Medina County Hazard Mitigation Action Plan

2025

"Under the Federal Disaster Mitigation Act of 2000 (DMA 2000 or "the Act"), Medina County (County) is required to have a Federal Emergency Management Agency ("FEMA") - approved Local Hazard Mitigation Plan ("the Plan") in order to be eligible for certain pre- and post-disaster mitigation funds. Adoption of this Plan by the County and approval by FEMA will serve the dual objectives of providing direction and guidance on implementing hazard mitigation in the County, and qualify the County to obtain federal assistance for hazard mitigation. Solely to help achieve these objectives, the Plan attempts to systematically identify and address hazards that can affect the County. Nothing in this Plan is intended to be an admission, either expressed or implied, by or on behalf of the County, of any County obligation, responsibility, duty, fault or liability for any particular hazard or hazardous condition, and no such County obligation, responsibility, duty, fault or liability should be inferred or implied from the Plan, except where expressly stated."

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1. Introduction and Background

1) Participating Jurisdictions

The 2025 Medina County Hazard Mitigation Action Plan (HMAP) is an update of the County's most recent plan that expired in December 2025. The 2025 Plan update includes six participating jurisdictions: Medina County, the City of Castroville, the City of Devine, the City of Hondo, the City of La Coste, and the City of Natalia.

2) Hazards to be Addressed

The mitigation planning regulation of the Disaster Mitigation Act[1] requires that mitigation plans be reviewed and updated every five years to maintain eligibility for mitigation grant funding. As part of this plan, Medina County will develop a schedule to ensure that its hazard mitigation plan is regularly updated.

The 2025 Medina County Hazard Mitigation Action Plan update will address the following natural hazards listed below in Table 1.

[1] 44 CFR §201.6(d)(3)

Table 1: List of Hazards Addressed

Hazard	Jurisdiction					
	Medina County	City of Castroville	City of Devine	City of Hondo	City of La Coste	City of Natalia
Flooding	X	X	X	X	X	X
Hurricane/ Tropical Storms						
Wildfire	X	X	X	X	X	X
Tornados	X	X	X	X	X	X
Drought	X	X	X	X	X	X
Extreme Cold	X	X	X	X	X	X
Extreme Heat	X	X	X	X	X	X
Hailstorm	X	X	X	X	X	X
Winter Storms	X	X	X	X	X	X
Windstorms	X	X	X	X	X	X
Lightning	X	X	X	X	X	X
Additional Optional Hazards						
Coastal Erosion						
Riverine Erosion	X	X	X	X	X	X
Land Subsidence/ Sinkhole						
Earthquakes	X	X	X	X	X	X
Expansive Soils	X	X	X	X	X	X
Dam Failure	X	X			X	X

A) Omission Statements

Medina County and the participating jurisdictions will not be addressing the following hazards: Hurricane/Tropical Storms, Land Subsidence. The history of impacts for all the omitted hazards have been negligible (or non-existent), therefore the County and participating jurisdictions expect that future impacts will be negligible as well, nor do the County and participating jurisdictions anticipate applying for grant funding to address any of them.

The Cities of Devine and Hondo will not be profiling dam failure as there are no high hazard dams or dams of concern near their boundaries that could threaten inundation.

2. Planning Process

The Medina County Hazard Mitigation Action Plan (HMAP) is a multi-jurisdiction plan. Representatives of the local planning team were selected by each jurisdiction. Planning team members represented the following offices and departments:

Table 2: Local Planning Team Representatives

Title	Jurisdiction
Emergency Management Coordinator	Medina County
Grant Administrator	
City Secretary	City of Castroville
City Administrator	City of Devine
City Manager	City of Hondo
City Administrator	City of La Coste
City Secretary	City of Natalia

Once the planning team was established, members developed a schedule with specific goals and proposed meeting dates over the planning period.

Hazard mitigation planning team (HMPT) members contributed to the following activities throughout the planning process:

1. Providing technical assistance and necessary data to the HMPT.
2. Scheduling, coordinating, and facilitating community meetings.
3. Providing necessary materials for public planning meetings.
4. Collecting and analyzing data.
5. Developing mitigation goals and implementation strategies.
6. Preparing the first draft of the plan and providing technical writing assistance for review, editing, and formatting.

Each member of the HMPT participated in the following activities associated with development of the plan:

1. Identifying, contacting, coordinating, and implementing input from stakeholders.
2. Attending, conferencing in, or providing meeting support and information for regular HMPT meetings.
3. Identifying hazards and estimating potential losses from future hazard events.

4. Developing and prioritizing mitigation actions to address identified risks.
5. Coordinating public meetings to develop the plan.
6. Identifying community resources available to support planning effort.
7. Submitting proposed plan to all appropriate departments for review and comment and working with the County to incorporate the resulting comments into the proposed plan.

Table 3: Plan Schedule

TIMELINE												
Planning Tasks	**2025**											**Completed**
	Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	
Organize Resources and Identify Planning Team												
Create Outreach Strategy												
Review Community Capabilities												
Conduct Risk Assessment												
Identify Mitigation Goals and Actions												
Develop Action Plan for Implementation												
Identify Plan Maintenance Procedures												
Review Plan Draft												
Submit Plan to State and FEMA												
Adopt Plan												TBD
	MEETINGS / OUTREACH											
Planning Team Meetings	1/30/25		3/20/25									
Public Outreach												
Stakeholder Outreach												

1) Existing Plans, Reports, Ordinances, and Technical Information Sources

Each planning team member worked to collect and provide the input and information necessary to develop the hazard mitigation strategy. Research was coordinated and conducted by local planning team members. The local planning team reviewed the following documents during the planning process:

Table 4: Planning Team Data Sources

Data Source	Data Incorporation	Purpose
National Centers for Environmental Information (NCEI)	Hazard occurrences	Previous event occurrences, damage dollars, and mapping for all hazards
National Oceanic and Atmospheric Administration (NOAA)	Historic Weather Data	Previous event occurrences, damage dollars, and mapping for all hazards
Texas A&M Forest Service	Historical Fire Data	Previous even occurrences
Medina County Hazard Mitigation Plan, 2020-2025	Previous planning approach, hazards addressed, and mitigation actions	Previous planning team representatives, plan maintenance, hazard histories, and mitigation actions
State of Texas Hazard Mitigation Plan 2023 Update	Hazard Descriptions	Official descriptions of hazards and their potential impacts
Estimated Base Flood Elevation – Federal Emergency Management (FEMA)	Flood Zones maps	GIS mapping of flood zones and potential flooding risk areas
TCEQ Dam Safety Program	Dam information	Identity high-hazard or significant risk dams
Medina County Flood Damage Prevention Ordinance	Flood damage prevention requirements	Identifying building requirements and restrictions for structures in the floodplain
City of Castroville Flood Damage Prevention Ordinance	Flood damage prevention requirements	Identifying building requirements and restrictions for structures in the floodplain
City of Devine Flood Damage Prevention Ordinance	Flood damage prevention requirements	Identifying building requirements and restrictions for structures in the floodplain
City of Hondo Flood Damage Prevention Ordinance	Flood damage prevention requirements	Identifying building requirements and restrictions for structures in the floodplain

City of La Coste Flood Damage Prevention Ordinance	Flood damage prevention requirements	Identifying building requirements and restrictions for structures in the floodplain
City of Natalia Flood Damage Prevention Ordinance	Flood damage prevention requirements	Identifying building requirements and restrictions for structures in the floodplain

Additional information sources included: USDA Census of Agriculture, United States Geological Survey, Vaisala, and specific details about previous natural hazard events from planning team participants. Sources are noted throughout the document. Report titles and links to the most recently accessed websites hosting the related information are also noted, where appropriate.

Area stakeholders contacted to participate in the planning process included the following offices and departments within the participating jurisdictions and neighboring jurisdictions. In many cases of non-participation, the title listed is reflective of the office the planning team tried to contact.

Table 5: Local Stakeholders Contacted

Stakeholder	Title	Participated
Bandera County	Emergency Management Coordinator	Y
Bexar County	Emergency Management Coordinator	N
Atascosa County	Emergency Management Coordinator	N
Frio County	Emergency Management Coordinator	N
Uvalde County	Emergency Management Coordinator	N
Texas A&M AgriLife	County Extension Agent – Agriculture and Natural Resources	N
Texas A&M AgrilLife	County Extension Agent – Family and Community Health	N
Hondo Area Chamber of Commerce	Director	N

Area stakeholders were contacted by phone and email. In an effort to increase participation, each stakeholder was contacted at least twice. Local academia and businesses were contacted in order to reach a diverse group of stakeholders. These organizations focus on multiple community needs such as education, food, health and safety, and financial stability. Area stakeholders who chose to participate provided important supplemental input and information

that helped shape mitigation strategies for each hazard, in particular by making the planning team aware of actions neighboring communities were successful in implementing, and what actions they think should take priority. Drought, Flood, Hailstorms, Wildfire, Winter Storms, and Lightning. were of particular concern amongst respondents.

2) Project Meetings

The planning team met on two separate occasions. Additional communication was regularly carried out via email and over the phone.

The first planning team meeting was held virtually on January 30, 2025. During this meeting, the planning team decided which hazards needed to be addressed in the mitigation plan and which were not relevant. To make these decisions, a hazard handout was produced to show previous occurrences of each hazard, associated deaths and injuries, and total dollar damages. The team agreed to use the collected hazard data, as the foundation for its hazard risk assessment and ongoing research into hazard extent, impact, and vulnerability. At the end of the meeting, planning team members were tasked with compiling relevant data, including city ordinances; identifying critical facilities; identifying stakeholders; and completing a capability assessment.

The second planning team meeting was held virtually on March 20, 2025. To stay on schedule, the planning team needed to meet the following objectives: review and refine the critical facilities list, provide a status update on past mitigation actions, and review possible new mitigation actions and projects for each participant. The planning team discussed and identified new mitigation actions, discussed changes to the plan drafts, and agreed to work on completing all deliverables for the plan. Additional work was done over email in preparation for submitting the plan for official review in November 2025.

3) Public Input

Members of the public were invited to participate in two public comment periods to provide input and feedback during the planning process. The public comment periods were held virtually. The first public comment period took place in April 2025. A Microsoft Form survey was posted to the County website and Facebook page for a period of two weeks for members of the public to fill out. A newspaper ad was placed to announce to the public for the opportunity to provide input via online survey. In an effort to reach the widest audience possible, especially socially vulnerable populations, the County and participating jurisdictions actively announced the online survey through newspaper ads, on their own websites, social media, and through the County text message notification system. Stakeholders who support vulnerable populations were also provided with a link to the survey and encouraged to share it with their community. The planning team appreciated receiving responses to the survey which helped inform them when identifying and prioritizing new mitigation actions for this plan update. The survey received 2 anonymous responses.

The survey asked nine questions:

1. Where do you live?
2. Do you own or rent?
3. Medina County is looking at addressing the following hazards. Which hazards do you believe impact the County and/or participating cities the most? Please select all that apply (multiple choice answer).
4. Which of the above hazards have affected you directly within the past five years? Please select all that apply (multiple choice answer).
5. How have you been affected by the hazards selected above? (Open-ended question)
6. Have you taken any actions to reduce your risk to these hazards? If so, what actions have you taken? (Open-ended question)
7. Which of the following mitigation project types do you believe local government agencies should focus on to reduce disruptions of services and to strengthen the community? Please check all that apply (multiple choice answer).
8. What is the best means of communication for you? Please select all that apply (multiple choice answer).
9. Do you have any other thoughts or concerns relating to the Hazard Mitigation Plan? (Open-ended question).

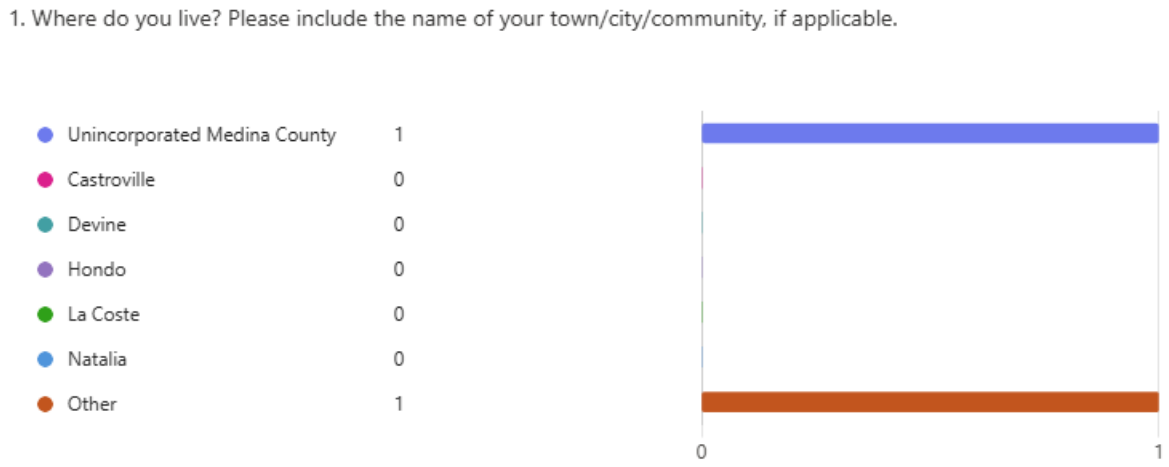

Figure 1: Survey Responses for Question 1

Figure 2: Survey Responses for Question 2

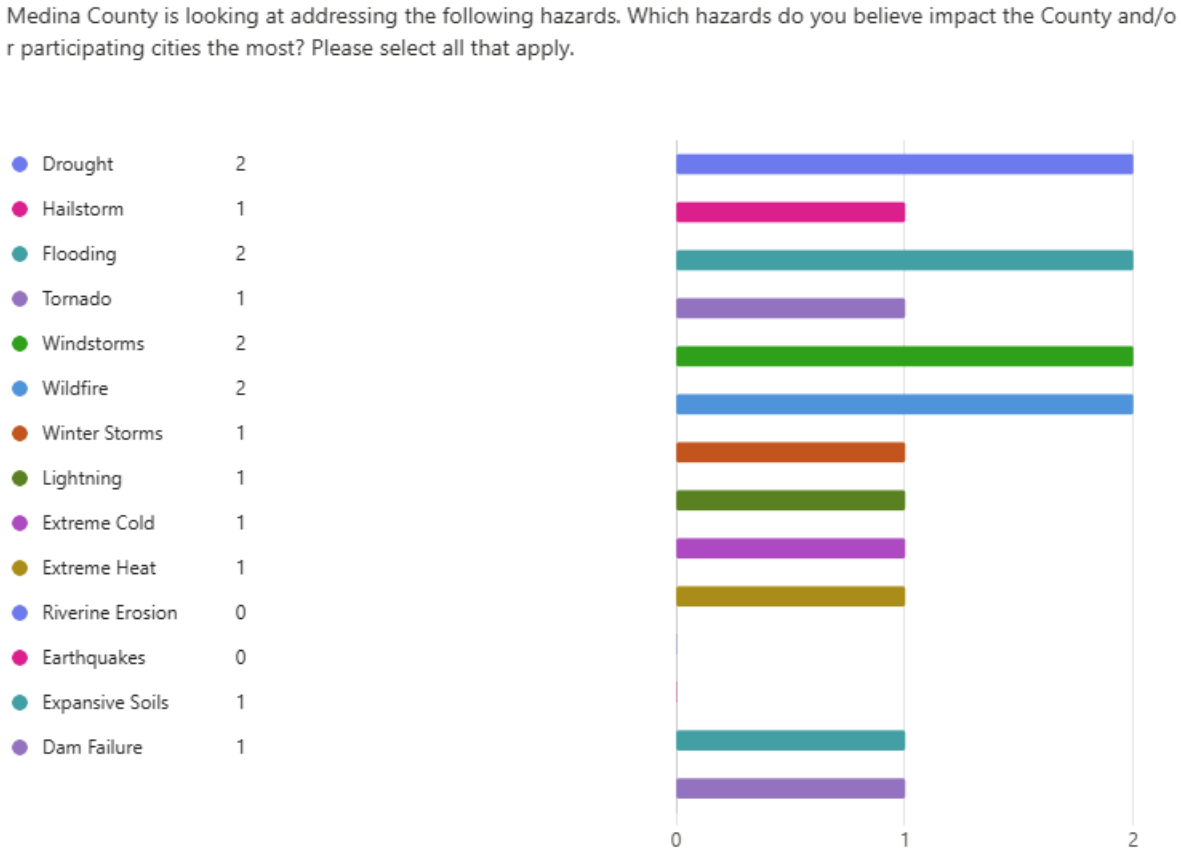

Figure 3: Survey Response for Question 3

The chart in Figure 3 above shows the breakdown of responses for survey question three. The answer choices were Drought, Hailstorm, Flooding, Tornados, Windstorms, Wildfire, Winter Storms, Lightning, Extreme Cold, Extreme Heat, Riverine Erosion, Expansive Soils, Earthquakes and Dam Failure. Drought, Flooding, Windstorms and Wildfire ranked the highest out of all the hazards addressed in the plan, with each choice getting 100% of the votes.

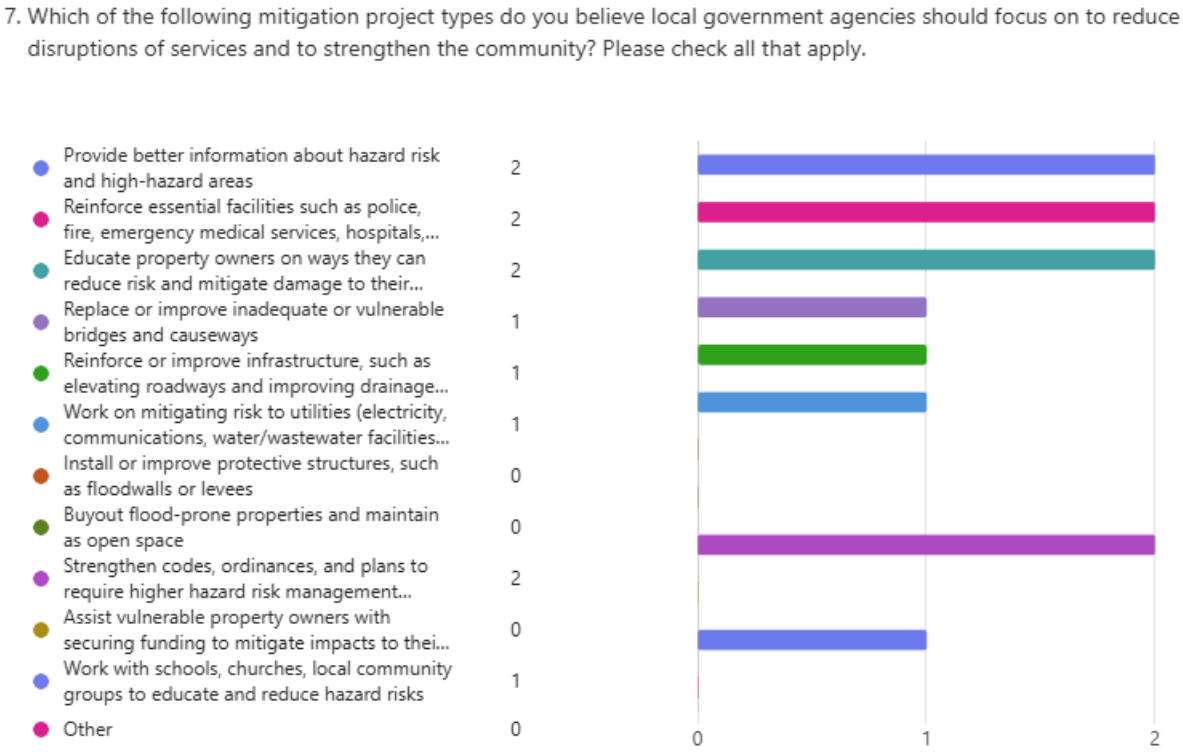

Figure 4: Survey Choices for Question 7

Figure 4 shows the choices for Question 7: Which of the following mitigation project types do you believe local government agencies should focus on to reduce disruptions of services and to strengthen the community? Please check all that apply. Respondents could choose from 11 answers such as "Provide better information about hazard risk and high-hazard areas," "Reinforce or improve infrastructure, such as elevating roadways and improving drainage systems," "Install or improve protective structures, such as floodwalls or levees," or input their own answer. The most popular answers included "Provide better information about hazard risks," "Reinforce essential facilities," "Educate property owners," and "Strengthen codes, ordinances, and plans."

The second public comment period took place in November 2025. A copy of the in-progress plan draft was posted to the County website for one weeks for the public to review and comment or provide suggestions. This public comment period was advertised in the newspaper and shared on social media.

4) Plan Maintenance

The hazard mitigation plan is not a static document. As conditions change and actions are implemented, the plan will need to be updated to reflect new and changing conditions in each jurisdiction.

The planning team has identified specific departments to oversee action implementation in each jurisdiction. The planning team has also identified potential funding sources and an implementation timeframe for each mitigation action. The expected timeframes will be an important component in determining whether actions are implemented efficiently. The departments or persons identified for each jurisdiction include but are not limited to:

Table 6: Maintenance Responsibility

Title	Jurisdiction
Emergency Management Coordinator	Medina County
Grant Administrator	
Mayor	Castroville
City Secretary	
City Administrator	Devine
City Manager	Hondo
City Administrator	La Coste
City Secretary	Natalia

Within one year of adoption of this plan, each department or agency will review and, as appropriate, integrate implementation of their respective mitigation actions with their existing internal plans and policies relating to capital improvements, land use, design and construction, and emergency management.

On a biannual basis, representatives from each jurisdiction serving as the planning team will evaluate progress on implementing the plan's mitigation actions. The planning team will review departmental / agency findings, public input, and future development plans to evaluate the effectiveness and appropriateness of the plan.

Considering changing funding sources, hazard vulnerability, and local mitigation priorities, the planning team will identify changes to plan goals and priorities for their respective jurisdictions, and they will report their findings to the rest of the planning team. It will be the planning team's responsibility to identify relevant reasons for delays or obstacles to completing the plan's mitigation actions, along with recommended strategies to overcome any deficiencies.

Any significant change to the plan will require the County and participating jurisdictions to provide opportunities for the public to make its views and concerns known. Medina County and the participating jurisdictions will provide notice to the public through announcements in the

local paper, fliers posted at City and County offices, and on the County's website and/or social media accounts.

5) Plan Monitoring

The Medina County Emergency Management Coordinator (EMC) will be responsible for the overall continued coordination and monitoring of the mitigation plan in its entirety, including but not limited to the planning process, risk assessment, strategy, and the actions assigned for each hazard. The agency or department identified above in Table 6 shall serve as the responsible party for each respective jurisdiction.

At a minimum, the mitigation plan will be reviewed by the EMC and planning team representatives from each jurisdiction quarterly, during budget workshops, and as other plans are being developed or revised including comprehensive plans, capital improvement project plans, and emergency plans.

Regularly monitoring the plan implementation process in each participating jurisdiction will ensure that every component of the plan gets reviewed for potential amendments.

After adoption of this plan, it will be posted to each participating jurisdiction's website or Facebook page, and a printed copy will be available for review in the Office of Emergency Management. The goal is to create the opportunity for constant and continued feedback from local officials, stakeholders, and the public.

6) Plan Evaluation

Proper evaluation will measure the progress and effectiveness of the mitigation actions identified in the plan. On a bi-annual basis the EMC along with the planning team representatives from each jurisdiction will use the following criteria, along with additional metrics as necessary, to assess the effectiveness of the plan in its entirety, including but not limited to the planning process, risk assessment, strategy, and the actions:

- Do the specified goals and objectives still address current and expected conditions?
- Has the nature, magnitude, and/or risk of any hazard changed?
- Have there been changes in land development that the plan needs to address?
- Are available resources suitable for implementing the plan?
- Is funding budgeted or available to successfully implement prioritized mitigation actions?
- Are there opportunities in the local budgeting process or local, state, and national grant funding cycles to increase funding to implement mitigation actions?

Other steps will include site visits to completed mitigation projects in each jurisdiction to measure and ensure their success. The planning team will evaluate the causes of the shortcoming in the event that a mitigation project fails to meet its goal. The planning team will

use their assessment to amend the project and related projects in other jurisdictions, allocate additional resources to achieve the desired outcome for the project and related projects in other jurisdictions, or replace the project and similar projects in other jurisdictions with better projects.

The EMC and planning team members will also work to implement any additional revisions required to ensure that the plan and their respective jurisdiction is in full compliance with federal regulations and state statutes.

The approved plan will be hosted on the County website to allow the public to view and provide feedback during the 5-year lifespan of the plan.

7) Plan Update

The plan is designed to address a five-year period. In accordance with 44CFR Section 201.6, it will be updated every five years to maintain compliance with State and Federal regulations. However, at least every two years from the date of approval, and quarterly on the fifth and final year of the plan, the EMC and planning team representatives from each participating jurisdiction will thoroughly review any significant changes in their respective jurisdictions that might impact the plan update.

During the update process, planning team representatives will do the following for their respective jurisdictions: collect data on recent occurrences of each natural hazard identified in the plan, record how each natural hazard impacted their jurisdiction during the preceding years, determine whether or not implemented mitigation actions produced the desired outcomes in their jurisdiction, and determine whether or not to modify their jurisdiction's list of hazards to be addressed in the update.

Additional considerations to address on a jurisdictional level include but are not limited to changes in local development, changes in exposure to natural hazards, the development of new mitigation capabilities or techniques, and revisions to state or federal legislation.

The update process will provide continued opportunity for the public and elected officials to determine which actions succeeded, failed, or are no longer relevant. It is also an opportunity for each jurisdiction to identify recent losses due to natural hazards and to consider whether any of those losses could have been avoided.

3. Determining Risk

1) Risk Assessment

Throughout the plan, each hazard addressed will be considered in light of its history, likelihood of future events, extent, jurisdictional vulnerability, location and impact.

Likelihood of Future Events is measured based on a hazard's expected frequency of occurrence in terms of previous frequency. Each hazard's likelihood of future events will be considered using the following standardized parameters:

- **Highly likely** – event probable in the next year
- **Likely** – event probable in the next three years
- **Occasional** – event possible in the next five years
- **Unlikely** – event possible in the next 10 years

Given this plan's five-year duration, hazards likely to occur during that period will be given priority when selecting and prioritizing mitigation actions.

Medina County has grown since the 2020 plan. The census recorded the population in 2023 to be 54,797 and in 2024 it rose to 55,619. However, the county is on the verge of rapid growth. Over 20,000 homes are currently in progress and planning phases along the eastern and central portions of the County. Eight (8) Microsoft data centers planned with three (3) currently in progress. Microsoft estimates an investment of $1.5 Billion. An additional two (2) data centers in the planning phase with one (1) near the City of Lytle that is nearing the construction phase. Medina Valley Independent School District (MVISD) opened the Silos Elementary School in 2024 and is currently constructing Creek View High School (High School #2), with plans for it to open in Fall 2026. MVISD is in the process of starting their own Police Department due to the expansion. As such, vulnerability to all hazards has increased.

The City of Castroville has grown since the 2020 plan. The data provided on Texas-Demographics.com shows that the population for the City of Castroville has risen from 3,169 in 2023 to 3.201 in 2024. The City of Castroville is in the fastest growing portion of Medina County. As such, vulnerability to all hazards has increased.

The City of Devine has seen a slight increase in growth since the 2020 plan. Renovations to the Senior Citizens Apartments and Devine Walmart have taken place, as well as new convenience stores being added. As such, vulnerability to all hazards has increased.

The City of Hondo has grown since the 2020 plan. The data provided on Texas-Demographics.com shows that the population for the City of Hondo has risen from 8,863 in 2023 to 8,969 in 2024. The City of Hondo has seen expansion of new businesses in the Hondo Railway, new TXN Bank, multiple fast-food restaurants, and more new businesses projected to be coming in soon. As such, vulnerability to all hazards has increased.

The City of La Coste has grown since the 2020 plan. The data provided on Texas-Demographics.com shows that the population for the City of La Coste has risen from 1,189 in 2023 to 1,222 in 2024. The City of La Coste borders on the fastest growing portion of Medina County. As such, vulnerability to all hazards has increased.

The City of Natalia's population has stayed relatively the same since the 2020 plan; however several new small businesses have moved into the area. As such, vulnerability to all hazards has increased.

A) Major Disaster Declarations

The following table outlines all major disaster declarations that have occurred in Medina County since the 2020 HMAP.

Table 7: Major Disaster Declarations Since 2020

Medina County Major Disaster Declarations		
Disaster	**Incident Period**	**Declaration Date**
DR-4586 Texas Severe Winter Storms	February 11, 2021 – February 21, 2021	February 19, 2021
DR-4485 Texas Covid-19 Pandemic	January 20, 2020 - Present	March 25, 2020

2) Distribution of Property by Housing Density and Potential Damage Values

Table 8: Estimated Values by Location[2]

Category	Medina County	City of Castroville	City of Devine	City of Hondo	City of La Coste	City of Natalia
Total Housing Units[3]	19,758	1,200	1,803	2,971	589	513
Housing Unit Density (per square mile)	15 units/sq. mi	480 units/sq. mi	563 units/sq. mi	304 units/sq. mi	934 units/sq. mi	369 units/sq. mi
Median Housing Value[4]	$220,000	$266,000	$145,600	$215,800	$74,600	$105,000
Estimated Value of	$4.3 billion	$319 million	$262 million	$641 million	$44 million	$53 million

[2] Source: U.S. Census 2021 American Community Survey 5-Year Estimates.
[3] Table B25001 2023 ACS Housing unit information for Medina County includes totals for cities and unincorporated areas.
[4] Table B25077 2023 ACS

Housing Units[5]						

3) Distribution of Vulnerable Populations

The planning team identified a set of indicators it could use to identify each jurisdiction's vulnerable population. The indicators include demographic data like age and income, as well as geographic data including the location of low income or subsidized housing units, concentrations of manufactured and mobile homes, and concentrations of homes in substandard condition.

A) Age, Disability, and Income

The populations of each jurisdiction were broken down into four categories: young residents, elderly residents, disabled residents, and low-income residents. Residents falling into these categories were deemed most likely to suffer disproportionate losses due to natural hazards because of their potentially limited means to prepare for and recover from a hazard event.

Table 9: Age, Disability, and Poverty Level Percentages by Jurisdiction[6]

Demographic Category	Medina County	City of Castroville	City of Devine	City of Hondo	City of La Coste	City of Natalia	Texas	U.S.
Population Under Age 5[7]	5.6%	8.6%	5.1%	7.3%	3.6%	6.1%	6.6%	5.7%
Population Over Age 65	17%	20.1%	18.2%	12.8%	18.6%	13.8%	12.9%	16.5%
Disability Status[8]	18.9%	21.9%	26.5%	19%	25.9%	32.4%	12%	13%

[5] Total value of housing units derived from median value multiplied by number of units

[6] Source: U.S. Census 2022 American Community Survey 5-Year Estimates

[7] Table S0101, Age and Sex, 2022 ACS 5-Year Estimates

[8] Table S1810, Disability Characteristics. 2023 ACS 5-Year Estimates. The U.S. Census defines a person as having a work disability if one or more of the following conditions are met:

1. Persons with a health problem or disability which prevents them from working or which limits the kind or amount of work they can do
2. Persons who have retired or left a job for health reasons
3. Persons currently not in the labor force because of a disability.
4. Persons who did not work at all in the previous year because of illness or disability
5. Under 65 years old and covered by Medicare in previous year.
6. Under 65 years old and received Supplemental Security Income (SSI) in previous year.
7. Received VA disability income in previous year.

Individuals Below Poverty Level[9]	8.1%	7.7%	8.1%	16.3%	5.3%	22.9%	10.5%	8.7%

B) Distribution of Vulnerable Populations

The following vulnerable populations map is based on a social vulnerability index created specifically for the planning area. The index considers six relevant Census Block Group-level factors: poverty rate, population of residents 65 years old and older, population of residents younger than 18, the population of residents without a high school diploma or GED, the population of residents with a low English proficiency, and the number of homes constructed before 1980.

To create the index, each factor is re-scaled by assigning the largest population in each category a score of 1. The remaining population counts for each category are then given a score based on the ratio of the relevant population to the largest population. Once each factor has a re-scaled score, the scores for each factor are totaled to create an overall index number for each Census Block Group. The vulnerable populations map is representative of each Census Block Group's overall vulnerability, based on the six factors outlined above, relative to the other Census Block Groups in the planning area.

[9] Table DP03, Selected Economic Characteristics, 2023 5-Year Estimates

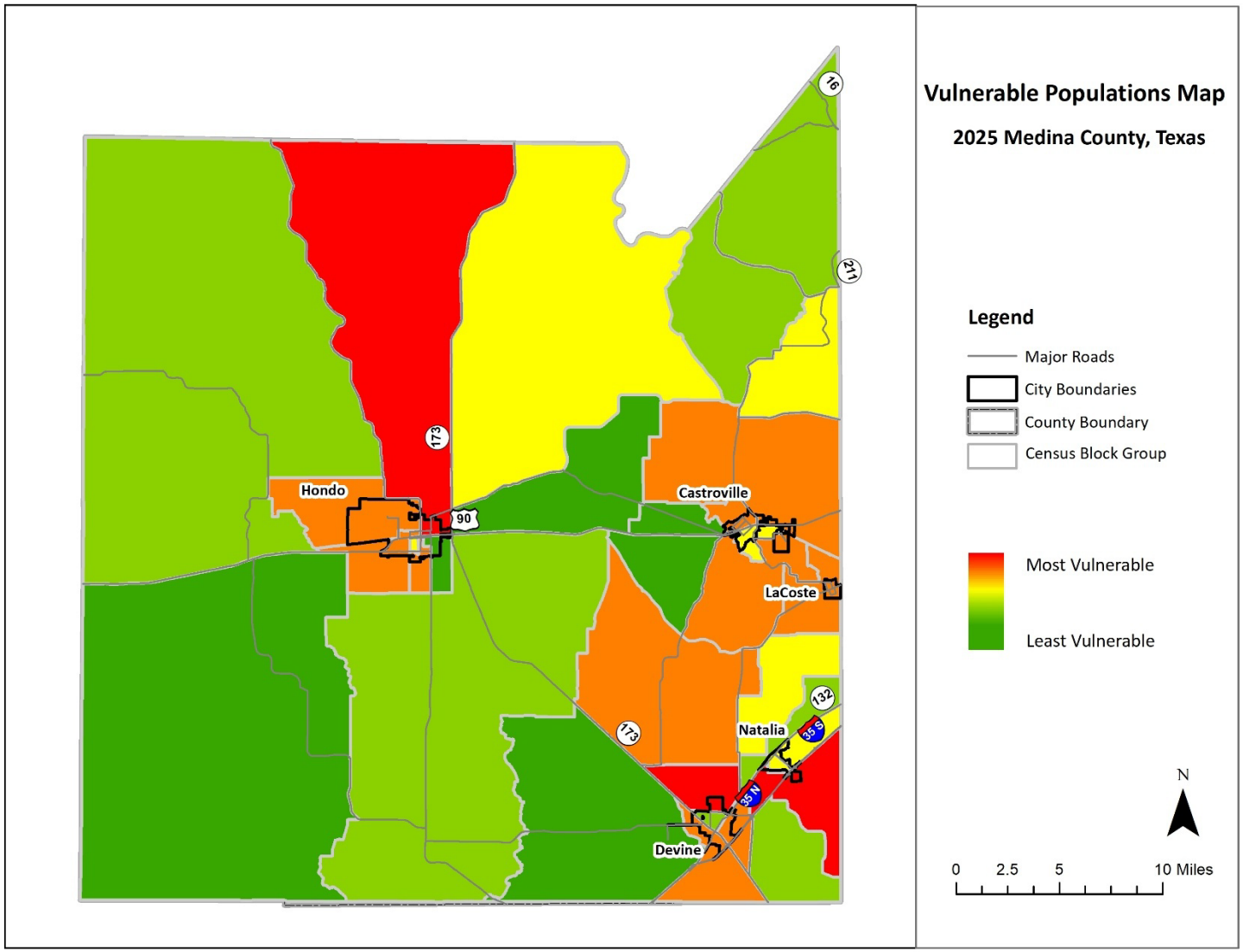

Figure 5: Medina County Social Vulnerability Index

C) Low Income and Subsidized Housing

Low-income residents in Medina County are primarily served through rental assistance programs and low-income housing. The Texas Department of Housing and Community Affairs, as well as the Alamo Area Council of Governments are the primary operators of low-income housing in the County[10].

Residents of low-income housing and/or subsidized housing facilities are expected to suffer disproportionate losses due to natural hazards because of their potentially limited means to prepare for and recover from a hazard event.

D) Housing Type and Condition

The participating jurisdictions have used housing types and housing conditions to identify additional vulnerable areas and concentrations of vulnerable residents.

I. Manufactured / Mobile Homes

In particular, the jurisdictions have identified areas with large numbers of mobile/manufactured housing as being disproportionately vulnerable to certain hazards including but not limited to floods, tornados, winter storms, and windstorms.

Mobile and manufactured homes can be found throughout Medina County, including several RV parks. These parks' populations fluctuate on a seasonal basis. Due to the express portability of RVs, most of these structures are expected to evacuate ahead of hazard events with significant warning times. However, RVs may not have enough time to evacuate ahead of less predictable hazard events like tornados.

Locations with clusters of three or more mobile / manufactured homes, including named mobile home parks, are shown in the figure below.

[10] Low Income Apartments and Affordable Housing For Rent in Medina County, TX (affordablehousingonline.com)

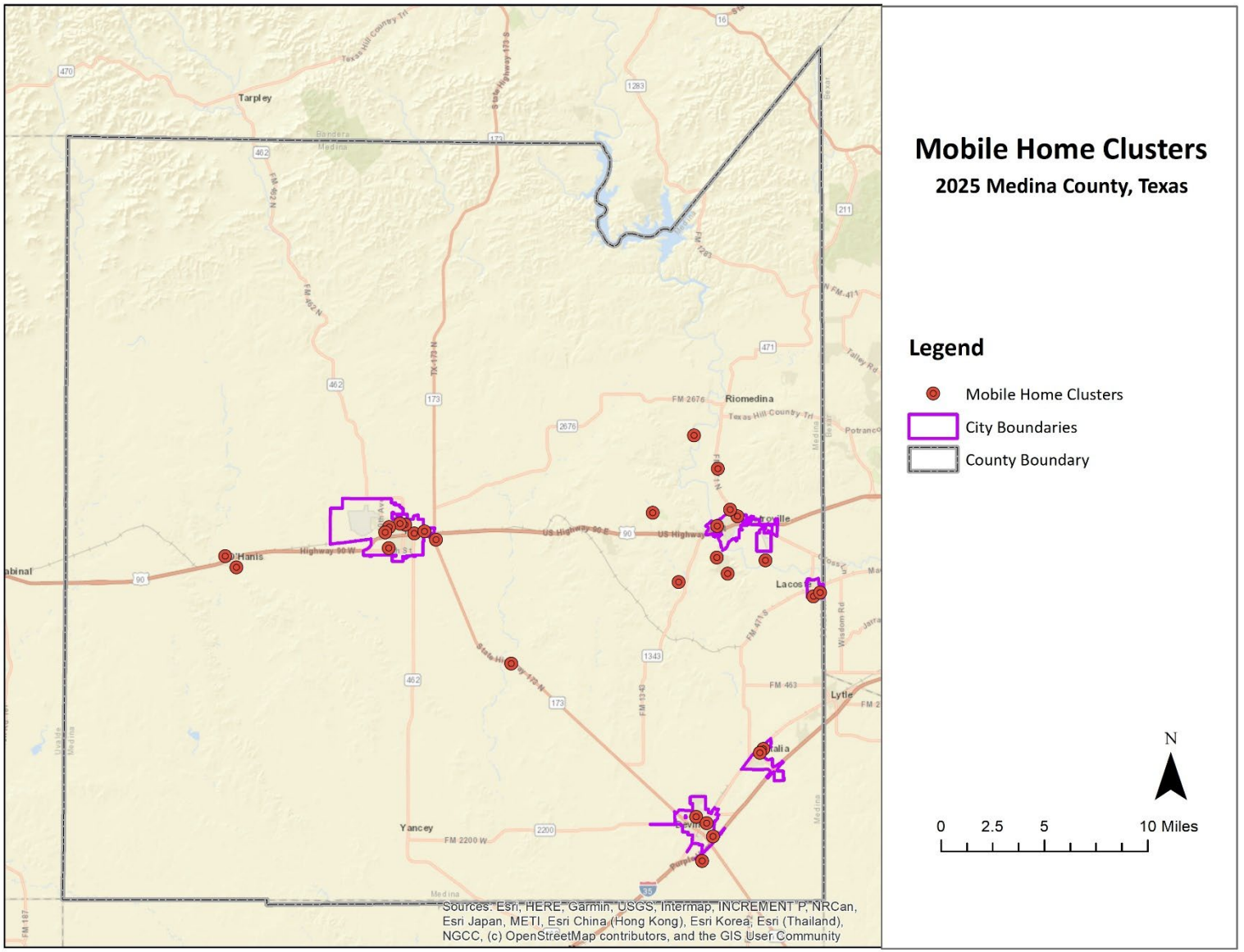

Figure 6: Mobile and Manufacturing Clusters in Medina County and the Participating Jurisdictions

II. Homes in Substandard Condition

The jurisdictions have determined that homes in sub-standard condition, regardless of structure type, may indicate that residents are low-income or otherwise means-limited and thus more vulnerable to certain hazards.

To be considered standard condition, a home must show few or no minor visible exterior defects such as:

- cracked, peeling, or missing paint
- cracked, sagging, rotting, or missing siding, steps, porch planks, or other wooden surfaces
- cracked or broken windowpanes
- cracked masonry, brick, or mortar surfaces
- missing or damaged roof shingles
- small rust spots on mobile homes

Structures in sub-standard condition may provide less protection to residents during certain hazard events like tropical storms, tornados, or hurricanes. Furthermore, because they're already in a state of disrepair, additional damage due to hazard events may compound existing ones and potentially make these homes uninhabitable.

4. Floods

According to the National Oceanic and Atmospheric Administration, flood is defined as an overflow of water onto normally dry land. The inundation of a normally dray area caused by rising water in an existing waterway, such as a river, stream, or drainage ditch. Ponding of the water at or near the point where the rain fell. Flooding is a longer-term event than flash flooding: it may last days or weeks.

Flash flood is defined as a flood caused by heavy or excessive rainfall in a short period of time, generally less than 6 hours. Flash floods are usually characterized by raging torrents after heavy rains that rip through riverbeds, urban streets, or mountain canyons sweeping everything before them. They can occur within minutes or a few hours of excessive rainfall. They can also occur even if no rain has fallen, for instance after a levee or dam has failed, or after a sudden release of water by a debris or ice jam.[11]

1) Flood History

The 2020 Medina County HMAP reported 89 flood occurrences throughout the county from 1960-2016.

The following records show all reported events from January 2020 – July 2025.

Table 10: Medina County Flood History

Location	Date Range	Number of Floods	Flood Type	Fatalities	Injuries	Property Damage $2025	Crop Damage $2025
Countywide	5/01/2020 – 7/4/2025	3	Flash Flood	0	0	$0	$0

There have been no recorded events for the remaining jurisdictions since the 2020 HMAP.

A) National Flood Insurance Program

The National Flood Insurance Program (NFIP) is administered by FEMA to provide flood insurance coverage to the nation. Medina County, and all participating jurisdictions are members of NFIP.

Medina County has adopted and enforced a flood damage prevention ordinance in their jurisdiction and adopted their current FIRM on 5/15/2020. Medina County's Flood Damage Prevention Ordinance designates the Department Head of the Environmental Health Department as the Floodplain Administrator responsible for implementing its floodplain

[11] https://www.weather.gov/mrx/flood_and_flash

management regulations and ensuring regulations meet or exceed the minimum NFIP requirements. Floodplain management ordinances and any future updates will guide the jurisdiction as it continues to comply with NFIP requirements through permitting, inspection, and recordkeeping, especially for new and substantially redeveloped construction (i.e. substantially damaged repairs). The permitting process, presented to the floodplain administrator, may include plans showing location, dimension, and elevation of proposed landscape alterations, existing and proposed structures, and the location of the foregoing in relation to areas of the special flood hazard. Additionally, information including elevation of new and substantially improved structures, nonresidential structures, floodproofing, certificates from registered professional engineers, watercourse or natural drainage alterations, and records are required. Permitting also requires the costs of providing governmental services during and after flood conditions including maintenance and repair of streets and bridges, and public utilizes and facilities such as sewer, gas, electrical and water systems. Variances may be issued for the repair or rehabilitation of historic structures. General standards for all new construction or substantial improvements require prevention of floatation, collapse or lateral movement and practices that minimize flood damage.

The City of Castroville has adopted and enforced a flood damage prevention ordinance in their jurisdiction and adopted their current FIRM on 5/12/2020. The City of Castroville's Flood Damage Prevention Ordinance designates the City Administrator as the Floodplain Administrator responsible for implementing its floodplain management regulations and ensuring regulations meet or exceed the minimum NFIP requirements. Floodplain management ordinances and any future updates will guide the jurisdiction as it continues to comply with NFIP requirements through permitting, inspection, and recordkeeping, especially for new and substantially redeveloped construction (i.e. substantially damaged repairs). The permitting process, presented to the floodplain administrator, may include plans showing location, dimension, and elevation of proposed landscape alterations, existing and proposed structures, and the location of the foregoing in relation to areas of the special flood hazard. Additionally, information including elevation of new and substantially improved structures, nonresidential structures, floodproofing, certificates from registered professional engineers, watercourse or natural drainage alterations, and records are required. Permitting also requires the costs of providing governmental services during and after flood conditions including maintenance and repair of streets and bridges, and public utilizes and facilities such as sewer, gas, electrical and water systems. Variances may be issued for the repair or rehabilitation of historic structures. General standards for all new construction or substantial improvements require prevention of floatation, collapse or lateral movement and practices that minimize flood damage.

The City of Devine has adopted and enforced a flood damage prevention ordinance in their jurisdiction and adopted their current FIRM on 3/20/2012. The City of Devine's Flood Damage

Prevention Ordinance designates the City Administrator as the Floodplain Administrator responsible for implementing its floodplain management regulations and ensuring regulations meet or exceed the minimum NFIP requirements. Floodplain management ordinances and any future updates will guide the jurisdiction as it continues to comply with NFIP requirements through permitting, inspection, and recordkeeping, especially for new and substantially redeveloped construction (i.e. substantially damaged repairs). The permitting process, presented to the floodplain administrator, may include plans showing location, dimension, and elevation of proposed landscape alterations, existing and proposed structures, and the location of the foregoing in relation to areas of the special flood hazard. Additionally, information including elevation of new and substantially improved structures, nonresidential structures, floodproofing, certificates from registered professional engineers, watercourse or natural drainage alterations, and records are required. Permitting also requires the costs of providing governmental services during and after flood conditions including maintenance and repair of streets and bridges, and public utilizes and facilities such as sewer, gas, electrical and water systems. Variances may be issued for the repair or rehabilitation of historic structures. General standards for all new construction or substantial improvements require prevention of floatation, collapse or lateral movement and practices that minimize flood damage.

The City of Hondo has adopted and enforced a flood damage prevention ordinance in their jurisdiction and adopted their current FIRM on 10/28/2024. The City of Hondo's Flood Damage Prevention Ordinance designates the City Manager as the Floodplain Administrator responsible for implementing its floodplain management regulations and ensuring regulations meet or exceed the minimum NFIP requirements. Floodplain management ordinances and any future updates will guide the jurisdiction as it continues to comply with NFIP requirements through permitting, inspection, and recordkeeping, especially for new and substantially redeveloped construction (i.e. substantially damaged repairs). The permitting process, presented to the floodplain administrator, may include plans showing location, dimension, and elevation of proposed landscape alterations, existing and proposed structures, and the location of the foregoing in relation to areas of the special flood hazard. Additionally, information including elevation of new and substantially improved structures, nonresidential structures, floodproofing, certificates from registered professional engineers, watercourse or natural drainage alterations, and records are required. Permitting also requires the costs of providing governmental services during and after flood conditions including maintenance and repair of streets and bridges, and public utilizes and facilities such as sewer, gas, electrical and water systems. Variances may be issued for the repair or rehabilitation of historic structures. General standards for all new construction or substantial improvements require prevention of floatation, collapse or lateral movement and practices that minimize flood damage.

The City of La Coste has adopted and enforced a flood damage prevention ordinance in their jurisdiction and adopted their current FIRM on 3/18/2020. The City of La Coste's Flood Damage Prevention Ordinance designates the City Administrator as the Floodplain Administrator responsible for implementing its floodplain management regulations and ensuring regulations meet or exceed the minimum NFIP requirements. Floodplain management ordinances and any future updates will guide the jurisdiction as it continues to comply with NFIP requirements through permitting, inspection, and recordkeeping, especially for new and substantially redeveloped construction (i.e. substantially damaged repairs). The permitting process, presented to the floodplain administrator, may include plans showing location, dimension, and elevation of proposed landscape alterations, existing and proposed structures, and the location of the foregoing in relation to areas of the special flood hazard. Additionally, information including elevation of new and substantially improved structures, nonresidential structures, floodproofing, certificates from registered professional engineers, watercourse or natural drainage alterations, and records are required. Permitting also requires the costs of providing governmental services during and after flood conditions including maintenance and repair of streets and bridges, and public utilizes and facilities such as sewer, gas, electrical and water systems. Variances may be issued for the repair or rehabilitation of historic structures. General standards for all new construction or substantial improvements require prevention of floatation, collapse or lateral movement and practices that minimize flood damage.

The City of Natalia has adopted and enforced a flood damage prevention ordinance in their jurisdiction and adopted their current FIRM on 7/16/2018. The City of Natalia's Flood Damage Prevention Ordinance designates the City Administrator as the Floodplain Administrator responsible for implementing its floodplain management regulations and ensuring regulations meet or exceed the minimum NFIP requirements. Floodplain management ordinances and any future updates will guide the jurisdiction as it continues to comply with NFIP requirements through permitting, inspection, and recordkeeping, especially for new and substantially redeveloped construction (i.e. substantially damaged repairs). The permitting process, presented to the floodplain administrator, may include plans showing location, dimension, and elevation of proposed landscape alterations, existing and proposed structures, and the location of the foregoing in relation to areas of the special flood hazard. Additionally, information including elevation of new and substantially improved structures, nonresidential structures, floodproofing, certificates from registered professional engineers, watercourse or natural drainage alterations, and records are required. Permitting also requires the costs of providing governmental services during and after flood conditions including maintenance and repair of streets and bridges, and public utilizes and facilities such as sewer, gas, electrical and water systems. Variances may be issued for the repair or rehabilitation of historic structures. General standards for all new construction or substantial improvements require prevention of floatation, collapse or lateral movement and practices that minimize flood damage.

The flood mitigation actions outlined in Chapter 18 below were developed with flood mitigation and NFIP compliance in mind. Public engagement will be an ongoing effort in each participating jurisdiction to reduce future losses due to flooding and will continue even after recommended corrective actions have been implemented.

A Repetitive Loss (RL) property is any insurable building for which two or more claims of more than $1,000 were paid by the NFIP within any rolling ten-year period, since 1978. According to the best information available, there are two single-family RL properties in Medina County. There is one single-family RL property in the City of Hondo, three single-family RL properties in the City of La Coste, and one single-family RL property in the City of Natalia. The remaining jurisdictions have no RL properties.

A severe repetitive loss (SRL) property is: a single family property (consisting of 1 to 4 residences) that is covered under flood insurance by the NFIP and has incurred flood-related damage for which 4 or more separate claims payments have been paid under flood insurance coverage, with the amount of each claim payment exceeding $5,000 and with cumulative amount of such claims payments exceeding $20,000; or for which at least 2 separate claims payments have been made with the cumulative amount of such claims exceeding the reported value of the property. According to the best information available, there are no SRL properties in any of the participating jurisdictions.

2) Likelihood of Future Events

In the case of the FEMA 100-year floodplain there is a 1% annual chance, while in the 500-year floodplain there is a 0.02% annual chance. Thus, the likelihood of a 100-year flood event is occasional and the likelihood of a 500-year flood event is unlikely. However, based on the frequency of previous flood events, every jurisdiction can expect to experience some type of flooding that may or may not meet the definition of a 100-year or 500-year event on a more regular basis.

The local planning team determined it is likely that Medina County and the participating jurisdictions will experience a flood event, meaning an event is probable in the next three years.

3) Extent

Flood magnitude is generally measured by depth of flood waters in feet or inches. Throughout Medina County and the participating jurisdictions, recent flood events have resulted in up to 15’ of flood water.

Future worst-case flood events in Medina County and the participating jurisdictions may meet or exceed previous worst-case 15’ flood depths.

4) Location and Impact

Roughly 14% (125,281 acres out of 855,535) of Medina County is in the FEMA 100-year floodplain (Zone A). In contrast, about 83% (715,743 acres out of 855,535) of Medina County is in the FEMA 500-year floodplain (Zone X).

A) Location

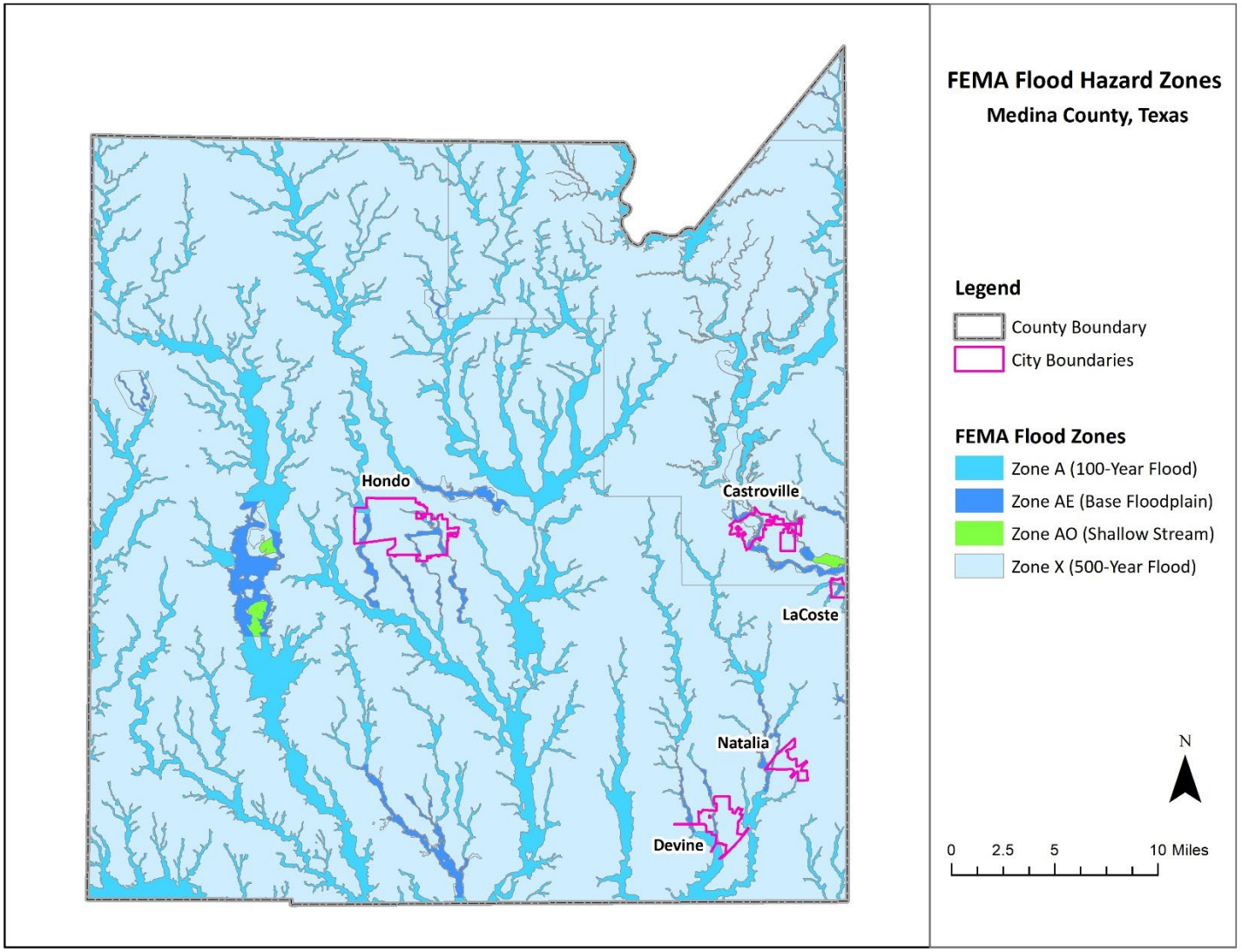

Figure 7: Medina County Special Flood Hazard Areas

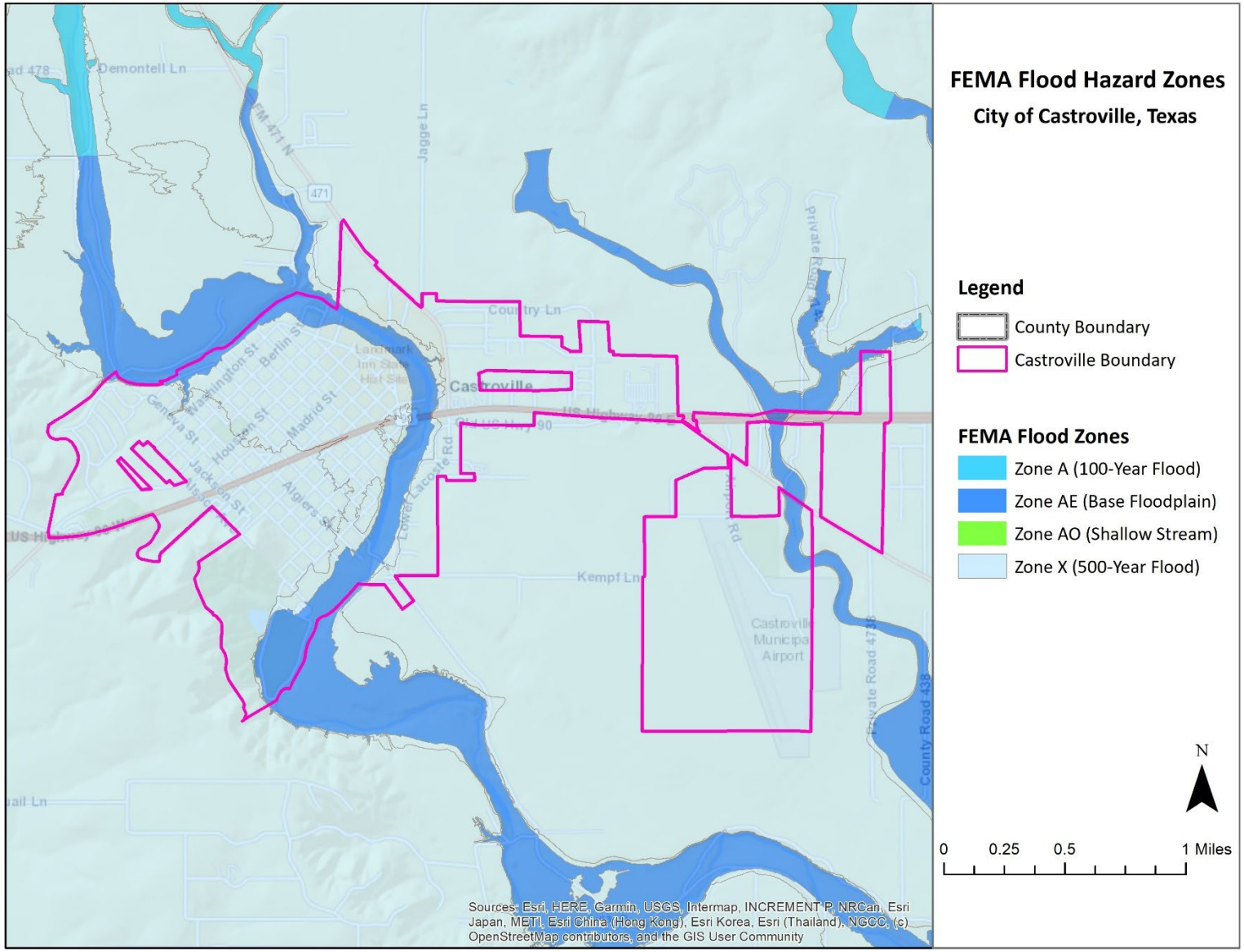

Figure 8: City of Castroville Special Flood Hazard Areas

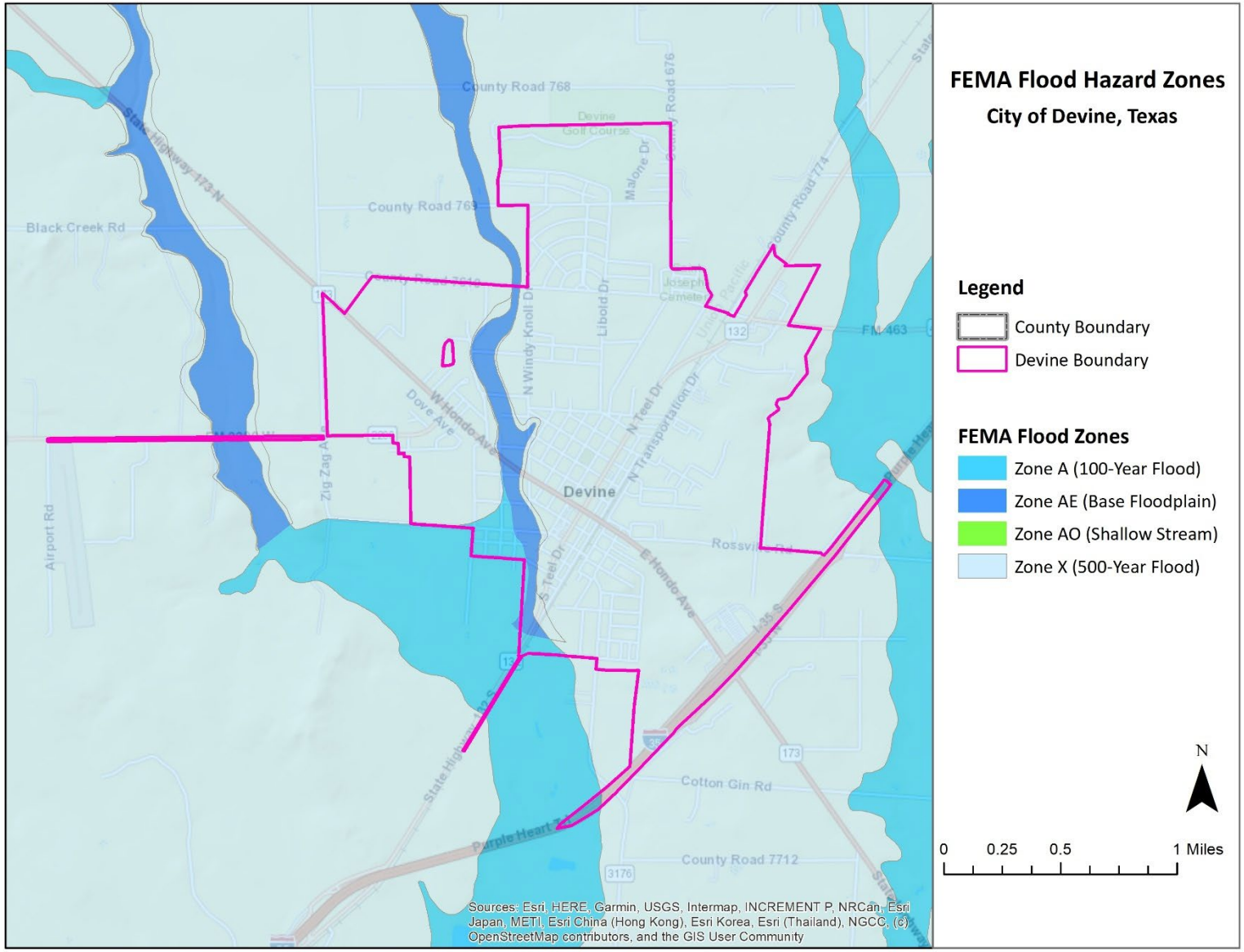

Figure 9: City of Devine Special Flood Hazard Areas

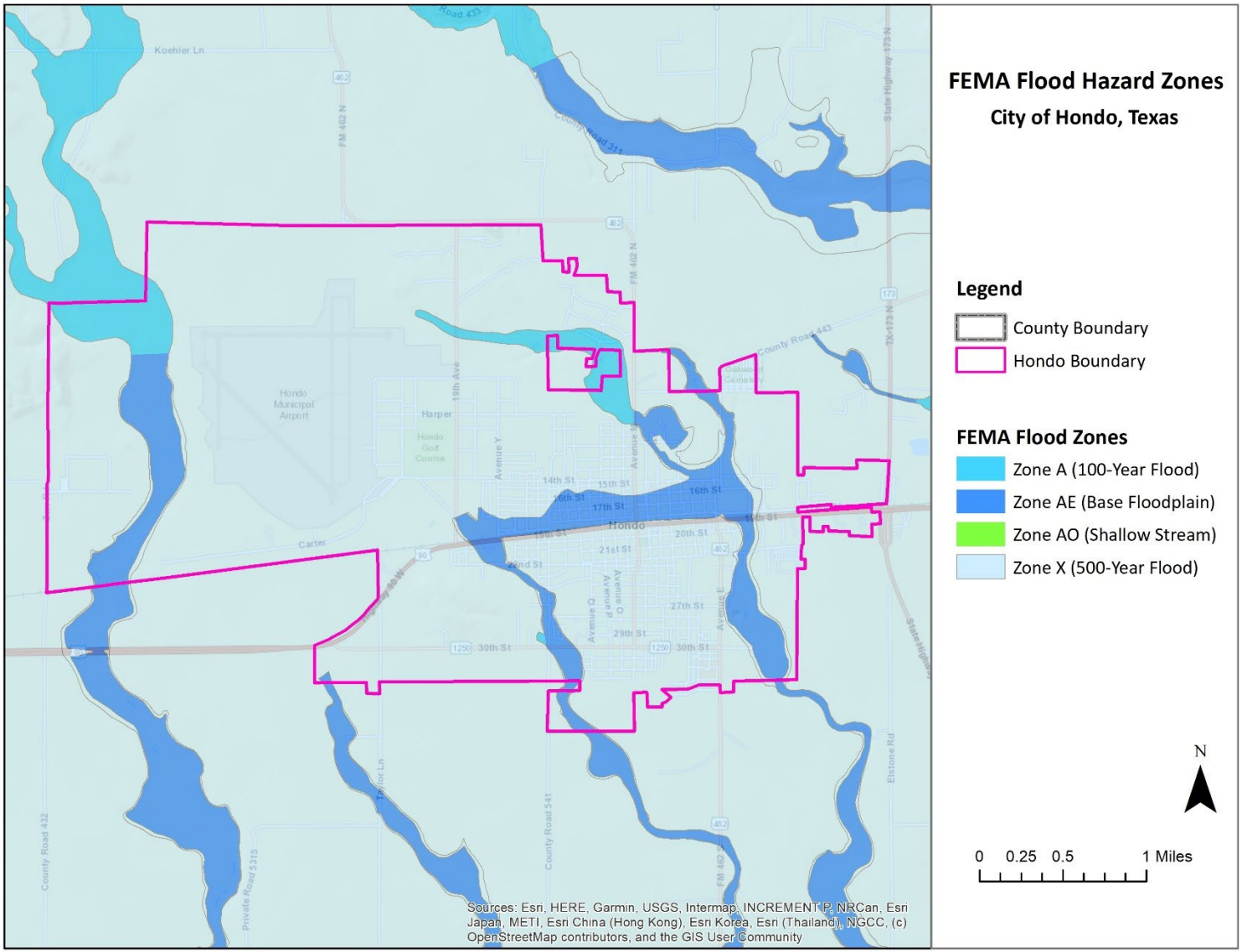

Figure 10: City of Hondo Special Flood Hazard Areas

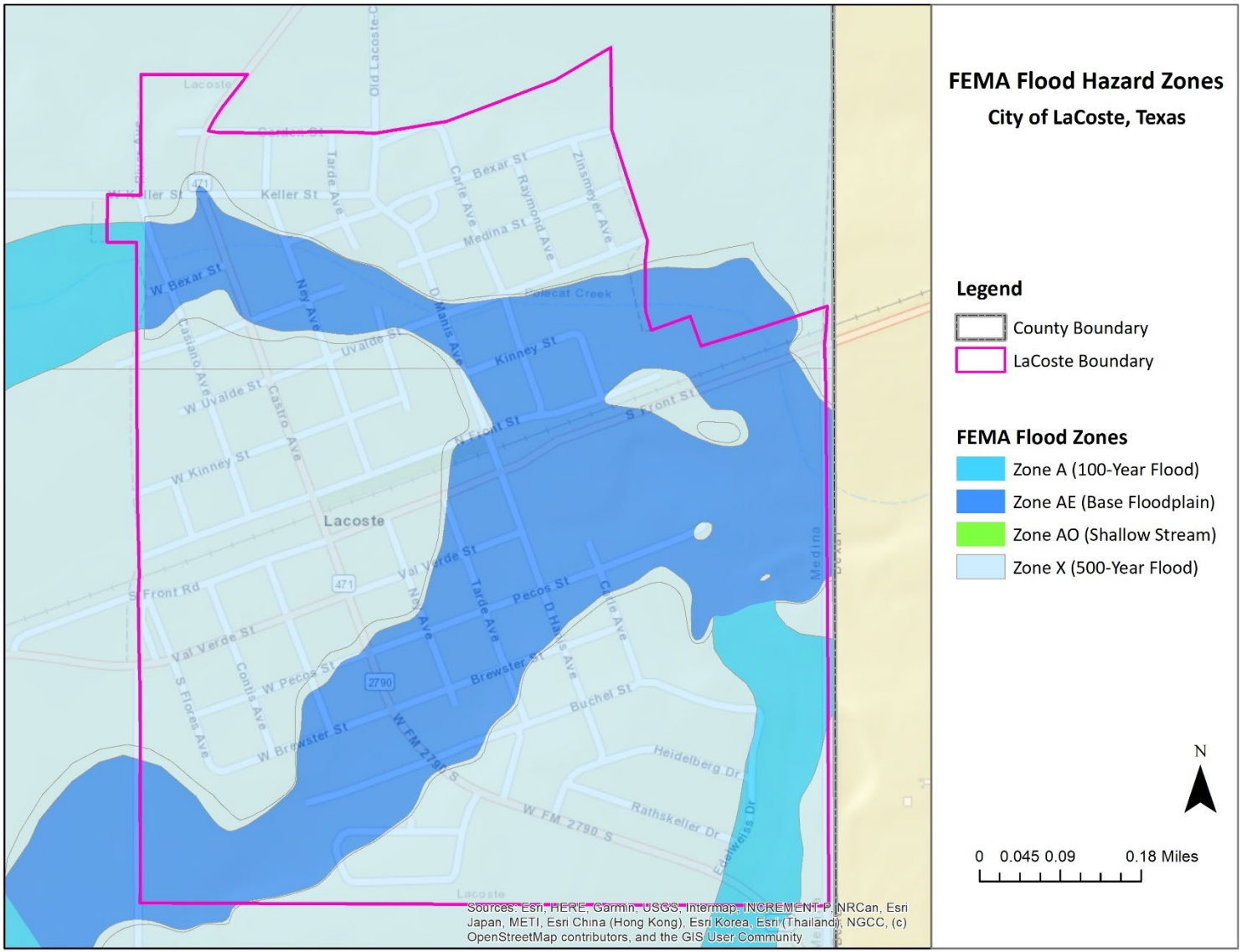

Figure 11: City of La Coste Special Flood Hazard Areas

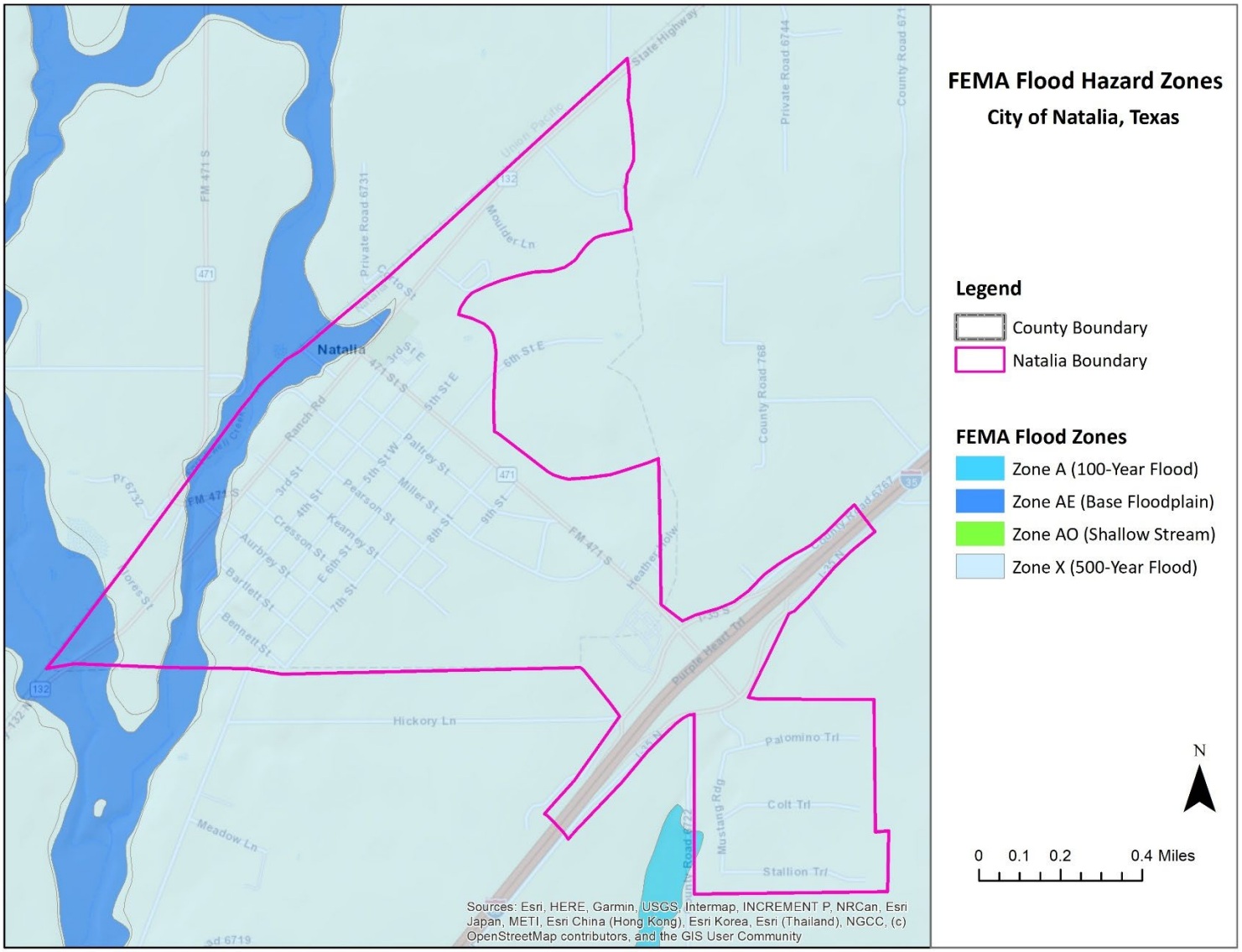

Figure 12: City of Natalia Special Flood Hazard Areas

B) Impact

Residents in the participating jurisdictions may temporarily lose power due to downed power lines. Motorists and residents may be left stranded and needing rescue. Affected structures may be flooded, damaged by foodborne contaminants, damaged by debris flow, or even completely washed away. Crops may be damaged or destroyed.

Despite the unlikely probability of a so-called 500-year flood, 0.02% in any given year, the danger is not negligible. Similar to 100-year flood events, parts of the County may temporarily lose power due to downed power lines; motorists and residents may be left stranded and needing rescue; affected structures may be flooded, damaged by flood borne contaminants, damaged by debris flow, or even completely washed away; crops may be damaged or destroyed.

In addition to flooding's direct effects, the participating jurisdictions may be subject to indirect effects. These may include but aren't limited to loss of power, limited travel due to flooded and/or washed-out roads, and limited access to nearby emergency care centers.

5) Vulnerability

A) Population

As described in Section 3 of Chapter 3 above, Medina County and the participating jurisdictions are home to many vulnerable residents. Increased vulnerability may be due to many factors including but not limited to age, physical ability, financial means, housing type, and housing condition. Many of these vulnerabilities often overlap.

The participating jurisdictions recognize that vulnerable populations may need additional help preparing for and recovering from a flood.

Residents of mobile / manufactured housing are of particular concern. These structures are never considered safe during a flood, and depending on tie-down methods, may threaten surrounding structures.

Residents of sub-standard structures are also of particular concern. Structures in sub-standard condition ahead of a flood, whether due to structural damage, missing windows or doors, holes in exterior walls or the roof, may be less safe during a flood than structures in standard condition. Existing structural weaknesses may mean increased damage, injuries, or loss of life.

B) Critical Facilities

The planning team identified 95 critical facilities spread across the County and participating jurisdictions. All critical facilities are located in some variation of special flood zone.

Table 11: Medina County Critical Facilities Vulnerable to Flooding

Medina County Critical Facilities
Medina County Courthouse
Medina County Courthouse Annex
Medina County Commissioner Precinct 1
Medina County Commissioner Precinct 2
Medina County Commissioner Precinct 3
Medina County Commissioner Precinct 4
Medina County Tax Assessor – Collector Hondo Office
Medina County Tax Assessor – Collector Devine Office
Medina County Tax Assessor – Collector Castroville Office
Medina County Constable & Justice of the Peace Precinct 1
Medina County Constable & Justice of the Peace Precinct 2
Medina County Constable & Justice of the Peace Precinct 3
Medina County Constable & Justice of the Peace Precinct 4
Medina County Sheriff's Office, Communications/Dispatch, & Jail
Medina County Office of Emergency Management & Fire Marshal's Office
Medina County Animal Control Office
Medina County AgriLife Extension
Medina County Health Unit & WIC
Medina County Environmental Health & Floodplain Administrator
Medina County Pretrial Services
Medina County Juvenile Probation
D'Hanis Independent School District
D'Hanis Vol. Fire Dept.
Medina County Emergency Service District 1, Station 12
Medina County Emergency Service District 1, Station 14
Medina County Emergency Service District 1, Station 15
Medina Regional Hospital
Medina Valley Independent School District High School
Medina Valley Independent School District Middle School
Medina Valley Independent School District Administration
Medina Valley Independent School District High School # 2
Medina Valley Independent School District Loma Alta Middle School
Potranco Elementary
Yancey Vol. Fire Dept.
Medina County Public Safety Radio Tower – Natalia
Medina County Public Safety Radio Tower – Dunlay
Medina County Public Safety Radio Tower – Hondo
Medina County Public Safety Radio Tower – Castroville
Medina County Public Safety Radio Tower – D'Hanis
Medina County Public Safety Radio Tower – Mico

Castroville Municipal Airport
Devine Municipal Airport
City of Castroville Critical Facilities
City Hall
Castroville Elementary School
Castroville Municipal Airport
Castroville Police Dept.
Castroville Public Library
ESD #1, Castroville Station 10
City of Devine Critical Facilities
Edwards Well #1
Bain Well
Warhorse Tower
LeMartin Well
Edwards Well #2
Ingram Tower / PD Radio Repeater
Harrison Well
Wastewater Treatment Plant
City Hall / Police Dept.
Devine Mechanic Shop
Public Works Office / City Yard
Devine ISD Administrative Office
John J. Ciavarra Elementary School
Devine Intermediate School
Devine Middle School
Devine High School
DAEP School
Driscoll Public Library
George S. Woods Community Center
Shaffer Well
Devine Animal Control Kennels
Devine ISD
Allman Sewer Lift Station
Colonial Pkwy Sewer Lift Station
City of Hondo Critical Facilities
City Hall
Hondo High School
Hondo Municipal Airport
Hondo Police Dept.
Hondo Public Library
Hondo VFD Station #1
Hondo VFD Station #2
City of La Coste Critical Facilities
City Hall / Police Dept.
La Coste Well #1
La Coste Well #2
La Coste Wastewater Treatment Plant

La Coste Records & Vehicle Storage
ESD1 – Station 11 (North)
ESD1 – Station 11 (South)
La Coste Helicopter Landing Pad
MVISD – La Coste Elementary
City of Natalia Critical Facilities
Wells 4 & 6
Tower & Standpipe
WWTP
Ball Park Lift Station
Loves Lift Station
Ft. Ewell Creek Lift Station
City Office

5. Wildfire

Wildfire is defined as an unplanned wildland fire, including unauthorized human-caused fires, escaped wildland fire use events, and escaped prescribed fire projects. A wildfire event can rapidly spread out of control and occurs most often in the summer, when the brush is dry, and flames can move unchecked through a highly vegetative area. Wildfires can start as a slow burning fire along the forest floor, killing and damaging trees. The fires often spread more rapidly as they reach the tops of trees, with wind carrying the flames from tree to tree. Usually, dense smoke is the first indication of a wildfire. A wildfire event often begins unnoticed and spreads quickly, lighting brush, trees and homes on fire. For example, a wildfire may be started by a campfire that was not doused properly, tossed cigarette, burning debris, or arson.[12]

1) Wildfire History

The Texas A&M Forest Service Wildfire Risk Assessment Portal provides wildfire data on fires that occurred as recently as 2021. Additional data came from local planning team members.

The 2020 Medina County HMAP reported 305 wildfire ignitions 2005-2015.

The following table represents all events recorded in the National Centers for Environmental Information (NCEI) and Texas A&M Forest Service databases between 2016 – 2021.

Table 12: Medina County Wildfire History

Location	Date Range	Wildfire Events	Acres Burned
Countywide	1/1/2020 – 12/31/2021	67	217

2) Likelihood of Future Events

Based on the frequency of recorded events in Medina County, the probability of a future event is considered highly likely, meaning an event is probable in the next year.

3) Extent

The Texas A&M Forest Service's Characteristic Fire Intensity Scale (FIS) specifically identifies areas where significant fuel hazards and associated dangerous fire behavior potential exist. The FIS is a fire behavior output, which is influenced by three environmental factors - fuels, weather, and topography. According to Texas A&M Forest Service data, Medina County and the participating jurisdictions are rated between Class 1 and Class 5.

[12] 2023 State of Texas Hazard Mitigation Plan

Table 13: Characteristic Fire Intensity Scale[13]

Class 1 Very Low	Very small, discontinuous flames, usually less than one foot in length; very low rate of spread; no spotting. Fires are typically easy to suppress by firefighters with basic training and non-specialized equipment.
Class 2 Low	Small flames, usually less than two feet long; small amount of very short-range spotting possible. Fires are easy to suppress by trained firefighters with protective equipment and specialized tools.
Class 3 Moderate	Flames up to 8 feet in length; short-range spotting is possible. Trained firefighters will find these fires difficult to suppress without support from aircraft or engines, but dozer and plows are generally effective. Increasing potential for harm or damage to life and property.
Class 4 High	Large flames, up to 30 feet in length; short-range spotting common; medium range spotting possible. Direct attack by trained firefighters, engines, and dozers is generally ineffective, indirect attack may be effective. Significant potential for harm or damage to life and property.
Class 5 Very High	Very large flames up to 150 feet in length; profuse short-range spotting, frequent long-range spotting; strong fire-induced winds. Indirect attack marginally effective at the head of the fire. Great potential for harm or damage to life and property.

Future fire events in Medina County and the participating jurisdictions may meet previous worst-case Class 5 (FIS) wildfires in terms of intensity, acreage burned, and inflicted damage.

4) Location and Impact

A) Location

Housing density in the Wildland Urban Interface is represented in the location maps below.

[13] https://www.texaswildfirerisk.com

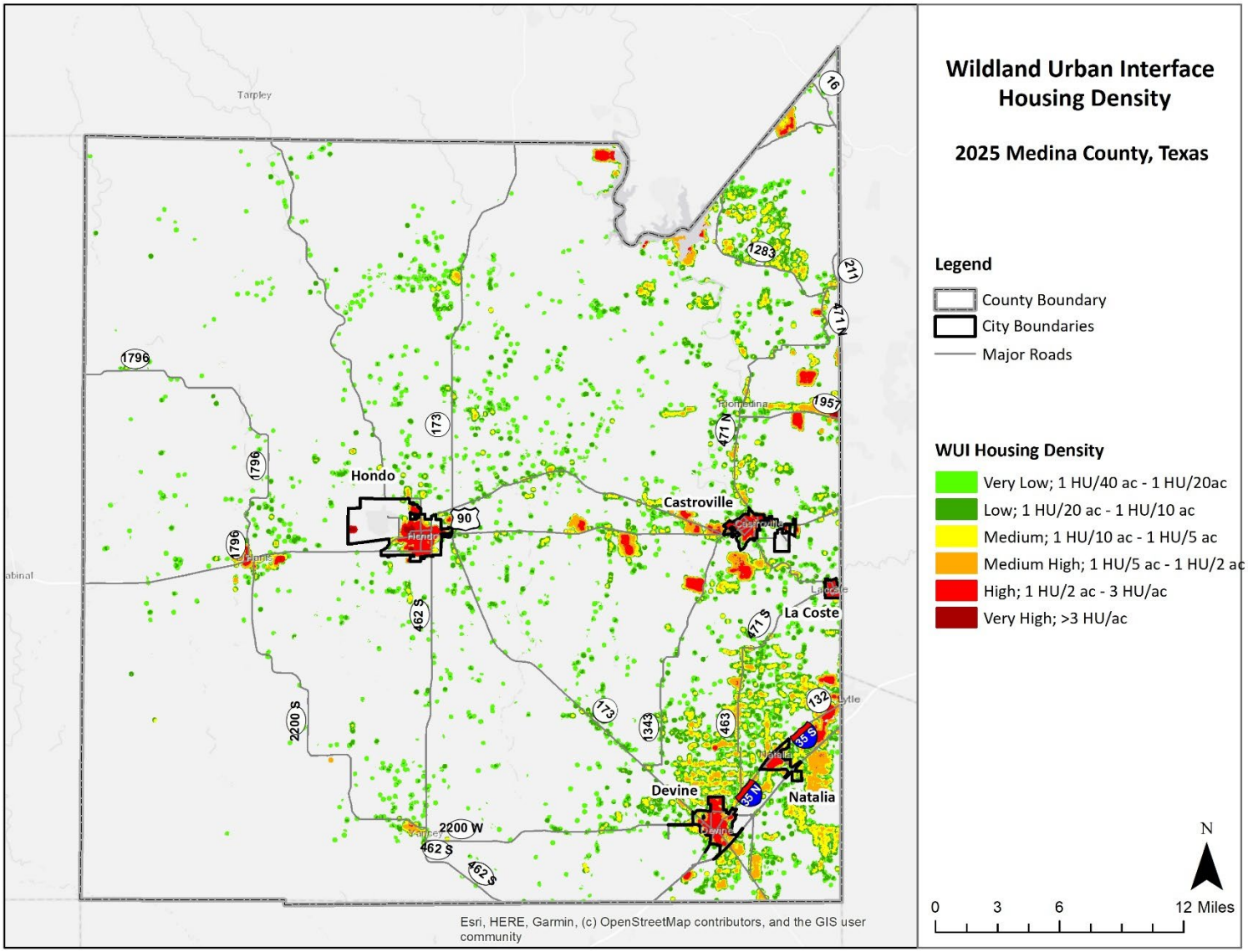

Figure 13: Medina County Wildland Urban Interface

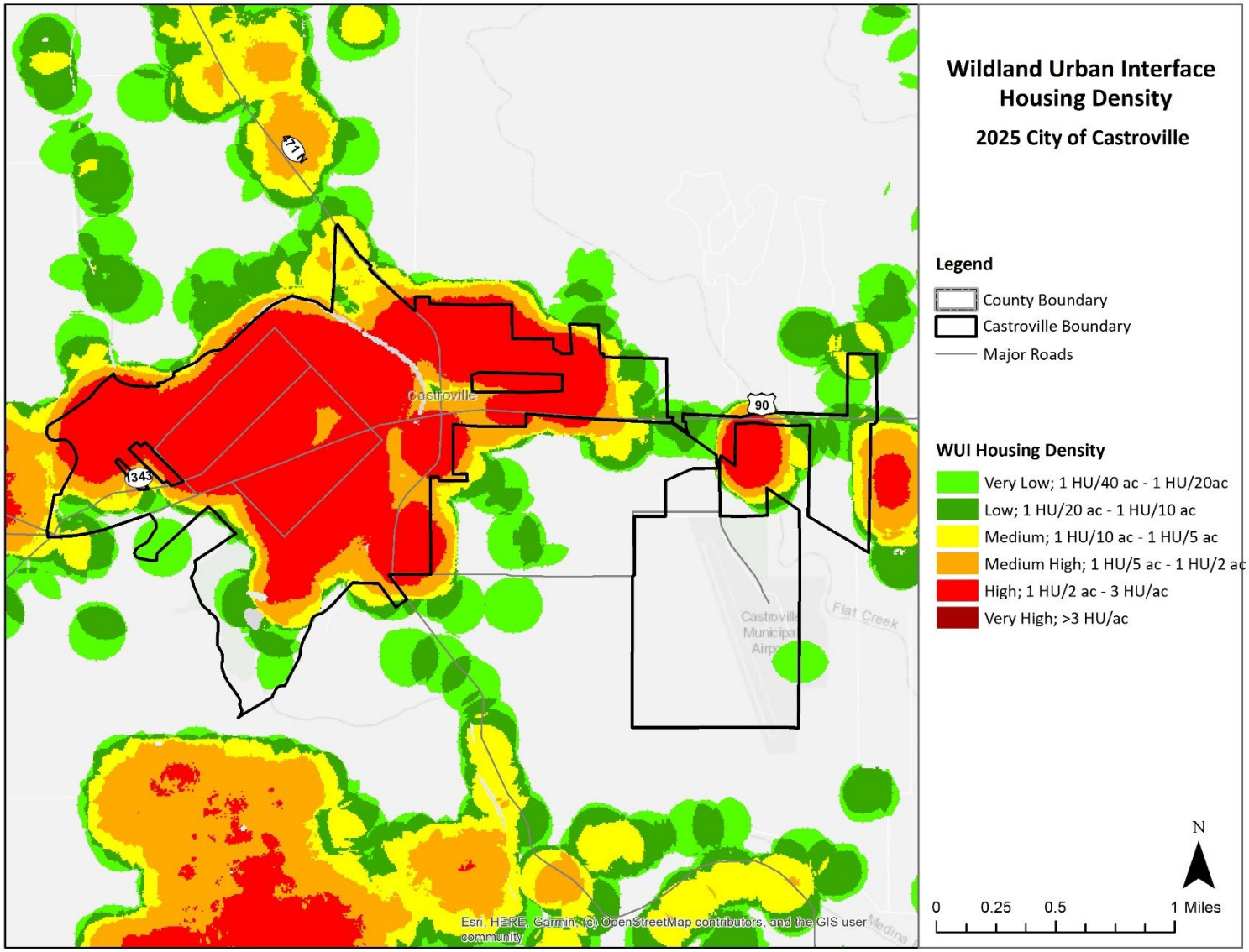

Figure 14: City of Castroville Wildland Urban Interface

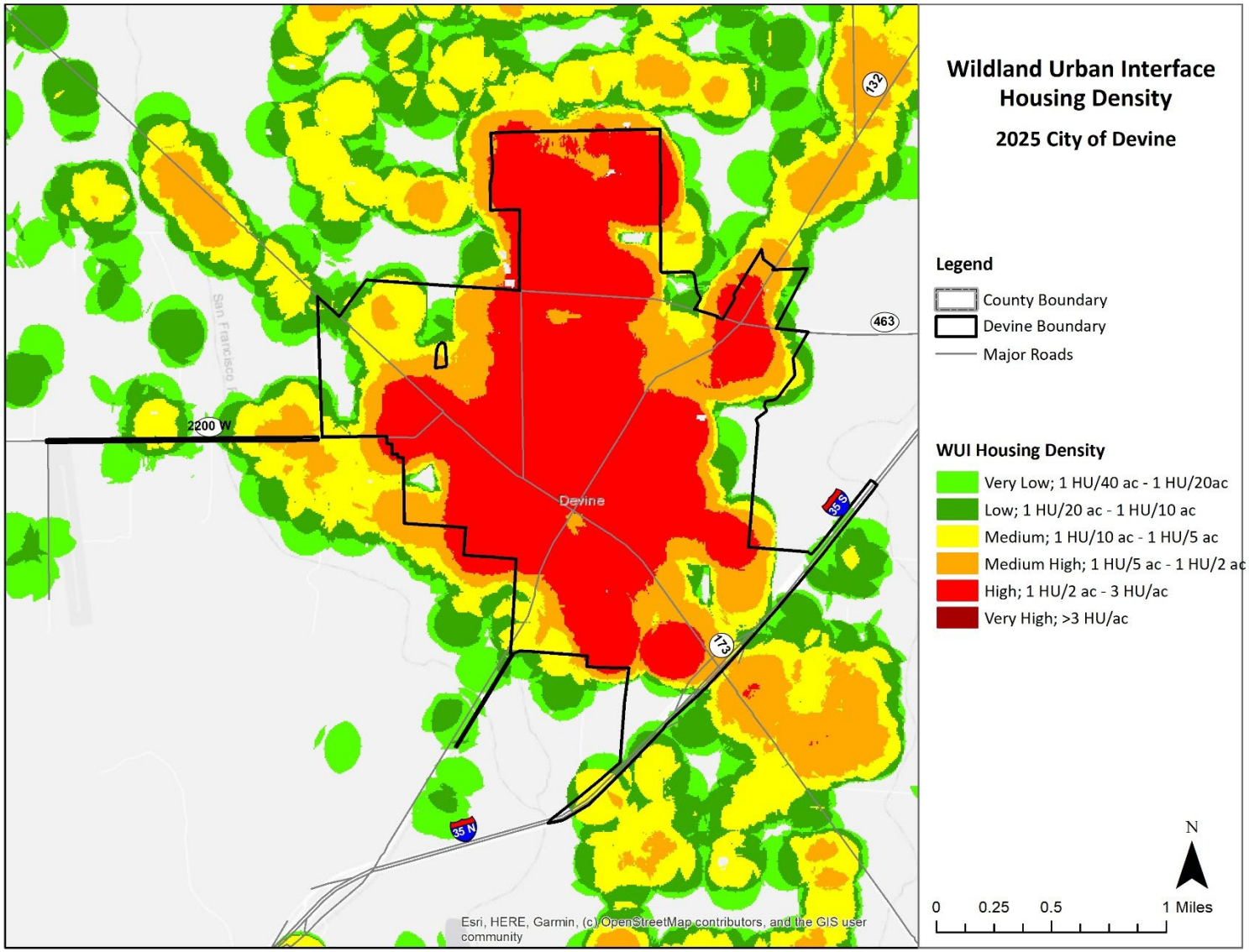

Figure 15: City of Devine Wildland Urban Interface

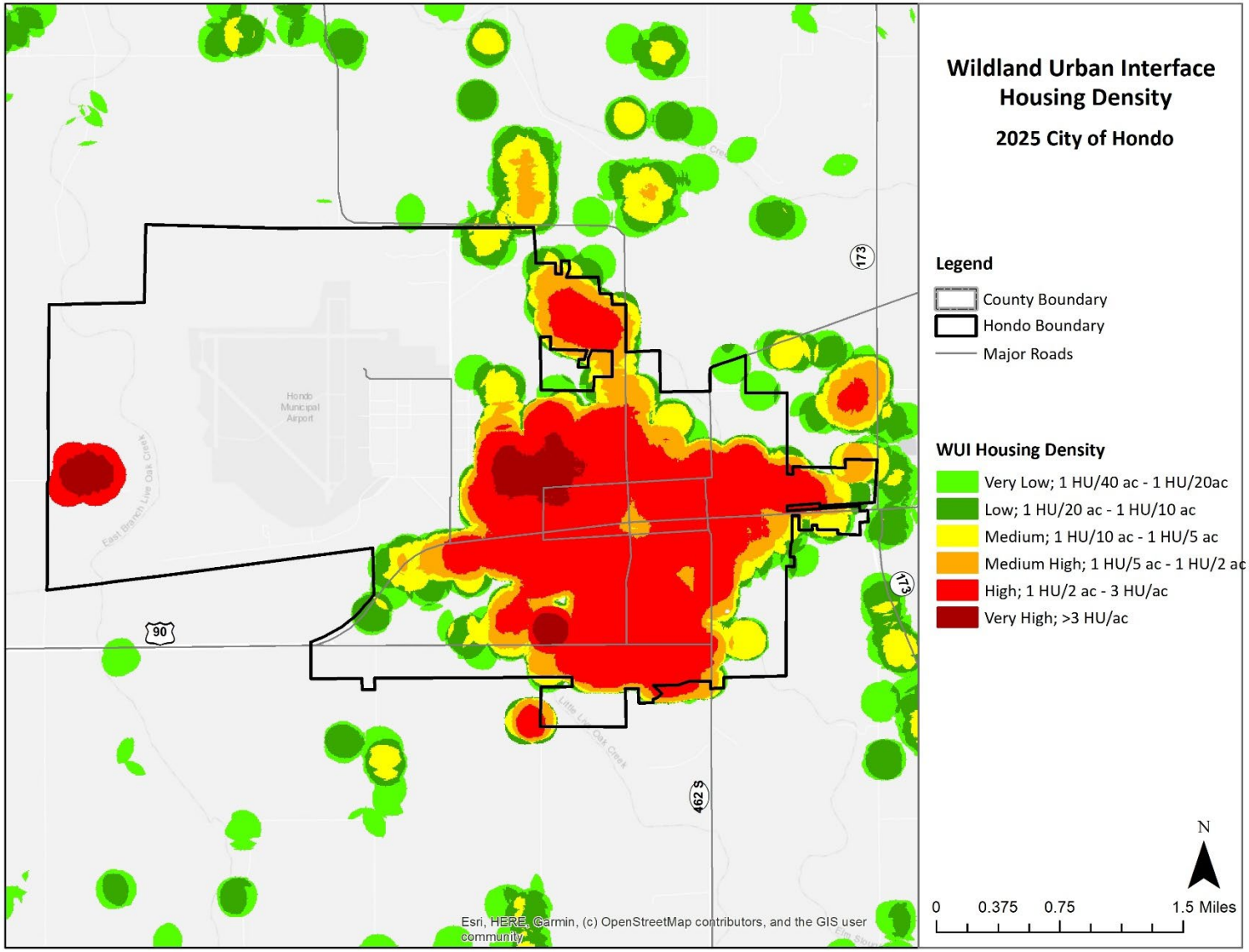

Figure 16: City of Hondo Wildland Urban Interface

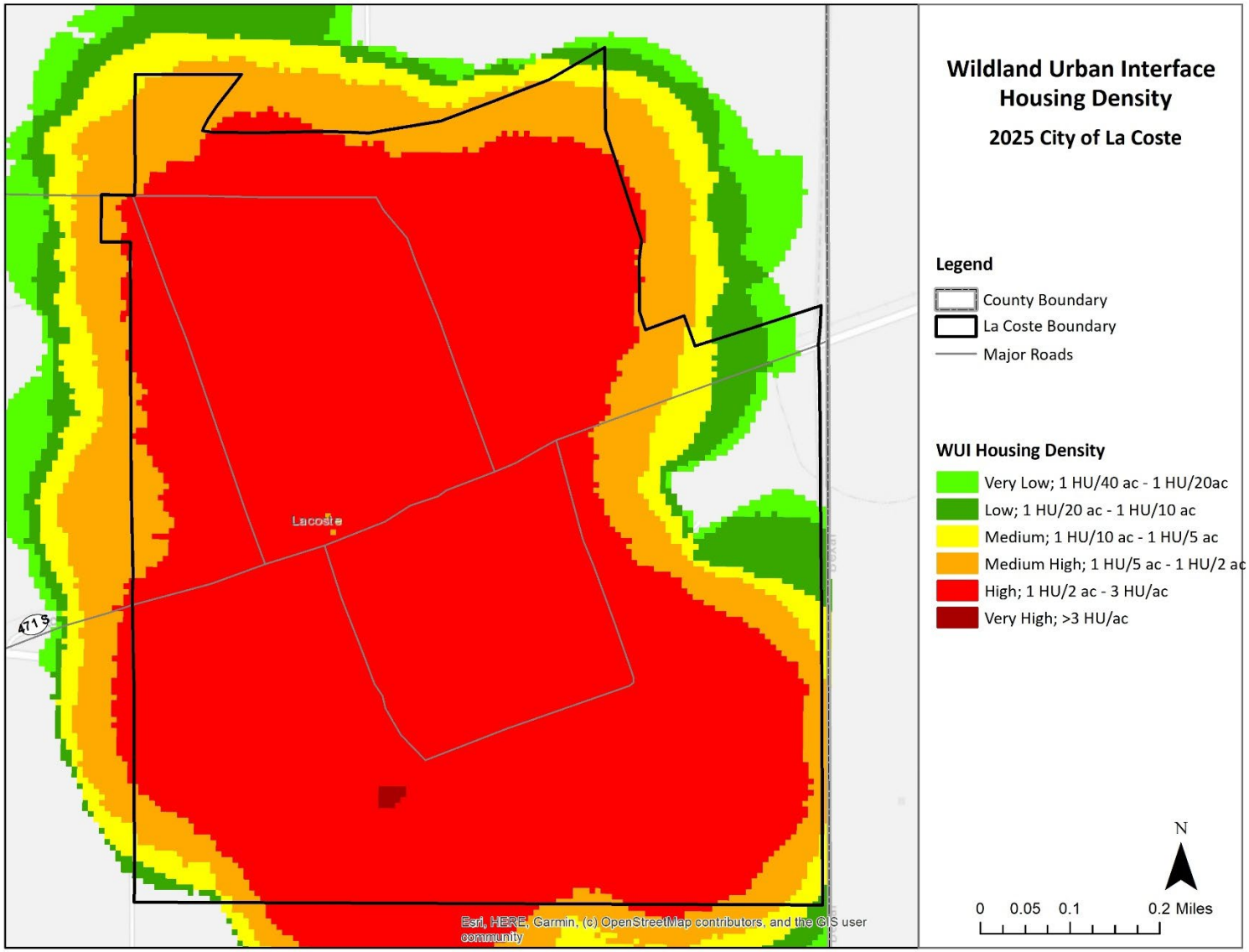

Figure 17: City of La Coste Wildland Urban Interface

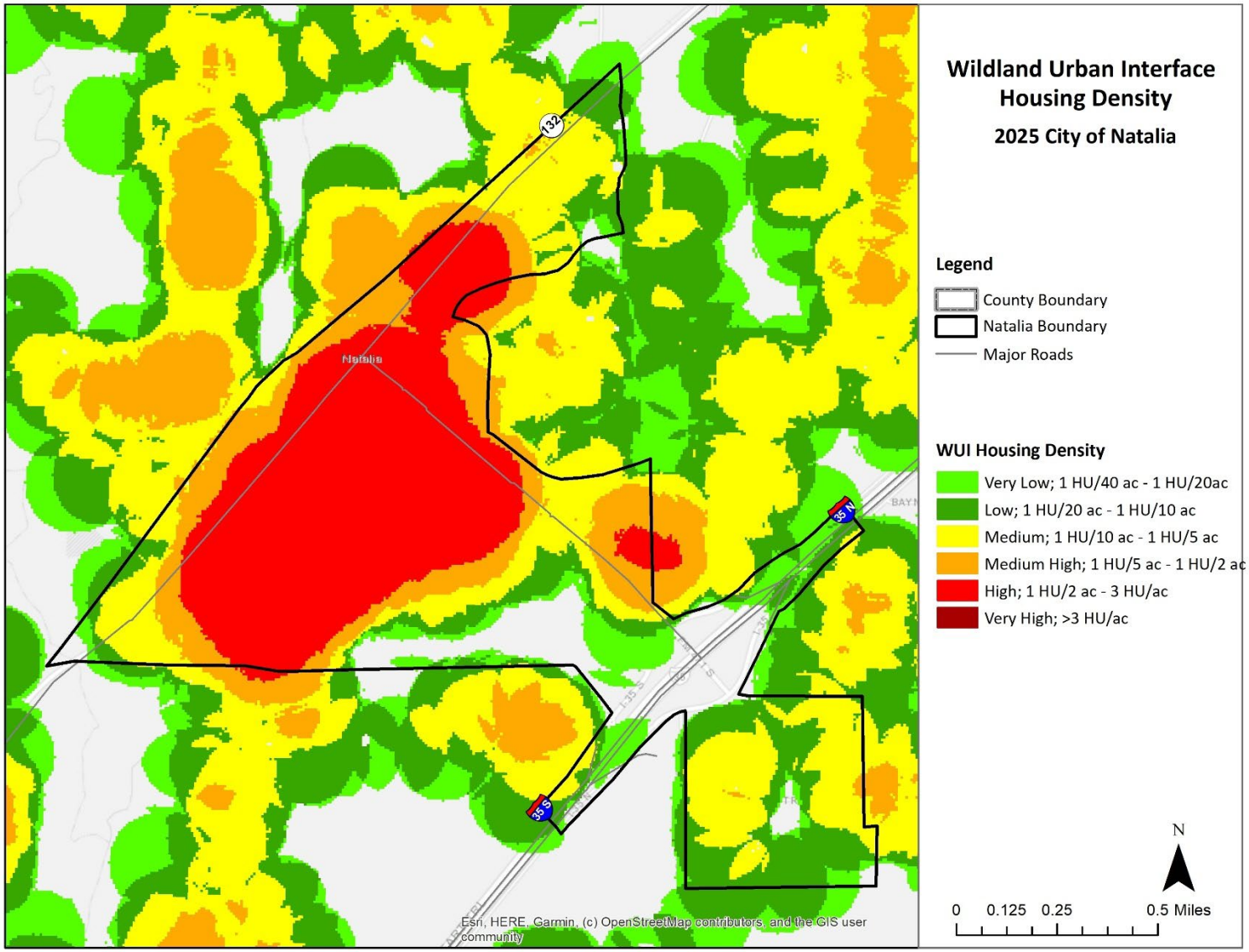

Figure 18: City of Natalia Wildland Urban Interface

B) Impact

Impacts from a wildfire in Medina County and the participating jurisdictions may include but are not limited to crop damage or destruction; damaged or destroyed agricultural, residential, commercial, and industrial buildings; escaped, lost, injured, or killed livestock and pets. In the worst cases, residents may be injured or killed.

5) Vulnerability

A) Population

As described in Section 3 of Chapter 3 above, Medina County and the participating jurisdictions are home to many vulnerable residents. Increased vulnerability may be due to many factors including but not limited to age, physical ability, financial means, housing type, and housing condition. Many of these vulnerabilities often overlap.

The jurisdictions recognize that vulnerable populations may need additional help preparing for and recovering from wildfire.

Residents of mobile homes, specifically those built before HUD's Manufactured Housing and Standards requirements were introduced in 1976, are of particular concern[14]. These structures are more prone to fire and have a higher incidence of occupant death than modern manufactured homes.

Residents of sub-standard structures are also of particular concern. Structures in sub-standard condition ahead of a wildfire, whether due to structural damage, missing windows or doors, holes in exterior walls or the roof, may be less safe during a wildfire than structures in standard condition. Exterior damage may make the homes more prone to fire by more readily exposing flammable materials to flame. Missing windows and other exterior gaps may leave residents and structures prone to smoke inhalation and smoke damage.

All of these issues may increase damage and lead to injuries or loss of life.

B) Critical Facilities

There are 95 critical facilities in the County and participating jurisdictions. Although not all are located in the Wildland Urban Interface, all may potentially be at risk to a fire or wildfire.

Table 14: Critical Facilities Vulnerable to Wildfire

Medina County Critical Facilities
Medina County Courthouse
Medina County Courthouse Annex
Medina County Commissioner

[14] https://www.usfa.fema.gov/downloads/pdf/statistics/rural.pdf

Precinct 1
Medina County Commissioner Precinct 2
Medina County Commissioner Precinct 3
Medina County Commissioner Precinct 4
Medina County Tax Assessor – Collector Hondo Office
Medina County Tax Assessor – Collector Devine Office
Medina County Tax Assessor – Collector Castroville Office
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Medina County Constable & Justice of the Peace Precinct 2
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Medina County Constable & Justice of the Peace Precinct 4
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Medina County Office of Emergency Management & Fire Marshal's Office
Medina County Animal Control Office
Medina County AgriLife Extension
Medina County Health Unit & WIC
Medina County Environmental Health & Floodplain Administrator
Medina County Pretrial Services
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Medina County Emergency Service District 1, Station 14
Medina County Emergency Service District 1, Station 15
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Medina Valley Independent School District Administration
Medina Valley Independent School District High School # 2
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Medina County Public Safety Radio Tower – Dunlay
Medina County Public Safety Radio Tower – Hondo
Medina County Public Safety Radio Tower – Castroville
Medina County Public Safety Radio Tower – D'Hanis
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Edwards Well #2
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Harrison Well
Wastewater Treatment Plant
City Hall / Police Dept.
Devine Mechanic Shop
Public Works Office / City Yard
Devine ISD Administrative Office
John J. Ciavarra Elementary School
Devine Intermediate School
Devine Middle School
Devine High School
DAEP School
Driscoll Public Library
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Devine ISD
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Colonial Pkwy Sewer Lift Station
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MVISD – La Coste Elementary
City of Natalia Critical Facilities

Wells 4 & 6
Tower & Standpipe
WWTP
Ball Park Lift Station
Loves Lift Station
Ft. Ewell Creek Lift Station
City Office

6. Tornado

A tornado is defined as a violently rotating column of air touching the ground, usually attached to the base of a thunderstorm.[15] Most of the time, vortices remain suspended in the atmosphere and are visible as a funnel cloud. However, when the lower tip of a vortex touches the ground, the tornado becomes a force of destruction. Tornado strength is currently measured using the Enhanced Fujita (EF) Scale. Like the previously used Fujita scale, the EF Scale uses damage to estimate tornado wind speeds and assigns a number between 0 and 5. A rating of EF0 represents minor to no damage whereas a rating of EF5 represents destruction of buildings.

1) Tornado History

The 2020 Medina County HMAP reported 34 tornado occurrences throughout the county from 1958-2015. The following table represents all recorded tornado events since the 2020 HMAP. There have been no recorded events for the individual participating jurisdictions.

Table 15: Medina County Tornado History

Location	Date Range	Number of Events	Magnitude	Fatalities	Injuries	Property Damage $2025	Crop Damage $2025
Countywide	4/28/2021	1	EF1	0	0	$578,826	$0

2) Likelihood of Future Events

Tornado events in Medina County are considered an occasional hazard given the frequency of previous tornados in the County and participating jurisdictions, meaning one is possible in the next five years.

3) Extent

Before 2007, the Fujita Scale was used for rating tornado strength. The Fujita Scale is based on damage intensity instead of wind speed, with estimated wind speed ranges based on the extent of observed damage.

[15] https://www.weather.gov/phi/TornadoDefinition

Table 16: Fujita Scale

Fujita Scale			
Fujita Category	**Wind Speed (MPH)**	**Character**	**Potential Damage**
F0	40-72	Weak	Light Damage. Some damage to chimneys; branches broken off trees, shallow-rooted trees uprooted, sign boards damaged.
F1	73-112	Weak	Moderate damage. Roof surfaces peeled off; mobile homes pushed foundations or overturned; moving autos pushed off road.
F2	113-157	Strong	Considerable damage. Roofs torn from frame houses; mobile homes demolished; boxcars pushed over; large trees snapped or uprooted; light objects become projectiles.
F3	158-206	Strong	Severe damage. Entire stories of well-constructed houses destroyed; severe damage to large buildings such as shopping malls; trains overturned; trees debarked; heavy cars lifted off the ground and thrown; structures with weak foundations blown away some distance.
F4	207-260	Violent	Devastating damage. Well-constructed houses and whole frame houses completely leveled; cars thrown and small missiles generated.
F5	260-318	Violent	Incredible damage. Strong frame houses leveled off foundations and swept away; automobile-sized missiles fly through the air in excess of 100 m (109 yds.); high-rise buildings have significant structural deformation; incredible phenomena will occur.

Adopted after 2007, the Enhanced Fujita Scale, or EF Scale, is the scale for rating the strength of tornados via the damage they cause. Six categories from zero to five represent increasing degrees of damage. The scale considers how most structures are designed and is thought to be an accurate representation of the surface wind speeds in the most violent tornados.

Table 17: Enhanced Fujita Scale[16]

Enhanced Fujita (EF) Scale		
Enhanced Fujita Category	**Wind Speed (MPH)**	**Potential Damage**
EF0	65-85	Light damage. Peels surface off some roofs; some damage to gutters or siding; branches broken off trees; shallow-rooted trees pushed over.
EF1	86-110	Moderate damage. Roofs severely stripped; mobile homes overturned or badly damaged; loss of exterior doors; windows and other glass broken.
EF2	111-135	Considerable damage. Roofs torn off well-constructed houses; foundations of frame homes shifted; mobile homes completely destroyed; large trees snapped or uprooted; light-object missiles generated; cars lifted off ground.
EF3	136-165	Severe damage. Entire stories of well-constructed houses destroyed; severe damage to large buildings such as shopping malls; trains overturned; trees debarked; heavy cars lifted off the ground and thrown; structures with weak foundations blown away some distance.
EF4	166-200	Devastating damage. Well-constructed houses and whole frame houses completely leveled; cars thrown and small missiles generated.
EF5	200+	Incredible damage. Strong frame houses leveled off foundations and swept away; automobile-sized missiles fly through the air in excess of 100 m (109 yds.); high-rise buildings have significant structural deformation; incredible phenomena will occur.

The most recent tornados in Medina County and the participating jurisdictions have been classified as EF1s on the Enhanced Fujita Scale. Medina County sits within Zone III (200 mph winds) of the IBC's wind speed map[17]. Future tornados in Medina County and the participating jurisdictions may meet up to EF5 on the Enhanced Fujita Category.

4) Location and Impact

A) Location

Tornados are not constrained by any distinct geographic boundary. Tornados can occur across all participating jurisdictions and may freely cross from one jurisdiction into another.

B) Impact

Impacts from a tornado may include but are not limited to damaged or destroyed personal property including vehicles, damaged or destroyed agricultural, residential, commercial, and industrial buildings, and loss of power. Crops may be damaged or destroyed. Pets and livestock

[16] 2023 State of Texas Hazard Mitigation Plan
[17] https://iibec.org/giving-Tornados-their-due/

may be injured or killed by tornados or flying debris. Pets and livestock may escape due to damaged or destroyed structures and fences.

In the worst cases, tornados may cause injuries and/or be deadly.

5) Vulnerability

Tornados have the potential to impact the entire planning area. All existing and future buildings, critical facilities, critical infrastructure, improved property, and the population of the participating jurisdictions are considered vulnerable to this hazard.

A) Population

As described in Section 3 of Chapter 3 above, Medina County and the participating jurisdictions are home to many vulnerable residents. Increased vulnerability may be due to many factors including but not limited to age, physical ability, financial means, housing type, and housing condition. Many of these vulnerabilities often overlap.

The participating jurisdictions recognize that vulnerable populations may need additional help preparing for and recovering from a tornado. Residents of mobile / manufactured homes are of particular concern. These structures are never considered safe during a tornado.

Residents of sub-standard structures are also of particular concern. Structures in sub-standard condition ahead of a tornado, whether due to structural damage, missing windows or doors, holes in exterior walls or the roof, may be less safe during a tornado than structures in standard condition. Existing structural weaknesses, due to housing type or existing damages, may lead to compounded damage, injuries, or loss of life.

B) Critical Facilities

Certain critical facilities and infrastructure in each jurisdiction may be particularly vulnerable to tornados. These facilities have been identified for reasons including: the number of people who use the facility or infrastructure, the facility's role in providing basic services to begin the cleanup process and get the jurisdictions running again, and the facility's ability to offer goods and materials residents will need to resume normalcy as quickly as possible. The selected critical facilities are built from a variety of materials with varying levels of resistance to tornadic damage. Additionally, their varying ages mean they weren't constructed to uniform building standards. Given tornados' violent nature, these facilities may experience increased levels of vulnerability to the hazards. Damage to any of these facilities may have a disproportionately negative impact on each jurisdiction's recovery from a tornado if that damage affects the facility's ability to reopen and resume normal business right away.

Table 18: Critical Facilities Vulnerable to Tornados and Potential Impacts

Jurisdiction	Critical Facilities	Potential Tornado Impacts								
		Loss of Power	Flying Debris	Uprooted Trees	Flooding Due to Physical Damages	Damaged or Destroyed Roofs	Damaged or Broken Windows	Wind Damage	Injuries	Death
Medina County	Medina County Courthouse	X	X	X	X	X	X	X	X	X
	Medina County Courthouse Annex	X	X	X	X	X	X	X	X	X
	Medina County Commissioner Precinct 1	X	X	X	X	X	X	X	X	X
	Medina County Commissioner Precinct 2	X	X	X	X	X	X	X	X	X
	Medina County Commissioner Precinct 3	X	X	X	X	X	X	X	X	X
	Medina County Commissioner Precinct 4	X	X	X	X	X	X	X	X	X
	Medina County Tax Assessor – Collector Hondo Office	X	X	X	X	X	X	X	X	X
	Medina County Tax Assessor – Collector Devine Office	X	X	X	X	X	X	X	X	X
	Medina County Tax Assessor – Collector Castroville Office	X	X	X	X	X	X	X	X	X
	Medina County Constable & Justice of the Peace Precinct 1	X	X	X	X	X	X	X	X	X
	Medina County Constable & Justice of the Peace Precinct 2	X	X	X	X	X	X	X	X	X

	Medina County Constable & Justice of the Peace Precinct 3	X	X	X	X	X	X	X	X	X
	Medina County Constable & Justice of the Peace Precinct 4	X	X	X	X	X	X	X	X	X
	Medina County Sheriff's Office, Communications/Dispatch, & Jail	X	X	X	X	X	X	X	X	X
	Medina County Office of Emergency Management & Fire Marshal's Office	X	X	X	X	X	X	X	X	X
	Medina County Animal Control Office	X	X	X	X	X	X	X	X	X
	Medina County AgriLife Extension	X	X	X	X	X	X	X	X	X
	Medina County Health Unit & WIC	X	X	X	X	X	X	X	X	X
	Medina County Environmental Health & Floodplain Administrator	X	X	X	X	X	X	X	X	X
	Medina County Pretrial Services	X	X	X	X	X	X	X	X	X
	Medina County Juvenile Probation	X	X	X	X	X	X	X	X	X
	D'Hanis Independent School District	X	X	X	X	X	X	X	X	X
	D'Hanis Vol. Fire Dept.	X	X	X	X	X	X	X	X	X
	Medina County Emergency Service District 1, Station 12	X	X	X	X	X	X	X	X	X
	Medina County Emergency Service District 1, Station 14	X	X	X	X	X	X	X	X	X
	Medina County Emergency Service District 1, Station 15	X	X	X	X	X	X	X	X	X
	Medina Regional Hospital	X	X	X	X	X	X	X	X	X
	Medina Valley Independent School District High School	X	X	X	X	X	X	X	X	X
	Medina Valley Independent School District Middle School	X	X	X	X	X	X	X	X	X
	Medina Valley Independent School District Administration	X	X	X	X	X	X	X	X	X
	Medina Valley Independent School District High School # 2	X	X	X	X	X	X	X	X	X

	Medina Valley Independent School District Loma Alta Middle School	X	X	X	X	X	X	X	X	X
	Potranco Elementary	X	X	X	X	X	X	X	X	X
	Yancey Vol. Fire Dept.	X	X	X	X	X	X	X	X	X
	Medina County Public Safety Radio Tower – Natalia	X	X	X	X	X	X	X	X	X
	Medina County Public Safety Radio Tower – Dunlay	X	X	X	X	X	X	X	X	X
	Medina County Public Safety Radio Tower – Hondo	X	X	X	X	X	X	X	X	X
	Medina County Public Safety Radio Tower – Castroville	X	X	X	X	X	X	X	X	X
	Medina County Public Safety Radio Tower – D'Hanis	X	X	X	X	X	X	X	X	X
	Medina County Public Safety Radio Tower – Mico	X	X	X	X	X	X	X	X	X
	Castroville Municipal Airport	X	X	X	X	X	X	X	X	X
	Devine Municipal Airport	X	X	X	X	X	X	X	X	X
Castroville	City Hall	X	X	X	X	X	X	X	X	X
	Castroville Elementary School	X	X	X	X	X	X	X	X	X
	Castroville Municipal Airport	X	X	X	X	X	X	X	X	X
	Castroville Police Dept.	X	X	X	X	X	X	X	X	X
	Castroville Public Library	X	X	X	X	X	X	X	X	X
	ESD #1, Castroville Station 10	X	X	X	X	X	X	X	X	X
Devine	Edwards Well #1				X					
	Bain Well				X					
	Warhorse Tower	X	X							
	LeMartin Well				X					
	Edwards Well #2				X					
	Ingram Tower / PD Radio Repeater	X	X							
	Harrison Well				X					
	Wastewater Treatment Plant	X	X	X	X	X	X	X	X	X

	City Hall / Police Dept.	X	X	X	X	X	X	X	X	X
	Devine Mechanic Shop	X	X	X	X	X	X	X	X	X
	Public Works Office / City Yard	X	X	X	X	X	X	X	X	X
	Devine ISD Administrative Office	X	X	X	X	X	X	X	X	X
	John J. Ciavarra Elementary School	X	X	X	X	X	X	X	X	X
	Devine Intermediate School	X	X	X	X	X	X	X	X	X
	Devine Middle School	X	X	X	X	X	X	X	X	X
	Devine High School	X	X	X	X	X	X	X	X	X
	DAEP School	X	X	X	X	X	X	X	X	X
	Driscoll Public Library	X	X	X	X	X	X	X	X	X
	George S. Woods Community Center	X	X	X	X	X	X	X	X	X
	Shaffer Well				X					
	Devine Animal Control Kennels	X	X	X	X	X	X	X	X	X
	Devine ISD	X	X	X	X	X	X	X	X	X
	Allman Sewer Lift Station	X	X		X					
	Colonial Pkwy Sewer Lift Station	X	X		X					
Hondo	City Hall	X	X	X	X	X	X	X	X	X
	Hondo High School	X	X	X	X	X	X	X	X	X
	Hondo Municipal Airport	X	X	X	X	X	X	X	X	X
	Hondo Police Dept.	X	X	X	X	X	X	X	X	X
	Hondo Public Library	X	X	X	X	X	X	X	X	X
	Hondo VFD Station #1	X	X	X	X	X	X	X	X	X
	Hondo VFD Station #2	X	X	X	X	X	X	X	X	X
La Coste	City Hall / Police Dept.	X	X	X	X	X	X	X	X	X
	La Coste Well #1				X					
	La Coste Well #2				X					
	La Coste Wastewater Treatment Plant	X	X	X	X	X	X	X	X	X
	La Coste Records & Vehicle Storage	X	X	X	X	X	X	X	X	X
	ESD1 – Station 11 (North)	X	X	X	X	X	X	X	X	X
	ESD1 – Station 11 (South)	X	X	X	X	X	X	X	X	X
	La Coste Helicopter Landing Pad				X					

	MVISD – La Coste Elementary	X	X	X	X	X	X	X	X	X
Natalia	Wells 4 & 6				X					
	Tower & Standpipe	X	X							
	WWTP	X	X							
	Ball Park Lift Station	X	X							
	Loves Lift Station	X	X							
	Ft. Ewell Creek Lift Station	X	X							
	City Office	X	X	X	X	X	X	X	X	X

7. Drought

Drought is typically defined as a persistent and abnormal moisture deficiency that creates adverse impacts on vegetation, animals, and the human population.[18]

Droughts are one of the most complex natural hazards to identify because it is difficult to determine their precise beginning or end. In addition, droughts can lead to other hazards such as extreme heat and wildfires. Their impact on wildlife and area farming is enormous, often killing crops, grazing land, edible plants and even in severe cases, trees. A secondary hazard to drought is wildfire because dying vegetation serves as a prime ignition source. Therefore, a heat wave combined with a drought is a very dangerous situation.

Table 19: Drought Classifications

Meteorological Drought	The degree of dryness or departure of actual precipitation from an expected average or normal amount based on monthly, seasonal, or annual time scales.
Hydrologic Drought	The effects of precipitation shortfalls on stream flows and reservoir, lake, and groundwater levels.
Agricultural Drought	Soil moisture deficiencies relative to water demands of plant life, usually crops.
Socioeconomic Drought	The effect of demands for water exceeding the supply as a result of a weather-related supply shortfall.

[18] NOAA, NIDIS. https://www.drought.gov/what-is-drought/drought-basics

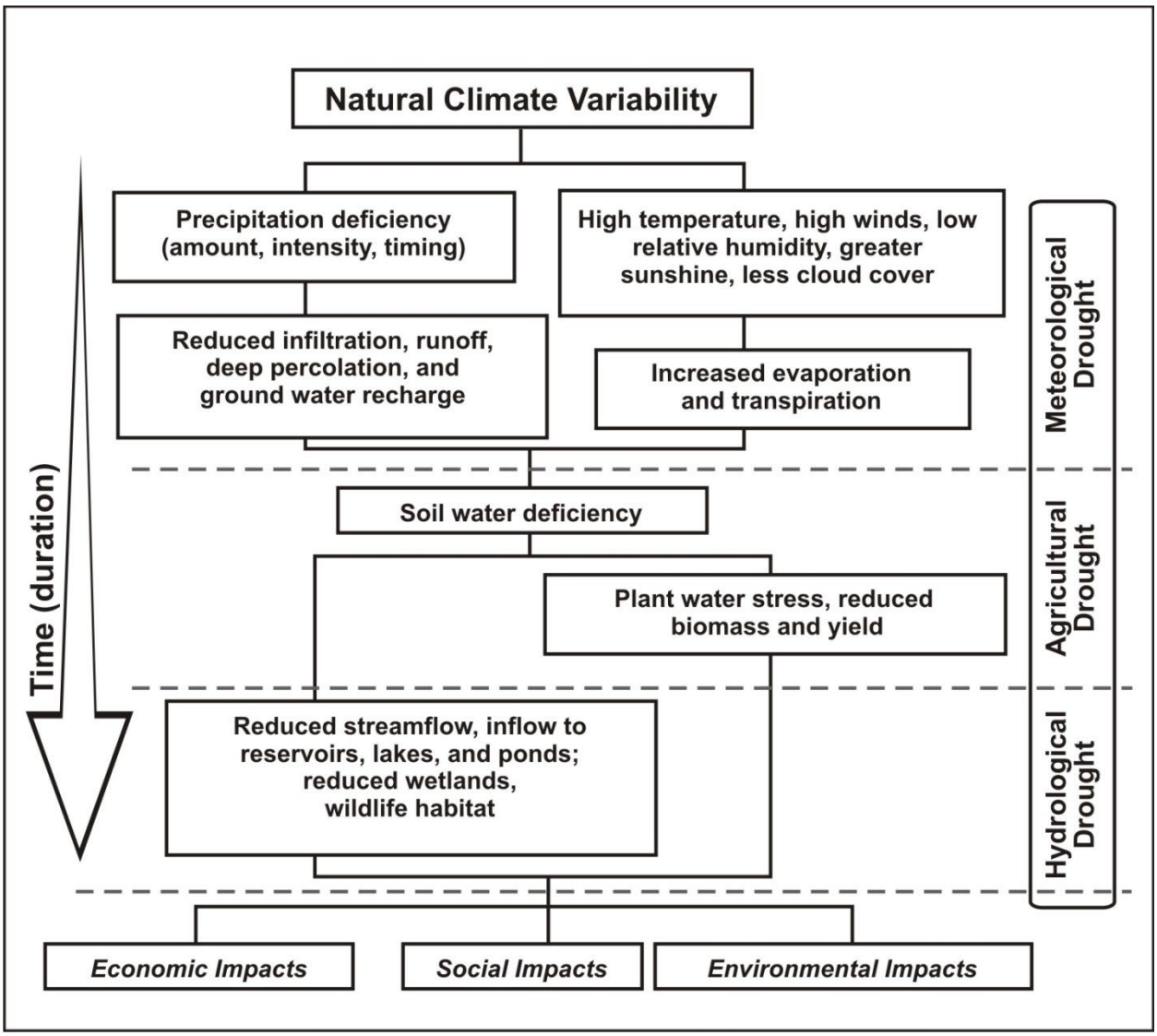

Figure 19: Sequence of Drought Occurrence and Impacts for Commonly Accepted Drought Types[19]

[19] Source: National Drought Mitigation Center, University of Nebraska-Lincoln, http://drought.unl.edu/DroughtBasics/TypesofDrought.aspx

1) Drought History

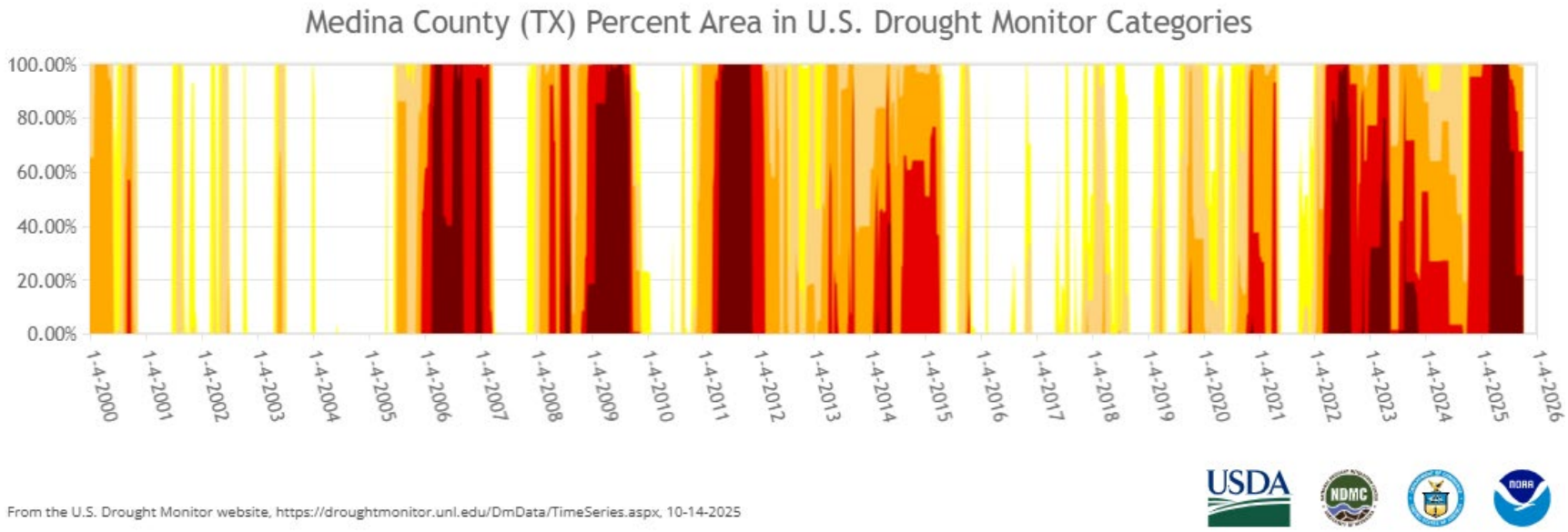

Figure 20: Medina County Drought History[20]

[20] Source: United States Drought Monitor https://droughtmonitor.unl.edu/Data.aspx

Drought history is recorded at the county level. However, the data is measured by the percentage of the county affected by drought. Although no specific data regarding drought's occurrences in the remaining jurisdictions is available, it's possible to use the data in Figure 20 to infer when the participating jurisdictions addressing the hazard previously experienced drought conditions due to the fact that the conditions impacted 100% of the county. The table below represents events recorded in the NCEI database, however, data from the US Drought Monitor, shown in Figure 20 above, shows more events that were not recorded in the NCEI. According to the data, Medina County and the participating jurisdictions have regularly experienced drought conditions since 2000.

Table 20: Medina County Drought History

Location	Date Range	Number of Drought Events	Fatalities	Injuries	Property Damage $2025	Crop Damage $2025
Countywide	10/1/2020 – 10/8/2024	39	0	0	$0	$0

2) Likelihood of Future Events

Based on historical drought in Texas and Medina County, it is highly likely that a future drought will affect the County and the participating jurisdictions, meaning an event affecting any or all the participating jurisdictions is probable in the next year, and a major drought every 20 years.

3) Extent

Since 2000, Medina County has regularly experienced county-wide droughts classified as periods ranging from abnormal dryness to exceptional drought. Between 2011 and 2012, the entire County, including all participating jurisdictions, was in a state of extreme or exceptional drought, the most severe drought categories.

The Palmer Drought Index is used to measure the extent of drought by measuring the duration and intensity of long-term drought-inducing circulation patterns. Long-term drought is cumulative, with the intensity of drought during the current month dependent upon the current weather patterns plus the cumulative patterns of previous months. The hydrological impacts of drought (e.g., reservoir levels, groundwater levels, etc.) take longer to develop.

Table 21: Palmer Drought Index

Drought Index	Drought Conditions Classifications						
	Extreme	Severe	Moderate	Normal	Mostly Moist	Very Moist	Extremely Moist
Z Index	-2.75 and below	-2.00 to -2.74	-1.25 to -1.99	-1.24 to +.99	+1.00 to +2.49	+2.50 to +3.49	n/a
Meteorological	-4.00 and below	-3.00 to -3.99	-2.00 to -2.99	-1.99 to +1.99	+2.00 to +2.00	+3.00 to +3.00	+4.00 and above
Hydrological	-4.00 and below	-3.00 to -3.99	-2.00 to -2.99	-1.99 to +1.99	+2.00 to +2.00	+3.00 to +3.00	+4.00 and above

Table 22: Palmer Drought Category Descriptions[21]

Category	Description	Possible Impacts	Palmer Drought Index
D0	Abnormally Dry	Going into drought: short-term dryness slowing planting, growth of crops or pastures; fire risk above average. Coming out of drought: some lingering water deficits; pastures or crops not fully recovered.	-1.0 to -1.9
D1	Moderate Drought	Some damage to crops, pastures; fire risk high; streams, reservoirs, or wells low, some water shortages developing, or imminent, voluntary water use restrictions requested.	-2.0 to -2.9
D2	Severe Drought	Crop or pasture losses likely; fire risk very high; water shortages common; water restrictions imposed.	-3.0 to -3.9
D3	Extreme Drought	Major crop/pasture losses; extreme fire danger; widespread water shortages or restrictions.	-4.0 to -4.9
D4	Exceptional Drought	Exceptional and widespread crop/pasture losses; exceptional fire risk; shortages of water in reservoirs, streams, and wells, creating water emergencies.	-5.0 or less

Drought is monitored nationwide by the National Drought Mitigation Center (NDMC). Indicators are used to describe broad scale drought conditions across the U.S. Indicators correspond to the intensity of drought.

Based on the historical occurrences of drought, Medina County and all participating jurisdictions should anticipate experiencing droughts ranging from abnormally dry to exceptional drought or D0 to D4 based on the Palmer Drought Category. Given varying conditions, droughts may start on the low end of the Index but will intensify with duration and

[21] www.droughtmonitor.unl.edu

ongoing lack of precipitation. Future drought events may reach the intensity of D4 on the Palmer Drought Index.

4) Location and Impact

A) Location

Drought has no distinct geographic boundary. Drought can occur across all participating jurisdictions.

B) Impact

General impacts may include water shortage, risk to public safety due to wildfire risk increases, respiratory impacts to the public due to affected air quality, and degradation of fish and wildlife habitat. Economic impacts may include increased prices for food, unemployment for farm workers and ranch hands, livestock mortality from limited grazing availability, and reduced tax revenues because of reduced supplies of agriculture products and livestock that are dependent on rainfall, along with other supply shortages.

5) Vulnerability

Because drought has the potential to impact every jurisdiction equally, all improved property and the entire population is exposed to this hazard. General impacts may include water shortage, risk to public safety due to wildfire risk increases, respiratory impacts to the public due to affected air quality, and degradation of fish and wildlife habitat.

Economic impacts may include increased prices for food, unemployment for farm workers and ranch hands, livestock mortality from limited grazing availability, and reduced tax revenues because of reduced supplies of agriculture products and livestock that are dependent on rainfall.

Lower income populations who may not have the resources to buy large quantities of bottled water in the event of a shortage may be more vulnerable than other populations.

A) Population

As described in Section 3 of Chapter 3 above, Medina County and the participating jurisdictions are home to many vulnerable residents. Increased vulnerability may be due to many factors including but not limited to age, physical ability, financial means, housing type, and housing condition. Many of these vulnerabilities often overlap.

The jurisdictions recognize that vulnerable populations may need additional help preparing for and recovering from a drought. Lower income populations who may not have the resources to buy large quantities of bottled water in the event of a shortage may be more vulnerable than other populations.

B) Critical Facilities

In addition to triggering various components of participating jurisdictions' Drought Contingency Plans, drought conditions may affect local critical facilities. Area fire departments may see increased demand for controlling wildland fire due to dry conditions. Drought is likely to require increased output from the local power companies to keep up with electrical demand. Depending on factors like time of year, temperature, and duration, increased electrical demand may cause brownouts that would impact critical facilities.

Table 23: Critical Facilities Vulnerable to Drought and Potential Impacts

Jurisdiction	Critical Facilities	Potential Drought Impacts	
		Increased Demand for Services	Economic Damages
Medina County	Medina County Courthouse		X
	Medina County Courthouse Annex		X
	Medina County Commissioner Precinct 1		X
	Medina County Commissioner Precinct 2		X
	Medina County Commissioner Precinct 3		X
	Medina County Commissioner Precinct 4		X
	Medina County Tax Assessor – Collector Hondo Office		X
	Medina County Tax Assessor – Collector Devine Office		X
	Medina County Tax Assessor – Collector Castroville Office		X
	Medina County Constable & Justice of the Peace Precinct 1		X
	Medina County Constable & Justice of the Peace Precinct 2		X
	Medina County Constable & Justice of the Peace Precinct 3		X
	Medina County Constable & Justice of the Peace Precinct 4		X
	Medina County Sheriff's Office, Communications/Dispatch, & Jail		X
	Medina County Office of Emergency Management & Fire Marshal's Office	X	X

	Medina County Animal Control Office		X
	Medina County AgriLife Extension	X	X
	Medina County Health Unit & WIC	X	X
	Medina County Environmental Health & Floodplain Administrator	X	X
	Medina County Pretrial Services		X
	Medina County Juvenile Probation		X
	D'Hanis Independent School District		X
	D'Hanis Vol. Fire Dept.	X	X
	Medina County Emergency Service District 1, Station 12	X	X
	Medina County Emergency Service District 1, Station 14	X	X
	Medina County Emergency Service District 1, Station 15	X	X
	Medina Regional Hospital	X	X
	Medina Valley Independent School District High School		X
	Medina Valley Independent School District Middle School		X
	Medina Valley Independent School District Administration		X
	Medina Valley Independent School District High School # 2		X
	Medina Valley Independent School District Loma Alta Middle School		X
	Potranco Elementary		X
	Yancey Vol. Fire Dept.	X	X
	Medina County Public Safety Radio Tower – Natalia	X	X
	Medina County Public Safety Radio Tower – Dunlay	X	X
	Medina County Public Safety Radio Tower – Hondo	X	X
	Medina County Public Safety Radio Tower – Castroville	X	X
	Medina County Public Safety Radio Tower – D'Hanis	X	X
	Medina County Public Safety Radio Tower – Mico	X	X
	Castroville Municipal Airport		X
	Devine Municipal Airport		X
Castroville	City Hall		X

	Castroville Elementary School		X
	Castroville Municipal Airport		X
	Castroville Police Dept.		X
	Castroville Public Library		X
	ESD #1, Castroville Station 10	X	X
Devine	Edwards Well #1	X	X
	Bain Well	X	X
	Warhorse Tower	X	X
	LeMartin Well	X	X
	Edwards Well #2	X	X
	Ingram Tower / PD Radio Repeater		X
	Harrison Well	X	X
	Wastewater Treatment Plant	X	X
	City Hall / Police Dept.		X
	Devine Mechanic Shop		X
	Public Works Office / City Yard		X
	Devine ISD Administrative Office		X
	John J. Ciavarra Elementary School		X
	Devine Intermediate School		X
	Devine Middle School		X
	Devine High School		X
	DAEP School		X
	Driscoll Public Library		X
	George S. Woods Community Center	X	X
	Shaffer Well	X	X
	Devine Animal Control Kennels	X	X
	Devine ISD		X
	Allman Sewer Lift Station	X	X

	Colonial Pkwy Sewer Lift Station	X	X
Hondo	City Hall		X
	Hondo High School		X
	Hondo Municipal Airport		X
	Hondo Police Dept.		X
	Hondo Public Library		X
	Hondo VFD Station #1	X	X
	Hondo VFD Station #2	X	X
La Coste	City Hall / Police Dept.		X
	La Coste Well #1	X	X
	La Coste Well #2	X	X
	La Coste Wastewater Treatment Plant	X	X
	La Coste Records & Vehicle Storage		X
	ESD1 – Station 11 (North)	X	X
	ESD1 – Station 11 (South)	X	X
	La Coste Helicopter Landing Pad		X
	MVISD – La Coste Elementary		X
Natalia	Wells 4 & 6	X	X
	Tower & Standpipe	X	X
	WWTP	X	X
	Ball Park Lift Station	X	X
	Loves Lift Station	X	X
	Ft. Ewell Creek Lift Station	X	X
	City Office		X

8. Extreme Cold

Extreme cold can happen anywhere in the state, although its levels can range extensively. In the panhandle extreme cold means days below zero Fahrenheit while in the Rio Grande Valley it means reaching temperatures below freezing.[22] Extreme cold is an issue any time winter temperatures drop significantly below normal and make staying warm and safe a challenge.

Extreme cold can accompany winter weather, but it can also be independent of those storms. For that reason, the impacts of extreme cold are presented here separately from the impacts of winter weather.

1) Extreme Cold History

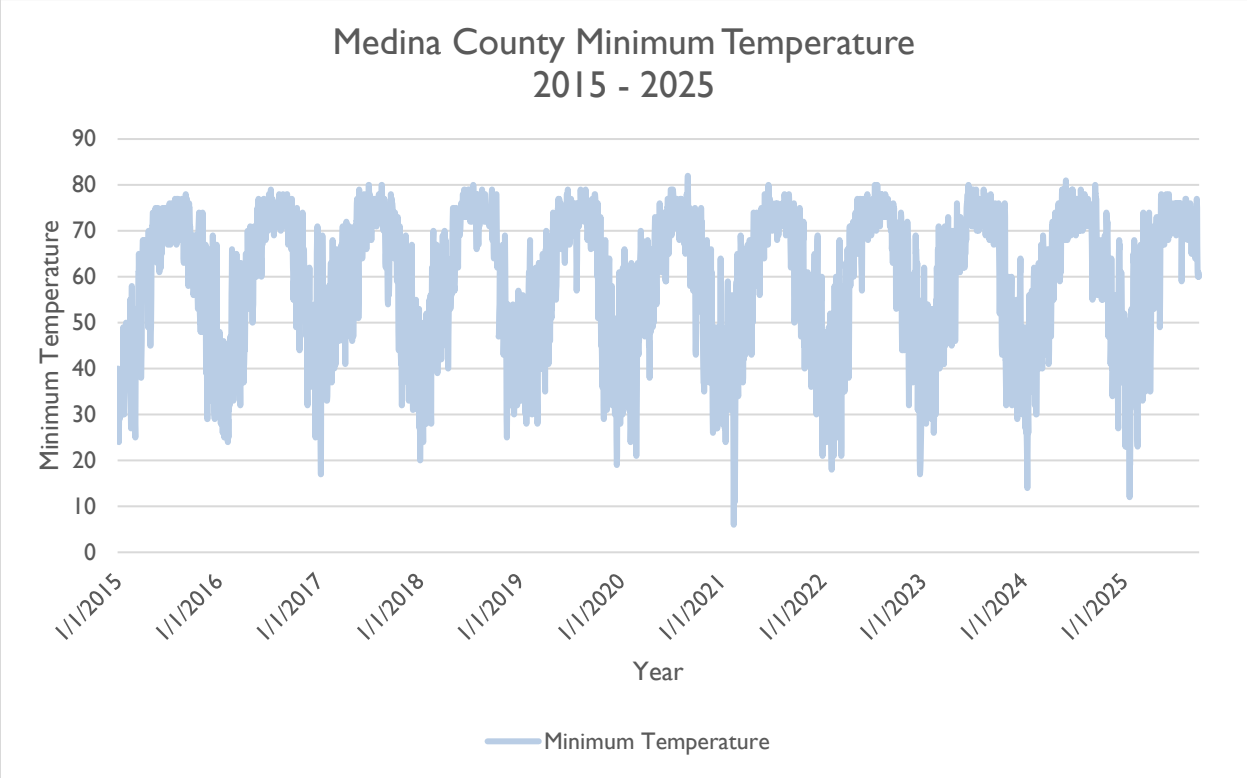

Figure 21: Minimum Recorded Daily Temperature 2015-2025[23]

Medina County and the jurisdictions addressing the hazard have not previously included extreme cold in their mitigation plan as a standalone hazard.

Between 2015 to 2025, Medina County experienced 234 days with a minimum temperature of 32˚F or colder. At least 4 of those days had a maximum temperature of 32˚F or below. During the same timeframe, the coldest temperature recorded was 6˚F on February 15, 2021.

[22] 2023 State of Texas Hazard Mitigation Plan
[23] Source: National Centers for Environmental Information, https://www.ncdc.noaa.gov/cdo-web/datasets

Temperature data is recorded at the county level. However, given the nature of extreme cold and the proximity of all jurisdictions to each other, it is assumed that all jurisdictions addressing the hazard experienced the same extreme cold events. The NCEI database recorded 2 events from 2015 – 2025, however based on recorded daily temperatures from the NOAA Climate Data Center, it is clear that many events have gone unreported.

2) Likelihood of Future Occurrence

Based on historic weather data, extreme cold in Medina County and the participating jurisdictions is highly likely, meaning an event affecting any or all the participating jurisdictions is probable in the next year.

3) Extent

The magnitude or intensity of an extreme cold event is measured according to temperature in relation to wind speed. The relationship is referred to as the "Wind Chill," and is depicted in Figure 22.

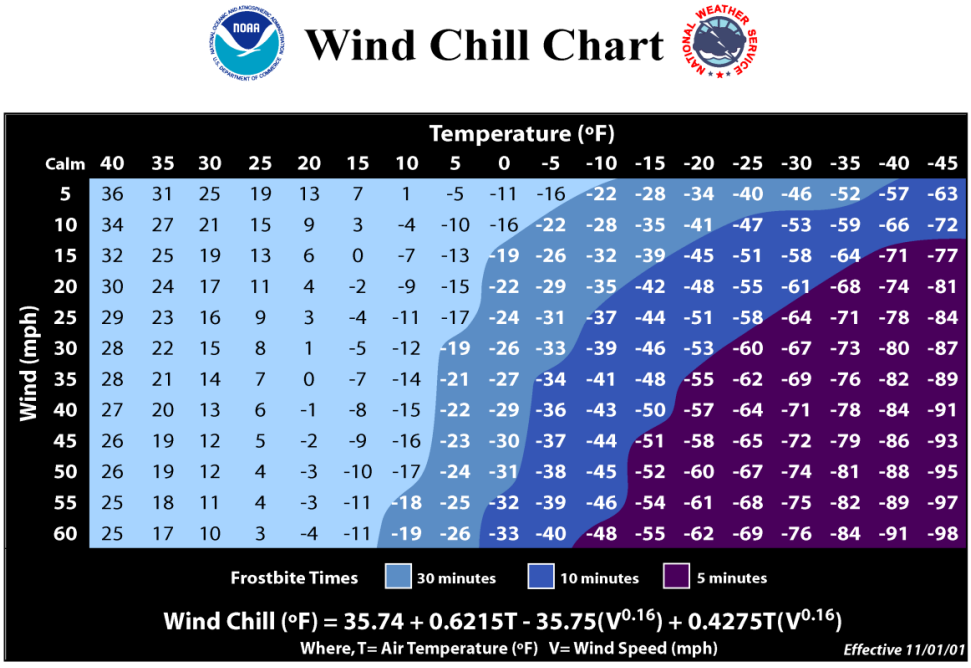

Figure 22: NOAA's NWS Wind Chill Index

As displayed in Figure 22, the wind chill temperature is a measurement of how cold the wind makes the air feel to the human body. Since wind can dramatically accelerate heat loss from the body, a 20° day could feel just as cold as a calm day with 0° temperatures. The Wind Chill

Chart factors the wind chill; it is not applicable in calm winds or when the temperature is over 50°.

The coldest temperatures in Medina County and the participating jurisdictions may meet or exceed the current record temperature of 6˚F. Future extreme cold events may be as intense, long-lasting, and dangerous as previous ones.

4) Location and Impact

A) Location

Extreme cold has no distinct geographic boundary. Extreme cold can occur across the entire planning area and uniformly affect all participating jurisdictions.

B) Impact

The potential impact of extreme cold is normally minor, resulting in few, if any, injuries. Based on the hazard's potential, in the worst cases, especially if combined with winter weather, the hazard may inflict property or crop damage, and it can even be deadly. Electrical grid failure, power outages, impacts to water and sewer infrastructure and pipe damage due to freezes are possible. Any shutdown of facilities due to extreme cold is expected to be temporary.

5) Vulnerability

A) Population

As described in Section 3 of Chapter 3 above, Medina County and the participating jurisdictions are home to many vulnerable residents. Areas with concentrations of young, elderly, and low-income residents may feel greater impacts from extreme cold due to those populations' limited ability to properly address the hazard. Deficiencies may include but aren't limited to lack of heating in their homes or vehicles, lack of access to heated public spaces during the coldest part of the day or night, and frozen pipes that may jeopardize access to drinking water, and in the worst cases, lead to severe structural damage that can render a home unlivable. The consequences for these populations' exposure to extreme cold may include but are not limited to complications for those suffering from hypertension, hypothyroidism, and diabetes, as well as exhaustion, hypothermia, trench foot, or death.

B) Critical Facilities

While all the jurisdictions are exposed to extreme temperatures, existing buildings, infrastructure, and critical facilities were historically not considered vulnerable to damage significant enough to interrupt or stop normal operations. However, damage to existing buildings and infrastructure as a result of winter weather and extreme cold in recent years has shown exceptions to long held assumptions about the threat of extreme cold. Therefore, all facilities are potentially vulnerable to the impacts noted in section 4b.

9. Extreme Heat

The National Weather Service criteria for an excessive heat warning is a heat index of 105 °F or greater that will last for 2 hours or more. In extreme heat your body works extra hard to maintain a normal temperature, which can lead to death. Extreme heat is responsible for the highest number of annual deaths among all weather-related hazards.[24] Humid conditions, which add to the discomfort of high temperatures, occur when a "dome" of high atmospheric pressure traps hazy, damp air near the ground.

Although heat can damage buildings and facilities, it presents a more significant threat to the safety and welfare of citizens. The major human risks associated with severe summer heat include heat cramps; sunburn; dehydration; fatigue; heat exhaustion; and heat stroke. The most vulnerable population to heat casualties are children and the elderly or infirm, who frequently live on low fixed incomes and cannot afford to run air-conditioning on a regular basis. This population is sometimes isolated, with no immediate family or friends to look out for their wellbeing.

Severe summer heat is an invisible killer. Although a heat wave does not happen with the spectacle of other hazards such as tornados and floods, the National Center for Environmental Health reports that extreme heat caused 7,415 heat-related deaths in the United States from 1999 to 2010[25]. Extreme heat kills more people than hurricanes, floods, tornados, and lightning combined, according to the National Weather Service. In 2001, 300 deaths were caused by excessive heat exposure.

[24] https://www.ready.gov/heat
[25] http://www.bt.cdc.gov/disasters/extremeheat/heat_guide.asp

1) Extreme Heat History

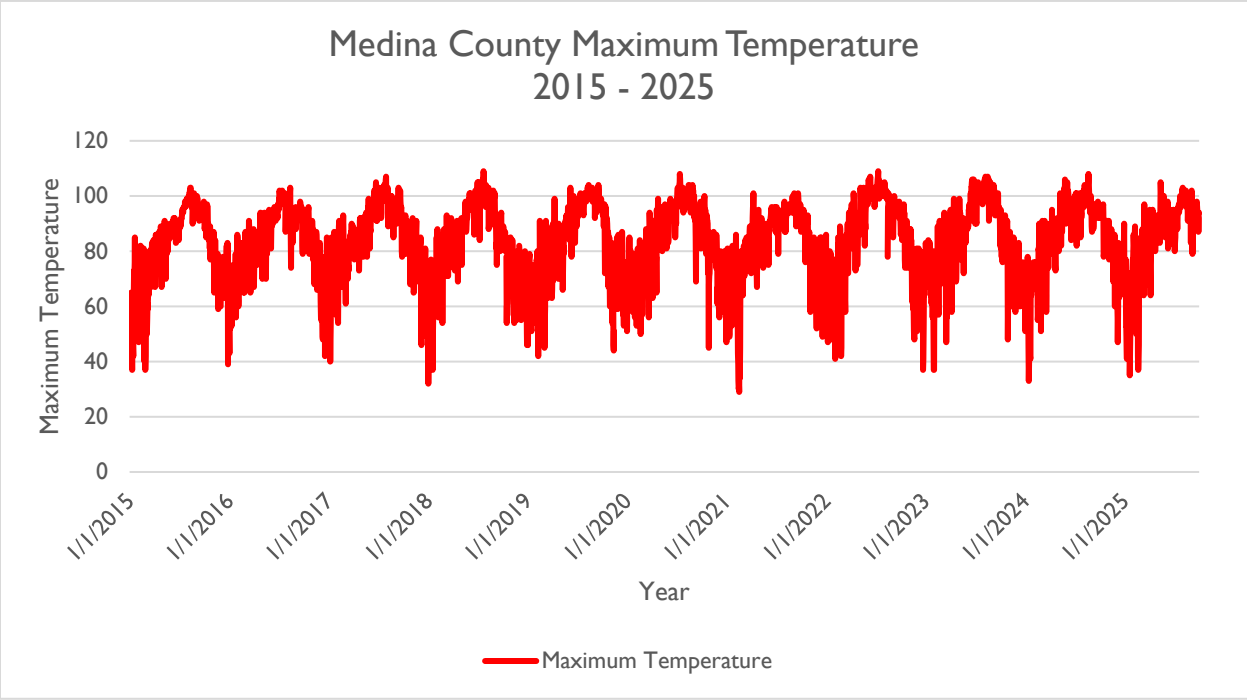

Figure 23: Maximum Recorded Daily Temperature 2015-2025[26]

In the 2020 HMAP, Medina County and the participating jurisdictions reported over 1000 extreme heat events from 2000 – 2018.

Between 2015 to 2025, Medina County and the participating jurisdictions experienced 424 days with a maximum temperature of 100˚F or hotter and 537 days where the combination of humidity and moderate-to-high temperatures warranted a heat advisory, if not an extreme heat warning.

Extreme heat data is recorded at the county level. However, given the nature of extreme heat and the proximity of all jurisdictions to each other, it is assumed that all jurisdictions experienced the same extreme heat events. The NCEI database recorded 6 events from 2015 – 2025, however based on recorded daily temperatures from the NOAA Climate Data Center, it is clear that many events have gone unreported.

[26] Source: National Centers for Environmental Information, https://www.ncdc.noaa.gov/cdo-web/datasets

2) Likelihood of Future Events

Based on historic weather data, extreme heat in Medina County and the participating jurisdictions is highly likely, meaning an event affecting any or all of the participating jurisdictions is probable in the next year.

3) Extent

The magnitude or intensity of an extreme heat event is measured according to temperature in relation to the percentage of humidity. According to the National Oceanic Atmospheric Administration (NOAA), this relationship is referred to as the "Heat Index," and is depicted in Figure 24. This index measures how hot it feels outside when humidity is combined with high temperatures.

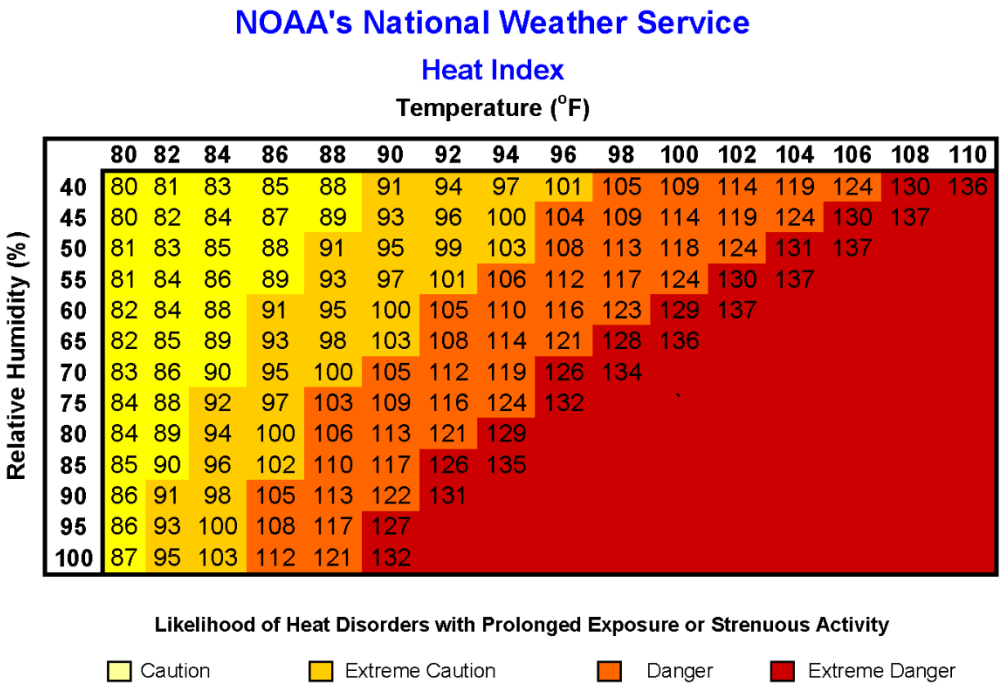

Figure 24: NOAA's NWS Heat Index Chart[27]

The extent scale in Figure 24 displays varying degrees of caution depending on the relative humidity combined with the temperature. For example, when the temperature is below 90˚F, caution should be exercised if the humidity level is at or above 40 percent.

The shaded zones on the chart indicate varying symptoms or disorders that could occur depending on the magnitude or intensity of the event. "Caution" is the first level of intensity where fatigue due to heat exposure is possible. "Extreme Caution" indicates that sunstroke,

[27] http://www.nws.noaa.gov/om/heat/ht-images/heatindexchart.png

muscle cramps or heat exhaustion are possible, whereas a "Danger" level means that these symptoms are likely. "Extreme Danger" indicates that heat stroke is likely.

The National Weather Service (NWS) initiates alerts based on the Heat Index Intensity as shown in Table 24.

Table 24: Heat Index Intensity

Intensity	Description
Heat Advisory	Extreme heat index making it feel hot, typically between 105˚F to 110˚F for 3 hours or more during the day and at or above 75˚F at night.
Excessive Heat Warning	Extreme heat index making it feel very hot, typically above 105˚F for 3 hours or more during the day and at or above 80˚F at night.

Given an estimated daily average relative humidity level of 75%[28], highs as low as 89˚F can produce a heat index temperature of 106˚F. The combination of high humidity and moderate temperatures creates an environment that reaches the Danger Zone on NOAA's Heat Index Chart and may trigger an NWS Heat Advisory.

Between 2015 and 2025 Medina County and the participating jurisdictions experienced 537 days with highs of 89˚F or hotter and overnight lows of 75˚F or hotter. Based on the NWS descriptions in Table 24 above, and the average daily humidity level, these days likely warranted a heat advisory.

The hottest temperature recorded in Medina County in the recent past, 109˚F, was reached on July 23, 2018 and again on July 11, 2022. Future extreme heat events may meet the heat index requirements for issuing an Excessive Heat Warning as described in the Heat Intensity scale in Table 24 above. The hottest temperatures in Medina County and the participating jurisdictions may meet or exceed the current record temperature of 109˚F. Future extreme heat events may be as intense, long-lasting, and dangerous as previous ones.

[28] Used Houston Average, closest to County - https://www.currentresults.com/Weather/Texas/humidity-annual.php

4) Location and Impact

A) Location

Extreme heat has no distinct geographic boundary. Extreme heat can occur across the entire planning area and uniformly affect all participating jurisdictions.

B) Impact

The potential impact of excessive summer heat is normally minor, resulting in few, if any, injuries. No property or crop damage specifically tied to extreme heat events has been recorded in any of the participating jurisdictions. No deaths related to extreme heat have ever been reported in the participating jurisdictions. However, based on the hazard's potential, in the worst cases, especially if combined with drought conditions, the hazard may inflict property or crop damage, and it can even be deadly. Electrical grid failure, power outages, and damage to critical roadways are potential impacts. Any shutdown of facilities due to extreme heat is expected to be temporary.

5) Vulnerability

A) Population

As described in Section 3 of Chapter 3 above, Medina County and the participating jurisdictions are home to many vulnerable residents. Vulnerable populations may feel greater impacts from extreme heat due to these populations' limited ability to properly address the hazard due to deficiencies including but not limited to lack of air conditioning in their homes or vehicles, lack of access to air-conditioned public spaces during the hottest part of the day, insufficient numbers of box or ceiling fans, or lack of access to other means of cooling. The consequences for these populations' exposure to extreme heat can include but are not limited to heat cramps, sunburn, dehydration, fatigue, heat exhaustion, heat stroke, or death.

B) Critical Facilities

While all the jurisdictions are exposed to extreme temperatures, existing buildings, infrastructure, and critical facilities were historically not considered vulnerable to damage significant enough to interrupt or stop normal operations. However, damage to existing buildings and infrastructure as a result of extended periods of extreme heat and record high temperatures in recent years has shown exceptions to long held assumptions about the threat of extreme heat. Therefore, all critical facilities are potentially vulnerable to the impacts noted in section 4b.

10. Hailstorm

Hail is a form of solid precipitation. Hailstones are formed when raindrops are carried upward by thunderstorm updrafts into extremely cold areas of the atmosphere and freeze. Hailstones then grow by colliding with liquid water drops that freeze onto the hailstone's surface. The hail falls when the thunderstorm's updraft can no longer support the weight of the hailstone, which can occur if the stone becomes large enough or the updraft weakens. The fall speed of hail primarily depends on the size of the hailstone, the friction between the hailstone and surrounding air, the local wind conditions (both horizontal and vertical), and the degree of melting of the hailstone. For small hailstones smaller than 1-inch in diameter, the expected fall speed is between 9 and 25 mph. Hailstones 1-inch to 1.75 inches in size typically associated with a severe thunderstorm can have an expected fall speed between 25 and 40 mph. In the strongest supercells 2 to 4-inch hail can be produced with an anticipated fall speed between 44 and 72 mph. However, fall speeds fluctuate due to variations in the hailstone's shape, degree of melting, fall orientation, and the environmental conditions. It is possible for very large hailstones, exceeding 4-inches in diameter, to fall at over 100 mph.[29]

1) Hailstorm History

The following tables represent all recorded history from 2018 to present. There were no recorded events for the City of La Coste.

Table 25: Medina County Hailstorm History

Location	Date Range	Number of Hailstorms	Hail Diameter in inches	Fatalities	Injuries	Property Damage $2025	Crop Damage $2025
Countywide	1/10/2020 – 5/13/2024	27	0.75 – 6.42	0	0	$1,157,652	$0

Table 26: City of Castroville Hailstorm History

Location	Date Range	Number of Hailstorms	Hail Diameter in inches	Fatalities	Injuries	Property Damage $2025	Crop Damage $2025
Countywide	4/28/2021 – 5/4/2022	3	0.75 – 1.75	0	0	$0	$0

[29] NOAA National Severe Storms Laboratory: https://www.nssl.noaa.gov/education/svrwx101/hail/

Table 27: City of Devine Hailstorm History

	Date Range	Number of Hailstorms	Hail Diameter in inches	Fatalities	Injuries	Property Damage $2025	Crop Damage $2025
Countywide	1/10/2020 – 5/13/2024	2	1.25 – 1.5	0	0	$0	$0

Table 28: City of Hondo Hailstorm History

	Date Range	Number of Hailstorms	Hail Diameter in inches	Fatalities	Injuries	Property Damage $2025	Crop Damage $2025
Countywide	4/28/2021 – 5/21/2022	9	0.75 – 6.42	0	0	$0	$0

Table 29: City of Natalia Hailstorm History

	Date Range	Number of Hailstorms	Hail Diameter in inches	Fatalities	Injuries	Property Damage $2025	Crop Damage $2025
Countywide	5/11/2021	1	0.75	0	0	$0	$0

2) Likelihood of Future Events

Based on the history of hailstorms, a hailstorm in Medina County and each of the participating jurisdictions is highly likely, meaning that an event is probable within the next year.

3) Extent

The severity of hail events ranges based on the size of the hail, wind speed, and the number and types of structures in the path of the hailstorm. Storms that produce high winds in addition to hail are most damaging and can result in numerous broken windows and damaged siding.

When hail breaks windows, water damage from accompanying rain can also be significant. A major hailstorm can easily cause damage running into the millions of dollars. Nationwide hail is responsible for over $1 billion in property and crop damage per year. The scale showing intensity categories in

Table 30 was developed by combining data from National Climatic Data Center (NCDC) and the Tornado and Storm Research Organization (TORRO).

Table 30: Hailstorm Intensity[30,31]

Size Code	Intensity Category	Size (Diameter in inches)	Descriptive Term	Typical Damage
H0	Hard Hail	Up to 0.33	Pea	No damage
H1	Potentially Damaging	0.33-.060	Mothball	Slight damage to plants and crops
H2	Significant	.060-.080	Penny	Significant damage to fruit, crops, and vegetation
H3	Severe[32]	0.80-1.20	Nickel – Half dollar	Severe damage to fruit and crops, damage to glass and plastic structures, paint and wood scored
H4	Severe	1.2-1.6	Half dollar – Ping pong ball	Widespread glass damage and vehicle bodywork damage
H5	Destructive	1.6-2.0	Ping pong ball – hen egg	Wholesale destruction of glass, damage to tiled roofs, and significant risk of injuries
H6	Destructive	2.0-2.4	Hen egg – tennis ball	Bodywork of grounded aircraft dented, and brick walls pitted
H7	Destructive	2.4-3.0	Tennis ball – Baseball	Severe roof damage and risk of serious injuries
H8	Destructive	3.0-3.5	Hockey puck	Severe damage to aircraft bodywork
H9	Super Hailstorms	3.5-4.0	Softball	Extensive structural damage could cause fatal injuries
H10	Super Hailstorms	4.0+	Greater than softball-sized	Extensive structural damage could cause fatal injuries

According to NCEI data, the worst hailstorms in Medina County and the participating jurisdictions have produced hail up to 6.42” in diameter, H10 on the Hailstorm Intensity Scale.

Future hailstorms may meet or exceed previous worst-case H10 storms in terms of strength, intensity, hailstone size, damage dollars inflicted, and the number of residents injured or killed.

[30] http://www1.ncdc.noaa.gov/pub/data/cmb/extremes/scec/reports/SCEC-Hail-Guide.pdf
[31] http://www.torro.org.uk/hscale.php
[32] Hail must be 1” or larger to be classified as severe.

4) Location and Impact

A) Location

Hailstorms vary in terms of size, location, intensity, and duration but are considered frequent occurrences in the planning area. Each jurisdiction is uniformly exposed to hail events just as each is uniformly exposed to the thunderstorms that typically produce the hail events.

B) Impact

The severity of a hailstorm's impact is considered limited since they generally result in injuries treatable with first aid, shut down critical facilities and services for 24 hours or less, and less than ten percent of affected properties are destroyed or suffer major damage. All existing and future buildings, facilities, and populations in the participating jurisdictions are considered exposed to this hazard and could potentially be impacted.

5) Vulnerability

A) Population

As described in Section 3 of Chapter 3 above, Medina County and the participating jurisdictions are home to many vulnerable residents. Increased vulnerability may be due to many factors including but not limited to age, ability, financial means, housing type, and housing condition. Many of these vulnerabilities often overlap.

Since hailstorms arise with little to no warning, the participating jurisdictions recognize that vulnerable populations may primarily need additional help recovering from a hailstorm. Residents of sub-standard structures are of particular concern. Structures in sub-standard condition ahead of a hailstorm, whether due to structural damage, missing windows or doors, holes in exterior walls or the roof, may sustain more damage than structures in standard condition.

Existing weaknesses, especially those related to the condition of a structure's roof, due to housing type or existing damage, may lead to compounded damage, injuries, or loss of life.

B) Critical Facilities

Table 31: Critical Facilities Vulnerable to Hailstorms and Potential Impacts

Jurisdiction	Critical Facilities	Potential Hailstorm Impacts		
		Damaged or Destroyed Roof	Damaged Windows	Water damage due to Physical Damages
Medina County	Medina County Courthouse	X	X	X
	Medina County Courthouse Annex	X	X	X
	Medina County Commissioner Precinct 1	X	X	X
	Medina County Commissioner Precinct 2	X	X	X
	Medina County Commissioner Precinct 3	X	X	X
	Medina County Commissioner Precinct 4	X	X	X
	Medina County Tax Assessor – Collector Hondo Office	X	X	X
	Medina County Tax Assessor – Collector Devine Office	X	X	X
	Medina County Tax Assessor – Collector Castroville Office	X	X	X
	Medina County Constable & Justice of the Peace Precinct 1	X	X	X
	Medina County Constable & Justice of the Peace Precinct 2	X	X	X
	Medina County Constable & Justice of the Peace Precinct 3	X	X	X
	Medina County Constable & Justice of the Peace Precinct 4	X	X	X
	Medina County Sheriff's Office, Communications/Dispatch, & Jail	X	X	X
	Medina County Office of Emergency Management & Fire Marshal's Office	X	X	X
	Medina County Animal Control Office	X	X	X
	Medina County AgriLife Extension	X	X	X
	Medina County Health Unit & WIC	X	X	X

	Medina County Environmental Health & Floodplain Administrator	X	X	X
	Medina County Pretrial Services	X	X	X
	Medina County Juvenile Probation	X	X	X
	D'Hanis Independent School District	X	X	X
	D'Hanis Vol. Fire Dept.	X	X	X
	Medina County Emergency Service District 1, Station 12	X	X	X
	Medina County Emergency Service District 1, Station 14	X	X	X
	Medina County Emergency Service District 1, Station 15	X	X	X
	Medina Regional Hospital	X	X	X
	Medina Valley Independent School District High School	X	X	X
	Medina Valley Independent School District Middle School	X	X	X
	Medina Valley Independent School District Administration	X	X	X
	Medina Valley Independent School District High School # 2	X	X	X
	Medina Valley Independent School District Loma Alta Middle School	X	X	X
	Potranco Elementary	X	X	X
	Yancey Vol. Fire Dept.	X	X	X
	Medina County Public Safety Radio Tower – Natalia			X
	Medina County Public Safety Radio Tower – Dunlay			X
	Medina County Public Safety Radio Tower – Hondo			X
	Medina County Public Safety Radio Tower – Castroville			X
	Medina County Public Safety Radio Tower – D'Hanis			X
	Medina County Public Safety Radio Tower – Mico			X
	Castroville Municipal Airport	X	X	X
	Devine Municipal Airport	X	X	X
Castroville	City Hall	X	X	X
	Castroville Elementary School	X	X	X
	Castroville Municipal Airport	X	X	X
	Castroville Police Dept.	X	X	X

	Castroville Public Library	X	X	X
	ESD #1, Castroville Station 10	X	X	X
Devine	Edwards Well #1			
	Bain Well			
	Warhorse Tower			X
	LeMartin Well			
	Edwards Well #2			
	Ingram Tower / PD Radio Repeater			X
	Harrison Well			
	Wastewater Treatment Plant	X	X	X
	City Hall / Police Dept.	X	X	X
	Devine Mechanic Shop	X	X	X
	Public Works Office / City Yard	X	X	X
	Devine ISD Administrative Office	X	X	X
	John J. Ciavarra Elementary School	X	X	X
	Devine Intermediate School	X	X	X
	Devine Middle School	X	X	X
	Devine High School	X	X	X
	DAEP School	X	X	X
	Driscoll Public Library	X	X	X
	George S. Woods Community Center	X	X	X
	Shaffer Well			
	Devine Animal Control Kennels	X	X	X
	Devine ISD	X	X	X
	Allman Sewer Lift Station			X
	Colonial Pkwy Sewer Lift Station			X
Hondo	City Hall	X	X	X
	Hondo High School	X	X	X
	Hondo Municipal Airport	X	X	X
	Hondo Police Dept.	X	X	X
	Hondo Public Library	X	X	X
	Hondo VFD Station #1	X	X	X
	Hondo VFD Station #2	X	X	X
La Coste	City Hall / Police Dept.	X	X	X
	La Coste Well #1	X	X	X
	La Coste Well #2	X	X	X
	La Coste Wastewater Treatment Plant	X	X	X
	La Coste Records & Vehicle Storage	X	X	X
	ESD1 – Station 11 (North)	X	X	X

	ESD1 – Station 11 (South)	X	X	X
	La Coste Helicopter Landing Pad			X
	MVISD – La Coste Elementary	X	X	X
Natalia	Wells 4 & 6			
	Tower & Standpipe			
	WWTP	X	X	X
	Ball Park Lift Station			X
	Loves Lift Station			X
	Ft. Ewell Creek Lift Station			X
	City Office	X	X	X

11. Winter Storms

Winter storms include heavy snow and blizzards, sleet, ice storms (or freezing rain), frost/freeze or a mix of these. Winter storms can down trees, cause widespread power outages, damage property, and cause fatalities and injuries. The effect of winter storms on Texas is quite disruptive compared to other regions that normally experience winter storms.

A heavy snowfall for the State is an accumulation of four or more inches of snow in a 12-hour period. This amount of snow accumulation usually occurs in the northern half of the state and in the higher elevations of West Texas. South of the line from Del Rio to Port Arthur snow is rare.

Blizzards are the most perilous of all winter storms, characterized by low temperatures and strong winds in excess of 35 mph, bearing large amounts of blowing or drifting snow. Blizzards take a terrible toll on livestock and people caught in the open. In Texas, blizzards are most likely to occur in the Panhandle and South Plains Regions.

An ice storm occurs when rain falls out of the warm upper layers of the atmosphere into a cold and dry layer near the ground. The rain freezes on contact with the cold ground and accumulates on exposed surfaces. Damage can occur with half an inch of rain freezing on trees and utility wires; the damage increases if there are high winds. Based on this, an icing event is categorized an ice storm at half an inch.[33]

1) Winter Storm History

The 2020 Medina County HMAP reported 17 winter storms between 1962 – 2017. The following table represents all recorded history since the 2020 HMAP

Table 32: Medina County Winter Storm History

Location	Date Range	Number of Winter Storms	Winter Storm Types	Fatalities	Injuries	Property Damage $2025	Crop Damage $2025
Countywide	2/13/2021 – 2/1/2023	7	Winter Weather, Winter Storm	0	0	$216,000	$0

There have been no recorded events for the individual participants since the 2020 HMAP, however, it is reasonable to assume that all participants experienced the same events as Medina County.

[33] 2023 State of Texas Hazard Mitigation Plan

2) Likelihood of Future Events

Future winter storms in Medina County and the participating jurisdictions are considered highly likely, meaning an event affecting any or all of the participating jurisdictions is probable in the next year.

3) Extent

Table 33 below displays the magnitude of winter storms.

Table 33: Winter Storm Extent Scale[34]

Frost Advisory*	Issued when nighttime minimum temperatures are expected to range from 33°F to 36°F in the growing season.
Freeze Warning*	Issued when nighttime minimum temperatures are expected to reach 32°F or lower in the growing season. They are usually issued to highlight the first few freezes of the fall or unusually late freezes in the spring. *A Freeze Watch is issued when these conditions may be met 12 to 48 hours in the future.*
Snow Advisory	Issued when accumulating snow of 2 to 4 inches is expected. An advisory may still be warranted if lesser accumulations will produce travel difficulties, especially early in the winter season.
Blowing Snow Advisory	Issued when blowing snow is expected to occasionally reduce visibilities to 1/4 mile or less with winds generally 25 to 34 mph. The event should last at least 3 hours.
Snow and Blowing Snow Advisory	Issued when winds of 25 to 34 mph are expected to be accompanied by falling snow and blowing snow, occasionally reducing the visibility to 1/4 mile or less. The event should last at least 3 hours
Freezing Rain / Drizzle Advisory	Issued for freezing rain when ice accumulations are expected to cause travel problems, but not exceed 1/4".
Sleet Advisory	Issued for accumulating sleet of 1/4" to 1". Because sleet usually occurs with other precipitation types, a winter weather advisory will almost always be used in such cases.
Winter Weather Advisory	Issued for a winter weather event in which there is more than one hazard present, but all precipitation is expected to remain below warning criteria. For example, it would be issued if 2 inches of snow were expected with a small amount of sleet mixing in at times.
Wind Chill Advisory[35]	Issued when wind chill temperatures are expected to be a significant inconvenience to life with prolonged exposure, and, if caution is not exercised, could lead to hazardous exposure.

[34] Source: National Weather Service Weather Forecast Office; Norman, Oklahoma. http://www.srh.noaa.gov/oun/?n=spotter-wwa-definitions
[35] https://www.osha.gov/dts/weather/winter_weather/windchill.html

Wind Chill Warning[36]	Issued when wind chill temperatures are expected to be hazardous to life within several minutes of exposure.
Ice Storm Warning	Issued when a period of freezing rain is expected to produce ice accumulations of 1/4" or greater, or cause significant disruptions to travel or Utility.
Heavy Sleet Warning	Issued when a period of sleet is expected to produce ice accumulations of 1" or greater, or cause significant disruptions to travel or Utility.
Heavy Snow Warning	Issued when snow is expected to accumulate 4 inches or more in 12 hours, or 6 inches or more in 24 hours.
Winter Storm Warning	Issued for a winter weather event in which there is more than one hazard present, and one of the warning criteria listed above is expected to be met. For example, it would be issued if 5 inches of snow were expected in 12 hours, with some sleet mixing in at times. It is commonly issued for heavy snow with strong winds of 25-34 mph that will cause blowing and drifting of the snow. *A Winter Storm Watch is issued when these conditions may be met 12 to 48 hours in the future.*
Blizzard Warning	Issued for sustained wind or frequent gusts greater than or equal to 35 mph accompanied by falling and/or blowing snow, frequently reducing visibility to less than 1/4 mile for three hours or more. *A Blizzard Watch is issued when these conditions may be met 12 to 48 hours in the future.*

* - Non-precipitation watch / warning / advisory

Based on previous winter storm events, specifically Winter Storm Uri in 2021, future events in Medina County and the participating jurisdictions may see sleet/snow accumulation of up to 6”.

4) Location and Impact

A) Location

Winter storms have no distinct geographic boundary. Winter storms can occur across the entire planning area and uniformly affect all participating jurisdictions.

B) Impact

The potential impact of winter storms is normally minor, resulting in few, if any, injuries. Drivers, especially those unfamiliar with or unable to drive in icy conditions, may be at the highest risk of crashing their vehicle and sustaining injuries.

Beyond accidents caused by icy conditions, winter storms have the potential to cause widespread power outages. Trees and other vegetation that grow along or near power lines and utility lines can become overburdened by ice and snow accumulation. Falling limbs or trees can easily take down power and utility lines. Neglected vegetation is especially at risk of failure

[36] https://www.osha.gov/dts/weather/winter_weather/windchill.html

due to increased weight loads. Power outages can create a cascading effect depending on residents' ability to heat their homes without electricity, especially for those young, elderly, and low-income residents as identified in Section 3 of Chapter 3 above. Although no deaths related to winter storms have been reported in the participating jurisdictions, in the worst cases, the hazard has the potential to be deadly.

Winter storms will likely cause only minor property damage and minimal disruption to the quality of life in the participating jurisdictions.

Depending on when the event happens, winter storms may damage or destroy crops.

5) Vulnerability

A) Population

As described in Section 3 of Chapter 3 above, Medina County and the participating jurisdictions are home to many vulnerable residents. Areas with concentrations of young, elderly, and low-income residents may feel greater impacts from winter storms due to those populations' limited ability to properly address the hazard. Deficiencies may include but aren't limited to lack of heating in their homes or vehicles, lack of access to heated public spaces during the coldest part of the day or night, and frozen pipes that may jeopardize access to drinking water, and in the worst cases, lead to severe structural damage that can render a home unlivable. The consequences for these populations' exposure to winter storms can include but are not limited to complications for those suffering from hypertension, hypothyroidism, and diabetes, as well as exhaustion, hypothermia, trench foot, or death.

B) Critical Facilities

Any shutdown of critical facilities due to winter storms is expected to be temporary. However, based on the proximity of trees and powerlines on their properties, the following critical facilities may be at a higher risk of losing power due to falling limbs.

Table 34: Critical Facilities Vulnerable to Winter Storms

Jurisdiction	Critical Facilities	Potential Winter Storm Impacts
		Falling Tree Limbs
Medina County	Medina County Courthouse	X
	Medina County Courthouse Annex	X
	Medina County Commissioner Precinct 1	X
	Medina County Commissioner	X

	Precinct 2	
	Medina County Commissioner Precinct 3	X
	Medina County Commissioner Precinct 4	X
	Medina County Tax Assessor – Collector Hondo Office	X
	Medina County Tax Assessor – Collector Devine Office	X
	Medina County Tax Assessor – Collector Castroville Office	X
	Medina County Constable & Justice of the Peace Precinct 1	X
	Medina County Constable & Justice of the Peace Precinct 2	X
	Medina County Constable & Justice of the Peace Precinct 3	X
	Medina County Constable & Justice of the Peace Precinct 4	X
	Medina County Sheriff's Office, Communications/Dispatch, & Jail	X
	Medina County Office of Emergency Management & Fire Marshal's Office	X
	Medina County Animal Control Office	X
	Medina County AgriLife Extension	X
	Medina County Health Unit & WIC	X
	Medina County Environmental Health & Floodplain Administrator	X
	Medina County Pretrial Services	X
	Medina County Juvenile Probation	X
	D'Hanis Independent School District	X
	D'Hanis Vol. Fire Dept.	X
	Medina County Emergency Service District 1, Station 12	X
	Medina County Emergency Service District 1, Station 14	X
	Medina County Emergency Service District 1, Station 15	X
	Medina Regional Hospital	X
	Medina Valley Independent School District High School	X

	Medina Valley Independent School District Middle School	X
	Medina Valley Independent School District Administration	X
	Medina Valley Independent School District High School # 2	X
	Medina Valley Independent School District Loma Alta Middle School	X
	Potranco Elementary	X
	Yancey Vol. Fire Dept.	X
	Medina County Public Safety Radio Tower – Natalia	X
	Medina County Public Safety Radio Tower – Dunlay	X
	Medina County Public Safety Radio Tower – Hondo	X
	Medina County Public Safety Radio Tower – Castroville	X
	Medina County Public Safety Radio Tower – D'Hanis	X
	Medina County Public Safety Radio Tower – Mico	X
	Castroville Municipal Airport	X
	Devine Municipal Airport	X
Castroville	City Hall	X
	Castroville Elementary School	X
	Castroville Municipal Airport	X
	Castroville Police Dept.	X
	Castroville Public Library	X
	ESD #1, Castroville Station 10	X
Devine	Edwards Well #1	X
	Bain Well	X
	Warhorse Tower	X
	LeMartin Well	X
	Edwards Well #2	X
	Ingram Tower / PD Radio Repeater	X
	Harrison Well	X
	Wastewater Treatment Plant	X
	City Hall / Police Dept.	X
	Devine Mechanic Shop	X
	Public Works Office / City Yard	X
	Devine ISD Administrative Office	X
	John J. Ciavarra Elementary School	X
	Devine Intermediate School	X
	Devine Middle School	X

	Devine High School	X
	DAEP School	X
	Driscoll Public Library	X
	George S. Woods Community Center	X
	Shaffer Well	X
	Devine Animal Control Kennels	X
	Devine ISD	X
	Allman Sewer Lift Station	X
	Colonial Pkwy Sewer Lift Station	X
Hondo	City Hall	X
	Hondo High School	X
	Hondo Municipal Airport	X
	Hondo Police Dept.	X
	Hondo Public Library	X
	Hondo VFD Station #1	X
	Hondo VFD Station #2	X
La Coste	City Hall / Police Dept.	X
	La Coste Well #1	X
	La Coste Well #2	X
	La Coste Wastewater Treatment Plant	X
	La Coste Records & Vehicle Storage	X
	ESD1 – Station 11 (North)	X
	ESD1 – Station 11 (South)	X
	La Coste Helicopter Landing Pad	X
	MVISD – La Coste Elementary	X
Natalia	Wells 4 & 6	X
	Tower & Standpipe	X
	WWTP	X
	Ball Park Lift Station	X
	Loves Lift Station	X
	Ft. Ewell Creek Lift Station	X
	City Office	X

C) Infrastructure

While all of the participating jurisdictions are exposed to extreme temperatures, existing buildings, infrastructure, and critical facilities are not considered vulnerable to significant damage caused by severe winter storm events. This determination was made based on the expectation that most roofs can support 20 lbs. / square foot of snow[37]. Although it's not

[37] https://disastersafety.org/freezing-weather/prevent-roof-collapse-homes/

impossible[38] for that much snow to cause structural damage, given that the snow weight is well below the threshold where damage is likely, structural damage is not expected. Additionally, 1" of ice is roughly equivalent in weight per square foot to 1" of snow. Considering the worst storms in the participating jurisdictions cause snow accumulations of 6", it's unlikely, but not impossible, that a storm causing structural snow accumulations of less than 6" will cause significant structural damages.

However, significant damages may be incurred indirectly. Examples include, but are not limited to, trees and limbs that fall after being overburdened with snow or ice, building strikes due to vehicles losing traction on snow or ice-covered roads, and power outages that affect building temperature regulation and allow pipes to freeze and burst.

[38] https://www.fema.gov/media-library-data/7d8c55d1c4f815edf3d7e7d1c120383f/FEMA957_Snowload_508.pdf - The weight of a foot a snow can vary widely based on how wet the snow is, between 3 and 21 lbs. per square foot. However, wet snow primarily affects the East Coast, Pacific Northwest, and southwestern Alaska.

12. Windstorms

Windstorms are classified as any wind that is strong enough to cause at least light damage to trees and buildings, which may or may not be accompanied by precipitation. Wind speeds during a windstorm typically exceed 41 knots. Damage can be attributed to gusts or longer periods of sustained winds. Although tornados and tropical cyclones also produce wind damage, they are usually classified separately.

Windstorms may last for just a few minutes when caused by downbursts from thunderstorms, or they may last for hours (and even several days) when they result from large-scale weather systems. A windstorm that travels in a straight line and is caused by the gust front (the boundary between descending cold air and warm air at the surface) of an approaching thunderstorm is called a derecho. Derechos are capable of causing widespread damage and landscape devastation.[39]

1) Windstorm History

The 2020 Medina County HMAP recorded 85 windstorm events between 1963 – 2017. The following tables represent all recorded events since the 2020 HMAP. There have been no recorded events for the remaining jurisdictions, although it is safe to assume that all jurisdictions experienced the same events as Medina County.

Table 35: Medina County Windstorm History

Incidents	Date Range	Windstorm Events	Windspeed Range (Knots)	Fatalities	Injuries	Property Damage $2025	Crop Damage $2025
Countywide	1/10/2020 – 4/9/2024	18	45 - 96	0	0	$366,832	$0

Table 36: City of Castroville Windstorm History

Incidents	Date Range	Windstorm Events	Windspeed Range (Knots)	Fatalities	Injuries	Property Damage $2025	Crop Damage $2025
Castroville	4/28/2021	1	61	0	0	$115,765	$0

Table 37: City of La Coste Windstorm History

Incidents	Date Range	Windstorm Events	Windspeed Range (Knots)	Fatalities	Injuries	Property Damage $2025	Crop Damage $2025
La Coste	1/10/2020	1	61	0	0	$115,765	$0

[39] https://www.britannica.com/science/windstorm

Table 38: City of Natalia Windstorm History

Incidents	Date Range	Windstorm Events	Windspeed Range (Knots)	Fatalities	Injuries	Property Damage $2025	Crop Damage $2025
Natalia	4/9/2024	1	52	0	0	$0	$0

2) Likelihood of Future Events

Given the frequency of past events in all jurisdictions, a damaging windstorm event in the future is highly likely, meaning that an event is probable in the next year.

3) Extent

The generally accepted extent scale for wind events is the Beaufort Wind Scale. The following table lists categories, measurement, classification, and appearance descriptions.

Table 39: Beaufort Wind Scale[40]

Beaufort Wind Scale				
Force	Wind (Knots)	WMO Classification	Appearance of Wind Effects	
			On the Water	On Land
0	Less than 1	Calm	Sea surface smooth and mirror-like	Calm, smoke rises vertically
1	1-3	Light Air	Scaly ripples, no foam crests	Smoke drift indicates wind direction, still wind vanes
2	4-6	Light Breeze	Small wavelets, crests glassy, no breaking	Wind felt on face, leaves rustle, vanes begin to move
3	7-10	Gentle Breeze	Large wavelets, crests begin to break, scattered whitecaps	Leaves and small twigs constantly moving, light flags extended
4	11-16	Moderate Breeze	Small waves 1-4 feet becoming longer, numerous whitecaps	Dust, leaves, and loose paper lifted, small tree branches move
5	17-21	Fresh Breeze	Moderate waves 4-8 feet taking longer form, many whitecaps, some spray	Small trees in leaf begin to sway
6	22-27	Strong Breeze	Larger waves 8-13 feet, whitecaps common, more spray	Larger tree branches moving, whistling in wires

[40] Source: www.spc.noaa.gov/faq/tornado/beaufort.html

7	28-33	Near Gale	Sea heaps up, waves 13-20 feet, white foam streaks off breakers	Whole trees moving, resistance felt walking against wind
8	34-40	Gale	Moderately high (13-20 feet) waves of greater length, edges of crests begin to break into spindrift, foam blown in streaks	Whole trees in motion, resistance felt walking against wind
9	41-47	Strong Gale	High waves (20 feet), sea begins to roll, dense streaks of foam, spray may reduce visibility	Slight structural damage occurs, slate blows off roofs
10	48-55	Storm	Very high waves (20-30 feet) with overhanging crests, sea white with densely blown foam, heavy rolling, lowered visibility	Seldom experienced on land, trees broken or uprooted, "considerable structural damage"
11	56-63	Violent Storm	Exceptionally high (30-45 feet) waves, foam patches cover sea, visibility more reduced	
12	64+	Hurricane	Air filled with foam, waves over 45 feet, sea completely white with driving spray, visibility greatly reduced	

The worst windstorm events in Medina County and the participating jurisdictions have ranged up to 12 on the Beaufort Wind Scale. Future windstorm events may meet previous worst-case Force 12 events in terms of strength and intensity of wind speed.

4) Location and Impact

A) Location

Windstorms are not constrained by any distinct geographic boundary. Windstorms can occur across all participating jurisdictions.

B) Impact

Impacts from a windstorm may include but are not limited to damaged or destroyed personal property including vehicles, damaged or destroyed agricultural, residential, commercial, and industrial buildings. Crops may be damaged or destroyed. Pets and livestock may be injured or killed by flying debris. Pets and livestock may escape due to damaged or destroyed structures and fences.

In the worst cases, windstorms may cause injuries and/or be deadly.

5) Vulnerability

Windstorms have the potential to impact all participating jurisdictions. Therefore, each jurisdiction is equally exposed to the hazard. Improved property, critical facilities, critical infrastructure, and the entire population are considered vulnerable to windstorms.

Based on windstorm data collected for the participating jurisdictions, windstorms primarily damage physical structures. However, there is no uniformity with respect to the type of structures that have been damaged by windstorms in any of the participating jurisdictions. Windstorm damage can be directly caused by the wind itself, flying debris, and falling trees, or indirectly by damage like power outages.

A) Population

As described in Section 3 of Chapter 3 above, Medina County and the participating jurisdictions are home to many vulnerable residents. Increased vulnerability may be due to many factors including but not limited to: age, physical ability, financial means, housing type, and housing condition. Many of these vulnerabilities often overlap.

The participating jurisdictions recognize that vulnerable populations may need additional help preparing for and recovering from a windstorm.

Residents of mobile / manufactured homes are of particular concern. These structures may not be safe during a windstorm.

Residents of sub-standard structures are also of particular concern. Structures in sub-standard condition ahead of a windstorm, whether due to structural damage, missing windows or doors, holes in exterior walls or the roof, may be less safe during a windstorm than structures in standard condition.

Existing structural weaknesses, due to housing type or existing damages, may lead to compounded damages, injuries, or loss of life.

B) Critical Facilities

Certain critical facilities and infrastructure in each jurisdiction may be particularly vulnerable to windstorms, similar to hurricane and tornado events. These facilities have been identified for reasons including: the number of people who use the facility or infrastructure, the facility's role in providing basic services to begin the cleanup process and get the jurisdictions running again, and the facility's ability to offer goods and materials residents will need to resume normalcy as quickly as possible. The selected critical facilities are built from a variety of materials with varying levels of resistance to wind damage. Additionally, their varying ages mean they weren't constructed to uniform building standards. Given wind's potentially violent nature, these facilities may experience increased levels of vulnerability to the hazards. Damage to any of

these facilities may have a disproportionately negative impact on each jurisdiction's recovery from a windstorm if that damage affects the facility's ability to reopen and resume normal business right away.

Table 40: Critical Facilities Vulnerable to Windstorms and Potential Impacts

Jurisdiction	Critical Facilities	Potential Windstorm Impacts							
		Loss of Power	Flying Debris	Uprooted Trees	Damaged or Destroyed Roofs	Damaged or Broken Windows	Wind Damage	Injuries	Death
Medina County	Medina County Courthouse	X	X	X	X	X	X	X	X
	Medina County Courthouse Annex	X	X	X	X	X	X	X	X
	Medina County Commissioner Precinct 1	X	X	X	X	X	X	X	X
	Medina County Commissioner Precinct 2	X	X	X	X	X	X	X	X
	Medina County Commissioner Precinct 3	X	X	X	X	X	X	X	X
	Medina County Commissioner Precinct 4	X	X	X	X	X	X	X	X
	Medina County Tax Assessor – Collector Hondo Office	X	X	X	X	X	X	X	X
	Medina County Tax Assessor – Collector Devine Office	X	X	X	X	X	X	X	X
	Medina County Tax Assessor – Collector Castroville Office	X	X	X	X	X	X	X	X
	Medina County Constable & Justice of the Peace Precinct 1	X	X	X	X	X	X	X	X
	Medina County Constable & Justice of the Peace Precinct 2	X	X	X	X	X	X	X	X

	Medina County Constable & Justice of the Peace Precinct 3	X	X	X	X	X	X	X	X
	Medina County Constable & Justice of the Peace Precinct 4	X	X	X	X	X	X	X	X
	Medina County Sheriff's Office, Communications/Dispatch, & Jail	X	X	X	X	X	X	X	X
	Medina County Office of Emergency Management & Fire Marshal's Office	X	X	X	X	X	X	X	X
	Medina County Animal Control Office	X	X	X	X	X	X	X	X
	Medina County AgriLife Extension	X	X	X	X	X	X	X	X
	Medina County Health Unit & WIC	X	X	X	X	X	X	X	X
	Medina County Environmental Health & Floodplain Administrator	X	X	X	X	X	X	X	X
	Medina County Pretrial Services	X	X	X	X	X	X	X	X
	Medina County Juvenile Probation	X	X	X	X	X	X	X	X
	D'Hanis Independent School District	X	X	X	X	X	X	X	X
	D'Hanis Vol. Fire Dept.	X	X	X	X	X	X	X	X
	Medina County Emergency Service District 1, Station 12	X	X	X	X	X	X	X	X
	Medina County Emergency Service District 1, Station 14	X	X	X	X	X	X	X	X
	Medina County Emergency Service District 1, Station 15	X	X	X	X	X	X	X	X
	Medina Regional Hospital	X	X	X	X	X	X	X	X
	Medina Valley Independent School District High School	X	X	X	X	X	X	X	X
	Medina Valley Independent School District Middle School	X	X	X	X	X	X	X	X
	Medina Valley Independent School District Administration	X	X	X	X	X	X	X	X
	Medina Valley Independent School District High School # 2	X	X	X	X	X	X	X	X

	Medina Valley Independent School District Loma Alta Middle School	X	X	X	X	X	X	X	X
	Potranco Elementary	X	X	X	X	X	X	X	X
	Yancey Vol. Fire Dept.	X	X	X	X	X	X	X	X
	Medina County Public Safety Radio Tower – Natalia	X	X				X		
	Medina County Public Safety Radio Tower – Dunlay	X	X				X		
	Medina County Public Safety Radio Tower – Hondo	X	X				X		
	Medina County Public Safety Radio Tower – Castroville	X	X				X		
	Medina County Public Safety Radio Tower – D'Hanis	X	X				X		
	Medina County Public Safety Radio Tower – Mico	X	X				X		
	Castroville Municipal Airport	X	X	X	X	X	X	X	X
	Devine Municipal Airport	X	X	X	X	X	X	X	X
Castroville	City Hall	X	X	X	X	X	X	X	X
	Castroville Elementary School	X	X	X	X	X	X	X	X
	Castroville Municipal Airport	X	X	X	X	X	X	X	X
	Castroville Police Dept.	X	X	X	X	X	X	X	X
	Castroville Public Library	X	X	X	X	X	X	X	X
	ESD #1, Castroville Station 10	X	X	X	X	X	X	X	X
Devine	Edwards Well #1						X		
	Bain Well						X		
	Warhorse Tower	X	X				X		
	LeMartin Well						X		
	Edwards Well #2						X		
	Ingram Tower / PD Radio Repeater	X	X				X		
	Harrison Well						X		
	Wastewater Treatment Plant	X	X	X	X	X	X	X	X

	City Hall / Police Dept.	X	X	X	X	X	X	X	X
	Devine Mechanic Shop	X	X	X	X	X	X	X	X
	Public Works Office / City Yard	X	X	X	X	X	X	X	X
	Devine ISD Administrative Office	X	X	X	X	X	X	X	X
	John J. Ciavarra Elementary School	X	X	X	X	X	X	X	X
	Devine Intermediate School	X	X	X	X	X	X	X	X
	Devine Middle School	X	X	X	X	X	X	X	X
	Devine High School	X	X	X	X	X	X	X	X
	DAEP School	X	X	X	X	X	X	X	X
	Driscoll Public Library	X	X	X	X	X	X	X	X
	George S. Woods Community Center	X	X	X	X	X	X	X	X
	Shaffer Well						X		
	Devine Animal Control Kennels	X	X	X	X	X	X	X	X
	Devine ISD	X	X	X	X	X	X	X	X
	Allman Sewer Lift Station	X	X				X		
	Colonial Pkwy Sewer Lift Station	X	X				X		
Hondo	City Hall	X	X	X	X	X	X	X	X
	Hondo High School	X	X	X	X	X	X	X	X
	Hondo Municipal Airport	X	X	X	X	X	X	X	X
	Hondo Police Dept.	X	X	X	X	X	X	X	X
	Hondo Public Library	X	X	X	X	X	X	X	X
	Hondo VFD Station #1	X	X	X	X	X	X	X	X
	Hondo VFD Station #2	X	X	X	X	X	X	X	X
La Coste	City Hall / Police Dept.	X	X	X	X	X	X	X	X
	La Coste Well #1						X		
	La Coste Well #2						X		
	La Coste Wastewater Treatment Plant	X	X	X	X	X	X	X	X
	La Coste Records & Vehicle Storage	X	X	X	X	X	X	X	X
	ESD1 – Station 11 (North)	X	X	X	X	X	X	X	X
	ESD1 – Station 11 (South)	X	X	X	X	X	X	X	X
	La Coste Helicopter Landing Pad						X		

	MVISD – La Coste Elementary	X	X	X	X	X	X	X	X
Natalia	Wells 4 & 6						X		
	Tower & Standpipe	X	X				X		
	WWTP	X	X	X	X	X	X	X	X
	Ball Park Lift Station	X	X				X		
	Loves Lift Station	X	X				X		
	Ft. Ewell Creek Lift Station	X	X				X		
	City Office	X	X	X	X	X	X	X	X

13. Lightning

Lightning occurs as a rapid discharge of electrical energy in the atmosphere between clouds, the air, or the ground. A bolt of lightning can reach temperatures approaching 50,000 degrees Fahrenheit, a temperature five times hotter than the sun's surface. Lightning rapidly heats the sky as it flashes, but the surrounding air quickly cools following the bolt. This rapid heating and cooling of the surrounding air causes the thunder which often accompanies lightning strikes. While most often affiliated with severe thunderstorms, lightning often strikes outside of heavy rain and might occur as far as 10 miles away from any rainfall.[41]

Lightning damage can result in electrocution of humans and animals; vaporization of materials along the path of the strike; fire caused by the high temperature produced by the strike; and sudden power surges that can damage electrical and electronic equipment. Millions of dollars of direct and indirect damages result from lightning strikes on electric utility substations and distribution lines. While property damage is the major hazard associated with lightning, it should be noted that lightning strikes kill nearly 49 people [42] each year in the United States.

1) Lightning History

The 2020 Medina County HMAP had no recorded lightning events. There have been no reported lightning events since the 2020 HMAP, however, many lightning events go unreported. It is likely that many events have occurred and gone unreported.

2) Likelihood of Future Events

Lightning is especially associated with thunderstorms. Despite the lack of officially reported instances of lightning-caused damage, a lightning event is highly likely, meaning an event affecting any of the participating jurisdictions is probable in the next year. According to information from VAISALA[43], most of Medina County can expect about 7 to 10 lightning flashes per square mile per year.

3) Extent

The extent for lightning can be expressed in terms of the number of strikes within an interval. Given the lack of lightning history data, it is expected that Medina County and all participating jurisdictions may experience lightning events between LAL 1 and LAL 5. Dry thunderstorms, LAL 6, are not expected.

[41] 2023 State of Texas Hazard Mitigation Plan
[42] https://www.weather.gov/safety/lightning-victims
[43] Vaisala Xweather Annual Lightning Report 2023 (adobe.com)

Table 41: Lightning Activity Levels[44]

Lightning Activity Level (LAL)		
Activity levels are valuable guidance tools to aid in the preparation for possible fire initiation from cloud-to-ground lightning.		
LAL	Cloud and Storm Development	Lightning Strikes per 15 Minutes
1	No thunderstorms.	-
2	Cumulus clouds are common but only a few reaches the towering cumulus stage. A single thunderstorm must be confirmed in the observation area. The clouds produce mainly virga, but light rain will occasionally reach the ground. Lightning is very infrequent.	1-8
3	Towering cumulus covers less than two-tenths of the sky. Thunderstorms are few, but two to three must occur within the observation area. Light to moderate rain will reach the ground, and lightning is infrequent.	9-15
4	Towering cumulus covers two to three-tenths of the sky. Thunderstorms are scattered and more than three must occur within the observation area. Moderate rain is common, and lightning is frequent.	16-25
5	Towering cumulus and thunderstorms are numerous. They cover more than three-tenths and occasionally obscure the sky. Rain is moderate to heavy and lightning is frequent and intense.	25+
6	Similar to LAL 3 except thunderstorms are dry.	

4) Location and Impact

A) Location

Lightning strikes have no distinct geographic boundary. Lightning can occur across each participating jurisdiction.

B) Impact

Impacts from lightning in all jurisdictions may include but are not limited to loss of power due to electrical surges, damaged or destroyed personal property including computers and other

[44] Source: http://www.prh.noaa.gov/hnl/pages/LAL.php

electronics, damaged or destroyed agricultural, residential, commercial, and industrial buildings. Crops may be damaged or destroyed. Livestock may be injured or killed by lightning. In the worst cases, lightning may cause injuries or even loss of life.

5) Vulnerability

According to the Lightning Protection Institute, it is a myth[45] that lightning always strikes the tallest objects. Given lightning's indiscriminate nature, it is impossible to identify buildings that are at an increased risk of being struck by lightning. All existing and future buildings, critical facilities, critical infrastructure, improved property, and the population are exposed to this hazard. However, structures without adequate lightning protection and those with large concentrations of electronic equipment like computers, servers, and printers, are most vulnerable, as are locations that may have outside crowds during a lightning event.

A) Critical Facilities

Table 42: Critical Facilities Vulnerable to Lightning and Potential Impacts

Jurisdiction	Critical Facilities	Potential Lightning Impacts			
		Physical Damage	Electrical Damage	Data Damage or Loss	Fire
Medina County	Medina County Courthouse	X	X	X	X
	Medina County Courthouse Annex	X	X	X	X
	Medina County Commissioner Precinct 1	X	X	X	X
	Medina County Commissioner Precinct 2	X	X	X	X
	Medina County Commissioner Precinct 3	X	X	X	X
	Medina County Commissioner Precinct 4	X	X	X	X
	Medina County Tax Assessor – Collector Hondo Office	X	X	X	X
	Medina County Tax Assessor – Collector Devine Office	X	X	X	X
	Medina County Tax Assessor – Collector Castroville Office	X	X	X	X

[45] http://lightning.org/wp-content/uploads/2015/06/LPI_lightning_infographic_2015.jpg

	Medina County Constable & Justice of the Peace Precinct 1	X	X	X	X
	Medina County Constable & Justice of the Peace Precinct 2	X	X	X	X
	Medina County Constable & Justice of the Peace Precinct 3	X	X	X	X
	Medina County Constable & Justice of the Peace Precinct 4	X	X	X	X
	Medina County Sheriff's Office, Communications/Dispatch, & Jail	X	X	X	X
	Medina County Office of Emergency Management & Fire Marshal's Office	X	X	X	X
	Medina County Animal Control Office	X	X	X	X
	Medina County AgriLife Extension	X	X	X	X
	Medina County Health Unit & WIC	X	X	X	X
	Medina County Environmental Health & Floodplain Administrator	X	X	X	X
	Medina County Pretrial Services	X	X	X	X
	Medina County Juvenile Probation	X	X	X	X
	D'Hanis Independent School District	X	X	X	X
	D'Hanis Vol. Fire Dept.	X	X	X	X
	Medina County Emergency Service District 1, Station 12	X	X	X	X
	Medina County Emergency Service District 1, Station 14	X	X	X	X
	Medina County Emergency Service District 1, Station 15	X	X	X	X
	Medina Regional Hospital	X	X	X	X
	Medina Valley Independent School District High School	X	X	X	X
	Medina Valley Independent School District Middle School	X	X	X	X
	Medina Valley Independent School District Administration	X	X	X	X
	Medina Valley Independent School District High School # 2	X	X	X	X
	Medina Valley Independent School District Loma Alta Middle School	X	X	X	X
	Potranco Elementary	X	X	X	X
	Yancey Vol. Fire Dept.	X	X	X	X
	Medina County Public Safety Radio Tower – Natalia	X	X		
	Medina County Public Safety Radio Tower – Dunlay	X	X		

	Medina County Public Safety Radio Tower – Hondo	X	X		
	Medina County Public Safety Radio Tower – Castroville	X	X		
	Medina County Public Safety Radio Tower – D'Hanis	X	X		
	Medina County Public Safety Radio Tower – Mico	X	X		
	Castroville Municipal Airport	X	X	X	X
	Devine Municipal Airport	X	X	X	X
Castroville	City Hall	X	X	X	X
	Castroville Elementary School	X	X	X	X
	Castroville Municipal Airport	X	X	X	X
	Castroville Police Dept.	X	X	X	X
	Castroville Public Library	X	X	X	X
	ESD #1, Castroville Station 10	X	X	X	X
Devine	Edwards Well #1	X			
	Bain Well	X			
	Warhorse Tower	X			
	LeMartin Well	X			
	Edwards Well #2	X			
	Ingram Tower / PD Radio Repeater	X	X		
	Harrison Well	X			
	Wastewater Treatment Plant	X	X	X	X
	City Hall / Police Dept.	X	X	X	X
	Devine Mechanic Shop	X	X	X	X
	Public Works Office / City Yard	X	X	X	X
	Devine ISD Administrative Office	X	X	X	X
	John J. Ciavarra Elementary School	X	X	X	X
	Devine Intermediate School	X	X	X	X
	Devine Middle School	X	X	X	X
	Devine High School	X	X	X	X
	DAEP School	X	X	X	X
	Driscoll Public Library	X	X	X	X
	George S. Woods Community Center	X	X	X	X
	Shaffer Well	X			
	Devine Animal Control Kennels	X	X	X	X
	Devine ISD	X	X	X	X
	Allman Sewer Lift Station	X	X		
	Colonial Pkwy Sewer Lift Station	X	X		
Hondo	City Hall	X	X	X	X
	Hondo High School	X	X	X	X
	Hondo Municipal Airport	X	X	X	X
	Hondo Police Dept.	X	X	X	X

	Hondo Public Library	X	X	X	X
	Hondo VFD Station #1	X	X	X	X
	Hondo VFD Station #2	X	X	X	X
La Coste	City Hall / Police Dept.	X	X	X	X
	La Coste Well #1	X			
	La Coste Well #2	X			
	La Coste Wastewater Treatment Plant	X	X	X	X
	La Coste Records & Vehicle Storage	X	X	X	X
	ESD1 – Station 11 (North)	X	X	X	X
	ESD1 – Station 11 (South)	X	X	X	X
	La Coste Helicopter Landing Pad	X	X	X	X
	MVISD – La Coste Elementary	X	X	X	X
Natalia	Wells 4 & 6	X			
	Tower & Standpipe	X			
	WWTP	X	X	X	X
	Ball Park Lift Station	X	X		
	Loves Lift Station	X	X		
	Ft. Ewell Creek Lift Station	X	X		
	City Office	X	X	X	X

14. Riverine Erosion

Riverine erosion is the removal of a volume of sediment from a stream reach. However, in riverine areas, a stream reach can be stable and still migrate back and forth. Channel instability occurs when natural or man-induced processes lead to excessive erosion or deposition. Therefore, when a stream migrates laterally but maintains its dimensions, pattern, and profile, stability is achieved even though the river is "active" and moves across the floodplain. A reach experiencing such lateral migration is considered to be "eroding," and thus has a riverine erosion hazard area. Such stream migration due to erosion can threaten buildings and infrastructure.

Property damaged by flood inundation can sometimes be considered a total loss, but property damaged by riverine erosion is not only destroyed, the land itself may be completely washed away leaving no chance to rebuild, let alone recover any property contents.

1) Erosion History

According to the local planning team, the participating jurisdictions experience varying riverine erosion rates of between 5' – 10' per year. During flash flooding, erosion rates may be even higher.

The planning team has determined that at least one riverine erosion event occurs annually in Medina County.

2) Likelihood of Future Occurrence

Given the ongoing nature of riverine erosion, a future event in Medina County and the jurisdictions addressing the hazard is highly likely, meaning ongoing riverine erosion is probable in the next year.

3) Extent

Unlike the flood inundation zones identified in FEMA FIRM maps, riverine erosion hazards are not necessarily proportional to the peak flood discharge. Catastrophic losses may result from larger flood events; smaller, more frequent events; or from the cumulative effects of a series of smaller storms.

In fluvial geomorphic terms, a stream or river is described as a system, consisting of the stream itself, and the water that flows in it, and the sediment that is eroded from it, deposited in it, or transported through it; along with the watershed around the stream, from which water and sediment are conveyed to the stream. If climatic conditions and land use on the watershed stay about the same, a stream tends to reach a more or less stable state, known as dynamic equilibrium, when large and abrupt changes in the characteristics of the stream do not occur under normal conditions. If the material (sediment) and energy (from flowing water) inputs to

the stream change, however, then the system has to adjust to the changed conditions, until a new state of dynamic equilibrium is reached[46].

In the worst cases, riverbanks have lost up to 25' of land, destroyed 10 structures, and caused damages in excess of $1 million. More typically, riverbanks lose less than 5' of land per year. Future events may meet or exceed the current known rate of 5' – 10' of erosion per year.

4) Location and Impact

The figures below show potential riverine erosion locations in Medina County. Riverine erosion can occur along any river or stream.

[46] http://manualzz.com/doc/29211055/by-asfpm-riverine-erosion-hazards-working-group-february-...

A) Location

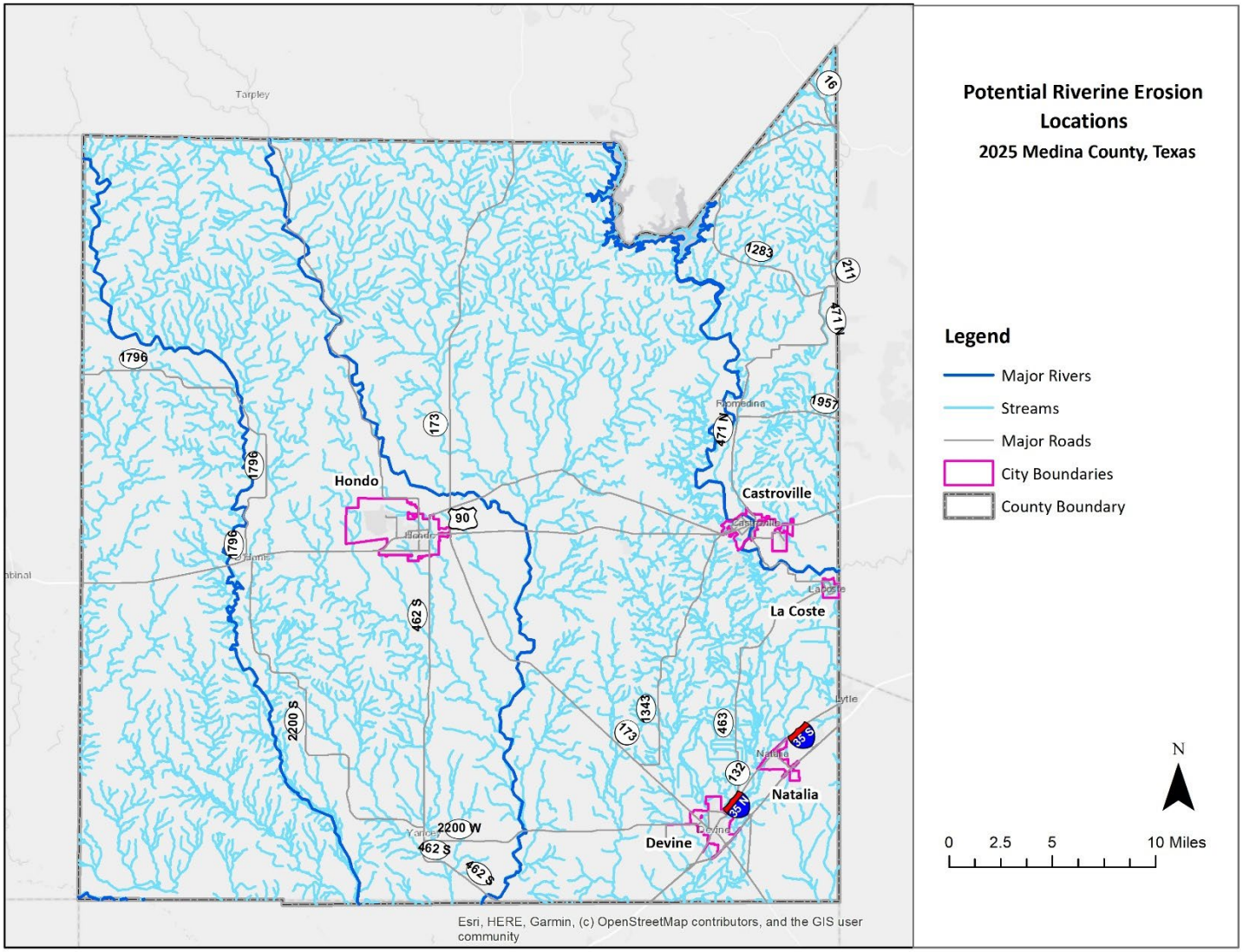

Figure 25: Medina County Potential Riverine Erosion Locations

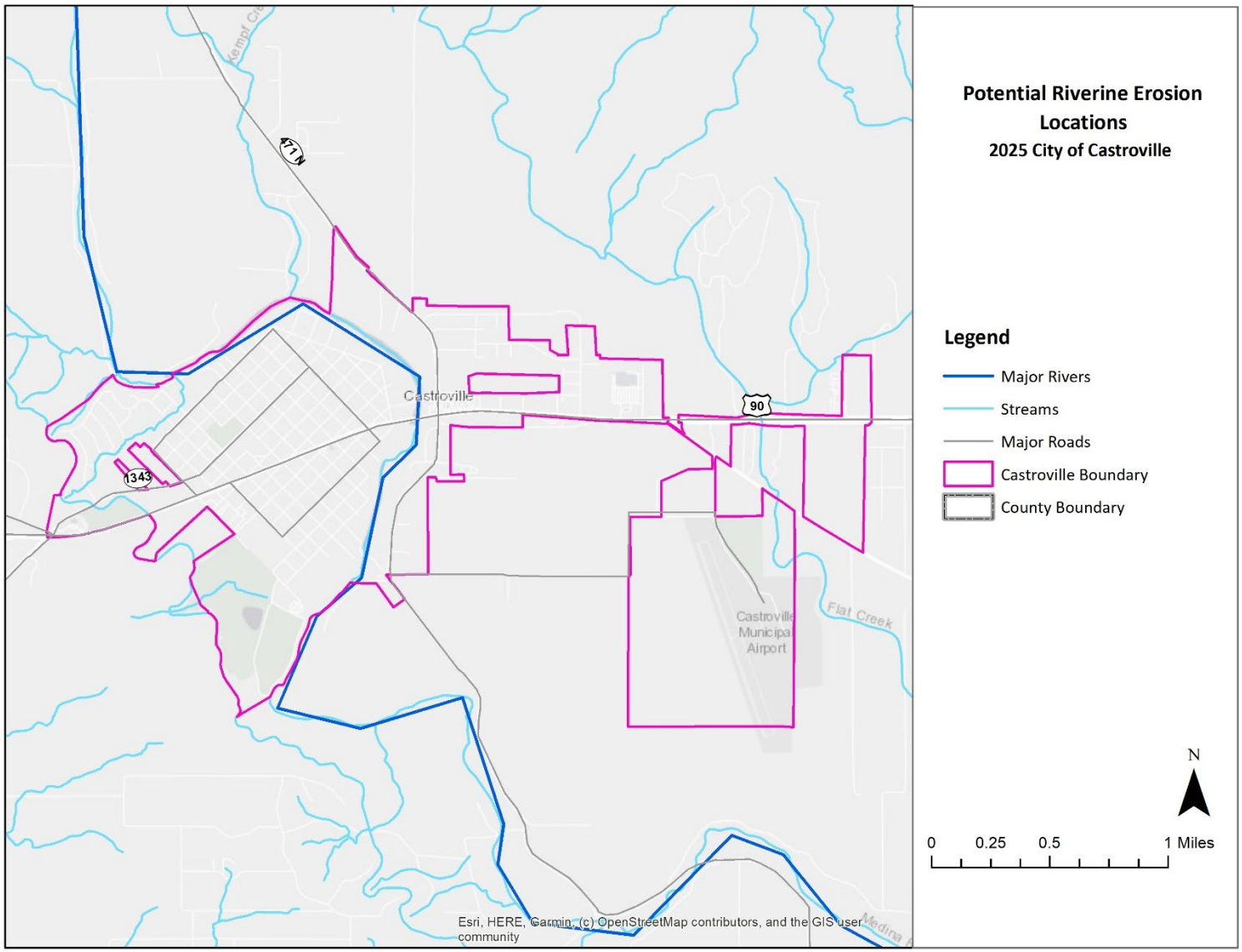

Figure 26: City of Castroville Potential Riverine Erosion Locations

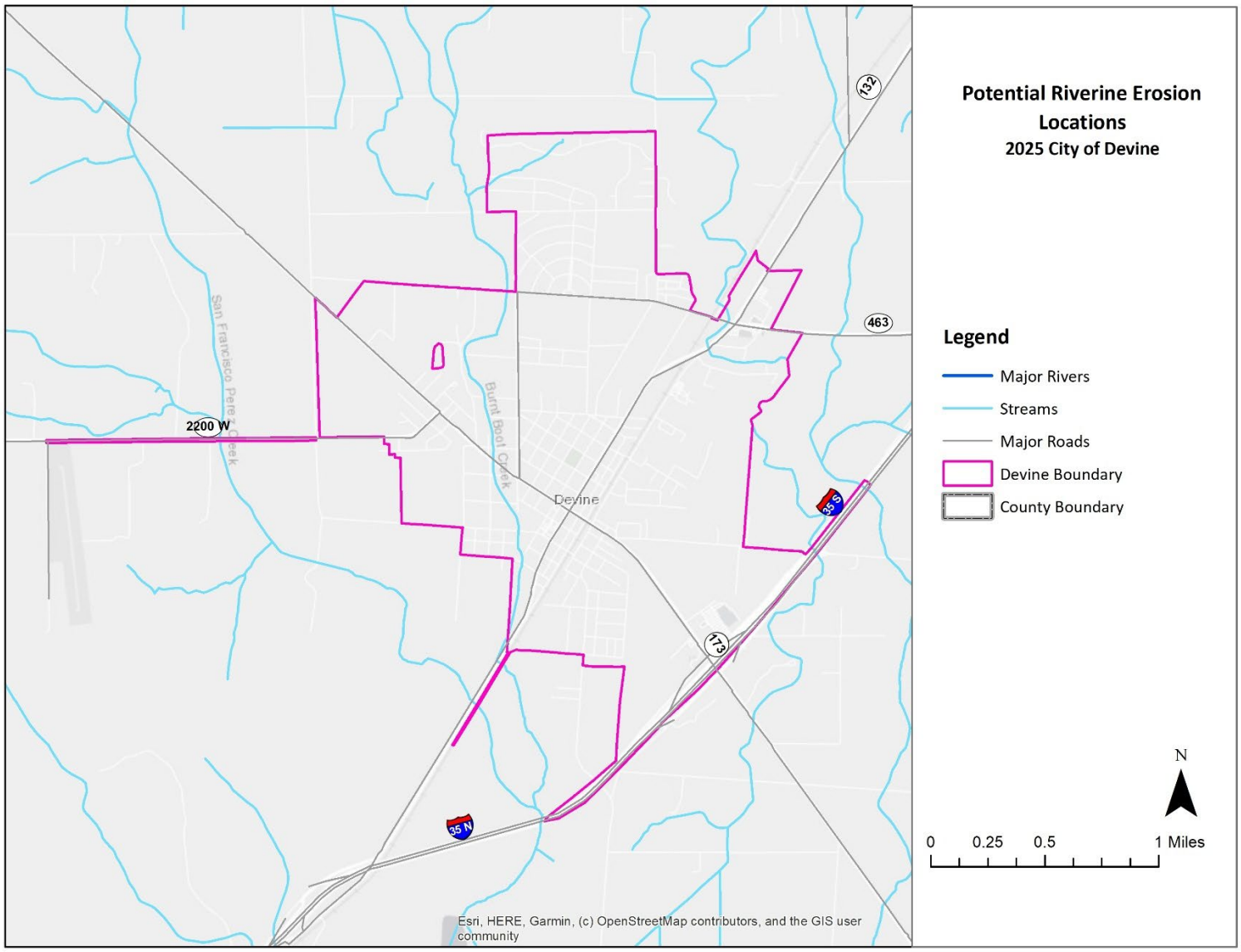

Figure 27: City of Devine Potential Riverine Erosion Locations

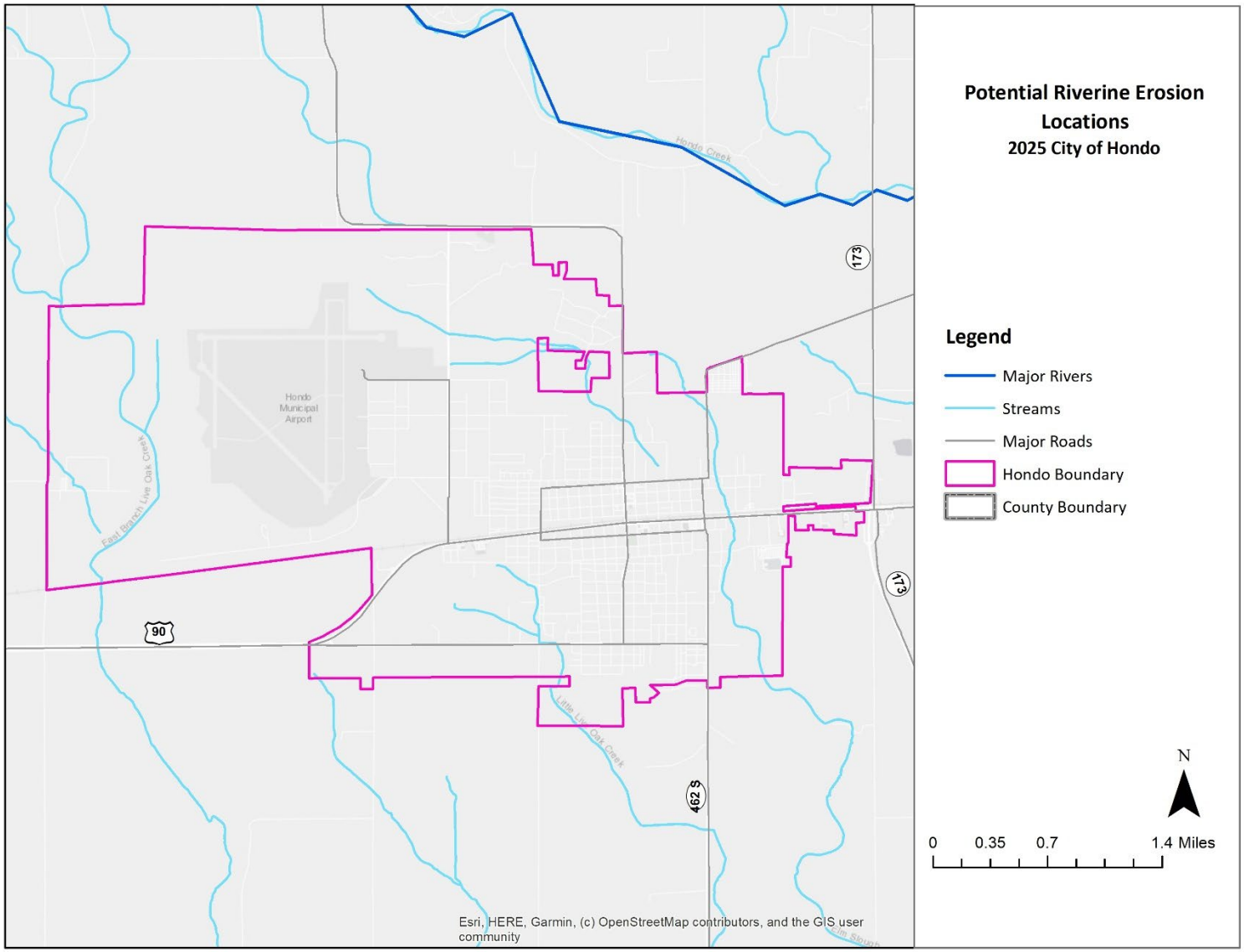

Figure 28: City of Hondo Potential Riverine Erosion Locations

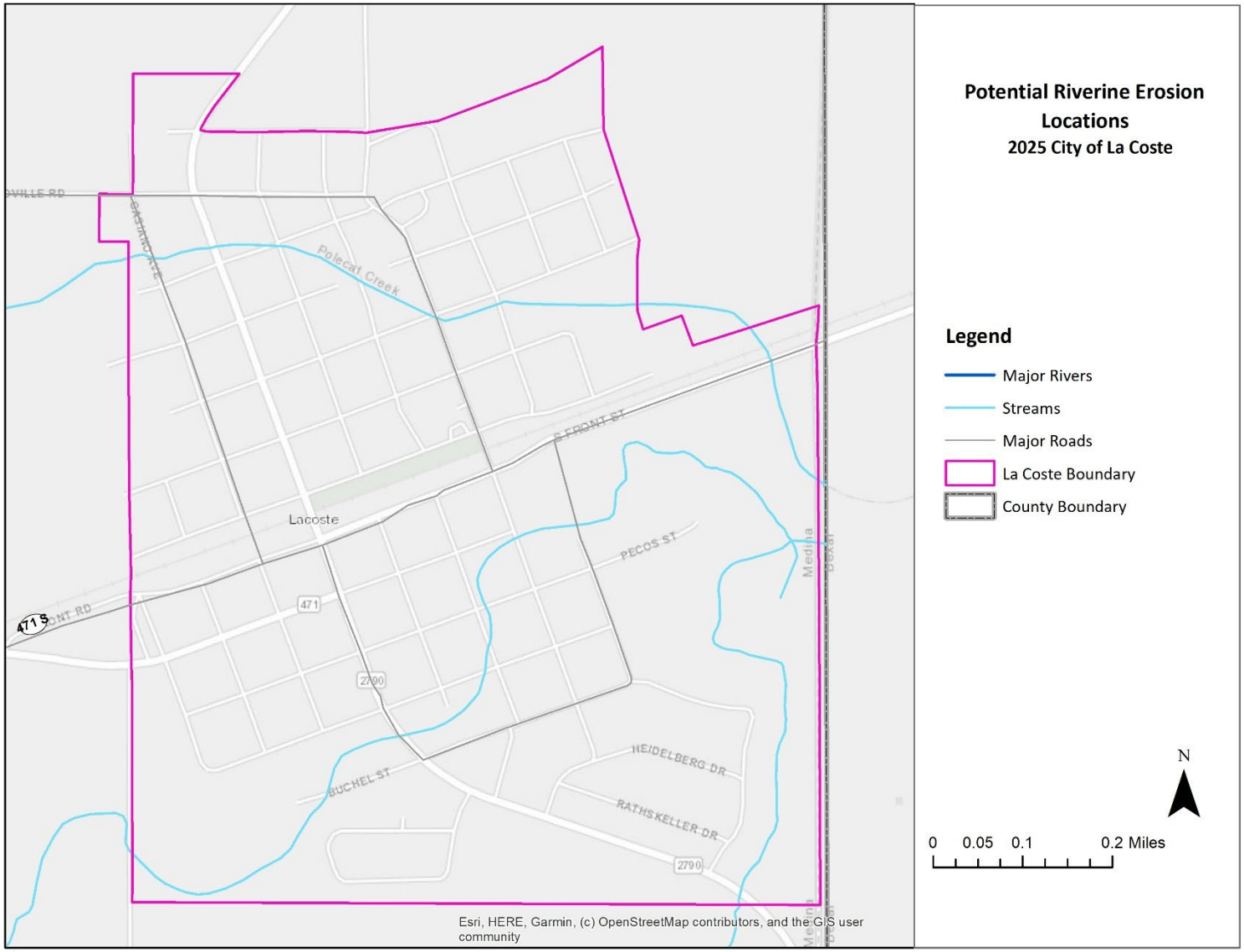

Figure 29: City of La Coste Potential Riverine Erosion Locations

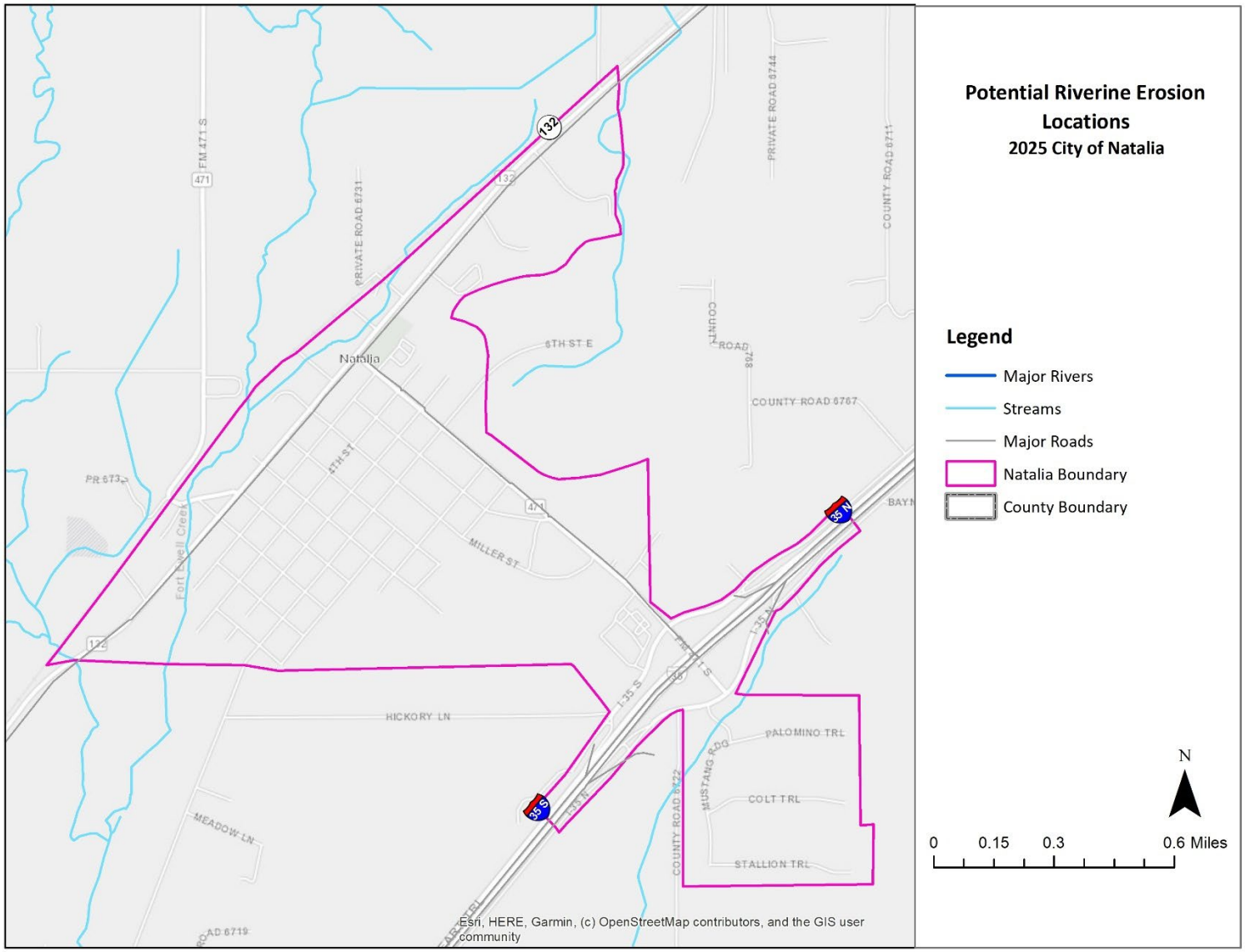

Figure 30: City of Natalia Potential Riverine Erosion Locations

B) Impact

The impacts of erosion may include but are not limited to decreasing property values, the partial or complete loss of structures, loss of land area and the ability to rebuild damaged or destroyed structures, economic losses to agricultural operations due to land and structure loss, damage to local infrastructure including, water and wastewater lines, roads and bridges.

5) Vulnerability

A) Critical Facilities

The critical facilities listed below were identified as vulnerable to riverine erosion due to their close proximity to rivers or streams.

Table 43: Medina County Critical Facilities Vulnerable to Riverine Erosion

Medina County Critical Facilities
D'Hanis Independent School District
Medina County Emergency Service District 1, Station 12
Medina County Emergency Service District 1, Station 14
Medina County Emergency Service District 1, Station 15
Medina Valley Independent School District Loma Alta Middle School
Potranco Elementary
Yancey Vol. Fire Dept.
Medina County Public Safety Radio Tower – Dunlay
Medina County Public Safety Radio Tower – Castroville
City of Devine Critical Facilities
Wastewater Treatment Plant
Devine Mechanic Shop
DAEP School
Devine ISD
City of La Coste Critical Facilities
La Coste Wastewater Treatment Plant
City of Natalia Critical Facilities
Wells 4 & 6

15. Earthquake

Earthquake is a term used to describe both a sudden slip on a fault, and the resulting ground shaking and radiated seismic energy caused by the slip. A burst of seismic energy can also be caused by volcanic or magmatic activity, or other sudden stress changes in the earth. Hazards associated with an earthquake that may affect the normal activities of people includes surface faulting, ground shaking, soil liquefaction, landslides, tectonic deformation, tsunamis, and seiches.[47] Earthquakes occur most often along geologic faults, narrow zones where rock masses move in relation to one another. The major fault lines of the world are located at the fringes of the large tectonic plates that make up Earth's crust. About 50,000 earthquakes large enough to be noticed without the aid of instruments occur annually over the entire Earth. Of these, approximately 100 are of sufficient size to produce substantial damage if their locations are near areas of habitation. Very great earthquakes occur on average about once per year. Over the centuries these events have been responsible for millions of deaths and an incalculable amount of damage to property.[48]

1) Earthquake History

The 2020 HMAP had no recorded earthquake events. Since the 2020 HMAP, there has been 1 earthquake in Medina County. Considering the increase of earthquakes in the State in recent years, the jurisdictions have decided to profile the hazard.

Table 44: Medina County Earthquake History

Incidents	Date Range	Earthquake Events	Magnitude (Richter)	Fatalities	Injuries	Property Damage $2025	Crop Damage $2025
Countywide	9/16/25	1	2.0	0	0	$0	$0

2) Likelihood of Future Events

Given the proximity but infrequency of earthquakes in the surrounding area, an earthquake that could affect any or all of the participating jurisdictions is occasional, meaning that one is possible in the next 5 years.

3) Extent

Earthquake strength is generally measured on the Richter Magnitude Scale. The Modified Mercalli Intensity Scale for Earthquakes provides an additional means of describing an earthquake's effects.

[47] Earthquake Glossary. United Stated Geological Survey
[48] Earthquakes. Britannica. https://www.britannica.com/science/earthquake-geology/Volcanism

Table 45: Richter Magnitude Scale

Richter Magnitude Scale		
Magnitude	**Earthquake Effects**	**Estimated number each year**
2.5 or less	Usually not felt but can be recorded by seismograph	900,000
2.5 to 5.4	Often felt, but only causes minor damage	30,000
5.5 to 6.0	Slight damage to buildings and other structures	500
6.1 to 6.9	May cause a lot of damage in very populated areas	100
7.0 to 7.9	Major earthquake, serious damage	20
8.0 or greater	Great earthquake; can destroy communities near the epicenter	One every 5 to 10 years.

Table 46: Modified Mercalli Intensity Scale for Earthquakes

Modified Mercalli Intensity Scale			
Scale	**Intensity**	**Description of Effects**	**Corresponding Richter Scale Magnitude**
I	Instrumental	Detected only by seismographs	<4.2
II	Feeble	Some people feel it	
III	Slight	Felt by people resting, like a truck rumbling by	
IV	Moderate	Felt by people walking	
V	Slightly Strong	Sleepers awake; church bells ring	<4.8
VI	Strong	Trees sway, suspended objects swing, objects fall off shelves	<5.4
VII	Very Strong	Mild alarm; walls crack; plaster falls	<6.1
VIII	Destructive	Moving cars uncontrollable; masonry fractures, poorly constructed buildings damaged	
IX	Ruinous	Some houses collapse; ground cracks; pipes break open	<6.9
X	Disastrous	Ground cracks profusely; many buildings destroyed; liquefaction and landslides widespread	<7.3

XI	Very Disastrous	Most buildings and bridges collapse; roads, railways, pipes, and cables destroyed; general triggering of other hazards	<8.1
XII	Catastrophic	Total destruction; trees fall or ground rises and falls in waves	>8.1

A future earthquake affecting Medina County, and the participating jurisdictions may meet or exceed recent events up to a 2.0 on the Richter scale or IV on the Modified Mercalli scale.

4) Location and Impact

A) Location

Earthquakes have no distinct geographic boundary in Medina County. Earthquakes can equally affect all jurisdictions addressing the hazard. Despite the lack of geographic boundary, damage is expected to be negligible in most participating jurisdictions.

B) Impact

Impacts may include structural damage to buildings of all types. Road networks that pass through the participating jurisdictions may be damaged to the point of failure as the ground shifts. Water and wastewater systems may fail due to cracks and breaks in underground tanks and pipe networks.

5) Vulnerability

A) Population

As described in Section 3 of Chapter 3 above, Medina County and the participating jurisdictions are home to many vulnerable residents. Increased vulnerability may be due to many factors including but not limited to: age, physical ability, financial means, housing type, and housing condition. Many of these vulnerabilities often overlap.

The jurisdictions recognize that vulnerable populations may need additional help preparing for and recovering from an earthquake.

Structures in substandard condition ahead of an earthquake may be more likely to suffer additional damage, including irreparable foundation or structural damages as the ground shifts. Depending on their means, these residents may require additional assistance recovering from earthquake-caused damage.

B) Critical Facilities & Infrastructure

The planning team identified the following critical facilities that may be affected by earthquakes which could affect the participating jurisdictions. Because earthquakes don't recognize geographic boundaries, all critical facilities, no matter their jurisdictional location, are equally vulnerable to earthquakes.

Table 47: Critical Facilities Vulnerable to Earthquakes

Jurisdiction	Critical Facilities	Potential Earthquake Impacts			
		Structural Damage	Pipe Damages	Increased Demand for Services	Economic Damages
Medina County	Medina County Courthouse	X	X	X	X
	Medina County Courthouse Annex	X	X	X	X
	Medina County Commissioner Precinct 1	X	X	X	X
	Medina County Commissioner Precinct 2	X	X	X	X
	Medina County Commissioner Precinct 3	X	X	X	X
	Medina County Commissioner Precinct 4	X	X	X	X
	Medina County Tax Assessor – Collector Hondo Office	X	X		X
	Medina County Tax Assessor – Collector Devine Office	X	X		X
	Medina County Tax Assessor – Collector Castroville Office	X	X		X
	Medina County Constable & Justice of the Peace Precinct 1	X	X		X
	Medina County Constable & Justice of the Peace Precinct 2	X	X		X
	Medina County Constable & Justice of the Peace Precinct 3	X	X		X
	Medina County Constable & Justice of the Peace Precinct 4	X	X		X
	Medina County Sheriff's Office, Communications/Dispatch, & Jail	X	X	X	X

	Medina County Office of Emergency Management & Fire Marshal's Office	X	X	X	X
	Medina County Animal Control Office	X	X	X	X
	Medina County AgriLife Extension	X	X	X	X
	Medina County Health Unit & WIC	X	X	X	X
	Medina County Environmental Health & Floodplain Administrator	X	X	X	X
	Medina County Pretrial Services	X	X	X	X
	Medina County Juvenile Probation	X	X		X
	D'Hanis Independent School District	X	X		X
	D'Hanis Vol. Fire Dept.	X	X	X	X
	Medina County Emergency Service District 1, Station 12	X	X	X	X
	Medina County Emergency Service District 1, Station 14	X	X	X	X
	Medina County Emergency Service District 1, Station 15	X	X	X	X
	Medina Regional Hospital	X	X	X	X
	Medina Valley Independent School District High School	X	X		X
	Medina Valley Independent School District Middle School	X	X		X
	Medina Valley Independent School District Administration	X	X		X
	Medina Valley Independent School District High School # 2	X	X		X
	Medina Valley Independent School District Loma Alta Middle School	X	X		X
	Potranco Elementary	X	X		X
	Yancey Vol. Fire Dept.	X	X	X	X
	Medina County Public Safety Radio Tower – Natalia	X	X	X	X
	Medina County Public Safety Radio Tower – Dunlay	X	X	X	X
	Medina County Public Safety Radio Tower – Hondo	X	X	X	X
	Medina County Public Safety Radio Tower – Castroville	X	X	X	X
	Medina County Public Safety Radio Tower – D'Hanis	X	X	X	X
	Medina County Public Safety Radio Tower – Mico	X	X	X	X
	Castroville Municipal Airport	X	X	X	X
	Devine Municipal Airport	X	X	X	X
Castroville	City Hall	X	X	X	X
	Castroville Elementary School	X	X		X
	Castroville Municipal Airport	X	X	X	X

	Castroville Police Dept.	X	X	X	X
	Castroville Public Library	X	X		X
	ESD #1, Castroville Station 10	X	X	X	X
Devine	Edwards Well #1	X	X	X	X
	Bain Well	X	X	X	X
	Warhorse Tower	X	X	X	X
	LeMartin Well	X	X	X	X
	Edwards Well #2	X	X	X	X
	Ingram Tower / PD Radio Repeater	X	X	X	X
	Harrison Well	X	X	X	X
	Wastewater Treatment Plant	X	X	X	X
	City Hall / Police Dept.	X	X	X	X
	Devine Mechanic Shop	X	X	X	X
	Public Works Office / City Yard	X	X	X	X
	Devine ISD Administrative Office	X	X		X
	John J. Ciavarra Elementary School	X	X		X
	Devine Intermediate School	X	X		X
	Devine Middle School	X	X		X
	Devine High School	X	X		X
	DAEP School	X	X		X
	Driscoll Public Library	X	X		X
	George S. Woods Community Center	X	X	X	X
	Shaffer Well	X	X	X	X
	Devine Animal Control Kennels	X	X	X	X
	Devine ISD	X	X		X
	Allman Sewer Lift Station	X	X		X
	Colonial Pkwy Sewer Lift Station	X	X		X
Hondo	City Hall	X	X	X	X
	Hondo High School	X	X		X
	Hondo Municipal Airport	X	X	X	X
	Hondo Police Dept.	X	X	X	X
	Hondo Public Library	X	X		X

	Hondo VFD Station #1	X	X	X	X
	Hondo VFD Station #2	X	X	X	X
La Coste	City Hall / Police Dept.	X	X	X	X
	La Coste Well #1	X	X	X	X
	La Coste Well #2	X	X	X	X
	La Coste Wastewater Treatment Plant	X	X	X	X
	La Coste Records & Vehicle Storage	X	X	X	X
	ESD1 – Station 11 (North)	X	X	X	X
	ESD1 – Station 11 (South)	X	X	X	X
	La Coste Helicopter Landing Pad	X	X	X	X
	MVISD – La Coste Elementary	X	X		X
Natalia	Wells 4 & 6	X	X	X	X
	Tower & Standpipe	X	X	X	X
	WWTP	X	X	X	X
	Ball Park Lift Station	X	X	X	X
	Loves Lift Station	X	X	X	X
	Ft. Ewell Creek Lift Station	X	X	X	X
	City Office	X	X	X	X

16. Expansive Soils

Expansive soils are soils and soft rocks with a relatively high percentage of clay minerals that are subject to volume changes as changing moisture conditions cause them to swell and shrink. Expansive soils contain minerals such as smectite clays that are capable of absorbing water. When these clays absorb water, they increase in volume and expand. The change in soil volume, and resulting expansion, can exert enough force on a building or other structure to cause damage. Homes built on expanding smectite clays without due precautions likely will be structurally damaged as the clay absorbs water. Examples of damage can include cracks appearing in walls and floors. Damage can be minor, but it also can be severe enough for the home to be structurally unsafe.[49]

Drought conditions can cause soils to contract in response to a loss of soil moisture, causing them to lose volume and shrink as they dry. A reduction in soil volume can affect the support to buildings or other structures, and result in damaging soil subsidence. Fissures in the soil can also develop and facilitate the deep penetration of water when moist conditions or runoff occurs. This produces a cycle of shrinkage and swelling, placing repetitive stress on structures. The effect of expansive soil is most prevalent in regions prone to prolonged periods of drought followed by periods of moderate to high precipitation.[50]

1) Expansive Soils History

None of the participating jurisdictions have a documented history of damage caused by expansive soils. However, Medina County and the jurisdictions determined that the hazard can affect structures and infrastructure.

2) Likelihood of Future Occurrence

Given the lack of an officially recorded hazard history in the profiling jurisdictions, it's difficult to attempt to estimate the likelihood of future expansive soils hazards events.

However, in light of the jurisdictions' histories of heavy rainfalls and periods of drought, conditions that lead clay-filled soils to expand and contract respectively, it may be fair to say that a future expansive soils event is likely, meaning one is possible in the next 3 years.

As information on the hazard is gathered more closely moving forward, its likelihood will be revised accordingly.

[49] https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/16/nrcs143_019308.pdf
[50] 2023 State of Texas Hazard Mitigation Plan

3) Extent

According to the 2023 State of Texas Hazard Mitigation Plan, "expansive soils risk is measured by the degree to which soils may shrink or swell. Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent, moderate if 3 to 6 percent, high if 6 to 9 percent, and very high if more than 9 percent. If the linear extensibility is more than 3 percent, shrinking and swelling can cause damage to buildings, roads, and other structures."[51] Medina County features the full range of risk categories and can expect future conditions to correlate up to a very high linear extensibility risk.

Table 48: Natural Resources Conservation Service Soil Linear Extensibility Risk Categories[52]

Category	Linear Extensibility %	Clay %
Low	< 3%	< 25%
Moderate	3% - 6%	25% - 35%
High	6% - 9%	35% - 45%
Very High	> 9%	> 45%

4) Location and Impact

A) Location

As shown in the maps below, expansive soils exist across the County and have the potential to affect all jurisdictions.

[51] 2023 State of Texas Hazard Mitigation Plan
[52] 2009 Soil Reports. Natural Resources Conservation Service

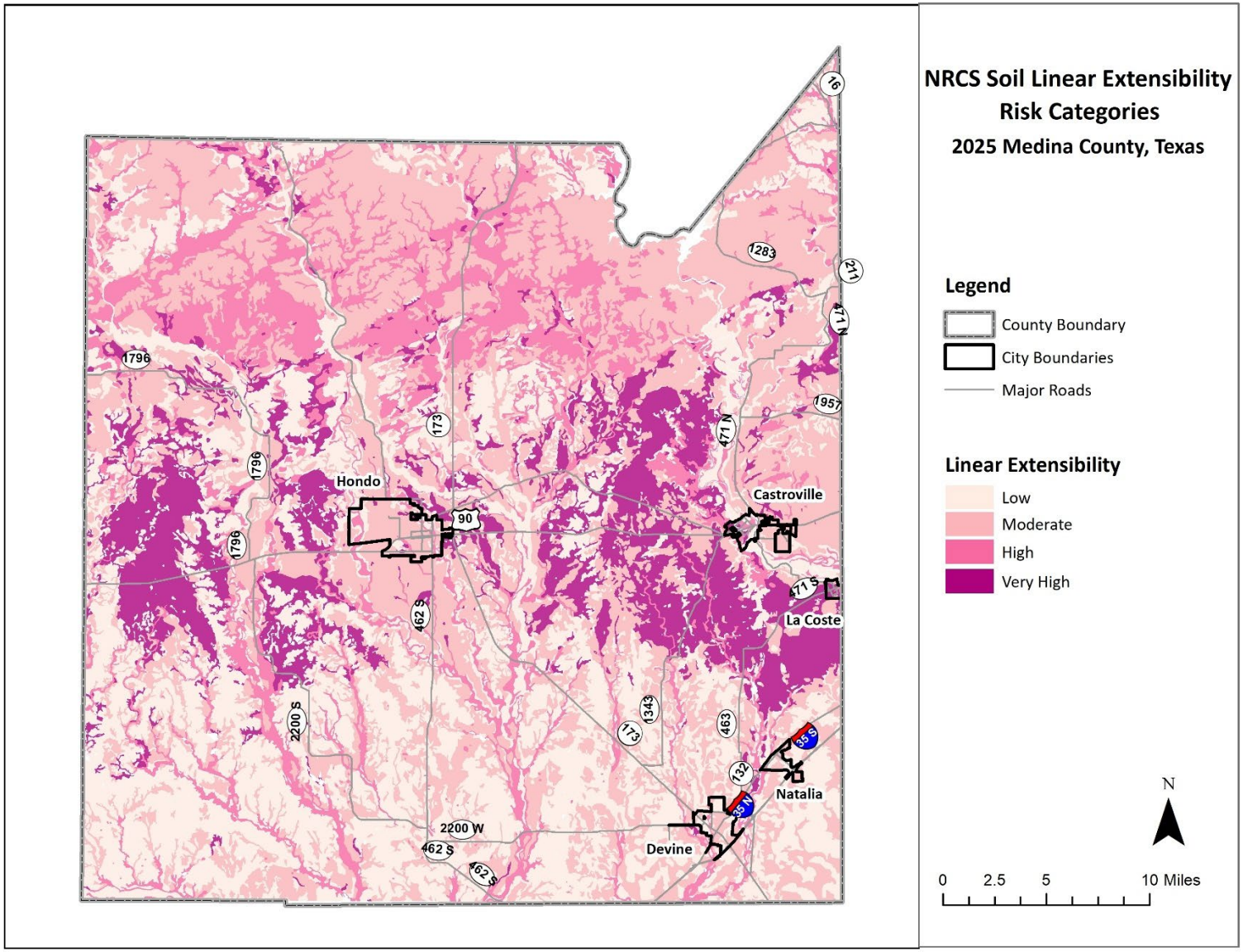

Figure 31: Medina County Linear Extensibility Risk

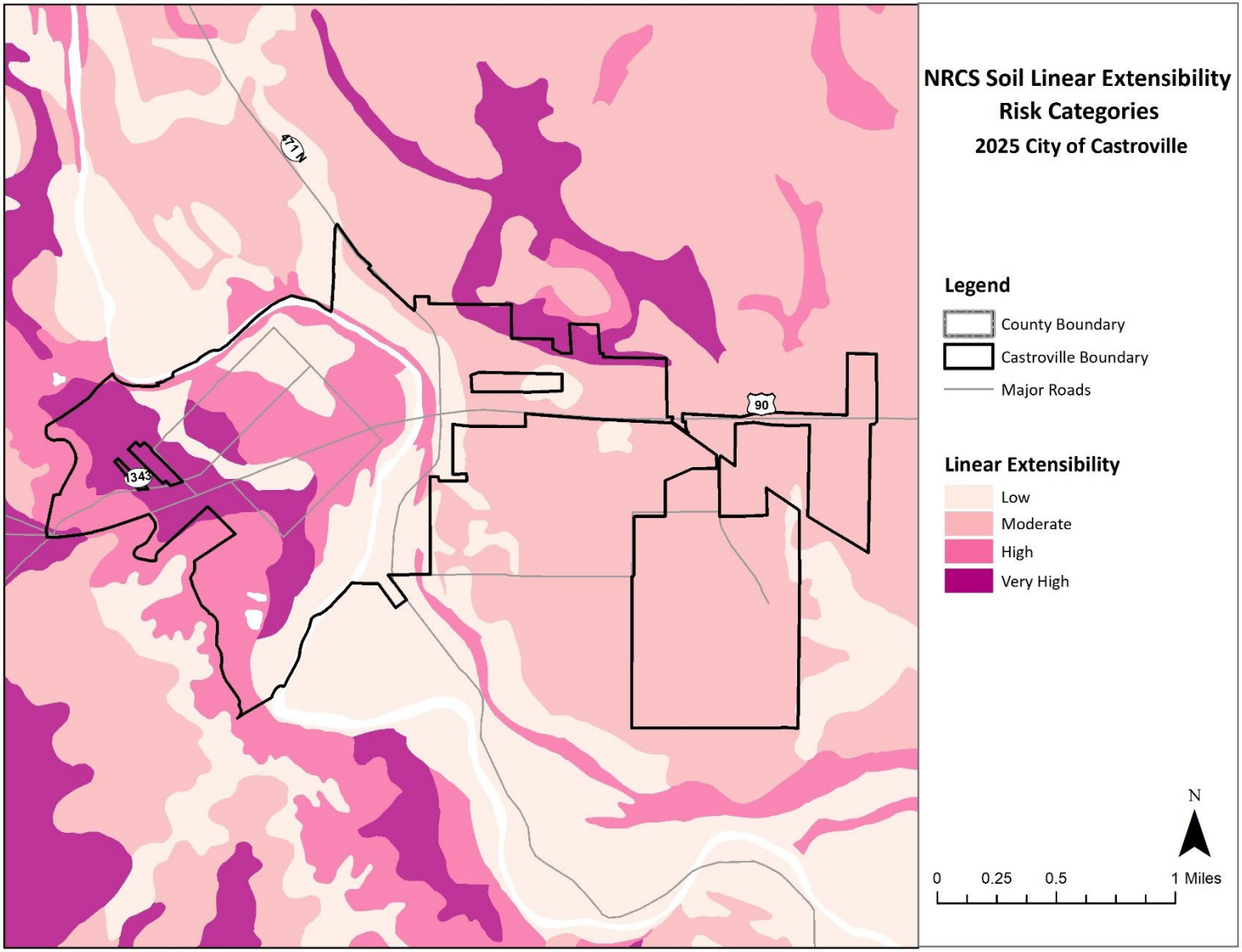

Figure 32: City of Castroville Linear Extensibility Risk

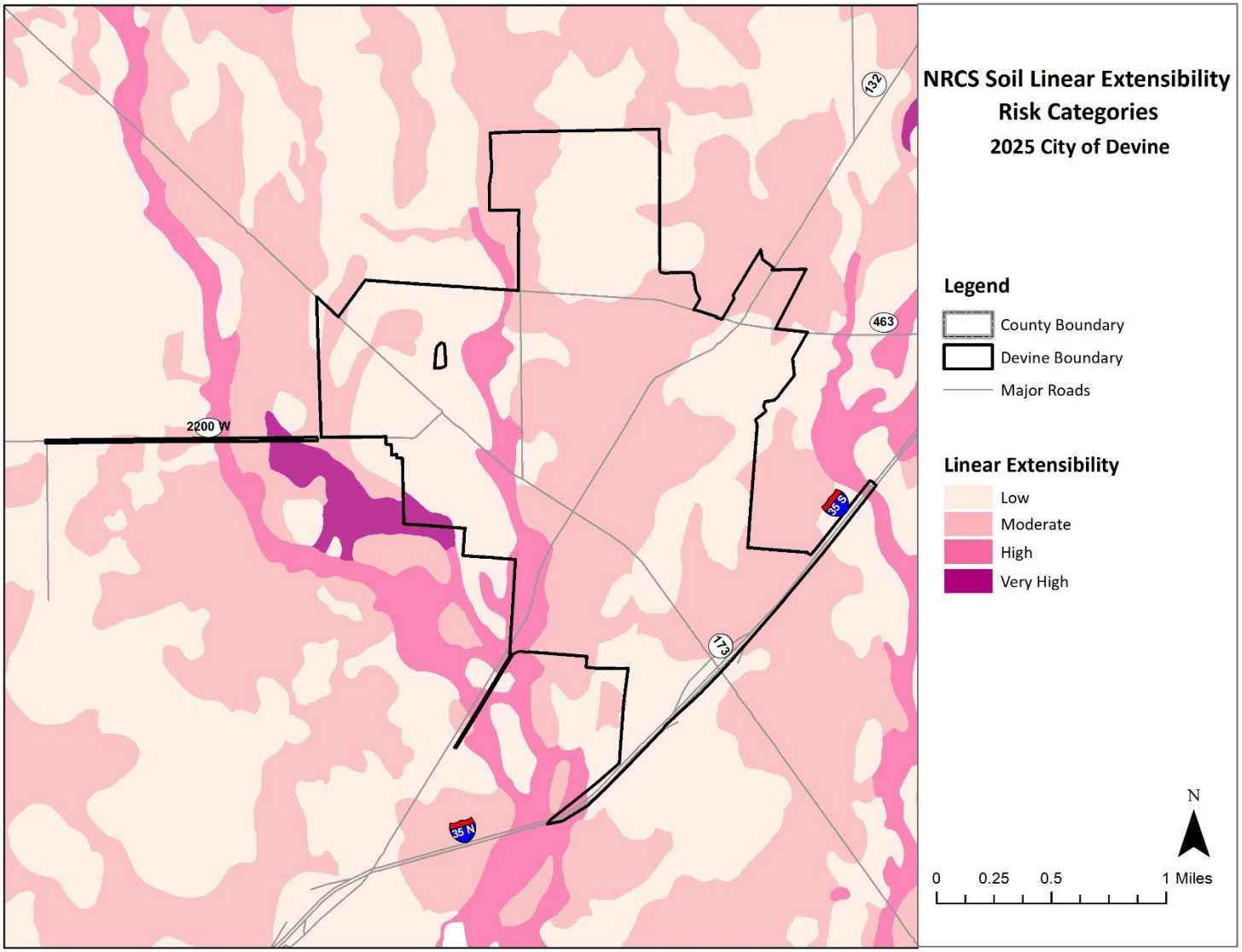

Figure 33: City of Devine Linear Extensibility Risk

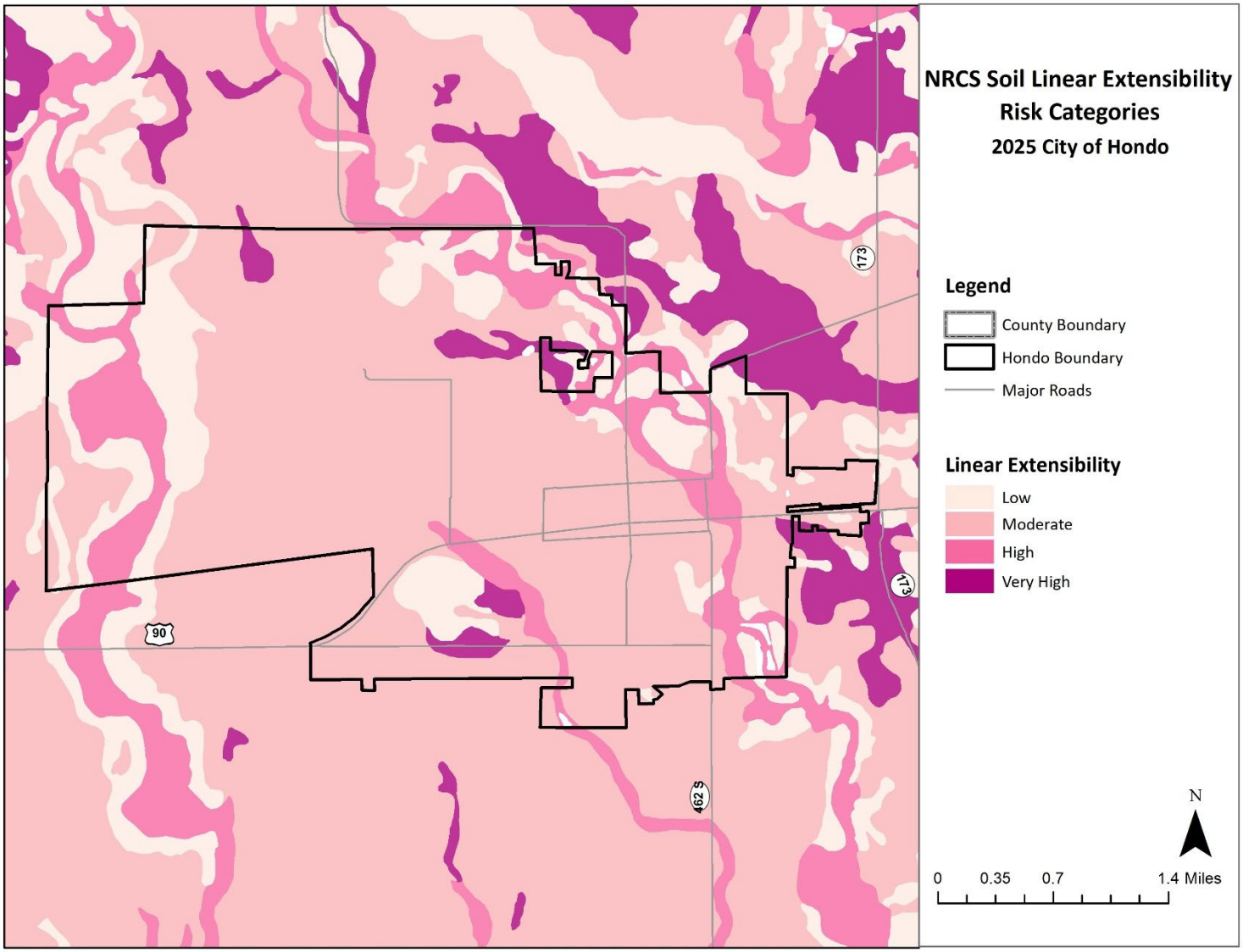

Figure 34: City of Hondo Linear Extensibility Risk

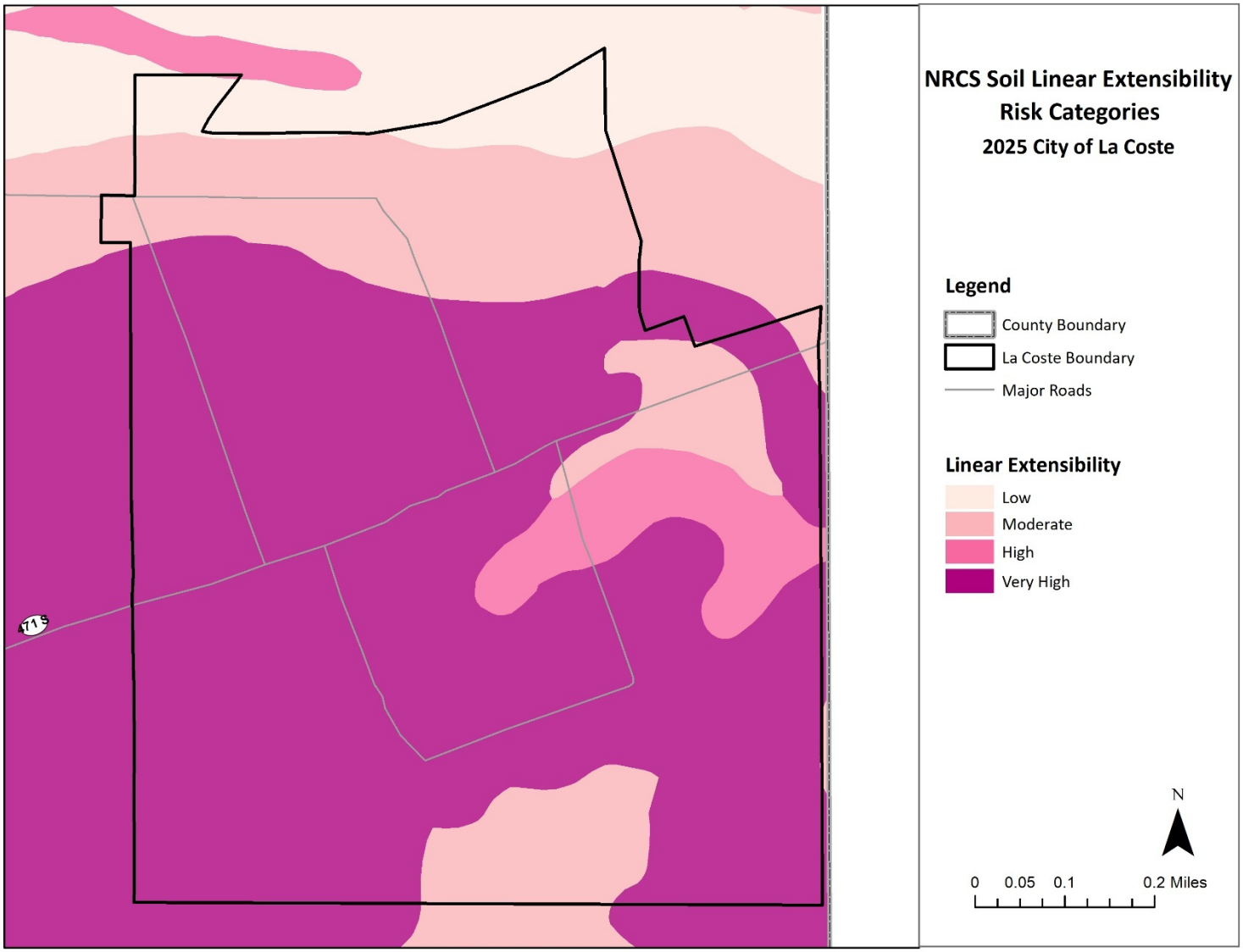

Figure 35: City of La Coste Linear Extensibility Risk

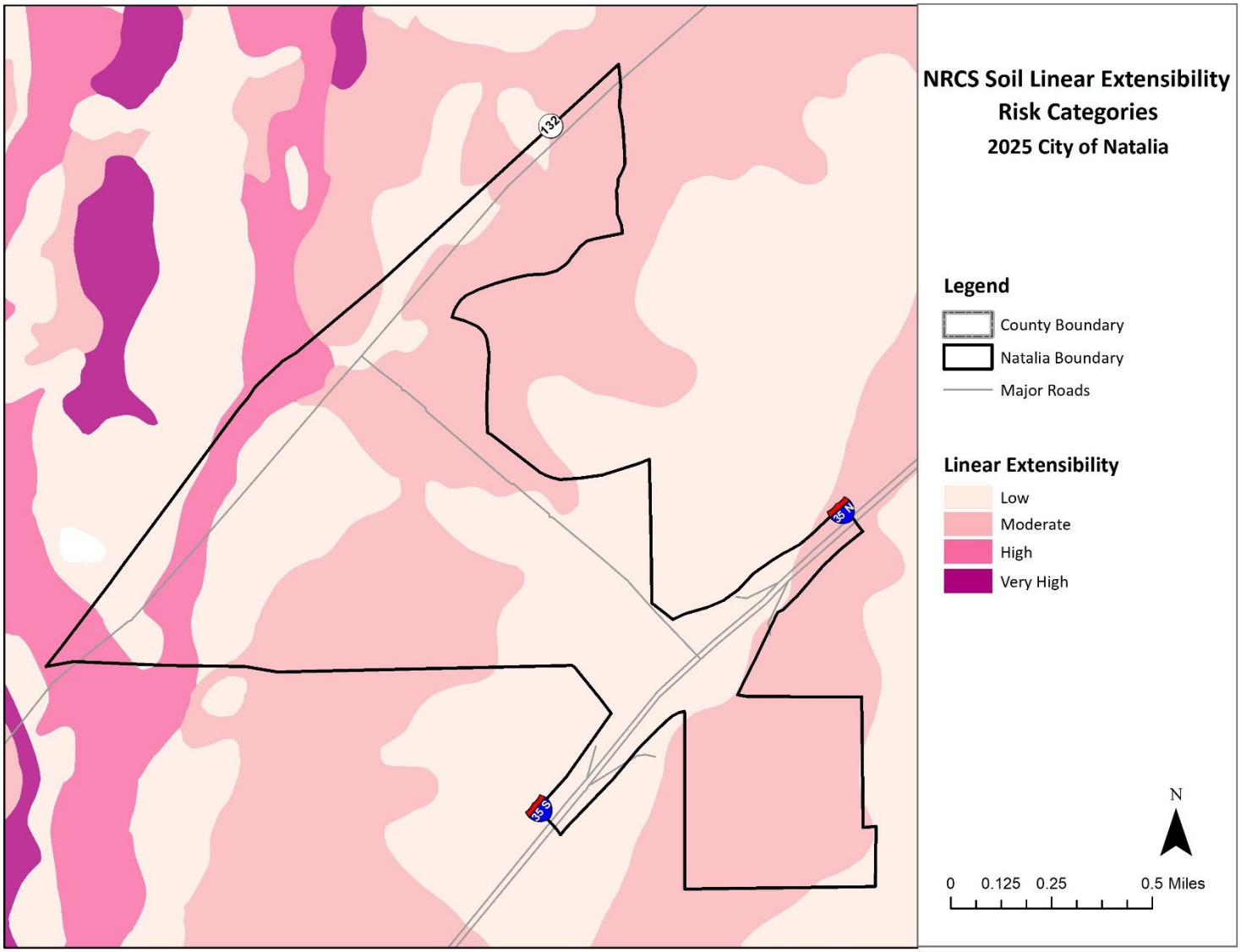

Figure 36: City of Natalia Linear Extensibility Risk

B) Impact

The potential impact of expansive soils in the jurisdictions is unknown at this time. Future hazard events are expected to result in few, if any, injuries. However, as mentioned in the 2023 State of Texas Hazard Mitigation Plan, the combination of expansive soils and Texas homebuilders' propensity for installing concrete slab foundations, often results in cracked foundations that can literally halve a home's value. In such cases, economic losses are not limited to those borne by the homeowner. Instead, halved property values result in lower property values, and therefore, lower property tax revenues. Typically, houses and one-story commercial infrastructure are likely to incur more damage due to the expansion of clay.

Potential ripple effects make it difficult to estimate how wide-reaching expansive soils' impact could be. Under the right circumstances, expansive soils may wreak havoc on local economies by depleting homeowners' bank accounts and decimating municipal budgets. In the worst cases, building owners may choose to walk away, rather than make costly repairs, thus saddling local governments with abandoned properties and the incumbent challenges they pose.

5) Vulnerability

Medina County is exposed to expansive soils to varying degrees based on soil type as shown in Figures 31-36 above. At this time, given the combination of the hazard's ability to inflict unpredictable damages, the lack of officially reported data, and the diversity of building ages, types, and foundations in each participating jurisdiction, it's unfeasible to identify which buildings, infrastructure, and critical facilities are vulnerable to damages significant enough to interrupt or stop normal operations. Therefore, all are considered equally vulnerable to the hazard.

A) Critical Facilities

Table 49: Critical Facilities Vulnerable to Expansive Soils

Jurisdiction	Critical Facilities	Potential Expansive Soils Impacts
		Structural Damage
Medina County	Medina County Courthouse	X
	Medina County Courthouse Annex	X
	Medina County Commissioner Precinct 1	X
	Medina County Commissioner Precinct 2	X
	Medina County Commissioner	X

	Precinct 3	
	Medina County Commissioner Precinct 4	X
	Medina County Tax Assessor – Collector Hondo Office	X
	Medina County Tax Assessor – Collector Devine Office	X
	Medina County Tax Assessor – Collector Castroville Office	X
	Medina County Constable & Justice of the Peace Precinct 1	X
	Medina County Constable & Justice of the Peace Precinct 2	X
	Medina County Constable & Justice of the Peace Precinct 3	X
	Medina County Constable & Justice of the Peace Precinct 4	X
	Medina County Sheriff's Office, Communications/Dispatch, & Jail	X
	Medina County Office of Emergency Management & Fire Marshal's Office	X
	Medina County Animal Control Office	X
	Medina County AgriLife Extension	X
	Medina County Health Unit & WIC	X
	Medina County Environmental Health & Floodplain Administrator	X
	Medina County Pretrial Services	X
	Medina County Juvenile Probation	X
	D'Hanis Independent School District	X
	D'Hanis Vol. Fire Dept.	X
	Medina County Emergency Service District 1, Station 12	X
	Medina County Emergency Service District 1, Station 14	X
	Medina County Emergency Service District 1, Station 15	X
	Medina Regional Hospital	X
	Medina Valley Independent School District High School	X
	Medina Valley Independent School District Middle School	X
	Medina Valley Independent School District Administration	X
	Medina Valley Independent School District High School # 2	X
	Medina Valley Independent School District Loma Alta Middle School	X
	Potranco Elementary	X
	Yancey Vol. Fire Dept.	X
	Medina County Public Safety Radio Tower – Natalia	X
	Medina County Public Safety Radio Tower – Dunlay	X
	Medina County Public Safety Radio Tower – Hondo	X
	Medina County Public Safety Radio Tower – Castroville	X

	Medina County Public Safety Radio Tower – D'Hanis	X
	Medina County Public Safety Radio Tower – Mico	X
	Castroville Municipal Airport	X
	Devine Municipal Airport	X
Castroville	City Hall	X
	Castroville Elementary School	X
	Castroville Municipal Airport	X
	Castroville Police Dept.	X
	Castroville Public Library	X
	ESD #1, Castroville Station 10	X
Devine	Edwards Well #1	X
	Bain Well	X
	Warhorse Tower	X
	LeMartin Well	X
	Edwards Well #2	X
	Ingram Tower / PD Radio Repeater	X
	Harrison Well	X
	Wastewater Treatment Plant	X
	City Hall / Police Dept.	X
	Devine Mechanic Shop	X
	Public Works Office / City Yard	X
	Devine ISD Administrative Office	X
	John J. Ciavarra Elementary School	X
	Devine Intermediate School	X
	Devine Middle School	X
	Devine High School	X
	DAEP School	X
	Driscoll Public Library	X
	George S. Woods Community Center	X
	Shaffer Well	X
	Devine Animal Control Kennels	X
	Devine ISD	X
	Allman Sewer Lift Station	X
	Colonial Pkwy Sewer Lift Station	X
Hondo	City Hall	X
	Hondo High School	X
	Hondo Municipal Airport	X
	Hondo Police Dept.	X
	Hondo Public Library	X

	Hondo VFD Station #1	X
	Hondo VFD Station #2	X
La Coste	City Hall / Police Dept.	X
	La Coste Well #1	X
	La Coste Well #2	X
	La Coste Wastewater Treatment Plant	X
	La Coste Records & Vehicle Storage	X
	ESD1 – Station 11 (North)	X
	ESD1 – Station 11 (South)	X
	La Coste Helicopter Landing Pad	X
	MVISD – La Coste Elementary	X
Natalia	Wells 4 & 6	X
	Tower & Standpipe	X
	WWTP	X
	Ball Park Lift Station	X
	Loves Lift Station	X
	Ft. Ewell Creek Lift Station	X
	City Office	X

17. Dam Failure

A dam failure is defined as systematic failure of a dam structure resulting in the uncontrolled release of water, often resulting in floods that could exceed the 100-year floodplain boundaries. A large dam failure has the potential to cause mass fatalities and extensive structural damage if populated and/or industrial areas are located near or downstream of the dam structure. In the event of a dam failure, the energy of the water stored behind the dam is capable of causing rapid and unexpected flooding downstream, resulting in loss of life and substantial property damage. A devastating effect on water supply and power generation could be expected as well. There are more than 91,000 dams across the U.S. and roughly 15,500 of them are classified as "High Hazard" and could cause fatalities if they failed, according to the National Inventory of Dams. Most of these dams were built many decades ago. By 2025, 70 percent of them will be more than a half century old, according to the American Society of Civil Engineers.[53]

1) Dam History

Medina County and the participating jurisdictions have no history of dam failure. However, the planning team has determined that the hazard has the ability to affect structures and infrastructure belonging to Medina County, the City of Castroville, the City of La Coste, and the City of Natalia.

The Cities of Devine and Hondo determined that no dams of concern pose a risk of inundation to their facilities and therefore will not be profiling the hazard.

There are 32 dams in Medina County, 6 of which are considered high hazard. All high hazard dams will be profiled. High Hazard Potential Dam (HHPD) requirements are also included. Three out of the six high hazard dams are classified as high hazard potential by the TCEQ Dam Safety Program and are identified as HHPD in the table below. The Cities provided dam information and collaborated regularly through meetings and email. The planning team worked with the dam owners and/or the State Dam Safety Program to obtain the following information on each high hazard dam:

Table 50: Medina County Dams of Concern

Dam	Owner Type	Storage Capacity in Acre/Feet	Emergency Action Plan Date	Hazard Status
Medina Lake Dam	Local Gov't	327,250	6/23/2022	HHPD
Medina Diversion Lake Dam	Local Gov't	3.900	6/23/2022	HHPD
Parker Creek Lake Dam	Local Gov't	6,987	4/29/2024	HIGH

[53] 2023 State of Texas Hazard Mitigation Plan

Pearson Dam	Local Gov't	1,759	8/27/2024	HHPD
Twin Lake Estates East Lake Dam	Private	260	N/A	HIGH
Twin Lake Estates West Lake Dam	Private	165	N/A	HIGH

2) Likelihood of Future Occurrence

Given the lack of a prior dam failure in the participating jurisdictions, dam failure is considered unlikely, meaning that one is possible in the next 10 years.

As information on the hazard is gathered more closely moving forward, its likelihood will be revised accordingly.

3) Extent

FEMA's classification system for dam failure is a simple and straight-forward three tier system. It is based on whether there is any probability of a loss of human life, and whether there is a large economic, environmental, or lifeline loss. The low hazard potential classification is used for failures that will not result in any loss of human life, and the economic, environmental, and lifeline losses are low and generally limited to the dam owner. The significant hazard potential classification is used for failures that will not result in any loss of human life, but the economic, environmental, and lifeline losses would have a great impact on the community. The high hazard potential classification is used when the dam failure will cause the loss of at least one human life, regardless of what the economic, environmental, and lifeline losses are. A way to consider the hazard extent is to use the storage capacity behind the dam to estimate the ground surface that would be covered with a foot of water.

An acre-foot is 325,851 gallons and would cover one acre of land with a foot of water. A 1,000-acre-foot body of water could cover 40 acres with an average depth of 25 feet, and the volume of 1,000 acre-feet is approximately 326 million gallons of water.

Table 51: Dam Failure Extent Classification

Hazard Potential Classification	Loss of Human Life	Dam Storage Capacity
Low	None Expected	Less than 10,000 acre-feet
Significant	Probable (1-6)	Between 10,000 – 100,000 acre-feet

High	Loss of Life Expected (7 or more)	100,000 acre-feet or more

* Other factors such as age or location can also classify a dam as high hazard.

The Medina Lake Dam's storage capacity is 327,250 acre-feet. If a failure were to occur, approximately 13,090 acres of land could be inundated with an average depth of 25 feet.

The Medina Diversion Lake Dam's storage capacity is 3,900 acre-feet. If a failure were to occur, approximately 156 acres of land could be inundated with an average depth of 25 feet.

The Parker Creek Dam's storage capacity is 6,987 acre-feet. If a failure were to occur, approximately 279 acres of land could be inundated with an average depth of 25 feet.

The Pearson Dam's storage capacity is 1,759 acre-feet. If a failure were to occur, approximately 70 acres of land could be inundated with an average depth of 25 feet.

The Twin Lake Estates East Lake Dam's storage capacity is 260 acre-feet. If a failure were to occur, approximately 10 acres of land could be inundated with an average depth of 25 feet.

The Twin Estates West Lake Dam's storage capacity is 165 acre-feet. If a failure were to occur, approximately 6 acres of land could be inundated with an average depth of 25 feet.

4) Location and Impact

A) Location

The figures below show the location of all dams of concern within the County. Official inundation maps are either unavailable or classified. GIS was used to determine potential inundation zones below. Mitigation actions have been added to conduct dam studies where HHPD inundation zone information is unavailable.

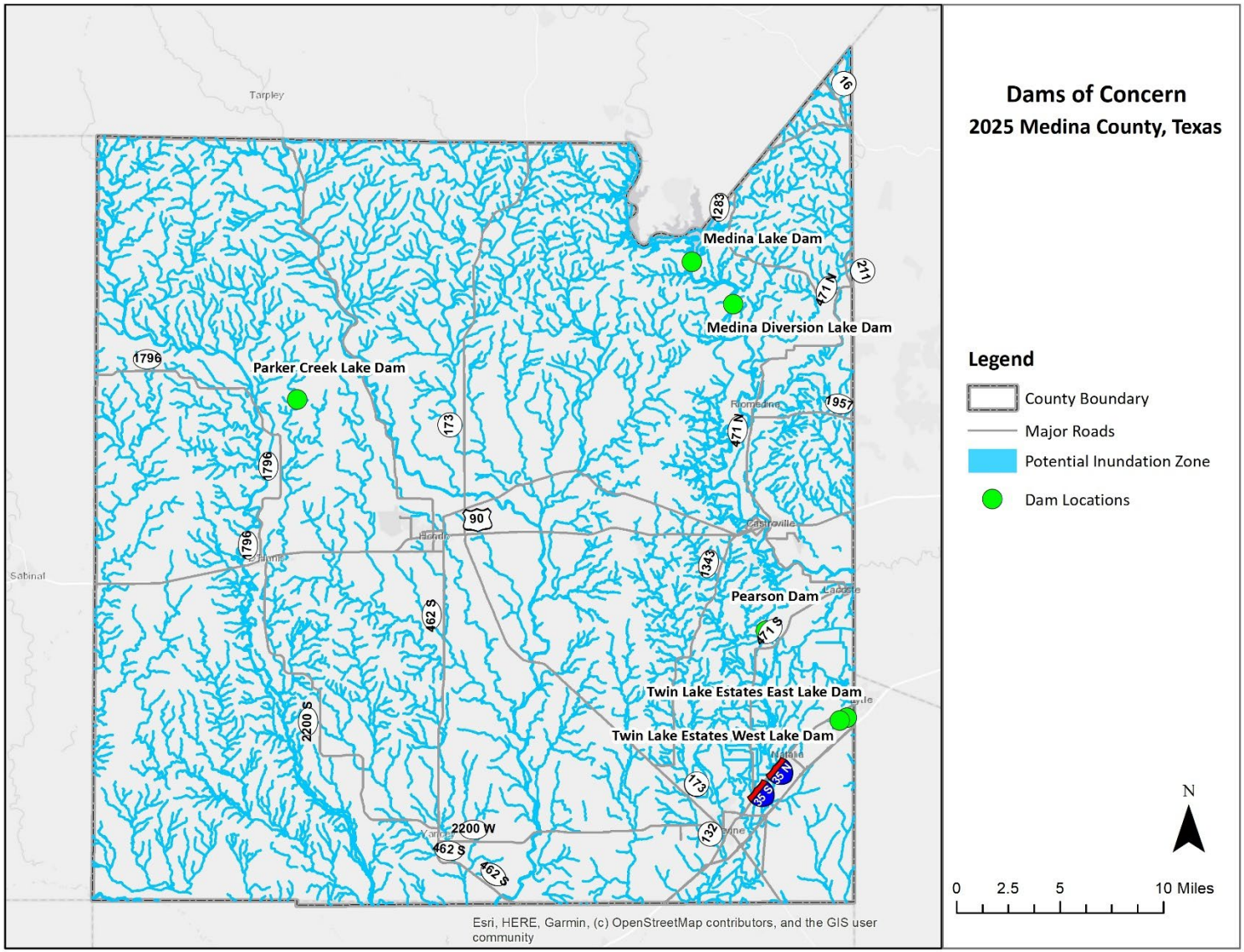

Figure 37: Medina County Dams of Concern

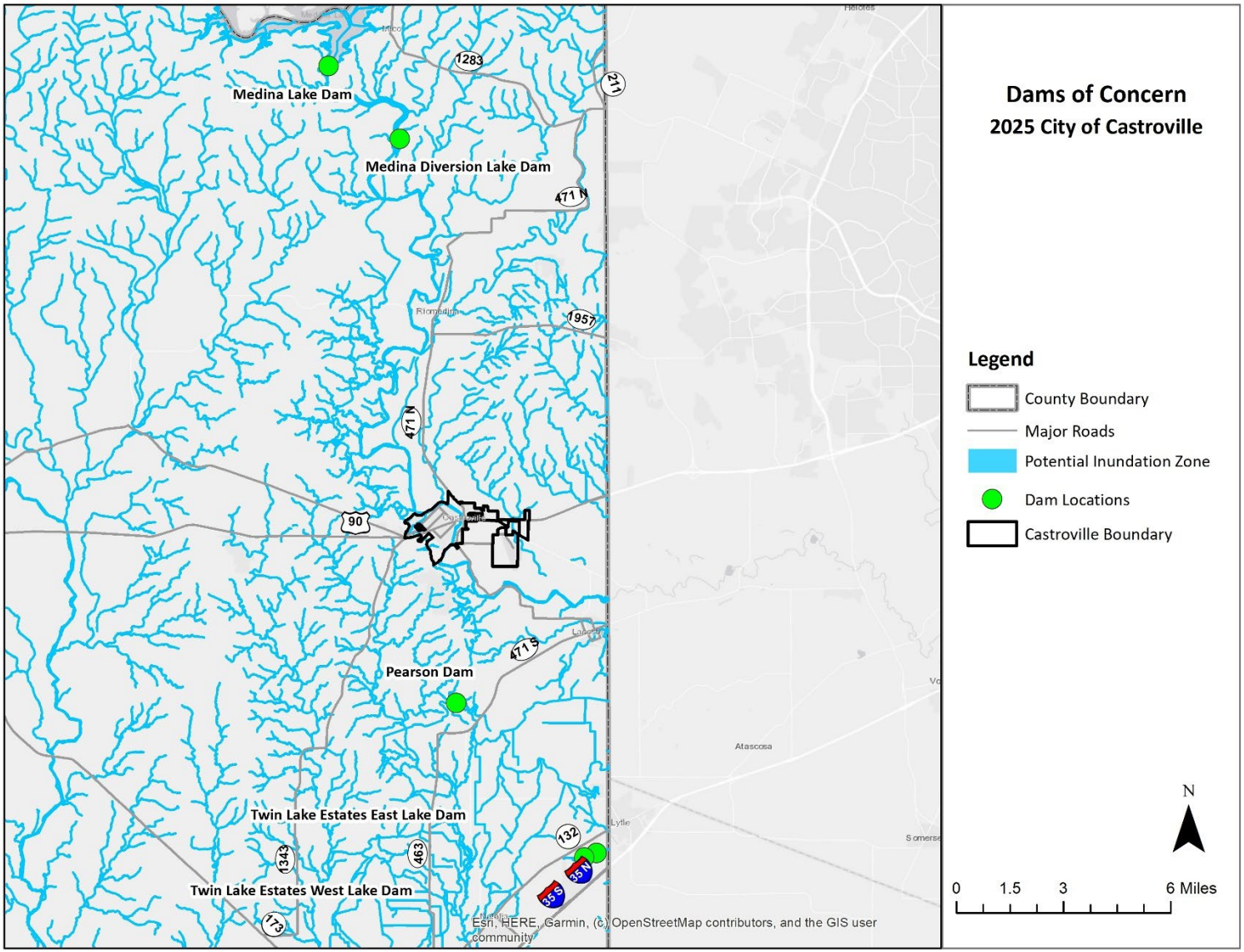

Figure 38: City of Castroville Dams of Concern

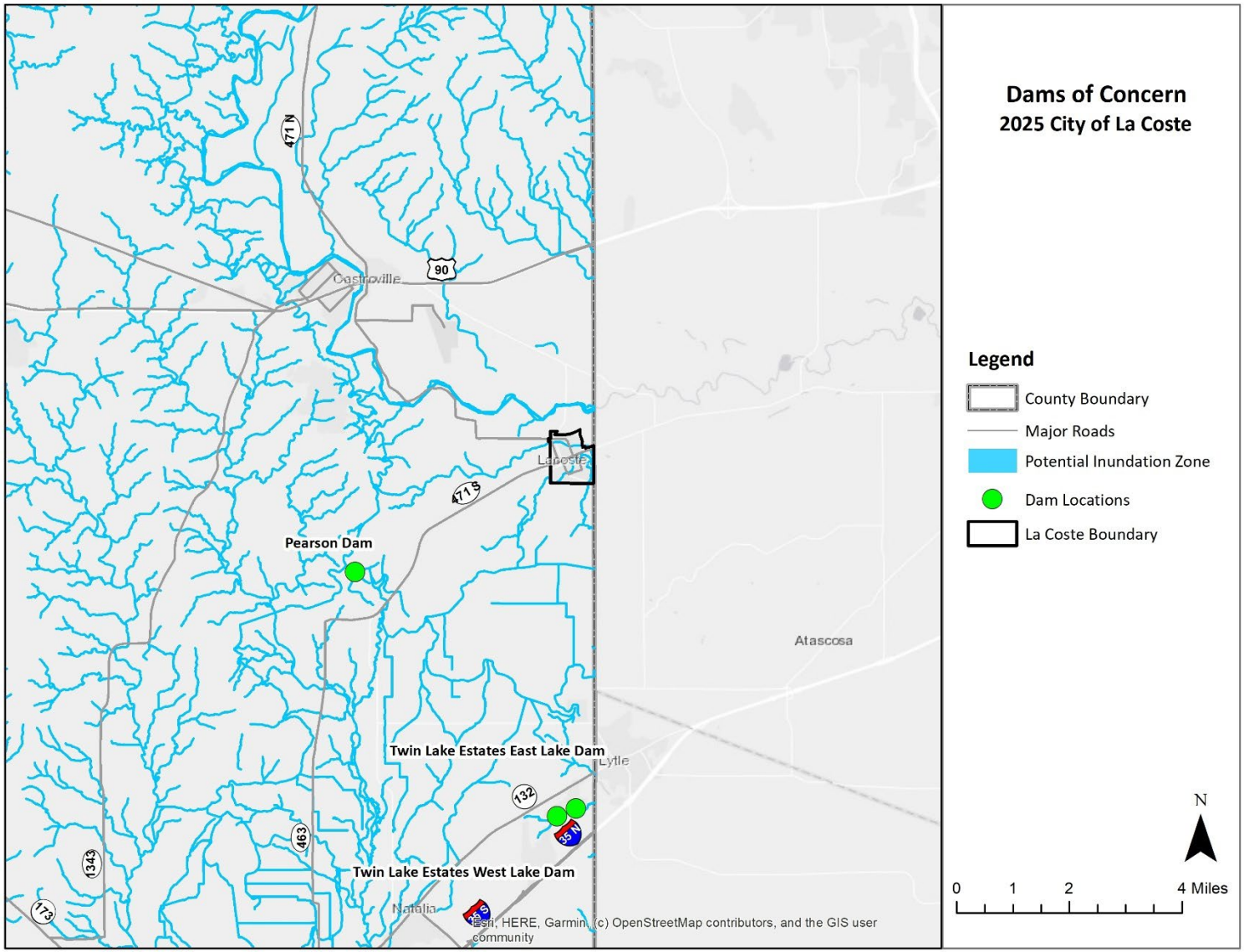

Figure 39: City of La Coste Dams of Concern

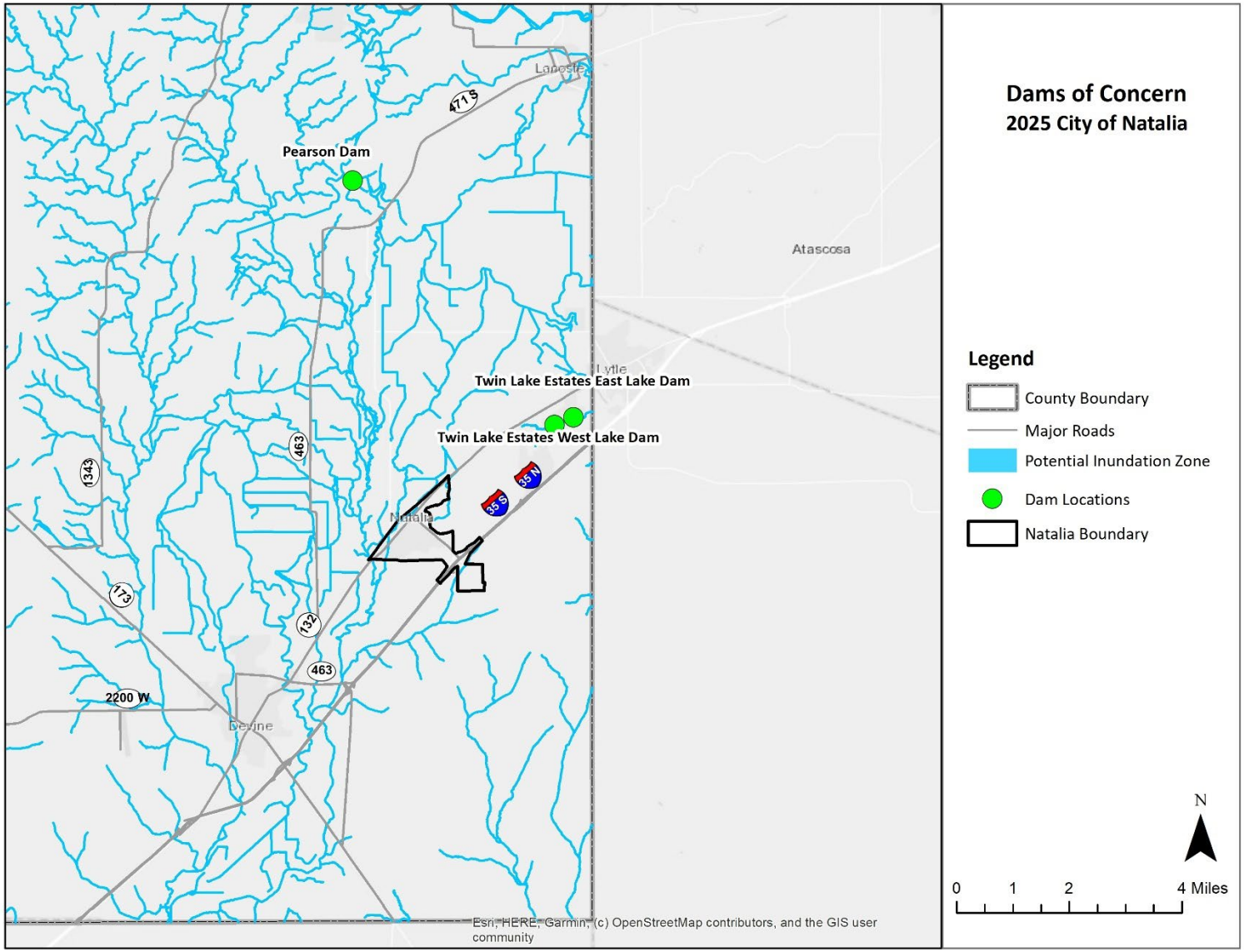

Figure 40: City of Natalia Dams of Concern

B) Impact

Structures at risk of dam failure may be flooded, damaged by flood-borne contaminants, damaged by debris flow, or even completely washed away. Although no loss of life to dam failure is expected in Medina County, under the right conditions injury or loss of life are possible.

5) Vulnerability

A) Population

Although 6 dams in the County are high hazard, most dams in the County have a small storage capacity and/or no history of failure. Therefore, negative impacts on the population is unlikely.

B) Critical Facilities

The critical facilities listed below were identified as vulnerable to dam failure due to their locations in potential inundation zones.

Table 52: Critical Facilities Vulnerable to Dam Failure

Medina County Critical Facilities
Medina County Emergency Service District 1, Station 12
City of La Coste Critical Facilities
La Coste Wastewater Treatment Plant
City of Natalia Critical Facilities
Wells 4 & 6

18. Mitigation Strategy

1) Capability Assessment

Medina County and the participating jurisdictions have shown themselves to be highly capable, especially in terms of implementing hazard mitigation actions.

In addition to reviewing previous actions and the steps taken to implement them, the planning team reviewed existing regulatory capabilities and opportunities for establishing new capabilities and enhancing existing ones. At this time, all jurisdictions could improve their hazard mitigation capabilities through the following efforts: budgeting for mitigation actions and support, passing policies and procedures to implement mitigation actions, adopting, and implementing stricter mitigation regulations, approving the hiring, and training of staff for mitigation activities, and approving mitigation updates and additions to existing plans as new needs are recognized. The participating cities could further improve their capabilities by creating and adopting regularly updated comprehensive plans.

Table 53: Capability Assessment by Jurisdiction

Medina County Administrative, Financial, Regulatory, and Technical Abilities
Emergency Management
Floodplain Management
Drought Contingency Plan
Subdivision
Zoning
Nuisance Abatement
Standard Structures Abatement
Water Conservation Planning
Road and Bridge Management
Comprehensive Planning
Economic Development Planning
Grant Writing
General Budgeting
Capital Improvement Funding

CDBG Funding
State and Federal Grant Funding

City of Castroville Administrative, Financial, Regulatory, and Technical Abilities
Emergency Management
Floodplain Management
Drought Contingency Plan
Subdivision
Zoning
Building Code Enforcement
Nuisance Abatement
Standard Structures Abatement
Water Conservation Planning
Road and Bridge Management
Comprehensive Planning
Economic Development Planning
Grant Writing
General Budgeting
Capital Improvement Funding
CDBG Funding
State and Federal Grant Funding

City of Devine Administrative, Financial, Regulatory, and Technical Abilities
Emergency Management
Floodplain Management
Drought Contingency Plan
Subdivision

Zoning
Building Code Enforcement
Nuisance Abatement
Standard Structures Abatement
Water Conservation Planning
Road and Bridge Management
Comprehensive Planning
Economic Development Planning
Grant Writing
General Budgeting
Capital Improvement Funding
CDBG Funding

City of Hondo **Administrative, Financial, Regulatory, and Technical Abilities**
Emergency Management
Floodplain Management
Drought Contingency Plan
Subdivision
Zoning
Building Code Enforcement
Nuisance Abatement
Standard Structures Abatement
Water Conservation Planning
Road and Bridge Management
Comprehensive Planning
Economic Development Planning
Grant Writing
General Budgeting
Capital Improvement Funding

CDBG Funding
State and Federal Grant Funding

City of La Coste Administrative, Financial, Regulatory, and Technical Abilities
Emergency Management
Floodplain Management
Drought Contingency Plan
Subdivision
Zoning
Building Code Enforcement
Nuisance Abatement
Standard Structures Abatement
Water Conservation Planning
Road and Bridge Management
Comprehensive Planning
Economic Development Planning
Grant Writing
General Budgeting
Capital Improvement Funding
CDBG Funding
State and Federal Grant Funding

City of Natalia Administrative, Financial, Regulatory, and Technical Abilities
Emergency Management
Floodplain Management
Drought Contingency Plan
Subdivision
Zoning

Building Code Enforcement
Nuisance Abatement
Standard Structures Abatement
Water Conservation Planning
Comprehensive Planning
Economic Development Planning
General Budgeting
Capital Improvement Funding
CDBG Funding
State and Federal Grant Funding

A) Building Codes

Table 54: Building Codes Per Jurisdiction

Jurisdiction	Codes	Description
Medina County	ICC – International Building Codes	The County defers to the International Building Codes followed by the State of Texas, but does not enforce. However, they are in the final stages of adopting the 2021 International Fire Code.
Castroville	ICC – International Building Codes	The City of Castroville has adopted the 2012 International Building Codes.
Devine	ICC – International Building Codes	The City of Devine has adopted the 2021 International Building Codes.
Hondo	ICC – International Building Codes	The City of Hondo has adopted the 2015 International Building Codes.
La Coste	ICC – International Building Codes	The City of La Coste has adopted the 2015 International Building Codes.

Natalia	ICC – International Building Codes	The City of Natalia has adopted the 2011 International Building Codes.

2) Incorporation and Integration of Existing Capabilities and Hazard Mitigation

As previously outlined, the planning team reviewed a range of codes, ordinances, and other planning mechanisms that have been adopted by the participating jurisdictions. The planning team's goal was to understand how these existing capabilities might affect mitigation actions in terms of implementation and enforcement as well as to identify opportunities for future plan integration.

Table 55: Plan Integration

Department	All Departments	Commissioners' Court, Road and Bridge, Mayor's Office/Council, Public Works, Economic Development	Planning, Zoning, Economic Development, Public Works, Mayor's Office, Floodplain Manager	Planning	Office of Emergency Management, Mayor's Office, Mayor and Council, Commissioners' Court	Office of Emergency Management, Mayor's Office, Chief of Fire Department	Office of Emergency Management, Mayor's Office, Administrative Office	Floodplain Manager, Mayor's Office
Activity	Annual Budget	Capital Improvement Projects	Comprehensive Master Plan	Community Wildfire Protection Plan	Public Involvement	Emergency Operations	Grant Application	Floodplain Management
Time Frame	Quarterly/ Annual workshops	Bi-annually	Every 10 Years	Annually	As Needed	Annually	Annual Funding Cycles	Annually
Integration Process	Discuss integration of medium and high priority actions with Commissioners' Court, Council, or Schoolboard (as appropriate) concerning feasibility, potential funding sources, and a preliminary cost benefit review.	Discuss inclusion of mitigation actions with CIPs. Ensure CIPs are consistent with mitigation actions, NFIP compliance, and any new land use development.	Review existing floodplain and land use controls to ensure that long term goals are consistent with actions in the HMAP.	Review CWPP in conjunction with the HMAP to integrate findings into each plan.	Utilize jurisdictional web sites, social media, and other forms of advertising to make announcements of any periodic review activities concerning potential amendments or updating of the HMAP	Review prevention and protection projects for continued relevance. Ensure appropriate actions and information are included in the Emergency Operation Plan.	Review and update mitigation actions as necessary based on funding opportunities available through FEMA FMA, FEMA BRIC, FEMA HMGP, and other grant funding sources.	Update and maintain floodplain information including but not limited to: maps, construction practices, permitting, and NFIP compliance.
Jurisdiction								

Medina County	X	X	X		X	X	X	X
City of Castroville	X	X	X		X	X	X	X
City of Devine	X	X	X		X	X	X	X
City of Hondo	X	X	X		X	X	X	X
City of La Coste	X	X	X		X	X	X	X
City of Natalia	X	X	X		X	X		X

As part of each jurisdiction's commitment to transparency, all relevant information, including but not limited to that described above and in each action's description, will be presented to the public before the action is formally adopted for implementation. After public notification, the integration process will resemble the one outlined in Table 63 below.

Table 56: Integration Process

Jurisdiction	Integration Process
Medina County	After considering integrating mitigation actions with the activities outlined in Table 55 above, mitigation actions will be presented, considered, and formally adopted by the County Commissioners' Court and County Judge. Medina County will also use the Medina County Hazard Mitigation Plan as a technical reference and data source for identified and future mitigation actions, as well as future planning processes.
City of Castroville	After considering integrating mitigation actions with the activities outlined in Table 55 above, mitigation actions will be presented, considered, and formally adopted by the council and mayor. The City of Castroville will also use the Medina County Hazard Mitigation Plan as a technical reference and data source for identified and future mitigation actions, as well as future planning processes.
City of Devine	After considering integrating mitigation actions with the activities outlined in Table 55 above, mitigation actions will be presented, considered, and formally adopted by the council and mayor. The City of Devine will also use the Medina County Hazard Mitigation Plan as a technical reference and data source for identified and future mitigation actions, as well as future planning processes.
City of Hondo	After considering integrating mitigation actions with the activities outlined in Table 55 above, mitigation actions will be presented, considered, and formally adopted by the board. The City of Hondo will also use the Medina County Hazard Mitigation Plan as a technical reference and data source for

	identified and future mitigation actions, as well as future planning processes.
City of La Coste	After considering integrating mitigation actions with the activities outlined in Table 55 above, mitigation actions will be presented, considered, and formally adopted by the board. The City of La Coste will also use the Medina County Hazard Mitigation Plan as a technical reference and data source for identified and future mitigation actions, as well as future planning processes.
City of Natalia	After considering integrating mitigation actions with the activities outlined in Table 55 above, mitigation actions will be presented, considered, and formally adopted by the board. The City of Natalia will also use the Medina County Hazard Mitigation Plan as a technical reference and data source for identified and future mitigation actions, as well as future planning processes.

A) Past Integration – 2020 Plan

Each jurisdiction has its own established process for integrating new actions, codes, ordinances, plans, and studies into its existing capabilities.

The Medina County Office of Emergency Management & Fire Marshal's Office (MCOEM/MCFMO) utilizes the previous Hazard Mitigation Plan as a source document for the development of the current Emergency Support Functions (ESFs) and updating the Emergency Operations Plan (EOP). The previous plan is beneficial for annual budget planning, especially in relation to capital improvements to address hazards identified. The County has been working on a flood study and applied for grants to improve the Seco Creek area. MCOEM/MCFMO is in the final stages of presenting the County with proposed Fire Codes to address building standards in the unincorporated county.

The City of Castroville in coordination with the Medina County Office of Emergency Management (MCOEM) utilizes the previous Hazard Mitigation Plan as a source document for the development of the current Emergency Support Functions (ESFs) and updating the Emergency Operations Plan (EOP). The previous plan is beneficial for annual budget planning, especially in relation to capital improvements to address hazards identified.

The City of Devine has not completed any formal plan integration. The integration process outlined in Table 55 above will be followed moving forward.

The City of Hondo in coordination with the Medina County Office of Emergency Management (MCOEM) utilizes the previous Hazard Mitigation Plan as a source document for the development of the current Emergency Support Functions (ESFs) and updating the Emergency Operations Plan (EOP). The previous plan is beneficial for annual budget planning, especially in relation to capital improvements to address hazards identified.

The City of La Coste in coordination with the Medina County Office of Emergency Management (MCOEM) utilizes the previous Hazard Mitigation Plan as a source document for the development of the current Emergency Support Functions (ESFs) and updating the Emergency Operations Plan (EOP). The previous plan is beneficial for annual budget planning, especially in relation to capital improvements to address hazards identified.

The City of Natalia utilized the previous plan to develop, update, and implement several ordinances, addressing issues of concern, and was taken into consideration during budgeting for possible needs and upgrades.

No other integration is known to have taken place.

3) Goals and Objectives Overview

The hazard analysis has shown that Medina County and the participating jurisdictions are at risk of multiple natural hazards. The following goals and objectives take a broad approach to improving outcomes before, during, and after these anticipated natural hazard events.

The goals and objectives in this plan reflect the overarching priorities identified by the communities and are similar to the goals listed in the 2020 plan. They have been expanded to include public services, public infrastructure, economic impacts, civic resources, and cultural resources as priorities in addition to reducing loss of life, injury, property damage, HHPD risks, and preservation of natural resources. The mitigation actions the County and participating jurisdictions have selected are designed to address specific hazard-related issues in support of achieving the desired goals and objectives.

4) Long-Term Vision

The hazard mitigation plan must strike a balance between identifying long-term goals and objectives and prioritizing mitigation actions that may be addressed sooner, depending on funding availability and local priorities. The result is that certain goals and objectives don’t have a corresponding mitigation action. Instead, by taking the long view, the local planning team has created a framework that can be developed as the plan is updated over time.

5) Goals

A) Goal 1: To reduce loss of life and injury to persons

Objective 1.1

Improve the delivery and effectiveness of warning messages

Objective 1.2

Preserve public and private emergency response capability (9-1-1, law enforcement, fire services, emergency medical services, hospitals).

Objective 1.3

Utilize available mitigation measures to prevent or reduce life-threatening impacts of natural hazards.

Objective 1.4

Reduce obstacles to timely and safe evacuation of flood hazard areas.

Objective 1.5

Reduce vulnerability of individuals living in mobile homes / manufactured housing.

Objective 1.6

Reduce life or health threatening impacts on individuals with special physical care requirements.

Objective 1.7

Reduce secondary impacts to health and safety from cascading effects.

Objective 1.8

Reduce long-term vulnerabilities from high hazard potential dams through regulatory or structural mitigation.

B) Goal 2: To reduce disruptions to essential public services and infrastructure

Objective 2.1

Minimize disruption to and enhance rapid restoration of Utility.

Objective 2.2

Minimize disruption to and enhance rapid restoration of essential transportation infrastructure.

Objective 2.3

Minimize disruption to governmental, educational, and other institutions providing services to the public.

C) Goal 3: To reduce economic impacts to individuals, businesses, and area institutions

Objective 3.1

Increase home and business owner investment in available mitigation measures for private property.

Objective 3.2

Increase home and business owner participation in appropriate insurance programs.

Objective 3.3

Increase public and private sector development and use of operations continuity strategies.

Objective 3.4

Utilize available mitigation measures to prevent or reduce economic losses from natural hazards.

Objective 3.5

Reduce vulnerability of existing development by encouraging property owners to participate in buy-out or flood-proofing opportunities.

Objective 3.6

Reduce vulnerability of future development by utilizing available planning and structural standards.

D) Goal 4: To reduce losses to civic, cultural, and environmental resources

Objective 4.1

Protect public investment in community-owned facilities and infrastructure through appropriate structural, non-structural, and financial methods.

Objective 4.2

Reduce future losses to the non-profit sector through participation in available mitigation opportunities.

Objective 4.3

Reduce vulnerability of historically or culturally significant structures.

Objective 4.4

Minimize environmental impacts from cascading effects.

6) Mitigation Action Plan

A) Mitigation Action Prioritization

The planning team members have identified at least one mitigation action per natural hazard. After review, the planning team has determined that the jurisdiction's priorities remain the same. For this update, action items were identified and prioritized in consideration of the following criteria:

1) Life safety and property protection improvements
2) Cost effectiveness – do the action's future benefits exceed its implementation costs
3) Technical feasibility – is the action reasonable given its technical requirements
4) Political acceptability
5) Administrative capabilities and legal authorities for implementation
6) Funding availability
7) The action's environmental impacts
8) The action's social acceptability
9) The action's ability to reduce risk to more than one hazard
10) The ease of implementation
11) The availability of a local champion
12) The action's relationship to other community objectives

The above criteria was also considered in relation to HHPD actions. In addition to considering an action's cost effectiveness as described above, the planning team considered TDEM's Cost-Effectiveness, Environmental Soundness and Technical Feasibility requirements as they relate to construction projects. Mitigation actions relating to physical infrastructure will meet the State's standards as outlined below:

A. Any state government construction project, regardless of potential funding source, has to be cost effective, technically feasible and meet all of the appropriate federal, state, and local environmental laws and regulations before it is started.
B. State government projects funded by Federal Mitigation Grant Programs administered by TDEM have to meet specific criteria related to cost effectiveness, environmental soundness and technical feasibility. These are outlined in the applicable FEMA grant program guidance for that particular funding program.

B) Mitigation Action Status – 2020 Plan

In addition to reviewing existing codes, ordinances, and planning studies, the planning team also examined the status of each mitigation action identified in the 2020 plan.

Mitigation actions marked as abandoned are no longer considered relevant as written to the participating jurisdictions. Deferred actions are indicated with an asterisk (*) in the new action tables in Chapter 18, Part C.

Table 57: Previous Mitigation Actions – All Jurisdictions

Medina County Mitigation Actions Status		
Hazards Addressed	**Mitigation Actions**	**Status**
Dam/Levee Failure	Conduct Dam/Levee Failure Studies: This action will be used to address the Dam Failure data deficiency. Medina County and the Cities will work with local dam/levee owners to conduct relevant studies to identify peak flow rates and expected inundations in the event of local dam failures.	*Deferred to Plan Update*
Flood, Hurricanes/Tropical Storms, Wildfire, Tornado, Drought, Riverine Erosion, Dam Failure, Earthquakes, Expansive Soils, Extreme Heat, Hailstorms, Land Subsidence, Severe Winter Storms, Windstorms, Lightning	Public Education & Outreach: Develop newsletters to residents and business owners to educate and inform them of area hazards and protection and mitigation steps they can take to protect their lives and property.	*Deferred to Plan Update*
Flood, Hurricanes/Tropical Storms, Wildfire, Tornado, Riverine Erosion, Dam Failure, Earthquakes, Extreme Heat, Hailstorms, Land Subsidence, Severe Winter Storms, Windstorms, Lightning	Install Generator/Alternative Power Source: Install Generator/Alternative power source at critical facilities.	*Deferred to Plan Update*
Flood, Riverine Erosion, Expansive Soils	Erosion Protection/Soil Stabilization: This action proposes installing erosion protection/soil stabilization for drainage ditches and around culverts, including but not limited to applying calcium soil stabilizers to affected areas.	*Deferred to Plan Update*
Flood, Hurricanes/Tropical Storms, Wildfire, Tornado, Riverine Erosion, Dam Failure, Earthquakes, Extreme Heat, Hailstorms, Land Subsidence, Severe Winter Storms, Windstorms, Lightning	Obtain GIS Capabilities for Planning & Project Coordination: This action proposes to obtain GIS capabilities for hazard mitigation planning and project coordination and includes, hardware, software, and training.	*Deferred to Plan Update*

Floods, Hurricanes/Tropical Storms, Wildfire, Tornados, Windstorms, Lightning	Implement Tree Trimming Program: This action will develop and implement a tree trimming program to minimum the amount of debris generated during national hazard events.	*Deferred to Plan Update*
Flood, Hurricane / Tropical Storm, Wildfire, Tornado, Drought, Dam/Levee Failure, Extreme Heat, Hailstorm, Severe Winter Storm, Windstorm, Lightning	Hardware and Software Technology: To have hardware and technology available to communicate readily with local, state and national emergency organizations during a natural occurring hazardous event, including but not limited to portable digital warning signs, NOAA weather radios, radio repeaters, etc.	*Deferred to Plan Update*
Earthquake, Riverine/Inland Erosion, Expansive Soil, Land Subsidence	Document Hazard Occurrences: This action will document occurrences of hazards within the next five years to address deficiencies in the data.	*Deferred to Plan Update*
Flood	New Drainage Analysis to Update/Revise Flood Maps: This action proposes performing a new drainage analysis for the community to update/revise Flood Maps to better identify areas subject to this Hazard.	*Deferred to Plan Update*
Lightning	Lightning/Surge Protection for Critical Facilities: This action proposes installing surge protection at critical facilities to prevent damage to critical electronic devices including but not limited to: computers, servers, audio/visual equipment, laboratory equipment, and appliances.	*Deferred to Plan Update*
Hailstorm	Hailstorm Protection for Critical Facilities: This action proposes to install protective covers over equipment, machinery, vehicle/equipment storage areas, and building windows at all public facilities to prevent damage by hailstorms.	*Deferred to Plan Update*
Flood	Construct Storm Drainage Infrastructure: This action proposes constructing new storm drainage infrastructure and / or improving existing infrastructure to reduce the potential impacts of future flood events.	*Deferred to Plan Update*
Flood	Local Flood Warning System: This action will prioritize areas to install a Local Flood Warning System and flood monitors using FEMA Special Flood Hazard Area maps and supplemental maps generated as part of flood mitigation planning process.	*Deferred to Plan Update*

City of Castroville Mitigation Actions Status		
Hazards Addressed	**Mitigation Actions**	**Status**
Flood, Hurricanes/Tropical Storms, Wildfire, Tornado, Riverine Erosion, Dam Failure,	Install Generator/Alternative Power Source: Install Generator/Alternative power source at critical facilities to help ensure physical safety for facility	*Deferred to Plan Update*

Earthquakes, Extreme Heat, Hailstorms, Land Subsidence, Severe Winter Storms, Windstorms, Lightning	occupants and maintain electronic systems functionality during power outages.	
Drought, Wildfire	Add Water Storage Tanks and Pumps: This action proposes installing additional water storage tanks & pumps.	*Deferred to Plan Update*
Flood, Riverine Erosion	Erosion Protection/Soil Stabilization: This action proposes installing erosion protection/soil stabilization for drainage ditches and around culverts.	*Deferred to Plan Update*
Earthquake, Riverine/Inland Erosion, Expansive Soil, Land Subsidence	Document Hazard Occurrences: This action will document occurrences of hazards within the next five years to address deficiencies in the data.	*Deferred to Plan Update*
Drought, Wildfire	Add Municipal Water Well: This action proposes performing a study and other necessary planning to determine a suitable location for drilling an additional municipal water well.	*Deferred to Plan Update*
All Hazards	Obtain GIS Capabilities for Planning & Project Coordination: This action proposes to obtain GIS capabilities for hazard mitigation planning and project coordination and includes, hardware, software, and training.	*Deferred to Plan Update*
Flood, Hurricanes/Tropical Storms, Wildfire, Tornado, Drought, Riverine Erosion, Dam Failure, Earthquakes, Expansive Soils, Extreme Heat, Hailstorms, Land Subsidence, Severe Winter Storms, Windstorms, Lightning	Public Education & Outreach: Develop newsletter to residents and business owners to educate and inform them of area hazards and protection and mitigation steps they can take to protect their lives and property.	*Deferred to Plan Update*
Flood, Hurricane / Tropical Storm, Wildfire, Tornado, Drought, Dam/Levee Failure, Extreme Heat, Hailstorm, Severe Winter Storm, Windstorm, Lightning	Hardware and Software Technology: To have hardware and technology available to communicate readily with local, state and national emergency organizations during a natural occurring hazardous event, including but not limited to portable digital warning signs, NOAA weather radios, radio repeaters, etc.	*Deferred to Plan Update*
Floods, Hurricanes/Tropical Storms, Wildfire, Tornados, Windstorms, Lightning	Implement Tree Trimming Program: This action will develop and implement a tree trimming program to minimum the amount of debris generated during national hazard events.	*Deferred to Plan Update*
Flood, Hurricane / Tropical Storm, Wildfire, Tornado, Drought, Riverine Erosion, Dam Failure, Expansive Soil, Extreme Heat, Hailstorm, Severe Winter Storm, Windstorm	Harden Facilities: Hardening facilities for safety and resilience including but not limited to reinforcing building foundations, upgrading or adding shatter proof or resistant film to all glazing, building walls around exposed fuel tanks and cylinders, building protective walls, shielding roof mounted equipment, use of bracing and tie down clips to building roofs.	*Deferred to Plan Update*

Flood	Construct Storm Drainage Infrastructure: This action proposes constructing new storm drainage infrastructure and / or improving existing infrastructure to reduce the potential impacts of future flood events.	*Deferred to Plan Update*
Riverine Erosion	Create and Adopt a Riverine Erosion Control Master Plan: This action will develop and implement a master plan to limit riverine erosion.	*Deferred to Plan Update*
Drought	Develop and Implement a New Drought Ordinance/Drought Contingency Plan: To re-evaluate all existing drought control measures to identify strengths and weaknesses in order to develop and enforce a new drought ordinance/drought contingency plan.	*Deferred to Plan Update*
Drought	Replace Current Landscaping with Drought Resistant Plant Varieties: This action's goal is to limit water consumption at City facilities by replacing existing landscaping with more drought resistant types. To the extent possible, landscaping will be replanted on an as-needed basis, as opposed to an immediate replanting of all landscaping.	*Deferred to Plan Update*
Flood	Review Special Flood Hazard Area Boundaries: This action proposes a re-evaluation of existing special flood hazard areas boundaries in order to gauge accuracy and identify potential changes to reduce future damages during flood events.	*Deferred to Plan Update*
Hailstorm	Hailstorm Protection for Public Facilities: This action proposes to install protective covers over equipment, machinery, vehicle/equipment storage areas, and building windows at all public facilities to prevent damage by hailstorms	*Deferred to Plan Update*
Lightning	Lightning/Surge Protection for Public Facilities: This action proposes installing surge protection at all critical/public facilities to prevent damage to critical electronic devices including but not limited to: computers, servers, audio/visual equipment, laboratory equipment, and appliances.	*Deferred to Plan Update*
Flood	Wet-Proof Wastewater System: This action proposes “wet-proofing” components of the Wastewater Treatment Plant and sewer lines to minimize/prevent infiltration of storm/flood waters.	*Deferred to Plan Update*
Flood	New Drainage Analysis to Update/Revise Flood Maps: This action proposes performing a new drainage analysis for the community to update/revise Flood Maps to better identify areas subject to this Hazard.	*Deferred to Plan Update*
Dam/Levee Failure	Conduct Dam/Levee Failure Studies: This action will be used to address the Dam Failure data deficiency. Medina County and the Cities will work with local dam/levee owners to conduct relevant studies to	*Deferred to Plan Update*

	identify peak flow rates and expected inundations in the event of local dam failures.	

City of Devine Mitigation Actions Status		
Hazards Addressed	**Mitigation Actions**	**Status**
Flood, Hurricanes/Tropical Storms, Wildfire, Tornados, Drought, Riverine Erosion, Dam Failure, Earthquakes, Expansive Soils, Extreme Heat, Hailstorms, Land Subsidence, Severe Winter Storms, Windstorms, Lightning	Public Education & Outreach: This action will create a program to educate the public about specific mitigation actions for all hazards, including but not limited to participation in NFIP, Wildfire Fuels Reduction, Structural Hardening, developing a newsletter to residents and business owners to educate and inform them of area hazards and protection and mitigation steps they can take to protect their lives and property, etc…	*Deferred to Plan Update*
Flood, Hurricanes/Tropical Storms, Wildfire, Tornados, Drought, Riverine Erosion, Dam Failure, Earthquakes, Expansive Soils, Extreme Heat, Hailstorms, Land Subsidence, Severe Winter Storms, Windstorms, Lightning	Personnel Training and Education: To develop a plan of action and instruction for all City employees.	*Deferred to Plan Update*
Flood, Hurricanes/Tropical Storms, Wildfire, Tornados, Dam Failure, Earthquakes, Extreme Heat, Hailstorms, Severe Winter Storms, Windstorms, Lightning	Install Generator/Alternative Power Source: Installing generators at critical facilities will help ensure physical safety for facility occupants and maintain electronic systems functionality during power outages.	*Deferred to Plan Update*
Riverine/Inland Erosion, Expansive Soil, Land Subsidence	Document Hazard Occurrences: This action will document occurrences of hazards within the next five years to address deficiencies in the data.	*Deferred to Plan Update*
Lightning	Lightning Protection for Infrastructure: Install protective devices that are able to withstand lightning strikes, preventing damage to electronic devices and other critical electronic components.	*Deferred to Plan Update*
Drought	Develop and Implement a New Drought Ordinance/Drought Contingency Plan: To re-evaluate all existing drought control measures to identify strengths and weaknesses in order to develop and enforce a new drought ordinance/drought contingency plan.	*Deferred to Plan Update*
Dam/Levee Failure	Conduct Dam/Levee Failure Studies: This action will be used to address the Dam Failure data deficiency. Medina County and the Cities will work with local dam/levee owners to conduct relevant studies to identify peak flow rates and expected inundations in the event of local dam failures.	*Abandoned: Jurisdiction no longer profiling hazard*

City of Hondo Mitigation Actions Status		
Hazards Addressed	**Mitigation Actions**	**Status**
Flood, Hurricanes/Tropical Storms, Wildfire, Tornados, Drought, Riverine Erosion, Dam Failure, Earthquakes, Expansive Soils, Extreme Heat, Hailstorms, Land Subsidence, Severe Winter Storms, Windstorms, Lightning	Public Education & Outreach: Develop newsletter to residents and business owners to educate and inform them of area hazards and protection and mitigation steps they can take to protect their lives and property.	*Deferred to Plan Update*
Flood, Hurricane / Tropical Storm, Wildfire, Tornado, Drought, Riverine Erosion, Dam Failure, Expansive Soil, Extreme Heat, Hailstorm, Severe Winter Storm, Windstorm	Harden Facilities: Hardening facilities for safety and resilience including but not limited to reinforcing building foundations, upgrading or adding shatter proof or resistant film to all glazing, building walls around exposed fuel tanks and cylinders, building protective walls, shielding roof mounted equipment, use of bracing and tie down clips to building roofs.	*Deferred to Plan Update*
Flood, Hurricane / Tropical Storm, Wildfire, Tornado, Drought, Dam/Levee Failure, Extreme Heat, Hailstorm, Severe Winter Storm, Windstorm, Lightning	Hardware and Software Technology: To have hardware and technology available to communicate readily with local, state and national emergency organizations during a natural occurring hazardous event, including but not limited to portable digital warning signs, NOAA weather radios, radio repeaters, etc.	*Deferred to Plan Update*
Floods, Hurricanes/Tropical Storms, Wildfire, Tornados, Windstorms, Lightning	Implement Tree Trimming Program: This action will develop and implement a tree trimming program to minimum the amount of debris generated during national hazard events.	*Deferred to Plan Update*
Flood, Hurricanes/Tropical Storms, Wildfire, Tornado, Riverine Erosion, Dam Failure, Earthquakes, Extreme Heat, Hailstorms, Severe Winter Storms, Windstorms, Lightning	Install Generator/Alternative Power Source: Install Generator/Alternative power source at public facilities	*Deferred to Plan Update*
Dam Failure, Riverine/Inland Erosion, Expansive Soil, Land Subsidence	Document Hazard Occurrences: This action will document occurrences of hazards within the next five years to address deficiencies in the data.	*Deferred to Plan Update*
Drought, Wildfire	Add Water Storage Tanks and Pumps: This action proposes installing additional water storage tanks & pumps.	*Deferred to Plan Update*
Flood, Riverine Erosion	Erosion Protection/Soil Stabilization: This action proposes installing erosion protection/soil stabilization for drainage ditches and around culverts.	*Deferred to Plan Update*
Flood, Hurricanes/Tropical Storms, Wildfire, Tornado, Drought, Riverine Erosion, Dam	Obtain GIS Capabilities for Planning & Project Coordination: This action proposes to obtain GIS capabilities for hazard mitigation planning and	*Deferred to Plan Update*

Failure, Earthquakes, Expansive Soils, Extreme Heat, Hailstorms, Land Subsidence, Severe Winter Storms, Windstorms, Lightning	project coordination and includes, hardware, software, and training	
Flood	New Drainage Analysis to Update/Revise Flood Maps: This action proposes performing a new drainage analysis for the community to update/revise Flood Maps to better identify areas subject to this Hazard.	*Deferred to Plan Update*
Flood	Wet-Proof Wastewater System : This action proposes "wet-proofing" components of the Wastewater Treatment Plant and sewer lines to minimize/prevent infiltration of storm/flood waters.	*Deferred to Plan Update*
Lightning	Lightning/Surge Protection for Public Facilities : This action proposes installing surge protection at all public/critical facilities to prevent damage to critical electronic devices including but not limited to: computers, servers, audio/visual equipment, laboratory equipment, and appliances.	*Deferred to Plan Update*
Hailstorm	Hailstorm Protection for Public Facilities : This action proposes to install protective covers over equipment, machinery, vehicle/equipment storage areas, and building windows at all public/critical facilities to prevent damage by hailstorms.	*Deferred to Plan Update*
Flood	Review Special Flood Hazard Area Boundaries: This action proposes a re-evaluation of existing special flood hazard areas boundaries in order to gauge accuracy and identify potential changes to reduce future damages during flood events.	*Deferred to Plan Update*
Drought	Replace Current Landscaping with Drought Resistant Plant Varieties: This action's goal is to limit water consumption at County facilities by replacing existing landscaping with more drought resistant types. To the extent possible, landscaping will be replanted on an as-needed basis, as opposed to an immediate replanting of all landscaping.	*Deferred to Plan Update*
Drought	Develop and Implement a New Drought Ordinance/Drought Contingency Plan: To re-evaluate all existing drought control measures to identify strengths and weaknesses in order to develop and enforce a new drought ordinance/drought contingency plan.	*Deferred to Plan Update*
Riverine Erosion	Create and Adopt a Riverine Erosion Control Master Plan: This action will develop and implement master plan to limit riverine erosion.	*Deferred to Plan Update*
Flood	Construct Storm Drainage Infrastructure : This action proposes constructing new storm drainage infrastructure and / or improving existing infrastructure to reduce the potential impacts of future flood events.	*Deferred to Plan Update*

Dam/Levee Failure	Conduct Dam/Levee Failure Studies: This action will be used to address the Dam Failure data deficiency. Medina County and the Cities will work with local dam/levee owners to conduct relevant studies to identify peak flow rates and expected inundations in the event of local dam failures.	*Abandoned: Jurisdiction no longer profiling hazard*

City of La Coste Mitigation Actions Status		
Hazards Addressed	**Mitigation Actions**	**Status**
Flood, Hurricanes/Tropical Storms, Wildfire, Tornados, Drought, Riverine Erosion, Dam Failure, Earthquakes, Expansive Soils, Extreme Heat, Hailstorms, Land Subsidence, Severe Winter Storms, Windstorms, Lightning	Public Education & Outreach: This action will create a program to educate the public about specific mitigation actions for all hazards, including but not limited to participation in NFIP, Wildfire Fuels Reduction, Structural Hardening, developing a newsletter to residents and business owners to educate and inform them of area hazards and protection and mitigation steps they can take to protect their lives and property, etc…	*Deferred to Plan Update*
Flood, Hurricanes/Tropical Storms, Wildfire, Tornados, Dam Failure, Earthquakes, Extreme Heat, Hailstorms, Severe Winter Storms, Windstorms, Lightning	Install Generator/Alternative Power Source: Installing generators at critical facilities will help ensure physical safety for facility occupants and maintain electronic systems functionality during power outages.	*Deferred to Plan Update*
Drought, Wildfire	Add Water Storage Tanks and Pumps: This action proposes installing additional water storage tanks & pumps at critical facilities in order to increase capacity for hazards.	*Deferred to Plan Update*
Drought, Wildfire	Add Municipal Water Well: This action proposes performing a study and other necessary planning to determine a suitable location for drilling an additional municipal water well.	*Deferred to Plan Update*
Flood, Hurricanes/Tropical Storms, Wildfire, Tornados, Dam Failure, Earthquakes, Extreme Heat, Hailstorms, Severe Winter Storms, Windstorms, Lightning	Obtain GIS Capabilities for Planning & Project Coordination: This action proposes to obtain GIS capabilities for hazard mitigation planning and project coordination and includes hardware, software, and training.	*Deferred to Plan Update*
Riverine Erosion, Expansive Soils, Land Subsidence	Document Hazard Occurrences: This action will document occurrences of hazards within the next five years to address deficiencies in the data.	*Deferred to Plan Update*
Flood	New Drainage Analysis to Update/Revise Flood Maps: This action proposes performing a new drainage analysis for the community to update/revise Flood Maps to better identify areas subject to this Hazard; last study completed in September 1977.	*Deferred to Plan Update*

Riverine Erosion	Erosion Protection/Soil Stabilization: This action proposes installing erosion protection/soil stabilization for drainage ditches and around culverts.	*Deferred to Plan Update*
Flood	Wet-Proof Wastewater System: This action proposes "wet-proofing" components of the Wastewater Treatment Plant and sewer lines to minimize/prevent infiltration of storm/flood waters.	*Deferred to Plan Update*
Lightning	Lightning/Surge Protection for Critical Facilities: This action proposes installing surge protection at all critical facilities to prevent damage to critical electronic devices including but not limited to: computers, servers, audio/visual equipment, laboratory equipment, and appliances.	*Deferred to Plan Update*
Hailstorm	Hailstorm Protection for Critical Facilities: This action proposes to install protective covers over equipment, machinery, vehicle/equipment storage areas, and building windows at all critical facilities to prevent damage by hailstorms.	*Deferred to Plan Update*
Dam/Levee Failure	Conduct Dam/Levee Failure Studies: This action will be used to address the Dam Failure data deficiency. Medina County and the Cities will work with local dam/levee owners to conduct relevant studies to identify peak flow rates and expected inundations in the event of local dam failures.	*Deferred to Plan Update*

City of Natalia Mitigation Actions Status		
Hazards Addressed	**Mitigation Actions**	**Status**
Floods, Hurricanes/Tropical Storms, Wildfire, Tornados, Drought, Dam/Levee Failures, Riverine Erosion, Earthquakes, Expansive Soils, Extreme Heat, Hailstorms, Land Subsidence, Windstorms, Lightning, Drainage	Employ Educational Training : This action will create a program to educate our employees, government officials and agents, about specific mitigation actions for all hazards, including but not limited to the adoption, participation, and implementation of programs and plans in compliance with National Incident Management Systems (NIMS), and the National Flood Insurance Programs (NFIP).	*Deferred to Plan Update*
Floods, Hurricanes/Tropical Storms, Wildfire, Tornados, Drought, Dam/Levee Failures, Riverine Erosion, Earthquakes, Expansive Soils, Extreme Heat, Hailstorms, Land Subsidence, Windstorms, Severe Winter Storms, Lightning	Educational Outreach : This action will create a program to educate the public about specific mitigation action plans for all hazards, including but not limited to participation in NFIP, Wildfire Fuels Reduction.	*Deferred to Plan Update*
Floods, Hurricanes/Tropical Storms, Wildfire, Tornados, Dam Failure, Earthquakes,	Install Backup Generators : Installing generators at critical facilities will help ensure physical safety for	*Deferred to Plan Update*

Extreme Heat, Hailstorms, Severe Winter Storms, Windstorms, Lightning	facility occupants and maintain electronic systems functionality during power outages.	
Floods, Hurricanes/Tropical Storms, Wildfire, Tornados, Windstorms, Lightning	Implement Tree Trimming Program : This action will develop and implement a tree trimming program to minimum the amount of debris generated during national hazard events.	*Deferred to Plan Update*
Floods, Hurricanes/Tropical Storms, Wildfire, Tornados, Dam/Levee Failures, Riverine Erosion, Earthquakes, Expansive Soils, Hailstorms, Land Subsidence, Windstorms, Lightning	Develop and Install a Geographical Information System (GIS) / Data Sharing: This action will develop and implement a data management program that provides inventory of existing facilities, utilities, infrastructure, drainage and floodways and allows analysis to find areas most at risk for hazards, through an accessible database system for key departments and agency use.	*Deferred to Plan Update*
Earthquake, Riverine Erosion, Expansive Soils, Land Subsidence	Document Hazard Occurrences : This action will document occurrences of hazards within the next five years to address deficiencies in the data.	*Deferred to Plan Update*
Flood	Construct Storm Drainage Infrastructure : This action proposes constructing new storm drainage infrastructure and / or improving existing infrastructure to reduce the potential impacts of future flood events.	*Deferred to Plan Update*
Drought	Replace Current Landscaping or Plant Future Landscaping with Drought Resistant Plant Varieties : This action's goal is to limit water consumption at City facilities by replacing existing landscaping with more drought resistant types, and making any future landscaping at all public and critical facilities drought-resistant. To the extent possible, landscaping will be replanted on an as-needed basis, as opposed to an immediate replanting of all landscaping.	*Completed*
Dam/Levee Failure	Conduct Dam/Levee Failure Studies: This action will be used to address the Dam Failure data deficiency. Medina County and the Cities will work with local dam/levee owners to conduct relevant studies to identify peak flow rates and expected inundations in the event of local dam failures.	*Deferred to Plan Update*

C) Mitigation Actions by Jurisdiction and by Hazard

Each jurisdiction has selected actions that were identified as high, medium or low priority and that are in line with TDEM's recommended mitigation actions. However, many of the mitigation actions below are dependent upon outside grant funding for implementation. For all actions likely to require grant funding, potential sources have been identified. However, grant funding is awarded on a competitive basis, so applying for funding doesn't guarantee that funds will be received. Budget constraints will remain the determining factor for how and when each action is implemented. Each new mitigation action outlines the following requirements: the identified responsible department head or delegate will research all relevant information to confirm the action's feasibility and prioritization, will formulate a plan of action, and will confirm funding sources and identify any fiscal liabilities associated with the mitigation action.

i. Medina County

The following mitigation action items may indicate an asterisk (*****) in the case that the actions were deferred from the previous 2020 HMAP. Actions marked with a grey heading are not eligible for mitigation funding but are included in the HMAP for the jurisdiction to reference for implementation or future planning endeavors.

Multi-Hazard Actions

Mitigation Action	Educational Outreach*
Objective	This action will create a program to educate the public about specific mitigation actions for all hazards, including but not limited to participation in Wildfire Fuels Reduction, Tornado Saferooms, Structural Hardening, etc.
Hazard	Flood, Wildfire, Tornado, Drought, Extreme Heat, Extreme Cold, Hailstorm, Winter Storm, Windstorms, Lightning, Earthquake, Expansive Soils, Riverine Erosion, Dam Failure
Priority	High
Estimated Cost	Less than $10,000 per hazard
Potential Funding Source (s)	Jurisdiction, FEMA HMGP, FEMA FMA, TWDB
Responsible Department	Emergency Management
Implementation Schedule	2 - 5 Years
Target	Existing and future population

Mitigation Action	Install Back Up Power Generators*
Objective	Installing generators at critical facilities will help ensure physical safety for facility occupants and maintain electronic systems functionality during power outages. Portable generators will maintain additional systems functionality including but not limited to lift stations, pumps, and communications infrastructure.
Hazard	Flood, Wildfire, Tornado, Extreme Heat, Extreme Cold, Hailstorm, Winter Storm, Windstorms, Lightning, Earthquake, Expansive Soils, Riverine Erosion, Dam Failure
Priority	High
Estimated Cost	More than $100,000 Each for Fixed Generators, Including Associated Engineering Costs. Less than $100,000 Each for Portable Generators
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	Commissioners' Court, Emergency Management
Implementation Schedule	2 - 5 Years
Target	Existing infrastructure

Mitigation Action	Obtain GIS Capabilities for Planning & Project Coordination*
Objective	This action proposes obtaining GIS capabilities for hazard mitigation planning and project coordination and includes, hardware, software, and training.
Hazard	Flood, Wildfire, Tornado, Drought, Extreme Heat, Extreme Cold, Hailstorm, Winter Storm, Windstorms, Lightning, Earthquake, Expansive Soils, Riverine Erosion, Dam Failure
Priority	Medium
Estimated Cost	Up to $100,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP, FEMA FMA, TWDB
Responsible Department	Commissioners' Court, Emergency Management
Implementation Schedule	2 - 5 Years
Target	Existing and future population

Mitigation Action	Hardware and Software Technology*
Objective	To have hardware and technology available to communicate readily with local, state and national emergency organizations during a natural hazardous occurring event, including but not limited to

	portable digital warning signs, NOAA weather radios, radio repeaters, etc.
Hazard	Flood, Wildfire, Tornado, Drought, Extreme Heat, Extreme Cold, Hailstorm, Winter Storm, Windstorms, Lightning, Earthquake, Expansive Soils, Riverine Erosion, Dam Failure
Priority	Medium
Estimated Cost	Up to $50,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP, FEMA FMA, TWDB
Responsible Department	Commissioners' Court, Emergency Management
Implementation Schedule	2 - 5 Years
Target	Existing and future population

Mitigation Action	**Set up Cooling and Heating Centers in Existing Facilities**
Objective	The action's goal is to increase extreme temperature resilience by limiting vulnerable populations' exposure to extreme temperatures by creating new, or opening up existing facilities as cooling centers or warming centers.
Hazard	Extreme Heat & Extreme Cold
Priority	Medium
Estimated Cost	More than $10,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	Police Department, Fire Department, Emergency Management
Implementation Schedule	2 - 5 Years
Target	Existing and future population

Mitigation Action	**Purchase Portable Digital Warning Signs**
Objective	Warning signs will help limit local vulnerability to multiple hazards by providing residents with information they need where they're likely to see it.
Hazard	Flood, Wildfire, Tornado, Drought, Extreme Heat, Extreme Cold, Hailstorm, Winter Storm, Windstorms, Lightning, Earthquake, Expansive Soils, Riverine Erosion, Dam Failure
Priority	Medium
Estimated Cost	$35,000 per device

Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	Commissioners' Court, Emergency Management
Implementation Schedule	1-3 Years
Target	Existing and future population

Mitigation Action	**Install and Expand Warning Systems and/or Sirens**
Objective	Warning systems and/or sirens will help limit local vulnerability to hazards by giving residents an opportunity to take shelter before one occurs.
Hazard	Flood, Wildfire, Tornado, Drought, Extreme Heat, Extreme Cold, Hailstorm, Winter Storm, Windstorms, Lightning, Earthquake, Dam Failure
Priority	High
Estimated Cost	$1,000 - $100,000 per device
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	Commissioners' Court, Emergency Management
Implementation Schedule	2-5 Years
Target	Existing and future population

Mitigation Action	**Develop and Implement a Tree Trimming Program***
Objective	This action will develop and implement a tree trimming program to reduce loose / dead tree limbs that may cause damage during a hazard event.
Hazard	Wildfire, Tornado, Winter Storm, Windstorm
Priority	Medium
Estimated Cost	$10,000 - $500,0000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	Commissioners' Court
Implementation Schedule	2 - 5 Years
Target	Existing and future infrastructure

Mitigation Action	Update Building Code Requirements
Objective	The jurisdiction will re-evaluate current building codes and update where needed to improve building standards to withstand impacts from hazards.
Hazard	Flood, Wildfire, Tornado, Drought, Extreme Heat, Extreme Cold, Hailstorm, Winter Storm, Windstorms, Lightning, Earthquake, Expansive Soils, Riverine Erosion, Dam Failure
Priority	High
Estimated Cost	Less than $10,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	Commissioners' Court, Emergency Management, Fire Marshal
Implementation Schedule	1-2 Years
Target	Existing and future infrastructure

Mitigation Action	Erosion Protection/Soil Stabilization*
Objective	This action proposes installing erosion protection/soil stabilization for drainage ditches and around culverts, including but not limited to applying calcium soil stabilizers to affected areas.
Hazard	Expansive Soils, Riverine Erosion
Priority	Medium
Estimated Cost	Up to $1,500,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	Commissioners' Court, Emergency Management, Flood Plain Administrator
Implementation Schedule	2-5 Years
Target	Existing and future infrastructure

Mitigation Action	Document Hazard Occurrences*
Objective	Document Hazard Occurrences: This action will document occurrences of hazards within the next five years to address deficiencies in the data.
Hazard	Lightning, Earthquake, Expansive Soils, Riverine Erosion
Priority	Medium

Estimated Cost	More than $100,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP, FEMA FMA, TWDB
Responsible Department	Emergency Management
Implementation Schedule	1 - 5 Years
Target	Existing and future population and infrastructure

Single Hazard Actions

Mitigation Action	Create Master Drainage Plan*
Objective	This action proposes creating a master drainage plan for the County, in conjunction with other jurisdictions, that will provide the County with a comprehensive planning document that provides basic information and necessary guidance for the county-wide drainage system, including but not limited to an H&H study.
Hazard	Flood
Priority	High
Estimated Cost	Less than $100,000
Potential Funding Source (s)	Jurisdiction, FEMA FMA, FEMA HMGP, CDBG-MIT
Responsible Department	Commissioners' Court, Emergency Management
Implementation Schedule	3 - 5 Years
Target	Existing and future infrastructure

Mitigation Action	Develop and Implement a New Flood Damage Prevention Ordinance
Objective	The jurisdiction will re-evaluate existing flood damage prevention and reduction measures to identify strengths and weaknesses to develop and enforce a new flood damage prevention ordinance.
Hazard	Flood
Priority	Medium
Estimated Cost	Less than $10,000
Potential Funding Source (s)	Jurisdiction, FEMA FMA, FEMA HMGP, CDBG-MIT
Responsible Department	Commissioners' Court
Implementation Schedule	1 - 2 Years
Target	Existing and future infrastructure

Mitigation Action	Construct Storm Drainage Infrastructure*
Objective	This action proposes constructing new storm drainage infrastructure to reduce the potential impacts of future flood events.
Hazard	Flood
Priority	High
Estimated Cost	More than $1,000,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP, FEMA FMA, TWDB
Responsible Department	Commissioners' Court
Implementation Schedule	3-5 years
Target	Existing infrastructure

Mitigation Action	Local Flood Warning System*
Objective	This action will prioritize areas to install a Local Flood Warning System and flood monitors using FEMA Special Flood Hazard Area maps and supplemental maps generated as part of flood mitigation planning process.
Hazard	Flood
Priority	Medium
Estimated Cost	More than $500,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP< FEMA FMA, TWDB
Responsible Department	Commissioners' Court, Emergency Management
Implementation Schedule	2 - 3 Years
Target	Existing and future infrastructure

Mitigation Action	Wildfire Fuels Reduction in WUI
Objective	This action will develop and implement a program to identify and prioritize lands in the Wildland Urban Interface in need of fuels reduction and then reduce or remove wildfire fuels through various methods as appropriate.
Hazard	Wildfire

Priority	Medium
Estimated Cost	$10,000 - $100,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	Commissioners' Court
Implementation Schedule	1 - 2 Years
Target	Existing and future infrastructure

Mitigation Action	**Develop and Implement a New Water Conservation Ordinance**
Objective	Jurisdiction will re-evaluate all existing water conservation and reduction measures to identify strengths and weaknesses in order to develop and enforce a new water conservation ordinance.
Hazard	Drought
Priority	High
Estimated Cost	Less than $10,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	Commissioners' Court
Implementation Schedule	1-2 Years
Target	Existing and future population and infrastructure

Mitigation Action	**Develop and Implement a New Drought Contingency Plan**
Objective	Jurisdiction will re-evaluate drought contingency plan to identify strengths and weaknesses in order to develop and enforce a new plan.
Hazard	Drought
Priority	High
Estimated Cost	Less than $10,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	Commissioners' Court
Implementation Schedule	2-3 Years
Target	Existing and future population and infrastructure

Mitigation Action	Hailstorm Protection for Critical Facilities*
Objective	This action proposes installing protective covers over equipment, machinery, vehicle/equipment storage areas, and building windows at all public facilities to prevent damage by hailstorms.
Hazard	Hailstorm
Priority	Medium
Estimated Cost	Up to $250,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	Commissioners' Court, Emergency Management
Implementation Schedule	2 - 5 Years
Target	Existing infrastructure

Mitigation Action	Install Surge Protection and Grounding Systems to Protect Electronic Assets*
Objective	This action will install surge protection at all County facilities to prevent damage to critical electronic devices including but not limited to: computers, servers, audio/visual equipment, laboratory equipment, and appliances.
Hazard	Lightning
Priority	Medium
Estimated Cost	$1,000 - $100,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	Commissioners' Court, Department Heads
Implementation Schedule	2 - 5 Years
Target	Existing infrastructure

Mitigation Action	Conduct Dam Failure Studies*
Objective	This action proposes conducting dam failure studies to determine potential inundation area and HHPD risks.
Hazard	Dam Failure
Priority	Medium

Estimated Cost	More than $100,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	Commissioner's Court, Emergency Management
Implementation Schedule	2 - 5 Years
Target	Existing and future infrastructure

Mitigation Action	**Restrict Development in High Hazard Areas**
Objective	Jurisdiction will re-evaluate all existing floodplain construction restrictions to identify strengths and weaknesses in order to produce a new ordinance that will reduce potential flood impacts due to dam failure by restricting development in areas that may be subject to inundation due to dam failure or HHPD risks.
Hazard	Dam/Levee Failure
Priority	Medium
Estimated Cost	Under $10,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	Commissioners' Court
Implementation Schedule	2-3 Years
Target	Existing and future infrastructure

Mitigation Action	**Structural Mitigation**
Objective	Jurisdiction will assess the structural integrity of high hazard potential dams and rehabilitate as necessary through structural mitigation.
Hazard	Dam/Levee Failure
Priority	Medium
Estimated Cost	Over $100,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	Commissioners' Court, County Engineer
Implementation Schedule	2-3 Years
Target	Existing and future infrastructure

ii. City of Castroville

The following mitigation action items may indicate an asterisk (*) in the case that the actions were deferred from the previous 2020 HMAP. Actions marked with a grey heading are not eligible for mitigation funding but are included in the HMAP for the jurisdiction to reference for implementation or future planning endeavors.

Multi-Hazard Actions

Mitigation Action	Educational Outreach*
Objective	This action will create a program to educate the public about specific mitigation actions for all hazards, including but not limited to participation in Wildfire Fuels Reduction, Tornado Saferooms, Structural Hardening, etc.
Hazard	Flood, Wildfire, Tornado, Drought, Extreme Heat, Extreme Cold, Hailstorm, Winter Storm, Windstorms, Lightning, Earthquake, Expansive Soils, Riverine Erosion, Dam Failure
Priority	High
Estimated Cost	Less than $10,000 per hazard
Potential Funding Source (s)	Jurisdiction, FEMA HMGP, FEMA FMA, TWDB
Responsible Department	City Council
Implementation Schedule	1 - 5 Years
Target	Existing and future population

Mitigation Action	Install Back Up Power Generators*
Objective	Installing generators at critical facilities will help ensure physical safety for facility occupants and maintain electronic systems functionality during power outages. Portable generators will maintain additional systems functionality including but not limited to lift stations, pumps, and communications infrastructure.
Hazard	Flood, Wildfire, Tornado, Extreme Heat, Extreme Cold, Hailstorm, Winter Storm, Windstorms, Lightning, Earthquake, Expansive Soils, Riverine Erosion, Dam Failure
Priority	High
Estimated Cost	More than $100,000 Each for Fixed Generators, Including Associated Engineering Costs. Less than $100,000 Each for Portable Generators
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council, Emergency Management

Implementation Schedule	2 - 5 Years
Target	Existing infrastructure

Mitigation Action	**Set up Cooling and Heating Centers in Existing Facilities**
Objective	The action's goal is to increase extreme temperature resilience by limiting vulnerable populations' exposure to extreme temperatures by creating new, or opening up existing facilities as cooling centers or warming centers.
Hazard	Extreme Heat & Extreme Cold
Priority	Medium
Estimated Cost	More than $10,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	Police Department, Fire Department, Emergency Management
Implementation Schedule	2 - 5 Years
Target	Existing and future population

Mitigation Action	**Install and Expand Warning Systems and/or Sirens**
Objective	Warning systems and/or sirens will help limit local vulnerability to hazards by giving residents an opportunity to take shelter before one occurs.
Hazard	Flood, Wildfire, Tornado, Drought, Extreme Heat, Extreme Cold, Hailstorm, Winter Storm, Windstorms, Lightning, Earthquake, Dam Failure
Priority	High
Estimated Cost	$1,000 - $100,000 per device
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council, Emergency Management
Implementation Schedule	2-5 Years
Target	Existing and future population

Mitigation Action	Harden Facilities*
Objective	This action proposes hardening facilities. Hardening will include but is not limited to increasing thermal insulation, upgrading and/or adding shatter-resistant films to all glazing, installing impact and wind-resistant windows and doors, installing shutters, building protective walls around exposed gas tanks and cylinders, shielding roof-mounted equipment. etc.
Hazard	Flood, Wildfire, Tornado, Hailstorm, Winter Storm, Windstorms, Lightning, Earthquake, Expansive Soils, Riverine Erosion, Dam Failure
Priority	Medium
Estimated Cost	Greater than $100,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council, Public Works, Emergency Management
Implementation Schedule	3 - 5 Years
Target	Existing infrastructure

Mitigation Action	Develop and Implement a Tree Trimming Program*
Objective	This action will develop and implement a tree trimming program to reduce loose / dead tree limbs that may cause damage during a hazard event.
Hazard	Wildfire, Tornado, Winter Storm, Windstorm
Priority	Medium
Estimated Cost	$10,000 - $500,0000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council, Public Works, Emergency Management
Implementation Schedule	2 - 5 Years
Target	Existing and future infrastructure

Mitigation Action	Add Water Storage Tanks and Pumps*
Objective	This action proposes installing additional water storage tanks & pumps.
Hazard	Drought, Wildfire
Priority	Medium

Estimated Cost	Up to $500,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council, Public Works
Implementation Schedule	2 - 5 Years
Target	Existing and future infrastructure

Mitigation Action	**Erosion Protection/Soil Stabilization***
Objective	This action proposes installing erosion protection/soil stabilization for drainage ditches and around culverts, including but not limited to applying calcium soil stabilizers to affected areas.
Hazard	Expansive Soils, Riverine Erosion
Priority	Medium
Estimated Cost	Up to $1,500,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council, Public Works
Implementation Schedule	2-5 Years
Target	Existing and future infrastructure

Mitigation Action	**Document Hazard Occurrences***
Objective	Document Hazard Occurrences: This action will document occurrences of hazards within the next five years to address deficiencies in the data.
Hazard	Lightning, Earthquake, Expansive Soils, Riverine Erosion
Priority	Medium
Estimated Cost	More than $100,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP, FEMA FMA, TWDB
Responsible Department	Emergency Management
Implementation Schedule	1 - 5 Years
Target	Existing and future population and infrastructure

Mitigation Action	Municipal Water Well*
Objective	This action proposes performing a study and other necessary planning to determine a suitable location for drilling an additional municipal water well.
Hazard	Drought, Wildfire
Priority	Medium
Estimated Cost	Up to $25,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP, FEMA FMA, TWDB
Responsible Department	City Council, City Engineer
Implementation Schedule	2 - 3 Years
Target	Existing and future population and infrastructure

Mitigation Action	Obtain GIS Capabilities*
Objective	Obtain GIS Capabilities for Planning & Project Coordination: This action proposes obtaining GIS capabilities for hazard mitigation planning and project coordination and includes, hardware, software, and training.
Hazard	Flood, Wildfire, Tornado, Drought, Extreme Heat, Extreme Cold, Hailstorm, Winter Storm, Windstorms, Lightning, Earthquake, Expansive Soils, Riverine Erosion, Dam Failure
Priority	Medium
Estimated Cost	Up to $25,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP, FEMA FMA, TWDB
Responsible Department	City Council
Implementation Schedule	2 - 3 Years
Target	Existing and future population and infrastructure

Mitigation Action	Hardware and Software Technology*
Objective	To have hardware and technology available to communicate readily with local, state and national emergency organizations during a natural hazardous occurring event, including but not limited to portable digital warning signs, NOAA weather radios, radio repeaters, etc.

Hazard	Flood, Wildfire, Tornado, Drought, Extreme Heat, Extreme Cold, Hailstorm, Winter Storm, Windstorms, Lightning, Earthquake, Expansive Soils, Riverine Erosion, Dam Failure
Priority	Medium
Estimated Cost	Up to $50,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP, FEMA FMA, TWDB
Responsible Department	City Council
Implementation Schedule	2 - 5 Years
Target	Existing and future population

Single Hazard Actions

Mitigation Action	Create Master Drainage Plan
Objective	This action proposes creating a master drainage plan for the jurisdiction that will provide the jurisdiction with a comprehensive planning document that provides basic information and necessary guidance for the county-wide drainage system, including but not limited to an H&H study.
Hazard	Flood
Priority	High
Estimated Cost	Less than $100,000
Potential Funding Source (s)	Jurisdiction, FEMA FMA, FEMA HMGP, CDBG-MIT
Responsible Department	City Council, City Administrator
Implementation Schedule	2 - 3 Years
Target	Existing and future infrastructure

Mitigation Action	Construct Storm Drainage Infrastructure*
Objective	This action proposes constructing new storm drainage infrastructure to reduce the potential impacts of future flood events.
Hazard	Flood
Priority	Medium
Estimated Cost	More than $1,000,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP, FEMA FMA, TWDB

Responsible Department	City Council, City Administrator, Public Works
Implementation Schedule	3 - 5 Years
Target	Existing infrastructure

Mitigation Action	Review Special Flood Hazard Area Boundaries*
Objective	This action proposes a re-evaluation of existing special flood hazard areas boundaries in order to gauge accuracy and identify potential changes to reduce future damages during flood events.
Hazard	Flood
Priority	Medium
Estimated Cost	Less than $25,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP, FEMA FMA, TWDB
Responsible Department	City Council, City Administrator, Public Works
Implementation Schedule	1 - 3 Years
Target	Existing infrastructure

Mitigation Action	Wet-Proof Wastewater System*
Objective	This action proposes “wet-proofing” components of the Wastewater Treatment Plant and sewer lines to minimize/prevent infiltration of storm/flood waters.
Hazard	Flood
Priority	Medium
Estimated Cost	Up to $250,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP, FEMA FMA, TWDB
Responsible Department	City Council, Public Works
Implementation Schedule	2 - 5 Years
Target	Existing infrastructure

Mitigation Action	Wildfire Fuels Reduction in WUI
Objective	This action will develop and implement a program to identify and prioritize lands in the Wildland Urban Interface in need of fuels

	reduction and then reduce or remove wildfire fuels through various methods as appropriate.
Hazard	Wildfire
Priority	Medium
Estimated Cost	$10,000 - $100,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council
Implementation Schedule	1 - 2 Years
Target	Existing and future infrastructure

Mitigation Action	**Develop and Implement a New Drought Contingency Plan***
Objective	Jurisdiction will re-evaluate drought contingency plan to identify strengths and weaknesses in order to develop and enforce a new plan.
Hazard	Drought
Priority	High
Estimated Cost	Less than $10,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council
Implementation Schedule	2-3 Years
Target	Existing and future population and infrastructure

Mitigation Action	**Drought Resistant Landscaping***
Objective	This action's goal is to limit water consumption at City facilities by replacing existing landscaping with more drought resistant types. To the extent possible, landscaping will be replanted on an as-needed basis, as opposed to an immediate replanting of all landscaping.
Hazard	Drought
Priority	High
Estimated Cost	Less than $25,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council, Public Works

Implementation Schedule	2-3 Years
Target	Existing and future population and infrastructure

Mitigation Action	Hailstorm Protection for Critical Facilities*
Objective	This action proposes installing protective covers over equipment, machinery, vehicle/equipment storage areas, and building windows at all public facilities to prevent damage by hailstorms.
Hazard	Hailstorm
Priority	Medium
Estimated Cost	Up to $250,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council, Public Works
Implementation Schedule	2 - 5 Years
Target	Existing infrastructure

Mitigation Action	Install Surge Protection and Grounding Systems to Protect Electronic Assets*
Objective	This action will install surge protection and/or grounding systems at all jurisdictional facilities to prevent damage to critical electronic devices including but not limited to: computers, servers, audio/visual equipment, laboratory equipment, and appliances.
Hazard	Lightning
Priority	Medium
Estimated Cost	$1,000 - $50,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council, Public Works
Implementation Schedule	2 - 3 Years
Target	Existing infrastructure

Mitigation Action	Create and Adopt a Riverine Erosion Control Master Plan*
Objective	This action will develop and implement a master plan to limit riverine erosion.

Hazard	Riverine Erosion
Priority	Medium
Estimated Cost	Less than $100,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council, Public Works
Implementation Schedule	2-3 Years
Target	Existing and future population and infrastructure

Mitigation Action	**Conduct Dam Failure Studies***
Objective	This action proposes conducting dam failure studies to determine potential inundation area and HHPD risks.
Hazard	Dam Failure
Priority	Medium
Estimated Cost	More than $100,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council, Emergency Management
Implementation Schedule	2 - 5 Years
Target	Existing and future infrastructure

Mitigation Action	**Restrict Development in High Hazard Areas**
Objective	Jurisdiction will re-evaluate all existing floodplain construction restrictions to identify strengths and weaknesses in order to produce a new ordinance that will reduce potential flood impacts due to dam failure by restricting development in areas that may be subject to inundation due to dam failure or HHPD risks.
Hazard	Dam/Levee Failure
Priority	Medium
Estimated Cost	Under $10,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council
Implementation Schedule	2-3 Years

Target	Existing and future infrastructure

Mitigation Action	Structural Mitigation
Objective	Jurisdiction will assess the structural integrity of high hazard potential dams and rehabilitate as necessary through structural mitigation.
Hazard	Dam/Levee Failure
Priority	Medium
Estimated Cost	Over $100,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council, City Engineer
Implementation Schedule	2-3 Years
Target	Existing and future infrastructure

iii. City of Devine

The following mitigation action items may indicate an asterisk (*) in the case that the actions were deferred from the previous 2020 HMAP. Actions marked with a grey heading are not eligible for mitigation funding but are included in the HMAP for the jurisdiction to reference for implementation or future planning endeavors.

Multi-Hazard Actions

Mitigation Action	Educational Outreach*
Objective	This action will create a program to educate the public about specific mitigation actions for all hazards, including but not limited to participation in Wildfire Fuels Reduction, Tornado Saferooms, Structural Hardening, etc.
Hazard	Flood, Wildfire, Tornado, Drought, Extreme Heat, Extreme Cold, Hailstorm, Winter Storm, Windstorms, Lightning, Earthquake, Expansive Soils, Riverine Erosion
Priority	High
Estimated Cost	Less than $10,000 per hazard
Potential Funding Source (s)	Jurisdiction, FEMA HMGP, FEMA FMA, TWDB
Responsible Department	City Council, City Administrator
Implementation Schedule	1 - 5 Years
Target	Existing and future population

Mitigation Action	Purchase Back Up Power Generators*
Objective	Installing generators at critical facilities will help ensure physical safety for facility occupants and maintain electronic systems functionality during power outages. Portable generators will maintain additional systems functionality including but not limited to lift stations, pumps, and communications infrastructure.
Hazard	Flood, Wildfire, Tornado, Extreme Heat, Extreme Cold, Hailstorm, Winter Storm, Windstorms, Lightning, Earthquake, Expansive Soils, Riverine Erosion
Priority	High
Estimated Cost	More than $100,000 Each for Fixed Generators, Including Associated Engineering Costs. Less than $100,000 Each for Portable Generators
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council, Fire Department, Emergency Management, City Administrator
Implementation Schedule	2 - 5 Years

Target	Existing infrastructure

Mitigation Action	Set up Cooling and Heating Centers in Existing Facilities
Objective	The action's goal is to increase extreme temperature resilience by limiting vulnerable populations' exposure to extreme temperatures by creating new, or opening up existing facilities as cooling centers or warming centers.
Hazard	Extreme Heat & Extreme Cold
Priority	High
Estimated Cost	More than $10,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	Police Department, Fire Department, Emergency Management
Implementation Schedule	2 - 5 Years
Target	Existing and future population

Mitigation Action	Develop and Implement a New Tie-Down Ordinance for Manufactured / Mobile Homes, Temporary Buildings, and Unrestrained Advertisement Signs
Objective	Re-evaluate all existing tie-down measures to identify strengths and weaknesses in order to develop and enforce a new tie-down ordinance.
Hazard	Tornado, Windstorm
Priority	Medium
Estimated Cost	Less than $10,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council, Planning
Implementation Schedule	1 - 2 Years
Target	Existing and future population and infrastructure

Mitigation Action	Document Hazard Occurrences*
Objective	Document Hazard Occurrences: This action will document occurrences of hazards within the next five years to address deficiencies in the data.
Hazard	Lightning, Earthquake, Expansive Soils, Riverine Erosion

Priority	Medium
Estimated Cost	More than $100,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP, FEMA FMA, TWDB
Responsible Department	Emergency Management
Implementation Schedule	1 - 5 Years
Target	Existing and future population and infrastructure

Mitigation Action	Personnel Training and Education*
Objective	To develop a plan of action and instruction for all City employees.
Hazard	Flood, Wildfire, Tornado, Drought, Extreme Heat, Extreme Cold, Hailstorm, Winter Storm, Windstorms, Lightning, Earthquake, Expansive Soils, Riverine Erosion
Priority	Medium
Estimated Cost	More than $10,000
Potential Funding Source (s)	Jurisdiction
Responsible Department	City Council, Emergency Management
Implementation Schedule	2 - 5 Years
Target	Existing and future population

Single Hazard Actions

Mitigation Action	Create Master Drainage Plan
Objective	This action proposes creating a master drainage plan for the jurisdiction that will provide the jurisdiction with a comprehensive planning document that provides basic information and necessary guidance for the county-wide drainage system, including but not limited to an H&H study.
Hazard	Flood
Priority	High
Estimated Cost	Less than $100,000
Potential Funding Source (s)	Jurisdiction, FEMA FMA, FEMA HMGP, CDBG-MIT

Responsible Department	City Council, Public Works, Emergency Management
Implementation Schedule	2 - 3 Years
Target	Existing and future infrastructure

Mitigation Action	Construct Storm Drainage Infrastructure
Objective	This action proposes constructing new storm drainage infrastructure to reduce the potential impacts of future flood events.
Hazard	Flood
Priority	Medium
Estimated Cost	More than $1,000,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP, FEMA FMA, TWDB
Responsible Department	City Council, City Administrator, Public Works
Implementation Schedule	3 - 5 Years
Target	Existing infrastructure

Mitigation Action	Mandate Freeboard on Structures to Reduce Flooding Damage
Objective	The jurisdiction will re-evaluate all existing floodplain construction restrictions to identify strengths and weaknesses in order to produce a new ordinance that will reduce potential flood impacts by instituting a new freeboard requiremet.
Hazard	Flood
Priority	Medium
Estimated Cost	Less than $10,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council, Public Works
Implementation Schedule	2 - 5 Years
Target	Existing and future population

Mitigation Action	Purchase Portable Pumps
Objective	This action proposes purchasing portable pumps that can be deployed as needed to reduce the potential impacts of future flood events.
Hazard	Flood
Priority	Medium
Estimated Cost	More than $250,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP, FEMA FMA, TWDB
Responsible Department	Public Works
Implementation Schedule	2-3 Years
Target	Existing infrastructure

Mitigation Action	Develop and Implement a New Water Conservation Ordinance*
Objective	Jurisdiction will re-evaluate all existing water conservation and reduction measures to identify strengths and weaknesses in order to develop and enforce a new water conservation ordinance.
Hazard	Drought
Priority	Medium
Estimated Cost	Less than $10,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council
Implementation Schedule	1 - 2 Years
Target	Existing and future population and infrastructure

Mitigation Action	Develop and Implement a New Drought Contingency Plan*
Objective	Jurisdiction will re-evaluate drought contingency plan to identify strengths and weaknesses to develop and enforce a new plan.
Hazard	Drought
Priority	Medium
Estimated Cost	Less than $50,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council

Implementation Schedule	2 - 3 Years
Target	Existing and planned infrastructure

Mitigation Action	Replace Water Fixtures with Low Flow Units
Objective	This action's goal is to limit water consumption at jurisdiction-owned and maintained facilities by replacing traditional water fixtures with low flow units on an as-needed basis.
Hazard	Drought
Priority	Medium
Estimated Cost	$10,000 - $100,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	Public Works
Implementation Schedule	2-5 Years
Target	Existing and Future infrastructure

Mitigation Action	Install Surge Protection and Grounding Systems to Protect Electronic Assets*
Objective	This action will install surge protection and/or grounding systems at all jurisdictional facilities to prevent damage to critical electronic devices including but not limited to: computers, servers, audio/visual equipment, laboratory equipment, and appliances.
Hazard	Lightning
Priority	Medium
Estimated Cost	$1,000 - $50,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council, Public Works
Implementation Schedule	2 - 3 Years
Target	Existing infrastructure

iv. City of Hondo

The following mitigation action items may indicate an asterisk (*) in the case that the actions were deferred from the previous 2020 HMAP. Actions marked with a grey heading are not eligible for mitigation funding but are included in the HMAP for the jurisdiction to reference for implementation or future planning endeavors.

Multi-Hazard Actions

Mitigation Action	Educational Outreach*
Objective	This action will create a program to educate the public about specific mitigation actions for all hazards, including but not limited to participation in Wildfire Fuels Reduction, Tornado Saferooms, Structural Hardening, etc.
Hazard	Flood, Wildfire, Tornado, Drought, Extreme Heat, Extreme Cold, Hailstorm, Winter Storm, Windstorms, Lightning, Earthquake, Expansive Soils, Riverine Erosion
Priority	High
Estimated Cost	Less than $10,000 per hazard
Potential Funding Source (s)	Jurisdiction, FEMA HMGP, FEMA FMA, TWDB
Responsible Department	City Council
Implementation Schedule	1 - 5 Years
Target	Existing and future population

Mitigation Action	Harden Facilities*
Objective	This action proposes hardening facilities. Hardening will include but is not limited to increasing thermal insulation, upgrading and/or adding shatter-resistant films to all glazing, installing impact and wind-resistant windows and doors, installing shutters, building protective walls around exposed gas tanks and cylinders, shielding roof-mounted equipment. etc.
Hazard	Flood, Wildfire, Tornado, Hailstorm, Winter Storm, Windstorms, Lightning, Earthquake, Expansive Soils, Riverine Erosion
Priority	Medium
Estimated Cost	Greater than $100,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council, Public Works
Implementation Schedule	3 - 5 Years

Target	Existing infrastructure

Mitigation Action	Set up Cooling and Heating Centers in Existing Facilities
Objective	The action's goal is to increase extreme temperature resilience by limiting vulnerable populations' exposure to extreme temperatures by creating new or opening up existing facilities as cooling centers or warming centers.
Hazard	Extreme Heat, Extreme Cold
Priority	Medium
Estimated Cost	Less than $10,000
Potential Funding Source(s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council, Emergency Management
Implementation Schedule	3 - 5 Years
Target	Existing and future population

Mitigation Action	Install and Expand Warning Systems and/or Sirens
Objective	Warning systems and/or sirens will help limit local vulnerability to hazards by giving residents an opportunity to take shelter before one occurs.
Hazard	Flood, Wildfire, Tornado, Drought, Extreme Heat, Extreme Cold, Hailstorm, Winter Storm, Windstorms, Lightning, Earthquake
Priority	High
Estimated Cost	$1,000 - $100,000 per device
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council, Emergency Management
Implementation Schedule	2-5 Years
Target	Existing and future population

Mitigation Action	Hardware and Software Technology*
Objective	To have hardware and technology available to communicate readily with local, state and national emergency organizations during a natural hazardous occurring event, including but not limited to

	portable digital warning signs, NOAA weather radios, radio repeaters, etc.
Hazard	Flood, Wildfire, Tornado, Drought, Extreme Heat, Extreme Cold, Hailstorm, Winter Storm, Windstorms, Lightning, Earthquake, Expansive Soils, Riverine Erosion
Priority	Medium
Estimated Cost	Up to $50,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP, FEMA FMA, TWDB
Responsible Department	City Council
Implementation Schedule	2 - 5 Years
Target	Existing and future population

Mitigation Action	**Develop and Implement a Tree Trimming Program***
Objective	This action will develop and implement a tree trimming program to reduce loose / dead tree limbs that may cause damage during a hazard event.
Hazard	Wildfire, Tornado, Winter Storm, Windstorm
Priority	Low
Estimated Cost	$10,000 - $500,0000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council
Implementation Schedule	2 - 5 Years
Target	Existing and future infrastructure

Mitigation Action	**Install Back Up Power Generators***
Objective	Installing generators at critical facilities will help ensure physical safety for facility occupants and maintain electronic systems functionality during power outages. Portable generators will maintain additional systems functionality including but not limited to lift stations, pumps, and communications infrastructure.
Hazard	Flood, Wildfire, Tornado, Extreme Heat, Extreme Cold, Hailstorm, Winter Storm, Windstorms, Lightning, Earthquake, Expansive Soils, Riverine Erosion

Priority	High
Estimated Cost	More than $100,000 Each for Fixed Generators, Including Associated Engineering Costs. Less than $100,000 Each for Portable Generators
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council, Emergency Management
Implementation Schedule	2 - 5 Years
Target	Existing infrastructure

Mitigation Action	**Document Hazard Occurrences***
Objective	Document Hazard Occurrences: This action will document occurrences of hazards within the next five years to address deficiencies in the data.
Hazard	Lightning, Earthquake, Expansive Soils, Riverine Erosion
Priority	Medium
Estimated Cost	More than $100,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP, FEMA FMA, TWDB
Responsible Department	Emergency Management
Implementation Schedule	1 - 5 Years
Target	Existing and future population and infrastructure

Mitigation Action	**Add Water Storage Tanks and Pumps***
Objective	This action proposes installing additional water storage tanks & pumps.
Hazard	Drought, Wildfire
Priority	Medium
Estimated Cost	Up to $500,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council, Public Works
Implementation Schedule	2 - 5 Years
Target	Existing and future infrastructure

Mitigation Action	Erosion Protection/Soil Stabilization*
Objective	This action proposes installing erosion protection/soil stabilization for drainage ditches and around culverts, including but not limited to applying calcium soil stabilizers to affected areas.
Hazard	Expansive Soils, Riverine Erosion
Priority	Medium
Estimated Cost	Up to $1,500,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council, Public Works
Implementation Schedule	2-5 Years
Target	Existing and future infrastructure

Mitigation Action	Obtain GIS Capabilities*
Objective	Obtain GIS Capabilities for Planning & Project Coordination: This action proposes obtaining GIS capabilities for hazard mitigation planning and project coordination and includes, hardware, software, and training.
Hazard	Flood, Wildfire, Tornado, Drought, Extreme Heat, Extreme Cold, Hailstorm, Winter Storm, Windstorms, Lightning, Earthquake, Expansive Soils, Riverine Erosion
Priority	Medium
Estimated Cost	Up to $25,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP, FEMA FMA, TWDB
Responsible Department	City Council
Implementation Schedule	2 - 3 Years
Target	Existing and future population and infrastructure

Single Hazard Actions

Mitigation Action	Create Master Drainage Plan
Objective	This action proposes creating a master drainage plan for the jurisdiction that will provide the jurisdiction with a comprehensive planning document that provides basic information and necessary guidance for the county-wide drainage system, including but not limited to an H&H study.
Hazard	Flood
Priority	High
Estimated Cost	Less than $100,000
Potential Funding Source (s)	Jurisdiction, FEMA FMA, FEMA HMGP, CDBG-MIT
Responsible Department	City Council, City Administrator
Implementation Schedule	2 - 3 Years
Target	Existing and future infrastructure

Mitigation Action	Construct Storm Drainage Infrastructure*
Objective	This action proposes constructing new storm drainage infrastructure to reduce the potential impacts of future flood events.
Hazard	Flood
Priority	Medium
Estimated Cost	More than $1,000,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP, FEMA FMA, TWDB
Responsible Department	City Council, City Administrator, Public Works
Implementation Schedule	3 - 5 Years
Target	Existing infrastructure

Mitigation Action	Review Special Flood Hazard Area Boundaries*
Objective	This action proposes a re-evaluation of existing special flood hazard areas boundaries in order to gauge accuracy and identify potential changes to reduce future damages during flood events.
Hazard	Flood

Priority	Medium
Estimated Cost	Less than $25,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP, FEMA FMA, TWDB
Responsible Department	City Council, City Administrator, Public Works
Implementation Schedule	1 - 3 Years
Target	Existing infrastructure

Mitigation Action	**Wet-Proof Wastewater System***
Objective	This action proposes “wet-proofing” components of the Wastewater Treatment Plant and sewer lines to minimize/prevent infiltration of storm/flood waters.
Hazard	Flood
Priority	Medium
Estimated Cost	Up to $250,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP, FEMA FMA, TWDB
Responsible Department	City Council, Public Works
Implementation Schedule	2 - 5 Years
Target	Existing infrastructure

Mitigation Action	**Wildfire Fuels Reduction in WUI**
Objective	This action will develop and implement a program to identify and prioritize lands in the Wildland Urban Interface in need of fuels reduction and then reduce or remove wildfire fuels through various methods as appropriate.
Hazard	Wildfire
Priority	Medium
Estimated Cost	$10,000 - $100,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council
Implementation Schedule	1 - 2 Years
Target	Existing and future infrastructure

Mitigation Action	Develop and Implement a New Drought Contingency Plan*
Objective	Jurisdiction will re-evaluate drought contingency plan to identify strengths and weaknesses in order to develop and enforce a new plan.
Hazard	Drought
Priority	High
Estimated Cost	Less than $10,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council
Implementation Schedule	2-3 Years
Target	Existing and future population and infrastructure

Mitigation Action	Drought Resistant Landscaping*
Objective	This action's goal is to limit water consumption at City facilities by replacing existing landscaping with more drought resistant types. To the extent possible, landscaping will be replanted on an as-needed basis, as opposed to an immediate replanting of all landscaping.
Hazard	Drought
Priority	High
Estimated Cost	Less than $25,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council, Public Works
Implementation Schedule	2-3 Years
Target	Existing and future population and infrastructure

Mitigation Action	Hailstorm Protection for Critical Facilities*
Objective	This action proposes installing protective covers over equipment, machinery, vehicle/equipment storage areas, and building windows at all public facilities to prevent damage by hailstorms.
Hazard	Hailstorm
Priority	Medium
Estimated Cost	Up to $250,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP

Responsible Department	City Council, Public Works
Implementation Schedule	2 - 5 Years
Target	Existing infrastructure

Mitigation Action	**Install Surge Protection and Grounding Systems to Protect Electronic Assets***
Objective	This action will install surge protection and/or grounding systems at all jurisdictional facilities to prevent damage to critical electronic devices including but not limited to: computers, servers, audio/visual equipment, laboratory equipment, and appliances.
Hazard	Lightning
Priority	Medium
Estimated Cost	$1,000 - $50,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council, Public Works
Implementation Schedule	2 - 3 Years
Target	Existing infrastructure

Mitigation Action	**Create and Adopt a Riverine Erosion Control Master Plan***
Objective	This action will develop and implement a master plan to limit riverine erosion.
Hazard	Riverine Erosion
Priority	Medium
Estimated Cost	Less than $100,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council, Public Works
Implementation Schedule	2-3 Years
Target	Existing and future population and infrastructure

v. City of La Coste

The following mitigation action items may indicate an asterisk (*) in the case that the actions were deferred from the previous 2020 HMAP. Actions marked with a grey heading are not eligible for mitigation funding but are included in the HMAP for the jurisdiction to reference for implementation or future planning endeavors.

Multi-Hazard Actions

Mitigation Action	Educational Outreach*
Objective	This action will create a program to educate the public about specific mitigation actions for all hazards, including but not limited to participation in Wildfire Fuels Reduction, Tornado Saferooms, Structural Hardening, etc.
Hazard	Flood, Wildfire, Tornado, Drought, Extreme Heat, Extreme Cold, Hailstorm, Winter Storm, Windstorms, Lightning, Earthquake, Expansive Soils, Riverine Erosion, Dam Failure
Priority	High
Estimated Cost	Less than $10,000 per hazard
Potential Funding Source (s)	Jurisdiction, FEMA HMGP, FEMA FMA, TWDB
Responsible Department	City Council
Implementation Schedule	1 - 5 Years
Target	Existing and future population

Mitigation Action	Install Back Up Power Generators*
Objective	Installing generators at critical facilities will help ensure physical safety for facility occupants and maintain electronic systems functionality during power outages. Portable generators will maintain additional systems functionality including but not limited to lift stations, pumps, and communications infrastructure.
Hazard	Flood, Wildfire, Tornado, Extreme Heat, Extreme Cold, Hailstorm, Winter Storm, Windstorms, Lightning, Earthquake, Expansive Soils, Riverine Erosion, Dam Failure
Priority	High
Estimated Cost	More than $100,000 Each for Fixed Generators, Including Associated Engineering Costs. Less than $100,000 Each for Portable Generators
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council, Emergency Management

Implementation Schedule	2 - 5 Years
Target	Existing infrastructure

Mitigation Action	Harden Facilities*
Objective	This action proposes hardening facilities. Hardening will include but is not limited to increasing thermal insulation, upgrading and/or adding shatter-resistant films to all glazing, installing impact and wind-resistant windows and doors, installing shutters, building protective walls around exposed gas tanks and cylinders, shielding roof-mounted equipment. etc.
Hazard	Flood, Wildfire, Tornado, Hailstorm, Winter Storm, Windstorms, Lightning, Earthquake, Expansive Soils, Riverine Erosion, Dam Failure
Priority	Medium
Estimated Cost	Greater than $100,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council, Public Works, Emergency Management
Implementation Schedule	3 - 5 Years
Target	Existing infrastructure

Mitigation Action	Set up Cooling and Heating Centers in Existing Facilities
Objective	The action's goal is to increase extreme temperature resilience by limiting vulnerable populations' exposure to extreme temperatures by creating new, or opening up existing facilities as cooling centers or warming centers.
Hazard	Extreme Heat & Extreme Cold
Priority	Medium
Estimated Cost	More than $10,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	Police Department, Fire Department, Emergency Management
Implementation Schedule	2 - 5 Years
Target	Existing and future population

Mitigation Action	Install and Expand Warning Systems and/or Sirens
Objective	Warning systems and/or sirens will help limit local vulnerability to hazards by giving residents an opportunity to take shelter before one occurs.
Hazard	Flood, Wildfire, Tornado, Drought, Extreme Heat, Extreme Cold, Hailstorm, Winter Storm, Windstorms, Lightning, Earthquake, Dam Failure
Priority	High
Estimated Cost	$1,000 - $100,000 per device
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council, Emergency Management
Implementation Schedule	2-5 Years
Target	Existing and future population

Mitigation Action	Purchase Portable Digital Warning Signs
Objective	Warning signs will help limit local vulnerability to multiple hazards by providing residents with information they need where they're likely to see it.
Hazard	Flood, Wildfire, Tornado, Drought, Extreme Heat, Extreme Cold, Hailstorm, Winter Storm, Windstorms, Lightning, Earthquake, Expansive Soils, Riverine Erosion, Dam Failure
Priority	Low
Estimated Cost	$35,000 per device
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council
Implementation Schedule	1-3 Years
Target	Existing and future population

Mitigation Action	Mandate Freeboard on Structures to Reduce Flooding Damage
Objective	The jurisdiction will re-evaluate all existing floodplain construction restrictions to identify strengths and weaknesses in order to produce a new ordinance that will reduce potential flood impacts by instituting a new freeboard requiremet.
Hazard	Flood, Dam Failure

Priority	Medium
Estimated Cost	Less than $10,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council, Public Works
Implementation Schedule	2 - 5 Years
Target	Existing and future population

Mitigation Action	**Develop and Implement a Tree Trimming Program**
Objective	This action will develop and implement a tree trimming program to reduce loose / dead tree limbs that may cause damage during a hazard event.
Hazard	Wildfire, Tornado, Winter Storm, Windstorm
Priority	Medium
Estimated Cost	$10,000 - $500,0000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council
Implementation Schedule	2 - 5 Years
Target	Existing and future infrastructure

Mitigation Action	**Update Building Code Requirements**
Objective	The jurisdiction will re-evaluate current building codes and update where needed to improve building standards to withstand impacts from hazards.
Hazard	Flood, Wildfire, Tornado, Drought, Extreme Heat, Extreme Cold, Hailstorm, Winter Storm, Windstorms, Lightning, Earthquake, Expansive Soils, Riverine Erosion, Dam Failure
Priority	High
Estimated Cost	Less than $10,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council
Implementation Schedule	1-2 Years

Target	Existing and future infrastructure

Mitigation Action	Add Water Storage Tanks and Pumps*
Objective	This action proposes installing additional water storage tanks & pumps.
Hazard	Drought, Wildfire
Priority	Medium
Estimated Cost	Up to $500,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council, Public Works
Implementation Schedule	2 - 5 Years
Target	Existing and future infrastructure

Mitigation Action	Municipal Water Well*
Objective	This action proposes performing a study and other necessary planning to determine a suitable location for drilling an additional municipal water well.
Hazard	Drought, Wildfire
Priority	Medium
Estimated Cost	Up to $25,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP, FEMA FMA, TWDB
Responsible Department	City Council, City Engineer
Implementation Schedule	2 - 3 Years
Target	Existing and future population and infrastructure

Mitigation Action	Obtain GIS Capabilities*
Objective	Obtain GIS Capabilities for Planning & Project Coordination: This action proposes obtaining GIS capabilities for hazard mitigation planning and project coordination and includes, hardware, software, and training.

Hazard	Flood, Wildfire, Tornado, Drought, Extreme Heat, Extreme Cold, Hailstorm, Winter Storm, Windstorms, Lightning, Earthquake, Expansive Soils, Riverine Erosion, Dam Failure
Priority	Medium
Estimated Cost	Up to $25,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP, FEMA FMA, TWDB
Responsible Department	City Council
Implementation Schedule	2 - 3 Years
Target	Existing and future population and infrastructure

Mitigation Action	Erosion Protection/Soil Stabilization*
Objective	This action proposes installing erosion protection/soil stabilization for drainage ditches and around culverts, including but not limited to applying calcium soil stabilizers to affected areas.
Hazard	Expansive Soils, Riverine Erosion
Priority	Medium
Estimated Cost	Up to $1,500,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council, Public Works
Implementation Schedule	2-5 Years
Target	Existing and future infrastructure

Mitigation Action	Document Hazard Occurrences*
Objective	Document Hazard Occurrences: This action will document occurrences of hazards within the next five years to address deficiencies in the data.
Hazard	Lightning, Earthquake, Expansive Soils, Riverine Erosion
Priority	Medium
Estimated Cost	More than $100,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP, FEMA FMA, TWDB
Responsible Department	Emergency Management
Implementation Schedule	1 - 5 Years

Target	Existing and future population and infrastructure

Single Hazard Actions

Mitigation Action	Create Master Drainage Plan*
Objective	This action proposes creating a master drainage plan for the jurisdiction that will provide the jurisdiction with a comprehensive planning document that provides basic information and necessary guidance for the county-wide drainage system, including but not limited to an H&H study.
Hazard	Flood
Priority	High
Estimated Cost	Less than $100,000
Potential Funding Source (s)	Jurisdiction, FEMA FMA, FEMA HMGP, CDBG-MIT
Responsible Department	City Council, City Administrator
Implementation Schedule	2 - 3 Years
Target	Existing and future infrastructure

Mitigation Action	Develop and Implement a New Flood Damage Prevention Ordinance
Objective	The jurisdiction will re-evaluate existing flood damage prevention and reduction measures to identify strengths and weaknesses in order to develop and enforce a new flood damage prevention ordinance.
Hazard	Flood
Priority	Medium
Estimated Cost	Less than $10,000
Potential Funding Source (s)	Jurisdiction, FEMA FMA, FEMA HMGP, CDBG-MIT
Responsible Department	City Council
Implementation Schedule	1-2 Years
Target	Existing and future infrastructure

Mitigation Action	Construct Storm Drainage Infrastructure
Objective	This action proposes constructing new storm drainage infrastructure to reduce the potential impacts of future flood events.
Hazard	Flood
Priority	Medium
Estimated Cost	More than $1,000,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP, FEMA FMA, TWDB
Responsible Department	City Council, City Administrator, Public Works
Implementation Schedule	3 - 5 Years
Target	Existing infrastructure

Mitigation Action	Wet-Proof Wastewater System*
Objective	This action proposes “wet-proofing” components of the Wastewater Treatment Plant and sewer lines to minimize/prevent infiltration of storm/flood waters.
Hazard	Flood
Priority	Medium
Estimated Cost	Up to $250,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP, FEMA FMA, TWDB
Responsible Department	City Council, Public Works
Implementation Schedule	2 - 5 Years
Target	Existing infrastructure

Mitigation Action	Install Surge Protection and Grounding Systems to Protect Electronic Assets*
Objective	This action will install surge protection and/or grounding systems at all jurisdictional facilities to prevent damage to critical electronic devices including but not limited to: computers, servers, audio/visual equipment, laboratory equipment, and appliances.
Hazard	Lightning
Priority	Medium
Estimated Cost	$1,000 - $50,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP

Responsible Department	City Council, Public Works
Implementation Schedule	2 - 3 Years
Target	Existing infrastructure

Mitigation Action	Conduct Dam Failure Studies*
Objective	This action proposes conducting dam failure studies to determine potential inundation area and HHPD risks.
Hazard	Dam Failure
Priority	Medium
Estimated Cost	More than $100,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council, Emergency Management
Implementation Schedule	2 - 5 Years
Target	Existing and future infrastructure

Mitigation Action	Restrict Development in High Hazard Areas
Objective	Jurisdiction will re-evaluate all existing floodplain construction restrictions to identify strengths and weaknesses in order to produce a new ordinance that will reduce potential flood impacts due to dam failure by restricting development in areas that may be subject to inundation due to dam failure or HHPD risks.
Hazard	Dam/Levee Failure
Priority	Medium
Estimated Cost	Under $10,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council
Implementation Schedule	2-3 Years
Target	Existing and future infrastructure

Mitigation Action	Structural Mitigation
Objective	Jurisdiction will assess the structural integrity of high hazard potential dams and rehabilitate as necessary through structural mitigation.
Hazard	Dam/Levee Failure
Priority	Medium
Estimated Cost	Over $100,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council, City Engineer
Implementation Schedule	2-3 Years
Target	Existing and future infrastructure

vi. City of Natalia

The following mitigation action items may indicate an asterisk (*) in the case that the actions were deferred from the previous 2020 HMAP. Actions marked with a grey heading are not eligible for mitigation funding but are included in the HMAP for the jurisdiction to reference for implementation or future planning endeavors.

Multi-Hazard Actions

Mitigation Action	Educational Outreach*
Objective	This action will create a program to educate the public about specific mitigation actions for all hazards, including but not limited to participation in Wildfire Fuels Reduction, Tornado Saferooms, Structural Hardening, etc.
Hazard	Flood, Wildfire, Tornado, Drought, Extreme Heat, Extreme Cold, Hailstorm, Winter Storm, Windstorms, Lightning, Earthquake, Expansive Soils, Riverine Erosion, Dam Failure
Priority	High
Estimated Cost	Less than $10,000 per hazard
Potential Funding Source (s)	Jurisdiction, FEMA HMGP, FEMA FMA, TWDB
Responsible Department	City Council
Implementation Schedule	1 - 5 Years
Target	Existing and future population

Mitigation Action	Install Back Up Power Generators*
Objective	Installing generators at critical facilities will help ensure physical safety for facility occupants and maintain electronic systems functionality during power outages. Portable generators will maintain additional systems functionality including but not limited to lift stations, pumps, and communications infrastructure.
Hazard	Flood, Wildfire, Tornado, Extreme Heat, Extreme Cold, Hailstorm, Winter Storm, Windstorms, Lightning, Earthquake, Expansive Soils, Riverine Erosion, Dam Failure
Priority	High
Estimated Cost	More than $100,000 Each for Fixed Generators, Including Associated Engineering Costs. Less than $100,000 Each for Portable Generators
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council, Emergency Management

Implementation Schedule	2 - 5 Years
Target	Existing infrastructure

Mitigation Action	**Develop and Implement a Tree Trimming Program***
Objective	This action will develop and implement a tree trimming program to reduce loose / dead tree limbs that may cause damage during a hazard event.
Hazard	Wildfire, Tornado, Winter Storm, Windstorm
Priority	Medium
Estimated Cost	$10,000 - $500,0000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council
Implementation Schedule	2 - 5 Years
Target	Existing and future infrastructure

Mitigation Action	**Obtain GIS Capabilities***
Objective	Obtain GIS Capabilities for Planning & Project Coordination: This action proposes obtaining GIS capabilities for hazard mitigation planning and project coordination and includes, hardware, software, and training.
Hazard	Flood, Wildfire, Tornado, Drought, Extreme Heat, Extreme Cold, Hailstorm, Winter Storm, Windstorms, Lightning, Earthquake, Expansive Soils, Riverine Erosion, Dam Failure
Priority	Medium
Estimated Cost	Up to $25,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP, FEMA FMA, TWDB
Responsible Department	City Council
Implementation Schedule	2 - 3 Years
Target	Existing and future population and infrastructure

Mitigation Action	Document Hazard Occurrences*
Objective	Document Hazard Occurrences: This action will document occurrences of hazards within the next five years to address deficiencies in the data.
Hazard	Lightning, Earthquake, Expansive Soils, Riverine Erosion
Priority	Medium
Estimated Cost	More than $100,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP, FEMA FMA, TWDB
Responsible Department	Emergency Management
Implementation Schedule	1 - 5 Years
Target	Existing and future population and infrastructure

Mitigation Action	Harden Facilities
Objective	This action proposes hardening facilities. Hardening will include but is not limited to increasing thermal insulation, upgrading and/or adding shatter-resistant films to all glazing, installing impact and wind-resistant windows and doors, installing shutters, building protective walls around exposed gas tanks and cylinders, shielding roof-mounted equipment. etc.
Hazard	Flood, Wildfire, Tornado, Hailstorm, Winter Storm, Windstorms, Lightning, Earthquake, Expansive Soils, Riverine Erosion, Dam Failure
Priority	Medium
Estimated Cost	Greater than $100,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council, Public Works, Emergency Management
Implementation Schedule	3 - 5 Years
Target	Existing infrastructure

Mitigation Action	Construct Community Safe Rooms
Objective	The action's goal is to minimize local population vulnerability to hazards by providing public safe rooms.
Hazard	Flood, Wildfire, Tornado, Extreme Heat, Extreme Cold, Hailstorm, Winter Storm, Windstorms, Earthquake, Dam Failure
Priority	High

Estimated Cost	Greater than $100,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council, City Administrator
Implementation Schedule	3-5 Years
Target	Existing and future population and infrastructure

Mitigation Action	**Set up Cooling and Heating Centers in Existing Facilities**
Objective	The action's goal is to increase extreme temperature resilience by limiting vulnerable populations' exposure to extreme temperatures by creating new, or opening up existing facilities as cooling centers or warming centers.
Hazard	Extreme Heat & Extreme Cold
Priority	Medium
Estimated Cost	More than $10,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	Police Department, Fire Department, Emergency Management
Implementation Schedule	2 - 5 Years
Target	Existing and future population

Mitigation Action	**Purchase Portable Digital Warning Signs**
Objective	Warning signs will help limit local vulnerability to multiple hazards by providing residents with information they need where they're likely to see it.
Hazard	Flood, Wildfire, Tornado, Drought, Extreme Heat, Extreme Cold, Hailstorm, Winter Storm, Windstorms, Lightning, Earthquake, Expansive Soils, Riverine Erosion, Dam Failure
Priority	Low
Estimated Cost	$35,000 per device
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council
Implementation Schedule	1-3 Years
Target	Existing and future population

Mitigation Action	Install and Expand Warning Systems and/or Sirens
Objective	Warning systems and/or sirens will help limit local vulnerability to hazards by giving residents an opportunity to take shelter before one occurs.
Hazard	Flood, Wildfire, Tornado, Drought, Extreme Heat, Extreme Cold, Hailstorm, Winter Storm, Windstorms, Lightning, Earthquake, Dam Failure
Priority	High
Estimated Cost	$1,000 - $100,000 per device
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council, Emergency Management
Implementation Schedule	2-5 Years
Target	Existing and future population

Mitigation Action	Mandate Freeboard on Structures to Reduce Flooding Damage
Objective	The jurisdiction will re-evaluate all existing floodplain construction restrictions to identify strengths and weaknesses in order to produce a new ordinance that will reduce potential flood impacts by instituting a new freeboard requiremet.
Hazard	Flood, Dam Failure
Priority	Medium
Estimated Cost	Less than $10,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council, Public Works
Implementation Schedule	2 - 5 Years
Target	Existing and future population

Mitigation Action	Update Building Code Requirements
Objective	The jurisdiction will re-evaluate current building codes and update where needed to improve building standards to withstand impacts from hazards.

Hazard	Flood, Wildfire, Tornado, Drought, Extreme Heat, Extreme Cold, Hailstorm, Winter Storm, Windstorms, Lightning, Earthquake, Expansive Soils, Riverine Erosion, Dam Failure
Priority	High
Estimated Cost	Less than $10,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council
Implementation Schedule	1-2 Years
Target	Existing and future infrastructure

Mitigation Action	Personnel Training and Education*
Objective	To develop a plan of action and instruction for all City employees.
Hazard	Flood, Wildfire, Tornado, Drought, Extreme Heat, Extreme Cold, Hailstorm, Winter Storm, Windstorms, Lightning, Earthquake, Expansive Soils, Riverine Erosion
Priority	Medium
Estimated Cost	More than $10,000
Potential Funding Source (s)	Jurisdiction
Responsible Department	City Council, Emergency Management
Implementation Schedule	2 - 5 Years
Target	Existing and future population

Single Hazard Actions

Mitigation Action	Create Master Drainage Plan
Objective	This action proposes creating a master drainage plan for the jurisdiction that will provide the jurisdiction with a comprehensive planning document that provides basic information and necessary guidance for the county-wide drainage system, including but not limited to an H&H study.
Hazard	Flood
Priority	High

Estimated Cost	Less than $100,000
Potential Funding Source (s)	Jurisdiction, FEMA FMA, FEMA HMGP, CDBG-MIT
Responsible Department	City Council, City Administrator
Implementation Schedule	2 - 3 Years
Target	Existing and future infrastructure

Mitigation Action	**Construct Storm Drainage Infrastructure***
Objective	This action proposes constructing new storm drainage infrastructure to reduce the potential impacts of future flood events.
Hazard	Flood
Priority	Medium
Estimated Cost	More than $1,000,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP, FEMA FMA, TWDB
Responsible Department	City Council, City Administrator, Public Works
Implementation Schedule	3 - 5 Years
Target	Existing infrastructure

Mitigation Action	**Purchase Portable Pumps**
Objective	This action proposes purchasing portable pumps that can be deployed as needed to reduce the potential impacts of future flood events.
Hazard	Flood
Priority	Medium
Estimated Cost	More than $250,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP, FEMA FMA, TWDB
Responsible Department	Public Works
Implementation Schedule	2-3 Years
Target	Existing infrastructure

Mitigation Action	Wildfire Fuels Reduction in WUI
Objective	This action will develop and implement a program to identify and prioritize lands in the Wildland Urban Interface in need of fuels reduction and then reduce or remove wildfire fuels through various methods as appropriate.
Hazard	Wildfire
Priority	Medium
Estimated Cost	$10,000 - $100,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council
Implementation Schedule	1 - 2 Years
Target	Existing and future infrastructure

Mitigation Action	Install Surge Protection and Grounding Systems to Protect Electronic Assets
Objective	This action will install surge protection and/or grounding systems at all jurisdictional facilities to prevent damage to critical electronic devices including but not limited to: computers, servers, audio/visual equipment, laboratory equipment, and appliances.
Hazard	Lightning
Priority	Medium
Estimated Cost	$1,000 - $50,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council, Public Works
Implementation Schedule	2 - 3 Years
Target	Existing infrastructure

Mitigation Action	Conduct Dam Failure Studies*
Objective	This action proposes conducting dam failure studies to determine potential inundation area and HHPD risks.
Hazard	Dam Failure
Priority	Medium
Estimated Cost	More than $100,000

Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council, Emergency Management
Implementation Schedule	2 - 5 Years
Target	Existing and future infrastructure

Mitigation Action	**Restrict Development in High Hazard Areas**
Objective	Jurisdiction will re-evaluate all existing floodplain construction restrictions to identify strengths and weaknesses in order to produce a new ordinance that will reduce potential flood impacts due to dam failure by restricting development in areas that may be subject to inundation due to dam failure or HHPD risks.
Hazard	Dam/Levee Failure
Priority	Medium
Estimated Cost	Under $10,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council
Implementation Schedule	2-3 Years
Target	Existing and future infrastructure

Mitigation Action	**Structural Mitigation**
Objective	Jurisdiction will assess the structural integrity of high hazard potential dams and rehabilitate as necessary through structural mitigation.
Hazard	Dam/Levee Failure
Priority	Medium
Estimated Cost	Over $100,000
Potential Funding Source (s)	Jurisdiction, FEMA HMGP
Responsible Department	City Council, City Engineer
Implementation Schedule	2-3 Years
Target	Existing and future infrastructure

Appendix A – FIRM Maps

The maps below are all the FIRM maps currently available on the FEMA Flood Map Service Center.

Appendix B – Adoption Resolutions