



City of Harlingen HUC 10 Flood Protection Planning Study 25th Annual Stormwater Management and Planning Conference

COH_HUC10@CSEENGINEERS.COM

MAY 2023



PROJECT TEAM
CIVIL SYSTEMS
ENGINEERING
(PRIME)
TEDSI
AMBIOTEC
CONSOR
WALTER P MOORE

TEXAS WATER
DEVELOPMENT
BOARD (TWDB)

&

CITY OF
HARLINGEN

PARTICIPATING
AGENCIES &
STAKEHOLDERS

DRAINAGE
DISTRICTS

IRRIGATION
DISTRICTS

COUNTIES

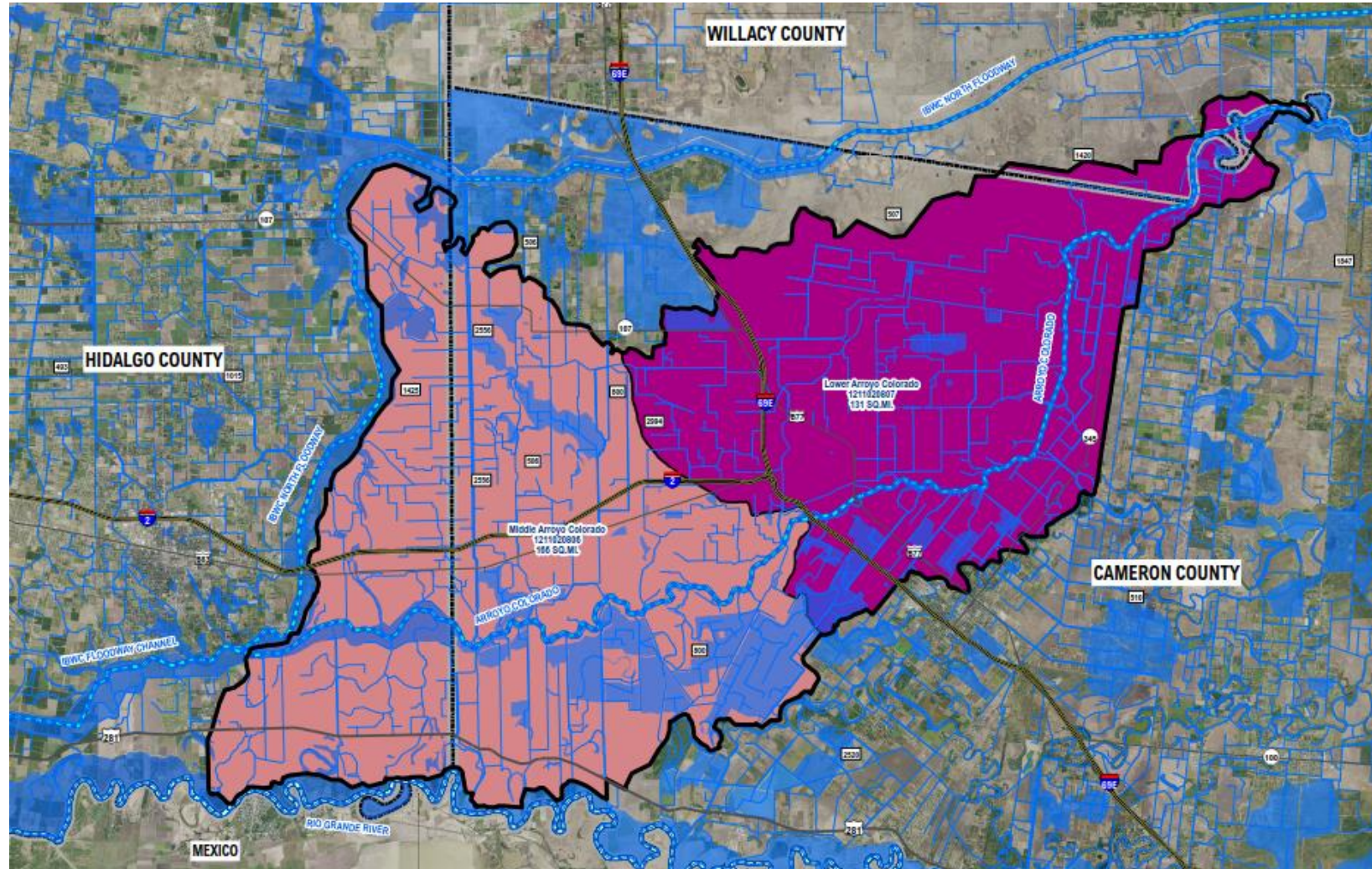
CITIES

IBWC

PUBLIC

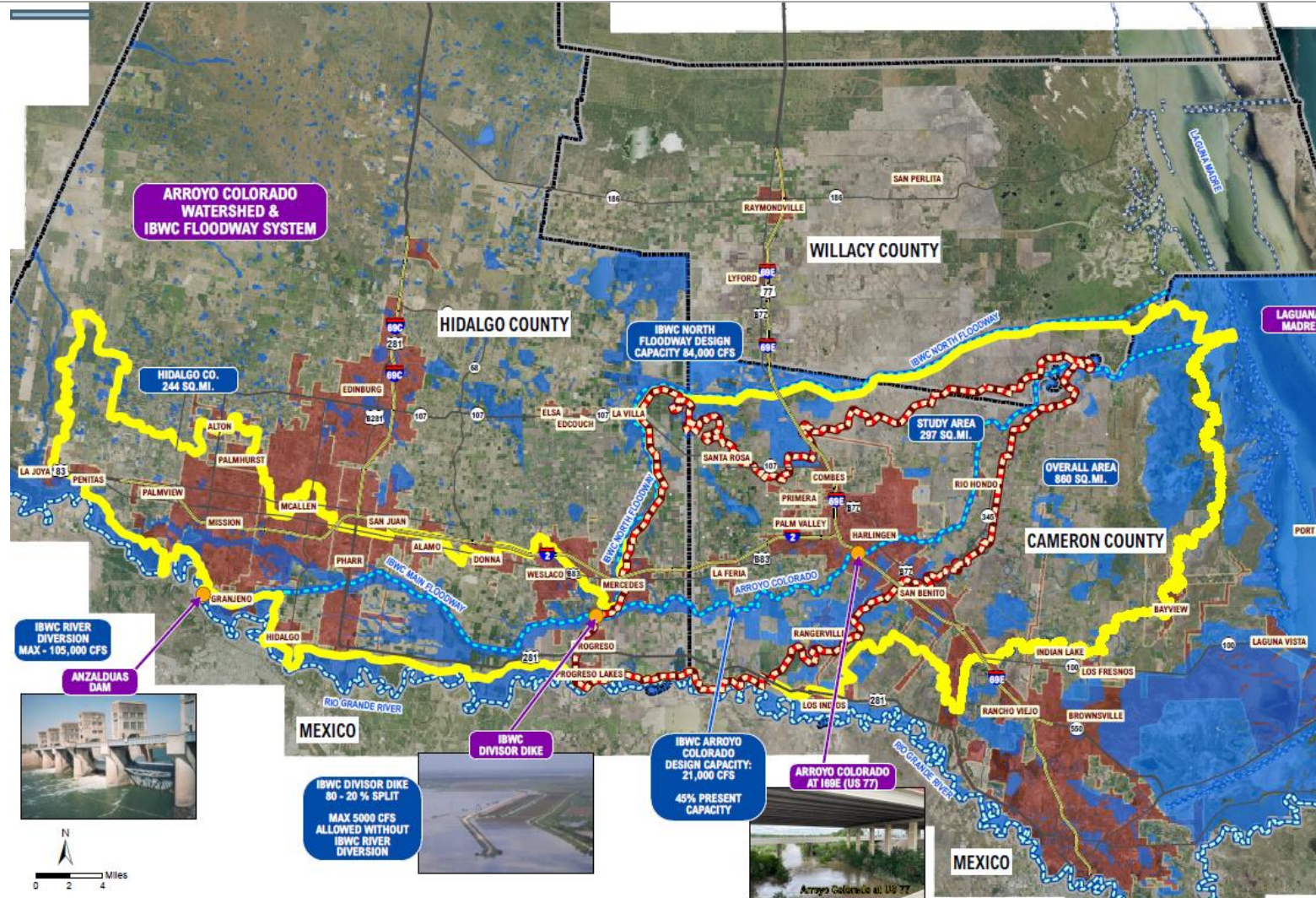
STUDY AREA

297 Square Miles
2 HUC - 10 Subbasins
(Hydrologic Unit Code)
Approx. 325 miles of
channels
Approx. 960 structures



PROJECT OVERVIEW

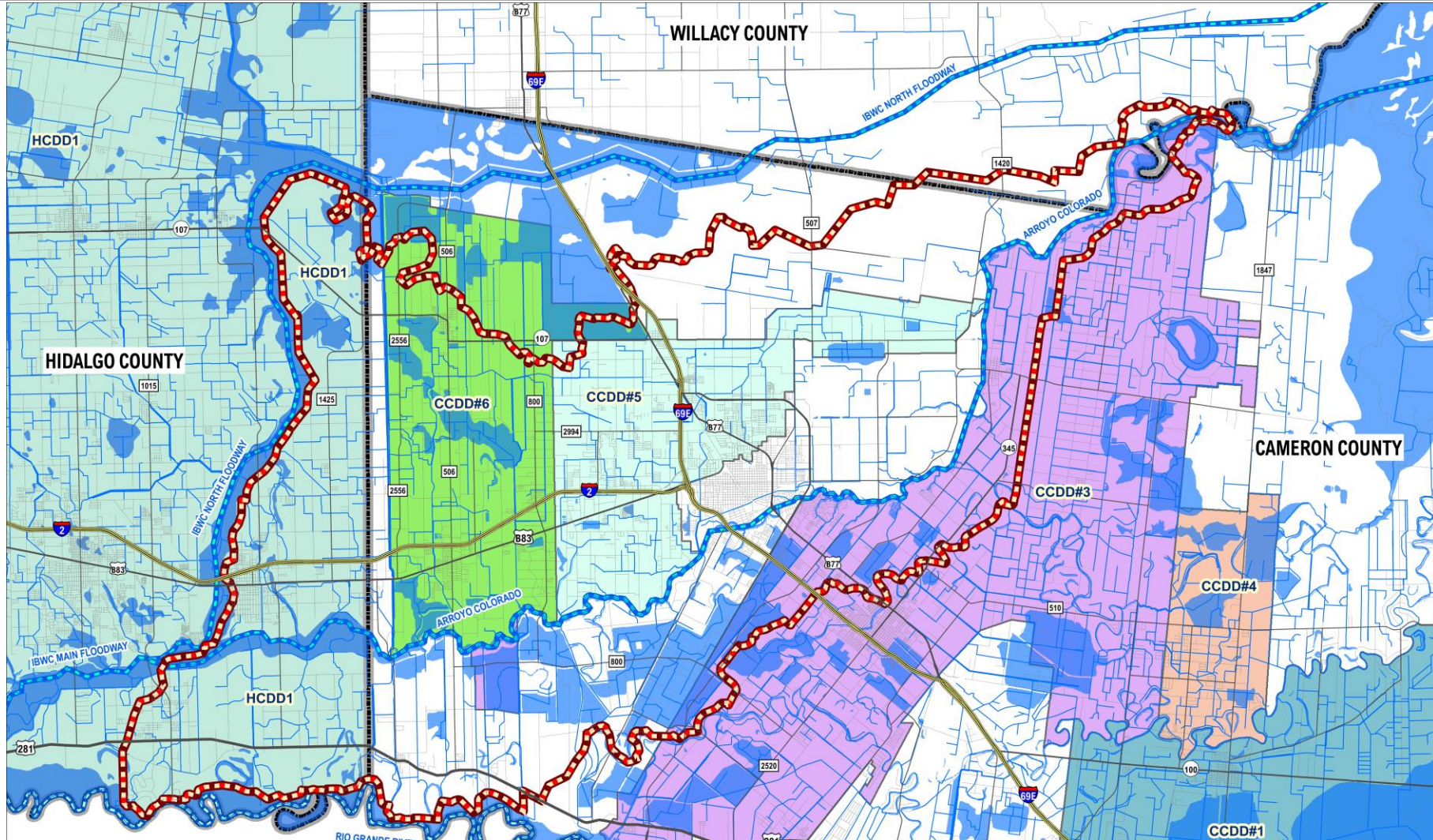
ARROYO COLORADO WATERSHED



PROJECT OVERVIEW

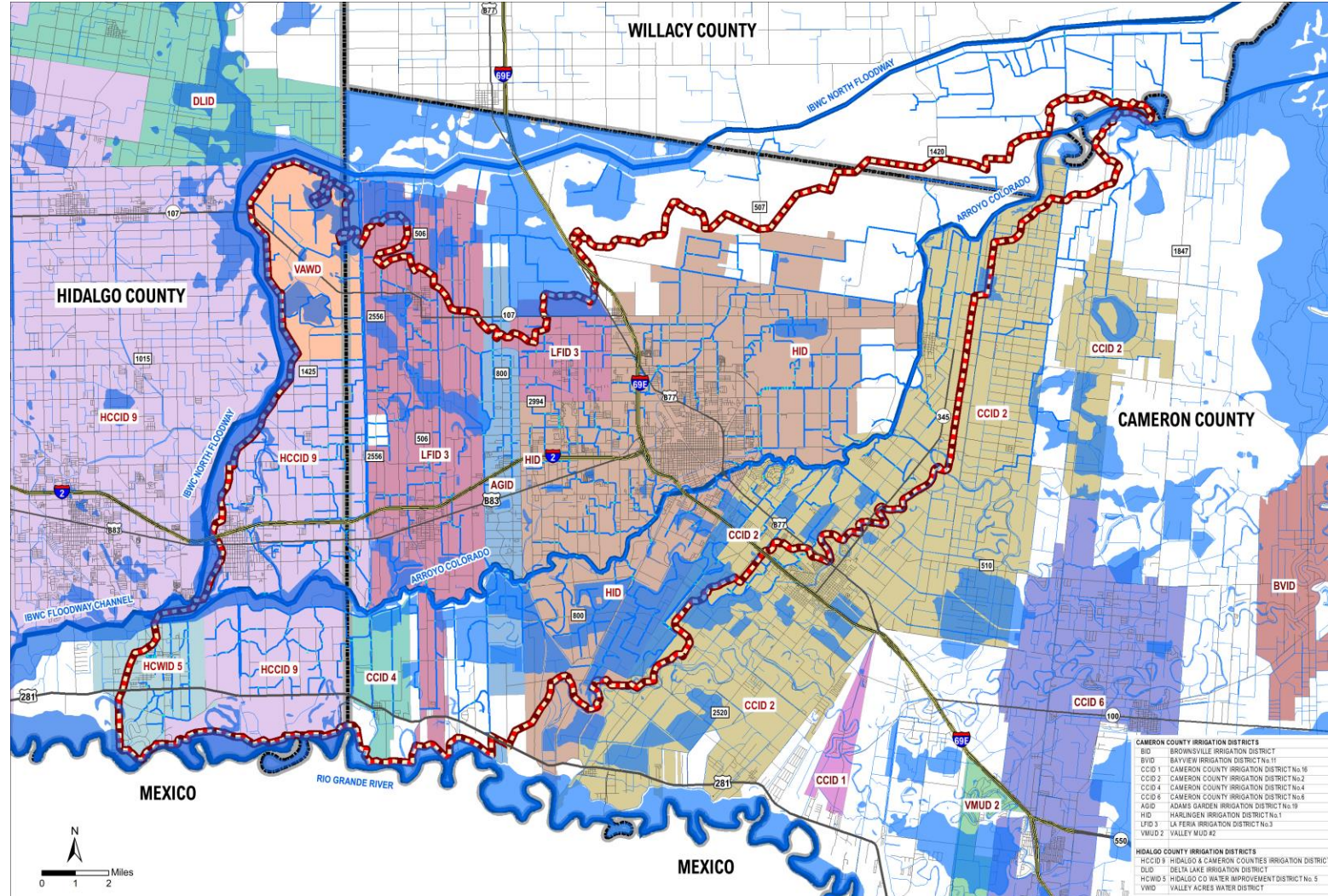
DRAINAGE DISTRICTS

4 Drainage
Districts



PROJECT OVERVIEW IRRIGATION DISTRICTS

9 Irrigation Districts



PROJECT OVERVIEW

GOALS AND OBJECTIVES

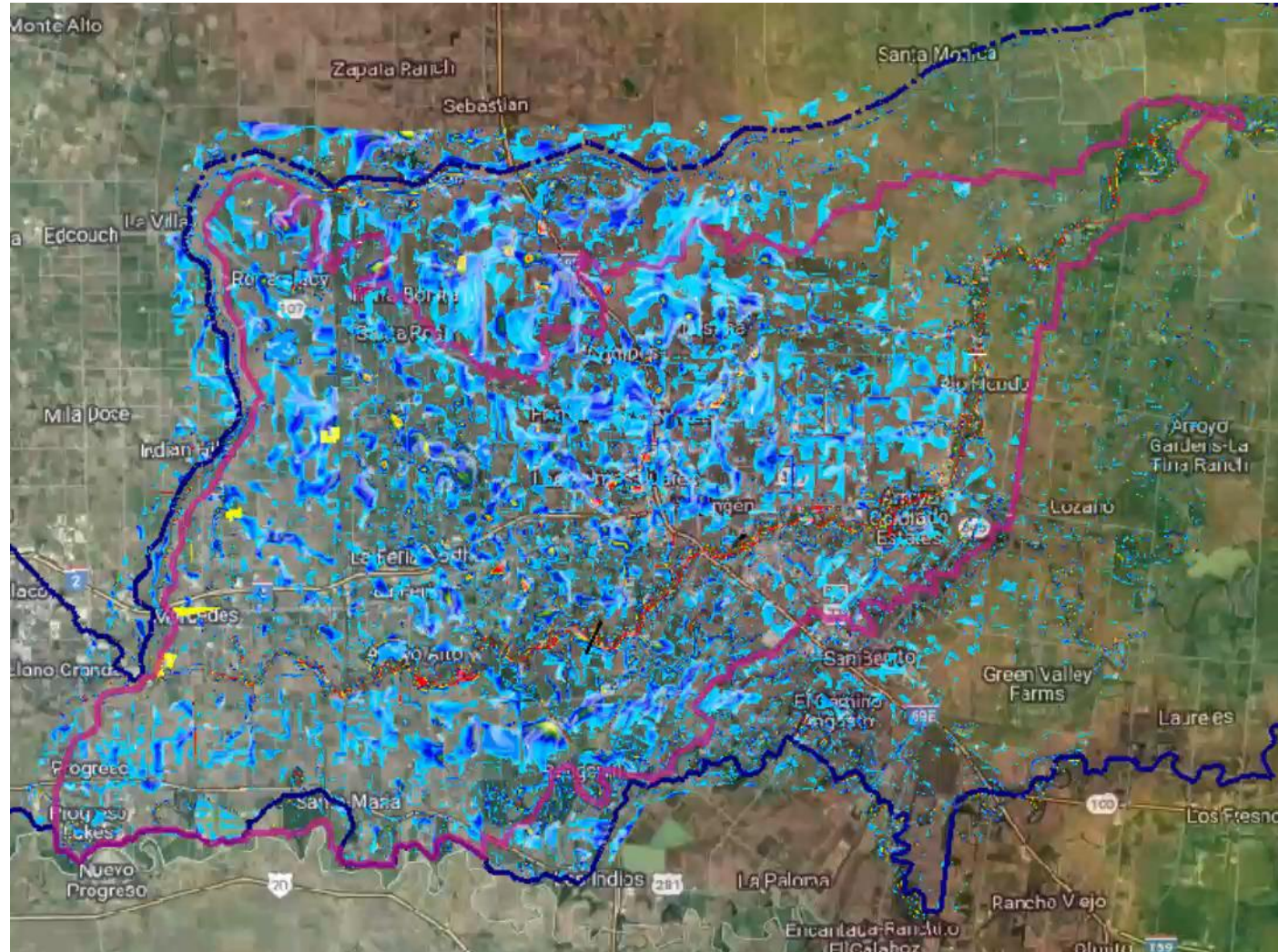
- ✓ **Reduce/ minimize loss of life and property damages from flooding**
- ✓ **Enhance regional sustainable flood resilience**
- ✓ **Develop watershed-based H&H models (1D/2D & Atlas 14 & LiDAR)**
- ✓ **Identify and map existing flood risk inundation areas**
- ✓ **Evaluate alternative structural mitigation strategies**
- ✓ **Evaluate & update local floodplain management policies**
- ✓ **Develop comprehensive regional drainage criteria**
- ✓ **Identify additional gage stations for Regional Early Flood Warning Systems**

FIELD SURVEY – GPS & BATHYMETRIC



STORM EVENT FROM NEXRAD JUNE 24, 2019 - 100 YR

Based on 2018 Lidar
data and NEXRAD



STORM EVENT FROM NEXRAD JUNE 24, 2019 - 100 YR CITY OF HARLINGEN, TEXAS

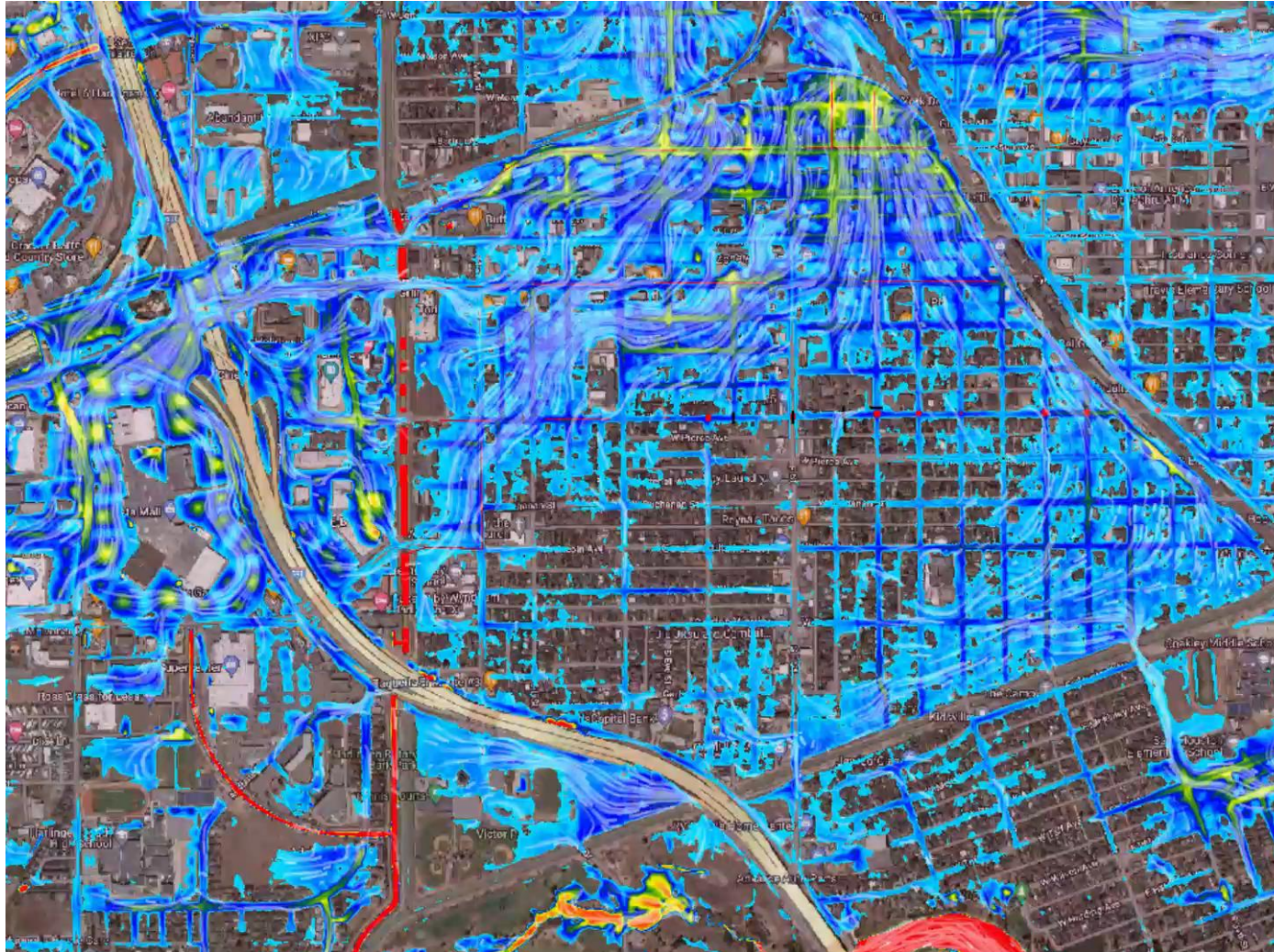
Based on 2018 Lidar data and NEXRAD



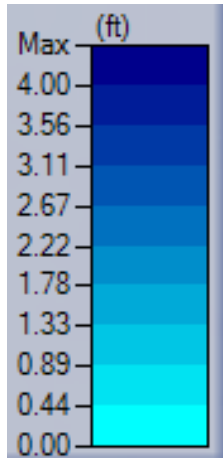
STORM EVENT FROM NEXRAD JUNE 24, 2019 - 100 YR CITY OF HARLINGEN, TEXAS

Based on 2018 Lidar
data and NEXRAD

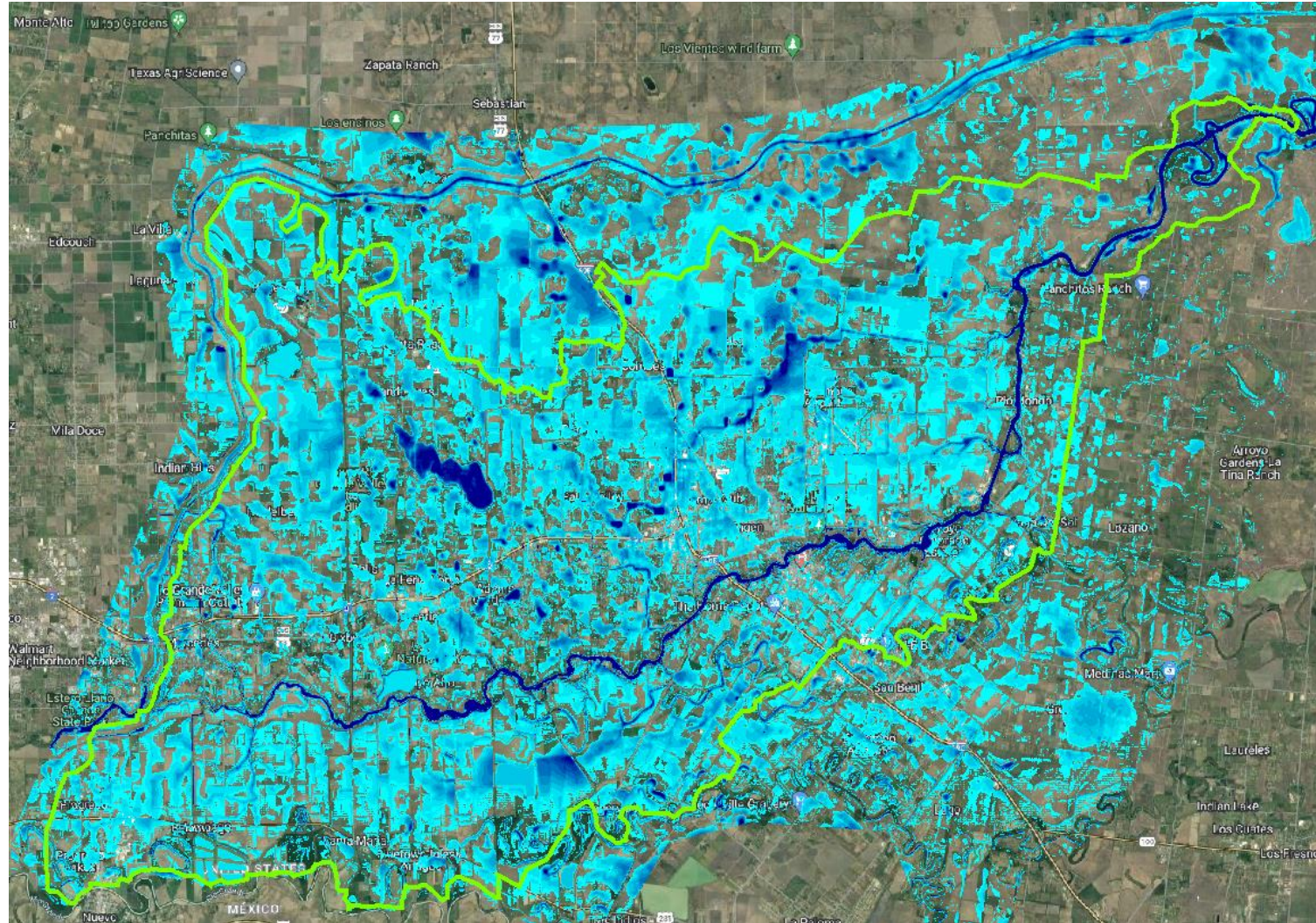
Depicting Flow Patterns



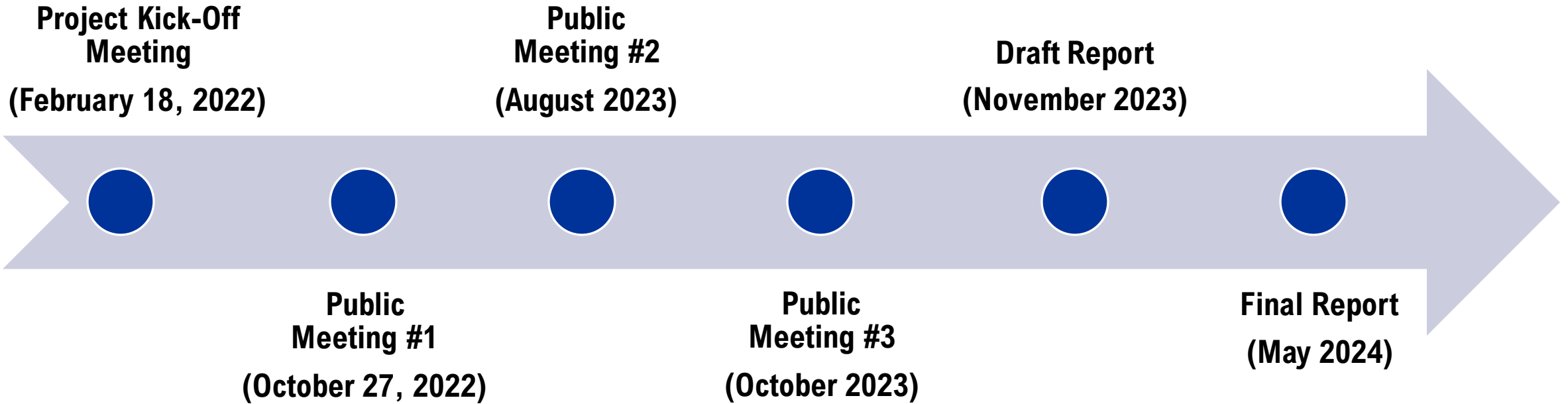
FLOOD INUNDATION MAP JUNE 25, 2019 - 100-200 YR



Based on 2018 Lidar data and NEXRAD



PROJECT TIMELINE





PROJECT MANAGER
Deren Li, PhD, PE, D.WRE,
CFM
PRINCIPAL (CSE)