



MEMORANDUM

TO: Mayor and Council Members

FROM: Jorge L. Morales, P.E., CFM, Director, Watershed Protection Department *JL Morales*
Robert Spillar, P.E., Director, Austin Transportation Department *Robert Spillar*

DATE: June 19, 2020

SUBJECT: CIUR # 2234, Trash in Creeks: Program Inventory, Analysis, and Outcomes

The purpose of this memorandum is to provide an update on interim efforts and outcomes related to Council Resolution No. 20200123-108 (CIUR # 2234), which directed the City Manager to prepare a study with recommendations addressing litter and the dumping of electric micromobility devices in Austin's waterways. For additional background please refer to the [March 3, 2020 update](#). This update is a collaboration between the Watershed Protection Department (WPD), Austin Transportation Department (ATD), Austin Resource Recovery (ARR), Parks and Recreation Department (PARC), and Austin Code Department (Code). In March staff committed to a report that contains an inventory of active programs and funding sources. The results of that report (attached) indicate:

- The primary sources of trash in Austin are littering, illegal dumping, large public events, and homeless encampments;
- The locations of this trash are predominantly along roads, waterways, and parkland; and
- Immediate opportunities exist to reduce the impacts of trash in the key areas of homeless encampment management, to provide long-term solutions for solving homelessness, and to expand community partnerships.

Upon review of the attached report, please direct additional questions to: Mike Kelly, Interim Assistant Director (WPD), 512-974-6591; or Jason JonMichael, Assistant Director (ATD), 512-974-7028.

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Richard Mendoza, P.E., Director, Public Works Department

Attachments:

Report: Trash in Creeks: Program Inventory, Analysis, and Outcomes
City of Austin Clean City Strategy Overview
Litter Abatement and Prevention Services Funding
WPD Trash in Creeks Project Work Plan



City of Austin

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P.O. Box 1088, Austin, Texas 78767

Trash in Creeks Program Inventory, Analysis, and Outcomes

Council Resolution 20200123-108
Litter and micromobility devices
(CIUR # 2234)

Prepared by

Watershed Protection Department (WPD)
Austin Code Department (ACD)
Austin Resource Recovery Department (ARR)
Austin Transportation Department (ATD)
Parks and Recreation Department (PAR)
Public Works Department (PWD)

Publish date

June 16, 2020

1. Analysis of existing data

Trash in Austin waterways comes from diverse sources and tracking them down is difficult. Preliminary analysis of existing data indicates the main categories of trash sources in Austin are:

- Littering
 - Non-point source pollution in the urban environment, in which small amounts of solid waste are discarded into the environment repeatedly by different people, spread over a wide area over time, and moved via rain, wind, and stormwater to our waterways.
- Illegal dumping
 - Unauthorized waste disposal, distinguished from littering by large volumes and commonly more bulky items discarded during a single incident.
- Large events
 - Mass gatherings, which rapidly generate significant volumes of trash that are geographically concentrated and that put a strain on systems for handling typical waste streams.
- Homeless encampments
 - Many people experiencing homelessness do not have access to waste disposal avenues that are available to housed residents in our community.

Existing data shows geographic trends in the concentration of litter, trash, and cleanup efforts across the City of Austin (Figs 1-5). Trash and litter accumulate predominantly along major roads, in waterways, and on parkland. The map layers and figures below provide a more detailed look at these patterns.

Figure 1. Base layer showing the primary networks of major roads (ATD), parklands (PARD), waterways and floodplains (WPD).

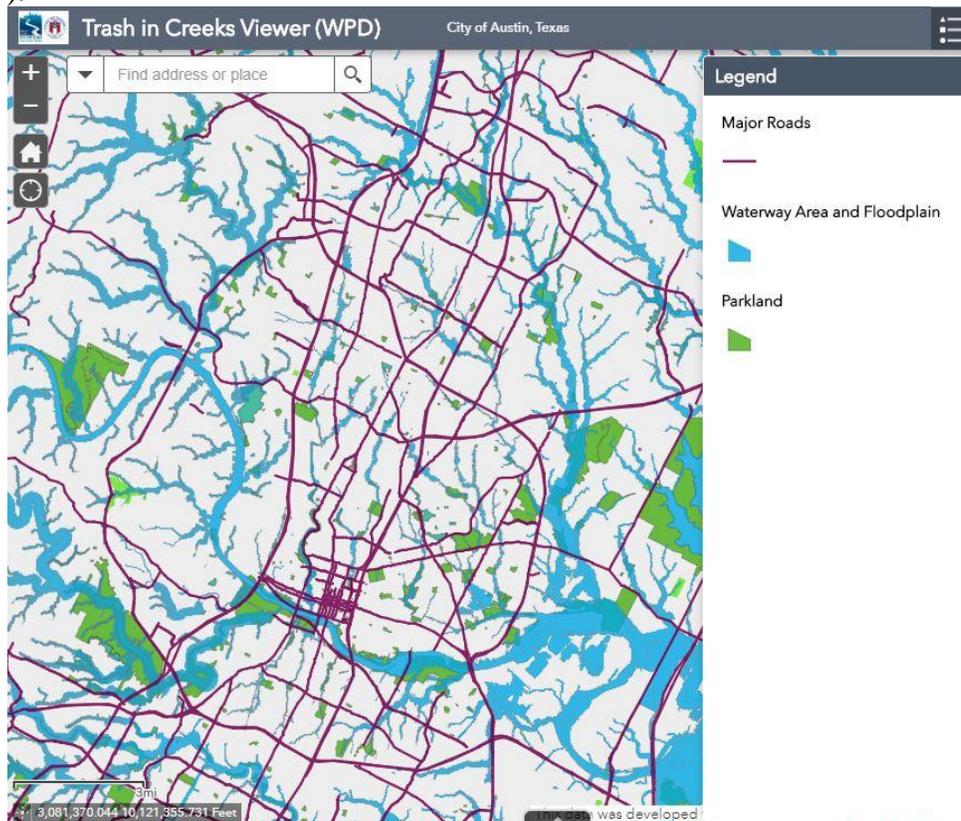


Figure 2. WPD pollution response data shows that there are more trash and litter findings (darker purple) in population-dense areas, along major roads, and along waterways.

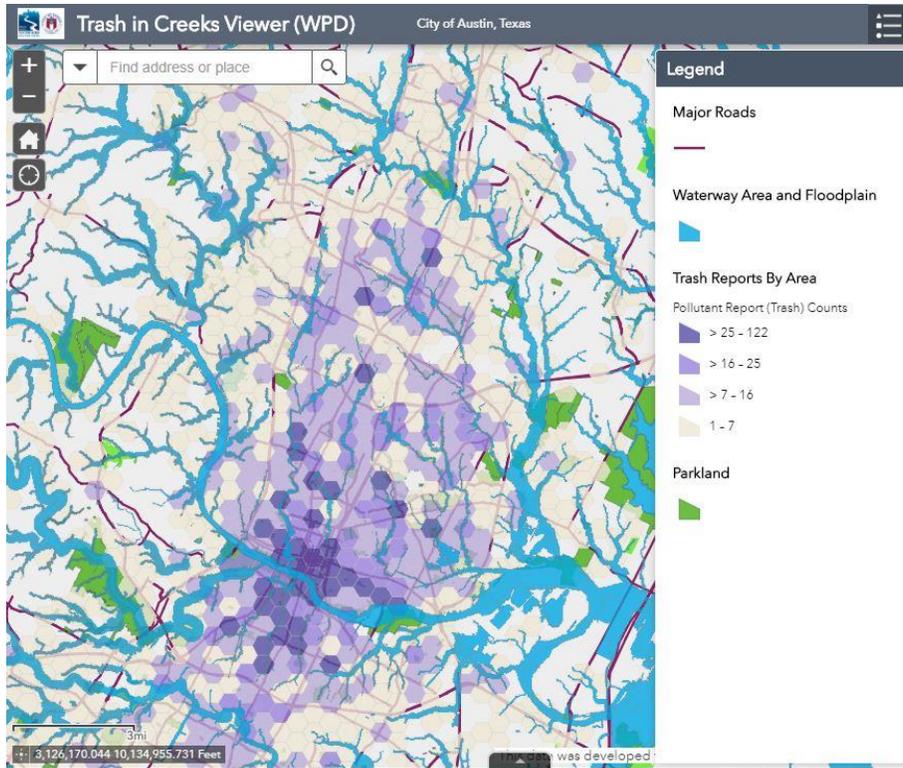


Figure 3. Homeless encampment site visits and cleanups by WPD, ARR, PARD, and PWD predominantly occur along major roads, in population-dense areas, along waterways, and on parkland.

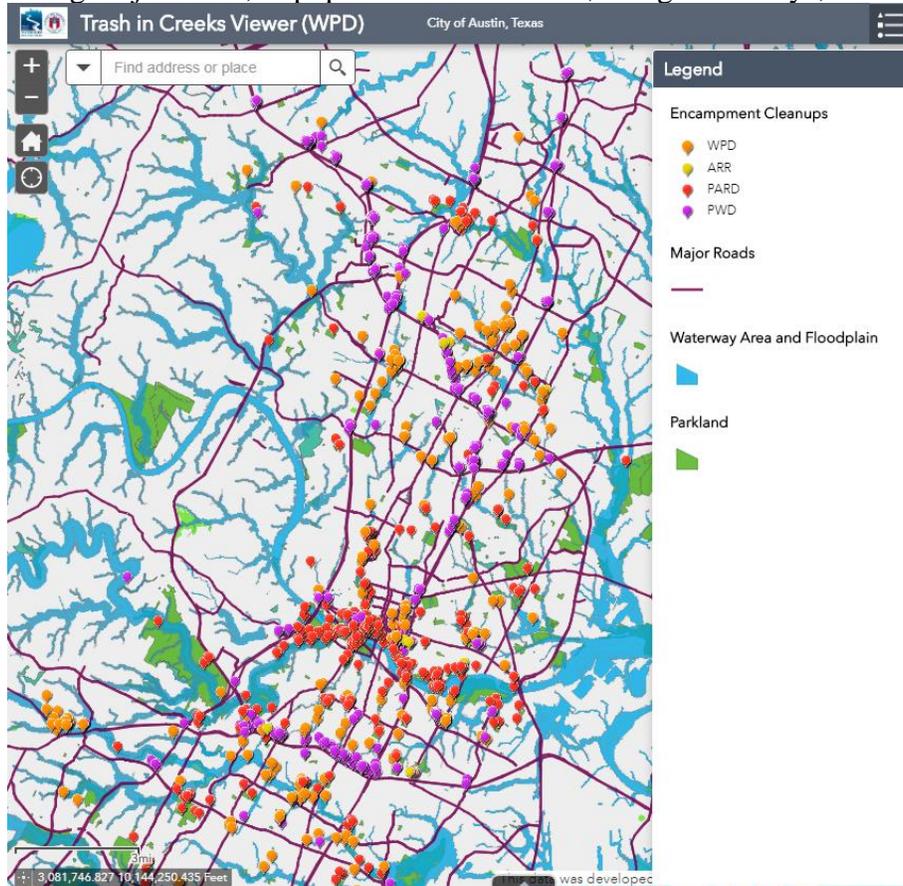


Figure 4. Locations of Illegal Dump sites that have been reported by Austin Resource Recovery.

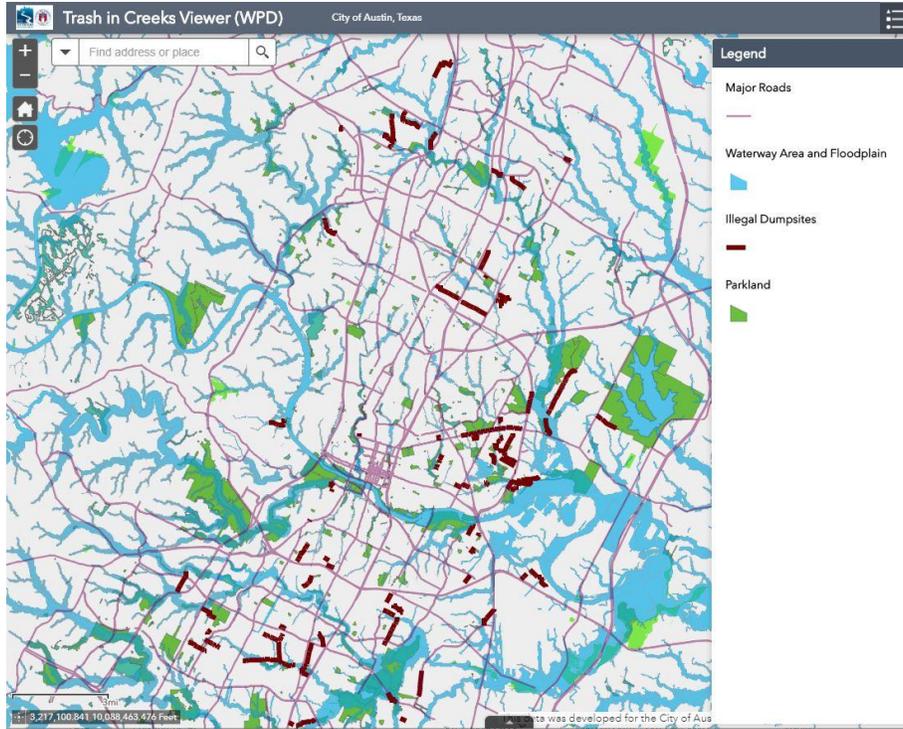
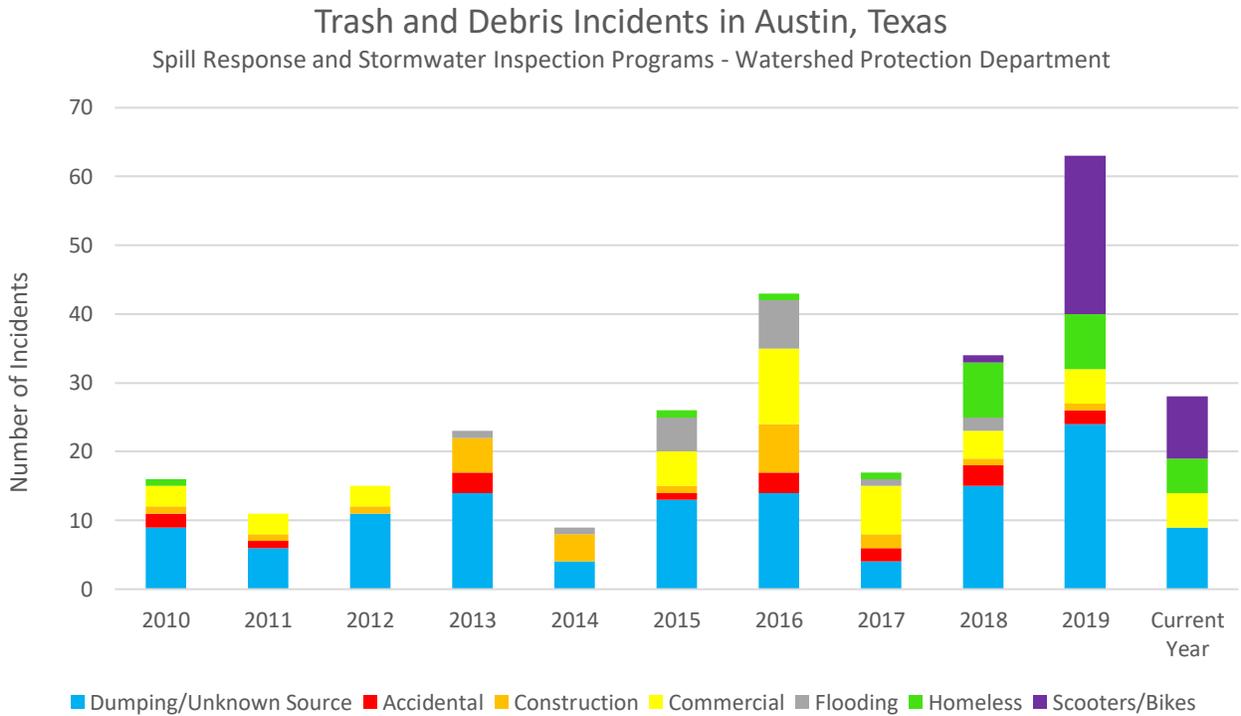


Figure 5. The WPD pollution response database shows dumping and commercial locations as consistent sources over the past ten years, with homeless encampments and scooters/bikes increasing in recent years.



Citywide trash and encampment data suggest that Austin’s major transportation infrastructure, waterways, and greenspaces are hotspots for trash accumulation and corresponding clean-up efforts. In addition to near-term recommendations for reducing trash in Austin’s waterways, we have provided a high-level overview of existing citywide efforts.

2. Existing trash and litter focused programs and initiatives

Clean City Strategy and Homeless Encampments

Homeless encampments are a source of trash in waterways. They are not the only source, but citywide efforts to maintain these encampments show that they are persistent and tend to occur near major roads, in waterways, and on parkland. To reduce the impact of encampments, WPD manages an annual \$250,000 contract for encampment cleanup services. In a seven-week period between January and March 2020, WPD contractors removed 60,000 pounds of debris from encampments across the City. In FY20, PARD has an operating budget of \$125,000 for homelessness-related initiatives. PARD cleanup efforts have resulted in the removal of 187,000 pounds of debris from parkland so far this year. For FY21, WPD is requesting a contract expansion to \$600,000 for continued encampment cleanup services. PARD will be requesting additional funds to allow for the hiring of another crew to provide cleanup services.

The Underpass Cleanup Contract, jointly funded by PWD, ARR and ATD is also a significant effort being undertaken to reduce the impact of trash in encampments. This contract, funded at \$386,000 last year and proposed to increase to \$575,000 next year (going to council on July 30th, 2020) has visited 673 sites and removed 440,000 pounds of debris from our bridges and underpasses since the inception of the program.

Encampment management and cleanups are a recurring effort that will continue to use City resources until the causes of homelessness are identified and resolved. When compared to other sources of trash, homeless encampments represent a promising opportunity for the reduction of trash in the environment through the Clean City Strategy (Program overview document attached). We have found that engaging and partnering with people experiencing homelessness is effective in reducing environmental impacts of encampments.

Litter Abatement

City of Austin departments have implemented different programs to reduce and prevent litter as well as protect Austin’s waterways. These programs are a joint effort, utilizing City staff, contractors, and volunteers led by community partners. These programs include:

- Austin Resource Recovery Programs
 - Bi-annual brush and bulk collection
 - Daily litter removal and street sweeping in the Central Business District
 - Daily removal of dead animals
 - Sweeping of residential streets six times per year; monthly sweeping of boulevards and protected bike lanes (over 7 million pounds of debris removed so far in FY20)
 - Cleaning of litter from rights-of-way and illegal dumpsites
 - City co-sponsored special event collection
 - Regular cleaning of bulk and brush debris from Clean Austin Program areas
 - Daily collection of litter and small debris from 14 established Violet Bag encampments sites (over 49,900 pounds of material collected through Violet Bag program in FY20).
- Community Partnerships
 - WPD partners with Keep Austin Beautiful (KAB), a local non-profit, to protect Austin’s environment through programs such as Clean Creek Campus, Adopt a Creek, Grow Green, and Lady Bird Lake Volunteer Cleanups.
 - ARR partners with Keep Austin Beautiful (KAB) to conduct neighborhood and community clean-ups throughout the year in addition to a large-scale, one-day volunteer cleanup event.

- Lady Bird Lake Floatables Program
 - To reduce trash on Ladybird Lake, WPD established litter collection sites at the mouths of two urban creeks that discharge into the lake. In FY19, these sites successfully removed 12 tons, or 24,000 pounds, of trash and debris from Austin’s waterways.
- Vegetation Management Program
 - WPD utilizes several vendors to provide vegetation management and litter collection services along more than 80 miles of waterways and over 1,100 stormwater controls.
- Waller Creek Tunnel Program
 - Trash screening controls are utilized at three of the tunnel facilities, and staff also removes litter along the creek. In FY19, this effort led to the removal of more than 34 tons, or 68,000 pounds, of trash and debris along lower Waller Creek.

Illegal Dumping

Austin Code Department responds to citizen complaints of illegal dumping (Fig 4). More than thirty cameras are placed throughout Austin to monitor chronic dumping locations. Camera locations are prioritized by the number of dumping reports received in a given area. The cameras serve as a deterrent more than as an effective investigation tool. Successful enforcement rates are very low, as there is typically not enough evidence for City attorneys to prosecute.

Spill Response Program

The WPD Spill Response program aims to prevent or minimize pollution impacts from illicit discharges to Austin’s creeks and lakes. Pollutant records are most frequently generated as a result of citizen complaints. For incidents involving trash, WPD frequently coordinates with ATD, ARR, PARD and Austin Code toward resolution.

Micromobility Devices

As Figure 5 shows, shared scooters and (dockless) bicycles, or micromobility for short, constitute a newer debris source in waterways since their introduction in 2018. Explanations for micromobility incidents are anecdotal, ranging from weather circumstances to individual malintent. To foster an orderly mobility environment, ATD has planned and communicated with permitted micromobility companies for everyday operations and special events. Communications encompass quick-response processes with permitted companies to retrieve devices from waterways. Although extensive work hasn’t been done on environmental risk of scooters abandoned in waterways, the batteries they carry are a significant concern as they leach out a variety of contaminants when submersed in water. Staff is looking into other pollutant risks associated with scooters in waterways, but are focusing currently on ways of locating and removing them from our creeks and reservoirs as quickly as possible.

Moving forward, ATD is pursuing infrastructure and education efforts to prevent and mitigate dumping of micromobility devices. ATD has analyzed map data of reported micromobility issues which are informing future shared mobility planning.

3. Funding Sources

Funding for programs that address litter problems comes from several sources, is allocated to different recipients and programs, and routed through various sponsor departments. The combined operating budget of these programs for FY20 is approximately \$21.5 million. A detailed cost breakdown is provided in the attached *Litter Abatement and Prevention Services Funding*.

4. Recommendations

Capitalizing on existing collaborative efforts, the following focus areas are recommended as major, tangible, and key opportunities that can significantly reduce the impacts of litter on the City's environment and waterways:

- **Create a Citywide centralized cleanup contract and protocol managed by a single department with funding contributions and technical assistance from other impacted departments.**
- Create a dedicated Violet Bag cleanup group and increase site locations
- Increase Leave No Trace education and outreach efforts.
- Continue to develop and expand the Work Force First Program, a partnership with Family Eldercare and The Other Ones Foundation that provides opportunities for those experiencing homelessness to participate in the care of the City's Parks and Open Spaces
- Increase boulevard sweeping efforts to twice-a-month
- Provide long-term housing-focused solutions that reduce the need for transient encampments and corresponding recurring litter problems in waterways and transportation infrastructure.
- Expand community partnerships with volunteer-management and work-force non-profit organizations to increase citizen engagement and reduce litter in the environment.

5. Next Steps:

- Departments will identify practical mechanisms for implementing a large citywide encampment cleanup contract.
- ARR and partner departments will identify potential new sites for Violet Bag kiosks.
- PARD and partner departments will review Leave No Trace education data and identify future needs for funding and resources.
- Departments will review the report that the national homelessness consultants will be providing in June regarding housing and other initiative recommendations, and will develop an action plan.
- Departments will coordinate, collaborate, and consolidate trash-related sponsorships and contracts with community partners to improve efficiency, effectiveness and equity.
- ATD will issue a summary report on the peer city survey.
- ATD will continue to install signs on bridges over Lady Bird Lake and other bodies of water about proper micromobility use and provide parking boxes where appropriate at end points of bridges.
- ATD will create and provide a map layer that shows the location of all existing and planned signs and parking boxes.
- Continued testing of monitoring tools (drones, divers, etc.) to identify sunken micromobility devices and other trash in Lady Bird Lake.
- WPD will kick off a quantitative study of trash dynamics in Austin-area watersheds in early FY21, with a report at the end of the year. The *WPD Trash in Creeks Project Work Plan* is attached for detail.

City of Austin Clean City Strategy

Pride in our City

Everyone deserves to live in a clean City. A clean city speaks to hope, it speaks to dignity, for all of our community members and visitors. The City of Austin strives to create pride in our community by administering cleanup programs across multiple departments working to keep our city clean and all residents safe. The Parks and Recreation Department is committed to keeping our parks clean, are stewards of our natural resources, and protect our ecosystem. Watershed Protection Department is dedicated to protecting lives and property by reducing erosion and keeping our streams and waterways clean. Resource Recovery is devoted to serving our neighborhoods and all of our neighbors, and the Public Works Department maintains our infrastructure including our roadways, bridges, and overpasses. The City of Austin is also working collaboratively with the Texas Department of Transportation (TxDOT) to maximize our resources and address as many areas as possible.



Public Works

Public Works contracts with outside crews that provide once-per-month cleanup services at 34 locations across the city. The department adds or deletes sites based on 3-1-1 calls, information or observations by City staff, or through the collaboration with TxDOT. Public Works continues to add sites and increases frequency of cleanups as needed. TxDOT contracts with the same crews to perform cleanups at 17 locations.

If there are residents experiencing homelessness at the site, crews will not remove individuals from these locations—only debris and unattended items. Public Works posts signage at cleanup sites 72 hours of advance to give notice that crews will be coming. Prior to and at the time of cleanups, “be safe – be seen” bags are provided to individuals to store any personal belongings. The cleaning process includes the removal of general solid waste and debris only from directly under bridges in the designated locations.

Watershed Protection

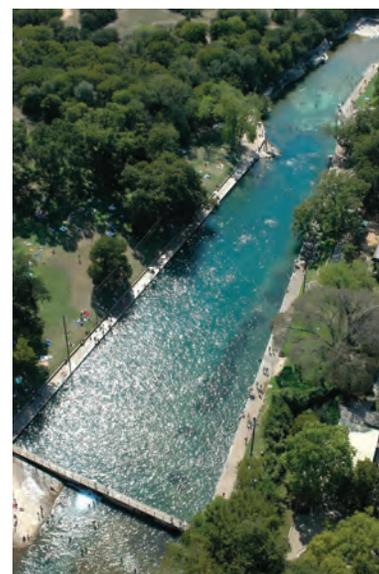
Watershed Protection assesses homeless encampments on Watershed Protection lands or drainage infrastructure. The department conducts cleanups when there are significant flood or water quality risks. Cleanups are generally conducted through a contractor. The department also makes an effort to connect residents of the encampments to social services prior to a cleanup.

City Landholding Departments

Departments with publicly accessible land are endeavoring to keep dangerous areas cleared of encampments. Non-dangerous areas still do not allow encampments; a process for contacting and supporting those experiencing homelessness is in place, while also ensuring public spaces are safe and accessible for all.

Austin Resource Recovery

Austin Resource Recovery (ARR) is expanding to meet the cleanup needs for the City of Austin. The department provides on-demand cleanup support for other city departments, and daily downtown litter abatement activities, in addition to providing its core services of curbside collections street cleaning, and brush and bulk collection. Austin Resource Recovery is also taking 3-1-1 homeless calls, tracking the information, and prioritizing cleanup areas.



City of Austin Clean City Strategy

Austin Resource Recovery

Storage Support for our Neighbors Experiencing Homelessness: For those experiencing homelessness, simply being able to store belongings can be life-altering. Access to storage bins allows those experiencing homelessness to safeguard important documents that can be hard or expensive to replace, as well as protect sentimental items and keepsakes, which can't be replaced at all. Everyday activities are difficult or impossible for anyone who has to protect their belongings around the clock.

Single-Site Storage Facility: A best-practice for providing storage for those experiencing homelessness is using a warehouse that can hold "curbside cart" containers for storing belongings. Each cart is assigned to an individual. The City is evaluating several successful models across the U.S. to support development of the Austin storage program. ARR has conducted a site visit to HealthSouth parking garage to determine if it is a suitable site until a long-term facility is built or acquired. If it is determined a suitable site, we anticipate a late March start date. Costs to secure the site, program management, and operation are still under review.



Current Storage Cart Support: ARR has provided 144 carts to the ARCH to support personal storage. Purple carts have been acquired and designated exclusively for personal asset storage. The designated color establishes a unique identifier that will be easily distinguishable for the designated purpose, which we believe will be a first in the United States.

Citywide Lockers: Creating smaller storage opportunities in strategic locations around the City of Austin will require a lower level of support and provide convenient access. These units will be similar to gymnasium or travel center lockers, and most likely will require some form of staff oversight or third-party support. The City is currently working to acquire a set of low-cost lockers to pilot this option.

Encampment Cleanup Storage: The Parks and Recreation Department (PARD) has purchased a shipping container to store unattended personal items found in City parks. The container will be located at the PARD facility at the Nash Hernandez building adjacent to Lady Bird Lake. The container will also be available to other City departments as space permits. ARR is providing the carts for storage.

Working together

Violet bag: The Violet Bag Project provides designated violet bags to homeless encampments to help keep the area clean and focuses on encampments with high volumes of trash. Individuals within the homeless community are encouraged to use these bags to collect garbage for pick-up by Austin Resource Recovery twice a week. Users have expressed appreciation for the ability to keep areas cleaner and safer. The project has been well received in its seven locations and will be expended to three more in the coming weeks.



Workforce solutions: The Parks and Recreation Department (PARD), Austin Public Health, in partnership with The Other Ones Foundation and Family Eldercare, created Workforce First. Workforce First's purpose is to offer people experiencing homelessness extremely low barrier employment opportunities as an alternative to panhandling as well as to pave pathways to stable employment and housing. Participants are given transportation to and from work sites, lunch, and counseling services, and have collectively removed 50 tons of trash from green spaces. The program also provides mobile outreach, job training, connection to banking and saving services, and access to social services.

Homelessness Initiative - Clean City Strategy

For more information please visit: austintexas.gov/homelessness
February 2020



Litter Abatement and Prevention Services Funding

City-funded litter abatement (and litter prevention) services to keep clean our parks, waterways, streets, preserves, and any other similarly serviced public lands or spaces.

Department	Program/Project Name	Program Details	One-Time or Ongoing	FY18 Operating Budget	FY 19 Operating Budget	FY20 Operating Budget	FY18, FY19, FY20 Combined Capital Budget	Funding Source
Austin Resource Recovery	Bulk Collection	The Bulk program provides weekly bulk collection for the City of Austin residential customers. This program collects large bulk items such as furniture, appliances, mattresses, metals and tires.	Mixed	\$ 2,795,782	\$ 2,922,438	\$ 3,143,378	\$ 1,670,945	Clean Community Fee
Austin Resource Recovery	Clean Austin Program	The Clean Austin Program consists of the cleanup of areas designated for high volume legal/illegal bulk disposal by members of the public.	Mixed	\$ 673,129	\$ 603,263	\$ 525,180	\$ 1,493,353	Clean Community Fee
Austin Resource Recovery	Business Outreach	The program implements and monitors compliance of the adopted ordinances and policies of the department, as well as providing zero waste education and technical assistance to the business community. Stakeholders include multifamily properties, commercial properties, food permit holders, and construction permit holders over five thousand square feet.	Mixed	\$ 1,755,592	\$ 1,625,707	\$ 1,743,634	\$ 40,000	Clean Community Fee
Austin Resource Recovery	Residential Street Cleaning	Residential Street Sweeping provides street sweeping for the City of Austin residential customers. Residential streets are swept 6 times per year.	Mixed	\$ 1,759,126	\$ 2,013,737	\$ 1,704,580	\$ 1,395,000	Clean Community Fee
Austin Resource Recovery	Litter Control	This program maintains the downtown area 7 days a week. Litter Control sweeps and cleans the CBD, collects litter from the rights of way, cleans up illegal dumpsites and assists with special events.	Mixed	\$ 2,947,907	\$ 2,919,952	\$ 2,992,126	\$ 2,055,000	Clean Community Fee
Austin Resource Recovery	Boulevard Sweeping	This program is responsible for sweeping all of the boulevards in the City of Austin. Also, assists with Bike Lanes and Special Events.	Mixed	\$ 509,808	\$ 525,030	\$ 544,341	\$ -	Clean Community Fee
Austin Resource Recovery	Dead Animal Collection	The Dead Animal Collection Program provides collection of deceased animals from the City of Austin residential customers, rights of way and the Austin Animal Shelter.	Mixed	\$ 194,958	\$ 219,080	\$ 252,795	\$ 125,000	Clean Community Fee
Austin Resource Recovery	Household Hazard Waste Facility	This program allows residents to safely dispose of unwanted Household Hazardous Waste (HHW) free of charge. Much of this material can be recycled, or is reusable through the Reuse store. The HHW facility offers a home pickup service to the elderly and disabled. Those that have HHW, but are not able to transport it to the facility can request a home pickup free of charge.	Mixed	\$ 1,462,446	\$ 1,349,761	\$ 1,539,973	\$ 30,000	Clean Community Fee
Austin Resource Recovery	Strategic Design and Development	This program plans and develops ARR's Zero Waste programs and ordinances. In addition, the team supports diversion at special events, and manages the Home Composting and Zero Waste Event Rebate programs. This team also leads department-wide research and plan development, such as the ARR Zero Waste Master Plan.	Mixed	\$ 942,137	\$ 857,365	\$ 768,857	\$ -	Clean Community Fee
Austin Resource Recovery	Resource Recovery Center	This program allows residents to recycle a wide variety of items. Recycled items at the Resource Recovery Center (RRC) consist of: common items - like cardboard, plastic, glass, and aluminum, and uncommon items - like textiles, scrap metal, tires, Styrofoam, and electronics. The RRC manages a Reuse Program, in which reusable items are offered for free to the public at a store.	Mixed	\$ 899,496	\$ 1,213,076	\$ 1,339,348	\$ 75,857	Clean Community Fee
Austin Resource Recovery	Brownfields Redevelopment	This program is designed to empower communities and stakeholders in economic redevelopment to work together in a timely manner to prevent, assess, safely clean up, and sustainably reuse brownfields. Brownfields are defined as any property that is underutilized due to the real or perceived presence of contamination (i.e. hazardous chemicals, asbestos, lead-based paint, mold, etc.).	Mixed	\$ 376,285	\$ 358,622	\$ 339,916	\$ -	Clean Community Fee
Austin Resource Recovery	FM 812 Landfill Closure Care	The landfill activities are based on the required maintenance of the FM 812 per the Texas Commission on Environmental Quality (TCEQ).	Mixed	\$ 1,416,701	\$ 1,290,337	\$ 963,422	\$ 1,275,000	Clean Community Fee
Austin Resource Recovery	Circular Economy Program	This program is designed to attract, retain, and grow businesses, non-profits, and entrepreneurs in the zero waste industry in order to create well-paying local jobs, attract investment, and support the necessary infrastructure for a resilient circular economy in Central Texas.	Mixed	\$ 511,738	\$ 529,892	\$ 592,775	\$ -	Clean Community Fee
Austin Resource Recovery	Commercial Compliance	This program supports education efforts and enforces the Universal Recycling Ordinance (URO).	Mixed	\$ -	\$ -	\$ 210,100	\$ 72,000	Clean Community Fee
Austin Resource Recovery	Homelessness	This program assists with cleanup efforts related to homelessness.	Mixed	\$ -	\$ -	\$ 429,000	\$ -	Clean Community Fee
Austin Resource Recovery	Customer Service	Graffiti abatement call intake center		\$ -	\$ -	\$ -	\$ -	
Austin Resource Recovery	Public Information Office	Leave No Trace is a nationally recognized anti-litter campaign that focuses on community members leaving public spaces the way that they found them or in better condition. WPD and Austin Resource Recovery (ARR) contribute funding to PARD to unify our message	Ongoing	\$ 34,000	\$ 34,000	\$ 34,000	\$ -	
Downtown Austin Community Court DACC	Community Services Restitution/Litter abatement	Includes litter pickup, graffiti abatement, abatement of code violations based on Austin Resource Recovery; Code Enforcement; PARD; and other City Departments or citizens requests	Ongoing	\$ 210,898	\$ 212,250	\$ 211,971	\$ -	Interdepartment Agreements (?)
Economic Development	TIF15 / 2nd St District	Maintenance of 4 downtown blocks per Ordinance #001012-34 (TIF15 Plan) under competitive contract for \$100,000 of which a portion is for daily litter pickup	Ongoing	\$ 47,520	\$ 47,520	\$ 47,520	\$ -	Funded by Tax Increment Fund

Department	Program/Project Name	Program Details	One-Time or Ongoing	FY18 Operating Budget	FY 19 Operating Budget	FY20 Operating Budget	FY18, FY19, FY20 Combined Capital Budget	Funding Source
Parks & Recreation	Grounds maintenance	The PARD Grounds maintenance units are responsible for the maintenance of parkland.	Ongoing	\$ 1,635,376	\$ 2,556,607	\$ 2,722,203	\$ -	General Fund
Parks & Recreation	Homeless Response	The PARD Homelessness Response unit created in FY19 to address homelessness response, including coordination of parkland clean-up efforts. In FY18, \$50K was transferred to APH to support the Workforce First Program.	Ongoing	\$ -	\$ 50,000	\$ 238,969	\$ -	General Fund
Public Works	Downtown Sidewalk Cleaning	Enhanced cleaning and debris removal of sidewalks within the Central Business District	Ongoing	\$ 837,220	\$ 839,235	\$ 596,921	\$ -	Transportation Fee
Public Works	Highway underpass cleanup	Contracted services for the removal of debris, cleanup, and clearing out of encampments under bridge overpasses throughout the city.	Ongoing	\$ -	\$ 64,460	\$ 230,227	\$ -	Transportation Fee
Watershed Protection Department	Homeless Encampment cleanup services	The Watershed Protection Department (WPD) is working with multiple other city departments and external stakeholders to identify and implement strategies utilizing a human centered approach that reduce the impacts homelessness encampments have on WPD mission areas. In FY19, WPD piloted an encampment cleanup contract at 9 locations which included integrating social service provider into the process. Additionally, WPD has developed a prioritization process for encampments that can focus resources to the appropriate location. WPD also piloted and education and outreach engagement effort with individuals experiencing homelessness on WPD land with the goals of reduce in the impact of encampments on the environmental and enhancing a support network for individuals as they seek permanent housing options. WPD utilizes the same contracted vendor that performs the litter abatement activities to also perform vegetation control work for other department program initiatives. While the vegetation control work also entails some litter removal, it is supplementary to vegetation control which is the primary purpose of the contract and the budget for litter abatement in this area cannot be separated.	Ongoing	\$ -	\$ 250,000	\$ 250,000	\$ -	Drainage Utility Fund
Watershed Protection Department	Keep Austin Beautiful (KAB) for Clean Creek Campus	The Clean Creek campus program is a youth education program developed by KAB and WPD in 2005 that reaches more than 1,600 students, while also completing 25 service projects, 17 of which are creekside projects. WPD has provided \$17,500 in annual funding from FY 2017-2020 for the KAB to fund a Program Coordinator and part-time Environmental Educator to coordinate projects, schedule schools, deliver classroom presentations, and to oversee service projects.	Ongoing	\$ 17,500	\$ 17,500	\$ 17,500	\$ -	Drainage Utility Fund
Watershed Protection Department	WPD funding to Parks and Recreation Department (PARD) for Leave No Trace program	Leave No Trace is a nationally recognized anti-litter campaign that focuses on community members leaving public spaces the way that they found them or in better condition. WPD and Austin Resource Recovery (ARR) contribute funding to PARD to unify our messaging, and so PARD can localize the national campaign for our Austin area. The WPD and ARR departments each contribute \$34,000 annually towards this campaign. The campaign includes advertising (radio, digital, bus advertisements, etc.), social media, signage, media outreach, engagement with local non-profits, and on the ground outreach by the Park Rangers. The campaign targets litter hotspots, which are often creeks like the Barton Creek Greenbelt.	Ongoing	\$ 34,000	\$ 34,000	\$ 34,000	\$ -	Drainage Utility Fund
Watershed Protection Department	Funding to Keep Austin Beautiful (KAB) for Adopt a Creek and Grow Green Program	The Adopt-a-Creek program developed by KAB and WPD in 2005 as a creek clean-up program to improve water quality in Austin's streams and engage the public in urban water quality issues currently has over 100 active groups with more than 50 miles of streams adopted within the City of Austin. In 2012, WPD established the Grow Zone program to improve water quality, infiltration and base flow in our streams by restoring creekside (riparian) areas utilizing both passive management techniques (e.g., no longer mowing near streams), and proactive methods (e.g., soil stabilization, revegetation, invasive plant management, etc.). As many of the methods employed are well-suited to volunteer participation, KAB also expanded their program to include riparian restoration activities as well, and WPD has collaborated extensively with KAB to educate, train and organize volunteers, as well as coordinate workdays and supply restoration materials. To enhance coordination between the Adopt-a-Creek and Grow Zone programs, from FY 2017-2020 WPD has provided \$20,000 in funding for the KAB Program Coordinator to receive training in restoration techniques to lead volunteer training and restoration events; thereby expanding outreach efforts and increasing the number of adopted creek segments in Grow Zones to encourage the transition of adopted creek segments into active restoration areas.	Ongoing	\$ -	\$ -	\$ -	\$ 60,000	Drainage Utility Fund

Department	Program/Project Name	Program Details	One-Time or Ongoing	FY18 Operating Budget	FY 19 Operating Budget	FY20 Operating Budget	FY18, FY19, FY20 Combined Capital Budget	Funding Source
Watershed Protection Department	Funding to Keep Austin Beautiful (KAB) for Lady Bird Lake clean-up program	The Lady Bird Lake Volunteer clean-up program developed by KAB and WPD in 2009 to improve the floatable litter abatement program and incorporate citizen requests for a more robust volunteer program, currently coordinates more than 4,000 volunteers at nearly 150 water-based clean-up events each year; providing all equipment needed for clean-up activities. This program has dovetailed extremely well with Adopt-a-Creek program activities within those watersheds contributing flow into the lake and helping to raise awareness of litter on Lady Bird lake throughout the City. To address both the need for volunteer coordination services and the demand for litter management specific to Lady Bird Lake, from FY 2017-2020 WPD has provided \$18,000 in funding to address the pervasive litter issues along Lady Bird Lake.	Ongoing	\$ 18,000	\$ 18,000	\$ 18,000	\$ -	Drainage Utility Fund
Totals				\$ 19,079,619	\$ 20,551,832	\$ 21,490,736	\$ 8,292,155	

Project Work Plan

Project Name	Trash sources, types and pathways to creeks
Section Program(s)	Surface Water Health
Timeline	March, 2020 – June 2022
Staff Involved	Mateo Scoggins, Andrew Clamann, Todd Jackson

I. Problem statement

Austin’s lakes, rivers, creeks, and springs are a cherished natural resource that distinguish Austin and provide immeasurable quality of life, health, ecological, and economic benefits. The exceptional value the Austin community places on our rivers is reflected in Imagine Austin’s Environment and Water priority programs. Trash and other physical contaminants are a dynamic pollutant, entering constantly into the stormwater pathway from anywhere in the watershed, and moving at unknown rates, with unknown effects on the health of the overall system. Although there are a wide variety of litter and trash related programs and policies, including Watershed Protection Department routine monitoring of trash, there has never been a comprehensive study of trash dynamics in our watersheds to understand the sources, quantities, and pathways of trash that moves from our uplands to our creeks and receiving water bodies.

II. Task Outline

WPD would like to initiate a roughly 2-year study that would be broken down into 3 primary components:

Objective 1: Complete a background study of currently active programs and policies related to litter and trash in Austin’s waterways and analyze available data related to spatial and temporal patterns.

Task	Deliverable	Start Date	Finish Date
Review and compile all currently active programs and policies related to litter and trash in Austin’s waterways, including funding and resources currently or potentially available.		03/01/2020	06/01/2020
Compile and analyze all available data related to spatial and temporal patterns of litter and trash.		06/01/2020	08/31/2020
Writing a background report that includes an inventory and review of current COA and external partners efforts with respect to litter and trash in Austin watersheds and a high-level summary of available data, trends, and maps.	Background Report	03/01/2020	9/30/2020

Objective 2: Develop and implement a field-based empirical study of trash dynamics in Austin’s watersheds that will represent the range of spatial and temporal variation that is both comprehensive and feasible.

Task	Deliverable	Start Date	Finish Date
Planning of the study. Development of appropriate sampling locations, field collection methods, and statistical analysis to use within the project.	Quality Assurance Project Plan	06/01/2020	10/01/2020
Data Collection.		10/01/2020	07/01/2021
Statistical analysis of collected data and writing the associated report which will include volume, type, source, and pathways of trash in creeks from representative locations around Austin.	Study Report	07/01/2021	10/01/2021

Objective 3: Benchmark trash and litter related studies, best practices, programs and policies in peer cities around the country to understand the range, scope, and reach of the problems and potential solutions that are available.

Task	Deliverable	Start Date	Finish Date
Staff to write a Scope of Services for a comprehensive benchmarking and solution analysis study of peer cities and programs around the country.	Scope of Services	10/5/2020	12/04/2021
Selection of consultant.		12/07/2020	04/02/2021
Phase 1: Consultant to perform benchmarking study of best practices, programs and policies in peer cities around the country.	Preliminary Report to WPD	04/05/2021	07/02/2021
Phase 2: Consultant to develop a list of Austin-specific trash and litter solutions based on results in Objective 1, Objective 2, and the first phase of this benchmarking study.		07/01/2021	10/01/2021
Phase 3: Consultant to benchmark and analyze costs and resources needed to implement the trash and litter solutions from the second phase of this benchmarking study.		10/01/2021	01/31/2022
Compilation of a final report that will integrate the background and quantitative COA staff studies mentioned above, into the national context, including estimated costs and time scales for implementation of Austin-specific solutions.	Final Report	01/31/2022	05/27/2022

III. Resources

1. Background Report:
 - This will be researched, analyzed, and published using current WPD staff by re-prioritizing time and resources.
2. Study of watershed trash and litter dynamics in Austin watersheds:

https://cityofaustin.sharepoint.com/sites/TrashInCreeks_CIUR_QAPP/Shared Documents/Trash_in_creeks_workplan.docx

- One Full-Time Equivalent (FTE) position to oversee the development and implementation of the study, including analysis and reporting, and \$150,000 in contractuals (temp staff, laboratory analysis, labor, etc).
3. Final Report:
- Selection of a consultant via a competitive bid process will be managed by the WPD staff noted above (one FTE), and will also include management of the contract and deliverables. This component of the study we estimate to cost \$250,000 in contractuals over a 1.5 year period.

IV. Network folder

Sharepoint: https://cityofaustin.sharepoint.com/sites/TrashInCreeks_CIUR_QAPP

https://cityofaustin.sharepoint.com/sites/TrashInCreeks_CIUR_QAPP/Shared Documents/Trash_in_creeks_workplan.docx