

Flood Management Task Force

August 14, 2020



Welcome and Introductions

- Thanks for attending!
- Please introduce yourself in the chat box.
- Please mute your line.
- Unmute your line when you would like to speak during question and discussion time.
 - We will also watch the chat and Q&A boxes for questions

Meeting Summary

- The link to the meeting summary is available in the download box.
- Please inform me of any corrections or additions.

FY20 Trinity River Common Vision Work Program Activities Discussion

NFIP/CDC Model Consolidation Team

- The FMTF approved the Consolidation Team's Memo in January. The USACE has submitted two scopes for work related to the model consolidation.
 - Updating the newly georeferenced CDC model with approved but not yet constructed CDC project geometries from 2017 onward and future flows.
 - Creating the CDC future flows for the FEMA detailed study on the East Fork Trinity and the Trinity mainstem to extend the consolidated model.
- The USACE set aside \$485,000 from the Floodplain Management Services (FPMS) fund to complete these scopes. Internal coordination at the USACE will be occurring this FY. Updates for FY21 will be provided as they become available.

FY20 Trinity River Common Vision Work Program Activities Discussion

CDC Model Repository and Application Website: www.trinityrivercdc.com

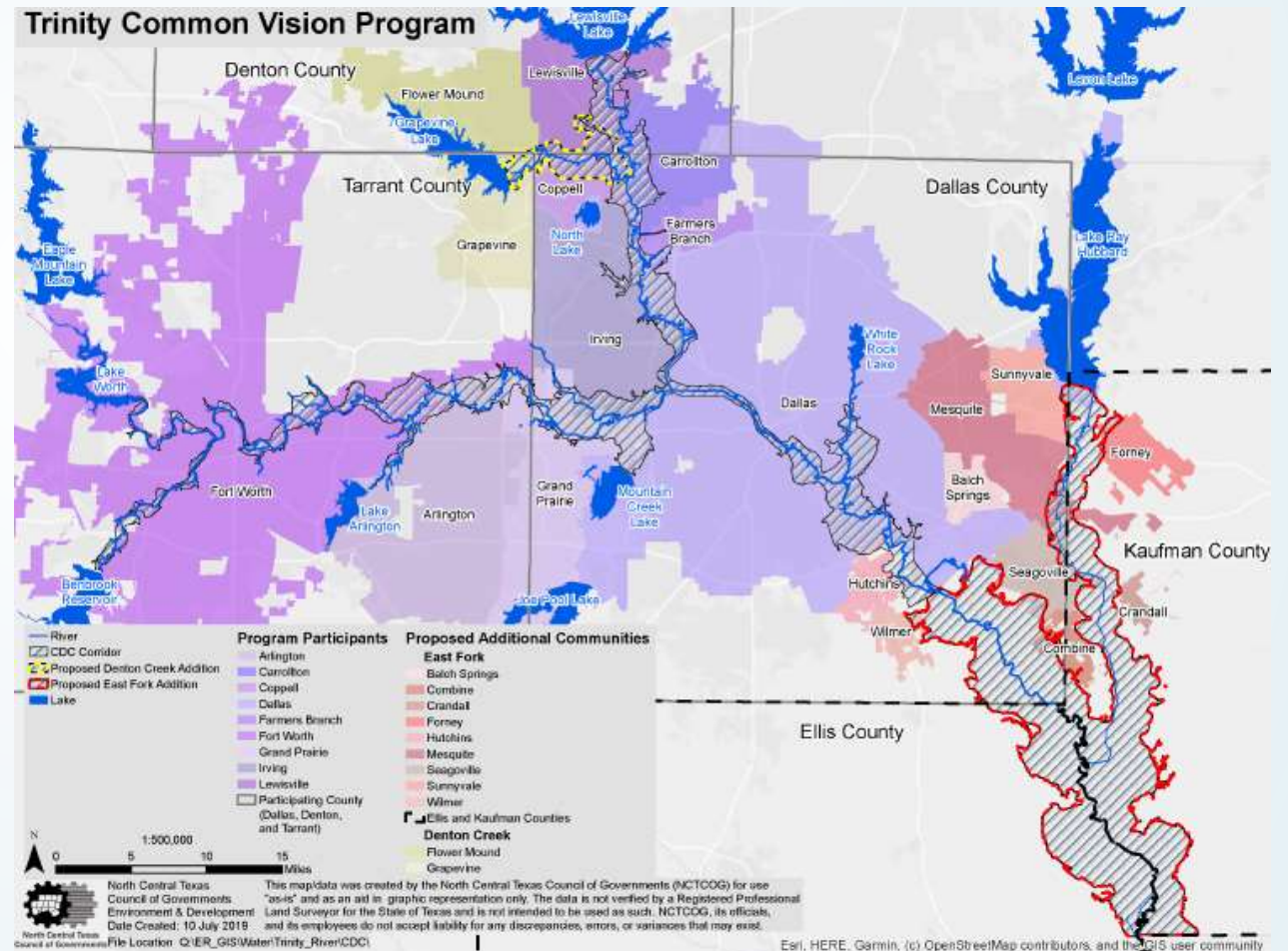
- ▶ Plan to go live with all functionality on October 1st.
- ▶ Emails went out requesting individuals that need accounts. Mia Brown will follow up with some communities.
- ▶ Later this summer, you will see materials from NCTCOG with instructions for submitting CDC applications on the website. Tutorials/webinars will follow.



FY20 Trinity River Common Vision Work Program Activities Discussion

East Fork/Denton Creek Update

- NCTCOG staff sent letters to Grapevine and Flower Mound in July formally inviting them to join Trinity Common Vision.
- The City of Mesquite is taking the East Fork resolution to a future council meeting and will discuss membership with Forney and Sunnyvale.



FY20 Trinity River Common Vision Work Program: Ongoing Support Activities

OneRain Regional Flood Software

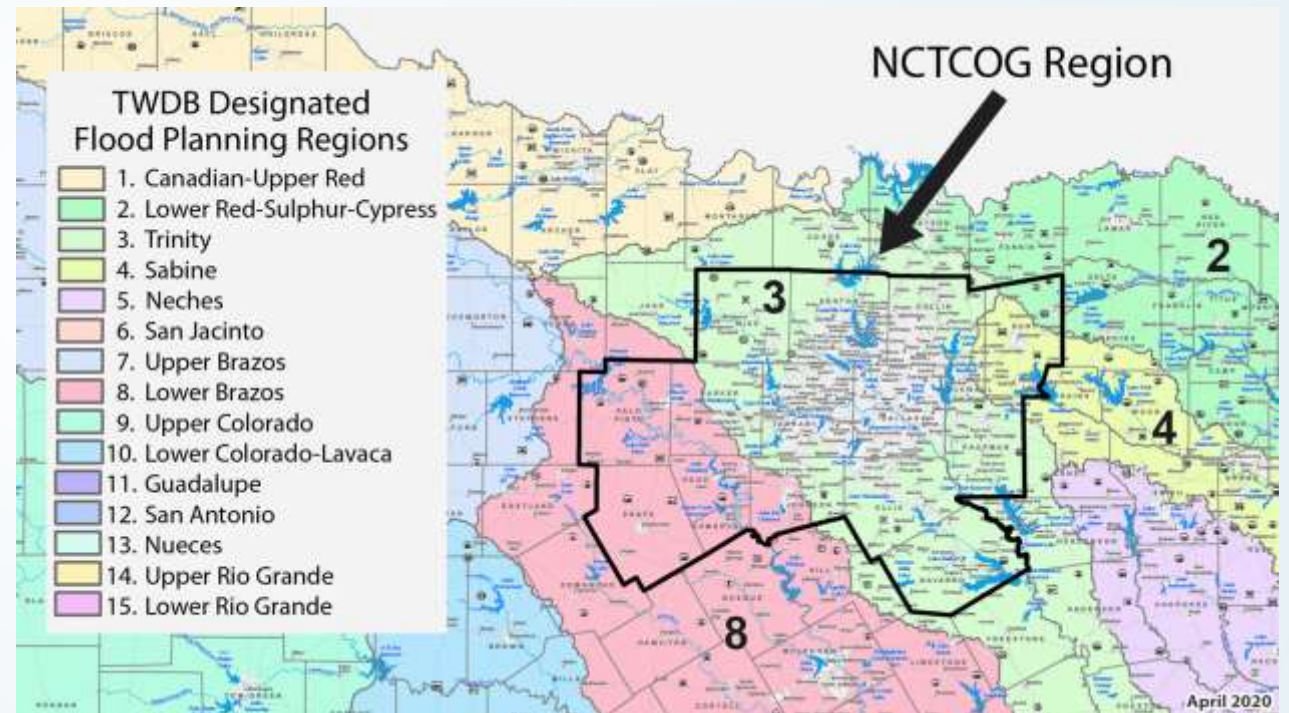
- Regional software requested by FMTF in 2016. Entities currently on the common contract are McKinney, Arlington, Frisco, and TRWD. Fort Worth and Grand Prairie feed their data into the platform.
- Current contract for services is through North Texas SHARE and expired July 5, 2020.
- NCTCOG staff met with OneRain's Product Manager on 8/10 to discuss contract renewal with a model more focused on partnership. A contract extension is still being negotiated with NCTCOG's Administration Department. Details will be provided as soon as they are available.



FY20 Trinity River Common Vision Work Program: Ongoing Support Activities

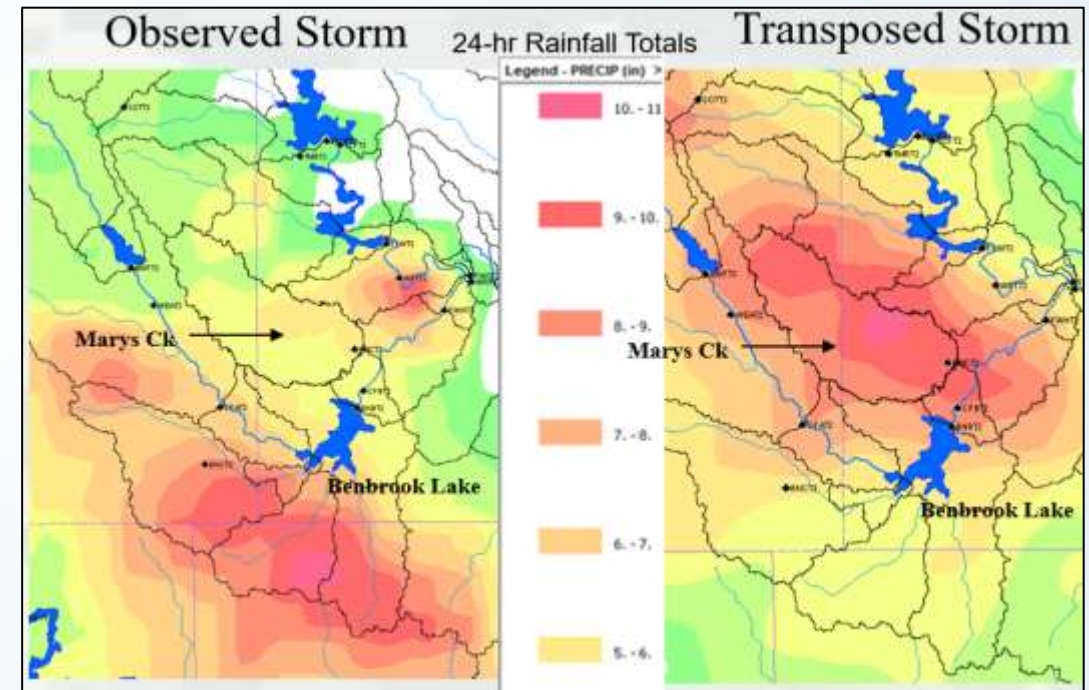
NCTCOG Participation in the TWDB Flood Planning Process

- Nominations closed on July 17th for membership in the 12 interest categories for Regional Flood Planning Groups (RFPGs).
 - Edith Marvin submitted a nomination for membership in the Environmental Interests category for the Trinity River RFGP.
- The interest form deadline for RFGP Sponsor has been extended to August 21st.
 - NCTCOG has nominated itself for sponsor of the Trinity River RFGP.



FY20 Trinity River Common Vision Work Program: Ongoing Support Activities

- ▶ Application to USACE Silver Jackets for a Storm Shifting Study on the Upper Trinity River
 - ▶ This proposal was not selected for funding. The USACE and FMTF can make an additional request next year if desired. Ideas for application improvement have been received and can be initiated in the next funding cycle.



June 2000 storm transposed 15 miles North

FY21 Trinity River Common Vision Draft Work Program Vote

- **NCTCOG is seeking the FMTF's approval of the Draft FY21 Work Program for recommendation to the Trinity River Common Vision Steering Committee.**
- Additions to existing Ongoing Support Activities
 - Maintenance of CDC Application and Tracking Website
- Additional Technical Activities
 - Participation in the Model Consolidation Committee
 - Update the CDC Manual to the 5th Edition
 - East Fork Trinity and Denton Creek Integration
- No change in the annual cost shares; total program cost of \$100,000
 - East Fork Communities will not be invoiced this year since CDC products are not yet available.

Other Program Related Efforts

The Interagency Flood Risk Management (InFRM) Team

Multiple Federal Agencies → One Mission

- *Develop actionable information to reduce long-term flood risk in the region*
- Pilot Program began in Texas in 2014
- Watershed Hydrology Assessments
- <https://webapps.usgs.gov/infrm/>



To provide **reliable, impartial, timely information** that is needed to understand the Nation's water resources.



provide the best weather, water, and climate forecasts through international cooperation on hydro-meteorological observations, data exchange, modeling, research, and technology development; and to provide global leadership in setting meteorological standards and building partnerships to save lives and protect property.



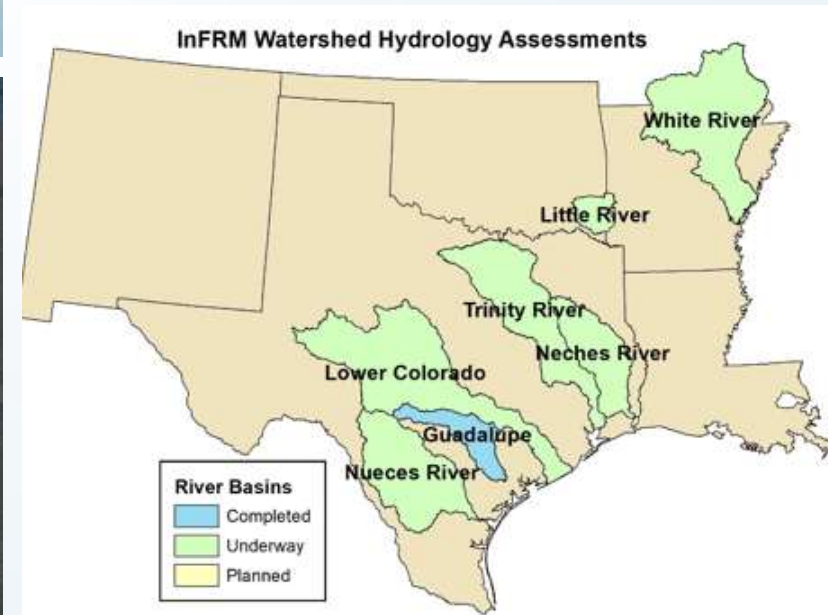
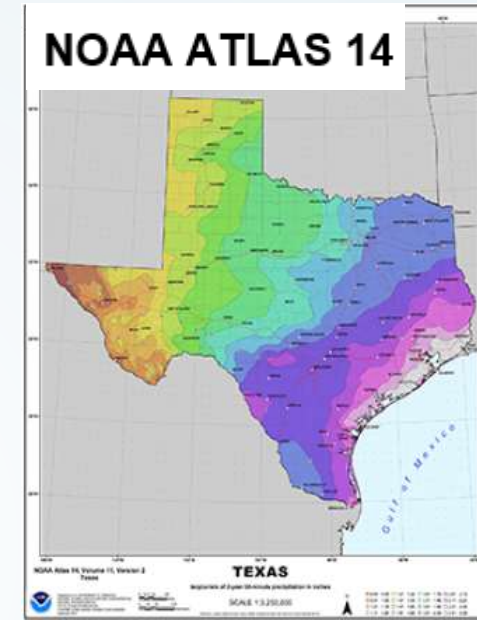
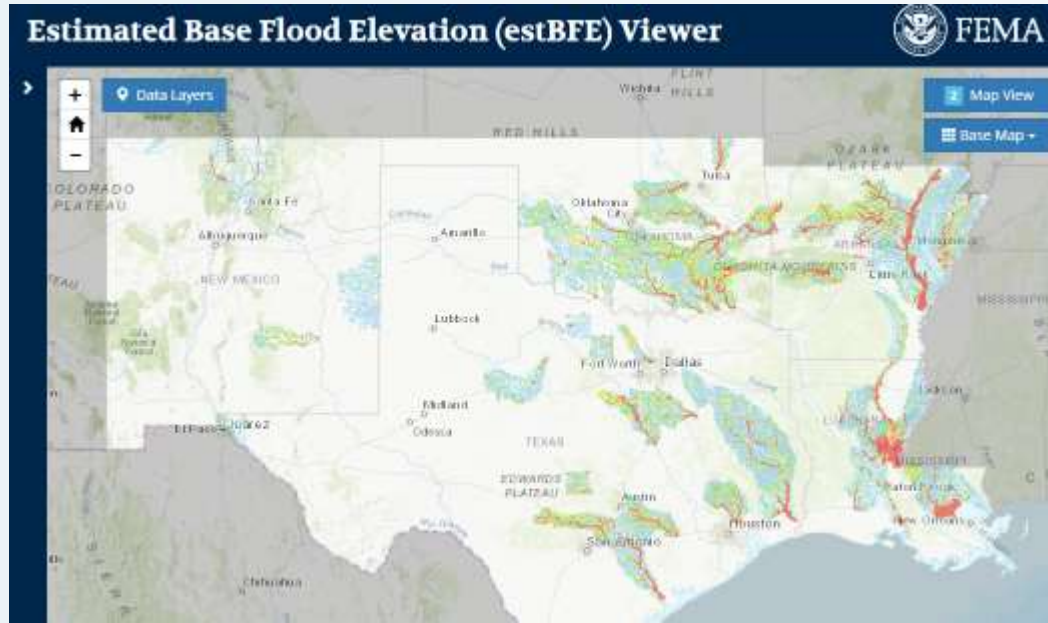
Deliver vital public and military engineering services; partnering in peace and war to strengthen our Nation's security, energize the economy and reduce risks from disasters.



Support our citizens and first responders to ensure that as a nation we work together to build, sustain and improve our capability to **prepare for, protect against, respond to, recover from and mitigate all hazards**

Collaborating Nationally. Empowering Locally.

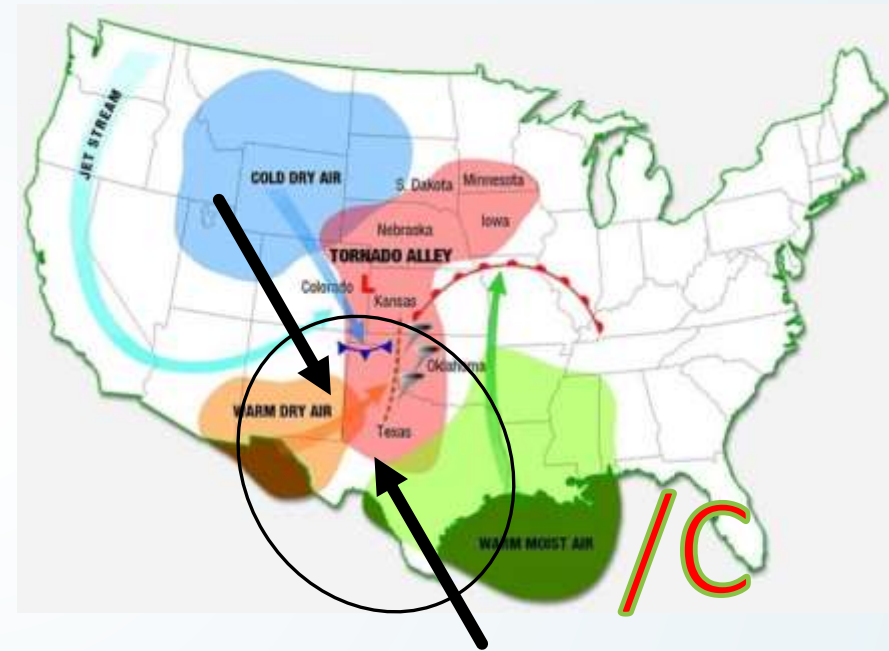
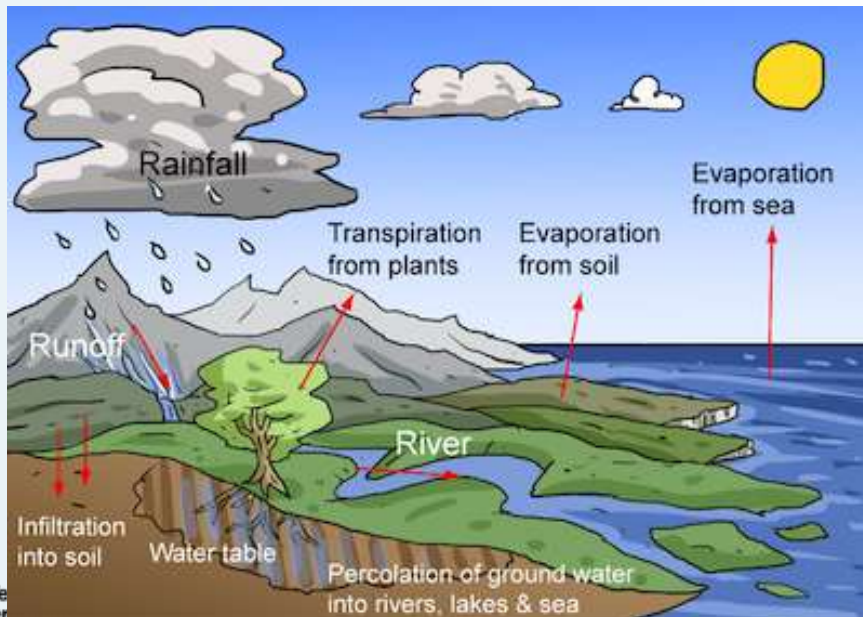
www.InFRM.us



What Are Watershed Hydrology Assessments About?

Watershed Hydrology:

Study how much water will result from a given storm event at a point of interest on the river



Purposes of the InFRM Watershed Hydrology Assessments (WHAs)

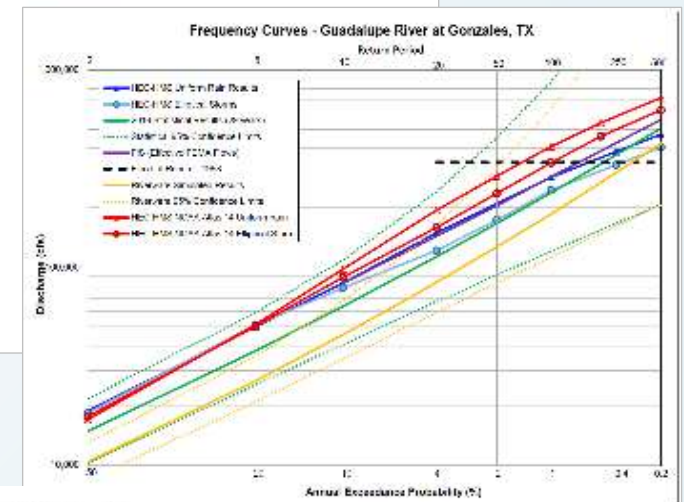
- Estimate 1% annual chance (100-yr) and other frequency flows across the basin
- Employ a Comprehensive Approach to Hydrology
 - Uses a range of hydrologic methods and compares their results
 - Models calibrated to accurately simulate observed watershed responses to rainfall.
 - Tells the story of how the 1% flow has changed over time
- Outcomes suggest areas where FEMA flood hazard information may need to be updated



Interagency Flood Risk Management (InFRM)

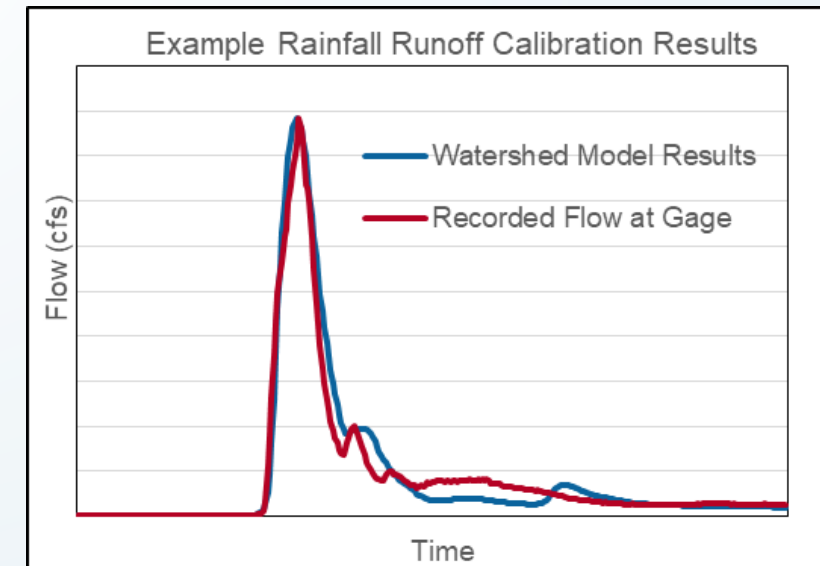
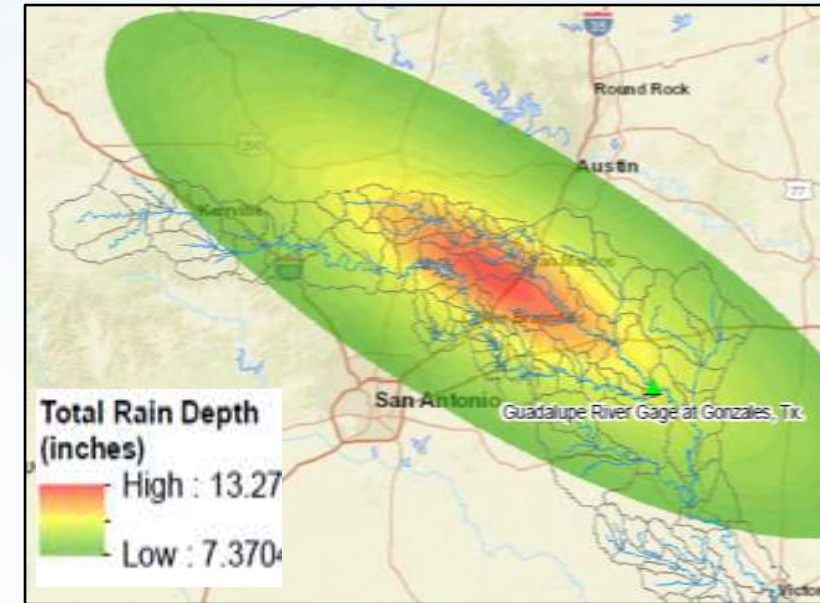
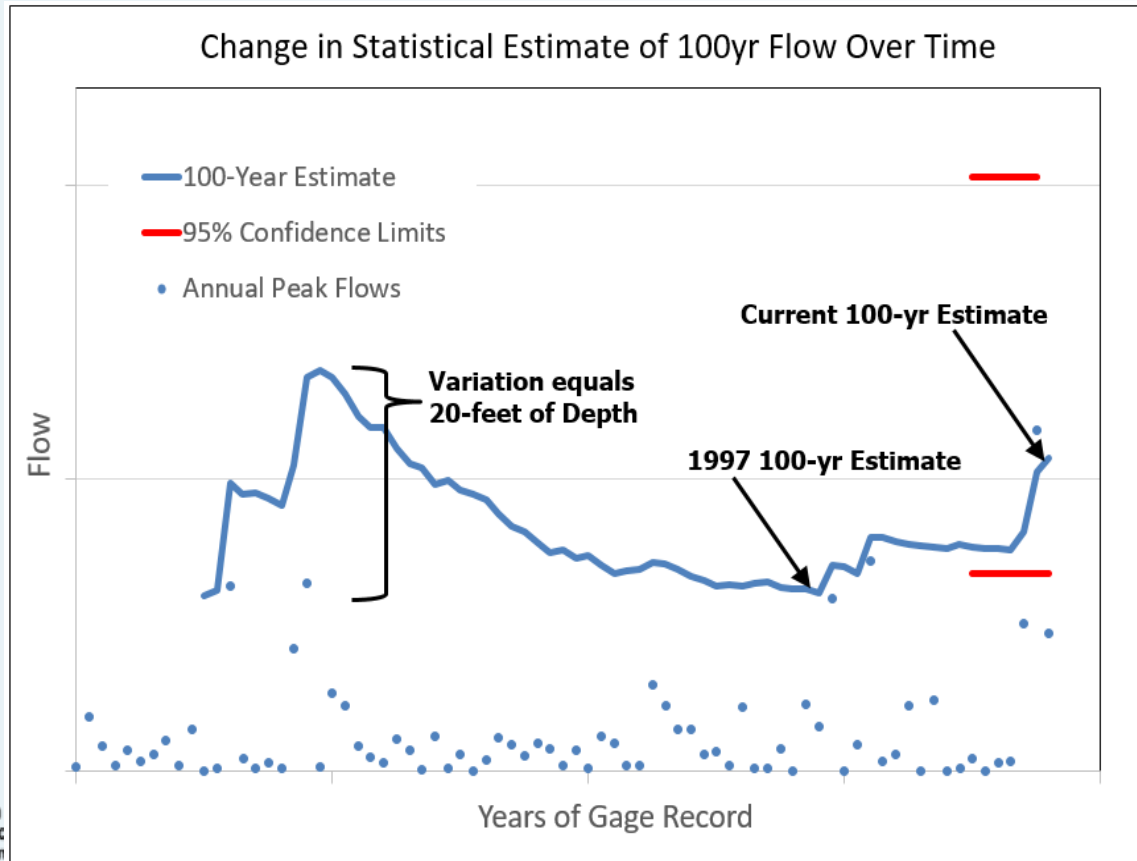
Hydrology Report for the
Guadalupe River Basin

10 September 2018



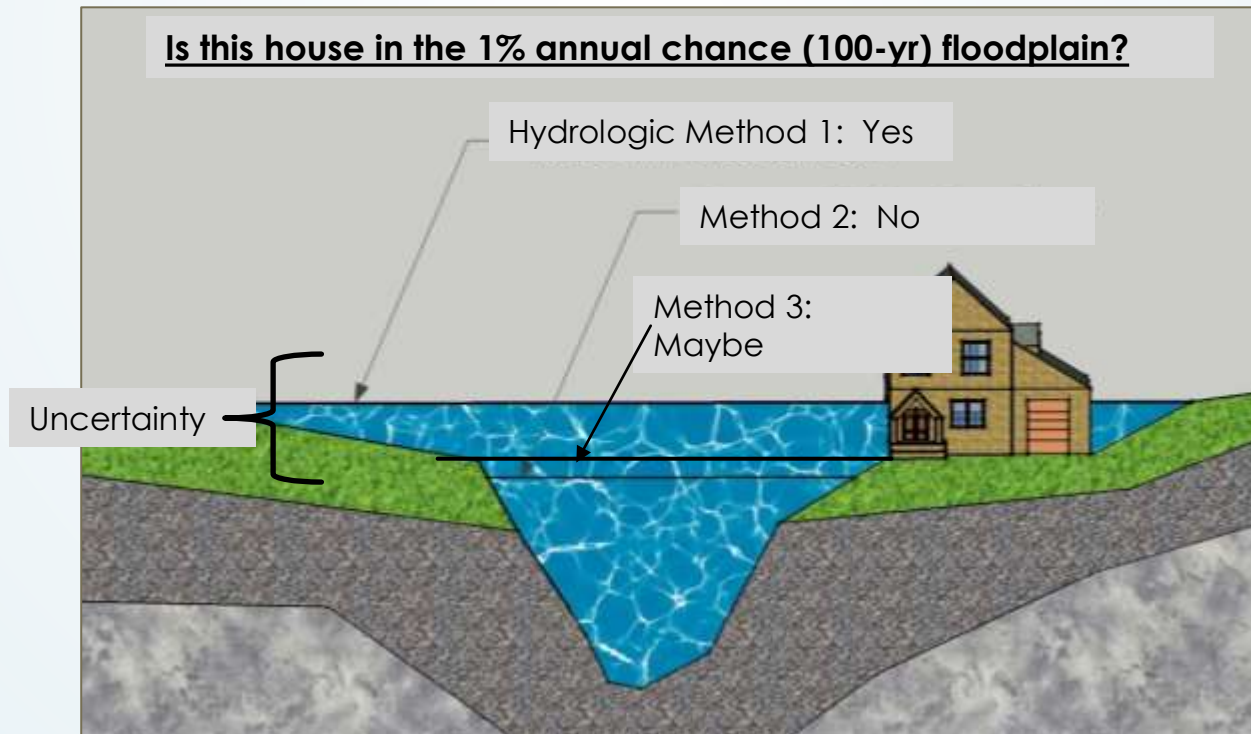
Unique Features in the InFRM Watershed Hydrology Assessments

- Change Over Time Plots from Statistical Estimates
- Extensive Calibration of Rainfall Runoff Models
- Elliptical Shaped Frequency Storms



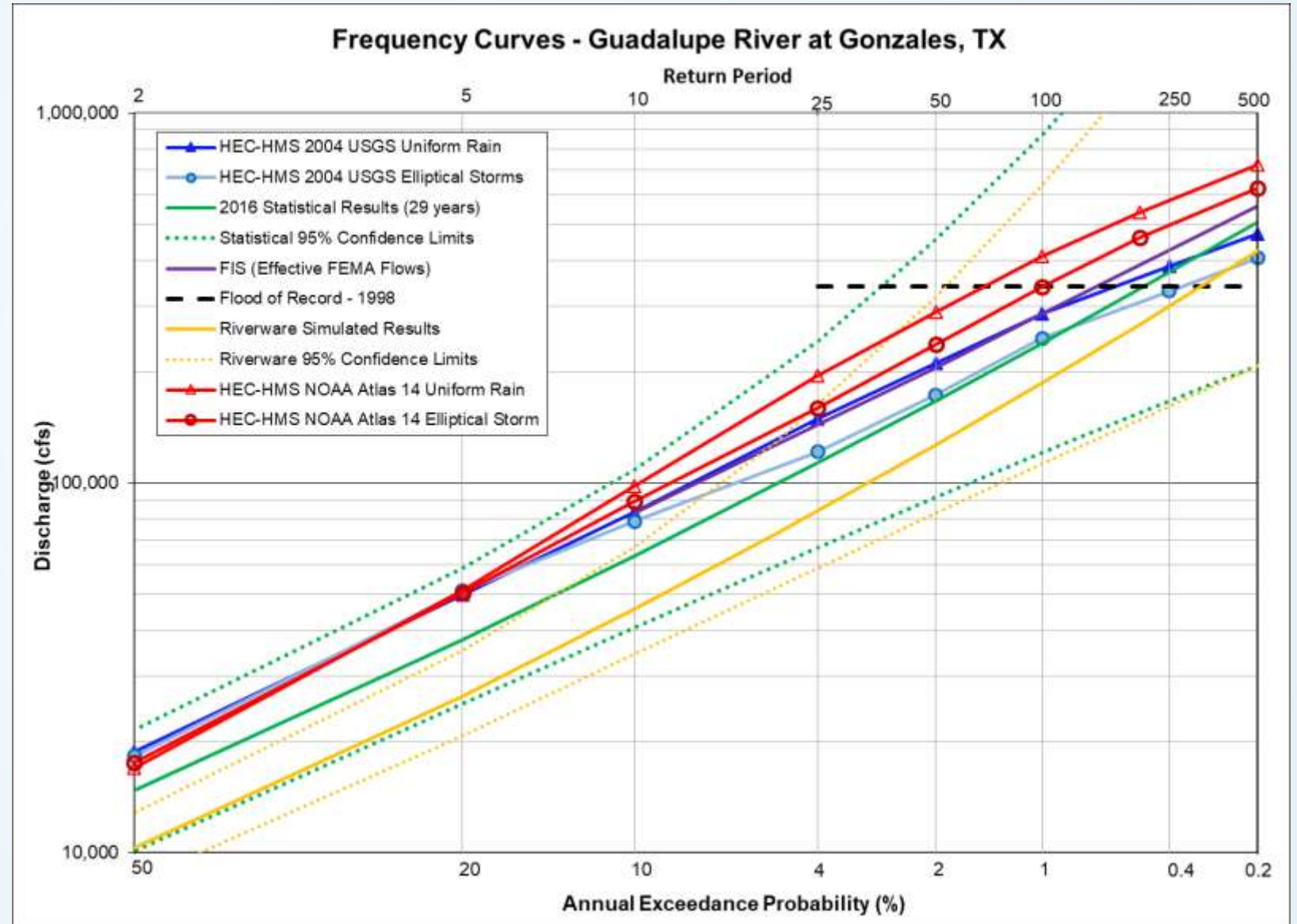
The Problem of Hydrology:

- Single largest source of uncertainty in flood risk estimation
- Many commonly used and accepted methods
- Every method will yield a different answer
- In Texas, this can yield up to 20-feet of variation in flood depth



Compare Results from Multiple Methods

- Compare Results early and often
- Investigate Reasons for the Differences
- Elicit Feedback from multiple Subject Matter Experts
- Select Recommended Methods and Frequency Flows



Recommended Frequency Flows

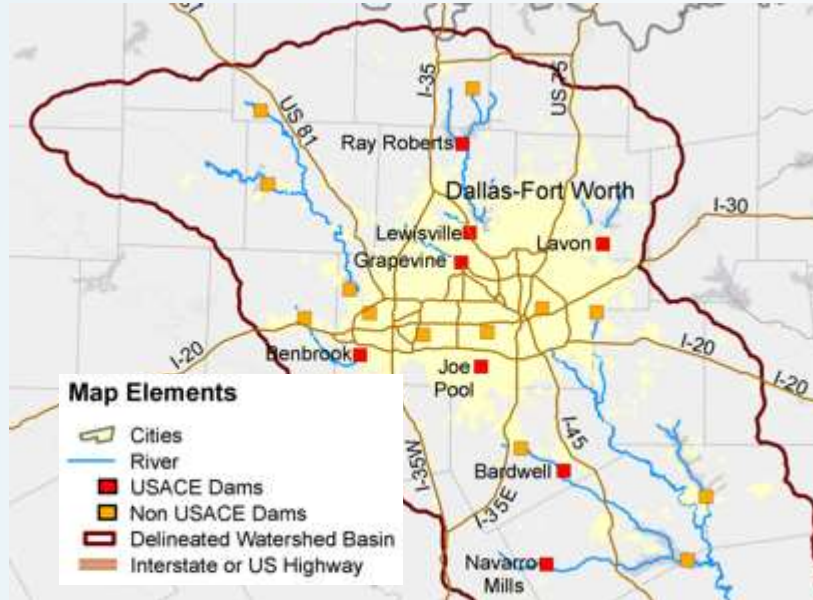
➤ Summary of Discharges Table

Location Description	Drainage Area*	50%	20%	10%	4%	2%	1%	0.50%	0.20%	Hydrologic Method
	sq mi	2-YR	5-YR	10-YR	25-YR	50-YR	100-YR	200-YR	500-YR	
Denton Creek below Sweetwater Creek	346.6	6,200	14,200	22,900	34,200	44,900	55,600	70,000	86,500	Uniform HEC-HMS
Denton Creek nr Justin, TX USGS gage	400.0	4,100	9,700	16,000	26,000	35,900	47,300	62,900	81,700	Uniform HEC-HMS
Denton Creek below Oliver Creek	475.3	6,100	15,500	24,100	35,400	44,600	54,800	70,100	92,700	Uniform HEC-HMS
Denton Creek above Elizabeth Creek	506.1	6,800	15,500	23,300	35,200	45,600	57,200	70,400	94,200	Uniform HEC-HMS
Denton Creek below Elizabeth Creek	599.7	15,800	29,300	39,500	53,400	68,400	85,300	102,000	123,900	Elliptical HEC-HMS
Grapevine Lake Inflow	694.4	15,200	27,900	38,300	51,900	66,500	84,500	101,300	124,200	Elliptical HEC-HMS
Grapevine Lake Outflow (Denton Creek nr Grapevine USGS gage)	694.4	2,000	2,000	2,000	3,100	7,700	13,100	20,100	30,800	Reservoir Study
Denton Creek above the Elm Fork Trinity River	24.3	2,100	4,100	6,100	10,400	12,200	14,300	20,100	30,800	Reservoir Study/Uniform HEC-HMS
Elm Fork Trinity River near Carrollton USGS gage	104.2	6,500	11,500	16,900	26,700	31,500	37,100	43,100	51,200	Uniform HEC-HMS
Elm Fork Trinity River at Interstate 635	143.4	11,300	17,400	21,900	30,400	36,500	43,300	50,000	59,600	Uniform HEC-HMS
Elm Fork Trinity River above Hackleberry Creek	143.4	8,200	13,100	18,200	29,000	35,100	42,100	48,900	57,100	Uniform HEC-HMS
Elm Fk Trinity Rv at Spur 348 in Irving, TX USGS gage	180.4	9,900	15,000	19,000	30,200	37,000	45,100	52,800	62,400	Uniform HEC-HMS
Elm Fork Trinity River above Bachman Branch	202.6	9,100	14,100	17,800	27,000	33,600	41,600	48,500	57,700	Uniform HEC-HMS
Bachman Lake Outflow	12.7	3,100	6,000	8,100	11,200	13,400	16,000	18,600	21,600	Uniform HEC-HMS
Bachman Branch above the Elm Fork Trinity River	14.1	1,600	3,000	4,000	5,300	6,400	7,800	9,200	11,200	Uniform HEC-HMS
Elm Fork Trinity River below Bachman Branch (at Frasier Dam USGS gage)	216.7	10,000	15,600	19,100	27,500	34,300	42,600	49,600	58,900	Uniform HEC-HMS
Elm Fork Trinity River above the West Fork Trinity River	222.8	8,100	13,300	18,000	26,700	33,600	41,800	48,700	58,700	Uniform HEC-HMS
Trinity River below the West Fork and Elm Fork confluence	3043.7	20,800	31,700	42,600	63,300	86,000	109,300	134,400	175,700	Elliptical HEC-HMS
Trinity River at Dallas, TX USGS gage	3056.1	20,000	31,900	42,800	62,700	85,000	108,700	133,300	174,500	Elliptical HEC-HMS

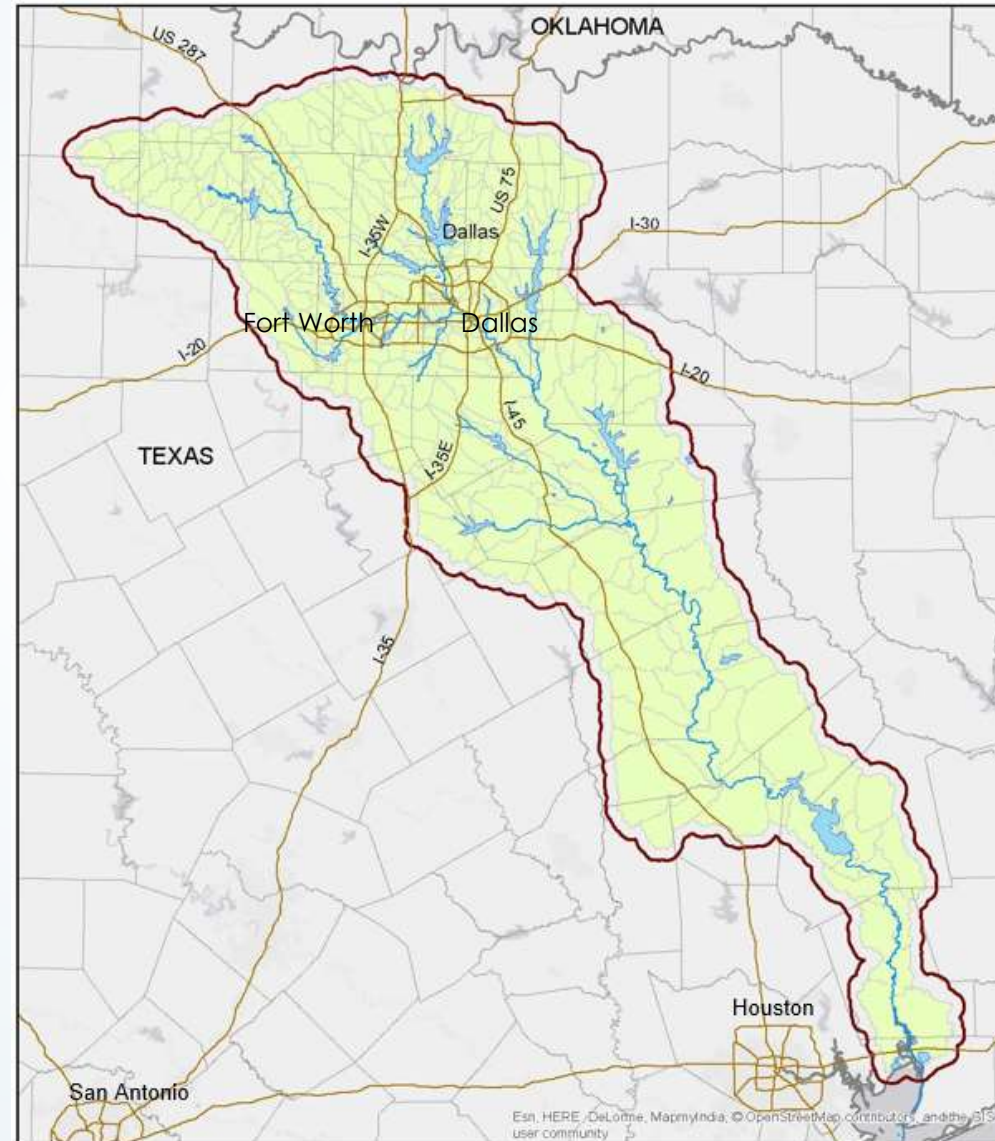
Advantages of the InFRM Watershed Hydrology Assessments

- **Comprehensive Approach to Hydrology**
 - Multi-layered analysis examines all variables affecting flood risk
 - Reduces uncertainty in the 1% annual chance flow estimate
 - Explains how 1% flow estimate has changed over time
- **Collaboration is Strengthened between Federal Agencies**
 - Teams of Scientists & Engineers from FEMA, USACE, USGS & NWS
 - Leverage the unique strengths & expertise within each agency
 - Multi-Agency Approach → One Federal Answer
- **Conscientious Extension of Tax Payer Dollars**
 - Leverages models & funding from multiple programs
 - Can advance the modeling further and extend resources
- **Cutting Edge Practice of Science & Technology**
 - Incorporates new methods & technology as they become available
 - Ongoing Collaboration with other Researchers & Scientists
 - Forward Leaning Assessments

Trinity River Watershed Hydrology Assessment



- Drainage Area – 18k square miles
- Watershed Length – 700 miles
- HMS Subbasins – 289 (60 sq. mi avg.)
- 8 USACE Reservoirs
- Fort Worth and Dallas Levees
- 100 Active USGS Gages
- Trinity WHA began Sept.2015



Trinity River Watershed Hydrology Assessment

- ▶ **Draft Documentation Review began August 1, 2020**
 - ▶ Comments due Mid-September
 - ▶ Study completion by end of calendar year
 - ▶ Report uploaded to www.infrm.us website
- ▶ **Not Inherently Regulatory but Can be Used for Mapping Updates**
 - ▶ Being used for some ongoing mapping updates in some cases (i.e. East Fork below Ray Hubbard Reservoir and Trinity River in Southeastern Dallas County downstream to Henderson County)
 - ▶ Also being used to inform BLE results
 - ▶ Recommended frequency flows and elevations can be used by Communities interested in developing or updating flood insurance rate maps

Contact

C. Landon Erickson

Water Resources Branch

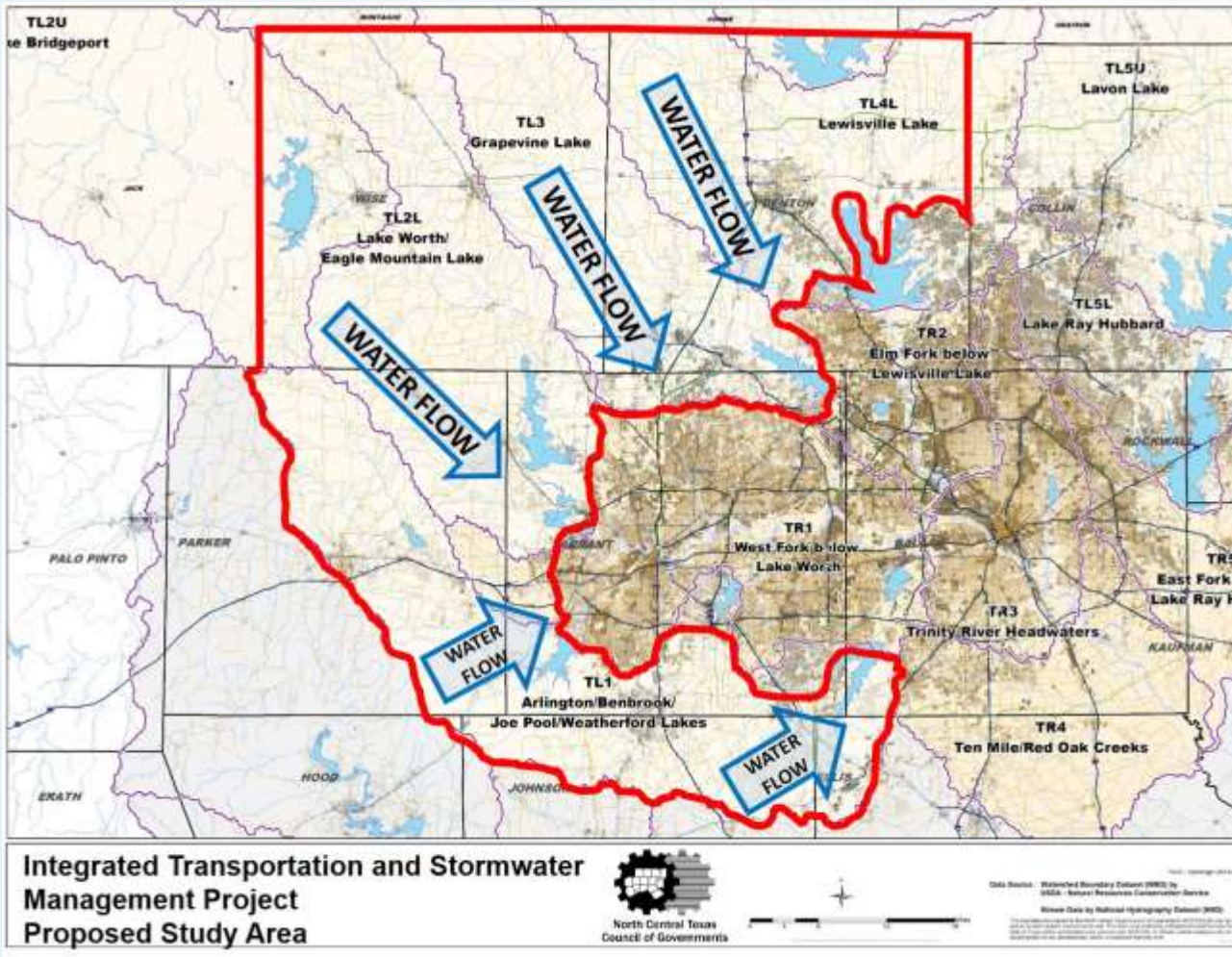
U.S. Army Corps of Engineers

Charles.Erickson@usace.army.mil

817.886.1692

Other Program Related Efforts

Update on Efforts Toward Integrated Transportation & Stormwater Planning



A webinar was held on June 18th for staff and elected officials in the project area to discuss the project scope, benefits to communities, and an update on progress toward obtaining funding.

The recording can be viewed at:
<https://www.youtube.com/watch?v=eXGJTHLiRbg>



North Central Texas
Council of Governments

Other Program Related Efforts

Funding Application Update for Integrated Transportation and Stormwater Planning

	SUBMITTED APPLICATIONS			ANTICIPATED/REQUESTED FUNDS OR APPLICATIONS*	
Funding Agency/ Funding Opportunity Name	TWDB (Flood Infrastructure Fund)	USACE (Various Authorities)	FEMA (Community Outreach and Mitigation Strategies)	Regional Transportation Council (Transportation Planning Dollars)	General Land Office (CDBG MIT or Other Funding Category)
Requested Funding	\$3.0 Million	\$3.0 Million	\$80,000	\$3.0 Million	?
Current Status	Submitted Abridged Application June 15th; will know in the fall if invited to submit complete application.	Submitted to USACE Fort Worth District in March/Expect to hear in late 2020.	Award received; Phase 1 engagement to begin in early 2021.	Included in Unified Planning Work Program	Applications Due in October 2020

*Anticipate applying to additional funding opportunities as they become available (ex. FEMA BRIC, GLO, TDEM, etc.) and working with partner organizations to identify project funding.

Other Program Related Efforts

North Texas Floodplain Administrators/CRS Users Group

- ▶ The Annual Combined CRS Users Group & Elected Officials Seminar was held virtually July 30, 2020, from 1:00 p.m. to 4:00 p.m.
- ▶ The Texas Water Development Board spoke on a variety of topics, including their role in floodplain management in Texas and the most recent updates on the State Flood Plan and Planning Regions. There were 80 attendees.
- ▶ View and download the presentation here:
<https://www.nctcog.org/getattachment/envir/Watershed-Management/Floodplain-Management/Combined-Presentations.pdf.aspx?lang=en-US>
- ▶ What topics interest you for future CRS Users Group meetings?

Other Program Related Efforts

Cooperative Technical Partnership (CTP) Program

➤ FY17 Projects

- Flood Resilience meetings for Town Creek (Weatherford) and Stream CF-5 (Benbrook) are complete; these projects will be complete as of 09/30/20.
- Richland-Chambers Post-Discovery Webinar was held April 2nd. The recording and Draft Discovery Report are available: <https://www.nctcog.org/envir/watershed-management/cooperating-technical-partners/discovery>. This project will be complete 09/30/20.

➤ FY18 Projects

- Flood Risk ID on Marys Creek in Parker County is 70% complete. A Flood Risk Review Meeting will be held for all partners in late summer/early fall.

➤ FY19 Projects

- Harriet Creek and Waxahachie Creek field survey, terrain data capture, and hydraulic and hydrologic analyses are ongoing.

➤ FY20 Projects

- NCTCOG received awards for the Catherine Branch flood risk identification project in Denton County and a communications and outreach project related to NCTCOG's efforts for integration of transportation and stormwater planning in northern/western portions of the region. Both projects will kick off in early 2021.

Other Program Related Efforts

Integrated Stormwater Management (iSWM) Subcommittee

- Task Order 4 runs from May 1st, 2020 to April 30th, 2021
 - Project Management and Meeting Attendance
 - Reorganize/Re-evaluate Site Development Controls
 - Guidance on developing a regional detention program
 - Detention criteria guidance research
 - Re-evaluate 85th Percentile (1.5") Rainfall Requirements
 - **5-Year Outreach and Implementation Strategy (High priority)**
 - Provide details and specifications for water quality BMPs
- The City of Celina applied for iSWM Gold Certification on July 22nd. Reviews take approximately 60 days after receipt of all supporting documentation.
- Next Meeting: October 7th at 1:30 p.m. Keep up with NCTCOG E&D meetings and events at: <https://www.nctcog.org/envir/events>
- Questions about iSWM? Contact Sydni Ligons at sligons@nctcog.org or (817) 608-2360

Corridor Development Certificate Applications

Received Since Last FMTF Meeting:

- New CDC Applications - None
- Technical Review Completed – None
- Final Action Forms - None

Roundtable



Dallas County	
AFFECTED COMMUNITY	CID
Addison, Town of	481089
Balch Springs, City of	480166
Carrollton, City of	480167
Cedar Hill, City of	480168
Cockrell Hill, City of	480169
Combine, City of	480408
Coppell, City of	480170
Dallas County, Unincorporated Areas	480165
Dallas, City of	480171
Desoto, City of	480172
Duncanville, City of	480173
Farmers Branch, City of	480174
Garland, City of	485471
Glenn Heights, City of	481265
Grand Prairie, City of	485472
Grapevine, City of	480598
Highland Park, Town of	480178
Hutchins, City of	480179
Irving, City of	480180
Lancaster, City of	480182
Lewisville, City of	480195
Mesquite, City of	485490
Ovilla, City of	481155
Richardson, City of	480184
Seagoville, City of	480187
Sunnyvale, Town of	480188
University Park, City of	480189
Wilmer, City of	480190

Tarrant County	
AFFECTED COMMUNITY	CID
Arlington, City of	485454
Azle, City of	480584
Bedford, City of	480585
Benbrook, City of	480586
Blue Mound, City of	480587
Burleson, City of	485459
Colleyville, City of	480590
Crowley, City of	480591
Dalworthington Gardens, City of	481013
Eules, City of	480593
Forest Hill, City of	480595
Fort Worth, City of	480596
Grand Prairie, City of	485472
Grapevine, City of	480598
Haltom City, City of	480599
Haslet, City of	480600
Hurst, City of	480601
Keller, City of	480602
Kennedale, City of	480603
Lake Worth, City of	480605
Lakeside, City of	480604
Mansfield, City of	480606
North Richland Hills, City of	480607
Pantego, Town of	481116
Richland Hills, City of	480608
River Oaks, City of	480609
Roanoke, City of	480785
Saginaw, City of	480610
Sansom Park, City of	480611
Southlake, City of	480612
Tarrant County, Unincorporated Areas	480582
Trophy Club, Town of	481606
Watauga, City of	480613
Westlake, Town of	480614
Westover Hills, Town of	480615
Westworth Village, City of	480616
White Settlement, City of	480617

Next FMTF Meeting Date

Friday, November 13, 2020

9:30 a.m.

The meeting will be held virtually.

Contact

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