

ATTACHMENT E:
CITY OF PARIS DRAINAGE PROGRAM

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The purpose of this Drainage Program is to capture and formalize maintenance information that has existed in various locations but was historically unwritten. There were large amounts of data and expertise held within the memory of the department that needed to be gathered and organized in a manner that could be understood and implemented.

Additionally, it is the intent of this plan to capture the maintenance data and scheduling information that has simply been institutional knowledge for years, which will leave the organization as employees leave or retire. The plan was also developed to identify existing drainage infrastructure and develop an inventory, which can be identified through GIS mapping.

Mission Statement

The mission of the Drainage Program is to proactively protect lives and property from flooding events and to perform ongoing maintenance and repair of the entire public drainage system. This mission is to be accomplished by providing quality services that add to our residents' quality of life and make Paris the most livable city in Texas.

Goals and Objectives

- *Reduce flooding calls for service
- *Proactively maintain the public drainage system on a schedule to maximize its effectiveness, reduce the overall maintenance cost and reduce the number of repair calls for service
- *Actively provide public education and information on drainage services and issues affecting the system
- *Develop a GIS database of all drainage infrastructures
- *Assist other city departments with resources and expertise

Annual Operations Maintenance Plan

Outfall Ditches

There are many ditches in the drainage system in Paris that are considered outfall ditches that carry public street water to larger creeks and rivers. Drainage crews need to clean these ditches at least once a year with the assistance of the slope mower.

During the growing season outfall ditches (Big Sandy, 24th SE, Buttermilk, Collegiate & Clarksville) that carry street water need to be cut at least once per year with the priority being placed on the ones that carry the greatest volume of water. During the non-growing season all other ditches that take street water are cut as needed. Throughout the year this crew is responsible for checking blockages, obstructions of any kind, looking for trees that are down in the ditch and take the necessary actions to correct the problem.

Pre and Post Rain Event Drainage System Inspections

In the event a major rain event is forecast, the drainage crew conducts both pre-event and post-event inspections of the drainage system. The pre-event inspection is designed to be

proactive so that trouble areas can be identified and any areas that are blocked by debris can be unstopped prior to the event. This facilitates proper drainage flow in the system, reducing flooding during the event, and safeguards property. The post-event inspection is designed to check the system to again unstop any blockages that have occurred during the storm event, inspect the system for any damage that will require future repair and to ensure that any residual water left in the system can drain properly.

The city is divided into four quadrants for which each division is responsible. During and after major rain events, each superintendent and crews respond to these quadrants to remove debris if possible and report their findings to the public works director.

Major cleaning

Ditches scheduled for major cleaning and re-grading during FY 2018-23 include 10th NW & Center, 25th SE & Sherman, 24th SE @ Dragon Park. These are identified as needing major work based upon their current condition following inspections made by division personnel. This work will include major ditch bottom clearing and cleaning to increase the capacity of the ditch and facilitate the movement of the maximum amount of drainage within the ditch. All maintenance on any ditch that requires permits from state agencies will be dependent upon the city obtaining the necessary permit(s) to complete the work. Until all permits can be obtained, the work cannot be done. The planned work may take up to 180 days per item depending on the size of the outfall ditch and the conditions found once work begins. Work priorities on these outfall ditches may change due to political considerations, major storm events or other delays not within the control of the drainage crew.

Back and Side Ditches

The back and side ditches that carry street water in the drainage system are cleaned as needed once a year by the same crew based upon the available scheduling.

During the growing season, these ditches need to be cut and cleaned once per year and they are cleared of leaves one time per year. The crew receives assistance from street sweepers for large scale clearing of leaves from the street-side ditches citywide after all the leaves have fallen throughout the city. This particular cleaning of street-side ditches should take place in the January to March timeframe.

Construction Crew

Constructs new drainage infrastructure and replaces existing drainage infrastructure such as storm pipe, structures, and retention and detention ponds citywide. This crew also clears land and assists other city departments as needed when major heavy equipment activities are needed. The work schedule is determined by inspections of the systems by existing staff, in-house projects by city staff that is determined too costly to contract out. This crew also assists in removing large blockages from outfall ditches after storm events and re-grades outfall ditches between projects.

Repairs existing drainage infrastructure and installs new infrastructure throughout the City of Paris. This includes repairs of cave-ins over storm pipes and structures, such as curb drop inlets, yard drains and manholes. Existing deteriorated storm pipe is replaced by this crew as needed. This will take place with assistance from other crews within the ROW division, for multiple persons and heavy equipment will be needed to perform this task.

Off-Street Ditching Crew

All off-street ditches that receive public street water need to be cleaned once per year. This includes residential back and side yard ditches that receive public street water run-off. This activity includes mowing slopes and access roads on large outfall ditches with slope mowers during the growing season. The ROW tractors and crew will assist with this process and scheduling.

Residential off-street ditches that do not receive street water are the responsibility of the property owners; however, the city will unstop drains and pipe ends at the end of the drainage system, if required.

Street-side Ditching Crew

All street-side ditches will be inspected once per year to determine if maintenance is required. Ditches that need maintenance (debris removal, grading or brush removal) will be cleaned once a year or on a rotating schedule. The crew takes care of all the street-side ditches and hand clean ditches if grading is not necessary. Ditches are mechanically cleaned if re-grading is needed. Mechanical re-grading is done by a mini track hoe for shallow ditches and a Gradall and/or track hoe for wider and deeper ditches. A Street Division crew will assist with most of the roadside ditches as has been done historically.

ANNUAL SCHEDULE FOR DITCH CREW

The city is divided into four sections, called quadrants that are divided by NW, SW, SE, NE.

The city's ditch schedule is performed in counter-clockwise rotation, starting from the innermost ditches to the outermost ditches. This cycle repeats every month.

The schedule is as follows, with allowance for flexibility.

First week of every month, crew will be in the NW quadrant.

Second week of every month, crew will be in SW quadrant.

Third week of every month, crew will be in SE quadrant.

Fourth week of every month, crew will be in NE quadrant.

City of Paris

DRAINAGE AND FLOOD CONTROL

Public Works Operations is responsible for the daily maintenance of ditches and drainage in the street rights-of-way, street stormwater structures, and creeks in which the city has existing drainage easements.

Road Side/Some Off Road Ditch Maintenance is the responsibility of the Public Works Street Division and includes the re-grading of roadside ditches, including flushing culverts under driveways and streets. While the City Code of Ordinances mandates abutting property owners maintain ditches free of debris, the division will re-grade ditches that become heavily silted; existing drainage culverts are also flushed during this activity. New culverts or culverts that are damaged or undersized under residential or commercial driveways are the property owner's responsibility for replacement. Off-road drainage ditches are cleaned and re-graded by the city if the city has an existing drainage easement; otherwise it is the responsibility of property owners. These off-road ditches collect storm water from many smaller ditches and storm sewers and transport it to larger ditches and/or creeks maintained by the city.

Storm Water Sewer Maintenance is the responsibility of the Street & ROW Division, which handles the operation and maintenance of the City's storm water sewer system, including tasks such as cleaning manholes and inlets as well as replacing missing manhole covers. The storm water sewer system is very different from the sanitary sewer system that carries waste from your home. These sewers are designed only for storm water and empty directly into major ditches and creeks. Residents are reminded to never dispose of grass clippings, tree limbs, motor oil, or other items in the storm water sewer system.

The NPDES (National Pollutant Discharge Elimination System) is a federally mandated program that monitors and inspects runoff from manufacturers and industrial businesses to prevent pollutants from entering our streams and lakes. The city will investigate reported or suspected illegal discharges into the storm water system and disposal of commercial, industrial or household hazardous materials.

The local Drainage Projects (LDP) stem from service requests related to storm water maintenance, whether it is a storm water sewer, roadside ditching or an off-road ditching concern. Maintenance crews do an onsite assessment of the request to determine if the request/concern qualifies for further city involvement. If it does, a work order is generated and work is scheduled based on the greatest need. Large drainage issues are forwarded to the Public Works Director & City Manager to be reviewed as part of a future Capital Improvement Program.