Technical Guidelines Webinar

June 1, 2021
2:00 pm to 3:30 pm

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Agenda Item 1: Agenda Overview

1. Introductions, Opening Comments, and Agenda Overview
2. Director Jackson Opening Remarks
3. Presentation: Regional Flood Planning Technical Guidelines
4. Presentation: Regional Flood Planning Data
5. Questions

Agenda Item 1: Introductions

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Hayley Gillespie
Regions 9, 10, 13

Megan Ingram
Regions 6, 15

Ryke Moore
Regions 4, 7, 8

Anita Machiavello
Regions 1, 2, 12

Agenda Item 2: Opening Remarks by Director Kathleen Jackson

Brooke T. Paup
Chairwoman

Kathleen Jackson
Board Member

Agenda Item 3: Technical Guidelines for Regional Flood Planning

Downloads Available:
https://www.twdb.texas.gov/flood/Planning/planningdocu/2023/index.asp

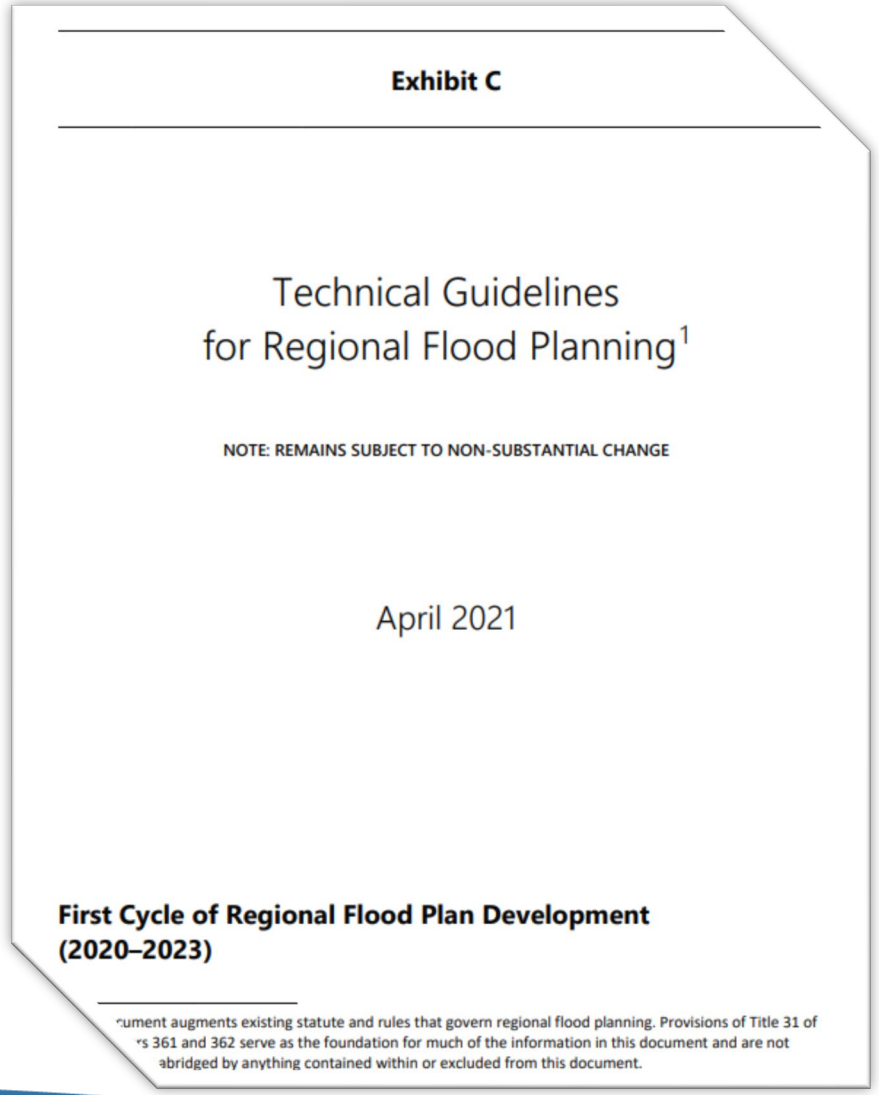


Exhibit C

Technical Guidelines
for Regional Flood Planning[1]

NOTE: REMAINS SUBJECT TO NON-SUBSTANTIAL CHANGE

April 2021

First Cycle of Regional Flood Plan Development (2020–2023)

ument augments existing statute and rules that govern regional flood planning. Provisions of Title 31 of s 361 and 362 serve as the foundation for much of the information in this document and are not abridged by anything contained within or excluded from this document.

Flood Planning Guidelines

- Final guidelines posted on TWDB website on April 30th, 2021.
  https://www.twdb.texas.gov/flood/planning/planningdocu/2023/index.asp
- Technical Guidelines for Regional Flood Planning provides technical guidelines and submittal requirements for each scope item and additional technical guidance regarding population estimates, hydraulic and hydrologic modeling, benefit-cost ratio analysis, etc.
- Data Submittal Guidelines for Regional Flood Planning provides data submittal guidelines for regional flood planning.
- Benefit-Cost Analysis Input Tool and Instructions

Purpose

While each regional plan will be unique the technical guidance is intended to ensure that the 15 regional flood plans are consistent and at the state level, to support the development of a meaningful and credible state flood plan.

Organization of the Technical Guideline

1. Part 1: Orientation
2. Part 2: Scope of work task-specific general guidelines
3. Part 3: Technical Guidelines

Task 1 – Planning Area Description

Goal: In general, the goal of this task is for RFPGs to describe the flood planning region, inventory and assess natural features and constructed major flood infrastructure, and describe proposed or ongoing flood mitigation projects in the region.

Primary deliverables:

- Chapter 1 of Regional Flood Plan
- Existing flood infrastructure summary table and GIS layers
- Proposed or ongoing flood mitigation projects summary table and GIS layers

Llano dam on the Llano river sits on the banks of the county seat. Image: TWDB

Task 2A & 2B – Existing & Future Condition Flood Risk Analyses

Goal: The goal of these tasks is for RFPGs to perform existing and future condition flood risk analyses (hazard, exposure, vulnerability) for the region.

Primary deliverables:

- Chapter 2 of Regional Flood Plan
- Existing condition flood risk summary table, GIS layers, and maps
- Future condition flood risk summary table, GIS layers, and maps

Task 3A – Eval. & Recommendations on Floodplain Mgmt. Practices

Goal: The goal of this task is for RFPGs to evaluate and make recommendations on floodplain management practices within the flood planning region. The intent of regional flood planning is twofold:

1) identify and reduce the risk and impact to life and property that already exists and, importantly,

2) avoid increasing or creating new flood risk by addressing future development within the areas known to have existing or future flood risk.

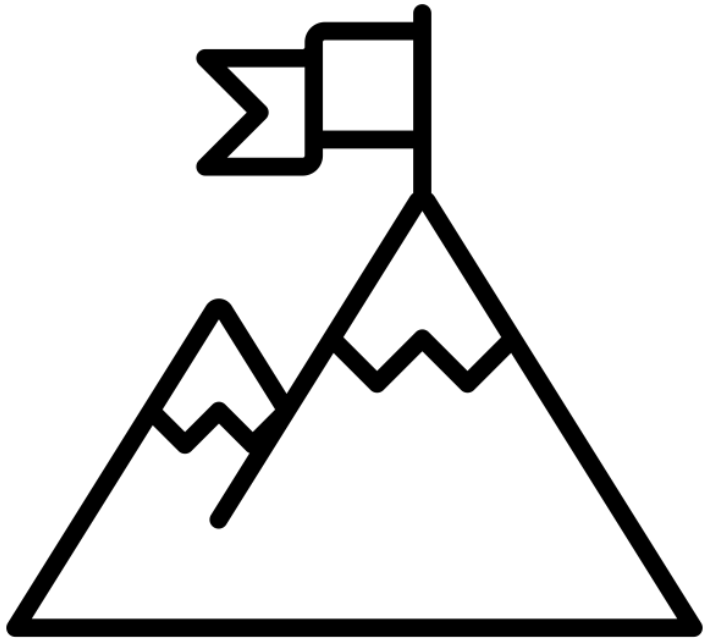
West Fork San Jacinto River near Humble, Texas after Hurricane Harvey
Image: Steve Fitzgerald, Harris County Flood Control District

Primary deliverables:

- Chapter 3 of Regional Flood Plan
- Existing floodplain management practices summary table and GIS layer
- Qualitiative assessment and adopted recommendations or region-specific minimum standards for floodplain management practices

Task 3B – Flood Mitigation & Floodplain Management Goals

Goal: The goal of this task is for RFPGs to define the overarching flood mitigation and floodplain management goals for their regional flood plans. These goals will guide the overall approach and recommendations in the plan and, to ensure the coherence of the entire plan, may also be used in developing the recommendations for floodplain management in the previous task.



Created by Birckhead Creative
from Noun Project

Primary deliverables:

- Chapter 3 of Regional Flood Plan
- Flood mitigation and floodplain management goals summary table and GIS layer

Key Terms for Tasks 4 & 5: FME, FMP, FMS

Flood Management Evaluation (FME)

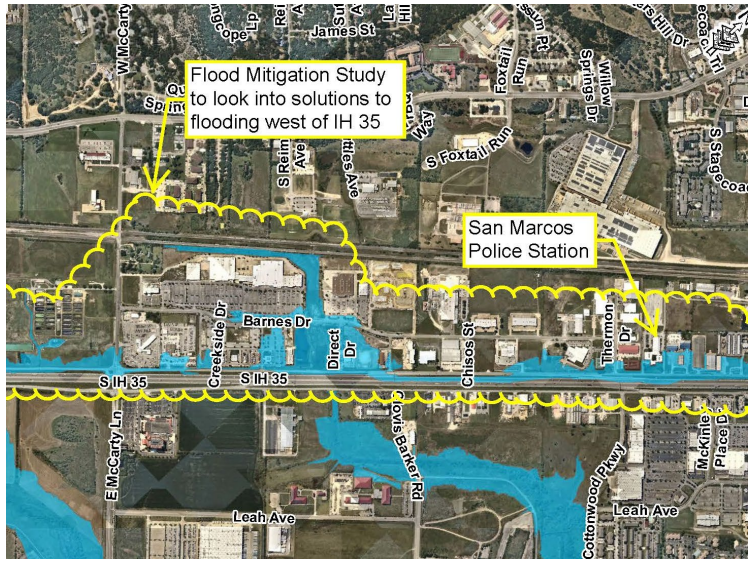
- A proposed flood study of a specific, flood-prone area that is needed in order to assess flood risk and/or determine whether there are potentially feasible FMSs or FMPs.

Flood Mitigation Project (FMP)

- A proposed project (structural and non-structural) that when implemented will reduce flood risk, mitigate flood hazards to life or property.

Flood Management Strategy (FMS)

- A proposed plan to reduce flood risk or mitigate flood hazards to life or property (may or may not require associated FMPs to be implemented).

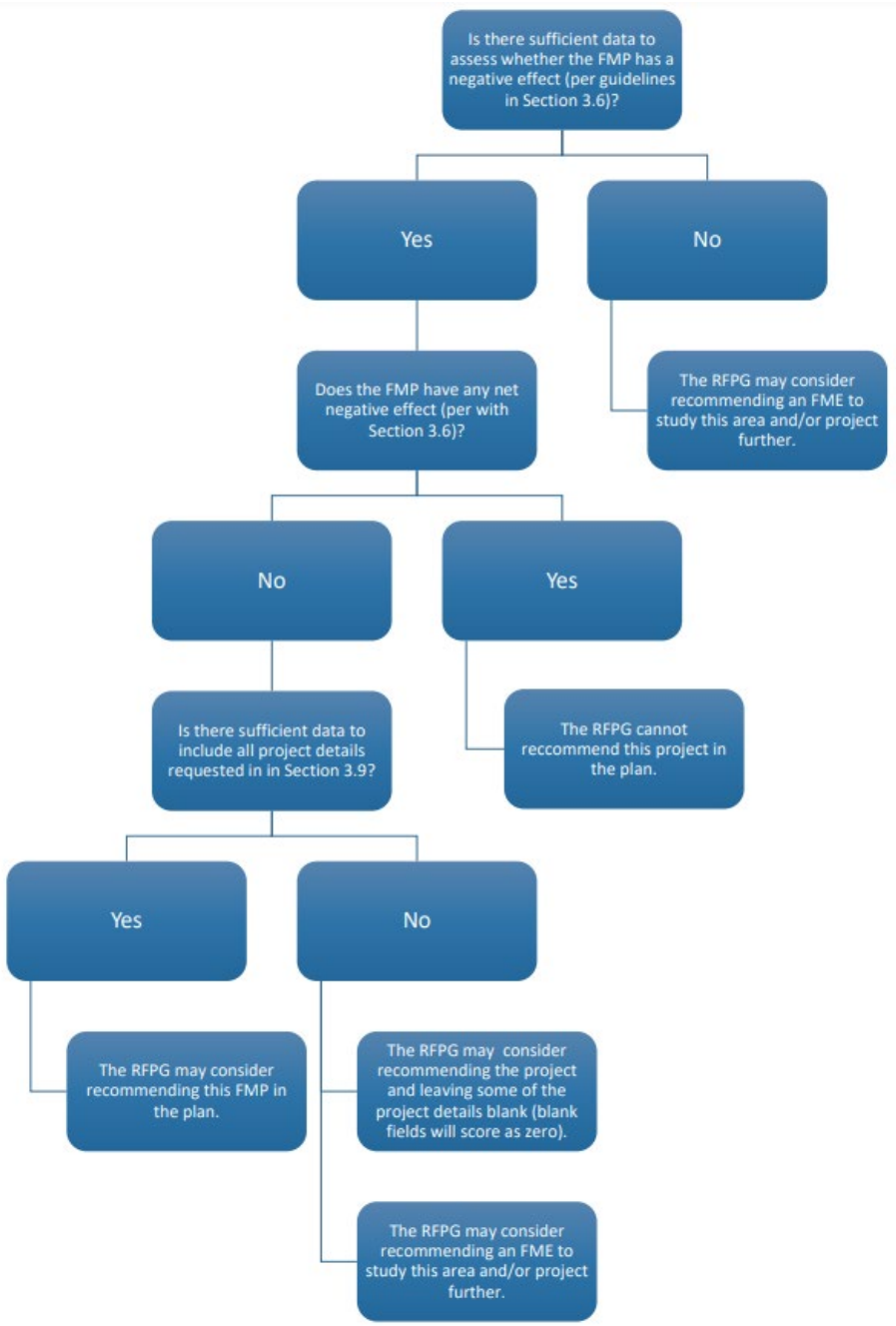


Cottonwood Creek Flood Study, San Marcos, TX.
Image: City of San Marcos

El Paso storm water project, El Paso, TX
Image: El Paso Water

Exploration Green project, Clear Lake City, TX
Image: Texas Water Resources Institute

Flood Mitigation Project Flowchart



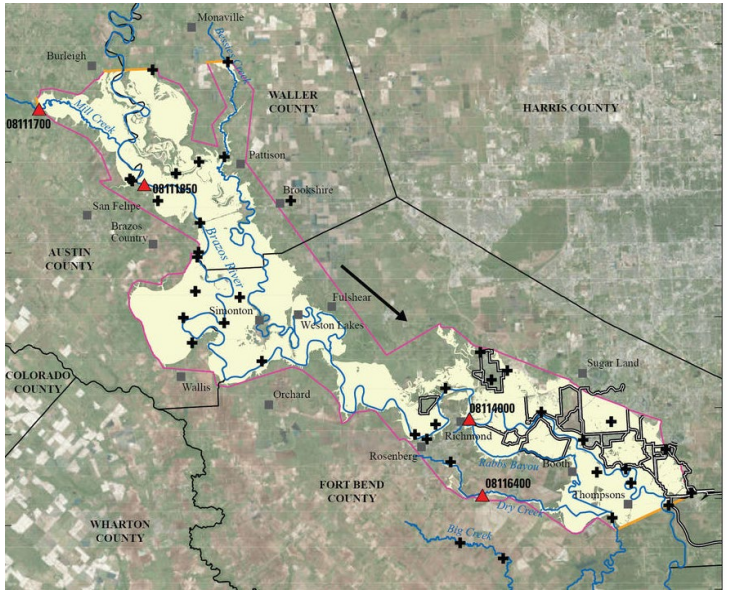
Task 4A – Flood Mitigation Needs Analysis

Goal: The goal of this task is for RFPGs to conduct a two-piece, big picture analysis to guide the RFPG's subsequent efforts (under Task 4B) by identifying:

- *The region's flood prone areas where the greatest **flood risk knowledge gaps** exist and where the RFPG should consider identifying potentially feasible flood risk studies as **FMEs**. (See Task 4B), and,*
- *The areas of greatest **known flood risk** and flood mitigation needs in the regions and resulting need of potential strategies and projects, as **FMSs and FMPs**, to reduce those known risks. See Task 4B).*

Primary deliverable:

- Chapter 4 of Regional Flood Plan, including summaries, descriptions, and maps



Map of inundated areas (yellow areas) on the lower Brazos River after Hurricane Harvey

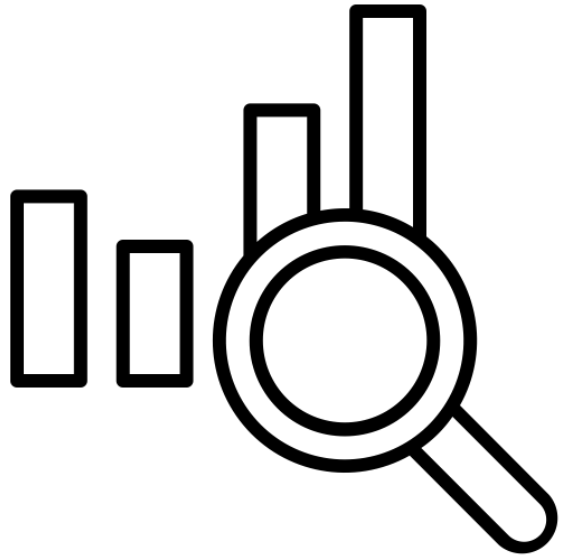
Image: USGS

Task 4B – Identification and Evaluation of Potential FMEs & Potentially Feasible FMSs and FMPs

Goal: The goal of this task is for RFPGs to identify and evaluate potential FMEs, and potentially feasible FMPs, and FMSs. While the evaluation of FMEs, FMSs, and FMPs can be initiated in Task 4, they will be completed during Task 5.

Primary deliverables:

- Chapter 4 of Regional Flood Plan
- Quantitative analysis and evaluation of FMEs, FMSs, and FMPs
- Potential FMEs, FMSs, and FMPs summary tables, GIS layers, and maps



Created by Pascal Heß
from Noun Project

Task 4C – Prepare and Submit Technical Memorandum

Goal: The goal for this task is for RFPGs to submit their mid-point deliverable, the Technical Memorandum.

Due date: January 7, 2022

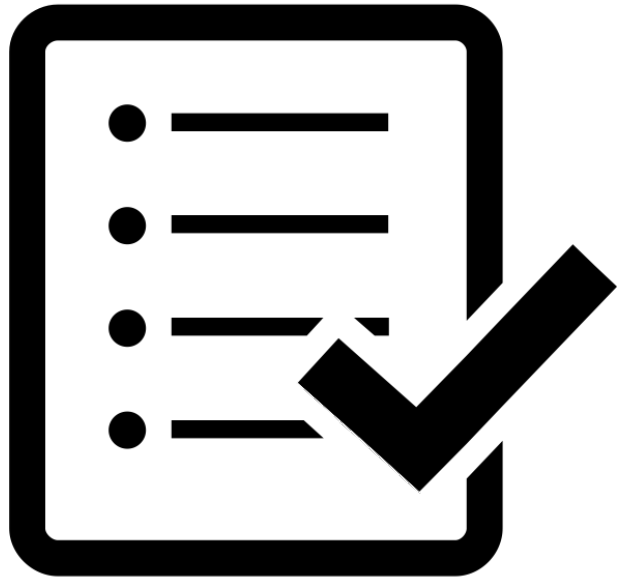
Required Information (Deliverables)	RFPGs Must Provide
• A list of existing political subdivisions within the FPR that have flood-related authorities or responsibilities; • A list of previous flood studies considered by the RFPG to be relevant to development of the RFP;	Information in written format and may provide a limited version of associated GIS data or deliverables.
• A geodatabase and associated maps for: region-wide 1.0% annual chance flood event and 0.2% annual chance flood event inundation boundaries, and the source of flooding for each area, for use in its risk analysis, including indications of locations where such boundaries remain undefined; • A geodatabase and associated maps that identifies additional flood-prone areas not described in (c) based on location of hydrologic features, historic flooding, and/or local knowledge; • A geodatabase and associated maps in accordance with TWDB Flood Planning guidance documents that identifies areas where existing hydrologic and hydraulic models needed to evaluate FMSs and FMPs are available; • A list of available flood-related models that the RFPG considers of most value in developing its plan;	Required to provide associated GIS data and feature layers identified in Exhibit D
• The flood mitigation and floodplain management goals adopted by the RFPG per §361.36; • The documented process used by the RFPG to identify potentially feasible FMSs and FMPs; • A list of potential FMEs and potentially feasible FMSs and FMPs identified by the RFPG, if any; and • A list of FMSs and FMPs that were identified but determined by the RFPG to be infeasible, including the primary	Information in written format and are required to provide a limited version of associated GIS data or deliverables

Task 5 – Recommendation of FMEs, FMSs & FMPs

Goal: The goal of this task is for RFPGs to recommend FMEs, FMSs, and FMPs for inclusion in the regional flood plan.

Primary deliverables:

- Chapter 5 of Regional Flood Plan
- Continued quantitative analysis and evaluation of FMEs, FMSs, and FMPs
- Recommended FME, FMP, and FMS summary tables, GIS layers, and maps



Created by Kwesi Phillips from Noun Project

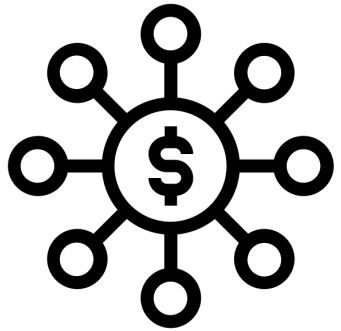
Regional & State Flood Planning Long-Range Planning Process

Created by Andrejs Kirma
from Noun Project

Regional Flood Plans will identify flood risk and recommend FMEs, FMSs, and FMPs within regions.

Created by Creative Stall
from Noun Project

State Flood Plan will rank recommended FMEs, FMSs, and FMPs statewide.



Created by Alice Design
from Noun Project

Future state financial assistance may be allocated using a to-be-determined prioritization criteria.*

*Funding to implement projects can also come from local, federal, or other sources.

Task 6A/6B – Impact and Contributions of the Regional Flood Plan and Water Supply

Goal: The goal of this task is for RFPGs to summarize the impacts of implementation of the regional flood plan.

Primary deliverables:

- Chapter 6 of Regional Flood Plan
- Summaries, descriptions, tables, and other quantifications of impacts

Crops in the lower Rio Grande Valley
Image: TWDB

Recreational boating.
Image: TWDB

Dolan Falls
Image: TWDB

Task 7 – Flood Response Information and Activities

Goal: The goal of this task is for RFPGs to summarize existing flood response and recovery activities in the region.

Primary deliverable:

- Chapter 7 of Regional Flood Plan, including qualitative analysis and summaries

Texas State Guard Hurricane Harvey emergency response.

Image: Texas State Guard

Task 8 – Administrative, Regulatory, and Legislative Recommendations

Goal: The goal of this task is for RFPGs to develop legislative, regulatory, administrative, or other recommendations.

Primary deliverable:

- Chapter 8 of Regional Flood Plan, including qualitative analysis and summaries

Image: TWDB

Task 9 – Flood Infrastructure Financing Analysis

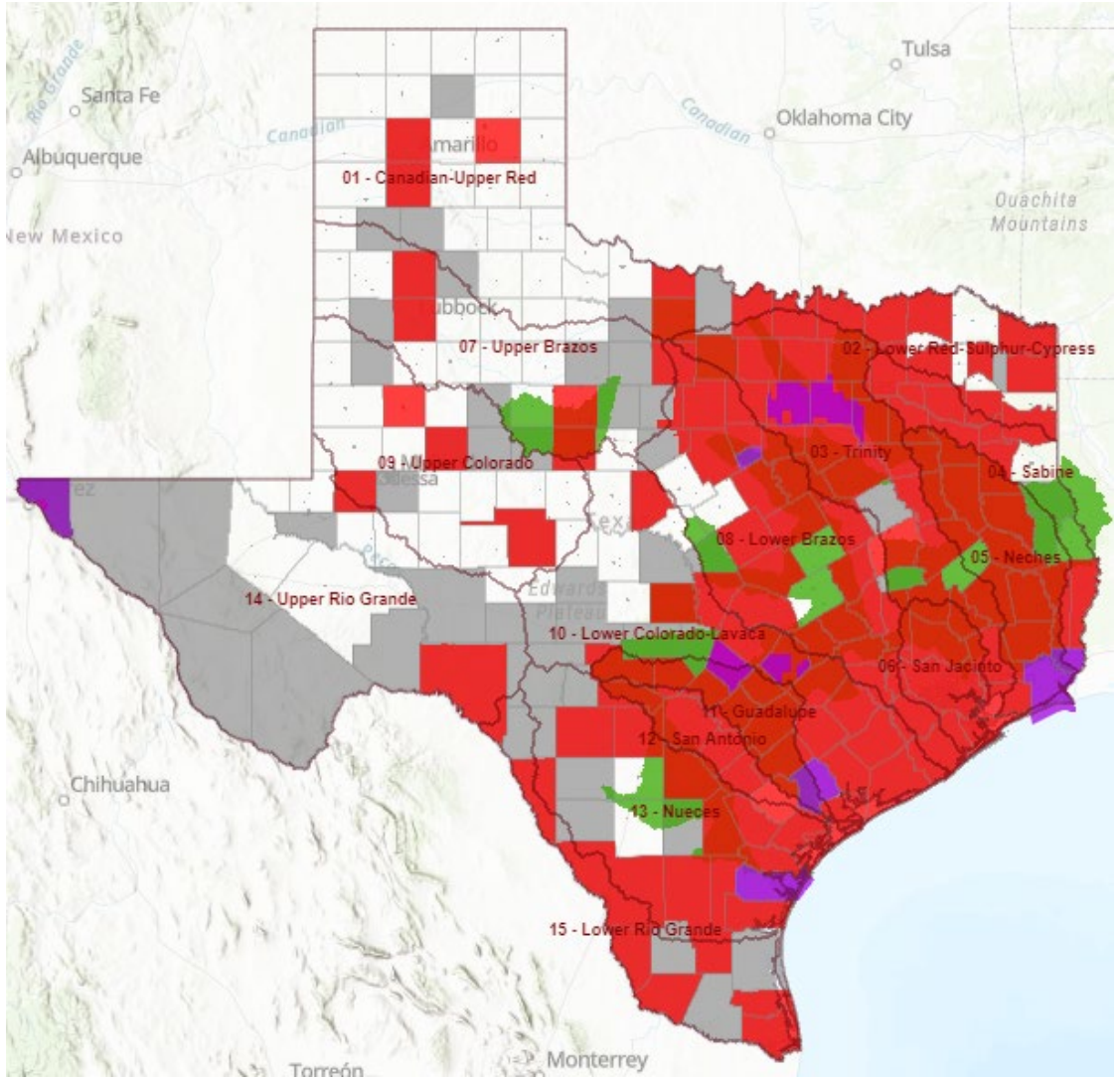
Goal: The goal of this task is for RFPGs to indicate how sponsors will propose to finance recommended FMPs, and FMEs.

Primary deliverable:

- Chapter 9 of Regional Flood Plan
- Survey results, methodology documentation, and summaries

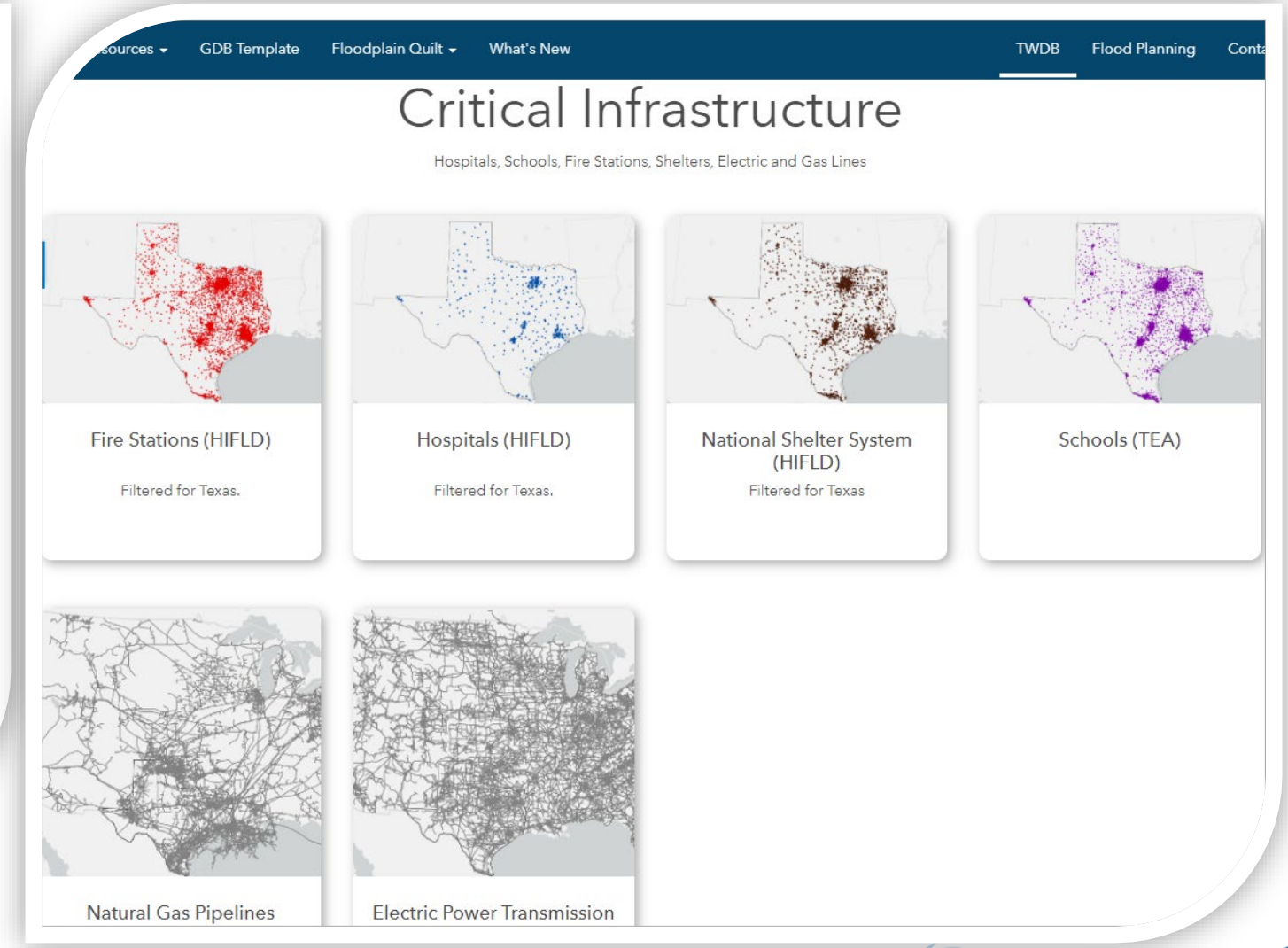
Dam on the Llano River under Hwy 16 in Llano, Texas. Image: TWDB

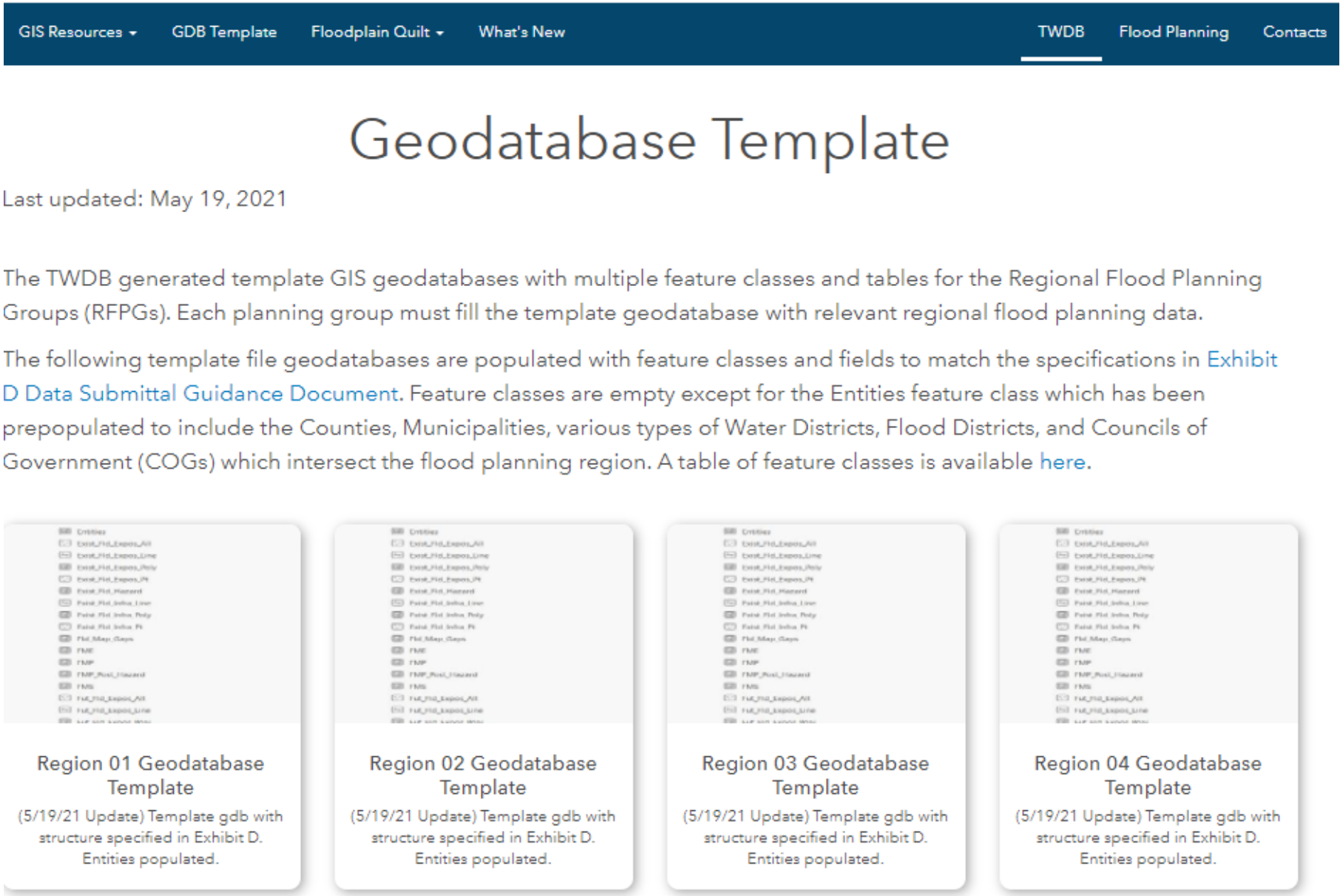
Agenda Item 4: Regional Flood Planning Data Presentation



This map shows the layers that are used as inputs to the TWDB Flood Quilt.

Flood Planning Data HUB

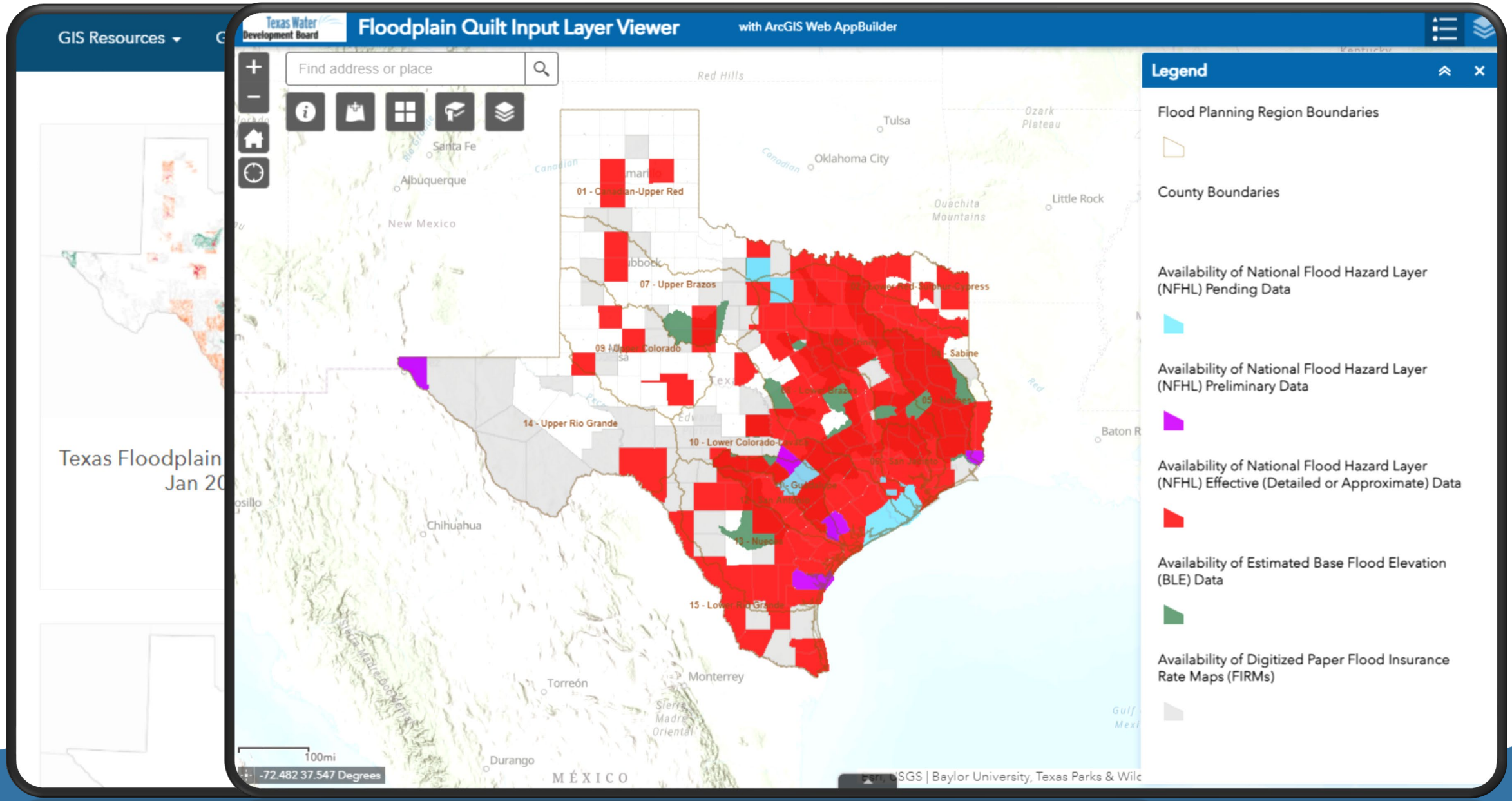




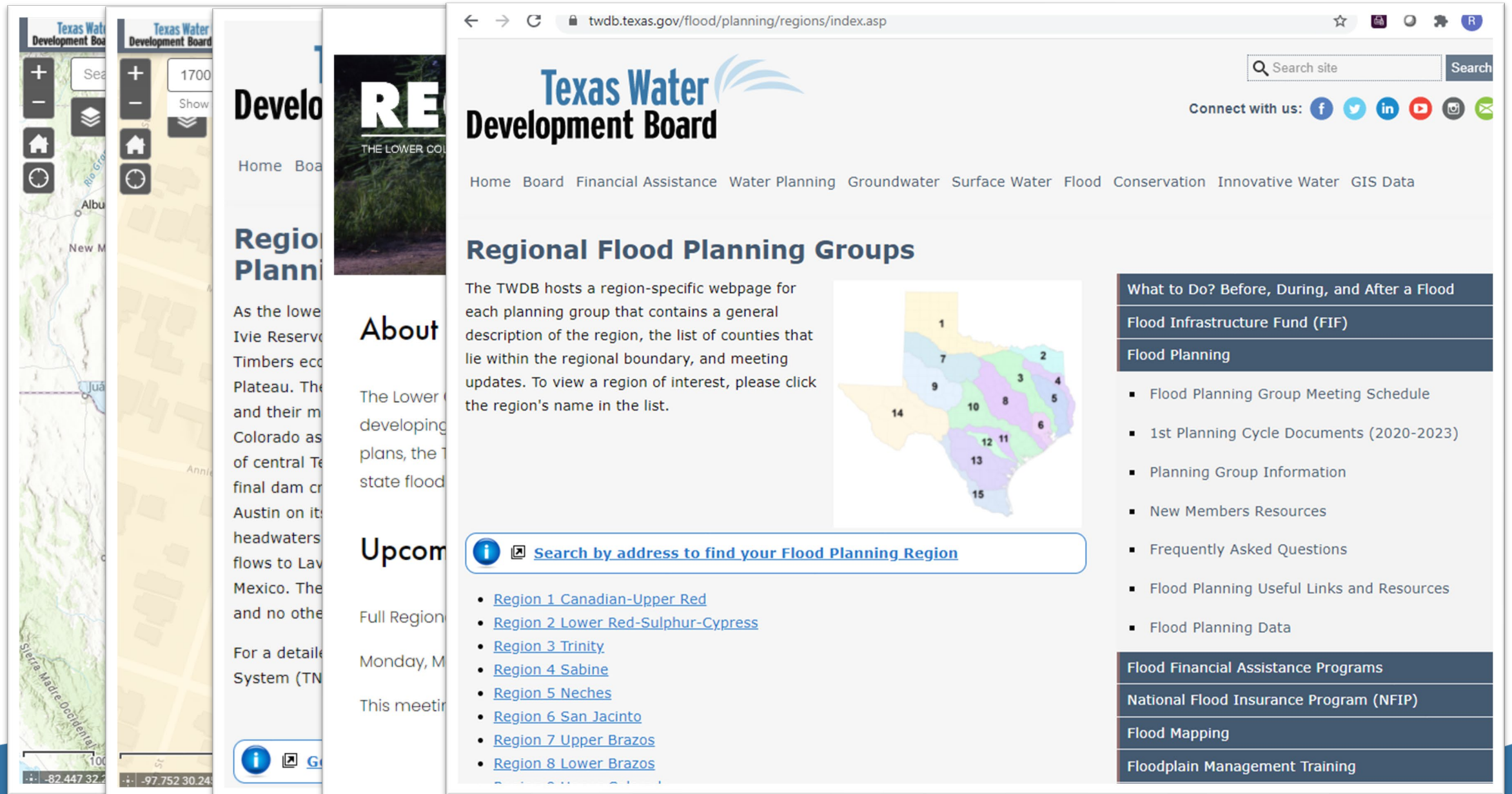
Geodatabase Template

https://twdb-flood-planning-resources-twdb.hub.arcgis.com/pages/fpr-templates

Draft Floodplain Quilt



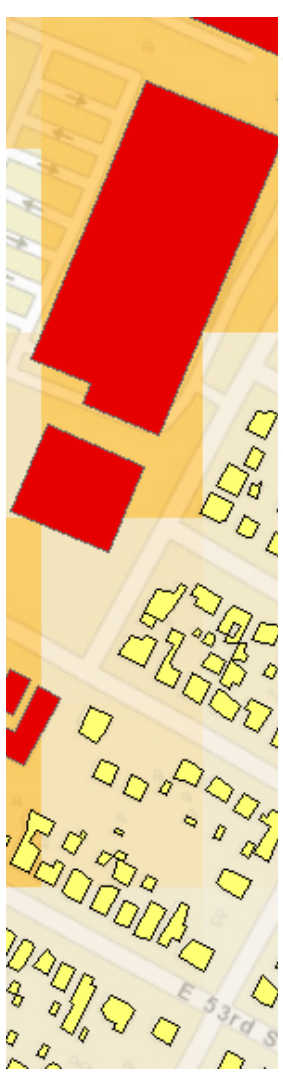
‘Where is My Flood Planning Region?’

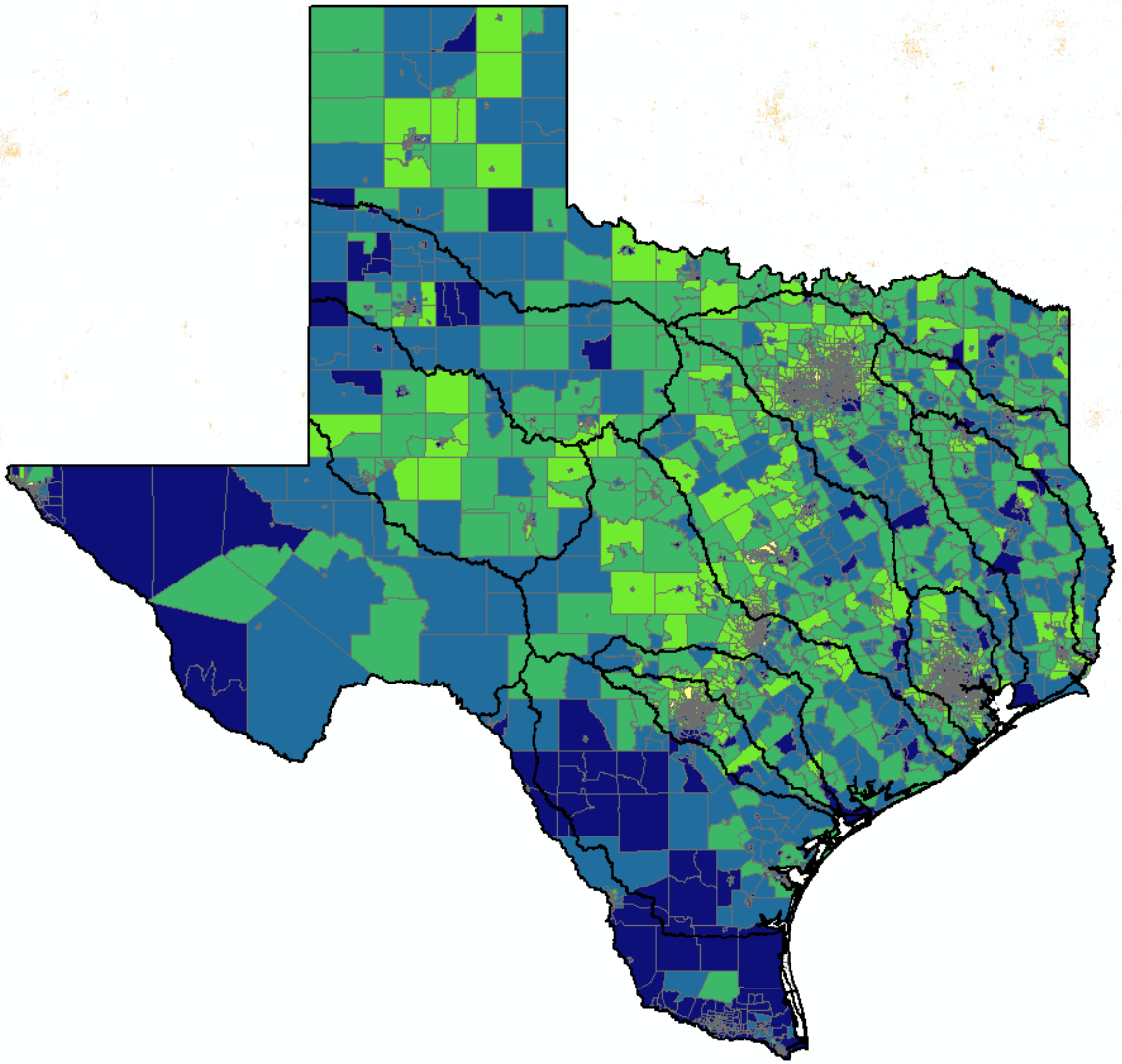


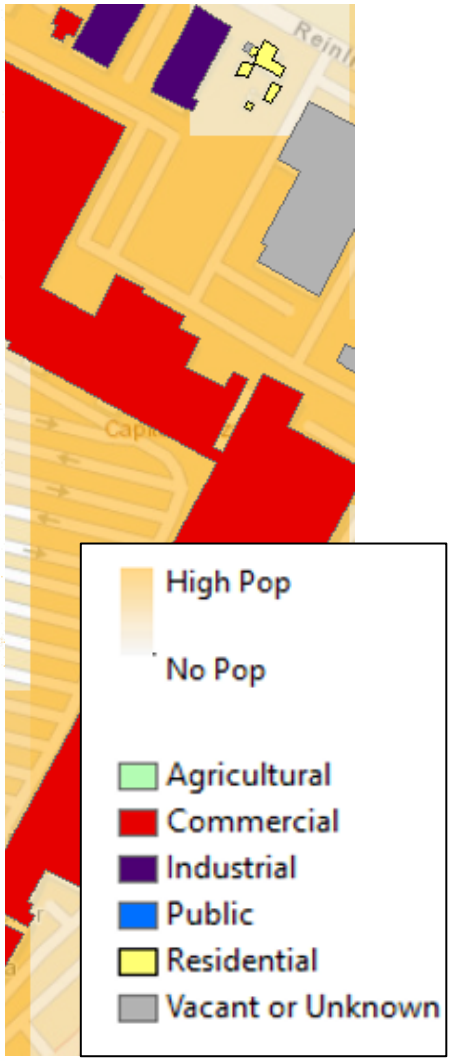
Statewide Buildings Data

Building Attributes:

- ~10million footprints
- Land Use
- Improvement Value (from tax records)
- Night Population
- Day Population
- Social Vulnerability Index (SVI)
- To be published in June on the Data Hub







Flood Data Next Steps

- Fathom Flood Risk Data
  - June – coarse terrain, 30m raster
  - Fall – LIDAR terrain, raster/polygon TBD

Questions or Comments?

Send an E-mail to:
FloodPlanningData@TWDB.Texas.gov

Agenda Item 5: Questions

Image: Brent Hanson, U.S. Geological Survey. Public domain.