

🔹 RAIN
🔹 CATCHER
🔹 PILOT
🔹 PROGRAM

FEBRUARY 2020 – JANUARY 2021

Phase 2 | Snapshot Report



Table of Contents

Introduction	01
Phase 2 Details	02
Phase 2 Implementation	03
Addressing Equity	03
COVID-19 Complications.....	03
Outreach	04
Websites	04
Social Media	05
Phase 2 Mailouts.....	06
Workforce Development Training	07
Promotional Giveaways	08
Public Property Demonstration Projects.....	09
Residential Installations	10
Phase 2 Participation Status	11
Phase 2 Research	12
Monitoring Studies.....	12
Case Studies.....	13
Next Steps: Phase 3	14



Introduction

The City of Austin Watershed Protection Department is implementing the Rain Catcher Pilot Program (RCPP), a study in the headwaters of Waller Creek. This report covers residential aspects of Phase 2 of 5 from February 2020 through January 2021. The study is in North Central Austin in an urban area with a high percentage of impervious cover. The RCPP's main goal is increasing the prevalence of cisterns and rain gardens to achieve stormwater management and water conservation objectives.

Partners

RCPP is a collaboration with multiple partners to address financial barriers, help with outreach and messaging, and streamline tasks associated with green stormwater infrastructure (GSI) installation. It is multi-disciplinary with interdepartmental support and partners from non-profits, educational organizations, and local businesses.

City of Austin (COA)

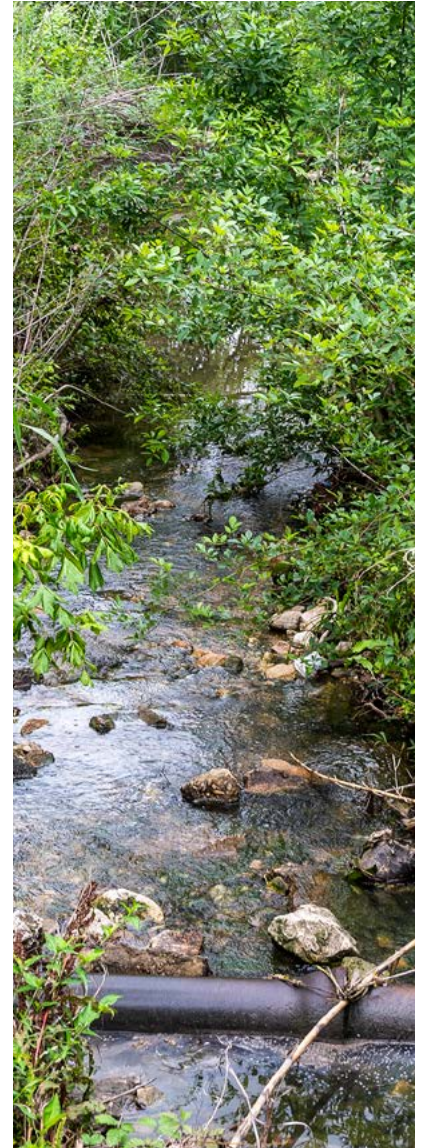
- 💧 Watershed Protection Department (WPD)
- 💧 Austin Water (AW)
- 💧 Development Services Department (DSD) Urban Forestry Fund
- 💧 Public Works Neighborhood Partnering Program
- 💧 Parks and Recreation Department (PARC)
 1. Park Ranger Cadette Program
 2. Joint Use Agreement with Reilly Elementary Green School Park

Non-Profits

- 💧 Urban Patchwork (UP)
- 💧 The Nature Conservancy (TNC)
- 💧 Partners for Education, Agriculture and Sustainability (PEAS)
- 💧 Pacific Institute (PI)

Others

- 💧 Austin Independent School District (AISD)
- 💧 RCPP Qualified Contractors



Phase 2 Details

The entire pilot program area is in the upper portion of Waller Creek Watershed in North Central Austin (Figure 1a). The area covers 1.08 sq. mile with 46% impervious cover. Historic flow data (USGS Gage # 08156910) at the bottom of the pilot area is available to track any changes resulting from the program’s efforts. The location of the 448 Phase 2 properties are shown in (Figure 1b).

- 💧 **Timeframe:** February 2020 through January 2021
- 💧 **Number of residential properties:** 448 parcels

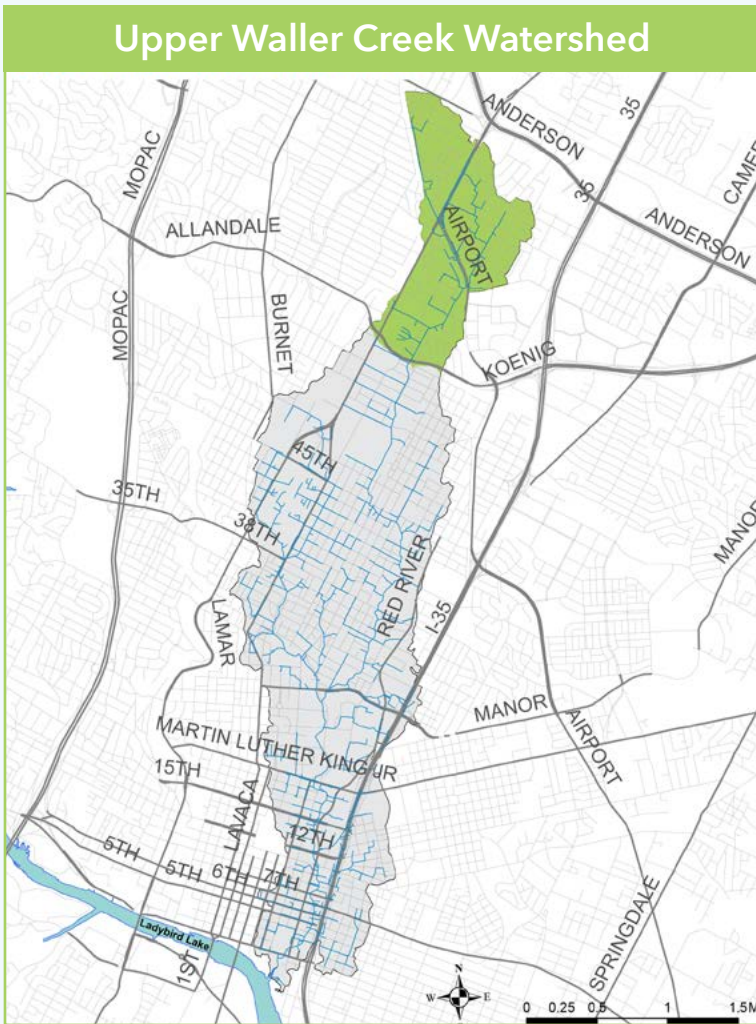


Figure 1a.
Location of the entire RCP catchment area

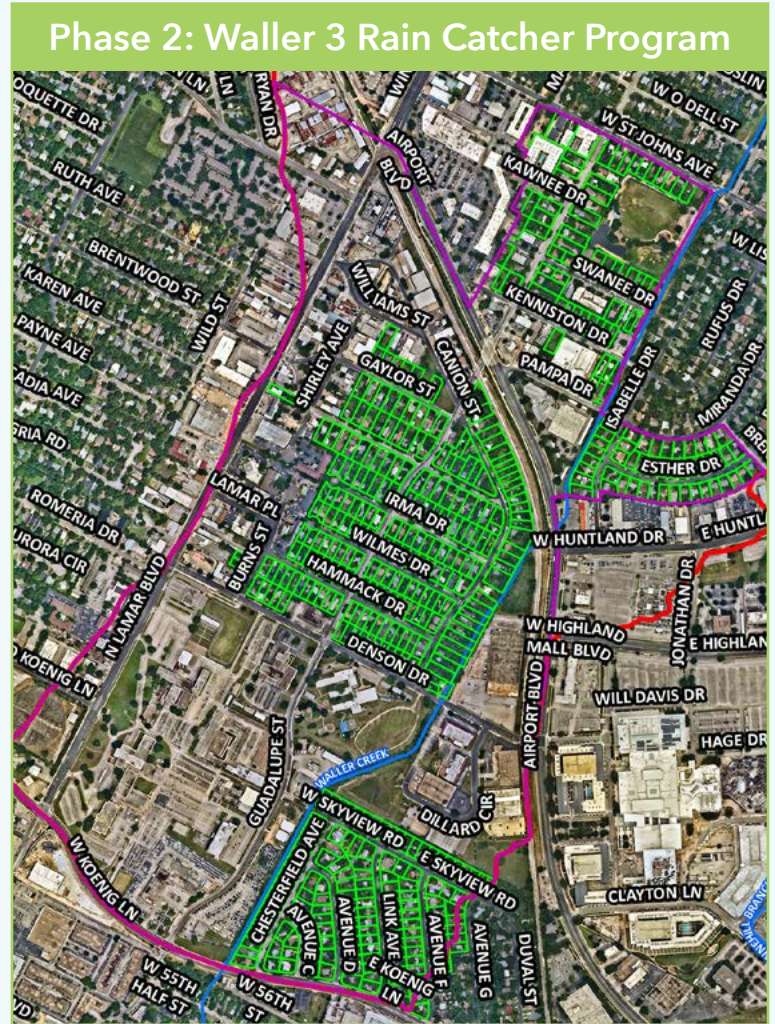


Figure 1b.
Location of Phase 2 properties

- Phase 2 Waller Area
- Waller 3 Watershed
- Phase 2 Parcels: 448 Properties

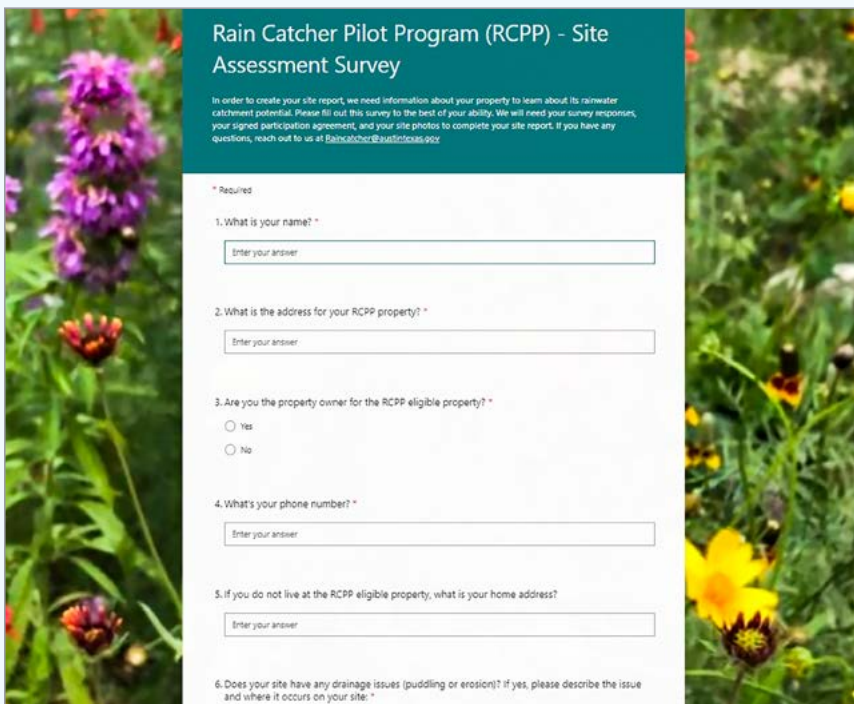
Phase 2 Implementation

Addressing Equity

If this pilot is successful, the RCPP will be offered city-wide. The RCPP team has taken time to strategize about how to make the program more equitable. Through feedback gathered from participants via Urban Patchwork, The Nature Conservancy and a survey that went out to all eligible RCPP properties, the team was able to identify priorities and actions to advance racial equity in our work. The top priority is to seek additional funding to make this program more accessible for participants. Other priorities focus on making outreach materials more accessible for non-English speakers. A city-wide market and behavioral study that began in Spring of 2021 will provide additional data & recommendations on how to equally engage all Austin residents with this program.

COVID-19 Complications

Phase 2 was poised to begin when the COVID-19 pandemic hit Austin in March of 2020. The pandemic put the Phase 2 roll out on hold, and the team worked to reconfigure outreach to align with the crisis. To adhere to COVID-19 restrictions, all in-person site visits and inspections were suspended. In their place, City staff developed a virtual process to onboard participants and create site reports. This process included an online survey to collect site data (**Figure 2**), the utilization of aerial photography websites, photographs submitted by homeowners (**Figure 3**), and email and phone communication. The creation & implementation of new processes and a city-wide halt on external communications not related to the crisis delayed project timelines. Most meetings were conducted on Teams. Outreach letters inviting new participants into the program were delayed from March to June and were amended to include resiliency and Covid-19 updates. Despite these challenges, initial response from homeowners was positive.



Rain Catcher Pilot Program (RCPP) - Site Assessment Survey

In order to create your site report, we need information about your property to learn about its rainwater catchment potential. Please fill out this survey to the best of your ability. We will need your survey responses, your signed participation agreement, and your site photos to complete your site report. If you have any questions, reach out to us at RainCatcher@austintexas.gov.

* Required

1. What is your name? *
2. What is the address for your RCPP property? *
3. Are you the property owner for the RCPP eligible property? *
 Yes
 No
4. What's your phone number? *
5. If you do not live at the RCPP eligible property, what is your home address?
6. Does your site have any drainage issues (puddling or erosion)? If yes, please describe the issue and where it occurs on your site: *

Figure 2. RCPP Site Assessment Survey



Figure 3. Site Assessment Photo Instructions

Phase 2 Implementation

Outreach

A wide variety of outreach methods were used throughout Phase 2, these included website development, social media, invitation-to-participate letters and postcards, workforce training, giveaways with a new graphic design, and several demonstration sites throughout the pilot area.

Websites

- 💧 www.raincatcheraustin.org
- 💧 www.austintexas.gov/raincatcherpilot

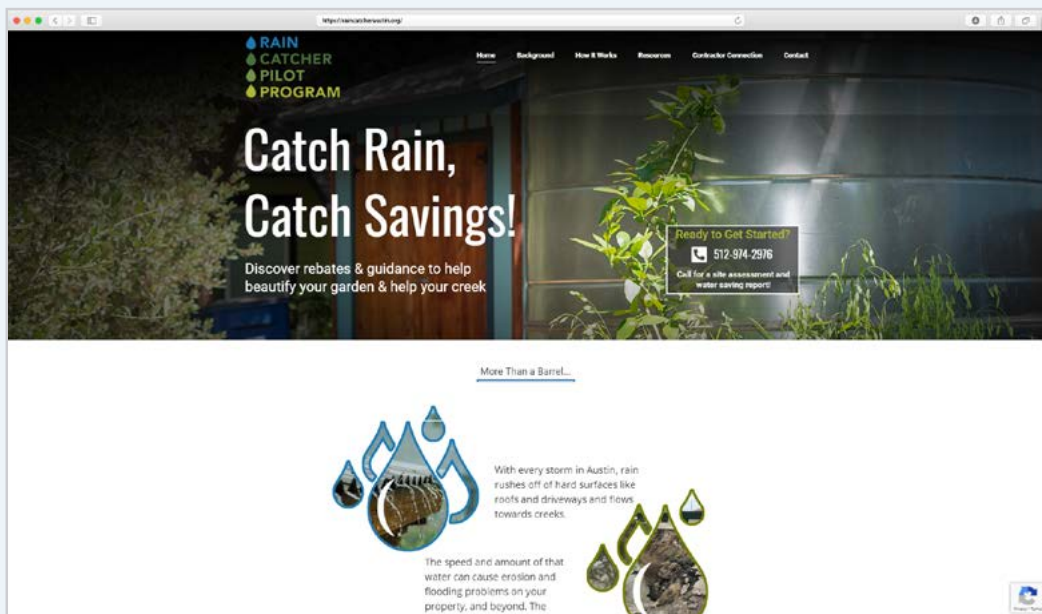


Figure 4a. Homepage of the RCPP website – www.raincatcheraustin.org

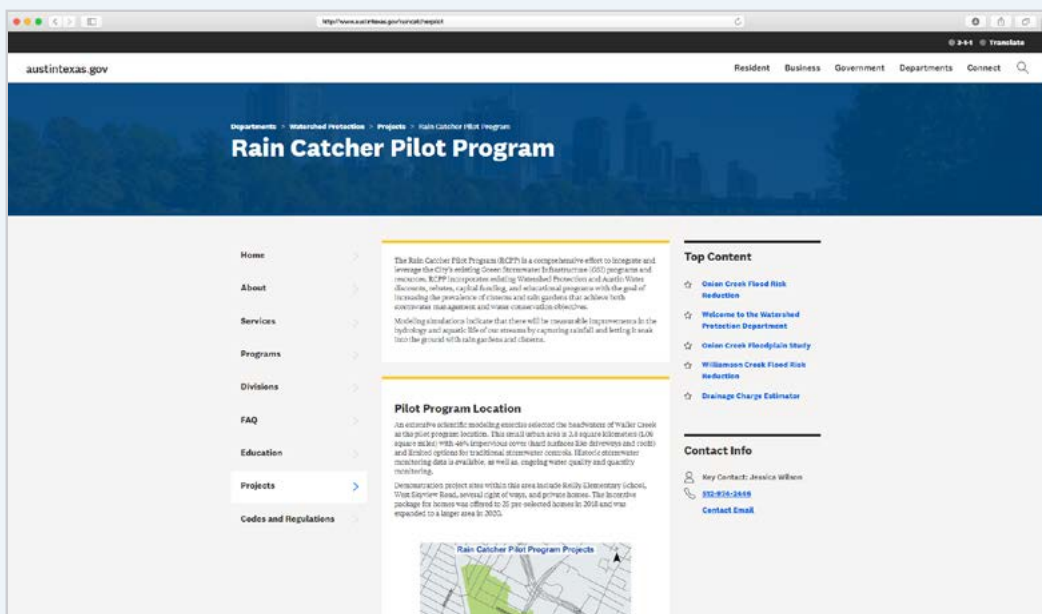


Figure 4b. City of Austin RCPP webpage – www.austintexas.gov/raincatcherpilot

Phase 2 Implementation

Outreach

Social Media

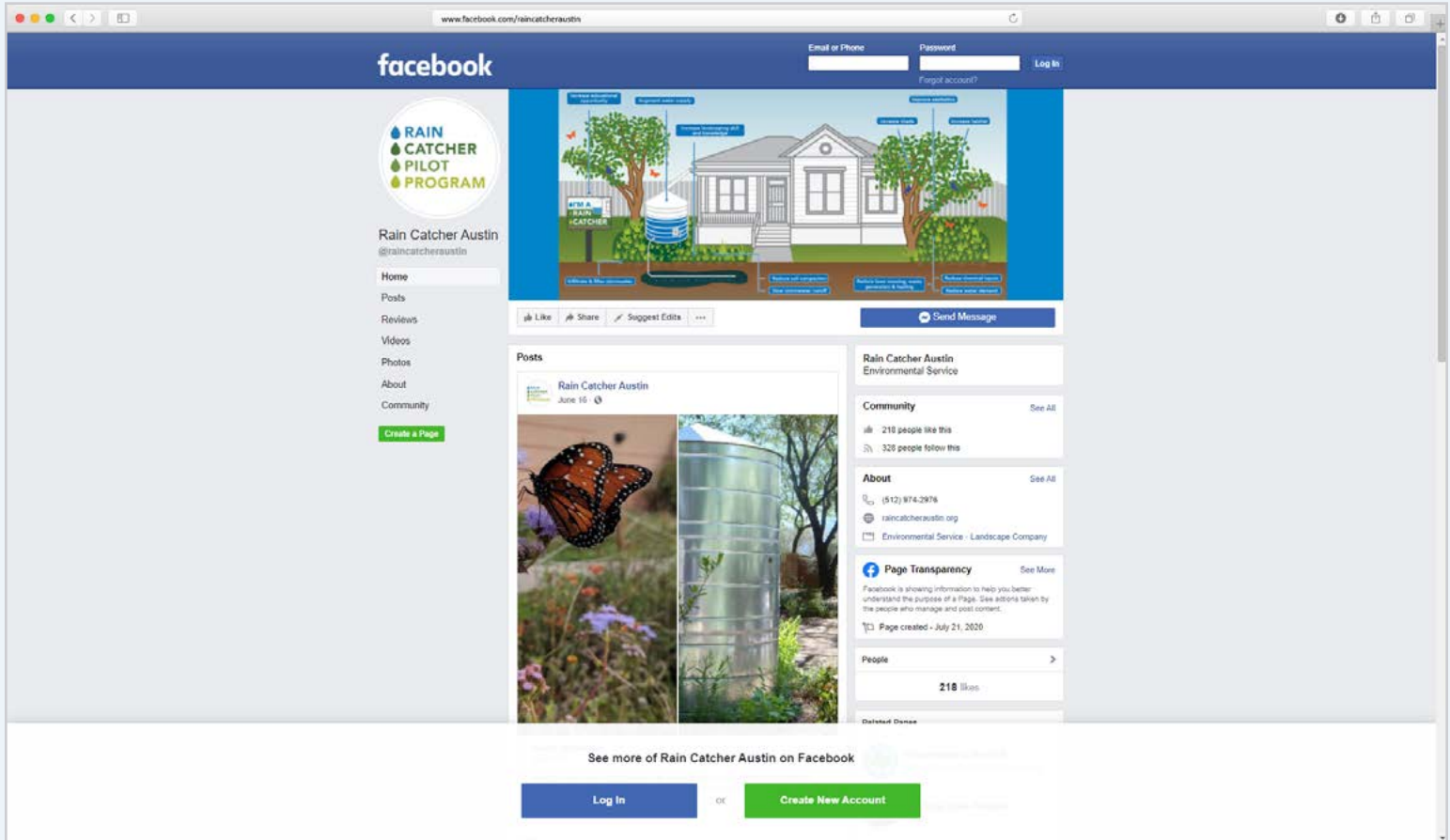


Figure 5a. Facebook homepage where we connect with our community (facebook.com/raincatcheraustin)

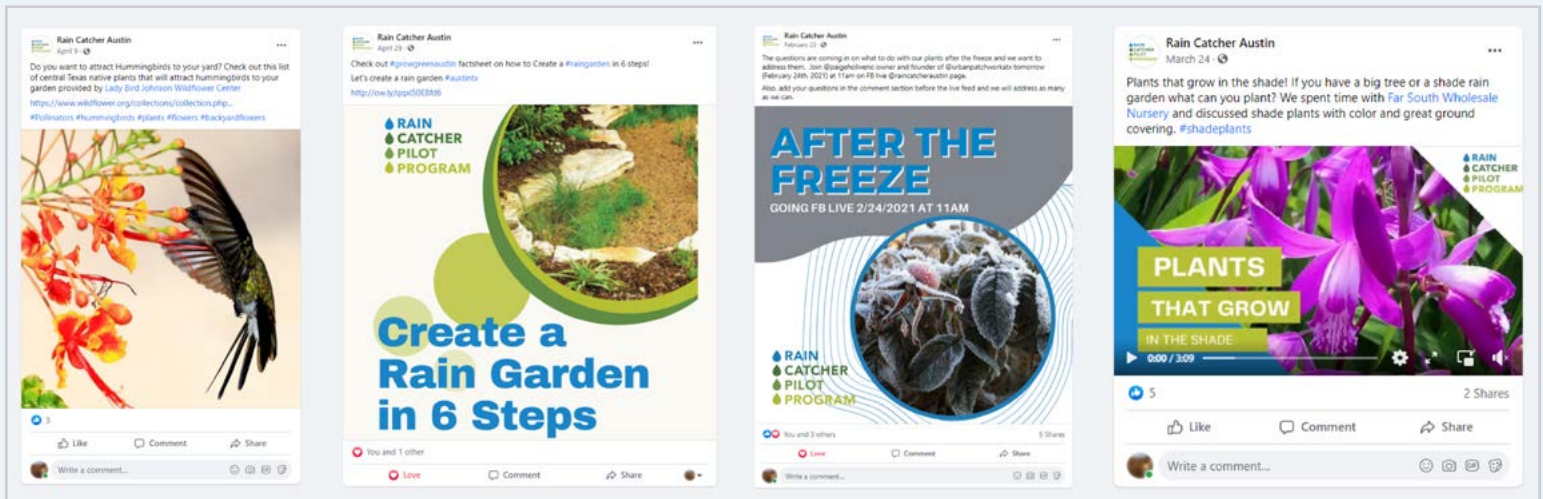


Figure 5b. Various examples of Facebook posts and information shared.

Phase 2 Implementation

Outreach

Phase 2 Mailouts

To better understand the behaviors of the RCPP participants, we partnered with The Nature Conservancy to test two different messages in the invitation letter. Half of the 448 letters emphasized Individual action and the other half encouraged Community collaboration (**Figure 6a**). Two graphics were developed to emphasize the type of letter.

Mailout Dates

- 💧 June 30, 2020 – Invitation Letters (**Figure 6b**)
- 💧 September 11, 2020 - Reminder Postcards (**Figure 6c & 6d**)



Figure 6a. Map of Phase 2 Individual Letter/Group 1 (blue) and Community Letter/Group 2 (green)

Figure 6b. Phase 2 Individual Letter/Group 1 (left) and Community Letter/Group 2 (right)



Figure 6c. Phase 2 Postcard with individual emphasis

Figure 6d. Phase 2 Postcard with community emphasis

Phase 2 Implementation

Outreach

Workforce Development Training

The program involves several outreach aspects directly related to workforce training. This type of education is important to the program's success, because as we increase demand for rain gardens and cisterns, etc. there need to be people qualified and available to install and maintain them.

PARD Park Ranger Cadets

In early 2020, PARD and WPD staff began discussing how to create opportunities within the RCPP for Ranger Cadet graduates after they complete their GSI-focused high school internship program. The goal is to offer one apprentice GSI position for a cadet pathway to employment starting in the fall of 2021. The apprentice would ideally split time with RCPP contractors, our non-profit partner, and members of the City of Austin team for a well-rounded, holistic experience. All partners will contribute to the apprentice development plan.

RCPP Contractor Training

Urban Patchwork held the first RCPP contractor training in October 2020. Six companies were represented. The training was a combination of ZOOM presentations, reviewing the Contractor Handbook (**Figure 7b**) and a socially distanced masked walk-through of an existing project.

National Green Infrastructure Certification Program (NGICP)

The first Austin training began in December 2020 and 21 people attended. This certification focuses on installation, maintenance, and inspection aspects of green stormwater infrastructure as professional development for industry professionals, however, the same material that is used for this certification has also been used in other cities for workforce development training.



Figure 7a. A Park Ranger Cadet teaches other interns about a cistern at the Park Ranger Caretakers Cottage in Zilker Park.

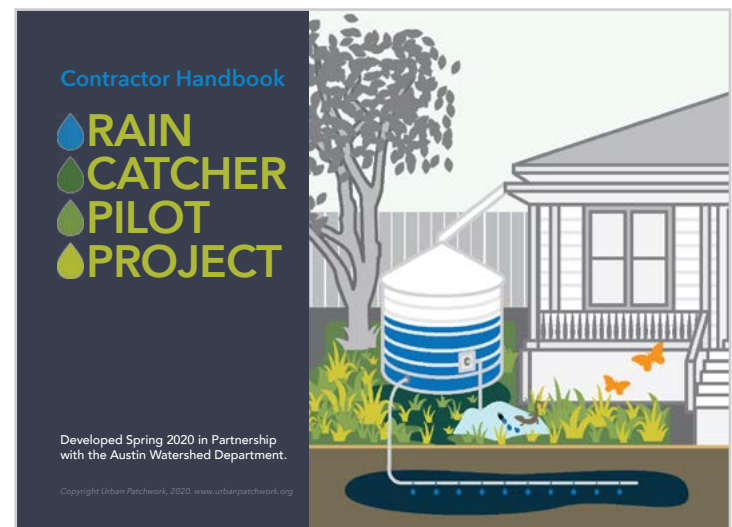


Figure 7b. Cover of RCPP Contractor Handbook

Phase 2 Implementation

Outreach

Promotional Giveaways

WPD's graphic design team created a new RCPP graphic that is used on 3 different promotional items

- The team designed a seed packet as a giveaway for in-person events and to place in Phase 3 mailout envelopes to encourage people to open outreach letters
- Water bottles and hats were created as a thank you gift to participating residents, as well as RCPP contractors who are devoting their own time to help us work out the pilot program



Figure 8. RCPP Promotional Materials – Seed packets, water bottles and embroidered hats.

Phase 2 Implementation

Outreach

Public Property Demonstration Projects

Skyview Neighborhood Partnering Program

Initiated by neighbors via the Neighborhood Partnering Program (NPP), this project de-paved a dead-end street to create a green space. The City completed their construction portion of the project in 2019. During the RCPP Phase 2 timeline, NPP facilitated conversations between the RCPP team and neighborhood representatives to discuss an overall design layout (**Figure 9b**) for the space. By February 2020, the plant selection process was underway. The neighborhood will be responsible for planting, maintenance, and watering of plantings.

Reilly Elementary School

Through a partnership between the City of Austin and Austin Independent School District, a total of 5 rain gardens (**Figure 10**) and 12 cisterns were installed on the campus of Reilly Elementary School in Phase 1 of the RCPP. These GSI features gather rainwater from 76,000 square feet of impervious cover and can infiltrate approximately 621,000 gallons of rainwater each year. In addition to providing environmental benefits, the rain gardens and cisterns are used by educators for outdoor learning opportunities in a variety of subjects. Partners for Education, Agriculture and Sustainability (PEAS) provides programming to connect students with their campuses' GSI and Waller Creek, and does minor maintenance.



Figure 9a. Map of RCPP Public Property Demonstration Projects

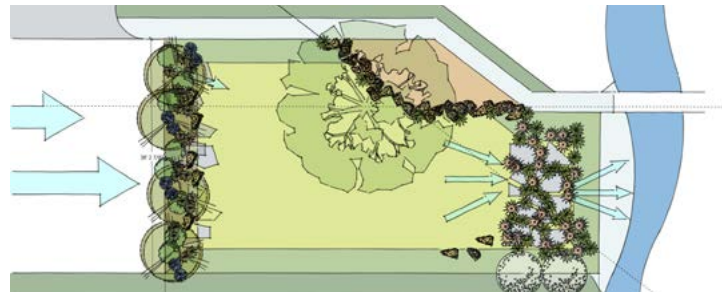


Figure 9b. Draft Skyview rain garden planting design

Project Award

During Phase 2 of the RCPP the Reilly Elementary School project won First Place in the National Association of Flood & Stormwater Management Agencies (NAFSMA) Green Infrastructure Awards national competition.

Learn more about the project and enjoy the virtual ribbon cutting ceremony at:

<https://youtu.be/iKTJ86beyVU>



Figure 10. Cistern at Reilly Elementary

Phase 2 Implementation

Outreach

Residential Installations



Figure 11a. Phase 2 Spiral rain garden



Figure 11b. Phase 1 Thriving installation



Figure 11c. Phase 2 DIY cistern installation



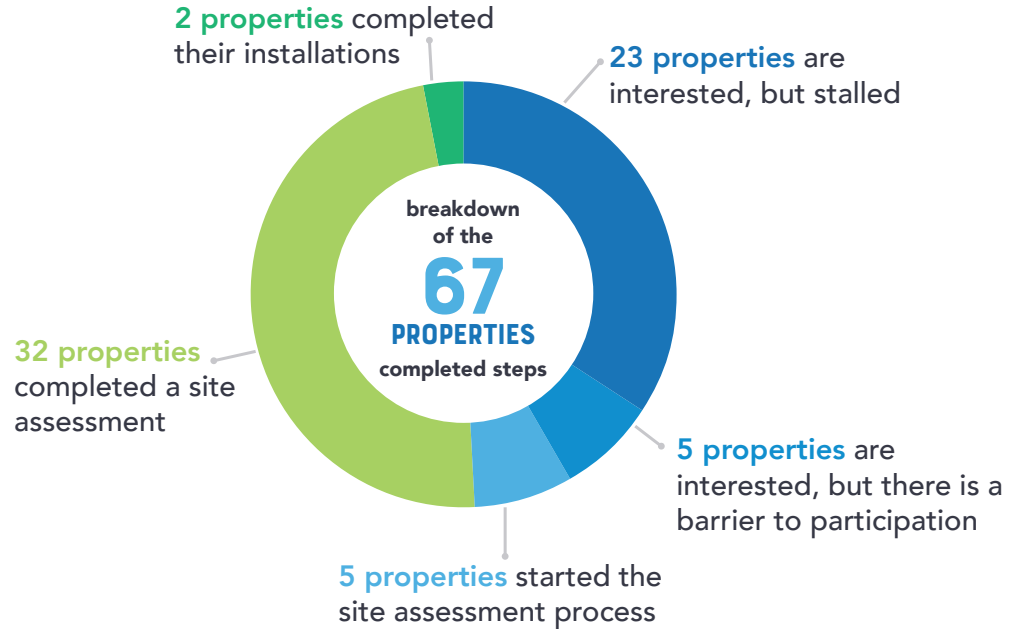
Figure 11d. Phase 2 Cistern installation

Phase 2 Participation Status

Phase 2 was offered to the community on a shorter timeline than originally planned due to the pandemic. Several homeowners moved forward with installation of GSI on their properties and many more learned about Austin's waterways, the importance of stormwater capture, and the benefits of GSI through the pilot program.

RCPP Participation from February 2020 - January 2021

67
PROPERTIES
of the
476
RCPP ELIGIBLE PROPERTIES
participated at some level
=
14%
PARTICIPATION RATE



Collaboration

The Watershed Protection Department, Austin Water and Development Services Department collaborated to layer financial incentives. This collaboration plus providing in-depth outreach to the target area resulted in an increased rate of adoption.

- 💧 The city-wide rate of landscape rebates being approved through January 2021 = 0.095%
- 💧 The RCPP percent of properties that installed gsi between February 2020 and January 2021 rose to 0.42%.



Figure 12. Rain garden at Reilly Elementary

Phase 2 Research

Monitoring Studies

Behavioral Nudge

To better understand the experience, motivation, concerns, and knowledge about the RCPP, the TNC tested behavioral nudges that may influence participation rates. Two different letters were sent to eligible properties, one to half of the group with an emphasis on a community approach and the other half focused on individual households' participation.

Cistern

Monitoring cistern function and performance, first at Reilly Elementary and later in residential cisterns. The rain garden infiltration study team had a kick-off meeting in October 2020. Four rounds of data have been collected and is being analyzed by the storm team. During the study, several modifications to the designs have been made to improve the capture efficiency or underground infiltration of the systems. There will be two more years of data collection before the study ends.

Sewershed

Comparing baseline creek and soil moisture data to post-RCPP implementation data in the headwaters of Waller Creek along Northcrest Boulevard. Several GSI projects have been installed within this section of the Waller Creek Watershed. More than 1.5 years of baseline data will be compared to data collected. The study is in the early stages of collecting data and will continue for several years.



Figure 13a. Individual vs. community graphics for mailouts and site assessment reports



Figure 13b. Cistern being monitored at Reilly Elementary



Figure 13c. WPD staff work on the study area

Phase 2 Research

Case Studies

City-wide Market and Behavioral Study

A Request for Qualifications and Services was issued to develop a city-wide study about adoption of GSI and other pro-environmental behaviors. A contractor was selected to conduct the market and behavioral study in early 2021. This study will identify opportunities, barriers, motivations, and knowledge from different demographic groups in the Austin community. The market study will also focus on best strategies to maximize widespread acceptance of cisterns and rain gardens on residential properties.

Pacific Institute Multiple Benefits Case Study

City staff collaborated with the Pacific Institute to use Austin as a case study to test a tool for quantifying the multiple benefits of the RCPP and GSI. The goal of this study is to give municipalities and partners a way to document all the good things GSI provides in a more systematic way. The report, "Scaling Green Stormwater Infrastructure Through Multiple Benefits in Austin, Texas: Distributed Rainwater Capture on Residential Properties in the Waller Creek Watershed" was published in June 2020.

www.pacinst.org/publication/multiple-benefits-in-austin-texas/

The Nature Conservancy Survey

In October 2020, TNC sent a survey they developed to the RCPP Phase 2 addresses. It was administered by the Social and Economic Sciences Research Center Washington State University.

The response rate was 48%!

The survey results will be analyzed and used to inform Phase 3 outreach.

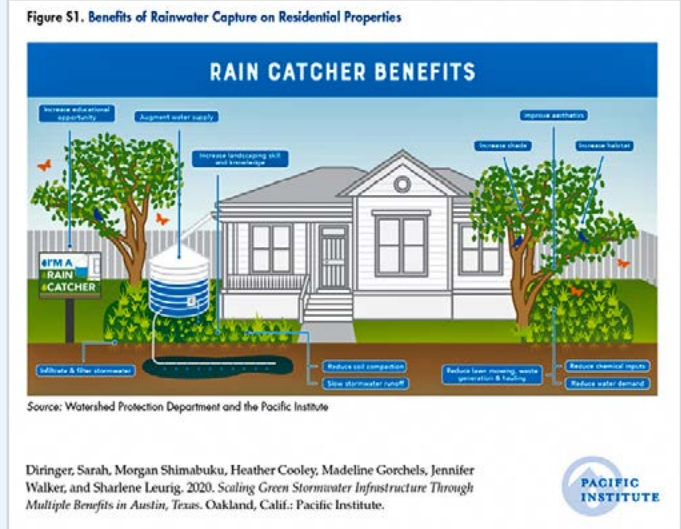


Figure 14a. Cover of the Pacific Institute Scaling Green Stormwater Infrastructure Through Multiple Benefits in Austin, Texas report

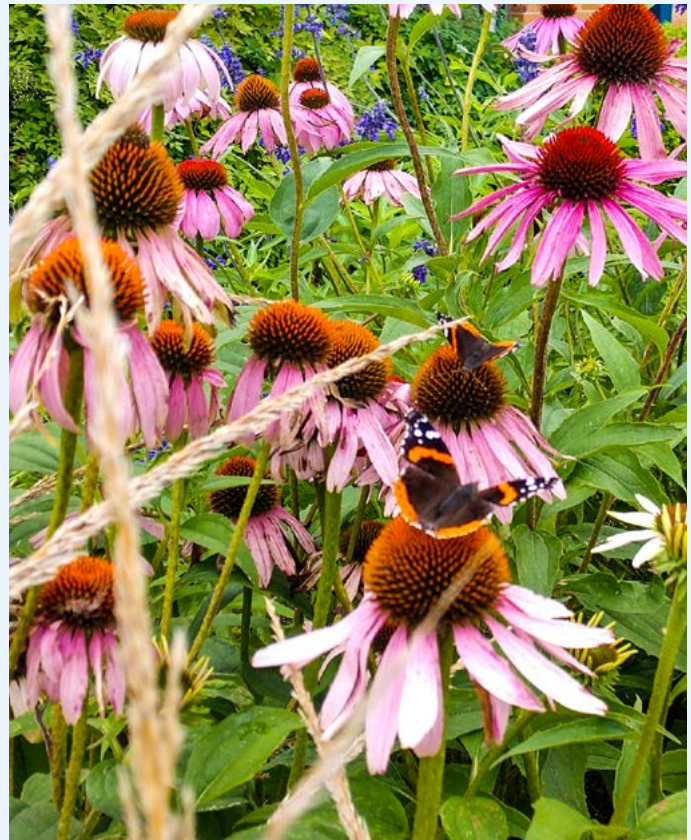


Figure 14b. Purple coneflower in a rain garden

Next Steps: Implementing Phase 3

Timeframe: February 2021 through January 2022

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

- 448 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

- 440 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 Catchment study at start of Phase 4

Phase 5

February 2023 thru January 2024

- Circle back to all properties
- February 2023 thru June 2024 focus on new outreach and program adjustments
- June 2023 thru January 2024 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 will be vetted on a case-by-case basis for participation depending on the length of the project. All outreach will halt by June and all installations must be complete by the beginning of February 2024

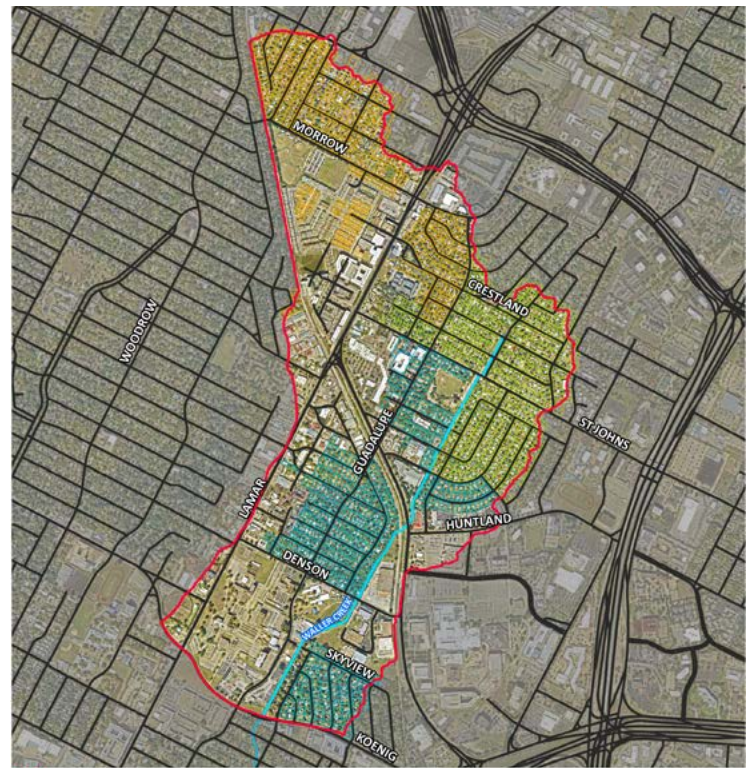


Figure 15. RCCP Program Phases Timeline Map