



FEBRUARY 2021 – JANUARY 2022

# Phase 3 | 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 3 of 5, from February 1, 2021, to January 30, 2022. The City of Austin's Watershed Protection Department administers the program in North Central Austin, an urban area with a high percentage of impervious cover. The RCPP's primary goal is to increase the prevalence of cisterns and rain gardens 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. It involves multi-disciplinary efforts, interdepartmental support, and partners from non-profits, educational organizations, and local businesses.

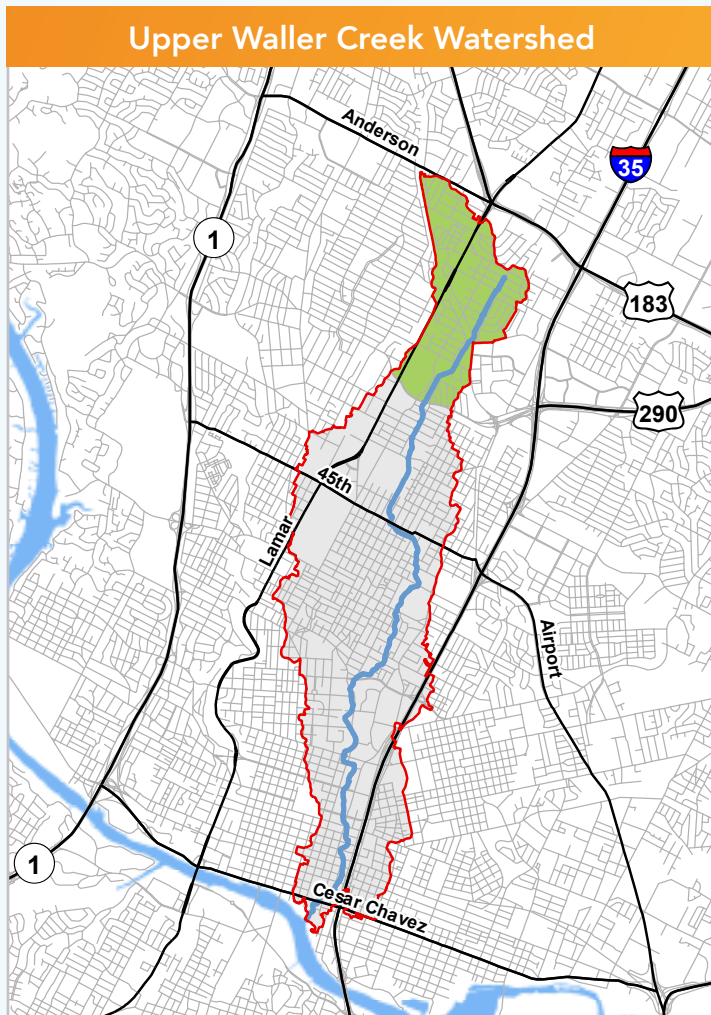




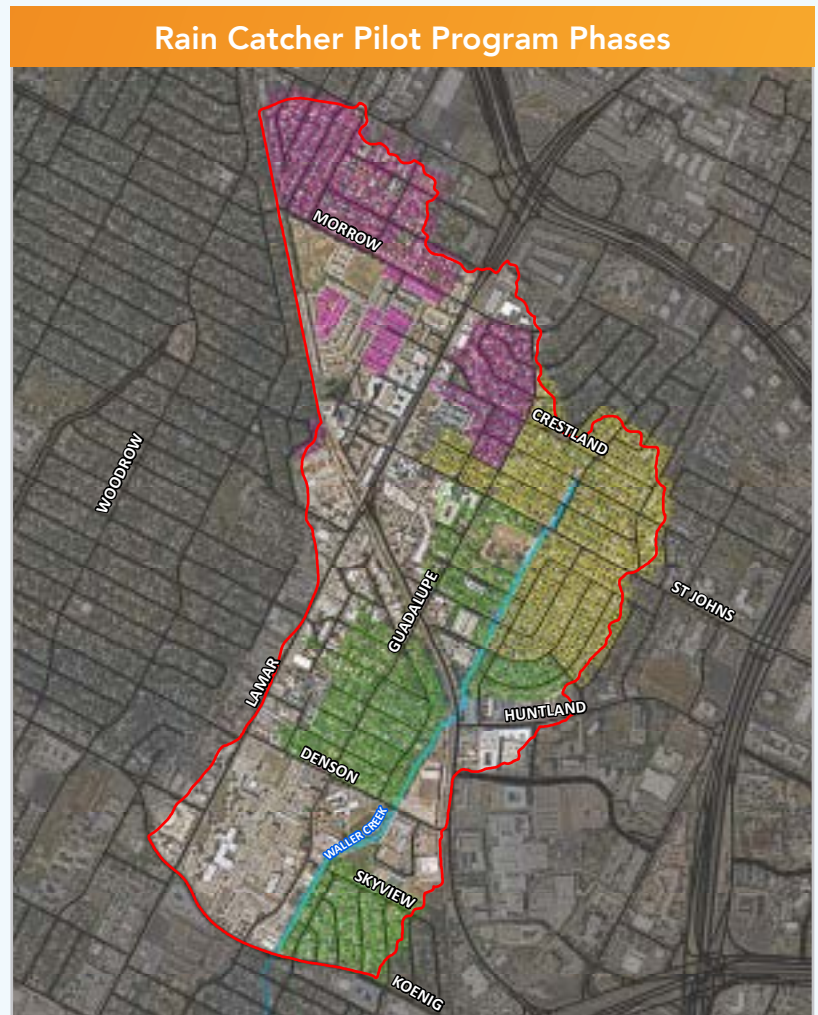
# Phase 3 Details

The site covers **1.08 square miles with 46%** impervious cover.

The pilot program area is in the upper portion of Waller Creek Watershed in North Central Austin (**Figure 1**). The area is 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, will add 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 3 Implementation

## Challenges

The RCPP team focused on program adjustments, developing new outreach, contractor recruitment, and training, and continuing to work with interested community members from Phases 1-2 from February through May. Outreach to new participants began in June with the Phase 3 mailout. After that, program staff began conducting site assessments and design visits, providing participants with basic GSI design & installation information, and connecting more community members with Waller Creek. During Phase 3, the program faced several unexpected time-consuming complexities creating challenges that required the team to adapt.

## Phase 3 Challenges

### COVID-19's Impact on Community Health and Labor Shortages

In 2021, the world experienced its second year of the COVID-19 pandemic. Conditions prevented in-person visits and outreach events, and many people were sick or had to quarantine, which resulted in scheduling challenges. Community members juggled working from home with kids attending school virtually. Mandated Covid restrictions defined landscape contracting as an essential business. Worker retention was an issue, landscaping companies lost clients, and many closed. There was disruption to the supply chain for materials needed for installations. Due to the complexities of the projects, staffing turnover, and other challenges, the original model to utilize RCPP contractors did not work as seamlessly as intended in Phase 3.



**Figure 3.** A RCPP contractor follows Covid restrictions

# Phase 3 Implementation

## Challenges

*"Not only were my barrels able to assist with my house, we were able to share rainwater with our neighbors who also lost water."* -RCPP participant

### Phase 3 Challenges

#### Severe Weather Impact on Supply Chain Issues, Price Increases

In mid-February 2021, Austin experienced Winter Storm Uri (**Figure 4**). This deadly storm brought extended freezing temperatures, utility outages, affected travel and mobility, and caused significant damage to plumbing pipes and plants, causing shortages of skilled plumbers and landscapers willing to work on smaller projects, price increases, and project delays, sometimes for months. Due to the lack of supply and high demand for materials, prices sometimes increased substantially or were unavailable. **For example, cisterns and PVC pipe increased 3X in price, metal doubled in price, and wood quadrupled in price at one point.** The storm also significantly impacted plant suppliers right before spring planting. Nursery plant stock supply did not start to recover until late fall 2021. Additionally, City management redirected staff to focus on emergency response during storm recovery. The RCPP City staff coordinators paused work on the pilot program until the core needs of the City had been met.

#### Financial Barriers and Equity

Communities surviving through the aftermath of the winter storm and an increased cost of living from inflation, Covid, and other financial, emotional, & health challenges, limited their bandwidth for new household projects like installing GSI systems on their property. While we have worked to invite all community members into the program, we recognize that high costs create barriers for many low-income community members interested in the program.



**Figure 4.** Snow from Winter Storm Uri



# Phase 3 Implementation

## Addressing Challenges

### Addressing Challenges

#### In response to Covid-related issues:

- 💧 The team had to be flexible about constantly changing conditions.
- 💧 Site visits were conducted virtually during high restriction levels.
- 💧 When on-site, appropriate Covid restrictions (**Figure 3, page 3**) were followed by staff, non-profit partners, and contractors.

#### To address labor issues:

- 💧 Urban Patchwork began retooling the pilot program to collaborate with the Parks and Recreation Department. Ranger Cadet Apprentice program so that they could install systems initially meant to be done by contractors and support equitable workforce development.
- 💧 Urban Patchwork introduced a small, affordable tree and irrigation option and created a program flow to assist with a do-it-yourself approach. This should bring down the cost of installations while having the residents invested directly in their project.

#### To increase affordability & equity:

- 💧 The team is working to build funding mechanisms to enable low or no-cost installations.
- 💧 Urban Patchwork addressed material shortages and labor delays by sourcing and stockpiling scarce materials to keep them available for projects. It then offered homeowners the option to purchase materials at wholesale costs and save money.
- 💧 Participants were told about the supply chain issues and were very amenable to the team moving the projects through the design process and then waiting until prices dropped.
- 💧 While equity was not at the forefront of decisions to select this pilot area, the team will continue to address equity in future planning and pilot program adaptations. The cost-reducing approaches discussed in this report help address future imbalances.
- 💧 Urban Patchwork is focused on providing leadership roles relevant to training a diverse staff. The program seeks to ensure equity in hiring and supporting underserved contractors and workforce members. The partnership with the Parks and Recreation Department (PARC) and the cadet training program supports this goal. *See the Collaborations Section PARC Park Ranger Cadets.*
- 💧 The team created and began to use Spanish outreach materials.



# Phase 3 Implementation

## Outreach

### Outreach

Throughout Phase 3, the team used various outreach methods to connect with community members, including in-person events during periods when Covid restrictions allowed it, virtual presentations, websites, social media, letters, postcards, and giveaways.

#### In-Person Events

*In-person presentations were limited due to Covid restrictions*

- 💧 On June 1, 2021, Austin Outdoor Living Tour (**Figure 5**)
- 💧 On September 16, 2021, Sunshine Garden Plant Sale



**Figure 5.** Paige Oliverio with Urban Patchwork shares information at the Austin Outdoor Living Tour – 2021



**Figure 6.** UP Facebook post screenshot

#### Reports and Virtual Presentations

- 💧 On March 9, 2021 **Highland Neighborhood virtual meeting had 40 attendees**
- 💧 On June 20, 2021, Jessica Wilson presented ***Stacked Incentives: Co-funding Water Customer Incentive Programs*** (**Link to YouTube Video:** [https://youtu.be/X88wvE\\_FlaM](https://youtu.be/X88wvE_FlaM))
- 💧 June 2021 Publication, ***Stacked Incentives: Co-Funding Water Customer Incentive Programs*** - Pacific Institute (**Pacific Institute Website:** [Pacinst.org](http://Pacinst.org))
- 💧 ***Pathways to Employment: Green Stormwater Infrastructure*** (**Link to YouTube Video – A look into the Green Stormwater Infrastructure:** <https://youtu.be/srVdb9OFvHk>)
- 💧 ***Phase 2 Snapshot Report*** (**Link to Report:** [www.austintexas.gov/sites/default/files/images/Watershed\\_Protection/rain\\_catcher\\_program/RCPP\\_Phase\\_2\\_Summary\\_Report\\_Interactive.pdf](http://www.austintexas.gov/sites/default/files/images/Watershed_Protection/rain_catcher_program/RCPP_Phase_2_Summary_Report_Interactive.pdf))



# Phase 3 Implementation

## Outreach

### Outreach

#### Social Media

🌿 **Rain Catcher Austin | Facebook:** [www.facebook.com/raincatcheraustin](https://www.facebook.com/raincatcheraustin)

Urban Patchwork posted on Facebook and used Facebook Live throughout the phase.



**Figure 7.** February 23, 2021, Paige from Urban Patchwork talks about freeze damage to plants from Winter Storm Uri



**Figure 8.** February 24, 2021, Paige from Urban Patchwork talks about freeze damage to plants from Winter Storm Uri



**Figure 9.** March 24, 2021, Urban Patchwork's video talking about shade plants



**Figure 10.** April 6, 2021, Urban Patchwork FB Pollinator's post

# Phase 3 Implementation

## Outreach

### Outreach

#### Cistern Wrap

WPD added graphics to an existing cistern (Figure 11), and new bilingual signs, (Figure 12), at the Twin Oaks Library. Both items include graphics that utilized components of the new RCPP logo, expanding the program branding beyond the pilot program’s geographic area.



Figure 11. Cistern with RCPP-related graphics at Twin Oaks Branch Library



Figure 12. Catch the Rain bilingual signs at the Twin Oaks Library



# Phase 3 Implementation

## Outreach

The team received a lot of positive feedback about the program. People are excited to start working with the RCPP. One participant shared that he saw the plants in his neighbor’s rain garden after Winter Storm Uri and was impressed by how well they did, which motivated him to contact us about participating. Participants get a better idea of their costs earlier in the process because we have some cost history to share.

### Mailouts

🌱 **June 8, 2021** – 1317 invitation letters were mailed to Phases 1 -3 addresses, including 975 properties eligible to participate in the pilot program, plus 342 addresses for owners of rental units located within the area.

💧 **November 24, 2021** – 1317 reminder postcards were sent to the same addresses used for the letter

💧 The eye-catching invitation letter envelope (Figure 13) included an insert flyer (Figure 14) with information about costs and features and a packet of rain garden seeds (Figure 15).

💧 The printed materials were in English and Spanish

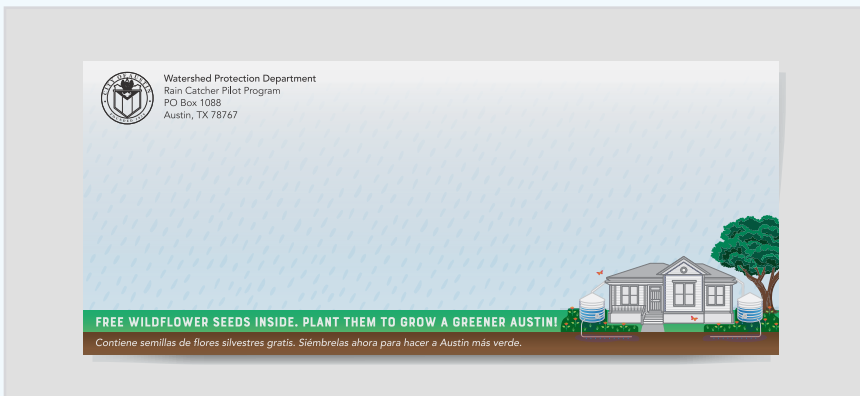


Figure 13. Sample envelope



Figure 15. Seed packet, front and back.



Figure 14. Sample invitation letter and flyer, English side.



Figure 16. Phase 3 postcard

# Phase 3 Participation

## Participation Status

### Pilot Participation Status: Phases 1-3

- 19 **Action**  
 Signed agreement, site assessment and beyond
- 129 **Interest**  
 Residents who contacted RCPP
- 975 **Awareness**  
 # of properties represented that received mailouts



Figure 17. Phase 3 projects and participants with their new systems



# Phase 3 Collaborations

## Collaborations

### Collaborations

#### Austin Independent School District, AISD, and Partners for Education, Agriculture, and Sustainability, PEAS Reilly Elementary School Demonstration Project

The five rain gardens located at Reilly Elementary are now entirely under Austin Independent School District (AISD) facilities maintenance with some help from students guided by Partners for Education, Agriculture, and Sustainability (PEAS).

💧 Reilly Elementary's Rain Gardens and Cisterns Virtual Ribbon Cutting - ([Link to YouTube Video](#))

💧 PEAS coordinated rain garden maintenance projects with six classes and reached a total of 111 students with GSI-focused activities at Reilly Elementary School

💧 PEAS GSI-focused programming includes the following elementary schools: Reilly, Cunningham, Rodriguez, Boone, Sanchez, Sunset Valley, Houston, Pecan Springs, Andrews, Govalle, Zilker

💧 Future outreach plans include an **interpretive signage trail**, a **virtual tour**, and **community groups learning about green stormwater infrastructure**

💧 WPD and PEAS developed a customized **GSI Maintenance Guide** for the site

💧 The University of Texas at Austin Engineering students worked on developing **interactive water activities for cisterns** ([Figure 18](#))



**Figure 18.** Reilly Elementary students using the spaces to learn



**Figure 19.** Reilly Elementary School Interactive Rainwater Cisterns report

# Phase 3 Collaborations

## Collaborations

### Collaborations

#### Austin Water (AW), Water Conservation Program

**AW staff support the program in numerous ways:** by managing the rebate programs that provide funding that helps reduce participation costs, providing updates on changes to water conservation rebates and the development of a new residential landscaping ordinance; representing the CoA at national events on topics of rainwater harvesting and stacked incentives and sharing data for multi-family water use research, rebate participation (Figure 20), the City Wide Behavioral Study, and Winter Storm Survey Observations.



Figure 20. Austin Water FB post for the Rainscape Rebate

#### Development Services Department (DSD), Urban Forest Funding

The Development Services Department (DSD) Urban Forestry Fund is dedicated to enhancing the long-term health of Austin's urban forest and the community's Urban Forest Vision. They provide funding to other city departments for tree projects. For RCPP, this funding helps cover costs for establishing healthy trees in the urban core irrigated by rainwater. (Figure 21).



Figure 21. Live Oak tree watered with a cistern installed with funding from DSD



# Phase 3 Collaborations

## Collaborations

### Collaborations

#### Parks & Recreation Department (PARD)

##### Ranger Cadet Program

In early 2020, PARD and WPD staff began discussing creating learning and career path opportunities within the RCPP for Ranger Cadets participating in a high school GSI-focused internship. Once they complete the internship training, the participants become eligible to be apprentices after they graduate. In the summer of 2021, the COA hired Victor Monzon (**Figure 23**) as the first GSI apprentice. The program supports learning about the GSI design process, installations, & maintenance on residential and public land.

**To gain hands-on experience** installing GSI features, in July 2021, Park Ranger Cadet interns and the first GSI apprentice, Victor, addressed a long-existing erosion problem at Stephenson Preserve by installing a cistern, filling in soil, and planting around it (**Figure 22**). This experience will be utilized in future RCPP residential projects.

**Educational outreach** is another component of the program. The group also produced educational signs and videos called **Pathways to Employment: Green Stormwater Infrastructure, A look into the Green Stormwater Infrastructure**. Victor assisted with outreach during community events.

*"This whole project, I had a great experience; I developed more than I thought; when I first came into this project, I didn't know a lick of information, but throughout time and great guidance, I started to grasp new information and started understanding every bit of info, with the team I worked with they also made this project enjoyable and a great experience"*

-Uriel



**Figure 22.** PARD Ranger Cadets working on a project in Stephenson Preserve



**Figure 23.** Victor prepares materials for an outreach event

# Phase 3 Collaborations

## Collaborations

### Collaborations

#### Parks & Recreation Department (PARD)

##### Highland Park GSI

PARD and WPD are working on a project to utilize space along Waller Creek to improve water quality and reduce erosion locally and for those downstream. The area runs along Northcrest Boulevard between West St. Johns Avenue and West Croslin Street. The concept plan was completed in 2017, and Phase 1 in 2019. Phases 2 and 3 included gathering community input. In January 2022, team members presented the project in a virtual meeting and asked for input on the Speak Up! Austin website



Figure 24. Screenshot from Speak Up, Austin

[www.austintexas.gov/HighlandParkProject](http://www.austintexas.gov/HighlandParkProject)

##### Reznicek Fields Water Quality Retrofit Project

The project funded by WPD involved the installation of a regional biofiltration pond (Figure 25). During this phase, WPD worked with PARD to have the property designated for shared use between the departments. The Reznicek Field biofiltration control treats approximately 65 acres at 72% impervious cover. The water quality volume is approximately 65,000 cubic feet.



Figure 25. Drone image of the Reznicek pond

##### Public Works Neighborhood Partnering Program (NPP), Skyview Neighborhood Rain Garden

Through the Public Works NPP, neighbors can initiate community projects and enhance the places where they live, work, and play. The neighborhood started the project in 2018 to turn a paved dead-end street into usable green space (Figure 26). During this phase, the planting plan for a rain garden was finalized, with plans to plant in the Fall of 2021. The planting had to be pushed back to the Spring of 2022 due to the inability to find a contractor and supply chain issues with landscaping supplies.



Figure 26. Skyview Neighborhood Rain Garden area May 2021



# Phase 3 Collaborations

## Collaborations

### Collaborations

#### Rain Catcher Pilot Program Public Demonstration Projects



**Figure 27.** Rain Catcher Pilot Program Public Demonstration Projects

# Phase 3 Research

## Case Studies

### City-wide Behavioral Study

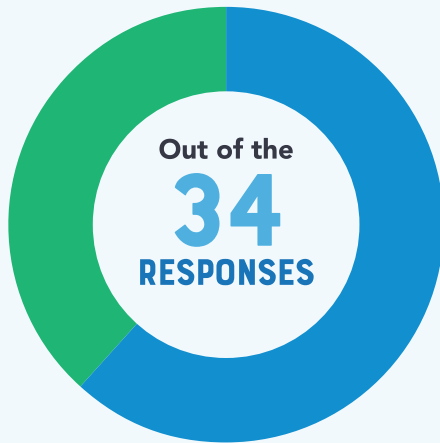
The City-wide Behavioral Study, *"Our Rain, Our Waters: Protecting Waterways for All with Actions at Home,"* is a city-wide survey to understand the adoption of GSI and other pro-environmental behaviors. It will identify opportunities, barriers, motivations, and knowledge from different demographic groups in Austin.

During Phase 3, Asakura Robinson (the market study consultant) collected relevant data, interviewed COA staff, and prepared a sampling plan. The plan includes a survey questionnaire, addresses of residents for random selection, and sampling frequency. The results will inform a statistical model to determine where to focus future pro-environmental outreach.

In January 2022, at the end of Phase 3, the focus group recruitment and scheduling occurred by posting on NextDoor and the Equity Action Team Facebook page. **Asakura Robinson recruited fifteen early adopters.** They planned another focus group recruitment a few weeks later to meet with WPD & UT staff to discuss sampling methods and survey questions.

### Behavioral Nudge

To better understand what motivates the RCPP participants, we consulted with WPD's Data Analysis and Decision Support Section to test two different messages in the invitation letters. Half of the letters emphasized creek health, and the other half did not. Our graphics team developed two different graphics to highlight the type of letter (**Figures 28 & 29**).



**21** **Creek Health Emphasis**  
Were from the group with creek health emphasized in their outreach.

**13** **No Creek Health Emphasis**  
Were from the group that did not emphasize creek health.



**Figure 28.** Invitation graphic with creek emphasis



**Figure 29.** Invitation graphic without creek emphasis



# Phase 3 Research

## Case Studies

### The Waller Cistern Study

The WPD Applied Watershed Research and Data Analysis / Decision Support Sections designed this study to monitor cistern function and performance. It is approaching its final year of data collection, after which the results will be analyzed and published. After two years of data collection, modifications are being made to the rainwater collection systems to improve their rate of stormwater collection. WPD staff replaced some screens and the above-ground PVC piping that broke during the February freeze. They also insulated it to help protect against future freezes. WPD will begin the final year of data collection when the modifications have been tested and fine-tuned.

### The Waller Sewershed Study

This study collects baseline data for water quantity, rainfall, and soil moisture in the Upper Waller Creek Watershed (**Figure 30**). These measurements can characterize creek response to rainfall events of different sizes and intensities. With almost three years of data collected, we are fine-tuning our understanding of how the creek responds to GSI implementation.



**Figure 30.** The birth of Waller Creek. Waller Creek first surfaces downstream of curb inlets in the Highland Neighborhood.

# Next Steps: Implementing Phase 4

**Timeframe:** February 2022 through January 2025

*Provide the opportunity for 448 additional properties to participate*

- 1) Enhance Partnerships
- 2) Evaluate and Improve Processes
- 3) Explore Funding Opportunities
- 4) Discuss Potential Expansion After the Pilot

## 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 Catchment 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