



# CRS Floodplain Management Plan Annual Report

2018

This report is a summary of the Floodplain Management Committee review of activities outlined in Step 8, of the Grand Prairie Floodplain Management Plan whose committee selected and specified those activities relative to the City’s resources, hazards, and risk. The City of Grand Prairie strives for a balanced program including preventative activities both to keep its flood problems from getting worse, and also to protect future development from effects of flooding and other natural hazards.

## 1. Preventative

The Stormwater Department shall continue to evaluate the current NFIP Floodplain Ordinance and higher regulatory standards for development in flood hazard areas as it pertains to storm water management and future development.

- **Action:** The Stormwater Department evaluates proposed project compliance on a project-by-project basis according to current regulations that include higher regulatory standards in high risk or flood-prone areas.
- **Summary of Implementation:** The Stormwater Department participates in the Development Review Committee (DRC). The DRC reviews all proposed developments that require a special use permit, a zoning change, platting, etc. The Stormwater Department reviews all engineering plans submitted to the City for floodplain compliance. The Stormwater Department reviews all building permit applications for new buildings within the City.

The Stormwater Department oversees the floodplain permitting process. From January 1, 2018 through July 31, 2018, 67 floodplain development permits (FDP) and 3 Corridor Development Certificate (CDC) permits were issued. FEMA approved 1 Letter of Map Revision (LOMR).

Year	FDPs Issued	CDCs Issued	LOMRs Approved
2016	79	2	6
2017	125	2	5
2018 (Jan-July)	67	3	1

No changes have been made to the Drainage Design Manual (DDM) since it was updated in January 2017.

No changes have been made to the City’s Stormwater Management Program (SWMP), which is valid through December 2018. The new rules will be published at the end of December 2018. The City will have 90 days to update our SWMP to conform to the new permitting requirements.

The Stormwater Utility Fee (SWU) increased by approximately 10% in FY 2017 and 5% in FY 2018. City staff is requesting a 3% increase in the SWU fee for FY 2019, which will be considered at a public hearing during the City Council meeting on September 18, 2018.

- **Budget:** Operating Budget

## 2. Property Protection

The City will continue to work with the CRS Program for Public Information Committee and Floodplain Management Committee to review outreach projects to educate the public, area businesses, and all citizens about flood risk.

City staff will continue to evaluate and recommend improvements, as needed, to the City-Wide Drainage Master Plan. The Stormwater Department will work with other City departments to fund projects and implement improvements.

The City will continue to comply with CRS program to maintain the existing Class 5 rating.

- **Action:** The Stormwater Department works with other City departments to implement CRS outreach programs. The Stormwater Department works with other City departments to make drainage system improvements, including system maintenance, planning, elimination of structural flooding, and reduction of stormwater pollutants carried by stormwater runoff into creeks and streams.
- **Summary of Implementation:** The Stormwater Department works with Public Works, Building Inspections, Planning and Development, Office of Emergency Management, Environmental Services, Communications & Marketing, Library, Engineering, Transportation, and Information Technology to implement the City's CRS program. Other departments may also be involved in CRS activities depending on the specific need.

The Stormwater Department reviews building permit applications for new buildings within the City. Those proposed improvements that are within 200 feet of the floodplain are required to obtain the appropriate floodplain permits prior to receiving building permits.

The City has one staff member who reviews all of the Stormwater Pollution Prevention Plans for construction projects as part of the City's Municipal Separate Storm Sewer System (MS4) program. Two staff members were added in May 2018 to proactively enforce the City's MS4 program requirements.

Mapping Activity Statement No. 2 (FEMA CTP Funding) was completed in 2016. However, the final reimbursement to the City was delayed due to an error at FEMA. The final payment was received by the City and officially closed in January 2018.

The City completed several "hot spot" studies in 2018, including Shady Grove and Indian Hills neighborhoods.

The City completed a City-Wide 2-dimensional (2D) rain on mesh model to visualize localized areas of potential flooding. This is a planning tool.

A new City-Wide Drainage Master Plan (CWDMP) for Cannon Branch was completed in 2018.

The updated Fish Creek and Cottonwood Creek City-Wide Drainage Master Plans should be completed by the end of 2018.

The City is preparing a Drainage Master Plan Update evaluating the stormdrains for new developments. The plan should be completed by the end of 2018.

In 2018, no houses were purchased using Resolution 4812-2016, which established a voluntary buyout program for houses impacted by creek erosion.

City crews continue to maintain and repair the open drainage system. City staff is preparing a contract to have on-call contractor assist with drainage maintenance projects for the open channel/bar ditch system. City staff is developing a proactive open channel maintenance program.

The Dalworth Creek Concrete Channel (Keith Heights) project is in progress. This project will repair failed weep holes that resulted in "sink holes" in several yards along the channel. The project also

includes replacing a stormdrain pipeline that is in disrepair. The repairs are scheduled to begin in August 2018 and be completed by the end of the year.

The following stormwater-related Capital Improvement Projects (CIP) and their status are as follows:

- 20th St/Walnut Drainage Erosion (under construction)
- Indian Hills Addition Improvements (study complete)
- Marshall and Robinson @ Cottonwood Crk (in design)
- Great Southwest Parkway @ Prairie Creek (design complete and under construction)
- Seeton Rd (Grand Peninsula to Day Miar) (in design)
- Hot Spot Studies: Preliminary Neighborhood Flooding Study (design complete and under construction)
- Drainage improvements along Dalworth Street at Dalworth Creek (in design)
- Potential buyouts in Lakeview area due to drainage (proposed FY 2018 budget)
- Acosta Street drainage improvements from Cober Street to Kennedy Middle School (design complete and awarded for construction)
- Reclamation Plan for Beltline Rd in Partnership with Irving (waiting on Irving)
- Stormdrain Outfall Repairs: Walnut Street Outfall (in design)
- Vega Street Bar Ditch Improvements (under construction)
- Carrier Parkway Improvements Phase 1 from I-30 to HWY 161 (adding a storm drain system to the Eisenhower Elementary School area) (proposed FY 2019 budget)
- Cottonwood Creek Stream Stability from East of Carrier to FM 1382 (proposed FY 2019 budget)
- Brent Court from W Marshall Dr to Crooks (proposed FY 2019 budget)
- Rain/stream gauge expansion (proposed FY 2019 budget)
- Flood forecasting tool (proposed FY 2019 budget)
- Fish Creek Stream Stability from Magna Carta to Carrier (proposed FY 2019 budget)
- GPISD Bus Barn Drainage Improvements (proposed FY 2019 budget)
- Dickey Rd Stormdrain Improvements Design West of SW 3<sup>rd</sup> (Indian Hills area) (proposed FY 2019 budget)
- Design of drainage associated with Pavement Assessment/Priority Projects (proposed FY 2019 budget)

Since the May/June 2015 flood events, the City has continued working with FEMA's Public Assistance (PA) Grant for two stormwater-related projects: Johnson Creek channel floor repair and concrete channel repair southeast of Arkansas and Forum. FEMA has prepared the Project Worksheets for each of these projects. The Johnson Creek project construction was completed in July 2018. The channel wall repair near Arkansas Lane and Forum Drive was completed in August 2017.

- **Budget:** Operating Budget; Stormwater Utility fees
- **Follow-Up Item:**
  - Pat asked about the status of the removal of the Trinity River Authority's (TRA) aerial wastewater pipeline crossing in the vicinity of Fish Creek and Robinson Road. Cindy offered to provide pat with the appropriate contact at TRA who can provide an update on that project.

### 3. Natural Resource Protection

The City of Grand Prairie will continue to work with the University of North Texas to study and construct a wetland on property located between the City's landfill and the Trinity River. Mitigation efforts may include using standing vegetation and seed bank community structures in development of a natural and compensatory wetland.

- **Action:** No other activities are required to support natural resource protection at this time.
- **Summary of Implementation:** The planting is in maintenance mode now. In 2016, some additional plantings were made and the third basin had been excavated. No additional plantings have been accomplished this year. Potential future plantings may occur in FY 2019. In FY 2020, the City may have a micro vertebrate/hydrology/seed bank study performed as a comparison to the original baseline study.
- **Budget:** Staff time (Grants, Operating fees)

#### 4. Emergency Services

Implement ongoing public education on warning systems and the actions that should be taken to prepare for hazards and disasters. Disaster-related public education materials are available through the City's Public Information Office. Public education materials relating to emergency management are available from [www.fema.gov](http://www.fema.gov), [www.redcross.org](http://www.redcross.org), [www.ready.gov](http://www.ready.gov) and [knowwhat2do.com](http://knowwhat2do.com).

- **Action:** The City will continue to monitor and update emergency services as needed. Future work will include website refinements, software updates, and discharge versus stage rating curve development. The City upgraded its platform for monitoring its rain and stream gauges in 2017.
- **Summary of Implementation:**

Editorial updates have been made to portions of the Comprehensive Emergency Management Plan. No major changes have been made. The basic plan and annexes have been updated with the State.

FEMA approved the City's updated Hazard Mitigation Action Plan (HMAP) in August 2017. City Council recently adopted the updated HMAP.

The City updated its Debris Management Plan in 2017 and has educated appropriate staff accordingly.

The City continues to maintain and repair its rain/stream gauge system, including the low water crossing (LWC) flashing lights. The City added automated low water crossing gates on Carrier Parkway near McFalls Park between Dickey Rd and Phillips Ct in early 2018. (Additional information on the gates is included in Section 5 below.)

The Stormwater Department began working with a consultant in 2017 to develop a flood forecasting system that will provide more specific lead time for first responders to prepare for flood events at specific locations and to better answer the question, "If it rains X more inches, how high will the water get?" The flood forecasting tool was completed in Fall 2017. The tool was tested in February and July 2018 during localized events. The tool experienced a few glitches that have since been addressed. The second phase of the flood forecasting tool is in progress and includes additional flood-prone locations. City staff is requesting FY 2019 budget to continue expanding the tool.

After several months of running the previous and the new rain/stream gauge software simultaneously, City staff turned off the old software. The new software is providing better quality data. In August 2018, the public-facing side of the software program was made available and the link was updated on the City's website.

The City continues to work with UTA and the CASA Radar program to support the development of additional flood-warning tools.

- **Budget:** Operating Budget; Stormwater Utility fees

## 5. Structural Projects

Based on discussions with the Floodplain Management Committee, the City continues to seek improvements to older areas of the City that are low-lying and areas of flat terrain that experience poor drainage and minor flooding. Areas include Sandra Lane and Beltline at Springdale Street, Willow Bend Mobile Home Park and Fox Hollow Apartments. Automated low-water crossing gates have been added along Carrier Parkway between Dickey Rd and Phillips Ct.

- **Action:** Drainage issues have been minimized through additional flood control measures or repairs and improvements to existing flood control structures. City staff will continue to review alternatives to drainage issues in low-lying areas of the City. City staff will pursue possible FEMA grants and other funding sources in order to buyout flood-prone structures and install electronic gates at low-water crossings.
- **Summary of Implementation:** The Drainage Design Manual was updated in January 2017 to include current iSWM criteria reflective of the City's silver rating.

City staff continues to respond to and investigate drainage, erosion and flooding calls.

Clearing and Grubbing/Earthwork permits are required prior to any dirt being moved on project sites.

The City submitted three Hazard Mitigation Grant Program (HMGP) grant applications in December 2015: flood gates/arms along Carrier Parkway, actuators for the gates at the Dorchester Levee and a permanent generator at the Dorchester Levee.

FEMA approved the grant request for the automated flood gates along Carrier Parkway at Cottonwood Creek near McFalls Park. The equipment cost more than the amount originally awarded in the grant. The City submitted a request to FEMA in Spring 2018 requesting financial assistance with a portion of the cost overrun. FEMA has been slow to respond to the request. In July 2018, the City requested a period of performance extension to allow FEMA additional time to make a decision. Although complete, the project must remain open in order to receive any additional funding that might be awarded. FEMA notified the City on August 17, 2018 that the agency will provide additional funding to assist with the cost overrun!

FEMA also approved the HMGP grant request for actuators at the Dorchester Levee. The motors were installed and tested in 2017. The project was closed in 2018.

As for the permanent generator at the Dorchester Levee, the City submitted its third HMGP grant request in July 2017 to FEMA. FEMA did not award this grant application. City staff submitted a notice of interest in the HMGP grant following the Presidential Disaster Declaration for Hurricane Harvey. However, the rules for generators awarded through this grant program have changed. City staff concluded that purchasing the generator without the grant was in the City's best interest and did not pursue the full grant application.

The City continues implementing its multi-year plan to expand the rain/stream gauge system. City staff reviewed and updated this plan in early 2018. Flood sirens and additional LWC flood flashing lights were approved in FY 2018 budget. Both of these projects involved the coordination of multiple City departments and vendors. City Council approved the contracts in July 2018. Equipment has been ordered. Installation is anticipated in mid to late September 2018.

The City submitted a Texas Water Development Board grant to convert all of the rain/stream gauge system to ALERT2 protocol. City staff anticipates hearing about the grant request this Fall. In case the City does not receive the grant, City staff has requested funding from the FY 2019 budget to perform this task.

- **Budget:** Operating Budget; CIP funding; FEMA grant funding; other grant opportunities

- **Follow-Up Items:**
  - Mike suggested that the educational postcard that Valerie created for the new low water crossing gates on Carrier Parkway be submitted to the International Emergency Managers for a potential award. Stephanie will follow up with Mike on this potential award opportunity.
  - Pat asked about the overgrown area in the creek of an old park along Cottonwood Creek. Stephanie and Barry will follow-up with Pat to get the exact location and see what, if anything, can be done.

## **6. Public Information and Flood Information Assistance**

The Public Information Office provides public information on disaster related materials; the Stormwater Department provides comprehensive flood information to the public. The Emergency Management Department provides disaster preparedness information to residents. The Public Works Department guides residents on protecting the City's waterways from household pollutants and contaminated runoff.

- **Action:** Twenty-three community outreach activities were identified in the Program for Public Information (PPI) Plan.
- **Summary of Implementation:** The CRS Program for Public Information Plan Annual Report provides a detailed description for each of these activities.
- **Budget:** Operating Budget; Volunteer Time/Labor by the Program for Public Information and Floodplain Management Committees

**Table 3 Action Items, Goals**

**Action Item 1: Reduce Flood Losses and Increase Policy Count**

Total flood insurance policy count continues to increase from year to year. When broken into flood zones, the number of policies has increased in Flood Zones AE and X. The number of policies in Flood Zone A has remained constant. The number of residential policies continues to increase each year.

<b>Flood Zone</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>
Policies in Zone AE	49	58	67	74
Policies in Zone A	2	2	2	2
Policies in Zone X	225	228	234	264
<b>Total</b>	<b>276</b>	<b>288</b>	<b>303</b>	<b>340</b>
<b>Occupancy</b>				
Single Family Policies	231	242	250	275
2-4 Family Policies	1	1	1	2
Other Residential Policies	4	9	9	18
Non-Residential Policies	40	43	43	45
<b>Total</b>	<b>276</b>	<b>295</b>	<b>303</b>	<b>340</b>

Notes: 2016 as of June 30, 2017; 2017 as of May 31, 2017; 2018 as of February 28, 2018

**Action Item 2: Attend NFIP/CRS Users Group Meetings (City staff)**

City staff participates in the CRS Users Group meetings held at NCTCOG (approximately every quarter).

**Action Item 3: Establish City Disaster Response Team**

The Office of Emergency Management has established the disaster response teams and activates them when needed. In addition, Barry participates in the Public Works Emergency Response Team (PWERT) that has agreements in place to provide and receive assistance from other communities within the North Central Texas Council of Governments (NCTCOG) area.

**Action Item 4: Ensure Flood Insurance Rate Maps (FIRMs) are Updated**

In 2016, FEMA issued preliminary maps for Dallas and Tarrant Counties. These maps have been uploaded into GIS on Stephanie’s computer. The preliminary maps are considered along with the effective maps as property owners seek to develop the impacted properties.

FEMA initiated the 90-day public review and comment period for the preliminary maps in Dallas and Tarrant Counties. The City submitted comments to FEMA in July 2017 for incorporation into the final effective maps. FEMA incorporated comments from the communities and reissued preliminary maps at the beginning of 2018. Due to time constraints, the City hired a consultant to confirm that previous comments and new projects had all been accounted for in the rerelease of the preliminary maps. The City sent questions to FEMA who has since provided answers or made additional adjustments to the maps. The City anticipates FEMA publishing the new effective maps sometime in 2019.

**Action Item 5: Acquire, Elevate, Relocate Structures in Floodprone Areas**

In 2016, no structures were acquired, elevated or relocated by the City for flood-related reasons.

One property qualified in 2016 for the Voluntary Buyout Program due to creek erosion. The City purchased that property in May 2017. Demolition is complete.

No structures were acquired, elevated or relocated by the City for flood-related reasons in 2018.

**Action Item 6:** Improve CRS Rating

The City received a letter dated May 13, 2017 from FEMA's consultant stating that the City's preliminary CRS score from the 2015 CRS recertification will remain a 5, which provides our residents with a 25 percent discount on flood insurance. Due to Hurricane Harvey, FEMA delayed the mailing of the City's formal letter from FEMA indicating the official, final score in September 2017 with an effective date of October 1, 2017. However, FEMA had updated the information on its website. The City received the formal letter confirming the CRS rating of 5 on November 17, 2017.

**Action Item 7:** Design, Construct, Maintain Drainage Improvement Projects

Capital Improvements Projects (CIPs) are included in the City's annual budget and continue to move forward. The City's Drainage Crew works to relieve drainage and erosion issues reported to the City on a complaint-based approach.