



FEBRUARY 2022 – JANUARY 2023

Phase 4 | 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 4 of 5, from February 1, 2022, to January 30, 2023**. 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, streamline green stormwater infrastructure (GSI) installation, increase the amount of decentralized GSI, and connect with community members. RCPP incorporates Watershed Protection and Austin Water discounts, rebates, capital funding, and educational programs to help meet program goals.



Phase 4 Details

The City of Austin’s Watershed Protection Department administers the program. The site is in North Central Austin, in the upper portion of Waller Creek Watershed (**Figure 1**), an urban area covering **1.08 square miles** with **46% impervious cover**. **1,476 properties** are eligible to participate. The site consists of 4 sections divided into phases (**Figure 2**).

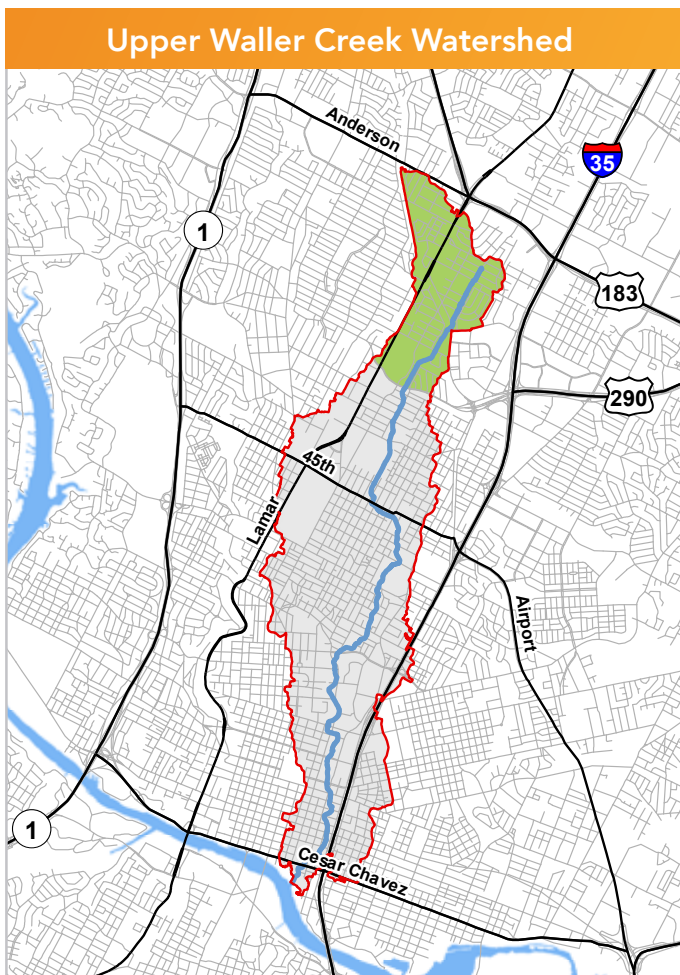


Figure 1.
Location of the entire RCPP catchment area

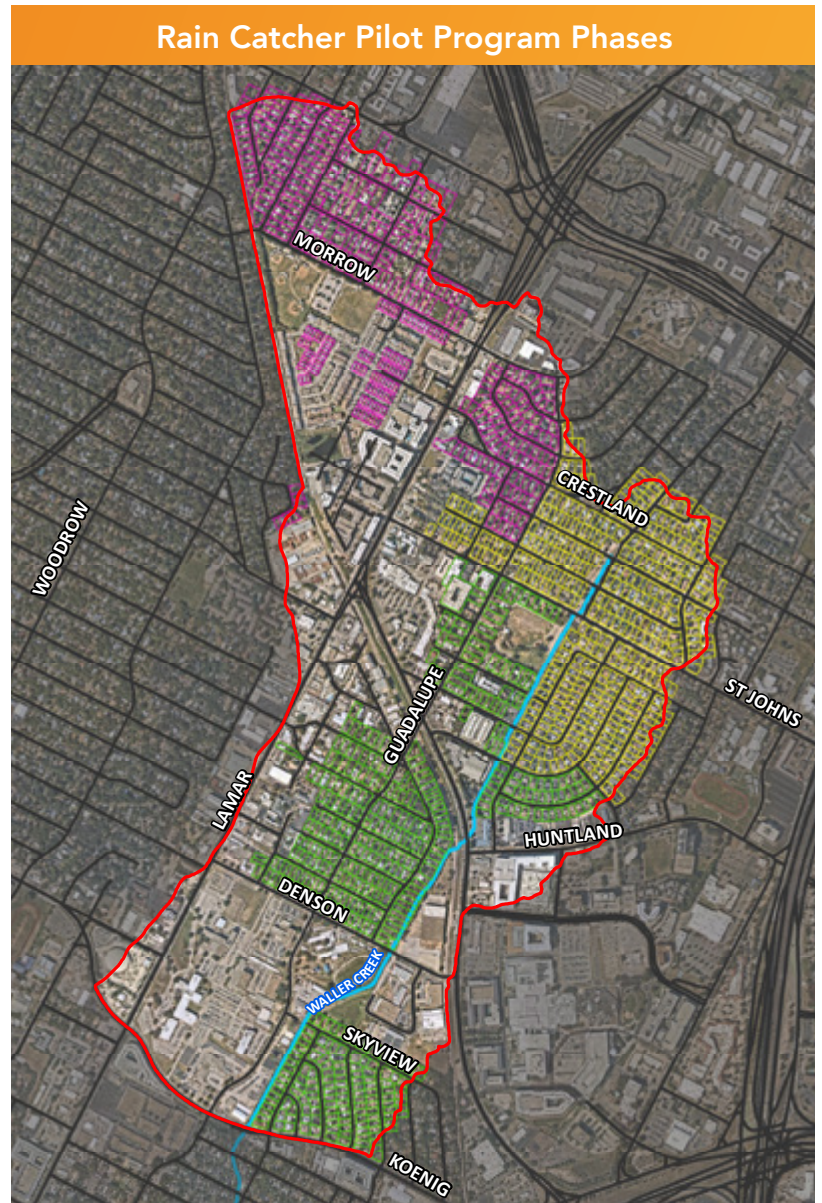


Figure 2.
Rain Catcher Pilot Program Phases

- **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 488 more properties
- **Phase 5:** February 2023 – January 2025, the full geographic target area, 1463 properties

Note: Each new phase includes all previous phases

Phase 4 Implementation

Partnerships

The RCPP team continued to work with interested community members from Phases 1-3. Outreach to new participants began in April with the Phase 4 mailout (**Figure 18 in mailout section page**). After that, program staff conducted site assessments and design visits, providing participants with basic GSI design & installation information, and connecting more community members with Waller Creek. Additionally, the team focused on enhancing partnerships, exploring new funding sources and equity opportunities, and continually evaluating and improving processes related to communication within the team and with participants. Discussions began regarding potential expansion beyond the Pilot. During Phase 4, the team addressed the following activities and their associated challenges and adaptations:

1. Enhance Partnerships

Workforce, Contractor & Staffing Challenges

During Phase 4, Urban Patchwork (UP), the city's non-profit partner who administrates the program, launched an effort to incorporate a workforce development component into the program through a collaboration with Austin's Civilian Conservation Corps (ACCC). Staff were spread thin due to complications with planning and implementation, causing delayed project turnaround times. Concurrently, WPD RCPP staff transitioned to new roles, leaving gaps in the RCPP team. Interested property owners had difficulty finding contractors for their smaller residential projects. Contractors were dropping out, mostly wanting to do jobs over \$25K.

Figure 3.

On 10/20/22, Members of Austin's Civilian Conservation Corps (ACCC) observed a cistern installation on a site tour



Adaptations:

- Urban Patchwork hired two full-time staff and began contracting with a landscape designer enabling UP to work directly with property owners from design through installation.
- The RCPP team continues to work with ACCC to enable more projects to be completed in-house at a lower cost and to grow a workforce that can design, install, and maintain GSI systems (**Figure 3**).
- WPD transitioned one staff member from a temporary position to a full-time job, ensuring further support for the program and RCPP staff. And the department hired a grant writer to help find funding opportunities for this program.

Phase 4 Implementation

Opportunities

2. EXPLORE FUNDING & EQUITY OPPORTUNITIES

Financial Barriers and Equity

The response to outreach in Phase 4 was higher than in the previous phase. (Figure 4) However, many community members ultimately opted not to engage with us and declined to commit to an installation. Most feedback on why potential participants didn't move forward with the program centered on financial barriers. Many community members do not prioritize landscaping & green stormwater infrastructure over other household expenses, and with inflation raising the cost of living significantly in 2022, there was less money to spend on these kinds of projects. Inflation also affected the costs of these systems, making them more unaffordable as prices for parts, labor, & transportation increased.



Pilot Participation Status: Phases 1-4



Figure 4.

Adaptations:

- Program staff are working to create a low-cost or even free system with two street trees watered with a cistern to allow all community members to participate regardless of income.
- UP negotiated with suppliers to receive lower prices on poly tanks.
- To adjust for changes in cost due to inflation, Urban Patchwork signed the "Amendment for Economical Price Adjustment for the Master Agreement for the RCPP." The adjustment gives the RCPP's non-profit partner more financial stability to continue supporting the program.
- WPD hired a new grant specialist who can help find funding opportunities to support equity and green workforce development.
- UP applied for external funding opportunities from the Pisces Foundation.
- In January, AW announced an increase in the Waterwise landscape rebate from \$.50 to \$1 per sq ft, decreasing costs for RCPP participants.

Phase 4 Implementation

Improve Processes

3. Evaluate and Improve Processes

Process Flow and Communication Challenges

More community members responded to outreach in this phase than in the previous phase, which necessitated increased communication, tracking, & effort among team members. Communication complications due to the scale and complexity of many of the projects exposed some inefficiencies with the process flow. In June, the first Spanish-speaking homeowner expressed interest in the program.

Adaptation

- UP & WPD staff met weekly to strategize process flows such as final walk-throughs, rebate timelines, invoicing, & the drainage utility discount paperwork, and monthly with the entire Team, including partners from other departments.
- The team developed an internal **Summer Schedule (Figure 5)** to help everyone stay aligned and provide consistent answers to participant scheduling questions.
- RCPP Ambassadors re-tooled site reports to align better with the design process and interface with the designer, utilizing the mapping program SketchUp.
- WPD extended UP's Master Agreement contract for another year due to widespread pandemic issues affecting the city's operations. The extension allows UP more time to complete installations and collect data on what is working to encourage people to change their environmental behaviors by installing cisterns & rain gardens.

- WPD's FY21 Annual report (**Figure 6**) mentions improving internal processes with our RCPP database. https://www.austintexas.gov/sites/default/files/files/Watershed/brochures/AnnualReport_2021_Official_Final_Interactive.pdf







RAIN CATCHER SUMMER SCHEDULE			
JUNE	JULY	AUGUST	SEPTEMBER
Hot Season			Cool Season
 NO PLANTING	Too hot & not allowed with rebates		 FALL SITE VISITS BEGIN
 PARTICIPANT	Finalize Design & Order Materials		 PLANT RAIN GARDENS September 15th
 CONTRACTOR	Finalize Design, Earthworks & Cistern Installations		 RANGER CADETTE INTERNS RETURN Mid-September
www.RainCatcherAustin.org			

Figure 5. Rain Catcher Summer Schedule



Figure 6. WPD's Annual Report highlighting the RCPP data collection program improvements

Phase 4 Implementation

Improve Processes

- September - December 2022, two introductory videos were developed and produced: one in English (Figure 7) and one in Spanish (Figure 8) (links in video section)

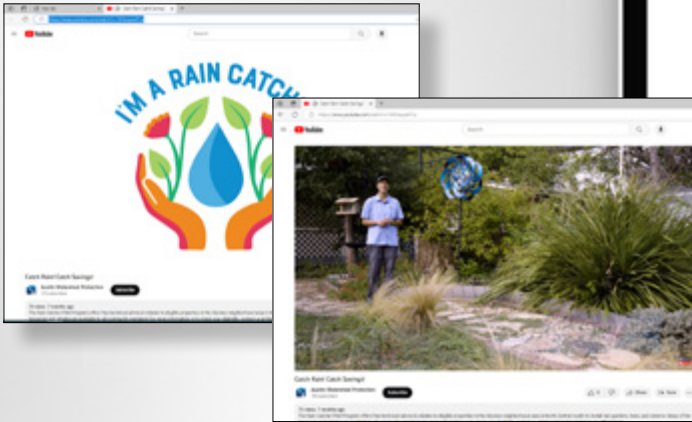


Figure 7.
RCPP introductory video in English



Figure 8.
RCPP introductory video in Spanish

4. Discuss Potential Expansion Beyond the Pilot

Pilot Program Continuation Challenges

The RCPP is currently in Phase 4 out of 5. Phase 5, initially planned to end on January 31, 2024, was extended for one year due to Covid disruptions. The team is exploring how we will proceed after the Pilot.

Adaptation

The team held several workshops to discuss items related to the program after the Pilot, including:

- Determining the feasibility of taking the program to other focused areas of the city or taking it city-wide.
- Identifying internal related challenges and coming up with solutions.
- Communication with RCPP participants and other stakeholders.
- Solutions to address financial barriers.
- Solutions to remove design & installation barriers.
- Defining WPD's role in design & installations.
- Assessing the intern program capacity.
- Requesting a professional facilitator or business process consultant to advise the process.

Phase 4 Implementation

Outreach

Outreach

Presentations and Reports

- On Tuesday, May 3, 2022, the City of Austin Grow Green Team presented the webinar “Grow Green to Keep Our Water Clean” (Figure 9), including a presentation by Paige Olivero, “Why Catch Rain?”(Figure 10)
- On July 16, 2022, Denise Delaney presented “Co-funding Water Customer Incentives,” For the Alliance for Water Efficiency Increasing the Value of Water Efficiency with Stacked Incentive Programs (Figure 11 & 12)



Figure 9. “Grow Green to Keep Our Water Clean” webinar screenshot (Link to YouTube Video: https://youtu.be/OcQ_EyJ8fDA)



Figure 10. “Grow Green to Keep Our Water Clean,” webinar presentation “Why Catch Rain?”

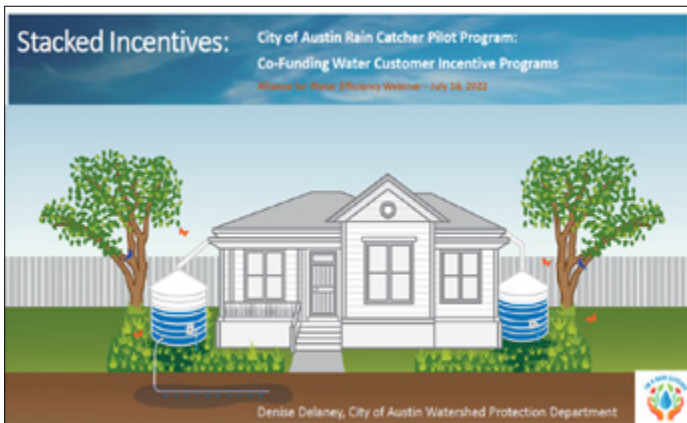


Figure 11. “Co-funding Water Customer Incentives”



Figure 12 (Right). “Alliance for Water Efficiency Webinar”

Phase 4 Implementation

Outreach

Outreach

Presentations and Reports

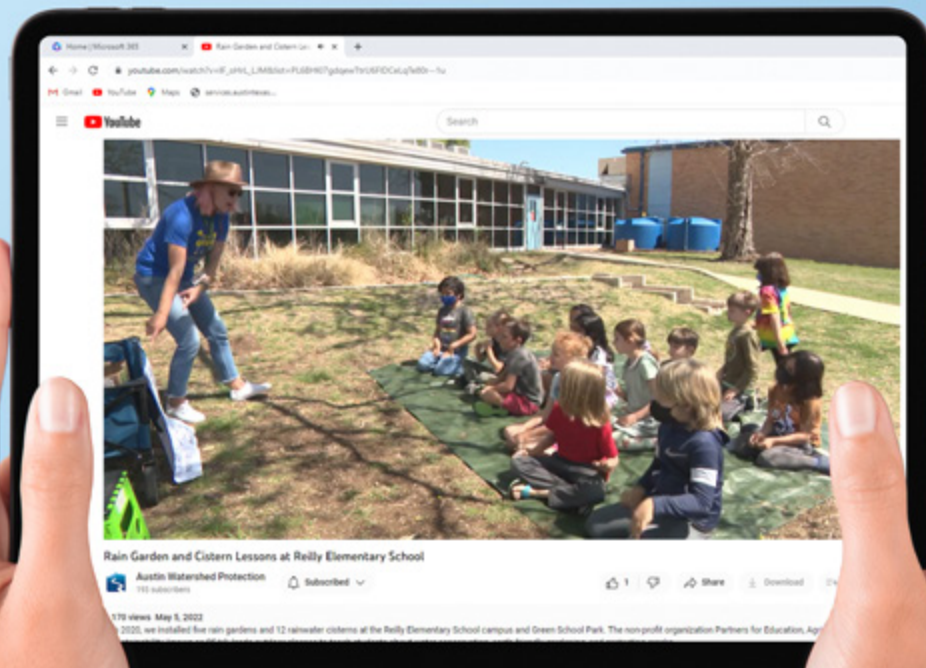
- On September 20, 2022, Chris Charles presented "Rainwater to the Rescue, Rainwater Cistern Use During Winter Storm URI", at the American Catchment Systems Association, ARCSA, Conference
- On November 17, 2022, Chris Charles presented "Stacked Incentives: Co-Funding Outdoor Water Conservation Programs" at the 16th Annual North Texas Regional Water Conservation Symposium | Save Tarrant Water <https://savetarrantwater.com/2022-ntx-water-conservation-symposium/>

Videos

- March 19, 2022 "Skyview Neighborhood Rain Garden Planting" <https://www.youtube.com/watch?v=LRIP3ITM0Bs>
- May 2022 ATXN video "Rain Garden and Cistern Lessons at Reilly Elementary School" (Figure 13) https://www.youtube.com/watch?v=IF_oHrL_LJM&list=PL6BHKI7gdqexk8a-s6Yy2XCSxlm8ICDRF&index=5
- December 2022, RCPP English Introductory video, "I'm a Rain Catcher" <https://www.youtube.com/watch?v=YATmeynaPCw>
- December 2022, RCPP Spanish Introductory video, "Soy Una Rain Catcher" <https://youtu.be/KcV4mf405Bc>

Figure 13

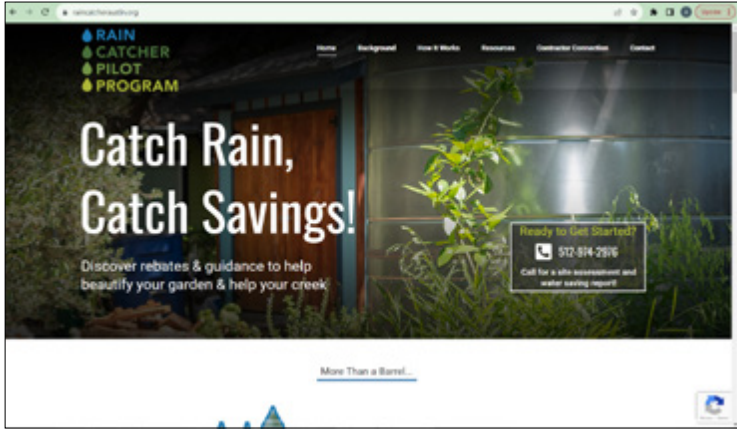
"Rain Garden and Cistern Lessons at Reilly Elementary School" video



Phase 4 Implementation

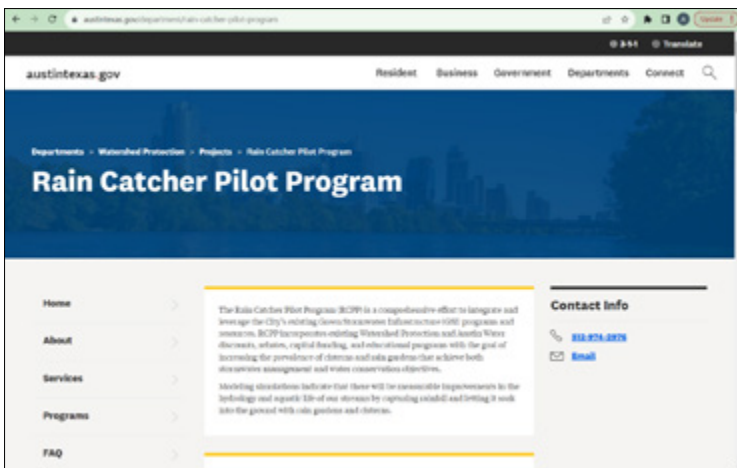
Outreach

Websites



Urban Patchwork:
<https://raincatcheraustin.org/>

Figure 14. Screenshot Urban Patchwork’s Catch Rain Catch Savings



The City of Austin, WPD Rain Catcher Pilot Program:
<https://www.austintexas.gov/department/rain-catcher-pilot-program>

Figure 15. Screenshot from WPD’s Rain Catcher Pilot Program homepage

Social Media



www.facebook.com/AustinWatershed

Figure 16 & 17. March 29, 2022, NPP Skyview Rain Garden Planting Day Facebook Posting

Phase 4 Implementation

Outreach

Mailouts

• **April 14, 2022:** WPD mailed 1,929 invitation letters to Phase 1- 4 addresses, including 1,476 properties eligible to participate in the pilot program, plus 454 addresses for owners of rental units within the pilot area.

The eye-catching invitation letter envelope (Figure 18) included an insert flyer (Figure 19) and features and a packet of rain garden seeds (Figure 20).

September 20, 2022: WPD mailed 1,929 reminder postcards to the same addresses for the invitation package. All outreach materials are in English & Spanish (Figure 21).



Figure 18. Sample invitation letter and flyer, English side

Figure 19. Sample envelope

Figure 20. Phase 4 postcard

Figure 21. Seed packet, front and back

Phase 4 Participation

Participation Status

Pilot Participation Status: Phases 1-4

Presentations and Reports

The RCPP has been present in the area since 2018 when initial interest surveys were conducted by University of Texas, at Austin students. The ongoing and increased presence over the years has begun to take root. Community members have shared that the RCPP is becoming more visible in their neighborhood – neighbors are talking about it, yard signs & projects are getting attention, and several people expressed they were proud to know that this is a special project that was only being piloted in their neighborhood. The completion of the Skyview Neighborhood Rain Garden has also made a positive impact on the neighborhood attitudes. These observations are reflected in that the participation rate increased 100% from Phase 3 to Phase 4 (Figure 22).

11 Completed

Residents who completed the entire process

53 Action

Signed agreement, site assessment and beyond

155 Interest

Residents who contacted RCPP

1473 Awareness

of properties represented that received mailouts

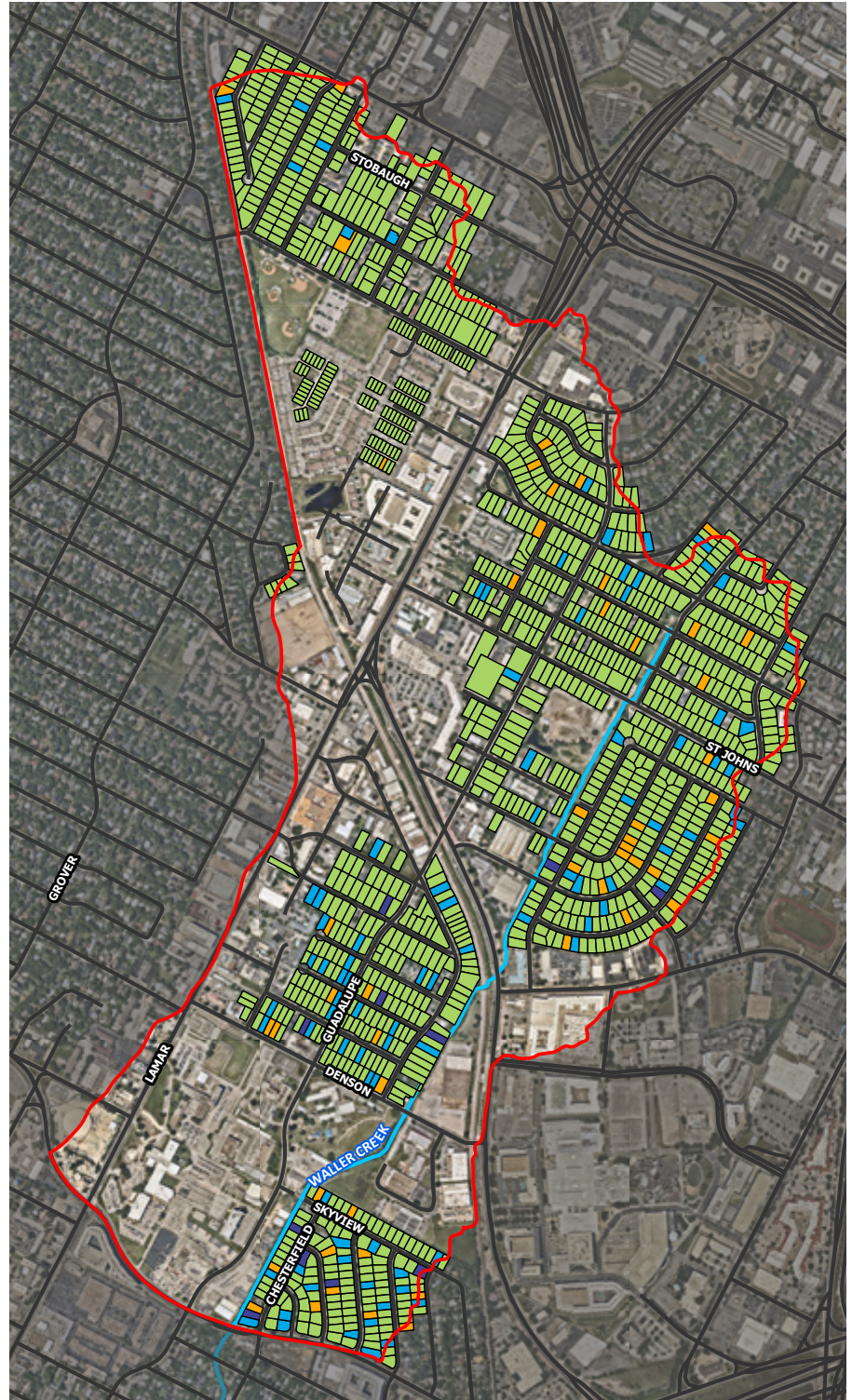


Figure 22. Map showing participation distribution through Phase 4

— Upper Waller Watershed boundary

Phase 4 Collaborations

Collaborations

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



Figure 23. Rain Catcher Pilot Program Public Demonstration Projects Map

Phase 4 Collaborations

Collaborations

REILLY ELEMENTARY SCHOOL GSI

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, reaching 114 students.

The site was also utilized for education by a local non-profit for a waterwise, creek-friendly workshop (Figure 24). New interpretive signage is being developed (Figure 25). Future outreach plans include providing tours to community groups to learn about GSI.

The project won a 2022 Texas Water Development Board (TWDB) Rain Catcher Award (Figure 26). The TWDB established the competition and recognition program to promote rainwater harvesting and recognize the contributions of individuals and entities pursuing it as a water conservation strategy.



Figure 24. On October 22, 2022, the Shoal Creek Conservancy utilized the Reilly site for a “Waterwise Landscape Workshop for Creekside Neighbors.”

Figure 25. In December 2022, staff finalized the language for the interpretive trail sign at Reilly Elementary, to be installed in 2023.



Figure 26. In November 2022, team members accepted the Texas Water Development Board (TWDB) Rain Catcher Award.

Phase 3 Collaborations

Collaborations

Collaborations

REILLY ELEMENTARY SCHOOL GSI DEMONSTRATION PROJECT

The grounds include multiple rain gardens and cisterns that need maintenance updates or improvements, including those caused by freezing temperatures during the February winter ice storm. The storm did not damage the first flush systems but damaged pipes (Figure 27) between the irrigation and the cistern tanks on four cisterns. Occasionally other system components, like the gutter screens, need replacing or upgrading (Figure 28).



Figure 27. Cistern pipes were damaged by freezing temperatures



Figure 28. Staff made modifications to the gutter screens.

Austin Water (AW), Water Conservation Program

AW, staff support RCPP by managing and funding the rebate programs that help reduce participation costs; providing updates on changes to irrigation restrictions, water conservation rebates, and the development of a new residential irrigation & landscaping ordinance (Figure 29); representing the RCPP team at national conferences like the 2022 American Rainwater Catchment Systems Association on topics like stacked incentives and rainwater harvesting; and sharing data for multifamily water use research, rebate participation, & the City Wide Behavioral Study.

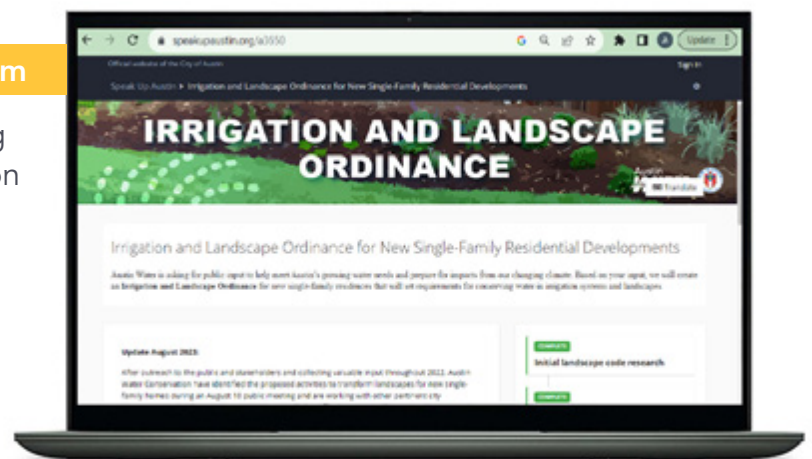


Figure 29. Speak Up Austin webpage about the new residential landscape ordinance

Phase 4 Collaborations

Collaborations

Collaborations

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 of their approaches is funding other city departments for tree projects. For the RCPP, this funding helps cover costs for establishing trees irrigated by rainwater (**Figure 30**). As of 10/21/22, 22 trees have been planted or were in a final design moving forward with installation.

Parks & Recreation Department (PARC) Austin Civilian Conservation Corps

The program's administration has switched from PARC's Ranger Cadet Program to the Austin Civilian Conservation Corps, ACCC. In the summer of 2022, ACCC participants worked with Paige Oliverio from Urban Patchwork on two installations to help enhance their potential workforce training skills. On the first property, they installed cisterns, which included digging trenches for pipes (**Figure 31**) and assisting with measuring, cutting, and installing PVC pipes used as downspouts. They transported gravel, leveled the ground for the cistern bases, set up the cisterns, and installed leaf catchers.



Figure 30. A newly planted tree utilizing water from a cistern

My favorite project was working at Jerry's house because we got to work on building and constructing cisterns. I feel like my team learned a lot and are hard working.

- Victor Monzon



Figure 31. ACCC participants get hands-on experience installing cisterns



Phase 4 Collaborations


Collaborations

Collaborations

Parks & Recreation Department (PARD) / Austin Civilian Conservation Corps

On the second property, they installed a rain garden by digging up 1 foot of soil from a 600 sq. ft. area (**Figure 31**), using it to create berms, and then applying mulch to the exposed area.

Figure 31. ACCC participants get hands-on experience installing a rain garden



Hard work truly pays off. I was able to see the progress of the hard work that the team put in. Watching the barren land transform into a full rain garden is truly inspiring. It has inspired me to keep working hard and make a change in our community.

- Aranza Oviedo Sandoval



Phase 4 Collaborations

Collaborations

Collaborations

Austin Transportation Department,

Northcrest GSI

WPD is partnering with the Austin Transportation Department to work on a public demonstration project on Northcrest Blvd. In March 2022, project staff engaged the community through meetings & questionnaires to determine what features, besides a rain garden, are desired at the site. The rain garden design is about 60% complete, and the target construction date for the project is 2025.

PARD Highland Park GSI

Highland Park Project: www.austintexas.gov/HighlandParkProject

In March 2022 – WPD staff gave a virtual presentation for the Highland Park Neighborhood Association to publicize the online questionnaire about the project they developed. July through August 2022, the team redesigned the in-channel rain garden to capture more rainwater from the east and west sides of the creek (**Figure 32**). The project will participate in the City of Austin Arts in Public Places (AIPP) program that will commission a permanent art installation within the park. Construction began in December of 2022, and the target for completion is winter 2024 .



Figure 32. Phase 2 Scope

Phase 4 Collaborations

Collaborations

Austin Transportation Department,

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

The project funded by WPD involved the installation of a regional biofiltration pond that treats approximately 65 acres at 72% impervious cover. The water quality volume is about 65,000 cubic feet. WPD is awaiting the completion of a construction project at a nearby park before wrapping up the cleanup and revegetation of the pond. WPD anticipates completing this task in 2023, weather permitting.

Public Works Neighborhood Partnering Program (NPP),

Skyview Neighborhood Rain Garden

Community members can initiate projects to enhance common areas through the Public Works NPP. This project began in 2018 and is very close to completion. During this phase, neighbors held a planting day in the spring ([Figure 33](#)) and another workday in the fall.



Figure 33. On March 19, 2022, neighbors and city staff installed plants at the Skyview Neighborhood Rain Garden

Phase 4 Collaborations

Collaborations

Austin Transportation Department

In late April, the installation of a crushed granite area with edging, a bench, and planted trees (**Figure 34**) by contractors signified the completion of the installation. Urban Patchwork removed the Under Construction banner in July (**Figure 35**). The team designed a new permanent interpretive sign. NPP plans to install it in the spring of 2023 .



Figure 34. In late April, the last round of contractors completed the installation



Figure 35. In July, the Under Construction sign was removed



Figure 36. On November 5, 2022, Neighbors and city staff participated in Its My Park Day doing clean up and adding more plants

Phase 4 Research

Case Studies

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. It will identify opportunities, barriers, motivations, and knowledge from different demographic groups in Austin. During Phase 4, Asakura Robinson (the market study consultant) mailed the survey to 10,000 residents. The results of this survey will inform a statistical model to determine where to focus future pro-environmental outreach. The survey achieved the target goal for completed surveys; however, the project team noticed a lack of engagement from typically underrepresented community members. Expanded efforts in conjunction with a significant strategic planning effort, Rain to River, at WPD are underway to incorporate feedback from a more diverse group. Analysis of the results will run through October of 2023.

The Waller Cistern Study

The WPD Applied Watershed Research and Data Analysis/Decision Support Sections designed this study to monitor cistern function and performance. Staff modified the rainwater collection systems to improve their rate of stormwater collection. WPD began the final year of data collection in June after the changes had been tested and fine-tuned. During Phase 5, the plan is to collect data for one year without system changes.

Figure 37. Staff made adjustments to the rainwater collection system



Phase 3 Research

Case Studies

The Waller Sewershed Study

The Sewershed Study includes one hundred homes at the headwaters of Waller Creek near Northcrest, where it leaves St. Johns Ave. The study looks at the impact of installing green stormwater infrastructure in a relatively small area to see if it will have an impact on the hydrology of that tributary.

In early spring 2022, staff replaced the measuring equipment hardware. Since then, data collection has been ongoing. By mid-November, good baseline data had been collected using a secondary bubbler; the first one had issues, so data was not collected as planned. In Phase 5, ideally, 50 out of the 100+ homes will have rain gardens and cisterns installed.

Figure 38. Map of 100 homes in the Sewershed Study.



Next Steps: Implementing Phase 5

Raincatcher Pilot Program Phases

Phase 1

October 2018 through September 2019

- 25 new properties
- From October 2019 - 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 2021 thru June 2021 focus on new outreach & contractor recruitment, training, and program adjustments
- June 2021 thru January 2022 engage new properties & manage existing installations

Phase 4

February 2022 through January 2023

- 448 new properties
- Include Phase 1, 2, & 3 in outreach
- February 2022 thru June 2022 focus on new outreach & contractor recruitment, training, and program adjustments
- June 2022 thru January 2023 engage new properties & manage existing installations
- Begin Sewershed study at start of Phase 4

Phase 5

February 2023 through January 2025

- Circle back to all properties
- February 2023 thru June 2024 focus on new outreach and program adjustments
- June 2023 thru January 2025 complete existing installations, capture and publish program accomplishments, and wrap up reports to prepare for post pilot next steps
- All properties who express interest starting in June 2024 will be vetted on a case-by-case basis for participation depending on the length of the project. All outreach will halt by June 2024 and all installations must be complete by the end of January 2025