



CRS Floodplain Management Plan

Annual Report

2017

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, 2016 through December 31, 2016, 79 floodplain development permits (FDP) and 2 Corridor Development Certificate (CDC) permits were issued. FEMA approved 6 Letters of Map Revision (LOMR).

From January 1, 2017 through September 27, 2017, 90 FDP and 2 CDC permits were issued. FEMA approved 4 LOMRs as of September 11, 2017.

The Drainage Design Manual (DDM) was updated in January 2017 to update the City's iSWM status as being a Silver iSWM regional community. Associated iSWM information was updated in the DDM to include the current iSWM requirements.

No changes have been made to the City's Stormwater Management Program (SWMP), which is valid through 2018. The Best Management Practices (BMPs) within the SWMP were updated in 2016.

The Stormwater Utility Fee (SWU) increased by approximately 10% in FY 2017. City staff requested a 5% increase in the SWU fee for FY 2018, which was approved by City Council on September 19, 2017. The new SWU rate will go into effect on October 1, 2017.

- **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.

Mapping Activity Statement No. 2 (FEMA CTP Funding) was completed in 2016. However, FEMA has yet to make its final reimbursement to the City. In August 2017, City staff and FEMA had a conference call to discuss the situation. FEMA did not process the City's final submittal upon receipt and just realized their error. FEMA is looking into the best way to rectify the situation.

No new City-Wide Drainage Master Plans (CWDMP) were completed in 2017. Grand Prairie has been working with the City of Arlington on agreeable flows coming from Arlington in Cottonwood Creek watershed and Fish Creek watershed. Grand Prairie is using this information to develop an updated CWDMP for these two watersheds with an anticipated completion date of Spring 2018.

In April 2016, City Council adopted Resolution 4812-2016 establishing a voluntary buyout program for houses impacted by creek erosion after specific criteria have been satisfied. One house has been purchased through this resolution. The City closed on the property in May 2017. The house has been demolished and the area will remain open space.

City crews continue to maintain and repair the open drainage system, including the recent Daisy Court erosion repair.

The Dalworth Creek Concrete Channel (Keith Heights) project is in progress. This project will repair failed weep holes. The design is complete. The survey is complete. The City is currently working with property owners to obtain temporary construction easements, as well as permanent drainage easements. The actual repairs will begin later this year.

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

- East Main Street at Railroad Bridge (complete)
- Philips Storm Drain (complete)
- 20th St/Walnut Drainage Erosion (design complete and currently out for construction bids)

- Indian Hills Addition Improvements (study complete)
- Marshall and Robinson @ Cottonwood Crk (in design)
- Great Southwest Parkway @ Prairie Creek (in design)
- Seeton Rd (Grand Peninsula to Day Mir) (in design)
- Hot Spot Studies: Preliminary Neighborhood Flooding Study (in design)
- Drainage improvements along Dalworth Street at Dalworth Creek (in design)
- Potential buyouts in Lakeview area due to drainage (FY 2018 budget item)
- Acosta Street drainage improvements from Cober Street to Kennedy Middle School (FY 2018 budget item)

Following the May/June 2015 flood events, the City began pursuing the FEMA Public Assistance (PA) Grant for three stormwater-related projects: Johnson Creek channel floor repair, Landfill Levee 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 is currently under design.

Determining damages from the 2015 floods proved to be more difficult than what the FEMA grant would cover. The design for the Landfill Levee repair is in progress but will not involve FEMA funding or FEMA reimbursement. The channel wall repair near Arkansas Lane and Forum Drive was completed in August 2017.

The City obtained updated LiDAR (1 foot contour intervals) in late 2016.

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

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, www.redcross.org, and www.ready.gov.

- **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 recently upgraded its platform for monitoring its rain and stream gauges.

- **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 recently updated its Debris Management Plan and will educate appropriate staff accordingly.

The City continues to maintain and repair its Rain/Stream Gauge System, including the low water crossing flashers. Soon, the City will have a set of automated low water crossing gates. (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 should be ready for City staff use in Fall 2017. City staff is requesting FY 2018 budget to include additional locations to the tool.

The City published a request for proposals for software programs for the existing rain/stream gauge system. We received three proposals. We selected two of those applicants to provide a demonstration of their programs as part of the selection process. We selected a new software program and have been working with the vendor to transfer the data from our current program to the new program. The new software is running simultaneously with the previous software. City staff was trained on the new software in September 2017. We will continue to run both software programs in parallel for quality assurance and comparison purposes.

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, and Willow Bend Mobile Home Park and Fox Hollow Apartments. Another structural project for consideration is adding gates to low-water crossings.

- **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 vendor has been selected and the project is in progress. FEMA also approved the HMGP grant request for actuators at the Dorchester Levee. The motors have been installed and are operational. This grant project was completed in August 2017, although final invoicing is in progress. As for the permanent generator at the Dorchester Levee, the City submitted its third HMGP grant request in July 2017 to FEMA and is awaiting FEMA response.

The City is implementing its multi-year plan to expand the rain/stream gauge system. City staff is requesting FY 2018 budget to fund the expansion of the rain/stream gauge system. City staff intends to pursue a Texas Water Development Board grant for additional equipment. The flood flashers that were in the vicinity of Main Street under the railroad are being moved to SW 3rd Street at McFalls Park. A recent CIP project in the vicinity of Main Street and the railroad has addressed this flood prone area.

In 2016, the City began a study of the Indian Hills neighborhood to look at potentially feasible options to reduce the flooding experienced during smaller storm events. The study was recently completed using the new LiDAR information.

In 2016, the City began its neighborhood hot spot study investigating why specific areas flooded in May-June 2015. This study incorporated the new LiDAR information. The study identified feasible solutions to reduce the flooding at these locations. The recommended solutions are currently in design.

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

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 2015-17 Program for Public Information (PPI) Plan.
- **Summary of Implementation:** The CRS Program for Public Information Plan Annual Report provides a detailed update on 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 for the last three years. The number of policies in Flood Zone A has remained constant. The number of residential policies increased from 2016 to 2017.

Flood Zone	2015	2016	2017
Policies in Zone AE	49	58	67
Policies in Zone A	2	2	2
Policies in Zone X	225	228	234
Total	276	288	303
Occupancy			
Single Family Policies	231	242	250
2-4 Family Policies	1	1	1
Other Residential Policies	4	9	9
Non-Residential Policies	40	43	43
Total	276	295	303

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

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 other month).

Action Item 3: Establish City Disaster Response Team

The Office of Emergency Management has established the disaster response teams and activates them when needed.

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

In 2016, FEMA issued preliminary maps for some map panels in Dallas and Tarrant Counties of Grand Prairie. 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. The City anticipates FEMA publishing the new effective maps in February 2018.

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.

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 has updated the information on its website.

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.