



## SECTION 9. JURISDICTIONAL ANNEXES

### 9.6 City of Kendleton

This section presents the jurisdictional annex for the City of Kendleton that provides resources and information to assist public and private sectors to reduce losses from future hazard events. This annex is not guidance of what to do when a disaster occurs. Rather, this annex concentrates on actions to reduce or eliminate damage to property and people that can be implemented prior to a disaster. Information presented includes a general overview of the municipality, the City of Kendleton representatives who participated in the planning process, an assessment of the City of Kendleton’s risk and vulnerability, the different capabilities used in the City of Kendleton, and an action plan that will be implemented to achieve a more resilient community.

#### 9.6.1 Hazard Mitigation Planning Team

The City of Kendleton identified the primary and alternate points of contact and developed the 2023 Hazard Mitigation Plan (HMP) over the course of several months with input from many City of Kendleton departments. The city secretary represented the community on the Fort Bend County HMP Planning Partnership and supported the local planning process requirements by securing input from persons with specific knowledge to enhance the plan. All departments were asked to contribute to the annex development through reviewing and contributing to the capability assessment, reporting on the status of previously identified actions, and participating in action identification and prioritization.

The following table summarizes municipal officials who participated in the development of the annex and in what capacity. Additional documentation on the municipality’s planning process through Planning Partnership meetings is included in Volume 1, Section 2 (Planning Process) and Appendix C (Meeting Documentation).

Table 9-1. Hazard Mitigation Planning Team

Primary Point of Contact		Alternate Point of Contact	
Name/Title:	Christina Flores/City Secretary	Name/Title:	N/A
Address:	430 FM2919, Kendleton, TX 77451	Address:	N/A
Phone Number:	713-476-1526	Phone Number:	N/A
Email:	Christina.flores@kendletontx.net	Email:	N/A
<b>NFIP Floodplain Administrator</b>			
Name/Title:	Sean Eglinton/Assistant County Engineer		
Address:	430 FM2919, Kendleton, TX 77451		
Phone Number:	281-633-7513		
Email:	sean.eglinton@fortbendcountytexas.gov		
<b>Additional Contributors:</b>			
Name/Title:	Christina Flores/City Secretary		
Method of Participation:	Provided key input in the planning process		

\*Information collected from <https://www.texasflood.org/flood-basics/fpa.html>

#### 9.6.2 Municipal Profile

The City of Kendleton is in western Fort Bend County, and its western boundary is the San Bernard River. Located 51 miles southwest of Houston, the City of Kendleton is known for its beautiful parks, farmland, museums, and the San Bernard River. The City also has a total area of 1.10 square miles, of which 0.004 square miles is water.





According to the American Community Survey, the 2021 population for the City of Kendleton was 341. Data from the 2020 U.S. Census indicate that 1.8 percent of the population is 5 years of age or younger, and 25.2 percent is 65 years of age or older. Communities must deploy a support system that enables all populations to safely reach shelters or to quickly evacuate a hazard area.

### 9.6.3 Jurisdictional Capability Assessment and Integration

The City of Kendleton performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Volume 1, Section 5 (Capability Assessment) describes the components included in the capability assessment and their significance for hazard mitigation planning. The jurisdictional assessment includes the following analyses:

- An assessment of legal and regulatory capabilities
- Development and permitting capabilities
- An assessment of administrative and technical capabilities
- An assessment of fiscal capabilities
- An assessment of education and outreach capabilities
- Classification under various community mitigation programs
- The community’s adaptive capacity to withstand hazard events

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into the day-to-day local government operations. As part of the hazard mitigation analysis, planning/policy documents were reviewed, and each jurisdiction was surveyed to obtain a better understanding of their progress toward plan integration. The updated mitigation strategy provided an opportunity for the City of Kendleton to identify opportunities for integration of mitigation concepts that can be incorporated into municipal procedures.

#### Planning, Legal, and Regulatory Capability and Integration

The table below summarizes the regulatory tools that are available to the City of Kendleton. The comment field provides information as to how the capability integrates hazard mitigation and risk reduction.

**Table 9-2. Planning, Legal, and Regulatory Capability and Integration**

	Jurisdiction has this? (Yes/No)	Code Citation and Date (code chapter, name of plan, date of plan)	Authority (local, county, state, federal)	Individual / Department / Agency Responsible
<b>Codes, Ordinances, &amp; Regulations</b>				
<b>Building Code</b>	Yes	International Building Code	Local	Code Enforcement
<i>How does this reduce risk?</i> The City of Kendleton adopted the International Building Code and Fire Code, which have a set of standards and regulations that enforce hazard mitigation.				
<b>Zoning/Land Use Code</b>	Yes	Zoning	Local	Planning and Zoning Commission
<i>How does this reduce risk?</i> State-level code authorizes the City to regulate zoning through review of the HMP to ensure consistent and compatible land use prior to zoning changes. The ordinance requires developers to take additional actions to mitigate natural hazard risks.				
<b>Subdivision Ordinance</b>	Yes	Bernard River Park Subdivision Association No. 205151, adopted 3/6/1972	Local	City of Kendleton
<i>How does this reduce risk?</i>				



	Jurisdiction has this? (Yes/No)	Code Citation and Date (code chapter, name of plan, date of plan)	Authority (local, county, state, federal)	Individual / Department / Agency Responsible
It is poorly written, and no board has been elected in over 10 years <i>Consider the following:</i>				
<ul style="list-style-type: none"> <li>Do the subdivision regulations restrict the subdivision of land within or adjacent to natural hazard areas? No</li> <li>Do the regulations provide for conservation subdivisions or cluster subdivisions in order to conserve environmental resources? No</li> <li>Do the regulations allow density transfers where hazard areas exist? No</li> </ul>				
<b>Site Plan Ordinance</b>	No	-	-	-
<i>How does this reduce risk?</i>				
<b>Stormwater Management Ordinance</b>	No	-	-	-
<i>How does this reduce risk?</i>				
<b>Post-Disaster Recovery/ Reconstruction Ordinance</b>	No	-	-	-
<i>How does this reduce risk?</i>				
<b>Real Estate Disclosure</b>	No	-	-	-
<i>How does this reduce risk?</i>				
<b>Growth Management</b>	No	-	-	-
<i>How does this reduce risk?</i>				
<b>Environmental Protection Ordinance</b>	No	-	-	-
<i>How does this reduce risk?</i>				
<b>Flood Damage Prevention Ordinance</b>	Yes	Flood Damage Prevention Ordinance	Local	Floodplain Administrator
<i>How does this reduce risk?</i> Dictates the minimum flood standards adopted by the City to meet the federal standards of the NFIP.				
<b>Wellhead Protection</b>	No	-	-	-
<i>How does this reduce risk?</i>				
<b>Emergency Management Ordinance</b>	No	-	-	-
<i>How does this reduce risk?</i>				
<b>Climate Change Ordinance</b>	No	-	-	-
<i>How does this reduce risk?</i>				
<b>Other</b>	-	-	-	-
<b>Planning Documents</b>				
<b>Comprehensive/Master Plan</b>	Yes	Comprehensive Plan	Local	Planning Commission
<i>How does this reduce risk?</i> State-level code that authorizes the City to adopt a comprehensive plan for the long-range development of the City.				
<b>Capital Improvement Plan</b>	No	-	-	-
<i>How does this reduce risk?</i>				
<b>Disaster Debris Management Plan</b>	No	-	-	-
<i>How does this reduce risk?</i>				
<b>Floodplain Management or Watershed Plan</b>	No	-	-	-
<i>How does this reduce risk?</i>				



	Jurisdiction has this? (Yes/No)	Code Citation and Date (code chapter, name of plan, date of plan)	Authority (local, county, state, federal)	Individual / Department / Agency Responsible
<b>Stormwater Management Plan</b>	No	-	-	-
<i>How does this reduce risk?</i>				
<b>Open Space Plan</b>	No	-	-	-
<i>How does this reduce risk?</i>				
<b>Urban Water Management Plan</b>	No	-	-	-
<i>How does this reduce risk?</i>				
<b>Habitat Conservation Plan</b>	No	-	-	-
<i>How does this reduce risk?</i>				
<b>Economic Development Plan</b>	No	-	-	-
<i>How does this reduce risk?</i>				
<b>Shoreline Management Plan</b>	No	-	-	-
<i>How does this reduce risk?</i>				
<b>Community Wildfire Protection Plan</b>	No	-	-	-
<i>How does this reduce risk?</i>				
<b>Community Forest Management Plan</b>	No	-	-	-
<i>How does this reduce risk?</i>				
<b>Transportation Plan</b>	Yes	20-Year Growth Plan	Local	Kendleton City Council
<i>How does this reduce risk?</i> The 20-Year Growth Plan includes the City Transportation Plan. The Transportation Plan focuses on assessing the City's existing transportation systems and provides recommendations for future improvements.				
<b>Agriculture Plan</b>	No	-	-	-
<i>How does this reduce risk?</i>				
<b>Climate Action/ Resiliency/Sustainability Plan</b>	No	-	-	-
<i>How does this reduce risk?</i>				
<b>Tourism Plan</b>	No	-	-	-
<i>How does this reduce risk?</i>				
<b>Business/ Downtown Development Plan</b>	No	-	-	-
<i>How does this reduce risk?</i>				
<b>Other</b>	Yes	20-Year Growth Plan	Local	Kendleton City Council
<b>Response/Recovery Planning</b>				
<b>Comprehensive Emergency Management Plan</b>	No	-	-	-
<i>How does this reduce risk?</i>				
<b>Continuity of Operations Plan</b>	No	-	-	-
<i>How does this reduce risk?</i>				
<b>Strategic Recovery Planning Report</b>	No	-	-	-
<i>How does this reduce risk?</i>				



	Jurisdiction has this? (Yes/No)	Code Citation and Date (code chapter, name of plan, date of plan)	Authority (local, county, state, federal)	Individual / Department / Agency Responsible
<b>Threat &amp; Hazard Identification &amp; Risk Assessment (THIRA)</b>	No	-	-	-
<i>How does this reduce risk?</i>				
<b>Post-Disaster Recovery Plan</b>	No	-	-	-
<i>How does this reduce risk?</i>				
<b>Public Health Plan</b>	Yes	The Fort Bend County Health and Human Services Department (FBHHS) provides public health services for the City. FBHHS has public health plans as part of Annex H of the Fort Bend County Emergency Operations Plan.	County	FBHHS
<i>How does this reduce risk?</i> FBHHS has plans in place to prevent public health issues through regular inspections of regulated facilities as well as prepare for and respond to public health emergencies.				
<b>Other</b>	-	-	-	-
<i>How does this reduce risk?</i>				

**Development and Permitting Capability**

The table below summarizes the capabilities of the City of Kendleton to oversee and track development.

**Table 9-3. Development and Permitting Capability**

Indicate if your jurisdiction implements the following	Yes/No	Comment:
Do you issue development permits? • If yes, what department is responsible?	Yes	After completing any of the residential & commercial permit application(s), they must be submitted either in person at City Hall (430 FM 2919) or via email to info@kendletontx.net.
If you do not issue development permits, what is your process for tracking new development?	N/A	
Are permits tracked by hazard area? (For example, floodplain development permits.)	Yes	Floodplain permits are tracked.
Do you have a buildable land inventory? • If yes, please describe	N/A	
Describe the level of build-out in your jurisdiction.	N/A	

**Administrative and Technical Capability**

The table below summarizes potential staff and personnel resources available to the City of Kendleton and their current responsibilities that contribute to hazard mitigation.



**Table 9-4. Administrative and Technical Capabilities**

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
<b>Administrative Capability</b>		
Planning Board	Yes	Mayor & council
Zoning Board of Adjustment	Yes	Mayor & Council
Planning Department	Yes	Mayor & City Hall Staff
Mitigation Planning Committee	Yes	Mayor & City Hall Staff
Environmental Board/Commission	No	Fort Bend County
Open Space Board/Committee	Yes	Mayor & Council
Economic Development Commission/Committee	Yes	An elected board to help with decision making regarding the City's growth and development.
Public Works/Highway Department	Yes	The Public Works Department is responsible for residential water and sewer services, commercial water and sewer services, and trash services.
Construction/Building/Code Enforcement Department	Yes	City Hall staff processes permits to contracted City Inspector.
Emergency Management/Public Safety Department	Yes	The Emergency Management Coordinator is an elected official and is responsible for City-level HMP updates.
Warning Systems / Services (mass notification system, outdoor warning signals, etc.)	No	-
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	No	-
Mutual aid agreements	No	-
Human Resources Manual		
Other	No	-
<b>Technical/Staffing Capability</b>		
Planners or engineers with knowledge of land development and land management practices	No	-
Engineers or professionals trained in building or infrastructure construction practices	No	-
Planners or engineers with an understanding of natural hazards	No	-
Staff with expertise or training in benefit/cost analysis	No	-
Professionals trained in conducting damage assessments	No	-
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	No	-
Environmental scientist familiar with natural hazards	No	-
Surveyor(s)	No	-
Emergency manager	Yes	See Emergency Management/Public Safety above
Grant writer(s)	No	-
Resilience officer	No	-
Other (this could include stormwater engineer, environmental specialist, etc.)	-	-

**Fiscal Capability**

The table below summarizes financial resources available to the City of Kendleton.



**Table 9-5. Fiscal Capabilities**

Financial Resources	Accessible or Eligible to Use? (Yes/No)
Community Development Block Grants (CDBG, CDBG-DR)	Yes
Capital improvements project funding	No
Authority to levy taxes for specific purposes	No
User fees for water, sewer, gas, or electric service	Yes
Impact fees for homebuyers or developers of new development/homes	Yes
Stormwater utility fee	No
Incur debt through general obligation bonds	No
Incur debt through special tax bonds	No
Incur debt through private activity bonds	No
Withhold public expenditures in hazard-prone areas	Yes
Other federal or state funding programs	Yes
Open space acquisition funding programs	No
Other (for example, Clean Water Act 319 Grants [Nonpoint Source Pollution])	-

**Education and Outreach Capability**

The table below summarizes the education and outreach resources available to the City of Kendleton.

**Table 9-6. Education and Outreach Capabilities**

Outreach Resources	Available? (Yes/No)	Comment:
Public information officer or communications office	No	-
Personnel skilled or trained in website development	No	-
Hazard mitigation information available on your website	No	-
Social media for hazard mitigation education and outreach	No	-
Citizen boards or commissions that address issues related to hazard mitigation	No	-
Warning systems for hazard events	No	-
Natural disaster/safety programs in place for schools	No	-
Does the jurisdiction have any public outreach mechanisms / programs in place to inform citizens on natural hazards, risk, and ways to protect themselves during such events? <ul style="list-style-type: none"> <li>If yes, please describe.</li> </ul>	No	-

**Community Classifications**

The table below summarizes classifications for community programs available to the City of Kendleton.

**Table 9-7. Community Classifications**

Program	Participating? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-



Program	Participating? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Public Protection (ISO Fire Protection Classes 1 to 10)	No	-	-
Storm Ready Certification	No	-	-
Firewise Communities classification	No	-	-
Other			

**Adaptive Capacity**

Adaptive capacity is defined as “the ability of systems, institutions, humans, and other organisms to adjust to potential damage, to take advantage of opportunities, or respond to consequences” (IPCC 2014). Each jurisdiction has a unique combination of capabilities to adjust to, protect from, and withstand a future hazard event, future conditions, and changing risk. The table below summarizes the adaptive capacity for each identified hazard of concern and the jurisdiction’s capability to address related actions using the following classifications:

- Strong: Capacity exists and is in use.
- Moderate: Capacity might exist but is not used or could use some improvement.
- Weak: Capacity does not exist or could use substantial improvement.

**Table 9-8. Adaptive Capacity**

Hazard	Adaptive Capacity – Strong/Moderate/Weak
Dam/Levee Failure	Weak
Disease Outbreak	Strong
Drought	Weak
Extreme Temperature	Moderate
Flood	Moderate
Geologic Hazards	Moderate
Hurricane/Tropical Storm	Weak
Severe Weather	Weak
Tornado	Moderate
Wildfire	Moderate
Winter Weather	Weak

**9.6.4 National Flood Insurance Program (NFIP) Compliance**

This section provides specific information on the management and regulation of the regulatory floodplain, including current and future compliance with the NFIP. The Floodplain Administrator is responsible for maintaining this information and is listed in the Hazard Mitigation Planning Team table at the beginning of this annex.

**NFIP Summary**

The following table summarizes the NFIP statistics for the City of Kendleton.

**Table 9-9. NFIP Summary**

Municipality	Policies in Force <sup>a</sup>	Number of Paid Claims <sup>a</sup>	Amount of Paid Claims <sup>a</sup>	Number of NFIP RL Properties <sup>b</sup>	Number of NFIP SRL Properties <sup>b</sup>
Kendleton (C)	12	4	\$61,312.99	0	0

Sources: a BureauNet 2022 (<https://nfipservices.floodsmart.gov/reports-flood-insurance-data>)  
 b 2018 Fort Bend County HMP





Notes: Due to a contractual agreement with FEMA, detailed information at the municipal level was not available to incorporate into the 2023 HMP Update. The information presented here was collected from data provided by the State of Texas and from FEMA's HUDEX Report.

\*Number of RL and SRL properties provided by the State of Texas

\*\*Total policies in force and paid claims collected from FEMA's OpenFEMA Dataset: FIMA NFIP Redacted Claims

RL Repetitive Loss

SRL Severe Repetitive Loss

### Flood Vulnerability Summary

The following table provides a summary of the NFIP program in the City of Kendleton.

Table 9-10. NFIP Summary

NFIP Topic	Comments
<b>Flood Vulnerability Summary</b>	
Describe areas prone to flooding in your jurisdiction. <ul style="list-style-type: none"> <li>Do you maintain a list of properties that have been damaged by flooding?</li> </ul>	San Bernard River Park Subdivision (Willie Melton Blvd.), 1 <sup>st</sup> Street, 2 <sup>nd</sup> Street, 3 <sup>rd</sup> Street, Lawson Street, Crawford Street, Lum Road flood quickly.
<ul style="list-style-type: none"> <li>Do you maintain a list of property owners interested in flood mitigation?</li> <li>How many homeowners and/or business owners are interested in mitigation (elevation or acquisition)?</li> </ul>	A list is not maintained but can be easily created. There are some homes that have suffered flood damage that have not been repaired, and the homeowners still reside in them.
Are any RiskMAP projects currently underway in your jurisdiction? <ul style="list-style-type: none"> <li>If so, state what projects are underway.</li> </ul>	No
<ul style="list-style-type: none"> <li>How do you make Substantial Damage determinations?</li> <li>How many were declared for recent flood events in your jurisdiction?</li> </ul>	One home to our knowledge has substantial damage; we are unsure of how many homes were declared in our jurisdiction.
How many properties have been mitigated (elevation or acquisition) in your jurisdiction? <ul style="list-style-type: none"> <li>If there are mitigated properties, how were the projects funded?</li> </ul>	Unsure
Do your flood hazard maps adequately address the flood risk within your jurisdiction? <ul style="list-style-type: none"> <li>If not, state why.</li> </ul>	No. Flood hazard maps only show the creek and the river areas that may or may not be a threat in 50-100 years. They do not reflect the smaller road floods that happen with heavy rainfall.
<b>NFIP Compliance</b>	
What local department is responsible for floodplain management?	Floodplain Administrator
Are any certified floodplain managers on staff in your jurisdiction?	No
Do you have access to resources to determine possible future flooding conditions from climate change?	Unsure, County may have access.
Does your floodplain management staff need any assistance or training to support its floodplain management program? <ul style="list-style-type: none"> <li>If so, what type of assistance/training is needed?</li> </ul>	Yes, we would need full support in establishing, educating, and initiating the program.
Provide an explanation of NFIP administration services you provide (e.g. permit review, GIS, education/outreach, inspections, engineering capability)	Permit Reviews, Inspections (Builders, elevation, electrical, plumbing, HVAC, culvert), we provide educational material through social media, website, and inserts in the utility bills.



NFIP Topic	Comments
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	It would be brought to the Mayor and City Inspector’s attention, then placed on the workshop agenda for City Council to discuss and determine qualifications.
What are the barriers to running an effective NFIP program in the community, if any?	Not sufficient staff or knowledge
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? <ul style="list-style-type: none"> <li>If so, state the violations.</li> </ul>	No
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	Shortly after Hurricane Harvey
What is the local law number or municipal code of your flood damage prevention ordinance? <ul style="list-style-type: none"> <li>What is the date that your flood damage prevention ordinance was last amended?</li> </ul>	At the time of this plan update, the Flood Damage Prevention Ordinance was not available for review.
Does your floodplain management program meet or exceed minimum requirements? <ul style="list-style-type: none"> <li>If exceeds, in what ways?</li> </ul>	Meets
Are there other local ordinances, plans, or programs (e.g., site plan review) that support floodplain management and meeting the NFIP requirements? For instance, does the planning board or zoning board consider efforts to reduce flood risk when reviewing variances such as height restrictions?	N/A
Does your community plan to join the CRS program, or is your community interested in improving your CRS classification?	No interest has been expressed, but educating the community is a high interest.

### 9.6.5 Growth/Development Trends

Understanding how past, current, and projected development patterns have or are likely to increase or decrease risk in hazard areas is a key component to appreciating a jurisdiction’s overall risk to its hazards of concern. The table below summarizes recent and expected future development trends, including major residential/commercial development and major infrastructure development.

**Table 9-11. Number of Building Permits for New Construction**

Type of Development	2018		2019		2020		2021		2022	
<b>Number of Building Permits for New Construction Issued Since the previous HMP* (total/within regulatory floodplain)</b>										
	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA
Single-Family	N/A	N/A	N/A	N/A	11	0	9	0	13	0
Multi-Family	N/A	N/A	N/A	N/A	0	0	2	0	1	0
Other (commercial, mixed-use, etc.)	N/A	N/A	N/A	N/A	0	0	2	0	0	0
Total Permits Issued	N/A	N/A	N/A	N/A	11	0	13	0	14	0

SFHA Special Flood Hazard Area (1% annual chance flood event)

\* Only location-specific hazard zones or vulnerabilities identified.

Note: Information for building permits from 2018 and 2019 were unavailable for this planning process.



**Table 9-12. Recent and Expected Future Development**

Property or Development Name	Type (e.g. Res., Comm.)	# of Units / Structures	Address and Parcel ID	Known Hazard Zone(s)	Description/Status of Development
<b>Recent Major Development from 2018 to Present</b>					
None Identified					
<b>Known or Anticipated Major Development in the Next Five (5) Years</b>					
None Identified					

### 9.6.6 Jurisdictional Risk Assessment

The hazard profiles in Volume 1, Section 4 (Risk Assessment) provide detailed information regarding each plan participant’s vulnerability to the identified hazards. Section 4.1 (Methodology and Tools) and Section 4.4 (Hazard Ranking) provide detailed summaries for the City of Kendleton’s risk assessment results and data used to determine the hazard ranking discussed later in this section.

Hazard area extent and location maps provided below illustrate the probable areas impacted within the jurisdiction based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps were generated only for those hazards that can be identified clearly using mapping techniques and technologies and for which the City of Kendleton has significant exposure. The maps also show the location of potential new development, where available.



Figure 9-1. City of Kendleton Hazard Area Extent and Location Map-Dam Inundation

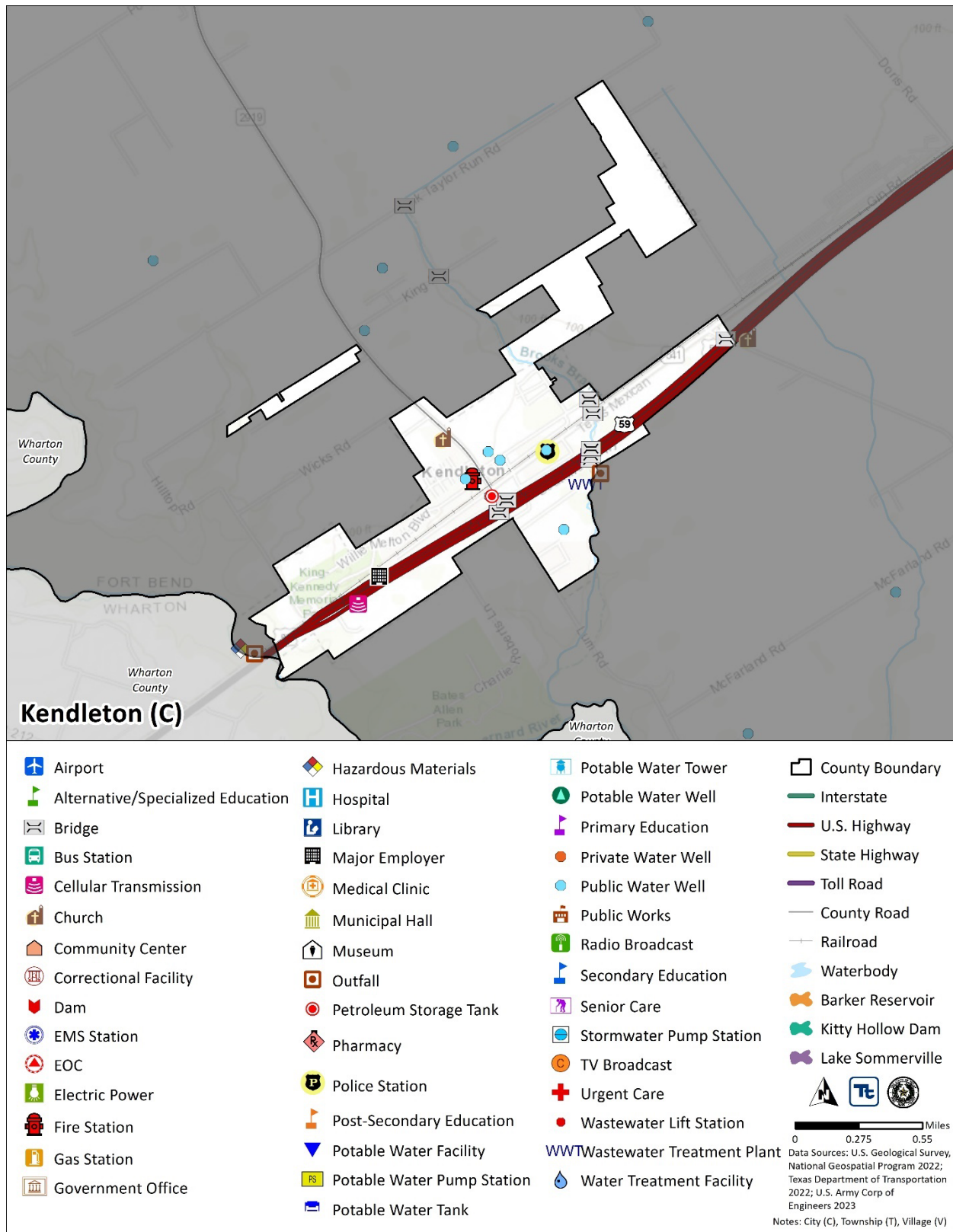
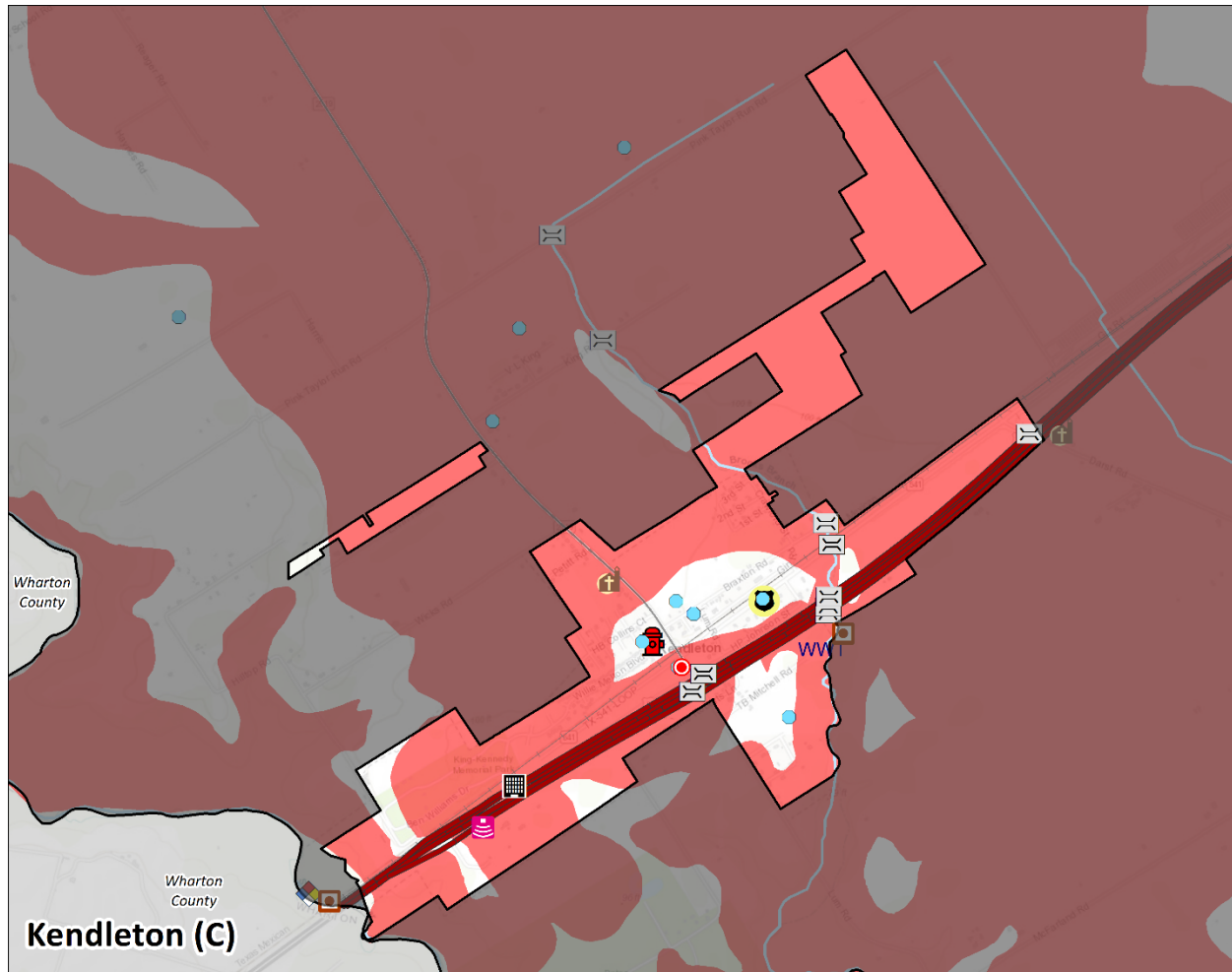




Figure 9-2. City of Kendleton Hazard Area Extent and Location Map - Expansive Soils



Airport	Hazardous Materials	Potable Water Tank	County Boundary
Alternative/Specialized Education	Hospital	Potable Water Tower	Interstate
Bridge	Library	Potable Water Well	U.S. Highway
Bus Station	Major Employer	Private Water Well	State Highway
Cellular Transmission	Medical Clinic	Public Water Well	Toll Road
Church	Municipal Hall	Public Works	County Road
Community Center	Museum	Radio Broadcast	Railroad
Correctional Facility	Outfall	Secondary Education	Waterbody
Dam	Petroleum Storage Tank	Senior Care	<b>Expansive Soils Hazard Area</b>
EMS Station	Pharmacy	Stormwater Pump Station	Linear Extensibility >6%
EOC	Police Station	TV Broadcast	North Arrow
Electric Power	Post-Secondary Education	Urgent Care	0 0.25 0.5 Miles
Fire Station	Potable Water Facility	Wastewater Lift Station	Data Sources: U.S. Geological Survey, National Geospatial Program 2022; Texas Department of Transportation 2022; U.S. Department of Agriculture, Natural Resources Conservation Service 2022
Gas Station	Potable Water Pump Station	Water Treatment Facility	Notes: City (C), Township (T), Village (V)
Government Office			



Figure 9-3. City of Kendleton Hazard Area Extent and Location Map-Flood

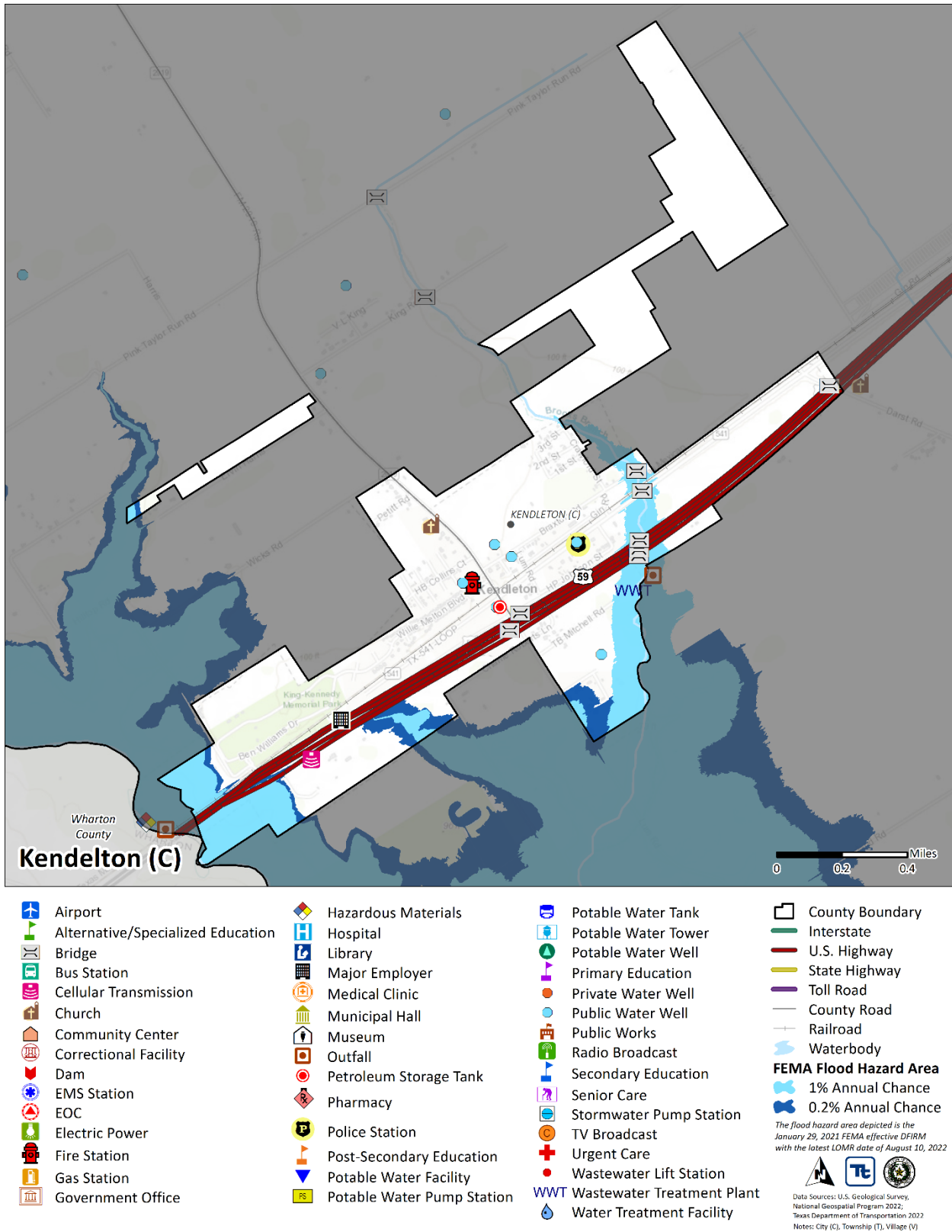




Figure 9-4. City of Kendleton Hazard Area Extent and Location Map-Inland Erosion

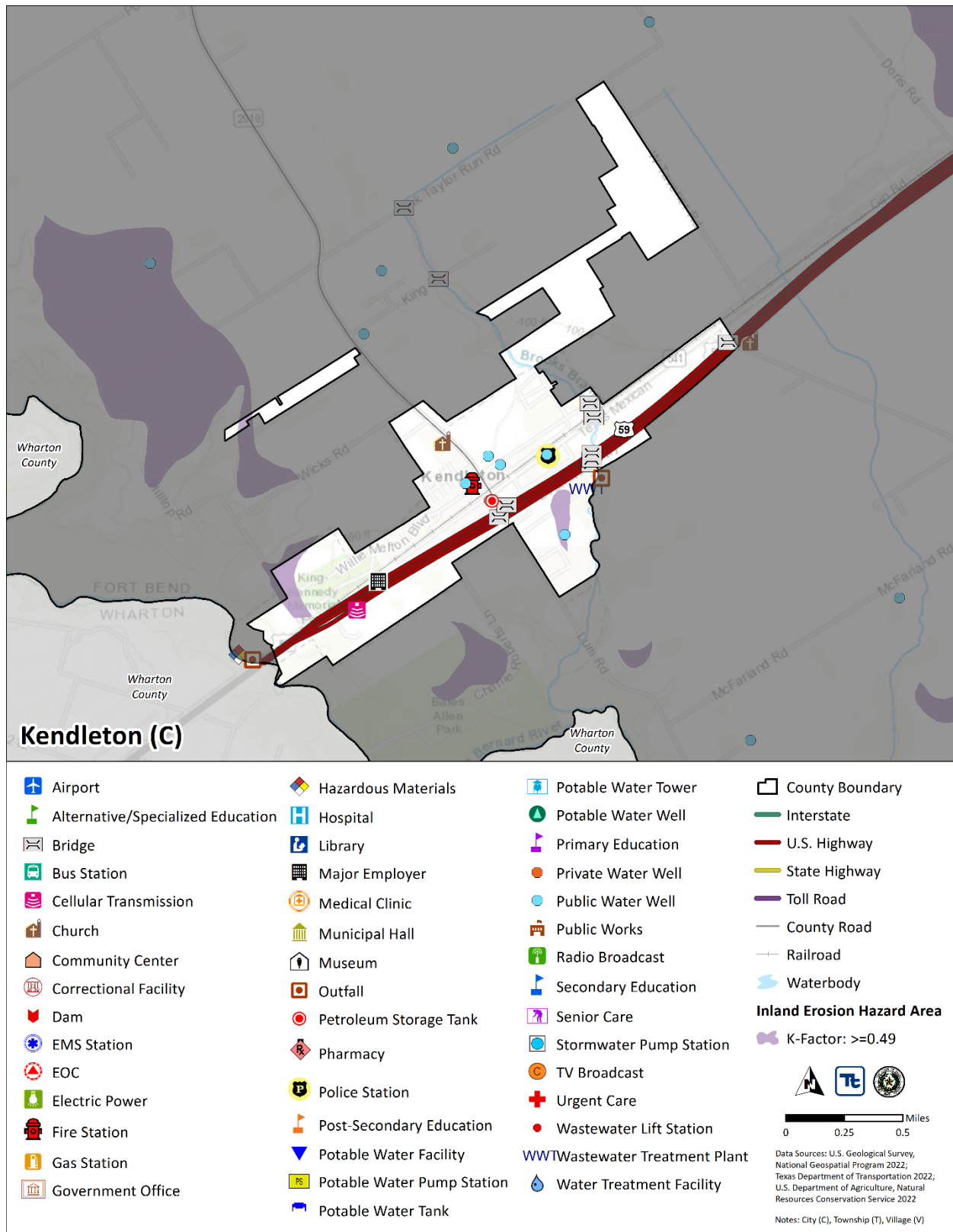
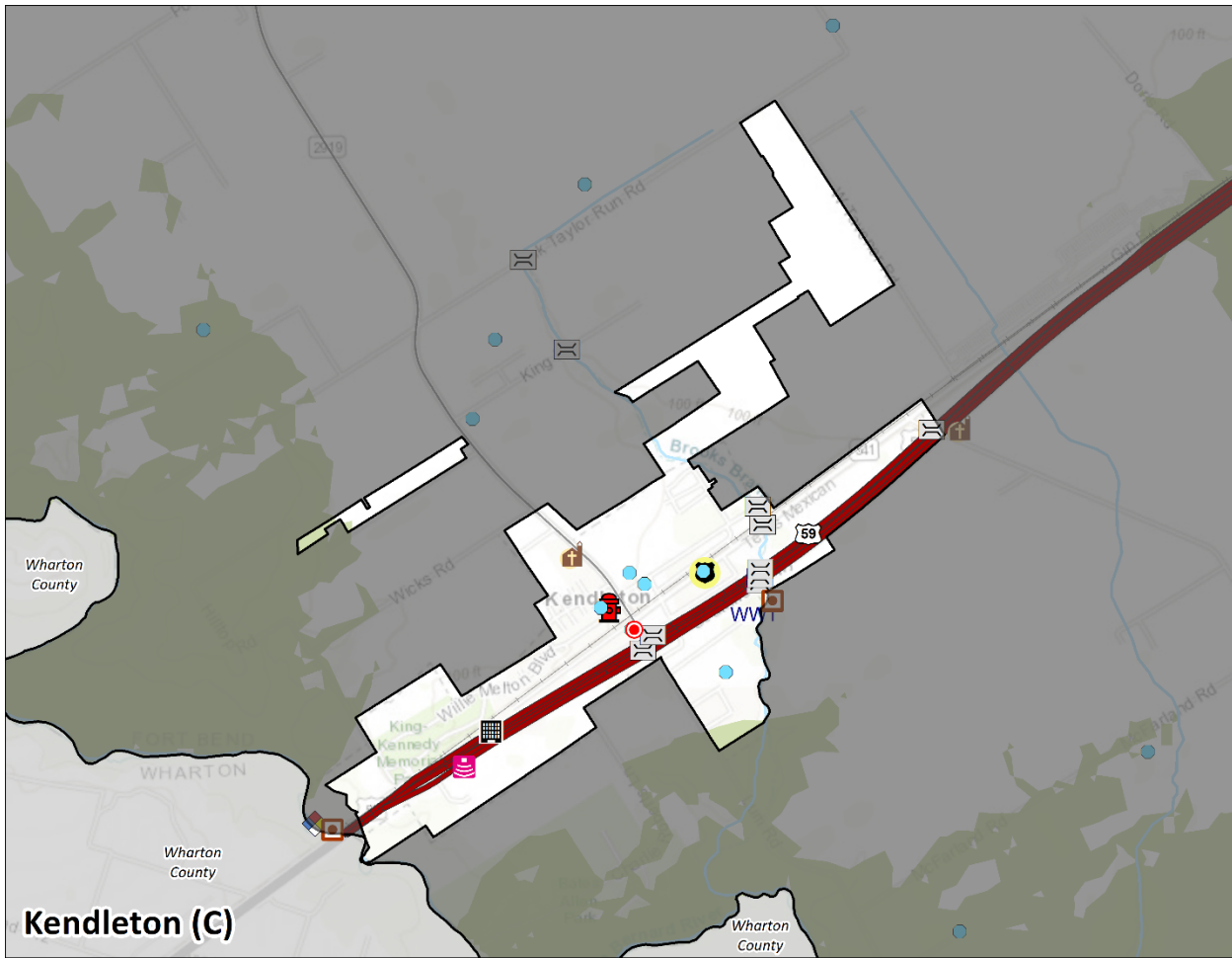




Figure 9-5. City of Kendleton Hazard Area Extent and Location Map-Wildfire



Kendleton (C)

- |                                   |                            |                         |                               |
|-----------------------------------|----------------------------|-------------------------|-------------------------------|
| Airport                           | Hazardous Materials        | Potable Water Tower     | County Boundary               |
| Alternative/Specialized Education | Hospital                   | Potable Water Well      | Interstate                    |
| Bridge                            | Library                    | Primary Education       | U.S. Highway                  |
| Bus Station                       | Major Employer             | Private Water Well      | State Highway                 |
| Cellular Transmission             | Medical Clinic             | Public Water Well       | Toll Road                     |
| Church                            | Municipal Hall             | Public Works            | County Road                   |
| Community Center                  | Museum                     | Radio Broadcast         | Railroad                      |
| Correctional Facility             | Outfall                    | Secondary Education     | Waterbody                     |
| Dam                               | Petroleum Storage Tank     | Senior Care             | <b>Wildfire Hazard Area</b>   |
| EMS Station                       | Pharmacy                   | Stormwater Pump Station | Low Threat                    |
| EOC                               | Police Station             | TV Broadcast            | Moderate Threat               |
| Electric Power                    | Post-Secondary Education   | Urgent Care             | WWTWastewater Treatment Plant |
| Fire Station                      | Potable Water Facility     | Wastewater Lift Station | Water Treatment Facility      |
| Gas Station                       | Potable Water Pump Station |                         |                               |
| Government Office                 | Potable Water Tank         |                         |                               |

0 0.25 0.5 Miles  
 Data Sources: U.S. Geological Survey, National Geospatial Program 2022, Texas Department of Transportation 2022, Texas A&M Forest Service 2022  
 Notes: City (C), Township (T), Village (V)







**Hazard Event History**

Fort Bend County has a history of natural and non-natural hazard events, as detailed in Volume I, Section 4 (Risk Assessment). A summary of historical events is provided in each of the hazard profiles and includes a chronology of events that have affected the County and its municipalities.

The City of Kendleton’s history of federally declared (as presented by FEMA) and significant hazard events [as presented in NOAA-National Centers for Environmental Information (NCEI)] is consistent with that of the County. The table below provides details regarding municipal-specific loss and damages the City of Kendleton experienced during hazard events since the last hazard mitigation plan update. Information provided in the table below is based on reference material or local sources.

**Table 9-13. Hazard Event History**

Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Municipal Summary of Damages and Losses
January 20, 2020 – continuing	EM-3458 – COVID-19; DR-4485 – COVID-19 Pandemic	Yes	COVID-19 pandemic	Loss of City staff, loss of income for most staff, multiple City Hall shut-downs due to illness.
July 25-31, 2020	EM-3530 – Hurricane Hanna	Yes	Hurricane-force winds resulted in significant number of downed trees and utility lines.	No damages reported at the City level.
August 23-27, 2020	EM-3540 – Tropical Storms Marco and Laura	Yes	Fort Bend County activated their emergency operations center as fringe impacts of Tropical Storms Marco and Laura impacted the County.	No damages reported at the City level.
September 12-18, 2021	EM-3572 Hurricane Nicholas	No	Hurricane Nicholas produced several hours of tropical storm-force sustained winds and gusts. There were numerous power outages and minor to moderate damage to some structures and roofs. Trees down in areas.	No damages reported at the City level.
February 11-21, 2021	DR-4586; EM 3554 – Severe Winter Storms	Yes	Winter Storm Uri distributed a record amount of snow throughout Texas. Snow, ice, and ultra-low temperatures caused widespread road closures.	Water Plant, Water Tower, main water lines damaged, loss of water and electricity for more than 4 days.

Source: FEMA 2023; NOAA 2023

**Hazard Ranking and Vulnerabilities**

The hazard profiles in Volume 1, Section 4 (Risk Assessment) have detailed information regarding each plan participant’s vulnerability to the identified hazards. The following summarizes the City of Kendleton’s risk assessment results and data used to determine the hazard ranking.

**Hazard Ranking**

This section provides the community-specific identification of the primary hazard concerns based on identified problems, impacts, and the results of the risk assessment as presented in Volume 1, Section 4 (Risk Assessment). The ranking process involves an assessment of the likelihood of occurrence for each hazard; the potential impacts of the hazard on people, property, and the economy; and community capabilities to address the hazard and changing future climate conditions. Mitigation action development uses the inputs from the evaluation to target those hazards with highest level of concern.





As discussed in Volume 1, Section 4.4 (Hazard Ranking), each participating jurisdiction has differing degrees of risk exposure and vulnerability compared with the County as a whole. Therefore, each municipality ranked the degree of risk to each hazard as it pertains to their community. The table below summarizes the hazard risk/vulnerability rankings of potential natural hazards for the City of Kendleton. The City of Kendleton reviewed the County hazard risk/vulnerability risk ranking table and individual results to reflect the relative risk of the hazards of concern to the community.

The City of Kendleton agreed with all calculated risk rankings.

**Table 9-14. Hazard Ranking Input**

Hazard	Rankings
Dam/Levee Failure	Medium
Disease Outbreak	Low
Drought	Medium
Extreme Temperature	Medium
Flood	Low
Geologic Hazards	High
Hurricane/Tropical Storm	Medium
Severe Weather	High
Tornado	Medium
Wildfire	Low
Winter Weather	Low

### Critical Facilities

The table below identifies the number of critical facilities and community lifelines in the community located in hazard areas. The community reviewed the list of facilities and lifelines to determine appropriate mitigation measures for the facilities, where appropriate. Refer to Section 4.3 (Hazard Profiles) for details on the risk assessment and the facilities and lifelines exposed to each hazard of concern.



**Table 9-15. Potential Flood Losses to Critical Facilities**

Jurisdiction	1-Percent Annual Chance Flood Event Hazard Area		Wildfire Hazard Area – Moderate Risk		Inland Erosion (K-Factor: >= 0.49) Hazard Area		Expansive Soils (Linear Extensibility >6%) Hazard Area		Dam Inundation Hazard Area - Barker Reservoir Dam Inundation Area		Dam Inundation Hazard Area - Lake Somerville Dam Inundation Area		Dam Inundation Hazard Area - Kitty Hollow Dam Inundation Area	
	Critical Facilities	Lifelines	Critical Facilities	Lifelines	Critical Facilities	Lifelines	Critical Facilities	Lifelines	Critical Facilities	Lifelines	Critical Facilities	Lifelines	Critical Facilities	Lifelines
Kendleton (C)	6	6	0	0	1	1	14	12	0	0	0	0	0	0

Source: Fort Bend County; Hazus v5.1; FEMA 2022; Fort Bend Drainage District 2023



### Identified Issues

After review of the City of Kendleton’s hazard event history, hazard rankings, jurisdiction-specific vulnerabilities, hazard area extent and location, and current capabilities, the City of Kendleton identified the following vulnerabilities within their community:

- There are issues with flooding near parts of the Brazos River that are affecting nearby properties and roads.\*
- Harlem/90 area. Most of that area appears to be floodplain, and development seems to be happening without regard to surrounding areas. This seems like it will put stress on existing upstream drainage that is not designed for such a significant change.
- The City’s Subdivision Ordinance is outdated and does not provide any input on hazard mitigation information. No board has been elected in ten years in order to update the ordinance.
- The City does not have a hazard warning system in place that helps protect and warn residents against incoming hazard events.
- The City does not maintain a list of property owners that are interested in flood mitigation.
- The following critical facilities are located in the special flood hazard area:
  - City of Kendleton WWTP
  - Brooks Branch

*\*This issue was identified as a specific area of concern based on resident response to the Fort Bend County Hazard Mitigation public survey.*

### 9.6.7 Mitigation Strategy and Prioritization

This section discusses past mitigation actions and status, describes proposed hazard mitigation initiatives, and prioritizes actions to address over the next five years.

#### Past Mitigation Initiative Status

The following table indicates progress on the community’s mitigation strategy identified in the 2018 HMP. Actions that are in progress are carried forward and combined with new actions as part of this 2023 HMP update and are included in the tables with prioritization. Previous actions that are now ongoing programs and capabilities are indicated as such and previously presented in the Capability Assessment earlier in this annex.



Table 9-16. Status of Previous Mitigation Actions

Project	Responsible Party	What is the status? (e.g., In Progress, No Progress, Ongoing Capability, or Completed) If in progress or completed, please describe the funding source, cost, and who is implementing.	If you did not complete the action, should the action be included in the 2023 HMP (i.e., there is still a need, this is still a priority)?		
			Yes/No	If Yes, please describe the original problem (i.e., hazard, location, historic losses)	If Yes, identify the responsible department/person to implement the project.
Feasibility Study	City of Kendleton FBC Road and Bridge FBC Engineering	No Progress	No	-	-
Crawford Outlet Right-of-Way	City of Kendleton FBC Road and Bridge FBC Engineering	No Progress	No	-	-
Culvert Installation	City of Kendleton FBC Road and Bridge FBC Engineering	No Progress	No	-	-
Reinforcement of Critical Facilities	City of Kendleton City Hall	No Progress	No	-	-
Promote Flood Insurance	City of Kendleton City Hall	No Progress	No	-	-
Increase Public Awareness of Hazard Mitigation	City of Kendleton City Hall	No Progress	No	-	-
Evacuation	City of Kendleton Fire Dept.	No Progress	No	-	-
Wildfire Hazard Areas	City of Kendleton Fire Dept.	No Progress	No	-	-
Develop a Drought Contingency Plan	City of Kendleton City Hall	No Progress	No	-	-
Public Information Campaigns	City of Kendleton City Hall	No Progress	No	-	-
Evaluate Excess Heat Risks	City of Kendleton Fire Dept	No Progress	No	-	-
Address High Risk Populations (Excessive Heat)	City of Kendleton Fire Dept	No Progress	No	-	-
Review Plans and Resources to Address Risk Posed by Snow and Ice Hazards During Winter Storms	City of Kendleton Fire Dept	No Progress	No	-	-
Various Mitigation Actions to Reduce Wildfire Risk	City of Kendleton Fire Dept.	No Progress	No	-	-
Upgrades to At-Risk Structures	City of Kendleton City Hall	No Progress	No	-	-
Structural/Engineering Study	City of Kendleton City Hall	No Progress	No	-	-
Household Mitigation Class for Homeowners	City of Kendleton City Hall	No Progress	No	-	-



**Additional Mitigation Efforts**

In addition to the mitigation initiatives completed in the table above, the City of Kendleton identified the following mitigation efforts completed since the last HMP:

- None identified

Since the adoption of the County’s first HMP, the City of Kendleton has made significant mitigation progress in the following areas:

- None identified

**Proposed Hazard Mitigation Initiatives for the HMP Update**

Fort Bend County participated in a mitigation action workshop in March 2023 and was provided the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards (January 2013) and FEMA Mitigation Assistance Resource Guide for Texas (2020).

The table below indicates the range of proposed mitigation action categories. Both the four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table to further demonstrate the wide range of activities and mitigation measures selected.

**Table 9-17. Analysis of Mitigation Actions by Hazard and Category**

Hazard	FEMA				CRS					
	LPR	SIP	NSP	EAP	PR	PP	PI	NR	SP	ES
Dam/Levee Failure	X	-	-	X	X	-	-	-	-	X
Disease Outbreak	X	-	-	X	X	-	-	-	-	X
Drought	X	-	-	X	X	-	-	-	-	X
Extreme Temperature	X	-	-	X	X	-	-	-	-	X
Flood	X	X	-	X	X	X	-	-	X	X
Geologic Hazards	X	-	-	X	X	-	-	-	-	X
Hurricane/Tropical Storm	X	-	-	X	X	-	-	-	-	X
Severe Weather	X	-	-	X	X	X	-	-	-	X
Tornado	X	-	-	X	X	-	-	-	-	X
Wildfire	X	-	-	X	X	-	-	-	-	X
Winter Weather	X	-	-	X	X	X	-	-	-	X

Note: Mitigation categories are described below the Mitigation Initiatives.



The table below summarizes the specific mitigation initiatives the City of Kendleton would like to pursue in the future to reduce the effects of hazards. The initiatives are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities.

**Table 9-18. Proposed Hazard Mitigation Initiatives**

Project Number	Mitigation Initiative Name	Description of Problem and Solution	Hazard(s) to be Mitigated	Goals Met	Estimated Timeline	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Costs	Priority	Mitigation Category	CRS Category
2023-City of Kendleton-001	Brazos River Levees	<b>Problem:</b> There are issues with flooding near parts of the Brazos River that are affecting nearby properties and roads.  <b>Solution:</b> The levees near the Brazos River need to be maintained and evaluated by an engineer to see what mitigation initiative would be the most effective and cost-efficient to limit flooding.	Flood	2, 3	3 Years	City Engineer	BRIC, HMGP, FMA, City	The Brazos River will not flood as much, and the properties nearby will not be flooded as often.	Engineer Study: \$2,000	High	SIP	SP
2023-City of Kendleton-002	Update Subdivision Ordinance	<b>Problem:</b> The City's Subdivision Ordinance is outdated and does not provide any input on hazard mitigation information. No board has been elected in ten years in order to update the ordinance.  <b>Solution:</b> The City will create a board to update the Subdivision Ordinance and will integrate the hazard mitigation plan.	Dam/Levee Failure, Disease Outbreak, Drought, Extreme Temperature, Flood, Geologic Hazards, Hurricane/Tropical Storm, Severe Weather, Tornado, Wildfire, Winter Weather	4	1 Year	City Administration	City Budget	The City will operate under an updated subdivision ordinance.	\$2,000	High	LPR	PR
2023-City of Kendleton-003	Warning systems for hazard events	<b>Problem:</b> The City does not have a hazard warning system in place that helps protect and warn residents against incoming hazard events.	Dam/Levee Failure, Disease Outbreak, Drought, Extreme Temperature, Flood,	2	Less than 5 years	City Administration	BRIC, HMGP, FMA	Residents will have increased warning time before a hazard event	\$50,000	High	EAP	ES



Project Number	Mitigation Initiative Name	Description of Problem and Solution	Hazard(s) to be Mitigated	Goals Met	Estimated Timeline	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Costs	Priority	Mitigation Category	CRS Category
		<b>Solution:</b> The City will work to acquire necessary funding to install a hazard warning system that operates using outdoor sirens and notifications on cell phones to protect their residents.	Geologic Hazards, Hurricane/Tropical Storm, Severe Weather, Tornado, Wildfire, Winter Weather					affects the City.				
2023-City of Kendleton-004	Create a list of property owners interested in flood mitigation	<b>Problem:</b> The City does not maintain a list of property owners that are interested in flood mitigation.  <b>Solution:</b> The City will conduct outreach to property owners that have properties located in the floodplain and create a list of individuals interested in flood mitigation.	Flood, Severe Weather, Winter Weather	1, 2	1 Year	City Administration	City Budget	The City will be able to help property owners mitigate the risk of flood.	\$500	High	EAP	PP, PR
2023-City of Kendleton-005	Critical Facilities Flood Protection	<b>Problem:</b> The following critical facilities are located in the special flood hazard area: <ul style="list-style-type: none"> <li>City of Kendleton WWTP</li> <li>Brooks Branch</li> </ul> <b>Solution:</b> The City will work with critical facility owners to determine what additional floodproofing measures are needed at these facilities. Options include: <ul style="list-style-type: none"> <li>Elevation of facility</li> <li>Floodproofing of facility</li> <li>Mobile flood barriers</li> </ul> Once the most cost-effective option is identified, the City will help the critical facility owners carry out the option.	Flood	2	Less than 5 years	City Engineer	HMGP and PDM, BRIC, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, City Budget	Ensures that facilities can carry out continuity of operations.	TBD by feasibility assessment	High	SIP	SP





Project Number	Mitigation Initiative Name	Description of Problem and Solution	Hazard(s) to be Mitigated	Goals Met	Estimated Timeline	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Costs	Priority	Mitigation Category	CRS Category
2023-City of Kendleton-006	Flood Damage Prevention Ordinance	<p><b>Problem:</b> At the time of this plan update, the Flood Damage Prevention Ordinance was not available for review.</p> <p><b>Solution:</b> Ensure the Flood Damage Prevention Ordinance is available online to view and meets the minimum NFIP requirements.</p>	Flood	4	1 Year	City Administration	City	The Flood Damage Prevention Ordinance will be available online for review and the City will be compliant with NFIP requirements.	<\$1,000	High	LPR	PR

\*Mitigation initiative is related to a critical facility and/or community lifeline

Notes: Not all acronyms and abbreviations defined below are included in the table.

**Acronyms and Abbreviations:**

CRS Community Rating System  
 FEMA Federal Emergency Management Agency  
 HMA Hazard Mitigation Assistance  
 N/A Not applicable  
 NFIP National Flood Insurance Program

**Potential FEMA HMA Funding Sources:**

FMA Flood Mitigation Assistance Grant Program  
 HMGP Hazard Mitigation Grant Program  
 BRIC Building Resilient Infrastructure and Communities Program

**Timeline:**

The time required for completion of the project upon implementation.

**Cost:**

The estimated cost for implementation.

**Benefits:**

A description of the estimated benefits, either quantitative and/or qualitative.

**Mitigation Category:**

- Local Plans and Regulations (LPR)—These actions include government authorities, policies, or codes that influence the way land and buildings are being developed and built.
- Structure and Infrastructure Project (SIP)—These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures, as well as critical facilities and infrastructure. This type of action also involves projects to construct manmade structures to reduce the impact of hazards.
- Natural Systems Protection (NSP)—These are actions that minimize damage and losses, and also preserve or restore the functions of natural systems.
- Education and Awareness Programs (EAP)—These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities.

**CRS Category:**

- Preventative Measures (PR)—Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.
- Property Protection (PP)—These actions include public activities to reduce hazard losses or actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of the structures from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.
- Public Information (PI)—Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and educational programs for school-age children and adults.
- Natural Resource Protection (NR)—Actions that minimize hazard loss and also preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.



- *Structural Flood Control Projects (SP)*—Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.
- *Emergency Services (ES)*—Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities.

The prioritization criteria provided in Volume 1, Section 6 (Mitigation Strategy) identify 14 evaluation/prioritization criteria to complete the prioritization of mitigation initiatives. For each new mitigation action, a numeric rank is assigned (-1, 0, or 1) for each of the 14 evaluation criteria to assist with prioritizing actions as High, Medium, or Low. The table below provides a summary of the prioritization of all proposed mitigation initiatives for the HMP update.

**Table 9-19. Summary of Prioritization of Actions**

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
2023-City of Kendleton-001	Brazos River Levees	1	1	1	1	1	1	0	1	1	1	0	1	1	0	11	High
2023-City of Kendleton-002	Update Subdivision Ordinance	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14	High
2023-City of Kendleton-003	Warning systems for Hazard Events	1	1	1	1	1	1	0	1	1	1	1	1	1	0	12	High
2023-City of Kendleton-004	Create a list of property owners interested in flood mitigation	1	1	1	1	1	1	1	1	1	1	0	1	1	0	12	High
2023-City of Kendleton-005	Critical Facilities Flood Protection	1	1	1	1	1	1	0	1	1	1	0	0	1	1	11	High
2023-City of Kendleton-006	Flood Damage Prevention Ordinance	0	1	1	1	1	1	1	0	1	1	0	1	0	0	9	High

Note: Volume 1, Section 6 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-4), Medium (5-8), High (9-14).