

CITY OF GRAND PRAIRIE
FLOODPLAIN DEVELOPMENT PERMIT (FDP) APPLICATION – PART 2
(Unified Development Code (UDC) – Article 15)

2023

MODELING

Part 2 of the FDP application is required to be prepared, signed, and sealed by a licensed professional engineer in the State of Texas. Electronic copies of the associated models must be provided to the City for review.

The U.S. Army Corps of Engineer’s hydraulic model program, Hydraulic Engineering Center River Analysis System (HEC-RAS), shall be used to determine the impacts of the proposed project on the base flood elevation and valley storage. The FEMA effective model shall be used to determine the potential impacts of the proposed project for the existing conditions scenario. The ultimate conditions model shall be based on the U.S. Army Corps of Engineers model for the Corridor Development Certificate (CDC) or the City’s ultimate conditions model. The engineer may obtain the base models from the City’s Floodplain Administrator.

VALLEY STORAGE MITIGATION:

Describe hydraulic mitigation used to compensate for project valley storage impacts. (Use a separate attachment if necessary.)

EXISTING 100-YEAR (1% ANNUAL CHANCE) FLOOD

| Hydrologic and Hydraulic Impact | | Pre-Project | Post-Project | Change |
|---------------------------------|-------------------------------------|-------------|--------------|--------|
| Plan File Name: | | *.p____ | *.p____ | N/A |
| Discharge | | | | |
| Cross Section | Downstream Boundary of Project (DB) | cfs | cfs | cfs |
| | Upstream Boundary of Project (UB) | cfs | cfs | cfs |
| Channel Velocity | | | | |
| Cross Section | Downstream Boundary of Project | fps | fps | fps |
| | Upstream Boundary of Project | fps | fps | fps |
| Water Surface Elevation (NGVD) | | | | |
| Cross Section | | | | |
| | ___ ft downstream of DB | ft | ft | ft |
| | ___ ft downstream of DB | ft | ft | ft |
| | ___ ft downstream of DB | ft | ft | ft |
| | ___ ft downstream of DB | ft | ft | ft |
| | Downstream Boundary of Project | ft | ft | ft |
| | Mid-Project | ft | ft | ft |
| | Upstream Boundary of Project | ft | ft | ft |
| | ___ ft upstream of UB | ft | ft | ft |
| | ___ ft upstream of UB | ft | ft | ft |
| | ___ ft upstream of UB | ft | ft | ft |
| | ___ ft upstream of UB | ft | ft | ft |
| Project Land in Floodplain | | | | |
| | | ac | ac | ac |
| Project Land in Valley Storage | | | | |
| | | ac-ft | ac-ft | ac-ft |

ULTIMATE 100-YEAR (1% ANNUAL CHANCE) FLOOD

| Hydrologic and Hydraulic Impact | | Pre-Project | Post-Project | Change |
|---------------------------------|-------------------------------------|-------------|--------------|--------|
| Plan File Name: | | *.p____ | *.p____ | N/A |
| Discharge | | | | |
| Cross Section | Downstream Boundary of Project (DB) | cfs | cfs | cfs |
| | Upstream Boundary of Project (UB) | cfs | cfs | cfs |
| Channel Velocity | | | | |
| Cross Section | Downstream Boundary of Project | fps | fps | fps |
| | Upstream Boundary of Project | fps | fps | fps |
| Water Surface Elevation (NGVD) | | | | |
| Cross Section | | | | |
| | ___ ft downstream of DB | ft | ft | ft |
| | ___ ft downstream of DB | ft | ft | ft |
| | ___ ft downstream of DB | ft | ft | ft |
| | ___ ft downstream of DB | ft | ft | ft |
| | Downstream Boundary of Project | ft | ft | ft |
| | Mid-Project | ft | ft | ft |
| | Upstream Boundary of Project | ft | ft | ft |
| | ___ ft upstream of UB | ft | ft | ft |
| | ___ ft upstream of UB | ft | ft | ft |
| | ___ ft upstream of UB | ft | ft | ft |
| | ___ ft upstream of UB | ft | ft | ft |
| Project Land in Floodplain | | | | |
| | | ac | ac | ac |
| Project Land in Valley Storage | | | | |
| | | ac-ft | ac-ft | ac-ft |

Application is hereby submitted for a City of Grand Prairie Floodplain Development Permit. I certify that I am knowledgeable of the information contained in this application, and that to the best of my knowledge and belief, this information is true, complete and accurate.

Professional Engineer in the State of Texas:

(Printed Name)

(Signature)

(Date)

(Title)

Professional Engineer/License Number/Seal or Stamp