



City of Austin

# Watershed Protection Department

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**2020**  
Annual Report



# Table of Contents

*Some numbers in this document represent FISCAL YEAR 2020 as noted. All other numbers reflect the calendar year. Key performance indicators have also 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 employees at the spring picnic in 2019



Lindsey Sydow, Environmental Scientist Sr., counts salamanders at Eliza Springs.

# Message from the Director



**2020** has finally come to an end. Although no one could have imagined how this year would unfold, it helped us grow in so many ways. The COVID-19 pandemic forced us to spend the year working primarily in remote mode, but it didn't stop us from staying connected with one another. **RESILIENCE** is defined as *"the capacity to recover quickly from difficulties; toughness,"* or as I tell my sons in a simpler manner, it is how you respond to being punched in the mouth. 2020 was most definitely a punch in the mouth, but we responded with strength, courage, unity, and innovation.

It is my honor to serve as the director of the Watershed Protection Department. 2020 was my first full year as director, and I am humbled by our team's ability and willingness to step up and respond to our community needs in so many ways. Our annual report highlights some of these efforts and the work our department completed. Thank you for being the bright spot in 2020. I look forward to working with you in 2021, as we embrace the positive changes and the growth that came in 2020.

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

# Adapting to a Pandemic

## Message to Employees from Assistant Directors

The assistant directors of Watershed Protection stand together in awe of our employees' resilience in 2020. In a year when change became the norm, you persevered to continue the high quality of work that our community and City partner departments have come to know from us. You opened your hearts and volunteered during a pandemic, giving your time to internal and external causes. You worked in our Emergency Operations Center and other facilities for the pandemic. You showed up for City of Austin Combined Charities and helped us beat our goal to give back to those who may not have the same stability we enjoy as city government employees.

You opened your minds to the possibilities of a new structural alignment of our department, to help us find ways to improve how we do our work and achieve our goals. Using our mission as a guide, you dug deep to be flexible and patient as we worked through this process together.

And quite frankly – you just got so much incredible work done! This Annual Report is a testament to what we can achieve, even when things feel uncertain and resources aren't what they used to be. Just look at all of the projects and programs that were huge successes in 2020. Awards were won, big grants received – all because you didn't quit, but found a new way to work together for the common good of Austin.

The same can be said of so many of our amazing partners around the City who helped drive for progress on major initiatives side by side with us.

So, as we step into 2021, and your cat is still climbing onto your keyboard or your kid's Zoom is competing with your Teams, just know we are right there with you. In empathy, in support and in awe of all that you do for the City of Austin, we congratulate you.

■ Sara Hartley, Jose Guerrero, Mike Kelly, Chris Herrington



Stephanie Marsh, one of our Youth Educators, teaches a virtual lesson for Earth Camp.



# 134

**LAPTOPS AND TABLETS**  
distributed to staff to work from home

# 25

Staff who served at the **EMERGENCY OPERATIONS CENTER**

# 20

Number of staff on **REINTEGRATION TEAM**

# 9

Volunteers at the **CENTRAL TEXAS FOOD BANK**

# 4

Volunteers at **POLLING STATIONS**

Resilience is defined as “the capacity to recover quickly from difficulties; toughness.”

**Nikki Fowler, Human Resources Manager**

When the department transitioned to a full telework operation in March 2020, Watershed Protection’s Human Resources team sprang into action to keep our employees informed in an ever-changing environment. We swiftly adapted to our new virtual way of conducting business by creating an online recruitment and interview process, conducting online trainings and meetings, and using technology and applications to better support our operation. We used this experience as an opportunity to seek ways to be more proficient and proactive. As we look forward to a new year, we remain committed to providing high quality customer service to all of our employees.



Melton Penson, Drainage Operations and Maintenance II, pitches in to help distribute PPE and fill hand sanitizer dispensers.

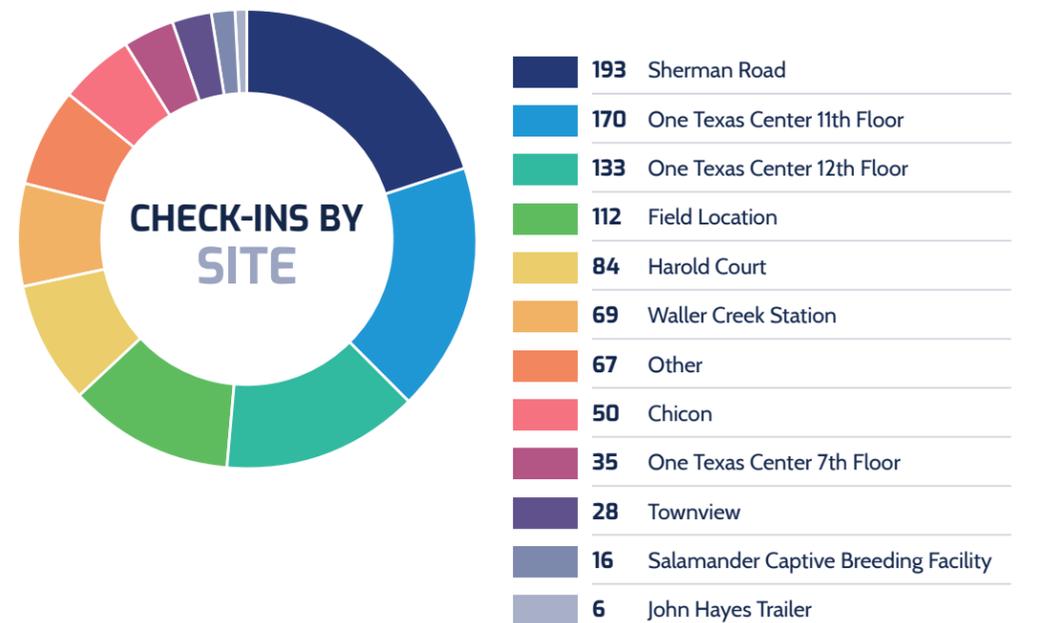
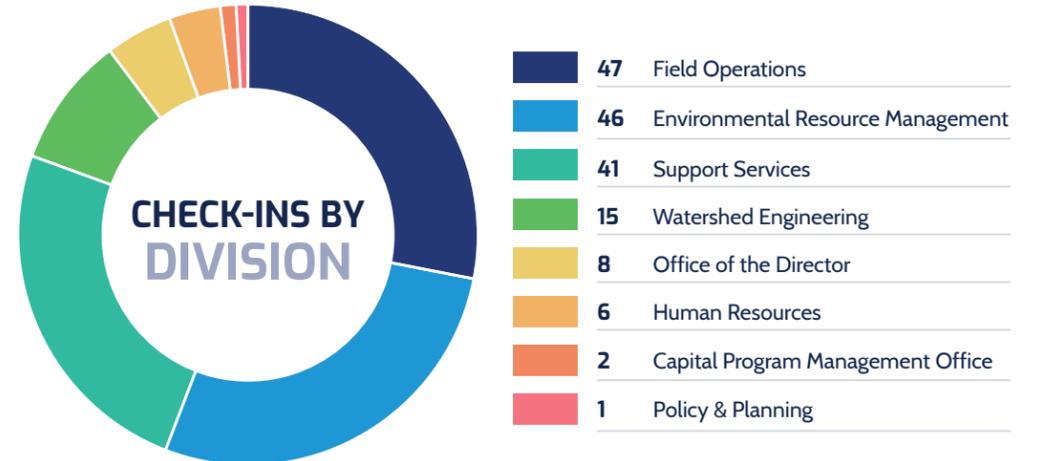
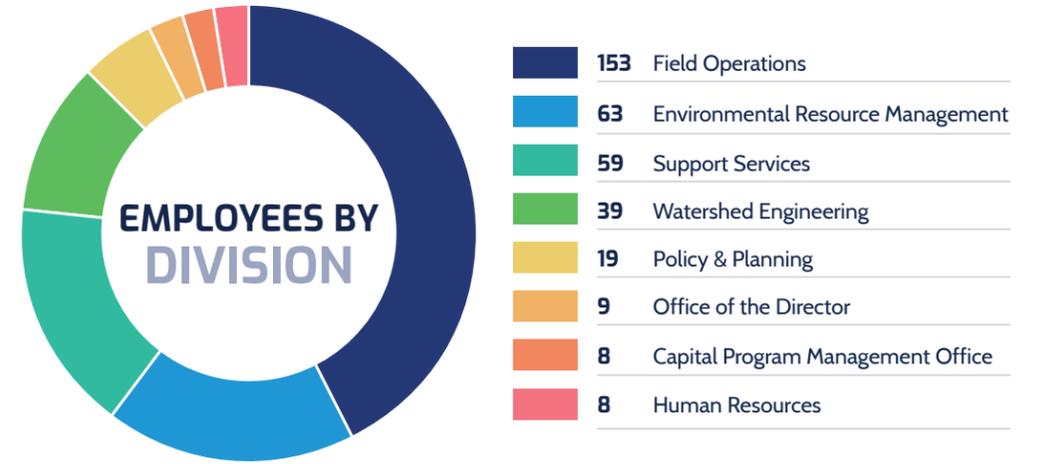
# Contact Tracing App Report

In November 2020, our Watershed Protection Reintegration Team released a Contact Tracing App to maintain a safe environment for our employees throughout the COVID-19 pandemic. This app allows our Human Resources office to identify anyone who may have potentially been exposed to COVID-19 if someone who has entered one of our work facilities or field site locations tests positive. Employees can use this app on their cellular phone, mobile tablet, or personal computer to “check in” when accessing one of our facilities and “check out” upon leaving. The graphs reflect the data between when the app was introduced in November 2020 and the end of the year.

## DURATION | BY DIVISION



## DURATION | BY SITE LOCATION



# 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.”



# \$103,811,505

**WATERSHED PROTECTION BUDGET**  
(FISCAL YEAR 2020)

# 362

**FULL-TIME EMPLOYEES**  
or equivalent  
(FISCAL YEAR 2020)

# 34

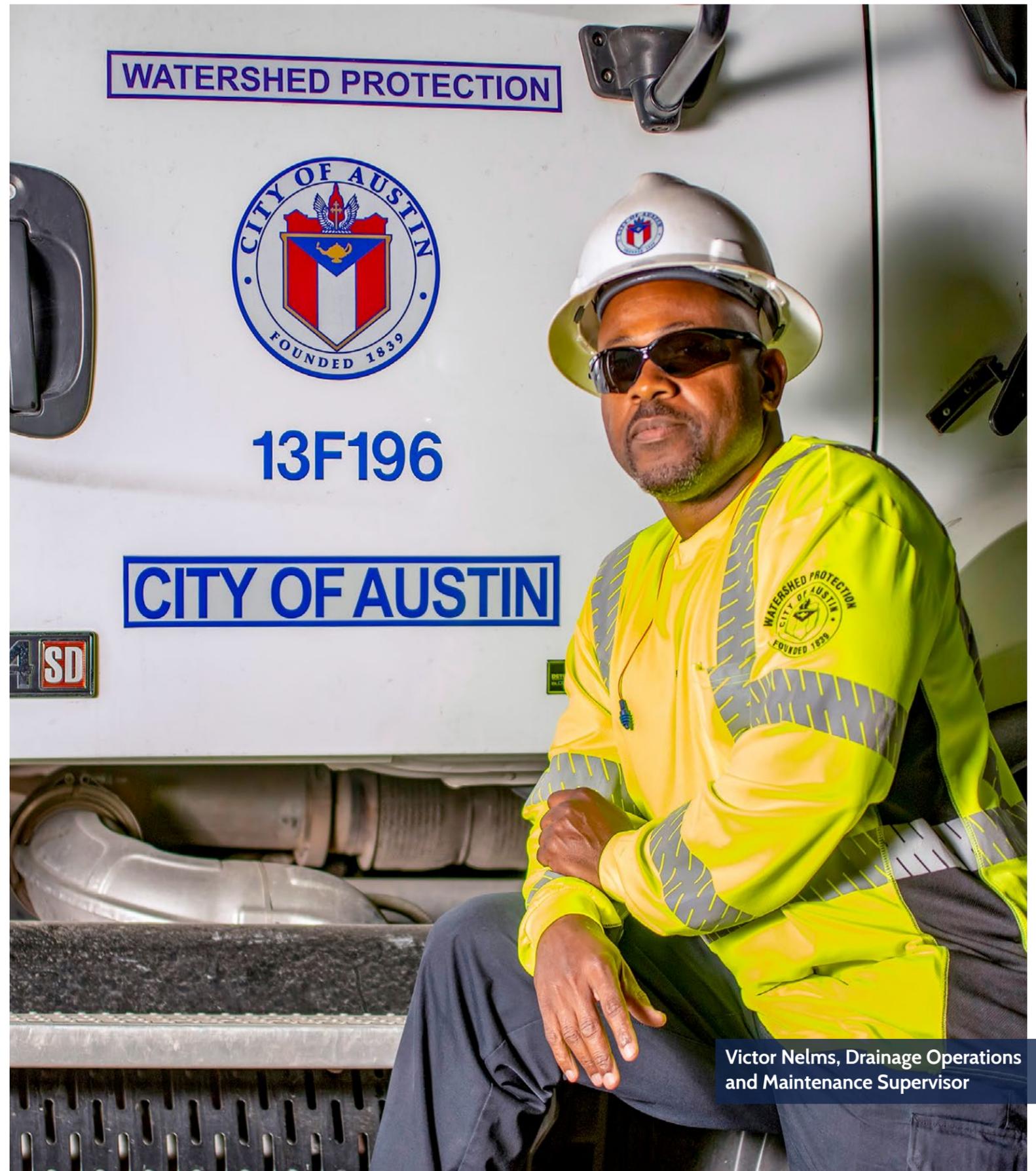
**EMPLOYEES PROMOTED**  
(FISCAL YEAR 2020)

# 30

**NEW HIRES**  
(FISCAL YEAR 2020)

# 10

**EMPLOYEES RETIRED**  
(FISCAL YEAR 2020)



Victor Nelms, Drainage Operations and Maintenance Supervisor

# Office of the Director Team



**Jorge Morales**  
Director



**Jose Guerrero**  
Assistant Director



**Sara Hartley**  
Assistant Director



**Chris Herrington**  
Assistant Director



**Mike Kelly**  
Assistant Director



**Nikki Fowler**  
Human Resources Manager



**Sarah Garvey**  
Business Process  
Consultant



**Thomas Grauzer**  
Department Executive  
Assistant

## Fiscal Year 2020 Overview



- **44%** Infrastructure and Waterway Maintenance
- **17%** Support Services
- **14%** Water Quality Protection
- **12%** Flood Risk Reduction
- **5%** Data Management
- **4%** Watershed Policy and Planning
- **2%** Capital Management Program
- **2%** Stream Restoration

### REVENUE BY SOURCE

Commercial Drainage Charge	\$ 65,156,764
Residential Drainage Charge	31,344,373
Interest	2,464,251
Development Fees	743,775
Public Health Licenses, Permits, Inspections	88,060
Property Sales	97,157
Building Safety	34,069
Other Revenue	60,896
<b>Total Revenue</b>	<b>\$ 99,989,345</b>

# Safety

## Flooding

We made tremendous progress on our Upper Onion Creek Flood Risk Reduction project, budgeted at \$83 million. This project is located in a far south Austin neighborhood that flooded in both 2013 and 2015. The project consists of 138 buyouts, which are a fail-safe way to reduce flood risk. By the end of 2020, we had purchased 124 of the eligible properties and helped the residents relocate to homes safe from flooding. Participation in the project is optional.



## \$5.6 Million

**GRANTS AWARDED** from FEMA and the Texas Water Development Board for floodplain remapping

## 2,889 Feet

Storm drain pipes  
**INSTALLED OR REPLACED**  
(FISCAL YEAR 2020)

## 0.46 Miles

Eroding stream channels  
**RESTORED AND STABILIZED**  
**KEY PERFORMANCE INDICATOR**  
(FISCAL YEAR 2020)

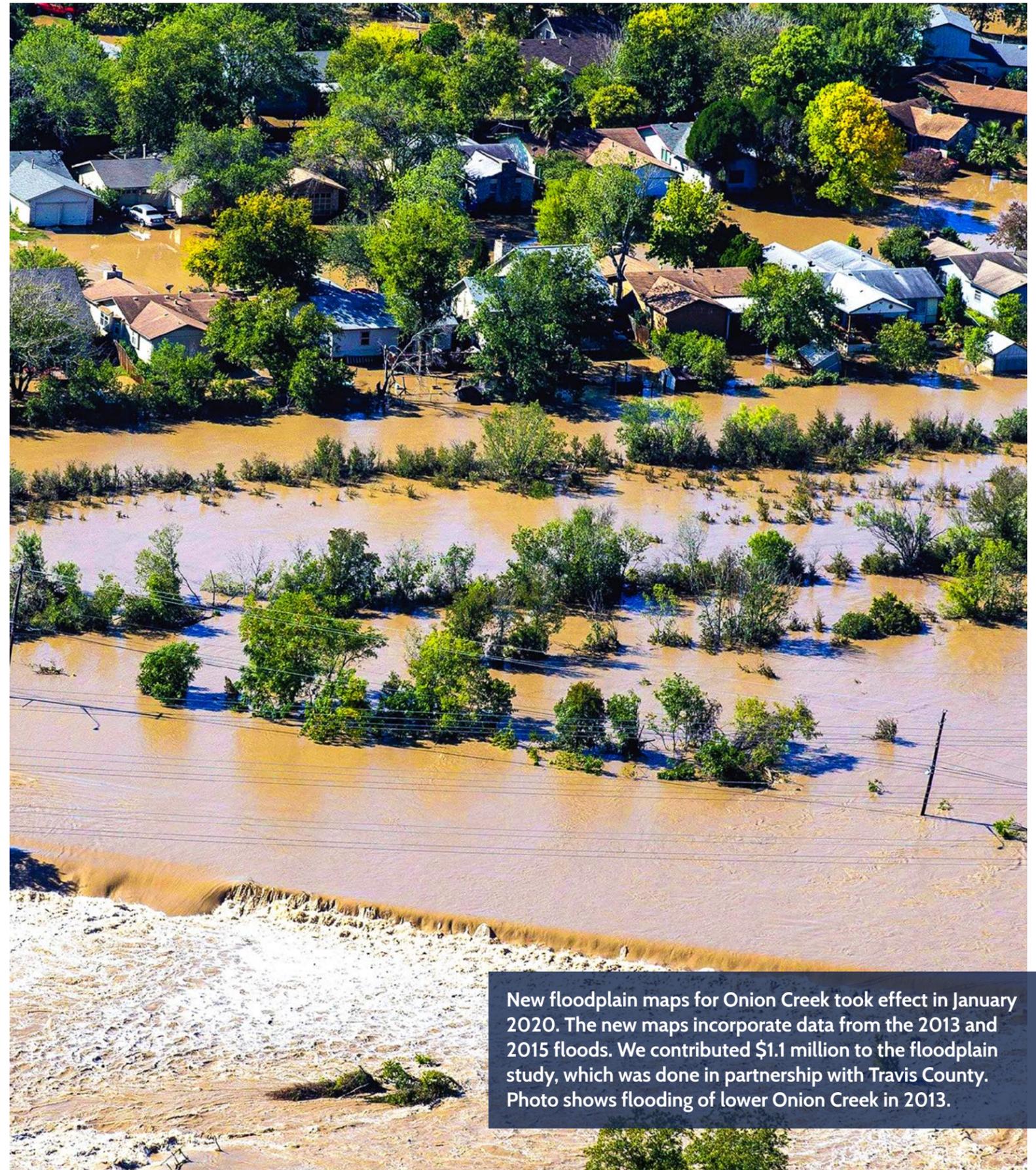
## 68

**BUILDINGS, PROPERTIES  
AND ROADWAYS**  
with reduced flood risk

**KEY PERFORMANCE INDICATOR**  
(FISCAL YEAR 2020)

## 17

**COMPLETED PROJECTS**  
(FISCAL YEAR 2020)



New floodplain maps for Onion Creek took effect in January 2020. The new maps incorporate data from the 2013 and 2015 floods. We contributed \$1.1 million to the floodplain study, which was done in partnership with Travis County. Photo shows flooding of lower Onion Creek in 2013.

Being safe in our home, at work, and in our community.  
STRATEGIC DIRECTION 2023

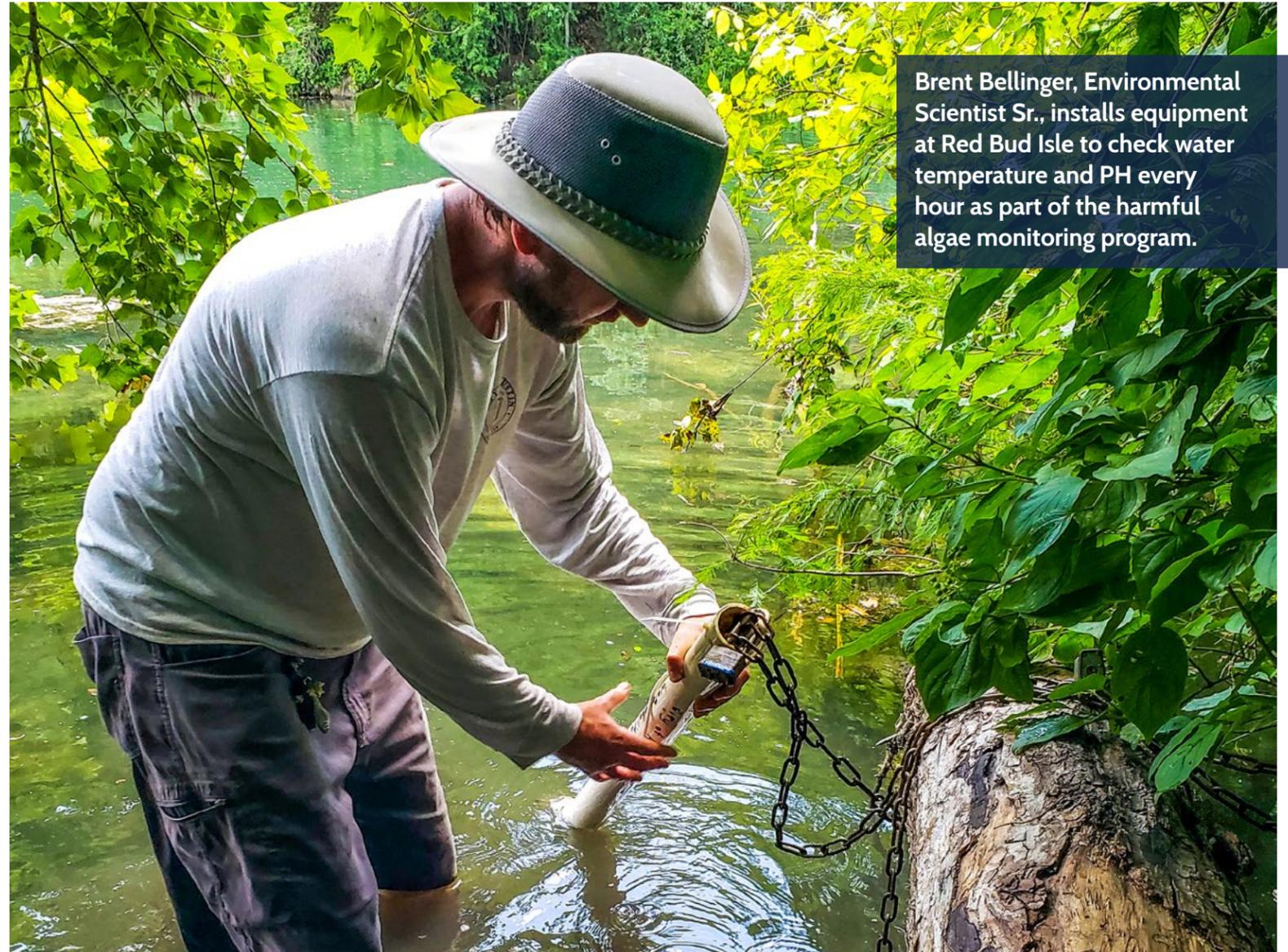
### Erosion and Flooding

We completed the \$580,000 Shoal Creek Greenbelt Bank Stabilization project, prompted by a 2018 landslide. Since the landslide, the bank of Shoal Creek has eroded at least 20 feet. The project protected two heritage trees and prevented the loss of more parkland due to erosion. The project also partially restored some flood capacity to the creek and helped address public safety issues that arose from the landslide.

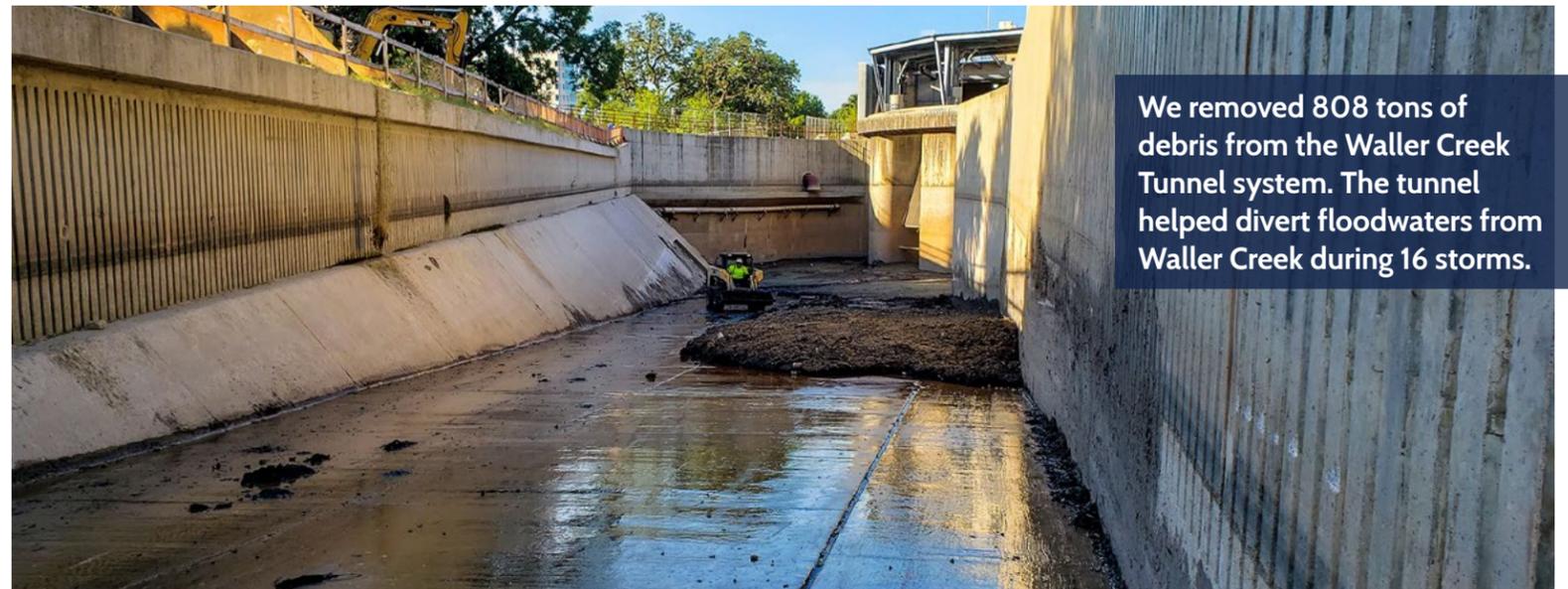
### Water Quality

We implemented dynamic monitoring, testing and communication plans for harmful algae blooms in Lady Bird Lake. We began detecting toxins in algae samples taken from Lady Bird Lake in mid-July and continued to find toxins until mid-November. In 2020, we did not receive any reports of dogs becoming ill or dying due to algae exposure. We credit this success to the care dog owners took in following recommendations and keeping their pets out of the water during the long, hot summer and fall. So far, the risk to humans has been low as the toxins have not been released into the water.

In 2020, Field Operations staff were placed on standby for 47 days and nights due to inclement weather and the potential need to barricade flooded roads.



Brent Bellinger, Environmental Scientist Sr., installs equipment at Red Bud Isle to check water temperature and PH every hour as part of the harmful algae monitoring program.



We removed 808 tons of debris from the Waller Creek Tunnel system. The tunnel helped divert floodwaters from Waller Creek during 16 storms.



Shoal Creek Greenbelt  
Bank Stabilization.



We began construction in May on the Bitter Creek Rehabilitation project. The project will stabilize the creek banks and protect 67 homes from further erosion in this southeast Austin neighborhood.



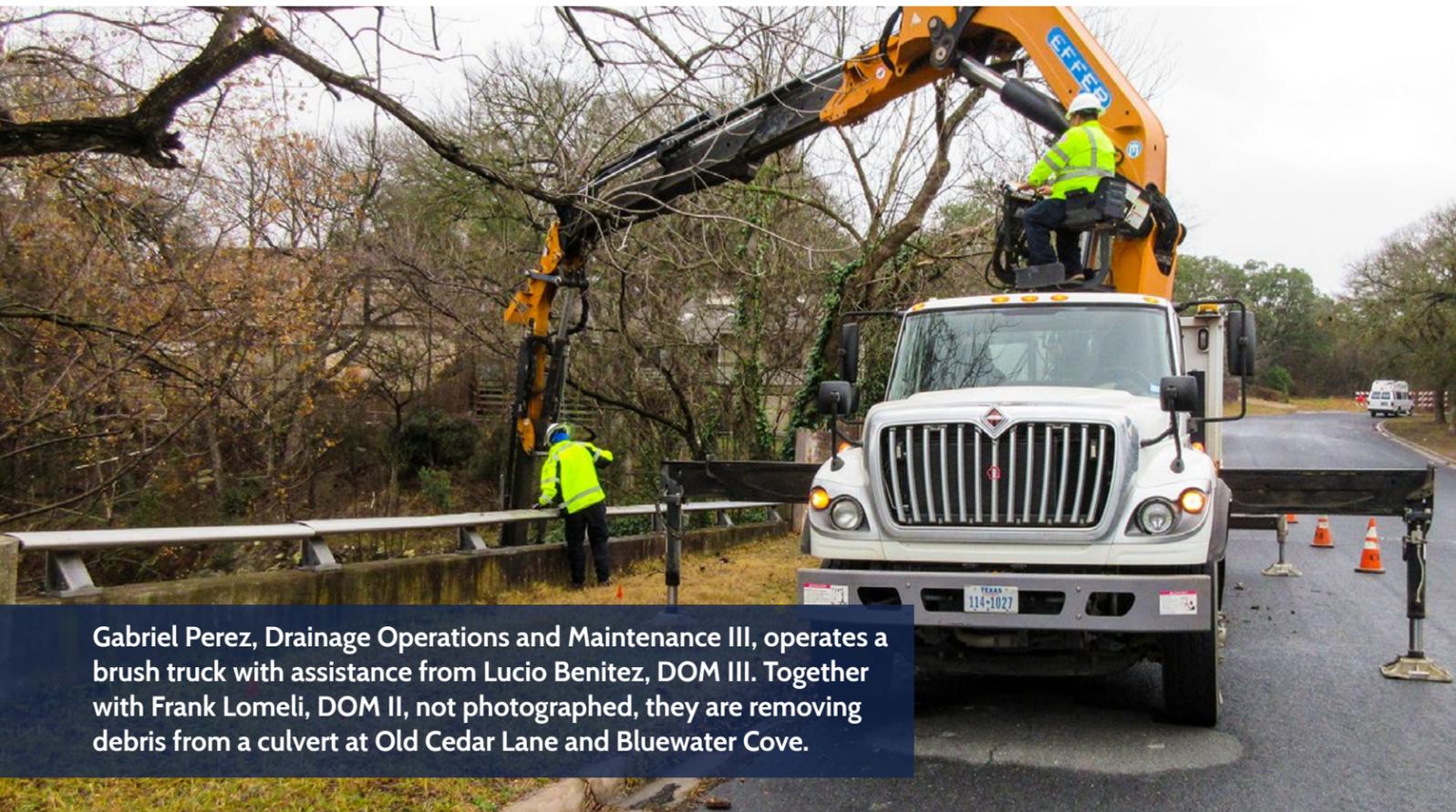
We routinely check low water crossings and other flood-prone spots for debris before storms. In mid-May, we removed 3.5 tons of debris from the Tanglewood Forest Dam ahead of inclement weather.

### CAPITAL SPENDING BY CATEGORY

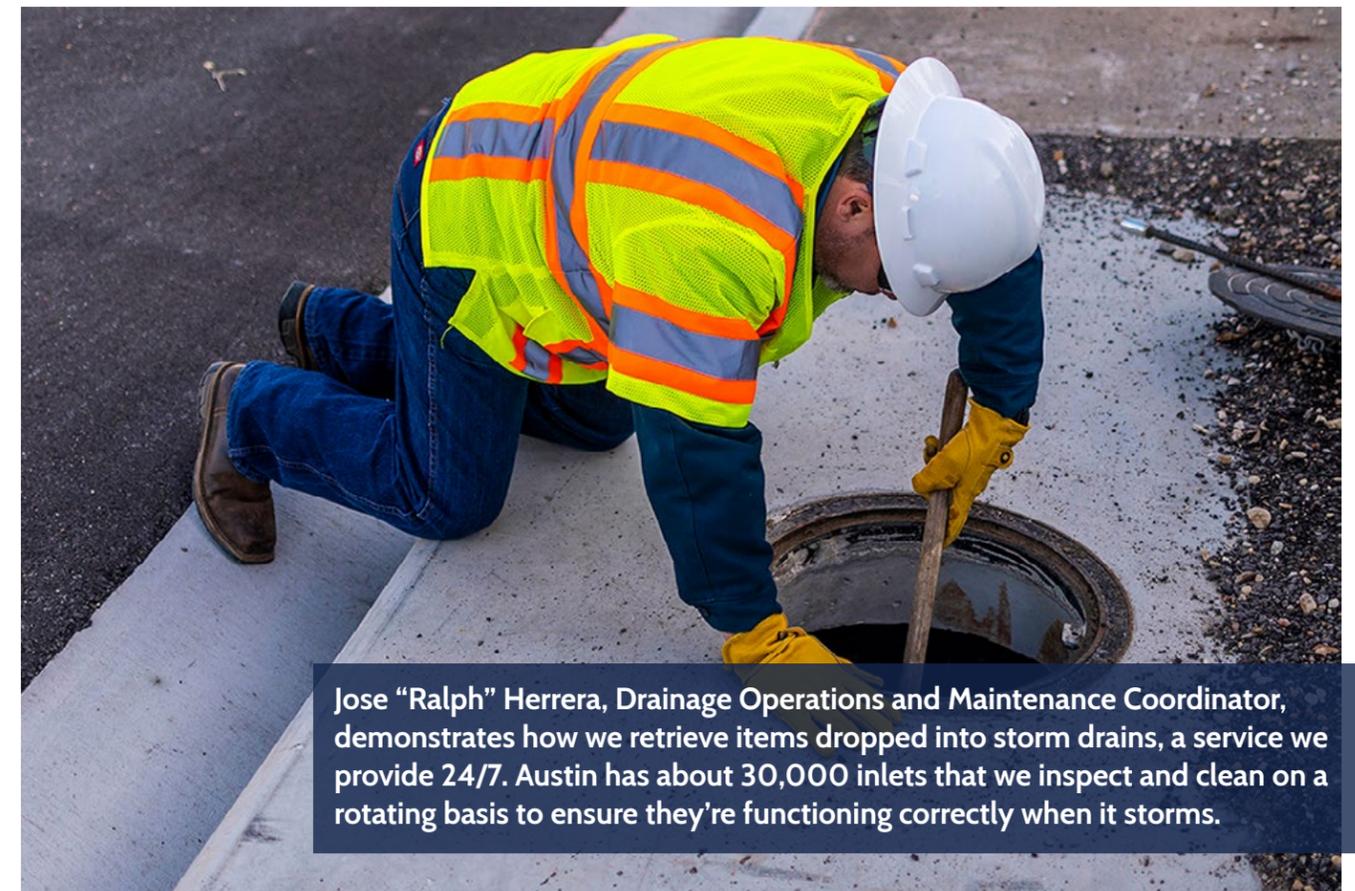
Erosion	\$ 2,620,582
Facility, Equipment, Software, Vehicles	4,055,278
Flood Buyouts	30,326,282
Flood Risk Reduction	9,834,684
Master Plan / Citywide	4,253,914
Open Space	4,616,673
Stormwater Pond Safety	190,891
Waller Creek District	6,950,127
Waller Creek O&M	2,586,137
Water Quality	3,998,419
Other	314,454
<b>Total Projects</b>	<b>\$ 69,747,441</b>



We shored up the eroding streambank in Roy G. Guerrero Metropolitan Park. This is a temporary measure to protect the park road and infrastructure until a permanent stabilization project can be constructed.



Gabriel Perez, Drainage Operations and Maintenance III, operates a brush truck with assistance from Lucio Benitez, DOM III. Together with Frank Lomeli, DOM II, not photographed, they are removing debris from a culvert at Old Cedar Lane and Bluewater Cove.



Jose "Ralph" Herrera, Drainage Operations and Maintenance Coordinator, demonstrates how we retrieve items dropped into storm drains, a service we provide 24/7. Austin has about 30,000 inlets that we inspect and clean on a rotating basis to ensure they're functioning correctly when it storms.

# Health and the Environment

## Water Quality Protection Lands

In Fiscal Year 2020, we acquired 1,010.5 acres of open space. This brings us to a current total of more than 30,000 acres of Water Quality Protection Lands. We purchase both land and conservation easements in the Barton Springs contributing and recharge zones of the Edwards Aquifer. The open space helps us conserve and maintain the safety of part of Austin's water supply. The open space also produces clean, high quality water to recharge the Barton Springs segment of the aquifer.



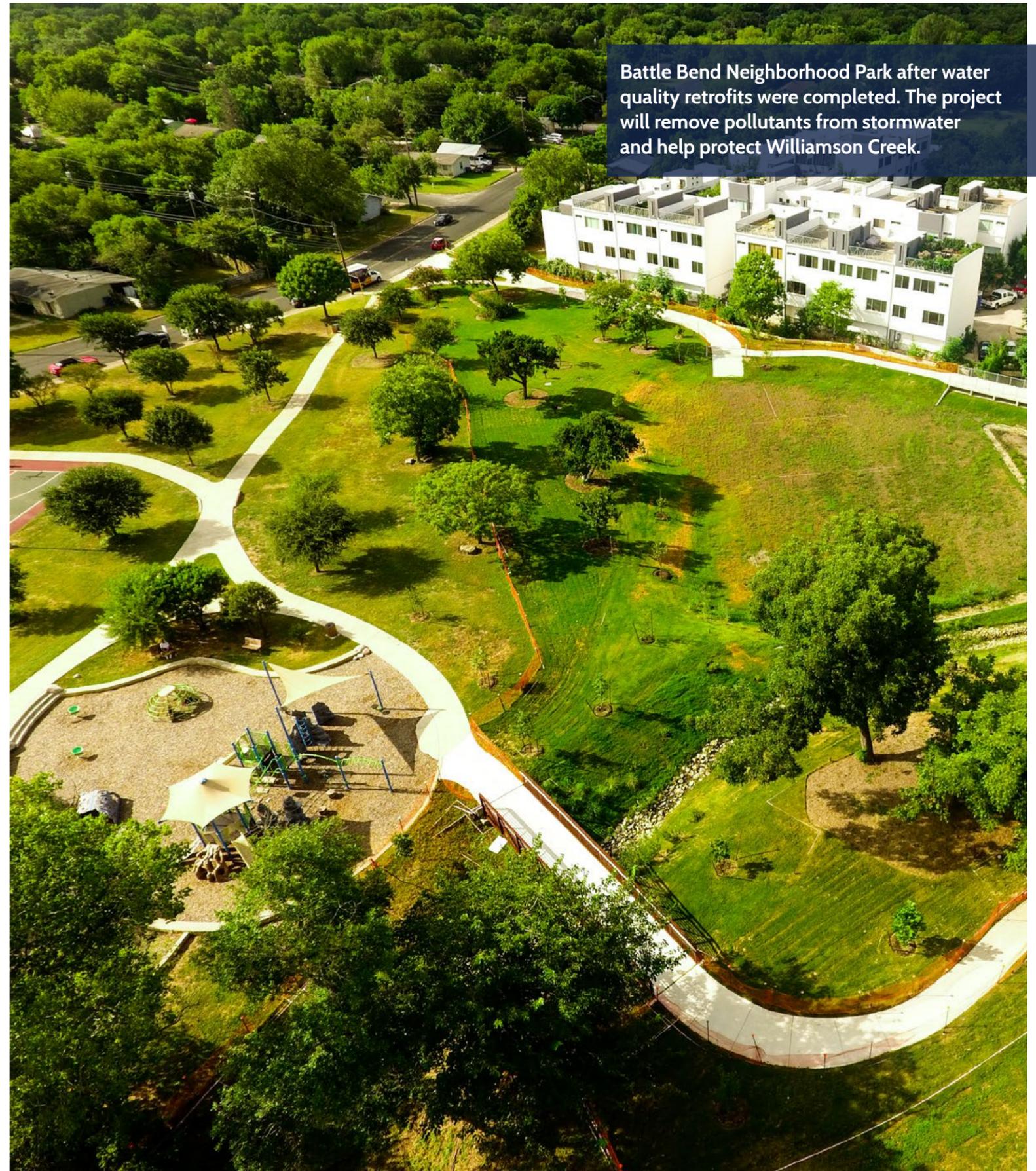
**1,224,000 lbs**  
**PET WASTE POTENTIALLY KEPT OUT**  
**OF STREAMS AND LAKES** as a result of the  
 Scoop the Poop program (FISCAL YEAR 2020)

**832 Tons**  
**POLLUTION REMOVED**  
 from stormwater by our  
 stormwater treatment facilities  
**KEY PERFORMANCE INDICATOR**  
 (FISCAL YEAR 2020)

**1,010.5 Acres**  
**OPEN SPACE ACQUIRED**  
 (FISCAL YEAR 2020)

**79%**  
 Percentage of creeks and lakes in  
**GOOD OR EXCELLENT HEALTH**  
 (FISCAL YEAR 2020)

**11.2 Million**  
**GALLONS POLLUTION REMOVED**  
 after spills into Austin's watersheds  
 (FISCAL YEAR 2020)

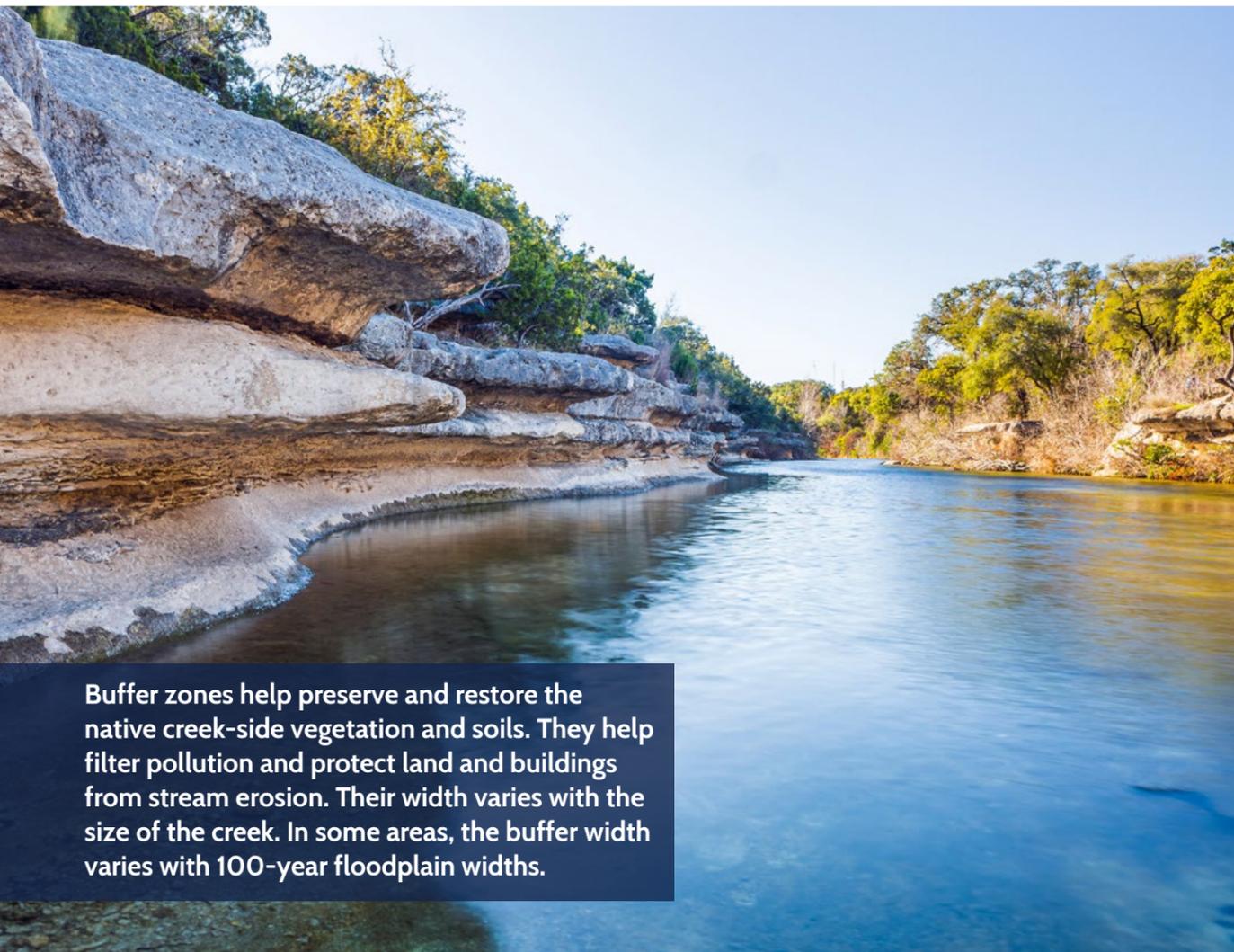


Battle Bend Neighborhood Park after water quality retrofits were completed. The project will remove pollutants from stormwater and help protect Williamson Creek.

Enjoying a sustainable environment and a healthy life, physically and mentally. STRATEGIC DIRECTION 2023

### Critical Water Quality Zone Delineations

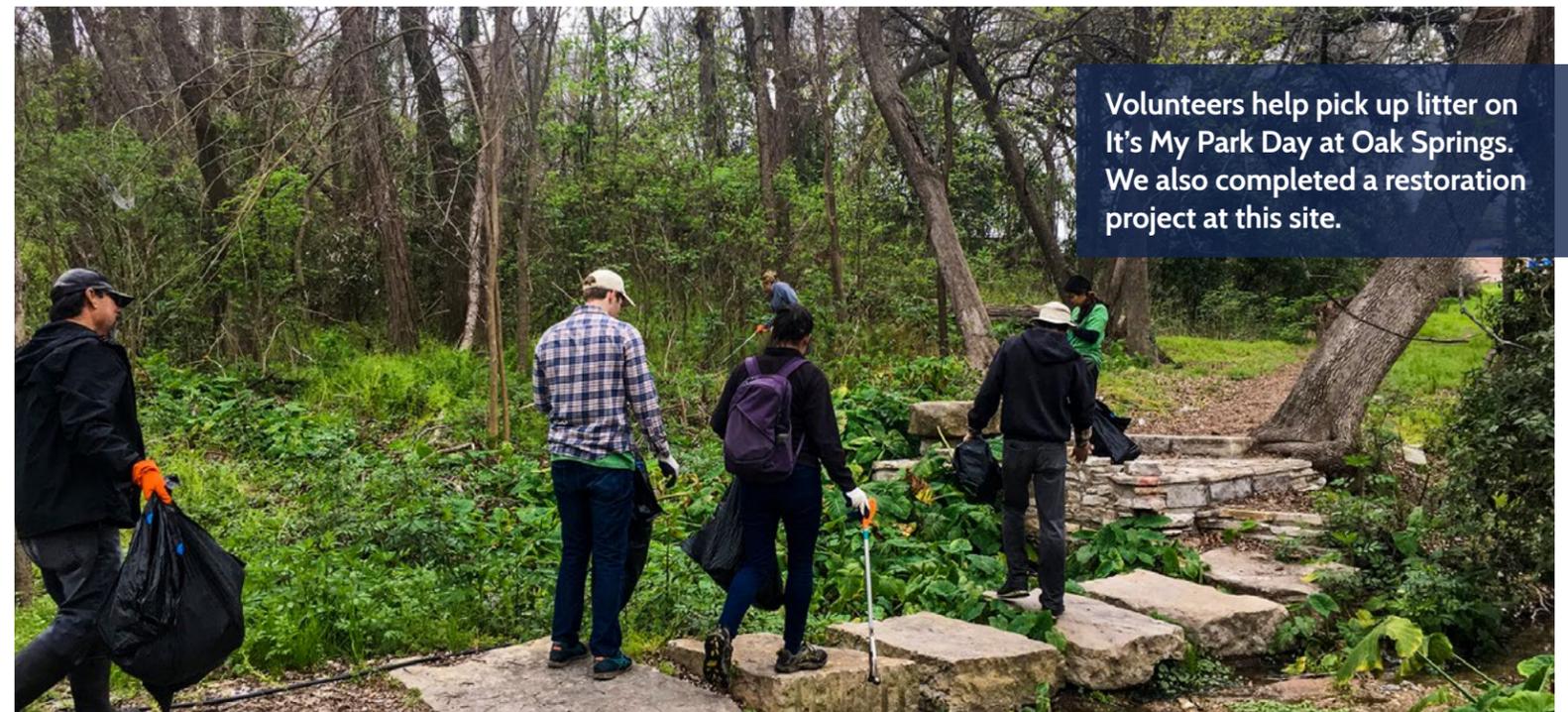
Austin helps protect its creeks and lakes by requiring that new development be located an appropriate distance from the water's edge. These buffer zones are called "critical water quality zones" in the Land Development Code. In 2020, we completed a major effort to adjust these buffer zones on our digital maps. The need arose after the Austin City Council approved an ordinance in November 2019 to use wider floodplains in accordance with the national Atlas 14 rainfall intensity study. The adjusted maps are available on the City's website for use by the public and land development community.



Buffer zones help preserve and restore the native creek-side vegetation and soils. They help filter pollution and protect land and buildings from stream erosion. Their width varies with the size of the creek. In some areas, the buffer width varies with 100-year floodplain widths.



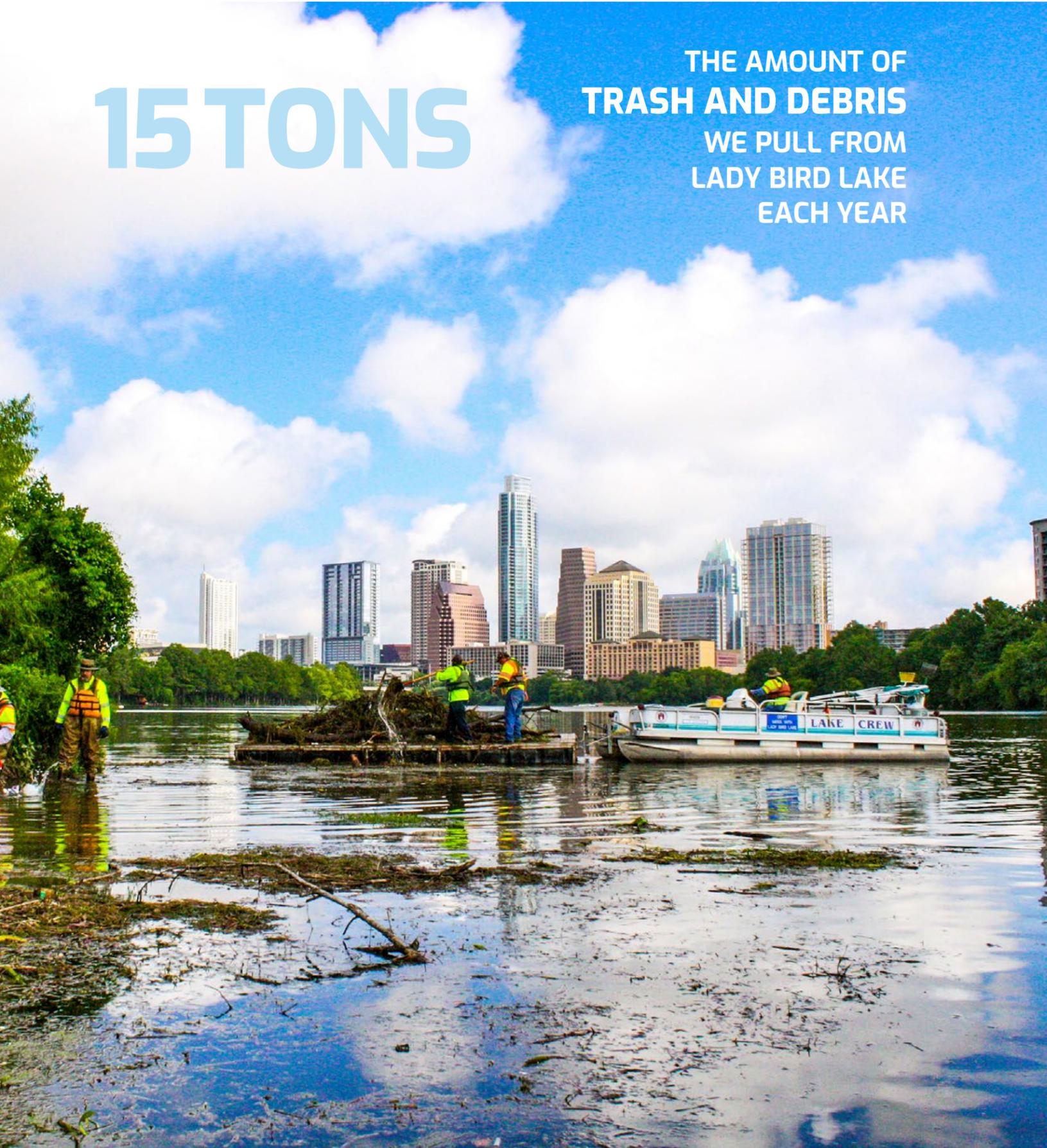
Little Bear Creek crosses the Roger Tract, approximately 400 acres in northern Hays County. The tract, purchased in 2020, is over the recharge zone.



Volunteers help pick up litter on It's My Park Day at Oak Springs. We also completed a restoration project at this site.

# 15 TONS

THE AMOUNT OF TRASH AND DEBRIS WE PULL FROM LADY BIRD LAKE EACH YEAR



Guadalupe Anicua, Drainage Operations and Maintenance III, puts the finishing touches on a footing needed for a cistern at Reilly Elementary School, part of an award-winning project completed in 2020.



We respond to accidents when needed to direct cleanup and protect the environment from any spilled fluids. In this photo, a vehicle landed in Shoal Creek about 30 yards from the road. We recovered approximately four quarts of motor oil for proper disposal using sorbent materials. Our investigators respond 24 hours a day, seven days a week to calls received on the Pollution Hotline.

# Government That Works for All

## New contract mechanism whittles away backlog of work orders

We continued to expand our use of Indefinite Delivery Indefinite Quantity contracts, spending \$4.5 million to complete projects that would otherwise have been added to a backlog of work orders. These contracts are a relatively new option. They fill a gap by providing us with contractors for projects that are too large or specialized for our crews, but too small for a Capital Improvement Project. In 2020, we used them to repair stormwater ponds, build rain gardens and biofiltration systems, restore streambanks, remove driveway approaches from buyout areas and install storm drain systems.



# \$680,000

**DRAINAGE CHARGE DISCOUNTS**  
for customers on low or fixed incomes  
(FISCAL YEAR 2020)

# 108

**ACTIVE CAPITAL IMPROVEMENT PROJECTS**  
in planning or construction stages  
(FISCAL YEAR 2020)

# 69%

High priority maintenance  
**WORK ORDERS COMPLETED**  
KEY PERFORMANCE INDICATOR  
(FISCAL YEAR 2020)

# 14

**WORK ASSIGNMENTS COMPLETED**  
by Indefinite Delivery Indefinite  
Quantity contractors

# 9%

Austin's storm drain  
systems categorized as  
**HIGH OR VERY HIGH RISK**



Amanda Sullivan teaching Earth Camp at the cave entrance to Wildflower Cave at the Lady Bird Johnson Wildflower Center.

“ Believing that city government works effectively and collaboratively for all of us - that it is equitable, ethical and innovative. ”  
 STRATEGIC DIRECTION 2023

**Being more strategic in our approach to maintenance**

To make the most efficient use of limited resources, we are creating Asset Management Plans for the ongoing repair, replacement, rehabilitation and upgrade of our infrastructure. Our infrastructure falls into three categories: ponds, storm drain systems and open channels. In 2020, we completed the Asset Management Plan for one of those categories, storm drain systems. The plan provides an evaluation of our storm drain assets, assigns a risk priority to each storm drain system and recommends next steps. We have previously completed a plan for ponds and will tackle one for open channels next.

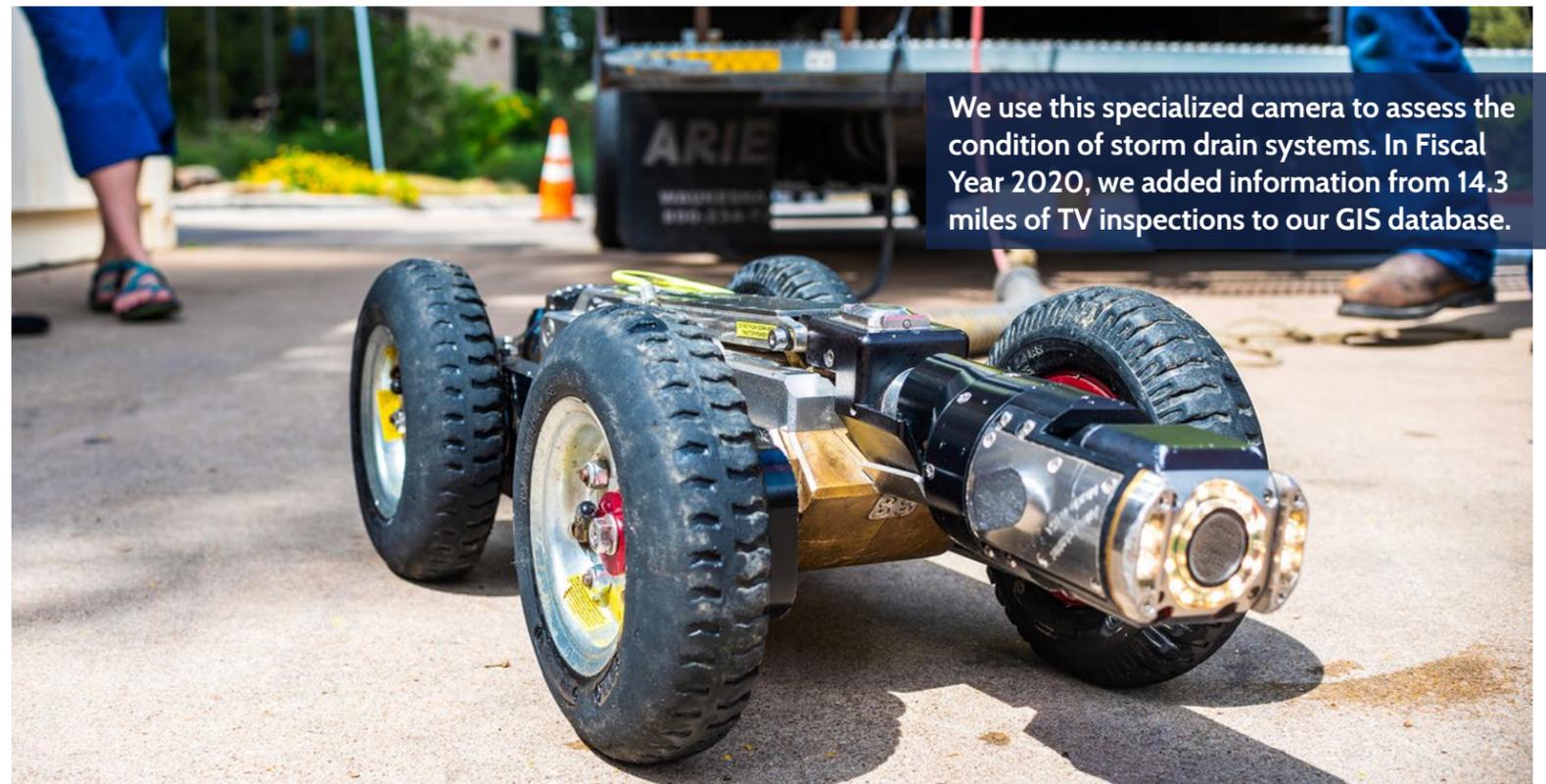


The photos show work on the storm drain system on Mary St. The system was upgraded using an Indefinite Delivery Indefinite Quantity contract.

Damage to Cantarra Pond Outfall (top photo). The damage was repaired using an Indefinite Delivery Indefinite Quantity contract (bottom photo).



With new development, comes new drainage infrastructure, such as the inlet in the photo. Using construction plans, we added 6,080 new drainage features to our GIS databases and online maps in Fiscal Year 2020. This helps us maintain and manage our infrastructure.



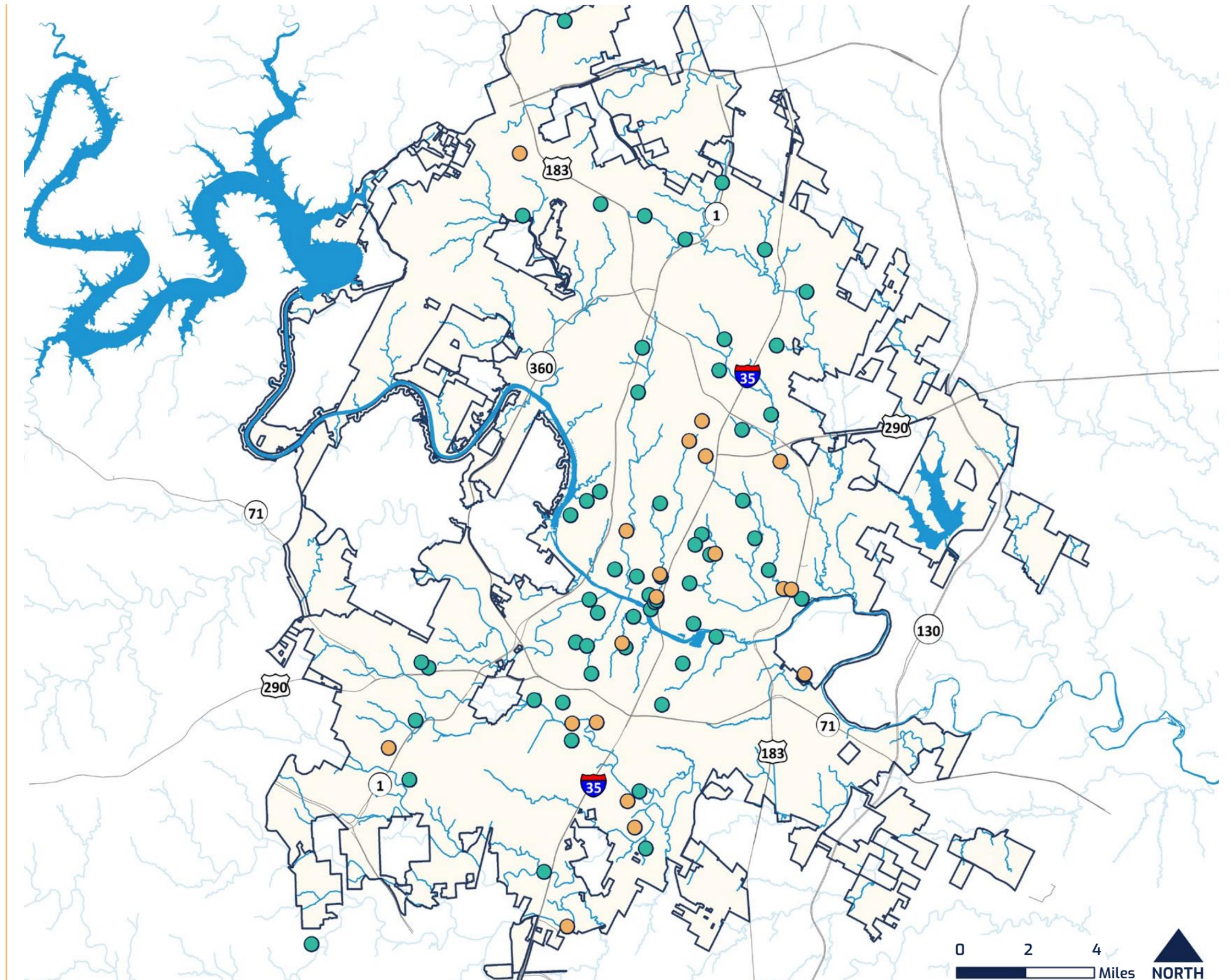
We use this specialized camera to assess the condition of storm drain systems. In Fiscal Year 2020, we added information from 14.3 miles of TV inspections to our GIS database.

### 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 2020 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 2020

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



# Culture and Lifelong Learning

## Passing the torch through Leadership Lab

In 2020, we marked the third year of our Watershed Protection Leadership Lab, and included the inaugural Field Operations Division-specific Leadership Lab. These “labs” began in 2018 due to the concern that almost 30 percent of our workforce would be eligible to retire by 2022. With the help of a consultant, we created application-based admission to 6-month long class cohorts. Watershed Protection has so many promising future leaders ready to take their leadership to the next level, and these labs provided the opportunity for them to learn techniques to be collaborative and empathetic leaders. To date, 30 percent of Leadership Lab graduates have earned a promotional opportunity.



# \$33,650

**AMOUNT AWARDED TO LOCAL SCHOOLS**  
for small green infrastructure projects via the Bright Green Future Grant program

# 168,258

# 1,204

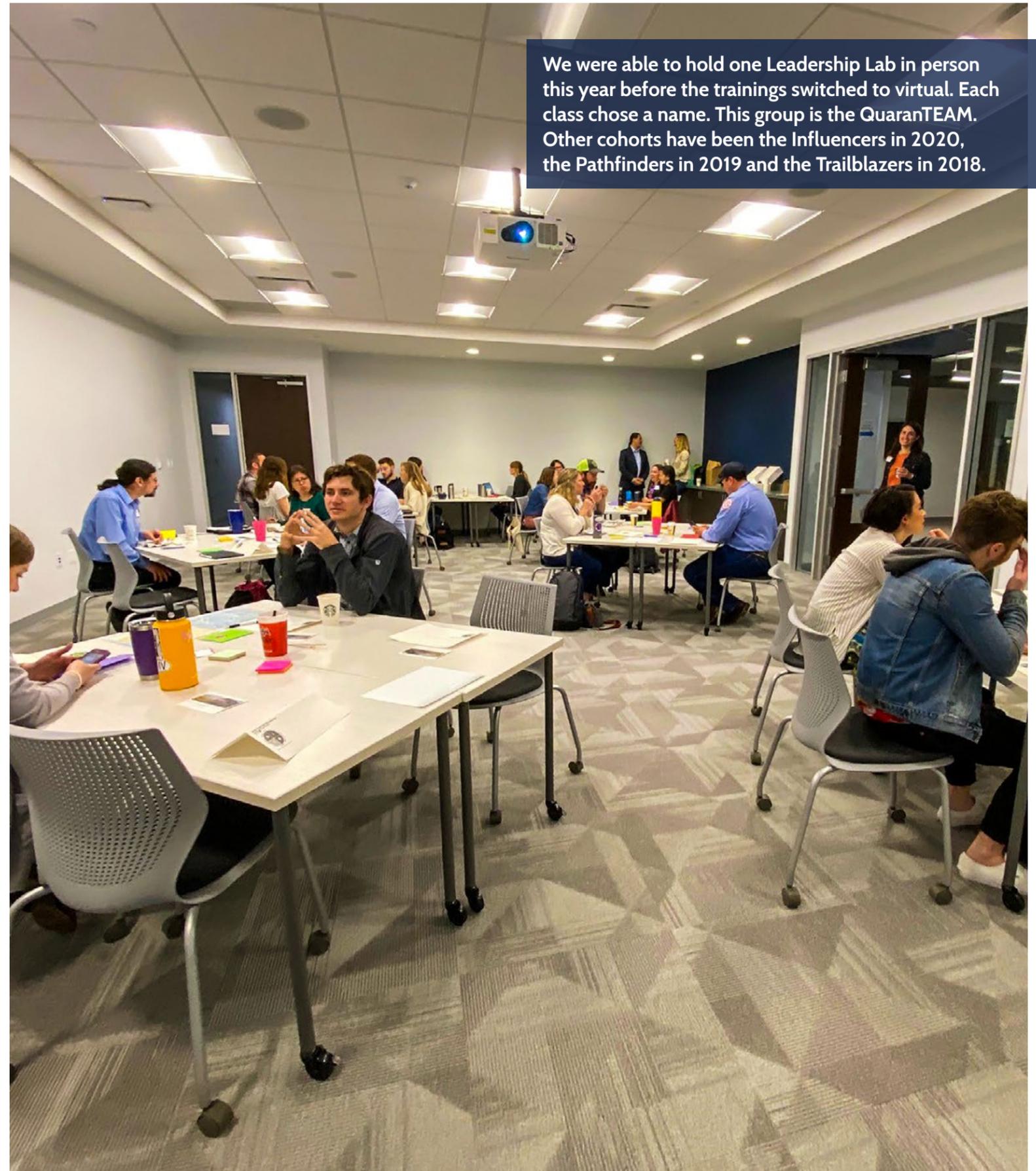
**YOUTH REACHED**  
with real-time virtual lessons in the fall

# 40

Employees who  
**COMPLETED THE LEADERSHIP LAB**

# 16

**NEW YOUTH EDUCATION VIDEOS**  
created in the spring



We were able to hold one Leadership Lab in person this year before the trainings switched to virtual. Each class chose a name. This group is the QuarantEAM. Other cohorts have been the Influencers in 2020, the Pathfinders in 2019 and the Trailblazers in 2018.

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

### Providing learning opportunities for our staff

In March 2020, we rapidly deployed the SafetySkills Learning Management System to our employees, beginning with the Field Operations Division. Field Operations employees were pre-enrolled in more than 250 online courses focused on workplace safety. This provided field crews with much-needed telework opportunities during the initial phase of work-from-home orders. We are also using this system to streamline assignments and track mandatory, compliance-based trainings such as defensive driving, hazardous communications, and bloodborne pathogens. Between March and December, our staff completed 11,599 courses and 4,040 hours of training.



All photos show our Youth Education team adapting to online classes.

### Providing learning opportunities for the community

Typically, the spring season is full of community events where we provide learning opportunities for our community. Most in-person events were cancelled this year. We worked hard to reinvent the way we provide educational opportunities. Hands-on science educators devoted time to becoming on-camera talent, video editors and live meeting hosts.



From one teacher, "We are so thankful that we have the opportunity to work with y'all again this year, even if it is virtual. You provide such a unique and memorable experience for the students that really helps to extend their learning and understanding. Thank you!"

# Equity

The Watershed Protection Department’s equity initiative seeks to advance racial equity in all department operations through the implementation of the City’s Equity Assessment and Action Planning framework as guided by the City’s Equity Office. To help us incorporate equity into our work, we have created teams to focus on four areas:

## Field Operations

We are assessing how outcomes, power and resources are different between our office and our field staff.

## Data

We are evaluating how communities of color and low-income communities may be disproportionately affected by flooding, erosion and water pollution.

## Prioritization

We are looking at how to include equity principles when we prioritize projects.

## Engagement

We are finding ways to improve our understanding of community needs and increase accountability.



60

STAFF SCHEDULED TO ATTEND racial equity training in 2021

29

STAFF WHO HAVE ATTENDED racial equity training

45

Staff involved in EQUITY INITIATIVE

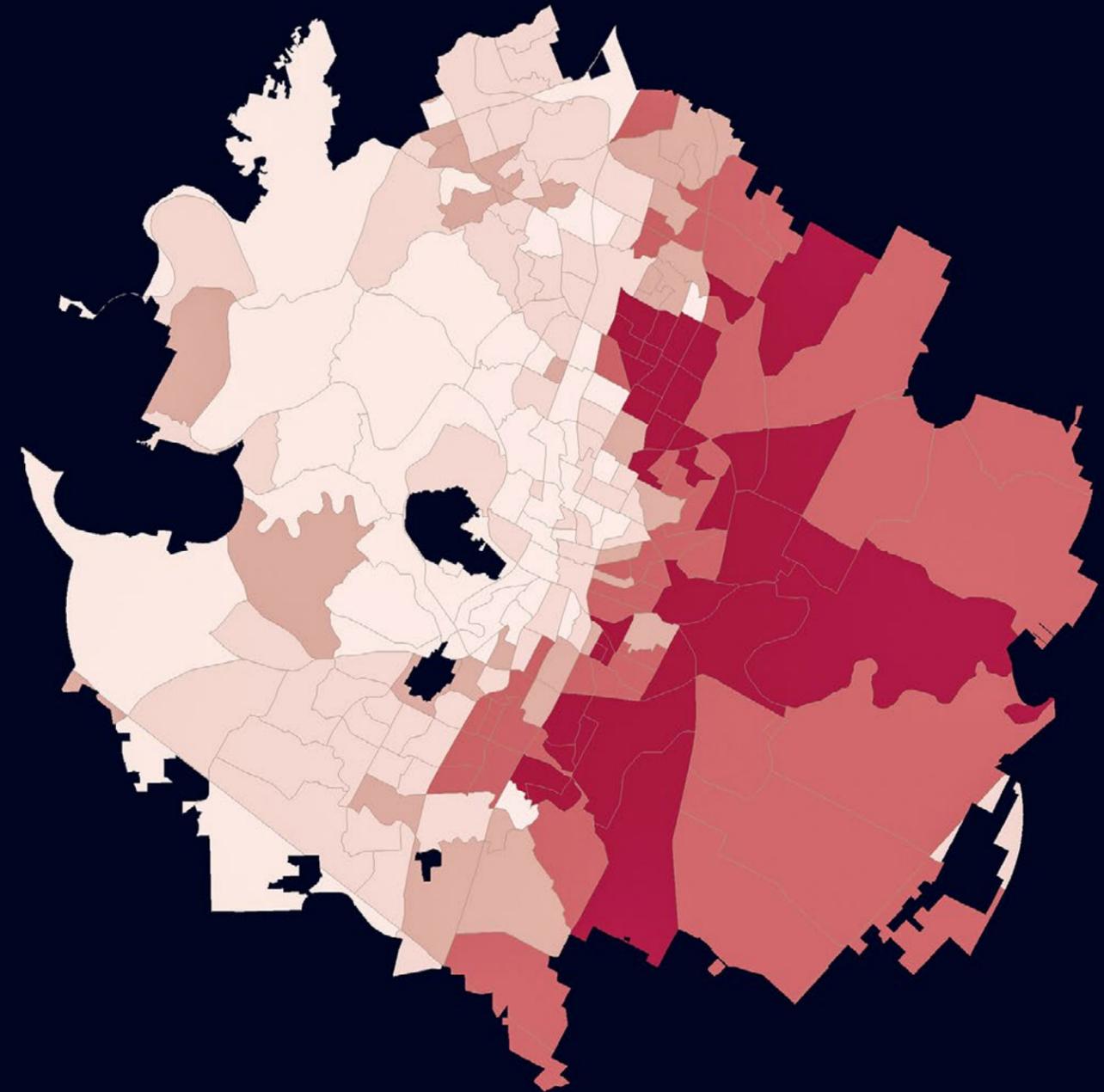
27

Staff who have attended UNDOING RACISM TRAINING

5

CORE MEMBERS of our Equity team

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

## Integrating Community Agriculture and Green Infrastructure

In 2020, we continued to explore the possibility of adding orchards and nonprofit farms on our lands. We currently own and manage more than 700 acres of stormwater ponds, creeks and open space throughout the city. Maintenance typically includes mowing, seeding with native grasses and wildflowers or other activities. We also have a few community gardens. Adding orchards and nonprofit farms could promote health and resiliency for residents who live nearby. Community agriculture can provide access to healthy, affordable, culturally-relevant food as well as opportunities for youth leadership, nature education, mentorship, and green jobs training.



### 202 Acres

**OF WILDFLOWER MEADOWS ON PROPERTY**

managed by Watershed Protection

### 171 Acres

**OF BUYOUT LAND**

### 74 Acres

**SEEDED IN 2020**

### 6.7 Acres

of riparian areas

**RESTORED OR IMPROVED**

### 4

**COMMUNITY GARDENS**

on land owned by Watershed Protection



Wildflower meadow in the Williamson Creek Watershed Management Area.

# Homelessness

## Initiating New Strategies

In alignment with the Austin City Council naming homelessness its number one priority, we incorporated public space and encampment management into our daily operations. We work in partnership with local non-profits, external contractors, and other City departments to clean green spaces, sites near waterways, and flood-prone areas across the city. In 2020, COVID-19 drastically changed our ability to respond to encampments and conduct cleanups. In accordance with CDC guidelines, we ceased all cleanup activities to reduce the potential for exposure and spread of the virus. In mid-summer, we procured a contract to resume cleanups with COVID-19 specific protocols in place.



# \$70,000

**ALLOCATED TO NON-PROFITS**

for employment opportunities in cleanup activities for people experiencing homelessness

# 301

**CUSTOMER SERVICE REQUESTS**  
received through Austin 3-1-1

# 228.54 Tons

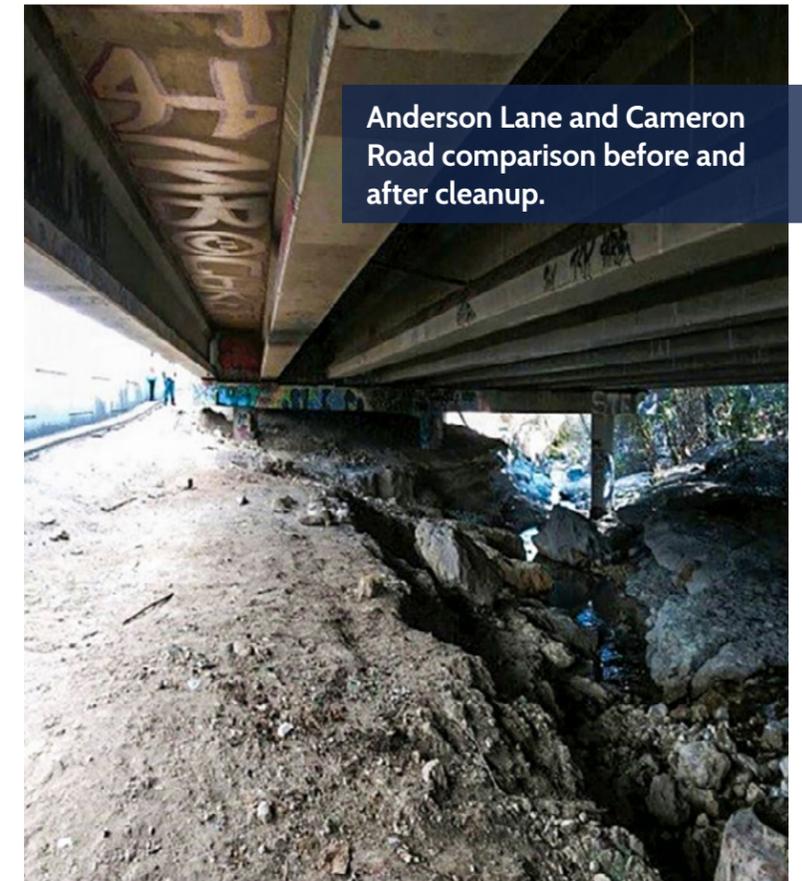
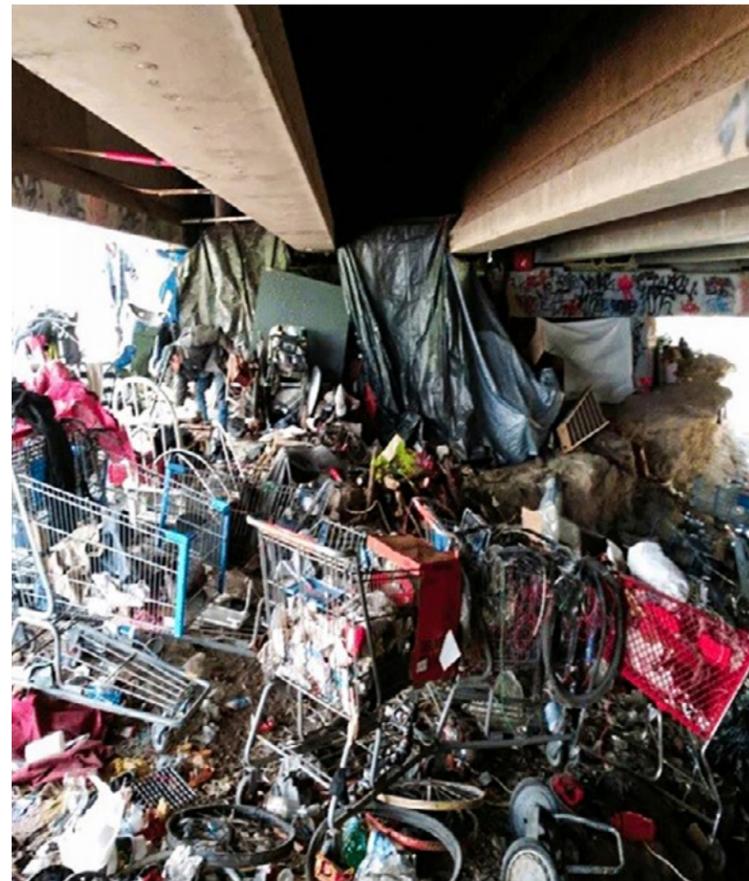
of **DEBRIS REMOVED**  
from cleaned sites

# 28 Sites

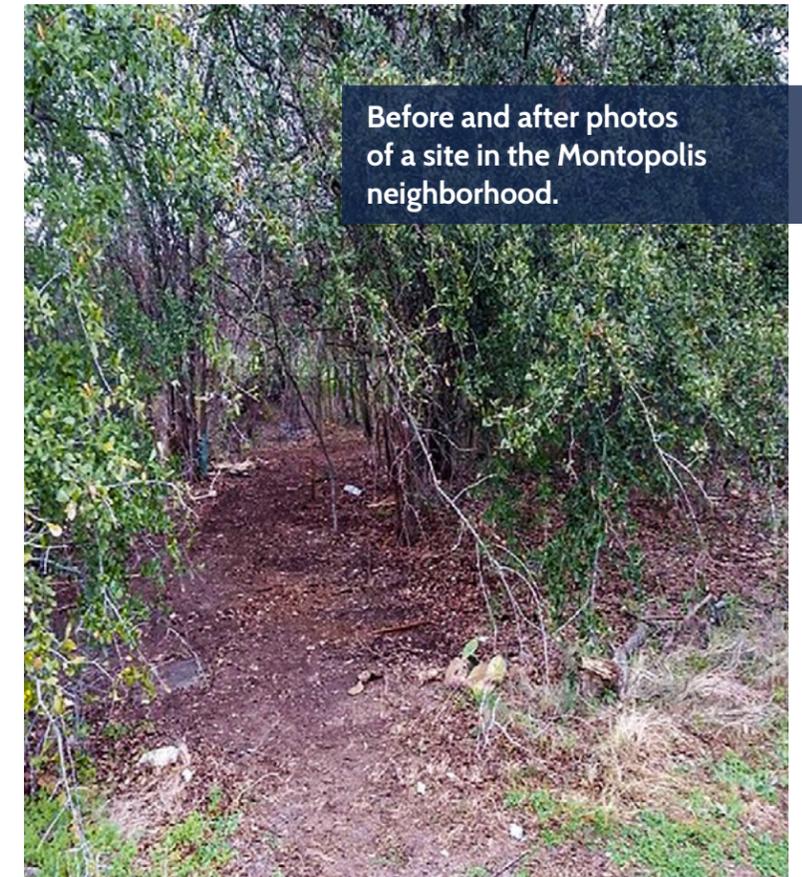
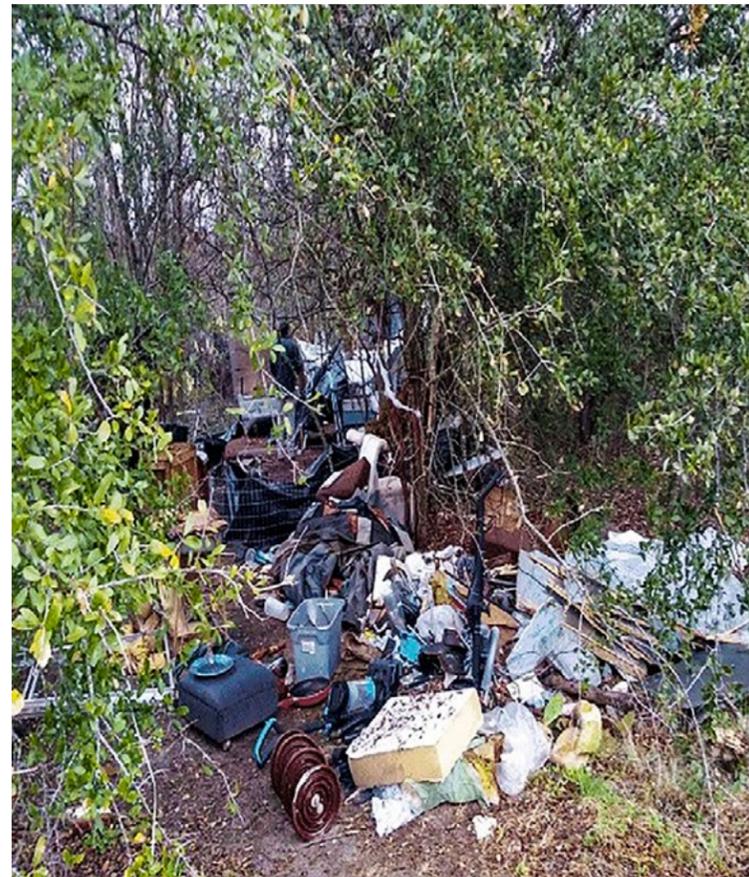
**CLEANED** by Watershed Protection

# 22

Watershed Protection employees  
who participated in  
**POINT-IN-TIME COUNT**



Anderson Lane and Cameron Road comparison before and after cleanup.



Before and after photos of a site in the Montopolis neighborhood.

# Awards

## 2020 Excellence in the Field Award

From the American Public Works Association for the Interdepartmental Homelessness Encampment Management Pilot Program.

## 2020 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.

## Water Quality Scientist of the Year Award

From the Save Barton Creek Association for Chris Herrington, Environmental Officer and Assistant Director.



Chris Herrington, Assistant Director and Water Quality Scientist of the Year



New cistern at Reilly Elementary School.



Jose Guerrero, Victor Nelms, Ramesh Swaminathan, Erik Schmitt, all with Watershed Protection, and Mark Janchar, Communications and Technology Management, display the Field Award from the American Public Works Association.

