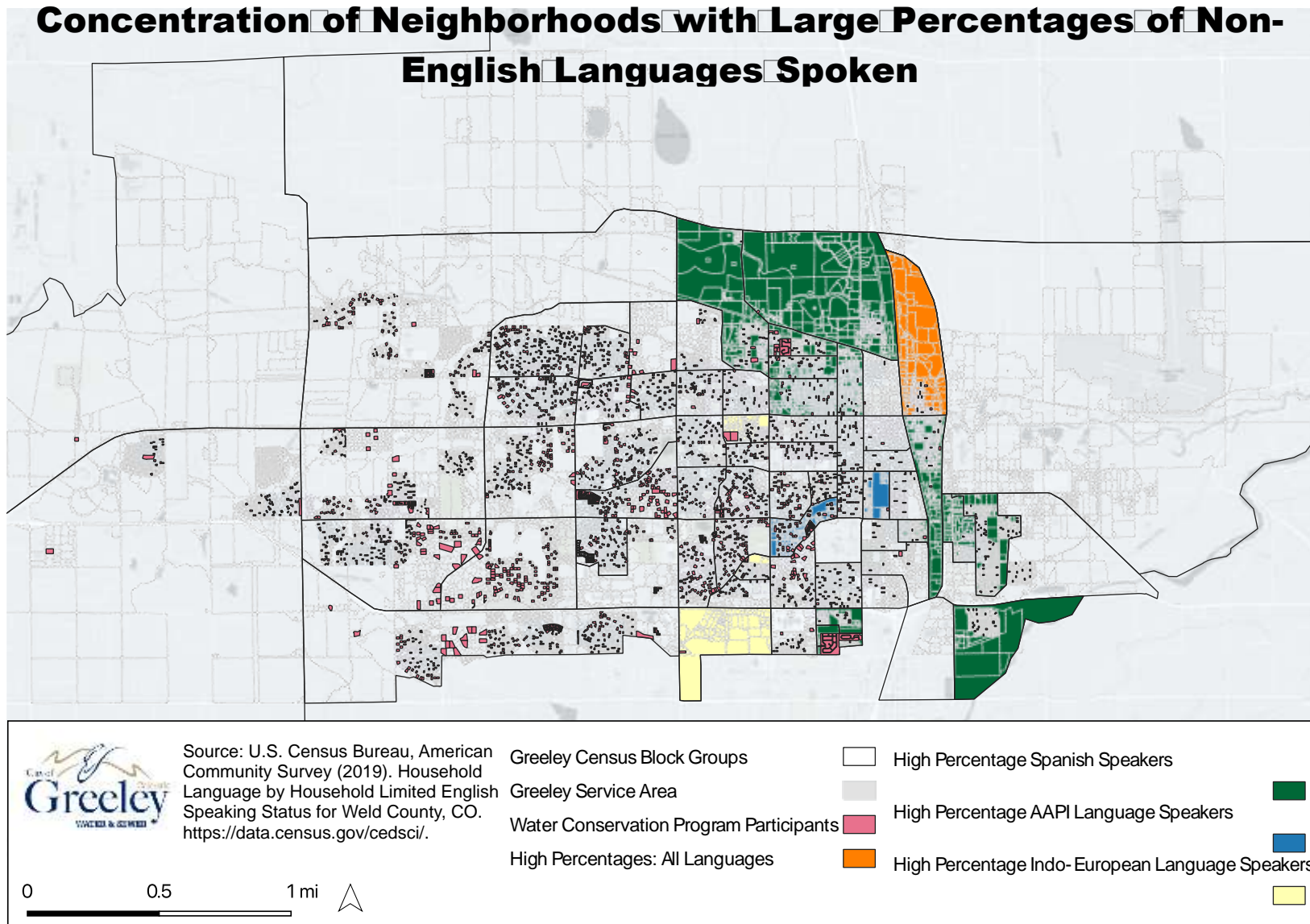


% Population Speaking an Indo-European Language

# PARTICIPANT DISTRIBUTION



# PARTICIPANT DISTRIBUTION





# CHANGES IN WATER USE: METHODOLOGY

- **Annual water use change** = Average water use for the two years prior to participating in program – average water use for the two years after participating
- **Indoor water use** = (Total use in Jan., Feb., March, Nov., Dec.) + (WQA\*7)
  - WQA (Winter Quarterly Average) = Average use in Jan., Feb., March, Nov., Dec.
- **Outdoor water use** = Apr. – Oct. water use greater than WQA
  - Outdoor water use is normalized for weather using the annual Irrigation Water Requirement (IWR)

# CHANGES IN WATER USE

Over the six-year study period (2013-2018), the analyzed water conservation programs have:

- Engaged nearly **5,000 participants**
- Achieved water savings ranging from **2.9 - 19.5 AF per program per year**
- Cost approximately **\$181-\$625/AF/year/program**

The programs' average cost per acre foot savings is **\$1,350**

# CHANGES IN WATER USE: INCENTIVES

<b>Conservation Program*</b>	<b>Number of Accounts</b>	<b>Annual Water Savings (AF)</b>	<b>Annual ROI (\$/AF/Year)</b>	<b>Estimated Annual Savings Per Account (Gallons/Year)</b>
<b>Front Loading Washer Rebate</b>	994	17.1	\$181	33,714
<b>Toilet Rebates</b>	756	14.7	\$625	6,271
<b>Smart Controller Rebate</b>	132	4.3	\$403	10,682
<b>PRV Rebate</b>	149	3.2	\$188	7,093
<b>Rotary Nozzles</b>	147	3.2	\$190	7,013

\*\*\*Only accounts with sufficient water use data were included in these calculations, and only programs with at least 50 participants with sufficient water use data are presented in this table.

\*\*\*\*Average annual cost reflects the total cost divided by the number of years a program was active between 2013-2018.

# CHANGES IN WATER USE: AUDITS

<b>Conservation Program*</b>	<b>Number of Accounts</b>	<b>Annual Water Savings (AF)</b>	<b>Annual ROI (\$/AF/Year)</b>	<b>Estimated Annual Savings Per Account (Gallons/Year)</b>
<b>Residential Audits (Indoor + Outdoor)</b>	1,294	19.5	\$341	4,903
<b>Commercial Audits (Indoor + Outdoor)</b>	182	2.9	\$285	5,118

\*\*\*Only accounts with sufficient water use data were included in these calculations, and only programs with at least 50 participants with sufficient water use data are presented in this table.

\*\*\*\*Average annual cost reflects the total cost divided by the number of years a program was active between 2013-2018.

# RECOMMENDATIONS

## *Program Prioritization*

- Residential Audit as a “gateway” program
  - Many participants participate in other programs & report taking water saving action
  - Outdoor irrigation audit is particularly popular
- Strong interest in outdoor water efficiency rebates and incentives
  - Opportunity to aim for larger overall savings from outdoor rebate programs (which have had large water savings/account, but lower levels of overall participation)
- Educational programs are popular and result in water savings actions
  - Particularly Landscape Lecture Series, Xeriscape Education, and Tours of Greeley Water facilities

# RECOMMENDATIONS

## *Communications & Outreach*

- Further encourage participation across different programs
  - ~30% of participants participated in more than one program
- Program preferences among respondents of Hispanic, Latino, or Spanish origin could inform targeted neighborhood outreach and/or prioritization of translated materials
  - Ex. High Efficiency Toilet rebate
- Use popular contact methods – email updates and monthly newsletter – to increase awareness of programs, particularly online efficiency tools

# Water Conservation Past, Present and Future

Dena Egenhoff  
Water Conservation Manager





# Audits

User Groups:

- Residential
- Commercial, Industrial & Institutional

Types

- Indoor
- Outdoor



# Rebates

- Toilets
- Outdoor irrigation components
- Commercial Rebates
- Professional Landscape Certification

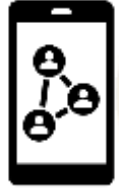
## Incentives ★★★

- Life After Lawn
- Grants

## Seasonal Offerings

- Garden in a Box
- Showerhead Exchanges

## Online tools



- WaterSmart
- Water Budget Portal
- Online Plant Database
- Website

# Education Programs



- Landscape Lecture Series
- Speakers Bureau
- Teacher Training
- Tours
- Xeriscape Education



# Programs removed

- Front Loading Washers (residential)
- Compost bins
- Rain Barrels
- Direct install smart irrigation clocks





# Future



- Data based water conservation decisions driven by innovation and technology.
- Ensure a return on investment.
- Fulfilling future customer needs and changing values.



# THANK YOU



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# Questions

