



# CRS Floodplain Management Plan Annual Report

2023

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. On December 14, 2021, the Floodplain Management Plan 2021-2026 was approved by City Council.

## 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 October 1, 2021, through October 1, 2022, 46 floodplain development permits (FDP) and 4 Corridor Development Certificate (CDC) permit was issued. FEMA approved 1 Conditional Letter of Map Revision (CLOMR) and 1 Letters of Map Revision (LOMRs).

Year	FDPs Issued	CDCs Issued	LOMRs Approved
2016	79	2	6
2017	125	2	5
2018	91	5	1
2019	67	1	2
2020 (Jan-Aug)	20	1	4
2021	36	1	3
2022	46	4	1
2023	40	6	4

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

The City updated its Stormwater Management Program (SWMP) and submitted the NOI for a new permitting term to TCEQ in 2019 and received a confirmation letter in July 2022.

The Stormwater Utility Fee (SWU) increased by approximately 10% in FY 2017, 5% in FY 2018, 3% in FY 2019, 5% for FY 2020, 0% for FY 2021, 0% for FY 2022, 0% for FY 2023, and 0% for FY 2024.

**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. The City of Grand Prairie has initiated numerous property protection measures to reduce flood risk in the community. The City has adopted more stringent building requirements in flood hazard areas within the City, and along the Trinity River Corridor. The Stormwater Department reviews all building permits that are within 200 feet of the floodplain to check that structures are built to an elevation above the 1% annual chance floodplain and address localized flooding in proximity to the floodplain area.

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 continued to comply with CRS program to maintain the existing Class 5 rating. The City applied for a mid-cycle modification to its CRS rating in January 2023 and was awarded a Class 4 rating. This will take effect on October 1, 2023.

- **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's Stormwater Inspection Supervisor reviews all the Stormwater Pollution Prevention Plans for construction projects as part of the City's Municipal Separate Storm Sewer System (MS4) program. Three Stormwater Investigators proactively enforce the City's MS4 program requirements.

From 2021-2022, two houses were purchased using Resolution 5205-2021, which established a voluntary buyout program for houses impacted by creek erosion. A third home located along Kirby Creek was purchased by the City in 2023.

City crews continue to maintain and repair the open drainage system. City staff established a contract to have on-call contractor assist with drainage maintenance projects for the open channel/bar ditch system with set unit prices in 2019. In 2020 the City hired a consultant to do a City-wide open ditch assessment. Based on the assessment and size of the project the City has used a combination of in house drainage crews and on-call contractor to construct the improvements. For FY2022-FY2027, City Council approved an increase to the CIP Stormwater Bar Ditch Improvement fund to \$500,000 per year.

In 2022 the City hired a consultant to do a concrete channel assessment. The City received the final report from the consultant and City Council approved \$500,000 per year in the CIP Stormwater budget (FY2022-FY2027) for Concrete Channel Repair.

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

- Dechman Street from Westchester to Bardin – **Construction is complete. Developer constructed the roadway project in tandem with the multifamily development.**
- Stormwater Modeling Annual Update – **FY 2021 project completed. FY 2022 project awarded to Halff on 9/20/2022. This update is currently in progress. The contract is being handled by Purchasing.**
- Briarhill Erosion Permanent Solution – **Contract awarded to Peloton Land Solutions. Final plan proposal is currently being reviewed by City staff. The next steps include final design and bidding.**
- Mike Lewis Erosion – **Consultant provided report with several alternatives ranging from ongoing monitoring to bank stabilization. City staff chose the option to monitor for now;**
- Wallingford PID Retaining Wall – **Final design has been reviewed and comments returned to Halff. Contract Amendment pending.**
- Shady Grove from Beltline to East of Roy Orr – **Alignment study is currently underway and is being managed by the City Transportation and Mobility department.**
- SW 3<sup>rd</sup> from Dickey to Phillips widening and drainage improvements – **Future project**
- Great Southwest Parkway (Ave. K to Fountain Parkway) – **Future 2024**
- Great Southwest Parkway (Ave H to J) – **Future project**
- Oakdale (Roy Orr to 161) – **Future project**
- Great Southwest Parkway (I-20 to Lakeridge) – **Future project**
- Ave J from SH 360 past Johnson Creek – **Future project**
- Great Southwest Parkway (Ave J to Ave K) (inc. Bridges) – **Future project FY2025**
- Drainage Buyouts for three structures due to erosion from creek – **Completed 2021, 2022, and 2023**
- Master Drainage Plan Study Updates – **Studies for the Study of West Fork Trinity River near SH360 and miscellaneous locations currently being updated by Stantec;**
- Bar Dich Improvements – **FY 2022-FY 2027 Budget**
- Misc. Erosion Projects – **Ongoing**
- Storm Drain Outfall Repairs – **Design was done in-house. Construction is complete and corrections are in progress.**
- Concrete channel assessment – **Final report received in late 2022. Will be used to prioritize projects.**
- Concrete Channel repairs **FY 2022-FY2027 Budget**
- Dry Branch Creek Channel Improvements **Future project**
- Annual Study for Outfall Rehabs. – **The FY2023 Storm Drain Outfall Inventory project is 74% completed and still in progress.**
- Storm drain improvements to 1500 Block of Oak Street – **Future project**
- Davis Rd realignment and drainage improvements - **Phase 1 is under construction; Phase 2 proposal is underway and design will begin in FY 2024.**
- Bear Creek Channel Improvements **Future project**
- Sherwood neighborhood drainage improvements **Consultant has been determined and they are working to identify solutions**
- Henry Branch – **Final design currently underway with construction FY 2024.**
- Flood warning system modeling - **Phase 4 \$200,000 yearly FY 2023 to 2027**

- Low Water Crossing Gates at SW 3rd Street – have been installed, operational by end 2023.
- Sampsell Road – **Future Project**
- NCTCOG Cost Share for CDC Model Update (City of Grand Prairie contributed their cost share to NCTCOG) – **Model update has been completed and is available online.**
- **Budget:** Operating Budget; Stormwater Utility fees

### 3. Natural Resource Protection

The City of Grand Prairie is a 'Water Wise' community and has implemented a number of programs and ordinances to encourage residents to conserve water year-round and avoid contaminating the soil and waterways. The City of Grand Prairie has 14 areas totaling 516.6 acres with the wetlands classification which comprises approximately 1% of the total City area. City staff has identified the presence of pristine wetland obligates on both sides of the Landfill, Wetlands Mitigation area, but no flora or fauna is endangered. Examples of obligate wetland flora include duckweed, water lily, pickerel weed, cattails, woolly sedge, soft-stem bulrush, royal fern, and water horsetail.

**Action:** No other activities are required to support natural resource protection at this time.

- **Summary of Implementation:**

- The Public Works Department continues to educate residents regarding “Don’t Clog the Drain”
- Code Enforcement Officers monitor activities to protect the City’s Floodplains and waterways.
- The City provides a free tree trimming and brush remove program to remove potential debris that can block the City’s waterways.
- The last wetland construction was completed in 2020. In FY 2022, the City had 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 information is available on the City’s website [www.gptx.org](http://www.gptx.org). Public education materials are also 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 as needed, software updates, and discharge versus stage rating curve development.

- **Summary of Implementation:**

The City of Grand Prairie has a flood-warning system to warn citizens of high water and flooded roadways.

The Comprehensive Emergency Management Plan was updated and filed with the State in 2020. The plan and annexes are valid through 2025.

FEMA approved and City Council adopted the City's updated Hazard Mitigation Action Plan (HMAP) in August 2017. This plan will be updated in 2023.

FEMA approved the City's updated Debris Management Plan in March 2019 and has educated appropriate staff accordingly. The current plan is valid through March 2024, but updates to the plan are being reviewed by FEMA.

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 SW 3<sup>rd</sup> St near McFalls Park between Dickey Rd and Phillips Ct in 2022. There are current plans for expansion in 2024.

The City continues to use the City of Grand Prairie's street drainage crew during periods of heavy rain with a 24-hour on-call and inspects roadways to monitor flooding. City crews use barricades to close roads that are inundated with water and to discourage traffic from driving through these areas. The City also uses its real-time rain and stream gauge monitoring system to assist in determining road closures. The monitoring system consists of 23 rain and stream gauges located throughout the City. Grand Prairie participates in the CASA radar system, which also helps provide current weather conditions.

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 phase 1 was completed in Fall 2017. The third phase of the flood forecasting tool is complete and included analysis of potential Gauge Adjusted Rainfall Radar (GARR) options for the program. 2023 will include phase 4 expansions with additional phases through 2027.

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

Engineering staff reviews drainage plans for building permits, development, and erosion control. The Stormwater and Engineering Department issues Clearing and Grubbing/ Earthwork permits. All development within the City of Grand Prairie must comply with the requirements of the City Drainage Design Manual. 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. Automated low-water crossing gates have been added along Carrier Parkway between Dickey Rd and Phillips Ct and at 3<sup>rd</sup> Street 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. A Stormwater operating budget for Storm sewer maintenance allows for small projects to alleviate flooding in the low-lying area.
- **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.

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. The City was unable to qualify for the grant due to having a Benefit Cost Ratio less than one. The City moved forward with the plan using City funding to purchase the Generator.

The City continues implementing its multi-year plan to expand the rain/stream gauge system. City staff reviewed and updated this plan in 2021. In 2023 the city plans expanding the rain and stream gauge system with at least 2 additional sites but could do more if funding allows.

Budget: **Operating Budget; CIP funding**

## **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- 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>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>
Policies in Zone AE	49	58	67	74	67	60	59	35	18
Policies in Zone A	2	2	2	2	1	1	1	0	0
Policies in Zone X	225	228	234	264	307	298	273	212	190
<b>Total</b>	<b>276</b>	<b>288</b>	<b>303</b>	<b>340</b>	<b>375</b>	<b>359</b>	<b>333</b>	<b>247</b>	<b>208</b>
<b>Occupancy</b>									
Single Family Policies	231	242	250	275	302	295	276	191	177
2-4 Family Policies	1	1	1	2	3	4	3	1	2
Other Residential Policies	4	9	9	18	22	19	12	17	9
Non-Residential Policies	40	43	43	45	48	41	42	38	20
<b>Total</b>	<b>276</b>	<b>295</b>	<b>303</b>	<b>340</b>	<b>375</b>	<b>359</b>	<b>333</b>	<b>247</b>	<b>208</b>

**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**

On March 21, 2019, FEMA issued new Floodplain Information Rating Maps (FIRMs) for the areas of Dallas and Tarrant Counties north of Joe Pool Lake. These maps have been uploaded into GIS. The City mailed letters to residents whose houses were mapped within the floodplain.

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

From 2021-2023, three houses were purchased using Resolution 5205-2021, which established a voluntary buyout program for houses impacted by creek erosion. Demolition is complete.

No structures were acquired, elevated or relocated by the City for flood-related reasons in 2022-2023.

**Action Item 6: Improve CRS Rating**

The City received a letter dated February 15, 2022 from FEMA’s consultant stating that the City’s preliminary CRS score from the 2021 CRS Cycle Verification was 3256 points. Even though it is enough points for a Class 4, not all the Class 4 prerequisites had been met. All the prerequisites have now been met, and the City applied for a mid-cycle modification in January 2023. The City was awarded a Class 4 rating, which will become effective October 1, 2023. This will provide residents with a 30 percent discount on flood insurance.

**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.