

City of Austin

Watershed Protection Department

Annual Report

Fiscal Year
2021



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Numbers in this document represent FISCAL YEAR 2021 unless otherwise noted. Key performance indicators have been identified. They are used by the City to assess the performance and success of the department. Key performance indicators best describe the department's primary functions.



Watershed Protection purchased the Euers Tract in FY 21. Our open space program helps Austin be more resilient as we face a future with more intense rainfall and increasing development.

Message from the Director



2021 was another year that tested the resilience and fortitude of the Watershed Protection Department, and I must say, we met the challenges head on. I am both proud and humbled to lead an organization that is always ready to respond, even when the challenge is new and outside of our regular roles and responsibilities.

While navigating another year of COVID-19, we were reminded of just how real climate change is. The 2021 Winter Storm Uri further proved the importance of being prepared for the unexpected. Watershed Protection may not always assume a lead role in a weather disaster, but we are committed to do what is needed to support our community before, during and after an emergency. When Winter Storm Uri hit Austin, Watershed Protection staff began conducting wellness checks on residents, clearing snow from the roads and airport runways, and distributing food and water across the city. Following the storm, our crews continued clearing brush and removing dead vegetation for weeks.

While 2021 was challenging, it was also a milestone year for our department. 2021 marked forty years since the historic Memorial Day Flood in 1981. 2021 also marked the 30th anniversary of the establishment of the Drainage Utility Fund that is our primary revenue source. Additionally, it was the 25th anniversary of the merger of flood and erosion programs from the Public Works Department with the water quality protection programs of the Environmental and Conservation Services Department, formally establishing Watershed Protection as we know it today.

We have come a long way since the department's earlier days and have accomplished much to protect our community against the harmful effects of water pollution, erosion, and flooding. We still have more to do, and we look forward to working alongside our community as we plan for the future in an equitable, effective, and efficient way.

Jorge L. Morales, P.E., CFM, Director
Watershed Protection Department

Watershed Protection at a Glance

Most of the department's funding comes from the drainage charge, assessed on utility bills.

MISSION STATEMENT

“Watershed Protection protects lives, property and the environment of our community by reducing the impact of flood, erosion and water pollution.”



\$107,329,314
WATERSHED PROTECTION BUDGET

377
FULL-TIME EMPLOYEES

13
NEW HIRES

36
EMPLOYEES PROMOTED

7
EMPLOYEES RETIRED



LaTara Clark, Drainage Operations and Maintenance I

“Do not judge me by my success, judge me by how many times I fell down and got back up again.” NELSON MANDELA



Jorge Morales
Director



Sarah Garvey
Business Process Consultant



Thomas Grauzer
Department Executive Assistant

Resilience in 2021: Reflections from Assistant Directors



One definition of resilience is: the ability to become strong, healthy, or successful again after something bad happens. We've certainly been through a lot this year and last year. We can only speak for ourselves with regard to how strong, healthy, and successful we are at this point in the pandemic. And I'm not sure we are yet in the "after" stage. We are still in it. What I have witnessed, which has aided my journey towards resilience, is the individual and collective display of adaptability, perseverance, and endurance in the face of continuing strong headwinds. I am honored and grateful to work with y'all and live through this with you.

Mike Kelly, Assistant Director, Project Design and Delivery



An ancient Sanskrit proverb says, "Atma aiva hi atmano bandhu aatma aiva ripu atmanah," which mostly translates to, "one is their own best friend, or worst enemy," the very essence of resilience. When we act with courage, resilience is the outcome. Watershed Protection is full of friends and allies who will lift you provided you do your part. There is always hope where there is resilience. 2021 has been a year that has tested us in ways we didn't know existed, yet it has also shown us the strength of our inner resilience to overcome, grow and be the best version of ourselves. Let's take a moment to look back with grace and gratitude to all of our brave employees, especially those in the field who selflessly keep our community safe during storms and emergencies.

Ramesh Swaminathan, Assistant Director, Field Operations



When I was making the decision about accepting my new role with the City of Austin and Watershed Protection, the culture of the department, the kindness and passion of individuals I have met over the years, and the genuine and supportive nature of the interactions I had and had witnessed amongst team members was part of what made my decision so easy. Being resilient is not an individual task. For this department, the city, our entire country, and people across this globe, we have had to face and adapt to major change in the past year. Whatever has come our way and whatever will come in the future, I know we can face it together. I believe in leading with my heart and my head and couldn't have more hope going into 2022 with a team that supports each other as I have seen and experienced, even in my brief time here.

Katie Coyne, Environmental Officer; Assistant Director, Planning, Monitoring, and Compliance



It's hard to believe that we are completing another year with so much need for resilience. These past two years have gone far beyond "testing" us, they have taken us deeper into serving others when we ourselves are exhausted. There is a quote from the great Nelson Mandela that says, "Do not judge me by my success, judge me by how many times I fell down and got back up again." I have seen our Watershed Protection team not only stand up again after many blows in 2021 but then reach back and grab the hands of others to lift them up, too. This report is a testament to how much incredible work the people of our department have done for our community despite the struggles we've all shared. If we continue to have hope and grace for one another, we can overcome these difficult times and share our talent and compassion with our city and its people as we roll into 2022. I am so grateful for our employees and stay inspired by the way they get back up and keep shining!

Sara Hartley, Assistant Director, Support Services

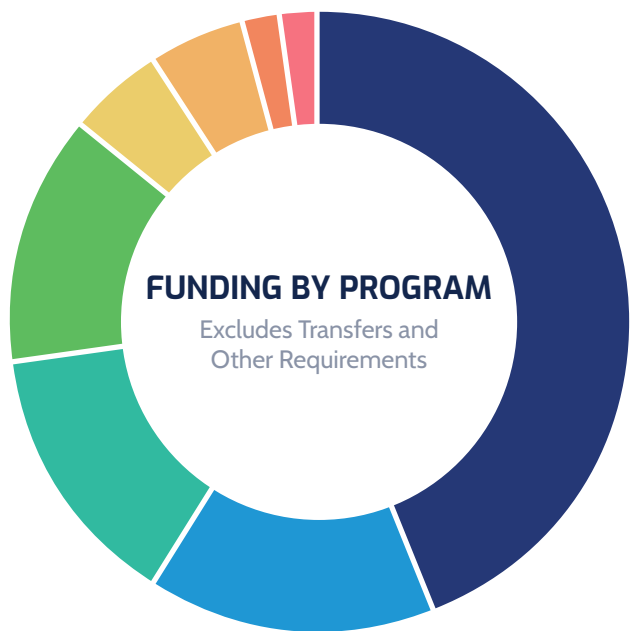
Message from Nikki Fowler, Human Resources Manager



As I reflect on 2021, I couldn't be more thankful for the hard work of our Watershed Protection team. We've adjusted to a hybrid model of conducting business through this second year of the pandemic, and on top of that, pulled together during the catastrophic Winter Storm Uri to serve our community and each other. We have been proud to celebrate the new hires and promotions to our department and continue to collaborate and innovate with digital performance evaluations and the use of technology to better support our operations. As we look forward to a new year, our teams remain committed to providing high quality service to the citizens of Austin and to our own team members.

Nikki Fowler, Human Resources Manager

Fiscal Year 2021 Overview



44%	Infrastructure and Waterway Maintenance
15%	Support Services
14%	Watershed Policy and Planning
13%	Flood Risk Reduction
5%	Data Management
5%	Watershed Quality Protection
2%	Capital Management Program
2%	Stream Restoration

REVENUE BY SOURCE

Commercial Drainage Charge	\$ 66,223,511
Residential Drainage Charge	31,791,708
Development Fees	1,098,836
Interest	459,511
Property Sales	233,941
Public Health Licenses, Permits, Inspections	107,480
Use of Property	16,533
Building Safety	14,324
Other Revenue	10,434
General Government Charges	4,460
Total Revenue	\$ 99,960,738

We have been preparing for a major update to our department's Strategic Plan, called Rain to River. It will include significant community engagement with a focus on communities of color and aims to embed equity as a central principle in our department's mission, values, and goals.



Watershed Milestones & History

Highlights

Forty years ago, during the Memorial Day weekend of 1981, Austin experienced a devastating flood. Ten inches of rain fell within 24 hours on already saturated soil. Thirteen people lost their lives, and the flood caused about \$36 million in damage. Austin is located in Flash Flood Alley, and our creeks will always be subject to flash flooding. While we cannot change our weather, topography or geography, the Memorial Day Flood served as a wake-up call. Since 1981, we have made significant progress to reduce flood risks citywide.

April 23, 1915, Austin History Center, Austin Public Library, PICA 04036



40

YEARS SINCE THE
1981 Memorial Day Flood

35

YEARS SINCE THE
Comprehensive Watershed Ordinance was
enacted to protect our creeks and waterways.

30

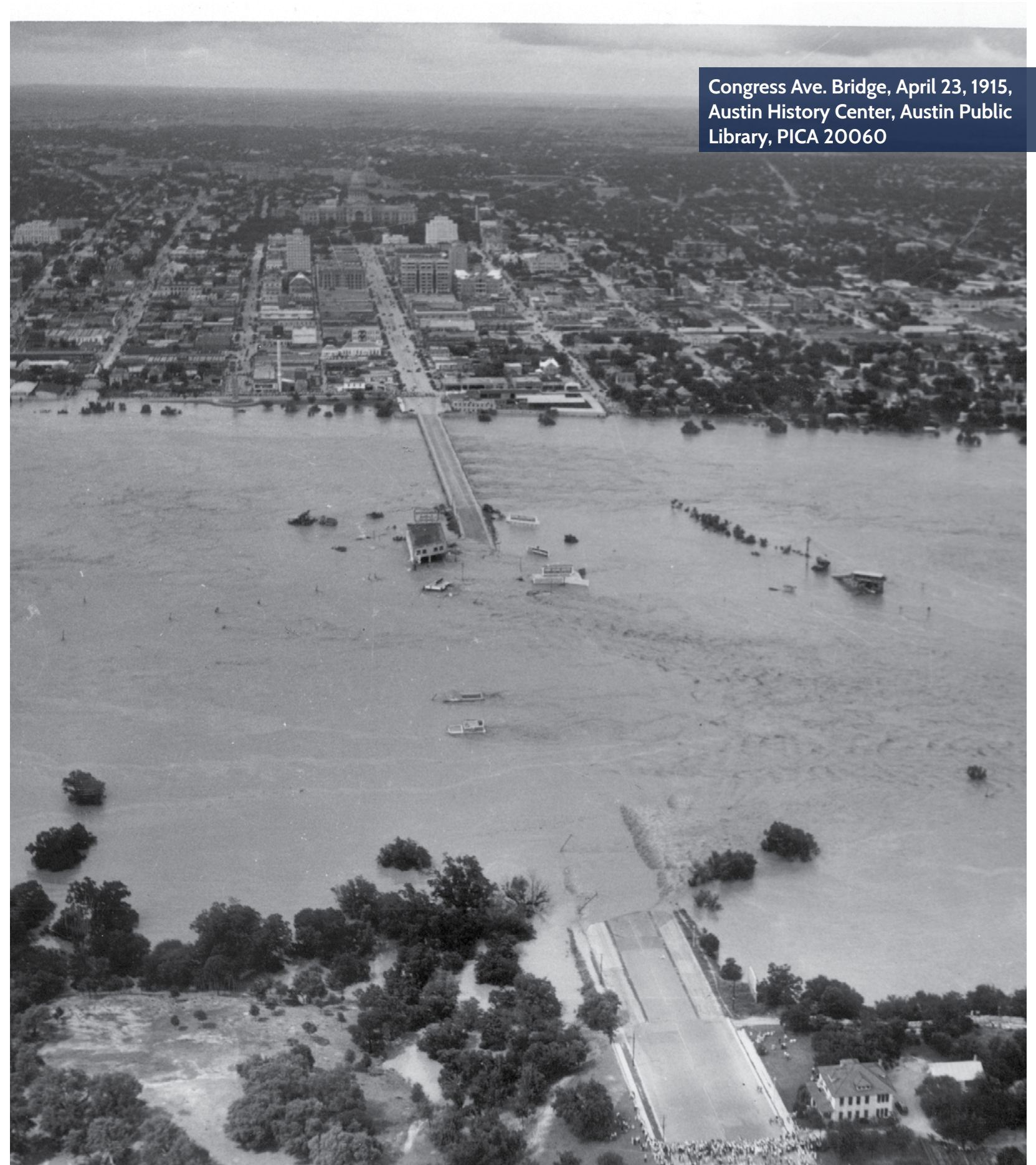
YEARS SINCE THE
Drainage Utility Fund was
established to provide a
dedicated source of funding.

25

YEARS SINCE THE
Watershed Protection
Department was established.

20

YEARS SINCE THE
original Watershed Protection
Master Plan was adopted.

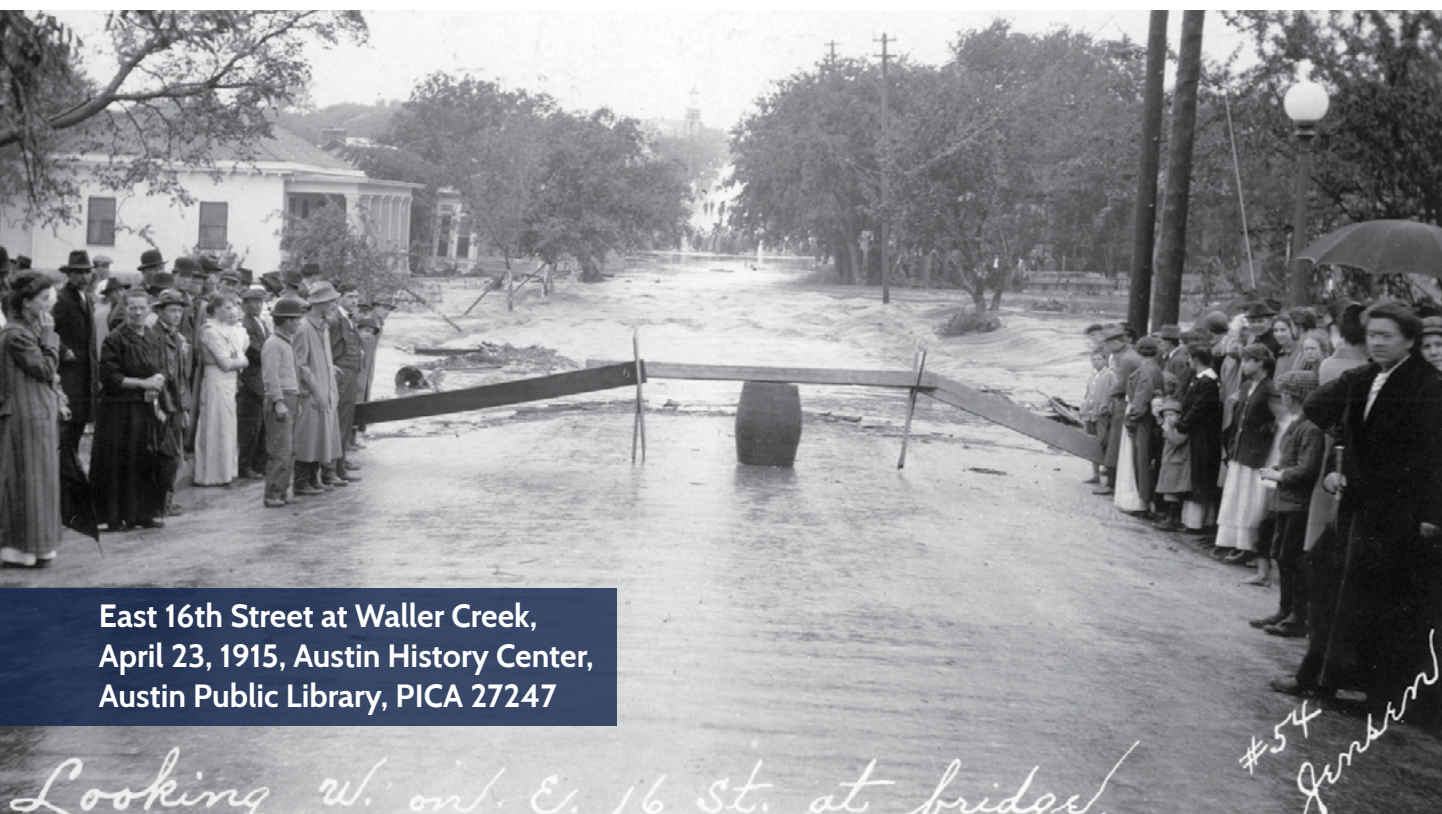


Congress Ave. Bridge, April 23, 1915,
Austin History Center, Austin Public
Library, PICA 20060



While we cannot change our weather, topography or geography, the Memorial Day Flood served as a wake-up call.

April 23, 1915, Austin History Center, Austin Public Library, PICA 29811



East 16th Street at Waller Creek, April 23, 1915, Austin History Center, Austin Public Library, PICA 27247

tuesday morning
May 26, 1981

Austin American-Statesman

clear

Mostly clear with light and variable winds. High, near 90. Low, near 70. Data, A2.

13 die as floods ravage city; losses estimated in millions

By BRUCE HIGHT
American-Statesman Staff

At least 13 persons, many swept from their cars and homes by the rising, racing waters of Shoal Creek, drowned late Sunday night as flash floods spawned by thunderstorms struck the city with stunning fury.

Another 10 persons were reported still missing late Monday. Of the 13 dead, bodies of nine were recovered and the other four were presumed dead by police based on accounts of their disappearances by witnesses.

The search for bodies continued throughout the day as rescue workers dug through mud and debris several feet thick in some places.

Less-serious flood damage was reported along several low-lying creek areas in North and East Austin. Some flooding also occurred as far north as Round Rock. For the most part, though, South Austin and the Hill Country escaped problems from the storm that inflicted damage most heavily along Shoal Creek.

Dollar estimates on the extensive property damage to homes, businesses and public facilities were sketchy, but George Phifer, assistant police chief, said it was in the "multimillions."

It was apparently the worst flood to hit Austin since Waller Creek exploded out of its banks in April 1915 under the assault of 10.29 inches of rain, and took 13 lives. In that flood, Shoal Creek did not kill, but it damaged much property.

Mayor Carole McClellan, after touring the damaged area Monday morning, said the city would seek all available federal and state disaster assistance such as grants and low-interest loans.

Official declaration of a disaster area by President Reagan is a step that must be taken through Gov. Bill Clements, and city officials were scheduled to meet today with representatives from the Disaster Emergency Services of the Texas Department of Public Safety.

The 13 who died or are presumed dead are:

- Michael Allen Villarreal, 18, found in his truck in a drainage ditch at Interstate 35 and U.S. 183 in North Austin.
- Sally Dexter, 52, of Dallas, found off Stratford Drive just west of Zilker Park. She was returning from her son's wedding in the park.
- Chin Kao Lu, 44, found in her car in the 4300 block of Duval Road.
- Michael John Martin, 17, found in a tree, 12 feet above the ground, behind 2601 Great Oaks Parkway near Shoal Creek.
- Jeffery P. Green, 28, found in...

The aftermath

Staff Photo by David Kennedy

Ana Hernandez, 2, stands amid the destruction at her home at 624 Wood St., waiting for the cleanup to begin.

Helplessness and rescue

- ☐ Two men watch helplessly as woman in car is swept away
- ☐ The scene at Palmer Auditorium's 'refugee center'
- ☐ 3 rescued from Rollingwood Plaza restaurant
- ☐ 'The water was up to the hood' — a first-person account

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Death, and a memory

- ☐ The devastation along Shoal Creek, and a grisly search
- ☐ A gentle memory in the midst of death and destruction
- ☐ Muddy floors and soggy ceilings, but school goes on

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Neighborhood is devastated

By RICHARD A. ABRAMS
American-Statesman Staff

While those who live here scrambled to save their possessions, the banks of Shoal Creek spilled into a swirling brown torrent Sunday night that carried cars away, split the sides of homes, sent trees through dining-room windows and left a quiet middle-class neighborhood devastated.

Behind Northcross Mall at Silverway and Bullard drives Monday, the neighbors wandered from home to home, bleary-eyed from shock and lack of sleep. Late into the afternoon, some were still in bathrobes and undershorts. Some stood guard in flooded hallways, clutching shovels and brooms. But cleanup efforts were stymied by tons of brown mud that oozed through doors of homes up and down a three-mile stretch of Shoal Creek.

Many of the homes were not insured against flood damage. Not a home was spared. Metal and wood fences were upturned and scattered. Tel-

City businesses take a beating

By KIRK LADENDORF
American-Statesman Staff

The business loss in Sunday's flooding along Shoal Creek between 13th and Fifth streets will run well into the millions of dollars, but only a handful of business owners contacted Monday were even willing to guess their losses.

Shoal Creek collected a heavy toll from nearby auto dealerships. The six new- and used-car dealerships swamped by the flood reported about 553 automobiles damaged or lost in the storm.

For eight businesses whose owners would make damage estimates, flood damage exceeded \$2.9 million.

Some cars were left stacked like fallen dominoes in their lots while others were wedged together in tight packs.

Many cars swept into the creek were deposited several blocks downstream, and the Fifth Street

inside

Gearing up

The Texas Legislature gears up for its usual frenzied finish.
City/State, B1

UT wins, 10-2

UT earns a trip to the College World Series with a 10-2 victory over Stanford.
Sports, E1

Amusements.....	D4-6
Ann Landers.....	C2
Classified.....	C1-14
Comics.....	D7
Dear Abby.....	D3
Deaths.....	B7
Editorials.....	A5
Ellie Rucker.....	D1
Horoscope.....	D2
Life/Style.....	D1-5

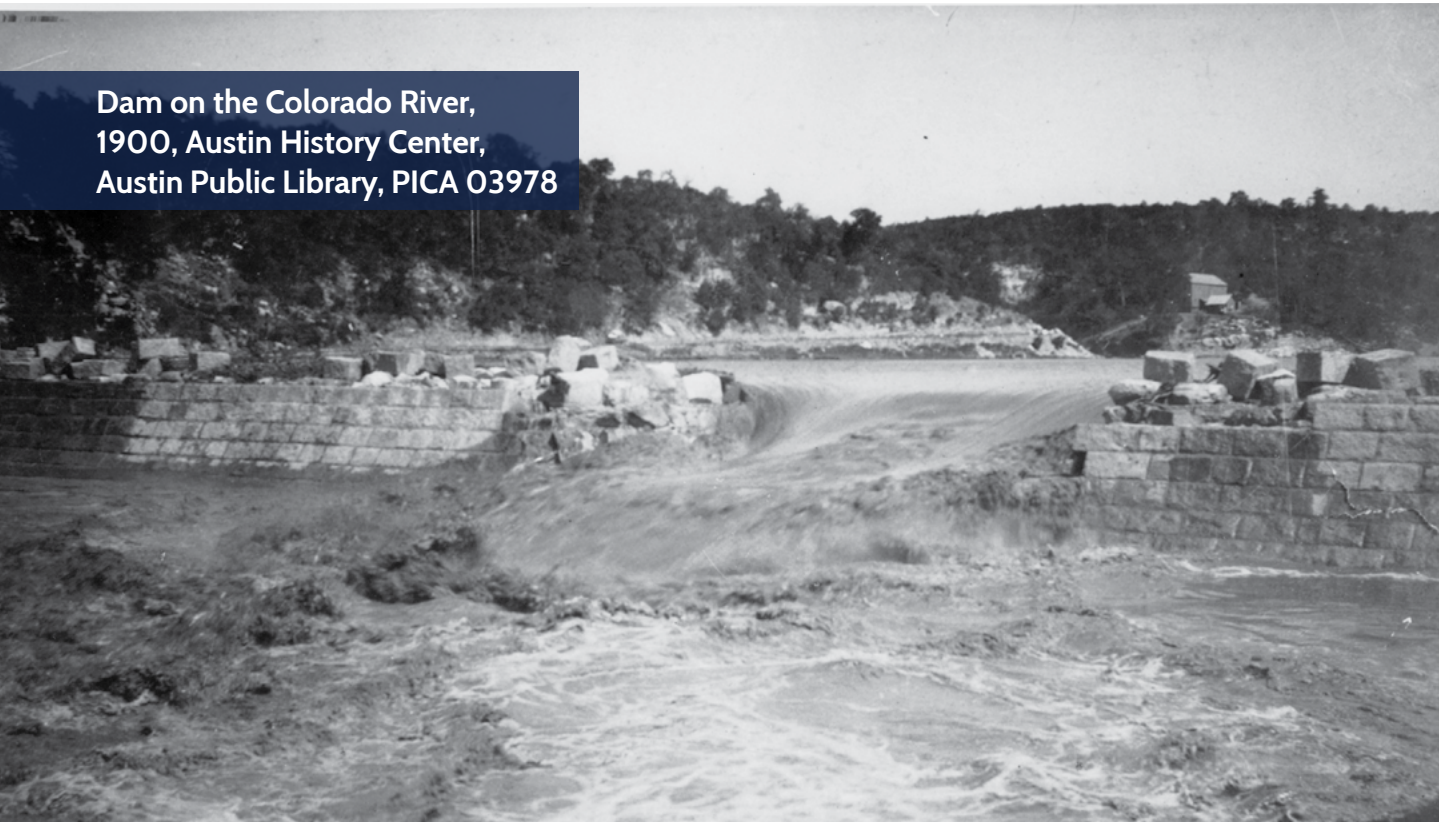
Austin American-Statesman, May 26, 1981

led to the weather Sunday, and why

- ☐ Most homeowners may be out of luck, insurance agents say
- ☐ How to remain safe if it happens again

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Dam on the Colorado River,
1900, Austin History Center,
Austin Public Library, PICA 03978



Waller Creek, April 23, 1915,
Austin History Center, Austin
Public Library, PICA 14517

Congress Ave., June 15, 1935,
Austin History Center, Austin
Public Library, PICA 04147



Shoal Creek, Memorial Day Flood,
1981, Photo by Hienz Schultz,
Austin History Center, Austin
Public Library, PICA 15139

Winter Storm Uri

The snow and ice arrive

In February 2021, Austin experienced a series of winter storms that plunged temperatures across the state far below normal. Winter Storm Uri caused cascading impacts to power, water, transportation and communications. Our staff jumped in to help. In the field, we cleared roads to provide access to the airport and grocery stores, helped repair water lines and used our four-wheel drive vehicles to make welfare checks. We delivered pallets of water and ready-to-eat meals, pitched in at distribution sites and helped staff the City's Emergency Operations Center. In addition, some of our employees volunteered to help on their own, making vast quantities of food for hungry neighbors as well as distributing boiled water to workers and those in need.



11,190

HOURS SPENT

on Winter Storm response

9,000

**READY-TO-EAT
MEALS DELIVERED**

680

CASES OF WATER DELIVERED
to one vulnerable neighborhood

154

WPD EMPLOYEES
helped respond to
Winter Storm Uri

72

SANDWICHES PREPARED
by one employee and his wife for neighbors
and people experiencing homelessness



Austin-Bergstrom International Airport

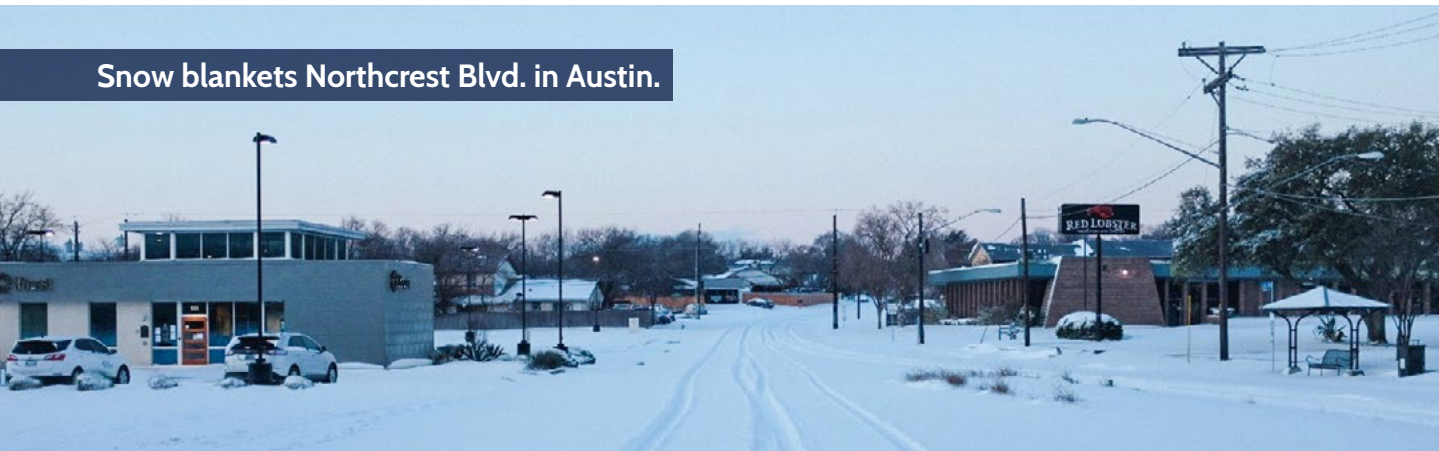
“Thank you, Austin Watershed, for providing safe drinking water for the most vulnerable communities. I watched a big group of volunteers come out and go deliver the cases of water door to door. What a thoughtful, beautiful thing. You pour yourselves out to ensure the survival of entire communities...”

SOCIAL MEDIA COMMENT

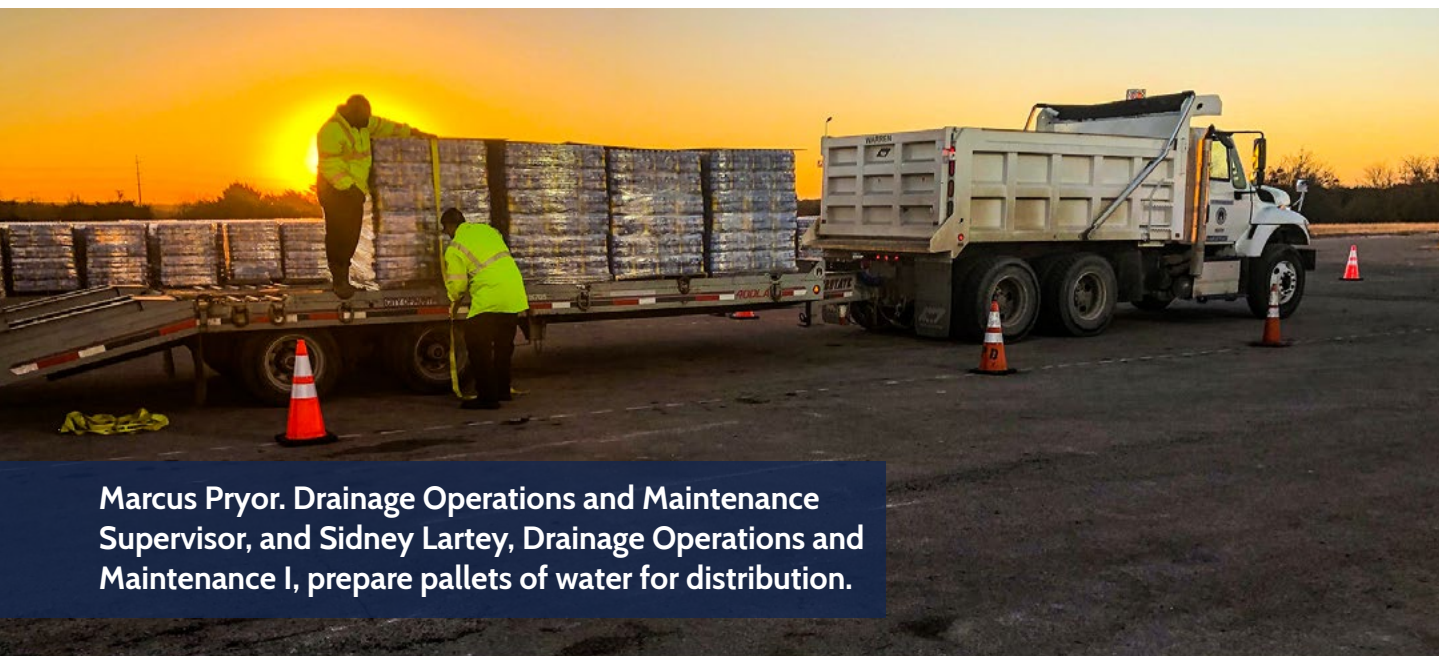
Kennedy Ridge Estates

When water had been restored to most of Austin's neighborhoods, one subdivision in far east Austin reached out for help. Kennedy Ridge Estates was still under a boil-water notice. Austin Water and the Watershed Protection Department worked together to help. Two trucks each delivered five pallets of water to a designated site. Then individual staff loaded up their personal vehicles to deliver two cases of water to each of the 340 homes.

Snow blankets Northcrest Blvd. in Austin.



Marcus Pryor, Drainage Operations and Maintenance Supervisor, and Sidney Lartey, Drainage Operations and Maintenance I, prepare pallets of water for distribution.



Diana Wang, Project Manager, helps out at a water distribution site.



Wallace Myer, Environmental Compliance Specialist, and Marvin Hope, Occupational Health and Safety Coordinator, help distribute ready-to-eat meals.

Safety

Harmful Algae Expands

A relatively mild summer meant less harmful algae was detected on Lady Bird Lake. However, that good news was tempered by the unwelcome discovery of toxins in algae on other bodies of water and in the winter months when the risk is lower. The algae season peaked with the closure of part of Barton Creek to recreation after toxins were detected in the water. We continue to adapt our monitoring program as new data emerges and our understanding of this natural phenomenon increases. It is becoming clear that Austinites should be cautious in all natural water bodies, avoiding warm, stagnant areas and areas with mats of algae.



\$4,445,825

GRANTS AWARDED FOR FLOODPLAIN MAPPING
from the Texas Water Development Board

5,502 Feet

of storm drain pipe
INSTALLED OR REPLACED

16

**BUILDINGS, PROPERTIES
AND ROADWAYS**

with reduced flood risk

KEY PERFORMANCE INDICATOR

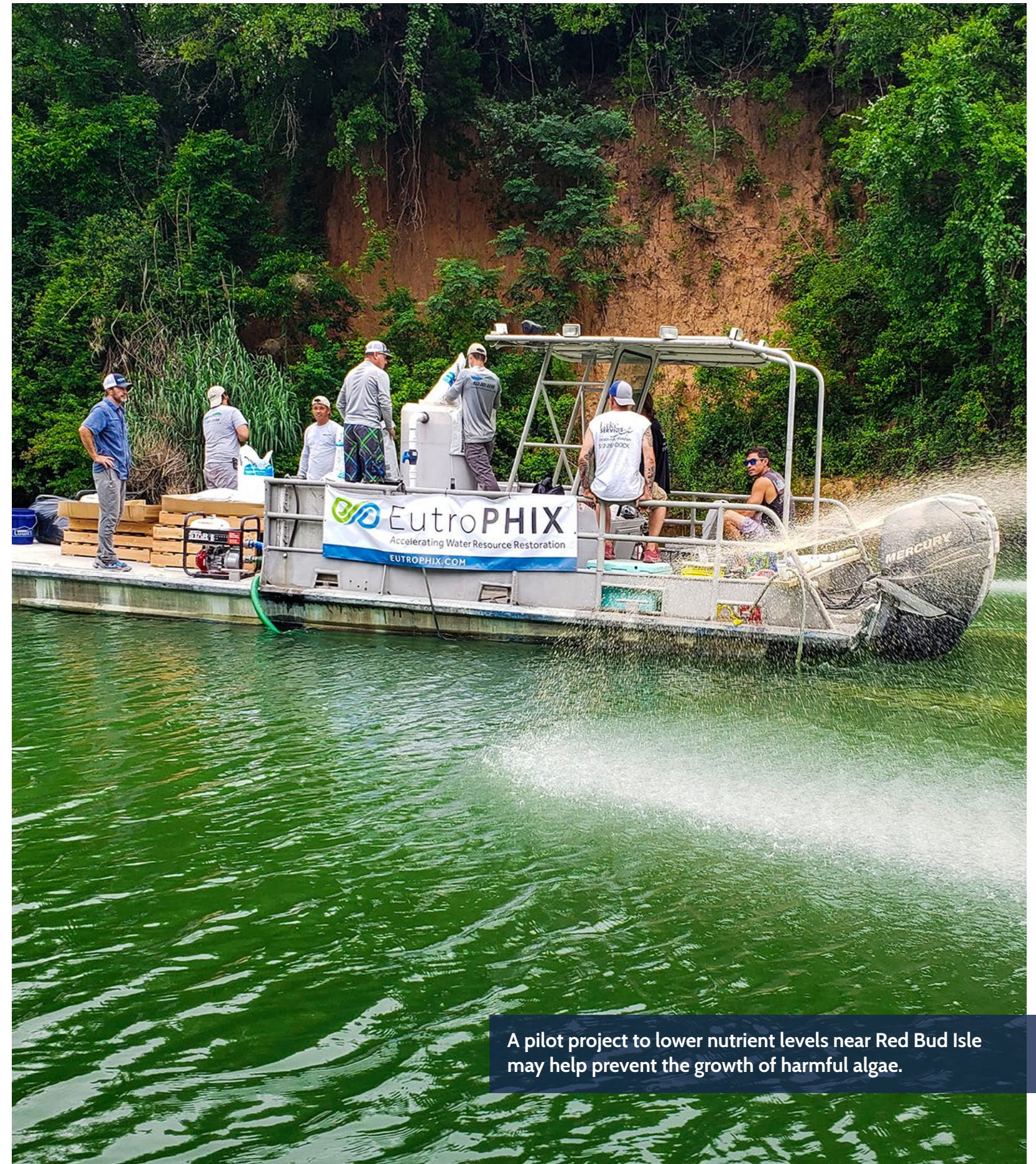
258 Tons

of **SEDIMENT, TRASH
AND DEBRIS REMOVED**
from storm drains

0.82 Miles

of eroding stream channels
RESTORED AND STABILIZED

KEY PERFORMANCE INDICATOR



A pilot project to lower nutrient levels near Red Bud Isle may help prevent the growth of harmful algae.

Being safe in our home, at work, and in our community.

STRATEGIC DIRECTION 2023

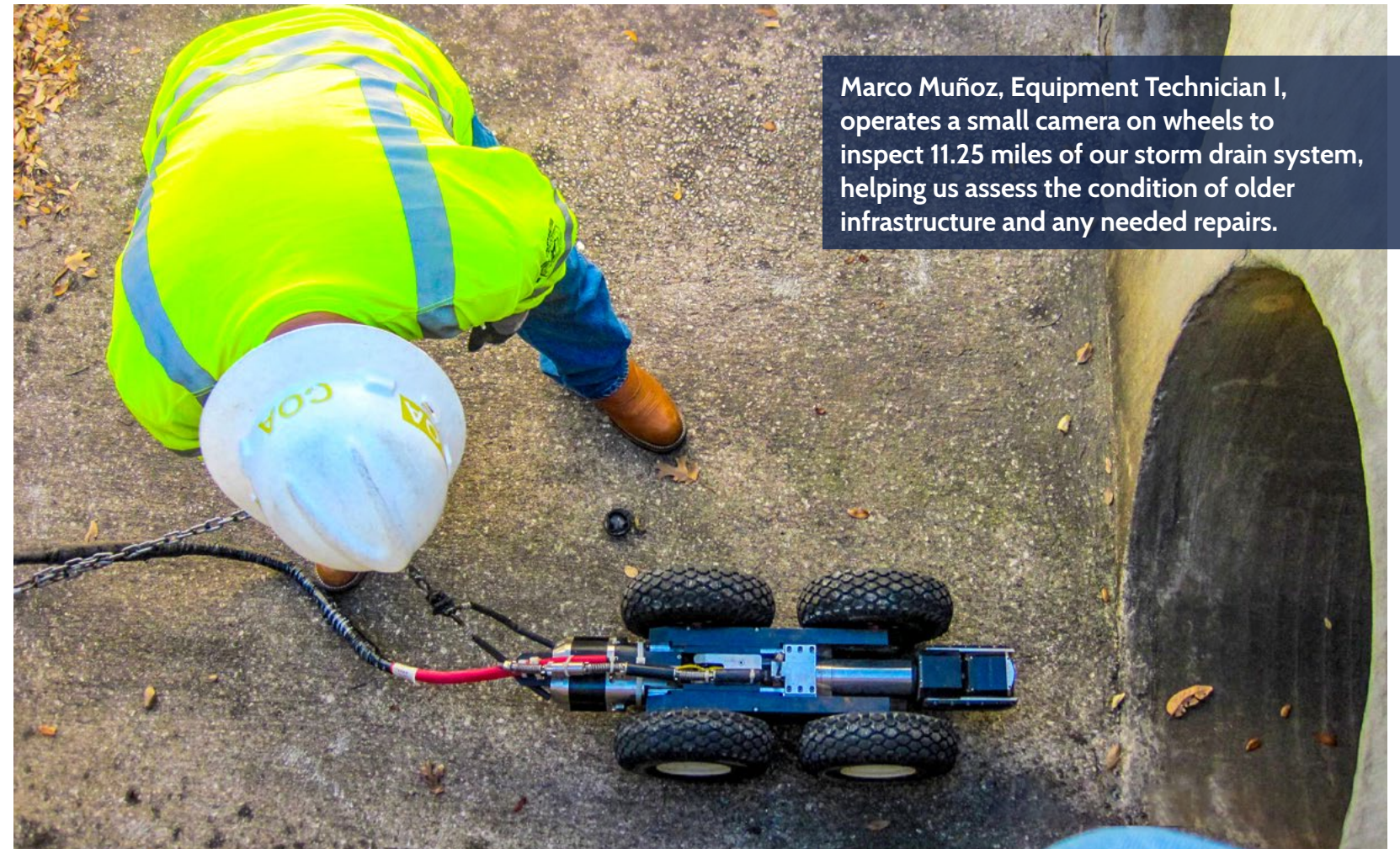
Vulnerable, north Austin neighborhood gets flood relief

Construction began on the three-year Little Walnut Creek Flood Risk Reduction project near Rundberg Lane. More than 75 homes are in the floodplain in this area. Several roads could also become impassable in a flood. To help, we are installing a large, rectangular pipe, up to 13 by 10-feet in size, under Mearns Meadow Boulevard. The pipe will divert flood waters from Little Walnut Creek, helping to protect homes and roadways. This project has been years in the making and is budgeted at \$19.7 million.

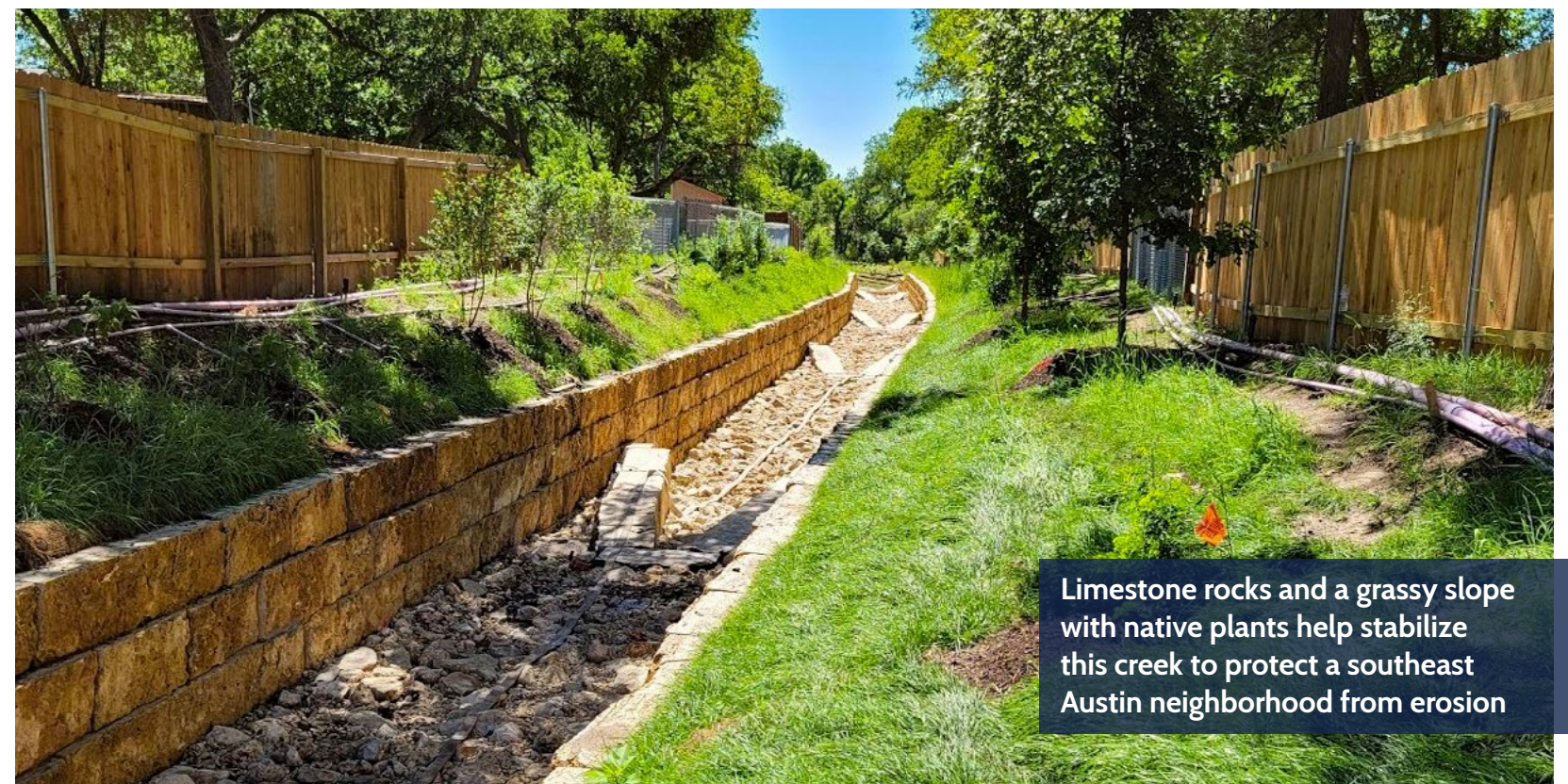
Southeast Austin homes protected from erosion

We completed construction on a project to repair and stabilize the banks of Bitter Creek in the Indian Hills Subdivision. In addition to protecting 67 homes from erosion, the project improved the appearance of the creek through the use of native plants and limestone. We removed trash, took steps to prevent future illegal dumping and, at the community's request, dredged and cleaned the neighborhood pond.

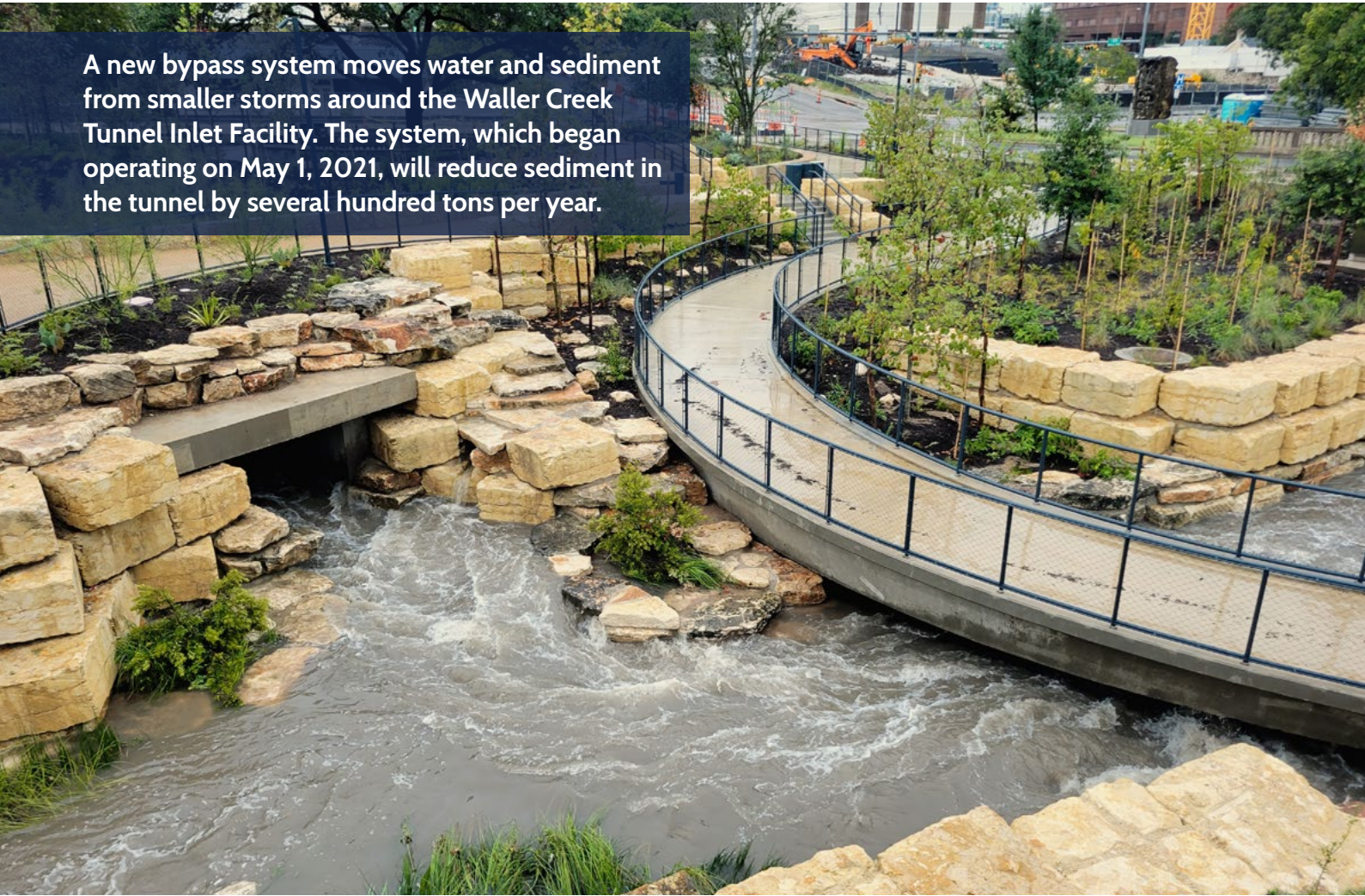
A colorful, bilingual banner alerts the neighborhood to a temporary park closure for the Little Walnut Creek Flood Risk Reduction project. The initial meeting flyer included several languages for a neighborhood that is home to many immigrants from all over the world.



Marco Muñoz, Equipment Technician I, operates a small camera on wheels to inspect 11.25 miles of our storm drain system, helping us assess the condition of older infrastructure and any needed repairs.



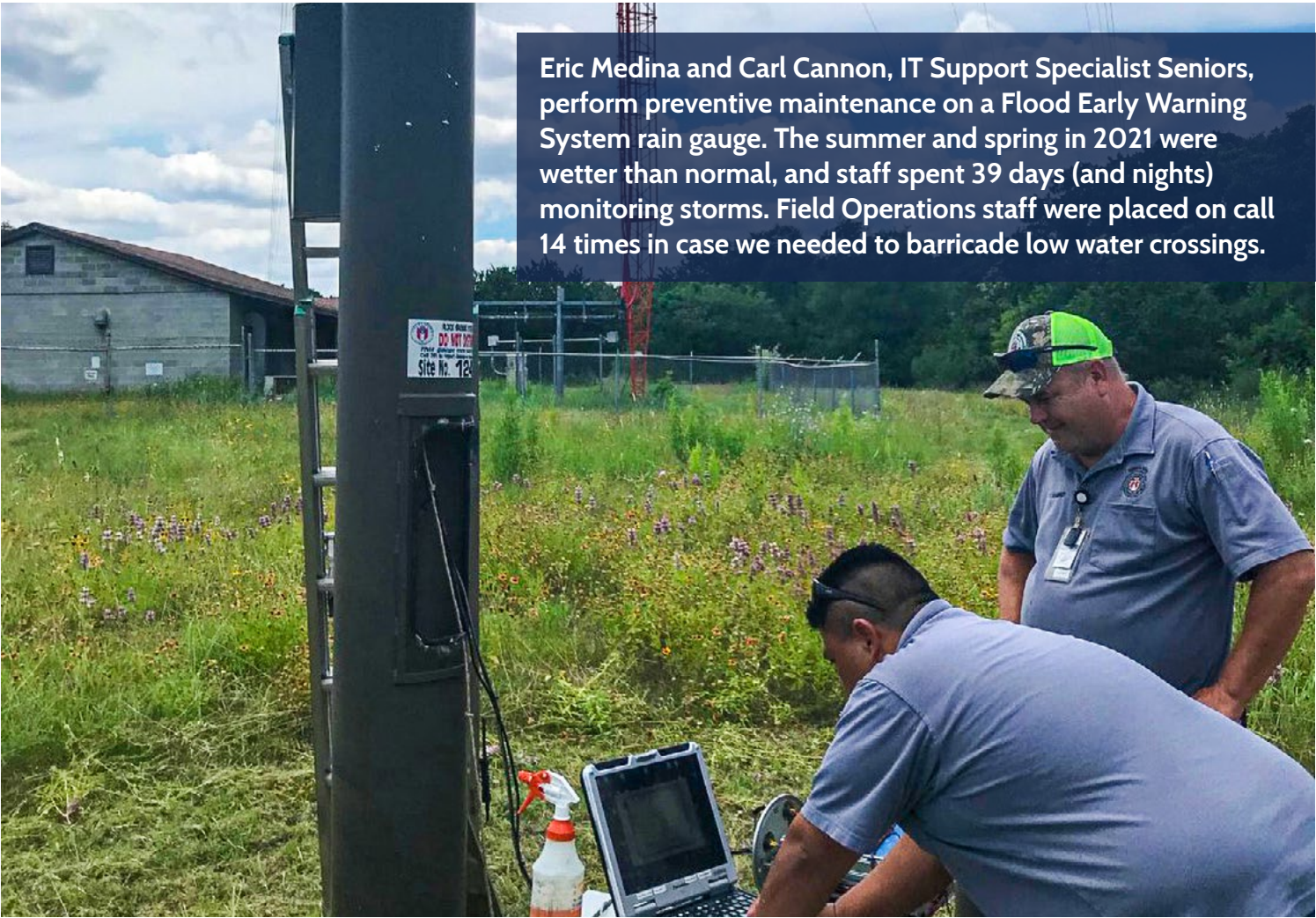
Limestone rocks and a grassy slope with native plants help stabilize this creek to protect a southeast Austin neighborhood from erosion



A new bypass system moves water and sediment from smaller storms around the Waller Creek Tunnel Inlet Facility. The system, which began operating on May 1, 2021, will reduce sediment in the tunnel by several hundred tons per year.



Marvin Rodriguez, Equipment Technician II, and John Beachy, Division Manager, remove debris at the Waller Creek Tunnel inlet facility. The Waller Creek Tunnel staff removed 1,942.34 tons of debris from the Waller Creek Tunnel and the inlet pond, which would otherwise have been washed into Lady Bird Lake. Contractors removed an additional 4,000 tons from inside the tunnel. The tunnel diverted 15 floods this year.



Eric Medina and Carl Cannon, IT Support Specialist Seniors, perform preventive maintenance on a Flood Early Warning System rain gauge. The summer and spring in 2021 were wetter than normal, and staff spent 39 days (and nights) monitoring storms. Field Operations staff were placed on call 14 times in case we needed to barricade low water crossings.

CAPITAL SPENDING BY CATEGORY	
Flood Buyouts/Open Space	\$ 17,940,868
Master Plan/Citywide	11,040,148
Flood Risk Reduction	6,342,973
Waller Creek District	5,806,740
Erosion	5,692,509
Water Quality	3,533,263
Facility, Equipment, & Other	3,074,788
Waller Creek Operations & Management	1,895,991
Total Projects	\$ 55,327,280

Health and the Environment

Open space helps preserve water quality

We purchased the Euers Tract, almost 110 acres in Hays County in the Little Bear Creek Watershed. Consisting of wooded rangeland with a few open grassland areas, the property will be preserved as open space in perpetuity. It is surrounded on three sides by existing Water Quality Protection Lands. The property is entirely within the Barton Springs Segment of the Edwards Aquifer and was purchased with 2018 bond funding. Open space protects the quality and quantity of water in Austin's aquifers, springs, greenbelts, and parks.



1,426,000 Pounds

of **PET WASTE** potentially kept out
of streams and lakes

843.7 Tons

**OF POLLUTION REMOVED
FROM STORMWATER**

by our stormwater treatment facilities

KEY PERFORMANCE INDICATOR

36 acres

of **WATERSHED
PROPERTY PLANTED**
with a wildflower seed mix.

8.2 Tons

of **TRASH AND DEBRIS**
pulled from Lady Bird Lake

6.2 million

**GALLONS OF
POLLUTANTS RECOVERED**
during spill response activities

An old quarry on Water Quality Protection Lands, adjacent to the newly purchased Euers Tract.



“Enjoying a sustainable environment and a healthy life, physically and mentally.”

STRATEGIC DIRECTION 2023

Repairs to pond protect environmentally sensitive area

Built in 2000, the Village of Western Oaks Wet Pond treats stormwater from 107 acres. That stormwater brings with it pollutants in the form of fertilizers, pesticides, sediment, motor oil and pet waste that the pond filters out, protecting Barton Springs. However, the original clay liner of the pond failed, requiring a \$2.1 million project to make repairs. Not only did we replace the damaged clay liner with a more resilient type of liner, we also replaced the concrete overflow area and planted wetland plants around and within the pond. The repairs took just over six months and the project was completed in September 2021.

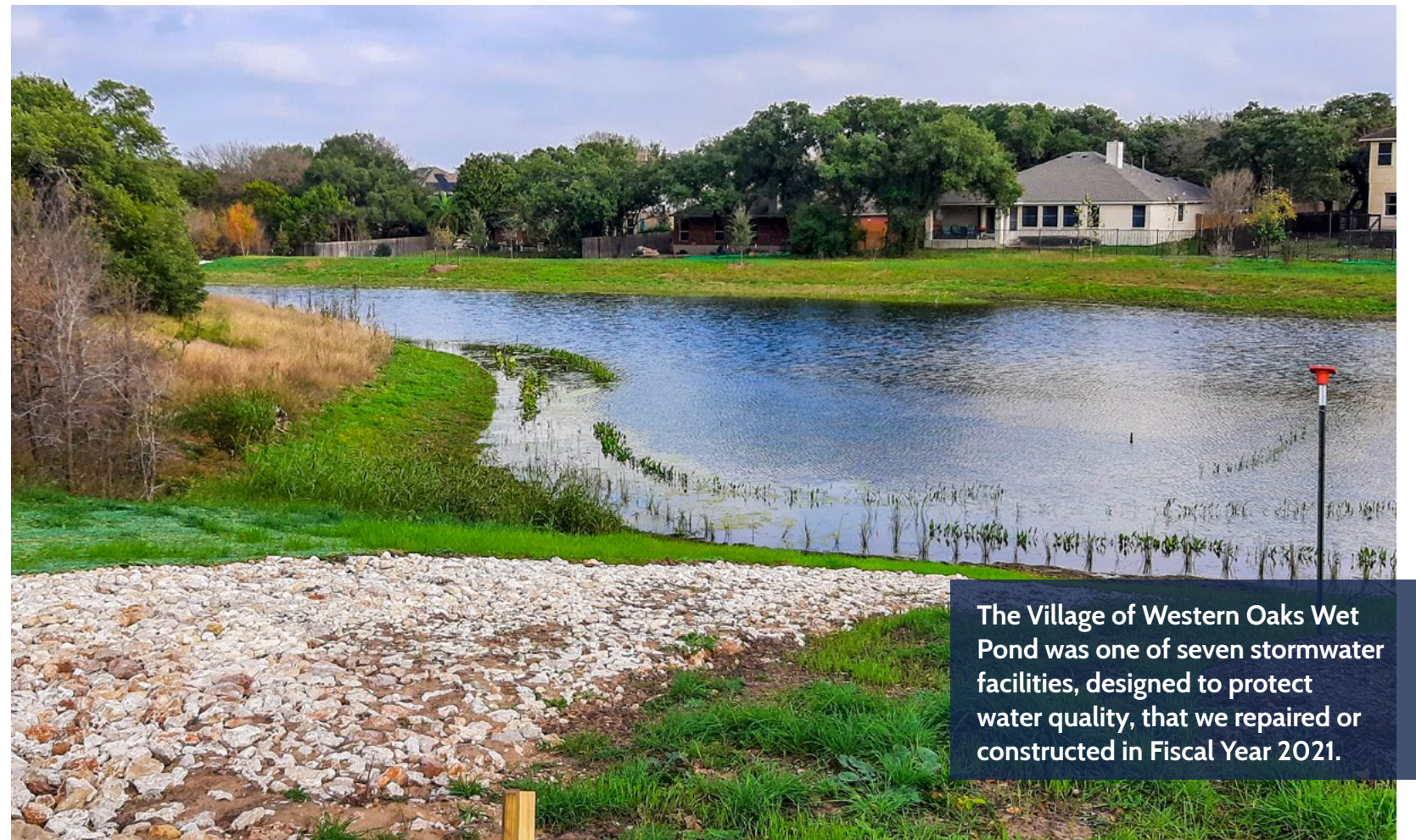
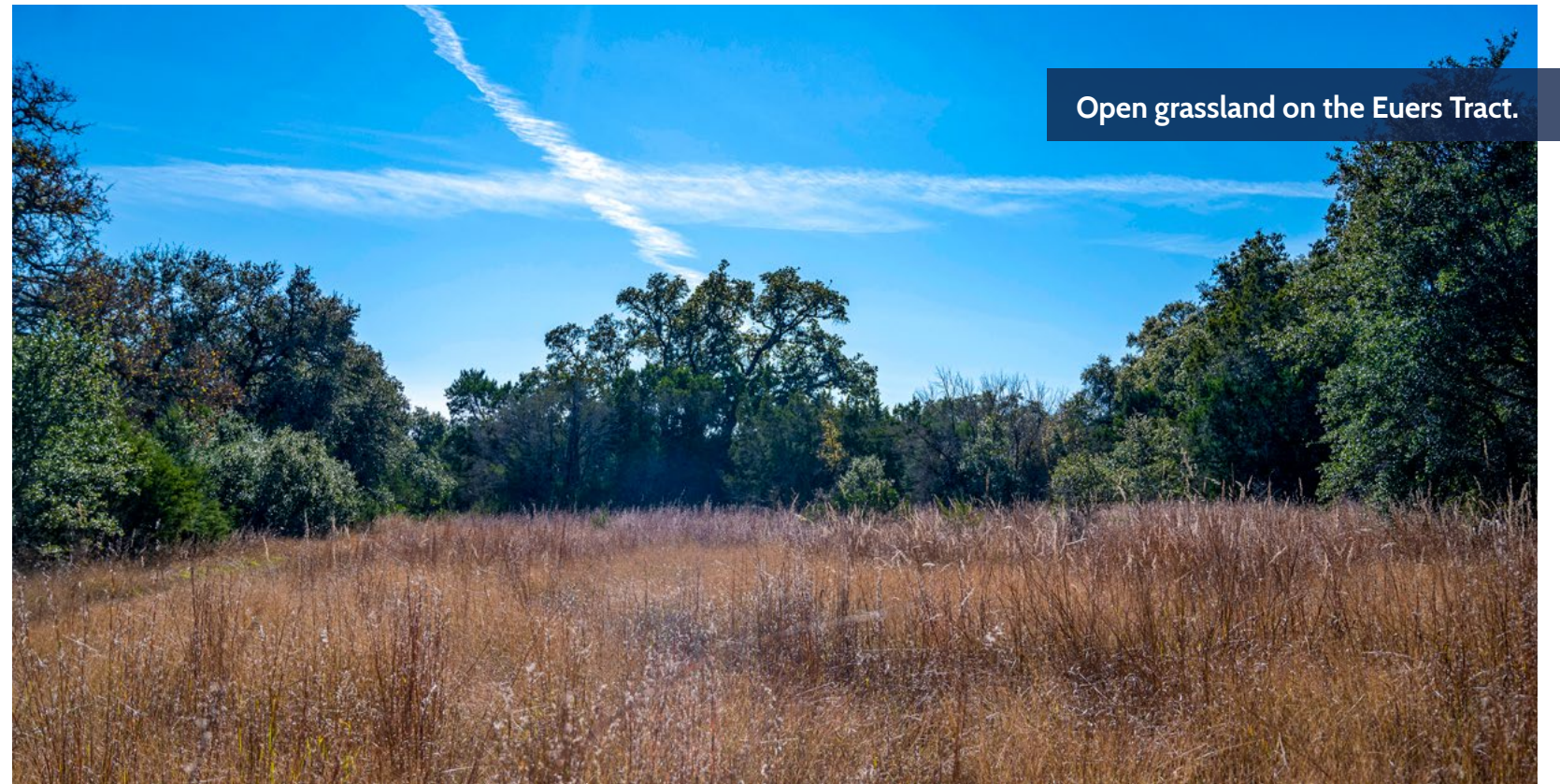
Delores Tributary Waste Removal and Stream Restoration

East Austin homes along the Delores Tributary of Fort Branch Creek are near a historic dump site for burned waste. Erosion along the creek banks exposed the burned material. Our \$3.5 million project is removing an estimated 10,000 tons of waste material, stabilizing the eroded streambank, and restoring disturbed areas. The project began in July 2021 and is expected to wrap up in February 2022.

Contractors are removing burned waste and stabilizing the creek banks along the Delores Tributary in close proximity to homes.



Open grassland on the Euers Tract.



The Village of Western Oaks Wet Pond was one of seven stormwater facilities, designed to protect water quality, that we repaired or constructed in Fiscal Year 2021.

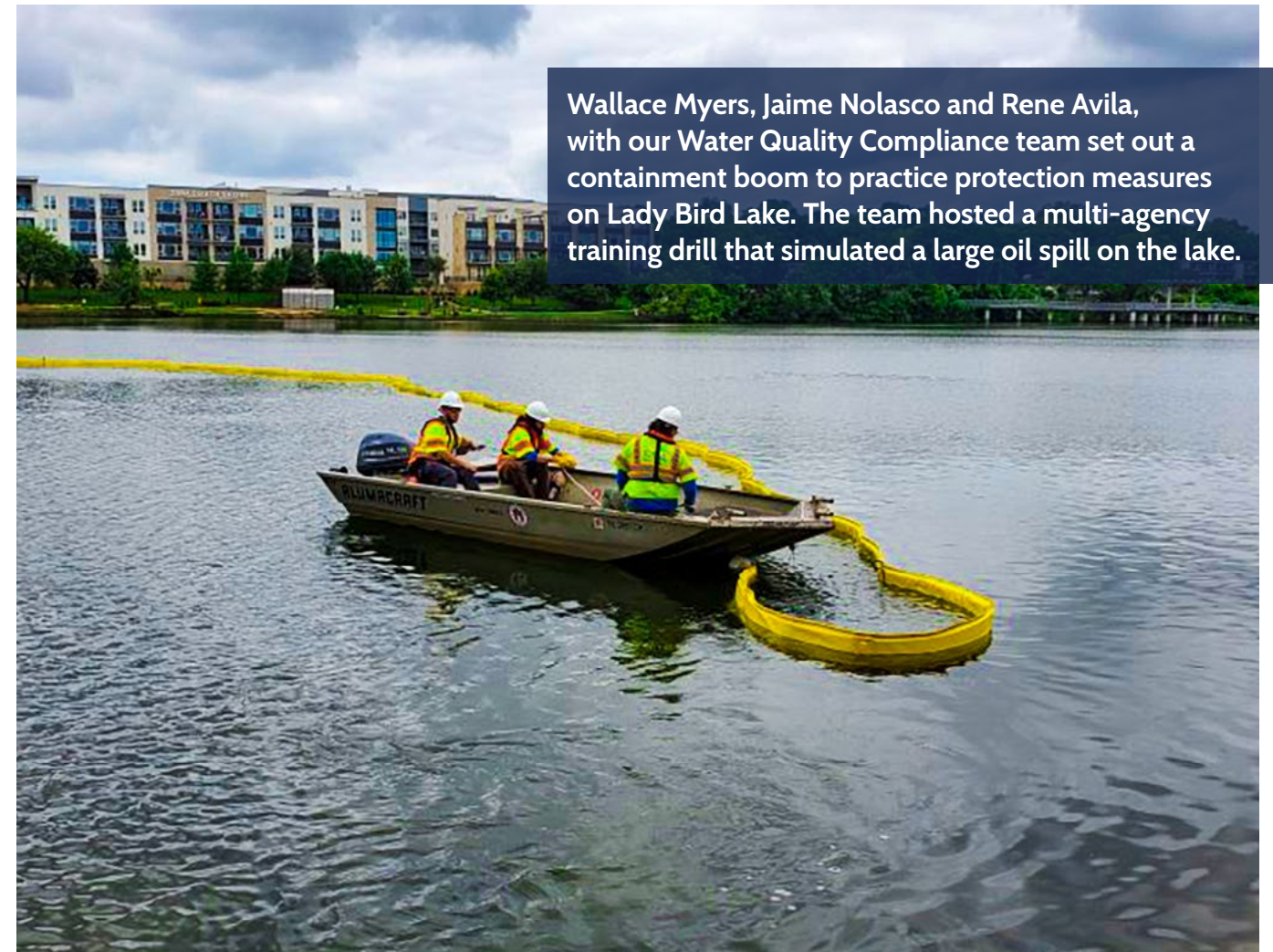
**STAFF FILL A SEED DRILL BOX
WITH WILDFLOWER SEED.**

**WE APPLIED
615 POUNDS
OF SEED**

**AT OUR PONDS AND
BUYOUT LANDS.**



Wallace Myers, Jaime Nolasco and Rene Avila, with our Water Quality Compliance team set out a containment boom to practice protection measures on Lady Bird Lake. The team hosted a multi-agency training drill that simulated a large oil spill on the lake.



Susan Kenzle, Project Manager, discusses the streambank restoration project along Waller Creek in Waterloo Park to members of the media.

Government That Works for All

Program provides jobs, training for unemployed

The Austin Civilian Conservation Corps, developed in response to a City Council resolution, is modeled on the depression-era Civilian Conservation Corps and helps Austinites impacted by COVID-19. Two 6-person crews were initially established. The Onion Creek crew focused on management of Onion Creek Metropolitan Park, where we had bought flood-prone homes in previous years. The crew removed trash, managed invasive plants, trimmed hazardous trees, constructed 690 feet of split rail fencing and cleared out brush and dead vegetation from the winter storm. The Parks and Preserves crew cleaned up trash and reduced woody invasives at the Red Bluff Nature Preserve and controlled a one-acre invasive bamboo stand at Colorado River Wildlife Sanctuary. The crew also assisted with construction of the fence at Onion Creek and completed other tasks for the Parks and Recreation Department.



\$747,000

IN DRAINAGE CHARGE DISCOUNTS
for customers on low or fixed incomes

222

**ACTIVE CAPITAL
IMPROVEMENT PROJECTS**
in planning or construction stages

75%

of high priority maintenance
WORK ORDERS COMPLETED

KEY PERFORMANCE INDICATOR

40

RESIDENTS TRAINED
to be Climate Navigators.

22

CUBIC YARDS OF TRASH REMOVED
from a southeast Austin park by the
Austin Civilian Conservation Corps



The Austin Civilian Conservation Corps program was designed to provide safe, outdoor work for Austin residents affected by COVID-19. These crews helped maintain floodplain areas.

“Believing that city government works effectively and collaboratively for all of us - that it is equitable, ethical and innovative.”

STRATEGIC DIRECTION 2023

Harnessing Power Apps to Increase Efficiency

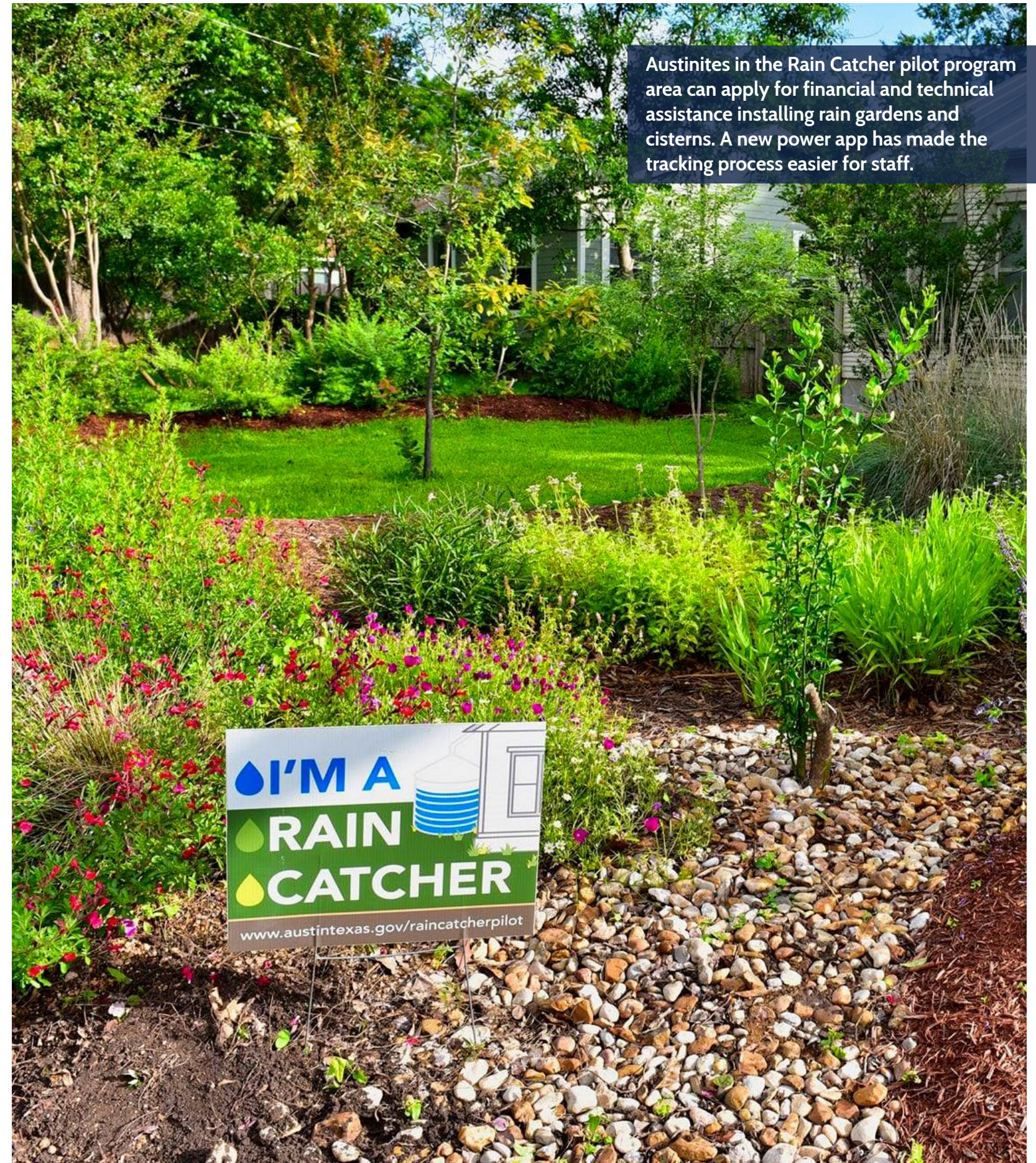
Our IT Management team took full advantage of Microsoft's Power Apps to ease workflows and fill production gaps. This tool allows quick and easy creation of apps using Microsoft Office components. Our IT team created 15 apps in this year alone, which range from helping our finance and human resources teams manage their processes more efficiently to making it easier to manage programs for residents.

Climate Navigator Program Kicks Off

We partnered with Go! Austin Vamos! Austin (GAVA) and Austin Free Net to train residents in the Dove Springs community on how to be prepared before, during and after a flood. These residents will share their knowledge with neighbors, so that the whole community is better prepared. Parts of the Dove Springs community are prone to both creek and localized flooding. The community also scores high on social vulnerability indicators, which suggests that recovery after a flood would be harder in this area.



The first Climate Navigator Training was in person. The trainings are a partnership between Go! Austin Vamos! Austin (GAVA), Austin Free Net and the City of Austin.



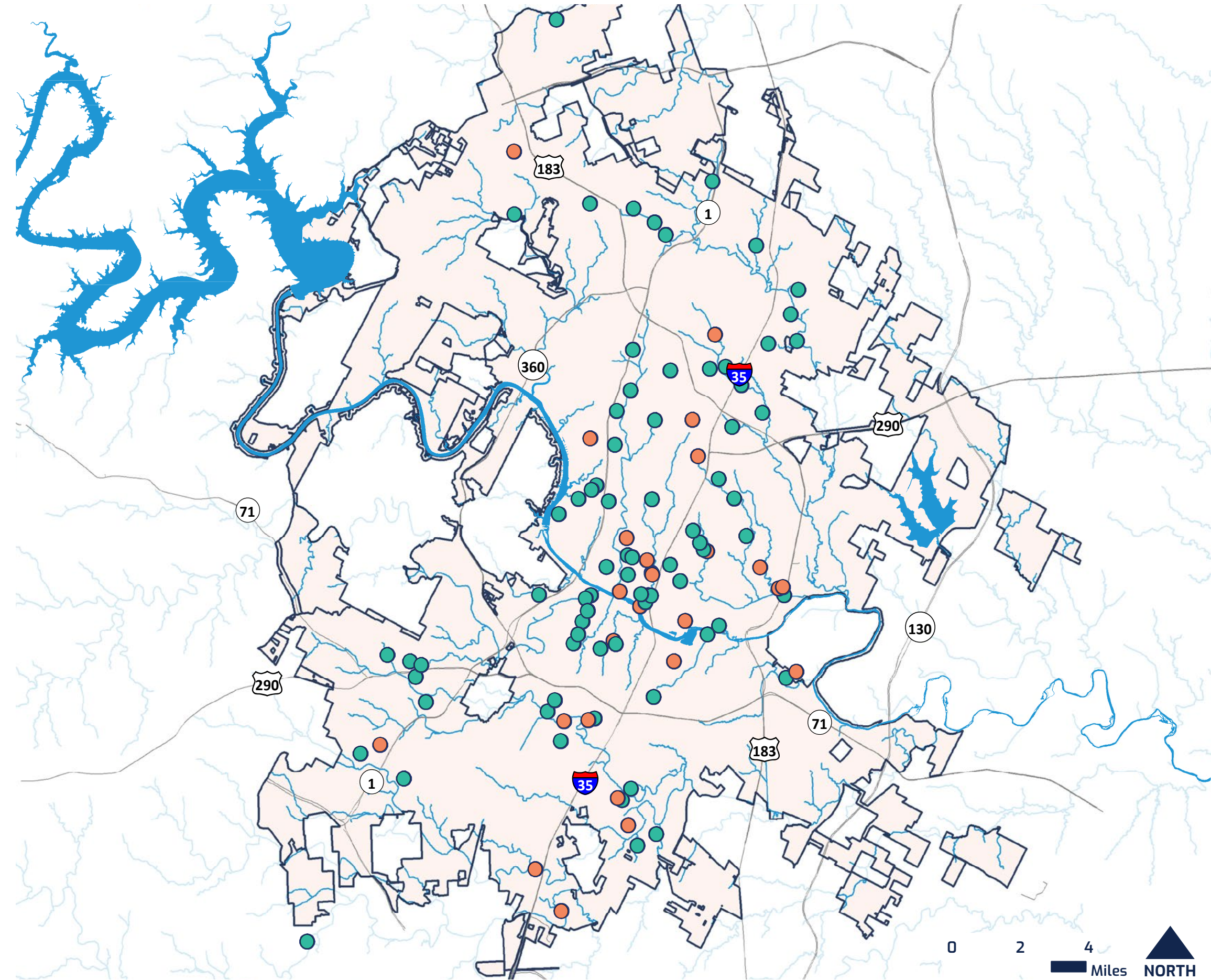
Austinites in the Rain Catcher pilot program area can apply for financial and technical assistance installing rain gardens and cisterns. A new power app has made the tracking process easier for staff.

Capital Improvement Projects

Capital improvement projects help protect Austin residents from flooding and erosion and protect the water quality of our creeks and lakes. This map shows projects that were under construction in 2021 as orange dots. Teal dots represent the multitude of projects in various stages of planning. These will go into construction in the future.

Active CIP Projects by Status 2021

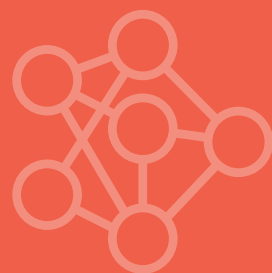
-  Project in Construction Phase
-  Project in Planning or Design Phases



Culture and Lifelong Learning

School programs adapted during the pandemic

We reinvented our hands-on educational programs for fifth grade students to be live, virtual programs for the 2020-2021 school year. Our youth education programs provide school outreach, curriculum and service learning opportunities that focus on what individuals can do to help protect our water quality.



\$30,000

AWARDED TO LOCAL SCHOOLS FOR RAINWATER
centered programming via Bright Green Future Grants

174,108

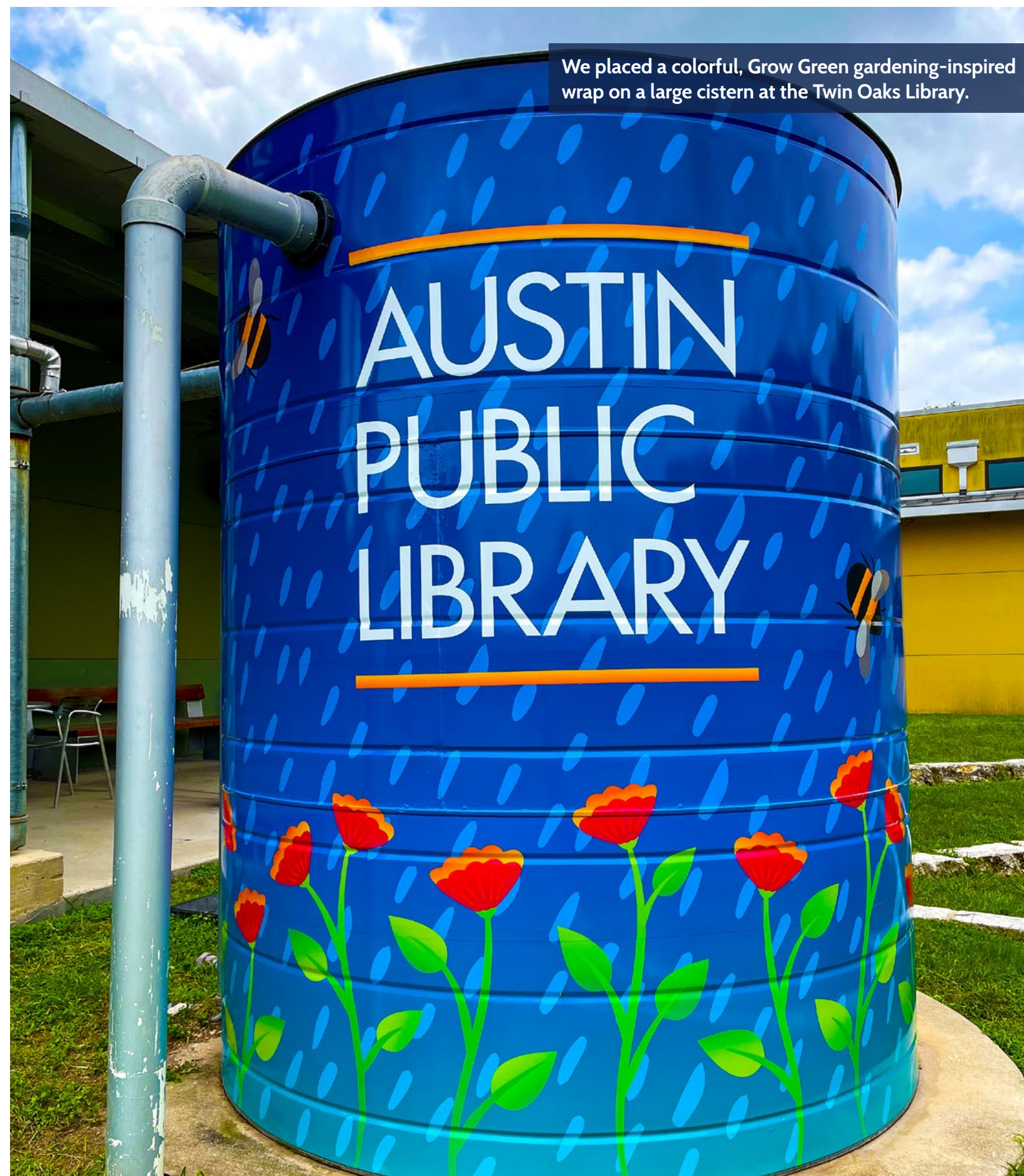
STUDENTS REACHED
through partnership programs

2,834

STUDENTS REACHED
through our youth education
programs in schools.

170

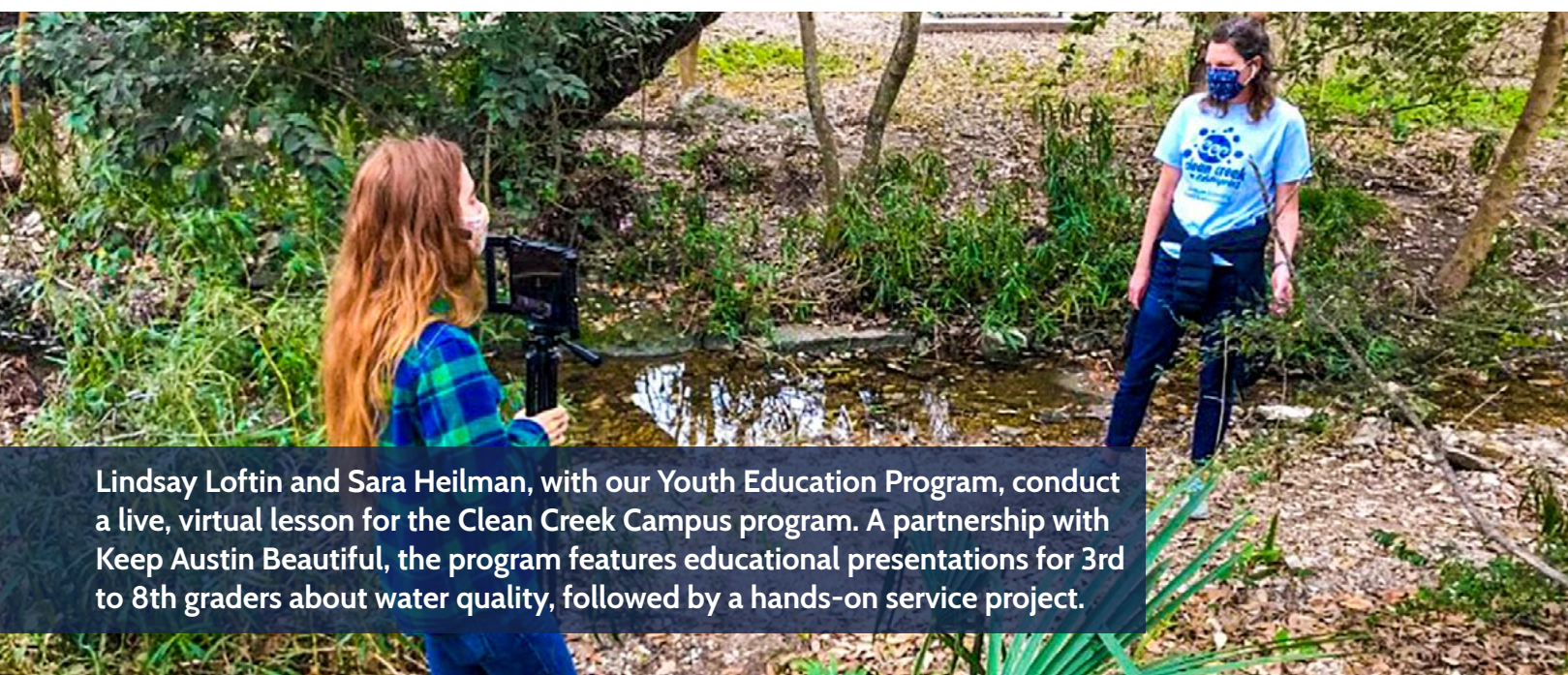
STORM DRAINS MARKED,
“Drains to Creek,” by volunteers



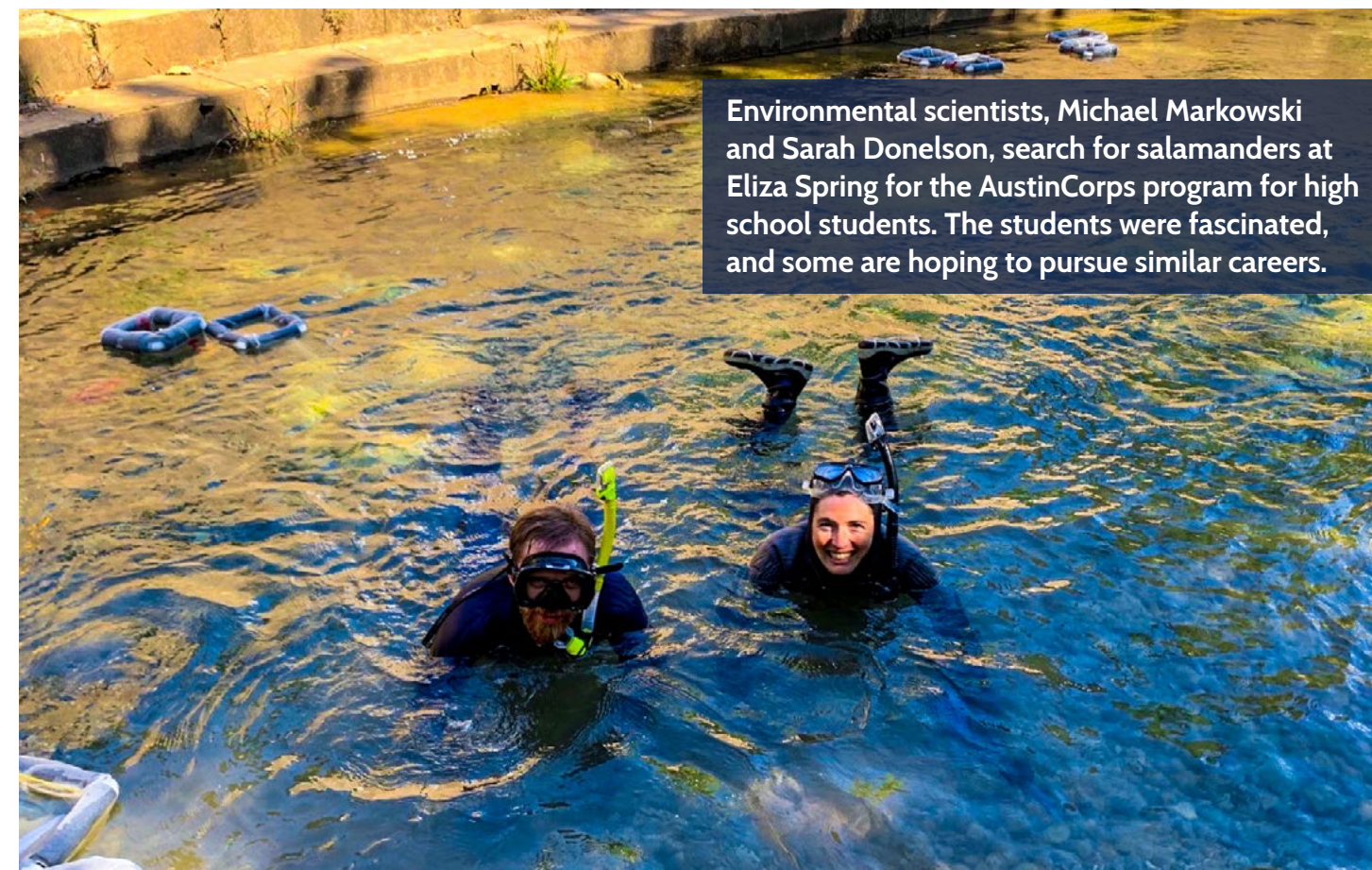
Being enriched by Austin's unique civic, cultural, ethnic, and learning opportunities. STRATEGIC DIRECTION 2023



This van, used for youth education programs, was recently decorated to celebrate our connection with creeks.



Lindsay Loftin and Sara Heilman, with our Youth Education Program, conduct a live, virtual lesson for the Clean Creek Campus program. A partnership with Keep Austin Beautiful, the program features educational presentations for 3rd to 8th graders about water quality, followed by a hands-on service project.



Environmental scientists, Michael Markowski and Sarah Donelson, search for salamanders at Eliza Spring for the AustinCorps program for high school students. The students were fascinated, and some are hoping to pursue similar careers.



Riley Hamilton, Environmental Conservation Information Specialist, conducts an Earth Camp session. Earth Camp is a four-day program for fifth graders at Title I schools for a deep dive into Earth sciences.

Equity

Our Equity Initiative seeks to advance racial equity in all our operations through the implementation of the City's Equity Assessment and Action Planning framework. To help us continue to incorporate equity into our work in 2021, we invested efforts into an organizing framework provided by the City's equity office:

Normalize

We are building a culture of equity, which requires a shared understanding of what institutional racism means, its history, and how racial equity relates to our everyday work. To do so, we expanded equity-related training opportunities as a requirement for all department leadership and as an option for interested staff.

Organize

We continue to expand our network of staff with a shared understanding of equity and hold conversations about equity in our everyday work. We developed a framework for an internal equity program and created an initiative charter to guide our work. We expanded our relationships with community members, specifically communities of color, and added staff positions in our Communications and Engagement Office to support this work.

Operationalize

We updated our hiring practices to expand recruitment and job postings in organizations, educational institutions, and communities of color. We requested and received a new position in our FY22 Budget to lead the Equity Initiative full time starting in 2022. We are developing an equity-driven prioritization system for our in-house projects and conducting an equity assessment on our Capital Improvement Program.



35%

OF EMPLOYEES HAVE COMPLETED racial equity training since the 2018 Equity Assessment.

100

EMPLOYEES ATTENDED various racial equity trainings

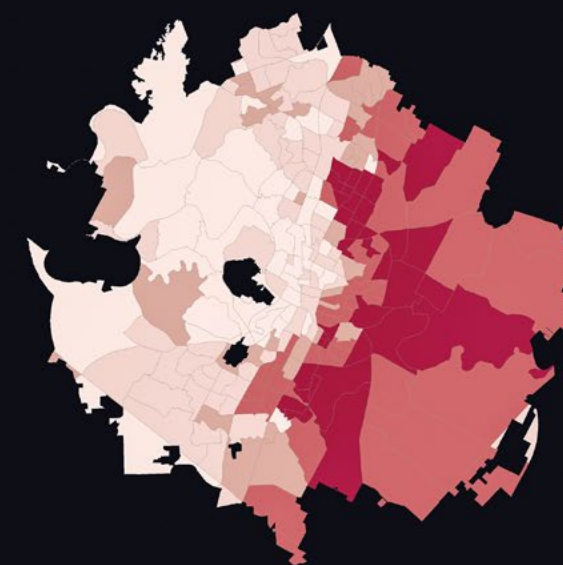
100

PERCENT OF EXECUTIVE TEAM have completed Undoing Racism training

5

CORE MEMBERS of our Equity team

We featured environmental justice in our State of the Environment report, sharing the history of the East Austin Tank Farms. Photo by Joe Vitone, Austin History Center, Austin Public Library, AR-2012-015-001



A map of Austin's 'social vulnerability' to natural disasters shows increasing vulnerability from west to east.

Low Social Vulnerability Index High Social Vulnerability Index

Resilience and Sustainability

Working Toward Climate Equity

We were a key part of Austin's Climate Equity Plan, approved by the Austin City Council in September 2021. The plan includes the bold and aggressive goal of equitably reaching net-zero community-wide greenhouse gas emissions by 2040 with a strong emphasis on cutting emissions by 2030. We provided leadership for the Natural Systems Section, which focuses on goals such as increased tree planting, sustainable agriculture, and carbon sequestration and removal techniques. Several Watershed staff will be key in implementing these techniques. Many strategies will require pilot projects to verify long-term feasibility and scalability.

Lowering our carbon footprint

Watershed Protection is monitoring and encouraging the use of local low-carbon concrete in Austin as a way to reduce emissions of carbon dioxide. Emissions from concrete production represent seven to eight percent of all global emissions. Low-carbon concrete works in two ways to reduce carbon emissions. First, it captures carbon emissions from other industries. The carbon dioxide is injected into wet concrete where it undergoes a chemical reaction and forms limestone flakes. These flakes allow for the use of less cement within the concrete, which also helps reduce carbon emissions in the concrete-making process. The use of low-carbon concrete by the private sector is the first implemented carbon dioxide removal approach in Austin. It has reduced emissions equivalent to three to four years of Watershed Protection's operational carbon footprint.

Texas Conservation Corps plants fruit and understory trees at the Middle Williamson Watershed Management area.



12,000

TREE SAPLINGS WERE PLANTED ON PUBLIC LANDS IN 2020-2021

as part of the Ready, Set, Plant Program

8,617

CUMULATIVE ACRES OF CRITICAL ENVIRONMENTAL FEATURES

protected or improved

4,000

TONS OF CO2 EQUIVALENTS SAVED by the use of local low-carbon concrete.

34.6

ACRES OF RIPARIAN AREAS restored or improved

16

AREA FACILITIES offering low-carbon concrete

Homelessness

Increased camping near creeks strains resources

The Watershed Protection Department resumed routine cleanups of homeless encampments on our properties in May after the Austin City Council authorized a new cleanup contract. There had been a year-long pause in cleanups after a prior contract was canceled for pandemic-related reasons. We found that a significant amount of trash had accumulated during that pause. Since the cleanups have resumed, the situation has continued to worsen. More encampments pop up in wooded areas near creeks, and sites that have been cleaned quickly deteriorate. These areas are relatively hidden from public view. However, they are challenging for staff and cleanup contractors to access, making them relatively expensive to clean. The encampments pose flood, fire and water quality risks. Within five months, by the end of the fiscal year, we had spent about 33 percent of our share of the five-year contract. 69 tons of trash had been removed.



\$279,000

SPENT ON CLEANUP CONTRACT

21

CLEANUPS CONDUCTED

69 Tons
OF DEBRIS COLLECTED

162

SERVICE REQUESTS ABOUT HOMELESS
encampments through 3-1-1 calls



Awards

Green Infrastructure Award, First Place

From the National Association of Flood & Stormwater Management Agencies for the Reilly Elementary School Green Stormwater Infrastructure Retrofit and Demonstration project

Richard Ridings Community Involvement Award

From the American Public Works Association, Texas Chapter, to Ramesh Swaminathan, Assistant Director

Sustainable Practices Award, Individual

From the American Public Works Association, Texas Chapter, to Thomas Ennis, Sustainability Officer, for his work on promoting the use of low carbon concrete and developing testing protocols for coal-tar sealants.

Rainwater cistern at Reilly Elementary School



Ramesh Swaminathan, Assistant Director, front-left, at award ceremony.



Tom Ennis, Sustainability Officer, and Jorge Morales, Director.

