City of Uhland
Hays County Hazard Mitigation Plan Update
2017

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City of Uhland Annex
Section 1: Organize and Review

This section contains a brief description of the City of Uhland and its jurisdictional features. In addition, Section 1 contains the following details regarding Uhland's:

- participation in the Hays County HMP Update process,
- stakeholder engagement,
- public outreach strategy,
- incorporation efforts and
- plan maintenance procedures.

*Population :	458
Size of Community:	2.49 sq. miles
*Population over 65 years old	30
*Population under 16 years old	155
*Economically Disadvantaged Population ($0-$20k)	17

Niederwald is serviced by the following responders:

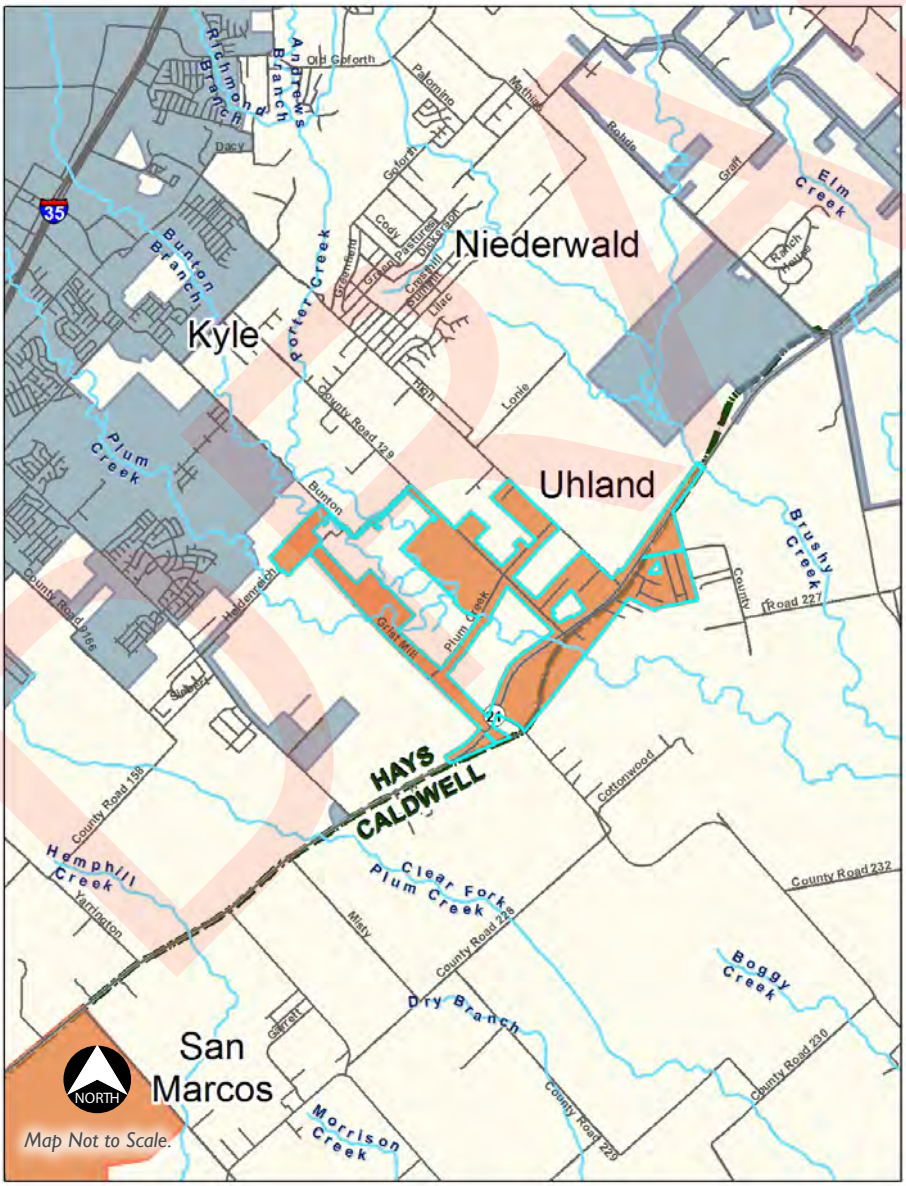
Fire: Chisolm Trail Fire Rescue

EMS: San Marcos Hays County EMS/Caldwell EMS

Law Enforcement - Hays County Sheriff's Office

HAZUS-MH 3.2 Updated Census 2010 Population Estimates

Figure UH.1, City of Uhland Planning Area



Community Description

When planning, it is important to take into account the characteristics that make a community unique. Consideration of unique needs when it comes to mitigating or recovering from natural hazards ensures that all members of the community and their needs are addressed.

Known as "The last stagecoach stop in Texas", Uhland is located along the Old Spanish Trail. Now located on State Highway 21, Uhland is a quickly developing community, interested in industrial and commercial growth. Although HAZUS-MH 3.2 Updated Census 2010 Population Estimates show a population of 458, the City of Uhland website provides a current population of 1,030 residents. With a population that doubled in a matter of 7 years, the community shows signs of continued growth in coming years.

A unique characteristic for the City of Uhland is that it resides

in both Hays and Caldwell Counties.

Uhland is a general law municipality that incorporated in 1985. The community currently has 4 Council members, with a Mayor Pro-Tem, and Mayor. The elected officials are supported by a City Administrator.

City of Uhland is served by Hays Consolidated Independent School District (HCISD).

Uhland's major employers are listed in UH.1 and main utility providers in Table UH.2 below.

Table UH.1, Major Employers

Business Type	Name of Employer
Small Industrial	Oyster Designs
Retail	Bon Ton Meat Market & Country Store
Industrial	Fire Star Concrete, Inc.

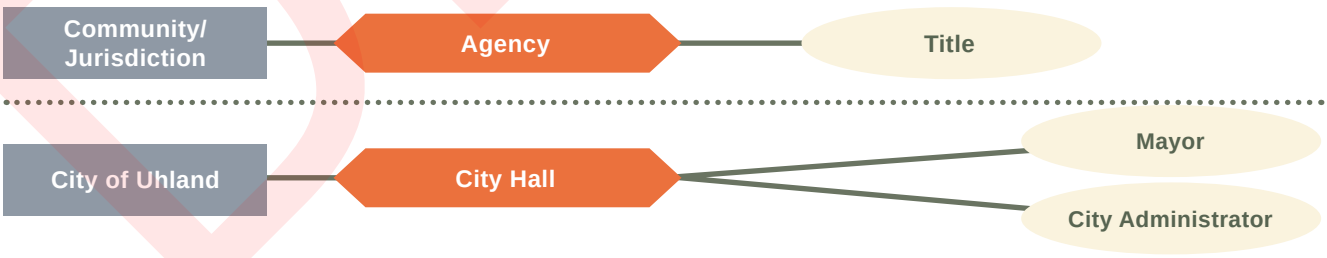
Table UH.2, Utility Providers

Type	Provider
Electric	Bluebonnet Electric/Pedernales Electric Cooperative (PEC)
Natural Gas	None
Water	County Line Special Utility District
Cable	Spectrum

Planning Committee

Planners who represented Uhland for the update process are collectively known as the Uhland Mitigation Planning Committee (MPC) and are shown in Figure UH.2.

Figure UH.2, Planning Committee Membership



Community Planning Involvement

MPC planning activities for the Hays County Hazard Mitigation Plan (HMP) Update are captured in Figure UH.3, which utilizes checkmarks to indicate each of the activities that were completed by the Uhland MPC.

Figure UH.3, City of Uhland Plan Participation

Meetings

- ✓ Kick-Off
- ✓ Risk Assessment
- ✓ Mitigation Strategy

Data Submission

- ✓ Planner's Survey
  Data Collection Spreadsheet/
  GIS Data
- ✓ Planning Worksheets
- ✓ Phone Interview

Public Involvement

- ✓ City Council/Commissioner's Court Agenda Items
- ✓ Public Survey Posting/ Collection

Stakeholders

During the Phase 1 Kick-Off Meeting, planners were provided with a Planner/Stakeholder worksheet, referred to in Chapter 1, the Plan Process portion of the Hays County HMP Update. This document allowed planners to identify stakeholders for inclusion in the Risk Assessment and Mitigation Strategy Meetings. Table UH.3 identifies the stakeholders that were invited to participate by the following email:

Good Morning,

You or your organization has been identified by a local community planner as a stakeholder (interested/affected party) for the Hays County Hazard Mitigation Plan Update process. The planning team, made up of community officials from throughout Hays County, is working to update this plan that identifies actions for reducing and mitigating the risk from natural hazards (flood, tornado, severe winter, etc...) affecting Hays County and the communities within it. If your schedule allows, your insight would be valuable at a meeting being held on Thursday, January 12, 2017, from 1 p.m. to 4 p.m. at

Wimberley Community Center
14068 Ranch Road 12
Wimberley, TX 78676

Please register for the Hazard Mitigation Plan Update- Risk Assessment Meeting. https://www.eventbrite.com/e/hays-county-hazard-mitigation-plan-update-risk-assessment-meeting-registration-30892049953

If unable to complete registration on the Eventbrite site, please reply to this email and indicate who will attend from your organization so that the meeting facility can be prepared for the proper number of attendees.

JWSA and Halff Associates are providing coordination and facilitation support for this process for Hays County and participating communities utilizing FEMA mitigation grant funding. Any questions regarding this meeting can be directed to Paloma Alaniz at palaniz@halff.com.

Thank you.

Table UH.3, Plan Stakeholders

Jurisdiction	Agency	Title
Caldwell County	Neighboring Community	County Judge
Hays CISD	School District	Director of Student Services
Hays CISD	School District	Superintendent
Hays County	Sheriff's Office	Sheriff
Pedernales Electric Cooperative	Electric Cooperative	Chief Executive Officer
Spectrum (Charter)	Cable	Public Relations

Outreach Strategy

The City of Uhland was very active in their outreach activities used to request public participation in the Hays County Hazard Mitigation Plan Update.

Public Survey Promotion

Uhland advertised the Hays County Hazard Mitigation Plan Update Public Survey on the homepage of www.cityofuhland.com and also advertised the survey on the community Facebook page.

As of March 10, 2017, Uhland had 13 residents respond to the public survey. A copy of the survey questions can be found in Appendix A of the Hays County HMP Update. Details on how the survey data was directly incorporated into the Risk Ranking process for hazards is included in Chapter 2, the Risk Assessment portion of the Hays County HMP Update.

City Council Meeting Announcement

On February 1, 2017, the Mayor presented information on the Hays County Hazard Mitigation Plan Update to the Uhland City Council. The council agenda and item report for this presentation is included in Appendix A.

Plan Phase Newsletters

Uhland was provided with newsletters at each phase of the planning process in order to be able to share updates on the planning process with stakeholders, elected officials, City staff and the public. Copies of the newsletters can be found in Plan Appendix A of the Hays County HMP Update.

Plan Draft Public Review and Comment Period

The link to the draft Hays County HMP (hosted on the Hays County Office of Emergency Services page) was posted on the City of Uhland website from July 12, 2017 until July 26, 2017. A hard copy was placed in the City Hall. Email comments were collected via email by the Uhland City Administrator.

Incorporation of Sources

In addition to stakeholder and public input, the MPC also reviewed other planning resources that could provide useful information to the plan update process. Table UH.4 lists the documents reviewed and how they were considered for incorporation in the updated plan.

Table UH.4, Review/Incorporation of Sources

Name of Document	Type	How Incorporated
2013 State of Texas Hazard Mitigation Plan	Plan	Utilized hazard definitions and hazard classification names.
Flood Insurance Study	Study	Incorporated best available hydraulic and hydrologic study results for flood hazard profile.
Uhland City Ordinances	Regulations	Reviewed for possibility of enhancement for mitigation purposes (detailed in Section 3: Mitigation Strategy- Existing Capabilities)
City of Uhland Zoning Map	Plan	Reviewed for development review purposes to update plan with latest development trends (Southwest Engineers, 2016)
City of Uhland Residential Building Permit	Form	Reviewed for floodplain review reference in permitting for development- none found (City of Uhland, 2017)

Continued Public Participation in Maintenance Process

The strategy for updates at the local level for the City will include opportunities for public involvement as shown in Table UH.5.

Table UH.5, Public Involvement for Updates

Activity	Public Involvement	Method Available
Monitoring	The public will be given notice when items will be reviewed and receive the opportunity to review the notes from any notable developments.	Newspaper/Social Media
Evaluation	The public will be given a means to voice their opinion on the completed actions.	SurveyMonkey/Paper Survey
Updates	Once updates are made, the changes will be recorded in a public revision history document.	Newspaper/Social Media/ Council Meeting Announcements/ SurveyMonkey

Maintenance

Table UH.6 lists the method, schedule, and responsible agent for the monitoring, evaluation, and updating of the adopted 2017 HMP within the Plan's 5-year update cycle.

Table UH.6, Hays County Hazard Mitigation Plan Maintenance Schedule, Uhland

Task	Scope	Method	Schedule	Responsible Agent
Monitoring	Jurisdictional	Reviews of mitigation action items using Mitigation Action Progress Report Worksheets (Appendix C of the Hays County HMP Update).	Every 12 months	City of Uhland, City Hall, City Administrator
Evaluation	Jurisdictional	Complete Online Planner Survey (using SurveyMonkey) with evaluation of plan process.	Every 12 months	City of Uhland, City Hall, City Administrator
Updates	Jurisdictional	Perform updates to Mitigation Strategy to edit/add/omit actions identified during monitoring activities. Conduct post-disaster review of community annex in order to update for significant occurrences, construction of new critical infrastructure or facilities, changes in jurisdictional boundaries and development. Participate in MPC for 5-year HMP update process.	As needed	City of Uhland, City Hall, City Administrator

Section 2: Risk Assessment
City of Uhland Jurisdictional Hazards

This section contains Uhland's hazard profiles for each natural hazard included in the Hays County HMP Update. Profiles include:

- Location - the area where the hazard is known to occur
- Previous Occurrences - a history of reported events for the hazard
- Significant Previous Occurrences (when applicable) - notable hazard events within the community
- Extent - the strength or magnitude of the hazard
- Probability - the likelihood of the hazard event occurring in the future
- Impact - the consequence or effect (or possible effect) of hazard events
- Vulnerability Summary - identification of structures, systems, populations or assets susceptible to loss or damage

Hazard descriptions and extent scales for hazard magnitudes, are found in Chapter 2, the Risk Assessment portion of the Hays County HMP Update.

When available, data specific to Uhland was used for hazard analysis. When no instances were reported specifically for the jurisdiction for regional hazards, County level data was applied.

State and national datasets were used to determine occurrence, extent, and the respective probabilities, rather than verbal testimonies, in an effort to retain data consistency. For some hazards, the National Oceanic and Atmospheric Administration (NOAA) Storm Events Database was used as the most comprehensive data available for hazards. As a result, fatality, injury and damage amounts shown for previous hazard occurrences do not always reflect the most recent totals. The Previous Occurrences paragraphs identify instances in which this may occur. Verbal testimony, when available, was integrated into impact or vulnerability summaries, when applicable.

Hazards profiled within the Risk Assessment include:

Drought

Extreme Heat

Severe Winter Storms

Lightning

Hailstorms

Windstorms

Tornadoes

Expansive Soils

Floods

Land Subsidence

Hurricanes/Tropical Storms

Earthquakes

Dam/Levee Failure

Wildfires

Drought

Drought: Location

Drought occurs on a regional scale, therefore all of the City of Uhland is equally at risk as it can occur anywhere in the planning area.

Drought: Previous Occurrences

NOAA Storm Events Database documents 27 drought events for Hays County since the year 1996 (see Table UH.7). Although there were no drought events reported specifically for the City of Uhland, the jurisdiction would have been affected by the events that were reported for the surrounding County area.

Fatality, injury and damage amounts are shown in Table UH.7, per the NOAA Storm Events Database. Community testimony indicates that these amounts do not reflect the most recent totals, however NOAA data is being used as the best source of information available for the record period.

Table UH.7, Reported Drought Occurrence, Hays County

Location	Date	Type	Fatalities	Injuries	Property Damage	Crop Damage
HAYS (ZONE)	4/1/1996	Drought	0	0	0.00	0.00
HAYS (ZONE)	5/1/1996	Drought	0	0	0.00	0.00
HAYS (ZONE)	6/1/1996	Drought	0	0	0.00	0.00
HAYS (ZONE)	7/1/1996	Drought	0	0	0.00	0.00
HAYS (ZONE)	8/1/1996	Drought	0	0	0.00	0.00
HAYS (ZONE)	7/1/2000	Drought	0	0	0.00	0.00
HAYS (ZONE)	8/1/2000	Drought	0	0	0.00	0.00
HAYS (ZONE)	9/1/2000	Drought	0	0	0.00	0.00
HAYS (ZONE)	10/1/2000	Drought	0	0	0.00	0.00
HAYS (ZONE)	5/1/2011	Drought	0	0	0.00	0.00
HAYS (ZONE)	6/1/2011	Drought	0	0	0.00	0.00
HAYS (ZONE)	7/1/2011	Drought	0	0	0.00	0.00
HAYS (ZONE)	8/1/2011	Drought	0	0	0.00	0.00
HAYS (ZONE)	9/1/2011	Drought	0	0	0.00	0.00
HAYS (ZONE)	10/1/2011	Drought	0	0	0.00	0.00
HAYS (ZONE)	11/1/2011	Drought	0	0	0.00	0.00
HAYS (ZONE)	12/1/2011	Drought	0	0	0.00	0.00
HAYS (ZONE)	1/1/2012	Drought	0	0	0.00	0.00
HAYS (ZONE)	6/1/2012	Drought	0	0	0.00	0.00
HAYS (ZONE)	12/1/2012	Drought	0	0	0.00	0.00
HAYS (ZONE)	2/1/2013	Drought	0	0	0.00	0.00
HAYS (ZONE)	3/1/2013	Drought	0	0	0.00	0.00
HAYS (ZONE)	4/1/2013	Drought	0	0	0.00	0.00
HAYS (ZONE)	6/1/2013	Drought	0	0	0.00	0.00
HAYS (ZONE)	7/1/2013	Drought	0	0	0.00	0.00
HAYS (ZONE)	8/1/2013	Drought	0	0	0.00	0.00
HAYS (ZONE)	8/1/2014	Drought	0	0	0.00	0.00
Total					$0.00	$0.00

(National Oceanic and Atmospheric Administration Storm Event Database, 2016)

Drought Significant Past Events

Several significant regional drought events have previously impacted the City. Refer to the *Drought: Significant Past Events* paragraph within Section 2, Risk Assessment of the Hays County Annex, for narratives discussing these events.

Drought: Extent

The US Drought Monitor Drought Intensity scale classifies drought by 5 categories, D0 through D4. According to the reported previous drought occurrences in the jurisdiction, the maximum drought extent experienced is a Category D4 drought. Refer to Chapter 2, the Risk Assessment portion of the Hays County HMP Update, for a description of US Drought Monitor Drought Intensity Index.

Drought: Probability

Based on 6 years with reported drought events from the NOAA Storm Events Database within 20 years, a drought event occurs approximately once every 3 years on average in Hays County. Since drought events can happen anywhere throughout the HMP update area and occur on a regional scale, the City of Uhland's future probability is assumed to be similar to the surrounding County areas and therefore, can expect a drought event approximately once every 3 years on average, with up to a Category D4 Drought.

Number of Years with Reported Event (Drought Year)	Number of Years in Dataset	Probability
6	20	0.30

Drought: Impact

Table UH.8 lists the impact of drought from 1996 to 2016 for Hays County as well as the City of Uhland according to the Drought Impact Reporter (DIR). The DIR is the nation's first comprehensive database of drought impacts. This database contains information from multiple Federal agencies, such as NOAA and United States Geological Survey (USGS), related to drought impacts from a national to city level by category and extent of impact. While there are no impacts reported specifically for the City of Uhland, the effects of drought are not confined to jurisdictional boundaries and occur on a regional scale. As the effects of drought are not confined to jurisdictional boundaries and occur on a regional scale, impacts reported on the Hays County level are applicable in illustrating impact to the City of Uhland.

Table UH.8, Reported Drought Impacts, Hays County

Hays County Drought Impacts 1996-2016	
Category	**# of Incidents Reported**
Agriculture	45
Business & Industry	3
Energy	2
Fire	24
Plants & Wildlife	33
Relief, Response & Restrictions	48
Society & Public Health	7
Tourism & Recreation	3
Water Supply & Quality	53

(University of Nebraska-Lincoln, 2016)

Drought: Vulnerability Summary

The community uses water that is sourced by the Lower Colorado River Authority and is in turn, as with any source of water, vulnerable to the effects of drought impacting the citizens of Uhland by decreasing their water supply. In addition, the community is growing exponentially and the construction of new subdivisions within the City limits and extraterritorial jurisdiction (ETJ) will further strain water resources.

Extreme Heat

Extreme Heat: Location

Extreme heat occurs on a regional scale; therefore, all of the City of Uhland is equally at risk as it could occur anywhere in the jurisdiction.

Extreme Heat: Previous Occurrences

NOAA's Online Weather Data (NOWData) provides temperature data ranging from 2000 to 2016. NOAA's National Weather Service (NWS) Heat Index (located in Chapter 2, the Risk Assessment portion of the Hays County HMP Update) indicates that temperatures meeting or exceeding 90°F are designated with an "Extreme Caution" or greater warning classification. According to Canyon Dam Station, the closest local weather data collection center with comprehensive data, the mean number of days with a daily max temperature equal or greater to 90°F is 94 days. Currently, the greatest number of days during which the jurisdiction experienced extreme heat is 119 in 2008 while the highest temperature experienced was 109°F in August 2011 (a "Danger" NWS Heat Index classification). Canyon Dam Station is the closest reporting NOWData station to the jurisdiction and applies equally to the City of Uhland due to the regional nature of extreme heat occurrence.

Extreme Heat: Extent

Extreme heat extent is classified by temperatures as well as levels, within the NWS Heat Index. The extent of extreme heat that the City of Uhland has experienced can be derived from the data provided from NOWData at Canyon Dam Station since the year 2000. The highest daily mean temperature experienced was 109°F in August 2011. This event is classified by the NWS Heat Index as "Danger". Refer to Chapter 2, the Risk Assessment portion of the Hays County HMP Update, for a description of heat extent scale, NOAA's NWS Heat Index.

Extreme Heat: Probability

The probability of future events can be determined by assessing historical averages. Since extreme heat events occur on a regional scale, the City of Uhland's future probability is assumed to be similar to the area surrounding Canyon Dam Station. Based on NOWData, the City can expect, on average, approximately 94 days a year with temperatures equal or greater to 90°F, and up to a "Danger" warning classification per the NOAA NWS Heat Index. As extreme heat events have occurred every year since 2000, the probability of extreme heat affecting the community is 100% in any given year.

Extreme Heat: Impact

Extreme heat has physical impacts on the public and the infrastructure that supports them. According to the Texas Health Care Information Collection and Trauma Registry from the Texas Department of State Health Services' Injury Epidemiology & Surveillance Branch, the following number of patients were received in Hays County medical facilities for Heat Related Injuries and Trauma shown in Tables UH.9 and UH.10 (Texas Department of State Health Services - Injury Epidemiology & Surveillance Branch, 2017).

Table UH.9, Hays County Hospital Inpatient Data, Extreme Heat

Description	2010	2011	2012	2013	2014
Accidents caused by excessive heat due to weather conditions	1	3	5	0	0
Accidents due to excessive heat of unspecified origin	1	0	0	0	0

(Texas Department of State Health Services- Injury Epidemiology & Surveillance Branch, 2017)

Table UH.10, Hays County Trauma Data, Extreme Heat

Description	2010	2011	2012	2013	2014
Accidents due to excessive heat of unspecified origin	0	1	0	0	0

(Texas Department of State Health Services- Injury Epidemiology & Surveillance Branch, 2017)

In addition to the physical impacts, an excessive heat event can also be the cause of cascading incidents. Electrical outages could occur due to the high demands of electricity needed to power cooling systems. A loss of critical resources, such as power, has significant impact on the entire population, with higher impacts to those with vulnerabilities to such conditions. The following portion of the City of Uhland's population, according to HAZUS-MH 3.2 updated Census 2010 population estimates, would be greatly impacted by the severe temperatures related to excessive heat and/or the loss of electrical energy in their dwellings.

Population over 65 years old	30
Population under 16 years old	155
Economically Disadvantaged Population ($0-$20k)	17

An organization called Inside Energy (http://insideenergy.org) provided a compiled database outlining 15 years of power outages across the United States from annual data available at the Department of Energy. Within the database, the following excessive heat events affected electrical availability in the areas in or near Hays County (Table UH.11).

Table UH.11, Extreme Heat Affecting Electrical Availability

Event Description	Year	Start Date	Start Time	End Date	Respondent	Location	Customers Affected
Declared Energy Emergency Alert2/Heat Wave	2007	8/14/2007	2:00 p.m.	8/14/2007	American Electric Power (CSWS)	CSWS Control Area of Southwest Power Pool Parts of Oklahoma, Texas, Louisiana, Arkansas	N/A

(Wirfs-Brock, 2014)

Extreme Heat: Vulnerability Summary

Uhland does not have a cooling station plan for the community but does have locations available, such as City Hall and the Uhland Community Center in order to implement one in the future. The structures do not have back-up generator power to continue providing cooling if electrical services are interrupted by the strain of Extreme Heat. In addition, there are 4 churches in the community that could possibly coordinate to provide emergency cooling stations.

Severe Winter Storms

Severe Winter Storms: Location

Severe winter storms occur on a regional scale; therefore, all of the City of Uhland is equally at risk.

Severe Winter Storms: Previous Occurrences

NOAA Storm Events Database documents 13 winter storm events for Hays County since the year 1996 (see Table UH.12). Although there were no winter storm events reported specifically for the City of Uhland, the jurisdiction would have been affected by the events that were reported for the surrounding County area.

Fatality, injury and damage amounts are shown in Table UH.12, per the NOAA Storm Events Database. Community testimony indicates that these amounts do not reflect the most recent totals, however NOAA data is being used as the best source of information available for the record period.

Table UH.12, Winter Weather Occurrences, Hays County

Location	Date	Type	Fatalities	Injuries	Property Damage	Crop Damage
HAYS (ZONE)	2/1/1996	Winter Storm	0	0	0.00	0.00
HAYS (ZONE)	1/7/1997	Winter Storm	0	0	0.00	0.00
HAYS (ZONE)	1/11/1997	Winter Storm	0	0	0.00	0.00
HAYS (ZONE)	12/23/1998	Winter Storm	0	0	0.00	0.00
HAYS (ZONE)	12/12/2000	Winter Storm	0	0	0.00	0.00
HAYS (ZONE)	11/28/2001	Winter Storm	0	0	0.00	0.00
HAYS (ZONE)	2/24/2003	Winter Storm	0	0	0.00	0.00
HAYS (ZONE)	12/7/2005	Winter Storm	0	0	0.00	0.00
HAYS (ZONE)	1/15/2007	Winter Storm	0	0	125,000.00	0.00
HAYS (ZONE)	2/3/2011	Winter Storm	0	0	0.00	0.00
HAYS (ZONE)	11/26/2013	Winter Weather	0	0	0.00	0.00
HAYS (ZONE)	1/23/2015	Winter Weather	0	0	0.00	0.00
HAYS (ZONE)	2/16/2015	Winter Weather	0	0	0.00	0.00
Total			0	0	$125,000.00	$0.00

(National Oceanic and Atmospheric Administration Storm Event Database, 2016)

Severe Winter Storms: Significant Past Events

Regionally, there were significant winter weather events reported as Hays (Zone) that may have impacted the City, as shown in Table UH.12. Refer to the *Severe Winter Storms: Significant Past Events* section within the Hays County Annex for narratives discussing these events.

Severe Winter Storms: Extent

Ice accumulation is captured and measured with the Regional Snowfall Index (RSI) and the Sperry-Piltz Ice Accumulation (SPIA) Index, as detailed in Chapter 2, the Risk Assessment portion of the Hays County HMP Update. According to the reported previous winter weather occurrences in the jurisdiction, the maximum winter weather extent experienced is a RSI Category 1 snowfall event or SPIA Ice Index Category 2 ice event.

Severe Winter Storms: Probability

Based on 13 reported events from the NOAA Storm Events Database in 20 years, a winter weather event occurs approximately every 2 years on average in Hays County. There were no events reported specifically for the City of Uhland. Since these events can happen anywhere throughout the HMP update area and occur on a regional scale, the City's future probability is assumed to be similar to the surrounding County area. The jurisdiction can expect a winter weather event approximately once every 2 years on average in the future with up to an RSI Category 1 snowfall event or SPIA Ice Index Category 2 ice event.

Number of Reported Events	Number of Years in Dataset	Probability
13	20	0.65

Severe Winter Storms: Impact

Severe winter weather has physical impacts upon the public and the infrastructure that supports them. According to the Texas Health Care Information Collection and Trauma Registry from the Texas Department of State Health Services' Injury Epidemiology & Surveillance Branch, the following number of patients were received in Hays County medical facilities for Cold Related Injuries and Trauma (shown in Table UH.13 & UH.14).

Table UH.13, Hays County Hospital Inpatient Data, Severe Winter Storms

Description	2010	2011	2012	2013	2014
Accidents caused by excessive cold due to weather conditions	2	0	0	0	0
Accidents due to excessive cold of unspecified origin	1	0	0	0	1

(Texas Department of State Health Services- Injury Epidemiology & Surveillance Branch, 2017)

Table UH.14, Hays County Trauma Data, Severe Winter Storms

Description	2010	2011	2012	2013	2014
Accidents due to excessive cold due to weather conditions	1	0	0	0	0

(Texas Department of State Health Services- Injury Epidemiology & Surveillance Branch, 2017)

In addition to the physical impacts, a severe winter storm event can also be the cause of cascading incidents. Electrical outages could occur due to the high demands of electricity needed to power heating systems. A loss of critical resources, such as power, has significant impact on the entire population, with higher impacts to those with vulnerabilities to such conditions. The following portion of Uhland's population, according to HAZUS-MH 3.2 updated Census 2010 population estimates, would be greatly impacted by the extreme temperature conditions related to severe winter storms and/or the loss of electrical energy in their dwellings.

Population over 65 years old	30
Population under 16 years old	155
Economically Disadvantaged Population ($0-$20k)	17

An organization called Inside Energy (http://insideenergy.org) provided a compiled database outlining 15 years of power outages across the United States from annual data available at the Department of Energy. Within the database, the following winter storm events affected electrical availability in the areas in or near Hays County (Table UH.15).

Table UH.15, Severe Winter Storms Affecting Electrical Availability

Event Description	Year	Start Date	Start Time	End Date	Respondent	Location	Customers Affected
Cold Weather Event	2011	2/9/2011	4:30 PM	2/10/2011	ERCOT ISO	Texas	N/A
Public Appeal due to Severe Weather - Cold	2014	1/6/2014	7:01 AM	1/7/2014	ERCOT	Texas	N/A
Public Appeal due to Severe Weather - Cold	2014	3/2/2014	7:00 PM	3/4/2014	ERCOT	ERCOT Region Texas	N/A

**Electrical Reliability Council of Texas (ERCOT)*

(Wirfs-Brock, 2014)

In addition, severe winter storms and the icy roads that accompany them lead to dangerous driving conditions. City level data available from the Texas Department of Transportation's Crash Records Information System shows that between the years of 2010 and (May) 2017, Uhland experienced 3 crashes related to sleet/hail conditions (shown in Table UH.16). Injuries sustained from these crash events included 1 possible injury.

Table UH.16, Severe Winter Storms, Vehicle Accidents, City of Uhland

City	Fatality	Incapacitating Injury	Non-Incapacitating	Possible Injury	Crash Year	Street Name	Surface Condition	Weather Condition
Uhland	0	0	0	0	2014	SH0021	Ice	Sleet/Hail
Uhland	0	0	0	0	2014	SH0021	Ice	Sleet/Hail
Uhland	0	0	0	1	2014	SH0021	Ice	Sleet/Hail

Crash Records Information System Query for Accidents in Uhland from 2010-2017 from non-Clear Weather Conditions (Texas Department of Transportation, 2017)

Severe Winter Storms: Vulnerability Summary

A majority of Uhland's powerlines are on poles. This poses a vulnerability due to the impact on electricity to homes and businesses during cold temperatures when an accumulation of ice and snow on branches could cause them to fall upon the exposed powerlines. An abundance of dead trees in some areas could create a greater risk. The Plum Creek bridge is vulnerable to ice and is a bridge maintained by another entity. An indirect measure that recently took place in the community that will lessen vulnerability was a recent reduction of the speed limit through the portion of State Highway 21 that runs through the Uhland City limits. This should lessen the number of overall collisions and indirectly decrease the number of accidents occurring during ice and sleet events.

Lightning

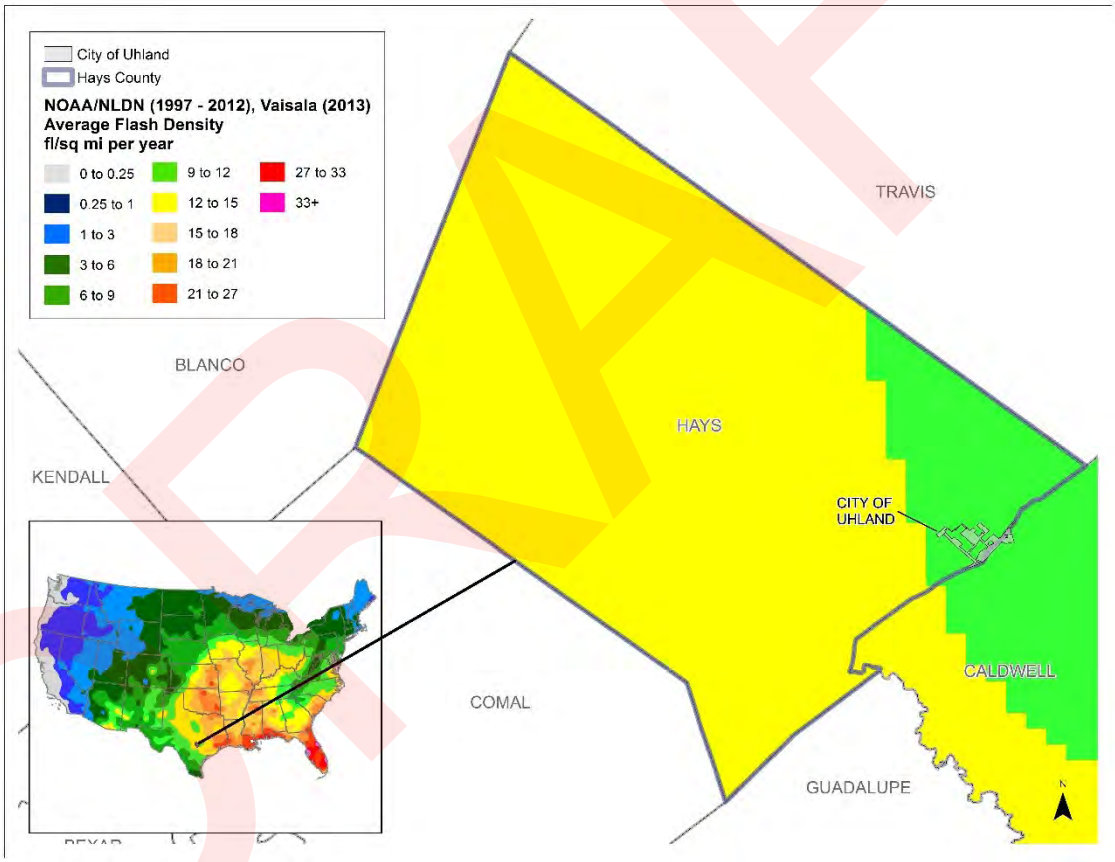
Lightning: Location

The entire extent of the City of Uhland is exposed to some degree of lightning hazard. Since lightning can occur at any location, lightning events could be experienced anywhere within the planning area.

Lightning Previous: Occurrences

Figure UH.4 reflects the City of Uhland within the area that was calculated to receive approximately 9 to 12 lightning strikes per square mile per year according to National Lightning Detection Network (NLDN) data for the years 1997 to 2012. There were no lightning events reported specifically for the jurisdiction in the NOAA Storm Events Database.

Figure UH.4, Average Annual Lightning Density, City of Uhland



(Vaisala NLDN, 2016)

Lightning: Extent

Due to the lack of reported occurrences, there is not sufficient data to determine the maximum Lightning Activity Level (LAL) for the jurisdiction (refer to Chapter 2, the Risk Assessment portion of the Hays County HMP Update, for a description of the lightning extent scale LAL Grids). However, with the data available, the extent of lightning events that the City of Uhland has experienced can be derived from the NOAA/NLDN data seen in Figure UH.4. There were up to 9 to 12 strikes per square mile per year within the jurisdiction of approximately 2.49 square miles.

Lightning: Probability

Since lightning can occur at any location, lightning events could be experienced anywhere within the jurisdiction. Based on the data provided in Figure UH.4, the City of Uhland can expect future events to fall in line with NLDN data from previous years with an average occurrence of up to approximately 9 to 12 lightning strikes per square mile per year.

Lightning: Impact

The National Lightning Detection Network (NLDN) reported 217 lightning fatalities within the State between the years 1959 and 2013. According to the Texas Health Care Information Collection and Trauma Registry from the Texas Department of State Health Services' Injury Epidemiology & Surveillance Branch, the following number of patients were received in Hays County medical facilities for Lightning Related Trauma (shown in Table UH.17).

Table UH.17, Hays County Trauma Registry Data, Lightning Events

Description	2010	2011	2012	2013	2014
Accident due to lightning	0	1	0	0	1

(Texas Department of State Health Services- Injury Epidemiology & Surveillance Branch, 2017)

In addition to the physical impacts, a lightning event can also be the cause of cascading incidents. Electrical outages could occur due to the impact that lightning strikes can have on electrical utility infrastructure. A loss of critical resources, such as power, has significant impact on the entire population, with higher impacts to those with vulnerabilities to such conditions. The following portion of the City of Uhland's population, according to HAZUS-MH 3.2 updated Census 2010 population estimates, would be greatly impacted by the loss of electrical energy in their dwellings.

Population over 65 years old	30
Population under 16 years old	155
Economically Disadvantaged Population ($0-$20k)	17

An organization called Inside Energy (http://insideenergy.org) provided a compiled database outlining 15 years of power outages across the United States from annual data available at the Department of Energy. Within the database, the following thunderstorm/severe storm events affected electrical availability in the areas in or near Hays County (Table UH.18).

Table UH.18, Lightning Affecting Electrical Availability

Event Description	Year	Start Date	Start Time	End Date	Respondent	Location	Customers Affected
Severe Weather	2008	4/9/2008	4:00 p.m.	4/13/2008	Oncor Electric Delivery Company LLC	North, Central and East Texas	488,689
Severe Thunderstorms	2008	6/17/2008	9:01 a.m.	6/19/2008	Oncor Electric Delivery Company LLC	North, Central and East Texas	234,393
Severe Thunderstorms	2008	8/3/2008	1:30 a.m.	8/3/2008	Entergy Corporation	Mississippi, Louisiana, Texas	59,500
Severe Storms	2009	6/10/2009	6:00 p.m.	6/14/2009	Oncor Electric Delivery Company, LLC	North and Central Texas	800,000
Thunderstorms	2010	6/8/2010	11:00 a.m.	6/8/2010	Centerpoint Energy	Southeastern Texas	79,741

(Wirfs-Brock, 2014)

Lightning strikes also cause wildfire ignitions. According to the National Fire Protection Association (NFPA), "during 2007-2011, U.S. local fire departments responded to an average of 22,600 fires per year that were started by lightning. These fires caused an average of 9 civilian deaths, 53 civilian injuries and $451 million in direct property damage per year." The source also sites that the fires are more common in June through August and in the late afternoon and evening.

Lightning: Vulnerability Summary

The presence of dead trees, a result of a past drought, creates a vulnerability of those trees acting as fuel for a lightning strike that could ignite a wildfire. This in combination with the amount of areas where residential structures border areas of wildland, creates an increased risk of structures igniting as well.

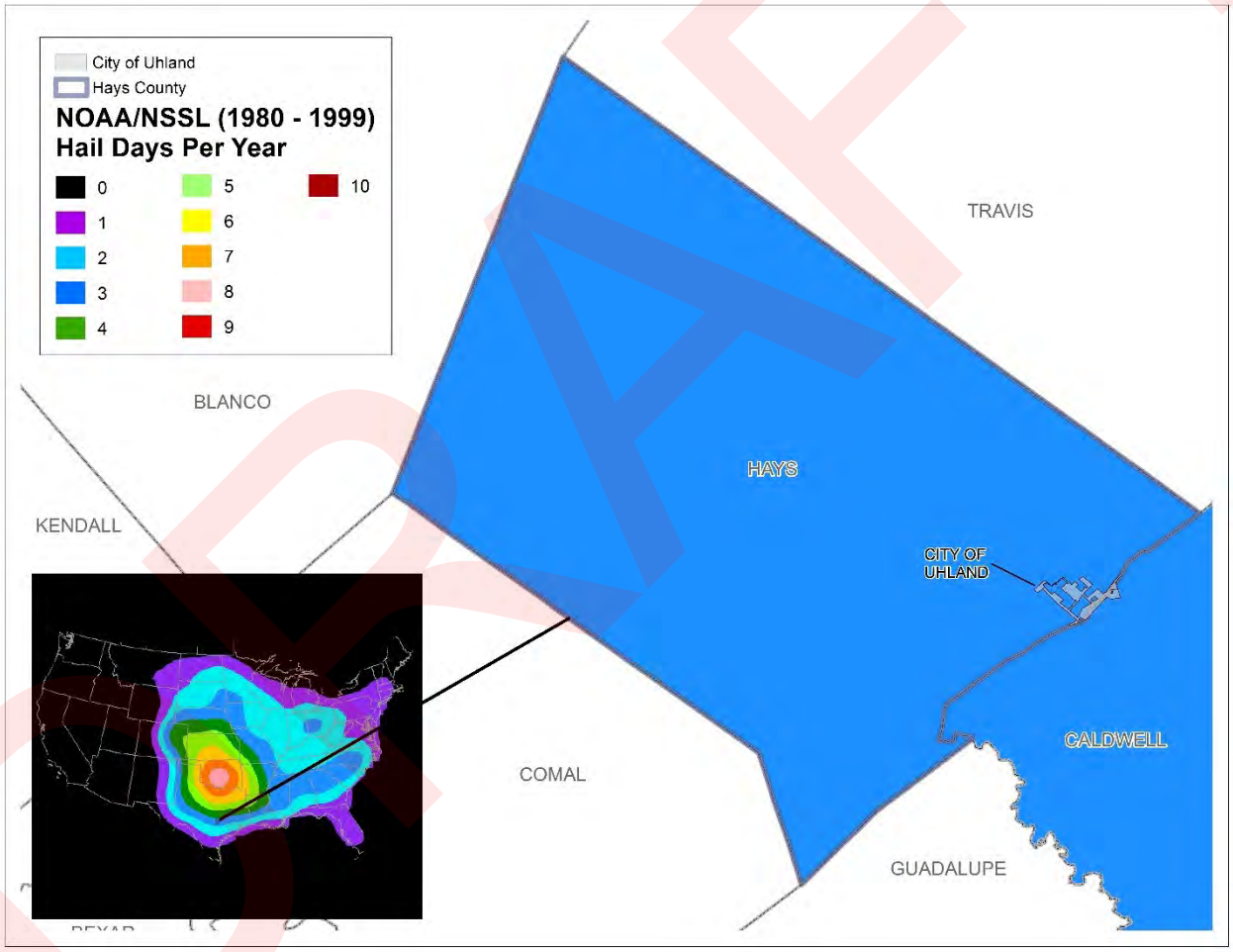
Lightning strikes could also impact the electrical power to the community because 80 percent of the powerlines are on poles, with the exception of recent new subdivisions which utilize subsurface electrical utilities.

Hailstorms

Hailstorms: Location

The entire extent of the City of Uhland is exposed to some degree of hail hazard. Since hail can occur at any location, hail events could be experienced anywhere within the planning area. NOAA's National Severe Storms Laboratory used historical data from 1980 to1999 to estimate the daily probability of hail occurrences, of at least 0.75-inch diameter hail across the U.S. Figure UH.5 shows the average number of hail days per year determined from this analysis and the corresponding location of the City. The density of hail days per years in the map's legend indicates the probable number of hail days for each 25-square-mile cell within the contoured zone that can be expected per year. It should be noted that the density number does not indicate the number of events that can be expected within each cell, rather the average number of days per year with 1 or more events occurring within each cell.

Figure UH.5, National Hail Days Per Year, City of Uhland



(National Severe Storms Laboratory, 2016)

Hailstorms: Previous Occurrences

Since hail can occur at any location, hail events could be experienced anywhere within the planning area. While the City of Uhland has not had any previous occurrences reported through the NOAA Storm Events Database, if an event were to occur, it would be similar in size and magnitude to events within the surrounding county area. Table UH.19 lists the 57 hail events reported for Hays County and its unincorporated jurisdictions from year 1967. Note that multiple listings for the same dates are the result of reports from different affected parts of the County for the given event.

Fatality, injury and damage amounts are shown in Table UH.19, per the NOAA Storm Events Database. Community testimony indicates that these amounts do not reflect the most recent totals, however NOAA data is being used as the best source of information available for the record period.

Table UH.19, Hail Events, Hays County

Location	Date	Type	Extent (mm)	Fatalities	Injuries	Property Damage	Crop Damage
Hays County	5/20/1967	Hail	76.20	0	0	0.00	0.00
Hays County	5/8/1969	Hail	25.40	0	0	0.00	0.00
Hays County	10/27/1970	Hail	25.40	0	0	0.00	0.00
Hays County	2/25/1971	Hail	57.15	0	0	0.00	0.00
Hays County	3/12/1971	Hail	76.20	0	0	0.00	0.00
Hays County	5/29/1975	Hail	44.45	0	0	0.00	0.00
Hays County	3/30/1976	Hail	44.45	0	0	0.00	0.00
Hays County	4/7/1976	Hail	44.45	0	0	0.00	0.00
Hays County	4/7/1976	Hail	44.45	0	0	0.00	0.00
Hays County	4/7/1976	Hail	44.45	0	0	0.00	0.00
Hays County	4/7/1976	Hail	44.45	0	0	0.00	0.00
Hays County	4/7/1976	Hail	44.45	0	0	0.00	0.00
Hays County	5/5/1976	Hail	44.45	0	0	0.00	0.00
Hays County	4/3/1977	Hail	25.40	0	0	0.00	0.00
Hays County	4/14/1977	Hail	50.80	0	0	0.00	0.00
Hays County	4/14/1977	Hail	50.80	0	0	0.00	0.00
Hays County	4/18/1979	Hail	25.40	0	0	0.00	0.00
Hays County	1/17/1980	Hail	44.45	0	0	0.00	0.00
Hays County	1/17/1980	Hail	25.40	0	0	0.00	0.00
Hays County	2/29/1980	Hail	44.45	0	0	0.00	0.00
Hays County	4/11/1980	Hail	25.40	0	0	0.00	0.00
Hays County	5/8/1980	Hail	25.40	0	0	0.00	0.00
Hays County	5/9/1981	Hail	25.40	0	0	0.00	0.00
Hays County	4/20/1982	Hail	25.40	0	0	0.00	0.00
Hays County	5/13/1982	Hail	25.40	0	0	0.00	0.00
Hays County	3/30/1983	Hail	25.40	0	0	0.00	0.00
Hays County	5/20/1983	Hail	25.40	0	0	0.00	0.00
Hays County	5/20/1983	Hail	31.75	0	0	0.00	0.00

Table UH.19, Hail Events, Hays County (cont.)

Location	Date	Type	Extent (mm)	Fatalities	Injuries	Property Damage	Crop Damage
Hays County	5/20/1987	Hail	50.80	0	0	0.00	0.00
Hays County	5/5/1989	Hail	19.05	0	0	0.00	0.00
Hays County	5/5/1989	Hail	38.10	0	0	0.00	0.00
Hays County	5/10/1989	Hail	19.05	0	0	0.00	0.00
Hays County	5/10/1989	Hail	38.10	0	0	0.00	0.00
Hays County	2/1/1990	Hail	38.10	0	0	0.00	0.00
Hays County	4/14/1991	Hail	19.05	0	0	0.00	0.00
Hays County	4/28/1991	Hail	19.05	0	0	0.00	0.00
Hays County	4/19/1992	Hail	38.10	0	0	0.00	0.00
Hays County	5/12/1992	Hail	44.45	0	0	0.00	0.00
Hays County	5/12/1992	Hail	19.05	0	0	0.00	0.00
Hays County	5/27/1992	Hail	19.05	0	0	0.00	0.00
Hays County	5/27/1992	Hail	25.40	0	0	0.00	0.00
Henly	11/1/1995	Hail	44.45	0	0	0.00	0.00
Henly	3/7/1998	Hail	19.05	0	0	0.00	0.00
Henly	2/10/2009	Hail	25.4	0	0	0.00	0.00
Driftwood	5/11/2011	Hail	44.45	0	0	0.00	0.00
Mt. Gainor	5/20/2011	Hail	19.05	0	0	0.00	0.00
Driftwood	5/20/2011	Hail	25.40	0	0	0.00	0.00
Driftwood	5/20/2011	Hail	25.40	0	0	0.00	0.00
Mt. Gainor	5/20/2011	Hail	25.40	0	0	0.00	0.00
Driftwood	5/20/2011	Hail	25.40	0	0	0.00	0.00
Driftwood	5/20/2011	Hail	22.35	0	0	0.00	0.00
Fitzhugh	1/24/2012	Hail	25.40	0	0	0.00	0.00
Fitzhugh	3/19/2013	Hail	38.10	0	0	0.00	0.00
Driftwood	4/27/2013	Hail	44.45	0	0	0.00	0.00
Driftwood	5/27/2014	Hail	25.40	0	0	0.00	0.00
Fitzhugh	5/27/2014	Hail	19.05	0	0	0.00	0.00
Driftwood	4/16/2015	Hail	22.35	0	0	0.00	0.00
Total				**0**	**0**	**$0.00**	**$0.00**

(National Oceanic and Atmospheric Administration Storm Event Database, 2016)

Hailstorms: Extent

The Tornado and Storm Research Organization (TORRO) created a hail extent index to measure hail called the Hailstorm Intensity Scale. According to the reported previous hail occurrences in the planning area, the maximum hail extent experienced is hail up to 3 inches or 76.20 millimeters in diameter, corresponding to a TORRO Hailstorm Intensity Scale classification of a "Super Hailstorm." Refer to Chapter 2, the Risk Assessment portion of the Hays County HMP Update, for hail extent scale descriptions.

Hailstorms: Probability

Figure UH.5 reports 3 hail days per year as a result of NLDN's nationwide analysis. Since this calculation is based off of national data, a more specific calculation based on local-level NOAA reports was utilized to

calculate probability. Based on 57 reported events in 49 years, a hail event occurs approximately once a year on average in Hays County. Since hail events can happen anywhere throughout the HMP update area, the City of Uhland's future probability is assumed to be similar to the surrounding County area. The City can expect a hail event approximately once every year on average in the future with hail up to 3 inches, or 76.20 millimeter in diameter, corresponding to a TORRO Hailstorm Intensity Scale classification of a "Super Hailstorm."

Number of Reported Events	Number of Years in Dataset	Probability
57	49	1.16

Hailstorms: Impact

Although there are no specific occurrences for which hailstorm damages are captured, based on the maximum hail extent experienced (76.20 mm) in the surrounding county area, the TORRO Hailstorm Intensity Scale (found in Chapter 2, the Risk Assessment portion of the Hays County HMP Update) indicates that impact can be expected to include any of the following:

- Varying degrees of damage to vegetation and crops
- Damage to plastic structures
- Varying degrees of damage to glass
- Paint and wood scored
- Vehicle bodywork damage
- Varying degrees of roof damage
- Varying degrees of risk of injuries
- Varying degrees of aircraft damage
- Brick walls pitted
- Risk of severe or even fatal injuries to persons caught in the open

Hailstorms: Vulnerability Summary

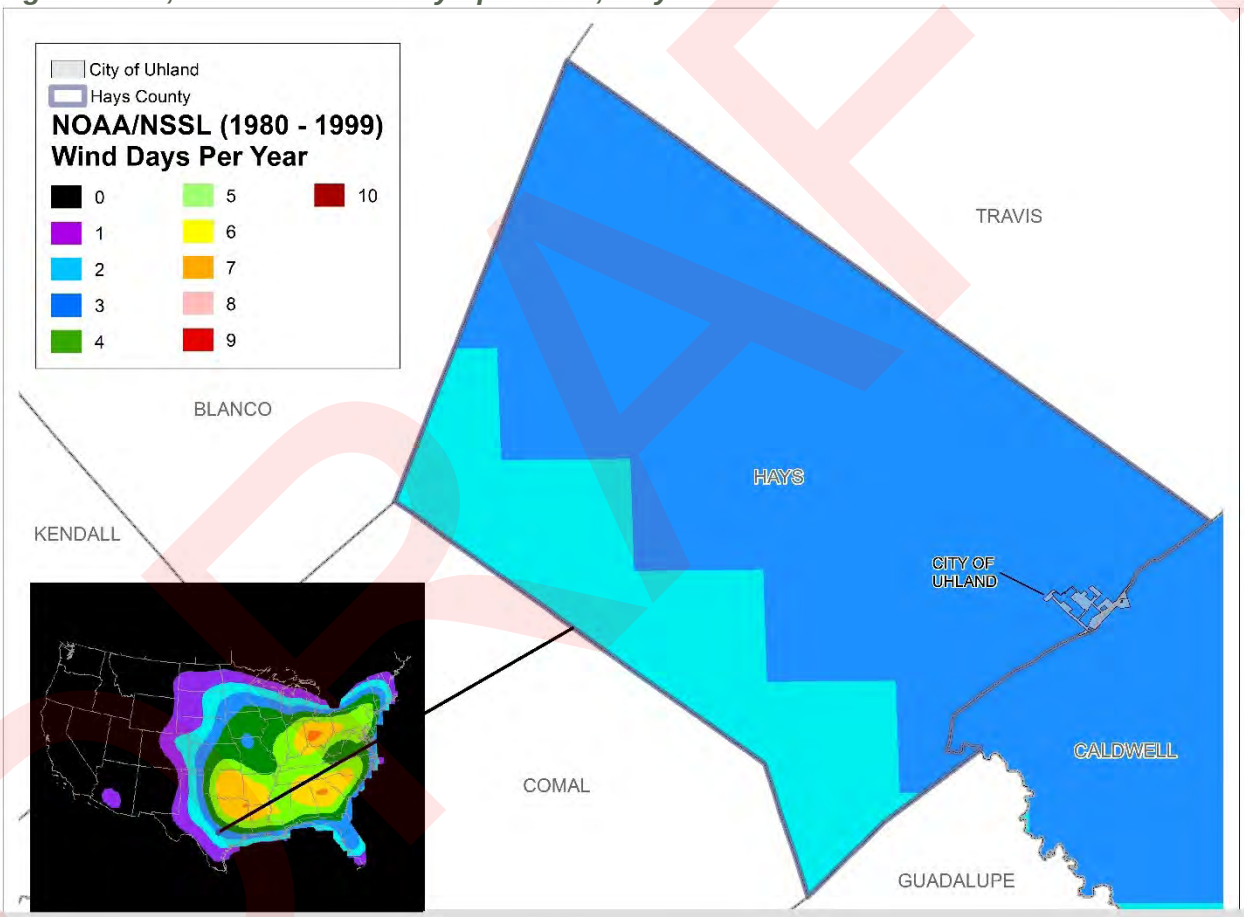
The City has not experienced significant past damage to public property due to hail. This could be attributed to the City's roofs being constructed of corrugated tin, which is less susceptible to hail damage than shingle roofs. However, damages could still occur. Additionally, there are several pieces of City equipment to include: a truck, a tractor and zero turn mower. These are kept in a barn that was formerly the fire department building.

Windstorms

Windstorms: Location

The entire extent of the City of Uhland is exposed to some degree of wind hazard. Since wind can occur at any location, wind events could be experienced anywhere within the planning area. NOAA's National Severe Storms Laboratory used historical data from 1980 to 1999 to estimate the daily probability of wind occurrences across the U.S., with gusts of at least 58 mph. Figure UH.6 shows the estimates for wind days determined from this analysis and the corresponding location of the City. The density of wind days per year in the map's legend indicates the probable number of wind days for each 25-square-mile cell within the contoured zone that can be expected per year. It should be noted that the density number does not indicate the number of events that can be expected within each cell, rather the average number of days per year with 1 or more events occurring within each cell.

Figure UH.6, National Wind Days per Year, City of Uhland



(National Severe Storms Laboratory, 2016)

Windstorms: Previous Occurrences

Since windstorms can occur at any location, wind events can be experienced anywhere within the planning area. While the City of Uhland has not had any previous occurrences reported through the NOAA Storm Events Database, if an event were to occur, it would be similar in size and magnitude to events within the surrounding county area. Table UH.20 lists the 38 wind events reported for Hays County and its unincorporated jurisdictions since the year 1974.

Fatality, injury and damage amounts are shown in Table UH.20, per the NOAA Storm Events Database. Community testimony indicates that these amounts do not reflect the most recent totals, however NOAA data is being used as the best source of information available for the record period.

Table UH.20, Reported Wind Events, Hays County

Location	Date	Type	Extent (knots)	Fatalities	Injuries	Property Damage	Crop Damage
Hays County	5/9/1974	Thunderstorm Wind	NA	0	0	0.00	0.00
Hays County	4/7/1975	Thunderstorm Wind	NA	0	0	0.00	0.00
Hays County	5/19/1975	Thunderstorm Wind	70 kts.	0	0	0.00	0.00
Hays County	5/31/1976	Thunderstorm Wind	NA	0	0	0.00	0.00
Hays County	5/31/1976	Thunderstorm Wind	NA	0	0	0.00	0.00
Hays County	5/11/1978	Thunderstorm Wind	NA	0	0	0.00	0.00
Hays County	5/29/1978	Thunderstorm Wind	NA	0	0	0.00	0.00
Hays County	4/18/1979	Thunderstorm Wind	52 kts.	0	0	0.00	0.00
Hays County	7/10/1979	Thunderstorm Wind	NA	0	0	0.00	0.00
Hays County	2/29/1980	Thunderstorm Wind	55 kts.	0	0	0.00	0.00
Hays County	5/13/1980	Thunderstorm Wind	52 kts.	0	0	0.00	0.00
Hays County	7/28/1980	Thunderstorm Wind	NA	0	0	0.00	0.00
Hays County	5/13/1982	Thunderstorm Wind	NA	0	0	0.00	0.00
Hays County	6/22/1982	Thunderstorm Wind	NA	0	0	0.00	0.00
Hays County	3/30/1983	Thunderstorm Wind	NA	0	0	0.00	0.00
Hays County	10/21/1984	Thunderstorm Wind	NA	0	0	0.00	0.00
Hays County	12/31/1984	Thunderstorm Wind	NA	0	0	0.00	0.00

Table UH.20, Reported Wind Events, Hays County (cont.)

Location	Date	Type	Extent (knots)	Fatalities	Injuries	Property Damage	Crop Damage
Hays County	5/8/1985	Thunderstorm Wind	NA	0	0	0.00	0.00
Hays County	6/12/1986	Thunderstorm Wind	NA	0	0	0.00	0.00
Hays County	5/5/1989	Thunderstorm Wind	NA	0	0	0.00	0.00
Hays County	5/20/1989	Thunderstorm Wind	NA	0	0	0.00	0.00
Hays County	4/26/1990	Thunderstorm Wind	NA	0	0	0.00	0.00
Hays County	4/26/1990	Thunderstorm Wind	NA	0	0	0.00	0.00
Hays County	5/18/1990	Thunderstorm Wind	NA	0	0	0.00	0.00
Hays County	4/7/1991	Thunderstorm Wind	NA	0	0	0.00	0.00
Hays County	5/27/1992	Thunderstorm Wind	53 kts.	0	0	0.00	0.00
Hays County	6/12/1992	Thunderstorm Wind	60 kts.	0	0	0.00	0.00
Hays County	6/12/1992	Thunderstorm Wind	NA	0	0	0.00	0.00
Hays County	9/3/1992	Thunderstorm Wind	50 kts.	0	0	0.00	0.00
Hays County	9/3/1992	Thunderstorm Wind	50 kts.	0	0	0.00	0.00
Countywide	3/8/1995	Thunderstorm Wind	55 kts.	0	0	0.00	0.00
Countywide	6/11/1995	Thunderstorm Wind	NA	0	0	0.00	3,000.00
Countywide	3/19/2002	Thunderstorm Wind	NA	0	0	100,000.00	100,000.00
Driftwood	4/14/2014	Thunderstorm Wind	50 kts. EG	0	0	0.00	0.00
Driftwood	6/12/2014	Thunderstorm Wind	61 kts. EG	0	0	0.00	0.00
Fitzhugh	6/12/2014	Thunderstorm Wind	61 kts. EG	0	0	0.00	0.00
Fitzhugh	6/12/2014	Thunderstorm Wind	56 kts. EG	0	0	0.00	0.00
Mt. Gainor	4/30/2016	Thunderstorm Wind	61 kts. EG	0	0	0.00	0.00
Total				**0**	**0**	**$100,000.00**	**$103,000.00**

NA - No data available
EG = Estimated Gust

(National Oceanic and Atmospheric Administration Storm Event Database, 2016)

Windstorms: Extent

Wind is measured by the Beaufort Wind Scale that relates wind speed to observed conditions on land and sea. According to the reported previous windstorm occurrences in the planning area, the maximum wind extent experienced was 70 knots windstorm occurrences in the jurisdiction, the maximum wind extent experienced was 70 knots (Beaufort Wind Classification: Hurricane). Refer to Chapter 2, the Risk Assessment portion of the Hays County HMP Update, for a description of wind extent scales.

Windstorms: Probability

Figure UH.6 reports 3 wind days per year as a result of NLDN's nationwide analysis. Since this calculation is based on national data, a more specific calculation based on local-level NOAA reports was utilized to calculate probability. Based on 38 reported events in 42 years, a wind event occurs approximately once every year on average in Hays County. Since wind events can happen anywhere throughout the HMP planning area, the City of Uhland's future probability is assumed to be similar to the surrounding County area. In the future, the City can expect a wind event approximately once every year on average of up to 70 knots (Beaufort Wind Classification: Hurricane).

Number of Reported Events	Number of Years in Dataset	Probability
38	42	0.90

Windstorms: Impact

Although there were no reports specifically for the City of Uhland, data available from the Texas Department of Transportation's Crash Records Information System shows that between the years of 2010 and 2017, rural Hays County experienced 5 crashes related to severe crosswind weather conditions (see Table UH.21). There were no injuries reported from these crash events. Since wind events occur on a regional scale, it is assumed that weather related crashes in the surrounding county area would be similar to those experienced in these conditions within Uhland.

Table UH.21, Windstorms, Vehicle Accidents, Hays County

City	Fatality	Incapacitating Injury	Non-Incapacitating	Possible Injury	Crash Year	Street Name	Surface Condition	Weather Condition
Rural Hays County	0	0	0	0	2010	LIME KILN RD	Dry	Severe Crosswinds
Rural Hays County	0	0	0	0	2014	IH0035	Dry	Severe Crosswinds
Rural Hays County	0	0	0	0	2014	IH0035	Dry	Severe Crosswinds
Rural Hays County	0	0	0	0	2014	IH0035	Dry	Severe Crosswinds
Rural Hays County	0	0	0	0	2017	US0290	Wet	Severe Crosswinds

(Texas Department of Transportation, 2017)

Windstorms: Vulnerability Summary

Uhland has previously experienced debris accumulation in roadways during past windstorm events. According to community testimony ,a storm of straight line winds produced citywide damage around 2008. No qualitative data was available for this incident, therefore it was not included in the risk assessment probability and analytic analysis. Such incidents could cause impact on the ability of public safety officials being able to access emergency calls.

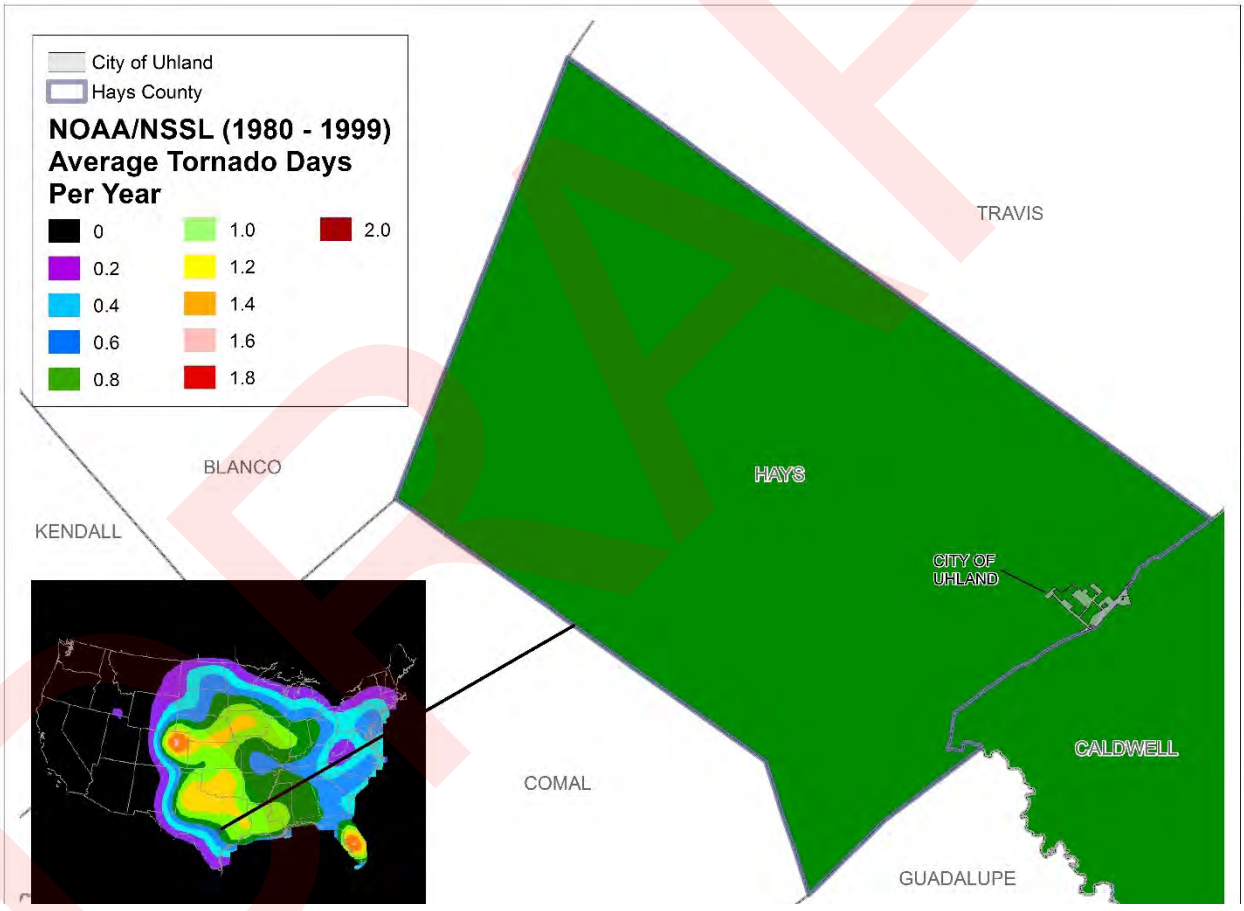
In addition, citizens swerving to avoid debris in the road could experience damage to their vehicles or physical harm.

Tornadoes

Tornadoes: Location

The entire extent of the City of Uhland is exposed to some degree of tornado hazard. Since tornadoes can occur at any location, tornado events can be experienced anywhere within the planning area. NOAA's National Severe Storms Laboratory used historical data from 1980 to 1999 to estimate the daily probability of tornado occurrences across the U.S., regardless of tornado magnitude. Figure UH.7 shows the average number of tornado days resulting from this analysis and the respective location of the City. The density of average tornado days per year in the map's legend indicates the probable number of tornado days for each 25-square-mile cell within the contoured zone that can be expected per year. This density number does not indicate the number of events that can be expected within each cell, rather the average number of days per year with 1 or more events occurring within each cell.

Figure UH.7, National Tornado Days Per Year, City of Uhland



(National Severe Storms Laboratory, 2016)

Tornadoes: Previous Occurrences

Since tornadoes can occur at any location, tornado events can be experienced anywhere within the planning area. While the City of Uhland has not had any previous occurrences reported through the NOAA Storm Events Database, if an event were to occur, the event would be similar in size and magnitude to events within the surrounding County area. Table UH.22 lists the 16 tornado events reported for Hays County and its unincorporated jurisdictions since the year 1953.

Fatality, injury and damage amounts are shown in Table UH.22, per the NOAA Storm Events Database. Community testimony indicates that these amounts do not reflect the most recent totals, however NOAA data is being used as the best source of information available for the record period.

Table UH.22, Tornado Events, Hays County

Location	Date	Type	Magnitude (mm)	Fatalities	Injuries	Property Damage	Crop Damage
Hays County	4/28/1953	Tornado	F3	1	5	250,000.00	0.00
Hays County	4/30/1954	Tornado	F1	0	0	250,000.00	0.00
Hays County	5/2/1958	Tornado	F1	0	0	30.00	0.00
Hays County	11/12/1961	Tornado	F2	0	0	2,500.00	0.00
Hays County	9/20/1967	Tornado	NA	0	0	250.00	0.00
Hays County	9/20/1967	Tornado	NA	0	0	30.00	0.00
Hays County	5/10/1975	Tornado	F1	0	0	25,000.00	0.00
Hays County	3/30/1976	Tornado	F2	0	0	25,000.00	0.00
Hays County	3/30/1976	Tornado	F2	0	1	250,000.00	0.00
Hays County	8/10/1980	Tornado	F2	0	0	25,000,000.00	0.00
Hays County	4/22/1985	Tornado	F2	0	0	250,000.00	0.00
Hays County	8/22/1991	Tornado	F1	0	0	2,500.00	0.00
Countywide	5/13/1994	Tornado	F0	0	0	500.00	500.00
Henly	11/15/2001	Tornado	F0	0	1	50,000.00	0.00
Driftwood	10/8/2002	Tornado	F0	0	0	70,000.00	0.00
M. Gainor	5/23/2015	Tornado	EF0	0	0	0.00	0.00
Total				1	7	$26,175,810.00	$500.00

(National Oceanic and Atmospheric Administration Storm Event Database, 2016)

Tornadoes: Extent

Tornadoes are measured by severity on the Enhanced Fujita Scale, with a range from 0-6. According to the reported previous tornado occurrences in the planning area, the maximum tornado extent experienced was a category F3. Refer to Chapter 2, the Risk Assessment portion of the Hays County HMP Update for a description of tornado extent scales, Fujita (F) Scale and Operational Enhanced Fujita (EF) Scale.

Tornadoes: Probability

Figure UH.7 reports 0.8 tornado days per year as a result of NLDN's nationwide analysis. Since this calculation is based on national data, a more specific calculation based on local-level NOAA reports was utilized to calculate probability. Based on 16 reported events in 63 years, a tornado event occurs approximately every 4 years on average in Hays County. Since tornado events can happen anywhere throughout the HMP planning area, the City of Uhland's future probability is assumed to be similar to the surrounding County area. The City can expect a tornado event approximately once every 4 years on average in the future with up to an F3 magnitude.

Number of Reported Events	Number of Years in Dataset	Probability
16	63	0.25

Tornadoes: Impact

There is not specific event data available for the City of Uhland, from which impacts would be calculated. However, it can be assumed that impacts would be similar to those that the surrounding County area experiences.

Hays County has experienced tornadoes between F0 and F3 levels in the past. If similar events were to happen in the future in the City, the type of impacts that the planning area could expect associated with those magnitudes would include (from least to greatest severity):

- Light Damage - Broken branches; shallow rooted trees pushed over; some chimney damage.
- Moderate Damage - Surface damage to roofs; mobile homes pushed off foundation; moving vehicles pushed off the road.
- Significant Damage - Frame houses have roof torn off; mobile homes completely destroyed; train boxcars overturned; large trees snapped or uprooted; smaller debris turned into missiles.
- Severe Damage - Roofs completely torn off well-constructed building, along with some walls; majority of trees uprooted; trains overturned, vehicles lifted off the ground.

(Tornado Facts, 2016)

Additional impacts from tornado events could include downed utility poles, communication towers, street signals, and debris created from residential and commercial property.

Critical infrastructure could be disrupted, resulting in periods of impact to service due to the lack of back-up utility resources. See Lightning: Impact section within this annex for more information on utility interruption.

Tornadoes: Vulnerability Summary

Impacts experienced from tornadoes have been practically non-existent, with no damages being reported. Uhland's primary vulnerabilities are associated with the high presence of manufactured homes and lack of a community tornado warning system. Currently, the Uhland Community Center can be used as a shelter option, but its application will be limited by the lack of a tornado warning system or mass notification tool.

Expansive Soils

Expansive: Soils Location

Areas within the City of Uhland with structures that are underlain by soils containing clays with swelling potential are most affected by expansive soils. Figure 2.4 within Chapter 2 (the Risk Assessment portion of the Hays County HMP Update) shows the location of expansive soil areas for the City. The planning area has the same expansive soil composition throughout the entire area.

Expansive Soils: Previous Occurrences

There was no documentation of site-specific past events of structural damage due to expansive soils from state or national datasets found.

Expansive soils cannot be documented as a time-specific event, except when they lead to structural and infrastructure damage. There are no specific damage reports or historical records of events in the City, other than the community testimony that was offered without data. These accounts can be used for vulnerability statement purposes, however the lack of data for these instances does not allow for the incorporation of this information for the extent and probability determinations.

Expansive Soils: Extent

According to the USGS Expansive Soils Regions, Figure 2.4 in Chapter 2 (the Risk Assessment portion of the Hays County HMP Update), over 50% of the City of Uhland is underlain by soils with abundant clays, which have high swelling potential.

Expansive Soils: Probability

When using State and Federal datasets as the basis for calculations, the probability of a future event is low, (unlikely in next 10 years) for the planning area. However, local community testimony indicates that the instances of expansive soils are frequent and that the effects are evident throughout the community. With this in mind, the probability of events occurring within the planning area is more accurately reported as high (likely in next 10 years).

Expansive Soils: Impact

According to community testimony, large areas within the City of Uhland have expansive soils that have affected structures. In the case of some manufactured and mobile homes, the expansion has previously created cracking in the base pads that the structures were placed on. In some cases, it has even caused the beginning of separation of the structure at the seams, such as in the case of a doublewide. The City of Uhland has acted rapidly and aggressively to address the issue of expansive soils and has taken measures to mitigate against this impact.

Expansive Soils: Vulnerability Summary

In response to the vulnerability of manufactured and mobile homes, the City of Uhland passed an ordinance that requires an engineered concrete foundation be constructed for any mobile or manufactured homes to be built within the City limits. This greatly decreases the vulnerability for these homes.

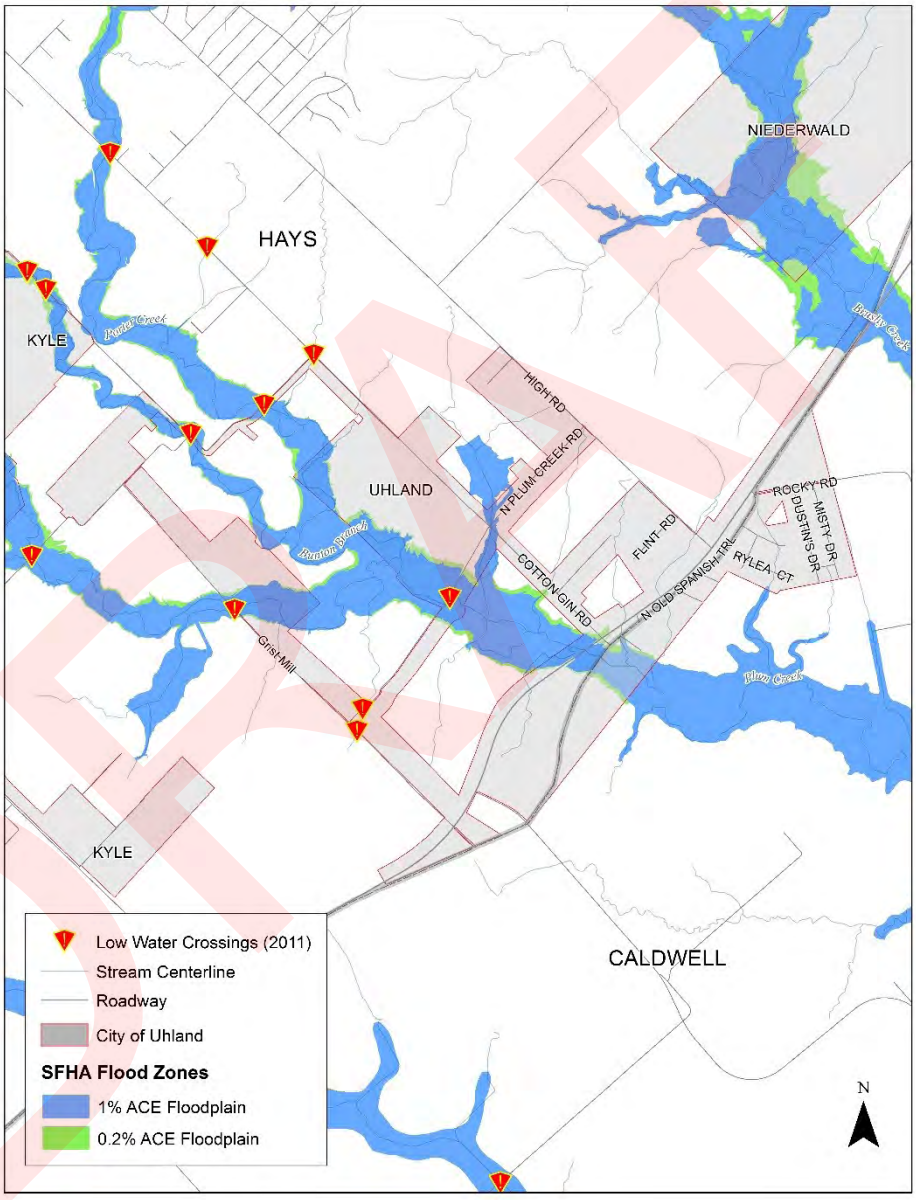
As the community looks to continue to grow in both residential and industrial markets, they are working diligently to ensure that they adopt safe growth measures and processes.

Floods

Floods: Location

The location of low water crossings as well as the 1% (100 year) and 0.2% (500 year) Annual Chance Event (ACE) floodplains for the City of Uhland are shown in Figure UH.8 and are the locations within the planning area that are most affected by flooding. This figure is based upon newly developed hydrologic and hydraulic analysis and is the best information available to date. Table UH.23 provides the total acreage in the jurisdiction that is located in the 1% and 0.2% floodplains.

Figure UH.8, Special Flood Hazard Areas and Low Water Crossings, City of Uhland



(Texas Natural Resources Information System, 2011)

Table UH.23, City of Uhland Floodplain Acreage

Jurisdiction	100yr (1%) Floodplain Acres (Includes Floodway)	500yr (0.2%) Floodplain Acres (Includes 100yr)
City of Uhland	190	216

Floods: Previous Occurrences

Hays County was included in 3 Federal disaster declarations between 2013 and 2015, all related to flooding. Although there were no flood events reported specifically for the City of Uhland in the NOAA Storm Events Database, Table UH.24 lists the 69 documented events reported for Hays County and its unincorporated jurisdictions from year 1997 to 2016. Due to the size and extent of some flood occurrences as well as the regional or zonal nature of reports in the NOAA Storm Events Database, the City of Uhland may have been affected by many of the events that were reported for the surrounding areas.

Fatality, injury and damage amounts are shown in Table UH.24, per the NOAA Storm Events Database. Community testimony indicates that these amounts do not reflect the most recent totals, however NOAA data is being used as the best source of information available for the record period.

Table UH.24, Flood Events, Hays County

Location	Date	Type	Fatalities	Injuries	Property Damage	Crop Damage
Countywide	5/23/1997	Flash Flood	0	0	10,000.00	0.00
Countywide	6/6/1997	Flash Flood	0	0	10,000.00	0.00
Countywide	6/7/1997	Flash Flood	0	0	15,000.00	0.00
Countywide	6/8/1997	Flash Flood	2	7	2,500,000.00	50,000.00
Countywide	6/21/1997	Flash Flood	0	0	5,000.00	0.00
Countywide	6/22/1997	Flash Flood	0	0	50,000.00	50,000.00
Countywide	2/21/1998	Flash Flood	0	0	5,000.00	0.00
Countywide	7/3/1998	Flash Flood	0	0	20,000.00	0.00
Countywide	8/22/1998	Flash Flood	0	0	20,000.00	10,000.00
Countywide	8/23/1998	Flash Flood	0	0	10,000.00	0.00
Countywide	10/17/1998	Flash Flood	0	100	500,000.00	50,000.00
HAYS (ZONE)	10/17/1998	Flood	0	25	4,000,000.00	50,000.00
HAYS (ZONE)	10/17/1998	Flood	0	25	4,000,000.00	50,000.00
Countywide	6/21/1999	Flash Flood	0	0	3,000.00	0.00
Countywide	6/9/2000	Flash Flood	0	0	15,000.00	0.00
Countywide	11/2/2000	Flash Flood	0	0	20,000.00	0.00
HAYS (ZONE)	11/4/2000	Flood	0	0	0.00	0.00
North Portion	8/26/2001	Flash Flood	0	0	10,000.00	0.00
Countywide	8/31/2001	Flash Flood	0	0	20,000.00	0.00
Countywide	8/31/2001	Flash Flood	0	0	30,000.00	20,000.00
Countywide	11/15/2001	Flash Flood	0	20	200,000.00	50,000.00
HAYS (ZONE)	11/15/2001	Flood	0	0	0.00	0.00
West Portion	6/30/2002	Flash Flood	0	0	10,000.00	0.00
HAYS (ZONE)	7/1/2002	Flood	0	0	0.00	0.00
South Portion	7/1/2002	Flash Flood	0	0	0.00	0.00
Countywide	7/2/2002	Flash Flood	0	0	0.00	0.00
West Portion	7/3/2002	Flash Flood	0	0	0.00	0.00
West Portion	7/5/2002	Flash Flood	0	0	0.00	0.00

Table UH.24, Flood Events, Hays County (cont.)

Location	Date	Type	Fatalities	Injuries	Property Damage	Crop Damage
South Portion	9/19/2002	Flash Flood	0	0	0.00	0.00
South Portion	10/24/2002	Flash Flood	0	0	0.00	0.00
Countywide	11/4/2002	Flash Flood	0	0	0.00	0.00
Countywide	2/20/2003	Flash Flood	0	0	10,000.00	0.00
West Portion	6/13/2003	Flash Flood	0	0	5,000.00	0.00
South Portion	9/11/2003	Flash Flood	0	0	3,000.00	0.00
Northwest Portion	1/16/2004	Flash Flood	0	0	3,000.00	0.00
East Portion	6/5/2004	Flash Flood	0	0	0.00	0.00
Countywide	6/9/2004	Flash Flood	0	0	350,000.00	0.00
Driftwood	6/26/2004	Flash Flood	0	0	0.00	0.00
West Portion	6/27/2004	Flash Flood	0	0	0.00	0.00
West Portion	6/28/2004	Flash Flood	0	0	0.00	0.00
Countywide	6/29/2004	Flash Flood	0	0	0.00	0.00
South Portion	6/30/2004	Flash Flood	0	0	0.00	0.00
HAYS (ZONE)	6/30/2004	Flood	0	0	0.00	0.00
West Portion	7/25/2004	Flash Flood	0	0	0.00	0.00
Countywide	10/2/2004	Flash Flood	0	0	0.00	0.00
Countywide	10/23/2004	Flash Flood	0	0	0.00	0.00
HAYS (ZONE)	10/23/2004	Flood	0	0	0.00	0.00
HAYS (ZONE)	10/24/2004	Flood	0	0	0.00	0.00
Countywide	11/16/2004	Flash Flood	0	0	0.00	0.00
HAYS (ZONE)	11/17/2004	Flood	0	0	0.00	0.00
Countywide	11/21/2004	Flash Flood	0	0	0.00	0.00
Countywide	11/22/2004	Flash Flood	0	0	0.00	0.00
Countywide	11/22/2004	Flash Flood	0	0	0.00	0.00
Southeast Portion	11/23/2004	Flash Flood	0	0	0.00	0.00
South Portion	5/6/2006	Flash Flood	0	0	0.00	0.00
Henly	3/30/2007	Flash Flood	0	0	0.00	0.00
Driftwood	3/30/2007	Flood	0	0	0.00	0.00
Henly	5/2/2007	Flash Flood	0	0	0.00	0.00
Henly	7/2/2007	Flash Flood	0	0	0.00	0.00
Henly	5/17/2010	Flash Flood	0	0	0.00	0.00
Driftwood	9/7/2010	Flash Flood	0	0	0.00	0.00
Driftwood	5/10/2012	Flash Flood	0	0	0.00	0.00
Driftwood	5/11/2012	Flash Flood	0	0	0.00	0.00
Fitzhugh	5/17/2015	Flash Flood	0	0	0.00	0.00
Henly	5/30/2015	Flash Flood	0	0	0.00	0.00
Fitzhugh	6/14/2015	Flash Flood	0	0	0.00	0.00
Driftwood	10/30/2015	Flash Flood	0	0	10,000,000.00	0.00
Fitzhugh	5/19/2016	Flash Flood	0	0	0.00	0.00

Table UH.24, Flood Events, Hays County (cont.)

Location	Date	Type	Fatalities	Injuries	Property Damage	Crop Damage
Driftwood	8/16/2016	Flash Flood	0	0	0.00	0.00
Totals			2	177	$21,824,000.00	$330,000.00

(National Oceanic and Atmospheric Administration Storm Event Database, 2016)

Floods Significant Past Events

Hays County experienced 3 disaster declarations discussed under Floods: Previous Occurrences. Refer to the *Floods: Significant Past Events* section within the Hays County Annex for narratives discussing these events.

Floods: Extent

Flood extent is described by a combination of ground elevation, river heights, 100 year Water Surface Elevations (WSE's) and HAZUS depth grids. An example of flooding within the jurisdiction is a community along Plum Creek, as this community is exposed to some of the greatest extent of a flood event. This area has an approximate overbank ground elevation of 545 feet with an intersecting 100 year WSE of 547 feet. For a 100 year event, water depth of approximately 2 feet can be expected within this area. A further analysis of the total creek height is described below.

With Plum Creek having an approximate normal in-channel elevation of 537 feet, (per Light Detection and Ranging [LiDAR] data) and an intersecting 100 year WSE of approximately of 847 feet, flood depths would be 10 feet. Such an event is categorized as an "Action Stage." Refer to the Water Depth Extent Scale in Chapter 2 (the Risk Assessment portion of the Hays County HMP Update).

Floods: Probability

Probability has been calculated on the basis of NOAA reported events, as a standard, consistent calculation method for all hazards profiled with the Hays County HMP. Based on 69 reported events in

Past flooding events in Uhland, Texas

19 years, a flood event occurs approximately 3 to 4 times per year on average in Hays County and its unincorporated jurisdictions. Due to the size and extent of some flood occurrences, as well as the regional or zonal nature of reports in the NOAA Storm Events Database, the City of Uhland's future probability is assumed to be similar to the surrounding county area. The City can expect a flood event approximately 3 to 4 times per year on average in the future with flood water depths in the category of "Action Stage."

Number of Reported Events	Number of Years in Dataset	Probability
69	19	3.63

Floods: Impact

The following describes the inventory counts and building replacement values for the jurisdictional area.

Uhland Building Counts			
Residential	Commercial	Other	Total
158	5	5	168

Uhland Building Replacement Value		
Building ($)	Content ($)	Total ($)
41,562,692	22,534,750	64,097,442

A Probabilistic 100-year Return Period HAZUS-MH 3.2 analysis was run on the participating communities. HAZUS results are calculated to census blocks. This analysis utilized the best available LiDAR (COA 2012 and CAPCOG 2008) and Depth Grids. These blocks where then intersected with the participating community to run a weighted area analysis to get jurisdictional results. The following describes results of the 100-year Return (1% Annual Chance Event) weighted area analysis.

Past flooding events in Uhland, Texas

HAZUS-MH Results

General Building Stock Damage

HAZUS estimates that about 1 building will be at least moderately damaged in Uhland. "At least moderately damaged" is defined by HAZUS as greater than 10% damage to a building. For this scenario, only residential buildings were at least moderately damaged.

Residential Buildings	Commercial Buildings	Other Buildings	Total Buildings
1	0	0	0

Building-Related Losses

Exposed Value is the total building and content values for structures within the community. The exposed value for the community is $64,097,442. The total building related losses were $926,000 for this scenario. This represents 1.4% of the total replacement value of the community. Loss values are divided into building and content loss dollars.

Building Loss ($)	Content Loss ($)	Total Loss ($)
518,000	408,000	926,000

Essential Facility Damage

HAZUS does not estimate any critical facilities or infrastructure to be out of service for more than 1 day on the day of the event. Additionally, the model estimates that 100% of available hospital beds are ready for use by patients already in the hospital and for those injured by an event.

Debris Generation

HAZUS estimates the amount of debris that will be generated in this scenario at a total of 194 tons. If the building debris tonnage is converted to an estimated number of truckloads, it will require 8 truckloads (with 1 to 25 tons per truck) to remove the building debris generated.

Shelter Requirements

HAZUS estimates the number of households that are expected to be displaced from their homes due to the flood and the associated potential evacuation. HAZUS also estimates those people displaced that will require accommodations in temporary public shelters. The model estimates 29 people will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 3 people will seek temporary shelter in public shelters.

Floods Vulnerability Summary

According to community testimony, floods have caused great damage in the past. At one point, floodwaters washed out the Plum Creek Bridge and it cost $379,000 to fix the bridge as part of the community cost share. South Plum Creek is known to flood for days and prevent residents from exiting the community. There are 3 roads that lead out of the community including Dairy Road, Cotton Gin, and Highway 21. If these roads are to flood, residents are unable to exit and first responders are unable to enter to respond to resident calls. When flood funding is considered, there is always a limitation to what the community can pursue in grants because they do not have cost-share funding available to meet local match.

National Flood Insurance Program Repetitive Loss (RL)

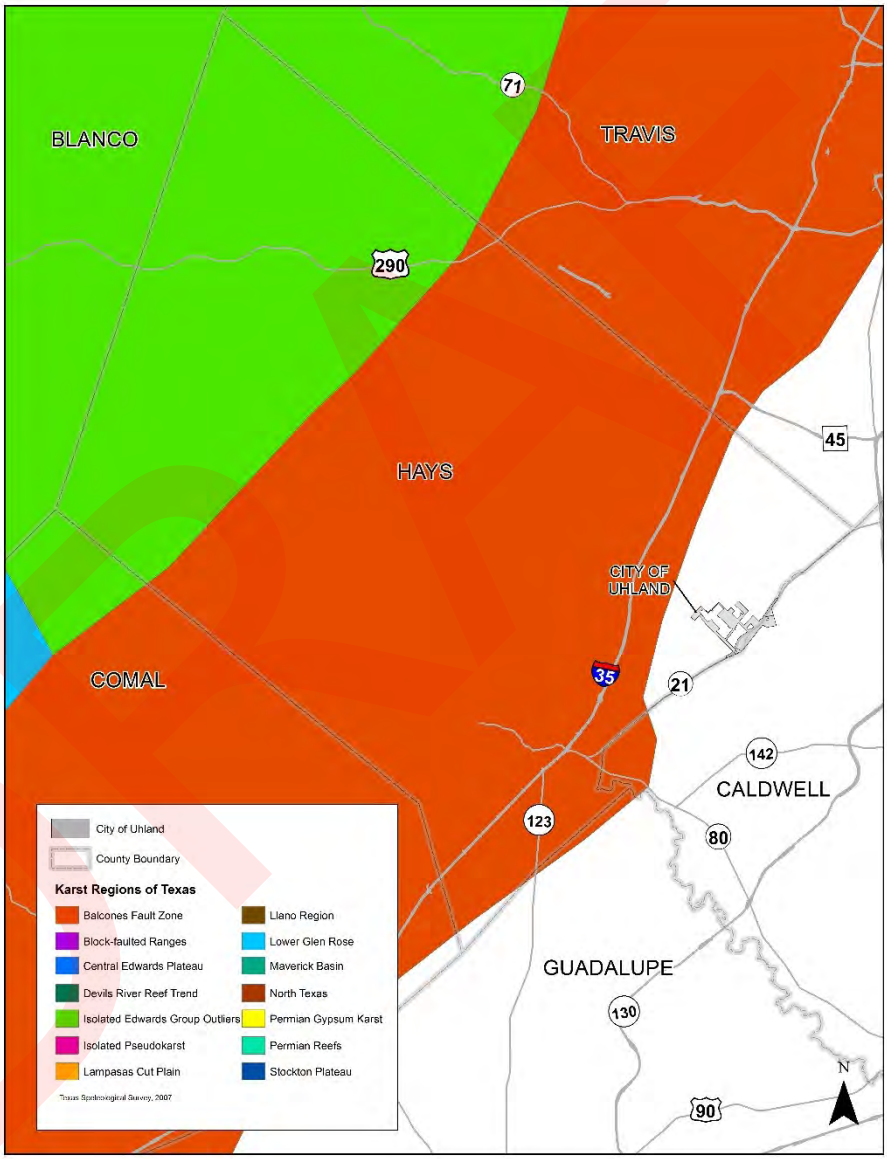
The City of Uhland is a current participant in the National Flood Insurance Program (NFIP). As of September of 2016, the City does not have any listed RL or SRL properties according to FEMA RL/SRL data.

Land Subsidence

Land Subsidence: Location

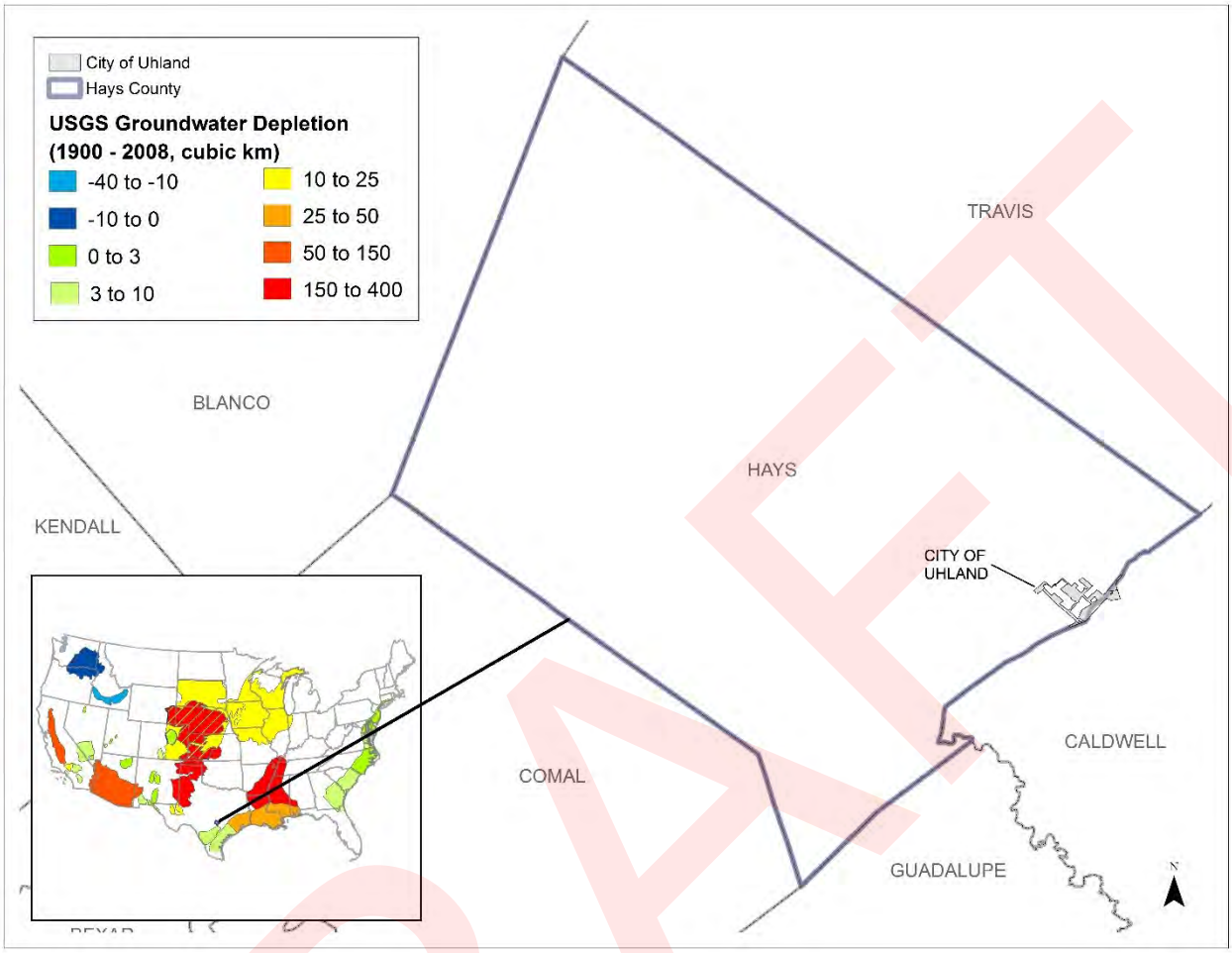
Karst features are a landscape formed from the dissolution of soluble rocks, such as limestone, that can cause sinkholes and caves. Locations within Uhland that are underlain by karst features or that are experiencing extensive groundwater depletion, are most at risk. Figures UH.9 and UH.10 illustrate the City's location in conjunction with the karst regions of Texas and USGS Groundwater Depletion Zones. As seen in these figures, the City of Uhland is not within a karst region or documented USGS groundwater depletion area. Therefore, if a land subsidence event were to occur, however unlikely, the entire jurisdiction is equally at risk.

Figure UH.9, Karst Regions of Texas, City of Uhland



(Texas Speleological Survey, 2007)

Figure UH.10, Groundwater Depletion Zones, City of Uhland



(Groundwater depletion in the United States (1900–2008), 2013)

Land Subsidence: Previous Occurrences

There were no sinkhole or land subsidence events documented specifically for the City of Uhland.

However, land subsidence can occur in the Central Texas Hill County Area. Recently, a small event occurred in Travis County (located ~ 18 miles northwest of the study area) when a 25-foot-wide and 12-foot-deep sinkhole opened up at a Costco parking lot in Austin, Texas (Mashhood, 2012). The area could potentially experience an event of similar depths, widths, and impact as the event described above, but conditions would vary depending on the location and geography of the event. Since future events cannot be predicted, the estimated extents previously described are hypothetical.

Land Subsidence: Extent

Due to the lack of reported occurrences, there is not sufficient data to determine the maximum extent of land subsidence for the planning area. However, if a future event were to occur, it could be assumed it would be similar in extent to previous events in the region. This includes the aforementioned sinkhole in Austin, Texas measuring 25-feet wide and 12-feet deep.

Land Subsidence: Probability

The occurrence of subsidence is an ongoing process resulting from natural and human-induced causes. As seen in Figure UH.9, the City of Uhland is not located within a known karst region and has no documented history of subsidence. Therefore, the probability of a future land subsidence event for the City is low (unlikely in next 10 years). If a future event were to occur, however unlikely, it can be assumed would be similar in extent to previous events in the region. This includes the previously mentioned sinkhole documented in Austin, Texas.

Land Subsidence: Impact

When considering the impact of land subsidence, it is important to note that many areas within the karst zone have structures and infrastructure and could be affected by a collapsed area. However, the City of Uhland is not in a karst zone, but could still be affected by a sinkhole or land collapse event as a result of unnatural events. For example, water main breaks can erode the subsoil and cause the ground above to collapse. This could cause damage to the structures above or near the collapse area.

Land Subsidence: Vulnerability Summary

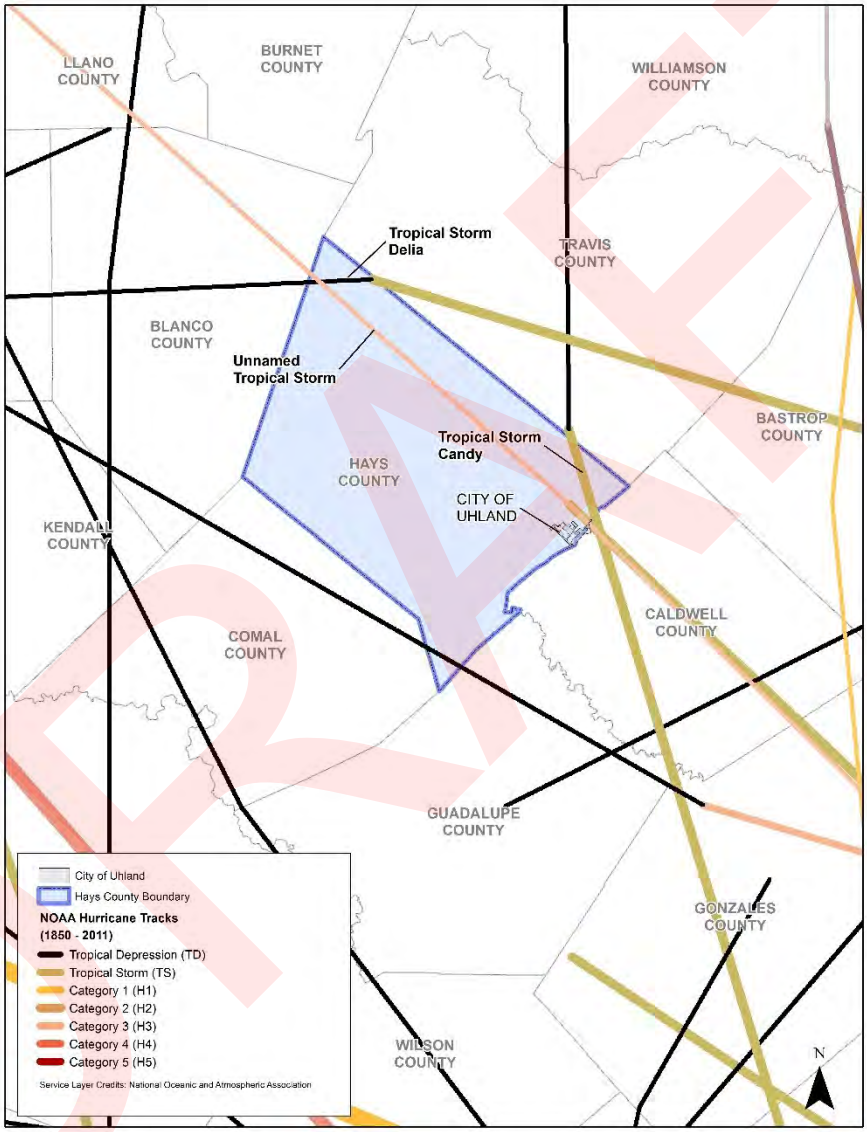
Although Uhland is not in a karst zone, community testimony indicates a portion of the road near High Road at Camino Real is beginning to experience sinking. The sinking is related to drainage associated with the local school district but could also be an indicator of subsidence in the area. From this testimony, it may be concluded that other portions are at risk for sinking in the future.

Hurricanes/Tropical Storms

Hurricanes/Tropical Storms: Location

Due to the regional nature of a hurricane or tropical storm event, the entire extent of the City of Uhland is equally exposed to a hurricane or tropical storm. Figure UH.11 illustrates the location of the planning area with historical hurricane and tropical storm paths documented by NOAA's Hurricane Tracker from 1850 to 2011.

Figure UH.11, Historical Hurricane/Tropical Storm Paths, City of Uhland



(National Oceanic and Atmospheric Administration, 2016)

Hurricanes/Tropical Storms: Previous Occurrences

Previous events are listed below from NOAA Storm Events Database for Tropical Storm Hermine and NOAA Hurricane Tracker for all other events. By the time most hurricanes reach the County, they are tropical storms, depressions or thunderstorms. Because hurricane and tropical storm events occur on a regional scale, all events listed for Hays County have been included as they would impact the City of Uhland.

July 13 to July 22, 1909 – An unnamed storm made landfall near Freeport, as a Category 3 Hurricane. This storm impacted Hays County and participating communities as a tropical depression with wind speeds up to 30 knots. No significant damages, injuries, or fatalities were reported for the City.

June 22 to June 26, 1968 – Tropical Storm Candy made landfall near Port Aransas. This storm impacted Hays County and participating communities as a tropical storm with wind speeds slowing to 30 knots as a tropical depression just after leaving the County. No significant damages, injuries, or fatalities were reported for the jurisdiction.

September 1 to September 7, 1973 – Tropical Storm Delia made landfall near the border of Brazoria and Matagorda Counties. This storm impacted Hays County and participating communities as a tropical storm with wind speeds slowing to 30 knots as a tropical depression just after leaving the County. No significant damages, injuries, or fatalities were reported for the HMP update area.

September 6 to September 8, 2010 – According to the NOAA Storm Events Database, Tropical Storm Hermine made landfall near the Texas/Mexico border on the night of September 6. South Central Texas was hit very hard with widespread rains of 8 to 12 inches across much of the IH 35 corridor from Austin down to San Antonio.

Hurricanes/Tropical Storms: Extent

The Saffir-Simpson Scale measures pressure, wind speed, and storm surge in 5 categories. According to the reported previous hurricane occurrences in the jurisdiction, the maximum hurricane extent experienced was categorized as a Tropical Storm. Refer to Chapter 2, the Risk Assessment portion of the Hays County HMP Update, for a description of storm extents.

Hurricanes/Tropical Storms: Probability

Based on 4 reported events in 107 years, a hurricane or tropical storm event occurs approximately every 27 years on average in Hays County. Since hurricane and tropical storm events can happen anywhere throughout the HMP planning area, the City of Uhland's future probability is assumed to be similar to the surrounding County area. In the future, the City can expect an event approximately once every 27 years on average, of up to a magnitude of a Tropical Storm based on historical extents for the planning area.

Number of Events Reported	Number of Years in Dataset	Probability	100yr Max Wind Speed (mph)
4	107	0.04	76

Hurricanes/Tropical Storms Impact

A Probabilistic 100-year Return Period HAZUS-MH 3.2 analysis was run on the participating communities. The following describes the results of this analysis.

HAZUS-MH Results

General Building Stock Damage

The total property damage losses were $143,373. The majority of damage can be expected to impact residential areas (98%). The remaining damages (2%) are for commercial, industrial, agricultural and religious buildings. While some building damage is experienced, it is estimated that no buildings will be completely destroyed or experience severe damage. Exposed Value is the total building and content values for structures within the community. Loss values are divided separately for building and content loss in dollars.

Exposed Value ($) (Building + Content)	Building Loss ($)	Content Loss ($)	Total Loss ($)
64,097,442	143,373	206	143,578

Essential Facility Damage

HAZUS does not estimate any critical facilities or infrastructure to be out of service for more than 1 day on the day of the event. Additionally, the model estimates that 100% of available hospital beds are ready for use by patients already in the hospital and for those injured by the hurricane.

Debris Generation

HAZUS estimates the amount of debris that will be generated by the hurricane at a total of 11 tons. Of the total amount, brick/wood comprises 100% of the total. If the building debris tonnage is converted to an estimated number of truckloads, it will require 1 truckload (with 1 to 25 tons per truck) to remove the building debris generated by the hurricane.

Shelter Requirements

HAZUS estimates the number of households that are expected to be displaced from their homes due to the hurricane and the number of displaced people that will require accommodations in temporary public shelters. The model estimates no households to be displaced due to the hurricane. While there is an estimation of over $143,000 in property damages expected, it is aforementioned that “no buildings would be completely destroyed or experience severe damage.” Residents would likely remain in their homes as damages were repaired, therefore no temporary shelter is needed.

Hurricanes/Tropical Storms: Vulnerability Summary

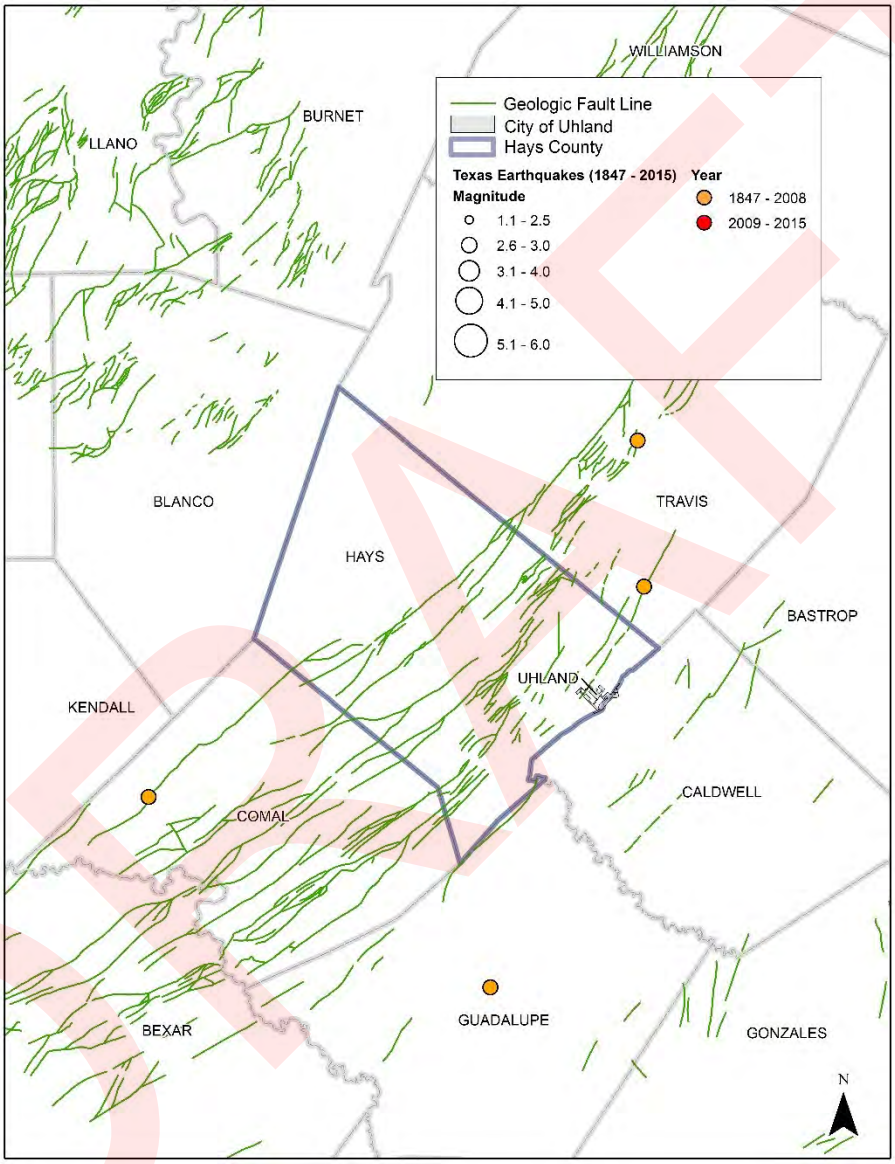
Similar to the impacts of windstorms, hailstorms, and lightning, Uhland can expect to be impacted with debris and possible interruptions of critical infrastructure. In addition, the community’s proximity to IH35 could lead to traffic delays caused by major evacuation efforts if the highway is used as an evacuation route for coastal residents.

Earthquakes

Earthquakes: Location

Locations within proximity to fault lines are typically the areas most at risk for earthquakes. Figure UH.12 shows USGS documented fault lines and the locations of earthquakes from 1847 to 2015 in relation to the City of Uhland.

Figure UH.12, Texas Earthquakes, 1847 – 2015, City of Uhland



(USGS Earthquake Hazard Program, 2015)

Earthquakes: Previous Occurrences

There have been no documented earthquake events for the City of Uhland according to USGS 1847-2015 data as illustrated in Figure UH.12.

Earthquakes: Extent

The HAZUS Peak Ground Acceleration (PGA) for the planning area is 1.59% (see Earthquakes: Impact Section for a description of the HAZUS Analysis). This corresponds to the Modified Mercalli Scale Category IV, with light perceived shaking and no potential structure damage. HAZUS measures PGA on a census tract level. Cities within more than 1 census tract were assigned the highest PGA level to reflect the

maximum possible extent. Refer to Chapter 2 for extent scale descriptions (the Risk Assessment portion of the Hays County HMP Update).

Earthquakes: Probability

As there have been no recorded previous occurrences of earthquakes for the City of Uhland and the PGA is Less than 2% for the area, the probability of an earthquake for the City in the future is low (unlikely within the next 10 years).

Number of Events Reported	Number of Years in Dataset	500yr PGA %
0	170	1.59

Earthquakes: Impact

The FEMA How-To Guidance, Understanding Your Risks (FEMA 386-2, page 1-7), suggests the earthquake hazard should be profiled if the PGA is greater than 3%g, where PGA measures the acceleration of gravity (g). The City's PGA is less than 3%g (0.03) and there have been no recorded earthquakes in or near the jurisdiction. Therefore, only a minimum level-1 HAZUS analysis was profiled using the 500-year probability event scenario. The HAZUS analysis produced a PGA of 1.59%. HAZUS also produced $0 in building damages (Residential, Commercial, Agriculture, Religious and Government) from an event. Critical facilities and Infrastructure did not experience any loss of service. There were no critical facilities or infrastructure that experienced moderate to complete damage. No debris was generated from this event and no people or households required temporary housing. There were no moderate, extensive or completely damaged buildings by this event. HAZUS estimates no households are expected to be displaced from their homes or will require accommodations in temporary public shelters due to the earthquake. Additionally, there were no causalities or fatalities from this event.

Earthquakes: Vulnerability Summary

While the probability of an earthquake in Uhland is low with no significant prior events on file, there is 1 fault line located within the jurisdiction according to USGS data that could cause impact if there were to be an increase in seismic activity in the area. Uhland could expect to be impacted with debris and possible utility interruptions if an event were to occur in this unlikely and unprecedented scenario. If an event were to incapacitate a roadway, emergency responders would be hindered from responding, leaving the residents who were affected at risk. Grist Mill Road crosses the USGS fault line displayed on Figure UH.12 within the City.

Pages 47-50, Dam/Levee Failure have been redacted from this copy of the plan.

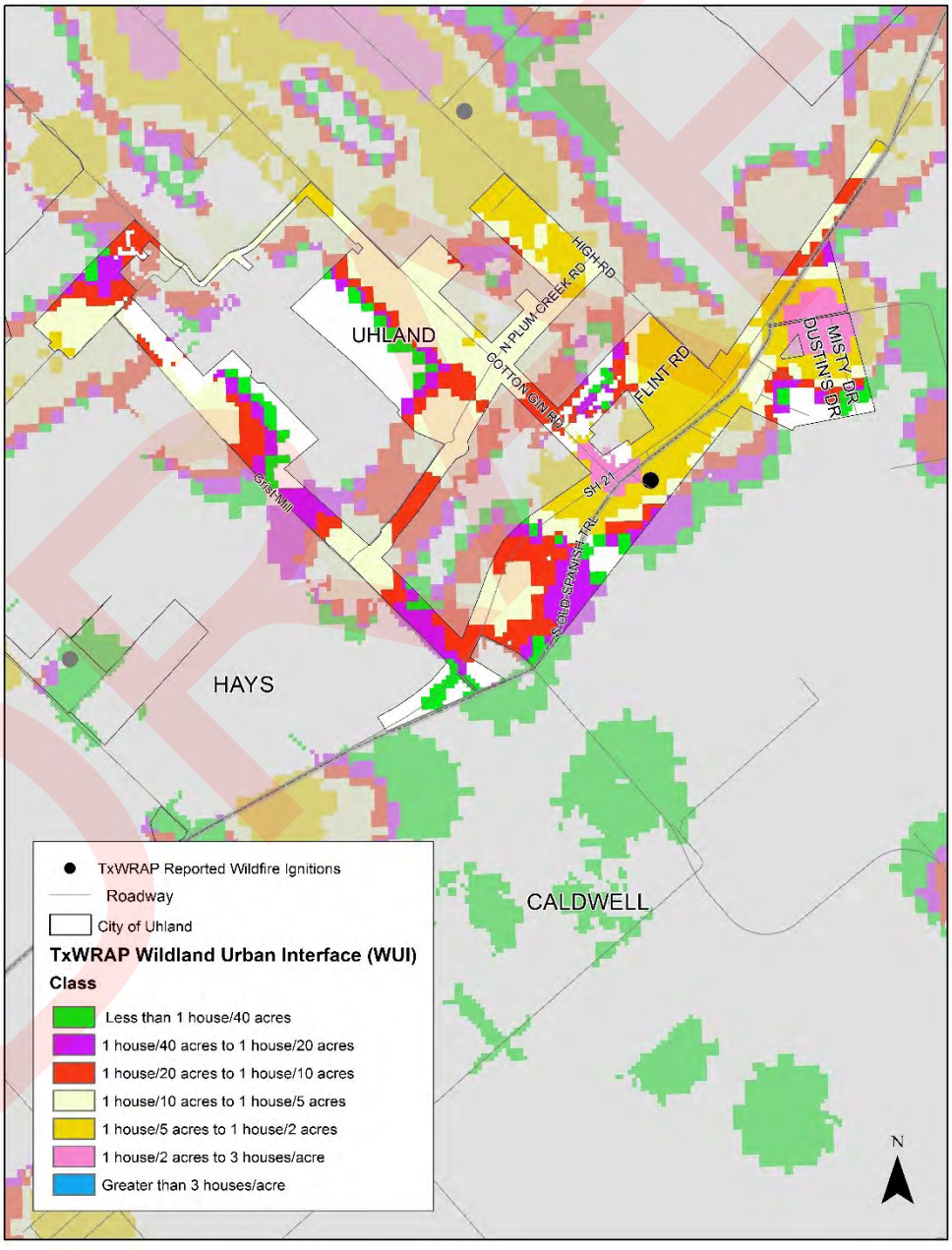
Pages 47-50, Dam/Levee Failure have been redacted from this copy of the plan.

Wildfires

Wildfires: Location

The Texas A&M Forest Service Texas Wildfire Risk Assessment Portal (TxWRAP) can be used to help communities understand their wildfire risk. Figure UH.16 below shows the location of TxWRAP's documented wildfire occurrences with Wildland Urban Interface (WUI) classifications within the City of Uhland. The WUI illustrates areas of development that are abutting natural areas. Here, communities and the built environment have an increased vulnerability to a wildfire event. Wildfires can be ignited from a variety of sources including lightning or human activity such as campfires, smoking, arson, or equipment use.

Figure UH.15, Wildland Urban Interface (WUI) and Reported Wildfire Ignitions, City of Uhland



(Texas A&M Forest Service, 2016)

Wildfires: Previous Occurrences

Table UH.26 shows the reported wildfire ignitions within the City of Uhland according to TxWRAP and USGS Federal Fire Occurrence data from the years 1980 to 2015.

Table UH.26, Wildfire Ignitions, City of Uhland

FPA ID	Date	Fire Size (Acres)
SFO-TX02240707-86256	2/18/2007	12

Wildfire: Extent

Table UH.27 lists the Fire Intensity Acreage for the City according to the Texas A&M Forest Service TxWRAP Community Summary Report. For a description of the Characteristic Fire Intensity Scale (FIS), refer to Chapter 2, the Risk Assessment portion of the Hays County HMP Update.

Table UH.27, TxWRAP Fire Intensity Acreage, City of Uhland

Class	Acres	Percent
Non-Burnable	404	31.50%
1 (Very Low)	17	1.30%
1.5	38	3.00%
2 (Low)	10	0.80%
2.5	165	12.90%
3 (Moderate)	624	48.70%
3.5	21	1.70%
4 (High)	2	0.10%
4.5	0	0.00%
5 (Very High)	0	0.00%
Total	1,283	100.0 %

Wildfires: Probability

Based on 1 reported event in 35 years, the City of Uhland can expect a wildfire event approximately once every 35 years on average in the future with up to a potential fire intensity of 4, or “High” classification on the TxWRAP Characteristic Fire Intensity Scale.

Number of Reported Events	Number of Years in Dataset	Probability
1	35	0.03

Wildfires: Impact

Impact on the community can be measured using TxWRAP Housing Density levels within the WUI. Areas with a higher housing and population density would be affected to a greater extent than more rural areas, and especially areas near burnable fuels. Table UH.28 below lists the population, percent of total population, WUI acreage and percent of WUI acreage for the City of Uhland, according to the Texas A&M Forest Service TxWRAP Community Summary Report. See Figure UH.15 for the location of WUI areas within the jurisdiction.

Table UH.28, WUI Acreage, City of Uhland

Housing Density		WUI Population	Percent of WUI Population	WUI Acres	Percent of WUI Acres
	LT 1hs/40ac	0	0.00%	75	6.70%
	1hs/40ac to 1hs/20ac	17	2.20%	122	10.90%
	1hs/20ac to 1hs/10ac	43	5.50%	194	17.30%
	1hs/10ac to 1hs/5ac	192	24.50%	349	31.00%
	1hs/5ac to 1hs/2ac	296	37.80%	320	28.40%
	1hs/2ac to 3hs/1ac	235	30.00%	64	5.70%
	GT 3hs/1ac	0	0.00%	0	0.00%
Total		783	100.00%	1,124	100.00%

Wildfires: Vulnerability Summary

The City of Uhland is active against wildfire risk and takes measures to communicate burn ban information. There is vulnerability linked to the allowance of burning within the City limits. According to community testimony, 175 acres burned between Uhland and Niederwald due to a property owner losing control of a garbage fire. The presence of structures in the same vicinity of open land with vegetative fuels lends to a fast spread of burning that also creates a higher vulnerability.

Risk Ranking Result

On January 12, 2017, planning representatives from the City of Uhland completed a questionnaire as part of the Hays County Hazard Mitigation Plan Update: Risk Assessment. The questions covered the risk associated with the hazards that affect each community based on the level of concern over each profiled hazard, the hazards' impact on health & safety as well as property damage and business continuity. The answers from this questionnaire were combined with public survey results on perception of risk, and the values from both sources were analyzed using the Halff Risk Ranking Tool (details regarding the risk ranking tool are in Chapter 2, the Risk Assessment portion of the Hays County HMP Update). The results provided a quantified ranking of risk with values ranging from 0 to 100. The results for Uhland are shown below (hazard values shown from highest risk to lowest):

Ranking Order	Hazard	Risk Ranking Value
1	Floods	97.5
2	Expansive Soils	96.9
3	Dam/Levee Failure	95.6
4	Extreme Heat	92.5
5	Severe Winter Storms	89.7
6	Wind Storms	53.8
7	Hail Storms	53.1
8	Lightning	51.9
9	Wildfire	50.9
10	Tornadoes	50.6
11	Land Subsidence	50.6 (same value as tornadoes)
12	Drought	50
13	Earthquakes	43.8
14	Hurricanes/Tropical Storms	37.5

Section 3: Mitigation Strategy

This section examines the community's ability to perform mitigation (review of existing capabilities, shown in Table UH.29) and identifies specific mitigation actions to address vulnerabilities for each hazard profiled in the Hays County HMP Update. The mitigation strategy is the application of actions into an approach for performing structural and non-structural mitigation efforts within the jurisdiction. Actions are also prioritized and considered for incorporation into other community programs, regulations, projects or plans.

Completed and canceled actions are also included in a separate section for future reference.

Table UH.29, Existing Capabilities

Capability Name	Capability Type	How it can Accomplish Mitigation
Mayor/Emergency Management Coordinator	Elected Official	Political support and funding for mitigation actions./ Management of City-level HMP updates.
City Administrator/Floodplain Administrator	City Staff	Support for implementation of mitigation actions./ Responsibility for continued participation in the NFIP.
Engineer	Consultant	Expertise in structural mitigation projects and compliance with flood damage preventation ordinance.
Sales Tax	Funding	Provides potential funding for Hazard Mitigation items.
Property Tax	Funding	Provides potential funding for Hazard Mitigation items.
Permitting and Licensing Fees	Funding	Provides potential funding for Hazard Mitigation items.
Chapter 211 of the Local Government Code: Zoning	Authority	Authorizes the City to regulate Zoning
Chapter 213 of the Local Government Code: Municipal Comprehensive Plans	Authority	Authorizes the City to adopt a comprehensive plan for the long-range development of the City
Chapter 214 of the Local Government Code	Authority	Authorizes the City to have regulatory authority as it related to building code (such as structural integrity and plumbing)
City of Uhland Ordinance 186	Regulation	Requires contractors to register before offering services in the City (City of Uhland, 2017)
City of Uhland Ordinance 180	Regulation	Establishes Ad Valorem Tax Rate and establishes expenditure of funds to be for the City Annual Budget (City of Uhland, 2016)
City of Uhland Ordinance 126	Regulation	Adopts flood damage prevention standards from Chapter 44 of Code of Federal Regulations (City of Uhland, 2012)
City of Uhland Ordinance 114	Regulation	Allows for enforcement of health and sanitation standards that includes mitigation of wildfire risk through brush cleanup requirements (City of Uhland, 2011)
City of Uhland Ordinance 25	Regulation	Establishes a program, including mitigation, preparedness, response and recovery phases of comprehensive emergency management (City of Uhland, 1989)
City of Uhland Ordinance 86	Regulation	Ordinance adopting the 2006 International Building Codes (City of Uhland, 2009)

National Flood Insurance Program Participation

The City of Uhland participates in the NFIP and has adopted a Flood Damage Prevention Ordinance that employs a 1 foot freeboard, requiring an additional foot of elevation above the Base Flood Elevation for construction within the FEMA Flood Insurance Rate Map Special Flood Hazard Area (SFHA). This is considered a higher standard that goes beyond the minimum standards required by Chapter 44 of the Code of Federal Regulations, Section 60.3. The Ordinance names the City Administrator as the Floodplain Administrator. The program is run out of the City Administrator office. Technical evaluation of floodplain development permit submittals are reviewed by the City Engineer (consultant). The City will continue to explore options for higher standards. The community will continue to comply with the standards of the program, with an effort to obtain Certified Floodplain Management certification for the City Administrator. The community currently has a total of 3 NFIP policies in force, as of January 2017.

Mitigation Goals

The plan-level Mitigation Goals can be found in Chapter 3, The Mitigation Strategy portion of the Hays County Hazard Mitigation Plan. These mitigation goals apply to each community and were mutually decided upon as the guiding goals for the development of actions in each planning area.

Mitigation Actions

Risk Focus is defined as:
***E= Actions reducing risk to existing buildings and infrastructure**
***F= Actions reducing risk to new development and redevelopment**

Number/Title	Hazard	Item Description	Implementation Agency
1 CFM Training and CFM Certification (previously action 3 in 2011 plan, modified)	Flood	Sending designated Floodplain Administrator to floodplain management courses and to test for Certification as a Certified Floodplain Manager.	City of Uhland City Administrator

Cost Estimate/Funding	Schedule	Status as of 2017	*Risk Focus:
Existing staff resources, time for training, cost of class (less than $50), lodging/per diem costs if training is outside of County	3 months	Not started	E/F

Cost and Benefit Considerations

The cost of floodplain management training from the Texas Water Development Board or Texas Floodplain Management Association is low and readily accessible throughout Texas. The benefits of better informing local officials on administering the flood damage prevention ordinance is critical toward responsible future growth. All owners of new development and substantial improvement to existing structures will benefit.

Number/Title	Hazard	Item Description	Implementation Agency
2 Emergency Communications Plan/Phone Tree/ Coordination (Previously action 4 in 2011 plan, modified)	All hazards, except Land Subsidence and Expansive Soils	Establishment of a community phone tree to be the manual process for reaching residents for times that standard technology fails. This will supplement a plan that Uhland will coordinate with CAPCOG for utilizing available emergency communications resources available at the regional and county levels.	City of Uhland City Hall

Cost Estimate/Funding	Schedule	Status as of 2017	*Risk Focus:
Existing staff resources	12 months	Not started	N/A

Cost and Benefit Considerations

Low-cost coordination efforts will assist the community in reaching all of the members of the community with communication to take shelter, protective measures or evacuation procedures in the event of a disaster or disaster conditions. The benefit to protect human life is not quantifiable but should be considered justifiable.

Number/Title	Hazard	Item Description	Implementation Agency
3 Storm Ready Designation from National Weather Service (previously action 6 in 2011 plan)	Severe Winter Weather, Lightning, Hailstorm, Windstorm, Tornadoes, Floods, Hurricanes/ Tropical Storms	Application for designation that classifies community's level of preparedness for severe weather and storms.	City of Uhland City Hall

Cost Estimate/Funding	Schedule	Status as of 2017	*Risk Focus:
Existing Staff	6 months	Not Started	N/A

Cost and Benefit Considerations

There is a high level of effort to complete the application, however no other cost applies. The level of increased preparedness would benefit the entire population.

Number/Title	Hazard	Item Description	Implementation Agency
4 Cooling Plan for vulnerable members of the community during periods of extreme heat that result in power loss (previously action 7 in 2011 plan, modified)	Extreme Heat	Documented plan for how to provide cool accommodations for vulnerable populations during periods of extreme heat when electrical power is interrupted.	City of Uhland City Hall

Cost Estimate/Funding	Schedule	Status as of 2017	*Risk Focus:
Existing staff	6 months	Not started	N/A

Cost and Benefit Considerations

With existing staff documenting the interlocal agreements of assisting each other with accommodating their vulnerable populations, this effort would benefit the population who are either over 65 or under 16 years of age.

Number/Title	Hazard	Item Description	Implementation Agency
5 Promote Flood Insurance in the community (previously action 8 in 2011 plan, modified)	Floods	Placing National Flood Insurance Program information brochures in City Hall	City of Uhland City Administrator

Cost Estimate/Funding	Schedule	Status as of 2017	*Risk Focus:
Existing Staff, free brochures from FEMA	1 month	In progress	N/A

Cost and Benefit Considerations

The cost and labor required to promote the NFIP is negligible. The benefit is difficult to estimate.

Number/Title	Hazard	Item Description	Implementation Agency
6 Increase Public Awareness of Hazards (previously action 9 in 2011 plan)	All hazards	Public awareness campaign of providing natural hazard information on the City website, with links to HaysInformed.com also being included.	City of Uhland City Administrator

Cost Estimate/Funding	Schedule	Status as of 2017	*Risk Focus:
Existing Staff	1 month	Not started	N/A

Cost and Benefit Considerations

There is minimal cost and labor required to make this enhancement to the existing Uhland City website.

Number/Title	Hazard	Item Description	Implementation Agency
7 Adopt wildfire maps from Hays County Firewise project (previously action 10 in 2011 plan, modified)	Wildfires	Formally adopt the maps created through the Hays County application for Firewise designation in order to begin to control development in accordance with the avoidance of hazard areas, or development with consideration of proper mitigation.	City of Uhland City Hall, in coordination with Hays County Fire Marshal's office

Cost Estimate/Funding	Schedule	Status as of 2017	*Risk Focus:
Existing staff	6 months	Not started	E/F

Cost and Benefit Considerations

The benefit of mitigating against wildfire for future development as well as for instituting fire mitigation in existing areas of development greatly saves the community from the costs of potential damages.

Number/Title	Hazard	Item Description	Implementation Agency
8 Coordination of marketing Large Item Pick-up day for Wildfire Mitigation (previously action 11 in 2011 plan, modified)	Wildland Fire, Lightning, Windstorms, Tornadoes	Enhancement of existing large item pick-up to emphasize the wildfire mitigation benefits of cleaning brush and overgrown lots.	City of Uhland Administrator in coordination with waste disposal service provider

Cost Estimate/Funding	Schedule	Status as of 2017	*Risk Focus:
Existing staff	2 months	Ongoing	N/A

Cost and Benefit Considerations

This slight change to marketing an existing event would likely lessen the risk for wildland fire for residents located within the WUI.

Number/Title	Hazard	Item Description	Implementation Agency
9 Extreme Temperature Help Hotline (previously action 14 in 2011 plan, modified)	Extreme Heat, Severe Winter Storms	Provides residents with a phone number to call to report special needs during extreme temperatures if they do not have access to heating or cooling.	City of Uhland Administrator

Cost Estimate/Funding	Schedule	Status as of 2017	*Risk Focus:
Existing staff and resources, line is already in place in City Hall	6 months	In progress	N/A

Cost and Benefit Considerations

This line is already paid for by the City and will provide all citizens with a way to reach out and find out resources available during periods of extreme temperatures. They will also be able to report needs for assistance that are non-emergency.

Number/Title	Hazard	Item Description	Implementation Agency
10 Energy Prioritization Collaboration with Electric Cooperative (previously 15 in 2011 action plan, modified)	Extreme Heat, Severe Winter Storms, Lightning, Windstorms, Tornadoes, Hurricanes/ Tropical Storms	Identification and documentation of members of the community who depend on electricity for survival (medical).	City of Uhland Administrator

Cost Estimate/Funding	Schedule	Status as of 2017	*Risk Focus:
Existing staff	6 months	Not started	N/A

Cost and Benefit Considerations

This is a low cost project for prioritizing energy restoration within the community in order to accommodate the special needs community impacted by hazards that are known for affecting electrical power. All those with special needs from electrical resources would benefit.

Number/Title	Hazard	Item Description	Implementation Agency
11 Generator Purchase for City Hall/ Community Center	Lightning, Extreme Heat, Severe Winter Storm, Windstorms, Hurricanes/ Tropical Storms, Tornadoes	Back-up electrical power available to City Hall/ Community Center to ensure continuity of government operations and to also provide temporary sheltering for vulnerable populations in the City.	City of Uhland City Council

Cost Estimate/Funding	Schedule	Status as of 2017	*Risk Focus:
HMGP Grant funding with community share covered by Community Development Block Grant funding	18 months	Not started	E

Cost and Benefit Considerations

If grant funding is eligible, the cost/benefit of this project would have to be positive. There is only 1 public building in the City in use and it has no back-up source for power.

Number/Title	Hazard	Item Description	Implementation Agency
12 Watershed Review Tour for Private Dams (Amended action 19 in 2011 plan)	Dam/Levee Failure, Floods	Plan for how to enforce flood damage prevention ordinance against encroachments in the floodway by inspecting for private dams that are not authorized and requirement of no-rise study when they are found to ensure neighbors are not at risk to be negatively impacted	City of Uhland Engineer

Cost Estimate/Funding	Schedule	Status as of 2017	*Risk Focus:
Existing staff	6 months	Not started	E

Cost and Benefit Considerations

This effort of enforcement will protect downstream properties and protect the community from liability from encroachments that create adverse impact. Although benefits are unquantifiable at this point, the cost is low enough for it to be negligible.

Number/Title	Hazard	Item Description	Implementation Agency
13 Evacuation Plans/ Alternate road consideration (previously item 20 in 2011 plan)	Hurricanes/Tropical Storms, Floods, Dam/ Levee Failure, Wildfire	Documentation of an evacuation plan that includes multiple exits for leaving the community. There are only 2 points of entry/ exit and all 3 flood.	City of Uhland City Hall

Cost Estimate/Funding	Schedule	Status as of 2017	*Risk Focus:
Existing staff	18 months	In progress	F

Cost and Benefit Considerations

The cost of not establishing a way out of the community would greatly outweigh the cost of mitigating this risk of not being able to get citizens out of danger.

Number/Title	Hazard	Item Description	Implementation Agency
14 Drought Monitoring Program/ SUD Water Conservation Webpage (previously action 12/20 in 2011 plan, combined)	Drought, Land Subsidence	Drought stage triggers added to water ordinance for preservation. Also the link to the National Drought Monitor on website.	City of Uhland City Administrator

Cost Estimate/Funding	Schedule	Status as of 2017	*Risk Focus:
Existing staff	12 months	In Progress	N/A

Cost and Benefit Considerations

This low cost monitoring and inclusion of drought water conservation measures will take more time than money to institute and could save the community from a water shortage. All residents that use the water source would benefit. This would be done with a current effort the present Special Utility District water conservation measures/ advisories.

Number/Title	Hazard	Item Description	Implementation Agency
15 Soil Compaction Recommendation	Expansive Soils	Recommendation for soil compaction to lessen the possible effects of expansive soils to accompany existing slab requirements for manufactured and mobile homes.	City of Uhland City Hall

Cost Estimate/Funding	Schedule	Status as of 2017	*Risk Focus:
Existing staff, cost of engineer support	6 months	Not Started	F

Cost and Benefit Considerations

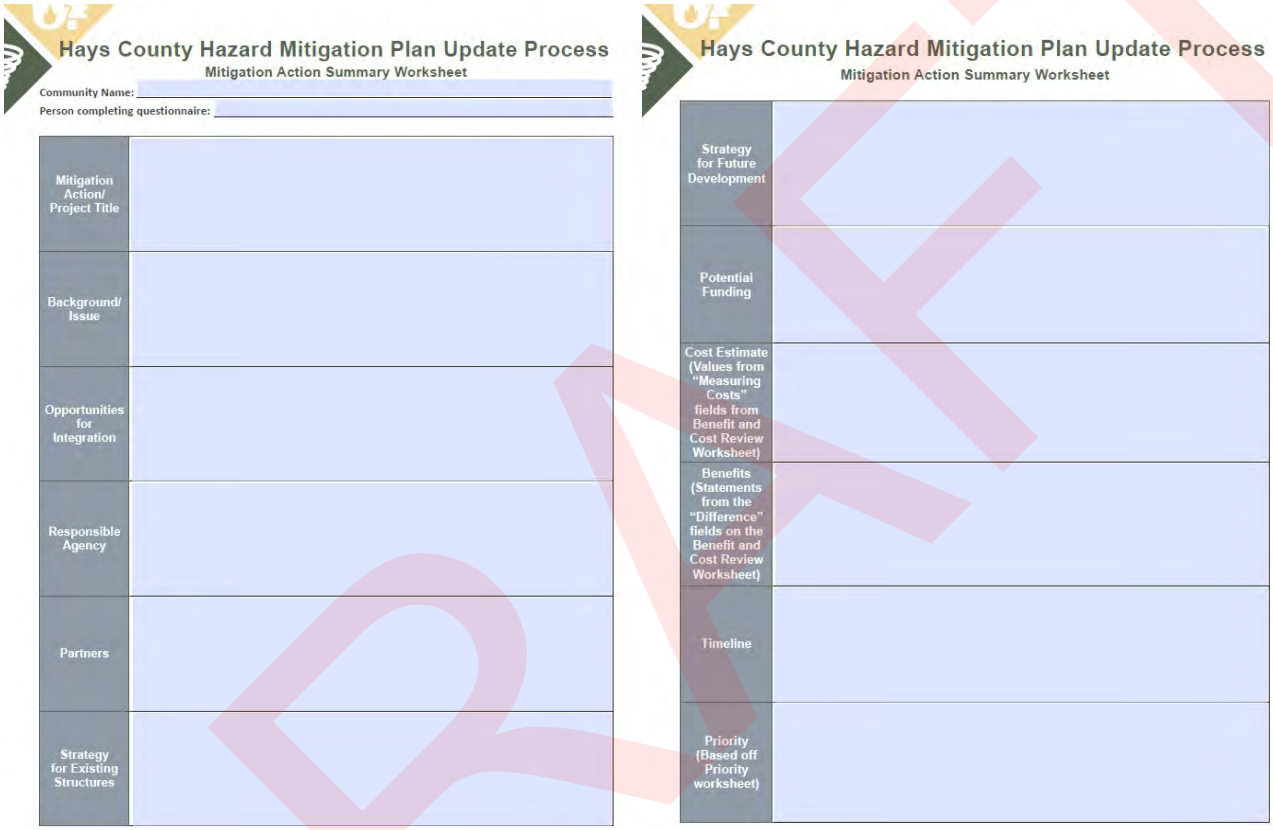
This recommendation would add a level of protection to future development of foundations so that they mitigate against expansive soil damage.

Capabilities Assessment

Evaluation/Prioritization of Actions

Each action added to the plan was developed using the Mitigation Action Summary Worksheet shown in Figure UH.16. The cost/benefit calculation occurred on this document. Non-cost effective projects were not included in prioritization activity. Risk Ranking Score used a high water mark effort of utilizing the highest score from the hazards that the action will mitigate impact from.

Figure UH.16, Mitigation Action Summary Worksheet



Hays County Hazard Mitigation Plan Update Process

Mitigation Action Summary Worksheet

Community Name: _____

Person completing questionnaire: _____

Mitigation Action/ Project Title	
Background/ Issue	
Opportunities for Integration	
Responsible Agency	
Partners	
Strategy for Existing Structures	

Hays County Hazard Mitigation Plan Update Process

Mitigation Action Summary Worksheet

Strategy for Future Development	
Potential Funding	
Cost Estimate (Values from "Measuring Costs" fields from Benefit and Cost Review Worksheet)	
Benefits (Statements from the "Difference" fields on the Benefit and Cost Review Worksheet)	
Timeline	
Priority (Based off Priority worksheet)	

Table UH.30, Mitigation Action Prioritization (with Hazards in order of highest priority to lowest)

Mitigation Action	Life Safety	Property Protection	Technical	Political	Legal	Environmental	Social	Administrative	Local Champion	Other Community	Risk Ranking Score	Total Score
6. Increase Public Awareness of Hazards	1	1	1	1	0	1	1	1	0	1	98	106
13. Evacuation Plans/Alternate road consideration	1	0	1	1	1	0	1	1	0	1	98	105
3. StormReady Designation for Uhland	1	0	1	1	0	0	1	1	0	1	98	104
2. Emergency Communications-Phone Tree Development	1	0	1	1	0	0	1	1	0	1	98	104
5. Promote Flood Insurance in the community	0	0	1	1	0	0	1	1	0	0	98	102
1. Attend Local Floodplain Management Courses to receive certification	1	1	1	0	0	0	0	1	0	0	98	102
15. Soil Compaction Recommendation	0	1	1	-1	0	0	1	1	0	0	97	100
11. Generator Purchase for City Hall/ Community Center	1	0	1	1	1	0	1	1	0	1	93	100
12. Watershed Review Tour for Private Dams	1	1	1	-1	-1	1	-1	1	0	0	98	100
4. Cooling Plan for vulnerable members of the community during periods of extreme heat that result in power loss	1	0	1	0	0	0	1	1	0	1	93	98
9. Extreme Temperature Help Hotline	1	0	1	0	0	0	1	1	0	0	93	97
11. Coordination of marketing Large Item Pick-up day for Wildfire Mitigation	1	1	1	1	1	1	-1	1	0	0	90	96
10. Energy Prioritization Collaboration with Electric Cooperative	1	0	1	0	-1	0	1	1	0	0	93	96
7. Adopt wildfire maps from Hays County Firewise project	1	1	1	1	0	1	1	1	1	1	51	60
14. Drought Monitoring Program/ SUD Water Conservation Webpage	1	0	1	1	0	1	1	1	0	1	50	57

Mitigation Actions by Hazard

The mitigation actions in Table UH.31 are shown with the corresponding hazards.

Table UH.31, Mitigation Action Impact, City of Uhland

Action Number	Drought	Extreme Heat	Severe Winter Storms	Lightning	Hailstorms	Windstorms	Tornadoes	Expansive Soils	Floods	Land Subsidence	Hurricanes/ Tropical Storms	Earthquakes	Dam/ Levee Failure	Wildfire
1									X					
2	X	X	X	X	X	X	X		X		X	X	X	X
3			X	X	X	X	X		X		X			
4		X												
5									X					
6	X	X	X	X	X	X	X	X	X	X	X	X	X	X
7														X
8				X		X	X							X
9		X	X											
10		X	X	X		X	X				X			
11		X	X	X		X	X				X			
12									X				X	
13									X		X		X	X
14	X									X				
15								X						

Integration Efforts

Table UH.32 captures ways that the Risk Assessment, Goals and Actions developed in the HMP can be integrated into other City of Uhland documents, programs and regulations.

Table UH.32, Plan Integration Efforts, City of Uhland

Name of Document	Type	Item Type	Opportunity for Integration
Hays Inform	Program	Action	Link to existing Hays County HaysInformed.com emergency preparedness/awareness page when creating Public Awareness Page for hazards on Uhland website (Action 6)
CDBG	Funding	Action	Research utilizing existing CDBG funding for the cost-share for FEMA HMGP grant funding for projects (Generators- Action 11, Emergency Communications System- Action 3)
City of Uhland Budget	Funding	Action	Seek training funds for Floodplain Administration training on future budgets through Uhland Budget Line item 21012 for training
Hazard Mitigation Grant Program (HMGP)	Funding	Action	Identify actions that can be funded through new and existing grant awards.
Pre-Disaster Mitigation (PDM)	Funding	Action	Identify actions that can be funded through new and existing grant awards.
Flood Mitigation Assistance (FMA)	Funding	Action	Identify actions that can be funded through new and existing grant awar
TWDB Flood Protection Planning (FPP) Grant	Funding	Action	Identify actions that can be funded through new and existing grant awards.
TWDB Clean Water State Revolving Fund (CWSRF)	Funding	Action	Identify actions that can be funded through new and existing grant awards.
Texas Water Development Fund (DFund)	Funding	Action	Identify actions that can be funded through new and existing loans.

Section 4: Finalize Plan Update (Review, Evaluation, and Implementation)

Changes in Development

The City of Uhland has experienced growth in small industry in the last 3 years. Most significantly, their tax revenue has increased with the addition of a concrete plant within the city limits. This in combination with other commercial growth, has increased the budget for the community in the recent years. During the next planning period, the community expects to see more subdivision growth and even more commercial growth.

The City's first convenience store is currently under construction, Mio Rancho Meat Market. In addition, Hays CISD broke ground on Elementary School #14 on June 1, 2017. This is located on High Road, on the northwest side of Uhland. Hays CISD Transportation Department will also be building a Transportation Department building to house the district's buses in Uhland.

Past Mitigation Action Progress Reports Summary - Completed and Canceled

2011 Action Number	Hazard	Item Description	Lead Department
1	Flood	Increase the number of Hays County communities that participate in the NFIP	City of Uhland
Cost Estimate/Funding		**Schedule**	**Status as of 2017**
Cost and Funding: Existing staff resources, no cost		Completed	Completed
Cost Effectiveness			
Not independently cost-effective			

2011 Action Number	Hazard	Item Description	Lead Department
2	Flood	Adopt Higher Standard Flood Damage Prevention Ordinance	City of Uhland
Cost Estimate/Funding		**Schedule**	**Status as of 2017**
Cost and Funding: Existing staff resources, no cost		Completed	Completed
Cost Effectiveness			
Not independently cost-effective			

2011 Action Number	Hazard	Item Description	Lead Department
5	All hazards	Development of and maintenance of Countywide and individual community HAZMAP Plans	City of Uhland
Cost Estimate/Funding		**Schedule**	**Status as of 2017**
Existing staff resources		Original Plan adopted on 4/20/2004. Update in 2011	Completed
Cost Effectiveness			
Not independently cost-effective			

2011 Action Number	Hazard	Item Description	Lead Department
13	Drought	Public Information Campaigns	City of Uhland

Cost Estimate/Funding	Schedule	Status as of 2017
No additional cost- uses existing staff resources	Ongoing	Canceled. Replaced by Action 14.

Cost Effectiveness
Very difficult to determine, but presumed very cost-effective because actions preserve essential function

2011 Action Number	Hazard	Item Description	Lead Department
18	Floods, Thunderstorms, high winds, tornadoes, seismic	Structural/Engineering Study of Uhland public facilities	City of Uhland

Cost Estimate/Funding	Schedule	Status as of 2017
To be determined, but if initiated probably from General Fund	Not yet established- to be commenced only if funding is available	Canceled. This action is not fiscally feasible.

Cost Effectiveness
Not independently cost-effective, but the initial step in identifying appropriate mitigation actions

Changes in Priorities

The current City of Uhland Administrator has become very active and successful in acquiring grant funding for improvements to the City. With these funds, the community has been able to make improvements to infrastructure and public facilities. Continuing the pursuit of grant funding will benefit the community. The timing of the newly updated Hazard Mitigation Plan and the opportunity to apply for mitigation grant funds will become a renewed priority for Uhland.

Section 5: Approval and Adoption

Approval and Adoption Procedure

Table UH.33, Municipal Jurisdiction Adoption Date

Municipality	APA Date	Adoption Date
City of Uhland		

Jurisdiction Adoption Documentation Placeholder

References

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