Partnering in Flood Study Updates
Across Local, State, and Federal Agencies
Texas Floodplain Management Association
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Trinity River Common Vision Program

- SAFE Trinity River, with stabilization and reduction of flooding risks
- CLEAN Trinity River, with fishable and swimmable waters
- ENJOYABLE Trinity River, with recreational opportunities linked by a Trinity Trails. System within a "world-class" greenway.
- NATURAL Trinity River, with preservation and restoration of riparian and cultural resources
- DIVERSE Trinity River, with local and regional economic, transportation, and other public needs met

Primary partners:
- North Central Texas COG
- US Army Corps of Engineers
- Cities of Arlington, Carrollton, Coppell, Dallas, Farmers Branch, Fort Worth, Grand Prairie, Irving, and Lewisville
- Dallas County, Tarrant County
- Tarrant Regional Water District
The Corridor Development Certificate (CDC) process aims to stabilize flood risk along the Trinity River.

The CDC process does not prohibit floodplain development, but ensures that any development that does occur in the floodplain will not raise flood water levels or reduce flood storage capacity.

A CDC permit is required to develop land within a specific area of the Trinity floodplain called the "Regulatory Zone", which is similar to the 100-year floodplain.

Corridor Development Certificate (CDC)

Program applies regional criteria through development permitting for flood reduction along the Trinity River Corridor.

- no increase to the 100-yr water surface
- no decrease in valley storage
- no increase to erosive water velocity

Allows continued development along the Trinity corridor through common regional criteria, state-of-the-art floodplain modeling and mapping including fully developed flows, local control through review and comment, and USACE technical partnership.

Flood Risk Project Phases

Training, Education & Consistent Coordination throughout the project
Trinity River Coordination Efforts

- In 2013, the NCTCOG and FEMA (along with Arlington, Dallas, Grand Prairie, and Fort Worth) completed Discovery in three Trinity River watersheds.
- After Discovery, FEMA scoped study work, to include the use and incorporation of the CDC modeling along the Trinity River Corridor
  - Clear Fork Trinity River
  - Elm Fork Trinity River
  - West Fork Trinity River
  - Trinity River
- In both Phase 1 and Phase 2, FEMA depends on leveraged stakeholder-supplied data
  - Recent Flood Studies
  - Topographic Data
  - Survey Data
  - Channel Improvement Work
  - Development Projects

Trinity River Project Goals

- Align CDC Stakeholder’s vision with FEMA regulatory modeling/mapping
- Utilize the wealth of USACE-developed, community-vetted model data for FEMA regulatory models
- Accomplish through careful coordination translating current CDC hydrologic and hydraulic models to a version that meets FEMA standards

Flood Risk Project – Study Tasks

- Hydrology
  - Volume of water?
  - When will storm water or runoff make it to the stream?
- Hydraulics
  - Will the stream in question be able to convey all storm water or runoff that arrives?
- Floodplain Mapping
  - What areas of a community will be inundated based on engineering analysis?
Hydrology
How much water?

• Study team needed to validate CDC rainfall-runoff model (HEC-HMS)

Hydraulics
Describe channel geometry & spacing

• Study team needed to coordinate with communities and activities along the Trinity River to:
  ▶ Ensuring HEC-RAS model reflects current conditions
  ▶ Geo-reference HEC-RAS historic modeling
  ▶ Validate CDC hydraulic model and include floodways

CDC model includes all FUTURE projects
FEMA modeling can only describe the CURRENT and EXISTING conditions
Geo-referencing:
The process of assigning real-world geographic coordinates to data (H&H model data) to associate something with locations in physical space.

Importance to CDC Study Data:
- Required for development of flood extents using topographic data
- Creates digital data supporting study for community/FEMA use
- Lessen reliance on project paper as-built documentation

Hydraulics
Geo-Referencing Model Cross-Sections

Floodplain Mapping
- Study team reviewing and integrating local datasets
- Will commence after the finalization of the hydrology/hydraulic efforts
- New flows and modeling currently being vetted with the Trinity River Flood Management Task Force
- Study team reviewed results against most recent LiDAR information
Next Steps along the Trinity River

- **Fall 2017**  
  Floodplain Mapping (*Work Maps*)
- **Fall 2017**  
  Flood Risk Review Meeting
- **2018**  
  Risk Assessment
- **2018**  
  Regulatory Updates (2018)

Benefits to Partnering

- Satisfying requirements of local, state, and federal regulatory requirements
  - CDC permit
  - USACE 404 permit
  - NFIP regulations
- One set of models/maps used for CDC permitting and floodplain management under the NFIP
- Seamless CDC permitting & LOMR application process
- Coordination and collaboration allows more local buy in with communities prior to appeal/comment period.

Partnerships

- Local Stakeholder Buy-in
  - Studies or data already supported by stakeholders
  - May include greater detail or enforce higher standards than required by NFIP
  - Opportunity to reduce appeals shortens regulatory period
  - Reduced level-of-effort for FEMA study saving tax dollars
- Enhanced Risk Assessments
  - Increased accuracy for greater community/stakeholder value
- Two-Way Benefits
  - Local studies accepted by FEMA — Local Stakeholder Benefit
  - FEMA starting their study from locally-accepted study — FEMA Benefit