



AURORA
WATER

Aurora Water Conservation 2015 Annual Report



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Aurora Water Conservation worked hard in 2015. By taking advantage of new social media avenues as well as established ones, we continued to get the word out about our fantastic programs. Through efficiency alignments and additional tweaks to our programs we have been able to continue helping Aurora Water customers reduce their water footprint even more effectively in 2015. With no additional staff, our team was able to conserve over 1,000 acre feet of water with an improved return on investment.

More community gardens popped up throughout Aurora and even more teachers requested our services in 2015, showing that the water conservation ethic is growing throughout the city. We hope to piggy back off the success in 2015 to make 2016 an even more successful year. Please read our 2015 Annual Report to learn about all of our programs, both established and new and find out all that we did last year.

Stay tuned for updates and thank you again for all of your support in our efforts to reduce water use in Aurora.

Thank you,



Lyle Whitney

Water Conservation Supervisor



The Water Conservation Team was nominated for the Core 4 City Manager Extraordinary Customer Service Award.

2015 Highlights



Keeping up with innovations in irrigation technology, Conservation initiated a two-year case study on the use and effects of weather-based controllers at Champagne Condo Association. The results will help influence the direction of future irrigation incentives.

The City of Aurora walked its talk by completing 46 indoor water assessments of municipal facilities to become an example of water use efficiency throughout the city.



The Industrial, Commercial and Institutional (ICI) pilot program assessed 71 properties to better understand and create solutions for the unique water needs of this traditionally underserved sector.

Conservation kick-started a partnership with Aurora Public Schools that invites student involvement in evaluating and tracking water use with Green Star School's interactive dashboards.



Social media got people talking about conservation. Aurora Water received 1,626 comments (up from 21 in 2014) and a nine fold increase in views on Facebook and debuted on the local, neighborhood-oriented Nextdoor social network.

Aurora's green thumbs put their skills to the test in the first Dig In Aurora Community Garden Competition which challenged gardens to compete in the categories of conservation, composting, and general aesthetic value to the community.



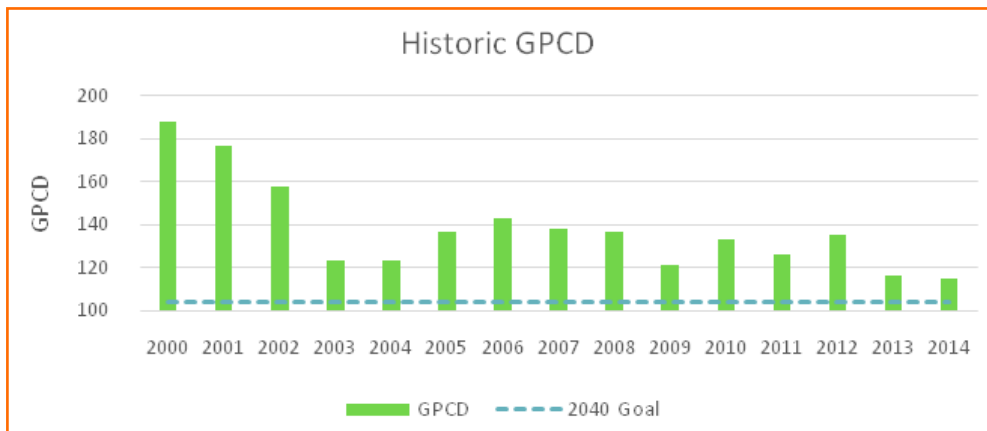
Irrigation codes for the city moved to the Engineering Design Standards book which allows greater flexibility in adopting efficiency technology into city code, such as new requirements for master valves and subsurface drip systems in turf areas less than 5ft in width.

Permits for new irrigation and turf installations were issued through the city's permit office, streamlining the permitting process for customers and allowing Conservation to delay Certificates of Occupancy for properties that do not pass inspections.

Goal-Oriented Conservation

Last year, Aurora Water Conservation (Conservation) submitted its Water Efficiency Plan to the Colorado Water Conservation Board to inform statewide conservation efforts and water resource forecasting. The Plan also included seven benchmarks which Conservation will use to achieve a 10% reduction in gallons per capita per day (gpcd) consumption by 2040:

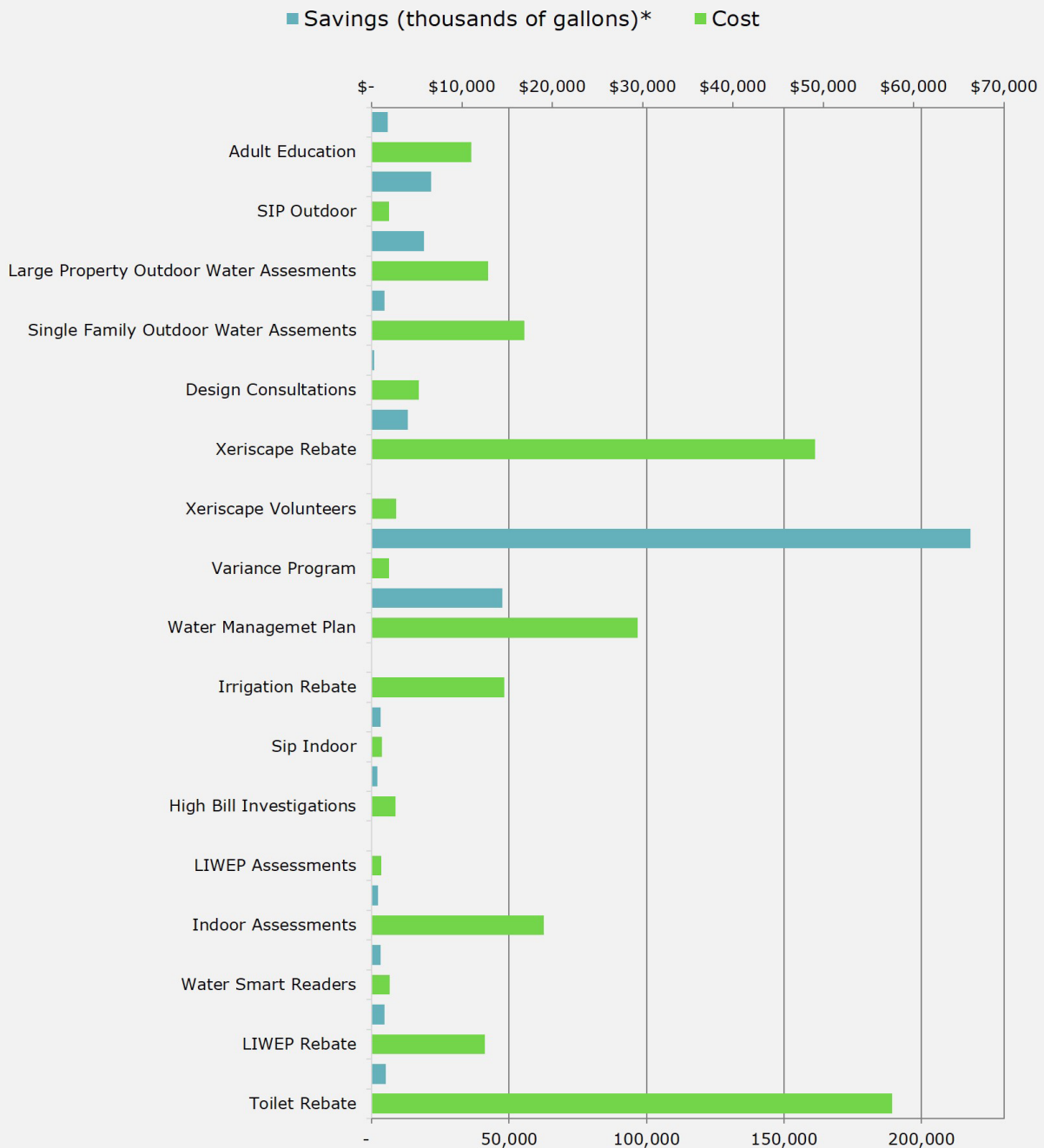
1. Give customers tools to evaluate their own use and make efficiency improvements through fixture replacement or changes in usage patterns.
2. Expand the youth education program to include tailored classes for each grade level, including higher education, that convey the importance of water conservation, stewardship and pollution prevention.
3. Make conservation education actionable with incentives and audits.
4. Respond to drought in a quick and effective manner.
5. Influence market transition towards more efficient fixtures and practices, accelerating change beyond local, state and federal codes.
6. Support local ordinances that promote water conservation through collaborations with other departments.
7. Partner with CII customers to create and meet benchmarks through tailored water efficiency programs.



During the process of creating this annual report, Conservation staff used these benchmarks to evaluate, analyze and direct changes in all programs and incentives. Beyond basic water use reductions, Conservation considers cost-benefit comparisons, consumption efficiency and customer satisfaction to determine whether existing efforts satisfy our outlined goals for the next seven years.

2015 Water Conservation Programs	Savings (gallons)
Indoor	18,298,000
Outdoor	331,940,000
Total	350,238,000

Cost-Benefit Comparison 2015



*Savings estimates throughout the annual report come from tracking changes in participants' water use. Consumption changes are not just influenced by Conservation's efforts, but also by a variety of external factors such as the perception of weather conditions, youth education programs and regional media outreach. Projections in this report demonstrate the effects of Conservation programs and incentives but cannot be attributed to those effects alone.

Other programs and incentives have been omitted due to only indirect involvement with Conservation and/or incomplete consumption data before participation, most notably in new development. These include: Landscape Permits, Z-zones, Single-family Tap Fee Credit and Leak Repair.

Charting the Path to Efficiency

Assessments

Conservation achieves its mission of promoting the efficient use of Aurora's water through assistance and incentives that empower customers to fulfill their own conservation goals. Conservation's Indoor and Outdoor Assessment Programs, coupled with Water Smart Reader (WSR) rentals, provide an in-depth analysis of a property's water use. These programs will begin closer coordination in 2016 by scheduling a single appointment for both indoor and outdoor assessments to further accommodate customers' schedules and provide a thorough, whole-property profile of water use.

Indoor and outdoor assessments continued looking to technology-based solutions for marketing and the assessment processes. Indoor assessments successfully utilized social network marketing to sign up an additional 45 customers in just two months. Both assessment programs have also started development of mobile device applications that can collect and organize information during inspections to produce rapid, customized reports to customers.

Targeted Technical Assistance	Quantity
Single Family Water Assessments	223
Multifamily Water Assessments	
Single Family Leak Repair Assistance (customers)	528
Residential Outdoor Assessments	185
Large Property Outdoor Assessments	27
Car Wash Certification	0
Water Variance Program (participants)	199
Water Smart Reader Rentals	40
System Incentive Program (contacts)	452

System Incentive Program

The System Incentive Program (SIP), piloted in 2014, targeted the most inefficient residential users as determined by lot size. Though only a portion of the customers that received letters followed up with assessments in 2015, the outreach alone saved an estimated 24 million gallons of water (21 million gallons for outdoor and 3 million gallons for indoor).

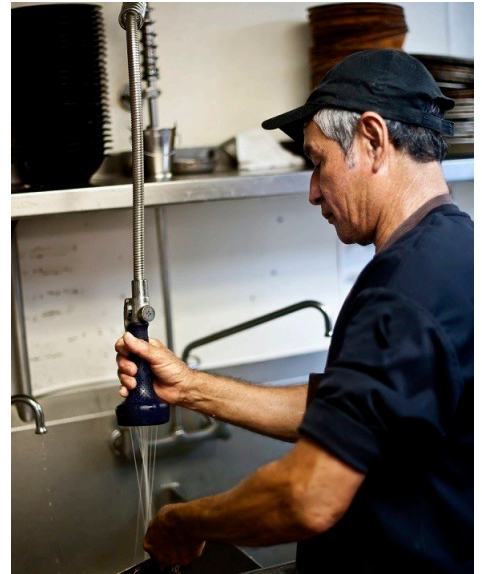
ICI

In response to the traditionally low participation from the Industrial, Commercial and Institutional (ICI) sector, Conservation began targeting ICI customers by providing tailored, cost-effective efficiency upgrade plans. Conservation inspected 127 properties in 2015, including 46 municipal

properties; staff also replaced faucet aerators and pre-rinse nozzles (for dishwashing) during inspections whenever possible. It became clear during this process that benchmarks of efficiency need to be uniquely designed for different categories within the ICI sector (restaurants, hotels, schools etc) to address the special characteristics of each.

Watering Variance

Customers participating in the Watering Variance Program were able to monitor their water use with much more precision in 2015 through new allocations based on the type of landscape. Conservation’s new calculations divided the landscape into high water use (turf) and low water use (bed) areas to ensure consumption reflects the different water needs of plants. In addition to having monthly consumption updates available on the web, landscape managers will also be able to complete a streamlined, online application process in 2016.



Toilet Rebate

Although toilet efficiency has been nationally mandated for over twenty years, advances in fixtures demonstrate enormous potential for further reducing unnecessary water use. Conservation shifted toilet rebate parameters in 2015 in response to Senate Bill 103, creating a higher incentive for upgrades to ultra-high efficiency models over regular high efficiency options. The emphasis on ultra-high efficiency toilets will continue in 2016 with a new offer of \$50 to replace toilets newer than 1994, previously ineligible for rebates, with ultra-high efficiency models.

Toilet Rebate Changes	2014	2015	2016
Ultra-high efficiency toilet (1.0 gpf or less replacing 3.5 gpf or greater)	\$150	\$150	\$150
Ultra-high efficiency toilet (1.0 gpf or less, replacing 1.6 gpf to 3.5 gpf)	ineligible	ineligible	\$50
High efficiency toilets (1.28 gpf)	\$75	\$25	\$0

Low Income Water Efficiency

The Low Income Water Efficiency Program (LIWEP) will continue to offer income qualifying residents free high efficiency toilets, showerheads, and aerators installed by the Mile High Youth Corps, a non-profit 501(c)3 organization.

Outdoor Rebates

Interest in rebates for upgrading irrigation equipment continued to grow in 2015. Homeowners experienced greater ease in 2015 with online applications offered for the first time as well as an option to apply for rain sensor rebates without the normal prerequisite of an outdoor assessment. Advances in technology were echoed by a significant boost in demand for weather based controllers in 2015, especially for models that offer smartphone based oversight and management.



Keeping pace with new technology, Conservation completed the first year of a two-year pilot study on the effectiveness of weather-tracking irrigation clocks. These clocks use real-time weather data to irrigate more efficiently. Results of the first year confirm that, while this technology has potential to provide highly efficient and convenient irrigation scheduling, the controllers are only effective when properly installed and maintained.

Targeted Incentives	Quantity
Single Family Xeriscape Rebate	14
Large Property Xeriscape Rebate	3
Irrigation Rebate	44
Toilet Rebate	750
Low Income Water Efficiency Rebate	16

Knowledge is Conservation Power

Youth Education

Conservation's educational opportunities provide knowledge and skills that encourage citizens to become conservation advocates in both their community and personal lives. Water awareness starts early through one of the region's oldest, most comprehensive and consistent youth education programs. Conservation's classroom presentations and the 22nd annual Youth Water Festival brought students creative, impactful and grade specific information that conveys the importance of water stewardship, conservation and pollution prevention. Beyond direct student interaction, Conservation and Aurora Parks, Recreation and Open Space made water stewards out of teachers with the annual Forests to Faucets professional development seminar. Over the course of three days teachers explore topics such as water treatment and watershed health.



The creative vision of Aurora Water, Denver Water, Boulder Water and Metro State University (MSU) became a reality in 2015 with the completion of the inaugural Water Wise Theatre Ensemble. With guidance and resources from Conservation's youth education team, MSU theater students developed and performed an interactive "Water Show" for 5th

and 6th grade classes to the high acclaim of students. The Theatre Ensemble also joined six new presentations, in addition to the 39 returning exhibits and presentations, at the long-running Youth Water Festival which provided a fun and informative day to over 1,600 5th graders.

Residential Education

Aurora's residents also took advantage of a broader scope of educational resources this year. Adult class additions included DIY Xeriscape Design parts 1 and 2, Spring and Fall Garden Maintenance and an interactive Discover Xeric Plants class. After learning about xeriscape concepts in class, free landscape design consultations provided residents with low water, high-visual-impact landscape designs to reduce their water footprint. Residents also enjoyed renovations to the H2O Tracker App (Apple and Android) including more user-friendly layouts, expanded resource options and user profiles that offer property-specific conservation recommendations.

The Spencer Garrett community garden won the first-ever Dig In Aurora community garden award for their outstanding garden.

Volunteers

Conservation's Xeriscape Demonstration Garden remained a primary component of promoting water smart landscaping as an attractive and important option for Aurora property owners. The

garden once again depended on the dedication of volunteers from school groups, community organizations and ordinary citizens to provide nearly 900 hours of work maintaining and renovating attractive examples of xeriscape. In return for generously giving their time, volunteers were offered several horticulture and nature presentations from local experts; given their popularity, more enrichments opportunities will be offered in 2016.

Contractor Training

Landscapers and developers participated in the Water-Smart Contractor Training class that establishes communication and cooperation between the city and private businesses regarding water efficient large scale planning and design. Smaller class sizes in 2015 fostered more dialogue between attendees and presenters.

Community garden projects are taking root with 9 new gardens in progress, mostly as part of Denver Urban Garden’s initiative to support gardens at Aurora Public Schools.

Education Activities	Quantity
Youth Education (students)	10,979
Excellence in Xeriscape Award (winners)	1
Forest to Faucets (teachers)	20
Adult Education (participants)	538
Xeriscape Volunteer Program (hours)	894
Conservation Calculator (participants)	0
1-on-1 Design Consultations (participants)	43
H2O Outdoors (students)	0
Community Gardens Program (gardens)	22
Water-Smart Landscape Contractor Training (participants)	63
H2O Tracker Smartphone App (new members)	159
Youth Water Festival (students)	1,670

A Foundation of Efficiency

In a growing city, Aurora Water recognizes the need to proactively address the increased demand of tomorrow's Aurora. To help meet future development's needs, Aurora Water initiated incentives for incorporating conservation in the design and construction of new development.

Foundational Activities	Quantity
Z-zones (properties)	9
Single Family Tap Fee Credit (properties)	0

Zero Water Use Zones

The Zero Water Use Zone (Z-Zone) Program lets large property developers waive the tap fees associated for landscape areas that will not require irrigation once plants have been established. This opportunity for significant savings has resonated with the development community and nine properties are currently enrolled, saving an estimated eleven million gallons annually once the landscapes have matured. After the first full year, Conservation realized a need for greater communication in the planning process to ensure all participants understand and meet the requirements of the program prior to starting construction.

Single-Family Tap Fee Credit

Similar to Z-Zones for larger properties, the Single-Family Tap Fee Credit provides \$1,000 credit to incentivize developers to choose water-wise landscaping for residential homes. Though the credit received considerable interest, no properties applied for the credit in 2015. Moving forward, Conservation will focus on communicating this option to real estate and development professionals.



Built-In Conservation

Aurora’s codes and ordinances ensure that developers incorporate efficiency into the design and construction of new and renovated properties. Code changes in 2015 furthered the ethos of efficiency by requiring master valves on commercial irrigation systems and sub-surface drip irrigation in turf areas less than five feet in width. These changes will make conservation an inherent part of new development in Aurora.

In step with this expansion in construction, developers experienced a more streamlined permitting process in 2015 by being able to apply for landscape permits and reviews through Aurora's Permit Office. Conservation will continue to look for ways to adopt forward thinking code changes and ways to make adhering to those codes more expedient for the business community.

Water Management Plan

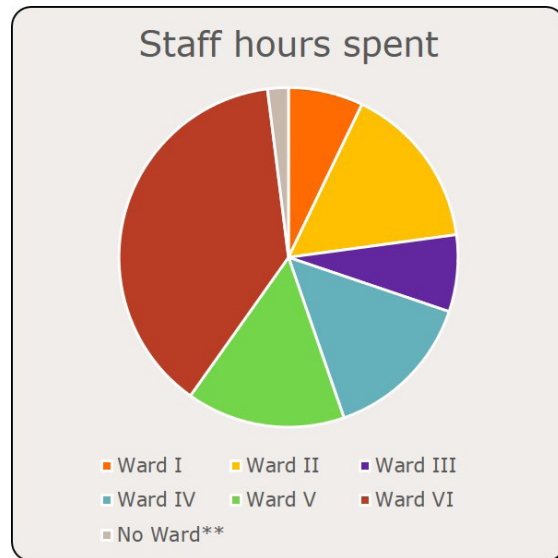
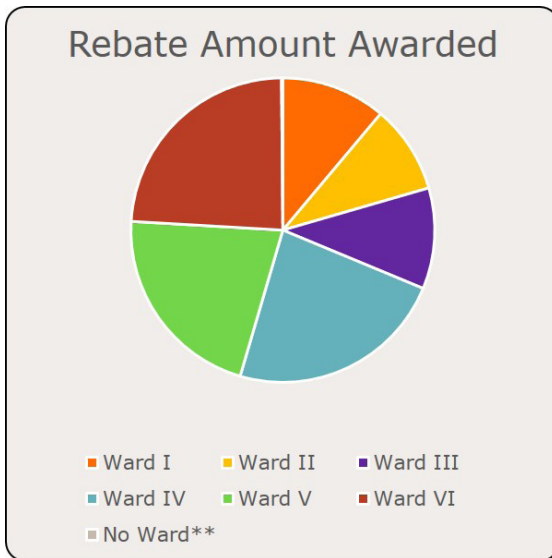
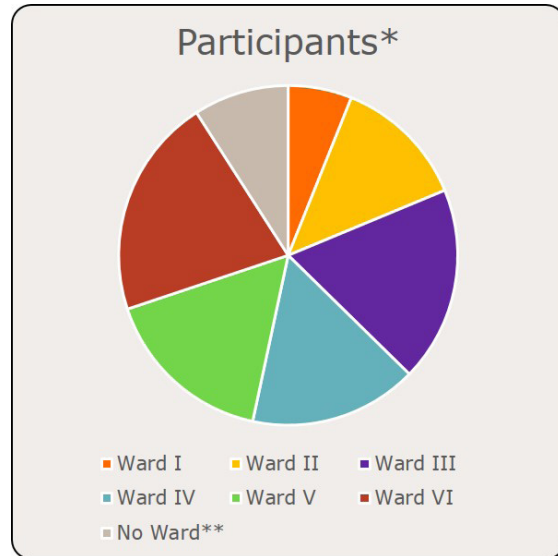
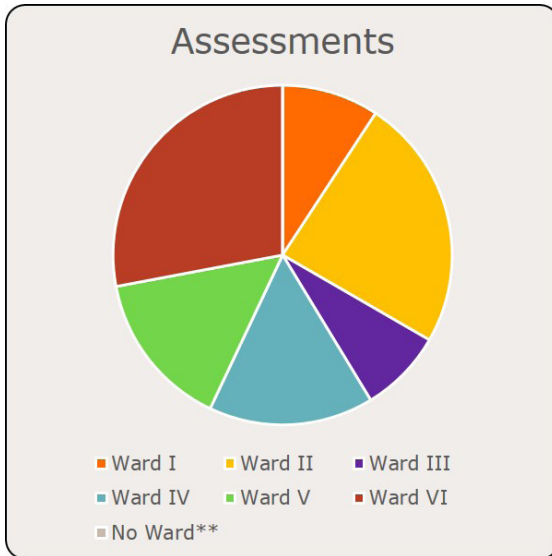
Conservation continued to act as the primary enforcer of the city's Water Management Plan, intended to prevent blatant forms of waste. Though the effects of this enforcement had always been assumed, in 2015, Conservation performed a study to calculate the associated savings. The results showed an estimated 55 million gallons a year in water savings.



Ordinances and Regulations	Quantity
Landscape Permits (rain sensors, soil amendment, and irrigation permits)	896
Water Management Plan (contacts)	562
Irrigation Plans Review (sheets)	323

Program and Incentive Participation by Ward

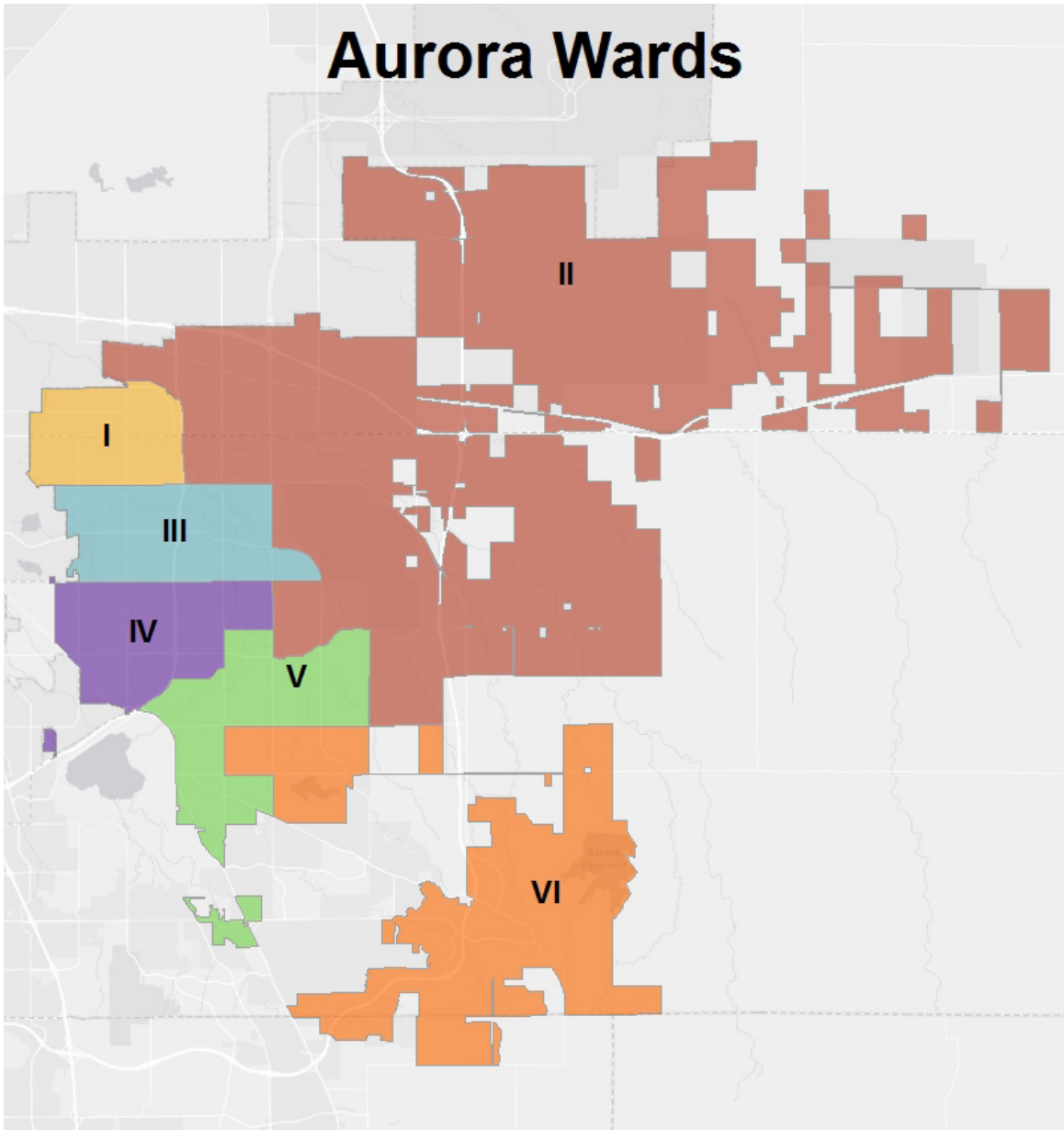
Aurora Water strives to promote conservation and provide incentives to customers across the city. As seen in the charts below, Aurora has interactions in every ward with some wards receiving more rebates, audits, or participants.



*A single instance of participation in an Conservation program or incentive i.e. student, homeowner, permit, rebate recipient etc.

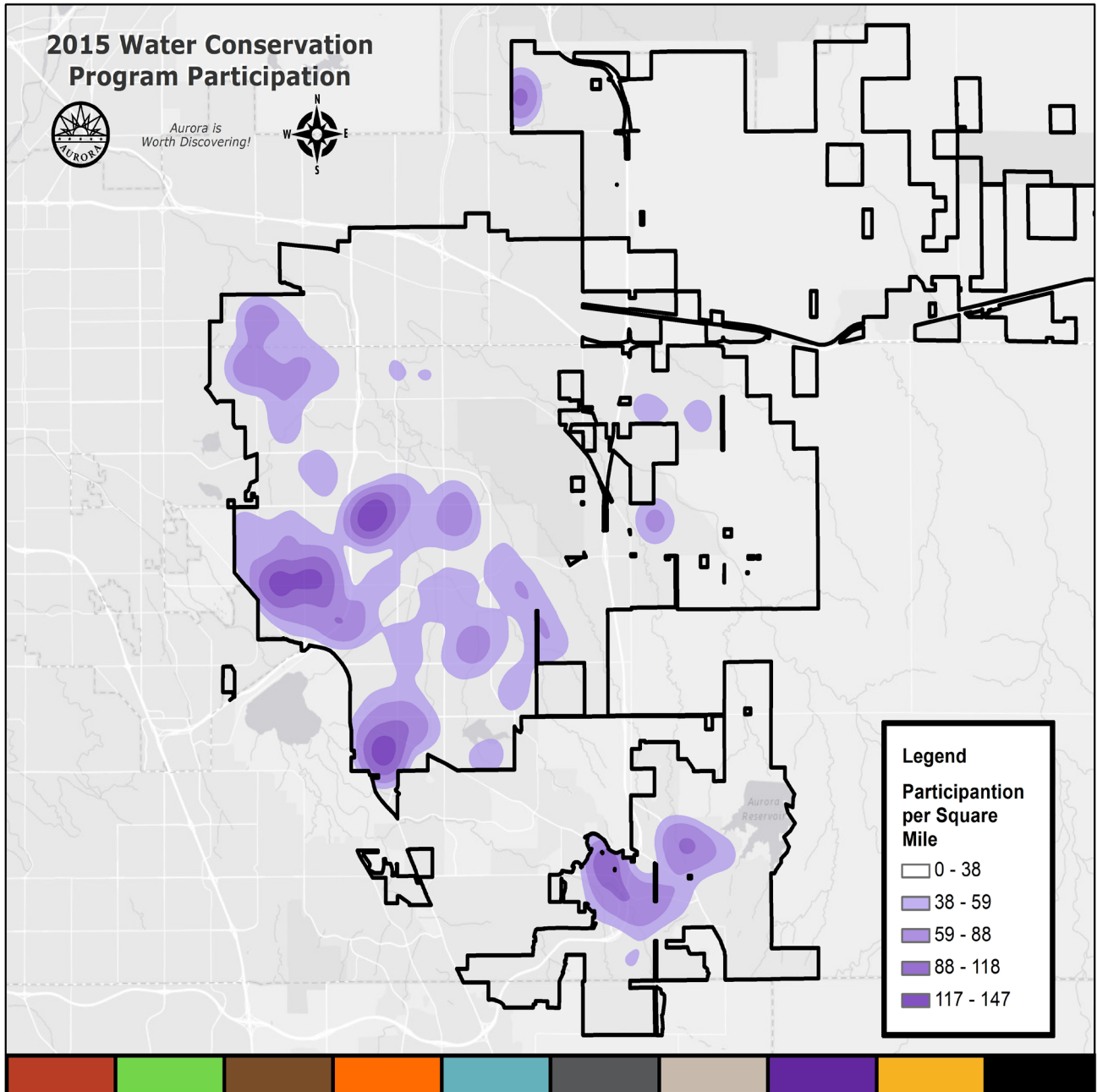
** No ward indicates a customer's location could not be found from the information provided.

Aurora Wards



2015 Program Participation Hot Spots

This map shows how participation in conversation programs varies across Aurora. The darkest purple color represents the areas with the highest customer participation per square mile.



aurorawater.org

15151
E. Alameda
Pkwy.
Suite 3228

303-739-
7195

**SAVE
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