I'M A RAIN CATCHER

WATERSHED PROTECTION

FEBRUARY 2023-JANUARY 2024

Phase 5 | Snapshot Report

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Introduction

This report covers the residential, public outreach, collaborations, and scientific research aspects of the Rain Catcher Pilot Program (RCPP) for **Phase 5 of 6**, from **February 1, 2023, to January 31, 2024**. The RCPP's primary goal is to increase the prevalence of cisterns and rain gardens in a targeted area to achieve stormwater management and water conservation objectives.

The RCPP is a collaboration with multiple partners to address financial barriers by providing an enhanced incentive package, streamlining green stormwater infrastructure (GSI) installation, increasing the amount of decentralized GSI, and connecting with community members. RCPP incorporates Development Services Department Urban Forest funding, Austin Water rebates, Watershed Protection Department capital funding, and educational programs to help meet program goals.

Phase 5 Details

The City of Austin's Watershed Protection Department administers the program. The site is in North Central Austin, in the upper portion of the Waller Creek Watershed. (Figure 1), an urban area covering **1.08 square miles** with **46% impervious cover. 1,475 properties** are eligible to participate. The site consists of four sections divided into phases (Figure 2).

Upper Waller Creek Watershed

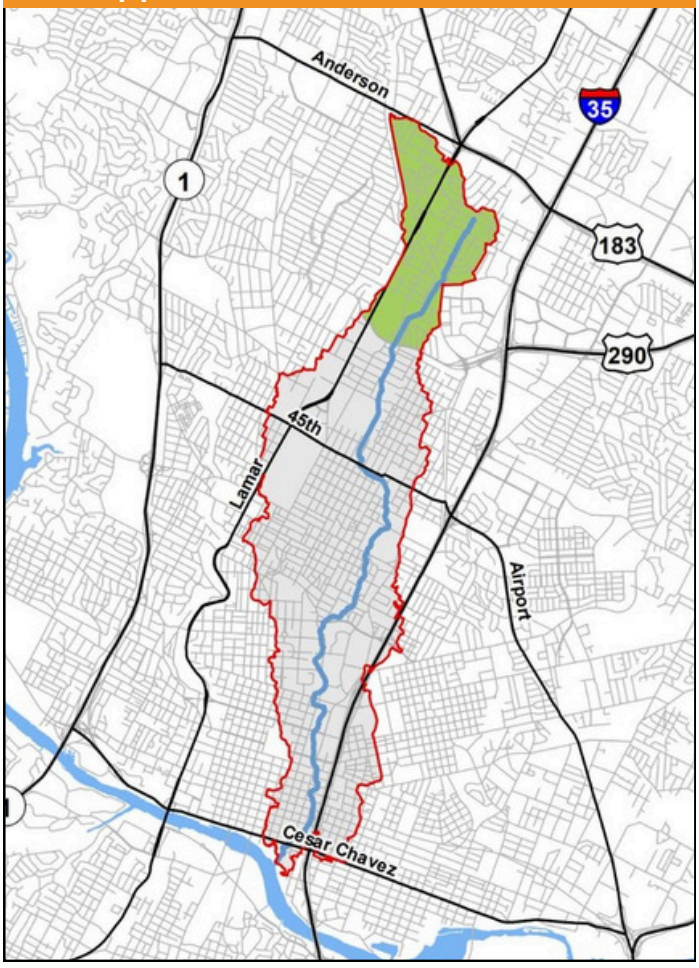


Figure 1. Location of the entire RCPP catchment area

Rain Catcher Pilot Program Phases

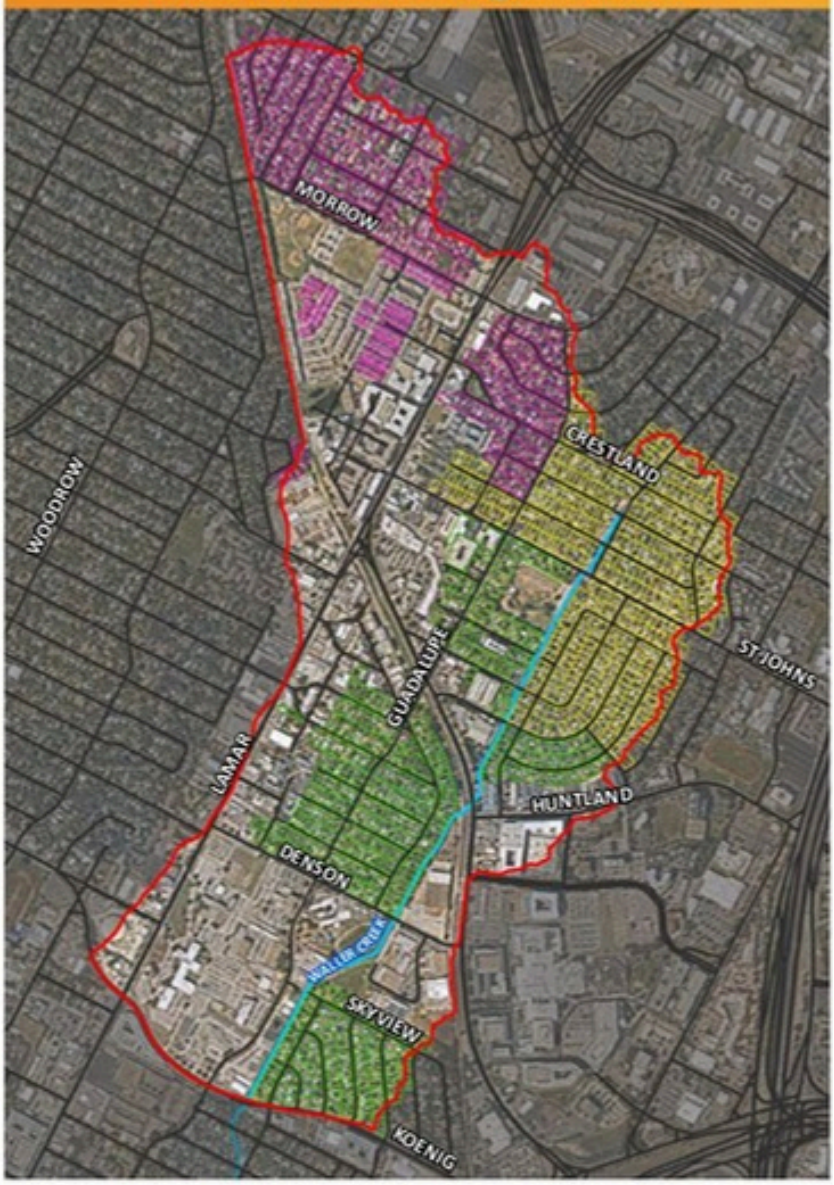


Figure 2.
Rain Catcher Pilot Program Phases

- **Phase 1:** October 2018 - September 2019, 25 properties
- **Phase 2:** February 2020 – January 2021, added 479 properties
- **Phase 3:** February 2021 – January 2022, added 471 properties
- **Phase 4:** February 2022 – January 2023, added 500 more properties
- **Phase 5:** February 2023 – January 2025, the full geographic target area, 1475 properties

Note: Each new phase includes all previous phases

Phase 5 Implementation

Supply Chain

The RCPP team continued to work with interested community members from previous phases. Outreach began in April with the Phase 5 mailout (Figures 16-18 in the mailout section, page 8). Program staff created site assessment maps and reports, providing site-specific green stormwater infrastructure (GSI) design information for participants who responded to the mailout. Additionally, the team focused on exploring new funding sources and evaluating and improving processes related to communication within the team and with participants. Discussions continued regarding potential expansion beyond the Pilot. During Phase 5, the team addressed the following activities and their associated challenges and adaptations:

1. Supply Chain Issues & Price Increases

Some significant challenges during this phase were related to supply chain disruptions and price increases.

Supply Chain Challenges

In early September, due to a private entity's large purchase of tanks under 1,500 gallons area-wide, there were significant delays in obtaining cisterns. This resulted in 6–8 week backorders and extended wait times for homeowners. The participants' desire for various tank sizes and types further complicated the situation (Figure 3). Additionally, there were shortages of pipe, lumber, plants, and trees.

Figure 3. Examples of cisterns used in RCPP projects

Addressing Supply Chain Issues

- Enhanced Communication with Suppliers: Our non-profit contractor, Urban Patchwork (UP), established a closer working relationship with their primary supplier of cisterns. This allowed for better communication and timely updates on cistern availability, helping manage homeowner expectations more effectively. UP now has an area representative to help source materials from different locations. They continue to look for other wholesalers that may have stock outside of Austin.
- Pre-Ordering & Storage Solutions: UP considered the feasibility of ordering cisterns in advance and storing them in a designated area. This would make them more readily available, reduce wait times, and ensure a steady supply of cisterns regardless of immediate market conditions.
- Limit Cistern Options: In response to complications with offering a wide range of cistern size choices, the options were limited to 1-3 standard options. This helped streamline the process, reduce delays, and simplify decision-making.

Phase 5 Implementation

Price Increases

Price Increase Challenges

During Phase 5, the cost of materials and labor for installing rainwater catchment systems fluctuated significantly, impacting budgets and affordability. These unexpected price hikes posed a risk to the program's financial sustainability and potentially discouraged homeowner participation. The following adaptations helped alleviate the supply chain issues and stabilize costs, ensuring that the Rain Catcher Pilot Program could operate effectively despite market fluctuations.

Addressing Price Increase Challenges

- Market Fluctuations: Urban Patchwork (UP) assessed the market for economic price adjustments. By staying informed about current market trends and price changes, they made more informed purchasing decisions and negotiated better deals with suppliers.
- Discount Negotiation: UP negotiated an 18% discount with the cistern supplier.
- Updating the Master Agreement: The master agreement for the program was updated to adjust for inflation while staying within the available budget.
- Rebate Increase: Austin Water's "Waterwise Rainscape Rebate" increased from $0.30 to $0.50 per sq. ft., and the "Waterwise Landscape Rebate" increased from $0.35 to $1.00 per sq. ft. These changes helped offset some price increases for program participants.
- Free Trees (two free street trees watered with a rainwater cistern—including installation): During this phase, a no-cost system was rolled out (Figure 4). To be eligible for the free system, the site needed to allow two street trees and have space for a 500-gallon cistern.
- Targeted Outreach: A special outreach effort was made to reach eligible Customer Assistance Program (CAP) residences with the doorhanger shown in Figure 4.

Figure 4. Street Tree & Cistern package doorhanger

Phase 5 Implementation

System Operations & Maintenance

2. System Operations & Maintenance Support

Participants need ongoing system operation and maintenance support.

System Operations & Maintenance Support

During final walk-throughs with UP, participants receive an operation manual for their rain catcher systems with diagrams, links to resources like the Grow Green Cistern Fact Sheet (Figure 5), Rain Garden Fact Sheet, and informational videos. We received feedback that people needed further assistance to understand their systems and what maintenance is required. These types of inquiries are often related to weather events.

Figure 5. Grow Green Cistern Fact Sheet

Enhancing System Operations & Maintenance Support

- **Creation of Maintenance Video:** We produced an informative maintenance video, "Prepare Your Cistern for Winter Storms" (Figure 6), see link in Outreach video section that provides a step-by-step guide on how to maintain cisterns before & during freezing temperatures.
- **Development and Sharing of Additional Documentation and Resources:** Comprehensive documentation covering all system operation and maintenance aspects is being developed. This includes detailed site-specific instructions, troubleshooting tips, and FAQs to address common issues.

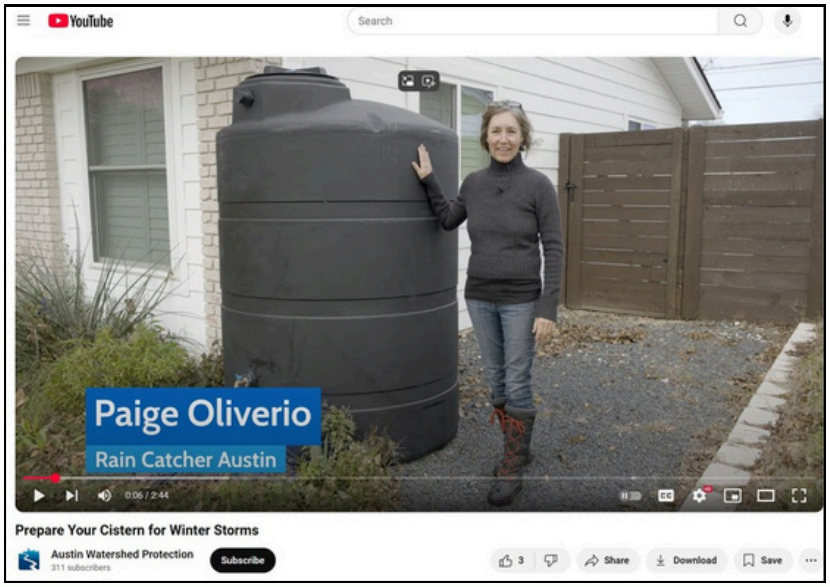


Figure 6. "Prepare Your Cistern for Winter Storms" video screenshot

Phase 5 Implementation

3. Outreach

Reports & Videos

- **Phase 4 Snapshot Report** (Figure 8). www.austintexas.gov/sites/default/files/files/Watershed/raincatcher/RCPP_Phase4_Report.pdf

- **April 13, 2023 "Be Like Bud"** (Figure 9), https://youtu.be/TDMNbAdLsb4.
- **January 2024 "Protecting Our Water"** (Figure 10), www.youtu.be/EczEJvb7CHU
- **January 24, 2024 "Prepare Your Cistern for Winter Storms,"** www.youtube.com/watch?v=VXbZfN3zdrQ

Figure 8. Phase 4 Snapshot Report cover

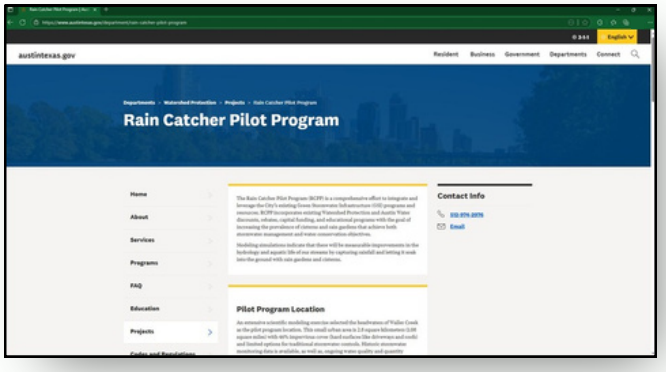
Figure 9. "Be Like Bud" video

Figure 10. January 2024 "Protecting our Water" video, PEAS (community partner) with CBS Austin/Telemundo

Phase 5 Implementation

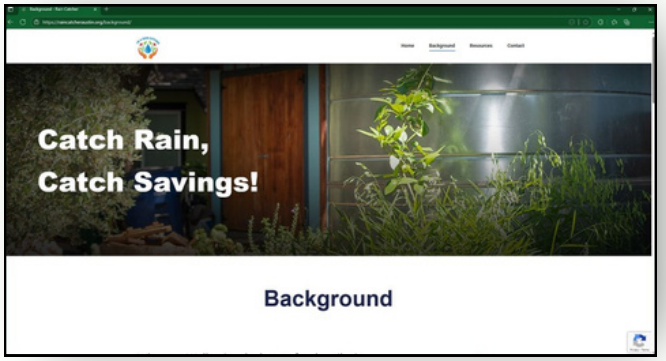
Websites & Social Media

Websites



The City of Austin, WPD Rain Catcher Pilot Program

Figure 11. Screenshot from WPD's Rain Catcher Pilot Program Homepage



Urban Patchwork:

https://raincatcheraustin.org/

Figure 12. Screenshot from Urban Patchwork's Catch Rain Catch Savings Website

Social Media

www.facebook.com/AustinWatershed

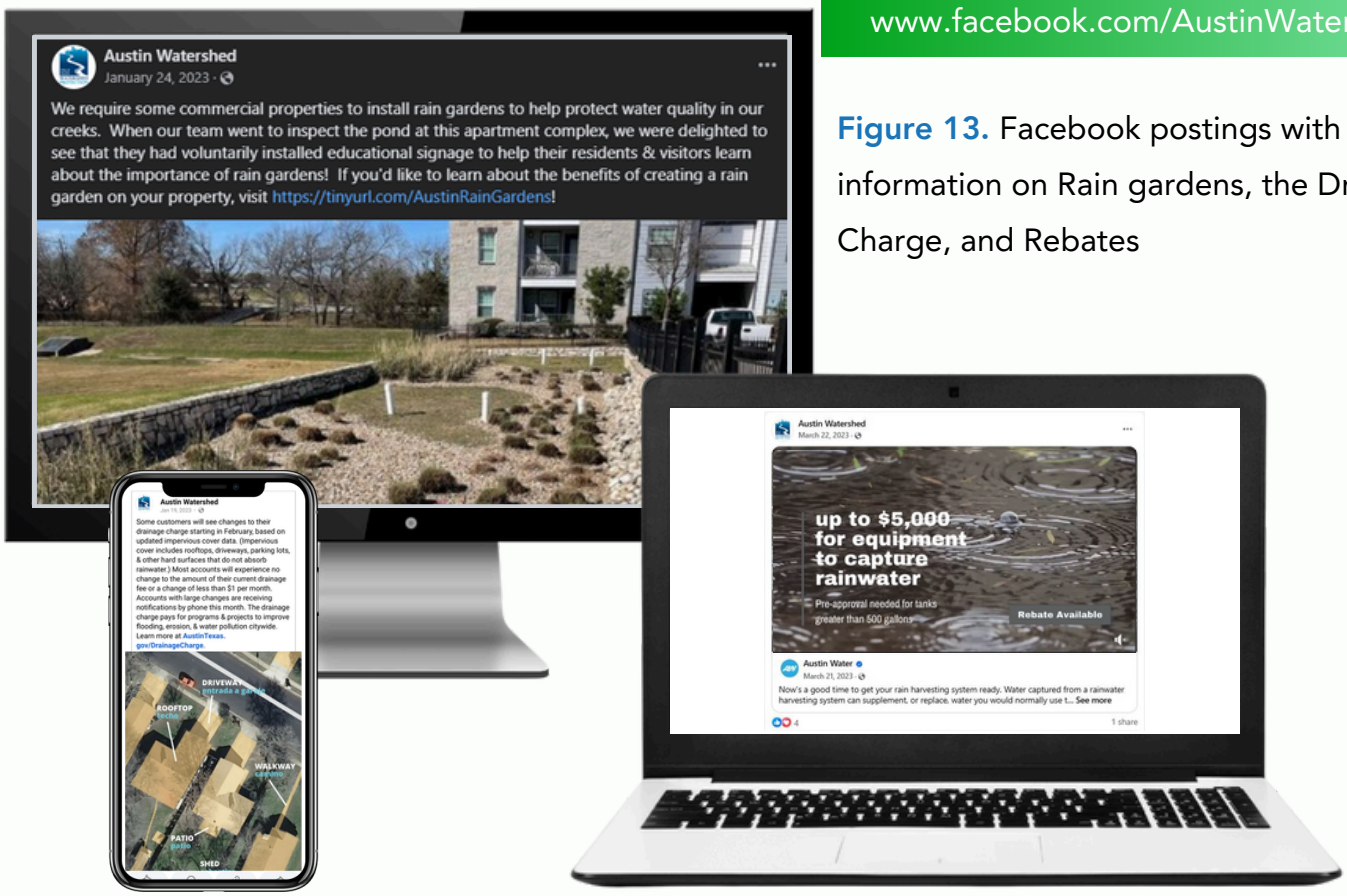


Figure 13. Facebook postings with information on Rain gardens, the Drainage Charge, and Rebates

Phase 5 Implementation

Mailouts

Mailouts

- April 13, 2023: WPD mailed ~1900 invitations, which included a letter, flyer, and a seed packet to Phase 1-5 addresses, including 1475 properties eligible to participate in the pilot program, plus 429 addresses for owners of rental units within the pilot area.
  - The revised letter (Figure 14) is easier to read, with less text and more graphics than previous letters. It emphasizes the free street tree cistern package and the limited time left to participate in the pilot.
- September 25, 2023: WPD mailed out the same materials to the addresses of the April invitations. All outreach materials are in English and Spanish.

Figure 14. Phase 5 sample letter (English side with Spanish side behind), flyer, and envelope

Phase 5 Participation

Participation Status

Pilot Participation Status: Phases 1-5

93 **Action**
Signed agreement, site assessment and beyond

203 **Interest**
Residents who contacted RCPP

1475 **Awareness**
# of properties represented that received mailouts

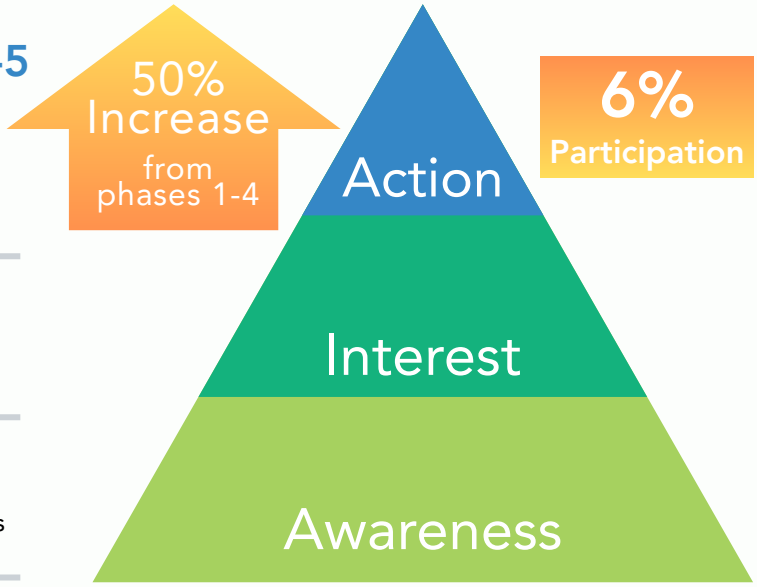


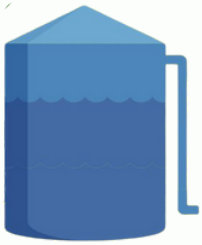
Figure 15. Examples of Phase 5 installations

Phase 5 Details

Total Installations completed during Phase 5 out of 6, from February 1, 2023 to January 31, 2024.

Phase 5 Total Sites

13 Completed



Cisterns

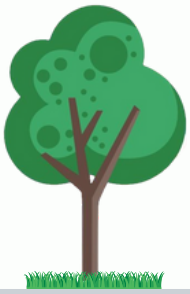
21 Installed.

28,832 potential gallons captured per 3" rain event

Rain Gardens

8 Installed.

7,525 potential gallons captured per 3" rain event



Trees

26 planted

Compared to Totals for Phases 1-4

- **10** Total Sites completed
- **25** Cisterns installed & **16,550** potential cistern gallons captured per 3" rain event
- **19** Rain Gardens installed & **19,645** potential rain garden gallons captured per 3" rain event
- **19** Trees Planted

Phase 5 Participation

Addressing Participation Barriers

Engagement

- Throughout this phase, Urban Patchwork periodically contacted homeowners who had expressed interest in an earlier phase but had not completed the process to reengage them.

Outreach Materials

- The letter was simplified from previous versions and included a reminder that applications would not be accepted after June 2024 (Figure 16).
- Future graphics are being worked on that will communicate cost and rebate numbers for recent projects, and these will be used to inform participants in upcoming outreach. An updated yard sign is also being created that will have a QR code for the RCPP website.

Figure 16. Updated letter graphic with date reminder

Site Reports

- The site reports that are given to participants were adjusted to be less technical and shorter than previous versions. The simplified approach has had a better response rate.

Costs

- Emphasized discounts and development of the FREE Street Tree + Cistern package

Figure 17. Graphic from outreach letter

Phase 5 Collaborations

Collaborations involve multi-disciplinary efforts, interdepartmental support, and partners from non-profits, educational organizations, and local businesses.

Figure 18. Rain Catcher Pilot Program Public Demonstration Projects Map

Phase 5 Collaborations

Continued

Collaborations involve multi-disciplinary efforts, interdepartmental support, and partners from non-profits, educational organizations, and local businesses.

Reilly Elementary School Green Stormwater Infrastructure

- **Austin Independent School District (AISD)** and **Partners for Education, Agriculture, and Sustainability (PEAS)** coordinated cistern and rain garden activities at the Reilly Elementary School Demonstration project, which reached 86 students.

Figure 19. Watershed Lesson at Reilly Elementary School

Highland Neighborhood Park, formerly known as Reznicek Fields Water Quality Retrofit Project

- **City of Austin Parks and Recreation Department (PARD).** The project, which began construction in December 2022, is nearing completion. It includes a new walking trail, picnic tables, drinking fountains, tree planting, and new field lighting. The design reflects sensitivity for the Waller Creek watershed and provides green infrastructure opportunities in collaboration with Austin's Watershed Protection Department. Community engagement for the project began in April 2021. The permitting and construction documents were completed in the summer of 2021. Construction started in the fall of 2022, and substantial completion of the projected is expected in summer of 2024.
- www.austintexas.gov/HighlandParkProject

Skyview Neighborhood Rain Garden

- **Austin Transportation and Public Works Department** and **Neighborhood Partnering Program (NPP)**. Community members can initiate projects to enhance common areas through the Public Works Neighborhood Partnering Program. This project began in 2018. The goal was to create a new usable green space by removing pavement and installing a rain garden. In late April of 2022, installation of the rain garden was completed, and a new interpretive sign was installed in April 2023.

Figure 20. New Sign at Skyview Neighborhood Rain Garden

Phase 5 Collaborations

Continued

Northcrest Green Stormwater Infrastructure

- **City of Austin Watershed Protection Department** is coordinating plans with the **City of Austin Transportation and Public Works Department** on a public demonstration project on Northcrest Blvd. The project is halfway through the design phase, and construction is expected to begin in 2025.

Austin Water Conservation Program

- **Austin Water** staff support RCPP by managing and funding the water conservation rebate program, which helps reduce participation costs. The WaterWise Landscape Rebate helps residents convert turfgrass to native plant beds. In February, the rebate increased from $0.35 to $1.00 per sq. ft. This means a more significant financial contribution for sites that remove turfgrass and install a rain garden. Austin Water's "Waterwise Rainscape Rebate" also increased from $0.30 to $0.50 per sq. ft. They also keep us up to date on topics related to both departmental missions by providing updates on changes to irrigation restrictions, the development of new residential irrigation and landscaping ordinances, drought updates, and other related topics.

Figure 21. Sample WaterWise Landscape

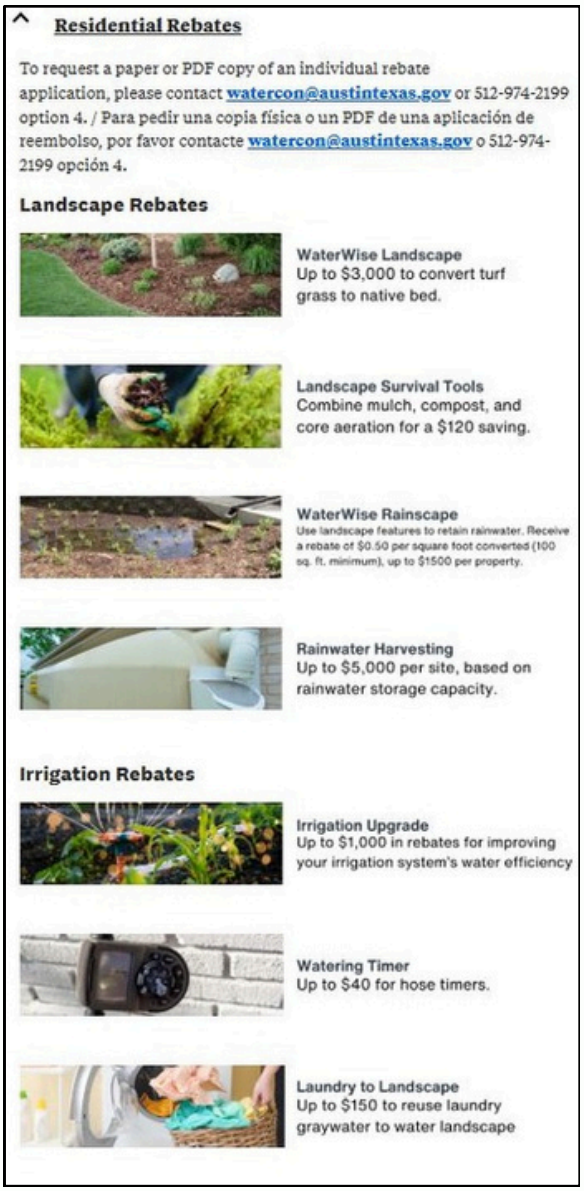


Figure 22. Austin Water Conservation Rebate Programs

Phase 5 Collaborations

Continued

Austin Water Conservation (continued)

- **June 21, 2023: Urban Patchwork** led a tour of some of the projects for **Austin Water** and **Watershed Protection Department** stormwater management discount staff (Figure 23).

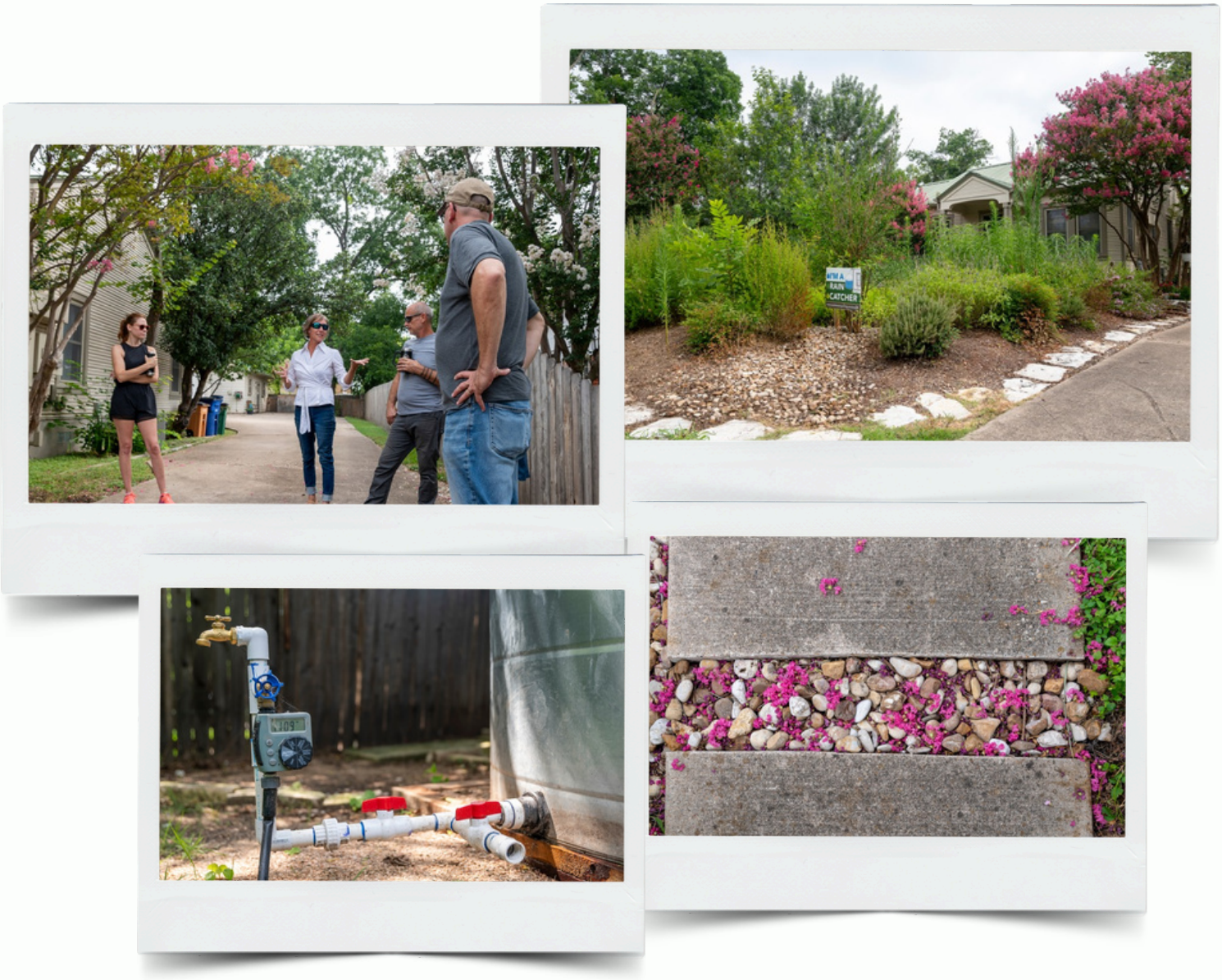


Figure 23. Tour photos: highlighting rain gardens, cisterns with timers, and drainage features.

Phase 5 Collaborations

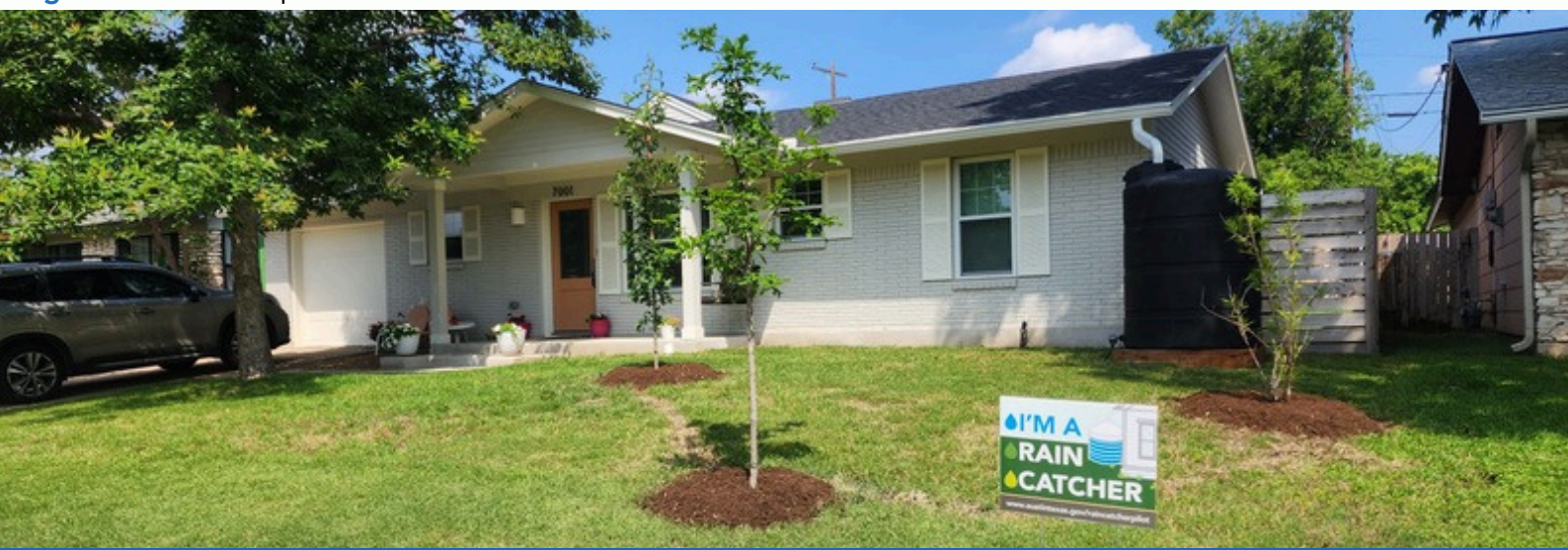
Continued

Development Services Department (DSD), Urban Forest Funding

- **DSD** is dedicated to enhancing the long-term health of Austin's urban forest and the community's Urban Forest Vision. One approach they utilize is funding tree projects for other city departments. For the RCPP, this funding helps cover costs for establishing trees irrigated by rainwater from a cistern. (Figure 24). As of 1/31/24, 43 new street trees have been planted, and 39 trees were incorporated into future rainwater irrigated designs.
- In February 2023, a representative from DSD toured RCPP sites with UP (Figure 25). They looked at projects in various stages (mid-install, recent install, established). The DSD staff member reported, "It was a fun day and seems like a good project. We relied on these photos when reviewing the funding request for the next phase, and everyone agreed it was worthwhile to fund it."

Figure 24. Trees planted using DSD's Urban Forest Fund.

Figure 25. An example of an RCPP site with several street trees and a cistern that was on the tour with UP & DSD.



Phase 5 Research

City-Wide Behavioral Study

- **The City-wide Behavioral Study, "Our Rain, Our Waters: Protecting Waterways for All with Actions at Home,"** is a city-wide survey to understand the adoption of GSI and other pro-environmental behaviors. The results of this survey will inform a statistical model to determine where to focus future pro-environmental outreach. Ten thousand residents from different demographic groups were surveyed to identify opportunities, barriers, motivations, and knowledge. WPD has started applying the results from the Behavioral Study to the neighborhoods across the City of Austin to help inform which neighborhoods would benefit from increased outreach for future programming. However, this work is still in progress.

The Waller Cistern Study

- **The WPD Applied Watershed Science and Data Analysis/Decision Support** sections designed this study to monitor cistern function and performance. During the study, staff modified the rainwater collection systems to improve their stormwater collection rate. After all changes had been tested and fine-tuned the plan is to collect data for one final year.

Figure 26. Cisterns at Reilly Elementary School, part of the Waller Cistern Study.

Phase 5 Research

Continued

The Waller Sewershed Study

The Sewershed Study includes one hundred homes at the headwaters of Waller Creek near Northcrest, where it leaves St. Johns Avenue. It examines the impact of installing green stormwater infrastructure in a relatively small area to see its influence on that tributary's hydrology. The study collects baseline water quality, rainfall, and soil moisture data. These measurements can characterize creek response to rainfall events of different sizes and intensities.

Figure 27. A stormwater feature in the Sewershed Study area.

The Infiltration Study

The rain garden infiltration study examines how rain gardens respond to storm events. There are 30 different rain gardens around town that meet the criteria for this study, and quite a few are in the Waller 3 area; 15/30 have sensors. In the future, a yet-to-be determined subset of them will be sampled. The goal was to outfit all of them with sensors before the fall rain started. Some of the sensors had been tampered with but have since been reset to the correct configuration. Stormwater level data is being collected from which drawdown and infiltration rates will be studied. The timeline depends on the weather and staffing, and it may be 1-2 years before the data is processed.

Next Steps - Beyond the Pilot

The RCPP is currently in Phase 5 out of 6. The pilot program, initially planned to have 5 phases and end on January 31, 2024, was extended for one year due to Covid disruptions.

Rain Catcher Pilot Program Phases

Phase 1

October 2018 through September 2019

- 25 new properties
- October 2019 to January 2020: The Master Agreement was waiting to be voted on by Council

Phase 2

February 2020 through January 2021

- 479 new properties
- Master Agreement approved in February but original initial March mailing got pushed back to July due to COVID

Phase 3

February 2021 through January 2022

- 471 new properties
- Include Phase 1 & 2 properties in outreach
- February–June 2021: Focus on new outreach and contractor recruitment, training, and program adjustments
- June 2021 to January 2022: Engage new properties and manage existing installations

Phase 4

February 2022 through January 2023

- 500 new properties
- Include Phase 1, 2, & 3 in outreach
- February–June 2022: Focus on new outreach and contractor recruitment, training, and program adjustments
- June 2022 to January 2023: Engage new properties and manage existing installations

Phase 5

February 2023 through January 2024

- Circle back to all properties
- February 2023 to June 2024: Focus on new outreach and program adjustments
- June 2023 to January 2024: Complete existing installations, capture and publish program accomplishments, and wrap up reports to prepare for post pilot next steps

Phase 6

February 2024 through January 2025

Next Steps - Beyond the Pilot

Continued

Phase 6

February 2024 through January 2025

- February–June 2024: Focus on new outreach & program adjustments
- June 2024: End outreach; after this time, all properties that express interest will be vetted on a case-by-case basis for participation, depending on the length of the project, timing, and available resources
- June 2024 to January 2025: Continue existing installations, publish program accomplishments, and wrap up reports to prepare for the next steps in the post-pilot stage
- End of January 2025: All installations must be complete

Continue investigating potential programming expansion beyond the Pilot to other focused areas of the city

- Integrate information from the "City-wide Behavioral Study" (see Research section pg 16). The results of this survey will inform a statistical model to determine where to focus future pro-environmental outreach
- Other considerations include WPD's "Rain to River Strategic Plan, A Strategic Plan to Protect Austin's Creeks and Communities," (RaintoRiverATX.com) and other city initiatives like a city-wide resilience plan from the new Office of Resilience
- Collect feedback from RCPP participants and other stakeholders
- Identify internal process challenges regarding communications and data collection and develop potential solutions
- Identify sustainable solutions to address financial, design, and installation barriers
- Define WPD's role in design & installations
- Assess the internal program capacity
- Collaborate with WPD's business process consultants to advise the process