Houston-Galveston Area Council

DICKINSON'S Water District

TXGLO



Photo: Rick Wilking, Reuters

HAZARD MITIGATION PLAN
APPENDIX A-F

DICKINSON WCID

Appendix A:
HAZUS Analysis

Hazus: Flood Global Risk Report

Region Name: Galveston County Water Control District #1

Flood Scenario: 100-yr Flood

Print Date: Thursday, May 9, 2024

Disclaimer:
Totals only reflect data for those census tracts/blocks included in the user's study region.

The estimates of social and economic impacts contained in this report were produced using Hazus loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social and economic losses following a specific Flood. These results can be improved by using enhanced inventory data and flood hazard information.

Table of Contents

Section	Page #
General Description of the Region	3
Building Inventory	
General Building Stock	4
Essential Facility Inventory	5
Flood Scenario Parameters	6
Building Damage	
General Building Stock	7
Essential Facilities Damage	9
Induced Flood Damage	10
Debris Generation	
Social Impact	10
Shelter Requirements	
Economic Loss	12
Building-Related Losses	
Appendix A: County Listing for the Region	15
Appendix B: Regional Population and Building Value Data	16

General Description of the Region

Hazus is a regional multi-hazard loss estimation model that was developed by the Federal Emergency Management Agency (FEMA) and the National Institute of Building Sciences (NIBS). The primary purpose of Hazus is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from multi-hazards and to prepare for emergency response and recovery.

The flood loss estimates provided in this report were based on a region that included 1 county(ies) from the following state(s):

- Texas

Note:
Appendix A contains a complete listing of the counties contained in the region.

The geographical size of the region is approximately 5 square miles and contains 456 census blocks. The region contains over 9 thousand households and has a total population of 25,086 people. The distribution of population by State and County for the study region is provided in Appendix B.

There are an estimated 8,530 buildings in the region with a total building replacement value (excluding contents) of 2,817 million dollars. Approximately 91.57% of the buildings (and 72.08% of the building value) are associated with residential housing.

Building Inventory

General Building Stock

Hazus estimates that there are 8,530 buildings in the region which have an aggregate total replacement value of 2,817 million dollars. Table 1 and Table 2 present the relative distribution of the value with respect to the general occupancies by Study Region and Scenario respectively. Appendix B provides a general distribution of the building value by State and County.

Table 1
Building Exposure by Occupancy Type for the Study Region

Occupancy	Exposure ($1000)	Percent of Total
Residential	2,030,200	72.1%
Commercial	525,506	18.7%
Industrial	38,564	1.4%
Agricultural	1,799	0.1%
Religion	46,486	1.7%
Government	24,790	0.9%
Education	149,253	5.3%
Total	**2,816,598**	**100%**

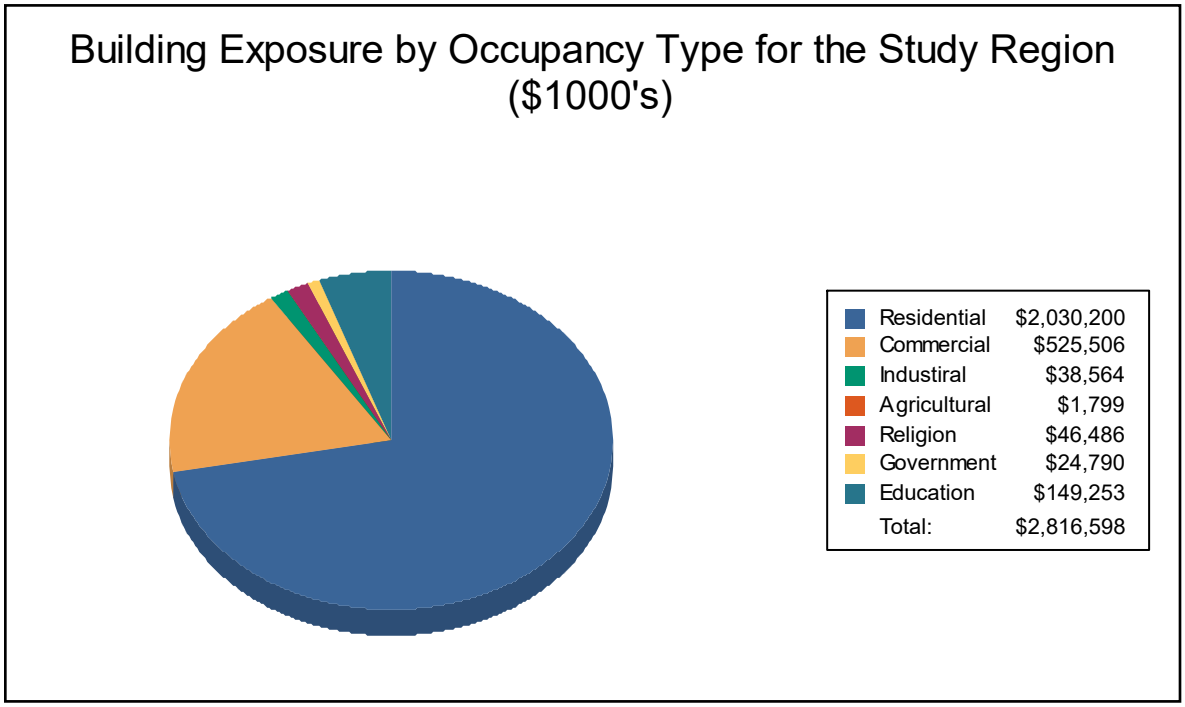
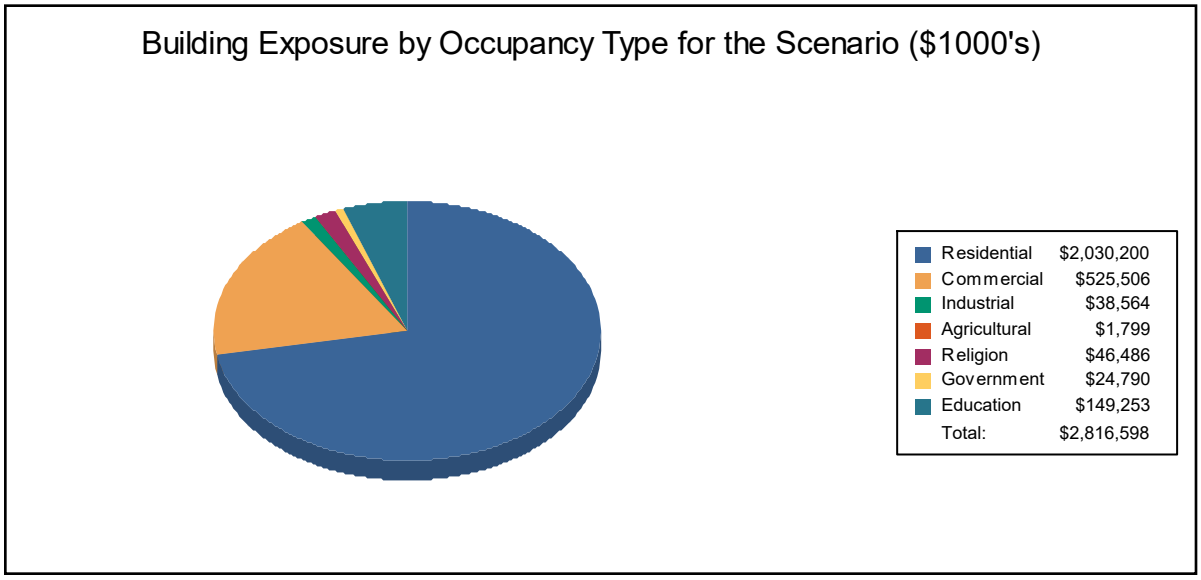


Table 2
Building Exposure by Occupancy Type for the Scenario

Occupancy	Exposure ($1000)	Percent of Total
Residential	2,030,200	72.1%
Commercial	525,506	18.7%
Industrial	38,564	1.4%
Agricultural	1,799	0.1%
Religion	46,486	1.7%
Government	24,790	0.9%
Education	149,253	5.3%
Total	**2,816,598**	**100%**



Essential Facility Inventory

For essential facilities, there are 1 hospitals in the region with a total bed capacity of no beds.
There are 20 schools, 3 fire stations, 2 police stations and no emergency operation centers.

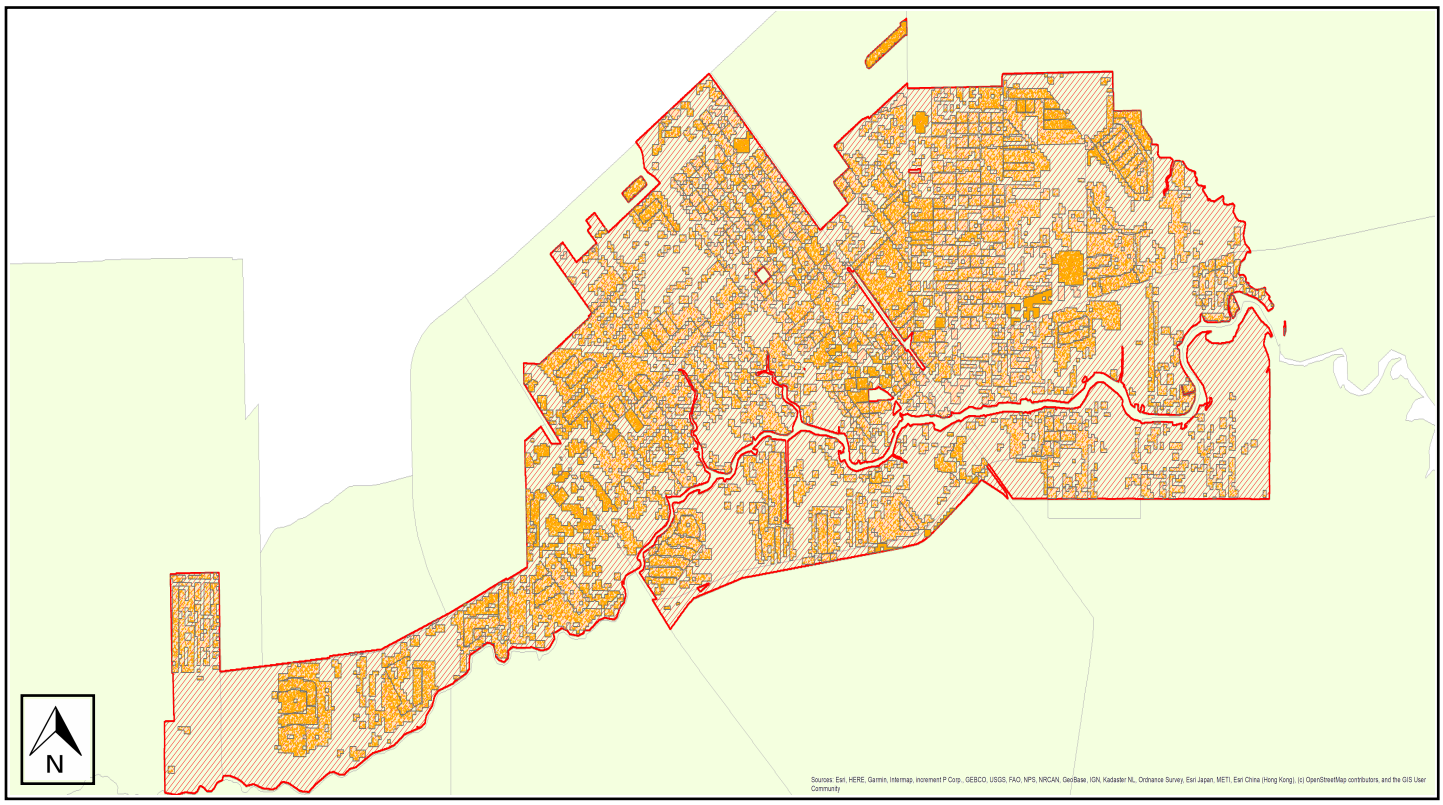
Flood Scenario Parameters

Hazus used the following set of information to define the flood parameters for the flood loss estimate provided in this report.

Study Region Name:	Galveston County Water Control District #1
Scenario Name:	100-yr Flood
Return Period Analyzed:	100
Analysis Options Analyzed:	No What-Ifs

Study Region Overview Map

Illustrating scenario flood extent, as well as exposed essential facilities and total exposure



Building Damage

General Building Stock Damage

Hazus estimates that about 6,420 buildings will be at least moderately damaged. This is over 61% of the total number of buildings in the scenario. There are an estimated 330 buildings that will be completely destroyed. The definition of the 'damage states' is provided in the Hazus Flood Technical Manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 summarizes the expected damage by general building type.

Total Economic Loss (1 dot = $300K) Overview Map

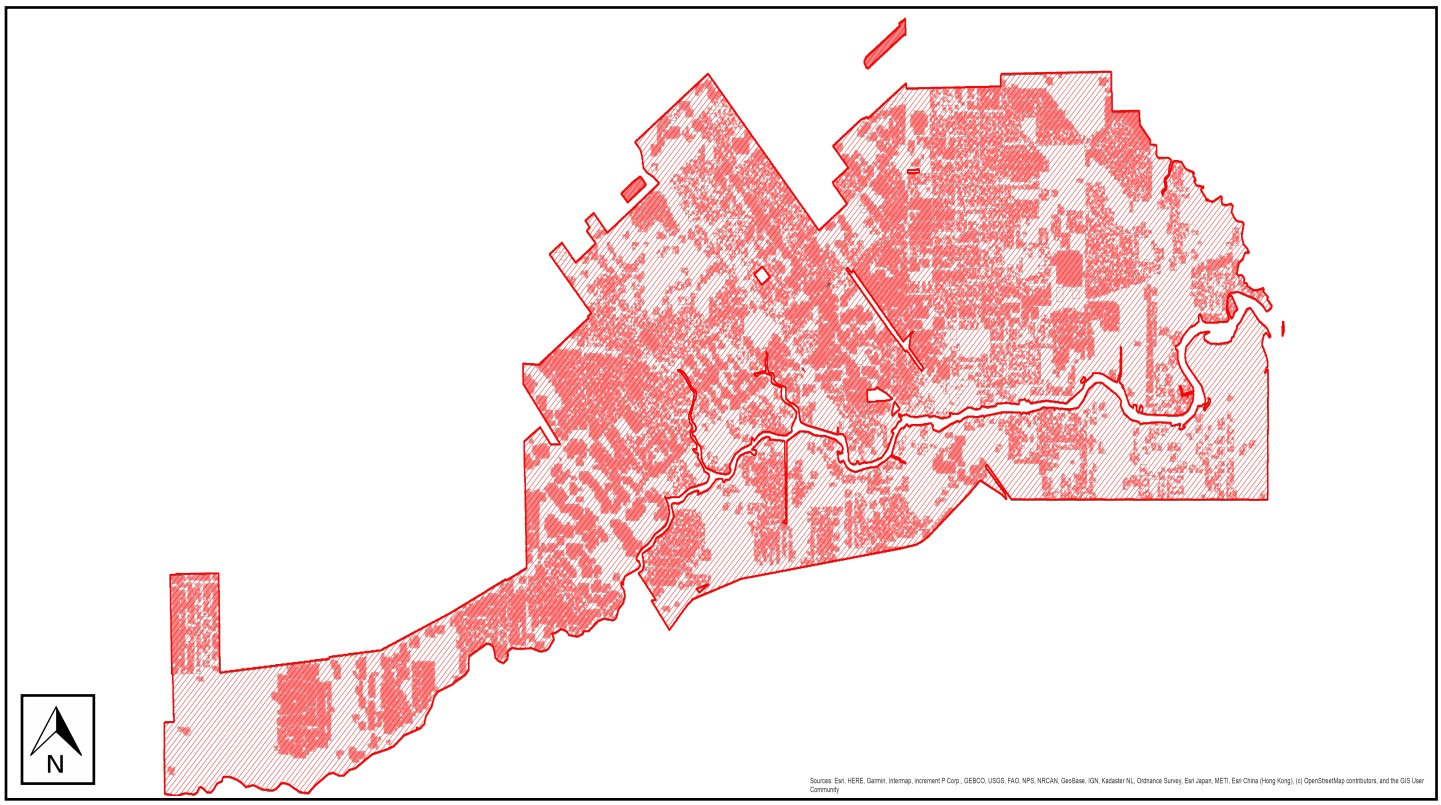


Table 3: Expected Building Damage by Occupancy

	1-10		11-20		21-30		31-40		41-50		>50	
Occupancy	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**
Agriculture	0	0	1	100	0	0	0	0	0	0	0	0
Commercial	0	0	159	45	195	55	0	0	0	0	0	0
Education	4	100	0	0	0	0	0	0	0	0	0	0
Government	0	0	5	100	0	0	0	0	0	0	0	0
Industrial	0	0	5	29	0	0	9	53	3	18	0	0
Religion	0	0	15	100	0	0	0	0	0	0	0	0
Residential	217	3	2,480	40	974	16	1,569	25	675	11	330	5
Total	**221**		**2,665**		**1,169**		**1,578**		**678**		**330**	

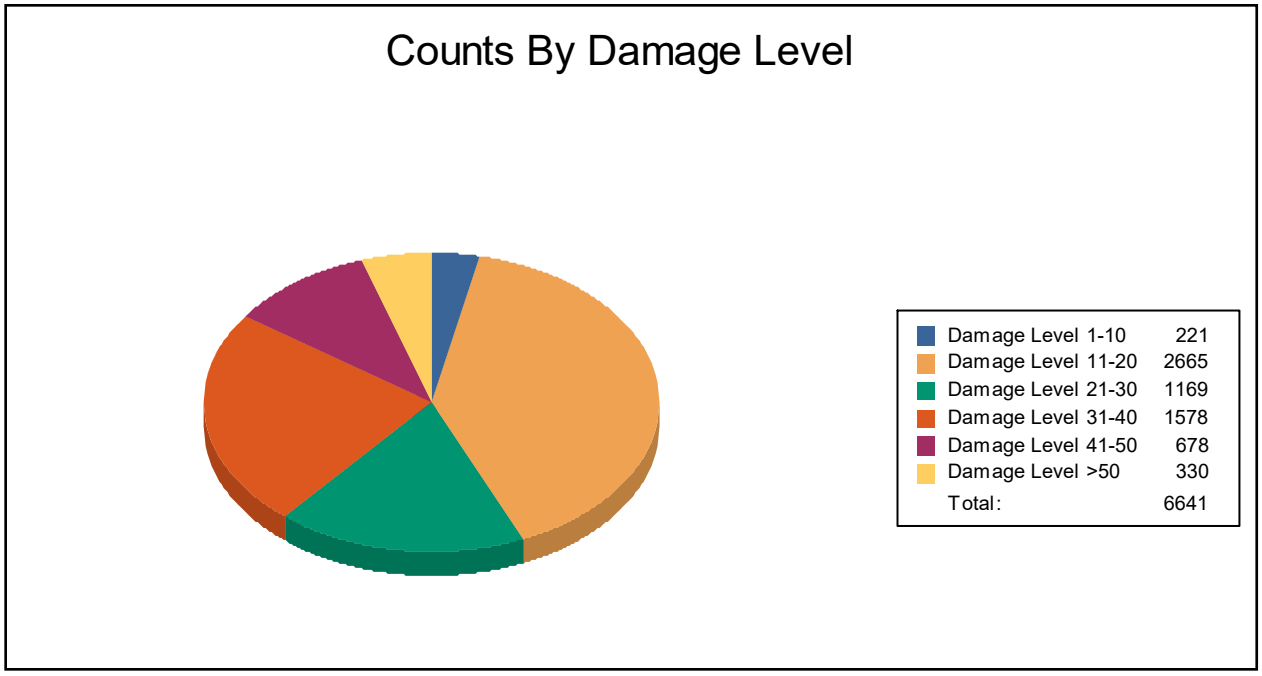




Table 4: Expected Building Damage by Building Type

Building Type	1-10		11-20		21-30		31-40		41-50		>50	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Concrete	0	0	19	66	10	34	0	0	0	0	0	0
ManufHousing	0	0	109	21	60	11	0	0	27	5	330	63
Masonry	30	4	296	42	181	26	146	21	49	7	0	0
Steel	0	0	51	48	53	50	2	2	1	1	0	0
Wood	194	4	2,183	42	855	16	1,427	27	600	11	0	0

Essential Facility Damage

Before the flood analyzed in this scenario, the region had 0 hospital beds available for use. On the day of the scenario flood event, the model estimates that 0 hospital beds are available in the region.

Table 5: Expected Damage to Essential Facilities

		# Facilities		
Classification	Total	At Least Moderate	At Least Substantial	Loss of Use
Emergency Operation Centers	0	0	0	0
Fire Stations	3	0	0	0
Hospitals	1	0	0	0
Police Stations	2	0	0	0
Schools	20	0	0	0

If this report displays all zeros or is blank, two possibilities can explain this.

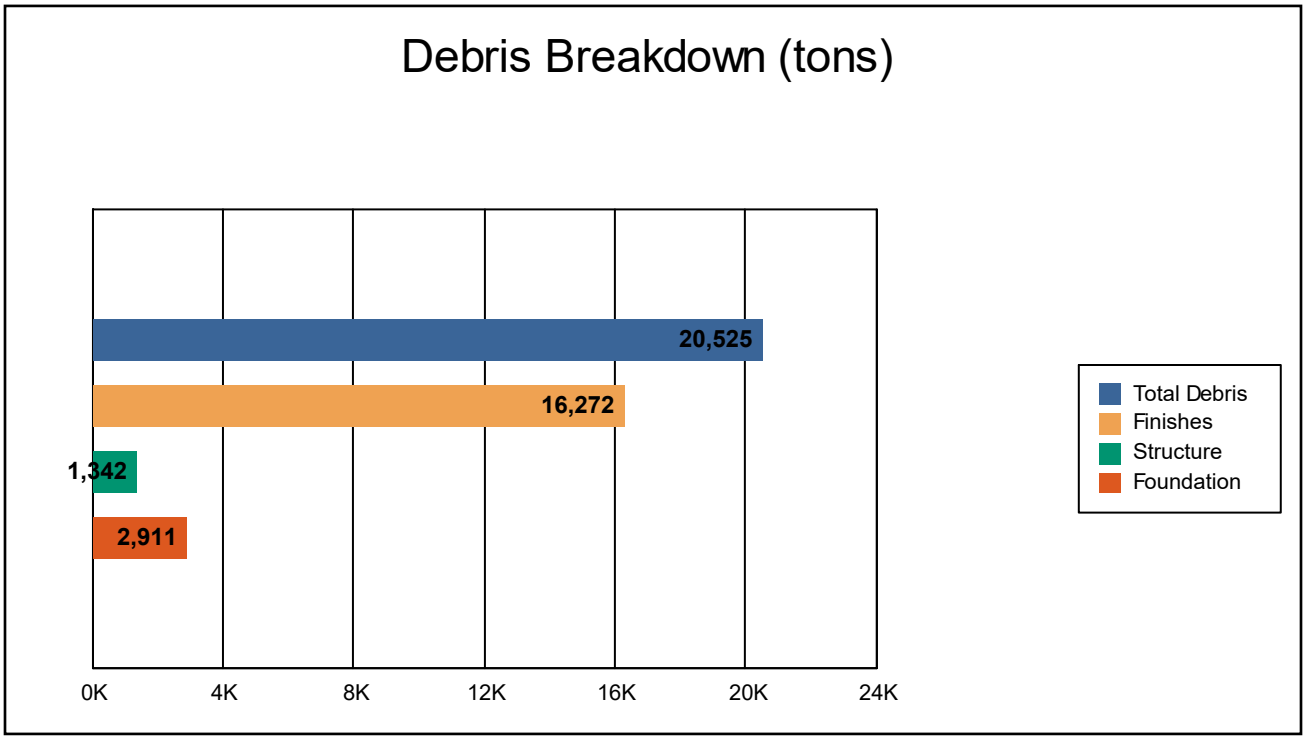
(1) None of your facilities were flooded. This can be checked by mapping the inventory data on the depth grid.

(2) The analysis was not run. This can be tested by checking the run box on the Analysis Menu and seeing if a message box asks you to replace the existing results.

Induced Flood Damage

Debris Generation

Hazus estimates the amount of debris that will be generated by the flood. The model breaks debris into three general categories: 1) Finishes (dry wall, insulation, etc.), 2) Structural (wood, brick, etc.) and 3) Foundations (concrete slab, concrete block, rebar, etc.). This distinction is made because of the different types of material handling equipment required to handle the debris.

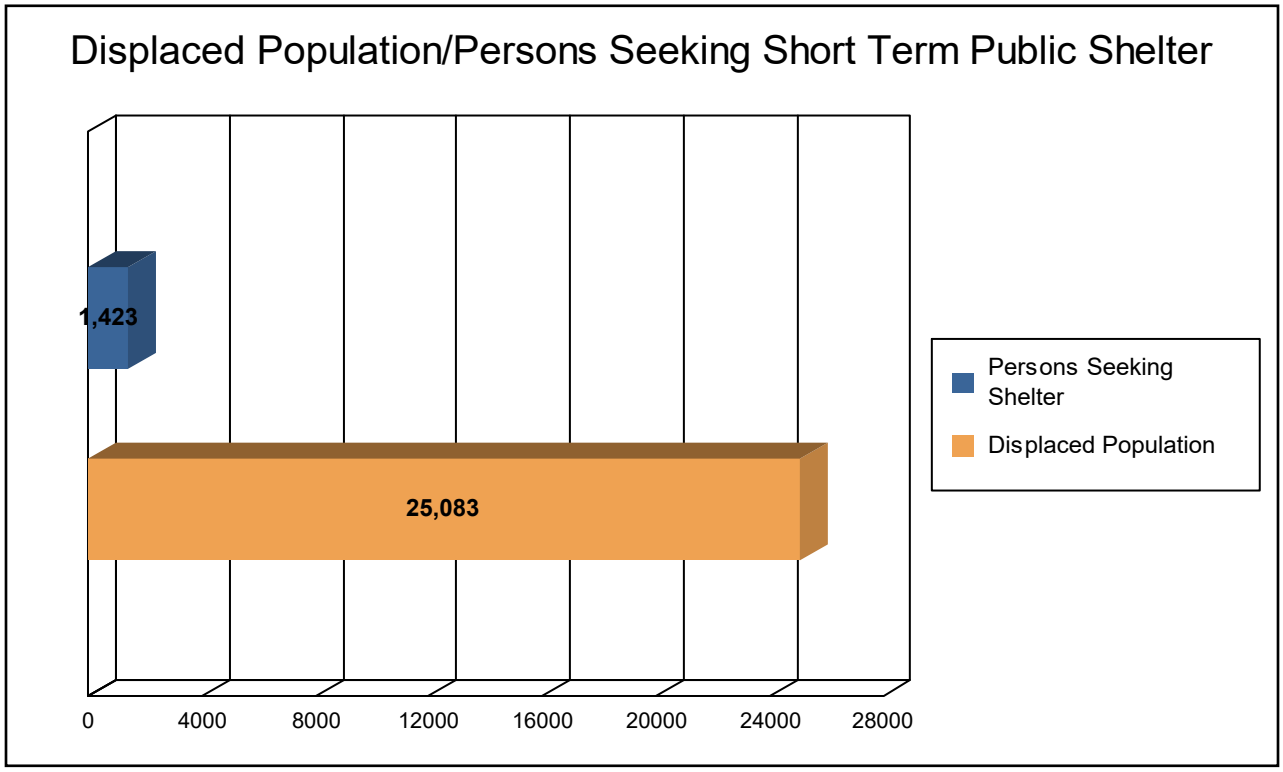


The model estimates that a total of 20,525 tons of debris will be generated. Of the total amount, Finishes comprises 79% of the total, Structure comprises 7% of the total, and Foundation comprises 14%. If the debris tonnage is converted into an estimated number of truckloads, it will require 821 truckloads (@25 tons/truck) to remove the debris generated by the flood.

Social Impact

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 displaced people that will require accommodations in temporary public shelters. The model estimates 8,361 households (or 25,083 of people) will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 1,423 people (out of a total population of 25,086) will seek temporary shelter in public shelters.



Economic Loss

The total economic loss estimated for the flood is 2,657.85 million dollars, which represents 94.36 % of the total replacement value of the scenario buildings.

Building-Related Losses

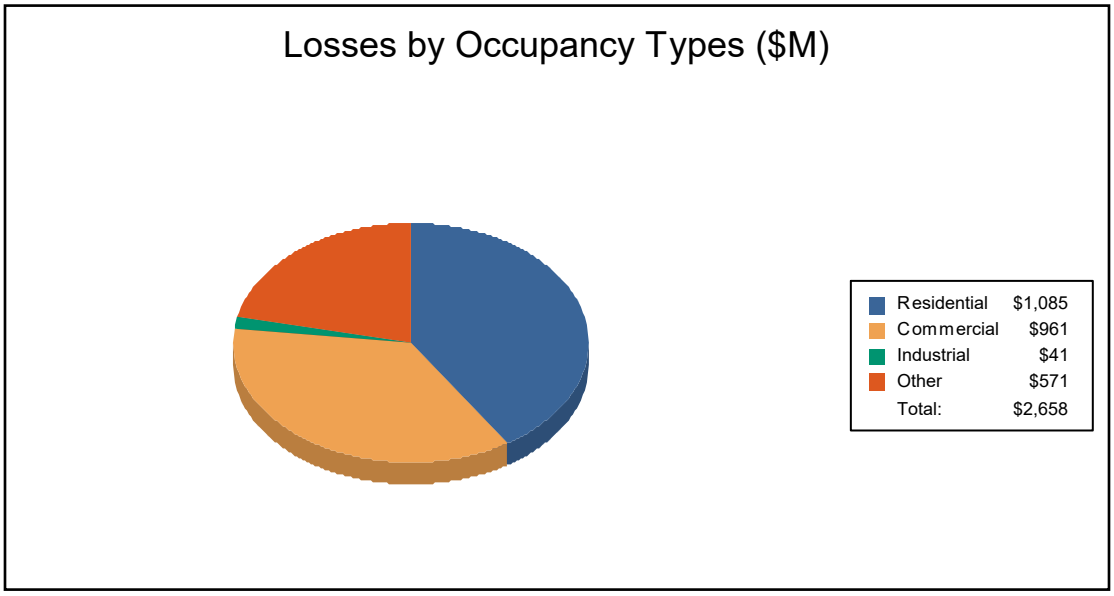
The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the flood. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the flood.

The total building-related losses were 1,440.72 million dollars. 46% of the estimated losses were related to the business interruption of the region. The residential occupancies made up 40.83% of the total loss. Table 6 below provides a summary of the losses associated with the building damage.

Table 6: Building-Related Economic Loss Estimates

(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
Building Loss						
	Building	535.06	93.83	10.14	22.03	661.06
	Content	300.09	271.80	22.66	141.27	735.82
	Inventory	0.00	37.67	4.89	1.28	43.84
	Subtotal	**835.16**	**403.30**	**37.69**	**164.58**	**1,440.72**
Business Interruption						
	Income	5.00	235.00	0.80	56.53	297.33
	Relocation	161.79	65.93	0.81	33.74	262.26
	Rental Income	71.45	47.74	0.20	3.26	122.64
	Wage	11.78	209.01	1.42	312.68	534.90
	Subtotal	**250.02**	**557.68**	**3.23**	**406.21**	**1,217.13**
ALL	**Total**	**1,085.18**	**960.98**	**40.91**	**570.79**	**2,657.85**





Appendix A: County Listing for the Region

Texas

- Galveston

Appendix B: Regional Population and Building Value Data

	Population	Building Value (thousands of dollars)		
		Residential	Non-Residential	Total
Texas				
Galveston	25,086	2,030,200	786,398	2,816,598
Total	**25,086**	**2,030,200**	**786,398**	**2,816,598**
Total Study Region	**25,086**	**2,030,200**	**786,398**	**2,816,598**

Hazus: Flood Global Risk Report

Region Name: Galveston County Water Control District #1

Flood Scenario: 500-yr Flood

Print Date: Thursday, May 9, 2024

Disclaimer:
Totals only reflect data for those census tracts/blocks included in the user's study region.

The estimates of social and economic impacts contained in this report were produced using Hazus loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social and economic losses following a specific Flood. These results can be improved by using enhanced inventory data and flood hazard information.

Table of Contents

Section	Page #
General Description of the Region	3
Building Inventory	
General Building Stock	4
Essential Facility Inventory	5
Flood Scenario Parameters	6
Building Damage	
General Building Stock	7
Essential Facilities Damage	9
Induced Flood Damage	10
Debris Generation	
Social Impact	10
Shelter Requirements	
Economic Loss	12
Building-Related Losses	
Appendix A: County Listing for the Region	15
Appendix B: Regional Population and Building Value Data	16

General Description of the Region

Hazus is a regional multi-hazard loss estimation model that was developed by the Federal Emergency Management Agency (FEMA) and the National Institute of Building Sciences (NIBS). The primary purpose of Hazus is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from multi-hazards and to prepare for emergency response and recovery.

The flood loss estimates provided in this report were based on a region that included 1 county(ies) from the following state(s):

- Texas

Note:
Appendix A contains a complete listing of the counties contained in the region.

The geographical size of the region is approximately 5 square miles and contains 456 census blocks. The region contains over 9 thousand households and has a total population of 25,086 people. The distribution of population by State and County for the study region is provided in Appendix B.

There are an estimated 8,530 buildings in the region with a total building replacement value (excluding contents) of 2,817 million dollars. Approximately 91.57% of the buildings (and 72.08% of the building value) are associated with residential housing.

Building Inventory

General Building Stock

Hazus estimates that there are 8,530 buildings in the region which have an aggregate total replacement value of 2,817 million dollars. Table 1 and Table 2 present the relative distribution of the value with respect to the general occupancies by Study Region and Scenario respectively. Appendix B provides a general distribution of the building value by State and County.

Table 1
Building Exposure by Occupancy Type for the Study Region

Occupancy	Exposure ($1000)	Percent of Total
Residential	2,030,200	72.1%
Commercial	525,506	18.7%
Industrial	38,564	1.4%
Agricultural	1,799	0.1%
Religion	46,486	1.7%
Government	24,790	0.9%
Education	149,253	5.3%
Total	**2,816,598**	**100%**

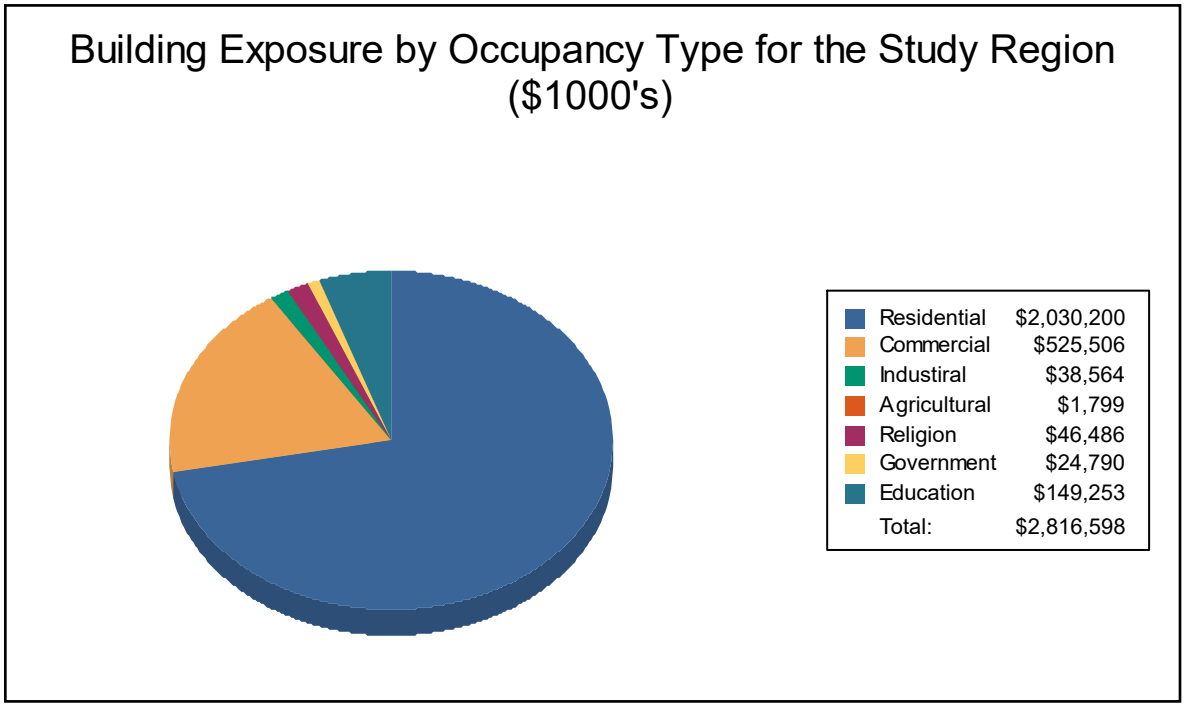
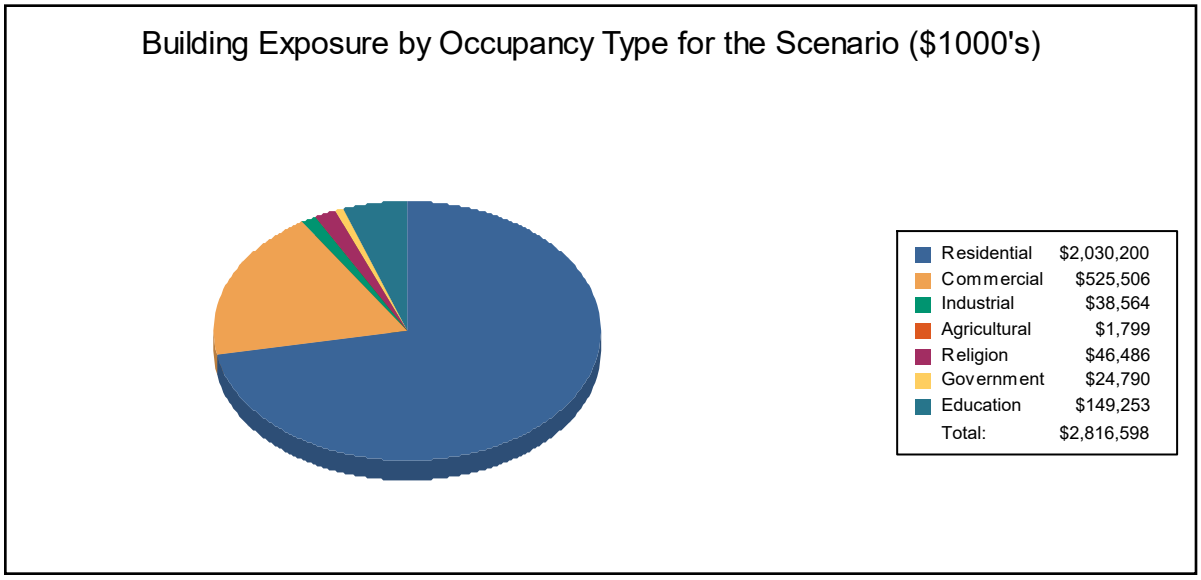


Table 2
Building Exposure by Occupancy Type for the Scenario

Occupancy	Exposure ($1000)	Percent of Total
Residential	2,030,200	72.1%
Commercial	525,506	18.7%
Industrial	38,564	1.4%
Agricultural	1,799	0.1%
Religion	46,486	1.7%
Government	24,790	0.9%
Education	149,253	5.3%
Total	**2,816,598**	**100%**



Essential Facility Inventory

For essential facilities, there are 1 hospitals in the region with a total bed capacity of no beds.
There are 20 schools, 3 fire stations, 2 police stations and no emergency operation centers.

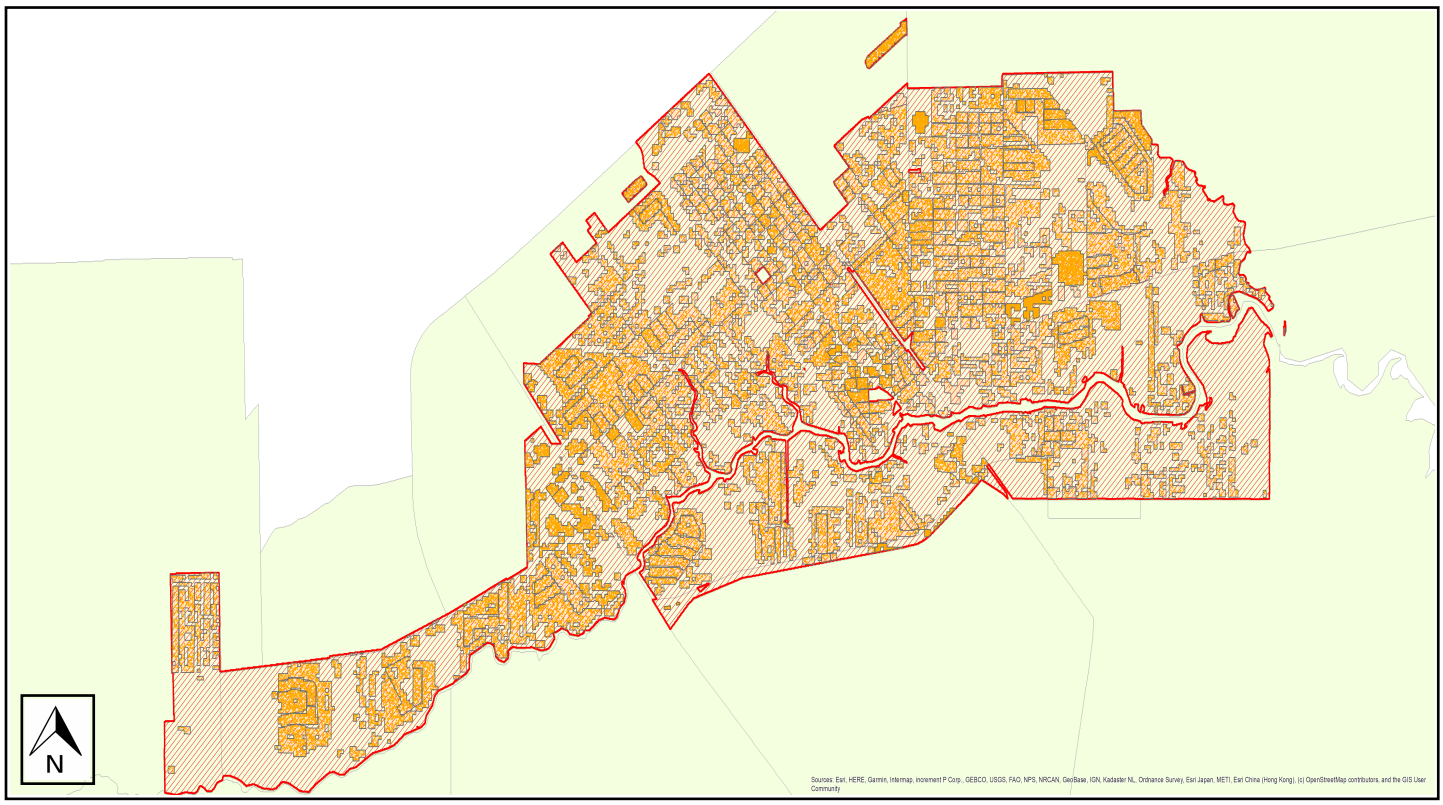
Flood Scenario Parameters

Hazus used the following set of information to define the flood parameters for the flood loss estimate provided in this report.

Study Region Name:	Galveston County Water Control District #1
Scenario Name:	500-yr Flood
Return Period Analyzed:	500
Analysis Options Analyzed:	No What-Ifs

Study Region Overview Map

Illustrating scenario flood extent, as well as exposed essential facilities and total exposure



Building Damage

General Building Stock Damage

Hazus estimates that about 6,552 buildings will be at least moderately damaged. This is over 42% of the total number of buildings in the scenario. There are an estimated 1,095 buildings that will be completely destroyed. The definition of the 'damage states' is provided in the Hazus Flood Technical Manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 summarizes the expected damage by general building type.

Total Economic Loss (1 dot = $300K) Overview Map

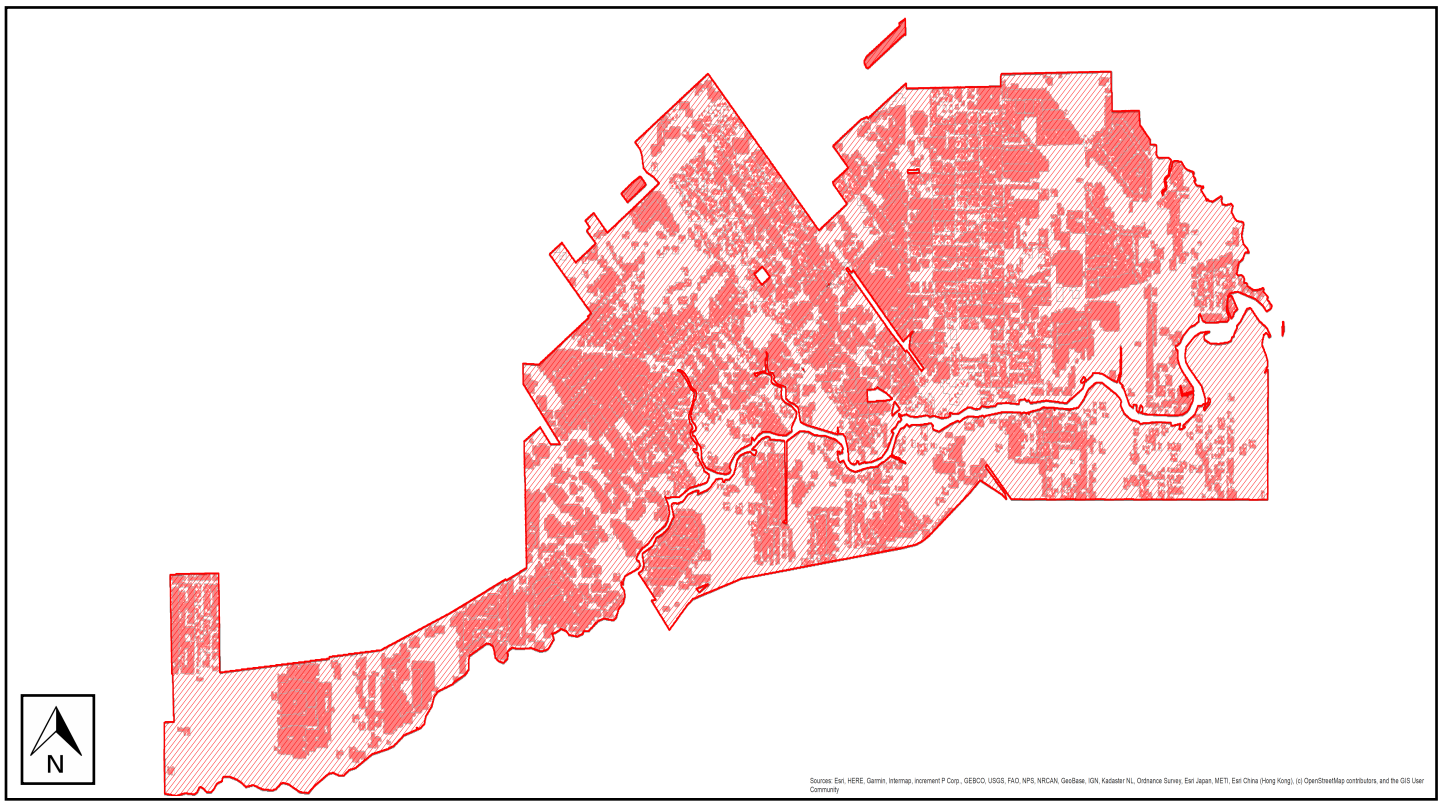


Table 3: Expected Building Damage by Occupancy

	1-10		11-20		21-30		31-40		41-50		>50	
Occupancy	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**
Agriculture	0	0	1	100	0	0	0	0	0	0	0	0
Commercial	0	0	146	41	39	11	171	48	0	0	0	0
Education	2	100	0	0	0	0	0	0	0	0	0	0
Government	0	0	6	100	0	0	0	0	0	0	0	0
Industrial	0	0	3	17	3	17	0	0	12	67	0	0
Religion	0	0	15	100	0	0	0	0	0	0	0	0
Residential	13	0	795	13	1,759	29	830	13	1,677	27	1,095	18
Total	**15**		**966**		**1,801**		**1,001**		**1,689**		**1,095**	

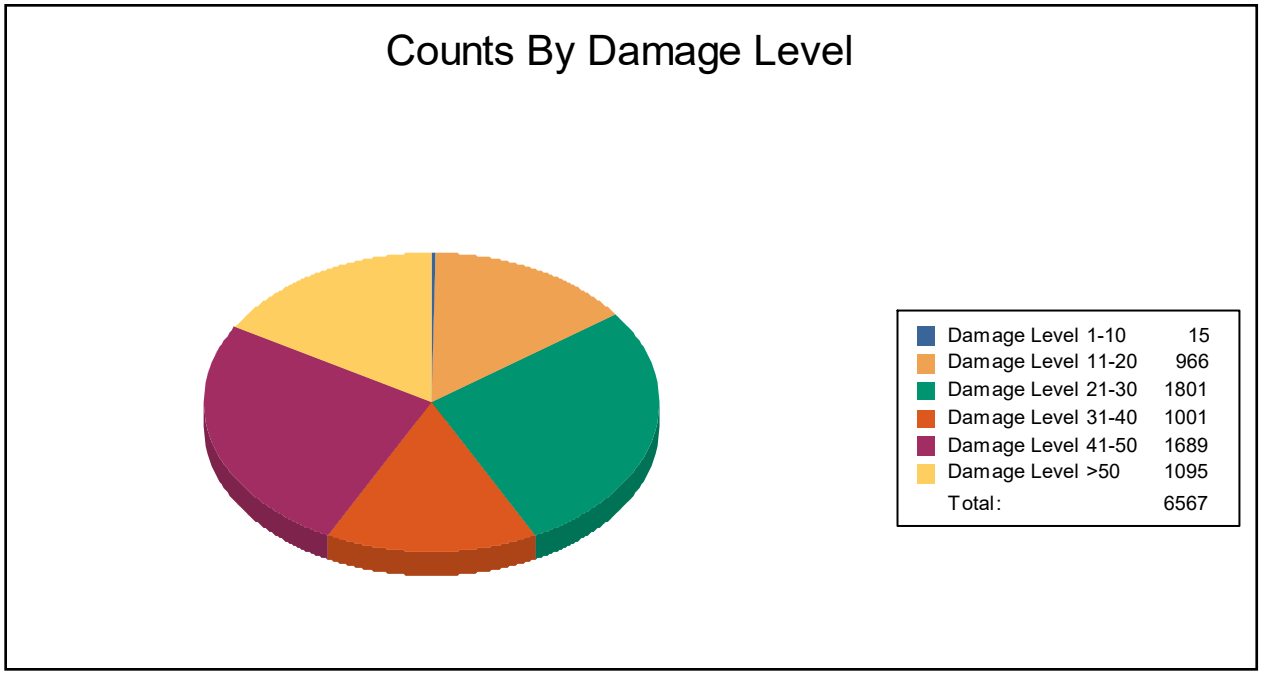


Table 4: Expected Building Damage by Building Type

Building Type	1-10		11-20		21-30		31-40		41-50		>50	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Concrete	0	0	18	60	3	10	9	30	0	0	0	0
ManufHousing	0	0	0	0	0	0	0	0	18	3	527	97
Masonry	5	1	144	21	222	32	119	17	150	22	46	7
Steel	0	0	46	43	11	10	48	44	3	3	0	0
Wood	12	0	749	14	1,563	30	810	16	1,515	29	522	10

Essential Facility Damage

Before the flood analyzed in this scenario, the region had 0 hospital beds available for use. On the day of the scenario flood event, the model estimates that 0 hospital beds are available in the region.

Table 5: Expected Damage to Essential Facilities

		# Facilities		
Classification	Total	At Least Moderate	At Least Substantial	Loss of Use
Emergency Operation Centers	0	0	0	0
Fire Stations	3	0	0	0
Hospitals	1	0	0	0
Police Stations	2	0	0	0
Schools	20	0	0	0

If this report displays all zeros or is blank, two possibilities can explain this.

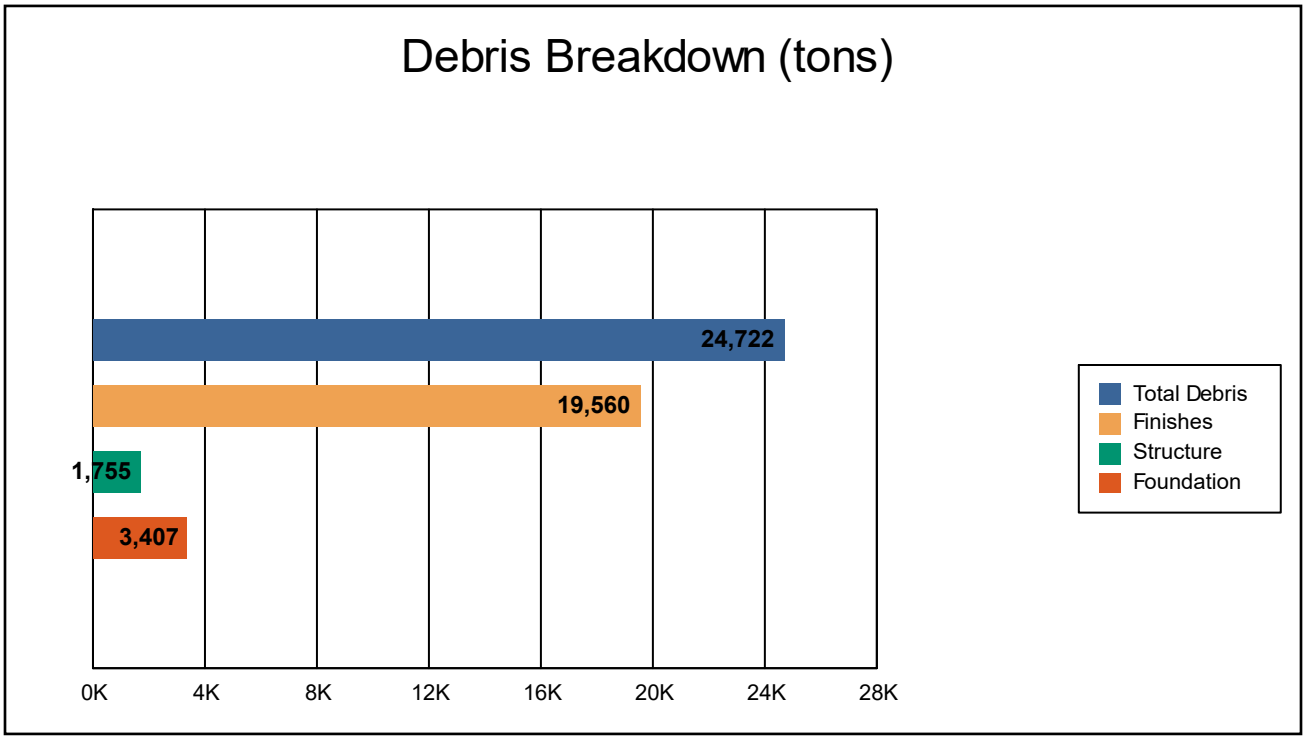
(1) None of your facilities were flooded. This can be checked by mapping the inventory data on the depth grid.

(2) The analysis was not run. This can be tested by checking the run box on the Analysis Menu and seeing if a message box asks you to replace the existing results.

Induced Flood Damage

Debris Generation

Hazus estimates the amount of debris that will be generated by the flood. The model breaks debris into three general categories: 1) Finishes (dry wall, insulation, etc.), 2) Structural (wood, brick, etc.) and 3) Foundations (concrete slab, concrete block, rebar, etc.). This distinction is made because of the different types of material handling equipment required to handle the debris.

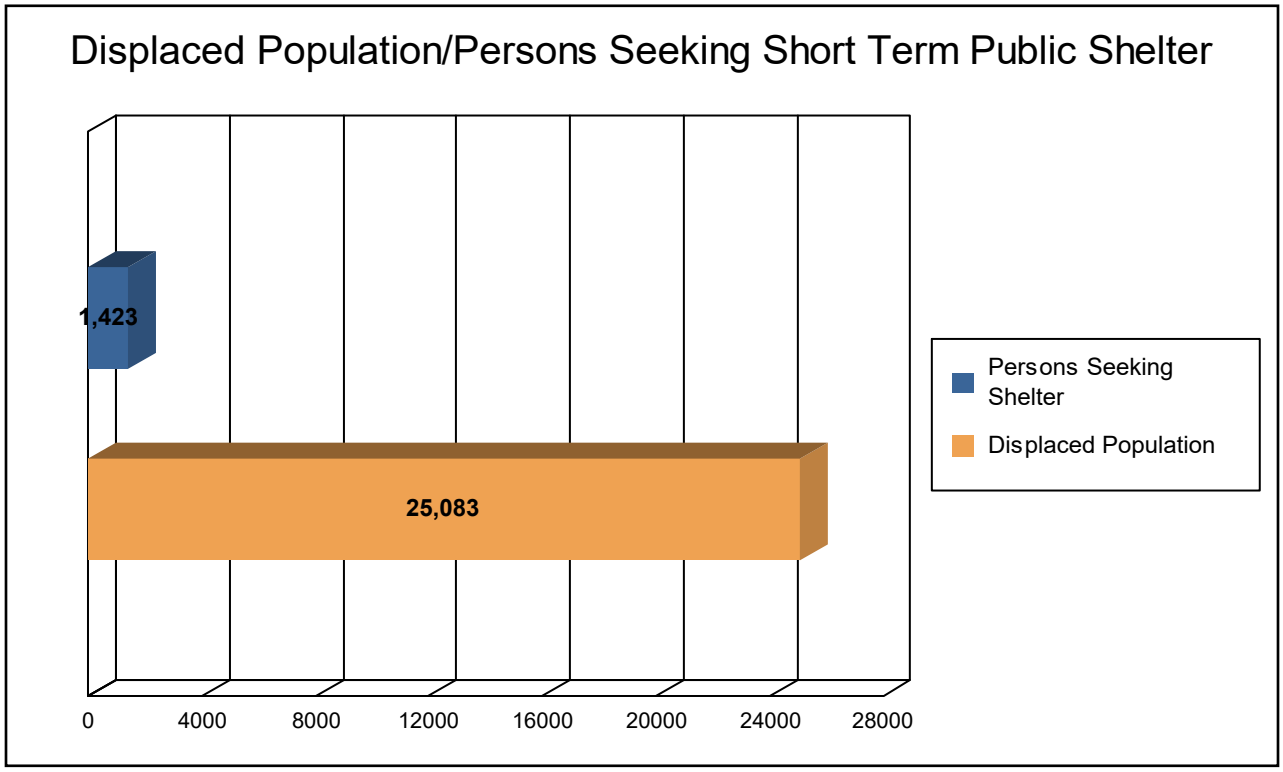


The model estimates that a total of 24,722 tons of debris will be generated. Of the total amount, Finishes comprises 79% of the total, Structure comprises 7% of the total, and Foundation comprises 14%. If the debris tonnage is converted into an estimated number of truckloads, it will require 989 truckloads (@25 tons/truck) to remove the debris generated by the flood.

Social Impact

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 displaced people that will require accommodations in temporary public shelters. The model estimates 8,361 households (or 25,083 of people) will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 1,423 people (out of a total population of 25,086) will seek temporary shelter in public shelters.



Economic Loss

The total economic loss estimated for the flood is 3,035.48 million dollars, which represents 107.77 % of the total replacement value of the scenario buildings.

Building-Related Losses

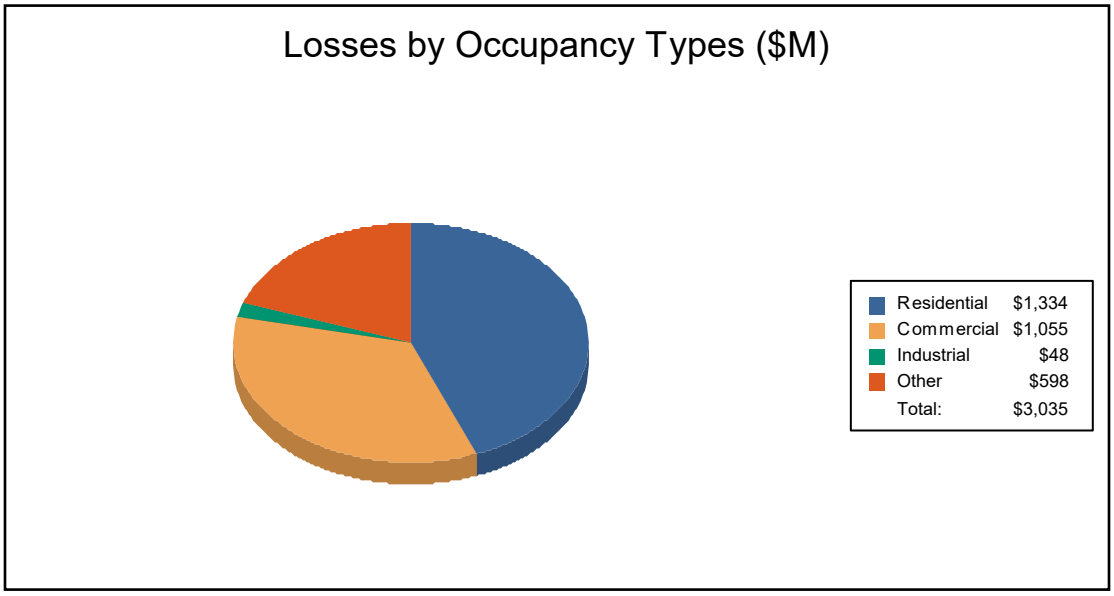
The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the flood. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the flood.

The total building-related losses were 1,812.36 million dollars. 40% of the estimated losses were related to the business interruption of the region. The residential occupancies made up 43.95% of the total loss. Table 6 below provides a summary of the losses associated with the building damage.

Table 6: Building-Related Economic Loss Estimates

(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
Building Loss						
	Building	686.52	121.25	12.06	23.87	843.70
	Content	394.14	327.14	27.10	166.27	914.65
	Inventory	0.00	46.70	5.62	1.69	54.01
	Subtotal	**1,080.66**	**495.09**	**44.78**	**191.83**	**1,812.36**
Business Interruption						
	Income	5.04	236.22	0.81	56.53	298.60
	Relocation	164.20	66.29	0.81	33.75	265.05
	Rental Income	72.43	48.02	0.20	3.26	123.91
	Wage	11.87	209.59	1.43	312.68	535.57
	Subtotal	**253.54**	**560.12**	**3.25**	**406.22**	**1,223.13**
ALL	**Total**	**1,334.20**	**1,055.21**	**48.02**	**598.05**	**3,035.48**





Appendix A: County Listing for the Region

Texas

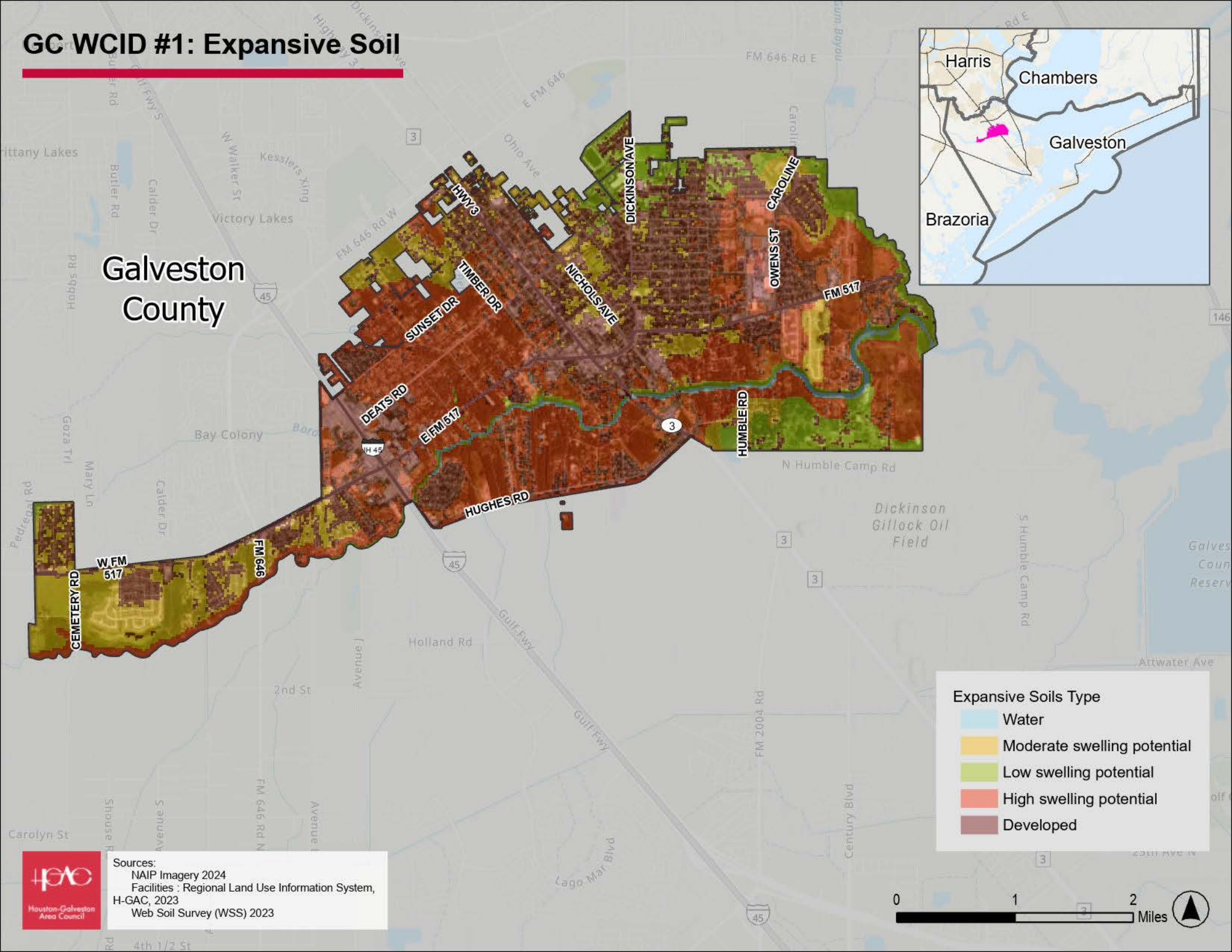
- Galveston

Appendix B: Regional Population and Building Value Data

	Population	Building Value (thousands of dollars)		
		Residential	Non-Residential	Total
Texas				
Galveston	25,086	2,030,200	786,398	2,816,598
Total	**25,086**	**2,030,200**	**786,398**	**2,816,598**
Total Study Region	**25,086**	**2,030,200**	**786,398**	**2,816,598**

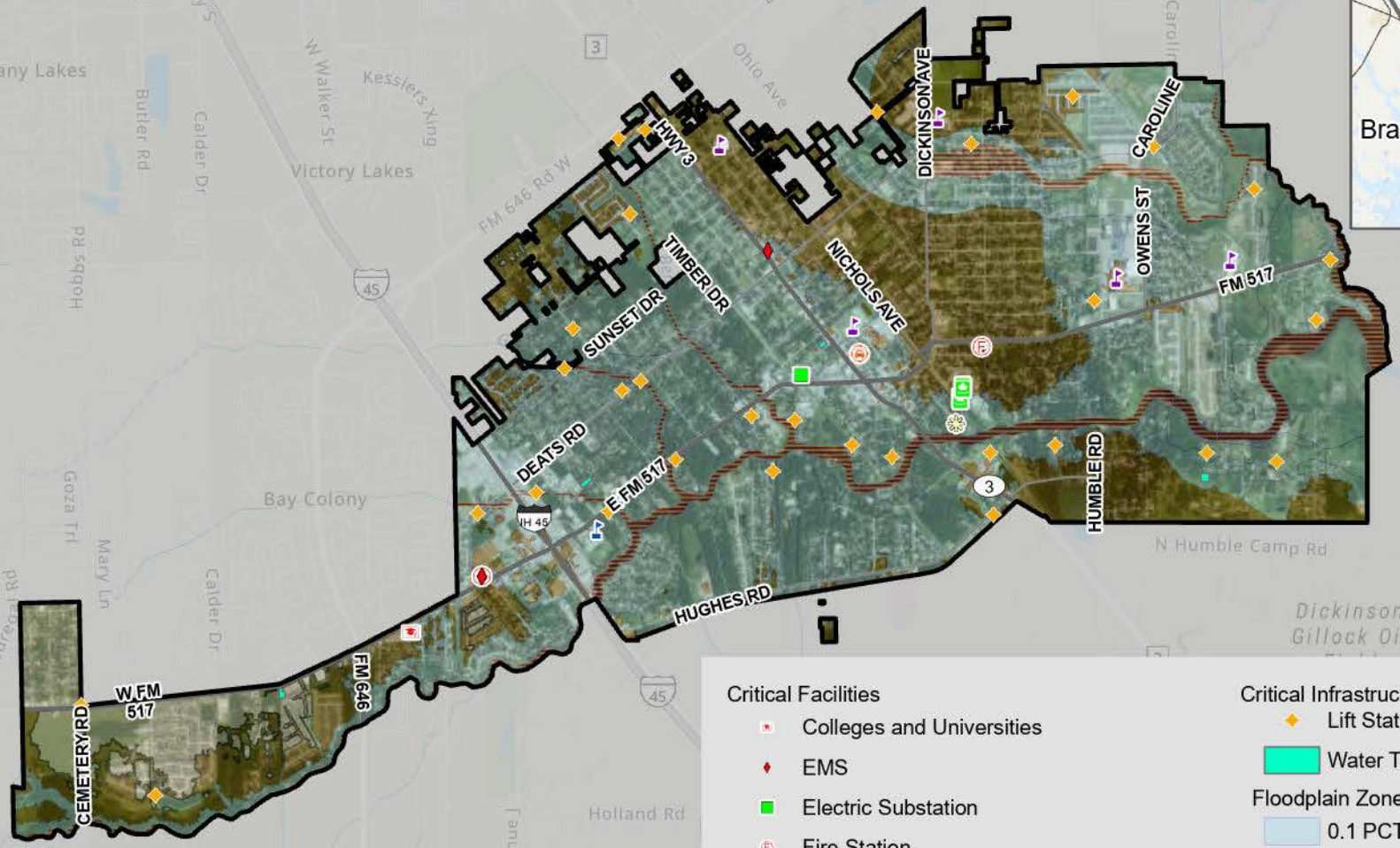
Appendix B:
Maps

GC WCID #1: Expansive Soil



GC WCID #1: Floodplain





Critical Facilities
- Colleges and Universities
- EMS
- Electric Substation
- Fire Station
- Police Station
- Private School
- Public School
- Toxic Release Inventory Facility
- Wastewater Treatment Plant

Critical Infrastructure
- Lift Stations
- Water Treatment Plant Sites

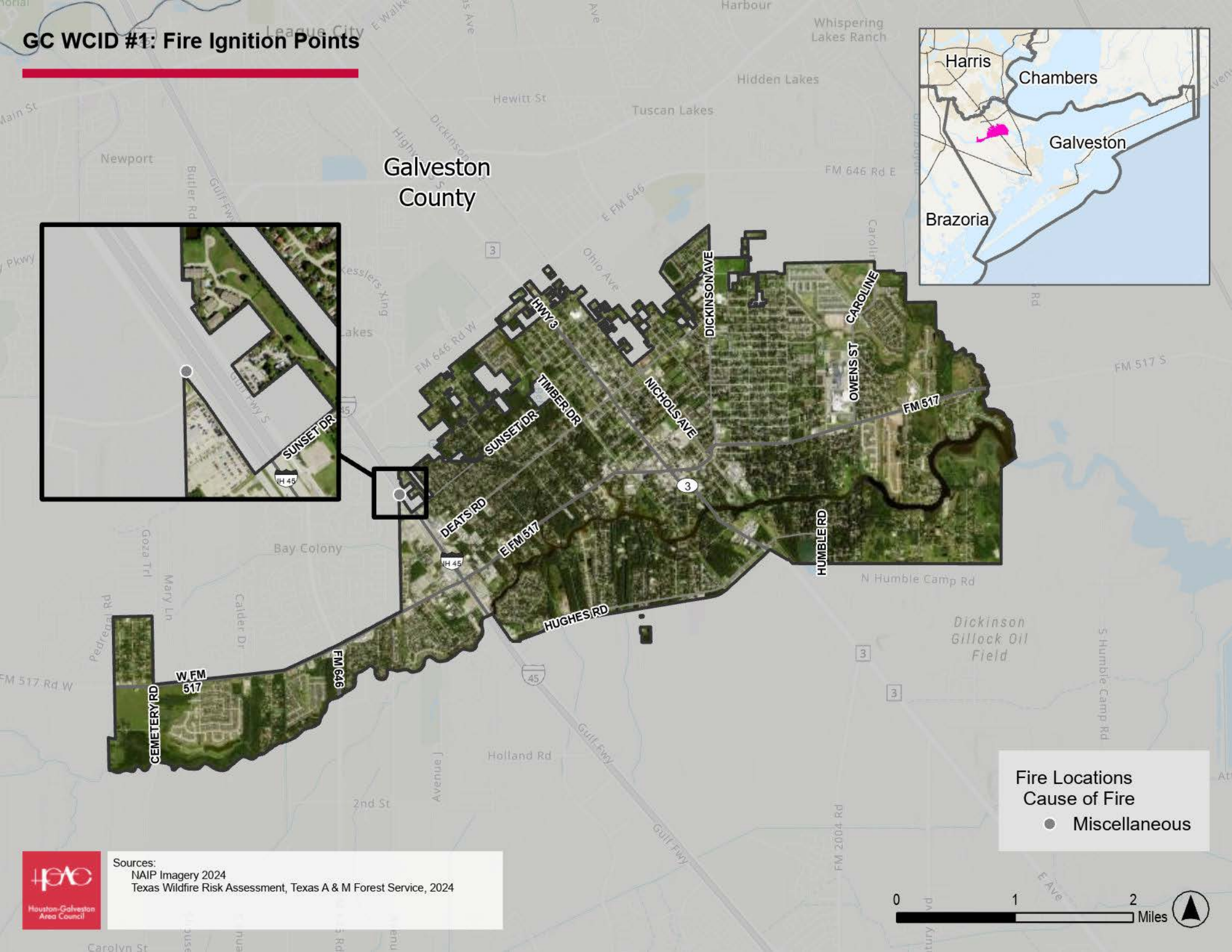
Floodplain Zone
- 0.1 PCT ANNUAL CHANCE
- 0.2 PCT ANNUAL CHANCE FLOOD HAZARD
- AREA OF MINIMAL FLOOD HAZARD
- FLOODWAY

Houston-Galveston Area Council

Sources:
Facilities : Regional Land Use Information System, H-GAC, 2024
FEMA NFHL 2022 Floodplain Data

0 1 2 Miles

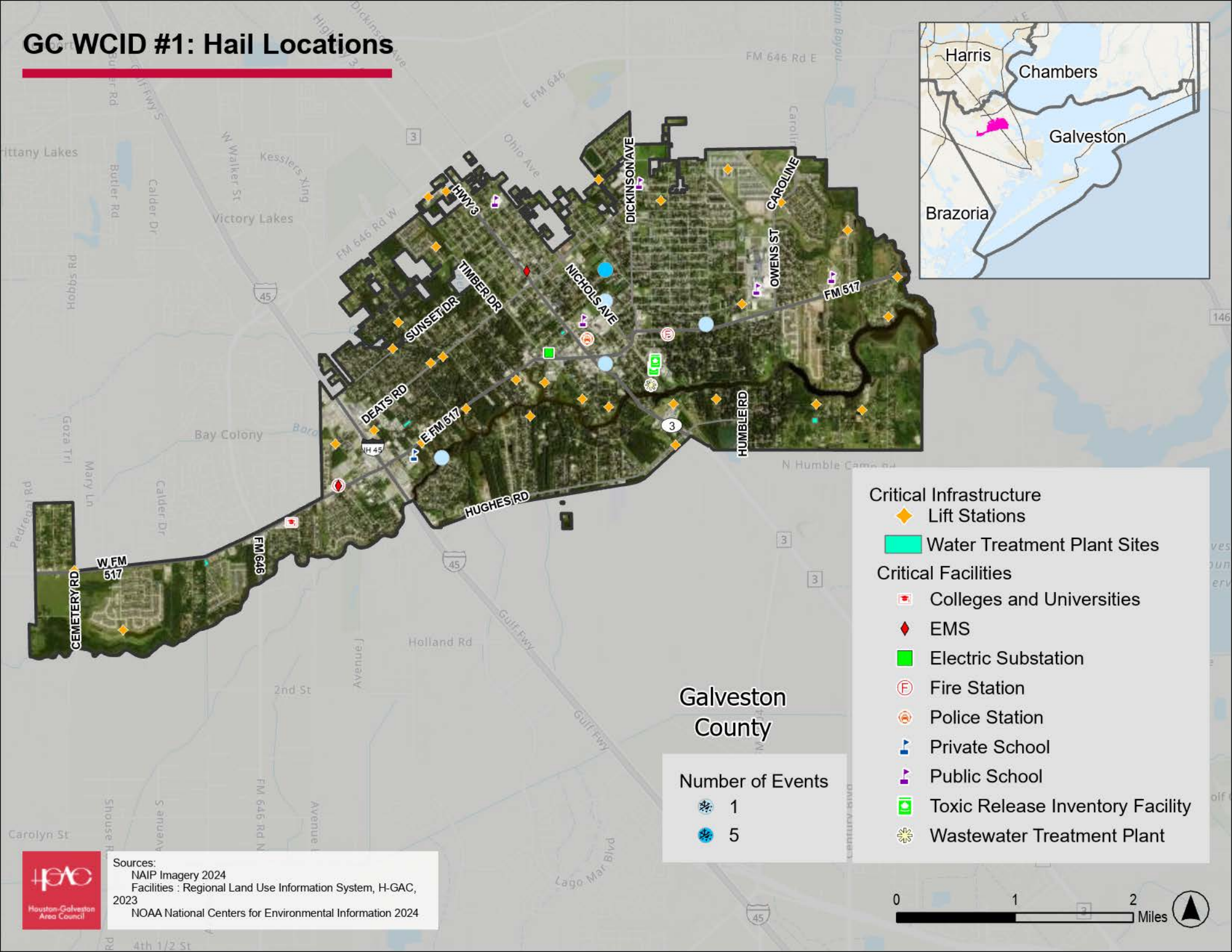
GC WCID #1: Fire Ignition Points



Houston-Galveston Area Council

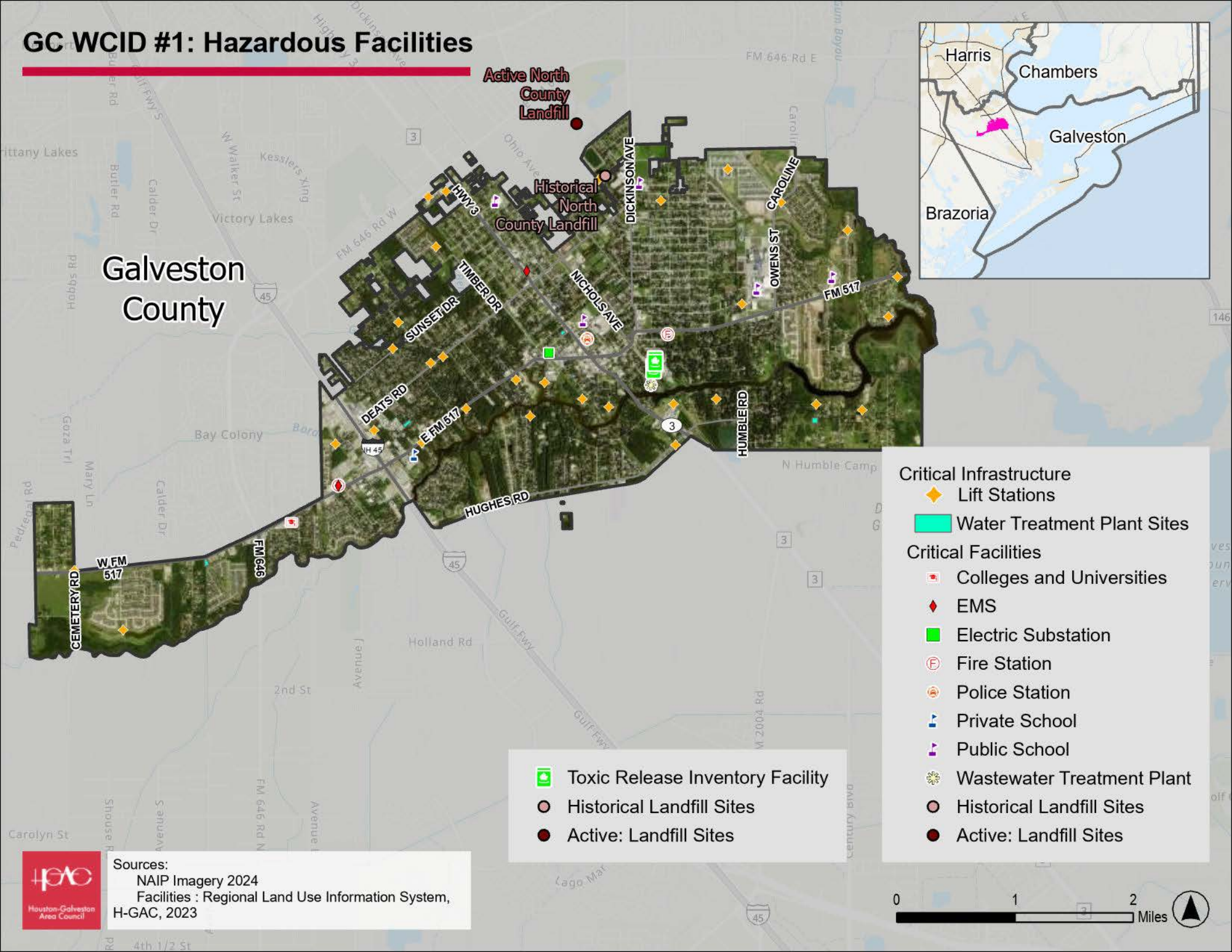
Sources:
NAIP Imagery 2024
Texas Wildfire Risk Assessment, Texas A & M Forest Service, 2024

GC WCID #1: Hail Locations



Sources:
NAIP Imagery 2024
Facilities : Regional Land Use Information System, H-GAC, 2023
NOAA National Centers for Environmental Information 2024

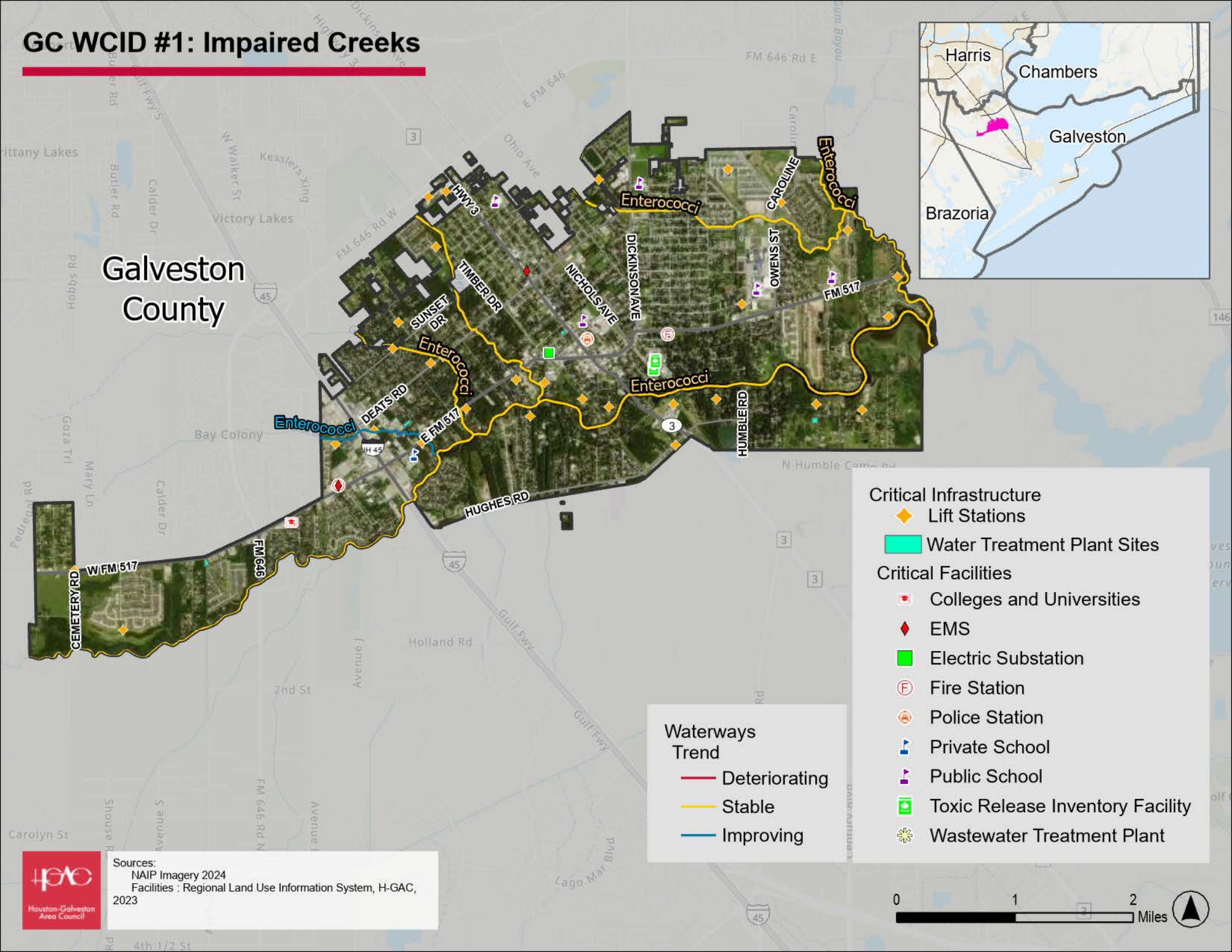
GC WCID #1: Hazardous Facilities



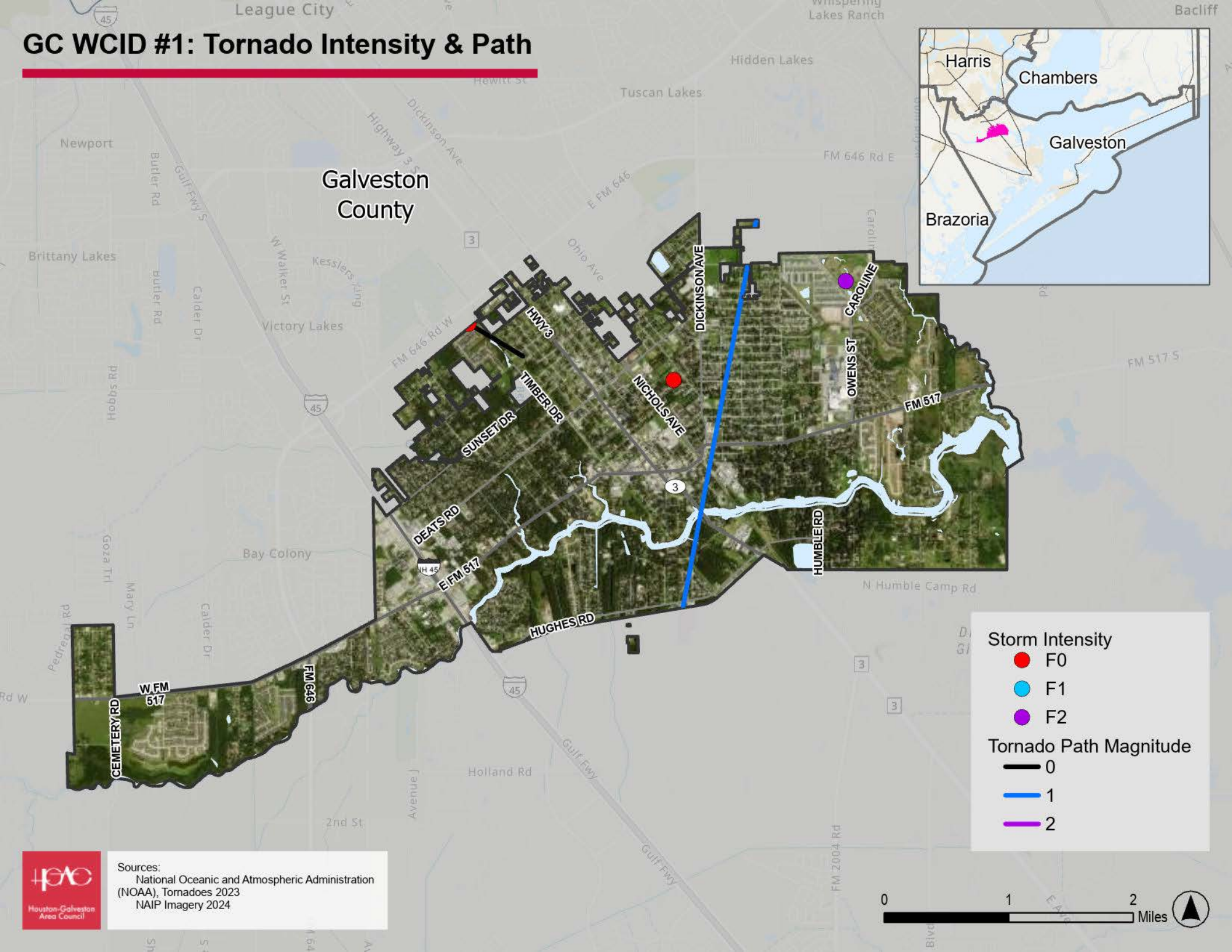
Houston-Galveston Area Council

Sources:
NAIP Imagery 2024
Facilities : Regional Land Use Information System, H-GAC, 2023

GC WCID #1: Impaired Creeks

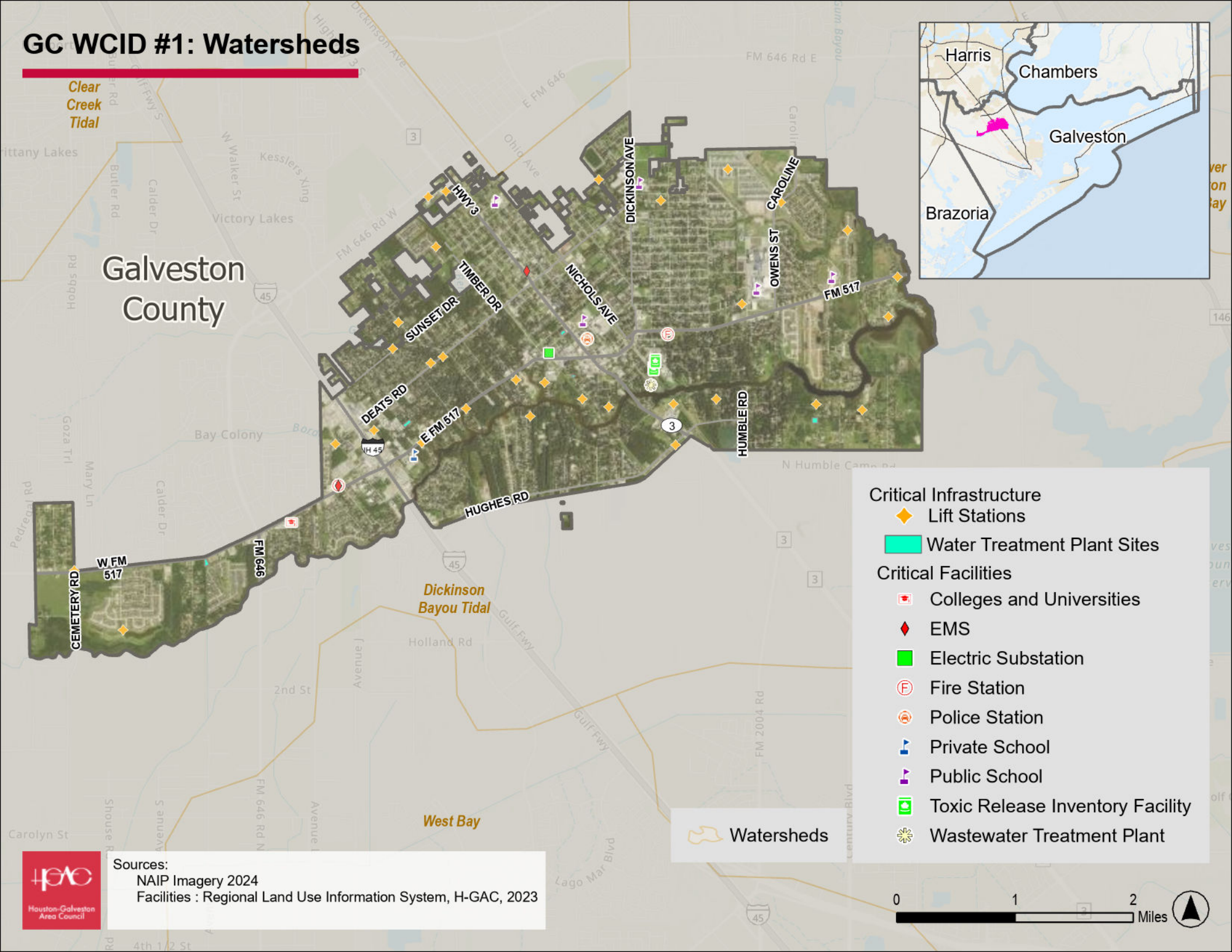


GC WCID #1: Tornado Intensity & Path



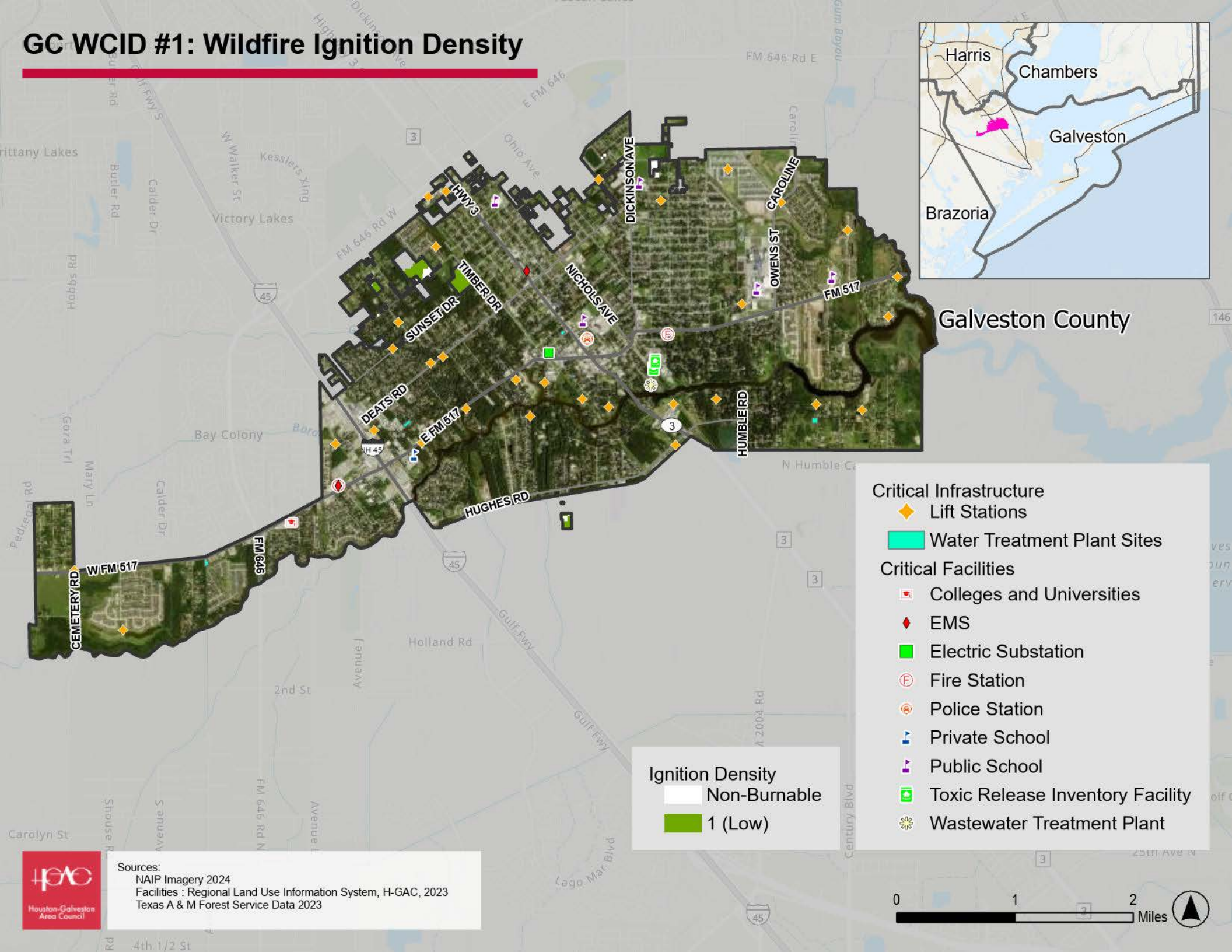
Sources:
National Oceanic and Atmospheric Administration (NOAA), Tornadoes 2023
NAIP Imagery 2024

GC WCID #1: Watersheds



Sources:
NAIP Imagery 2024
Facilities : Regional Land Use Information System, H-GAC, 2023

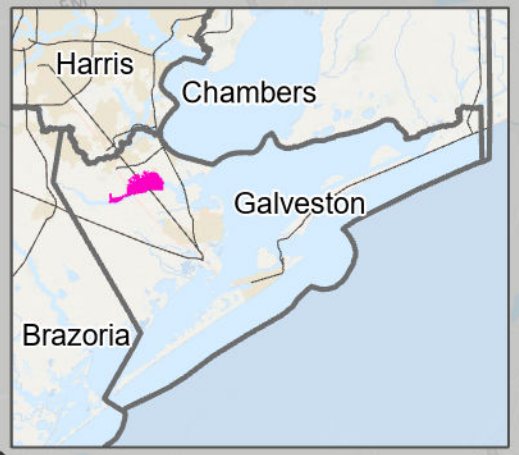
GC WCID #1: Wildfire Ignition Density

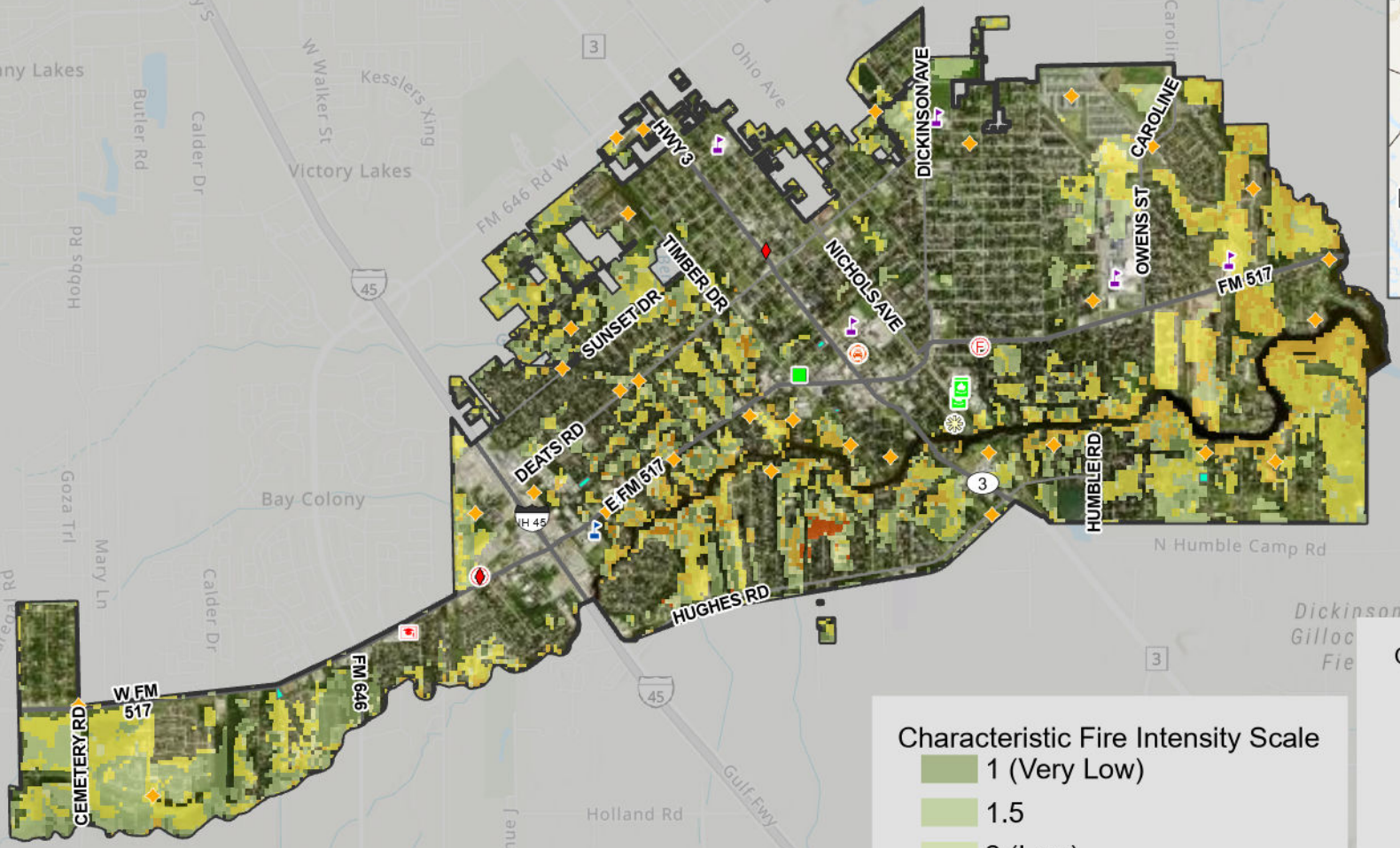


Houston-Galveston Area Council

Sources:
NAIP Imagery 2024
Facilities : Regional Land Use Information System, H-GAC, 2023
Texas A & M Forest Service Data 2023

GC WCID #1: Wildfire Risk Assessment





Characteristic Fire Intensity Scale

- 1 (Very Low)
- 1.5
- 2 (Low)
- 2.5
- 3 (Moderate)
- 3.5
- 4 (High)
- 4.5
- 5 (Very High)

Critical Facilities

- Colleges and Universities
- EMS
- Electric Substation
- Fire Station
- Police Station
- Private School
- Public School
- Toxic Release Inventory Facility
- Wastewater Treatment Plant

Critical Infrastructure

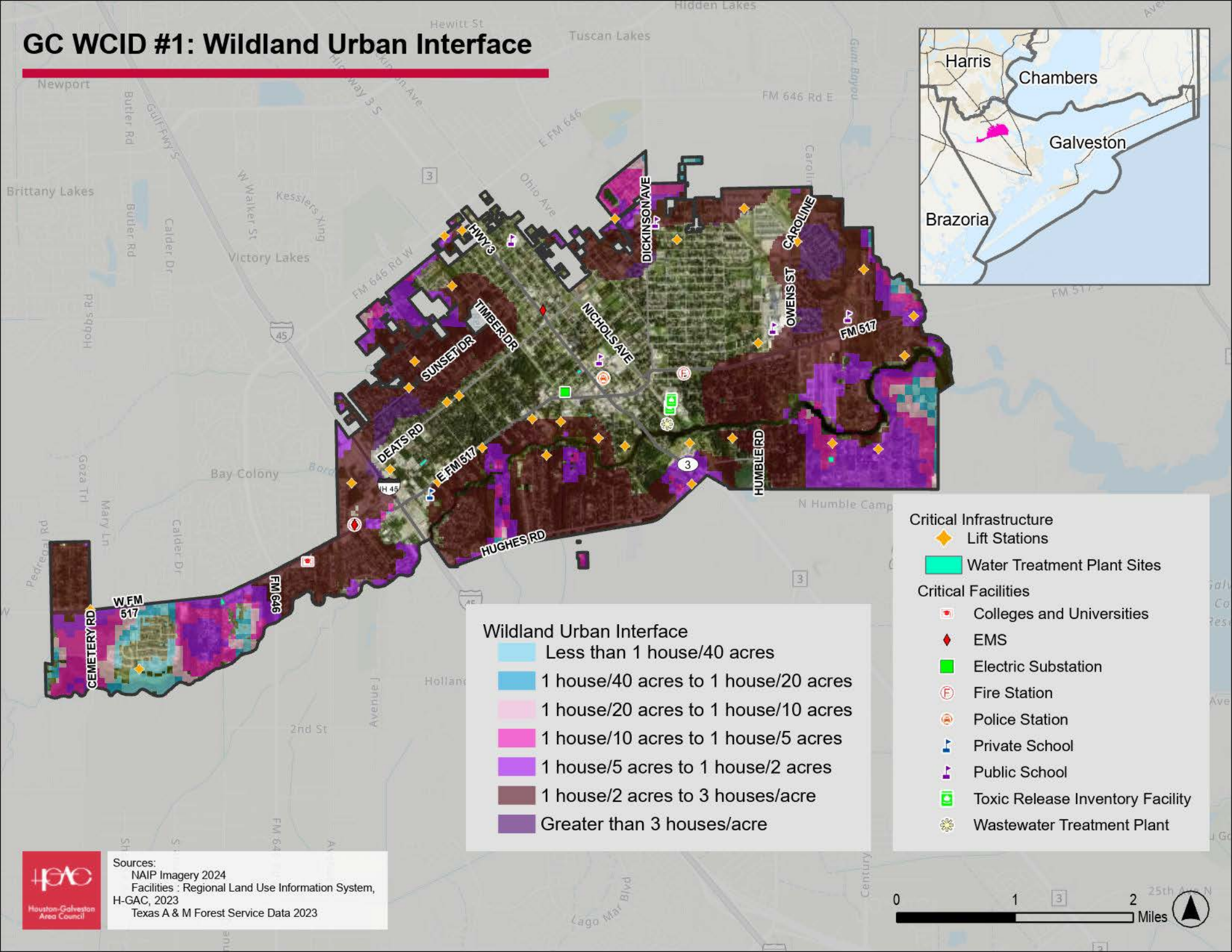
- Lift Stations
- Water Treatment Plant Sites

Sources:
NAIP Imagery 2024
Facilities : Regional Land Use Information System, H-GAC, 2023
Texas A & M Forest Service Data 2023

Houston-Galveston Area Council

0 1 2 Miles

GC WCID #1: Wildland Urban Interface



Houston-Galveston Area Council

Sources:
NAIP Imagery 2024
Facilities : Regional Land Use Information System, H-GAC, 2023
Texas A & M Forest Service Data 2023

Appendix C:
Reference Documents

DISASTER DECLARATIONS

femaDeclarationString	DeclarationType	declarationDate	fyDeclared	incidentType	DeclarationTitle
DR-398-TX	Major Disaster Declaration	7/11/1973	1973	Flood	
DR-595-TX	Major Disaster Declaration	7/28/1979	1979	Flood	
DR-603-TX	Major Disaster Declaration	9/25/1979	1979	Flood	
DR-689-TX	Major Disaster Declaration	8/19/1983	1983	Hurricane	
DR-1041-TX	Major Disaster Declaration	10/18/1994	1995	Flood	Severe Thunderstorms And Flooding
DR-1239-TX	Major Disaster Declaration	8/26/1998	1998	Severe Storm	Tropical Storm Charley
DR-1245-TX	Major Disaster Declaration	9/23/1998	1998	Severe Storm	Hurricane Georges - Texas
DR-1257-TX	Major Disaster Declaration	10/21/1998	1999	Flood	Tx-Flooding 10/18/98
EM-3142-TX	Emergency Declaration	9/1/1999	1999	Fire	Extreme Fire Hazards
DR-1379-TX	Major Disaster Declaration	6/9/2001	2001	Coastal Storm	2001
DR-1434-TX	Major Disaster Declaration	9/26/2002	2002	Coastal Storm	Tropical Storm Fay
DR-1479-TX	Major Disaster Declaration	7/17/2003	2003	Hurricane	Hurricane Claudette
EM-3216-TX	Emergency Declaration	9/2/2005	2005	Hurricane	Hurricane Katrina Evacuation
EM-3261-TX	Emergency Declaration	9/21/2005	2005	Hurricane	Hurricane Rita
DR-1606-TX	Major Disaster Declaration	9/24/2005	2005	Hurricane	Hurricane Rita
DR-1624-TX	Major Disaster Declaration	1/11/2006	2006	Fire	Extreme Wildfire Threat
EM-3277-TX	Emergency Declaration	8/18/2007	2007	Hurricane	Hurricane Dean
EM-3284-TX	Emergency Declaration	3/14/2008	2008	Fire	Wildfires
EM-3290-TX	Emergency Declaration	8/29/2008	2008	Hurricane	Hurricane Gustav
EM-3294-TX	Emergency Declaration	9/10/2008	2008	Hurricane	Hurricane Ike
DR-1791-TX	Major Disaster Declaration	9/13/2008	2008	Hurricane	Hurricane Ike
DR-4245-TX	Major Disaster Declaration	11/25/2015	2016	Severe Storm	Severe Storms, Tornadoes, Straight-Line Winds, And Flooding
DR-4332-TX	Major Disaster Declaration	8/25/2017	2017	Hurricane	Hurricane Harvey
EM-3458-TX	Emergency Declaration	3/13/2020	2020	Biological	Covid-19
DR-4485-TX	Major Disaster Declaration	3/25/2020	2020	Biological	Covid-19 Pandemic
EM-3530-TX	Emergency Declaration	7/26/2020	2020	Hurricane	Hurricane Hanna
EM-3540-TX	Emergency Declaration	8/24/2020	2020	Hurricane	Tropical Storms Marco And Laura
DR-4572-TX	Major Disaster Declaration	12/9/2020	2021	Hurricane	Hurricane Laura
EM-3554-TX	Emergency Declaration	2/14/2021	2021	Severe Ice Storm	Severe Winter Storm
DR-4586-TX	Major Disaster Declaration	2/19/2021	2021	Severe Ice Storm	Severe Winter Storms
DR-4798-TX	Major Disaster Declaration	7/9/2024	2024	Hurricane	Hurricane Beryl

GALVESTON COUNTY, NCEI STORM EVENTS (2000-2025)

EVENT_ID	CZ_NAME_STR	BEGIN_LOCATION	BEGIN_DATE	EVENT_TYPE	MAGNITUDE	TOR_F_SCALE	DEATHS_DIRECT	INJURIES_DIRECT	DAMAGE_PROPERTY_NUM	DAMAGE_CROPS_NUM	EVENT_NARRATIVE	EPISODE_NARRATIVE
5143369	GALVESTON CO.	LEAGUE CITY	4/2/2000	Thunderstorm Wind			0	0	$10,000	$0	Large tree limbs down on FM 270.	
5143372	GALVESTON CO.	GALVESTON	4/2/2000	Hail	0.75		0	0	$10,000	$0		
5143374	GALVESTON CO.	HIGH IS	4/3/2000	Thunderstorm Wind			0	0	$15,000	$0	Power pole snapped and transmission line down.	
5148881	GALVESTON CO.	LEAGUE CITY	5/2/2000	Thunderstorm Wind			0	1	$50,000	$0	Numerous power lines, street signs, and large tree limbs blown down mainly in the Newport, Brittany Bay, and Landing subdivisions.	
5148889	GALVESTON CO.	GALVESTON SCHOLES FLD	5/2/2000	Thunderstorm Wind			0	0	$1,000,000	$0	Several small airplanes overturned with severe damage to NOAA P-3 research aircraft. A strong storm system produced widespread severe thunderstorms over southeast Texas from late evening on May 1st through early morning on May 2nd. Widespread wind damage impacted Harris, Ft. Bend, Wharton, Brazoria, and Galveston counties. Storm surveys revealed most of the wind damage to be due to downburst winds, with only one F0 tornado reported in Rosharon. Severe damage occurred at Clover Field in Pearland where several planes were overturned and two airplane hangars were destroyed, and at Scholes Field in Galveston where several small planes were overturned and the NOAA P-3 research aircraft was damaged. A massive hailstorm with golfball to baseball sized hail struck the Conroe area producing over $10 million in damage to automobiles, carports, and several businesses. Wind and hail caused destruction of crops in Burleson County and in southern Austin and Ft. Bend counties. Total damage for the event in southeast Texas was estimated to be near $25 million.	
5176247	GALVESTON (ZONE)		7/6/2000	Heat			2	0	$0	$0	Excessive heat impacted southeast Texas for much of the month of July. High temperatures ranged from 98 to 105 degrees on a daily basis over all but the immediate coast during a 2 week period. College Station recorded 12 consecutive days with temperatures of 100 degrees or higher. Highest temperatures for the month included 103 degrees at Houston Intercontinental Airport and 105 degrees at College Station. Only traces of rainfall were observed during this period. Of the 19 heat related deaths reported during this period, 17 were in Harris County and 2 were in Galveston County.	
5164032	GALVESTON CO.	SAN LEON	7/23/2000	Thunderstorm Wind			0	0	$15,000	$0	Power lines down.	
5164031	GALVESTON CO.	SANTA FE	7/23/2000	Thunderstorm Wind			0	0	$15,000	$0	Trees down.	
5164328	GALVESTON CO.	HITCHCOCK	7/23/2000	Thunderstorm Wind			0	0	$50,000	$0	Railroad crossbars blown down and touching power lines at FM 2004 and SH 6.	
5164329	GALVESTON CO.	GALVESTON	7/23/2000	Thunderstorm Wind			0	0	$15,000	$0	Power lines down.	
5164417	GALVESTON CO.	JAMAICA BEACH	7/30/2000	Waterspout			0	0	$0	$0	Waterspout reported near west end of Galveston Island.	
5164419	GALVESTON CO.	GALVESTON SCHOLES FLD	7/31/2000	Waterspout			0	0	$0	$0	Waterspout over Galveston Bay between Scholes Field and Tiki Island.	
5157142	GALVESTON (ZONE)		8/1/2000	Drought			0	0	$0	$0	Severe drought continued across southeast Texas through the month of August. Rainfall for the month of August averaged only 30 to 50 percent of normal across southeast Texas. Several cities were placed under water rationing with large crop losses were noted across the area. Wildfires became increasingly common, especially toward the end of the month. Drought losses in dollars will be computed at the end of the summer growing season.	
5171641	GALVESTON (ZONE)		8/29/2000	Heat			0	0	$0	$0	Excessive heat occurred over southeast Texas during the last 3 days of August. High temperatures reached well over 100 degrees over inland areas, with Galveston reaching 100 degrees on the 31st. The high temperature of 107 degrees at Houston Intercontinental on the 31st tied the all-time record high temperature observed in Houston up to that date. College Station recorded a high temperature of 109 degrees on the 31st. All 3 heat related deaths were in Harris County.	
5173943	GALVESTON (ZONE)		9/1/2000	Heat			0	0	$0	$0	A record setting heat wave continued over southeast Texas through the first week of September 2000. The temperature at Houston Intercontinental soared to 109 degrees on the 4th and 108 degrees on the 5th, setting new records for the all-time highest temperatures recorded in Houston. The temperature in College Station peaked at 112 degrees on the 4th and 111 degrees on the 5th, both the highest temperatures ever recorded in College Station. In Galveston, the all-time record high temperature of 101 degrees was tied on the 4th, then broken the next day when the temperature rose to 104 degrees. Temperatures over southeast Texas began to cool on the 6th. In all, Houston recorded 6 consecutive days with temperatures of 104 degrees or higher and College Station recorded 6 consecutive days of 107 degrees or higher. Galveston reached 100 degrees or higher for the first time since 1939, and for the first time on record had more than one day in a season with 100-degree temperatures. A heat wave with temperatures of this duration and magnitude is unprecendented for southeast Texas. All 5 heat related deaths occurred in Harris County.	

5175141	GALVESTON (ZONE)		9/1/2000	Drought			0	0	$0	$102,300,000	Severe drought continued across southeast Texas through September 2000. The combination of excessive heat and dryness caused many wildfires to burn during the first week of the month including a 4500 acre fire in Liberty County on the 4th and a 1965 acre fire in Trinity County on the 2nd. Water rationing continued during the first half of the month in several small communities and was briefly instigated in the city of Houston. Water line breaks and small grass fires were a common problem across southeast Texas, especially at the beginning of the month. By the end of September, damage estimates for the season to cotton, wheat, and forage crops and increased irrigation reached $102.3 million for southeast Texas.	
5174435	GALVESTON CO.	COUNTYWIDE	9/13/2000	Flash Flood			0	0	$100,000	$0	Foot of standing water on streets in League City with cars flooded and stalled. Street flooding in Galveston with flooding on Broadway. Several cars submerged in water and several streets barricaded in Texas City including Palmer Highway. Over 7 inches of rainfall in League City.	
5174440	GALVESTON CO.	BACLIFF	9/14/2000	Funnel Cloud			0	0	$0	$0		
5238705	GALVESTON CO.	FRIENDSWOOD	3/14/2001	Hail	0.88		0	0	$10,000	$0		
5238707	GALVESTON CO.	SANTA FE	3/14/2001	Thunderstorm Wind			0	0	$40,000	$0	Numerous fences and trees down in Bay Colony.	
5238706	GALVESTON CO.	DICKINSON	3/14/2001	Thunderstorm Wind	54		0	0	$-	$0		
5238710	GALVESTON CO.	TEXAS CITY	3/14/2001	Thunderstorm Wind	57		0	0	$0	$0		
5238713	GALVESTON CO.	GALVESTON	3/14/2001	Funnel Cloud			0	0	$0	$0		
5238711	GALVESTON CO.	GALVESTON	3/14/2001	Thunderstorm Wind			0	0	$20,000	$0	Utility poles and power lines down; broken windows at a car dealership.	
5238717	GALVESTON CO.	HITCHCOCK	3/27/2001	Hail	0.75		0	0	$5,000	$0		
5245171	GALVESTON CO.	GALVESTON	5/13/2001	Funnel Cloud			0	0	$0	$0		
5256250	GALVESTON (ZONE)		6/5/2001	Tropical Storm			0	0	$31,740,000	$0		early afternoon of June 5th, 80 miles south of Galveston. Allison moved northward, making landfall on the west end of Galveston Island between midnight and 1am on the 6th, less than 12 hours after forming. As Allison moved inland it caused two to three foot tides, which had little impact on the area. On the evening of the 5th a tornado briefly touched down in Brazoria county causing damage to one home in the Manvel area. Over the next five days Allison produced record rainfall that led to devastating flooding across Southeast Texas, killing 22 people and damaging over 48,000 homes, 70,000 automobiles and nearly 2000 businesses. The first significant flooding occurred while Allison was still offshore. A large spiral band with very heavy rainfall moved inland from Galveston to the Houston area, and by mid evening 8 to 12 inch totals were common from northern Galveston county into southern Harris county. Heavy rain continued over inland portions of Southeast Texas overnight with 3 to 5 inch totals common, as Allison moved inland and weakened. On the morning of June 6th, Allison was downgraded to a tropical depression. Allison moved north until it was near Lufkin, then made a clockwise loop and began drifting to the southwest. Before sunrise on June 7th, the center was near Huntsville, and a band of heavy rain moved into Liberty county producing 5 to 10 inches of rain, causing almost a foot of water on Highway 90. Around the same time another area of thunderstorms developed over the Sugar Land - Stafford areas of Fort Bend and Harris counties, producing another 8 to 12 inches of rain and causing
5255995	GALVESTON CO.	COUNTYWIDE	6/5/2001	Flash Flood			0	0	$0	$0	Flooding from T.S. Allison. Damage included in previous report.	
5256169	GALVESTON CO.	SANTA FE	6/8/2001	Thunderstorm Wind			0	0	$30,000	$0	A building under construction sustained a damaged roof, twisted rafters and a collapsed frame. Numerous trees and fences were blown down.	
5256082	GALVESTON CO.	CENTRAL PORTION	6/8/2001	Flash Flood			0	0	$0	$0	Flooding from the remnants of T.S. Allison. Damage included in previous report.	
5256093	GALVESTON CO.	NORTH PORTION	6/9/2001	Flash Flood			0	0	$0	$0	Flooding from the remnants of T.S. Allison. Damage included in previous report.	
5256168	GALVESTON CO.	NORTH PORTION	6/9/2001	Flash Flood			0	0	$0	$0	Flooding from the remnants of T.S. Allison. Damage included in previous report.	
5259897	GALVESTON CO.	TEXAS CITY	7/7/2001	Funnel Cloud			0	0	$0	$0		
5263459	GALVESTON CO.	TEXAS CITY	8/19/2001	Funnel Cloud			0	0	$0	$0		
5263460	GALVESTON CO.	TEXAS CITY	8/25/2001	Funnel Cloud			0	0	$0	$0		
5263465	GALVESTON CO.	TEXAS CITY	8/28/2001	Flash Flood			0	0	$30,000	$0	Flooding on Amburn Road and on Ninth Avenue; high water at College of the Mainland.	
5263470	GALVESTON CO.	TEXAS CITY	8/30/2001	Flash Flood			0	0	$80,000	$0	Homes flooded on Edwards Street; high water on Palmer Highway.	A series of upper level disturbances produced heavy rain and some severe weather across the southern portions of southeast Texas. Rainfall rates of one inch per hour for up to 6 hours at a time were recorded in Jackson, Matagorda, and Wharton counties. This led to widespread street flooding with some roads being washed out. Heavy rainfall in Galveston, Brazoria, Fort Bend, and southeastern Harris counties also led to street flooding, as well as water in some homes. The storms also produced three tornadoes causing minor damage and no injuries.

5263475	GALVESTON CO.	PORT BOLIVAR	8/31/2001	Thunderstorm Wind			0	0	$25,000	$0	Newspaper reported damage to a bait camp at Sievers Cove.	A series of upper level disturbances produced heavy rain and some severe weather across the southern portions of southeast Texas. Rainfall rates of one inch per hour for up to 6 hours at a time were recorded in Jackson, Matagorda, and Wharton counties. This led to widespread street flooding with some roads being washed out. Heavy rainfall in Galveston, Brazoria, Fort Bend, and southeastern Harris counties also led to street flooding, as well as water in some homes. The storms also produced three tornadoes causing minor damage and no injuries.
5267742	GALVESTON CO.	PORT BOLIVAR	9/1/2001	Flash Flood			0	0	$10,000	$0	Flooding along Highway 87 on Bolivar Peninsula.	
5267735	GALVESTON CO.	TEXAS CITY	9/2/2001	Funnel Cloud			0	0	$0	$0		
5267638	GALVESTON CO.	LEAGUE CITY	9/19/2001	Thunderstorm Wind			0	0	$45,000	$0	Numerous trees down and damage to some homes and businesses.	
5281068	GALVESTON CO.	LEAGUE CITY	2/21/2002	Thunderstorm Wind			0	0	$5,000	$0	League City Police reported fences blown down near the Houston Gulf Airport at Highway 96.	
5281067	GALVESTON CO.	LEAGUE CITY	2/21/2002	Thunderstorm Wind			0	0	$5,000	$0	League City Police reported power lines down at Lawrence Road and FM 2094.	
5290830	GALVESTON CO.	FRIENDSWOOD	3/30/2002	Hail	1.75		0	0	$30,000	$0		
5290831	GALVESTON CO.	LEAGUE CITY	3/30/2002	Thunderstorm Wind	60		0	0	$20,000	$0	A large tree was blown down by strong winds at East Walker and Eden.	
5290832	GALVESTON CO.	LEAGUE CITY	3/30/2002	Hail	0.88		0	0	$10,000	$0	Nickel sized Hail occurred in the Countryside subdivision at FM 518 and Bay Area Boulevard.	
5290833	GALVESTON CO.	LEAGUE CITY	3/30/2002	Hail	2		0	0	$30,000	$0	Two inch Hail occurred at the League City Police Department.	
5293282	GALVESTON CO.	FRIENDSWOOD	4/8/2002	Thunderstorm Wind			0	0	$25,000	$0	On FM 518 in Friendswood, wind damage occurred to an auto repair shop, with loss of the sheet metal awning, and power lines were down.	
5293365	GALVESTON CO.	SAN LUIS PASS	4/8/2002	Hail	1.75		0	0	$10,000	$0		
5293370	GALVESTON CO.	GALVESTON	4/8/2002	Thunderstorm Wind			0	0	$20,000	$0	There was an extensive number of power lines down along FM 3005 on Galveston Island.	
5293371	GALVESTON CO.	JAMAICA BEACH	4/8/2002	Hail	0.75		0	0	$5,000	$0		
5293367	GALVESTON CO.	LEAGUE CITY	4/8/2002	Flash Flood			0	0	$5,000	$0	Street flooding was reported in League City and Friendswood.	
5293372	GALVESTON CO.	SAN LUIS PASS	4/8/2002	Thunderstorm Wind			0	0	$50,000	$0	Wind damage to homes on the west end of Galveston Island, most extensive at Terramar and Bay Harbor subdivisions, with 4 houses missing up to half their roofs, and a couple dozen homes with missing shingles and blown out windows.	
5293373	GALVESTON CO.	SAN LUIS PASS	4/8/2002	Hail	1		0	0	$300,000	$0	Police and Emergency Management reported that 200 to 300 homes had received hail damage on the west end of Galveston Island.	
5299873	GALVESTON CO.	TEXAS CITY	5/17/2002	Flash Flood			0	0	$150,000	$0	Streets flooded with 2-3 feet of water, 50 homes and businesses flooded.	
5299875	GALVESTON CO.	GALVESTON	5/17/2002	Flash Flood			0	0	$2,000	$0	Street flooding.	
5299874	GALVESTON CO.	LEAGUE CITY	5/17/2002	Flash Flood			0	0	$2,000	$0	Street flooding.	
5299882	GALVESTON CO.	GALVESTON	5/30/2002	Hail	0.88		0	0	$3,000	$0		
5299883	GALVESTON CO.	TEXAS CITY	5/30/2002	Hail	1.75		0	0	$15,000	$0		
5315237	GALVESTON CO.	CRYSTAL BEACH	8/15/2002	Thunderstorm Wind			0	0	$25,000	$0	Roof blown off house and power lines down.	
5315236	GALVESTON CO.	SOUTH PORTION	8/15/2002	Flash Flood			0	0	$75,000	$0	Water entering businesses on Broadway by 4:00 AM CST. Six inches of rain at Galveston's Scholes Field through 4:44 AM CST. Widespread street flooding by 5:45 AM CST (up to 3 feet deep at some locations). More than 11 inches of rain falls at Scholes Field by the end of the day.	
5313769	GALVESTON CO.	COUNTYWIDE	8/15/2002	Flash Flood			0	0	$100,000	$0	Major flooding across the county. Water in cars and businesses, streets closed. Island received more than 11 inches of rain.	
5313780	GALVESTON CO.	CRYSTAL BEACH	8/27/2002	Thunderstorm Wind			0	0	$20,000	$0	Wind damage.	
5316743	GALVESTON (ZONE)		9/5/2002	Tropical Storm			0	0	$0	$0		
5315379	GALVESTON CO.	JAMAICA BEACH	9/10/2002	Flash Flood			0	0	$45,000	$0	Flooding in Jamaica Beach and Pirates Beach.	
5315382	GALVESTON CO.	LEAGUE CITY	9/19/2002	Flash Flood			0	0	$25,000	$0	High water in and around League City.	
5319688	GALVESTON CO.	(GLS)SCHOLES FLD GAL	10/8/2002	Tornado		F0	0	0	$100,000	$0	Waterspout moved onshore and did F0 damage on the east end of Galveston Island. Damage included fences down, a carport damaged, and part of an apartment brick facade down.	
5319690	GALVESTON CO.	EAST PORTION	10/8/2002	Flash Flood			0	0	$15,000	$0	Roads flooded and impassable on Galveston Island (KGLS almost 3.50 inches of rain in 2 1/2 hours).	
5319696	GALVESTON CO.	NORTH PORTION	#########	Flash Flood			0	0	$75,000	$0	Roads near I-45 across northern Galveston County flooded.	
5322662	GALVESTON CO.	COUNTYWIDE	11/5/2002	Flash Flood			0	0	$55,000	$0	Numerous roads closed due to high water on extremely saturated grounds.	
5326702	GALVESTON CO.	CENTRAL PORTION	12/4/2002	Flash Flood			0	0	$20,000	$0	Flooding from League City to Dickinson with numerous roads underwater and impassable.	
5326954	GALVESTON CO.	TEXAS CITY	#########	Tornado		F1	0	0	$75,000	$0	Tornado touched down near the intersection of SH 348 and Loop 197 in Texas City. Several businesses were damaged at the initial touchdown. The tornado moved east northeast and eventually crossed the Texas City dike where numerous power poles were knocked down. The tornado continued past the dike and moved into Galveston Bay as a waterspout.	Exactly one week after the December 23rd outbreak, Southeast Texas received another round of severe weather as the next storm system moved out of the southwestern U.S. toward Texas. This event only lasted three hours (compared to eighteen hours on the 23rd). This event only had three tornadoes (compared to ten on the 23rd). However, damage from two of these three tornadoes was significant due to the fact that it occurred over heavily populated areas. This event had no injuries, and the total damage cost was just under $450,000.

5326955	GALVESTON CO.	GALVESTON	########	Thunderstorm Wind	65		0	0	$30,000	$0	140 feet of roof ripped off the Shops at the Balinese on the Galveston seawall.	Exactly one week after the December 23rd outbreak, Southeast Texas received another round of severe weather as the next storm system moved out of the southwestern U.S. toward Texas. This event only lasted three hours (compared to eighteen hours on the 23rd). This event only had three tornadoes (compared to ten on the 23rd). However, damage from two of these three tornadoes was significant due to the fact that it occurred over heavily populated areas. This event had no injuries, and the total damage cost was just under $450,000.
5326950	GALVESTON CO.	GALVESTON	########	Thunderstorm Wind	56		0	0	$0	$0	-94.81667	29.3
5352795	GALVESTON CO.	LEAGUE CITY	4/7/2003	Hail	1.75		0	0	$5,000	$0		
5352796	GALVESTON CO.	GALVESTON	4/7/2003	Hail	0.75		0	0	$2,000	$0		
5352914	GALVESTON CO.	JAMAICA BEACH	4/29/2003	Hail	0.75		0	0	$2,000	$0		
5355121	GALVESTON CO.	JAMAICA BEACH	6/4/2003	Funnel Cloud			0	0	$0	$0	Observed off the coast near Jamaica Beach.	
5355237	GALVESTON CO.	(GLS)SCHOLES FLD GAL	6/17/2003	Tornado		F0	0	0	$0	$0	Tornado was between Scholes Field and the Causway; no damage.	
5355238	GALVESTON CO.	HITCHCOCK	6/17/2003	Funnel Cloud			0	0	$0	$0		
5355525	GALVESTON CO.	TEXAS CITY	6/17/2003	Funnel Cloud			0	0	$0	$0		
5373842	GALVESTON CO.	BACLIFF	7/14/2003	Funnel Cloud			0	0	$0	$0		
5373829	GALVESTON (ZONE)		7/14/2003	Hurricane (Typhoon)			0	0	$8,300,000	$0		O'Connor around 10:30 AM CDT on Tuesday, July 15, 2003. Claudette was the first hurricane to strike the Port O'Connor and Matagorda Bay area since Hurricane Fern on September 10, 1971. Historical records dating back to 1851 indicate Claudette is the first July hurricane to make landfall in this area. Claudette developed from a tropical wave over the central Caribbean Sea on July 8th. The storm moved westward until July 10th, when it turned northwestward over the northwestern Caribbean Sea. This motion brought the center over the northeastern Yucatan peninsula of Mexico on July 11th. Claudette briefly became a hurricane on July 10th and was a 60 mph tropical storm at landfall in Yucatan. Claudette moved northwestward into the Gulf of Mexico on July 12th, then meandered over the central Gulf of Mexico on July 13th. A general north-northwestward motion followed on July 14th and Claudette slowly intensified during this time. Claudette reached hurricane strength on July 15th as it turned west-northwestward. This motion brought the center to the Texas coast at Port O'Connor that morning as a 90 mph Category 1 hurricane on the Saffir-Simpson Hurricane Scale. Claudette turned westward after landfall, moving across portions of southern Texas and northern Mexico. The cyclone turned west-northwestward across northwestern Mexico and the Texas Big Bend area before dissipating on July 17th. Damage was observed across most Southeastern Texas coastal counties. Major beach erosion was observed from High Island to Freeport. Large geo-
5378855	GALVESTON (ZONE)		8/30/2003	Tropical Storm			0	0	$7,000	$0		landfall between Port O'Connor and Freeport on August 31st. Grace was the second tropical cyclone to affect this portion of the Texas coast in less than two months (Hurricane Claudette moved through the Port O'Connor area on July 15th). Grace ended up being a heavy rain producer for portions of the Upper Texas Coast where some flooding was observed. There was no damage due to Grace's winds. Grace developed from a tropical wave that moved across the Yucatan Peninsula and into the southeastern Gulf of Mexico late on August 29th. Development was inhibited by strong vertical wind shear. On August 30th, the shear lessened and a tropical depression formed about 335 miles east southeast of Corpus Christi. Reports from a ship and a reconnaissance aircraft indicated that the cyclone had strengthened into Tropical Storm Grace later that day. Grace moved in a general northwestward direction and remained poorly organized until it made landfall along the Texas coast between Port O'Connor and Freeport on August 31st. The system continued to move inland and quickly weakened to a depression. Outer rain bands containing heavy rainfall continued to develop near the coast well after Grace had weakened and produced additional heavy rainfall that lead to some flooding. Heavy rainfall between 6 and 12 inches was observed from extreme eastern Galveston County to across the Bolivar Peninsula and northward into Chambers and portions of Liberty Counties. Some roads were flooded in these areas.

5378763	GALVESTON CO.	LEAGUE CITY	8/31/2003	Flash Flood			0	0	$3,000	$0	Street flooding.	
5378761	GALVESTON CO.	GILCHRIST	8/31/2003	Flash Flood			0	0	$3,000	$0	Portions of Highway 87 on the Bolivar Peninsula impassable.	
5370953	GALVESTON (ZONE)		9/1/2003	Tropical Storm			0	0	$7,000	$0		This flash flood event was from the remnants of Tropical Storm Grace. Grace's broad and poorly defined center moved inland between Port O'Connor and Freeport on the last day of August. Heavy rains before and after landfall resulted in flash flooding across mainly upper Texas coastal areas. These heavy rains continued into the first two days of September as remnant feeder bands continued to develop and move across portions of Southeast Texas. Heavy rainfall between 6 and 15 inches was observed from extreme eastern Galveston County to across the Bolivar Peninsula and northward into Chambers and portions of Liberty Counties. Some roads were flooded in these areas. A secondary area of very heavy rainfall was over southern Matagorda County where an estimated 6 to 12 inches was observed. The majority of this rain fell in the early morning hours of September 1st. The Corps of Engineers at the Matagorda River Locks (Matagorda, Matagorda County) reported 9 inches of rain between 1 AM and 7 AM CST on that day. This heavy rainfall flooded roads and a few homes. Rainfall totals from the 1st and 2nd included 1.42 inches in Galveston, 2.92 inches at Jamaica Beach, 4.75 inches in Freeport, and 9.50 inches in Matagorda. Much of the rain that occurred these two days fell on extremely saturated grounds which lead to the flash flooding.
5370959	GALVESTON CO.	COUNTYWIDE	9/1/2003	Flash Flood			0	0	$4,000	$0	High water across Hwy 87 on the Bolivar Peninsula. Street flooding around FM 518 and I-45.	
5370961	GALVESTON CO.	LEAGUE CITY	9/2/2003	Funnel Cloud			0	0	$0	$0	Funnel cloud reported between Egret Bay and League City.	
5337374	GALVESTON CO.	CRYSTAL BEACH	9/10/2003	Lightning			1	1	$0	$0	Two men struck by lightning, one fatality.	
5331990	GALVESTON CO.	SANTA FE	#########	Tornado		F0	0	0	$100,000	$0	Tornado touched down in Santa Fe along 4th Street and FM 1764.	A total of 24 tornadoes touched down during this 15 hour period of severe weather in southeastern Texas on November 17, 2003. In addition to these tornadoes, a major flood developed over Harris and surrounding counties during the middle of this tornadic outbreak. Over 300 homes, along with hundreds of vehicles, were flooded. These tornadic storms developed over parts of Wharton and Matagorda counties shortly after sunrise with the first confirmed tornado occurring just east of El Campo around 9:00 am. Strong 500mb upper level troughing over the western U.S. moved from west to east across the Southern Plains. The polar jet stream associated with this 500 millibar trough surged into west Texas and then curved sharply northeastward into the Central Plains. The sub-tropical jet stream was oriented west to east across deep southern Texas. This jet stream pattern was the impetus to strong lower level convergence due to the enhanced upper level divergence. Low level moisture had substantially increased and was about 200 percent of normal by 6 AM. Vertical wind profiles also showed a great deal of low level wind shear with the greatest shear occurring in the lowest 2000 feet. In addition, these veering wind speeds rapidly increased with height. A focus for the thunderstorm development was provided by a weak low level boundary which was aligned southwest to northeast, or generally along the U.S. Highway 59 corridor. This feature was nearly-stationary and

5331468	GALVESTON CO.	DICKINSON	#########	Tornado		F0	0	0	$30,000	$0	Tornado damaged local car dealership's sign and rearranged a few cars in lot with tree damage along I-45.	A total of 24 tornadoes touched down during this 15 hour period of severe weather in southeastern Texas on November 17, 2003. In addition to these tornadoes, a major flood developed over Harris and surrounding counties during the middle of this tornadic outbreak. Over 300 homes, along with hundreds of vehicles, were flooded. These tornadic storms developed over parts of Wharton and Matagorda counties shortly after sunrise with the first confirmed tornado occurring just east of El Campo around 9:00 am. Strong 500mb upper level troughing over the western U.S. moved from west to east across the Southern Plains. The polar jet stream associated with this 500 millibar trough surged into west Texas and then curved sharply northeastward into the Central Plains. The sub-tropical jet stream was oriented west to east across deep southern Texas. This jet stream pattern was the impetus to strong lower level convergence due to the enhanced upper level divergence. Low level moisture had substantially increased and was about 200 percent of normal by 6 AM. Vertical wind profiles also showed a great deal of low level wind shear with the greatest shear occurring in the lowest 2000 feet. In addition, these veering wind speeds rapidly increased with height. A focus for the thunderstorm development was provided by a weak low level boundary which was aligned southwest to northeast, or generally along the U.S. Highway 59 corridor. This feature was nearly-stationary and
5331894	GALVESTON CO.	FRIENDSWOOD	#########	Tornado		F0	0	0	$5,000	$0	Tornado touch down at FM 528 and FM 518. Tornado crossed Clear Creek and moved 1/4 mile into Harris County.	A total of 24 tornadoes touched down during this 15 hour period of severe weather in southeastern Texas on November 17, 2003. In addition to these tornadoes, a major flood developed over Harris and surrounding counties during the middle of this tornadic outbreak. Over 300 homes, along with hundreds of vehicles, were flooded. These tornadic storms developed over parts of Wharton and Matagorda counties shortly after sunrise with the first confirmed tornado occurring just east of El Campo around 9:00 am. Strong 500mb upper level troughing over the western U.S. moved from west to east across the Southern Plains. The polar jet stream associated with this 500 millibar trough surged into west Texas and then curved sharply northeastward into the Central Plains. The sub-tropical jet stream was oriented west to east across deep southern Texas. This jet stream pattern was the impetus to strong lower level convergence due to the enhanced upper level divergence. Low level moisture had substantially increased and was about 200 percent of normal by 6 AM. Vertical wind profiles also showed a great deal of low level wind shear with the greatest shear occurring in the lowest 2000 feet. In addition, these veering wind speeds rapidly increased with height. A focus for the thunderstorm development was provided by a weak low level boundary which was aligned southwest to northeast, or generally along the U.S. Highway 59 corridor. This feature was nearly-stationary and

5331895	GALVESTON CO.	FRIENDSWOOD	#########	Tornado		F1	0	0	$200,000	$0	Tornado struck a Friendswood church on FM 2351. Church's sanctuary received damage, church's bell tower completely torn off.	A total of 24 tornadoes touched down during this 15 hour period of severe weather in southeastern Texas on November 17, 2003. In addition to these tornadoes, a major flood developed over Harris and surrounding counties during the middle of this tornadic outbreak. Over 300 homes, along with hundreds of vehicles, were flooded. These tornadic storms developed over parts of Wharton and Matagorda counties shortly after sunrise with the first confirmed tornado occurring just east of El Campo around 9:00 am. Strong 500mb upper level troughing over the western U.S. moved from west to east across the Southern Plains. The polar jet stream associated with this 500 millibar trough surged into west Texas and then curved sharply northeastward into the Central Plains. The sub-tropical jet stream was oriented west to east across deep southern Texas. This jet stream pattern was the impetus to strong lower level convergence due to the enhanced upper level divergence. Low level moisture had substantially increased and was about 200 percent of normal by 6 AM. Vertical wind profiles also showed a great deal of low level wind shear with the greatest shear occurring in the lowest 2000 feet. In addition, these veering wind speeds rapidly increased with height. A focus for the thunderstorm development was provided by a weak low level boundary which was aligned southwest to northeast, or generally along the U.S. Highway 59 corridor. This feature was nearly-stationary and
5331896	GALVESTON CO.	FRIENDSWOOD	#########	Tornado		F1	0	0	$275,000	$0	Tornado hit a Friendswood home subdivision. Numerous homes received roof damage, garage door damage, and tree damage.	A total of 24 tornadoes touched down during this 15 hour period of severe weather in southeastern Texas on November 17, 2003. In addition to these tornadoes, a major flood developed over Harris and surrounding counties during the middle of this tornadic outbreak. Over 300 homes, along with hundreds of vehicles, were flooded. These tornadic storms developed over parts of Wharton and Matagorda counties shortly after sunrise with the first confirmed tornado occurring just east of El Campo around 9:00 am. Strong 500mb upper level troughing over the western U.S. moved from west to east across the Southern Plains. The polar jet stream associated with this 500 millibar trough surged into west Texas and then curved sharply northeastward into the Central Plains. The sub-tropical jet stream was oriented west to east across deep southern Texas. This jet stream pattern was the impetus to strong lower level convergence due to the enhanced upper level divergence. Low level moisture had substantially increased and was about 200 percent of normal by 6 AM. Vertical wind profiles also showed a great deal of low level wind shear with the greatest shear occurring in the lowest 2000 feet. In addition, these veering wind speeds rapidly increased with height. A focus for the thunderstorm development was provided by a weak low level boundary which was aligned southwest to northeast, or generally along the U.S. Highway 59 corridor. This feature was nearly-stationary and

5331899	GALVESTON CO.	FRIENDSWOOD	#########	Flash Flood			0	0	$5,000	$0	Flooding across northern Galveston County.	A total of 24 tornadoes touched down during this 15 hour period of severe weather in southeastern Texas on November 17, 2003. In addition to these tornadoes, a major flood developed over Harris and surrounding counties during the middle of this tornadic outbreak. Over 300 homes, along with hundreds of vehicles, were flooded. These tornadic storms developed over parts of Wharton and Matagorda counties shortly after sunrise with the first confirmed tornado occurring just east of El Campo around 9:00 am. Strong 500mb upper level troughing over the western U.S. moved from west to east across the Southern Plains. The polar jet stream associated with this 500 millibar trough surged into west Texas and then curved sharply northeastward into the Central Plains. The sub-tropical jet stream was oriented west to east across deep southern Texas. This jet stream pattern was the impetus to strong lower level convergence due to the enhanced upper level divergence. Low level moisture had substantially increased and was about 200 percent of normal by 6 AM. Vertical wind profiles also showed a great deal of low level wind shear with the greatest shear occurring in the lowest 2000 feet. In addition, these veering wind speeds rapidly increased with height. A focus for the thunderstorm development was provided by a weak low level boundary which was aligned southwest to northeast, or generally along the U.S. Highway 59 corridor. This feature was nearly-stationary and
5411823	GALVESTON CO.	SANTA FE	6/23/2004	Flash Flood			0	0	$3,000	$0	Intersection of FM 1764 and Avenue F impassable due to street flooding.	
5413460	GALVESTON CO.	FRIENDSWOOD	7/25/2004	Thunderstorm Wind	50		0	0	$3,000	$0	Tree down in the Forest of Friendswood subdivision.	
5418599	GALVESTON CO.	GALVESTON	8/28/2004	Tornado		F0	0	0	$0	$0	Brief touchdown on North Galveston Island along Old Port Industrial Road just north of 61st Street. No reported damage.	
5427155	GALVESTON CO.	FRIENDSWOOD	10/4/2004	Tornado		F0	0	0	$40,000	$0	18 wheeler overturned at intersection of FM 518 and FM 2351. Trees snapped and numerous fences damaged with widespread power outages in and around city. 16 foot boat flipped over in residential yard.	
5427210	GALVESTON CO.	FRIENDSWOOD	10/4/2004	Hail	1		0	0	$150,000	$0	Quarter-size hail in Coward Creek subdivision.	
5427211	GALVESTON CO.	FRIENDSWOOD	10/4/2004	Hail	1.75		0	0	$150,000	$0	Golfball-size hail at Friendswood Police Station on FM 518.	
5427212	GALVESTON CO.	LEAGUE CITY	10/4/2004	Thunderstorm Wind	56		0	0	$75,000	$0	Widespread tree and fence damage along with minor residential roof and home damage at FM 518 and Bay Area Blvd near Hall Elementary School in the Countyside South subdivision.	
5427213	GALVESTON CO.	FRIENDSWOOD	10/4/2004	Hail	1.75		0	0	$150,000	$0	Roof damage to numerous homes 2 miles SW of the intersection of FM 518 and FM 528.	
5425319	GALVESTON CO.	LEAGUE CITY	11/2/2004	Flash Flood			0	0	$3,000	$0	Widespread street flooding in and around League City.	
5425498	GALVESTON CO.	LEAGUE CITY	#########	Thunderstorm Wind	60		0	0	$75,000	$0	Windows blown out of residential homes, roof damage, trees, and fences blown down. Power lines and signs also down.	
5425600	GALVESTON CO.	GALVESTON SCHOLES FL	#########	Thunderstorm Wind	52		0	0	$0	$0	-94.85	29.26667
5430489	GALVESTON (ZONE)		#########	Heavy Snow			0	0	$0	$0		Christmas morning across Southeast Texas. For the first time in recorded history, some areas experienced their first white Christmas. The northernmost edge of the snow ran from a Cotulla to Cuero to Sugar Land to Winnie line. Snowfall totals ranged from about an inch (in Pasadena) to around 12 inches (in Brazoria) across the region. An arctic cold front had pushed across Southeast Texas on Wednesday (December 22nd) dropping temperatures below freezing, so plenty of cold air was in place Christmas Eve when the snow began. What made this event unusual was not just the cold air being in place, but the depth of the cold air that was in place over the area. Before the heavy snow began on the night of Christmas Eve, the entire depth of the atmosphere over Southeast Texas was below freezing. Normally when winter weather events occur in Southeast Texas, the depth of the cold air is much shallower, resulting in ice (freezing rain or sleet) being a lot more common than snow. The morning of Christmas Eve, a strong upper level low was evident on satellite across northern Mexico. Ahead of this system, some snow began across Southeast Texas, but the dry atmosphere kept the snowfall light during the day, resulting in only trace amounts or a light dusting through late afternoon. Eventually, the atmosphere moistened up by late in the day as the upper level low approached from the west. The upper low moved across South Texas during the nighttime hours

5445583	GALVESTON CO.	GALVESTON SCHOLES FL	3/20/2005	Thunderstorm Wind	51		0	0	$0	$0	-94.85	29.26667
5450893	GALVESTON CO.	TEXAS CITY	5/8/2005	Hail	1.75		0	0	$16,000	$0		
5450894	GALVESTON CO.	LEAGUE CITY	5/8/2005	Thunderstorm Wind	53		0	0	$10,000	$0	Trees down.	
5450895	GALVESTON CO.	TEXAS CITY	5/8/2005	Hail	1		0	0	$15,000	$0	Quarter size hail.	
5450896	GALVESTON CO.	CRYSTAL BEACH	5/8/2005	Hail	0.75		0	0	$5,000	$0	3/4 inch hail.	
5450897	GALVESTON CO.	SANTA FE	5/8/2005	Thunderstorm Wind	57		0	0	$11,000	$0	70 foot tall oak tree down.	
5450898	GALVESTON CO.	DICKINSON	5/8/2005	Thunderstorm Wind	52		0	0	$43,000	$0	Gas station canopy damaged and trees down.	
5450899	GALVESTON CO.	HITCHCOCK	5/8/2005	Hail	0.88		0	0	$5,000	$0		
5450964	GALVESTON CO.	TEXAS CITY	5/8/2005	Thunderstorm Wind	61		0	0	$35,000	$0	Numerous trees down and a light pole down on a parked SUV.	
5450965	GALVESTON CO.	GALVESTON	5/8/2005	Thunderstorm Wind	61		0	1	$175,000	$0	Building damage along the Port of Galveston, vehicle blown off the road and trees down. One house shifted about ten feet into another house next door dislodging it from its piers (both homes were Galveston 1900 Storm survivors).	
5451175	GALVESTON CO.	FRIENDSWOOD	5/29/2005	Thunderstorm Wind	54		0	1	$90,000	$0	Large cedar tree down on a home (one injury). Power pole down on FM 2351 with numerous tree limbs down in and around Clear Brook High School. The school had a tennis fence blown down. A nearby carport was damaged and a billboard sign was also blown down.	
5451176	GALVESTON CO.	LEAGUE CITY	5/29/2005	Thunderstorm Wind	52		0	0	$14,000	$0	Power lines down on FM 2094 east of Clear Creek High School.	
5458959	GALVESTON CO.	SAN LEON	7/14/2005	Lightning			0	1	$10,000	$0	Lightning strike victim was near a circuit breaker box when the strike occurred. Twenty-nine others in the home were not injured.	
5478432	GALVESTON (ZONE)		9/23/2005	Hurricane (Typhoon)			0	3	$15,000,000	$0		between Sabine Pass and Johnson's Bayou In Cameron Parish with a minimum central pressure of 937 mb and maximum sustained winds of 120 mph. Rita was a Category 3 hurricane at landfall. Two and a half weeks after Hurricane Katrina made her final and devastating landfall along the northern Gulf coast, all eyes turned to Tropical Storm Rita as she moved westward through the central Bahamas. On Tuesday, September 20th, Rita rapidly intensified while moving west through the Florida Straits into the Gulf of Mexico. Rita reached Category 2 intensity as the center passed about 50 miles south of Key West and significantly impacted the Florida Keys. After entering the Gulf of Mexico, Rita intensified at an astounding rate going from Category 2 to Category 5 intensity in 24 hours. Following this rapid intensification period, sustained winds reached 165 mph on the afternoon of Wednesday, September 21st. Since early Monday, Rita had been consistently forecast to make landfall along the upper southeast Texas coast, when the 120 hour forecast from the National Hurricane Center depicted a landfall near San Luis Pass. Emergency management officials, members of the media, and residents of southeast Texas had been watching Rita closely and planning their course of action on Monday and Tuesday. Therefore, even though the hurricane was still 620 miles southeast of Galveston, everyone had the images of Hurricane Katrina's impact on the central Gulf of Mexico coast still fresh in mind, and an unprecedented, largely voluntary evacuation began on Wednesday across
5502164	GALVESTON CO.	DICKINSON	4/21/2006	Thunderstorm Wind	55		0	0	$20,000	$0	Numerous trees and fences down.	
5502166	GALVESTON CO.	LEAGUE CITY	4/21/2006	Thunderstorm Wind	55		0	0	$10,000	$0	Trees down on West Walker Street near Victory Lakes Subdivision.	
5502220	GALVESTON CO.	DICKINSON	4/21/2006	Hail	1		0	0	$7,000	$0	Quarter size hail.	
5502219	GALVESTON CO.	DICKINSON	4/21/2006	Thunderstorm Wind	50		0	0	$5,000	$0	Tree limbs down.	
5502165	GALVESTON CO.	SANTA FE	4/21/2006	Hail	1.75		0	0	$25,000	$0	Golfball size hail.	
5502167	GALVESTON CO.	SANTA FE	4/21/2006	Hail	1.75		0	0	$8,000	$0	Golfball size hail.	
5502221	GALVESTON CO.	SANTA FE	4/21/2006	Thunderstorm Wind	50		0	0	$7,000	$0	Tree limbs down.	
5509553	GALVESTON CO.	LEAGUE CITY	5/6/2006	Hail	1		0	0	$10,000	$0	Quarter size hail.	
5509554	GALVESTON CO.	JAMAICA BEACH	5/6/2006	Hail	0.88		0	0	$3,000	$0	Nickel size hail.	
5509654	GALVESTON CO.	SANTA FE	5/14/2006	Hail	0.75		0	0	$3,000	$0	Penny size hail.	
5509752	GALVESTON CO.	SANTA FE	5/22/2006	Tornado		F0	0	0	$7,000	$0	Tornado damaged a home porch.	
5513900	GALVESTON CO.	LEAGUE CITY	6/13/2006	Thunderstorm Wind	60		0	0	$35,000	$0	Semi-tractor trailer overturned onto another vehicle on Interstate 45 at FM 646. Winds also blew down a few large concrete wall structures at a construction site at the same intersection. Numerous fences and store signs were also blown down in and around League City and Dickinson.	
5523460	GALVESTON CO.	DICKINSON	7/18/2006	Thunderstorm Wind	50		0	0	$2,000	$0	Tree down near the intersection of Deats Road and Highway 3.	
5525867	GALVESTON CO.	GALVESTON	8/6/2006	Funnel Cloud			0	0	$0	$0	Sighted over Galveston Bay.	
5525877	GALVESTON CO.	GALVESTON	8/19/2006	Flash Flood			0	0	$10,000	$0	Flooding across the east end of Galveston Island and in The Strand area.	
5525960	GALVESTON CO.	GALVESTON	8/23/2006	Lightning			1	0	$70,000	$0	86 year old man killed in a house fire started by a lightning strike.	
5533893	GALVESTON CO.	JAMAICA BEACH	9/18/2006	Thunderstorm Wind	51		0	0	$2,000	$0	Utility pole and power lines downed.	
681	GALVESTON CO.	JAMAICA BEACH	#########	Thunderstorm Wind	52		0	0	$0	$0	Thunderstorm moved over west Galveston Island.	A large region of disturbed weather ahead of a central Texas cold front spawned severe thunderstorms across southeast Texas.
713	GALVESTON CO.	JAMAICA BEACH	#########	Hail	0.75		0	0	$0	$0	Penny-sized hail.	Severe thunderstorms developed ahead of a cold frontal passage.
817	GALVESTON CO.	JAMAICA BEACH	#########	Funnel Cloud			0	0	$0	$0	Funnel cloud moved over Sunset Cove and then headed out to sea.	Severe thunderstorms developed ahead of a cold frontal passage.

833	GALVESTON CO.	(GLS)SCHOLES FLD GAL	#########	Tornado		F0	0	0	$4,000	$0	An EF-0 tornado blew out garage doors and tossed around some port covers on Tiki Island.	The combination of very deep tropical moisture with a slow-moving warm front and the approach of a strong upper level trough resulted in excessive rainfall across Harris and various surrounding counties. The ground became saturated on the 15th due to scattered convection before the more organized thunderstorms moved into the area shortly after midnight. These storms produced heavy rainfall due to their training nature. A brief break occurred during mid-day which allowed area creeks and bayous to recede before the onset of additional afternoon rainfall. There were four directly related drowning fatalities during this episode. Two deaths were in Harris County, one in Fort Bend County and the one in Liberty County.
836	GALVESTON (ZONE)		#########	Coastal Flood			0	0	$75,000	$0	Coastal flooding lead to high water near Highway 146 and FM 1764 outside of Texas City, the frontage road at Interstate 45 and FM 519, and in Galveston near Offatts Bayou and 61st Street. Flooding occurred on the Bolivar Peninsula near Gilchrist with water up to a foot deep on the bottom floor of some homes. High water also occurred in Jamaica Beach as significant bay side flooding closed many roads.	The combination of very deep tropical moisture with a slow-moving warm front and the approach of a strong upper level trough resulted in excessive rainfall across Harris and various surrounding counties. The ground became saturated on the 15th due to scattered convection before the more organized thunderstorms moved into the area shortly after midnight. These storms produced heavy rainfall due to their training nature. A brief break occurred during mid-day which allowed area creeks and bayous to recede before the onset of additional afternoon rainfall. There were four directly related drowning fatalities during this episode. Two deaths were in Harris County, one in Fort Bend County and the one in Liberty County.
831	GALVESTON CO.	HITCHCOCK	#########	Tornado		F0	0	1	$22,000	$0	An EF-0 tornado completely destroyed one mobile home roof and partially damaged another one. There was one minor injury in one of the mobile homes. Trees were also uprooted and one tree fell on a vehicle.	The combination of very deep tropical moisture with a slow-moving warm front and the approach of a strong upper level trough resulted in excessive rainfall across Harris and various surrounding counties. The ground became saturated on the 15th due to scattered convection before the more organized thunderstorms moved into the area shortly after midnight. These storms produced heavy rainfall due to their training nature. A brief break occurred during mid-day which allowed area creeks and bayous to recede before the onset of additional afternoon rainfall. There were four directly related drowning fatalities during this episode. Two deaths were in Harris County, one in Fort Bend County and the one in Liberty County.
899	GALVESTON CO.	GALVESTON	#########	Flash Flood			0	0	$35,000	$0	Numerous roads under water across Galveston Island due to heavy rain.	The combination of very deep tropical moisture with a slow-moving warm front and the approach of a strong upper level trough resulted in excessive rainfall across Harris and various surrounding counties. The ground became saturated on the 15th due to scattered convection before the more organized thunderstorms moved into the area shortly after midnight. These storms produced heavy rainfall due to their training nature. A brief break occurred during mid-day which allowed area creeks and bayous to recede before the onset of additional afternoon rainfall. There were four directly related drowning fatalities during this episode. Two deaths were in Harris County, one in Fort Bend County and the one in Liberty County.
901	GALVESTON CO.	FRIENDSWOOD	#########	Flash Flood			0	0	$250,000	$0	Heavy rains caused widespread flooding with water in homes. There were five water rescues from vehicles.	The combination of very deep tropical moisture with a slow-moving warm front and the approach of a strong upper level trough resulted in excessive rainfall across Harris and various surrounding counties. The ground became saturated on the 15th due to scattered convection before the more organized thunderstorms moved into the area shortly after midnight. These storms produced heavy rainfall due to their training nature. A brief break occurred during mid-day which allowed area creeks and bayous to recede before the onset of additional afternoon rainfall. There were four directly related drowning fatalities during this episode. Two deaths were in Harris County, one in Fort Bend County and the one in Liberty County.

832	GALVESTON CO.	CRYSTAL BEACH	########	Tornado		F0	0	0	$5,000	$0	An EF-0 tornado lifted up and spun a sheriff's patrol vehicle. There was also damage to a boat storage unit.	The combination of very deep tropical moisture with a slow-moving warm front and the approach of a strong upper level trough resulted in excessive rainfall across Harris and various surrounding counties. The ground became saturated on the 15th due to scattered convection before the more organized thunderstorms moved into the area shortly after midnight. These storms produced heavy rainfall due to their training nature. A brief break occurred during mid-day which allowed area creeks and bayous to recede before the onset of additional afternoon rainfall. There were four directly related drowning fatalities during this episode. Two deaths were in Harris County, one in Fort Bend County and the one in Liberty County.
2960	GALVESTON (ZONE)		#########	High Wind	55		0	0	$0	$0	Observed at Bacliff.	A strong cold front moved through Southeast Texas in the morning. A tight surface pressure gradient behind the front produced winds at wind advisory levels with some higher gusts.
11249	GALVESTON CO.	LEAGUE CITY S S ARPT	3/14/2007	Hail	0.75		0	0	$8,000	$0	Penny size hail.	A nearly-stationary upper-level low positioned over western Texas created an environment conducive to three distinct severe weather episodes over eastern Texas. Monday morning's (3/12) fast-moving squall line was initiated from a shortwave rounding the base of the upper low. Tuesday's (3/13) scattered convection was a second shortwave riding up from the west southwest around the still quasi-stationary upper low. Wednesday's (3/14) events stemmed from the upper-low moving eastward over the region into Louisiana.
11254	GALVESTON CO.	LEAGUE CITY	3/14/2007	Thunderstorm Wind	52		0	0	$30,000	$0	Tree down on one home with numerous downed tree limbs. National Weather Service in League City estimated wind gusts between 50 and 60 mph during the height of the storm.	A nearly-stationary upper-level low positioned over western Texas created an environment conducive to three distinct severe weather episodes over eastern Texas. Monday morning's (3/12) fast-moving squall line was initiated from a shortwave rounding the base of the upper low. Tuesday's (3/13) scattered convection was a second shortwave riding up from the west southwest around the still quasi-stationary upper low. Wednesday's (3/14) events stemmed from the upper-low moving eastward over the region into Louisiana.
11255	GALVESTON CO.	DICKINSON	3/14/2007	Thunderstorm Wind	52		0	0	$12,000	$0	Wind gust estimated in southeast Dickinson.	A nearly-stationary upper-level low positioned over western Texas created an environment conducive to three distinct severe weather episodes over eastern Texas. Monday morning's (3/12) fast-moving squall line was initiated from a shortwave rounding the base of the upper low. Tuesday's (3/13) scattered convection was a second shortwave riding up from the west southwest around the still quasi-stationary upper low. Wednesday's (3/14) events stemmed from the upper-low moving eastward over the region into Louisiana.
20468	GALVESTON CO.	TEXAS CITY	3/31/2007	Lightning			0	0	$30,000	$0	Lightning strike started a fire that caused moderate damage to a home.	A pre-frontal trough well ahead of a central Texas cold front slowed as it approached the coastal counties. This boundary became the focus for severe thunderstorms along the coast and neighboring inland counties.
32205	GALVESTON CO.	DICKINSON	5/11/2007	Funnel Cloud			0	0	$0	$0	Funnel cloud was sighted to the east of the National Weather Service forecast office.	The environment was conducive to the formation of late morning funnel clouds.
32385	GALVESTON CO.	SANTA FE	5/14/2007	Hail	0.88		0	0	$0	$0		A shortwave disturbance passed over southeastern Texas. With the combination of ample heating and high moisture levels, numerous afternoon and early evening thunderstorms developed.
32388	GALVESTON CO.	SANTA FE	5/14/2007	Thunderstorm Wind	50		0	0	$3,000	$0	Trees blown down.	A shortwave disturbance passed over southeastern Texas. With the combination of ample heating and high moisture levels, numerous afternoon and early evening thunderstorms developed.
32392	GALVESTON CO.	SANTA FE	5/14/2007	Funnel Cloud			0	0	$0	$0	Two funnel clouds were sighted on County Road 168.	A shortwave disturbance passed over southeastern Texas. With the combination of ample heating and high moisture levels, numerous afternoon and early evening thunderstorms developed.
32403	GALVESTON CO.	GALVESTON	5/22/2007	Thunderstorm Wind	53		0	0	$0	$0	Tree downed in the Gulf Village subdivision near Stewart Road.	Isolated severe storms fired up along the southeast Texas's Gulf Coast.
32611	GALVESTON CO.	DICKINSON	5/29/2007	Funnel Cloud			0	0	$0	$0		A continuation of the disturbed weather at the end of May.
36236	GALVESTON CO.	LEAGUE CITY	6/13/2007	Thunderstorm Wind	60		0	0	$10,000	$0	Tree down on a house and power line near Highway 96 and Interstate 45.	Scattered thunderstorms formed upon a southern-moving north central Texas boundary as it neared the Gulf of Mexico.
38063	GALVESTON CO.	TEXAS CITY	6/16/2007	Funnel Cloud			0	0	$0	$0	Funnel cloud reported over Texas City.	Morning marine environment was conducive for the formation of funnel clouds. Scattered storms affected coastal communities during the morning hours that produced funnel clouds, very localized street flooding, and frequent lightning strikes.

51765	GALVESTON CO.	VIRGINIA PT	7/5/2007	Tornado		EF0	0	0	$30,000	$0	Tornado spotted on the island side of the Causeway Bridge, near Interstate 45 and Teichman Point, moving east to southeast. Damage included a few uprooted trees, various fences, and minor structural damage to a car dealership and motel.	Residual thunderstorm boundaries from previous day storms allowed a focus for various northern storms to form upon and slowly travel. Upper level low, combined with abundant moisture, produced numerous showers and thunderstorms through the 4th of July.
51812	GALVESTON CO.	TEXAS CITY	7/6/2007	Flash Flood			0	0	$0	$0	Numerous reports of flooding through the towns of Texas City and La Marque.	An upper level low, combined with abundant moisture, produced numerous showers and thunderstorms throughout the coastal communities in and around Galveston, Texas.
51815	GALVESTON CO.	PORT BOLIVAR	7/6/2007	Flash Flood			0	0	$0	$0	One to two feet of water over Highway 87 causing road closure.	An upper level low, combined with abundant moisture, produced numerous showers and thunderstorms throughout the coastal communities in and around Galveston, Texas.
51868	GALVESTON CO.	HITCHCOCK	7/6/2007	Funnel Cloud			0	0	$0	$0	A funnel cloud was sighted off of FM 2004 heading east towards Hitchcock.	An upper level low, combined with abundant moisture, produced numerous showers and thunderstorms throughout the coastal communities in and around Galveston, Texas.
51874	GALVESTON CO.	SANTA FE	7/6/2007	Tornado		EF0	0	0	$15,000	$0	An EF-0 tornado produced minor damage to a small home and garage. There was also minor shingle damage to a residence across the street.	An upper level low, combined with abundant moisture, produced numerous showers and thunderstorms throughout the coastal communities in and around Galveston, Texas.
57984	GALVESTON CO.	CLEAR LAKE SHORES	8/1/2007	Thunderstorm Wind	50		0	0	$8,000	$0	Large tree downed on a car in Clear Lake Shores.	Afternoon thunderstorms produced gusty winds and lightning that caused some damage.
57977	GALVESTON CO.	KEMAH	8/1/2007	Lightning			0	0	$10,000	$0	Lightning struck a transformer and downed some power lines.	Afternoon thunderstorms produced gusty winds and lightning that caused some damage.
60861	GALVESTON (ZONE)		9/12/2007	Hurricane (Typhoon)			0	0	$2,500,000	$0	Hurricane Humberto affected 170 homes. Five single family homes were completely destroyed, twenty-two received major damage, and forty-nine only minor damage. ||Several High Island homes had roof and shingle damage, a gas station awning collapsed, and a local motel received moderate roof damage. High Island High School received light pole and sign damage. There were widespread uprooted trees and snapped limbs. Within town, larger trees were snapped off at the trunk. ||Numerous power poles were either completely blown down, or pushed over, along Highway 87 towards Canal City and Gilchrist.	Humberto was a Category 1 hurricane when it made landfall just to the east of High Island early in the morning on September 13th. Wind damage which occurred late on the 12th and early on the 13th was confined to the High Island area of Galveston County and far eastern Chambers County.||Humberto is notable for its exceptional rapid intensification off the Texas coast from a tropical depression into a hurricane within nineteen hours. Maximum rainfall totals from Humberto ranged from around two inches to over fourteen inches mainly along and east of a line from Freeport to the Hitchcock and Texas City area to around Winnie. ||The majority of the damage from Humberto was due to high winds and fresh water flooding that caused minor structural damage along with knocking down trees and power lines. There were no injuries or deaths from Humberto in the Houston-Galveston area.
60172	GALVESTON CO.	PORT BOLIVAR	9/19/2007	Funnel Cloud			0	0	$0	$0	Funnel cloud sighted on the bay side of the Bolivar Peninsula.	The marine environment was conducive to the formation of funnel clouds in the Galveston Bay area.
79488	GALVESTON CO.	ALTA LOMA	2/16/2008	Thunderstorm Wind	52		0	0	$4,000	$0	Reports of residential home damage.	Scattered thunderstorms became better organized and formed a coastal county squall line.
79485	GALVESTON CO.	LA MARQUE	2/16/2008	Tornado		EF0	0	0	$0	$0	Tornado was spotted from 1700 Main Street in La Marque.	Scattered thunderstorms became better organized and formed a coastal county squall line.
90819	GALVESTON CO.	TEXAS CITY	3/10/2008	Funnel Cloud			0	0	$0	$0	A funnel cloud was sighted in Texas City.	An upper level disturbance passing over southeast Texas produced severe weather.
90818	GALVESTON CO.	SANTA FE	3/10/2008	Hail	0.88		0	0	$0	$0	Nickel size hail was reported in the town of Santa Fe.	An upper level disturbance passing over southeast Texas produced severe weather.
117638	GALVESTON (ZONE)		6/14/2008	Rip Current			1	0	$0	$0	Rip currents claimed the life of a twenty year old male on the northeast corner of the jetty at 17th street and Seawall Boulevard off Galveston Island.	Rip currents were blamed for a drowning fatality at the Galveston Island jetties.
118231	GALVESTON CO.	LEAGUE CITY S S ARPT	6/21/2008	Funnel Cloud			0	0	$0	$0	A funnel cloud was sighted near FM 518 in Friendswood.	A strong line of southwestern-moving thunderstorms created severe weather across the region.
118233	GALVESTON CO.	LEAGUE CITY	6/21/2008	Funnel Cloud			0	0	$0	$0	A funnel cloud was sighted near the intersection of FM 518 and Interstate 45.	A strong line of southwestern-moving thunderstorms created severe weather across the region.
118183	GALVESTON CO.	LEAGUE CITY	6/24/2008	Funnel Cloud			0	0	$0	$0	A funnel cloud was sighted at the intersection of FM 518 and Interstate 45.	Southern-based thunderstorms produced a funnel cloud and a far inland lightning strike.
118198	GALVESTON CO.	BACLIFF	6/30/2008	Hail	0.75		0	0	$0	$0	Penny size hail was observed at the intersection of FM 517 and SH 146.	Brazoria and Galveston County thunderstorms became severe and produced strong winds with small hail.
132884	GALVESTON (ZONE)		8/5/2008	Storm Surge/Tide			0	0	$95,000	$0	Storm tide damage on the Bolivar Peninsula was confined to the Gilchrist area. Ten single family homes experienced flooding up to eighteen inches deep inside the home. Fifteen single family homes and two mobile homes experienced flooding up to six inches deep inside the home.	Tropical Storm Edouard moved ashore along the upper Texas coast between High Island and Sabine Pass in the McFaddin National Wildlife Refuge and produced minimal damage totalling $100,000.||Damage from Edouard included minor storm tide flooding along portions of the Bolivar Peninsula ($95,000) and brief flash flooding along portions of Interstate 10 in Chambers County ($5,000).||Storm tide damage on the Bolivar Peninsula was confined to the Gilchrist area. Ten single family homes experienced flooding up to eighteen inches deep inside the home. Fifteen single family homes and two mobile homes experienced flooding up to six inches deep inside the home.||Interstate 10 was closed in central Chambers County near State Highway 61 due to Edouard's heavy rainfall estimated to be between 3 and 5 inches.

132181	GALVESTON (ZONE)		8/5/2008	Tropical Storm			0	0	$0	$0	Tropical Storm Edouard moved ashore along the upper Texas coast between High Island and Sabine Pass in the McFaddin National Wildlife Refuge and produced minimal damage totaling $100,000. | |Damage from Edouard included minor storm tide flooding along portions of the Bolivar Peninsula ($95,000) and brief flash flooding along portions of Interstate 10 in Chambers County ($5,000). | |Storm tide damage on the Bolivar Peninsula was confined to the Gilchrist area. Ten single family homes experienced flooding up to eighteen inches deep inside the home. Fifteen single family homes and two mobile homes experienced flooding up to six inches deep inside the home. | |Interstate 10 was closed in central Chambers County near State Highway 61 due to Edouard's heavy rainfall estimated to be between 3 and 5 inches.	Tropical Storm Edouard moved ashore along the upper Texas coast between High Island and Sabine Pass in the McFaddin National Wildlife Refuge and produced minimal damage totalling $100,000. | |Damage from Edouard included minor storm tide flooding along portions of the Bolivar Peninsula ($95,000) and brief flash flooding along portions of Interstate 10 in Chambers County ($5,000). | |Storm tide damage on the Bolivar Peninsula was confined to the Gilchrist area. Ten single family homes experienced flooding up to eighteen inches deep inside the home. Fifteen single family homes and two mobile homes experienced flooding up to six inches deep inside the home. | |Interstate 10 was closed in central Chambers County near State Highway 61 due to Edouard's heavy rainfall estimated to be between 3 and 5 inches.
132129	GALVESTON CO.	TEXAS CITY GULF ARPT	8/26/2008	Lightning			0	1	$0	$0	A nineteen year old male working outside at a construction site was struck and injured by lightning. The victim was taken to a local hospital and later released having suffered only minor injuries.	A lightning strike from early afternoon showers and thunderstorms injured a man working outside.
135388	GALVESTON (ZONE)		9/12/2008	Hurricane (Typhoon)			0	0	$1,000,000,000	$0	Ike produced damage due to high storm surge and high winds along Galveston Island, the Bolivar Peninsula, and along the Galveston Bay. Storm tides of 10 to 15 feet above mean sea level were observed in these areas. Several indirect fatalities due to preexisting medical conditions, lack of power and availability to dialysis, etc. Number of injuries unknown.	Galveston. At landfall, Ike had a central pressure of 951.6 mb, as measured at Galveston Pleasure Pier, and a maximum estimated storm surge of 17 feet over portions of Chambers County and the Bolivar Peninsula. Maximum sustained winds at landfall were estimated at 95 knots (110 mph) with gusts to 110 knots (127 mph). A ship near the coast recorded a wind gust of 105 knots as the eye came through. At landfall, Ike was a Category 2 hurricane on the Saffir-Simpson scale based on wind speed, but due to its large size, had a storm surge more typical of a category 3 or 4. The height of the storm tide ranged from 4 to 6 feet in Matagorda county, 6 to 9 feet in Brazoria county, 10 to 13 feet along most of Galveston Island and Galveston Bay, to as high as 17 feet over portions of the Bolivar Peninsula and Chambers County. The majority of property damage at the coast was a result of storm tide. | |Collectively, damage amounts are estimated to be near 14 billion dollars over the counties of Harris, Chambers, Galveston, Liberty, Polk, Matagorda, Brazoria, Fort Bend, San Jacinto, and Montgomery with an estimated 8 billion of that due to storm surge in coastal Galveston, Harris and Chambers Counties. Fresh water flooding also occurred near the city of Houston where up to 14 inches of rain fell over a two day period, first from Ike, then from a line of thunderstorms associated with a cold front moving through the following day. The number of fatalities directly related to Ike was 12 in the aforementioned counties with 11 of those occurring in Galveston County from drowning due to the storm surge. In addition, there were at least 25 fatalities indirectly related to Ike, either due to carbon monoxide poisoning from generators, accidents while clearing debris, or house fires from
136422	GALVESTON (ZONE)		9/12/2008	Storm Surge/Tide			12	0	$4,000,000,000	$0	Storm tide ranged from 10 to 15 feet above mean sea level along the Galveston Bay, Clear Lake and associated tributaries which caused major flooding of coastal areas. Some higher surge levels up to 17 feet were indicated on the Bolivar Peninsula. At least 10 direct fatalities occurred in Galveston County. Number of injuries unknown. Some towns hit hard by surge include Galveston, San Leon, Kemah, and all towns on Galveston Island and the Bolivar Peninsula.	Galveston. At landfall, Ike had a central pressure of 951.6 mb, as measured at Galveston Pleasure Pier, and a maximum estimated storm surge of 17 feet over portions of Chambers County and the Bolivar Peninsula. Maximum sustained winds at landfall were estimated at 95 knots (110 mph) with gusts to 110 knots (127 mph). A ship near the coast recorded a wind gust of 105 knots as the eye came through. At landfall, Ike was a Category 2 hurricane on the Saffir-Simpson scale based on wind speed, but due to its large size, had a storm surge more typical of a category 3 or 4. The height of the storm tide ranged from 4 to 6 feet in Matagorda county, 6 to 9 feet in Brazoria county, 10 to 13 feet along most of Galveston Island and Galveston Bay, to as high as 17 feet over portions of the Bolivar Peninsula and Chambers County. The majority of property damage at the coast was a result of storm tide. | |Collectively, damage amounts are estimated to be near 14 billion dollars over the counties of Harris, Chambers, Galveston, Liberty, Polk, Matagorda, Brazoria, Fort Bend, San Jacinto, and Montgomery with an estimated 8 billion of that due to storm surge in coastal Galveston, Harris and Chambers Counties. Fresh water flooding also occurred near the city of Houston where up to 14 inches of rain fell over a two day period, first from Ike, then from a line of thunderstorms associated with a cold front moving through the following day. The number of fatalities directly related to Ike was 12 in the aforementioned counties with 11 of those occurring in Galveston County from drowning due to the storm surge. In addition, there were at least 25 fatalities indirectly related to Ike, either due to carbon monoxide poisoning from generators, accidents while clearing debris, or house fires from

												Galveston. At landfall, Ike had a central pressure of 951.6 mb, as measured at Galveston Pleasure Pier, and a maximum estimated storm surge of 17 feet over portions of Chambers County and the Bolivar Peninsula. Maximum sustained winds at landfall were estimated at 95 knots (110 mph) with gusts to 110 knots (127 mph). A ship near the coast recorded a wind gust of 105 knots as the eye came through. At landfall, Ike was a Category 2 hurricane on the Saffir-Simpson scale based on wind speed, but due to its large size, had a storm surge more typical of a category 3 or 4. The height of the storm tide ranged from 4 to 6 feet in Matagorda county, 6 to 9 feet in Brazoria county, 10 to 13 feet along most of Galveston Island and Galveston Bay, to as high as 17 feet over portions of the Bolivar Peninsula and Chambers County. The majority of property damage at the coast was a result of storm tide. ||Collectively, damage amounts are estimated to be near 14 billion dollars over the counties of Harris, Chambers, Galveston, Liberty, Polk, Matagorda, Brazoria, Fort Bend, San Jacinto, and Montgomery with an estimated 8 billion of that due to storm surge in coastal Galveston, Harris and Chambers Counties. Fresh water flooding also occurred near the city of Houston where up to 14 inches of rain fell over a two day period, first from Ike, then from a line of thunderstorms associated with a cold front moving through the following day. The number of fatalities directly related to Ike was 12 in the aforementioned counties with 11 of those occurring in Galveston County from drowning due to the storm surge. In addition, there were at least 25 fatalities indirectly related to Ike, either due to carbon monoxide poisoning from generators, accidents while clearing debris, or house fires from
137024	GALVESTON CO.	LEAGUE CITY S S ARPT	9/14/2008	Flash Flood			0	0	$0	$0	Heavy rains led to flooding of Brittany Bay Boulevard and service road near interstate 45.	
143873	GALVESTON CO.	LEAGUE CITY S S ARPT	2/1/2009	Hail	0.75		0	0	$0	$0	A severe thunderstorm produced penny size hail.	Severe thunderstorms developed in an unstable airmass ahead of a cold front and produced hail.
143875	GALVESTON CO.	DICKINSON	2/1/2009	Hail	1		0	0	$2,000	$0	A severe thunderstorm produced quarter size hail.	Severe thunderstorms developed in an unstable airmass ahead of a cold front and produced hail.
166446	GALVESTON CO.	LEAGUE CITY S S ARPT	4/18/2009	Flash Flood			0	0	$4,000,000	$0	Heavy rainfall from thunderstorms moving across the county produced road closeures and widespread flooding of homes, with high water rescues being required in Dickinson. A rain gauge at FM 528 and Clear Creek in League City recorded a 1 hour rainfall total of 6.02 inches. League City reported 300 homes sustaining flood damage from this event.	On April 18th there were flash floods and severe thunderstorms over Galveston and southern Harris counties.
165132	GALVESTON CO.	CLEAR LAKE SHORES	4/18/2009	Thunderstorm Wind	55		0	0	$3,000	$0	Large trees were downed in the Clear Lake Forest subdivision.	On April 18th there were flash floods and severe thunderstorms over Galveston and southern Harris counties.
165135	GALVESTON CO.	HIGHLAND BAYOU	4/18/2009	Tornado		EF0	0	0	$50,000	$0	The tornado touched down in a marshy area a few miles south southeast of Hitchcock as reported by several witnesses and captured on video. The damage path extended into the Harborwalk community with damage to several homes. Six garage doors were damaged or destroyed. A large wood and steel observing platform was destroyed. There was also some damage to shingles. The tornado was estimated to be a high end EF-0 with winds reaching 80 mph.	On April 18th there were flash floods and severe thunderstorms over Galveston and southern Harris counties.
166483	GALVESTON CO.	LEAGUE CITY S S ARPT	4/24/2009	Flash Flood			0	0	$5,000	$0	Numerous roads in and around Friendswood were impassable due to high water caused by heavy rainfall. Several high water rescues were required due to the flooding.	A series of thunderstorms produced heavy rainfall and strong winds across portions of Harris, Galveston, and Chambers counties leaving motorists stranded along several flooded area highways. Additional severe thunderstorms produced hail and flash flooding across the northern counties of Southeast Texas.
165154	GALVESTON CO.	SAN LEON	4/24/2009	Thunderstorm Wind	51		0	0	$0	$0	Severe wind gust measured at Eagle Point PORTS buoy.	A series of thunderstorms produced heavy rainfall and strong winds across portions of Harris, Galveston, and Chambers counties leaving motorists stranded along several flooded area highways. Additional severe thunderstorms produced hail and flash flooding across the northern counties of Southeast Texas.
163736	GALVESTON CO.	BACLIFF	6/3/2009	Thunderstorm Wind	52		0	0	$1,000	$0	Damage in Bacliff.	Showers and thunderstorms developed along old outflow boundaries from earlier thunderstorms over central Texas.
163731	GALVESTON CO.	CRYSTAL BEACH	6/3/2009	Lightning			1	0	$0	$0	A male jogger was found dead on Crystal Beach. The victim was found with burns on his torso.	Showers and thunderstorms developed along old outflow boundaries from earlier thunderstorms over central Texas.
182397	GALVESTON (ZONE)		6/24/2009	Heat			0	0	$0	$0	Hot, humid conditions led to heat indices above 105 degrees for several days in late June.	An upper level ridge built over the area, corresponding to a period of hot and humid conditions. A number of indirect fatalities were attributed to the heat.
191318	GALVESTON (ZONE)		7/9/2009	Heat			0	0	$0	$0	Available sensors indicated a heat index of 108 over interior portions of Galveston County during the afternoon of July 9th.	A hot humid air mass reestablished itself over the area, with afternoon heat indices as high as 111 on July 9th.
185962	GALVESTON CO.	GALVESTON	8/30/2009	Tornado		EF1	0	3	$500,000	$0	The tornado began as a waterspout moved onto the beach near 29th Street and Seawall Blvd. A police cruiser had its windows blown out and the roof of a souvenir shop at 29th and Seawall was blown off. Further inland, a house on stilts was blown over and the roof of a mobile home was peeled back. A two-story home at the intersection of 31st Street and Avenue Q 1/2 at the end of the damage track had its roof completely removed. Numerous trees and fences also sustained damage.	Several strong thunderstorms formed late in the evening near Galveston Island along a nearly stationary surface front. A waterspout developed off the coast near Galveston Island before moving inland and doing damage as a tornado.

185965	GALVESTON CO.	(GLS)SCHOLES FLD GAL	8/30/2009	Thunderstorm Wind	51		0	0	$0	$0	Wind gust was measured at Galveston Scholes Field.	Several strong thunderstorms formed late in the evening near Galveston Island along a nearly stationary surface front. A waterspout developed off the coast near Galveston Island before moving inland and doing damage as a tornado.
192009	GALVESTON CO.	LEAGUE CITY	10/1/2009	Flash Flood			0	0	$5,000	$0	Repeated thunderstorm development and associated training across the far northern portions of Galveston County around the League City area produce flash flooding. Numerous roads were under water and several automobiles were flooded and abandoned.	Showers and thunderstorms developed during the afternoon in and around the League City area of northern Galveston County. Activity continued to develop and train across the same areas for several hours resulting in flash flooding.
199662	GALVESTON CO.	LEAGUE CITY S S ARPT	#########	Flash Flood			0	0	$0	$0	Several roads closed in Friendswood due to high water including 528 near near Interstate 45, the 17200 block of Blackhawk Road AT 528 and the 500 block of FM 518.	A line of thunderstorms associated with a slow moving cold front trained over a line from Friendswood to Pasadena to Baytown producing some localized flash flooding.
203114	GALVESTON (ZONE)		11/8/2009	Coastal Flood			0	0	$0	$0	Water over portions of Route 87 on the Bolivar Peninsula around time of high tide in the evenings of both November 8th and 9th. Road was closed in places.	A combination of raised water levels from a persistent northeast wind, and high surf from swell generated by distant Hurricane Ida, led to moderate coastal flooding and beach erosion. This occurred around the time of high tide during the evenings of November 9th and November 10th.
205132	GALVESTON (ZONE)		12/1/2009	Coastal Flood			0	0	$0	$0	The eastbound lane of Highway 87 on the Bolivar Peninsula was under water, from just east of Gilchrist to the Highway 124 intersection south of High Island. There was another section of Highway 87, between the former Dirty Pelican Pier and former Meacoms Pier, that had water over both lanes.	A moderate easterly fetch across the northern Gulf of Mexico created minor coastal flooding along the Bolivar Peninsula.
227596	GALVESTON (ZONE)		4/24/2010	High Wind	60		0	0	$20,000	$0	Wind gust of 69 mph measured at Galveston Scholes Airport. Roofs on some homes damaged on West End of Galveston Island.	A low pressure system combined with a gravity wave disturbance to produce a period of strong winds mainly along the coast. The winds did damage to some homes.
234590	GALVESTON CO.	(GLS)SCHOLES FLD GAL	5/14/2010	Flash Flood			0	0	$0	$0	Heavy rainfall led to inundation of Steward Road on Galveston Island.	Scattered thunderstorms over southeast Texas produced flooding over portions of the area.
238520	GALVESTON CO.	(GLS)SCHOLES FLD GAL	7/26/2010	Lightning			0	0	$250,000	$0	Eight apartments were damaged by fire due to a lightning strike in Galveston. The apartment complex had been abandoned since Hurricane Ike in 2008.	A series of showers and thunderstorms moving onshore from the Gulf of Mexico produced several structural fires due to lightning strikes.
238521	GALVESTON CO.	JAMAICA BEACH	7/26/2010	Lightning			0	0	$15,000	$0	Lightning caused a small attic fire in a home on the west end of Galveston Island. Damage to the home was minimal.	A series of showers and thunderstorms moving onshore from the Gulf of Mexico produced several structural fires due to lightning strikes.
238522	GALVESTON CO.	ALTA LOMA	7/26/2010	Lightning			0	0	$5,000	$0	Lightning struck a house in the 7000 block of Avenue R. The strike produced minor damage to the brick exterior of the home but no fire was reported.	A series of showers and thunderstorms moving onshore from the Gulf of Mexico produced several structural fires due to lightning strikes.
281464	GALVESTON (ZONE)		1/9/2011	Coastal Flood			0	0	$5,000	$0	Gale force easterly winds caused minor coastal flooding over portions of the Bolivar Peninsula and along Galveston Bay. Water reached the boardwalk in Kemah and covered some roads on the Bolivar Peninsula.	A coastal low and associated squall line moved across the southern counties and the coastal waters and produced strong wind gusts and some elevated tides.
285516	GALVESTON (ZONE)		2/3/2011	Ice Storm			0	0	$0	$0	A period of freezing rain and freezing drizzle led to icy roads, especially bridges and overpasses, and numerous accidents. Between one and two tenths of an inch of ice accumulated.	A very cold air mass was in place in early February with overnight lows in the teens and 20s. low pressure system moved from west to east across northern Texas on February 3rd and 4th drawing Gulf moisture into the area in the form of freezing rain and drizzle with some snow also occurring well north and northwest of Houston.
303904	GALVESTON (ZONE)		5/23/2011	Rip Current			1	1	$0	$0	A man drowned when he was taken under by a rip current off of Galveston. A woman swimming with the man was thrown onto a jetty and was injured but survived.	A swimmer drowned when captured by a rip current off Galveston Island.
297402	GALVESTON CO.	TEXAS CITY	6/7/2011	Funnel Cloud			0	0	$0	$0	A funnel cloud was sighted over Texas City.	A funnel cloud was sighted over Texas City.
331019	GALVESTON (ZONE)		9/3/2011	High Surf			1	0	$0	$0	Man on float was blown off well offshore and drowned. High winds and surf were believed to contribute to the accident according to beach patrol.	High offshore winds associated with Tropical Storm Lee knocked a beach goer off a flotation device. The man was unable to get back to shore and drowned.
354348	GALVESTON CO.	TEXAS CITY GULF ARPT	11/8/2011	Tornado		EF0	0	0	$50,000	$0	A tornado touched down at a industrial plant. It knocked over 10 empty trailers and did minor damage to plant.	Thunderstorms moved across Southeast Texas producing areas of damage and at least two tornadoes.
361896	GALVESTON CO.	ALTA LOMA	1/9/2012	Funnel Cloud			0	0	$0	$0	A funnel cloud was sighted in Santa Fe by law enforcement officials.	Severe thunderstorms developed across southeast Texas and produced hail, wind damage, flash flooding and tornadoes.
361897	GALVESTON CO.	ARCADIA	1/9/2012	Thunderstorm Wind	50		0	0	$0	$2,000	A severe thunderstorm downed a tree along Cemetery Road in Santa Fe.	Severe thunderstorms developed across southeast Texas and produced hail, wind damage, flash flooding and tornadoes.
361898	GALVESTON CO.	HITCHCOCK VOLK ARPT	1/9/2012	Thunderstorm Wind	52		0	0	$6,000	$0	A severe thunderstorm produced straight line wind damage in the Westwood Circle area of La Marque. The winds downed some fences and uprooted a few trees. This storm produced a tornado in the Mall of the Mainland area just a few minutes later.	Severe thunderstorms developed across southeast Texas and produced hail, wind damage, flash flooding and tornadoes.
361900	GALVESTON CO.	HITCHCOCK VOLK ARPT	1/9/2012	Tornado		EF0	0	0	$50,000	$0	This EF-0 tornado was observed by a police officer to touch down in the Mall of the Mainland parking lot. Tree limbs were downed and some shallow rooted trees were knocked over. A combination of tornadic winds and heavy rainfall likely contributed to some Mall roof damage. Another witness in an adjacent subdivision just to the east of the Mall observed swirling debris approaching the area, and the tornado threw a neighbor's shed back toward the left before lifting.	Severe thunderstorms developed across southeast Texas and produced hail, wind damage, flash flooding and tornadoes.
362827	GALVESTON CO.	LEAGUE CTY SPCLND AR	3/20/2012	Lightning			0	0	$15,000	$0	A lightning strike started a fire in the attic of a house. Damage was mostly contained to the attic and part of the second floor of the home.	An early morning squall line moved across the area and produced some wind damage.

377702	GALVESTON CO.	LEAGUE CITY S S ARPT	4/4/2012	Hail	1		0	0	$2,000	$0	Quarter sized hail reported near the intersection of FM 518 and FM 528.	A stalled surface boundary served as a focus for the development of several well organized and severe thunderstorms that produced large hail across areas south and southwest of Houston.
378059	GALVESTON CO.	HITCHCOCK	4/20/2012	Hail	1		0	0	$2,000	$0	Quarter sized hail reported along Highway 6 from the intersection with FM 2004 east to the fire and police stations in Hitchcock.	A series of strong thunderstorms moved across the southern half of southeast Texas producing widespread reports of hail and wind damage.
378060	GALVESTON CO.	LA MARQUE	4/20/2012	Hail	1.75		0	0	$3,000	$0	Golfball sized hail reported at the public works department building.	A series of strong thunderstorms moved across the southern half of southeast Texas producing widespread reports of hail and wind damage.
378066	GALVESTON CO.	(GLS)SCHOLES FLD GAL	4/20/2012	Thunderstorm Wind	68		0	0	$0	$0	A wind gust of 78 mph was recorded at Moody Gardens.	A series of strong thunderstorms moved across the southern half of southeast Texas producing widespread reports of hail and wind damage.
378065	GALVESTON CO.	LA MARQUE	4/20/2012	Thunderstorm Wind	61		0	0	$5,000	$0	Windshields damaged and power outages caused in La Marque.	A series of strong thunderstorms moved across the southern half of southeast Texas producing widespread reports of hail and wind damage.
385728	GALVESTON CO.	JAMAICA BEACH	5/11/2012	Thunderstorm Wind	61		0	0	$25,000	$0	Numerous power lines downed on the island from communities on the West End eastward into downtown Galveston.	A strong squall line with a large bowing line segment moved across the coastal counties and nearshore waters of southeast Texas during the early morning hours of May 11th. This system produced widespread wind damage along its path.
386986	GALVESTON CO.	LEAGUE CITY	5/12/2012	Flash Flood			0	0	$5,000	$0	Rainfall totals of between five to ten inches produced widespread flooding. Street flooding was severe enough to force numerous road closures from northwestern Fort Bend County eastward into northern Galveston County. Homes and businesses flooded along Keegans Bayou from below Wilcrest Road to above Beltway 8. Thirteen to fifteen businesses flooded on the western bank of Keegans Bayou along West Bellfort Road between US 59 and Wilcrest. This flooding was a direct result of the bayou over-topping its banks by 2 to 3 feet. Based on high water marks left on the Wilcrest bridge at least 1 foot of water was flowing over the top of the bridge deck. 1 house flooded along Keegans Bayou between Beltway 8 and US 59 from local run-off then from the bayou when it rose above bank full.	An upper level trough, coupled with deep moisture and a slow-moving lower level boundary, allowed for the focus of numerous thunderstorms that produced flooding rainfall.
412091	GALVESTON CO.	LA MARQUE	11/4/2012	Thunderstorm Wind	60		0	0	$10,000	$0	There was wind damage to commercial building windows and minor roof damage to the fire station. One residence was damaged by a vehicle that was pivoted around and struck the home.	A severe thunderstorm developed near a cold frontal boundary that was pushing to the coast in the morning.
447821	GALVESTON CO.	HITCHCOCK	4/2/2013	Hail	4.5		0	0	$1,100,000	$0	A severe thunderstorms produced baseball to softball sized hail in Hitchcock. The central and western parts of the town received extreme damage to vehicles and home roofs and windows. There was also significant damage to the Midway Church, a fire station, and in two trailer parks. Seven Hitchcock police cars were severely damaged by the large hail.	An upper level disturbance initiated a few strong to severe thunderstorms. The storms produced large hail, up to softball size, across portions of the Southeast Texas Coast.
447822	GALVESTON CO.	ALTA LOMA	4/2/2013	Hail	1		0	0	$0	$0	A severe thunderstorm produced quarter sized hail.	An upper level disturbance initiated a few strong to severe thunderstorms. The storms produced large hail, up to softball size, across portions of the Southeast Texas Coast.
447823	GALVESTON CO.	ALTA LOMA	4/2/2013	Hail	2.5		0	0	$750,000	$0	A severe thunderstorm produced ping pong to tennis ball sized hail near Sante Fe.	An upper level disturbance initiated a few strong to severe thunderstorms. The storms produced large hail, up to softball size, across portions of the Southeast Texas Coast.
449025	GALVESTON CO.	JAMAICA BEACH	5/10/2013	Hail	1.75		0	0	$45,000	$0	A severe thunderstorm produced golf ball sized hail that damaged vehicles near Jamaica Beach.	Clusters and lines of storms produced hail and flooding. In addition several homes and one individual were struck by lightning.
469990	GALVESTON CO.	SANTA FE	7/10/2013	Funnel Cloud			0	0	$0	$0		A funnel cloud was sighted in the Santa Fe area.
469992	GALVESTON CO.	DICKINSON	7/12/2013	Funnel Cloud			0	0	$0	$0		A funnel cloud was sighted near an outlet mall in Texas City.
462578	GALVESTON CO.	GALVESTON	8/21/2013	Funnel Cloud			0	0	$0	$0	Three funnel clouds were sighted over Galveston Bay near the Texas City Dike.	A moist tropical air mass moving onshore produced Galveston Bay area funnel clouds.
480899	GALVESTON CO.	FRIENDSWOOD	#########	Flash Flood			0	0	$10,000	$0	Heavy rain caused road closures due to flooding in and around the towns of League City, Hitchcock, Dickinson, La Marque, and San Leon, as well as high water around Tiki Island, and the Bolivar Peninsula.	A slow moving storm system and associated frontal boundary generated heavy rainfall that led to flooding across portions of southeast Texas, especially in and around the Houston and Galveston areas.
521446	GALVESTON CO.	GALVESTON	5/27/2014	Thunderstorm Wind	60		0	0	$0	$0	Severe thunderstorm winds blew down a utility pole and power lines in Galveston.	A shortwave disturbance produced slow moving clusters of thunderstorms that tracked north and east from the Gulf Coast the afternoon of May 26th and 27th.
521476	GALVESTON CO.	(GLS)SCHOLES FLD GAL	5/31/2014	Funnel Cloud			0	0	$0	$0	Funnel clouds were reported over Galveston Island.	The maritime air mass over Galveston Island was unstable and moist enough to produce morning nearshore waterspouts and funnel clouds.
528925	GALVESTON CO.	(GLS)SCHOLES FLD GAL	6/25/2014	Funnel Cloud			0	0	$0	$0	A funnel cloud was sighted over Galveston Island near the intersection of Seawall Blvd and 49th Street.	Conditions were favorable for funnel cloud formation across the area.
528927	GALVESTON CO.	(GLS)SCHOLES FLD GAL	6/25/2014	Funnel Cloud			0	0	$0	$0	A funnel cloud was sighted over Galveston Island near the intersection of the Seawall and 91st Street.	Conditions were favorable for funnel cloud formation across the area.
528926	GALVESTON CO.	PORT BOLIVAR ARPT	6/25/2014	Funnel Cloud			0	0	$0	$0	A funnel cloud was sighted over Galveston Island near the mouth of Galveston Bay.	Conditions were favorable for funnel cloud formation across the area.
528936	GALVESTON CO.	HIGHLAND BAYOU	6/26/2014	Tornado		EF0	0	1	$0	$0	A tornado destroyed a storage trailer and knocked down a fence near the intersection of Highland Bayou Drive and Mallard Street. There was one injury.	Conditions were favorable during the day for funnel cloud and water spout formation across the area, and a couple of tornadoes were sighted.

528931	GALVESTON CO.	TEXAS CITY	6/26/2014	Funnel Cloud			0	0	$0	$0	A funnel cloud was sighted south of Texas City.	Conditions were favorable during the day for funnel cloud and water spout formation across the area, and a couple of tornadoes were sighted.
533066	GALVESTON CO.	PORT BOLIVAR	7/7/2014	Funnel Cloud			0	0	$0	$0	A funnel cloud was sighted over Galveston Bay.	A funnel cloud developed early in the morning, then isolated severe thunderstorms formed in the early evening hours.
533030	GALVESTON CO.	GALVESTON	7/18/2014	Funnel Cloud			0	0	$0	$0	A funnel cloud was sighted on Galveston Island near the intersection of Seawall Blvd and 39th Street.	A moist and unstable tropical air mass residing over coastal southeastern Texas was conducive to the formation of morning funnel clouds.
533032	GALVESTON CO.	NADEAU HGTS	7/21/2014	Tornado		EF0	0	0	$15,000	$0	An EF0 tornado briefly touched down at an oil refinery. There was minimal damage to one of the buildings, and one vehicle's window was shattered.	Isolated to widely scattered thunderstorms formed within a humid and unstable air mass. One of these storms produced a weak tornado in Texas City that caused minimal damage.
533488	GALVESTON CO.	LA MARQUE	9/5/2014	Funnel Cloud			0	0	$0	$0	A funnel cloud was sighted near the intersection of FM 1765 and Highway 3.	A very moist and unstable late morning near coastal air mass generated scattered thunderstorms that produced funnel clouds.
533489	GALVESTON CO.	VIRGINIA PT	9/5/2014	Funnel Cloud			0	0	$0	$0	A funnel cloud was sighted near the intersection of Interstate 45 and Highway 6.	A very moist and unstable late morning near coastal air mass generated scattered thunderstorms that produced funnel clouds.
533490	GALVESTON CO.	TEXAS CITY	9/5/2014	Funnel Cloud			0	0	$0	$0	A funnel cloud was sighted near Blocker Middle School.	A very moist and unstable late morning near coastal air mass generated scattered thunderstorms that produced funnel clouds.
533486	GALVESTON CO.	LEAGUE CITY S S ARPT	9/7/2014	Hail	0.75		0	0	$0	$0	Dime sized hail was observed in the Westover Park subdivision of League City.	Daytime heating within a moist and unstable air mass allowed for the isolated development of near coastal storms. The strongest of these storms produced three quarter inch in diameter hail.
533485	GALVESTON CO.	SAN LEON ELLIS ARPT	9/9/2014	Funnel Cloud			0	0	$0	$0	A funnel cloud moved northward across the north side of San Leon.	A moist and conditionally unstable late morning air mass was conducive for the formation of a funnel cloud along Galveston Bay's western shore.
533484	GALVESTON CO.	LEAGUE CTY SPCLND AR	9/12/2014	Funnel Cloud			0	0	$0	$0	A funnel cloud was sighted near the intersection of FM 96 and Egret Bay Boulevard.	Higher Gulf of Mexico moisture being brought onshore by an easterly wave initiated areas of thunderstorms. Isolated storms displayed weak rotation and produced funnel clouds.
543200	GALVESTON CO.	LEAGUE CITY S S ARPT	9/18/2014	Flash Flood			0	0	$0	$0	Several League City area roads were flooded with water as deep as 5 to 8 inches.	A vicinity western shortwave disturbance provided enough lift within a very moist and unstable late morning through afternoon air mass to produce clustering thunderstorms. Weak steering flow allowed for the slow movement of storm clusters that ultimately generated regional flash flooding.
568016	GALVESTON CO.	LA MARQUE	3/21/2015	Heavy Rain			0	0	$0	$0	Heavy rains (up to four inches) and some street flooding was reported in and around the La Marque area.	Slow moving thunderstorms along a cold front led to heavy rainfall and localized flooding over portions of the area. A swath of four and seven inches of rain fell from Brazoria County to Chambers County.
572611	GALVESTON CO.	TEXAS CITY GULF ARPT	4/12/2015	Flash Flood			0	0	$0	$0	A nearly stationary thunderstorm produced flash flooding in and around the Texas City area.	An early evening and slow moving thunderstorm produced flash flooding in Texas City.
573368	GALVESTON CO.	LEAGUE CITY S S ARPT	4/17/2015	Flash Flood			0	0	$2,000	$0	Flooded roadways due to high rainfall around Friendswood High School.	An approaching broad upper low east of the Four Corners region placed eastern Texas in a favorable upper air pattern conducive to sustaining either a mesoscale storm complex or an organized linear storm system. Daytime heating, within a highly moist environment and a passing shortwave disturbance, allowed a south central Texas originating derecho to pass through within the southwest flow and cause severe weather damage across the Houston, Texas area.
569546	GALVESTON CO.	JAMAICA BEACH	4/17/2015	Thunderstorm Wind	70		0	0	$20,000	$0	Thunderstorm winds blew a roof off a home.	An approaching broad upper low east of the Four Corners region placed eastern Texas in a favorable upper air pattern conducive to sustaining either a mesoscale storm complex or an organized linear storm system. Daytime heating, within a highly moist environment and a passing shortwave disturbance, allowed a south central Texas originating derecho to pass through within the southwest flow and cause severe weather damage across the Houston, Texas area.
572347	GALVESTON CO.	(GLS)SCHOLES FLD GAL	4/25/2015	Hail	1.75		0	0	$1,000	$0	Golf ball sized hail was reported close to the intersection of Heards Lane and 68th Street on Galveston Island.	Severe storms developed across central and southern portions of Southeast Texas as a strong upper level disturbance moved across the area.
583543	GALVESTON CO.	SAN LEON ELLIS ARPT	5/12/2015	Flash Flood			0	0	$20,000	$0	Water covered roads in San Leon. Water several inches deep in many yards. Radar estimates over 8 inches of rain fell from slow moving storm over San Leon.	Slow moving thunderstorms produced copious amounts of rain that led to flash flooding for some locations. Communities of Webster, San Leon and Angleton were hardest hit.
578941	GALVESTON CO.	LEAGUE CITY	5/12/2015	Flash Flood			0	0	$0	$0	There was widespread flooding around League City. Several roads were impassable due to high water.	Slow moving thunderstorms produced copious amounts of rain that led to flash flooding for some locations. Communities of Webster, San Leon and Angleton were hardest hit.
589592	GALVESTON CO.	LEAGUE CTY SPCLND AR	6/13/2015	Flash Flood			0	0	$0	$0	Strong thunderstorms produced heavy rainfall that flooded the southbound feeder road of Interstate 45 at Highway 96. Rainfall totals ranged from 5 to 7 inches.	A weak tropical wave interacted with a highly moist air mass and produced periods of high rainfall.

589206	GALVESTON (ZONE)		6/15/2015	Tropical Storm			0	0	$0	$0	There was minor coastal flooding on the Bolivar peninsula with some debris removal required off of State Highway 87. High surf caused erosion of Galveston Island beaches. Sand and debris washed up on the streets of various west end island communities. There was minor flooding damage to downstairs garages in Jamaica Beach with two temporarily closed roads.	June 16th. Strong winds and minor coastal flooding occurred near Matagorda Bay in Jackson and Matagorda Counties and along the coast of Brazoria and Galveston Counties. Heavy rainfall of over 13 inches caused significant inland flooding in and around the towns of Lolita, Edna, and Ganado. The maximum sustained wind reported in Matagorda Bay was 45 knots (52 mph). The maximum wind gust of 54 knots (62 mph) was reported on the Bolivar Peninsula at Crab Lake. There were no reported tornadoes associated with Tropical Storm Bill. ||Storm surge heights ranged from 2.1 feet in Chambers County to 3.2 feet in Galveston County. Roads were flooded and closed around Sargent in Matagorda County. Flood waters rose around homes in the city of Matagorda but no damage was reported. In Brazoria County, surge produced minor coastal flooding near Surfside beaches, the Treasure Island subdivision and San Luis Pass Park but with little or no damage. In the village of Surfside Beach, Seashell, Surf and Beach Roads were closed due to high water form storm surge. All countywide beach access roads were closed. Heavy rain caused the flooding of Chocolate and Halls Bayous. There were four trees that were downed by wind. There was minor coastal flooding on the Bolivar Peninsula in Galveston County with some debris removal required off of State Highway 87. High surf caused erosion of Galveston Island beaches. Sand and debris washed up on the streets of various West End island communities. There was minor flooding damage to downstairs garages in Jamaica Beach with two temporarily closed roads. in Harris County, there was minor storm surge flooding in Shoreacres, Clear Lake Shores, and along Toddville Road in Seabrook. Two feet of water impacted Shoreacres
588068	GALVESTON CO.	ALTA LOMA	8/17/2015	Funnel Cloud			0	0	$0	$0	An early afternoon funnel cloud was sighted near Santa Fe.	An early afternoon funnel cloud was sighted near Santa Fe.
588750	GALVESTON CO.	PATTON	8/20/2015	Lightning			0	0	$50,000	$0	Light struck and caused a fire at an oil storage tank near Crystal Beach.	Early morning showers and thunderstorms developed and moved very little for several hours resulting in flash flooding across parts of Galveston and Brazoria counties. Rainfall totals of 5 to 7 inches were common, and isolated totals did reach 10 inches in the Bayou Vista area.
592653	GALVESTON CO.	ALTA LOMA	8/20/2015	Flash Flood			0	0	$0	$0	Street flooding and road closures were reported across portions of central Galveston County including areas around Bayou Vista, La Marque, Hitchcock, Freddieville, as well as near the intersection of Highway 3, Highway 6 and Interstate 45. More street flooding and road closures were found on Galveston Island along Harborside Drive.	Early morning showers and thunderstorms developed and moved very little for several hours resulting in flash flooding across parts of Galveston and Brazoria counties. Rainfall totals of 5 to 7 inches were common, and isolated totals did reach 10 inches in the Bayou Vista area.
596455	GALVESTON CO.	GALVESTON	9/1/2015	Flash Flood			0	0	$10,000	$0	Flash flooding on Galveston Island included several roads under water and impassable, including 48th Street and Broadway, service roads to Interstate 45, and 51st Street and Harborside Drive where vehicles stalled out. There was also flooding on the TAMU campus.	Showers and thunderstorms moved northward toward the upper Texas coast. Activity trained in and around the Galveston Island area and produced flash flooding.
604977	GALVESTON (ZONE)		#########	Coastal Flood			0	0	$0	$0	Gulf water inundated Highway 87 approximately two miles from the Highway 124 intersection on High Island.	A strong upper level storm system, combined with high moisture levels to produce a bands of excessive rainfall that caused flash flooding across Fort Bend, Harris and Liberty Counties. Thunderstorms rapidly developed shortly after midnight on the 31st over Matagorda and Fort Bend Counties and moved into Harris County around 1:00 a.m. The thunderstorms trained or moved over the same areas between 1:00 a.m. and 4:00 a.m. with significant rainfall occurring over the southwest and south-central portions of Harris County into the east-central part of the county. After a brief break between 5:00 a.m. and 8:00 a.m. an additional round of thunderstorms slowly moved across Harris County from west to east producing additional heavy rainfall and worsening ongoing flooding conditions. Saturated grounds from previous heavy rainfall the week before coupled with intense short term rainfall rates resulted in widespread flooding. There was one confirmed flood related death and one possible flood related death.
609210	GALVESTON CO.	LEAGUE CITY S S ARPT	#########	Tornado		EF2	0	0	$1,000,000	$0	The EF-2 tornado touched down just east of Clover Field Airport (Brazoria County) and continued on a narrow northeast track into Galveston County. This tornado expanded in size and weakened in intensity as it approached FM 518 over the last half of its track. There was extensive tree damage along the entire track. Homes sustained partial roof loss and tree damage consistent with an EF-1 rating from east of the airport through Sunset Drive in Friendswood (Galveston County). Low-end EF-2 damage occurred on Chester Drive in Friendswood where there was complete loss of a residential home's roof. Estimated peak wind was 115 mph.	Tornadoes formed along a near coastal county warm frontal boundary that was downstream of a central Texas cold front.
612649	GALVESTON (ZONE)		#########	Coastal Flood			0	0	$0	$0	Coastal flooding inundated portions of Highway 87 near the Highway 24 intersection on the eastern beaches of the Bolivar Peninsula.	A long southeasterly wind fetch across the western Gulf of Mexico drove up a swell that inundated sections of the Bolivar Peninsula.

608048	GALVESTON CO.	HITCHCOCK VOLK ARPT	1/8/2016	Hail	0.75		0	0	$0	$0	Penny sized hail occurred to the northwest of La Marque.	A strong upper level storm system moved across the area that aided in the generation of regional thunderstorms. The stronger thunderstorms produced large hail.
628073	GALVESTON CO.	LEAGUE CITY S S ARPT	4/13/2016	Hail	1		0	0	$0	$0	The quarter size hail was reported in Friendswood.	Early morning pre-dawn thunderstorms strengthened to severe as they moved eastward across southeastern Texas. These storms produced wind damage and hail along with damaging lightning strikes.
628077	GALVESTON CO.	LEAGUE CTY SPCLND AR	4/13/2016	Hail	0.75		0	0	$0	$0	The dime size hail was reported in League City.	Early morning pre-dawn thunderstorms strengthened to severe as they moved eastward across southeastern Texas. These storms produced wind damage and hail along with damaging lightning strikes.
629839	GALVESTON CO.	LEAGUE CITY S S ARPT	4/18/2016	Flash Flood			0	0	$0	$0	Numerous flooded roadways in League City. Flood waters were inundating numerous roads within the city of Galveston.	A slow moving upper low over the Southwestern U.S. combined with near record level moisture aided in producing extremely heavy rainfall and devastating flooding over portions of Harris, Waller and Fort Bend Counties. Northwest to southeast orientated bands of precipitation commenced during the early evening hours of April 17th across extreme southwestern and western Harris County as well as north and west into Grimes, Waller, Fort Bend, Austin and Colorado Counties. Between 8:00 p.m. and 9:00 p.m. thunderstorms began to greatly intensify and slow their northward movement over Waller County and, by late evening, had stalled and began shifting eastward into western Harris County. Excessive rainfall spread across northwestern Harris County during the late evening hours of April 17th and into the early morning hours of April 18th. Slow thunderstorm movement and rain rates over 4 inches per hour resulted in a large portion of northwest Harris and Waller Counties receiving between 10 and 20 inches of rainfall over mainly a 12 hour period. A few CoCoRaHS gauges in Waller County measured over 20 inches.||The flooding resulted in 8 direct fatalities over the region, all drownings in vehicles. Six of these were in Harris County with 1 in Waller County and another in Austin County. An estimated 40000 cars and trucks were flooded. Several bayous and creeks were flooded. The Addicks Barker Reservoir was severely impacted. At least 10,000 homes were flooded. Damage was estimated from Damage Survey Reports to be near $60 million.
623246	GALVESTON CO.	LEAGUE CITY S S ARPT	4/24/2016	Tornado		EF0	0	0	$100,000	$0	An EF-0 tornado produced intermittent damage that began southwest of a Cabelas parking lot then continued east across Interstate 45 and then on toward the NE across a Candlewood Suites hotel and an assisted living center. The tornado continued north-northeast through the Victory Lakes subdivision then to near Lynn Nursery along Pecan Orchard Road where they was some minor tree damage. Vehicles were damaged by swirling winds and debris around the Cabelas and the Candlewood Suites sustained roof damage. In area neighborhoods, damage was mostly minor with numerous fences down and loose objects like basketball goals and trampolines knocked over. One storage shed in Victory Lakes was picked up and thrown approximately 300 yards.	An early evening EF-0 tornado caused minor damage in League City.
635553	GALVESTON CO.	(GLS)SCHOLES FLD GAL	5/2/2016	Hail	1		0	0	$0	$0	Quarter size hail was reported near the intersection of 67th Street and Heards Lane.	Late night isolated severe thunderstorms developed across parts of Southeast Texas and produced large hail.
635660	GALVESTON (ZONE)		5/9/2016	Coastal Flood			0	0	$0	$0	The was minor water over wash at the intersection of Highway 87 and Highway 124 due to the combination of above normal tides and wave run up.	Some coastal flooding was observed due to the combination of above normal water levels and wave run up.
635663	GALVESTON CO.	GALVESTON	5/19/2016	Flash Flood			0	0	$0	$0	Flash flooding occurred near the intersection of Interstate 45 and 61st Street in Galveston.	A fast eastward moving storm system tracked across the area during the day. One county reported some wind damage, and there was one flood report on Galveston Island.
644970	GALVESTON CO.	(GLS)SCHOLES FLD GAL	6/4/2016	Flash Flood			0	0	$0	$0	Harborside Drive was closed due to high water.	A western upper low over central Texas, in combination with an approaching inland frontal boundary sagging south towards the coast within a very moist air mass, provided the necessary focus for storm clusters to track over the southeastern forecast area and produce a high rainfall-leading-to-a-flooding event.
654701	GALVESTON CO.	LEAGUE CITY	6/28/2016	Lightning			0	0	$8,000	$0	A lightning strike caused electrical damage to the League City City Hall's parking lot lights.	Clusters of thunderstorms formed in a regionally moist and unstable air mass ahead of an approaching northeastern surface boundary. One of these storms produced a cloud to ground lightning strike that produced a power outage in League City, Texas.
636446	GALVESTON CO.	(GLS)SCHOLES FLD GAL	7/17/2016	Tornado		EF0	0	0	$0	$0	A waterspout moved onshore and became a weak tornado just east of the Galveston Fishing Pier at 61st Street. The tornado moved across Seawall Boulevard and dissipated. There was no damage.	A waterspout south of Galveston, moved onshore and became a tornado. No damage was observed as it dissipated before crossing Seawall Boulevard.
637888	GALVESTON CO.	LEAGUE CTY SPCLND AR	7/20/2016	Funnel Cloud			0	0	$0	$0	A League City area funnel cloud lasted around fifteen minutes.	A funnel cloud was sighted in the Dickinson and League City area.

672283	GALVESTON (ZONE)		12/3/2016	Coastal Flood			0	0	$20,000	$0	A prolonged period of easterly winds south of a near coastal warm front produced elevated water levels that inundated sections of Galveston Island, including downtown. Impassable roads due to high water included the intersection of 38th and Winnie Street, 39th and Church Street and the intersection of 51st Street and Harborside Drive.	Efficient low level convergence along a near coastal warm frontal boundary within a moist environment generated thunderstorms that produced extreme early day rainfall rates. This intense morning rainfall produced flash flooding.
672274	GALVESTON CO.	TEXAS CITY GULF ARPT	12/3/2016	Flash Flood			0	0	$50,000	$0	Numerous streets were inundated with flood waters nearing homes in Texas City. Impassable roads due to high water included the FM 1764 - Emmett Lowry Parkway and Highway 146 intersection. There were also reports of flooded streets in the town of La Marque.	Efficient low level convergence along a near coastal warm frontal boundary within a moist environment generated thunderstorms that produced extreme early day rainfall rates. This intense morning rainfall produced flash flooding.
675241	GALVESTON (ZONE)		1/22/2017	Strong Wind	41		0	0	$1,000	$0	Power lines were downed in the League City area.	Strong northwest winds behind a cold frontal passage produced mainly power line damage and downed some trees. The most damage occurred in the Harris County area.
681536	GALVESTON CO.	FLAKE	2/14/2017	Thunderstorm Wind	52		0	0	$4,000	$0	Six power poles were blown down near the intersection of Highway 87 and Helen Blvd.	Several morning tornadoes developed as a storm system moved eastward across the state.
681541	GALVESTON CO.	ALTA LOMA	2/14/2017	Thunderstorm Wind	53		0	0	$12,000	$0	A couple of trees were downed (one on a house) along Avenue I between 21st Street and 24th Street.	Several morning tornadoes developed as a storm system moved eastward across the state.
681547	GALVESTON CO.	FLAKE	2/14/2017	Thunderstorm Wind	53		0	0	$4,000	$0	Power poles were snapped at Crenshaw Elementary School.	Several morning tornadoes developed as a storm system moved eastward across the state.
676602	GALVESTON CO.	SAN LEON	2/17/2017	Funnel Cloud			0	0	$0	$0	A funnel cloud that was sighted over the city became a waterspout when it moved into Galveston Bay.	Training showers and thunderstorms associated with a southern plains storm system generated some heavy rainfall and a funnel cloud.
687225	GALVESTON CO.	LEAGUE CITY S S ARPT	3/29/2017	Flash Flood			0	0	$0	$0	Street flooding was reported across the Friendswood area.	A line of thunderstorms moved across southeast Texas during the morning and afternoon hours and produced several tornadoes, hail, wind damage and some flooding.
691029	GALVESTON (ZONE)		4/16/2017	Rip Current			1	0	$0	$0	Moderate surf created a rip current strong enough to cause a drowning around 20 to 30 yards offshore near 35th street.	A moderate surf produced a rip current strong enough to cause a drowning in Galveston.
693186	GALVESTON CO.	LA MARQUE	4/18/2017	Flash Flood			0	0	$4,000	$0	Street flooding was causing vehicles to stall around the College of the Mainland. The Amburn Street and Monticello Drive intersection was flooded and impassable. High flood water was also reported in La Marque at the Gulf Freeway and FM 519 intersection.	A weak upper low over the region allowed a slow moving organized clustering of storms to position themselves over the coastal counties. These storms produced high rainfall rates that lead to isolated flash flooding.
693188	GALVESTON CO.	ALTA LOMA	4/18/2017	Flash Flood			0	0	$100,000	$0	Water reported in homes at Avenue M 1/2 and 24th Street, north of 32nd Street and on Ave P at 28th Street in Santa Fe. Sections of O and P Avenue near the 28th Street intersection were closed due to flooding. Street flooding was also reported along R, S and T Avenues at the 32nd and 33rd street intersections. Approximately 8 roads were closed and impassable due to flood waters within town limits.	A weak upper low over the region allowed a slow moving organized clustering of storms to position themselves over the coastal counties. These storms produced high rainfall rates that lead to isolated flash flooding.
689172	GALVESTON CO.	(GLS)SCHOLES FLD GAL	5/22/2017	Tornado		EF0	0	0	$20,000	$0	An EF0 tornado damaged a Holiday Inn along Termini-San Luis Pass Road. Damage included blown out windows and lattice damage. Witnesses indicated this was a waterspout that moved onshore.	Morning storms became severe and produced wind damage, some flooding and two tornadoes.
690880	GALVESTON (ZONE)		5/31/2017	Rip Current			1	0	$0	$0	A 20 year old male drowned near 63rd Street and Seawall Blvd.	There was a rip current fatality off the Galveston Island beach.
693431	GALVESTON (ZONE)		6/12/2017	Rip Current			1	0	$0	$0	There was a rip current fatality near 850 Gulf Road on the Bolivar Peninsula.	There was a rip current fatality on the Bolivar Peninsula.
707141	GALVESTON (ZONE)		6/21/2017	Tropical Storm			0	0	$0	$0	Water and debris covered a low lying section of Highway 87 near its intersection with Highway 124 which is an area that is especially vulnerable to coastal flooding. Elsewhere, channels were elevated around Jamaica Beach and other west end communities of Galveston Island, but there was little impact.	Tropical Storm Cindy made landfall in southwestern Louisiana between Port Arthur, TX and Cameron, LA in the early morning hours of June 22nd. Cindy's main impact was minor coastal flooding around Galveston Island and especially the Bolivar Peninsula. Storm total rainfall ranged from around one quarter inch at Houston Intercontinental Airport to 4.33 inches on the Bolivar Peninsula with the highest amounts generally across Chambers, Galveston and Liberty counties as well as the Bolivar Peninsula. The highest sustained wind of 37 knots (43 mph) was recorded at WeatherFlow site KCRB on the Bolivar Peninsula and the peak gust of 45 knots (52 mph) was recorded at Rollover Pass on the Bolivar Peninsula. The lowest sea-level pressure was 999 mb at Galveston Scholes Field. Minor coastal flooding was the tropical storm's main impact. Despite predominant offshore winds, long period swells and associated wave run up led to a rise in water levels along Gulf facing beaches. In addition, a persistent northerly wind component lead to a pile up of water on north facing Bay side beaches. Water and debris covered a low lying section of Highway 87 near its intersection with Highway 124 which is an area that is especially vulnerable to coastal flooding. Elsewhere, channels were elevated around Jamaica Beach and other west end communities of Galveston Island, but there was little impact. Minor coastal flooding was also experienced around Surfside and Blue Water Highway in Brazoria County.
707755	GALVESTON CO.	GALVESTON	8/18/2017	Funnel Cloud			0	0	$0	$0	A funnel cloud was observed near Harborside Drive on Galveston Island.	Two funnel clouds were sighted on Galveston Island.
707756	GALVESTON CO.	GALVESTON	8/18/2017	Funnel Cloud			0	0	$0	$0	A second funnel cloud was observed near Harborside Drive on Galveston Island.	Two funnel clouds were sighted on Galveston Island.

720459	GALVESTON CO.	GALVESTON	8/25/2017	Tornado		EF0	0	0	$500	$0	Funnel cloud sighting with fence damage near Ferry Road.	Harvey made landfall as a category 4 hurricane near Rockport, Texas during the evening of August 25th. The storm then weakened to a tropical storm and slowed, looping back and tracking over SE Texas then back over the Gulf of Mexico making a second landfall along the Louisiana coast during the early morning hours of August 30th. Over that 5 day period over Southeast Texas TS Harvey produced catastrophic flooding with a large area of 30 to 60 inches of rain, 23 tornadoes, tropical storm force winds and a moderate storm surge near Matagorda Bay. In some of the heavier bands rain fell at a rate of over 5 inches per hour. This copious record amount of rain over a led to catastrophic flooding. Thousands of homes, businesses, and roads were flooded due to flash flooding and sheet flow from long duration intense rain. Main stem rivers and adjoining tributaries, creeks and bayous reached full capacity and came out of their banks and this also contributed to the massive flooding across southeastern Texas.
720344	GALVESTON CO.	LEAGUE CITY S S ARPT	8/26/2017	Flash Flood			0	0	$0	$0	Numerous roads were flooded and impassable across northern and western Galveston County.||Approximately 7,000 homes and 125 businesses were impacted by flood waters across the county. Clear Creek measured record levels that lead to the widespread flooding throughout Friendswood and League City. Major flooding occurred along the Dickinson Bayou; from Cemetery Road to east of Highway 3 along FM 517. Flood waters inundated sections of Interstate 45, Bay Area Boulevard, FM 528, FM 518 and numerous primary and secondary county roads.	Harvey made landfall as a category 4 hurricane near Rockport, Texas during the evening of August 25th. The storm then weakened to a tropical storm and slowed, looping back and tracking over SE Texas then back over the Gulf of Mexico making a second landfall along the Louisiana coast during the early morning hours of August 30th. Over that 5 day period over Southeast Texas TS Harvey produced catastrophic flooding with a large area of 30 to 60 inches of rain, 23 tornadoes, tropical storm force winds and a moderate storm surge near Matagorda Bay. In some of the heavier bands rain fell at a rate of over 5 inches per hour. This copious record amount of rain over a led to catastrophic flooding. Thousands of homes, businesses, and roads were flooded due to flash flooding and sheet flow from long duration intense rain. Main stem rivers and adjoining tributaries, creeks and bayous reached full capacity and came out of their banks and this also contributed to the massive flooding across southeastern Texas.
720465	GALVESTON CO.	LEAGUE CITY	8/26/2017	Flash Flood			0	0	$0	$0	Low water ways were flooded along FM 270 from FM 646 to NASA Road 1.||Approximately 7,000 homes and 125 businesses were impacted by flood waters across the county. Clear Creek measured record levels that lead to the widespread flooding throughout Friendswood and League City. Major flooding occurred along the Dickinson Bayou; from Cemetery Road to east of Highway 3 along FM 517. Flood waters inundated sections of Interstate 45, Bay Area Boulevard, FM 528, FM 518 and numerous primary and secondary county roads.	Harvey made landfall as a category 4 hurricane near Rockport, Texas during the evening of August 25th. The storm then weakened to a tropical storm and slowed, looping back and tracking over SE Texas then back over the Gulf of Mexico making a second landfall along the Louisiana coast during the early morning hours of August 30th. Over that 5 day period over Southeast Texas TS Harvey produced catastrophic flooding with a large area of 30 to 60 inches of rain, 23 tornadoes, tropical storm force winds and a moderate storm surge near Matagorda Bay. In some of the heavier bands rain fell at a rate of over 5 inches per hour. This copious record amount of rain over a led to catastrophic flooding. Thousands of homes, businesses, and roads were flooded due to flash flooding and sheet flow from long duration intense rain. Main stem rivers and adjoining tributaries, creeks and bayous reached full capacity and came out of their banks and this also contributed to the massive flooding across southeastern Texas.
720815	GALVESTON CO.	PORT BOLIVAR ARPT	8/26/2017	Flash Flood			0	0	$0	$0	Low lying sections of Highway 87 on the Bolivar Peninsula were flooded due to rain.	Harvey made landfall as a category 4 hurricane near Rockport, Texas during the evening of August 25th. The storm then weakened to a tropical storm and slowed, looping back and tracking over SE Texas then back over the Gulf of Mexico making a second landfall along the Louisiana coast during the early morning hours of August 30th. Over that 5 day period over Southeast Texas TS Harvey produced catastrophic flooding with a large area of 30 to 60 inches of rain, 23 tornadoes, tropical storm force winds and a moderate storm surge near Matagorda Bay. In some of the heavier bands rain fell at a rate of over 5 inches per hour. This copious record amount of rain over a led to catastrophic flooding. Thousands of homes, businesses, and roads were flooded due to flash flooding and sheet flow from long duration intense rain. Main stem rivers and adjoining tributaries, creeks and bayous reached full capacity and came out of their banks and this also contributed to the massive flooding across southeastern Texas.

720859	GALVESTON CO.	FRIENDSWOOD	8/26/2017	Flash Flood			0	0	$0	$0	There were numerous water rescues and flooded homes within the Friendswood and Pearland areas. Roads and highways in and around these Houston suburbs were inundated and closed due to flash flooding. Mary's Creek and Cowart Creek overflowed their banks and exacerbated the flooding.	|Approximately 7,000 homes and 125 businesses were impacted by flood waters across the county. Clear Creek measured record levels that lead to the widespread flooding throughout Friendswood and League City. Major flooding occurred along the Dickinson Bayou; from Cemetery Road to east of Highway 3 along FM 517. Flood waters inundated sections of Interstate 45, Bay Area Boulevard, FM 528, FM 518 and numerous primary and secondary county roads.	Harvey made landfall as a category 4 hurricane near Rockport, Texas during the evening of August 25th. The storm then weakened to a tropical storm and slowed, looping back and tracking over SE Texas then back over the Gulf of Mexico making a second landfall along the Louisiana coast during the early morning hours of August 30th. Over that 5 day period over Southeast Texas TS Harvey produced catastrophic flooding with a large area of 30 to 60 inches of rain, 23 tornadoes, tropical storm force winds and a moderate storm surge near Matagorda Bay. In some of the heavier bands rain fell at a rate of over 5 inches per hour. This copious record amount of rain over a led to catastrophic flooding. Thousands of homes, businesses, and roads were flooded due to flash flooding and sheet flow from long duration intense rain. Main stem rivers and adjoining tributaries, creeks and bayous reached full capacity and came out of their banks and this also contributed to the massive flooding across southeastern Texas.
720862	GALVESTON CO.	FRIENDSWOOD	8/26/2017	Flash Flood			0	0	$0	$0	There were numerous water rescues within League City, Dickinson and Santa Fe. Flash flood waters, from sheet flooding and bayous/creeks coming out of banks, completely inundated hundreds to thousands of homes and businesses. Roads and highways in and around northern and central Galveston County were flooded and therefore closed for long time periods.	|Approximately 7,000 homes and 125 businesses were impacted by flood waters across the county. Clear Creek measured record levels that lead to the widespread flooding throughout Friendswood and League City. Major flooding occurred along the Dickinson Bayou; from Cemetery Road to east of Highway 3 along FM 517. Flood waters inundated sections of Interstate 45, Bay Area Boulevard, FM 528, FM 518 and numerous primary and secondary county roads.	Harvey made landfall as a category 4 hurricane near Rockport, Texas during the evening of August 25th. The storm then weakened to a tropical storm and slowed, looping back and tracking over SE Texas then back over the Gulf of Mexico making a second landfall along the Louisiana coast during the early morning hours of August 30th. Over that 5 day period over Southeast Texas TS Harvey produced catastrophic flooding with a large area of 30 to 60 inches of rain, 23 tornadoes, tropical storm force winds and a moderate storm surge near Matagorda Bay. In some of the heavier bands rain fell at a rate of over 5 inches per hour. This copious record amount of rain over a led to catastrophic flooding. Thousands of homes, businesses, and roads were flooded due to flash flooding and sheet flow from long duration intense rain. Main stem rivers and adjoining tributaries, creeks and bayous reached full capacity and came out of their banks and this also contributed to the massive flooding across southeastern Texas.
720871	GALVESTON CO.	SAN LEON	8/26/2017	Flash Flood			3	0	$10,000,000,000	$10,000	There were numerous water rescues across western and central Galveston County. Flood waters completely inundated hundreds to thousands of homes and businesses in League City, Dickinson and Santa Fe. Approximately 7,000 homes and 125 businesses were impacted by flood waters across the county. Clear Creek measured record levels that lead to the widespread flooding throughout Friendswood and League City. Major flooding occurred along the Dickinson Bayou; from Cemetery Road to east of Highway 3 along FM 517. Flood waters inundated sections of Interstate 45, Bay Area Boulevard, FM 528, FM 518 and numerous primary and secondary county roads. Approximately 7,000 homes and 125 businesses were impacted by flood waters across the county. Clear Creek measured record levels that lead to the widespread flooding throughout Friendswood and League City. Major flooding occurred along the Dickinson Bayou; from Cemetery Road to east of Highway 3 along FM 517. Flood waters inundated sections of Interstate 45, Bay Area Boulevard, FM 528, FM 518 and numerous primary and secondary county roads. There were numerous water rescues and flooded homes within the Friendswood, Pearland and Dickinson areas.	Harvey made landfall as a category 4 hurricane near Rockport, Texas during the evening of August 25th. The storm then weakened to a tropical storm and slowed, looping back and tracking over SE Texas then back over the Gulf of Mexico making a second landfall along the Louisiana coast during the early morning hours of August 30th. Over that 5 day period over Southeast Texas TS Harvey produced catastrophic flooding with a large area of 30 to 60 inches of rain, 23 tornadoes, tropical storm force winds and a moderate storm surge near Matagorda Bay. In some of the heavier bands rain fell at a rate of over 5 inches per hour. This copious record amount of rain over a led to catastrophic flooding. Thousands of homes, businesses, and roads were flooded due to flash flooding and sheet flow from long duration intense rain. Main stem rivers and adjoining tributaries, creeks and bayous reached full capacity and came out of their banks and this also contributed to the massive flooding across southeastern Texas.
720878	GALVESTON CO.	LEAGUE CITY S S ARPT	8/27/2017	Flash Flood			0	0	$0	$0	There were numerous water rescues within League City and Dickinson. Flash flood waters, from sheet flooding and bayous/creeks coming out of banks, completely inundated hundreds to thousands of homes and businesses. Roads and highways such as but not limited to Calder and Walker Streets, Highway 96, FM 518, FM 517, sections of Highway 3 and FM 646 in and around League City and Dickinson were flooded and therefore closed for long time periods.	|Approximately 7,000 homes and 125 businesses were impacted by flood waters across the county. Clear Creek measured record levels that lead to the widespread flooding throughout Friendswood and League City. Major flooding occurred along the Dickinson Bayou; from Cemetery Road to east of Highway 3 along FM 517. Flood waters inundated sections of Interstate 45, Bay Area Boulevard, FM 528, FM 518 and numerous primary and secondary county roads.	Harvey made landfall as a category 4 hurricane near Rockport, Texas during the evening of August 25th. The storm then weakened to a tropical storm and slowed, looping back and tracking over SE Texas then back over the Gulf of Mexico making a second landfall along the Louisiana coast during the early morning hours of August 30th. Over that 5 day period over Southeast Texas TS Harvey produced catastrophic flooding with a large area of 30 to 60 inches of rain, 23 tornadoes, tropical storm force winds and a moderate storm surge near Matagorda Bay. In some of the heavier bands rain fell at a rate of over 5 inches per hour. This copious record amount of rain over a led to catastrophic flooding. Thousands of homes, businesses, and roads were flooded due to flash flooding and sheet flow from long duration intense rain. Main stem rivers and adjoining tributaries, creeks and bayous reached full capacity and came out of their banks and this also contributed to the massive flooding across southeastern Texas.

720709	GALVESTON CO.	KEMAH	8/27/2017	Tornado		EF0	0	0	$200,000	$0	Trees down, minor roof damage in Bacliff. Fences down.	Harvey made landfall as a category 4 hurricane near Rockport, Texas during the evening of August 25th. The storm then weakened to a tropical storm and slowed, looping back and tracking over SE Texas then back over the Gulf of Mexico making a second landfall along the Louisiana coast during the early morning hours of August 30th. Over that 5 day period over Southeast Texas TS Harvey produced catastrophic flooding with a large area of 30 to 60 inches of rain, 23 tornadoes, tropical storm force winds and a moderate storm surge near Matagorda Bay. In some of the heavier bands rain fell at a rate of over 5 inches per hour. This copious record amount of rain over a led to catastrophic flooding. Thousands of homes, businesses, and roads were flooded due to flash flooding and sheet flow from long duration intense rain. Main stem rivers and adjoining tributaries, creeks and bayous reached full capacity and came out of their banks and this also contributed to the massive flooding across southeastern Texas.
721081	GALVESTON CO.	LEAGUE CITY S S ARPT	8/27/2017	Flash Flood			0	0	$0	$0	Numerous flooded homes, businesses and vehicles around Friendswood from run off sheet flooding and from Mary's Creek and Clear Creek coming out of banks.||Approximately 7,000 homes and 125 businesses were impacted by flood waters across the county. Clear Creek measured record levels that lead to the widespread flooding throughout Friendswood and League City. Major flooding occurred along the Dickinson Bayou; from Cemetery Road to east of Highway 3 along FM 517. Flood waters inundated sections of Interstate 45, Bay Area Boulevard, FM 528, FM 518 and numerous primary and secondary county roads.	Harvey made landfall as a category 4 hurricane near Rockport, Texas during the evening of August 25th. The storm then weakened to a tropical storm and slowed, looping back and tracking over SE Texas then back over the Gulf of Mexico making a second landfall along the Louisiana coast during the early morning hours of August 30th. Over that 5 day period over Southeast Texas TS Harvey produced catastrophic flooding with a large area of 30 to 60 inches of rain, 23 tornadoes, tropical storm force winds and a moderate storm surge near Matagorda Bay. In some of the heavier bands rain fell at a rate of over 5 inches per hour. This copious record amount of rain over a led to catastrophic flooding. Thousands of homes, businesses, and roads were flooded due to flash flooding and sheet flow from long duration intense rain. Main stem rivers and adjoining tributaries, creeks and bayous reached full capacity and came out of their banks and this also contributed to the massive flooding across southeastern Texas.
721099	GALVESTON CO.	LEAGUE CITY S S ARPT	8/28/2017	Flash Flood			0	0	$0	$0	Flooded roadways through Friendswood in and around the FM 2351 and FM 518 intersection.||Approximately 7,000 homes and 125 businesses were impacted by flood waters across the county. Clear Creek measured record levels that lead to the widespread flooding throughout Friendswood and League City. Major flooding occurred along the Dickinson Bayou; from Cemetery Road to east of Highway 3 along FM 517. Flood waters inundated sections of Interstate 45, Bay Area Boulevard, FM 528, FM 518 and numerous primary and secondary county roads.	Harvey made landfall as a category 4 hurricane near Rockport, Texas during the evening of August 25th. The storm then weakened to a tropical storm and slowed, looping back and tracking over SE Texas then back over the Gulf of Mexico making a second landfall along the Louisiana coast during the early morning hours of August 30th. Over that 5 day period over Southeast Texas TS Harvey produced catastrophic flooding with a large area of 30 to 60 inches of rain, 23 tornadoes, tropical storm force winds and a moderate storm surge near Matagorda Bay. In some of the heavier bands rain fell at a rate of over 5 inches per hour. This copious record amount of rain over a led to catastrophic flooding. Thousands of homes, businesses, and roads were flooded due to flash flooding and sheet flow from long duration intense rain. Main stem rivers and adjoining tributaries, creeks and bayous reached full capacity and came out of their banks and this also contributed to the massive flooding across southeastern Texas.
721115	GALVESTON CO.	WALLIS	8/28/2017	Flash Flood			0	0	$0	$0	Sections of FM 518 in League City as well as parts of I-45 near the FM 518 exit were closed due to run off and Clear Creek flooding.||Approximately 7,000 homes and 125 businesses were impacted by flood waters across the county. Clear Creek measured record levels that lead to the widespread flooding throughout Friendswood and League City. Major flooding occurred along the Dickinson Bayou; from Cemetery Road to east of Highway 3 along FM 517. Flood waters inundated sections of Interstate 45, Bay Area Boulevard, FM 528, FM 518 and numerous primary and secondary county roads.	Harvey made landfall as a category 4 hurricane near Rockport, Texas during the evening of August 25th. The storm then weakened to a tropical storm and slowed, looping back and tracking over SE Texas then back over the Gulf of Mexico making a second landfall along the Louisiana coast during the early morning hours of August 30th. Over that 5 day period over Southeast Texas TS Harvey produced catastrophic flooding with a large area of 30 to 60 inches of rain, 23 tornadoes, tropical storm force winds and a moderate storm surge near Matagorda Bay. In some of the heavier bands rain fell at a rate of over 5 inches per hour. This copious record amount of rain over a led to catastrophic flooding. Thousands of homes, businesses, and roads were flooded due to flash flooding and sheet flow from long duration intense rain. Main stem rivers and adjoining tributaries, creeks and bayous reached full capacity and came out of their banks and this also contributed to the massive flooding across southeastern Texas.

721130	GALVESTON CO.	HIGH IS	8/29/2017	Flash Flood			0	0	$0	$0	Heavy rainfall exacerbated the the flooding of low lying areas along Highway 87 at Highway 124 on the eastern side of Bolivar Peninsula.	|Approximately 7,000 homes and 125 businesses were impacted by flood waters across the county. Clear Creek measured record levels that lead to the widespread flooding throughout Friendswood and League City. Major flooding occurred along the Dickinson Bayou; from Cemetery Road to east of Highway 3 along FM 517. Flood waters inundated sections of Interstate 45, Bay Area Boulevard, FM 528, FM 518 and numerous primary and secondary county roads.	Harvey made landfall as a category 4 hurricane near Rockport, Texas during the evening of August 25th. The storm then weakened to a tropical storm and slowed, looping back and tracking over SE Texas then back over the Gulf of Mexico making a second landfall along the Louisiana coast during the early morning hours of August 30th. Over that 5 day period over Southeast Texas TS Harvey produced catastrophic flooding with a large area of 30 to 60 inches of rain, 23 tornadoes, tropical storm force winds and a moderate storm surge near Matagorda Bay. In some of the heavier bands rain fell at a rate of over 5 inches per hour. This copious record amount of rain over a led to catastrophic flooding. Thousands of homes, businesses, and roads were flooded due to flash flooding and sheet flow from long duration intense rain. Main stem rivers and adjoining tributaries, creeks and bayous reached full capacity and came out of their banks and this also contributed to the massive flooding across southeastern Texas.
721133	GALVESTON CO.	GALVESTON	8/29/2017	Flash Flood			0	0	$1,000	$0	Areas along Highway 87, or Ferry Drive south of Harborside Drive, were flooded and impassable.	Harvey made landfall as a category 4 hurricane near Rockport, Texas during the evening of August 25th. The storm then weakened to a tropical storm and slowed, looping back and tracking over SE Texas then back over the Gulf of Mexico making a second landfall along the Louisiana coast during the early morning hours of August 30th. Over that 5 day period over Southeast Texas TS Harvey produced catastrophic flooding with a large area of 30 to 60 inches of rain, 23 tornadoes, tropical storm force winds and a moderate storm surge near Matagorda Bay. In some of the heavier bands rain fell at a rate of over 5 inches per hour. This copious record amount of rain over a led to catastrophic flooding. Thousands of homes, businesses, and roads were flooded due to flash flooding and sheet flow from long duration intense rain. Main stem rivers and adjoining tributaries, creeks and bayous reached full capacity and came out of their banks and this also contributed to the massive flooding across southeastern Texas.
719055	GALVESTON CO.	DICKINSON	#########	Tornado		EF0	0	0	$50,000	$0	An EF0 tornado downed trees and branches along either side of Benson's Bayou. Damage included home and vehicle windows along with residential fences.	Heavy rains caused flooding from a north to south line of thunderstorms. Damage was caused by a tornado, thunderstorm winds and a lightning strike.
719056	GALVESTON CO.	DICKINSON	#########	Thunderstorm Wind	50		0	0	$-	$0	Damage was reported near the intersection of FM 646 and Highway 3.	Heavy rains caused flooding from a north to south line of thunderstorms. Damage was caused by a tornado, thunderstorm winds and a lightning strike.
719058	GALVESTON CO.	LEAGUE CITY S S ARPT	#########	Flash Flood			0	0	$0	$0	Multiple roadways were flooded and impassable, including southern I-45 feeder roads in Friendswood and League City, the intersection of West Bay Area Blvd and FM 518, and Westover Park Avenue south of FM 518.	Heavy rains caused flooding from a north to south line of thunderstorms. Damage was caused by a tornado, thunderstorm winds and a lightning strike.
729417	GALVESTON (ZONE)		12/8/2017	Winter Weather			0	0	$0	$0	Approximately an inch to slightly under two inches of snow was measured around League City and Dickinson.	The forcing of an approaching upper trough and jet streak allowed precipitation falling through a deep enough sub freezing lower layer to turn to snow. The heaviest snow fell across the northwestern CWA the evening of the 7th with measurable snow across the central and southern forecast area occurring during the early morning hours of the 8th.
745053	GALVESTON CO.	ARCADIA	3/29/2018	Thunderstorm Wind	50		0	0	$500	$500	There was some minor residential awning and tree limb damage.	A line of thunderstorms produced some wind damage, flash flooding and a tornado.
745055	GALVESTON CO.	GALVESTON	3/29/2018	Thunderstorm Wind	50		0	0	$0	$0	An oleander tree was knocked down and a wooden bench swing collapsed around the intersection of 15th Street and Avenue M.	A line of thunderstorms produced some wind damage, flash flooding and a tornado.
745056	GALVESTON CO.	GALVESTON	3/29/2018	Thunderstorm Wind	52		0	0	$1,000	$0	A power pole was downed near an apartment complex on 21st Street.	A line of thunderstorms produced some wind damage, flash flooding and a tornado.
746492	GALVESTON CO.	TEXAS CITY GULF ARPT	5/23/2018	Funnel Cloud			0	0	$0	$0	A funnel cloud was sighted.	Several funnel clouds were sighted.
746493	GALVESTON CO.	TEXAS CITY	5/23/2018	Funnel Cloud			0	0	$0	$0	A funnel cloud was sighted.	Several funnel clouds were sighted.
757528	GALVESTON CO.	BACLIFF	6/9/2018	Thunderstorm Wind	52		0	0	$3,000	$0	Numerous trees were downed off of Gordy Road.	Trees were downed in the Bacliff area.
771043	GALVESTON CO.	SAN LUIS PASS	8/29/2018	Lightning			0	0	$745,000	$0	Lightning struck a home and caused a fire that destroyed the property.	Lightning strikes damaged a couple of homes.
771044	GALVESTON CO.	ROLLOVER	8/29/2018	Lightning			0	0	$1,000	$0	Lightning struck and damaged a house.	Lightning strikes damaged a couple of homes.
771734	GALVESTON CO.	JAMAICA BEACH	9/3/2018	Flash Flood			0	0	$200,000	$0	Significant flooding occurred on Galveston Island from Jamaica Beach up into the city of Galveston as over 10 inches of rain fell in some spots. There were numerous road closures with at least one washed out roadway in the town of Jamaica Beach. There were reports of water within some structures.	Little movement of clustering rain and storms along the immediate coastline caused flooding on Galveston Island.
785220	GALVESTON CO.	HITCHCOCK VOLK ARPT	9/11/2018	Flash Flood			0	0	$100,000	$0	Flooding was reported on the College of the Mainland campus. A few flooded residences had a half of a foot of water in them along Meadowlark Lane in western Texas City and western La Marque. There were numerous street flooding reports.	Slow moving thunderstorms clustered up over the Texas City and La Marque areas and produced localized flooding.
785228	GALVESTON CO.	DICKINSON	9/11/2018	Flash Flood			0	0	$0	$0	Some roads along Dickinson Bayou were flooded including Hughes Road.	Slow moving thunderstorms clustered up over the Texas City and La Marque areas and produced localized flooding.

786887	GALVESTON CO.	LEAGUE CITY	9/12/2018	Flash Flood			0	0	$0	$0	There was flooding along the Gulf Freeway-Interstate 45 that closed sections of the freeway between the FM 518 and Highway 96 exits.	A slow moving line of clustering thunderstorms produced high rainfall that caused road and highway flooding in the League City area.
785230	GALVESTON CO.	GALVESTON	9/14/2018	Flash Flood			0	0	$0	$0	There were flooded roads, with reports of water as high as two feet, around Ball High School. Sections of Harborside Drive-SH 275 from Interstate 45 east to Ferry Road were closed due to high water.	Passing thunderstorms produced high enough rainfall rates to induce flooding on Galveston Island.
777293	GALVESTON CO.	(GLS)SCHOLES FLD GAL	9/29/2018	Flash Flood			0	0	$50,000	$0	Roads were impassable from the Downtown Galveston area to across parts of the Port Bolivar area.	Slow moving showers and thunderstorms produced heavy rainfall from the downtown Galveston area to the Port Bolivar area.
786913	GALVESTON ISLAND A		########	Rip Current			2	0	$0	$0	An 11 year-old boy got caught in a rip current and drown near 17th Street at the Seawall. His 16 year-old boy went to attempt a rescue but also drown.	Two brothers drowned off of Galveston Island due to being caught up within a strong Gulf of Mexico rip current.
788965	GALVESTON CO.	ARCADIA	#########	Flash Flood			0	0	$0	$0	There were reports of water near homes with flooded cars and roadways in Santa Fe, Dickinson and League City. Some of the flooding occurred as Dickinson Bayou went out of banks at SH 3 near Hughes Road.	Clustering storms focused along an inland-moving warm front. These storms produced localized flooding around Galveston County and Galveston Island.
788966	GALVESTON CO.	GALVESTON	#########	Flash Flood			0	0	$0	$0	There were numerous reports of street flooding on the east end of Galveston Island from Scholes Field eastward towards Ferry Road. High water encroached the dorms at Texas A&M-Galveston on Pelican Island with flooding inundating the Strand and points along Harborside Road towards Ferry Road.	Clustering storms focused along an inland-moving warm front. These storms produced localized flooding around Galveston County and Galveston Island.
784796	GALVESTON CO.	TEXAS CITY	#########	Thunderstorm Wind	56		0	0	$0	$0	Thunderstorm winds caused minor structure damage. Winds rolled over an exposed, non-anchored mobile trailer off of Dike Drive.	Strong damaging wind gusts and one tornado occurred in association with the passage of a squall line of thunderstorms.
785179	GALVESTON CO.	GALVESTON	#########	Thunderstorm Wind	50		0	0	$0	$0	Thunderstorm winds downed two palm trees on Harborside Drive and 29th Street.	Strong damaging wind gusts and one tornado occurred in association with the passage of a squall line of thunderstorms.
785210	GALVESTON CO.	GALVESTON	#########	Thunderstorm Wind	52		0	0	$0	$0	There was a report of a collapsed residence on Ave S and 47th street.	Strong damaging wind gusts and one tornado occurred in association with the passage of a squall line of thunderstorms.
797760	GALVESTON CO.	LEAGUE CITY	12/8/2018	Flash Flood			0	0	$0	$0	There was high flood water that caused the intersection of the Gulf Freeway and Highway 96 to become impassable.	Storms associated with a slow moving cold front produced flash flooding and some wind damage.
797759	GALVESTON CO.	GALVESTON	12/8/2018	Flash Flood			0	0	$0	$0	There were sections of Harborside Drive that became impassable due to high flood waters.	Storms associated with a slow moving cold front produced flash flooding and some wind damage.
790798	GALVESTON ISLAND A		#########	Coastal Flood			0	0	$0	$0	High water impacted several SH 87 locations on the east end of Bolivar.	Late evening through early morning severe thunderstorms produced severe hail and some wind damage.
793448	GALVESTON CO.	ALTA LOMA	1/19/2019	Thunderstorm Wind	50		0	0	$15,000	$0	Trees and fences were downed and there were damaged and destroyed trampolines, gazebos, barn roofs and retail signs.	A strong cold front moved through Southeast Texas during the overnight hours and produced wind damage.
798741	GALVESTON CO.	DICKINSON	2/26/2019	Hail	0.88		0	0	$0	$0	There were various reports of pea to nickel sized hail.	Thunderstorms produced hail and flash flooding as a disturbance moved eastward across the area.
807363	GALVESTON CO.	DICKINSON	4/7/2019	Thunderstorm Wind	53		0	0	$-	$3,000	There were trees blown down.	A storm system moved across the area during the day and produced large hail, damaging winds and tornadoes.
807366	GALVESTON CO.	TEXAS CITY GULF ARPT	4/7/2019	Thunderstorm Wind	52		0	0	$0	$3,000	There were trees downed.	A storm system moved across the area during the day and produced large hail, damaging winds and tornadoes.
807369	GALVESTON CO.	CRYSTAL BEACH	4/7/2019	Thunderstorm Wind	55		0	0	$7,000	$0	Some travel trailers were flipped over.	A storm system moved across the area during the day and produced large hail, damaging winds and tornadoes.
832211	GALVESTON CO.	ARCADIA	5/4/2019	Tornado		EF0	0	0	$10,000	$0	Brief touchdown. Peeled off tin roof, damaged manufactured home and storage shed.	An early morning line of thunderstorms produced damaging winds and a brief tornado.
830431	GALVESTON CO.	HITCHCOCK	5/7/2019	Flash Flood			0	0	$0	$0	There were numerous reports of either high water in low lying locations or impassable roadways due to flooding. There were flooded roads around Friendswood, League City at the Gulf Freeway and Highway 96, the I-45 feeder roads near FM 646 in Dickinson and in Texas City near the high school.	Slow moving thunderstorms produce several inches of rain near Kingwood and over Fort Bend County.
830467	GALVESTON CO.	LEAGUE CITY	5/9/2019	Thunderstorm Wind	55		0	0	$0	$0	There were reports of trees and power lines downed along Highway 96 just west of Highway 3.	Shortwave disturbances traveling across a slow-moving frontal boundary within a moist air mass allowed for the development of high rainfall producing storms.
830477	GALVESTON CO.	LEAGUE CITY S S ARPT	5/9/2019	Flash Flood			0	0	$20,000	$0	Flash flooding lead to impassable roads that extended from Friendswood and League City down the Gulf Freeway to include, Dickinson, Texas City and the city of Galveston. One house flooded in Dickinson with some vehicle flooding. Approximately 25 vehicles were flooded in Texas City with some water entering the Heights Elementary School.	Shortwave disturbances traveling across a slow-moving frontal boundary within a moist air mass allowed for the development of high rainfall producing storms.
830474	GALVESTON CO.	DICKINSON	5/9/2019	Thunderstorm Wind	55		0	0	$-	$0	Thunderstorm winds damaged the roof of the volunteer fire department.	Shortwave disturbances traveling across a slow-moving frontal boundary within a moist air mass allowed for the development of high rainfall producing storms.
824303	GALVESTON ISLAND A		5/22/2019	Coastal Flood			0	0	$0	$0	Some low lying beach front roads had some water on them, and water was up to the seawall at some locations. Water was also over parts of the Highway 87 and Highway 124 intersection on the Bolivar Peninsula.	Some coastal flooding was observed.
821439	GALVESTON ISLAND A		6/23/2019	Heat			1	0	$0	$0	An eighteen month old boy died after being left in a car for five hours. The high temperature was 92 degrees but the heat index reached 113 degrees.	A child dies after being left in a car.
823267	GALVESTON CO.	FLAKE	6/29/2019	Thunderstorm Wind	60		0	0	$0	$0	A large area of the Bolivar Peninsula was without power after strong thunderstorm wind gusts were observed.	A thunderstorm produced strong wind gusts that took out the power to parts of the Bolivar Peninsula.
823729	GALVESTON ISLAND A		7/4/2019	Rip Current			1	0	$0	$0	A 22 -year-old male swimmer drowned after being caught within rip currents near the 29th Street Jetty.	A 22-year-old man drowned after being caught within rip currents off Galveston Island.

857794	GALVESTON CO.	GALVESTON	9/18/2019	Flash Flood			0	0	$0	$0	Flooding occurred on many roads in the Strand area as water flowed over the curbs and sidewalks. Ferry Road near UTMB became inundated and impassable due to floodwaters.	A weak surface low pressure system strengthened into Tropical Storm Imelda just after noon on September 17th around 15 miles south southwest of Freeport. Imelda moved onshore near Freeport and quickly weakened to a tropical depression. Imelda moved very slowly to the north-northwest then north-northeast over the next few days and produced a few heavy rain bands that caused devastating flooding across portions of Southeast Texas...with maximum amounts over 40 inches falling mainly over a 24 hour period. Imelda is the 7th wettest tropical cyclone to impact the United States, the 5th wettest in the contiguous United States, and the 4th wettest in the state of Texas. Although fresh water flooding was the main impact, an EF-1 tornado also occured in a cell within one of the leading bands from the storm. This damaged an area on the north side of Baytown near the Highlands.
857870	GALVESTON CO.	GALVESTON	########	Heavy Rain			0	0	$0	$0	A 20 x 20 foot portion of the Moody Compress Warehouse collapsed due to accumulated rain on the roof.	The weight of rain on top of a section of a warehouse roof caused it to collapse.
857871	GALVESTON ISLAND /		########	Coastal Flood			0	0	$0	$0	Frenchtown Road on extreme western Bolivar peninsula near the the ferry dock became impassible due to bay water run up during high tide.	Coastal flooding occurred during high tide on Bolivar peninsula.
886363	GALVESTON CO.	LEAGUE CITY S S ARPT	5/15/2020	Flash Flood			0	0	$0	$0	Numerous roadways were flooded in western Dickinson and southern League City including, but not limited to, the Bayou Lakes, Brentwood Estates and Bay Colony neighborhoods.	An upper low produced helped trigger scattered slow moving thunderstorms within an unstable warm and very moist air mass.
894420	GALVESTON CO.	ALTA LOMA	5/27/2020	Funnel Cloud			0	0	$0	$0	A funnel cloud was sighted.	Severe thunderstorms developed and produce wind damage, hail and few tornadoes.
894429	GALVESTON CO.	TEXAS CITY	5/27/2020	Thunderstorm Wind	56		0	0	$11,000	$0	There was some roof damage to a Texas City business.	Severe thunderstorms developed and produce wind damage, hail and few tornadoes.
894430	GALVESTON CO.	TEXAS CITY	5/27/2020	Thunderstorm Wind	56		0	0	$5,500	$0	Large tree limbs and some fencing were blown down.	Severe thunderstorms developed and produce wind damage, hail and few tornadoes.
894431	GALVESTON CO.	(GLS)SCHOLES FLD GAL	5/27/2020	Thunderstorm Wind	61		0	0	$0	$0	The wind gust was measured at KGLS.	Severe thunderstorms developed and produce wind damage, hail and few tornadoes.
883406	GALVESTON CO.	NADEAU HGTS	5/28/2020	Hail	0.7		0	0	$10	$0	Dime sized hail was observed in Texas City.	A series of disturbances moving across the area generated a funnel cloud and some hail.
894373	GALVESTON CO.	FLAKE	5/29/2020	Funnel Cloud			0	0	$0	$0	A funnel cloud was observed over the Bolivar Peninsula.	A funnel cloud was observed near the Bolivar Peninsula.
918161	GALVESTON ISLAND /		8/26/2020	Storm Surge/Tide			0	0	$0	$0	Period of storm surge flooding and high surf from 8/26 to 8/27 leading to flooding of low lying areas and roads. Beach erosion on Gulf side. Tide gauges measured tides 3 to 4 feet above MHHW. Bolivar Peninsula and Galveston Island, including Jamaica Beach, with multiple roads closed.	Hurricane Laura made landfall along the southwest Louisiana coast. The hurricane brought high surf, elevated tides and some winds and wind gusts to tropical storm force along the SE Texas coast. There we no measured sustained winds to tropical storm force at land observation sites and very little rainfall.
918165	COASTAL GALVESTOI		8/26/2020	Storm Surge/Tide			0	0	$0	$0	Period of storm surge flooding and high surf from 8/26 to 8/27 leading to flooding of low lying areas and roads around parts of Kemah and other coastal communities. Beach erosion. Tide gauges measured tides 3 to 4 feet above MHHW.	Hurricane Laura made landfall along the southwest Louisiana coast. The hurricane brought high surf, elevated tides and some winds and wind gusts to tropical storm force along the SE Texas coast. There we no measured sustained winds to tropical storm force at land observation sites and very little rainfall.
909473	GALVESTON ISLAND /		9/5/2020	Rip Current			1	0	$0	$0	Sixteen year old white male went swimming and was reported missing between the 43rd-47th Street rock groins along the Seawall in Galveston. Body was recovered next day.	Two swimmers drowned when swimming off Galveston beaches over Labor Day weekend.
909474	GALVESTON ISLAND /		9/6/2020	Rip Current			1	0	$0	$0	Hispanic male drowned around 4 pm between the 43rd-47th Street rock groins along the Seawall in Galveston. He and his teenage daughter were swimming far from shore (she was rescued by a surfer and lifeguard).	Two swimmers drowned when swimming off Galveston beaches over Labor Day weekend.
920223	GALVESTON ISLAND /		9/21/2020	Storm Surge/Tide			0	0	$0	$0	Significant beach erosion occurred along the Bolivar Peninsula and Galveston Island. A fishing pier at 61st St. in Galveston was damaged. Numerous roads were flooded from high storm tides. Some garages were inundated with water. Maximum water heights reached 3.77 ft above MHHW at the Galveston Fishing Pier and 3.56 above MHHW at the Galveston Bay entrance.	Tropical Storm Beta made landfall near Matagorda bay on September 21. As the system pushed slowly inland, portions of SE Texas experienced flash flooding from heavy rain bands, storm surge, and some strong wind gusts. Storm surge was enhanced by long fetch of northeast winds over Gulf behind a cold front. 20 to 25 homes were damaged from high water along portions of Clear Creek and Lower Brays Bayous.
920224	COASTAL GALVESTOI		9/21/2020	Storm Surge/Tide			0	0	$0	$0	Widespread coastal flooding occurred across coastal Galveston County. Flooding was observed in San Leon, Bayou Vista, Clear Lake Shores, and Kemah. The Kemah Boardwalk was flooded. Numerous instances of street flooding and road closures were reported. Heavy rain from the storm resulted in bayou and creek flooding, including Clear Creek.	Tropical Storm Beta made landfall near Matagorda bay on September 21. As the system pushed slowly inland, portions of SE Texas experienced flash flooding from heavy rain bands, storm surge, and some strong wind gusts. Storm surge was enhanced by long fetch of northeast winds over Gulf behind a cold front. 20 to 25 homes were damaged from high water along portions of Clear Creek and Lower Brays Bayous.
925570	GALVESTON ISLAND /		10/8/2020	Tropical Storm			0	0	$0	$0	Hurricane Delta produced a long duration of sustained tropical storm force winds across coastal areas. At Galveston Airport, GLS max sustained of 39 knots or 45 mph, max wind gust 50 knots of 58 mph.	Delta made landfall along the southwest Louisiana coast but produced tropical storm force winds across parts of Southeast Texas. Delta also produced high surf and elevated tides leading to mainly minor coastal flooding along Gulf facing beaches and around Galveston Bay.

925613	GALVESTON ISLAND /		10/9/2020	Coastal Flood			0	0	$0	$0	Prolonged period of high tides, coastal flooding and beach erosion from fringe effects of Hurricane Delta.	Delta made landfall along the southwest Louisiana coast but produced tropical storm force winds across parts of Southeast Texas. Delta also produced high surf and elevated tides leading to mainly minor coastal flooding along Gulf facing beaches and around Galveston Bay.
925567	COASTAL GALVESTOI		10/9/2020	Tropical Storm			0	0	$0	$0	Hurricane Delta produced a long duration of sustained tropical storm force winds across coastal areas including around Galveston Bay. At the Texas City Levee, maximum sustained winds were 46 mph, maximum wind gust 57 mph.	Delta made landfall along the southwest Louisiana coast but produced tropical storm force winds across parts of Southeast Texas. Delta also produced high surf and elevated tides leading to mainly minor coastal flooding along Gulf facing beaches and around Galveston Bay.
919903	GALVESTON ISLAND /		#########	Rip Current			1	0	$0	$0	A man who struggled in the water near the 53rd Street rock groin Sunday evening died between 7 pm and 8 pm.	Man drowns off Galveston beach due to rip current.
929080	GALVESTON CO.	DICKINSON	1/6/2021	Hail	1		0	0	$0	$0	Severe hail (1 in.) was observed by a member of the public as a squall line moved through Galveston County.	A squall line which formed along an advancing surface cold front produced strong wind gusts, severe hail, and an EF-1 Tornado in Texas City, TX which resulted in damage to homes and businesses.
929081	GALVESTON CO.	NADEAU HGTS	1/6/2021	Tornado		EF1	0	0	$500,000	$0	NWS conducted a storm survey of storm damage in the area around the intersection of 21st street and 13th avenue north, then along a path toward the ESE ending at Anchor Park. Damage suggested a tornado on the high end of EF1 rating for the most severe damage occurred at a convenience store and the adjacent Tradewinds Apartment complex. A clear relatively narrow path was seen in the severe damage. Although most debris was pushed toward the east dirt and insulation was found splattered on all sides of many structures including the east downwind side. Damage continued intermittently along an ESE path to Rainbow Park where numerous hardwood tree trunks and large limbs were snapped off and an iron fence was pushed over. In addition a business lost most of their roof around 6th street and 11th avenue. Most of the other damage along the path was EF0 tree damage through a residential area but little or no damage to structures.	A squall line which formed along an advancing surface cold front produced strong wind gusts, severe hail, and an EF-1 Tornado in Texas City, TX which resulted in damage to homes and businesses.
929079	GALVESTON CO.	KEMAH	1/6/2021	Hail	1		0	0	$0	$0	Severe hail (1 in.) was observed by a member of the public as a squall line moved through Galveston County.	A squall line which formed along an advancing surface cold front produced strong wind gusts, severe hail, and an EF-1 Tornado in Texas City, TX which resulted in damage to homes and businesses.
945983	GALVESTON ISLAND /		2/15/2021	Cold/Wind Chill			4	0	$10,000,000	$0	Very cold air and gusty winds overspread SE Texas behind an Arctic front with wind chill indices from near zero to single digits for much the period from Sunday night to Tuesday morning. Increased power demand, wind and ice led to widespread power outages. Bursting pipes caused many to be without water as well.	Record cold and windy conditions gripped Southeast Texas behind the passage of an Arctic front. The extreme cold and increased demand led to widespread power outages, loss of heat for many and led to the bursting of pipes with some losing water for many days. Numerous fatalities resulted both from hypothermia, carbon monoxide poisoning and other effects.
945979	COASTAL GALVESTOI		2/15/2021	Cold/Wind Chill			0	0	$0	$0	Very cold air and gusty winds overspread SE Texas behind an Arctic front with wind chill indices from near zero to single digits for much the period from Sunday night to Tuesday morning. Increased power demand, wind and ice led to widespread power outages. Bursting pipes caused many to be without water as well.	Record cold and windy conditions gripped Southeast Texas behind the passage of an Arctic front. The extreme cold and increased demand led to widespread power outages, loss of heat for many and led to the bursting of pipes with some losing water for many days. Numerous fatalities resulted both from hypothermia, carbon monoxide poisoning and other effects.
945985	INLAND GALVESTON		2/15/2021	Cold/Wind Chill			5	0	$2,000,000	$0	Very cold air and gusty winds overspread SE Texas behind an Arctic front with wind chill indices from near zero to single digits for much the period from Sunday night to Tuesday morning. Increased power demand, wind and ice led to widespread power outages. Bursting pipes caused many to be without water as well.	Record cold and windy conditions gripped Southeast Texas behind the passage of an Arctic front. The extreme cold and increased demand led to widespread power outages, loss of heat for many and led to the bursting of pipes with some losing water for many days. Numerous fatalities resulted both from hypothermia, carbon monoxide poisoning and other effects.
944863	BOLIVAR PENINSULA		4/10/2021	Rip Current			1	0	$0	$0	A man drowned after attempting to rescue others caught in a rip current at Surfside Beach.	A man drowned after attempting to rescue others caught in a rip current at Surfside Beach.
944803	GALVESTON CO.	PATTON	4/23/2021	Thunderstorm Wind	50		0	0	$0	$0	Local emergency managers reported a travel trailer knocked over by strong thunderstorm wind gusts.	Severe thunderstorms during the night of April 23 produced strong wind gusts, resulting in tree and power line, and minor structural damage.
956687	GALVESTON ISLAND (		5/2/2021	Rip Current			1	0	$0	$0	A boy drowned after bring caught in a rip current in a no swimming area near 37th street in Galveston.	An eight year old boy died in a rip current in a no swimming area along Galveston Beach.
957389	GALVESTON ISLAND (		5/11/2021	Rip Current			1	0	$0	$0	A 7-year-old male from St. Louis was swimming near the 37th Street Jetty and drowned in a rip current. The Galveston Beach Patrol was off duty at the time.	There was a rip current drowning near a jetty.
961193	GALVESTON CO.	BACLIFF	6/4/2021	Flash Flood			0	0	$500,000	$0	Heavy rain resulted in high water over roadways, making streets impassable. At least 25 structures including many within the Bacliff Villas subdivision were inundated with floodwaters, resulting in water damage.	A series of thunderstorms produced heavy rainfall over Galveston County, resulting in flooding in the Bacliff area.
956680	BOLIVAR PENINSULA		6/26/2021	Rip Current			2	0	$0	$0	A 16 year old male drowned near Gilchrist Beach after being caught in a rip current. A 32 year old male drowned after entering the water and attempting a rescue.	There were two rip current fatalities on the Bolivar Peninsula.
961470	GALVESTON CO.	CRYSTAL BEACH	7/20/2021	Funnel Cloud			0	0	$0	$0	A funnel cloud was sighted along the Bolivar Peninsula near the Rancho Caribe neighborhood as a thunderstorm lingered offshore.	A funnel cloud was sighted along the Bolivar Peninsula.
964448	GALVESTON CO.	CAPLEN	8/2/2021	Tornado		EF0	0	0	$0	$0	A waterspout moved onshore. This EF0 tornado lasted a short time and caused no damage.	A waterspout moved onshore along the Bolivar Peninsula.

970459	GALVESTON CO.	LEAGUE CITY S S ARPT	8/29/2021	Lightning			0	0	$250,000	$0	Lightning strike initiated a fire which severely damaged a two story home. Family and pets were able to evacuate in time with no injuries.	During the early morning hours, lightning started a fire as a residence in League City that was severely damaged.
987152	GALVESTON ISLAND (		9/13/2021	Tropical Storm			0	0	$0	$0	Hurricane Nicholas produced several hours of strong tropical storm force sustained winds and gusts. There were numerous power outages and minor to moderate damage to some structures and roofs. The storm also produced minor storm surge flooding.	Nicholas formed on September 12 in the Southwestern Gulf of Mexico, slowly advancing northeastward along the Middle Texas Coast. It eventually made landfall 10 miles west of Sargent just after midnight on September 14, with maximum sustained wind speeds of 75 mph. Heavy rain bands associated with Nicholas brought widespread rainfall totals of 6 to 10 inches to the Southeast Texas Coast, while strong wind gusts resulted in tree and structural damage as well as widespread power outages across the area. Additionally, Nicholas's surge resulted in flooding along the coast, particularly around Matagorda Bay.
987151	BOLIVAR PENINSULA		9/13/2021	Tropical Storm			0	0	$0	$0	Hurricane Nicholas produced tropical storm force sustained winds and gusts. The storm also produced minor storm surge flooding and beach erosion.	Nicholas formed on September 12 in the Southwestern Gulf of Mexico, slowly advancing northeastward along the Middle Texas Coast. It eventually made landfall 10 miles west of Sargent just after midnight on September 14, with maximum sustained wind speeds of 75 mph. Heavy rain bands associated with Nicholas brought widespread rainfall totals of 6 to 10 inches to the Southeast Texas Coast, while strong wind gusts resulted in tree and structural damage as well as widespread power outages across the area. Additionally, Nicholas's surge resulted in flooding along the coast, particularly around Matagorda Bay.
987438	BOLIVAR PENINSULA		9/13/2021	Storm Surge/Tide			0	0	$0	$0	Coastal tide gauges measured and NWS storm survey confirmed generally 3 to 6 feet of surge above MHHW along the Gulf Coast and Galveston Bay, with closer to the lower end of the range for Bolivar Peninsula.	Nicholas formed on September 12 in the Southwestern Gulf of Mexico, slowly advancing northeastward along the Middle Texas Coast. It eventually made landfall 10 miles west of Sargent just after midnight on September 14, with maximum sustained wind speeds of 75 mph. Heavy rain bands associated with Nicholas brought widespread rainfall totals of 6 to 10 inches to the Southeast Texas Coast, while strong wind gusts resulted in tree and structural damage as well as widespread power outages across the area. Additionally, Nicholas's surge resulted in flooding along the coast, particularly around Matagorda Bay.
987408	GALVESTON ISLAND (		9/13/2021	Storm Surge/Tide			0	0	$0	$0	Coastal tide gauges measured and NWS storm survey confirmed generally 3 to 6 feet of surge above MHHW along the Gulf Coast and Galveston Bay. Storm survey found a few spots of higher surge with close to 8 feet above MHHW estimated at Sargent but this included the impacts of surf/wave action.	Nicholas formed on September 12 in the Southwestern Gulf of Mexico, slowly advancing northeastward along the Middle Texas Coast. It eventually made landfall 10 miles west of Sargent just after midnight on September 14, with maximum sustained wind speeds of 75 mph. Heavy rain bands associated with Nicholas brought widespread rainfall totals of 6 to 10 inches to the Southeast Texas Coast, while strong wind gusts resulted in tree and structural damage as well as widespread power outages across the area. Additionally, Nicholas's surge resulted in flooding along the coast, particularly around Matagorda Bay.
983280	GALVESTON CO.	HIGHLAND BAYOU	#########	Funnel Cloud			0	0	$0	$0	Funnel cloud was observed near Bayou Vista on a webcam. There were no reports of damage.	Showers and thunderstorms developed along and ahead of a strong cold front and produced funnel clouds, wind damage and a tornado.
1002652	GALVESTON CO.	ARCADIA	3/14/2022	Tornado		EF0	0	0	$15,000	$0	A very brief EF-0 tornado occurred along West Half Moon Road in Santa Fe, just to the northwest of Santa Fe High School. A large oak tree was snapped, causing roof damage and destroying a well pump. The garage door in a single family home was blown out. A utility building had its metal siding destroyed. Several large pieces of heavy equipment sitting outdoors were picked up and moved by the tornado.	Showers and thunderstorms developed along and ahead of an evening cold front and produced a weak tornado and some hail.
1023975	COASTAL GALVESTOI		4/5/2022	Drought			0	0	$0	$0	Due to prolonged dry period, severe drought began over southern portions of Southeast Texas.	Due to prolonged dry period, severe drought began over parts of of Southeast Texas in early April.
1023978	INLAND GALVESTON		4/5/2022	Drought			0	0	$0	$0	Due to prolonged dry period, severe drought began over southern portions of Southeast Texas.	Due to prolonged dry period, severe drought began over parts of of Southeast Texas in early April.
1023977	GALVESTON ISLAND (		4/5/2022	Drought			0	0	$0	$0	Due to prolonged dry period, severe drought began over southern portions of Southeast Texas.	Due to prolonged dry period, severe drought began over parts of of Southeast Texas in early April.
1023976	BOLIVAR PENINSULA		4/5/2022	Drought			0	0	$0	$0	Due to prolonged dry period, severe drought began over southern portions of Southeast Texas.	Due to prolonged dry period, severe drought began over parts of of Southeast Texas in early April.
1015077	GALVESTON ISLAND (		4/12/2022	High Wind	50		0	0	$1,000	$0	A power pole was downed along with several power lines. The gust was estimated from nearby KGLS ASOS observation at 939 AM CST.	Strong wind gusts produced some damage on Galveston Island.
1032236	GALVESTON ISLAND (		5/1/2022	Drought			0	0	$0	$0	Severe Drought continued through the month of May.	Large ridge of high pressure kept it hot and mainly dry with very little rainfall. This led to an expansion of severe to extreme drought through the period.
1032231	COASTAL GALVESTOI		5/1/2022	Drought			0	0	$0	$0	Severe Drought continued through the month of May.	Large ridge of high pressure kept it hot and mainly dry with very little rainfall. This led to an expansion of severe to extreme drought through the period.
1032225	BOLIVAR PENINSULA		5/1/2022	Drought			0	0	$0	$0	Severe to Extreme Drought continued through the month of May.	Large ridge of high pressure kept it hot and mainly dry with very little rainfall. This led to an expansion of severe to extreme drought through the period.

1032238	INLAND GALVESTON		5/1/2022	Drought			0	0	$0	$0	Severe Drought continued through the month of May.	Large ridge of high pressure kept it hot and mainly dry with very little rainfall. This led to an expansion of severe to extreme drought through the period.
1016423	GALVESTON CO.	GALVESTON	5/24/2022	Thunderstorm Wind	50		0	0	$500	$0	A palm tree was downed on Texas Clipper Road.	A rapidly northward moving severe thunderstorm downed a tree.
1018800	GALVESTON CO.	(GLS)SCHOLES FLD GAL	5/25/2022	Thunderstorm Wind	56		0	0	$0	$0	A 64 mph wind gust was recorded at Scholes Field in Galveston at the KGLS ASOS site as a strong thunderstorm moved through the area.	A series of strong thunderstorms resulted in tree damage during the early morning hours of May 25.
1042611	INLAND GALVESTON		6/1/2022	Drought			0	0	$0	$0	Severe to extreme drought continued and intensified for coastal counties of SE Texas through the month of June.	Severe to extreme drought continued and intensified for coastal counties of SE Texas through the month of June.
1042609	GALVESTON ISLAND (		6/1/2022	Drought			0	0	$0	$0	Severe to extreme drought continued and intensified for coastal counties of SE Texas through the month of June.	Severe to extreme drought continued and intensified for coastal counties of SE Texas through the month of June.
1042603	COASTAL GALVESTOI		6/1/2022	Drought			0	0	$0	$0	Severe to extreme drought continued and intensified for coastal counties of SE Texas through the month of June.	Severe to extreme drought continued and intensified for coastal counties of SE Texas through the month of June.
1042599	BOLIVAR PENINSULA		6/1/2022	Drought			0	0	$0	$0	Severe to extreme drought continued and intensified for coastal counties of SE Texas through the month of June.	Severe to extreme drought continued and intensified for coastal counties of SE Texas through the month of June.
1025031	GALVESTON CO.	LEAGUE CITY	6/27/2022	Lightning			0	0	$25,000	$0	A lightning strike caused significant damage to a home.	A lightning strike caused a house fire.
1048589	COASTAL GALVESTOI		7/1/2022	Drought			0	0	$0	$0	Continued dry conditions led to continuing severe to extreme drought over portions of Southeast Texas.	Continued dry conditions led to continuing severe to extreme drought over portions of Southeast Texas.
1048594	GALVESTON ISLAND (		7/1/2022	Drought			0	0	$0	$0	Continued dry conditions led to continuing severe to extreme drought over portions of Southeast Texas.	Continued dry conditions led to continuing severe to extreme drought over portions of Southeast Texas.
1048593	BOLIVAR PENINSULA		7/1/2022	Drought			0	0	$0	$0	Continued dry conditions led to continuing severe to extreme drought over portions of Southeast Texas.	Continued dry conditions led to continuing severe to extreme drought over portions of Southeast Texas.
1048590	INLAND GALVESTON		7/1/2022	Drought			0	0	$0	$0	Continued dry conditions led to continuing severe to extreme drought over portions of Southeast Texas.	Continued dry conditions led to continuing severe to extreme drought over portions of Southeast Texas.
1054790	GALVESTON ISLAND (		8/1/2022	Drought			0	0	$0	$0	Severe to exceptional drought continued through most the month of August but with some relief late in the month..	Severe to exceptional drought continued through early August, with some relief over all but western zones later in the month.
1054785	COASTAL GALVESTOI		8/1/2022	Drought			0	0	$0	$0	Severe to exceptional drought continued through most the month of August but with some relief late in the month..	Severe to exceptional drought continued through early August, with some relief over all but western zones later in the month.
1054791	INLAND GALVESTON		8/1/2022	Drought			0	0	$0	$0	Severe to exceptional drought continued through most the month of August but with some relief late in the month..	Severe to exceptional drought continued through early August, with some relief over all but western zones later in the month.
1057927	GALVESTON CO.	(GLS)SCHOLES FLD GAL	########	Thunderstorm Wind	53		0	0	$0	$0	Wind gust was measured at the Galveston ASOS site (KGLS).	A thunderstorm wind gust was observed on Galveston Island.
1072115	GALVESTON CO.	(GLS)SCHOLES FLD GAL	########	Funnel Cloud			0	0	$0	$0	A funnel cloud was reported near the intersection of 57th St and Seawall Blvd in Galveston.	A cluster of strong thunderstorms developed across the area during the evening of December 29 and early morning hours of December 30. These storms produced heavy rain and gusty winds, notably resulting in flash flooding in portions of Galveston County. Additionally, a funnel cloud was sighted near Galveston Island.
1063802	GALVESTON CO.	TEXAS CITY GULF ARPT	########	Flash Flood			0	0	$0	$0	Multiple vehicles were stranded by floodwaters in the vicinity of the Interstate 45 and TX Highway 3 corridor.	A cluster of strong thunderstorms developed across the area during the evening of December 29 and early morning hours of December 30. These storms produced heavy rain and gusty winds, notably resulting in flash flooding in portions of Galveston County. Additionally, a funnel cloud was sighted near Galveston Island.
1063810	GALVESTON CO.	NADEAU HGTS	########	Flash Flood			0	0	$0	$0	Street flooding leading to impassable roadways was reported in Texas City.	A cluster of strong thunderstorms developed across the area during the evening of December 29 and early morning hours of December 30. These storms produced heavy rain and gusty winds, notably resulting in flash flooding in portions of Galveston County. Additionally, a funnel cloud was sighted near Galveston Island.
1063822	GALVESTON CO.	DICKINSON	########	Flash Flood			0	0	$0	$0	Dickinson's Emergency Operations Center reported 5.25 inches of storm total rainfall, resulting in widespread flooding on multiple streets throughout the city.	A cluster of strong thunderstorms developed across the area during the evening of December 29 and early morning hours of December 30. These storms produced heavy rain and gusty winds, notably resulting in flash flooding in portions of Galveston County. Additionally, a funnel cloud was sighted near Galveston Island.
1079799	GALVESTON CO.	LEAGUE CITY S S ARPT	1/24/2023	Thunderstorm Wind	55		0	0	$10,000	$0	Spotty roof, tree and fence damage spotted around Friendswood.	Several tornadoes occurred across the area in the afternoon.
1079800	GALVESTON CO.	LEAGUE CITY S S ARPT	1/24/2023	Thunderstorm Wind	55		0	0	$10,000	$0	Spotty roof, tree and fence damage spotted around Friendswood.	Several tornadoes occurred across the area in the afternoon.
1084289	GALVESTON CO.	LEAGUE CITY	3/28/2023	Lightning			0	0	$25,000	$0	A lightning strike ignited a fire in a church along FM 518 in League City, causing damage to the building.	A series of severe thunderstorms produced large hail and strong, damaging winds during the overnight hours of March 27 as a cold front drifted southward toward the coastline.
1082231	GALVESTON CO.	GALVESTON	4/20/2023	Hail	1		0	0	$0	$0	Quarter sized hail was observed on Galveston Island at the intersection of 20th and Market Streets.	A line of strong thunderstorms ahead of an approaching cold front produced hail and wind damage on the night of April 20 and early morning hours of April 21.
1091996	GALVESTON CO.	DICKINSON	5/16/2023	Lightning			0	0	$250,000	$0	An historic Dickinson home caught on fire and was destroyed after a lightning strike.	Afternoon through early evening thunderstorms produced some damage.
1091999	GALVESTON CO.	LEAGUE CITY	5/16/2023	Hail	0.75		0	0	$0	$0	There was penny sized hail.	Afternoon through early evening thunderstorms produced some damage.
1092000	GALVESTON CO.	LEAGUE CITY S S ARPT	5/16/2023	Thunderstorm Wind	50		0	0	$0	$0	A large tree limb was downed.	Afternoon through early evening thunderstorms produced some damage.
1093201	GALVESTON CO.	LEAGUE CITY S S ARPT	6/8/2023	Thunderstorm Wind	51		0	0	$0	$0	Trees were downed near Windsong Intermediate School.	Afternoon through evening severe thunderstorms produced numerous wind damage and hail reports. A lightning strike and some flash flooding occured too.
1093192	GALVESTON CO.	DICKINSON	6/8/2023	Hail	1		0	0	$0	$0	Quarter sized hail was reported along 40th Street East.	Afternoon through evening severe thunderstorms produced numerous wind damage and hail reports. A lightning strike and some flash flooding occured too.

1093193	GALVESTON CO.	LEAGUE CITY	6/8/2023	Hail	1		0	0	$0	$0	Quarter sized hail was reported near the FM 270 and FM 518 intersection.	Afternoon through evening severe thunderstorms produced numerous wind damage and hail reports. A lightning strike and some flash flooding occured too.
1098689	GALVESTON CO.	TEXAS CITY	6/8/2023	Thunderstorm Wind	58		0	0	$0	$0	Wind gust occurred at the Brigantine Cay Court mesonet site.	Afternoon through evening severe thunderstorms produced numerous wind damage and hail reports. A lightning strike and some flash flooding occured too.
1098688	GALVESTON CO.	(GLS)SCHOLES FLD GAL	6/8/2023	Thunderstorm Wind	53		0	0	$0	$0	Wind gust occurred at KGLS.	Afternoon through evening severe thunderstorms produced numerous wind damage and hail reports. A lightning strike and some flash flooding occured too.
1093327	GALVESTON CO.	PATTON	6/10/2023	Thunderstorm Wind	50		0	0	$0	$0	Wind gust occurred at the Crab Lake WeatherFlow site.	Evening storms moves across the area and produced numerous wind gusts, wind damage reports and hail.
1093328	GALVESTON CO.	PATTON	6/10/2023	Thunderstorm Wind	53		0	0	$0	$0	Wind gust occurred at the Crab Lake WeatherFlow site.	Evening storms moves across the area and produced numerous wind gusts, wind damage reports and hail.
1115059	INLAND GALVESTON		6/16/2023	Excessive Heat			0	0	$0	$0	Period of extremely hot weather. Long period of at least advisory levels. In StormData periods of warning levels are recorded.	An extended period of excessive heat began. The first stretch reaching warning criteria was in mid-June with more to come. On other days were generally at advisory levels. Excessive Heat Warning issued for max heat indices 113F or above.
1115055	GALVESTON ISLAND (		6/16/2023	Excessive Heat			0	0	$0	$0	Period of extremely hot weather. Long period of at least advisory levels. In StormData periods of warning levels are recorded.	An extended period of excessive heat began. The first stretch reaching warning criteria was in mid-June with more to come. On other days were generally at advisory levels. Excessive Heat Warning issued for max heat indices 113F or above.
1115049	COASTAL GALVESTOI		6/16/2023	Excessive Heat			0	0	$0	$0	Period of extremely hot weather. Long period of at least advisory levels. In StormData periods of warning levels are recorded.	An extended period of excessive heat began. The first stretch reaching warning criteria was in mid-June with more to come. On other days were generally at advisory levels. Excessive Heat Warning issued for max heat indices 113F or above.
1115044	BOLIVAR PENINSULA		6/16/2023	Excessive Heat			0	0	$0	$0	Period of extremely hot weather. Long period of at least advisory levels. In StormData periods of warning levels are recorded.	An extended period of excessive heat began. The first stretch reaching warning criteria was in mid-June with more to come. On other days were generally at advisory levels. Excessive Heat Warning issued for max heat indices 113F or above.
1115121	INLAND GALVESTON		6/25/2023	Excessive Heat			0	0	$0	$0	Another stretch of warning level heat overspread the area with heat indices near 113 degrees Fahrenheit.	Another round of warning level heat overspread much of the area excluding the immediate coastal counties.
1127175	INLAND GALVESTON		7/12/2023	Excessive Heat			0	0	$0	$0	Period of extremely hot weather, within a long period of at least Heat Advisory conditions. In StormData periods of conditions reaching Excessive Heat Warning levels are recorded.	Continued excessive heat occurred during most of July. The first stretch reaching warning criteria was on the 12th through the 14th, with most other days reaching Heat Advisory Levels. Excessive Heat Warnings are issued for maximum heat index values of 113F or above or maximum temperatures of 105 or above.
1136798	BOLIVAR PENINSULA		8/5/2023	Excessive Heat			0	0	$0	$0	The extremely hot and humid summer continued with excessive heat warnings for most days between 8/5 and 8/26, and heat advisories for many others.	The extremely hot and humid summer continued with excessive heat warnings for most days between 8/5 and 8/26, and heat advisories for many others. This episode includes the first of two stretches of warning level conditions.
1136816	INLAND GALVESTON		8/5/2023	Excessive Heat			0	0	$0	$0	The extremely hot and humid summer continued with excessive heat warnings for most days between 8/5 and 8/26, and heat advisories for many others.	The extremely hot and humid summer continued with excessive heat warnings for most days between 8/5 and 8/26, and heat advisories for many others. This episode includes the first of two stretches of warning level conditions.
1136812	GALVESTON ISLAND (		8/5/2023	Excessive Heat			0	0	$0	$0	The extremely hot and humid summer continued with excessive heat warnings for most days between 8/5 and 8/26, and heat advisories for many others.	The extremely hot and humid summer continued with excessive heat warnings for most days between 8/5 and 8/26, and heat advisories for many others. This episode includes the first of two stretches of warning level conditions.
1136805	COASTAL GALVESTOI		8/5/2023	Excessive Heat			0	0	$0	$0	The extremely hot and humid summer continued with excessive heat warnings for most days between 8/5 and 8/26, and heat advisories for many others.	The extremely hot and humid summer continued with excessive heat warnings for most days between 8/5 and 8/26, and heat advisories for many others. This episode includes the first of two stretches of warning level conditions.
1136835	BOLIVAR PENINSULA		8/23/2023	Excessive Heat			0	0	$0	$0	The extremely hot and humid summer continued with excessive heat warnings for most days between 8/5 and 8/26, and heat advisories for many others. This episode includes the first of two stretches of warning level conditions, mainly between 8/23 and 8/26.	The extremely hot and humid summer continued with excessive heat warnings for most days between 8/5 and 8/26, and heat advisories for many others. This episode includes the second of two stretches of warning level conditions.
1136852	INLAND GALVESTON		8/23/2023	Excessive Heat			0	0	$0	$0	The extremely hot and humid summer continued with excessive heat warnings for most days between 8/5 and 8/26, and heat advisories for many others. This episode includes the first of two stretches of warning level conditions, mainly between 8/23 and 8/26.	The extremely hot and humid summer continued with excessive heat warnings for most days between 8/5 and 8/26, and heat advisories for many others. This episode includes the second of two stretches of warning level conditions.
1136848	GALVESTON ISLAND (		8/23/2023	Excessive Heat			0	0	$0	$0	The extremely hot and humid summer continued with excessive heat warnings for most days between 8/5 and 8/26, and heat advisories for many others. This episode includes the first of two stretches of warning level conditions, mainly between 8/23 and 8/26.	The extremely hot and humid summer continued with excessive heat warnings for most days between 8/5 and 8/26, and heat advisories for many others. This episode includes the second of two stretches of warning level conditions.
1136841	COASTAL GALVESTOI		8/23/2023	Excessive Heat			0	0	$0	$0	The extremely hot and humid summer continued with excessive heat warnings for most days between 8/5 and 8/26, and heat advisories for many others. This episode includes the first of two stretches of warning level conditions, mainly between 8/23 and 8/26.	The extremely hot and humid summer continued with excessive heat warnings for most days between 8/5 and 8/26, and heat advisories for many others. This episode includes the second of two stretches of warning level conditions.

1141971	BOLIVAR PENINSULA		9/1/2023	Drought			0	0	$0	$0	The county was in Extreme (D3) to Exceptional (D4) Drought for entire month of September due a long duration lack of rainfall and a very hot, dry period.	Most of the region was in Extreme (D3) to Exceptional (D4) Drought for entire month of September.
1141984	GALVESTON ISLAND (		9/1/2023	Drought			0	0	$0	$0	The county was in Extreme (D3) to Exceptional (D4) Drought for entire month of September due a long duration lack of rainfall and a very hot, dry period.	Most of the region was in Extreme (D3) to Exceptional (D4) Drought for entire month of September.
1141978	COASTAL GALVESTOI		9/1/2023	Drought			0	0	$0	$0	The county was in Extreme (D3) to Exceptional (D4) Drought for entire month of September due a long duration lack of rainfall and a very hot, dry period.	Most of the region was in Extreme (D3) to Exceptional (D4) Drought for entire month of September.
1141989	INLAND GALVESTON		9/1/2023	Drought			0	0	$0	$0	The county was in Extreme (D3) to Exceptional (D4) Drought for entire month of September due a long duration lack of rainfall and a very hot, dry period.	Most of the region was in Extreme (D3) to Exceptional (D4) Drought for entire month of September.
1142028	COASTAL GALVESTOI		9/5/2023	Heat			0	0	$0	$0	A heat wave gripped much of Southeast Texas in early September with at least advisory level conditions experienced for several days between September 5th and September 9th.	A heat wave gripped much of Southeast Texas in early September with advisory level conditions experienced for several days between September 5th and September 9th.
1142034	GALVESTON ISLAND (		9/5/2023	Heat			0	0	$0	$0	A heat wave gripped much of Southeast Texas in early September with at least advisory level conditions experienced for several days between September 5th and September 9th.	A heat wave gripped much of Southeast Texas in early September with advisory level conditions experienced for several days between September 5th and September 9th.
1142021	BOLIVAR PENINSULA		9/5/2023	Heat			0	0	$0	$0	A heat wave gripped much of Southeast Texas in early September with at least advisory level conditions experienced for several days between September 5th and September 9th.	A heat wave gripped much of Southeast Texas in early September with advisory level conditions experienced for several days between September 5th and September 9th.
1142038	INLAND GALVESTON		9/5/2023	Heat			0	0	$0	$0	A heat wave gripped much of Southeast Texas in early September with at least advisory level conditions experienced for several days between September 5th and September 9th.	A heat wave gripped much of Southeast Texas in early September with advisory level conditions experienced for several days between September 5th and September 9th.
1127156	GALVESTON CO.	LEAGUE CITY	9/15/2023	Flash Flood			0	0	$0	$0	Heavy rain from ongoing thunderstorms resulted in street flooding along NASA Boulevard in Webster.	Late afternoon through early evening severe thunderstorms produced some localized flash flooding and isolated wind damage.
1122729	GALVESTON CO.	LEAGUE CTY SPCLND AR	9/15/2023	Thunderstorm Wind	52		0	0	$1,000	$0	A large tree was knocked down onto a road and a parked car.	Late afternoon through early evening severe thunderstorms produced some localized flash flooding and isolated wind damage.
1127152	GALVESTON CO.	GALVESTON	9/15/2023	Flash Flood			0	0	$0	$0	Street flooding was reported along Broadway on the East End of Galveston Island, with several cars stalled due to floodwaters.	Late afternoon through early evening severe thunderstorms produced some localized flash flooding and isolated wind damage.
1145305	BOLIVAR PENINSULA		10/1/2023	Drought			0	0	$0	$0	To start the month of October most of the region was in Extreme or D3 drought with other locations in Severe or D2. By the end of the month drought was mostly in the D2 range.	To start the month of October most of the region was in Extreme or D3 drought with other locations in Severe or D2. By the end of the month drought was mostly in the D1 to D2 range.
1145311	COASTAL GALVESTOI		10/1/2023	Drought			0	0	$0	$0	To start the month of October most of the region was in Extreme or D3 drought with other locations in Severe or D2. By the end of the month drought was mostly in the D2 range.	To start the month of October most of the region was in Extreme or D3 drought with other locations in Severe or D2. By the end of the month drought was mostly in the D1 to D2 range.
1145321	INLAND GALVESTON		10/1/2023	Drought			0	0	$0	$0	To start the month of October most of the region was in Extreme or D3 drought with other locations in Severe or D2. By the end of the month drought was mostly in the D2 range.	To start the month of October most of the region was in Extreme or D3 drought with other locations in Severe or D2. By the end of the month drought was mostly in the D1 to D2 range.
1145317	GALVESTON ISLAND (		10/1/2023	Drought			0	0	$0	$0	To start the month of October most of the region was in Extreme or D3 drought with other locations in Severe or D2. By the end of the month drought was mostly in the D2 range.	To start the month of October most of the region was in Extreme or D3 drought with other locations in Severe or D2. By the end of the month drought was mostly in the D1 to D2 range.
1143215	GALVESTON CO.	GALVESTON	#########	Flash Flood			0	0	$5,000	$0	Roadways flooded between 45th and 39th street. Few high water rescues.	Numerous thunderstorms produced areas of 3 to locally 6 inches of rain...leading to localized flooding.
1149122	GALVESTON CO.	DICKINSON	1/24/2024	Lightning			0	0	$25,000	$0	There was a home fire in the St. Edmunds neighborhood off of FM 646.	A series of disturbances moved across the area resulting in numerous flash flood events that resulted in the flooding of many homes, extensive high water rescues, and a flood-related fatality.
1156948	GALVESTON CO.	GILCHRIST	3/17/2024	Hail	1.25		0	0	$0	$0	A social media user documented widespread hail in Gilchrist. The maximum hail diameter observed was 1.25 inches.	Several rounds of severe thunderstorms produced numerous reports of large hail and wind damage.
1163663	GALVESTON CO.	DICKINSON	4/10/2024	Thunderstorm Wind	60		0	0	$10,000	$0	Numerous power lines were downed, poles were snapped, trees were downed and there was damage to structures in and around the Dickinson area intersection of Hill Avenue and Salvato Street.	Late night through early morning severe thunderstorms moved eastward across the area and produced hail, strong winds and some tornadoes.
1163651	GALVESTON CO.	DICKINSON	4/10/2024	Thunderstorm Wind	56		0	0	$-	$0	The wind gust occurred at a weather station.	Late night through early morning severe thunderstorms moved eastward across the area and produced hail, strong winds and some tornadoes.
1163662	GALVESTON CO.	LEAGUE CITY	4/10/2024	Thunderstorm Wind	51		0	0	$0	$0	Trees were downed in the League City area just north of FM 518 near Clear Creek.	Late night through early morning severe thunderstorms moved eastward across the area and produced hail, strong winds and some tornadoes.
1177199	GALVESTON CO.	DICKINSON	4/10/2024	Thunderstorm Wind	72		0	0	$-	$0	Measured gust from anemometer on radio tower at Dickinson PD. 25 to 30 feet AGL.	Late night through early morning severe thunderstorms moved eastward across the area and produced hail, strong winds and some tornadoes.
1163659	GALVESTON CO.	DICKINSON	4/10/2024	Thunderstorm Wind	65		0	0	$100,000	$0	Multiple trees were downed along FM 517 in the area around Dickinson High School. Siding was also ripped of a nearby apartment building.	Late night through early morning severe thunderstorms moved eastward across the area and produced hail, strong winds and some tornadoes.
1163664	GALVESTON CO.	SAN LEON	4/10/2024	Thunderstorm Wind	65		0	0	$10,000	$0	There was some wind damage across parts of San Leon and Bacliff.	Late night through early morning severe thunderstorms moved eastward across the area and produced hail, strong winds and some tornadoes.
1177181	GALVESTON CO.	HITCHCOCK VOLK ARPT	4/29/2024	Flash Flood			0	0	$0	$0	The Interstate 45 feeder road was nearly impassable due to floodwaters in the La Marque area.	Evening through overnight storms produced a lot of flash flooding, a couple tornadoes, some winds damage and some hail.
1170606	GALVESTON ISLAND (		5/25/2024	Rip Current			1	0	$0	$0	A 26 year old male from Leesville, LA drowned in a rip current near 24th Street. In addition, lifeguards rescued at least a dozen other people throughout the day that were rip current/surf related.	There was a rip current fatality.
1170653	GALVESTON CO.	LEAGUE CITY	5/28/2024	Thunderstorm Wind	52		0	0	$0	$0	Shingles were blown off and one-inch tree limbs were broken.	Another round of severe thunderstorms moved across the area resulting in numerous reports of wind damage.

1170644	GALVESTON CO.	(GLS)SCHOLES FLD GAL	5/28/2024	Thunderstorm Wind	54		0	0	$0	$0	Wind gust occurred at KGLS.	Another round of severe thunderstorms moved across the area resulting in numerous reports of wind damage.
1170588	GALVESTON CO.	DICKINSON	5/31/2024	Hail	2		0	0	$0	$0	Hen egg size hail was observed.	Early morning severe thunderstorms produced damaging winds and large hail.
1170589	GALVESTON CO.	DICKINSON	5/31/2024	Hail	1		0	0	$0	$0	Quarter sized hail was observed at the intersection of FM 646 and FM 517. Report came from a Spaceflight Meteorology Group (SMG) meteorologist.	Early morning severe thunderstorms produced damaging winds and large hail.
1170591	GALVESTON CO.	LEAGUE CITY	5/31/2024	Hail	1.75		0	0	$0	$0	Golf ball sized hail was observed in the League City area.	Early morning severe thunderstorms produced damaging winds and large hail.
1170592	GALVESTON CO.	LEAGUE CITY S S ARPT	5/31/2024	Hail	2		0	0	$0	$0	Half dollar to hen egg sized hail was observed.	Early morning severe thunderstorms produced damaging winds and large hail.
1170594	GALVESTON CO.	DICKINSON	5/31/2024	Hail	2.75		0	0	$0	$0	Hail up to baseball sized was collected around the WFO HGX office.	Early morning severe thunderstorms produced damaging winds and large hail.
1171027	GALVESTON CO.	(GLS)SCHOLES FLD GAL	6/5/2024	Thunderstorm Wind	55		0	0	$0	$0	Wind gust occurred at the Avenue N Tempest Weather System site.	Gusty winds accompanied southward moving showers and thunderstorms.
1171028	GALVESTON CO.	(GLS)SCHOLES FLD GAL	6/5/2024	Thunderstorm Wind	51		0	0	$0	$0	Wind gust occurred at the Avenue N Tempest Weather System site.	Gusty winds accompanied southward moving showers and thunderstorms.
1194692	BOLIVAR PENINSULA		6/19/2024	Coastal Flood			0	0	$0	$0	Widespread coastal flooding was reported along the Bolivar Peninsula, in particular across portions of Highway 87 which at times became impassable.	A Potential Tropical Cyclone became Tropical Storm Alberto as it moved generally westward across the southern Gulf of Mexico and made landfall in the Tampico area. Coastal flooding occurred along the upper Texas coast.
1194706	INLAND GALVESTON		6/19/2024	Coastal Flood			0	0	$0	$0	Coastal flooding was reported along Dickinson Bayou, resulting in several roads becoming flooded.	A Potential Tropical Cyclone became Tropical Storm Alberto as it moved generally westward across the southern Gulf of Mexico and made landfall in the Tampico area. Coastal flooding occurred along the upper Texas coast.
1194709	COASTAL GALVESTOI		6/19/2024	Coastal Flood			0	0	$0	$0	Widespread coastal flooding was reported around the city of Clear Lake Shores.	A Potential Tropical Cyclone became Tropical Storm Alberto as it moved generally westward across the southern Gulf of Mexico and made landfall in the Tampico area. Coastal flooding occurred along the upper Texas coast.
1204419	COASTAL GALVESTOI		6/21/2024	Rip Current			1	0	$0	$0	A 17-year-old from Louisiana drowned on west side of Tower 25 according to Beach Patrol.	A Potential Tropical Cyclone became Tropical Storm Alberto as it moved generally westward across the southern Gulf of Mexico and made landfall in the Tampico area. Coastal flooding occurred along the upper Texas coast.
1194766	GALVESTON CO.	SAN LUIS PASS	7/8/2024	Tornado		EF1	0	0	$0	$0	A waterspout associated with an outer rain band of Hurricane Beryl moved onshore near Jamaica Beach in the early morning hours. The tornado remained on the ground for just over a mile, resulting in damage power poles as well as significant damage to a home.	Hurricane Beryl made landfall during the early morning hours of July 8th near the city of Matagorda with a minimum central pressure of 978.8 mb. Maximum sustained winds were measured at 65 knots (74 mph) with gusts up to at least 84 knots (97 mph). On average, Beryl produced 4-8 inches on rainfall, with the highest amounts ranging from 10-15 inches. There was one confirmed EF-1 tornado on Galveston island near Jamaica Beach during the early morning hours of July 8. The storm also produced surge flooding generally between 4 to 6 feet AGL, with a maximum of 8 feet measured by survey crews. There have been 22 total fatalities attributed to Beryl, including 4 people killed by falling trees, 3 drownings, 1 death due to power loss in a medical device, 2 accidental deaths during debris cleanup, and 11 heat-related deaths due to power loss in the wake of the storm.
1183964	COASTAL GALVESTOI		7/8/2024	Tropical Storm			0	0	$0	$0	Hurricane Beryl produced sustained tropical storm force winds across coastal Galveston County. Wind gusts in excess of 60 mph were observed in Texas City and at the Texas Corinthian Yacht Club in Kemah.	Hurricane Beryl made landfall during the early morning hours of July 8th near the city of Matagorda with a minimum central pressure of 978.8 mb. Maximum sustained winds were measured at 65 knots (74 mph) with gusts up to at least 84 knots (97 mph). On average, Beryl produced 4-8 inches on rainfall, with the highest amounts ranging from 10-15 inches. There was one confirmed EF-1 tornado on Galveston island near Jamaica Beach during the early morning hours of July 8. The storm also produced surge flooding generally between 4 to 6 feet AGL, with a maximum of 8 feet measured by survey crews. There have been 22 total fatalities attributed to Beryl, including 4 people killed by falling trees, 3 drownings, 1 death due to power loss in a medical device, 2 accidental deaths during debris cleanup, and 11 heat-related deaths due to power loss in the wake of the storm.

1183956	GALVESTON ISLAND (		7/8/2024	Tropical Storm			0	0	$16,000,000	$0	Hurricane Beryl produced several hurricane force gusts in addition to sustained tropical storm force winds across Galveston Island. The strongest observed gusts occurred to the east of Surfside Beach (85 mph) and Scholes Field (73 mph). Widespread damage to power lines, homes, hotels, trees, and businesses was observed across the island. Damage estimates from County DSO.	Hurricane Beryl made landfall during the early morning hours of July 8th near the city of Matagorda with a minimum central pressure of 978.8 mb. Maximum sustained winds were measured at 65 knots (74 mph) with gusts up to at least 84 knots (97 mph). On average, Beryl produced 4-8 inches on rainfall, with the highest amounts ranging from 10-15 inches. There was one confirmed EF-1 tornado on Galveston island near Jamaica Beach during the early morning hours of July 8. The storm also produced surge flooding generally between 4 to 6 feet AGL, with a maximum of 8 feet measured by survey crews. There have been 22 total fatalities attributed to Beryl, including 4 people killed by falling trees, 3 drownings, 1 death due to power loss in a medical device, 2 accidental deaths during debris cleanup, and 11 heat-related deaths due to power loss in the wake of the storm.
1183997	BOLIVAR PENINSULA		7/8/2024	Tropical Storm			0	0	$0	$0	Hurricane Beryl produced tropical storm force winds along the Bolivar Peninsula.	Hurricane Beryl made landfall during the early morning hours of July 8th near the city of Matagorda with a minimum central pressure of 978.8 mb. Maximum sustained winds were measured at 65 knots (74 mph) with gusts up to at least 84 knots (97 mph). On average, Beryl produced 4-8 inches on rainfall, with the highest amounts ranging from 10-15 inches. There was one confirmed EF-1 tornado on Galveston island near Jamaica Beach during the early morning hours of July 8. The storm also produced surge flooding generally between 4 to 6 feet AGL, with a maximum of 8 feet measured by survey crews. There have been 22 total fatalities attributed to Beryl, including 4 people killed by falling trees, 3 drownings, 1 death due to power loss in a medical device, 2 accidental deaths during debris cleanup, and 11 heat-related deaths due to power loss in the wake of the storm.
1183971	INLAND GALVESTON		7/8/2024	Tropical Storm			0	0	$0	$0	Hurricane Beryl produced tropical storm force winds across inland Galveston County. Nearby wind gust observations in bordering counties indicated gusts in excess of 60 mph. Widespread damage to power lines, homes, trees, and businesses was observed across the county.	Hurricane Beryl made landfall during the early morning hours of July 8th near the city of Matagorda with a minimum central pressure of 978.8 mb. Maximum sustained winds were measured at 65 knots (74 mph) with gusts up to at least 84 knots (97 mph). On average, Beryl produced 4-8 inches on rainfall, with the highest amounts ranging from 10-15 inches. There was one confirmed EF-1 tornado on Galveston island near Jamaica Beach during the early morning hours of July 8. The storm also produced surge flooding generally between 4 to 6 feet AGL, with a maximum of 8 feet measured by survey crews. There have been 22 total fatalities attributed to Beryl, including 4 people killed by falling trees, 3 drownings, 1 death due to power loss in a medical device, 2 accidental deaths during debris cleanup, and 11 heat-related deaths due to power loss in the wake of the storm.
1205997	GALVESTON CO.	VIRGINIA PT	7/8/2024	Flash Flood			0	0	$0	$0	SH-6 was impassable due to floodwaters as a result of heavy rain.	Hurricane Beryl made landfall during the early morning hours of July 8th near the city of Matagorda with a minimum central pressure of 978.8 mb. Maximum sustained winds were measured at 65 knots (74 mph) with gusts up to at least 84 knots (97 mph). On average, Beryl produced 4-8 inches on rainfall, with the highest amounts ranging from 10-15 inches. There was one confirmed EF-1 tornado on Galveston island near Jamaica Beach during the early morning hours of July 8. The storm also produced surge flooding generally between 4 to 6 feet AGL, with a maximum of 8 feet measured by survey crews. There have been 22 total fatalities attributed to Beryl, including 4 people killed by falling trees, 3 drownings, 1 death due to power loss in a medical device, 2 accidental deaths during debris cleanup, and 11 heat-related deaths due to power loss in the wake of the storm.

1204830	GALVESTON ISLAND (		7/8/2024	Storm Surge/Tide			0	0	$0	$0	Widespread coastal flooding due to storm surge occurred along Galveston Island. This included significant impacts to Galveston Island State Park. A maximum storm surge of 6.5 ft AGL was recorded by NWS/HCFCD post-storm surveys near Jamaica Beach.	Hurricane Beryl made landfall during the early morning hours of July 8th near the city of Matagorda with a minimum central pressure of 978.8 mb. Maximum sustained winds were measured at 65 knots (74 mph) with gusts up to at least 84 knots (97 mph). On average, Beryl produced 4-8 inches on rainfall, with the highest amounts ranging from 10-15 inches. There was one confirmed EF-1 tornado on Galveston island near Jamaica Beach during the early morning hours of July 8. The storm also produced surge flooding generally between 4 to 6 feet AGL, with a maximum of 8 feet measured by survey crews. There have been 22 total fatalities attributed to Beryl, including 4 people killed by falling trees, 3 drownings, 1 death due to power loss in a medical device, 2 accidental deaths during debris cleanup, and 11 heat-related deaths due to power loss in the wake of the storm.
1204837	COASTAL GALVESTOI		7/8/2024	Storm Surge/Tide			0	0	$0	$0	Widespread coastal flooding due to storm surge occurred in Galveston County. A maximum storm surge of 5.3 ft AGL was recorded by NWS/HCFCD post-storm surveys in the Texas City area. 5 indirect fatalities occurred in the Galveston area, one due to power loss rendering medical devices inoperable and 4 due to heat-related illness.	Hurricane Beryl made landfall during the early morning hours of July 8th near the city of Matagorda with a minimum central pressure of 978.8 mb. Maximum sustained winds were measured at 65 knots (74 mph) with gusts up to at least 84 knots (97 mph). On average, Beryl produced 4-8 inches on rainfall, with the highest amounts ranging from 10-15 inches. There was one confirmed EF-1 tornado on Galveston island near Jamaica Beach during the early morning hours of July 8. The storm also produced surge flooding generally between 4 to 6 feet AGL, with a maximum of 8 feet measured by survey crews. There have been 22 total fatalities attributed to Beryl, including 4 people killed by falling trees, 3 drownings, 1 death due to power loss in a medical device, 2 accidental deaths during debris cleanup, and 11 heat-related deaths due to power loss in the wake of the storm.
1205996	GALVESTON CO.	(GLS)SCHOLES FLD GAL	7/8/2024	Flash Flood			0	0	$0	$0	Low water crossings along Interstate 45 were flooded between Bayou Vista and the Galveston Causeway.	Hurricane Beryl made landfall during the early morning hours of July 8th near the city of Matagorda with a minimum central pressure of 978.8 mb. Maximum sustained winds were measured at 65 knots (74 mph) with gusts up to at least 84 knots (97 mph). On average, Beryl produced 4-8 inches on rainfall, with the highest amounts ranging from 10-15 inches. There was one confirmed EF-1 tornado on Galveston island near Jamaica Beach during the early morning hours of July 8. The storm also produced surge flooding generally between 4 to 6 feet AGL, with a maximum of 8 feet measured by survey crews. There have been 22 total fatalities attributed to Beryl, including 4 people killed by falling trees, 3 drownings, 1 death due to power loss in a medical device, 2 accidental deaths during debris cleanup, and 11 heat-related deaths due to power loss in the wake of the storm.
1204878	BOLIVAR PENINSULA		7/8/2024	Storm Surge/Tide			0	0	$0	$0	Widespread coastal flooding due to storm surge occurred along the Bolivar Peninsula. A maximum storm surge of 6.2 ft AGL was recorded by NWS/HCFCD post-storm surveys.	Hurricane Beryl made landfall during the early morning hours of July 8th near the city of Matagorda with a minimum central pressure of 978.8 mb. Maximum sustained winds were measured at 65 knots (74 mph) with gusts up to at least 84 knots (97 mph). On average, Beryl produced 4-8 inches on rainfall, with the highest amounts ranging from 10-15 inches. There was one confirmed EF-1 tornado on Galveston island near Jamaica Beach during the early morning hours of July 8. The storm also produced surge flooding generally between 4 to 6 feet AGL, with a maximum of 8 feet measured by survey crews. There have been 22 total fatalities attributed to Beryl, including 4 people killed by falling trees, 3 drownings, 1 death due to power loss in a medical device, 2 accidental deaths during debris cleanup, and 11 heat-related deaths due to power loss in the wake of the storm.
1184227	GALVESTON CO.	GALVESTON	7/20/2024	Flash Flood			0	0	$10,000	$0	Skywarn HAM radio operator relayed information from county dispatch. Police and fire were responding to numerous high water rescue calls from Ferry Road to 45th and Broadway. Cameras in the area indicated possible inundation in businesses along Mechanic Street in downtown Galveston.	Overnight storms produced localized flooding across portions of Galveston Island and Galveston County.
1205403	GALVESTON CO.	DICKINSON	7/26/2024	Flash Flood			0	0	$0	$0	Dickinson Emergency manager reported flooding near I-45 and FM-517, with nearby roadways impassable.	Flash flooding occurred on July 26th across portions of Harris and Galveston counties.
1205406	GALVESTON CO.	NADEAU HGTS	7/26/2024	Flash Flood			0	0	$20,000	$0	Texas City Emergency manager reported numerous water rescues, including 2 to 3 rescues from flooded homes.	Flash flooding occurred on July 26th across portions of Harris and Galveston counties.
1200863	GALVESTON CO.	(GLS)SCHOLES FLD GAL	9/2/2024	Flash Flood			0	0	$0	$0	Significant street flooding occurred on Stewart Rd between 81st and 75th street. Additional street flooding occurred near Moody Gardens and along Broadway.	Flash flooding occurred on Galveston Island.
1201435	COASTAL GALVESTOI		9/11/2024	Coastal Flood			0	0	$0	$0	Bay Harbor area of Galveston had 16 to 18 inches of coastal flooding.	Some coastal flooding occurred from Hurricane Francine.
1201437	BOLIVAR PENINSULA		9/11/2024	Coastal Flood			0	0	$0	$0	Water was running over Highway 87 and was bringing debris onto the roadway.	Some coastal flooding occurred from Hurricane Francine.

1224048	GALVESTON CO.	DICKINSON	########	Tornado		EF1	0	0	$0	$0	The first report of a tornado in the Dickinson area came from an emergency manager, who relayed that multiple homes were damaged in and around the area.	|The survey team found that an EF1 tornado touched down near Hughes road between I-45 and HWY 3 and moved northeast across FM 517 and HWY 146, and then moved into Galveston bay near Bayshore park. Most of the damage was rated EF0 with wind speeds of 60-80 mph. However, a few homes received EF1 damage peaking at 90 mph east of Dickinson High School.	Multiple tornadic storms occurred during the afternoon on the 28th, producing hail, wind and tornadoes.
1229120	GALVESTON CO.	DICKINSON	########	Thunderstorm Wind	57		0	0	$0	$0	A member of the public measured a wind gust around 66 MPH near the intersection of 40th Street and Texas Avenue, associated with a thunderstorm that produced a tornado in Galveston county.	Multiple tornadic storms occurred during the afternoon on the 28th, producing hail, wind and tornadoes.
1230373	COASTAL GALVESTOI		1/9/2025	Coastal Flood			0	0	$0	$0	Texas Department of Transportation reported water on Texas highway 87 where it meets State highway 124.	Coastal flooding occurred on the Bolivar Peninsula on January 9th.
1231472	COASTAL GALVESTOI		1/20/2025	Winter Storm			0	0	$0	$0	Winter precipitation began on the evening on the 20th as a NWS employee reported light sleet falling at the NWS Houston-Galveston Office in Dickinson. Precipitation rates increased overnight, becoming predominantly snow during the early morning hours of the 21st, then diminished during the late morning. One NWS employee measured 0.1875 inches of an ice and sleet mixture accumulated on their personal snow table early in the morning. Later reports from the public, CoCoRaHS station TX-GV-76, a HAM radio operator, a trained storm spotter and multiple NWS employees showed 1.75-3.2 inches of snowfall across the area. The highest amounts were measured around Dickinson and League City.	A major winter storm impacted southern United States across the Gulf coast, producing what would go on to be historic levels of snowfall in some areas over Southeast Texas.

National Risk Index

June 18, 2025

Galveston County, Texas

Summary

Risk Index is **Relatively High** — Score **99.5**



Expected Annual Loss is **Very High** — Score **99.5**



Social Vulnerability is **Relatively High** — Score **73.5**



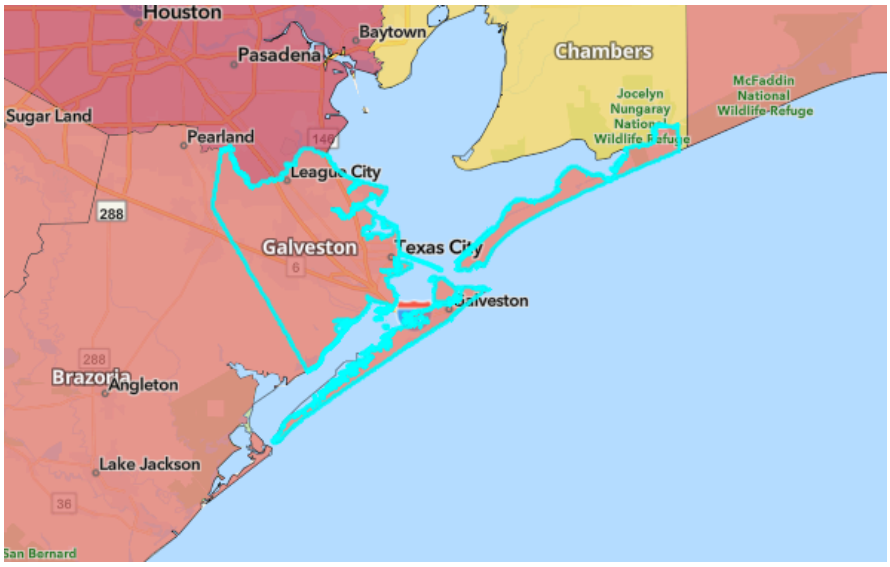
Community Resilience is **Very High** — Score **90.4**

While reviewing this report, keep in mind that low risk is driven by lower loss due to natural hazards, lower social vulnerability, and higher community resilience.

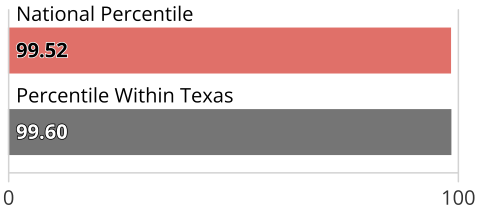
For more information about the National Risk Index, its data, and how to interpret the information it provides, please review the **About the National Risk Index** and **How to Take Action** sections at the end of this report. Or, visit the National Risk Index website at hazards.fema.gov/nri/learn-more to access supporting documentation and links.

Risk Index

The Risk Index rating is **Relatively High** for **Galveston County, TX** when compared to the rest of the U.S.



Score	99.52



100% of U.S. counties have a lower Risk Index

100% of counties in Texas have a lower Risk Index

Risk Index Legend

Very High | Relatively High | Relatively Moderate | Relatively Low | Very Low

No Rating | Not Applicable | Insufficient Data

Hazard Type Risk Index

Hazard type Risk Index scores are calculated using data for only a single hazard type, and reflect a community's Expected Annual Loss value, community risk factors, and the adjustment factor used to calculate the risk value.

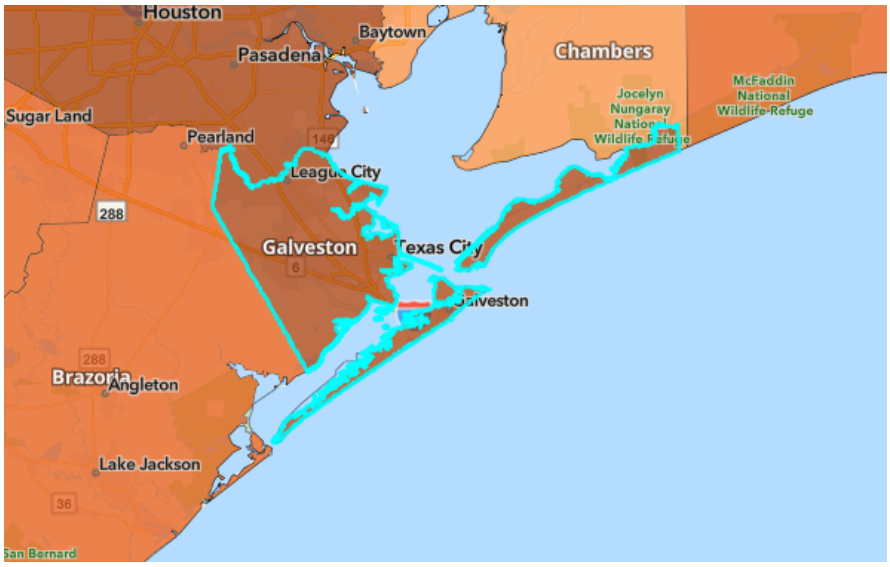
Hazard Type	Risk Index Rating	Risk Index Score	National Percentile
Avalanche	Not Applicable	--	
Coastal Flooding	Relatively Low	62.4	
Cold Wave	Very High	96.7	
Drought	Relatively Low	68.8	
Earthquake	Very Low	51	
Hail	Relatively Moderate	83.1	
Heat Wave	Relatively High	96	
Hurricane	Relatively High	98.3	
Ice Storm	Relatively Low	59.7	
Landslide	Relatively Low	36.7	
Lightning	Relatively High	98.6	
Riverine Flooding	Very High	100	
Strong Wind	Relatively Low	38.4	
Tornado	Relatively High	97	
Tsunami	Insufficient Data	--	
Volcanic Activity	Not Applicable	--	
Wildfire	Relatively Moderate	90.5	
Winter Weather	Relatively High	92.6	

Risk Factor Breakdown

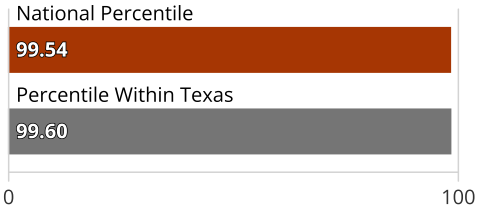
Hazard Type	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Risk Index Score
Riverine Flooding	$337,273,825	Relatively High	Very High	1.12	$379,986,195	100
Hurricane	$131,705,771	Relatively High	Very High	1.12	$143,940,043	98.3
Tornado	$16,714,467	Relatively High	Very High	1.12	$18,485,292	97
Heat Wave	$2,711,005	Relatively High	Very High	1.12	$3,089,451	96
Lightning	$2,230,131	Relatively High	Very High	1.12	$2,418,856	98.6
Cold Wave	$1,625,064	Relatively High	Very High	1.12	$1,862,410	96.7
Wildfire	$1,690,713	Relatively High	Very High	1.12	$1,798,852	90.5
Hail	$569,984	Relatively High	Very High	1.12	$621,763	83.1
Winter Weather	$475,732	Relatively High	Very High	1.12	$530,094	92.6
Coastal Flooding	$367,255	Relatively High	Very High	1.12	$390,852	62.4
Strong Wind	$246,579	Relatively High	Very High	1.12	$267,356	38.4
Earthquake	$141,987	Relatively High	Very High	1.12	$162,172	51
Drought	$128,481	Relatively High	Very High	1.12	$121,547	68.8
Ice Storm	$99,594	Relatively High	Very High	1.12	$108,473	59.7
Landslide	$21,900	Relatively High	Very High	1.12	$24,026	36.7
Avalanche	--	Relatively High	Very High	1.12	--	--
Tsunami	--	Relatively High	Very High	1.12	--	--
Volcanic Activity	--	Relatively High	Very High	1.12	--	--

Expected Annual Loss

In **Galveston County, TX**, expected loss each year due to natural hazards is **Very High** when compared to the rest of the U.S.



Score	99.54



100% of U.S. counties have a lower Expected Annual Loss

100% of counties in Texas have a lower Expected Annual Loss

Expected Annual Loss Legend

Very High | Relatively High | Relatively Moderate | Relatively Low | Very Low

No Expected Annual Losses | Not Applicable | Insufficient Data

Composite Expected Annual Loss	**$496,002,488.12**
Composite Expected Annual Loss Rate National Percentile	**99.7**

Building EAL	**$462,634,875.39**	Population EAL	**2.86** fatalities
Building EAL Rate	**$1 per $122.66 of building value**	Population EAL Rate	**1 per 122.49K people**
Agriculture EAL	**$176,616.11**	Population Equivalence EAL	**$33,190,996.62**
Agriculture EAL Rate	**$1 per $59.98 of agriculture value**		

Expected Annual Loss for Hazard Types

Expected Annual Loss scores for hazard types are calculated using data for only a single hazard type, and reflect a community's relative expected annual loss for only that hazard type.

15 of 18 hazard types contribute to the expected annual loss for **Galveston County, TX**.

Hazard Type	Expected Annual Loss Rating	EAL Value	Score
Riverine Flooding	Very High	$337,273,825	100.0
Hurricane	Relatively High	$131,705,771	98.4

Hazard Type	Expected Annual Loss Rating	EAL Value	Score
Tornado	Relatively High	$16,714,467	97.0
Heat Wave	Relatively High	$2,711,005	96.2
Lightning	Very High	$2,230,131	98.6
Wildfire	Relatively Moderate	$1,690,713	90.9
Cold Wave	Very High	$1,625,064	96.5
Hail	Relatively Moderate	$569,984	83.5
Winter Weather	Relatively High	$475,732	92.4
Coastal Flooding	Relatively Low	$367,256	64.4
Strong Wind	Relatively Low	$246,580	43.2
Earthquake	Very Low	$141,987	51.0
Drought	Relatively Low	$128,481	71.9
Ice Storm	Relatively Moderate	$99,594	61.1
Landslide	Relatively Low	$21,900	63.2
Avalanche	Not Applicable	--	--
Tsunami	Insufficient Data	--	--
Volcanic Activity	Not Applicable	--	--

Expected Annual Loss Values

Hazard Type	Total	Building Value	Population Equivalence	Population	Agriculture Value
Avalanche	--	--	--	--	--
Coastal Flooding	$367,255	$234,980	$132,275	0.01	n/a
Cold Wave	$1,625,064	$16,405	$1,602,708	0.14	$5,950
Drought	$128,481	n/a	n/a	n/a	$128,481
Earthquake	$141,987	$111,135	$30,851	0.00	n/a
Hail	$569,984	$283,285	$284,136	0.02	$2,562
Heat Wave	$2,711,005	$301	$2,710,703	0.23	$1
Hurricane	$131,705,771	$123,172,087	$8,495,579	0.73	$38,105
Ice Storm	$99,594	$4,497	$95,098	0.01	n/a
Landslide	$21,900	$4,500	$17,400	0.00	n/a
Lightning	$2,230,131	$70,878	$2,159,253	0.19	n/a
Riverine Flooding	$337,273,825	$334,703,831	$2,569,197	0.22	$798

Hazard Type	Total	Building Value	Population Equivalence	Population	Agriculture Value
Strong Wind	$246,579	$162,724	$83,654	0.01	$202
Tornado	$16,714,467	$2,275,536	$14,438,688	1.24	$243
Tsunami	n/a	n/a	n/a	n/a	n/a
Volcanic Activity	--	--	--	--	--
Wildfire	$1,690,713	$1,583,616	$106,965	0.01	$132
Winter Weather	$475,732	$11,101	$464,489	0.04	$142

Exposure Values

Hazard Type	Total	Building Value	Population Equivalence	Population	Agriculture Value
Avalanche	--	--	--	--	--
Coastal Flooding	$2,676,964,539,456	$37,686,517,779	$2,639,278,021,677	227,523.97	n/a
Cold Wave	$4,122,290,144,798	$56,746,974,030	$4,065,532,578,123	350,476.95	$10,592,645
Drought	$4,944,231	n/a	n/a	n/a	$4,944,231
Earthquake	$4,124,657,207,000	$56,746,007,000	$4,067,911,200,000	350,682.00	n/a
Hail	$4,122,290,770,230	$56,746,977,585	$4,065,533,200,000	350,477.00	$10,592,645
Heat Wave	$4,122,290,144,798	$56,746,974,030	$4,065,532,578,123	350,476.95	$10,592,645
Hurricane	$4,122,194,264,055	$56,746,143,140	$4,065,437,544,091	350,468.75	$10,576,824
Ice Storm	$4,100,129,820,075	$56,169,923,544	$4,043,959,896,530	348,617.23	n/a
Landslide	$33,598,158,063	$846,964,301	$32,751,193,762	2,823.38	n/a
Lightning	$4,122,280,177,585	$56,746,977,585	$4,065,533,200,000	350,477.00	n/a
Riverine Flooding	$1,223,087,510,790	$19,721,070,775	$1,203,363,401,379	103,738.22	$3,038,636
Strong Wind	$4,122,290,770,230	$56,746,977,585	$4,065,533,200,000	350,477.00	$10,592,645
Tornado	$4,122,290,770,230	$56,746,977,585	$4,065,533,200,000	350,477.00	$10,592,645
Tsunami	n/a	n/a	n/a	n/a	n/a
Volcanic Activity	--	--	--	--	--
Wildfire	$134,119,636,850	$2,173,422,625	$131,945,038,565	11,374.57	$1,175,660
Winter Weather	$4,122,290,144,798	$56,746,974,030	$4,065,532,578,123	350,476.95	$10,592,645

Annualized Frequency Values

Hazard Type	Annualized Frequency	Events on Record	Period of Record
Avalanche	--	--	--

Hazard Type	Annualized Frequency	Events on Record	Period of Record
Coastal Flooding	3.8 events per year	n/a	Various (see documentation)
Cold Wave	0.2 events per year	3	2005-2021 (16 years)
Drought	9 events per year	448	2000-2021 (22 years)
Earthquake	0.024% chance per year	n/a	2021 dataset
Hail	2.2 events per year	35	1986-2021 (34 years)
Heat Wave	0.2 events per year	2	2005-2021 (16 years)
Hurricane	0.3 events per year	43	East 1851-2021 (171 years) / West 1949-2021 (73 years)
Ice Storm	0.9 events per year	28	1946-2014 (67 years)
Landslide	0 events per year	0	2010-2021 (12 years)
Lightning	98 events per year	1,014	1991-2012 (22 years)
Riverine Flooding	3.2 events per year	76	1996-2019 (24 years)
Strong Wind	1.3 events per year	22	1986-2021 (34 years)
Tornado	0.3 events per year	72	1950-2021 (72 years)
Tsunami	n/a	n/a	1800-2021 (222 years)
Volcanic Activity	--	--	--
Wildfire	0.313% chance per year	n/a	2021 dataset
Winter Weather	0.6 events per year	7	2005-2021 (16 years)

Historic Loss Ratios

Hazard Type	Overall Rating
Avalanche	--
Coastal Flooding	Very Low
Cold Wave	Very Low
Drought	Relatively High
Earthquake	Very Low
Hail	Relatively Low
Heat Wave	Relatively Low
Hurricane	Relatively High
Ice Storm	Very Low
Landslide	Relatively Low
Lightning	Relatively Low

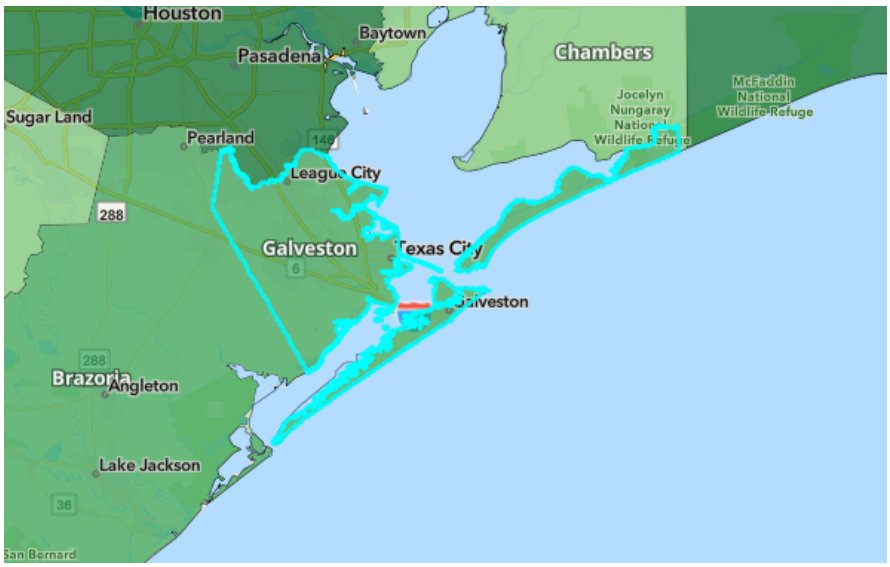
Hazard Type	Overall Rating
Riverine Flooding	Relatively Low
Strong Wind	Very Low
Tornado	Relatively Moderate
Tsunami	Insufficient Data
Volcanic Activity	--
Wildfire	Very Low
Winter Weather	Relatively Moderate

Expected Annual Loss Rate

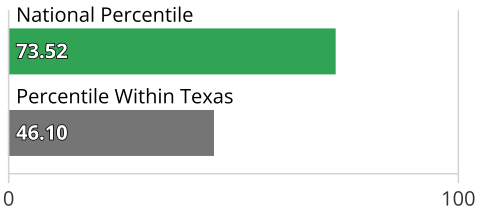
Hazard Type	Building EAL Rate (per building value)	Population EAL Rate (per population)	Agriculture EAL Rate (per agriculture value)
Avalanche	--	--	--
Coastal Flooding	$1 per $241.50K	1 per 30.74M	--
Cold Wave	$1 per $3.46M	1 per 2.54M	$1 per $1.78K
Drought	--	--	$1 per $82.45
Earthquake	$1 per $510.61K	1 per 131.78M	--
Hail	$1 per $200.32K	1 per 14.31M	$1 per $4.13K
Heat Wave	$1 per $188.68M	1 per 1.50M	$1 per $7.61M
Hurricane	$1 per $460.71	1 per 478.55K	$1 per $277.98
Ice Storm	$1 per $12.62M	1 per 42.75M	--
Landslide	$1 per $12.61M	1 per 233.65M	--
Lightning	$1 per $800.63K	1 per 1.88M	--
Riverine Flooding	$1 per $169.54	1 per 1.58M	$1 per $13.28K
Strong Wind	$1 per $348.73K	1 per 48.60M	$1 per $52.55K
Tornado	$1 per $24.94K	1 per 281.57K	$1 per $43.59K
Tsunami	--	--	--
Volcanic Activity	--	--	--
Wildfire	$1 per $35.83K	1 per 38.01M	$1 per $80.23K
Winter Weather	$1 per $5.11M	1 per 8.75M	$1 per $74.69K

Social Vulnerability

Social groups in **Galveston County, TX** have a **Relatively High** susceptibility to the adverse impacts of natural hazards when compared to the rest of the U.S.



Score	73.52



74% of U.S. counties have a lower Social Vulnerability

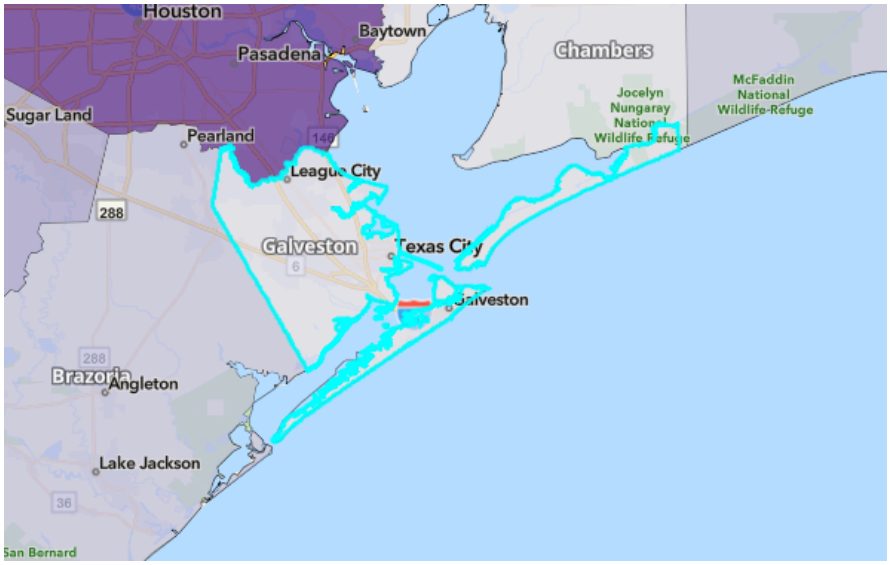
46% of counties in Texas have a lower Social Vulnerability

Social Vulnerability Legend

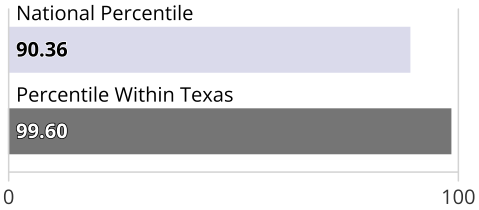
Very High | Relatively High | Relatively Moderate | Relatively Low | Very Low | Data Unavailable

Community Resilience

Communities in **Galveston County, TX** have a **Very High** ability to prepare for anticipated natural hazards, adapt to changing conditions, and withstand and recover rapidly from disruptions when compared to the rest of the U.S.



Score	90.36



10% of U.S. counties have a higher Community Resilience

0% of counties in Texas have a higher Community Resilience

Community Resilience Legend

Very High | Relatively High | Relatively Moderate | Relatively Low | Very Low | Data Unavailable

About the National Risk Index

The National Risk Index is a dataset and online tool to help illustrate the United States communities most at risk for 18 natural hazards: Avalanche, Coastal Flooding, Cold Wave, Drought, Earthquake, Hail, Heat Wave, Hurricane, Ice Storm, Landslide, Lightning, Riverine Flooding, Strong Wind, Tornado, Tsunami, Volcanic Activity, Wildfire, and Winter Weather.

The National Risk Index leverages available source data for Expected Annual Loss due to these 18 hazard types, Social Vulnerability, and Community Resilience to develop a baseline relative risk measurement for each United States county and Census tract. These measurements are calculated using average past conditions, but they cannot be used to predict future outcomes for a community. The National Risk Index is intended to fill gaps in available data and analyses to better inform federal, state, local, tribal, and territorial decision makers as they develop risk reduction strategies.

Explore the National Risk Index Map at **hazards.fema.gov/nri/map**.

Visit the National Risk Index website at hazards.fema.gov/nri/learn-more to access supporting documentation and links.

Calculating the Risk Index

Risk Index values are calculated using an equation* that combines values for Expected Annual Loss (EAL) due to natural hazards, with the Community Risk Factor (CRF), which is a function of Social Vulnerability and Community Resilience:

$$\text{Risk Index} = \text{Expected Annual Loss} \times \text{Community Risk Factor}$$

$$\text{where Community Risk Factor} = f\left(\frac{\text{Social Vulnerability}}{\text{Community Resilience}}\right)$$

*County-level risk values are derived by summing the risk values of all Census tracts within that county.

Risk is presented as a composite value and score for all 18 hazard types, as well as individual values and scores for each hazard type.

For more information, visit hazards.fema.gov/nri/determining-risk.

Calculating Expected Annual Loss

Expected Annual Loss values are calculated using an equation* that combines values for exposure, annualized frequency, and historic loss ratios for 18 hazard types:

$$\text{Expected Annual Loss} = \text{Exposure} \times \text{Annualized Frequency} \times \text{Historic Loss Ratio}$$

*Excluding Avalanche, Drought, Earthquake, and Tornado, EAL values for each hazard are calculated at the Census block level and summed together to determine Census tract and county-level hazard type EAL values.

Expected Annual Loss is presented as a composite value and score for all 18 hazard types, as well as individual values and scores for each hazard type.

For more information, visit **hazards.fema.gov/nri/expected-annual-loss**.

Calculating Social Vulnerability

Social Vulnerability is measured using the Social Vulnerability Index (SVI) published by the Centers for Disease Control and Prevention (CDC).

For more information, visit **hazards.fema.gov/nri/social-vulnerability**.

Calculating Community Resilience

Community Resilience is measured at the County level using the Baseline Resilience Indicators for Communities (HVRI BRIC) published by the University of South Carolina's Hazards and Vulnerability Research Institute (HVRI).

For more information, visit hazards.fema.gov/nri/community-resilience.

Values, Scores, and Ratings

The National Risk Index provides three different types of results for Risk and each component used to derive Risk: EAL, Social Vulnerability, and Community Resilience:

Values. Values for Risk and EAL are in units of dollars, representing the community's average economic loss from natural hazards each year. For Social Vulnerability and Community Resilience, values are the index values for the community provided by the source data sets.

Scores. Scores represent the national percentile ranking of the community's component value compared to all other communities at the same level (county or Census tract).

Ratings. Ratings refer to the qualitative terms that describe the relative risk of an area within the same geographic level. These rating categories range from "Very Low" to "Very High". Ratings for Social Vulnerability and Community Resilience are based on quintiles of those components' scores, while Risk and EAL ratings are based on more advanced statistical calculations on values . As a result, there is no fixed range of scores or values that correspond to the rating categories.

How to Take Action

There are many ways to reduce natural hazard risk through mitigation. Communities with high National Risk Index scores can take action to reduce risk by decreasing Expected Annual Loss due to natural hazards, decreasing Social Vulnerability, and increasing Community Resilience.

For information about how to take action and reduce your risk, visit hazards.fema.gov/nri/take-action.

Disclaimer

The National Risk Index (the Risk Index or the Index) and its associated data are meant for planning purposes only. This tool was created for broad nationwide comparisons and is not a substitute for localized risk assessment analysis. Nationwide datasets used as inputs for the National Risk Index are, in many cases, not as accurate as available local data. Users with access to local data for each National Risk Index risk factor should consider substituting the Risk Index data with local data to recalculate a more accurate risk index. If you decide to download the National Risk Index data and substitute it with local data, you assume responsibility for the accuracy of the data and any resulting data index. Please visit the Contact Us page if you would like to discuss this process further.

The methodology used by the National Risk Index has been reviewed by subject matter experts in the fields of natural hazard risk research, risk analysis, mitigation planning, and emergency management. The processing methods used to create the National Risk Index have produced results similar to those from other natural hazard risk analyses conducted on a smaller scale. The breadth and combination of geographic information systems (GIS) and data processing techniques leveraged by the National Risk Index enable it to incorporate multiple hazard types and risk factors, manage its nationwide scope, and capture what might have been missed using other methods.

The National Risk Index does not consider the intricate economic and physical interdependencies that exist across geographic regions. Keep in mind that hazard impacts in surrounding counties or Census tracts can cause indirect losses in your community regardless of your community's risk profile.

Nationwide data available for some risk factors are rudimentary at this time. The risk profiles for the vast majority of hazard types are based on historical frequency and loss data. They represent risk and expected annual loss based on average past conditions, not future predictions. The National Risk Index will be continuously updated as new data become available and improved methodologies are identified.

For comprehensive details about how the Risk Index can help you and its limitations, see the **National Risk Index Technical Documentation**

Assumption of Risk

In view of the identified limitations of the National Risk Index associated data, by using the data, you acknowledge and agree that FEMA makes no representations or warranties about the accuracy, completeness, or fitness for any particular purpose of the data; that the data is provided "as is" without warranty of any kind; that you assume full responsibility for any consequences that may arise, including financial losses, legal disputes, or other adverse outcomes; and that you release FEMA and the federal government from any liability that may arise to the extent allowable by law.

Attribution, No Endorsement

Please attribute your use of the National Risk Index and its associated data to the Federal Emergency Management Agency.

However, you acknowledge and agree that nothing herein constitutes and endorsement of you or your work by FEMA or the federal government, and you shall not imply through use of the National Risk Index or its associated data or through providing attribution, that FEMA or the federal government endorses you.

Preferred citation for the National Risk Index:

Zuzak, C., E. Goodenough, C. Stanton, M. Mowrer, A. Sheehan, B. Roberts, P. McGuire, and J. Rozelle. 2023. National Risk Index Technical Documentation. Federal Emergency Management Agency, Washington, DC.

The National Risk Index Contact Us page is available at **hazards.fema.gov/nri/contact-us**.

National Risk Index

June 18, 2025

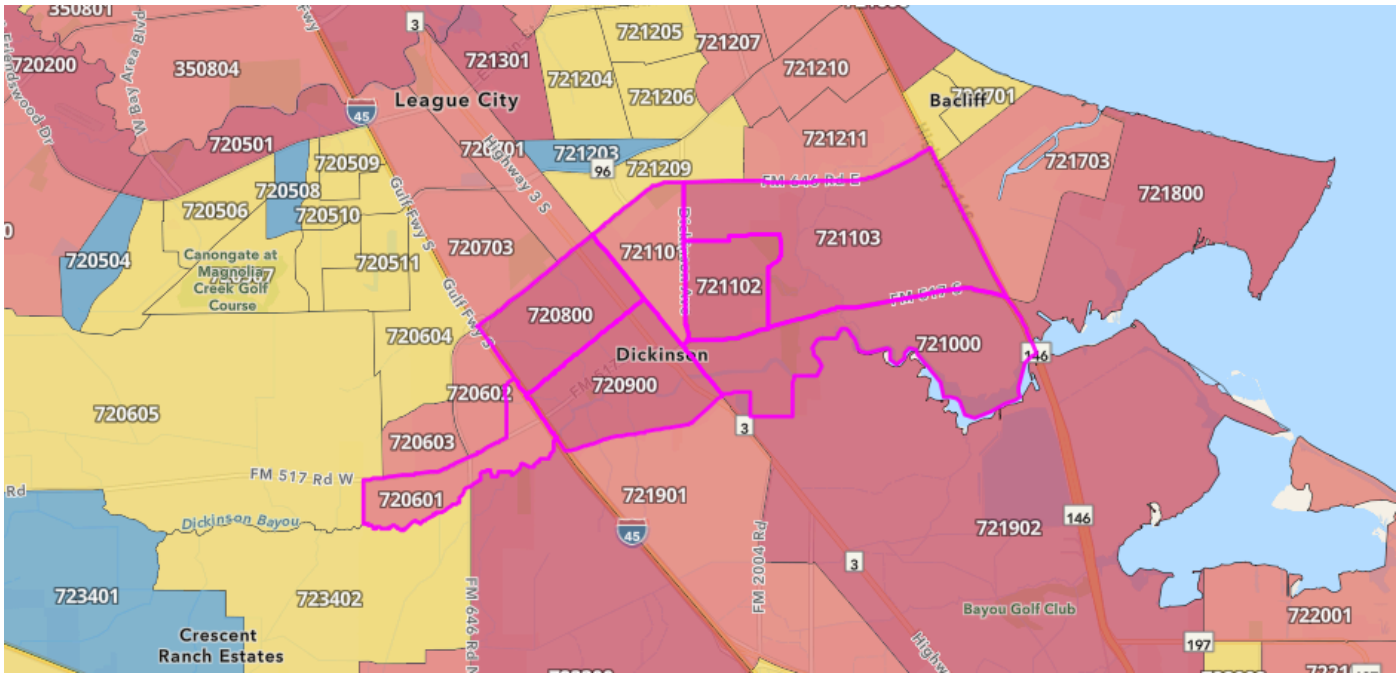
Risk Comparison Report

Use this report to determine how risk factors in selected communities compare to each other. Click a community name in any table below to open an individual risk profile report for that community and review its risk factors in more detail.

While reviewing this report, keep in mind that low risk is driven by lower loss due to natural hazards, lower social vulnerability, and higher community resilience.

For more information about the National Risk Index, its data, and how to interpret the information it provides, please review the **About the National Risk Index** and **How to Take Action** sections at the end of this report. Or, visit the National Risk Index website at hazards.fema.gov/nri/learn-more to access supporting documentation and links.

Risk Index



Risk Index Legend

Very High | Relatively High | Relatively Moderate | Relatively Low | Very Low

No Rating | Not Applicable | Insufficient Data

Rank	Community	State	Risk Index Rating	Risk Index Score	National Percentile
1	Census tract 48167720900	TX	Very High	99.9	0 100
2	Census tract 48167720800	TX	Very High	99.57	0 100
3	Census tract 48167721102	TX	Very High	99.35	0 100

Rank	Community	State	Risk Index Rating	Risk Index Score	National Percentile
4	Census tract 48167721103	TX	Very High	98.72	0 100
5	Census tract 48167721000	TX	Very High	97.87	0 100
6	Census tract 48167720601	TX	Relatively High	94.8	0 100
7	Census tract 48167721101	TX	Relatively High	87.38	0 100

Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Risk Index Score
1	Census tract 48167720900	TX	$12,019,220	Very High	Very High	1.6	$19,232,903	99.9
2	Census tract 48167720800	TX	$7,841,713	Relatively High	Very High	1.38	$10,786,999	99.57
3	Census tract 48167721102	TX	$6,176,392	Very High	Very High	1.44	$8,916,331	99.35
4	Census tract 48167721103	TX	$5,481,970	Relatively High	Very High	1.22	$6,683,400	98.72
5	Census tract 48167721000	TX	$4,144,214	Relatively High	Very High	1.29	$5,357,364	97.87
6	Census tract 48167720601	TX	$4,599,418	Very Low	Very High	0.75	$3,439,772	94.8
7	Census tract 48167721101	TX	$1,661,836	Relatively High	Very High	1.22	$2,025,399	87.38

Hazard Type Risk Index

Hazard type Risk Index scores are calculated using data for only a single hazard type, and reflect a community's relative risk for only that hazard type.

Avalanche

Rank	Community	State	Risk Index Rating	Risk Index Score	National Percentile
	Census tract 48167720601	TX	Not Applicable		
	Census tract 48167720800	TX	Not Applicable		
	Census tract 48167720900	TX	Not Applicable		
	Census tract 48167721000	TX	Not Applicable		
	Census tract 48167721101	TX	Not Applicable		
	Census tract 48167721102	TX	Not Applicable		
	Census tract 48167721103	TX	Not Applicable		

Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Risk Index Score
	Census tract 48167720601	TX	N/A	Very Low	Very High	0.75	N/A	N/A
	Census tract 48167720800	TX	N/A	Relatively High	Very High	1.38	N/A	N/A
	Census tract 48167720900	TX	N/A	Very High	Very High	1.6	N/A	N/A
	Census tract 48167721000	TX	N/A	Relatively High	Very High	1.29	N/A	N/A
	Census tract 48167721101	TX	N/A	Relatively High	Very High	1.22	N/A	N/A
	Census tract 48167721102	TX	N/A	Very High	Very High	1.44	N/A	N/A
	Census tract 48167721103	TX	N/A	Relatively High	Very High	1.22	N/A	N/A

Coastal Flooding

Rank	Community	State	Risk Index Rating	Risk Index Score	National Percentile
1	Census tract 48167720900	TX	Relatively Low	88.77	0 100
2	Census tract 48167721000	TX	Relatively Low	88.54	0 100
3	Census tract 48167720800	TX	Relatively Low	84.82	0 100
4	Census tract 48167721102	TX	Relatively Low	84.19	0 100
5	Census tract 48167721103	TX	Relatively Low	83.01	0 100
6	Census tract 48167720601	TX	Relatively Low	79.89	0 100

Rank	Community	State	Risk Index Rating	Risk Index Score	National Percentile
7	Census tract 48167721101	TX	Very Low	78.47	0 100

Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Risk Index Score
1	Census tract 48167720900	TX	$5,008	Very High	Very High	1.6	$8,013	88.77
2	Census tract 48167721000	TX	$5,804	Relatively High	Very High	1.29	$7,503	88.54
3	Census tract 48167720800	TX	$2,003	Relatively High	Very High	1.38	$2,755	84.82
4	Census tract 48167721102	TX	$1,622	Very High	Very High	1.44	$2,341	84.19
5	Census tract 48167721103	TX	$1,398	Relatively High	Very High	1.22	$1,705	83.01
6	Census tract 48167720601	TX	$980	Very Low	Very High	0.75	$733	79.89
7	Census tract 48167721101	TX	$388	Relatively High	Very High	1.22	$473	78.47

Cold Wave

Rank	Community	State	Risk Index Rating	Risk Index Score	National Percentile
1	Census tract 48167721102	TX	Relatively High	94.14	0 100
2	Census tract 48167720900	TX	Relatively High	93.4	0 100
3	Census tract 48167720800	TX	Relatively High	90.49	0 100
4	Census tract 48167721103	TX	Relatively Moderate	85.56	0 100
5	Census tract 48167721101	TX	Relatively Moderate	82.5	0 100
6	Census tract 48167721000	TX	Relatively Moderate	82.26	0 100
7	Census tract 48167720601	TX	Relatively Moderate	73.15	0 100

Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Risk Index Score
1	Census tract 48167721102	TX	$33,765	Very High	Very High	1.44	$48,744	94.14
2	Census tract 48167720900	TX	$27,564	Very High	Very High	1.6	$44,107	93.4
3	Census tract 48167720800	TX	$22,597	Relatively High	Very High	1.38	$31,085	90.49
4	Census tract 48167721103	TX	$16,223	Relatively High	Very High	1.22	$19,779	85.56
5	Census tract 48167721101	TX	$12,825	Relatively High	Very High	1.22	$15,630	82.5
6	Census tract 48167721000	TX	$11,846	Relatively High	Very High	1.29	$15,313	82.26
7	Census tract 48167720601	TX	$10,141	Very Low	Very High	0.75	$7,584	73.15

Drought

Rank	Community	State	Risk Index Rating	Risk Index Score	National Percentile
1	Census tract 48167721103	TX	Relatively Low	84.81	0 100
2	Census tract 48167721000	TX	Very Low	76.48	0 100
3	Census tract 48167721101	TX	Very Low	74.02	0 100
4	Census tract 48167720601	TX	Very Low	73.6	0 100
5	Census tract 48167720800	TX	Very Low	69.51	0 100
	Census tract 48167720900	TX	No Rating	0	0 100
	Census tract 48167721102	TX	No Rating	0	0 100

Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Risk Index Score
1	Census tract 48167721103	TX	$1,069	Relatively High	Very High	1.22	$1,303	84.81
2	Census tract 48167721000	TX	$83	Relatively High	Very High	1.29	$107	76.48
3	Census tract 48167721101	TX	$33	Relatively High	Very High	1.22	$41	74.02
4	Census tract 48167720601	TX	$45	Very Low	Very High	0.75	$34	73.6
5	Census tract 48167720800	TX	$1	Relatively High	Very High	1.38	$2	69.51
	Census tract 48167720900	TX	$0	Very High	Very High	1.6	$0	0
	Census tract 48167721102	TX	$0	Very High	Very High	1.44	$0	0

Earthquake

Rank	Community	State	Risk Index Rating	Risk Index Score	National Percentile
1	Census tract 48167720900	TX	Very Low	24.65	0 100
2	Census tract 48167721102	TX	Very Low	21.48	0 100
3	Census tract 48167720800	TX	Very Low	20.37	0 100
4	Census tract 48167721103	TX	Very Low	10.52	0 100
5	Census tract 48167720601	TX	Very Low	9.54	0 100
6	Census tract 48167721101	TX	Very Low	9.25	0 100
7	Census tract 48167721000	TX	Very Low	7.41	0 100

Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Risk Index Score
1	Census tract 48167720900	TX	$2,283	Very High	Very High	1.6	$3,654	24.65
2	Census tract 48167721102	TX	$2,102	Very High	Very High	1.44	$3,034	21.48
3	Census tract 48167720800	TX	$2,057	Relatively High	Very High	1.38	$2,830	20.37
4	Census tract 48167721103	TX	$1,009	Relatively High	Very High	1.22	$1,230	10.52
5	Census tract 48167720601	TX	$1,454	Very Low	Very High	0.75	$1,087	9.54
6	Census tract 48167721101	TX	$857	Relatively High	Very High	1.22	$1,045	9.25
7	Census tract 48167721000	TX	$616	Relatively High	Very High	1.29	$797	7.41

Hail

Rank	Community	State	Risk Index Rating	Risk Index Score	National Percentile
1	Census tract 48167720900	TX	Relatively Moderate	74.33	0 100
2	Census tract 48167721102	TX	Relatively Moderate	73.58	0 100
3	Census tract 48167720800	TX	Relatively Low	71.37	0 100
4	Census tract 48167721103	TX	Relatively Low	64.53	0 100
5	Census tract 48167720601	TX	Relatively Low	62.22	0 100
6	Census tract 48167721101	TX	Relatively Low	62	0 100
7	Census tract 48167721000	TX	Relatively Low	61.82	0 100

Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Risk Index Score
1	Census tract 48167720900	TX	$7,563	Very High	Very High	1.6	$12,102	74.33
2	Census tract 48167721102	TX	$7,852	Very High	Very High	1.44	$11,335	73.58
3	Census tract 48167720800	TX	$6,834	Relatively High	Very High	1.38	$9,401	71.37
4	Census tract 48167721103	TX	$4,273	Relatively High	Very High	1.22	$5,210	64.53
5	Census tract 48167720601	TX	$5,729	Very Low	Very High	0.75	$4,285	62.22
6	Census tract 48167721101	TX	$3,447	Relatively High	Very High	1.22	$4,201	62
7	Census tract 48167721000	TX	$3,207	Relatively High	Very High	1.29	$4,145	61.82

Heat Wave

Rank	Community	State	Risk Index Rating	Risk Index Score	National Percentile
1	Census tract 48167721102	TX	Relatively High	88.29	0 100
2	Census tract 48167720900	TX	Relatively High	86.87	0 100
3	Census tract 48167720800	TX	Relatively High	81.36	0 100
4	Census tract 48167721103	TX	Relatively Moderate	72.84	0 100
5	Census tract 48167721101	TX	Relatively Moderate	68.49	0 100
6	Census tract 48167721000	TX	Relatively Moderate	67.96	0 100
7	Census tract 48167720601	TX	Relatively Moderate	59.53	0 100

Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Risk Index Score
1	Census tract 48167721102	TX	$50,223	Very High	Very High	1.44	$72,502	88.29
2	Census tract 48167720900	TX	$40,899	Very High	Very High	1.6	$65,445	86.87
3	Census tract 48167720800	TX	$33,445	Relatively High	Very High	1.38	$46,007	81.36
4	Census tract 48167721103	TX	$23,684	Relatively High	Very High	1.22	$28,875	72.84
5	Census tract 48167721101	TX	$19,010	Relatively High	Very High	1.22	$23,169	68.49
6	Census tract 48167721000	TX	$17,479	Relatively High	Very High	1.29	$22,596	67.96
7	Census tract 48167720601	TX	$20,030	Very Low	Very High	0.75	$14,980	59.53

Hurricane

Rank	Community	State	Risk Index Rating	Risk Index Score	National Percentile
1	Census tract 48167720900	TX	Very High	95.8	0 100
2	Census tract 48167720800	TX	Relatively High	94.64	0 100
3	Census tract 48167721102	TX	Relatively High	93.59	0 100
4	Census tract 48167721103	TX	Relatively High	88.21	0 100
5	Census tract 48167720601	TX	Relatively High	87.34	0 100
6	Census tract 48167721000	TX	Relatively High	86.95	0 100
7	Census tract 48167721101	TX	Relatively High	86.76	0 100

Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Risk Index Score
1	Census tract 48167720900	TX	$1,444,382	Very High	Very High	1.6	$2,311,269	95.8
2	Census tract 48167720800	TX	$1,436,789	Relatively High	Very High	1.38	$1,976,435	94.64
3	Census tract 48167721102	TX	$1,209,954	Very High	Very High	1.44	$1,746,708	93.59
4	Census tract 48167721103	TX	$770,316	Relatively High	Very High	1.22	$939,139	88.21
5	Census tract 48167720601	TX	$1,128,354	Very Low	Very High	0.75	$843,864	87.34
6	Census tract 48167721000	TX	$621,217	Relatively High	Very High	1.29	$803,068	86.95
7	Census tract 48167721101	TX	$643,467	Relatively High	Very High	1.22	$784,239	86.76

Ice Storm

Rank	Community	State	Risk Index Rating	Risk Index Score	National Percentile
1	Census tract 48167721102	TX	Relatively Low	50.59	0 100
2	Census tract 48167720900	TX	Relatively Low	48.33	0 100
3	Census tract 48167720800	TX	Relatively Low	39.46	0 100
4	Census tract 48167721103	TX	Very Low	28.23	0 100
5	Census tract 48167721101	TX	Very Low	24.03	0 100
6	Census tract 48167720601	TX	Very Low	23.52	0 100
7	Census tract 48167721000	TX	Very Low	23.3	0 100

Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Risk Index Score
1	Census tract 48167721102	TX	$1,852	Very High	Very High	1.44	$2,674	50.59
2	Census tract 48167720900	TX	$1,529	Very High	Very High	1.6	$2,446	48.33
3	Census tract 48167720800	TX	$1,260	Relatively High	Very High	1.38	$1,734	39.46
4	Census tract 48167721103	TX	$881	Relatively High	Very High	1.22	$1,074	28.23
5	Census tract 48167721101	TX	$709	Relatively High	Very High	1.22	$864	24.03
6	Census tract 48167720601	TX	$1,125	Very Low	Very High	0.75	$842	23.52
7	Census tract 48167721000	TX	$643	Relatively High	Very High	1.29	$832	23.3

Landslide

Rank	Community	State	Risk Index Rating	Risk Index Score	National Percentile
	Census tract 48167720601	TX	No Rating	0	0 100
	Census tract 48167720800	TX	No Rating	0	0 100
	Census tract 48167720900	TX	No Rating	0	0 100
	Census tract 48167721000	TX	No Rating	0	0 100
	Census tract 48167721101	TX	No Rating	0	0 100
	Census tract 48167721102	TX	No Rating	0	0 100
	Census tract 48167721103	TX	No Rating	0	0 100

Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Risk Index Score
	Census tract 48167720601	TX	$0	Very Low	Very High	0.75	$0	0
	Census tract 48167720800	TX	$0	Relatively High	Very High	1.38	$0	0
	Census tract 48167720900	TX	$0	Very High	Very High	1.6	$0	0
	Census tract 48167721000	TX	$0	Relatively High	Very High	1.29	$0	0
	Census tract 48167721101	TX	$0	Relatively High	Very High	1.22	$0	0
	Census tract 48167721102	TX	$0	Very High	Very High	1.44	$0	0
	Census tract 48167721103	TX	$0	Relatively High	Very High	1.22	$0	0

Lightning

Rank	Community	State	Risk Index Rating	Risk Index Score	National Percentile
1	Census tract 48167721102	TX	Very High	97.95	0 100
2	Census tract 48167720900	TX	Very High	97.73	0 100
3	Census tract 48167720800	TX	Very High	94.6	0 100
4	Census tract 48167721103	TX	Relatively High	86.27	0 100
5	Census tract 48167721000	TX	Relatively High	81.85	0 100
6	Census tract 48167721101	TX	Relatively High	81.37	0 100
7	Census tract 48167720601	TX	Relatively High	81.01	0 100

Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Risk Index Score
1	Census tract 48167721102	TX	$39,339	Very High	Very High	1.44	$56,791	97.95
2	Census tract 48167720900	TX	$34,065	Very High	Very High	1.6	$54,509	97.73
3	Census tract 48167720800	TX	$27,613	Relatively High	Very High	1.38	$37,984	94.6
4	Census tract 48167721103	TX	$18,758	Relatively High	Very High	1.22	$22,869	86.27
5	Census tract 48167721000	TX	$14,609	Relatively High	Very High	1.29	$18,885	81.85
6	Census tract 48167721101	TX	$15,162	Relatively High	Very High	1.22	$18,479	81.37
7	Census tract 48167720601	TX	$24,347	Very Low	Very High	0.75	$18,208	81.01

Riverine Flooding

Rank	Community	State	Risk Index Rating	Risk Index Score	National Percentile
1	Census tract 48167720900	TX	Very High	99.99	0 100
2	Census tract 48167720800	TX	Very High	99.95	0 100
3	Census tract 48167721102	TX	Very High	99.91	0 100
4	Census tract 48167721103	TX	Very High	99.87	0 100
5	Census tract 48167721000	TX	Very High	99.79	0 100
6	Census tract 48167720601	TX	Very High	99.44	0 100
7	Census tract 48167721101	TX	Relatively High	98.42	0 100

Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Risk Index Score
1	Census tract 48167720900	TX	$10,215,132	Very High	Very High	1.6	$16,346,040	99.99
2	Census tract 48167720800	TX	$6,105,570	Relatively High	Very High	1.38	$8,398,775	99.95
3	Census tract 48167721102	TX	$4,545,859	Very High	Very High	1.44	$6,562,470	99.91
4	Census tract 48167721103	TX	$4,477,655	Relatively High	Very High	1.22	$5,458,979	99.87
5	Census tract 48167721000	TX	$3,361,004	Relatively High	Very High	1.29	$4,344,882	99.79
6	Census tract 48167720601	TX	$3,229,751	Very Low	Very High	0.75	$2,415,438	99.44
7	Census tract 48167721101	TX	$852,126	Relatively High	Very High	1.22	$1,038,548	98.42

Strong Wind

Rank	Community	State	Risk Index Rating	Risk Index Score	National Percentile
1	Census tract 48167720900	TX	Relatively Low	37.15	0 100
2	Census tract 48167721102	TX	Relatively Low	34.97	0 100
3	Census tract 48167720800	TX	Relatively Low	33.65	0 100
4	Census tract 48167721103	TX	Very Low	25.27	0 100
5	Census tract 48167720601	TX	Very Low	23.78	0 100
6	Census tract 48167721101	TX	Very Low	23.44	0 100
7	Census tract 48167721000	TX	Very Low	23.3	0 100

Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Risk Index Score
1	Census tract 48167720900	TX	$3,217	Very High	Very High	1.6	$5,148	37.15
2	Census tract 48167721102	TX	$3,116	Very High	Very High	1.44	$4,498	34.97
3	Census tract 48167720800	TX	$3,009	Relatively High	Very High	1.38	$4,139	33.65
4	Census tract 48167721103	TX	$1,761	Relatively High	Very High	1.22	$2,147	25.27
5	Census tract 48167720601	TX	$2,463	Very Low	Very High	0.75	$1,842	23.78
6	Census tract 48167721101	TX	$1,454	Relatively High	Very High	1.22	$1,772	23.44
7	Census tract 48167721000	TX	$1,349	Relatively High	Very High	1.29	$1,744	23.3

Tornado

Rank	Community	State	Risk Index Rating	Risk Index Score	National Percentile
1	Census tract 48167721102	TX	Relatively High	91.51	0 100
2	Census tract 48167720900	TX	Relatively High	90.32	0 100
3	Census tract 48167720800	TX	Relatively High	82.88	0 100
4	Census tract 48167721103	TX	Relatively Moderate	70.31	0 100
5	Census tract 48167721101	TX	Relatively Moderate	65.3	0 100
6	Census tract 48167720601	TX	Relatively Moderate	64.94	0 100
7	Census tract 48167721000	TX	Relatively Moderate	64.91	0 100

Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Risk Index Score
1	Census tract 48167721102	TX	$271,960	Very High	Very High	1.44	$392,605	91.51
2	Census tract 48167720900	TX	$230,438	Very High	Very High	1.6	$368,742	90.32
3	Census tract 48167720800	TX	$193,233	Relatively High	Very High	1.38	$265,809	82.88
4	Census tract 48167721103	TX	$132,060	Relatively High	Very High	1.22	$161,002	70.31
5	Census tract 48167721101	TX	$106,503	Relatively High	Very High	1.22	$129,803	65.3
6	Census tract 48167720601	TX	$170,487	Very Low	Very High	0.75	$127,502	64.94
7	Census tract 48167721000	TX	$98,512	Relatively High	Very High	1.29	$127,350	64.91

Tsunami

Rank	Community	State	Risk Index Rating	Risk Index Score	National Percentile
	Census tract 48167720601	TX	Insufficient Data		
	Census tract 48167720800	TX	Insufficient Data		
	Census tract 48167720900	TX	Insufficient Data		
	Census tract 48167721000	TX	Insufficient Data		
	Census tract 48167721101	TX	Insufficient Data		
	Census tract 48167721102	TX	Insufficient Data		
	Census tract 48167721103	TX	Insufficient Data		

Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Risk Index Score
	Census tract 48167720601	TX	N/A	Very Low	Very High	0.75	N/A	N/A
	Census tract 48167720800	TX	N/A	Relatively High	Very High	1.38	N/A	N/A
	Census tract 48167720900	TX	N/A	Very High	Very High	1.6	N/A	N/A
	Census tract 48167721000	TX	N/A	Relatively High	Very High	1.29	N/A	N/A
	Census tract 48167721101	TX	N/A	Relatively High	Very High	1.22	N/A	N/A
	Census tract 48167721102	TX	N/A	Very High	Very High	1.44	N/A	N/A
	Census tract 48167721103	TX	N/A	Relatively High	Very High	1.22	N/A	N/A

Volcanic Activity

Rank	Community	State	Risk Index Rating	Risk Index Score	National Percentile
	Census tract 48167720601	TX	Not Applicable		
	Census tract 48167720800	TX	Not Applicable		
	Census tract 48167720900	TX	Not Applicable		
	Census tract 48167721000	TX	Not Applicable		
	Census tract 48167721101	TX	Not Applicable		
	Census tract 48167721102	TX	Not Applicable		
	Census tract 48167721103	TX	Not Applicable		

Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Risk Index Score
	Census tract 48167720601	TX	N/A	Very Low	Very High	0.75	N/A	N/A
	Census tract 48167720800	TX	N/A	Relatively High	Very High	1.38	N/A	N/A
	Census tract 48167720900	TX	N/A	Very High	Very High	1.6	N/A	N/A
	Census tract 48167721000	TX	N/A	Relatively High	Very High	1.29	N/A	N/A
	Census tract 48167721101	TX	N/A	Relatively High	Very High	1.22	N/A	N/A
	Census tract 48167721102	TX	N/A	Very High	Very High	1.44	N/A	N/A
	Census tract 48167721103	TX	N/A	Relatively High	Very High	1.22	N/A	N/A

Wildfire

Rank	Community	State	Risk Index Rating	Risk Index Score	National Percentile
1	Census tract 48167721103	TX	Relatively Moderate	89.71	0 100
2	Census tract 48167721000	TX	Relatively Low	81.66	0 100
3	Census tract 48167721101	TX	Relatively Low	78.02	0 100
4	Census tract 48167720800	TX	Relatively Low	74.78	0 100
5	Census tract 48167721102	TX	Very Low	47.6	0 100
6	Census tract 48167720900	TX	Very Low	43.81	0 100
	Census tract 48167720601	TX	No Rating	0	0 100

Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Risk Index Score
1	Census tract 48167721103	TX	$28,826	Relatively High	Very High	1.22	$35,144	89.71
2	Census tract 48167721000	TX	$4,849	Relatively High	Very High	1.29	$6,269	81.66
3	Census tract 48167721101	TX	$2,599	Relatively High	Very High	1.22	$3,168	78.02
4	Census tract 48167720800	TX	$1,545	Relatively High	Very High	1.38	$2,126	74.78
5	Census tract 48167721102	TX	$198	Very High	Very High	1.44	$286	47.6
6	Census tract 48167720900	TX	$130	Very High	Very High	1.6	$209	43.81
	Census tract 48167720601	TX	$0	Very Low	Very High	0.75	$0	0

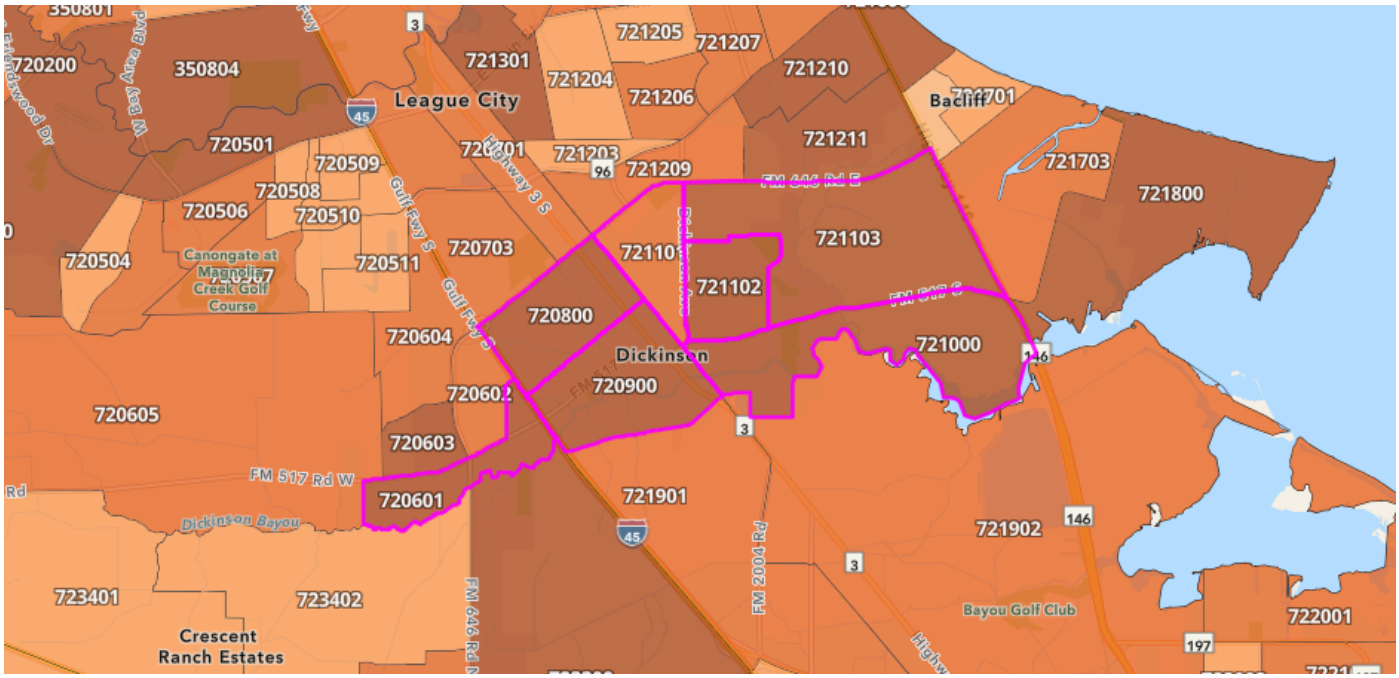
Winter Weather

Rank	Community	State	Risk Index Rating	Risk Index Score	National Percentile
1	Census tract 48167721102	TX	Relatively High	88.2	0 100
2	Census tract 48167720900	TX	Relatively High	87	0 100
3	Census tract 48167720800	TX	Relatively Moderate	82.16	0 100
4	Census tract 48167721103	TX	Relatively Moderate	73.87	0 100
5	Census tract 48167721101	TX	Relatively Moderate	69.71	0 100
6	Census tract 48167721000	TX	Relatively Moderate	69.24	0 100
7	Census tract 48167720601	TX	Relatively Moderate	66.45	0 100

Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Risk Index Score
1	Census tract 48167721102	TX	$8,551	Very High	Very High	1.44	$12,344	88.2
2	Census tract 48167720900	TX	$7,011	Very High	Very High	1.6	$11,219	87
3	Census tract 48167720800	TX	$5,757	Relatively High	Very High	1.38	$7,919	82.16
4	Census tract 48167721103	TX	$4,056	Relatively High	Very High	1.22	$4,945	73.87
5	Census tract 48167721101	TX	$3,255	Relatively High	Very High	1.22	$3,967	69.71
6	Census tract 48167721000	TX	$2,996	Relatively High	Very High	1.29	$3,873	69.24
7	Census tract 48167720601	TX	$4,511	Very Low	Very High	0.75	$3,374	66.45

Expected Annual Loss

Expected Annual Loss measures the expected loss each year due to natural hazards.



Expected Annual Loss Legend

Very High | Relatively High | Relatively Moderate | Relatively Low | Very Low

No Expected Annual Losses | Not Applicable | Insufficient Data

Rank	Community	State	EAL Value	Score
1	Census tract 48167720900	TX	$12,019,220	99.8
2	Census tract 48167720800	TX	$7,841,713	99.43
3	Census tract 48167721102	TX	$6,176,392	99.01
4	Census tract 48167721103	TX	$5,481,970	98.67
5	Census tract 48167720601	TX	$4,599,418	97.97
6	Census tract 48167721000	TX	$4,144,214	97.4
7	Census tract 48167721101	TX	$1,661,836	86.6

Expected Annual Loss for Hazard Types

Expected Annual Loss scores for hazard types are calculated using data for only a single hazard type, and reflect a community's relative expected annual loss for only that hazard type.

Avalanche

Rank	Community	State	EAL Value	Score
	Census tract 48167720601	TX	N/A	--
	Census tract 48167720800	TX	N/A	--
	Census tract 48167720900	TX	N/A	--
	Census tract 48167721000	TX	N/A	--
	Census tract 48167721101	TX	N/A	--
	Census tract 48167721102	TX	N/A	--
	Census tract 48167721103	TX	N/A	--

Coastal Flooding

Rank	Community	State	EAL Value	Score
1	Census tract 48167721000	TX	$5,804	87.7
2	Census tract 48167720900	TX	$5,008	87.1
3	Census tract 48167720800	TX	$2,003	83.8
4	Census tract 48167721102	TX	$1,622	83.0
5	Census tract 48167721103	TX	$1,398	82.5
6	Census tract 48167720601	TX	$980	81.2
7	Census tract 48167721101	TX	$388	78.1

Cold Wave

Rank	Community	State	EAL Value	Score
1	Census tract 48167721102	TX	$33,765	92.2
2	Census tract 48167720900	TX	$27,564	90.5
3	Census tract 48167720800	TX	$22,597	88.4
4	Census tract 48167721103	TX	$16,223	84.6
5	Census tract 48167721101	TX	$12,825	81.4

Rank	Community	State	EAL Value	Score
6	Census tract 48167721000	TX	$11,846	80.3
7	Census tract 48167720601	TX	$10,141	78.2

Drought

Rank	Community	State	EAL Value	Score
1	Census tract 48167721103	TX	$1,069	84.6
2	Census tract 48167721000	TX	$83	76.2
3	Census tract 48167720601	TX	$45	74.7
4	Census tract 48167721101	TX	$33	74.0
5	Census tract 48167720800	TX	$1	69.6
	Census tract 48167720900	TX	$0	0.0
	Census tract 48167721102	TX	$0	0.0

Earthquake

Rank	Community	State	EAL Value	Score
1	Census tract 48167720900	TX	$2,283	18.0
2	Census tract 48167721102	TX	$2,102	16.9
3	Census tract 48167720800	TX	$2,057	16.6
4	Census tract 48167720601	TX	$1,454	12.6
5	Census tract 48167721103	TX	$1,009	9.5
6	Census tract 48167721101	TX	$857	8.3
7	Census tract 48167721000	TX	$616	6.4

Hail

Rank	Community	State	EAL Value	Score
1	Census tract 48167721102	TX	$7,852	71.1
2	Census tract 48167720900	TX	$7,563	70.6
3	Census tract 48167720800	TX	$6,834	69.5
4	Census tract 48167720601	TX	$5,729	67.4
5	Census tract 48167721103	TX	$4,273	64.0

Rank	Community	State	EAL Value	Score
6	Census tract 48167721101	TX	$3,447	61.3
7	Census tract 48167721000	TX	$3,207	60.3

Heat Wave

Rank	Community	State	EAL Value	Score
1	Census tract 48167721102	TX	$50,223	85.7
2	Census tract 48167720900	TX	$40,899	82.2
3	Census tract 48167720800	TX	$33,445	78.3
4	Census tract 48167721103	TX	$23,684	71.6
5	Census tract 48167720601	TX	$20,030	68.4
6	Census tract 48167721101	TX	$19,010	67.3
7	Census tract 48167721000	TX	$17,479	65.7

Hurricane

Rank	Community	State	EAL Value	Score
1	Census tract 48167720900	TX	$1,444,382	92.8
2	Census tract 48167720800	TX	$1,436,789	92.8
3	Census tract 48167721102	TX	$1,209,954	91.2
4	Census tract 48167720601	TX	$1,128,354	90.5
5	Census tract 48167721103	TX	$770,316	87.1
6	Census tract 48167721101	TX	$643,467	85.5
7	Census tract 48167721000	TX	$621,217	85.2

Ice Storm

Rank	Community	State	EAL Value	Score
1	Census tract 48167721102	TX	$1,852	44.1
2	Census tract 48167720900	TX	$1,529	39.3
3	Census tract 48167720800	TX	$1,260	34.6
4	Census tract 48167720601	TX	$1,125	31.8
5	Census tract 48167721103	TX	$881	26.3

Rank	Community	State	EAL Value	Score
6	Census tract 48167721101	TX	$709	22.2
7	Census tract 48167721000	TX	$643	20.6

Landslide

Rank	Community	State	EAL Value	Score
	Census tract 48167720601	TX	$0	0.0
	Census tract 48167720800	TX	$0	0.0
	Census tract 48167720900	TX	$0	0.0
	Census tract 48167721000	TX	$0	0.0
	Census tract 48167721101	TX	$0	0.0
	Census tract 48167721102	TX	$0	0.0
	Census tract 48167721103	TX	$0	0.0

Lightning

Rank	Community	State	EAL Value	Score
1	Census tract 48167721102	TX	$39,339	96.9
2	Census tract 48167720900	TX	$34,065	95.5
3	Census tract 48167720800	TX	$27,613	92.7
4	Census tract 48167720601	TX	$24,347	90.6
5	Census tract 48167721103	TX	$18,758	85.1
6	Census tract 48167721101	TX	$15,162	79.8
7	Census tract 48167721000	TX	$14,609	78.8

Riverine Flooding

Rank	Community	State	EAL Value	Score
1	Census tract 48167720900	TX	$10,215,132	100.0
2	Census tract 48167720800	TX	$6,105,570	99.9
3	Census tract 48167721102	TX	$4,545,859	99.9
4	Census tract 48167721103	TX	$4,477,655	99.9
5	Census tract 48167721000	TX	$3,361,004	99.8

Rank	Community	State	EAL Value	Score
6	Census tract 48167720601	TX	$3,229,751	99.8
7	Census tract 48167721101	TX	$852,126	98.4

Strong Wind

Rank	Community	State	EAL Value	Score
1	Census tract 48167720900	TX	$3,217	32.2
2	Census tract 48167721102	TX	$3,116	31.8
3	Census tract 48167720800	TX	$3,009	31.3
4	Census tract 48167720601	TX	$2,463	28.9
5	Census tract 48167721103	TX	$1,761	25.3
6	Census tract 48167721101	TX	$1,454	23.7
7	Census tract 48167721000	TX	$1,349	23.1

Tornado

Rank	Community	State	EAL Value	Score
1	Census tract 48167721102	TX	$271,960	86.8
2	Census tract 48167720900	TX	$230,438	82.4
3	Census tract 48167720800	TX	$193,233	77.6
4	Census tract 48167720601	TX	$170,487	74.4
5	Census tract 48167721103	TX	$132,060	68.1
6	Census tract 48167721101	TX	$106,503	63.5
7	Census tract 48167721000	TX	$98,512	62.0

Tsunami

Rank	Community	State	EAL Value	Score
	Census tract 48167720601	TX	N/A	--
	Census tract 48167720800	TX	N/A	--
	Census tract 48167720900	TX	N/A	--
	Census tract 48167721000	TX	N/A	--
	Census tract 48167721101	TX	N/A	--

Rank	Community	State	EAL Value	Score
	Census tract 48167721102	TX	N/A	--
	Census tract 48167721103	TX	N/A	--

Volcanic Activity

Rank	Community	State	EAL Value	Score
	Census tract 48167720601	TX	N/A	--
	Census tract 48167720800	TX	N/A	--
	Census tract 48167720900	TX	N/A	--
	Census tract 48167721000	TX	N/A	--
	Census tract 48167721101	TX	N/A	--
	Census tract 48167721102	TX	N/A	--
	Census tract 48167721103	TX	N/A	--

Wildfire

Rank	Community	State	EAL Value	Score
1	Census tract 48167721103	TX	$28,826	89.3
2	Census tract 48167721000	TX	$4,849	80.8
3	Census tract 48167721101	TX	$2,599	77.0
4	Census tract 48167720800	TX	$1,545	71.6
5	Census tract 48167721102	TX	$198	44.3
6	Census tract 48167720900	TX	$130	39.8
	Census tract 48167720601	TX	$0	0.0

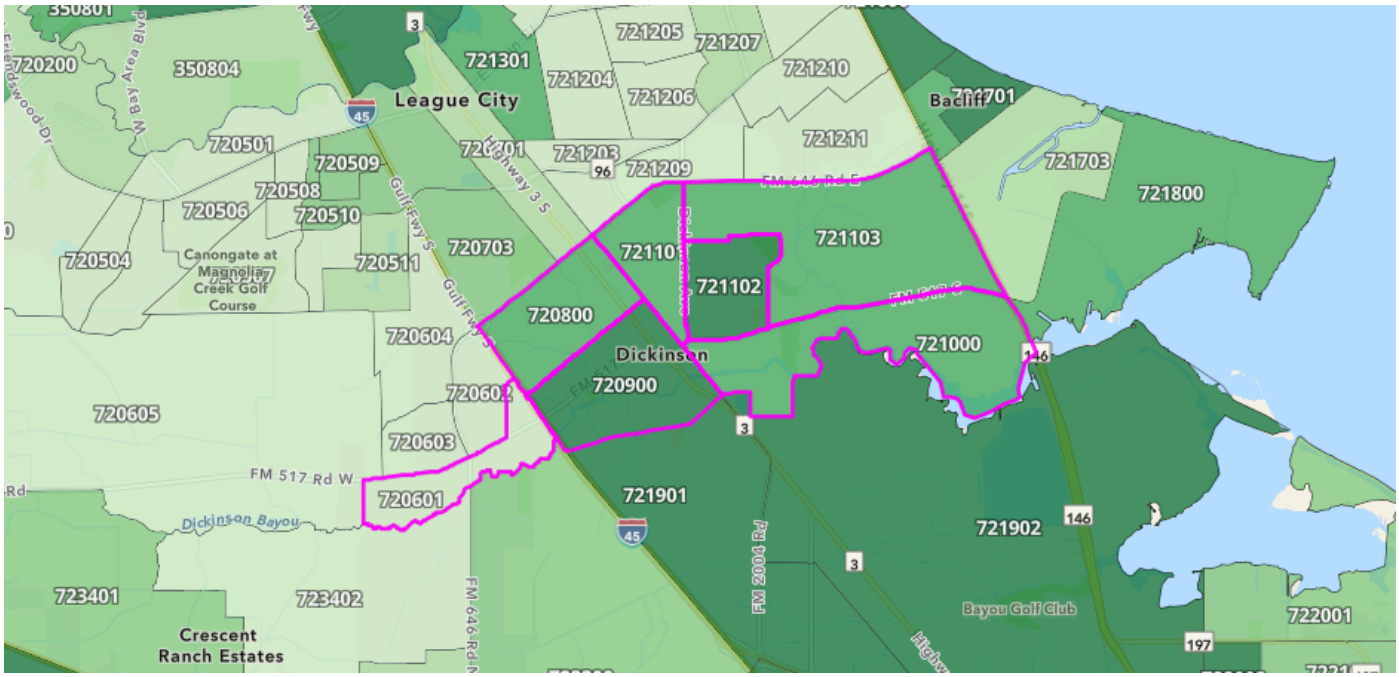
Winter Weather

Rank	Community	State	EAL Value	Score
1	Census tract 48167721102	TX	$8,551	85.2
2	Census tract 48167720900	TX	$7,011	82.1
3	Census tract 48167720800	TX	$5,757	78.8
4	Census tract 48167720601	TX	$4,511	74.1
5	Census tract 48167721103	TX	$4,056	72.1

Rank	Community	State	EAL Value	Score
6	Census tract 48167721101	TX	$3,255	67.9
7	Census tract 48167721000	TX	$2,996	66.2

Social Vulnerability

Social Vulnerability measures the susceptibility of social groups to the adverse impacts of natural hazards, including disproportionate death, injury, loss, or disruption of livelihood.



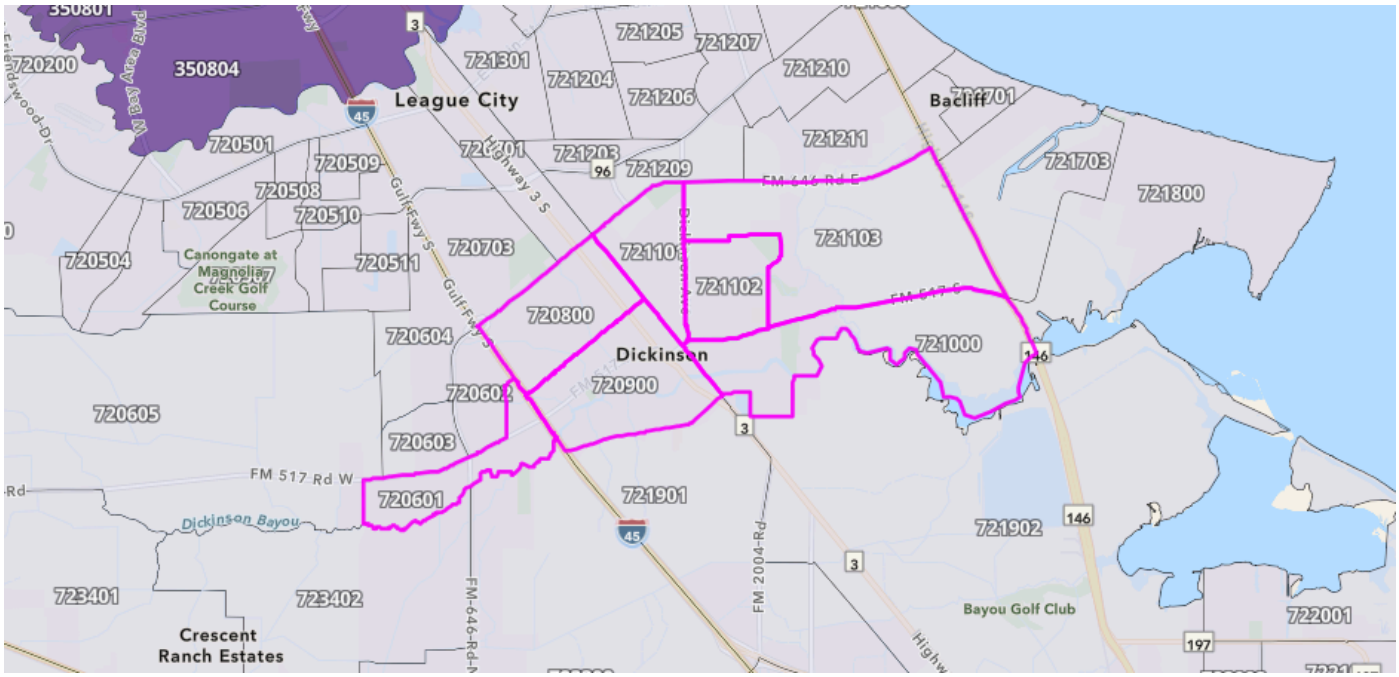
Social Vulnerability Legend

Very High | Relatively High | Relatively Moderate | Relatively Low | Very Low | Data Unavailable

Rank	Community	State	Rating	Score
1	Census tract 48167720900	TX	Very High	96.0
2	Census tract 48167721102	TX	Very High	84.6
3	Census tract 48167720800	TX	Relatively High	78.8
4	Census tract 48167721000	TX	Relatively High	70.8
5	Census tract 48167721103	TX	Relatively High	62.8
6	Census tract 48167721101	TX	Relatively High	62.8
7	Census tract 48167720601	TX	Very Low	8.5

Community Resilience

Community Resilience measures a County's ability to prepare for anticipated natural hazards, adapt to changing conditions, and withstand and recover rapidly from disruptions.



Community Resilience Legend

Very High | Relatively High | Relatively Moderate | Relatively Low | Very Low | Data Unavailable

Rank	Community	State	Rating	Score
1	Census tract 48167720601	TX	Very High	85.6
1	Census tract 48167720800	TX	Very High	85.6
1	Census tract 48167720900	TX	Very High	85.6
1	Census tract 48167721000	TX	Very High	85.6
1	Census tract 48167721101	TX	Very High	85.6
1	Census tract 48167721102	TX	Very High	85.6
1	Census tract 48167721103	TX	Very High	85.6

About the National Risk Index

The National Risk Index is a dataset and online tool to help illustrate the United States communities most at risk for 18 natural hazards: Avalanche, Coastal Flooding, Cold Wave, Drought, Earthquake, Hail, Heat Wave, Hurricane, Ice Storm, Landslide, Lightning, Riverine Flooding, Strong Wind, Tornado, Tsunami, Volcanic Activity, Wildfire, and Winter Weather.

The National Risk Index leverages available source data for Expected Annual Loss due to these 18 hazard types, Social Vulnerability, and Community Resilience to develop a baseline relative risk measurement for each United States county and Census tract. These measurements are calculated using average past conditions, but they cannot be used to predict future outcomes for a community. The National Risk Index is intended to fill gaps in available data and analyses to better inform federal, state, local, tribal, and territorial decision makers as they develop risk reduction strategies.

Explore the National Risk Index Map at **hazards.fema.gov/nri/map**.

Visit the National Risk Index website at hazards.fema.gov/nri/learn-more to access supporting documentation and links.

Calculating the Risk Index

Risk Index values are calculated using an equation* that combines values for Expected Annual Loss (EAL) due to natural hazards, with the Community Risk Factor (CRF), which is a function of Social Vulnerability and Community Resilience:

$$\text{Risk Index} = \text{Expected Annual Loss} \times \text{Community Risk Factor}$$

$$\text{where Community Risk Factor} = f\left(\frac{\text{Social Vulnerability}}{\text{Community Resilience}}\right)$$

*County-level risk values are derived by summing the risk values of all Census tracts within that county.

Risk is presented as a composite value and score for all 18 hazard types, as well as individual values and scores for each hazard type.

For more information, visit hazards.fema.gov/nri/determining-risk.

Calculating Expected Annual Loss

Expected Annual Loss values are calculated using an equation* that combines values for exposure, annualized frequency, and historic loss ratios for 18 hazard types:

$$\text{Expected Annual Loss} = \text{Exposure} \times \text{Annualized Frequency} \times \text{Historic Loss Ratio}$$

*Excluding Avalanche, Drought, Earthquake, and Tornado, EAL values for each hazard are calculated at the Census block level and summed together to determine Census tract and county-level hazard type EAL values.

Expected Annual Loss is presented as a composite value and score for all 18 hazard types, as well as individual values and scores for each hazard type.

For more information, visit **hazards.fema.gov/nri/expected-annual-loss**.

Calculating Social Vulnerability

Social Vulnerability is measured using the Social Vulnerability Index (SVI) published by the Centers for Disease Control and Prevention (CDC).

For more information, visit **hazards.fema.gov/nri/social-vulnerability**.

Calculating Community Resilience

Community Resilience is measured at the County level using the Baseline Resilience Indicators for Communities (HVRI BRIC) published by the University of South Carolina's Hazards and Vulnerability Research Institute (HVRI).

For more information, visit **hazards.fema.gov/nri/community-resilience**.

Values, Scores, and Ratings

The National Risk Index provides three different types of results for Risk and each component used to derive Risk: EAL, Social Vulnerability, and Community Resilience:

Values. Values for Risk and EAL are in units of dollars, representing the community's average economic loss from natural hazards each year. For Social Vulnerability and Community Resilience, values are the index values for the community provided by the source data sets.

Scores. Scores represent the national percentile ranking of the community's component value compared to all other communities at the same level (county or Census tract).

Ratings. Ratings refer to the qualitative terms that describe the relative risk of an area within the same geographic level. These rating categories range from "Very Low" to "Very High". Ratings for Social Vulnerability and Community Resilience are based on quintiles of those components' scores, while Risk and EAL ratings are based on more advanced statistical calculations on values . As a result, there is no fixed range of scores or values that correspond to the rating categories.

How to Take Action

There are many ways to reduce natural hazard risk through mitigation. Communities with high National Risk Index scores can take action to reduce risk by decreasing Expected Annual Loss due to natural hazards, decreasing Social Vulnerability, and increasing Community Resilience.

For information about how to take action and reduce your risk, visit **hazards.fema.gov/nri/take-action**.

Disclaimer

The National Risk Index (the Risk Index or the Index) and its associated data are meant for planning purposes only. This tool was created for broad nationwide comparisons and is not a substitute for localized risk assessment analysis. Nationwide datasets used as inputs for the National Risk Index are, in many cases, not as accurate as available local data. Users with access to local data for each National Risk Index risk factor should consider substituting the Risk Index data with local data to recalculate a more accurate risk index. If you decide to download the National Risk Index data and substitute it with local data, you assume responsibility for the accuracy of the data and any resulting data index. Please visit the **Contact Us** page if you would like to discuss this process further.

The methodology used by the National Risk Index has been reviewed by subject matter experts in the fields of natural hazard risk research, risk analysis, mitigation planning, and emergency management. The processing methods used to create the National Risk Index have produced results similar to those from other natural hazard risk analyses conducted on a smaller scale. The breadth and combination of geographic information systems (GIS) and data processing techniques leveraged by the National Risk Index enable it to incorporate multiple hazard types and risk factors, manage its nationwide scope, and capture what might have been missed using other methods.

The National Risk Index does not consider the intricate economic and physical interdependencies that exist across geographic regions. Keep in mind that hazard impacts in surrounding counties or Census tracts can cause indirect losses in your community regardless of your community's risk profile.

Nationwide data available for some risk factors are rudimentary at this time. The risk profiles for the vast majority of hazard types are based on historical frequency and loss data. They represent risk and expected annual loss based on average past conditions, not future predictions. The National Risk Index will be continuously updated as new data become available and improved methodologies are identified.

For comprehensive details about how the Risk Index can help you and its limitations, see the **National Risk Index Technical Documentation**

Assumption of Risk

In view of the identified limitations of the National Risk Index associated data, by using the data, you acknowledge and agree that FEMA makes no representations or warranties about the accuracy, completeness, or fitness for any particular purpose of the data; that the data is provided "as is" without warranty of any kind; that you assume full responsibility for any consequences that may arise, including financial losses, legal disputes, or other adverse outcomes; and that you release FEMA and the federal government from any liability that may arise to the extent allowable by law.

Attribution, No Endorsement

Please attribute your use of the National Risk Index and its associated data to the Federal Emergency Management Agency.

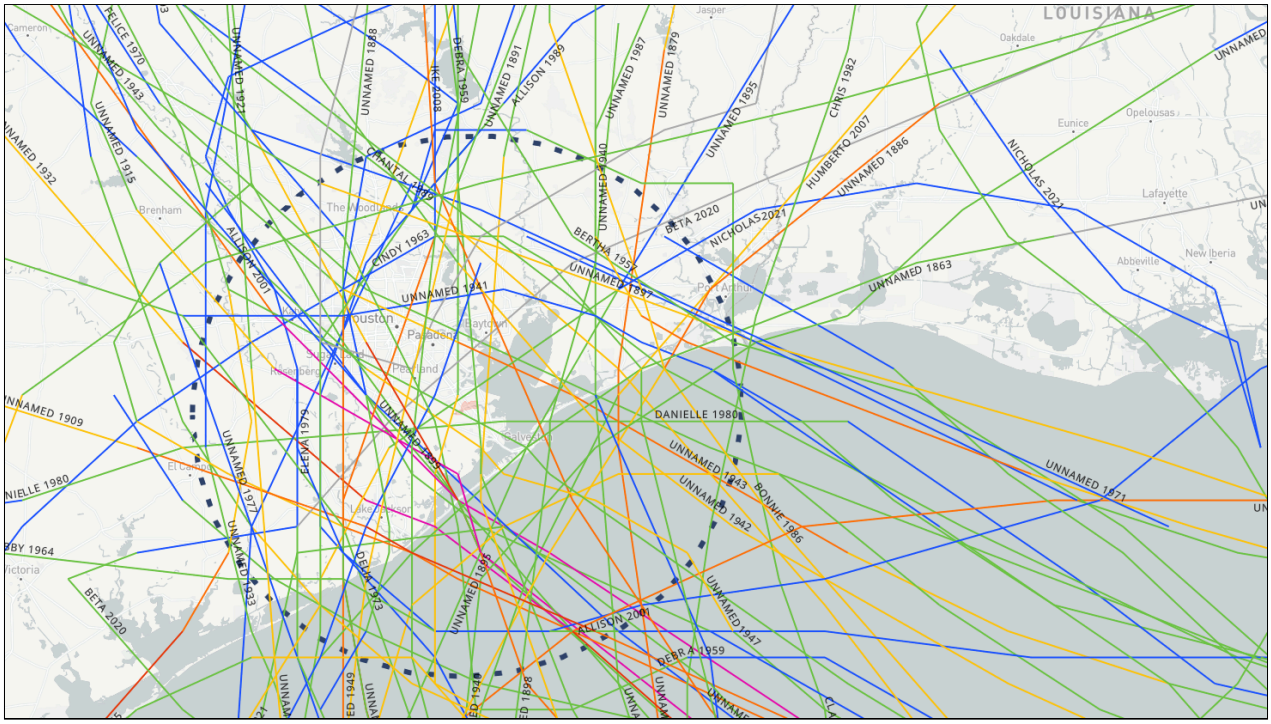
However, you acknowledge and agree that nothing herein constitutes and endorsement of you or your work by FEMA or the federal government, and you shall not imply through use of the National Risk Index or its associated data or through providing attribution, that FEMA or the federal government endorses you.

Preferred citation for the National Risk Index:

Zuzak, C., E. Goodenough, C. Stanton, M. Mowrer, A. Sheehan, B. Roberts, P. McGuire, and J. Rozelle. 2023. National Risk Index Technical Documentation. Federal Emergency Management Agency, Washington, DC.

The National Risk Index Contact Us page is available at **hazards.fema.gov/nri/contact-us**.

Hurricane List



Search Filter Criteria

Location: Dickinson, Galveston County, Texas, 77539, USA

Categories: H5, H4, H3, H2, H1, TS, TD, ET
Months: ALL
Years: ALL
El Niño-Southern Oscillation (ENSO): ALL
Minimum Pressure (mb) below: 1030

Buffer Distance: 60
Buffer Unit: Nautical Miles

STORM NAME	DATE RANGE	MAX WIND SPEED	MIN PRESSURE	MAX CATEGORY
NICHOLAS 2021	Sep 12, 2021 to Sep 17, 2021	65	988	H1
BETA 2020	Sep 17, 2020 to Sep 25, 2020	55	993	TS
IMELDA 2019	Sep 17, 2019 to Sep 19, 2019	40	1003	TS
IKE 2008	Sep 01, 2008 to Sep 15, 2008	125	935	H4
EDOUARD 2008	Aug 03, 2008 to Aug 06, 2008	55	996	TS
HUMBERTO 2007	Sep 12, 2007 to Sep 14, 2007	80	985	H1

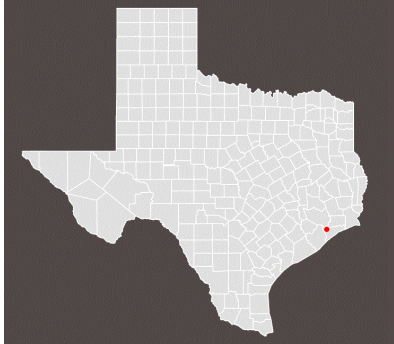
STORM NAME	DATE RANGE	MAX WIND SPEED	MIN PRESSURE	MAX CATEGORY
IVAN 2004	Sep 02, 2004 to Sep 24, 2004	145	910	H5
GRACE 2003	Aug 30, 2003 to Sep 02, 2003	35	1007	TS
ALLISON 2001	Jun 05, 2001 to Jun 19, 2001	50	1000	TS
DEAN 1995	Jul 28, 1995 to Aug 02, 1995	40	999	TS
JERRY 1989	Oct 12, 1989 to Oct 16, 1989	75	982	H1
CHANTAL 1989	Jul 30, 1989 to Aug 03, 1989	70	984	H1
ALLISON 1989	Jun 24, 1989 to Jul 01, 1989	45	999	TS
UNNAMED 1987	Aug 09, 1987 to Aug 17, 1987	40	1007	TS
BONNIE 1986	Jun 23, 1986 to Jun 28, 1986	75	990	H1
ALICIA 1983	Aug 15, 1983 to Aug 21, 1983	100	962	H3
CHRIS 1982	Sep 09, 1982 to Sep 12, 1982	55	994	TS
UNNAMED 1981	Jun 03, 1981 to Jun 05, 1981	30	-1	TD
DANIELLE 1980	Sep 04, 1980 to Sep 07, 1980	50	1004	TS
UNNAMED 1980	Jul 17, 1980 to Jul 21, 1980	30	-1	TD
ELENA 1979	Aug 30, 1979 to Sep 02, 1979	35	1004	TS
CLAUDETTE 1979	Jul 15, 1979 to Jul 29, 1979	45	997	TS
UNNAMED 1977	Jun 13, 1977 to Jun 14, 1977	25	-1	TD
UNNAMED 1974	Aug 24, 1974 to Aug 26, 1974	30	-1	TD
UNNAMED 1974	Jul 13, 1974 to Jul 17, 1974	30	-1	TD
UNNAMED 1973	Sep 06, 1973 to Sep 12, 1973	30	-1	TD
DELIA 1973	Sep 01, 1973 to Sep 07, 1973	60	986	TS
FERN 1971	Sep 03, 1971 to Sep 13, 1971	80	978	H1
UNNAMED 1971	Jul 07, 1971 to Jul 08, 1971	25	-1	TD
FELICE 1970	Sep 12, 1970 to Sep 19, 1970	60	990	TS
ABBY 1964	Aug 05, 1964 to Aug 08, 1964	60	1000	TS
CINDY 1963	Sep 16, 1963 to Sep 20, 1963	55	996	TS
DEBRA 1959	Jul 22, 1959 to Jul 27, 1959	75	980	H1
BERTHA 1957	Aug 08, 1957 to Aug 11, 1957	55	998	TS

STORM NAME	DATE RANGE	MAX WIND SPEED	MIN PRESSURE	MAX CATEGORY
UNNAMED 1949	Sep 27, 1949 to Oct 07, 1949	95	965	H2
UNNAMED 1947	Aug 18, 1947 to Aug 27, 1947	70	984	H1
UNNAMED 1946	Jun 13, 1946 to Jun 16, 1946	35	-1	TS
UNNAMED 1945	Aug 24, 1945 to Aug 29, 1945	100	963	H3
UNNAMED 1943	Jul 25, 1943 to Jul 30, 1943	90	967	H2
UNNAMED 1942	Aug 17, 1942 to Aug 23, 1942	70	-1	H1
UNNAMED 1941	Sep 17, 1941 to Sep 27, 1941	110	985	H3
UNNAMED 1941	Sep 11, 1941 to Sep 16, 1941	50	1001	TS
UNNAMED 1940	Sep 18, 1940 to Sep 25, 1940	45	1004	TS
UNNAMED 1940	Aug 03, 1940 to Aug 10, 1940	85	972	H2
UNNAMED 1938	Oct 10, 1938 to Oct 17, 1938	50	996	TS
UNNAMED 1934	Aug 26, 1934 to Sep 01, 1934	70	998	H1
UNNAMED 1933	Jul 14, 1933 to Jul 27, 1933	45	-1	TS
UNNAMED 1932	Aug 12, 1932 to Aug 15, 1932	130	935	H4
UNNAMED 1921	Jun 16, 1921 to Jun 26, 1921	80	980	H1
UNNAMED 1915	Aug 05, 1915 to Aug 23, 1915	125	940	H4
UNNAMED 1909	Jul 13, 1909 to Jul 22, 1909	100	959	H3
UNNAMED 1908	Jul 29, 1908 to Aug 03, 1908	50	-1	TS
UNNAMED 1900	Aug 27, 1900 to Sep 15, 1900	125	936	H4
UNNAMED 1899	Jun 26, 1899 to Jun 27, 1899	35	-1	TS
UNNAMED 1898	Sep 20, 1898 to Sep 28, 1898	50	-1	TS
UNNAMED 1897	Sep 10, 1897 to Sep 13, 1897	75	-1	H1
UNNAMED 1895	Oct 02, 1895 to Oct 07, 1895	35	-1	TS
UNNAMED 1891	Jul 03, 1891 to Jul 08, 1891	80	-1	H1
UNNAMED 1888	Jul 04, 1888 to Jul 06, 1888	50	-1	TS
UNNAMED 1888	Jun 16, 1888 to Jun 18, 1888	70	-1	H1
UNNAMED 1886	Jun 13, 1886 to Jun 15, 1886	85	-1	H2
UNNAMED 1880	Jun 21, 1880 to Jun 25, 1880	40	-1	TS

STORM NAME	DATE RANGE	MAX WIND SPEED	MIN PRESSURE	MAX CATEGORY
UNNAMED 1879	Aug 19, 1879 to Aug 24, 1879	90	964	H2
UNNAMED 1875	Sep 08, 1875 to Sep 18, 1875	100	978	H3
UNNAMED 1871	Jun 08, 1871 to Jun 10, 1871	50	-1	TS
UNNAMED 1871	Jun 01, 1871 to Jun 05, 1871	50	999	TS
UNNAMED 1867	Oct 02, 1867 to Oct 09, 1867	90	-1	H2
UNNAMED 1863	Sep 29, 1863 to Oct 01, 1863	60	-1	TS
UNNAMED 1854	Sep 18, 1854 to Sep 20, 1854	90	-1	H2

Texas Wildfire Risk Assessment Summary Report

DickinsonwithBuffer



Texas A&M Forest Service

Report was generated using www.texaswildfirerisk.com

Report version: 5.0

Report generated: 6/19/2025

Table of Contents

Hold Control and Click to navigate to the section of your interest.

Disclaimer
Introduction
Wildfire Hazard
- Wildfire Occurrence Statistics
- Burn Probability
- Wildfire Exposure Score
- Damage Potential

Risk to Homes and Communities
- Housing Unit Density
- Housing Unit Impact
- Housing Unit Risk
- Sources of Ember Load to Buildings
- Functional Wildland Urban Interface (WUI)

Flame Front Characteristics
- Characteristic Fire Intensity Scale
- 95th Percentile Fire Intensity Scale
- Characteristic Flame Length
- 95th Percentile Flame Length
- Characteristic Rate of Spread
- 95th Percentile Rate of Spread
- Probability of Crown Fire

Challenges to Fire Operations
- Probability of Exceeding Manual Control
- Probability of Exceeding Mechanical Control
- Probability of Extreme Fire Behavior
- Suppression Difficulty Index
- Wildfire Hazard Potential

Ember Characteristics
- Conditional Ember Production Index
- Conditional Ember Load Index

Landscape Characteristics
- Surface Fuels
- Percent Slope

References

Disclaimer

TEXAS A&M FOREST SERVICE MAKES NO WARRANTIES OR GUARANTEES, EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS, ACCURACY, OR CORRECTNESS OF THE DATA PORTRAYED IN THIS PRODUCT NOR ACCEPTS ANY LIABILITY, ARISING FROM ANY INCORRECT, INCOMPLETE OR MISLEADING INFORMATION CONTAINED THEREIN. ALL INFORMATION, DATA AND DATABASES ARE PROVIDED "AS IS" WITH NO WARRANTY, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO, FITNESS FOR A PARTICULAR PURPOSE.

The wildfire hazard maps in the Texas Wildfire Risk Assessment Portal include fuel disturbances through 2022. Events after January 2023 are not reflected in these maps. Users in affected areas should prioritize local knowledge of current fuel and hazard conditions.

The wildfire hazard information provided is intended solely for wildfire mitigation and prevention planning, communication, and collaboration purposes. It is not designed or validated for underwriting or insurance-related processes. Insurance entities should use their own methodologies and property-specific assessments to evaluate wildfire susceptibility. Texas A&M Forest Service and its application providers accept no liability for the use of this data in insurance practices. Users should also note that property boundaries included in any product do not represent an on-the-ground survey suitable for legal, engineering, or surveying purposes. They represent only the approximate relative locations.

By accessing this website and/or data contained within the databases, you hereby release the Texas A&M Forest Service, its employees, agents, contractors, and suppliers from any and all responsibility and liability associated with its use. In no event shall the Texas A&M Forest Service or its officers or employees be liable for any damages arising in any way out of the use of the website, or use of the information contained in the databases herein including, but not limited to the Texas Wildfire Risk Assessment products.

Introduction

TWRA Summary Report

Welcome to the Texas Wildfire Risk Assessment Summary Report for **DickinsonwithBuffer**. This report contains a set of selected products developed by the Texas Wildfire Risk Assessment project, which have been summarized explicitly for the DickinsonwithBuffer project area.

The **Texas Wildfire Risk Assessment** (TWRA) provides a consistent, comparable set of scientific results to be used as a foundation for wildfire mitigation planning in Texas. Results of the assessment can be used to help prioritize areas in the state where tactical analyses, community interaction and education, or mitigation treatments might be necessary to reduce risk from wildfires. The TWRA products included in this report are designed to provide the information needed to support the following key priorities:

- Identify areas that are most prone to wildfire
- Identify areas that may require additional tactical planning, specifically related to mitigation projects and Community Wildfire Protection Planning
- Provide the information necessary to justify resource, budget and funding requests
- Allow agencies to work together to better define priorities and improve emergency response, particularly across jurisdictional boundaries
- Increase communication with local residents and the public to address community priorities and needs
- Plan for response and suppression resource needs
- Plan and prioritize hazardous fuel treatment programs

To learn more about the TWRA project or to create a custom summary report, go to www.texaswildfirerisk.com.



Map Products and Descriptions

Each map product in this report is accompanied by a general description, table, chart, or map. Please see the table below for a list of data layers available in the Summary Report.

Layer	Description
Wildfire Occurrence Statistics	Information regarding number of fires, acres suppressed and cause of fire.
Burn Probability	Burn Probability is the likelihood of wildfire burning a specific location within one calendar year or wildfire season.
Wildfire Exposure Score	Wildfire Exposure Score combines wildfire likelihood (Burn Probability) and damage to homes (Damage Potential) for all areas regardless of whether a structure currently exists at that location.
Damage Potential	Damage Potential represents the possible damage from wildfire to a home or parcel considering both fire intensity and embers from nearby fuel.
Housing Unit Density	This layer displays housing unit density measured in housing units per square kilometer.
Housing Unit Impact	Housing Unit Impact represents the relative potential impact to housing units if a fire were to occur.
Housing Unit Risk	Housing Unit Risk represents the relative potential risk to housing units.
Sources of Ember Load to Buildings	This layer displays the potential for fuel to be a source of embers to buildings.
Functional Wildland Urban Interface	This dataset classifies the land near buildings into wildfire risk mitigation zones.
Characteristic Fire Intensity Scale	Quantifies the potential fire intensity by orders of magnitude as determined by fuel and a range of possible wind and weather conditions.
95th Percentile Fire Intensity Scale	95th Percentile (Average-Worst) Fire Intensity Scale quantifies fire intensity by orders of magnitude as determined by the worst five percent of wind and weather conditions.
Characteristic Flame Length	Flame length measures the height of flames as determined by fuel and a range of possible wind and weather conditions.
95th Percentile Flame Length	95th Percentile (Average-Worst) Flame Length measures the height of flames as determined by the worst five percent of wind and weather conditions.
Characteristic Rate of Spread	This layer represents the rate of spread (ROS) as determined by fuel and weather characteristics across a full range of possible wind and weather conditions.
95th Percentile Rate of Spread	95th Percentile (Average-Worst) Rate of Spread measures the rate of spread as determined by the worst five percent of wind and weather conditions.
Probability of Crown Fire	This layer shows the likelihood of experiencing at least mid-grade passive crown fire.

Layer	Description
Probability of Exceeding Manual Control	This layer shows the likelihood that flames at the head of the fire will exceed 4 feet, which is generally considered the limit for manual fire control.
Probability of Exceeding Mechanical Control	This layer shows the likelihood that flames at the head of the fire will exceed 8 feet, which is considered the limit for mechanical fire control in fire operations.
Probability of Extreme Fire Behavior	This layer shows the likelihood that flames at the head of the fire will exceed 11 feet, which is considered threshold for extreme fire behavior in fire operations.
Suppression Difficulty Index	Suppression Difficulty Index provides a rating of relative difficulty in performing wildfire control work considering factors like terrain, access, fuel, and fire behavior.
Wildfire Hazard Potential	Wildfire Hazard Potential maps challenges to wildfire control and includes information such as Burn Probability, small-fire ignition density, fire intensity measures, and fuel/vegetation type.
Conditional Ember Production Index	A relative index of the potential ember production if a fire were to occur.
Conditional Ember Load Index	A relative index of the potential for a location to receive embers from surrounding land if a fire were to occur.
Surface Fuels	Contains the parameters needed to compute surface fire behavior characteristics.
Percent Slope	Percent Slope measures the rate of change of elevation over a given horizontal distance, expressed as a percent.

Wildfire Hazard

The information in this section of the report describes the historical trends in wildfire, the annual likelihood of wildfire based on fire modeling, and two integrated hazard layers characterizing wildfire risk to homes - including a measure of ember load from nearby fuel.

Contents:

- Wildfire Occurrence Statistics
- Burn Probability
- Wildfire Exposure Score
- Damage Potential

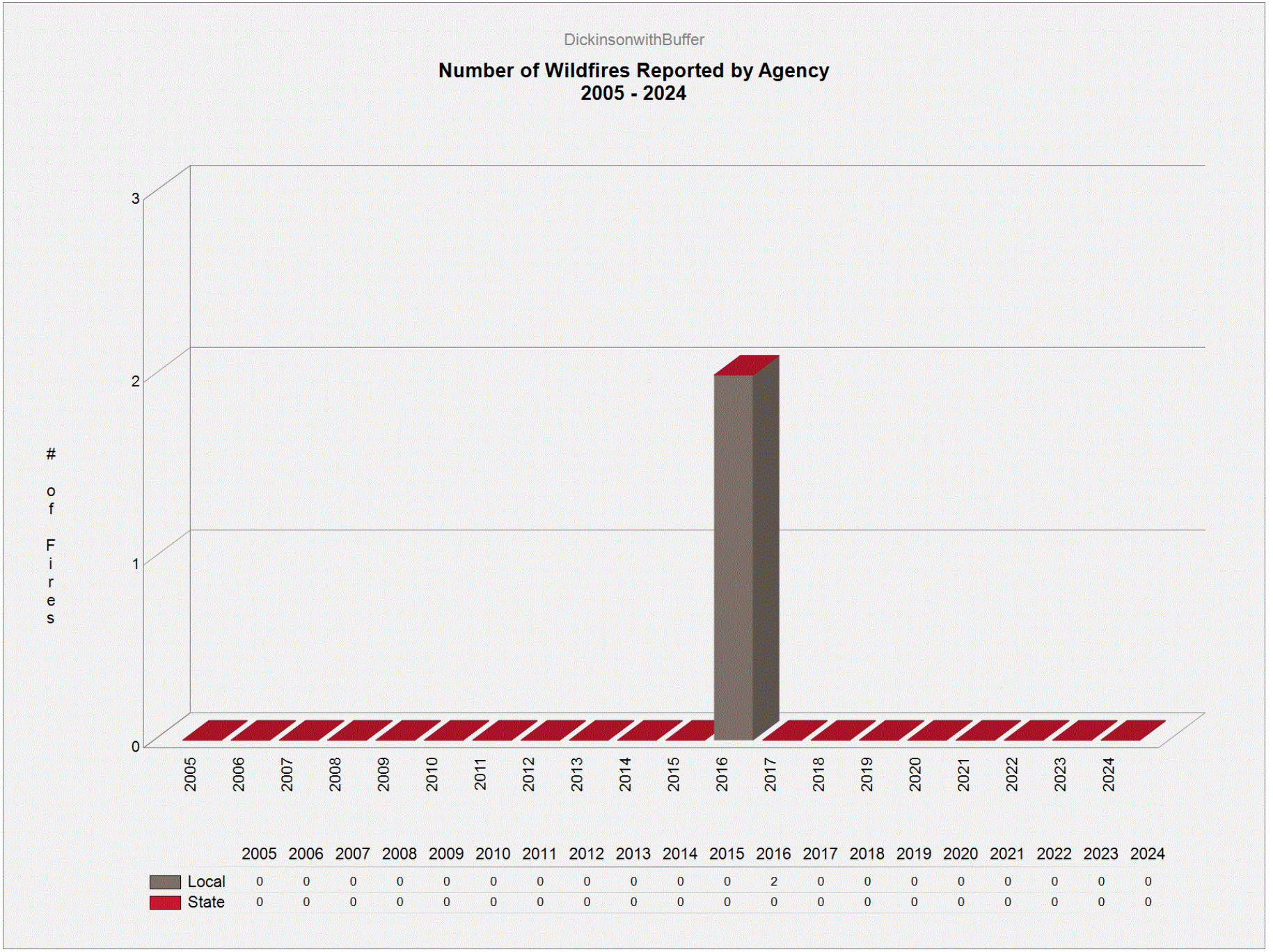
Wildfire Occurrence Statistics

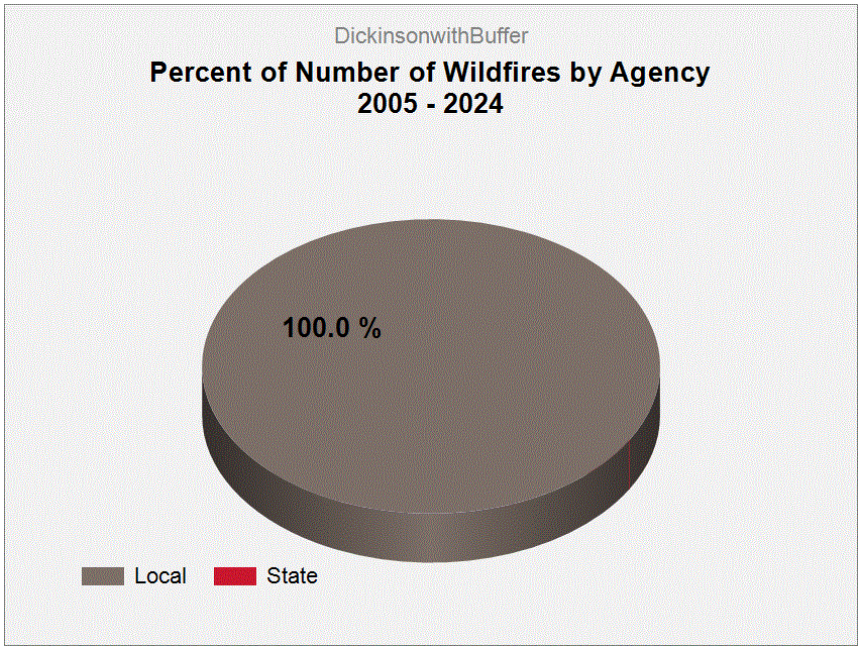
Description

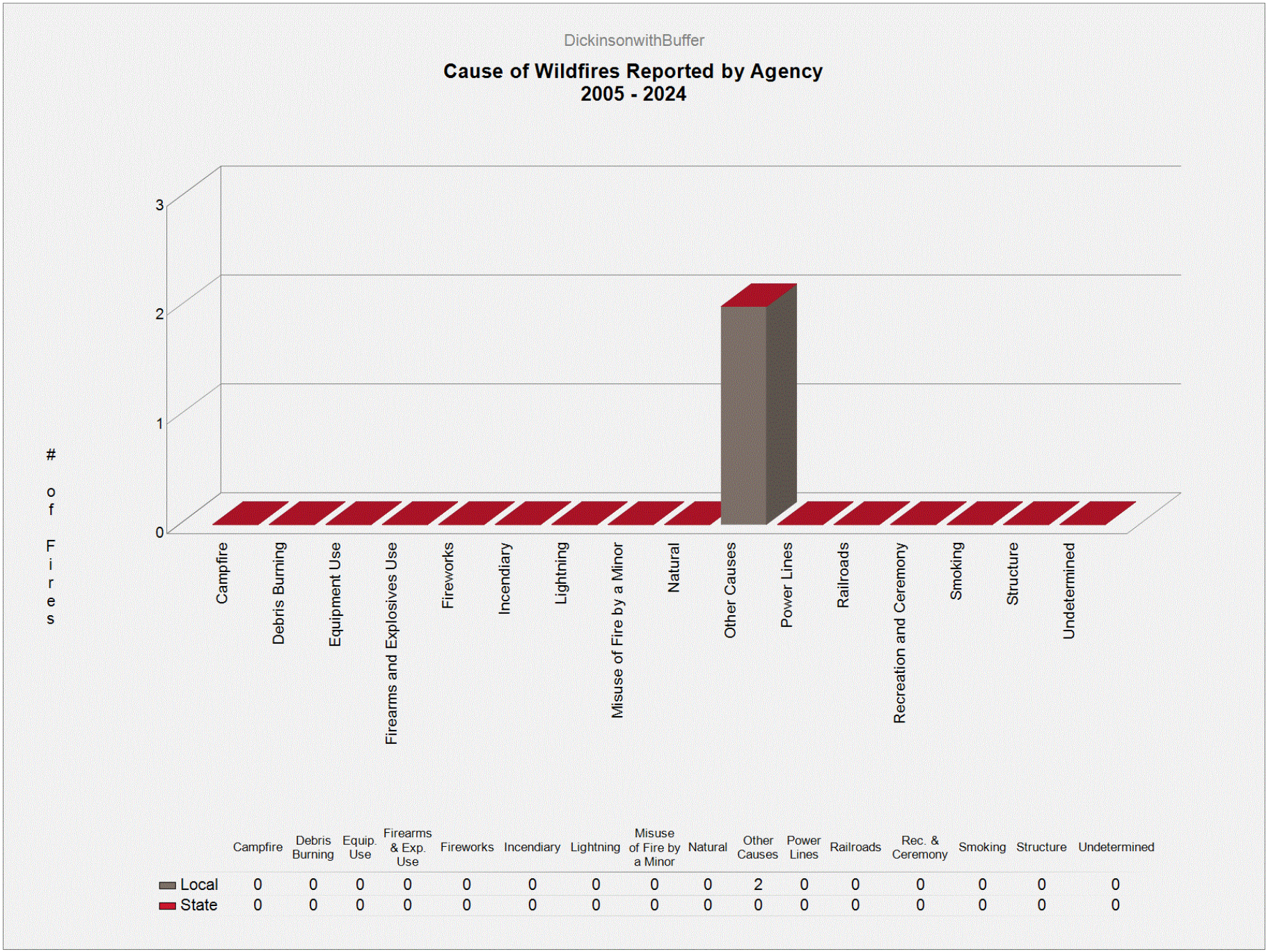
Wildfire occurrence statistics provide insight as to the number of fires, acres burned and cause of fires in Texas. These statistics are useful for prevention and mitigation planning. They can be used to quantify the level of fire business, determine the time of year most fires typically occur, and develop a fire prevention campaign aimed at reducing a specific fire cause. The fire occurrence statistics are grouped by primary response agency type, which include:

- **Texas Forest Service (TFS)** – The Texas Forest Service fire occurrence database represents all state-reported fires.
- **Local** – The local category includes fires reported via Texas Forest Service's online fire department reporting system. It is a voluntary reporting system that includes fires reported by both paid and volunteer fire departments since 2005.

Twenty years of historic fire report data was used to create the fire occurrence summary charts. Data was obtained from state and local fire department report data sources for the years 2005 to 2024. The compiled fire occurrence database was cleaned to remove duplicate records and to correct inaccurate locations.


DickinsonwithBuffer
Number of Wildfires Reported by Agency
2005 - 2024
# of Fires
3
2
1
0
2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024
Local 0 0 0 0 0 0 0 0 0 0 0 2 0 0 0 0 0 0 0 0
State 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

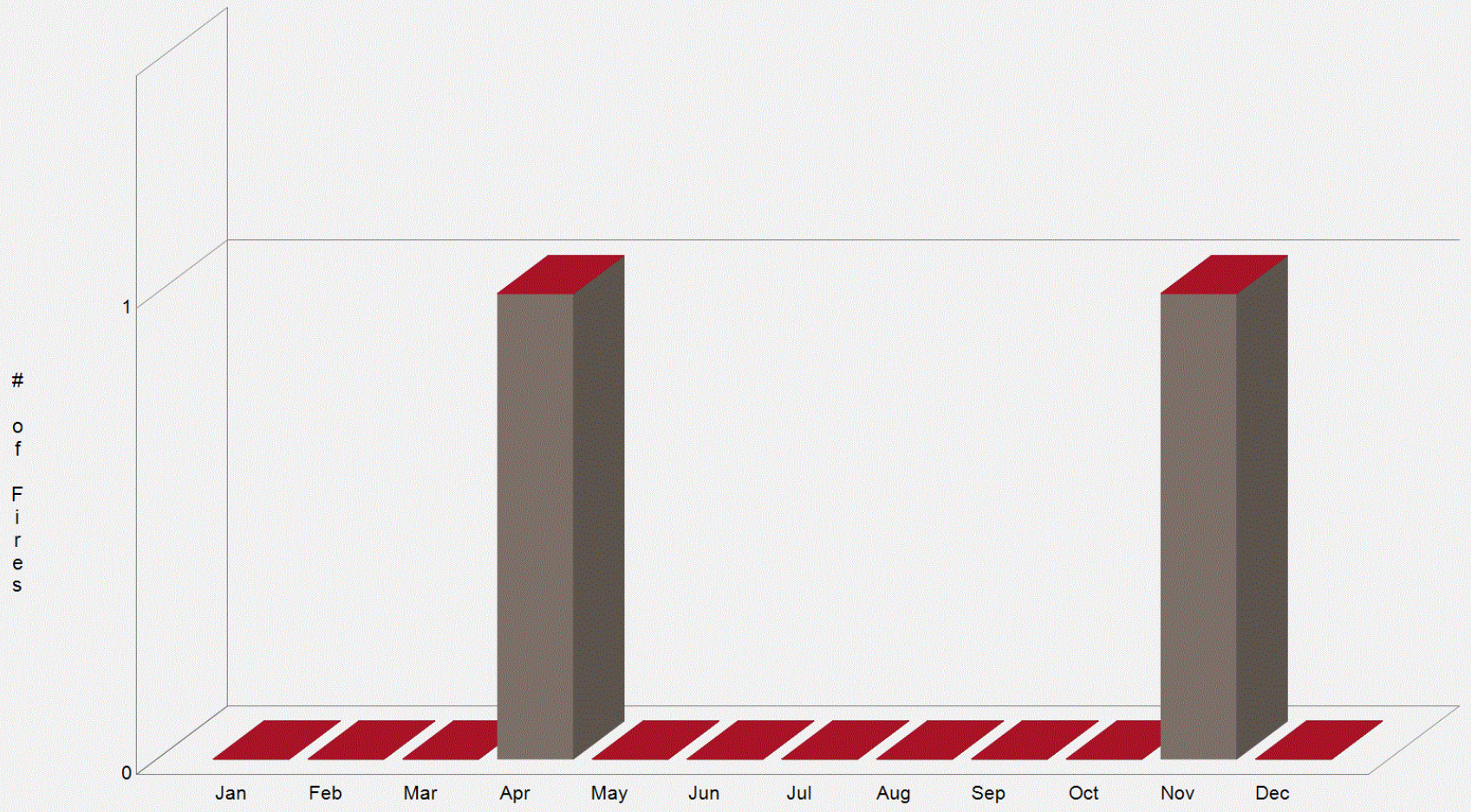

DickinsonwithBuffer
Percent of Number of Wildfires by Agency
2005 - 2024
100.0 %
Local
State



	Campfire	Debris Burning	Equip. Use	Firearms & Exp. Use	Fireworks	Incendiary	Lightning	Misuse of Fire by a Minor	Natural	Other Causes	Power Lines	Railroads	Rec. & Ceremony	Smoking	Structure	Undetermined
Local	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
State	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

DickinsonwithBuffer

Number of Wildfires Reported per Month by Agency
2005 - 2024



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Local	0	0	0	1	0	0	0	0	0	0	1	0
State	0	0	0	0	0	0	0	0	0	0	0	0

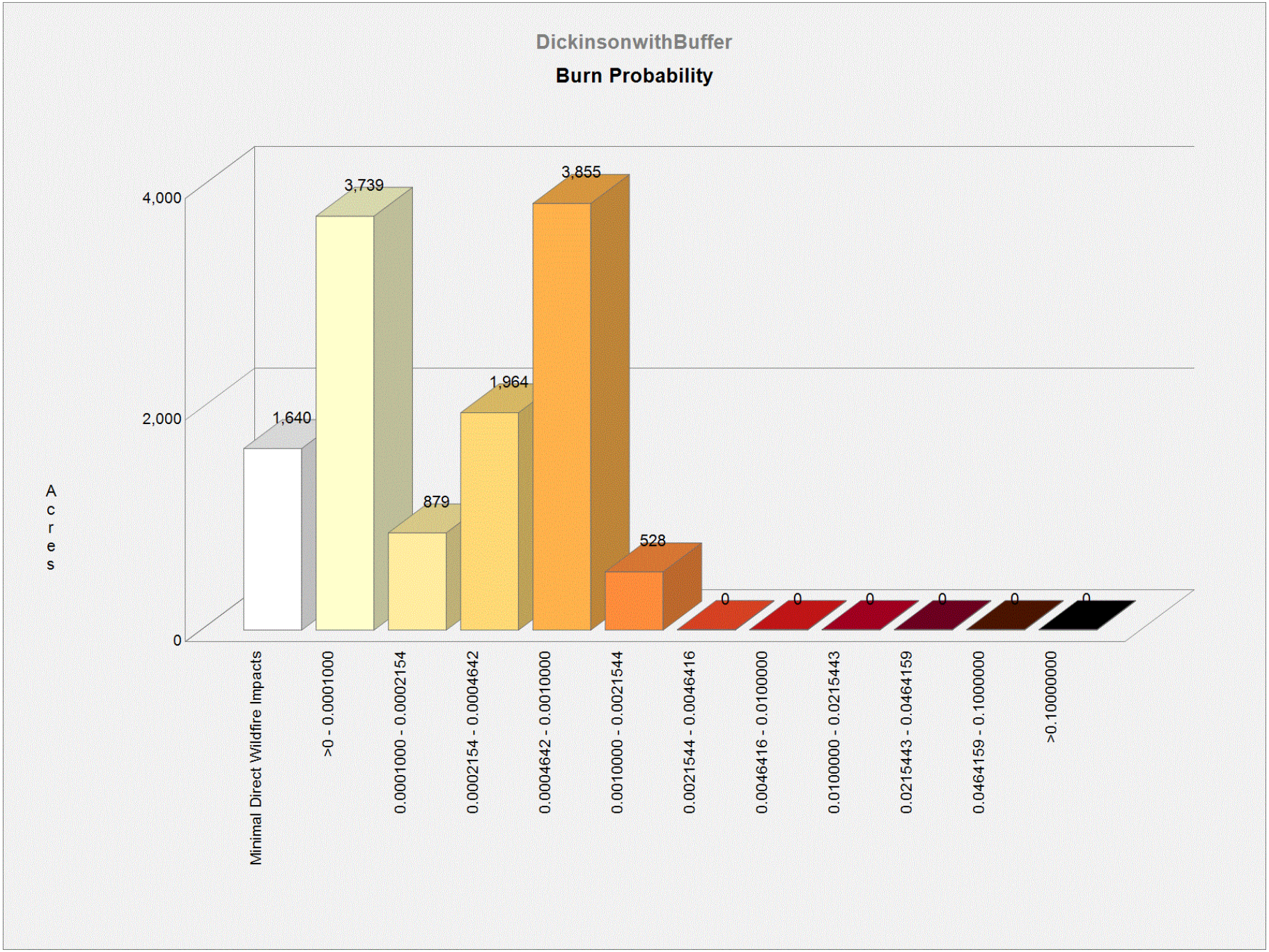
Burn Probability

Burn probability is the likelihood of wildfire burning a specific location within a set time frame - commonly represented as the chance of burning during one calendar year or wildfire season.

Burn Probability can be expressed as a fraction (ex. 0.005) or odds (1-in-200) and is based on fire behavior modeling across thousands of simulations of possible fire seasons. In each simulation, factors contributing to the probability of a fire occurring, including weather and ignition likelihood are varied based on patterns derived from observations in recent decades. It is not predictive and does not reflect any currently forecasted weather or fire danger conditions. Burn Probability does not say anything about the intensity of fire if it occurs.

Data Source: Texas Wildfire Risk Assessment, Pyrologix 2023 (includes fuel disturbances through 2022)

	Burn Probability Category	Acres	Percent
	Minimal Direct Wildfire Impacts	1,641	13 %
	>0 - 0.0001000	3,739	30 %
	0.0001000 - 0.0002154	879	7 %
	0.0002154 - 0.0004642	1,964	16 %
	0.0004642 - 0.0010000	3,855	31 %
	0.0010000 - 0.0021544	528	4 %
	0.0021544 - 0.0046416	0	0 %
	0.0046416 - 0.0100000	0	0 %
	0.0100000 - 0.0215443	0	0 %
	0.0215443 - 0.0464159	0	0 %
	0.0464159 - 0.1000000	0	0 %
	>0.10000000	0	0 %
	Total	**12,605**	**100 %**


DickinsonwithBuffer
Burn Probability
Acres
4,000
2,000
0
1,640
3,739
879
1,964
3,855
528
0
0
0
0
0
0
Minimal Direct Wildfire Impacts
>0 - 0.0001000
0.0001000 - 0.0002154
0.0002154 - 0.0004642
0.0004642 - 0.0010000
0.0010000 - 0.0021544
0.0021544 - 0.0046416
0.0046416 - 0.0100000
0.0100000 - 0.0215443
0.0215443 - 0.0464159
0.0464159 - 0.1000000
>0.10000000

Wildfire Exposure Score

Wildfire Exposure Score (also called “Structure Exposure Score”) combines two important wildfire factors related to structure exposure: the chance of wildfire (Burn Probability – defined as the likelihood of wildfire burning a specific location within a calendar year or wildfire season) and the potential damage to homes from wildfire (Damage Potential – defined as an estimate of damage that a wildfire could cause to homes considering both fire intensity and embers from nearby fuel).

Exposure scores are provided for all areas regardless of whether a structure currently exists at that location. Each Wildfire Exposure Score category accounts for a 1.5 times (or 50 percent) difference in exposure. For example, a structure located within Class 3/10 is 1.5 times more exposed than one in Class 2/10, and so on.

Data Source: Texas Wildfire Risk Assessment, Pyrologix 2023 (includes fuel disturbances through 2022)

	Wildfire Exposure Score Category	Acres	Percent
	1/10	1,641	13 %
	2/10	5,950	47 %
	3/10	2,080	17 %
	4/10	2,041	16 %
	5/10	819	6 %
	6/10	73	1 %
	7/10	0	0 %
	8/10	0	0 %
	9/10	0	0 %
	10/10	0	0 %
	Total	**12,605**	**100 %**

Damage Potential

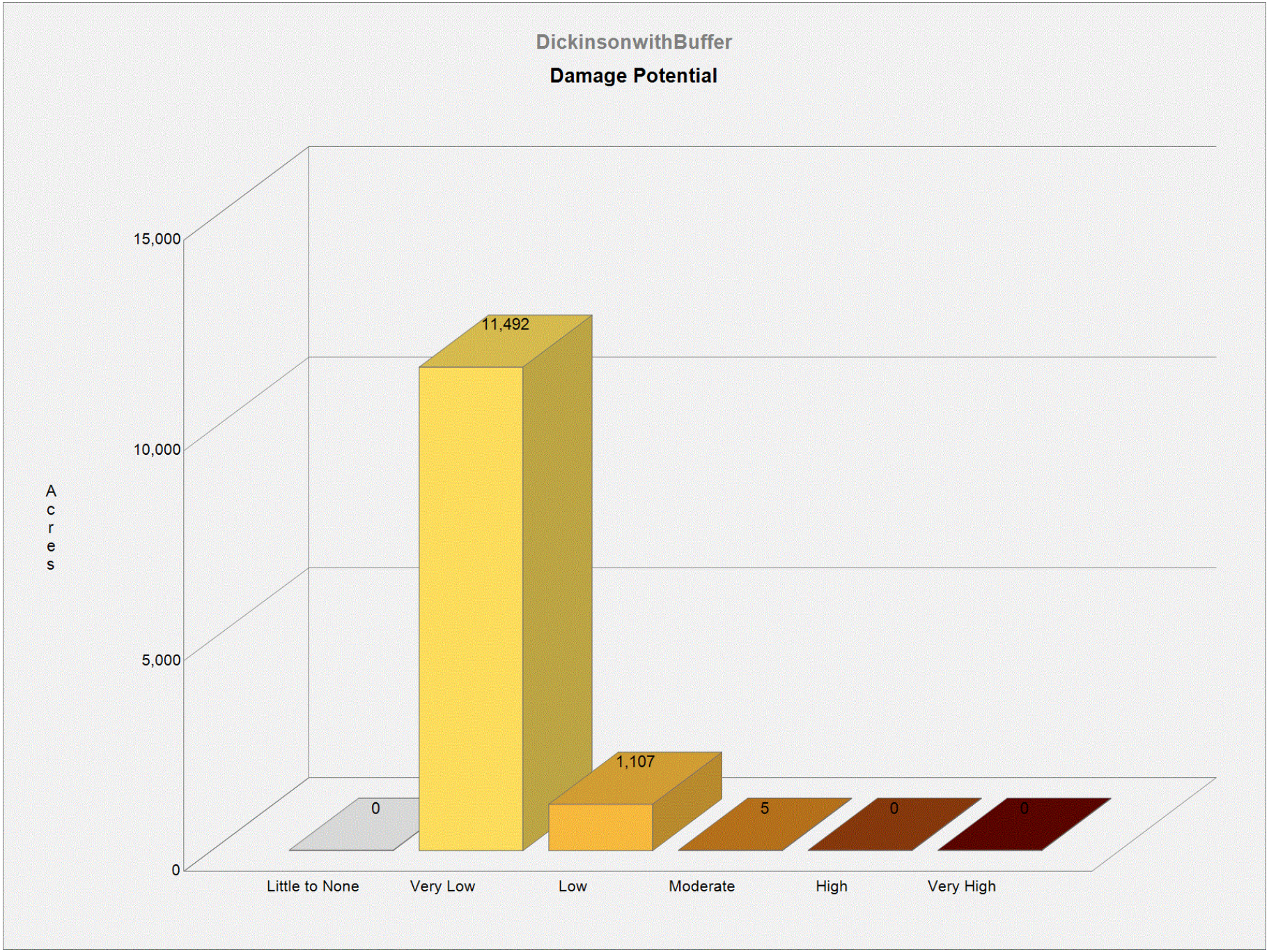
Damage Potential provides an index of potential damage to homes from wildfire. It considers factors like flame length and embers lofted from nearby fuel.

Damage Potential is a relative index (from low to high), that provides a broad measure of the possible damage from wildfire, based generally on the landscape, rather than specific characteristics of a home or parcel. For planning uses and broad applications, the index is calculated for all areas regardless of whether a structure currently exists at that location. This index does not incorporate a measure of wildfire likelihood.

Damage Potential is a fire-effects measure and includes flame-length estimates that reflect all spread directions (heading, backing, and flanking). Intensities from nonheading spread directions are considerably lower than those at the head of the fire.

Data Source: Texas Wildfire Risk Assessment, Pyrologix 2023 (includes fuel disturbances through 2022)

	Damage Potential Category	Acres	Percent
	Little to None	0	0 %
	Very Low	11,492	91 %
	Low	1,107	9 %
	Moderate	5	0 %
	High	0	0 %
	Very High	0	0 %
	Total	**12,605**	**100 %**


DickinsonwithBuffer
Damage Potential
Acres
15,000
10,000
5,000
0
11,492
1,107
0
5
0
0
Little to None
Very Low
Low
Moderate
High
Very High

Risk to Homes and Communities

The information in this section provides useful information for communities to help prepare for and prevent wildfires.

Contents:

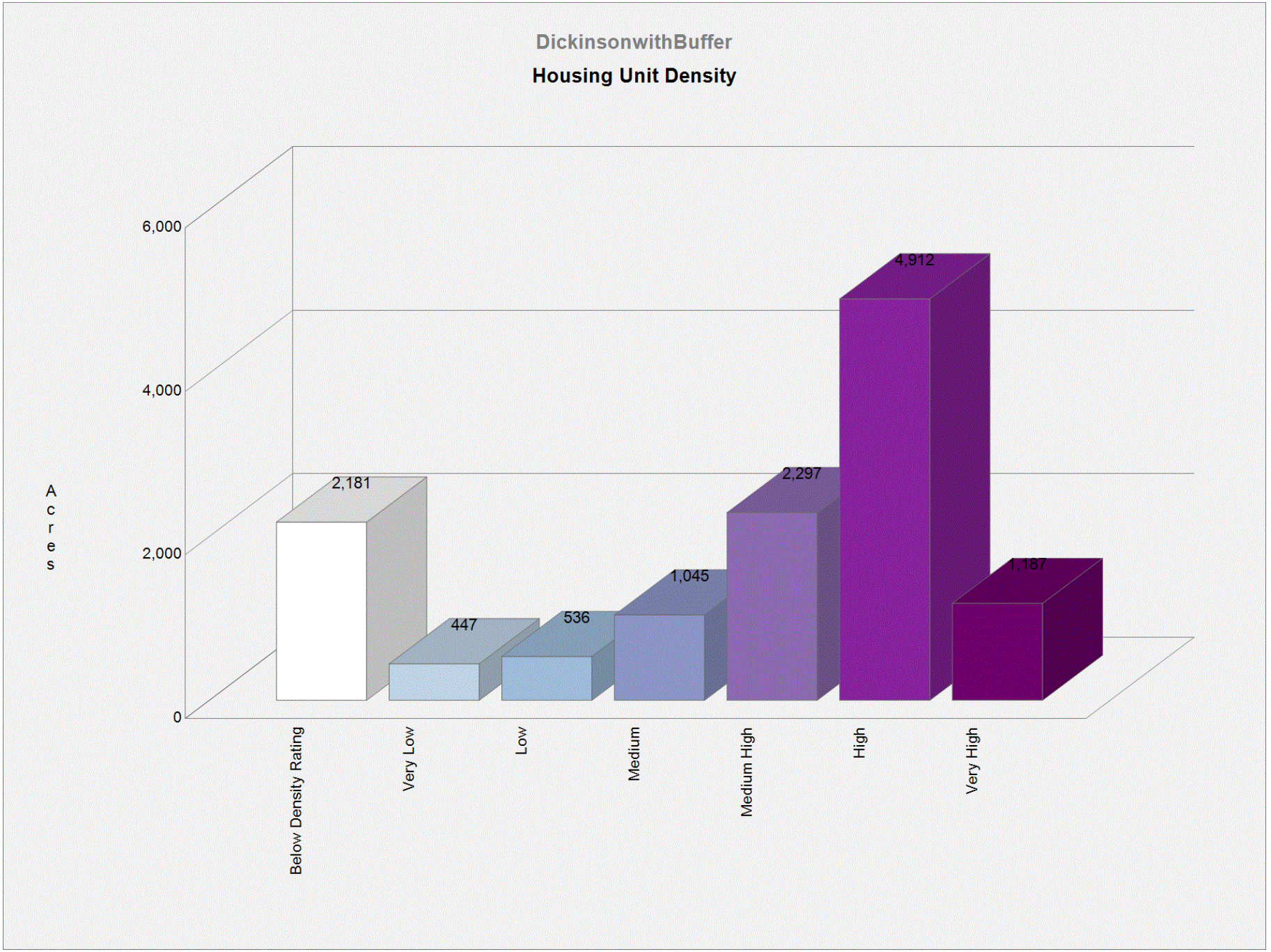
- Housing Unit Density
- Housing Unit Impact
- Housing Unit Risk
- Sources of Ember Load to Buildings
- Functional Wildland Urban Interface (WUI)

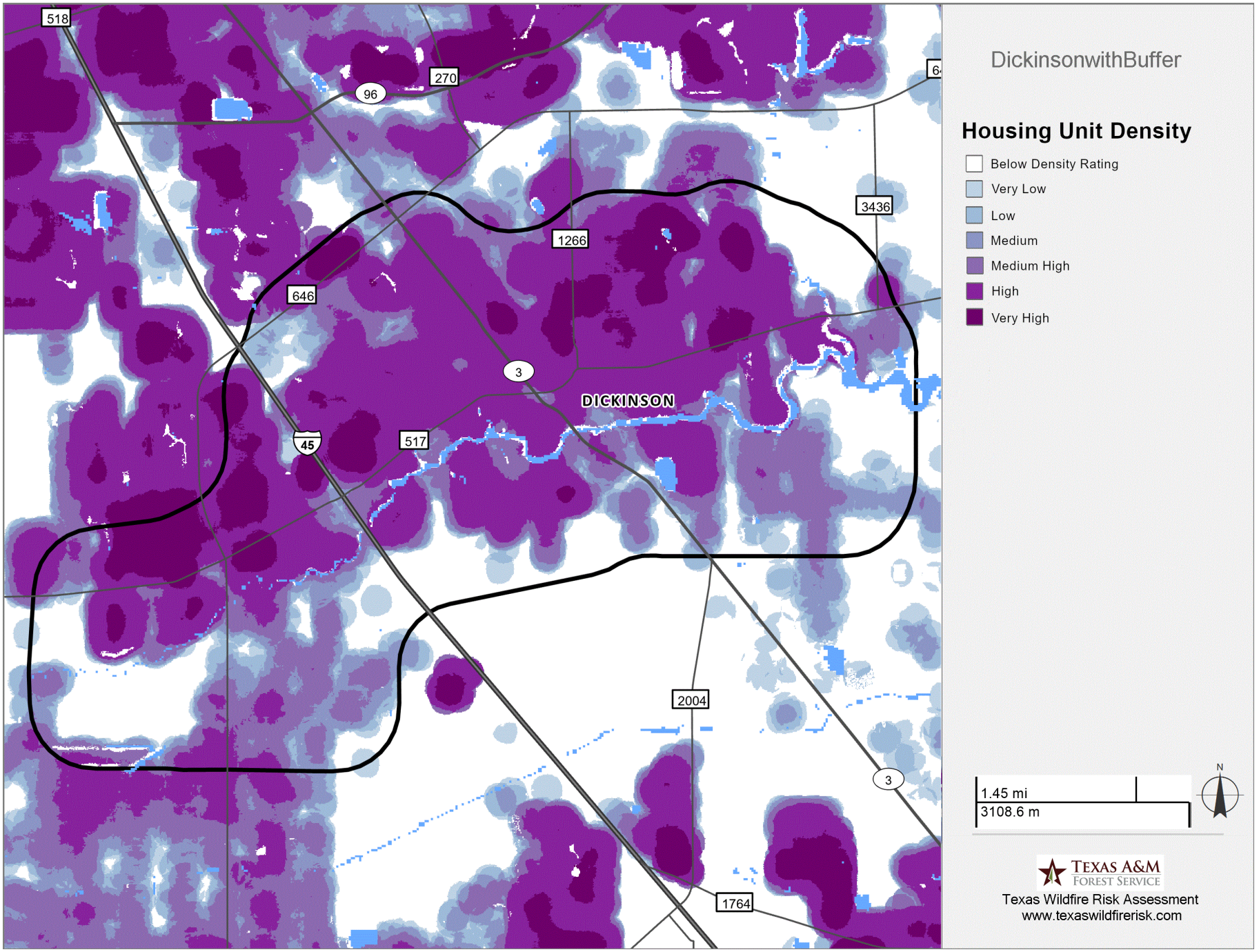
Housing Unit Density

This layer displays housing unit density measured in housing units per square kilometer and reflects 2020 estimates of housing unit counts from the U.S. Census Bureau, combined with building footprint data from Onegeo and USA Structures - both reflecting 2022 conditions. The same methodology was used here as was used to produce the Housing Unit Density layer created as part of the Wildfire Risk to Communities Project (Jaffe et al., 2024; WRC, 2024). However, housing unit counts and density (housing units/km2) were calculated at 10-m resolution for TWRA.

Data Source: Texas Wildfire Risk Assessment, Pyrologix 2023

	Housing Unit Density Category	Acres	Percent
	Below Density Rating	2,181	17 %
	Very Low	448	4 %
	Low	536	4 %
	Medium	1,045	8 %
	Medium High	2,297	18 %
	High	4,912	39 %
	Very High	1,187	9 %
	Total	**12,605**	**100 %**


DickinsonwithBuffer
Housing Unit Density
Acres
6,000
4,000
2,000
0
2,181
447
536
1,045
2,297
4,912
1,187
Below Density Rating
Very Low
Low
Medium
Medium High
High
Very High


DickinsonwithBuffer
Housing Unit Density
Below Density Rating
Very Low
Low
Medium
Medium High
High
Very High
518
270
96
3436
1266
646
3
DICKINSON
45
517
2004
3
1764
1.45 mi
3108.6 m
N
Texas A&M Forest Service
Texas Wildfire Risk Assessment
www.texaswildfirerisk.com

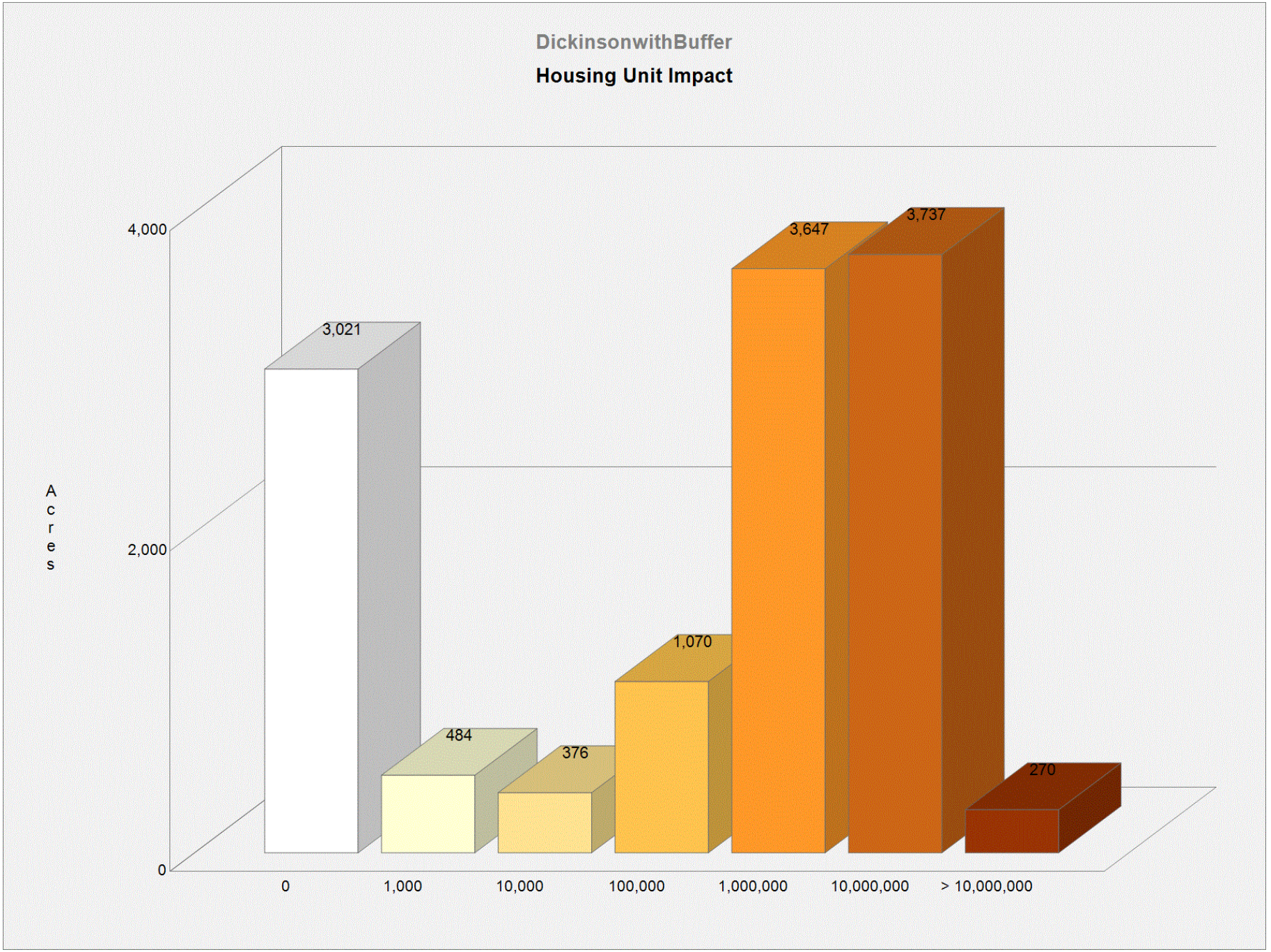
Housing Unit Impact

This dataset represents the relative potential impact to housing units if a fire were to occur. Housing Unit Impact (HUImpact) incorporates housing-unit counts with the general consequences of fire on a home as a function of fire intensity. HUImpact does not include fire likelihood and does not reflect individual structure mitigations that would influence susceptibility.

The same methodology was used here as was used to produce the Housing Unit Impact layer created as part of the Wildfire Risk to Communities Project (Jaffe et al., 2024; WRC, 2024). However, Housing Unit Impact was produced at 10-m resolution for TWRA. **Note: This legend was adjusted to account for the effect of 10-m resolution on the final values and to be comparable with the same data layer in the Southern Wildfire Risk Assessment. This adjustment is needed when comparing acres by legend class, however, original raster values should be used for any data analysis such as zonal summaries of Housing Unit Impact values.**

Data Source: Texas Wildfire Risk Assessment, Pyrologix 2023 (includes fuel disturbances through 2022)

	Housing Unit Impact Category	Acres	Percent
	0	3,021	24 %
	1,000	485	4 %
	10,000	376	3 %
	100,000	1,070	8 %
	1,000,000	3,647	29 %
	10,000,000	3,737	30 %
	> 10,000,000	270	2 %
	Total	**12,605**	**100 %**


DickinsonwithBuffer
Housing Unit Impact
Acres
4,000
2,000
0
3,021
484
376
1,070
3,647
3,737
270
0
1,000
10,000
100,000
1,000,000
10,000,000
> 10,000,000

Housing Unit Risk

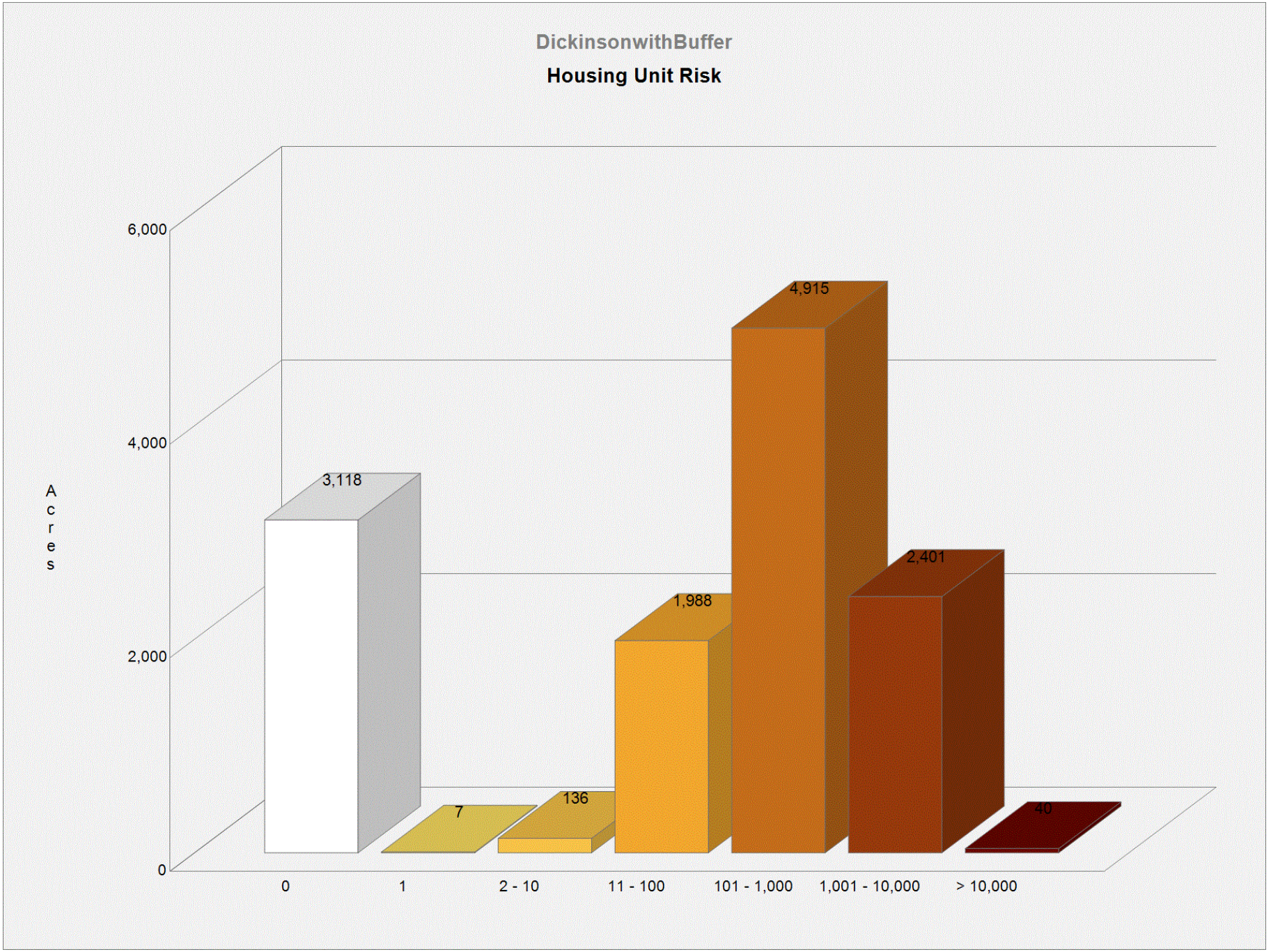
Housing Unit Risk (HURisk) represents the potential risk to housing units and incorporates both the general consequences of fire on a home as a function of fire intensity, and Burn Probability as a measure of wildfire likelihood. HURisk does not reflect individual structure mitigations that would influence susceptibility.

Housing Unit Risk integrates all four primary elements of wildfire risk - likelihood, intensity, susceptibility, and exposure - on pixels where housing unit density is greater than zero.

The same methodology was used here as was used to produce the Housing Unit Impact layer created as part of the Wildfire Risk to Communities Project (Jaffe et al., 2024; WRC, 2024). However, Housing Unit Impact was produced at 10-m resolution for TWRA. **Note: This legend was adjusted to account for the effect of 10-m resolution on the final values and to be comparable with the same data layer in the Southern Wildfire Risk Assessment. This adjustment is needed when comparing acres by legend class, however, original raster values should be used for any data analysis such as zonal summaries of Housing Unit Impact values.**

Data Source: Texas Wildfire Risk Assessment, Pyrologix 2023 (includes fuel disturbances through 2022)

	Housing Unit Risk Category	Acres	Percent
	0	3,118	25 %
	1	8	0 %
	2 - 10	136	1 %
	11 - 100	1,988	16 %
	101 - 1,000	4,915	39 %
	1,001 - 10,000	2,401	19 %
	> 10,000	40	0 %
	Total	**12,605**	**100 %**


DickinsonwithBuffer
Housing Unit Risk
Acres
6,000
4,000
2,000
0
3,118
7
136
1,988
4,915
2,401
40
0
1
2 - 10
11 - 100
101 - 1,000
1,001 - 10,000
> 10,000

Sources of Ember Load to Buildings

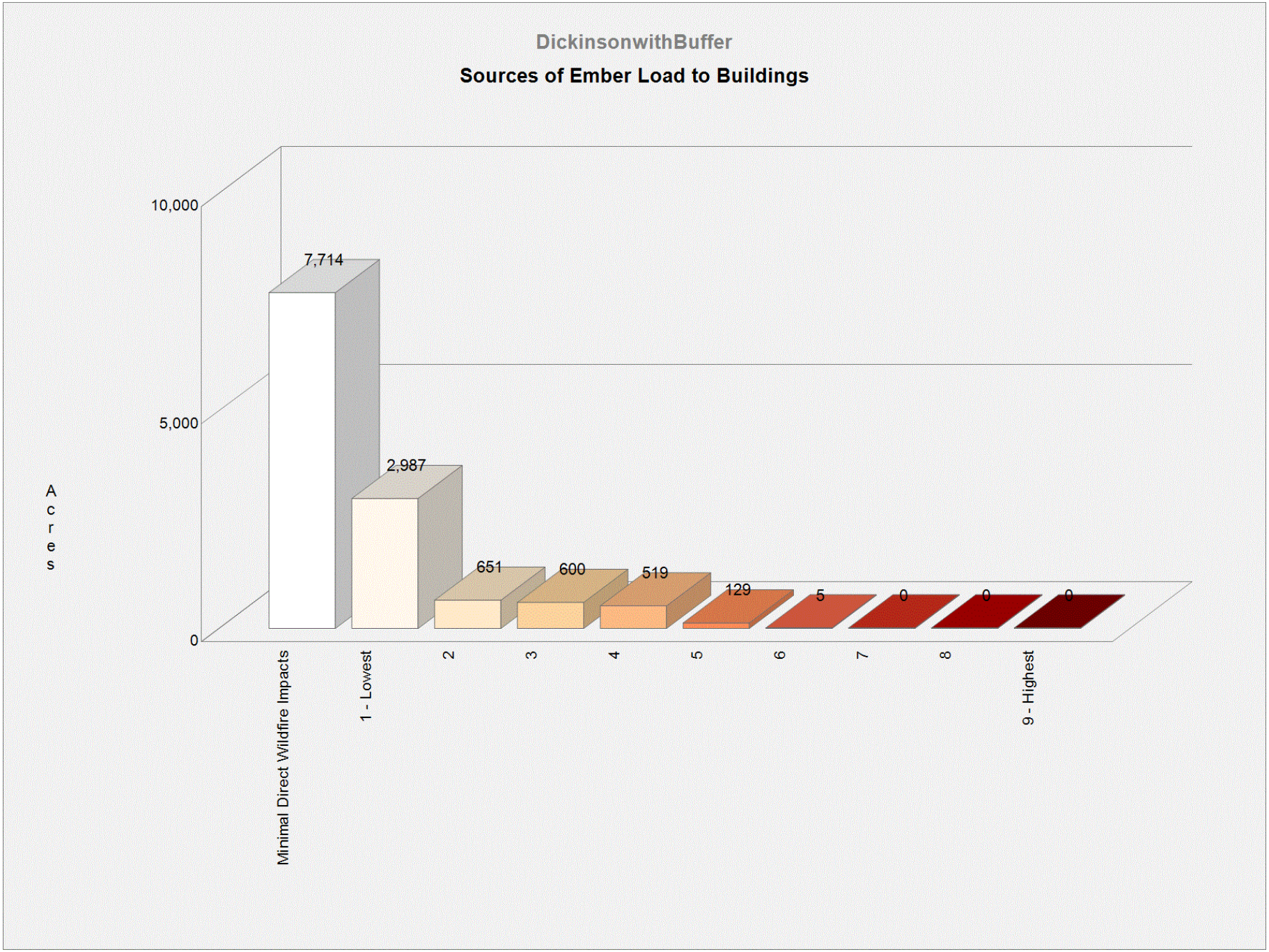
Sources of Ember Load to Buildings (SELB) is a relative index of the potential for fuel to produce embers that land where buildings are located, given that a fire occurs.

SELB identifies burnable land cover that produces embers capable of reaching nearby buildings. Units are an index of the relative number of embers rather than a count of embers produced. Ember production is a function of fire type and intensity; ember travel is a function of wind speed and direction. Ember modeling is based on fire modeling from WildEST, a process used to perform and combine multiple fire behavior simulations under a range of weather types (wind speed, wind direction, fuel moisture content). WildEST results reflect how often weather conditions occur and capture the influence of high-spread conditions. SELB is based on heading-only fire behavior and does not include the likelihood of wildfire.

The Sources of Ember Load to Buildings layer is useful for prioritizing mitigation actions to reduce the potential for ember damage to buildings.

Data Source: Texas Wildfire Risk Assessment, Pyrologix 2023 (includes fuel disturbances through 2022)

	Sources of Ember Load to Buildings Category	Acres	Percent
	Minimal Direct Wildfire Impacts	7,714	61 %
	1 - Lowest	2,988	24 %
	2	651	5 %
	3	600	5 %
	4	519	4 %
	5	129	1 %
	6	5	0 %
	7	0	0 %
	8	0	0 %
	9 - Highest	0	0 %
	Total	**12,605**	**100 %**


DickinsonwithBuffer
Sources of Ember Load to Buildings
Acres
10,000
5,000
0
7,714
2,987
651
600
519
129
5
0
0
0
Minimal Direct Wildfire Impacts
1 - Lowest
2
3
4
5
6
7
8
9 - Highest

Functional Wildland Urban Interface (WUI)

Functional WUI represents a classification of the land near buildings* into zones that describe the wildfire risk mitigation activities appropriate for each zone.

Direct Exposure—The Direct Exposure zone is burnable land cover within 75 m of a structure. Reducing fire intensity and ember production in this zone would reduce the exposure of nearby buildings to heat and embers. Buildings in this zone also require hardening of the structure to resist ignition.

Indirect Exposure—The Indirect Exposure zone is nonburnable land cover within 1500 m of burnable land cover that is within 75 m of a structure, meaning that embers and home-to-home spread could reach within this zone. Indirectly exposed structures would benefit from the hardening of the structure to resist ignition from embers and nearby structures, but defensible space is usually not required due to the heavily developed nature of the zone.

Critical Fireshed—The Critical Fireshed is the unpopulated land within about 2.4 km of a group of structures. Fires that originate within or spread to the Critical Fireshed have an immediate threat of reaching the nearby structures; fuel treatments that slow fire spread in this zone can reduce risk to these structures.

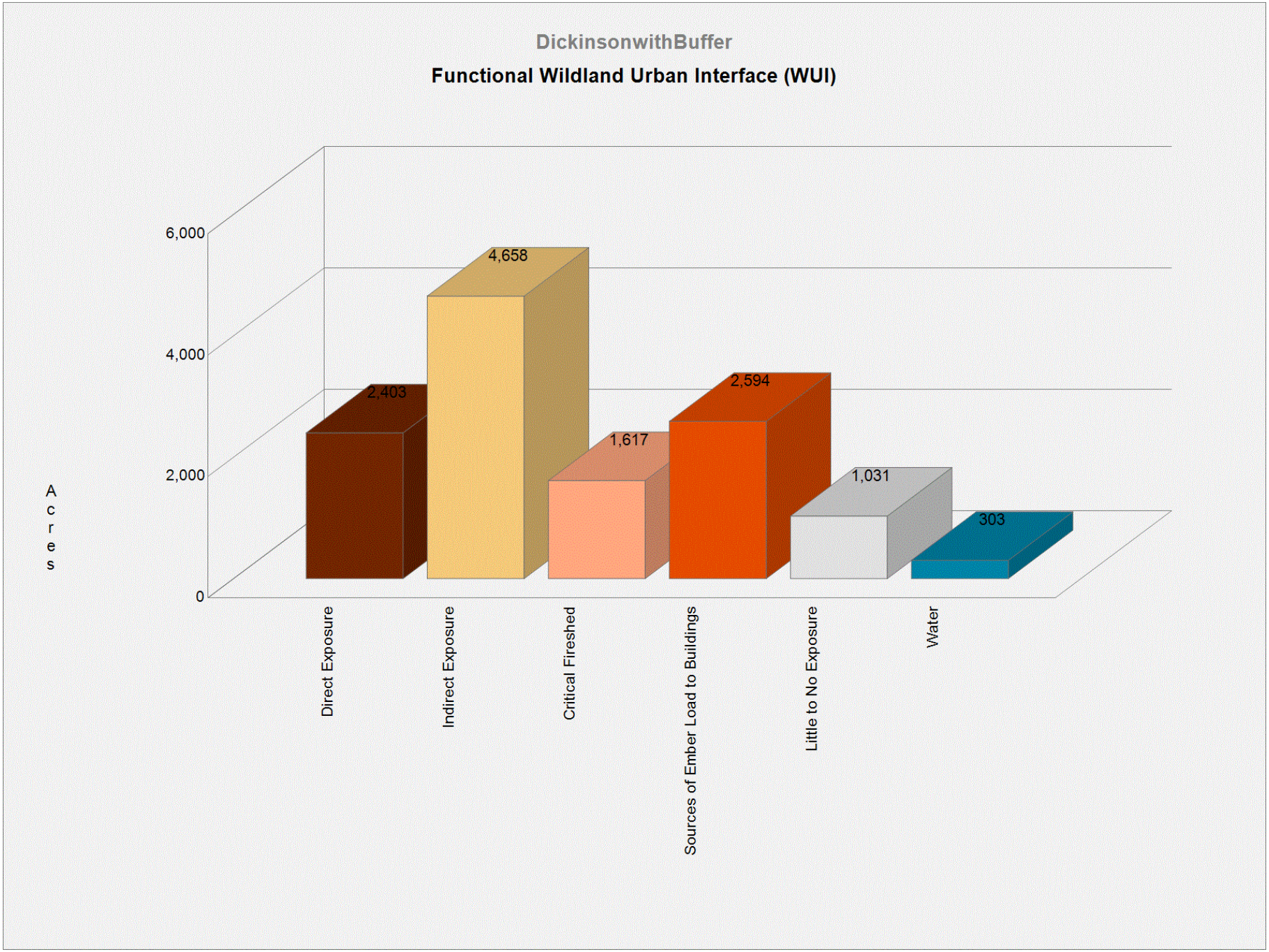
Sources of Ember Load to Buildings—These are areas of burnable land cover that produces embers capable of reaching nearby buildings. Ember production is a function of fire type and intensity, and ember travel is a function of wind speed and direction. Fuel treatment in this zone is a priority for reducing ember load to the nearby buildings.

Little-to-no Exposure—The Little-to-no Exposure zone is nonburnable land that is within 75 m of a structure but greater than 1500 m from a large (500 ha) contiguous block of burnable land cover. Flames—even from home-to-home spread—and embers are unlikely to reach the Little-to-no-Exposure zone, but smoke and evacuations could still impact this area.

*Buildings used in producing Functional WUI are defined as greater than 40 sq meters.

Data Source: Texas Wildfire Risk Assessment, Pyrologix 2023 (includes fuel disturbances through 2022)

	Functional Wildland Urban Interface (WUI) Category	Acres	Percent
	Direct Exposure	2,403	19 %
	Indirect Exposure	4,658	37 %
	Critical Fireshed	1,617	13 %
	Sources of Ember Load to Buildings	2,594	21 %
	Little to No Exposure	1,031	8 %
	Water	303	2 %
	Total	**12,605**	**100 %**


DickinsonwithBuffer
Functional Wildland Urban Interface (WUI)
6,000
4,000
2,000
0
Acres
2,403
4,658
1,617
2,594
1,031
303
Direct Exposure
Indirect Exposure
Critical Fireshed
Sources of Ember Load to Buildings
Little to No Exposure
Water

Flame Front Characteristics

The information in this section of the report describes fire behavior characteristics at the flaming front of the fire.

Contents:

- Characteristic Fire Intensity Scale
- 95th Percentile Fire Intensity Scale
- Characteristic Flame Length
- 95th Percentile Flame Length
- Characteristic Rate of Spread
- 95th Percentile Rate of Spread
- Probability of Crown Fire

Fire Behavior Overview

Description

Fire behavior is the manner in which a fire reacts to the following environmental influences:

1. **Fuels**
2. **Weather**
3. **Topography**



Fire behavior characteristics are attributes of wildland fire that pertain to its spread, intensity, and growth. Fire behavior characteristics utilized in the Texas Wildfire Risk Assessment (TWRA) include fire type, rate of spread, flame length and fire intensity scale. These metrics are used to determine the potential fire behavior under different weather scenarios. Areas that exhibit moderate to high fire behavior potential can be identified for mitigation treatments, especially if these areas are in close proximity to homes, business, or other assets.

Fuels

The SWRA includes composition and characteristics for both surface fuels and canopy fuels. Significant increases in fire behavior will be captured if the fire has the potential to transition from a surface fire to a canopy fire.

Fuel datasets required to compute both surface and canopy fire potential include:

- **Surface Fuels**, generally referred to as fire behavior fuel models, provide the input parameters needed to compute surface fire behavior.
- **Canopy Cover** is the horizontal percentage of the ground surface that is covered by tree crowns. It is used to compute wind reduction factors and shading.
- **Canopy Ceiling Height/Stand Height** is the height above the ground of the highest canopy layer where the density of the crown mass within the layer is high enough to support vertical movement of a fire. A good estimate of canopy ceiling height would be the average height of the dominant and co-dominant trees in a stand. It is used for computing wind reduction to midflame height and spotting distances from torching trees (Fire Program Solutions, L.L.C, 2005).
- **Canopy Base Height** is the lowest height above the ground above which here is sufficient canopy fuel to propagate fire vertically (Scott & Reinhardt, 2001). Canopy base height is a property of a plot, stand, or group of trees, not of an individual tree. For fire modeling, canopy base height is an effective value that incorporates ladder fuel, such as tall shrubs and small trees. Canopy base height is used to determine if a surface fire will transition to a canopy fire.
- **Canopy Bulk Density** is the mass of available canopy fuel per unit canopy volume (Scott & Reinhardt, 2001). Canopy bulk density is a bulk property of a stand, plot, or group of trees, not of an individual tree. Canopy bulk density is used to predict whether an active crown fire is possible.

Weather

Environmental weather parameters needed to compute fire behavior characteristics include 1-hour, 10-hour, and 100-hour timelag fuel moistures, herbaceous fuel moisture, woody fuel moisture, and the 20-foot wind speed.

Weather variables were acquired from gridded weather data to generate 216 weather scenarios comprised of 9 wind speeds, 8 wind directions, and 3 moisture scenarios. Rather than employing multiple percentile weather categories (as previously used in the SWRA fire behavior calculations), the fire behavior modeling in the SWRA update is calculated with the Wildfire Exposure Simulation Tool (WildEST).

WildEST is a cloud-based system that uses a custom implementation of the FlamMap fire modeling system (Finney 2006) to produce simulations under a range of weather types (wind speed, wind direction, fuel moisture content). The 216 FlamMap runs are combined into a single output by weighting each scenario according to weather type probabilities that reflect how often each weather scenario occurs in the record, its co-occurrence with historical fire ignitions, and the influence of high-spread conditions (such as the disproportionate impact of hot, dry, and windy conditions on fire growth).

Two sets of results are provided for each of the Flame Front Characteristic layers. Results using all 216 weather scenarios are labeled "Characteristic" while "95th Percentile" or average-worst Flame Front Characteristics demonstrate the impact of the top five percent of weather types. These results represent an average of the worst 5% of weather types, weighted according to the frequency of the weather type and the influence of high-spread conditions.

Topography

Topography datasets required to compute fire behavior characteristics are elevation, slope and aspect.

Characteristic Fire Intensity Scale

Characteristic Fire Intensity Scale (FIS) specifically identifies where significant fuel hazards and associated dangerous fire behavior potential exist based on fuel and weighted across a full range of wind and weather conditions calculated using WildEST. Rather than weighting results solely by how frequently the weather conditions occur, the WildEST process factors the greater influence of high-spread conditions into the weighting calculations. These estimates include the contribution of crown fuel and crowning fire intensity.

Similar to the Richter scale for earthquakes, FIS provides a standard scale to measure potential wildfire intensity. FIS consist of 5 classes where the order of magnitude between classes is ten-fold. The minimum class, Class 1, represents very low wildfire intensities and the maximum class, Class 5, represents very high wildfire intensities. Refer to descriptions below.

1. Class 1, Very Low:
Very small, discontinuous flames, usually less than 1 foot in length; very low rate of spread; no spotting. Fires are typically easy to suppress by firefighters with basic training and non-specialized equipment.

2. Class 2, Low:
Small flames, usually less than two feet long; small amount of very short range spotting possible. Fires are easy to suppress by trained firefighters with protective equipment and specialized tools.

3. Class 3, Moderate:
Flames up to 9 feet in length; short-range spotting is possible. Trained firefighters will find these fires difficult to suppress without support from aircraft or engines, but dozer and plows are generally effective. Increasing potential for harm or damage to life and property.

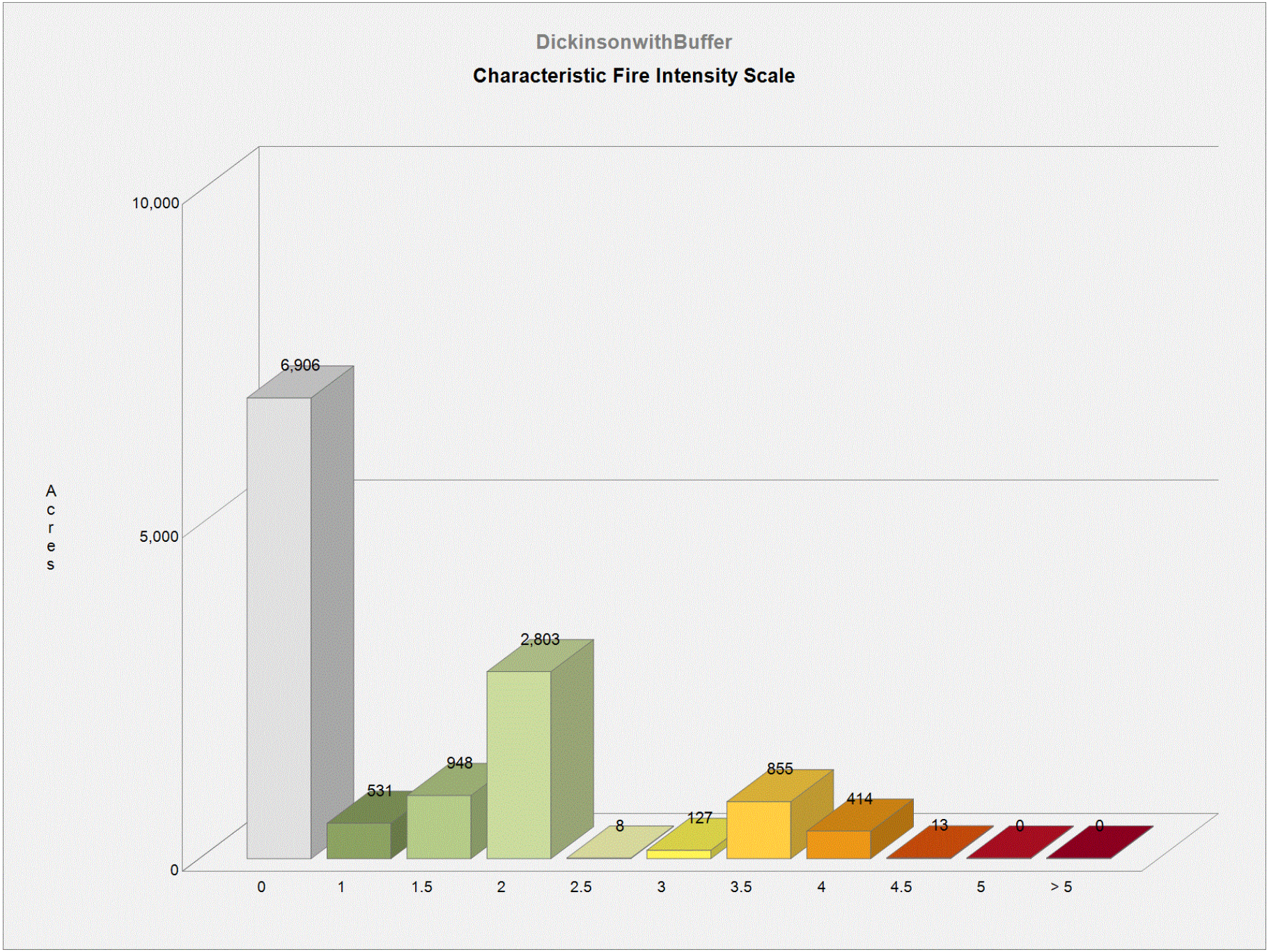
4. Class 4, High:
Large Flames, up to 40 feet in length; short-range spotting common; medium range spotting possible. Direct attack by trained firefighters, engines, and dozers is generally ineffective, indirect attack may be effective. Significant potential for harm or damage to life and property.

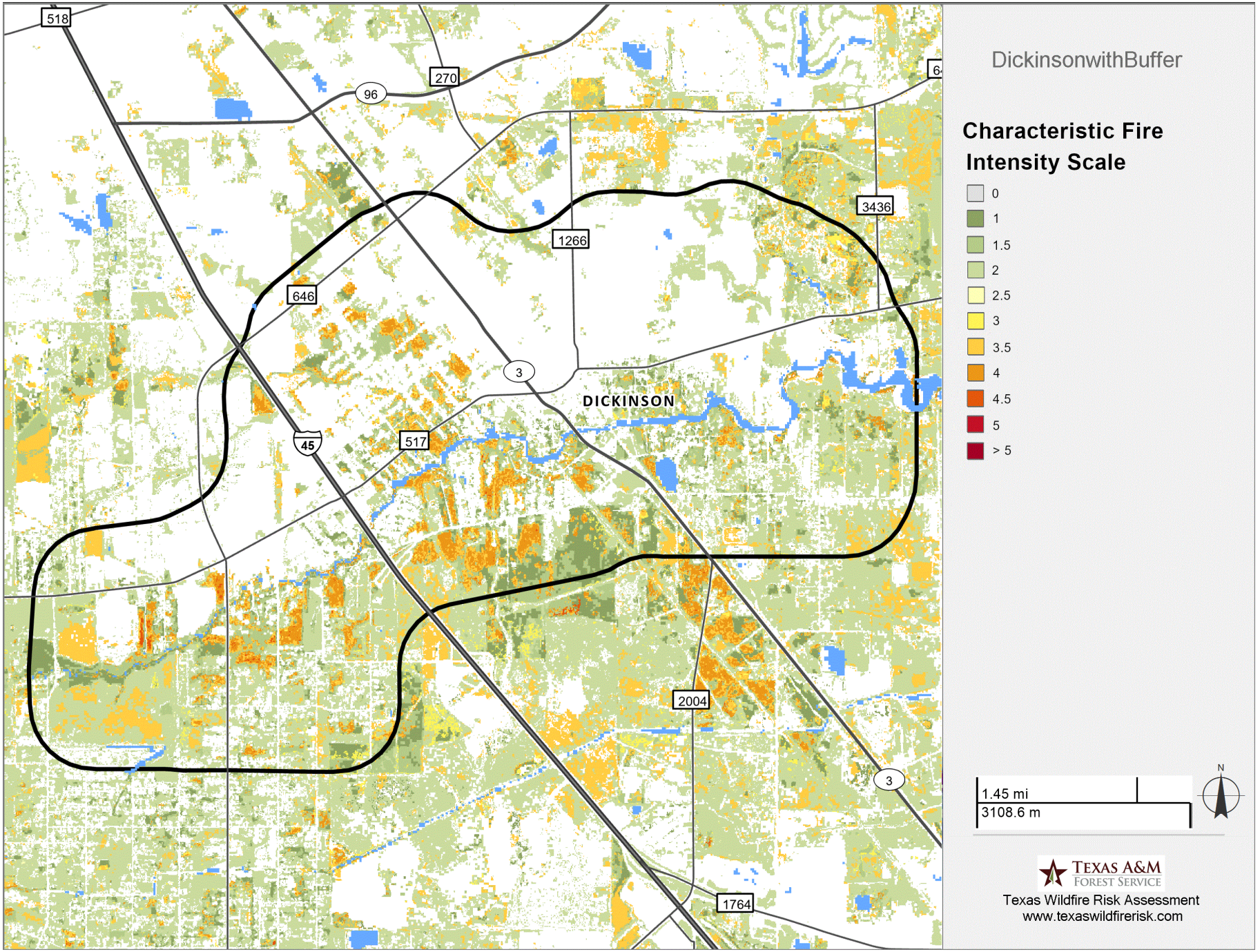
5. Class 5, Very High:
Flames exceeding 200 feet in length; expect extreme fire behavior.

To aid in viewing on the map, FIS is presented in 1/2 class increments. Please consult the TxWRAP User Manual for a more detailed description of the FIS class descriptions.

Data Source: Texas Wildfire Risk Assessment, Pyrologix 2023 (includes fuel disturbances through 2022)

	Characteristic Fire Intensity Scale Category	Acres	Percent
	0	6,906	55 %
	1	531	4 %
	1.5	948	8 %
	2	2,803	22 %
	2.5	8	0 %
	3	127	1 %
	3.5	855	7 %
	4	414	3 %
	4.5	13	0 %
	5	0	0 %
	> 5	0	0 %
	Total	**12,605**	**100 %**


DickinsonwithBuffer
Characteristic Fire Intensity Scale
Acres
10,000
5,000
0
6,906
531
948
2,803
8
127
855
414
13
0
0
0
1
1.5
2
2.5
3
3.5
4
4.5
5
> 5


DickinsonwithBuffer
Characteristic Fire Intensity Scale
0
1
1.5
2
2.5
3
3.5
4
4.5
5
> 5
518
270
96
3436
1266
646
3
DICKINSON
45
517
2004
3
1764
1.45 mi
3108.6 m
N
Texas A&M Forest Service
Texas Wildfire Risk Assessment
www.texaswildfirerisk.com

95th Percentile Fire Intensity Scale

This layer represents the "average-worst" 95th Percentile Fire Intensity Scale at the flaming front of the fire. Here, fireline intensity is represented as the standard Fire Intensity Scale (Log10 of fireline intensity) as determined by fuel and weather characteristics. These results are weighted according to the Weather Type Probabilities (WTPs) from the highest five percent of possible wind and weather conditions and include the contribution of crown fuel and crowning fire intensity, if applicable. Fireline intensity is calculated using WildEST. Rather than weighting results solely by how frequently the weather conditions occur, the WildEST process factors the greater influence of high-spread conditions into the weighting calculations.

Similar to the Richter scale for earthquakes, FIS provides a standard scale to measure potential wildfire intensity. FIS consists of 5 classes where the order of magnitude between classes is ten-fold. The minimum class, Class 1, represents very low wildfire intensities and the maximum class, Class 5, represents very high wildfire intensities. Refer to descriptions below.

1. Class 1, Very Low:
Very small, discontinuous flames, usually less than 1 foot in length; very low rate of spread; no spotting. Fires are typically easy to suppress by firefighters with basic training and non-specialized equipment.

2. Class 2, Low:
Small flames, usually less than two feet long; small amount of very short range spotting possible. Fires are easy to suppress by trained firefighters with protective equipment and specialized tools.

3. Class 3, Moderate:
Flames up to 9 feet in length; short-range spotting is possible. Trained firefighters will find these fires difficult to suppress without support from aircraft or engines, but dozer and plows are generally effective. Increasing potential for harm or damage to life and property.

4. Class 4, High:
Large Flames, up to 40 feet in length; short-range spotting common; medium range spotting possible. Direct attack by trained firefighters, engines, and dozers is generally ineffective, indirect attack may be effective. Significant potential for harm or damage to life and property.

5. Class 5, Very High:
Flames exceeding 200 feet in length; expect extreme fire behavior.

To aid in viewing on the map, FIS is presented in 1/2 class increments. Please consult the TxWRAP User Manual for a more detailed description of the FIS class descriptions.

Data Source: Texas Wildfire Risk Assessment, Pyrologix 2023 (includes fuel disturbances through 2022)

	95th Percentile Fire Intensity Scale Category	Acres	Percent
	0	6,906	55 %
	1	491	4 %
	1.5	40	0 %
	2	1,240	10 %
	2.5	2,322	18 %
	3	197	2 %
	3.5	77	1 %
	4	481	4 %
	4.5	449	4 %
	5	401	3 %
	> 5	0	0 %
	Total	**12,605**	**100 %**

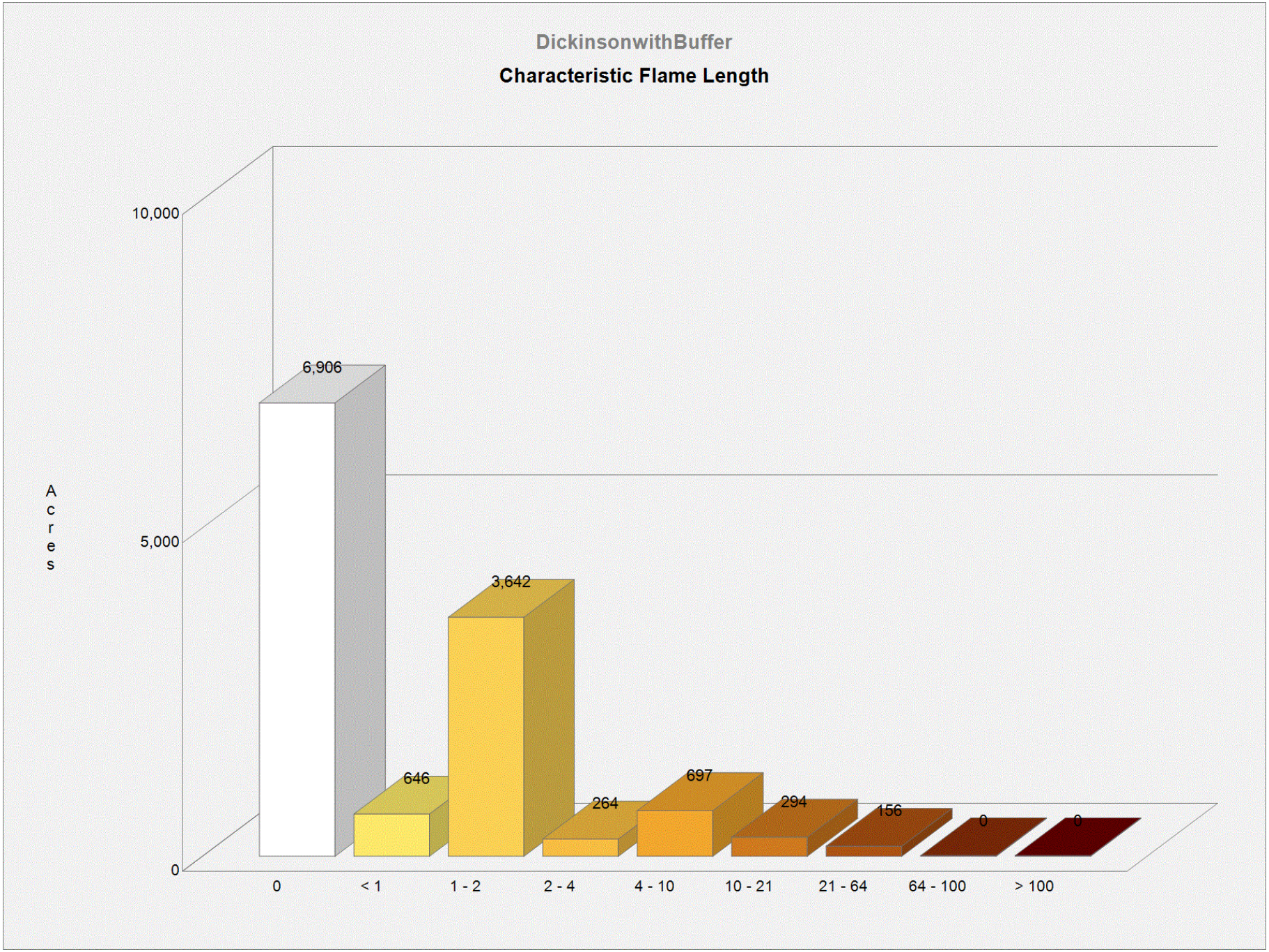
Characteristic Flame Length

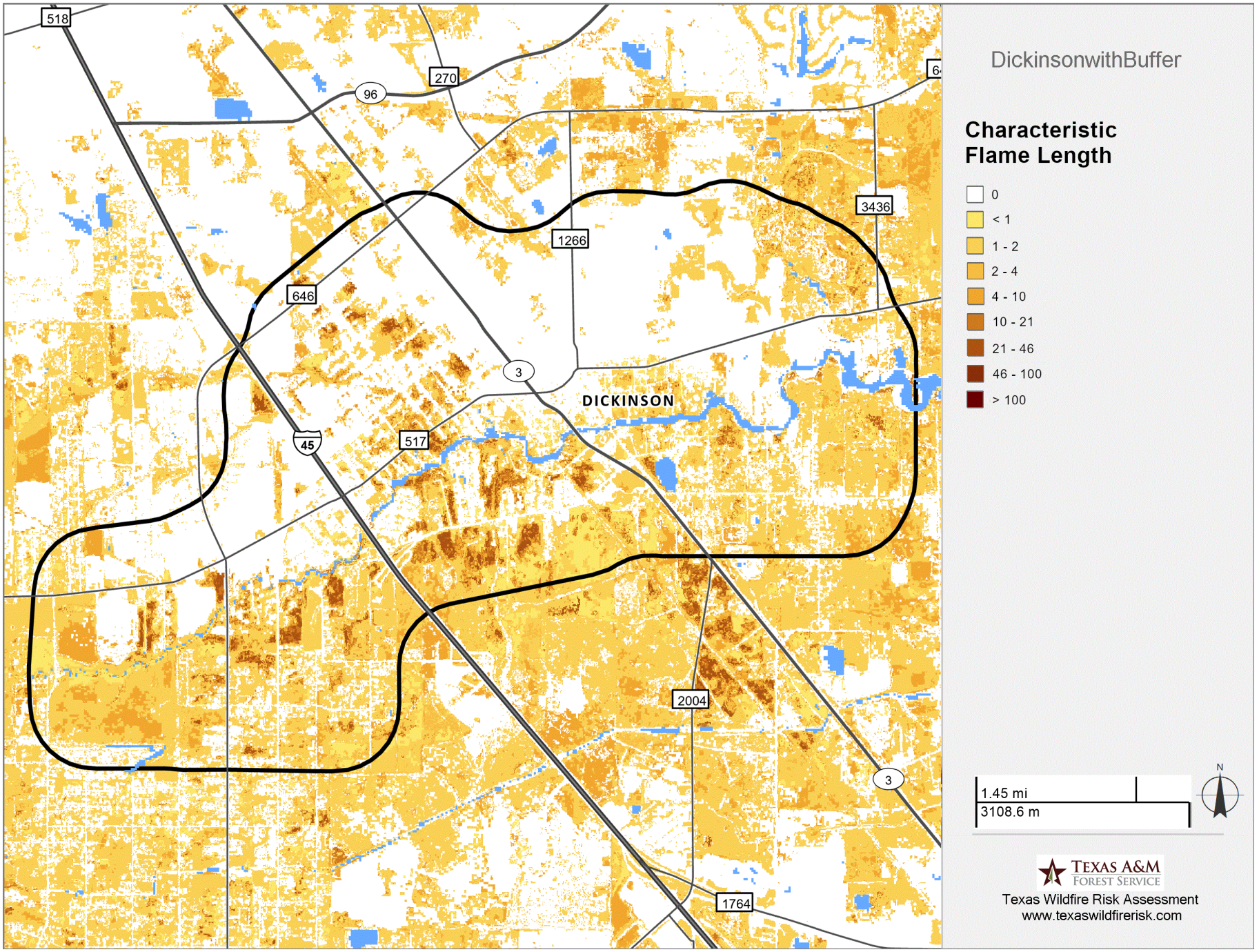
This layer represents the flame length (in feet) as determined by fuel and weather characteristics. These results are weighted across a full range of possible wind and weather conditions and include the contribution of crown fire flame lengths, if applicable. Flame length is calculated using WildEST, a process used to perform and combine multiple fire behavior simulations under a range of weather types (wind speed, wind direction, fuel moisture content). Rather than weighting results solely by how frequently the weather conditions occur, the WildEST process factors the greater influence of high-spread conditions into the weighting calculations.

Uses for this flame length dataset include comparison of expected flame-lengths across the landscape for identifying wildfire hazards to the public and exploring hazard mitigation opportunities for communities and land management agencies.

Data Source: Texas Wildfire Risk Assessment, Pyrologix 2023 (includes fuel disturbances through 2022)

	Characteristic Flame Length Category	Acres	Percent
	0	6,906	55 %
	< 1	646	5 %
	1 - 2	3,642	29 %
	2 - 4	264	2 %
	4 - 10	697	6 %
	10 - 21	294	2 %
	21 - 46	156	1 %
	46 - 100	0	0 %
	> 100	0	0 %
	Total	**12,605**	**100 %**


DickinsonwithBuffer
Characteristic Flame Length
Acres
10,000
5,000
0
6,906
646
3,642
264
697
294
156
0
0
0
< 1
1 - 2
2 - 4
4 - 10
10 - 21
21 - 64
64 - 100
> 100


DickinsonwithBuffer
Characteristic
Flame Length
0
< 1
1 - 2
2 - 4
4 - 10
10 - 21
21 - 46
46 - 100
> 100
518
270
96
3436
1266
646
3
DICKINSON
45
517
2004
3
1764
1.45 mi
3108.6 m
N
Texas A&M Forest Service
Texas Wildfire Risk Assessment
www.texaswildfirerisk.com

95th Percentile Flame Length

This layer represents the "average-worst" 95th Percentile Flame Length (in feet) at the flaming front of the fire as determined by fuel and weather characteristics. These results are weighted according to the Weather Type Probabilities (WTPs) from the highest five percent of possible wind and weather conditions and include the contribution of crown fire flame lengths, if applicable.

Flame length is calculated using WildEST, a process used to perform and combine multiple fire behavior simulations under a range of weather types (wind speed, wind direction, fuel moisture content). Rather than weighting results solely by how frequently the weather conditions occur, the WildEST process factors the greater influence of high-spread conditions into the weighting calculation.

Data Source: Texas Wildfire Risk Assessment, Pyrologix 2023 (includes fuel disturbances through 2022)

	95th Percentile Flame Length Category	Acres	Percent
	0	6,906	55 %
	< 1	531	4 %
	1 - 2	1,241	10 %
	2 - 4	2,474	20 %
	4 - 10	120	1 %
	10 - 21	502	4 %
	21 - 46	23	0 %
	46 - 100	538	4 %
	> 100	270	2 %
	Total	**12,605**	**100 %**

Characteristic Rate of Spread

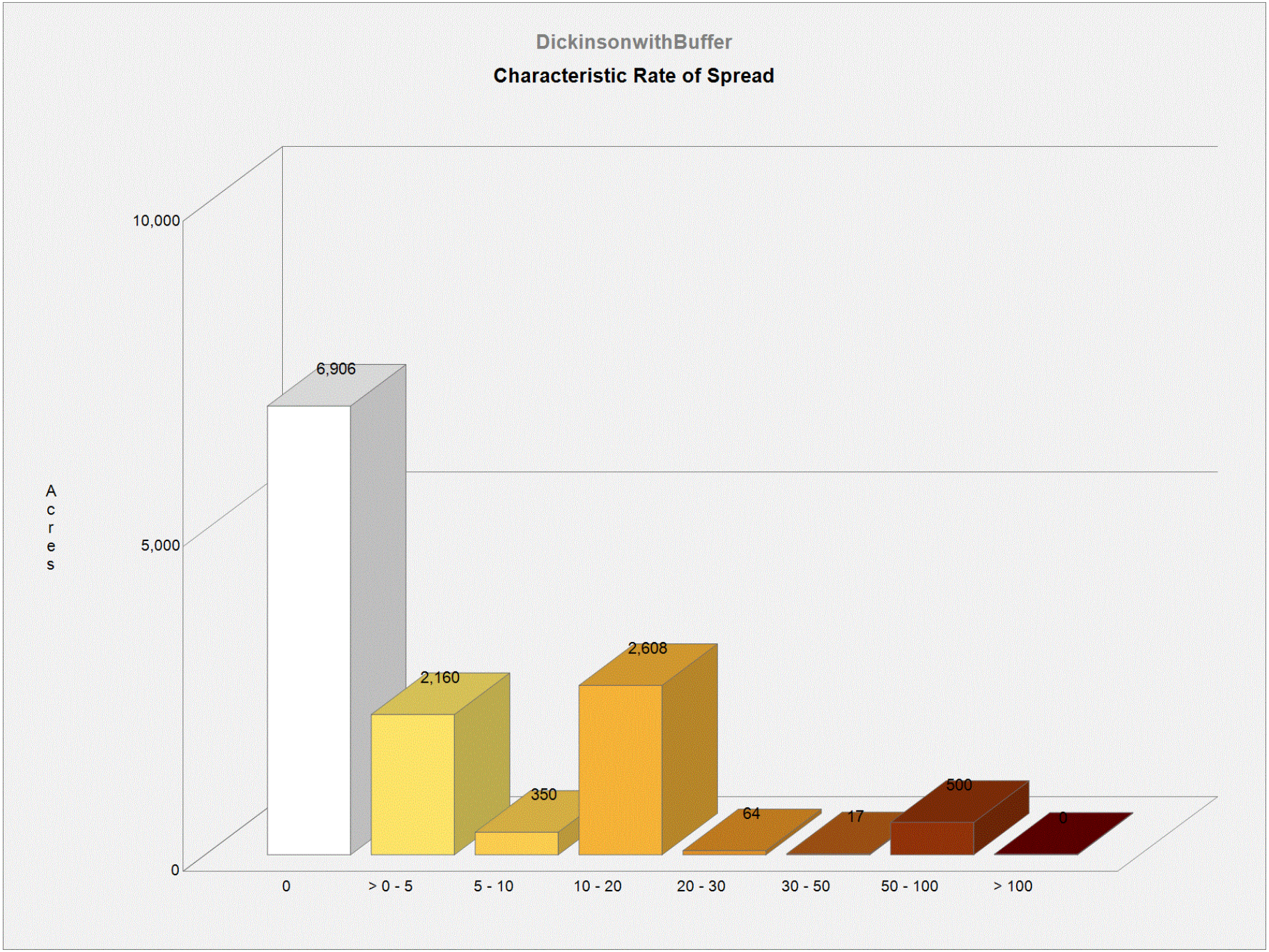
This layer represents the rate of spread as determined by fuel and weather characteristics. These results are weighted across a full range of possible wind and weather conditions and include the contribution of crown fire spread rate, if applicable.

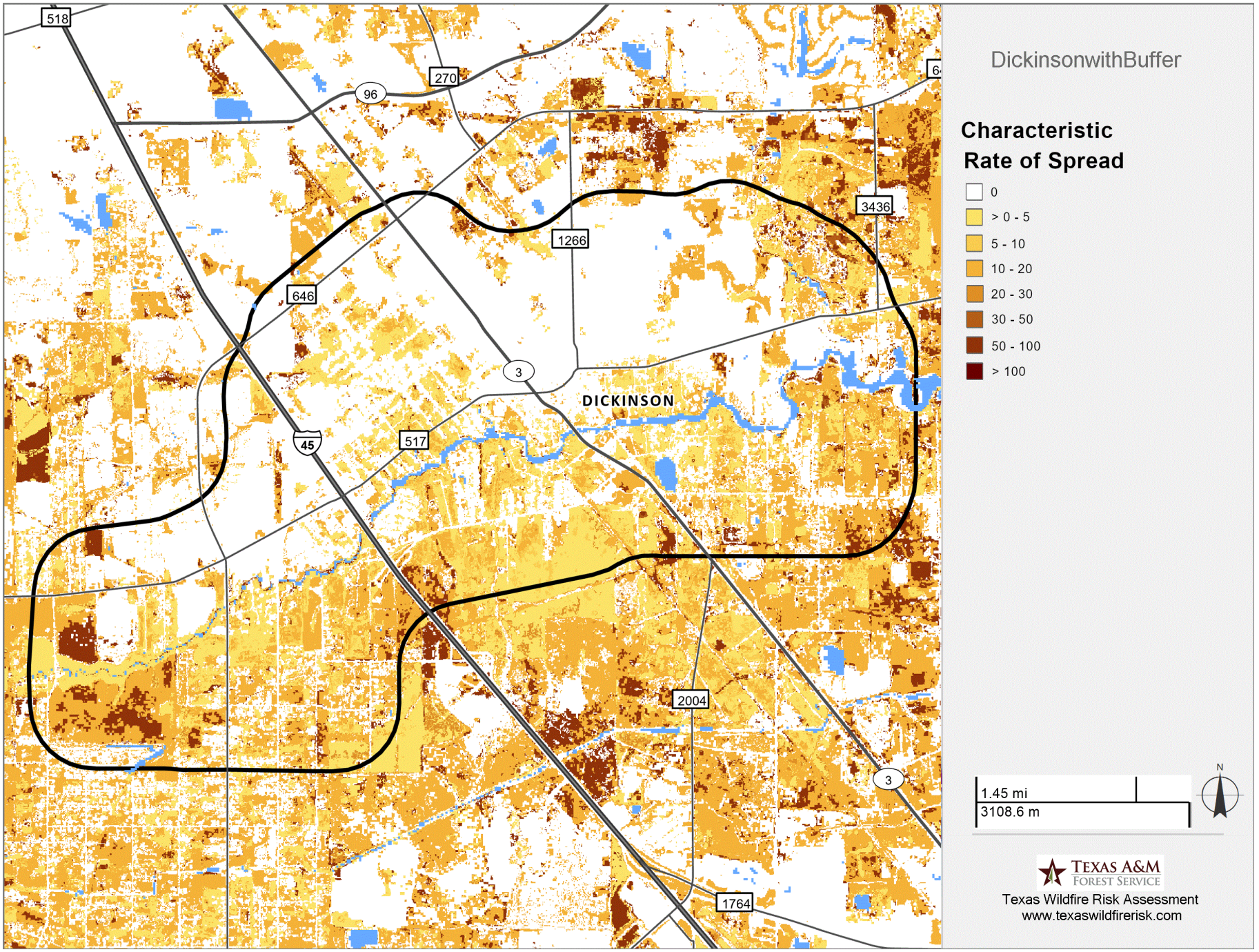
Rate of Spread is calculated using WildEST, a process used to perform and combine multiple fire behavior simulations under a range of weather types (wind speed, wind direction, fuel moisture content).

Rather than weighting results solely by how frequently the weather conditions occur, the WildEST process factors the greater influence of high-spread conditions into the weighting calculations.

Data Source: Texas Wildfire Risk Assessment, Pyrologix 2023 (includes fuel disturbances through 2022)

	Characteristic Rate of Spread Category	Acres	Percent
	0	6,906	55 %
	> 0 - 5	2,160	17 %
	5 - 10	350	3 %
	10 - 20	2,608	21 %
	20 - 30	64	1 %
	30 - 50	17	0 %
	50 - 100	500	4 %
	> 100	0	0 %
	Total	**12,605**	**100 %**


DickinsonwithBuffer
Characteristic Rate of Spread
Acres
10,000
5,000
0
6,906
2,160
350
2,608
64
17
500
0
0
> 0 - 5
5 - 10
10 - 20
20 - 30
30 - 50
50 - 100
> 100


DickinsonwithBuffer
Characteristic
Rate of Spread
0
> 0 - 5
5 - 10
10 - 20
20 - 30
30 - 50
50 - 100
> 100
518
270
96
3436
1266
646
3
DICKINSON
45
517
2004
3
1764
1.45 mi
3108.6 m
N
Texas A&M Forest Service
Texas Wildfire Risk Assessment
www.texaswildfirerisk.com

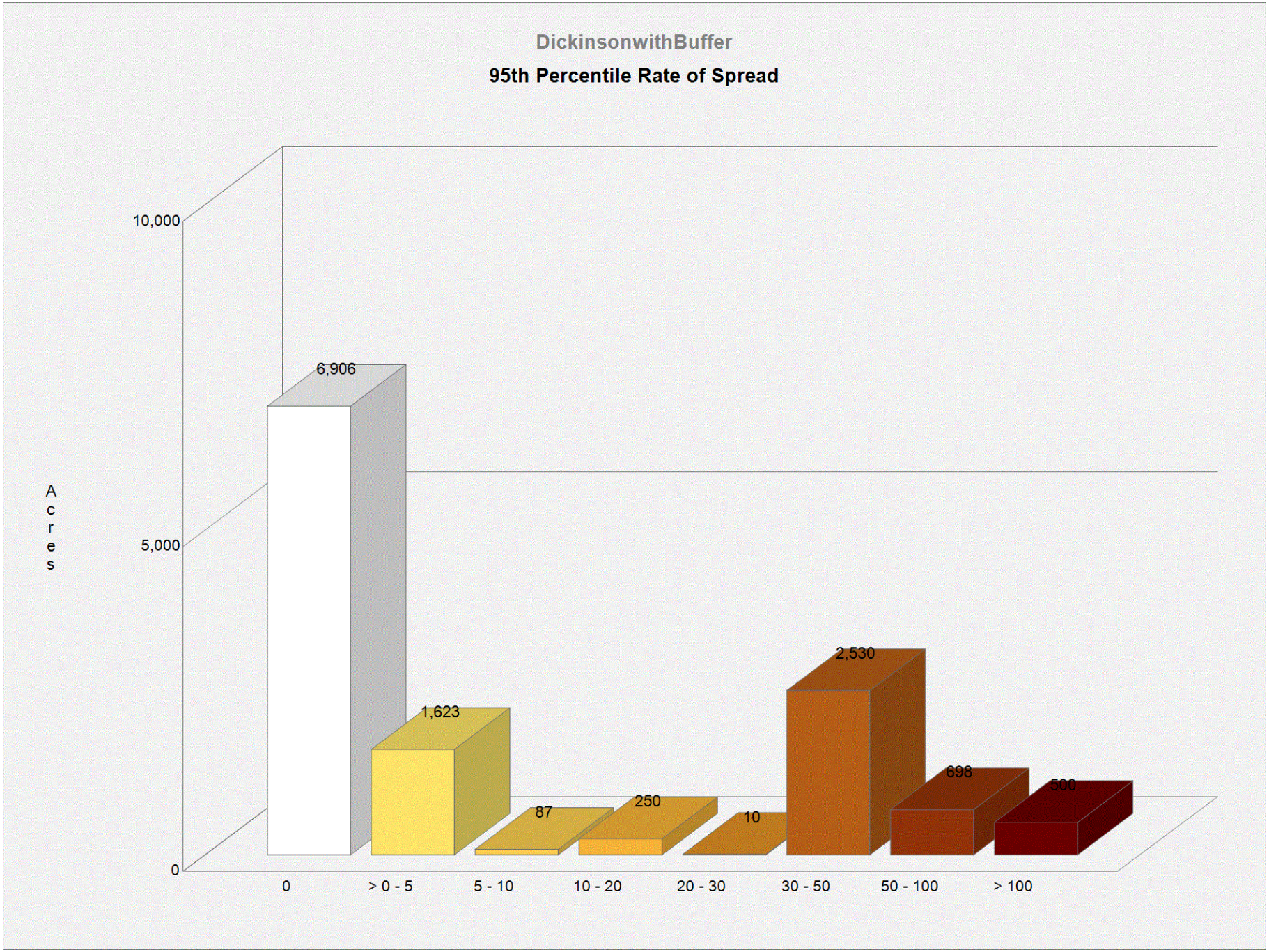
95th Percentile Rate of Spread

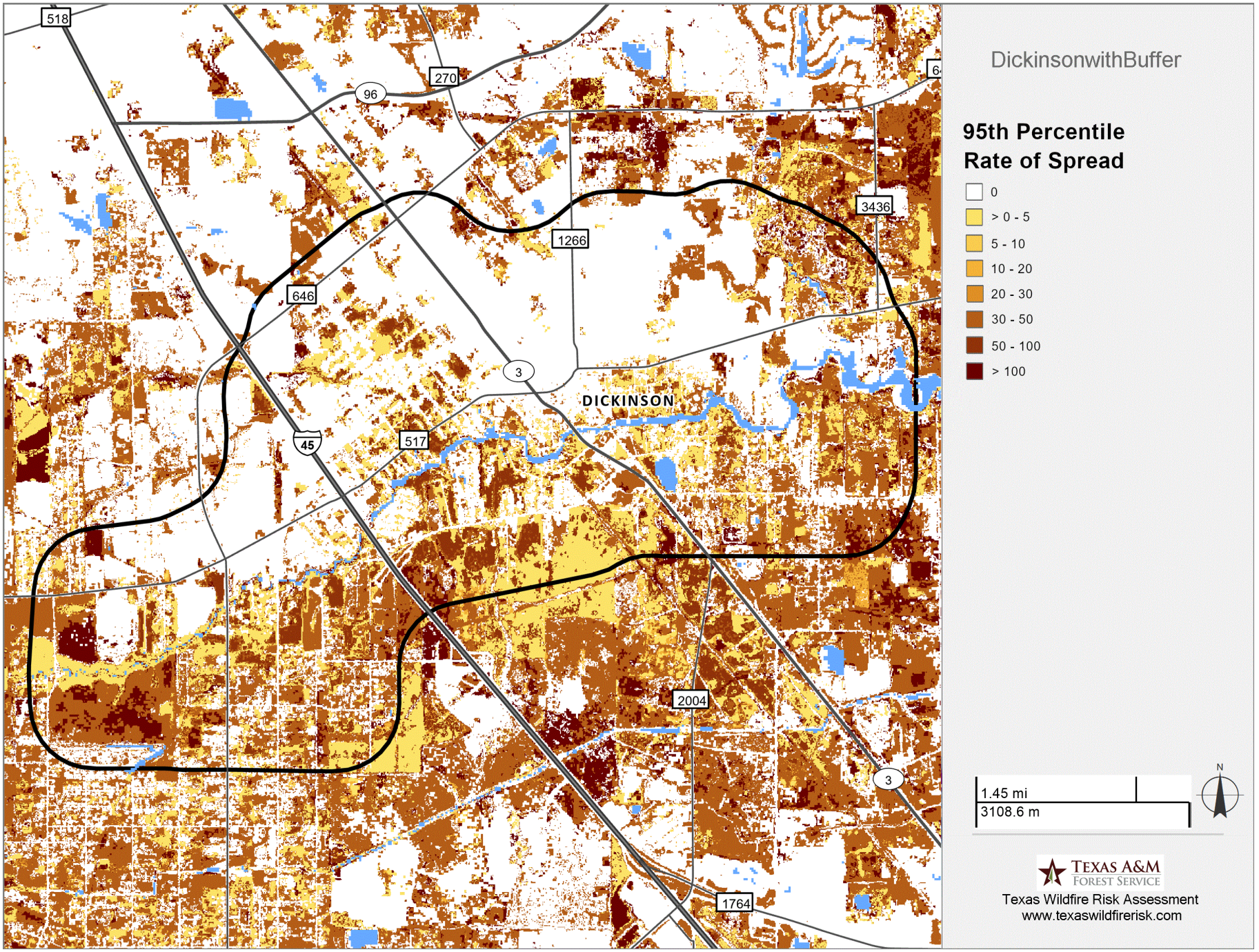
This layer represents the "average-worst" 95th Percentile Rate of Spread (ch/h) at the flaming front of the fire as determined by fuel and weather characteristics. These results are weighted according to the Weather Type Probabilities (WTPs) from the highest five percent of possible wind and weather conditions and include the contribution of crown fire spread rate, if applicable.

Rate of Spread is calculated using WildEST, a process used to perform and combine multiple fire behavior simulations under a range of weather types (wind speed, wind direction, fuel moisture content). Rather than weighting results solely by how frequently the weather conditions occur, the WildEST process factors the greater influence of high-spread conditions into the weighting calculations.

Data Source: Texas Wildfire Risk Assessment, Pyrologix 2023 (includes fuel disturbances through 2022)

	95th Percentile Rate of Spread Category	Acres	Percent
	0	6,906	55 %
	> 0 - 5	1,623	13 %
	5 - 10	87	1 %
	10 - 20	250	2 %
	20 - 30	10	0 %
	30 - 50	2,530	20 %
	50 - 100	698	6 %
	> 100	500	4 %
	Total	**12,605**	**100 %**


DickinsonwithBuffer
95th Percentile Rate of Spread
Acres
10,000
5,000
0
6,906
1,623
87
250
10
2,530
698
500
0
> 0 - 5
5 - 10
10 - 20
20 - 30
30 - 50
50 - 100
> 100


DickinsonwithBuffer
95th Percentile
Rate of Spread
0
> 0 - 5
5 - 10
10 - 20
20 - 30
30 - 50
50 - 100
> 100
518
270
96
3436
1266
646
3
DICKINSON
45
517
2004
3
1764
1.45 mi
3108.6 m
N
Texas A&M Forest Service
Texas Wildfire Risk Assessment
www.texaswildfirerisk.com

Probability of Crown Fire

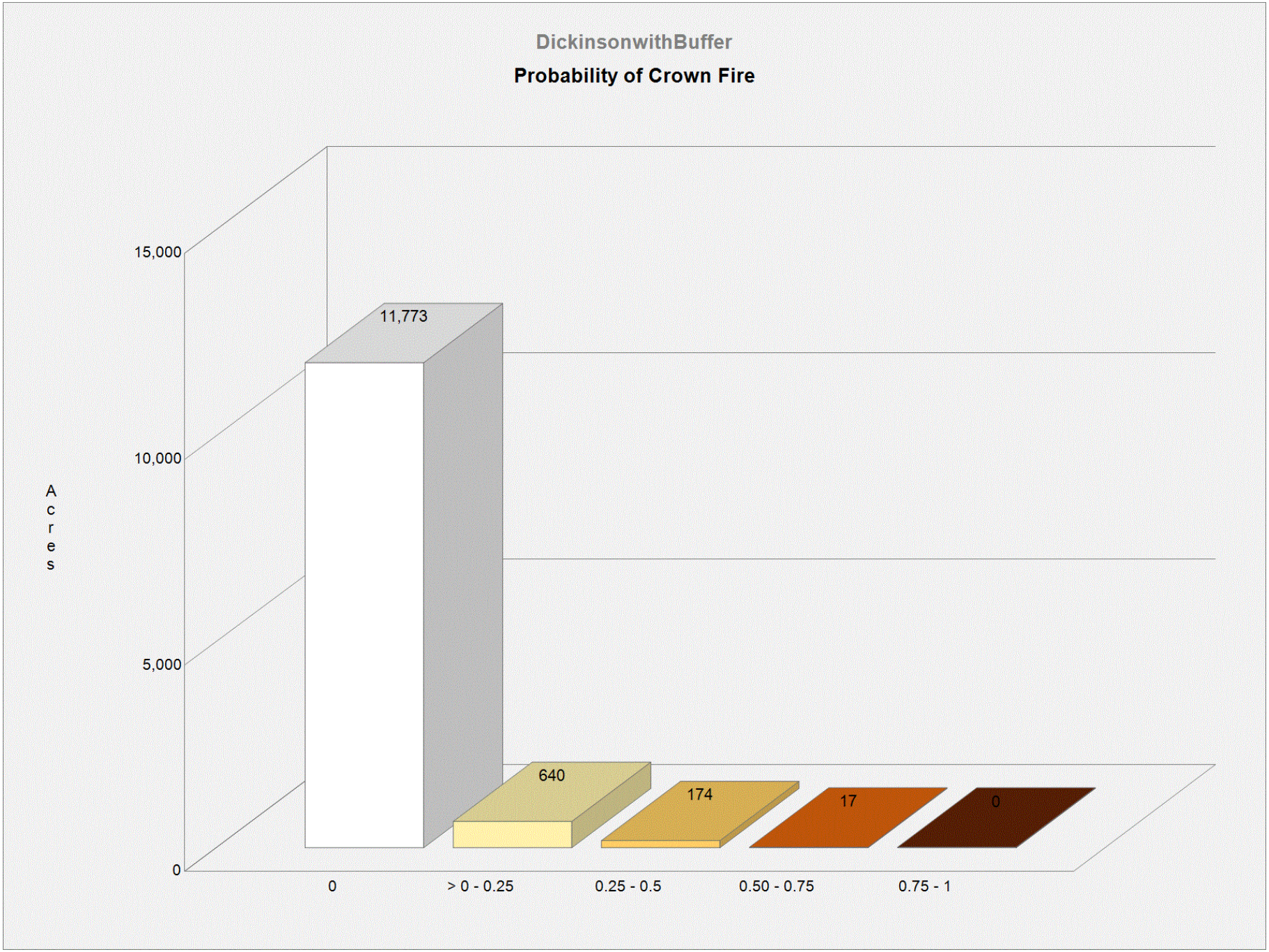
This layer shows the likelihood of the head of the fire experiencing crown fire (at least mid-grade passive crown fire). The head of the fire exhibits the most extreme fire behavior, demonstrating the highest intensity and fastest spread rates.

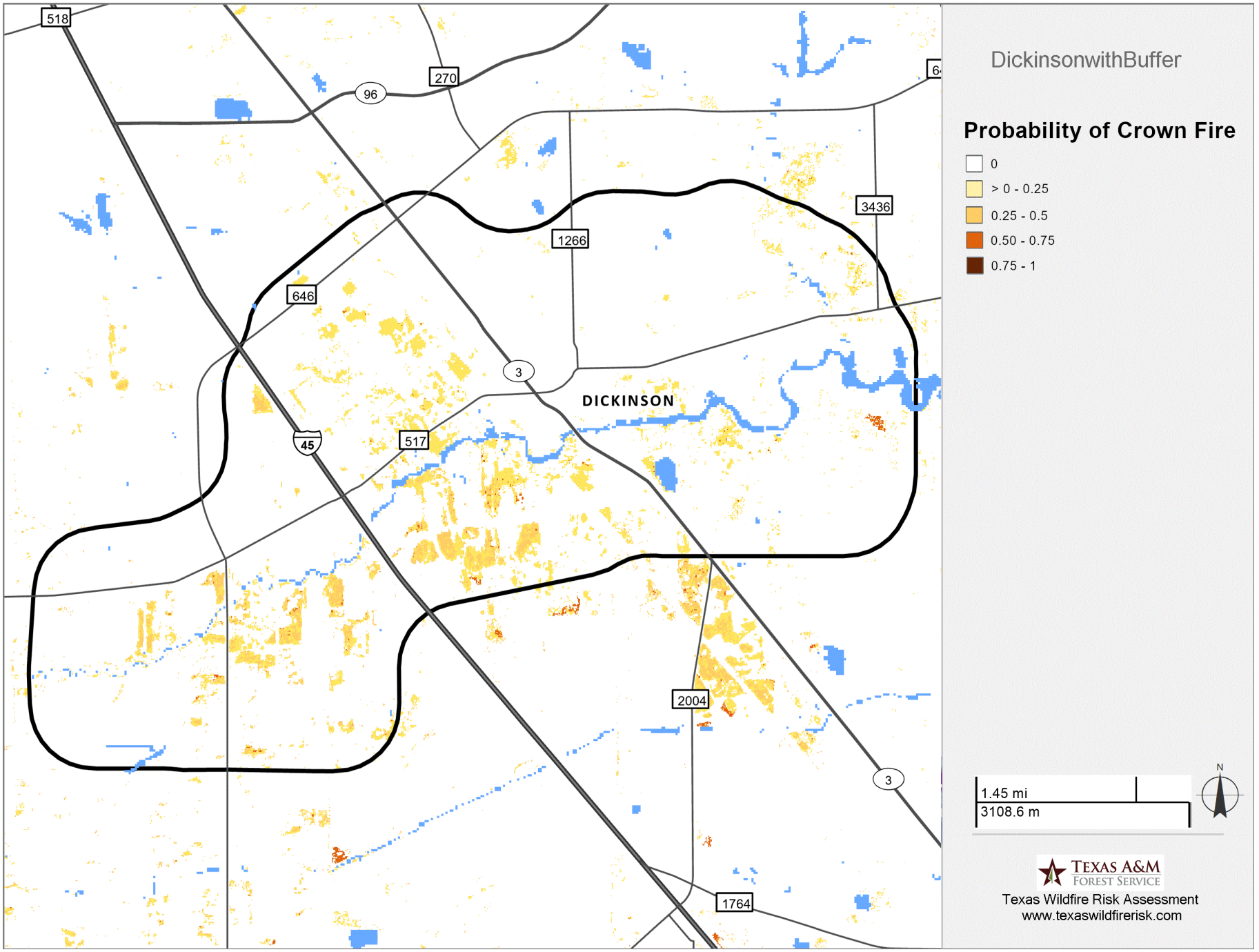
Crown (or canopy) fires are very dangerous, destructive, and difficult to control due to their increased fire intensity. From a planning perspective, it is important to identify where these conditions are likely to occur on the landscape so that special preparedness measures can be taken if necessary.

Higher probability values indicate a high likelihood of crown fire. Probability results reflect fuel characteristics and the flame lengths produced under a range of weather conditions. These probabilities do not include the likelihood of a wildfire occurring, rather, they provide information about the likelihood of a location experiencing crown fire, if a wildfire were to occur.

Data Source: Texas Wildfire Risk Assessment, Pyrologix 2023 (includes fuel disturbances through 2022)

	Probability of Crown Fire Category	Acres	Percent
	0	11,773	93 %
	> 0 - 0.25	640	5 %
	0.25 - 0.5	174	1 %
	0.50 - 0.75	17	0 %
	0.75 - 1	0	0 %
	Total	**12,605**	**100 %**


DickinsonwithBuffer
Probability of Crown Fire
Acres
15,000
10,000
5,000
0
11,773
640
174
17
0
0
> 0 - 0.25
0.25 - 0.5
0.50 - 0.75
0.75 - 1


DickinsonwithBuffer
Probability of Crown Fire
0
> 0 - 0.25
0.25 - 0.5
0.50 - 0.75
0.75 - 1
DICKINSON
518
270
96
1266
3436
646
3
45
517
2004
1764
1.45 mi
3108.6 m
N
Texas A&M Forest Service
Texas Wildfire Risk Assessment
www.texaswildfirerisk.com

Challenges to Fire Operations

The information in this section of the report describes fire behavior information useful in operational fire planning and for identifying fuel treatment opportunities.

Contents:

- Probability of Exceeding Manual Control
- Probability of Exceeding Mechanical Control
- Probability of Extreme Fire Behavior
- Suppression Difficulty Index
- Wildfire Hazard Potential

Probability of Exceeding Manual Control

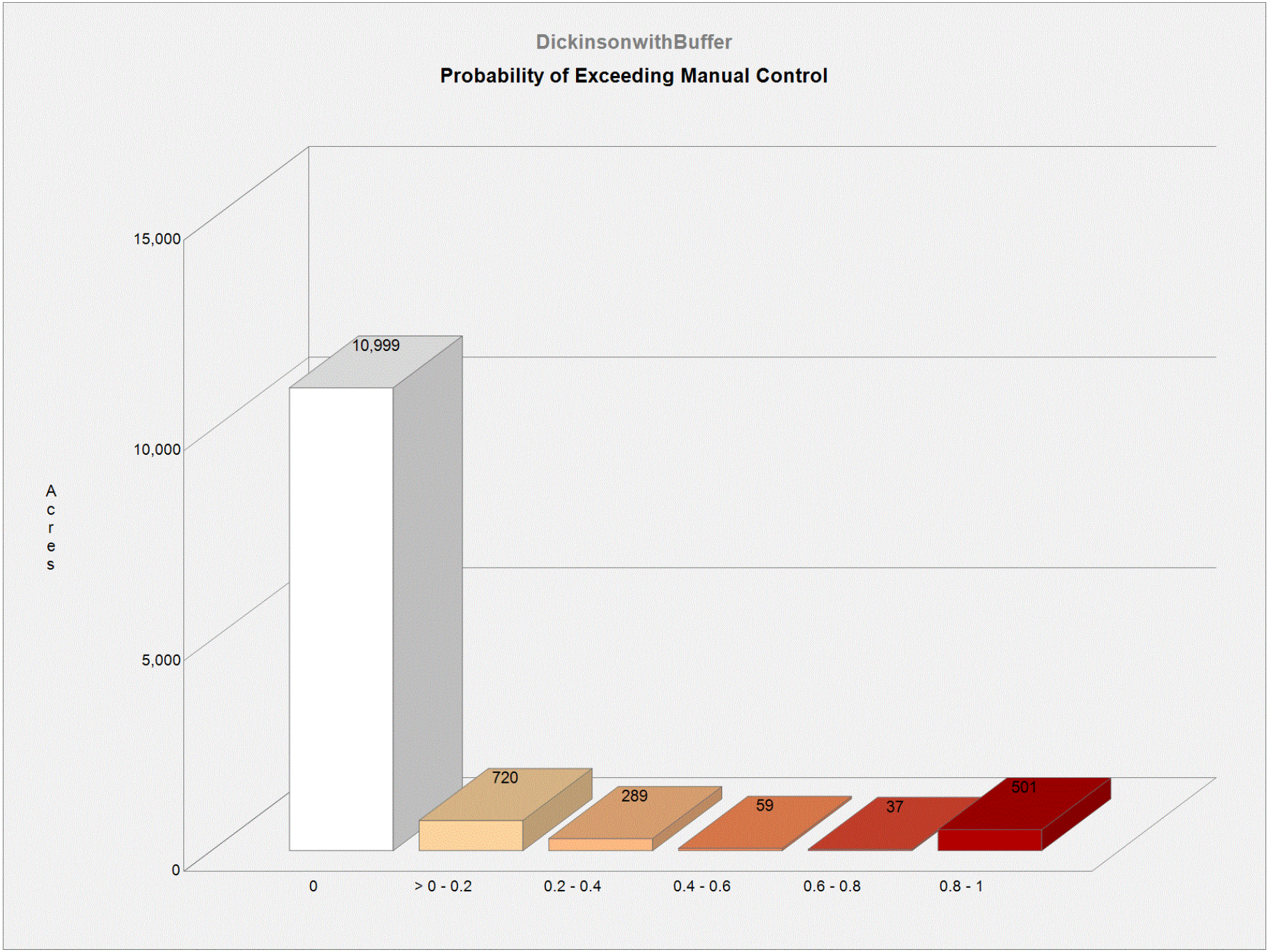
This layer shows the likelihood that flames at the head of the fire will exceed 4 feet, which is generally considered the limit for manual fire control. The head of the fire exhibits the most extreme fire behavior, demonstrating the highest intensity and fastest spread rates.

Higher probability values indicate a lower chance of success using manual control measures (i.e. hand crews and hand line). Probability results reflect fuel characteristics and the flame lengths produced under a range of weather conditions. These probabilities do not include the likelihood of a wildfire occurring, rather, they provide information about flame lengths if a wildfire were to occur.

Flame length exceedance probabilities refer to the likelihood of flames reaching or surpassing a certain height, typically measured from the leading edge or "head" of a fire. These probabilities provide insight into the range of potential flame lengths under various weather conditions. For example, if the probability of exceeding a certain flame length threshold is 0.2 (20%), it means there is a 20% chance that flames exceed that height under the range of modeled weather scenarios. It also means that 80% of flame lengths are expected to be below the threshold. These probabilities help fire management personnel anticipate and plan for the potential intensity of wildfires in a specific area.

Data Source: Texas Wildfire Risk Assessment, Pyrologix 2023 (includes fuel disturbances through 2022)

	Probability of Exceeding Manual Control Category	Acres	Percent
	0	10,999	87 %
	> 0 - 0.2	720	6 %
	0.2 - 0.4	289	2 %
	0.4 - 0.6	59	0 %
	0.6 - 0.8	37	0 %
	0.8 - 1	501	4 %
	Total	**12,605**	**100 %**


DickinsonwithBuffer
Probability of Exceeding Manual Control
15,000
10,000
5,000
0
Acres
10,999
720
289
59
37
501
0
> 0 - 0.2
0.2 - 0.4
0.4 - 0.6
0.6 - 0.8
0.8 - 1

Probability of Exceeding Mechanical Control

This layer shows the likelihood that flames at the head of the fire will exceed 8 feet, which is considered the limit for mechanical fire control in fire operations. The head of the fire exhibits the most extreme fire behavior, demonstrating the highest intensity and fastest spread rates.

Higher probability values indicate a lower chance of success using mechanical control measures such as dozers and engines. Probability results reflect fuel characteristics and the flame lengths produced under a range of weather conditions. These probabilities do not include the likelihood of a wildfire occurring, rather, they provide information about flame lengths if a wildfire were to occur.

Flame length exceedance probabilities refer to the likelihood of flames reaching or surpassing a certain height, typically measured from the leading edge or "head" of a fire. These probabilities provide insight into the range of potential flame lengths under various weather conditions. For example, if the probability of exceeding a certain flame length threshold is 0.2 (20%), it means there is a 20% chance that flames exceed that height under the range of modeled weather scenarios. It also means that 80% of flame lengths are expected to be below the threshold. These probabilities help fire management personnel anticipate and plan for the potential intensity of wildfires in a specific area.

Data Source: Texas Wildfire Risk Assessment, Pyrologix 2023 (includes fuel disturbances through 2022)

	Probability of Exceeding Mechanical Control Category	Acres	Percent
	0	11,196	89 %
	> 0 - 0.2	603	5 %
	0.2 - 0.4	766	6 %
	0.4 - 0.6	13	0 %
	0.6 - 0.8	6	0 %
	0.8 - 1	21	0 %
	Total	**12,605**	**100 %**

Probability of Extreme Fire Behavior

This layer shows the likelihood that flames at the head of the fire will exceed 11 feet, which is considered threshold for extreme fire behavior in fire operations. The head of the fire exhibits the most extreme fire behavior, demonstrating the highest intensity and fastest spread rates. Flames of this height can indicate extreme fire behavior and present significant challenges for suppression efforts.

Higher probability values indicate a high likelihood of extreme fire behavior such as crowning and spotting. Probability results reflect fuel characteristics and the flame lengths produced under a range of weather conditions. These probabilities do not include the likelihood of a wildfire occurring, rather, they provide information about flame lengths if a wildfire were to occur.

Flame length exceedance probabilities refer to the likelihood of flames reaching or surpassing a certain height, typically measured from the leading edge or "head" of a fire. These probabilities provide insight into the range of potential flame lengths under various weather conditions. For example, if the probability of exceeding a certain flame length threshold is 0.2 (20%), it means there is a 20% chance that flames exceed that height under the range of modeled weather scenarios. It also means that 80% of flame lengths are expected to be below the threshold. These probabilities help fire management personnel anticipate and plan for the potential intensity of wildfires in a specific area.

Data Source: Texas Wildfire Risk Assessment, Pyrologix 2023 (includes fuel disturbances through 2022)

	Probability of Extreme Fire Behavior Category	Acres	Percent
	0	11,272	89 %
	> 0 - 0.2	1,012	8 %
	0.2 - 0.4	284	2 %
	0.4 - 0.6	28	0 %
	0.6 - 0.8	10	0 %
	0.8 - 1	0	0 %
	Total	**12,605**	**100 %**

Suppression Difficulty Index

Suppression Difficulty Index can inform fire management decisions related to suppression strategies and resource placement. It classifies fire suppression challenges into six levels, ranging from very low to extreme. Blue areas indicate relatively manageable conditions with some combination of gentle terrain, less resistant fuels, easier access, and milder fire behavior. Red areas highlight tougher conditions with steep terrain, limited access, and more-intense fire activity. This index does not consider aerial suppression strategies, overhead hazards to firefighters like standing dead trees, and does not include the likelihood of a wildfire occurring.

Data Source: Texas Wildfire Risk Assessment, Pyrologix 2023 (includes fuel disturbances through 2022)

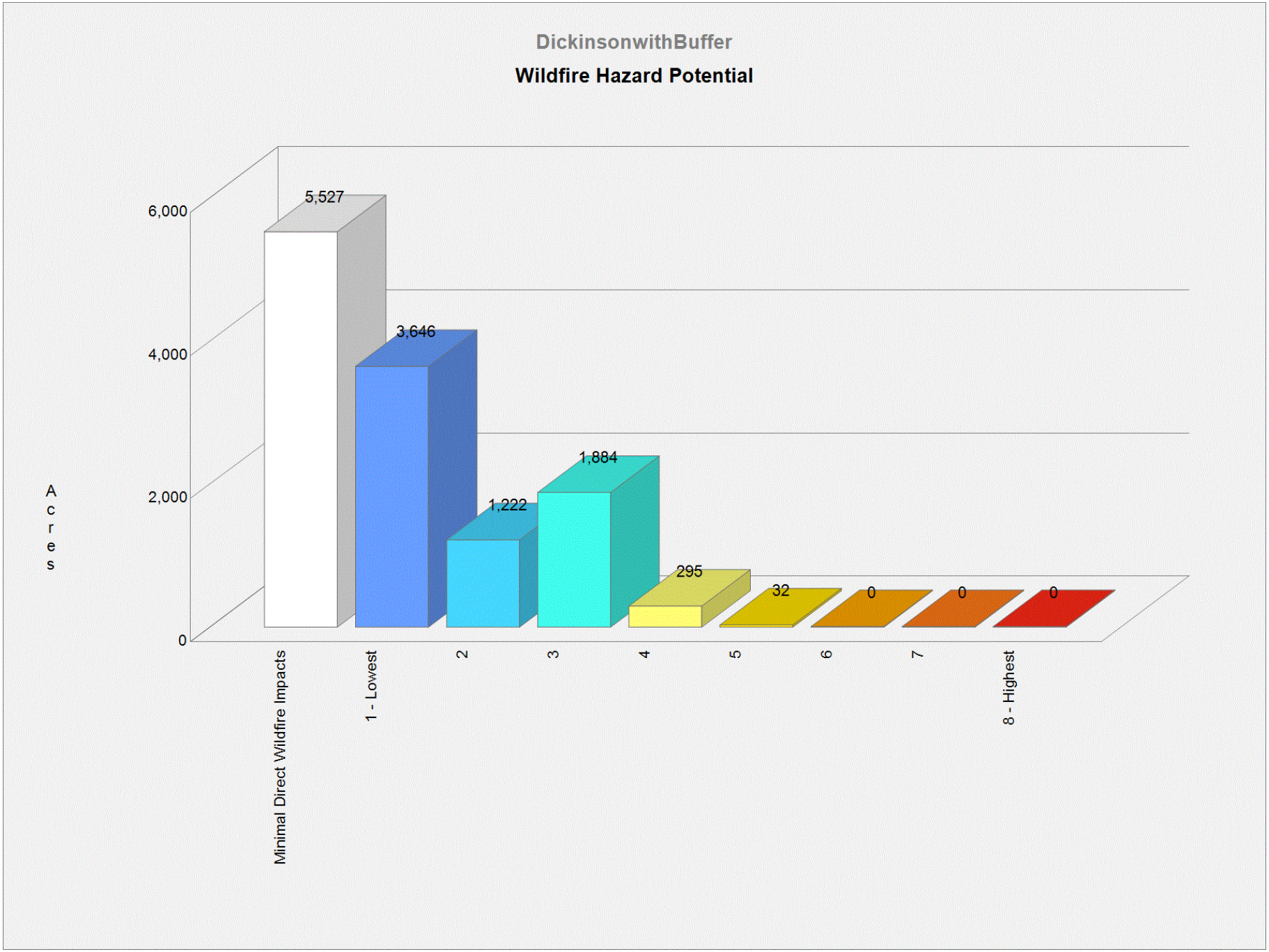
	Suppression Difficulty Index Category	Acres	Percent
	Little to No Difficulty	6,846	54 %
	Very Low Difficulty	4,978	39 %
	Low Difficulty	544	4 %
	Moderate Difficulty	236	2 %
	High Difficulty	0	0 %
	Very High Difficulty	0	0 %
	Extreme Difficulty	0	0 %
	Total	**12,605**	**100 %**

Wildfire Hazard Potential

Wildfire Hazard Potential is mapped with eight classes, ranging from low (blue) to high (red) hazard levels. The highest classes indicate areas with fuels more prone to experiencing extreme fire behavior during severe fire-weather conditions. Although Wildfire Hazard Potential is useful for long-term planning purposes, it does not incorporate current or forecasted weather conditions and should not be relied upon as a seasonal outlook.

Data Source: Texas Wildfire Risk Assessment, Pyrologix 2023 (includes fuel disturbances through 2022)

	Wildfire Hazard Potential Category	Acres	Percent
	Minimal Direct Wildfire Impacts	5,527	44 %
	1 - Lowest	3,646	29 %
	2	1,222	10 %
	3	1,884	15 %
	4	295	2 %
	5	32	0 %
	6	0	0 %
	7	0	0 %
	8 - Highest	0	0 %
	Total	**12,605**	**100 %**


DickinsonwithBuffer
Wildfire Hazard Potential
Acres
6,000
4,000
2,000
0
5,527
3,646
1,222
1,884
295
32
0
0
0
Minimal Direct Wildfire Impacts
1 - Lowest
2
3
4
5
6
7
8 - Highest

Ember Characteristics

The information in this section of the report identifies the locations most likely to produce embers and the areas most likely to receive embers, given a wildfire occurs. Ember modeling is based on fuel characteristics, climate, and topography.

Contents:

Conditional Ember Production Index
Conditional Ember Load Index

Conditional Ember Production Index

Conditional Ember Production Index (cEPI) provides a relative index of embers produced at a location, given that a fire occurs.

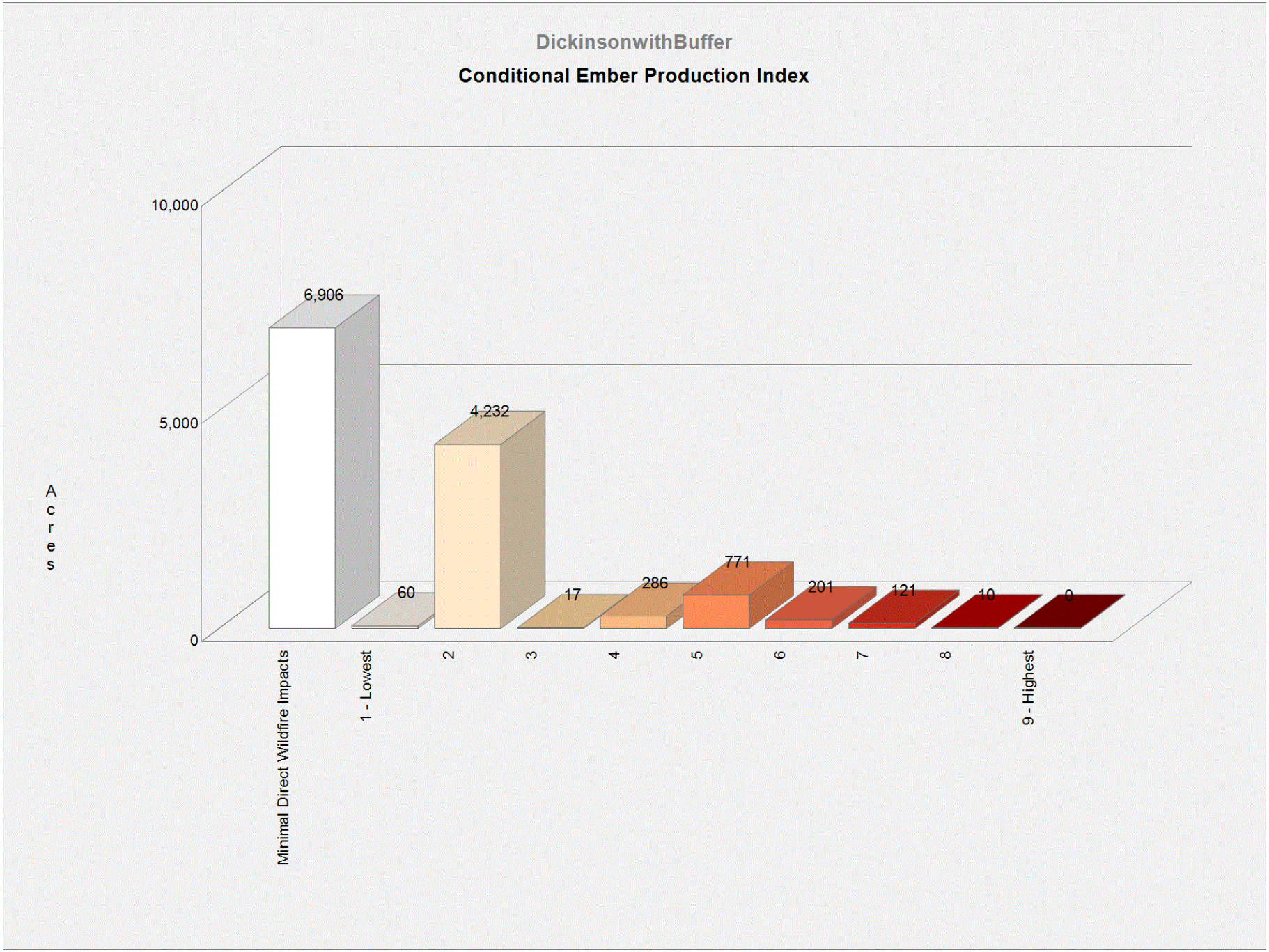
Ember production is based on surface and canopy fuel characteristics, climate, and topography within the pixel. Units are an index of the relative number of embers rather than a count of embers produced. Conditional EPI is based on heading-only fire behavior and does not include the likelihood of wildfire.

Embers can be produced from any burnable fuel source in the fuelscape, dependent on the wind and weather characteristics that lead to lofting embers.

Conditional EPI is useful for prioritizing fuel treatments to reduce the potential for ember production in volatile fuel types.

Data Source: Texas Wildfire Risk Assessment, Pyrologix 2023 (includes fuel disturbances through 2022)

	Conditional Ember Production Index Category	Acres	Percent
	Minimal Direct Wildfire Impacts	6,906	55 %
	1 - Lowest	61	0 %
	2	4,232	34 %
	3	17	0 %
	4	286	2 %
	5	771	6 %
	6	201	2 %
	7	121	1 %
	8	10	0 %
	9 - Highest	0	0 %
	Total	**12,605**	**100 %**


DickinsonwithBuffer
Conditional Ember Production Index
Acres
10,000
5,000
0
6,906
60
4,232
17
286
771
201
121
10
0
Minimal Direct Wildfire Impacts
1 - Lowest
2
3
4
5
6
7
8
9 - Highest

Conditional Ember Load Index

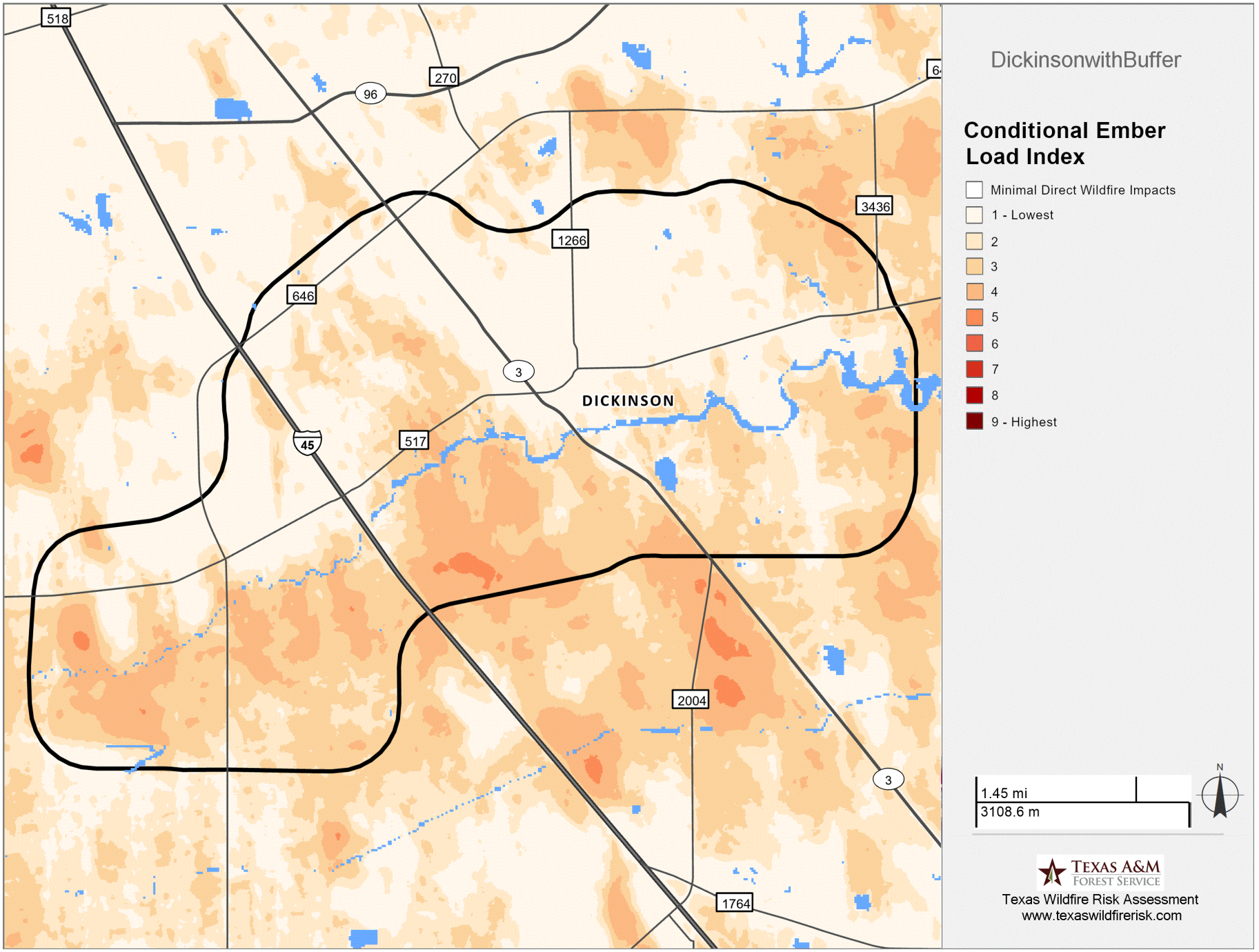
Conditional Ember Load Index (cELI) provides a relative index of embers received at a location, given that a fire occurs.

Ember load is based on surface and canopy fuel characteristics, climate, and topography within the pixel. Ember load incorporates downwind ember travel. Units are an index of the relative number of embers rather than a count of embers produced. Conditional ELI is based on heading-only fire behavior and does not include the likelihood of wildfire. Embers can be received by any pixel in the fuelscape; including both burnable and nonburnable fuel types.

Conditional ELI can be used to prioritize building hardening activities to resist ember ignition.

Data Source: Texas Wildfire Risk Assessment, Pyrologix 2023 (includes fuel disturbances through 2022)

	Conditional Ember Load Index Category	Acres	Percent
	Minimal Direct Wildfire Impacts	0	0 %
	1 - Lowest	4,752	38 %
	2	2,698	21 %
	3	3,609	29 %
	4	1,495	12 %
	5	51	0 %
	6	0	0 %
	7	0	0 %
	8	0	0 %
	9 - Highest	0	0 %
	Total	**12,605**	**100 %**


518
270
96
1266
3436
646
3
DICKINSON
45
517
2004
3
1764
DickinsonwithBuffer
Conditional Ember Load Index
Minimal Direct Wildfire Impacts
1 - Lowest
2
3
4
5
6
7
8
9 - Highest
1.45 mi
3108.6 m
N
Texas A&M Forest Service
Texas Wildfire Risk Assessment
www.texaswildfirerisk.com

Landscape Characteristics

The information in this section of the report describes the type of fuel characterized by the surface fuel model map and the percent slope, which is useful for characterizing conditions important for operating equipment.

Contents:

Surface Fuels
Percent Slope

Surface Fuels

Surface Fuels, or fire behavior fuel models as they are technically referred to, contain the parameters needed by the Rothermel (1972) surface fire spread model to compute surface fire behavior characteristics such as rate of spread, flame length, fireline intensity, and other fire behavior metrics. Surface fuels include grass, timber litter, shrub/brush, slash and other dead or live vegetation within about 6 feet of the ground and are shown here at 10-meter resolution.

This surface fuel map represents a combined effort by Texas A&M Forest Service (TAMFS) and Pyrologix to generate a custom, fine-resolution fuelscape built with 10-m vegetation data derived from Sentinel-2 imagery and reflects fuel disturbances through 2022 (Pyrologix, 2024).

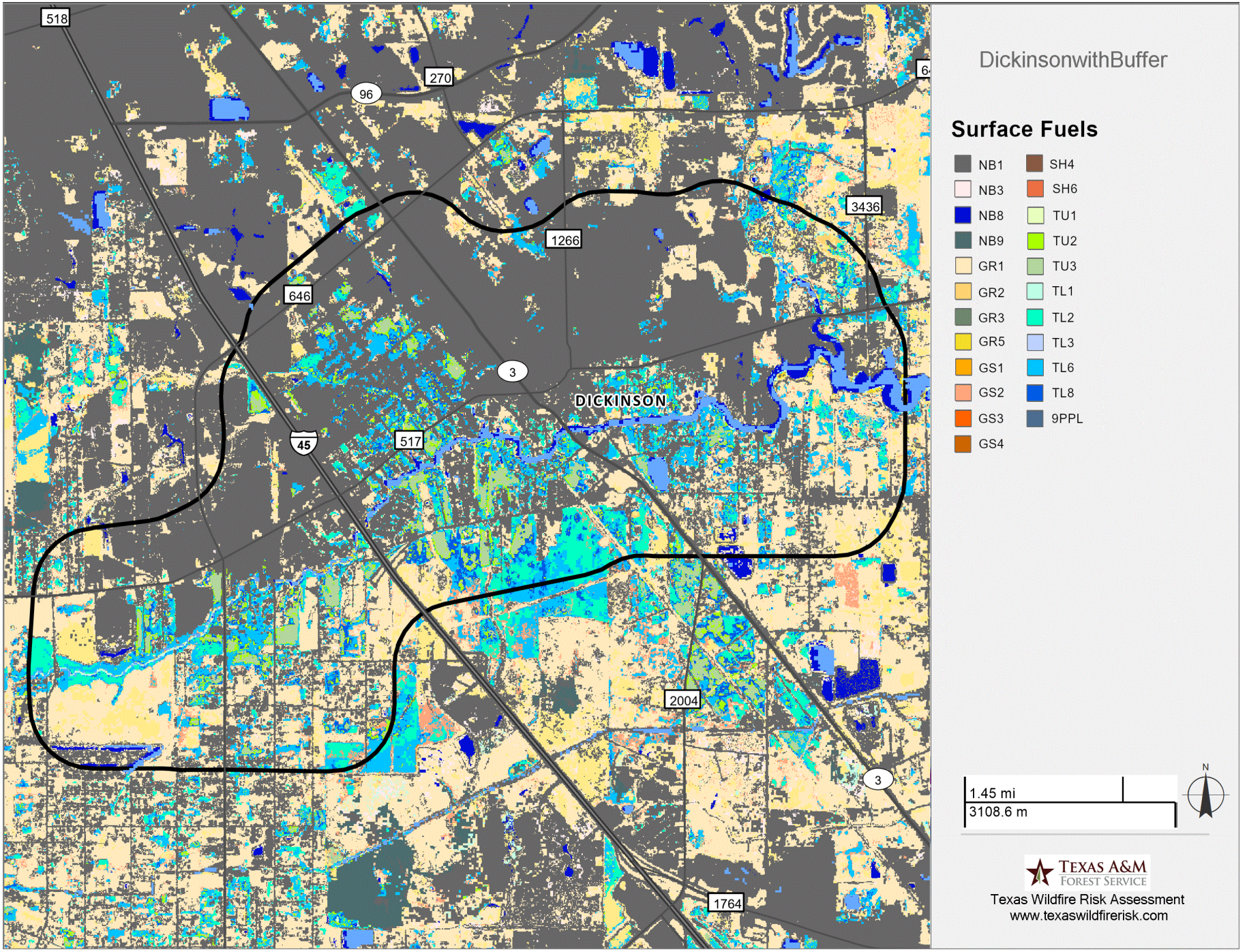
Surface fuels are typically categorized into four primary fuel types based on the primary carrier of the surface fire: 1) grass, 2) shrub/brush, 3) timber litter and 4) slash. There are two standard fire behavior fuel model sets published for use. The Fire Behavior Prediction System 1982 Fuel Model Set (Anderson, 1982) contains 13 fuel models and the Fire Behavior Prediction System 2005 Fuel Model Set (Scott & Burgan, 2005) contains 40 fuel models. One custom fuel model (9PPL) was used to characterize fire behavior in deep pine litter associated with closed pine plantations and dense natural pine stands.

A detailed fuels calibration process was undertaken that involved collaboration with fuels and fire behavior specialists across the State. Workshops were held to review the fuelscape products and calibrate the data by modifying specific vegetation and fuels classes to better reflect local knowledge and input.

Data Source: Texas Wildfire Risk Assessment, Pyrologix 2023 (includes fuel disturbances through 2022)

Surface Fuel	FBPS Fuel Model Set	Description	Acres	Percent
Non-burnable Fuel Type Models (insufficient wildland fuel to carry a wildland fire under any condition)				
NB1	2005	Urban or suburban development; insufficient wildland fuel to carry wildland fire. Includes roads.	6,573	52 %
NB3	2005	Agricultural field, maintained in nonburnable condition.	17	0 %
NB8	2005	Open water	303	2 %
NB9	2005	Bare ground	14	0 %
Grass Fuels Type Models (nearly pure grass and/or forb type)				
GR1	2005	Grass is short, patchy, and possibly heavily grazed. Spread rate moderate; flame length low.	2,470	20 %
GR2	2005	Moderately coarse continuous grass, average depth about 1 foot. Spread rate high; flame length moderate.	17	0 %
GR3	2005	Very coarse grass, average depth about 2 feet. Spread rate high; flame length moderate.	479	4 %
GR5	2005	Dense, coarse grass, average depth about 1 to 2 feet. Spread rate very high; flame length high.	21	0 %
Grass-Shrub Fuels Type Models (mixture of grass and shrub, up to 50 percent shrub coverage)				
GS1	2005	Shrubs are about 1 foot high, low grass load. Spread rate moderate; flame length low.	0	0 %
GS2	2005	Shrubs are 1 to 3 feet high, moderate grass load. Spread rate high; flame length moderate.	255	2 %
GS3	2005	Moderate grass/shrub load, average grass/shrub depth less than 2 feet. Spread rate high; flame length moderate.	2	0 %
GS4	2005	Heavy grass/shrub load, depth greater than 2 feet. Spread rate high; flame length very high.	0	0 %

Surface Fuel	FBPS Fuel Model Set	Description	Acres	Percent
Shrub Fuel Type Models (Shrubs cover at least 50 percent of the site, grass sparse to nonexistent)				
SH4	2005	Low to moderate shrub and litter load, possibly with pine overstory, fuel bed depth about 3 feet. Spread rate high; flame length moderate.	0	0 %
SH6	2005	Dense shrubs, little or no herb fuel, depth about 2 feet. Spread rate high; flame length high.	0	0 %
Timber-Understory Fuel Type Models (Grass or shrubs mixed with litter from forest canopy)				
TU1	2005	Fuelbed is low load of grass and/or shrub with litter. Spread rate low; flame length low.	0	0 %
TU2	2005	Fuelbed is moderate litter load with shrub component. Spread rate moderate; flame length low.	245	2 %
TU3	2005	Fuelbed is moderate litter load with grass and shrub components. Spread rate high; flame length moderate.	269	2 %
Timber Litter Fuel Type Models (dead and down woody fuel litter beneath a forest canopy)				
TL1	2005	Light to moderate load, fuels 1 to 2 inches deep. Spread rate very low; flame length very low.	61	0 %
TL2	2005	Low load, compact. Spread rate very low; flame length very low.	470	4 %
TL3	2005	Moderate load conifer litter. Spread rate very low; flame length low.	0	0 %
TL6	2005	Moderate load, less compact. Spread rate moderate; flame length low.	1,093	9 %
TL8	2005	Moderate load and compactness may include small amount of herbaceous load. Spread rate moderate; flame length low.	316	3 %
Custom Fuel Type Models				
9PPL	Custom	Long-needle (pine litter, plantations) with a high load.	0	0 %
		Total	**12,605**	**100 %**


DickinsonwithBuffer
Surface Fuels
NB1
NB3
NB8
NB9
GR1
GR2
GR3
GR5
GS1
GS2
GS3
GS4
SH4
SH6
TU1
TU2
TU3
TL1
TL2
TL3
TL6
TL8
9PPL
518
96
270
3436
1266
646
3
DICKINSON
45
517
2004
1764
1.45 mi
3108.6 m
N
Texas A&M Forest Service
Texas Wildfire Risk Assessment
www.texaswildfirerisk.com

Percent Slope

Percent Slope measures the rate of change of elevation over a given horizontal distance (rise over run), expressed as a percent. Percent slope is used to characterize the local conditions for operating equipment. Slope identifies the inclination at a single location based on the adjacent elevation values. Steep local conditions can severely restrict the movement of equipment and resources for suppression and intensify fire behavior.

Data Source: Texas Wildfire Risk Assessment, Pyrologix 2023 (includes fuel disturbances through 2022)

	Percent Slope Category	Acres	Percent
	0 - 5	12,071	96 %
	5 - 15	512	4 %
	15 - 25	20	0 %
	25 - 40	2	0 %
	40 - 55	0	0 %
	55 - 75	0	0 %
	> 75	0	0 %
	Total	**12,605**	**100 %**

References

Anderson, H. E. (1982). Aids to determining fuel models for estimating fire behavior. USDA For. Serv. Gen. Tech. Rep. INT-122.

Finney, M. A. 2006. In: Fuels management—how to measure success: conference proceedings. 2006 March 28-30; Portland, Oregon. Proceedings RMRS-P-41. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station: 213-220. (647 KB; 13 pages). https://www.fs.usda.gov/research/treesearch/39312

Jaffe, Melissa R.; Scott, Joe H.; Callahan, Michael N.; Dillon, Gregory K.; Karau, Eva C.; Lazarz, Mitchell T. 2024. Wildfire Risk to Communities: Spatial datasets of wildfire risk for populated areas in the United States. Fort Collins, CO: Forest Service Research Data Archive. https://doi.org/10.2737/RDS-2020-0060-2

Scott, J. H., & Burgan, R. E. (2005). Standard Fire Behavior Fuel Models: A Comprehensive Set for Use with Rothermel's Surface Fire Spread Model. Ft. Collins, CO, Rocky Mountain Research Station: USDA Forest Service, Gen. Tech. Rpt. RMRS-GTR-153.

Scott, J. H., & Reinhardt, E. D. (2001). Assessing the Crown Fire Potential by Linking Models of Surface and Crown Fire Behavior. Ft. Collins, CO, Rocky Mountain Research Station: USDA Forest Service, Research Paper RMRS-RP-29.

WRC, 2024. Wildfire Risk to Communities 2.0: Updated methods for geospatial datasets for populated areas in the United States. https://wildfirerisk.org/wp-content/uploads/2024/09/WildfireRiskToCommunities_V2_Methods_PopulatedAreas.pdf

More information about the wildfire risk and hazard data produced for the Texas Wildfire Risk Assessment is available in the project reports:

Contemporary Wildfire Hazard Across Texas. Prepared for Texas A&M Forest Service. Retrieved from https://pyrologix.com/reports/TWRA_WildfireHazardReport.pdf

A 10-m fuelscape for All-lands in Texas. Prepared for Texas A&M Forest Service. Retrieved from https://pyrologix.com/reports/TWRA_Fuelscape_Report.pdf

Documentation on the Wildfire Exposure Simulation Tool (WildEST) is available from: https://pyrologix.com/reports/WildEST Documentation.pdf





TEXAS A&M
FOREST SERVICE

Appendix D:
Meeting Documentation

WCID #1 Holding Meeting to Develop Hazard Mitigation Plan

Galveston County WCID #1 is working in partnership with the Houston-Galveston Area Council (H-GAC) to develop a Hazard Mitigation Plan. The public is invited to attend and provide input at its kick-off steering committee meeting:

Date: Tuesday, June 4, 6 p.m.
Location: 2320 Falco St., Dickinson, TX 77539
Attend in person or by Zoom (call-in info below)

The Hazard Mitigation Committee will examine the district's risks and vulnerability to all hazards and assess its vulnerability to those risks. Additionally, they will look at critical infrastructure and key resources to determine which are most susceptible to risks.

What is the Hazard Mitigation Plan? The Hazard Mitigation Plan is a framework that guides our community in making decisions and developing policies to reduce or eliminate risk to life and property. The plan identifies the types of hazards that threaten our community, evaluates our vulnerability to those threats, and outlines a strategy to reduce or eliminate the risk posed by those threats to break the cycle of repeated destruction by natural hazard events.

Who participates in the Hazard Mitigation Plan? Hazard mitigation planning is the process used by state, local and tribal leaders to understand risks from natural hazards and develop long-term strategies to reduce the impacts of disasters on people, property, and the environment.

Why is the plan important? The Federal Disaster Mitigation Act of 2000 (DMA 2000) requires that a community/Special Purpose District have an approved hazard mitigation plan to be eligible to apply for and receive FEMA hazard mitigation funds. Receipt of these funds can be critical to implementation of identified hazard mitigation programs.

Zoom Info:
Topic: WCID #1 Hazard Mitigation Plan Kick-Off Steering Committee Meeting
Time: Jun 4, 2024 06:00 PM Central Time (US and Canada)

Join Zoom Meeting

Meeting ID: 829 9094 8333
Passcode: 779741

RECENT NEWS

WCID #1 Holding Meeting to Hazard Mitigation Plan
2023 Water Quality Reports A
GCWA Announces Annual Cl Water Disinfection April 8-Ma
View and Track Your Water U Online
Freeze Preparedness Tips
Backdoor Garbage Collectior Renewal Reminder
SCAM ALERT – Fraudulent C Texts
Hazardous Waste Services

Galveston County WCID #1
DICKINSON'S Water District



Houston-Galveston Area Council

Developing a Local Hazard Mitigation Plan

What are we doing?

Galveston County Water Control and Improvement District #1 (WCID #1) is working in partnership with the Houston-Galveston Area Council (H-GAC) to develop a Local Hazard Mitigation Plan (LHMP). The WCID #1 LHMP is a customized single-jurisdictional plan tailored for a water district that geographically covers people (water customers), property and critical water assets within WCID #1's service area.

The **goal** of this plan is to make WCID #1's service area and its customers less vulnerable and more resilient to future hazard events by identifying policies, actions and strategies that will help to reduce risk and prevent future losses.

The development of this plan will also make WCID #1 eligible for certain federal disaster assistance. This includes FEMA's Hazard Mitigation Assistance (HMA) grants, including the Hazard Mitigation Grant Program (HMGP), Flood Mitigation Assistance (FMA) and Building Resilient Infrastructure and Communities (BRIC) program.

What is hazard mitigation?
FEMA defines "hazard mitigation" as any sustained action taken to reduce or eliminate the long-term risk to human life and property from hazards.

Why is hazard mitigation important?
Hazard mitigation actions lead to building stronger, safer and smarter communities. The goal of the hazard mitigation plan is to reduce or eliminate long-term risks to life and property caused by hazards or disasters. On average, each dollar spent on hazard mitigation saves society an average of $6 in avoided future losses, in addition to saving lives and preventing injuries. (Natural Hazard Mitigation Saves: 2017 Interim Report).

What will be included in the hazard mitigation plan?
The plan will identify and analyze natural hazards to which WCID #1 is susceptible and to identify policies, actions and strategies that will help to reduce risk and prevent future losses.

What can I do?

Public participation and feedback are vital parts of the hazard mitigation planning process. This can include:

- Attending and participating in the HMP Steering Committee meetings
- Collecting and providing other requested data (as available)
- Identifying mitigation actions for the plan
- Reviewing and providing comments on plan drafts, maps, and other HMP related components
- Informing the public, local officials and other interested parties about the planning process and providing the opportunity for them to comment on the plan
- Coordinating and participating in the public input process

Questions? Comments?

Contact Amanda Ashcroft,
AICP- Amanda.Ashcroft@h-gac.com

Look for HMP updates at www.WCID1.com and on the district's Facebook page.

Galveston County Water Control and Improvement District #1 (WCID #1) provides drinking water, wastewater and contracted solid waste collection services to more than 8,000 households and businesses in the greater Dickinson area.

WATER DISTRICT CUSTOMER SERVICE:
(281) 337-1576, Option 1

MORE INFO: www.wcid1.com

Houston-Galveston Area Council

Galveston County WCID #1 LHMP Steering Committee Kickoff Meeting

June 4, 2024, 6:00 PM

A G E N D A

6:00 PM	**Welcome and Introductions**
	Hazard Mitigation Planning Overview • **What is a Hazard Mitigation Plan?** • **Benefits of a Hazard Mitigation Plan** • **2023 Hazard Mitigation Plan Policy Updates**
	Project Organization
	Roles and Responsibilities
	Planning Process Overview
	Timeline
	Questions?
	Next Steps
	Adjourn

Galveston County WCID #1 LHMP Steering Committee Kickoff Meeting

June 4, 2024, 6:00 PM

Attendance

Name	Organization	Title
Amanda Ashcroft	H-GAC	Resilience Planner
Cheryl Mergo	H-GAC	Senior Manager
Amy Nelson	City of Dickinson	Citizen
Andrew Nelson	City of Dickinson	Citizen
Derek Hunt	City of Dickinson	EMS Director, EOC Coordinator
Kathy Thomas	Communications Strategies, Galveston County WCID #1	Owner, Communications Consultant
Jeremy Conn	County Constable Precinct 4	Sergeant
Michael Berezin	City of Dickinson, Police Department	Police Chief
Laura Norman	Galveston County Office of Emergency Management	Deputy Emergency Management Coordinator
Angela Maloney	Galveston County WCID #1	Administrative Assistant
Ivan Langford	Galveston County WCID #1	General Manager
Keith Morgan	Galveston County WCID #1	Water & Wastewater Superintendent
Tony Garcia	Gulf Coast Water Authority	Plant Manager
Pastor William King III	Greater New Hope Baptist Church	Pastor, Citizen
Ryan Nokelby	HDR Inc., Galveston County WCID #1	Water/Wastewater Lead, District Engineer

Meeting Notes

Welcome

Ivan Langford welcomed all in attendance and gave some background regarding the Water Control Improvement District (WCID) and the need for a Local Hazard Mitigation Plan (LHMP).

Hazard Mitigation Planning Overview

Amanda Ashcroft reviewed the meeting agenda and went over meeting goals and objectives; to explain hazard mitigation, review the benefits of developing a LHMP, provide an overview of the planning process, and inform what roles the planning team, steering committee, and the public serves in the planning process.

The Steering Committee members then introduced their name, title, the organization they represented, and a hazard they are concerned about that could affect the planning area. Amanda gave some background on the role of H-GAC and introduced the WCID and their service area.

Amanda explained what hazard mitigation planning is, the benefits of mitigating for hazards, and the history behind the Stafford Act and Disaster Mitigation Act of 2000. This act requires an approved LHMP for entities to remain eligible for mitigation grants, plans must be updated every 5-years. FEMA has a plan review guide that outlines the requirements for what must be in the plan or addressed by the plan, these were updated in 2022 and take full effect for all plans approved after April 2023. Updated policies were summarized to the committee.

Galveston County WCID #1 LHMP Steering Committee Kickoff Meeting

June 4, 2024, 6:00 PM

Project Organization

A project organization graphic was included to break down the differences between the planning team (H-GAC and WCID #1) and those invited to serve on the Steering Committee. The Planning Team and Steering Committee working together form our planning partnership for this LHMP. Amanda explained that, as part of the planning partnership, there are some roles and responsibilities all should be aware of.

Roles and Responsibilities

The roles and responsibilities of the Planning Partnership were outlined. These included:

1. Actively participate throughout the LHMP development
2. Attend meetings
3. Assist with coordination or participation in the public input process
4. Provide information and feedback
5. Adopt & implement the plan

Planning Process Overview

The LHMP Planning Process was discussed and broken down into 4 phases. These were: organize resources, Risk and capability assessment, mitigation strategy, and adoption and implementation. The components of an LHMP were then outlined to the steering committee.

Timeline

Amanda reviewed the tentative project timeline. The first outreach event will be taking place on June 15, 2024, at the Galveston County Hurricane Preparedness Fair. H-GAC staff will set up a booth to collect public input through interactive exercises and hand out hurricane preparedness flyers. The WCID will also provide giveaway items and coloring books for the booth. A meeting for Phase 2: Risk and Capability Assessment is tentatively planned for August 2024. Detail will be sent out when a date is finalized.

Outreach methods were discussed for how the planning partnership will get the word out to stakeholders for future meetings and public input.

Next Steps

The next steps included identifying hazards to be included in this LHMP for the WCID. Amanda outlined what other recently updated LHMP's within the region have included for their hazards, and urged the steering committee to start thinking about what affects the project area, especially the critical infrastructure and services the WCID provides. Amanda also discussed HAZUS and the HAZUS models being run in-house by H-GAC.

Galveston County WCID #1 Local Hazard Mitigation Plan Development

Meeting #1: Kickoff

June 4, 2024

1

Today's Agenda

- Welcome and Introductions
- Hazard Mitigation Planning Overview
  - What is a Hazard Mitigation Plan?
  - Benefits of a Hazard Mitigation Plan
  - 2023 Hazard Mitigation Plan Policy Updates
- Project Organization
- Roles and Responsibilities
- Planning Process Overview
- Timeline
- Q&A, Next Steps

2

Meeting Goals & Objectives

- Explain hazard mitigation
- Review the benefits of developing a local hazard mitigation plan (LHMP)
- Provide an overview of the planning process
- Inform what roles the planning team, steering committee, and the public serves in the planning process

3

Introductions

- Name
- Organization, Title/Role
- Natural hazard

4

What is H-GAC?



H-GAC 13 Counties & City of Houston

h-gac.com

Serving Today • Planning for Tomorrow

Houston-Galveston Area Council

5







Who we are

The Galveston County Water Control and Improvement District #1 (WCID #1) provides drinking water, wastewater and contracted solid waste collection services to 8,500 households and businesses in the greater Dickinson area.

Galveston County WCID #1
Dickinson's Water District

Galveston County WCID #1
Dickinson's Water District

6

Our vision

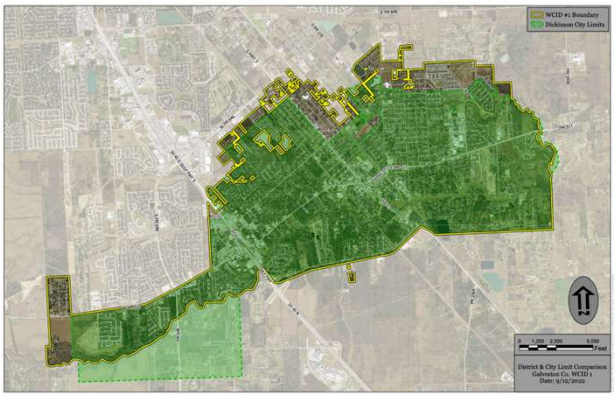
Provide excellent customer service by investing in infrastructure improvements, proactive communication, staff development and cost efficiencies

Galveston County WCID #1
Dickinson's Water District

Galveston County WCID #1
Dickinson's Water District

7

Our service area



- **DISTRIBUTE** 2.1 million gallons of drinking water a day
- **TREAT** 1.8 million gallons of sewage a day
- **CONTRACT** to pick up solid waste for 8,500 households and businesses

Galveston County WCID #1
Dickinson's Water District

Galveston County WCID #1
Dickinson's Water District

8

What is Hazard Mitigation Planning?

- Any action taken to reduce or eliminate the long-term risk to life, personal injury, and property damage that can result from a disaster

9

Disaster Mitigation Act of 2000 (DMA 2000)

"to reduce the loss of life and property, human suffering, economic disruption, and disaster assistance costs resulting from natural disasters."

- Section 322 specifically addresses mitigation planning and requires FEMA approved hazard mitigation plans as a precondition for receiving FEMA mitigation funds.

10

Benefits of Hazard Mitigation

- Prevent injury and loss of life
- Prevent damage to community assets
- Reduce exposure to risk from natural hazards
- Reduce costs of disaster response/recovery
- Advance other community objectives

11

Updated Policies

- On April 19, 2022, FEMA released the updated state and local mitigation planning policies for all mitigation plans approved on or after April 19, 2023.

12

Updated Policies

- Defines who local governments must include in the planning process.
  - Socially vulnerable/underserved communities
  - Engagement and active participation
- Climate change and other future conditions
- Facilitates stronger alignment with other FEMA mitigation programs & incorporates new FEMA grant programs
- Mitigation actions are required for every hazard of concern included in the plan

13

Project Organization

Planning Team + Steering Committee = Planning Partnership

H-GAC Staff
Amanda Ashcroft
Cheryl Mergo

WCID #1 Staff
Ivan Langford
Angela Maloney
Ryan Nokelby
Kathy Thomas

Steering Committee
- Emergency Mgmt
- City Staff
- The Public
- County Staff
- Elected Officials
- Utility Companies
- Industry/Business
- Transportation
- Places of Worship
- ISDs
- Non-profits
- Shelters

14

Planning Partnership Roles and Responsibilities

1. Actively participate throughout the LHMP development
2. Attend meetings
3. Assist with coordination or participation in the public input process
4. Provide information and feedback
5. Adopt & implement the plan

15

Planning Process



16

Plan Components

- WCID #1 Profile
- Planning Process
- Risk Assessment
- Capability Assessment
- Hazard Identification (Hazard Profiles)
- Mitigation Goal and Strategies
- Plan Implementation, Monitoring, and Maintenance
- Appendices

17

Risk and Capability Assessment

2

- Identify hazards
- Outline capabilities
- Assess risks



- Identify Hazards
  - Location
  - Extent
  - Historic Occurrences
  - Future Probability
  - Climate Change
- Update Assets/ Outline Capabilities
  - Critical Facilities
  - Community Lifelines
  - Critical Infrastructure
  - Population
  - Building Stock

18

Critical Facilities & Community Lifelines

- Critical Facilities- provide essential services to the community, especially before, during, and after a disaster.
- Community Lifelines- provide services that allow continuity of operations of critical business and government functions and are crucial to the health and safety of residents.

Water Systems

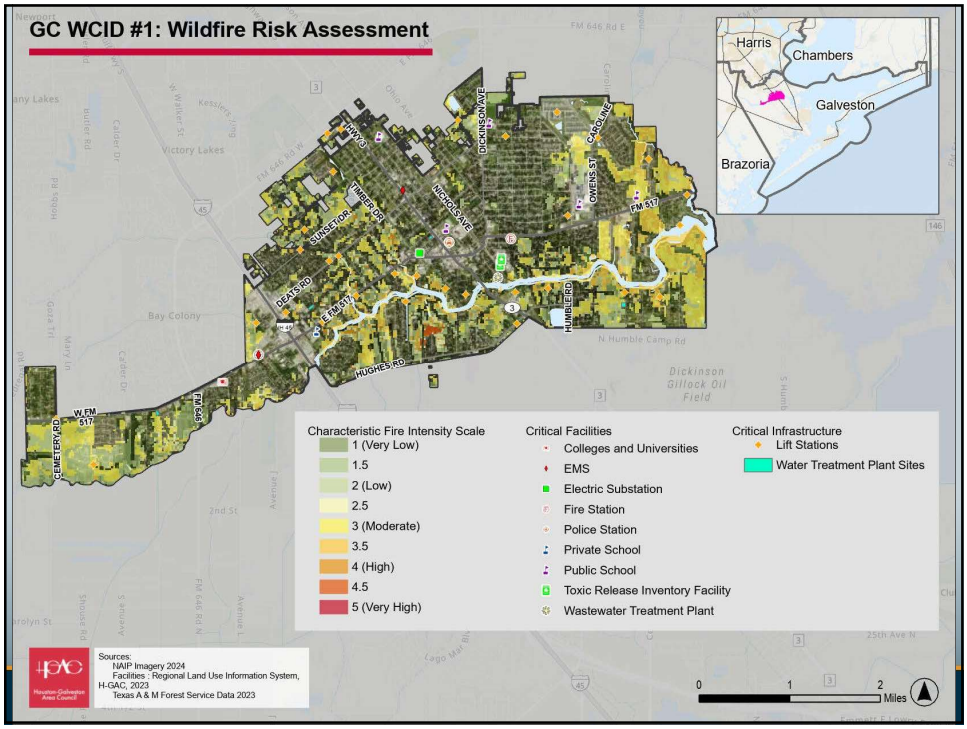
Communications | Energy (Power & Fuel) | Food, Hydration, Shelter | Hazardous Materials | Safety and Security | Transportation | Health and Medical

h-gac.com

Serving Today • Planning for Tomorrow

Houston-Galveston Area Council

19



20

Mitigation Strategy

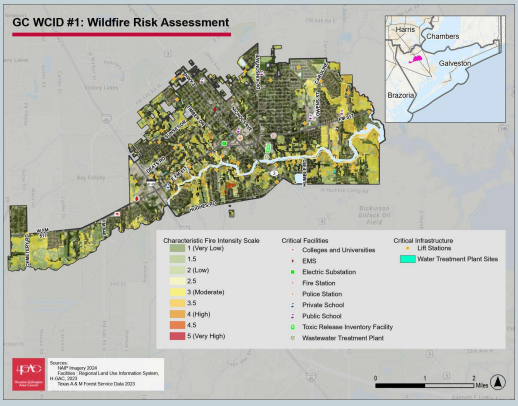
3

Set planning goals and objectives
Develop mitigation actions
Draft the action plan

- Goals/ Objectives
  - What outcomes do you want to achieve?
- Actions
  - What specific actions will be taken to reduce the risk of hazards?
- Action Plan
  - How will the actions be prioritized and implemented?

21

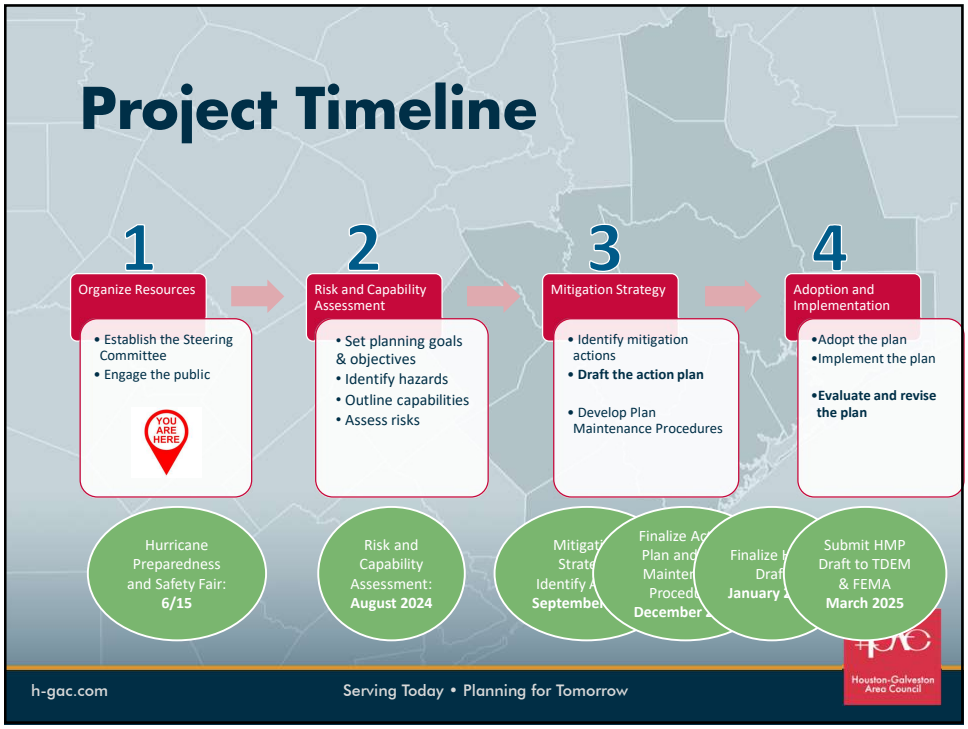
- Goal:
  - Increase Public Preparedness and Engagement
- Objective:
  - Reduce flammable vegetation within areas of moderate or greater wildfire risk.
- Action:
  - Increase homeowner awareness about wildfire risk and safety measures, such as hazardous fuels reduction and creating defensible space through social media campaigns, public events, and informational flyers distributed in water bills.



22


Adoption and Implementation
4
Adopt the plan
Implement the plan
Evaluate and revise the plan
Plan Adoption
Integration
What specific actions will be taken to reduce the risk of hazards?
The Action Plan
Explore funding options to complete projects
Develop grant applications
Implement the projects
h-gac.com
Serving Today • Planning for Tomorrow
Houston-Galveston Area Council

23


Project Timeline
1
Organize Resources
• Establish the Steering Committee
• Engage the public
YOU ARE HERE
2
Risk and Capability Assessment
• Set planning goals & objectives
• Identify hazards
• Outline capabilities
• Assess risks
3
Mitigation Strategy
• Identify mitigation actions
• Draft the action plan
• Develop Plan Maintenance Procedures
4
Adoption and Implementation
•Adopt the plan
•Implement the plan
•Evaluate and revise the plan
Hurricane Preparedness and Safety Fair: 6/15
Risk and Capability Assessment: August 2024
Submit HMP Draft to TDEM & FEMA March 2025
h-gac.com
Serving Today • Planning for Tomorrow
Houston-Galveston Area Council

24

Outreach Methods

- What methods of public involvement have worked well in the past?
  - Community events
  - Questionnaires/surveys
  - Roundtable/forums
  - Social media
  - Web sites

25

Hazard Identification

City of Galveston

- ❑ Biologic Event
- ❑ Coastal Erosion
- ❑ Environmental Disaster
- ❑ Extreme Cold
- ❑ Extreme Heat
- ❑ Drought & Expansive Soils
- ❑ Fire (Wild & Urban)
- ❑ Flooding
- ❑ Hail
- ❑ Lightning
- ❑ Sea Level Change
- ❑ Tornado & Waterspout
- ❑ Tsunami
- ❑ Tropical Systems and Hurricanes
- ❑ Windstorm
- ❑ Winter Storm

Port of Galveston

- ❑ Coastal erosion/ land subsidence
- ❑ Cold Wave
- ❑ Drought
- ❑ Flooding
- ❑ Fog
- ❑ Heat Wave
- ❑ Hurricanes and tropical storms
- ❑ Lightning
- ❑ Pandemic
- ❑ Thunderstorms
- ❑ Tornadoes
- ❑ Winter storms

Chambers County

- ❑ Climate Change
- ❑ Drought
- ❑ Extreme Temperatures (heat and cold)
- ❑ Flooding (Street/Land)
- ❑ Flooding
- ❑ Geologic
  - ❑ (Landslide, sinkholes, subsidence)
- ❑ Hurricane/Tropical Storm
- ❑ Tornado
- ❑ Severe Weather
  - ❑ (high winds, lightning, hail)
- ❑ Severe Winter Storms
  - ❑ (blizzard, heavy snow, ice)
- ❑ Wildfire

26

Hazard Identification

- HAZUS is a nationally applicable standardized methodology that contains models for estimating potential losses from earthquakes, floods, hurricanes, and tsunamis.
- HAZUS uses Geographic Information Systems (GIS) technology to estimate physical, economic, and social impacts of disasters.

27



28

Houston-Galveston Area Council

Galveston County WCID #1 LHMP Steering Committee Meeting

August 6, 2024, 6:00 PM

A G E N D A

6:00 PM	**Welcome and Introductions**
	Hazard Mitigation Kickoff Meeting Recap • What is Hazard Mitigation • Project Organization • Planning Process • Project Timeline
	Hazard Identification
	Risk Assessment
	Next Steps • Goal Setting • Capability Assessment
	Questions?
8:00 PM	**Adjourn**

Galveston County WCID #1 LHMP Steering Committee Meeting

August 6, 2024, 6:00 PM

Meeting Notes

Welcome and Introductions

The Galveston County Water Control Improvement District #1 (GCWCID #1) General Manager welcomed all in attendance and gave some background regarding the Water Control Improvement District and the need for a Local Hazard Mitigation Plan (LHMP, HMP). All in attendance introduced themselves, their role, and the organization they were representing.

Hazard Mitigation Kickoff Meeting Recap

H-GAC staff reviewed meeting goals and objectives, then gave a quick summary of the kickoff meeting for those who were not present. This included an overview of GCWCID #1 and Houston-Galveston Area Council's role for this plan development, reviewing what hazard mitigation is and why it's important, and discussing the project organization and planning process.

Hazard Identification

H-GAC staff discussed the hazard identification and risk assessment for developing a hazard mitigation plan specific to the GCWCID #1. The Steering Committee received a handout that included various hazards included in the 2023 Texas State Hazard Mitigation Plan, hazards included within other recent HMPs from surrounding areas/counties, and public input results that were obtained at the Galveston County Disaster Preparedness Event on 6/15 regarding hazards of concern. The Steering Committee then identified key natural and human-caused hazards of concern that could affect the GCWCID#1 and it's critical infrastructure.

Identified hazards included hurricanes, severe winter weather, flooding, drought/expansive soils, extreme heat, severe weather (tornadoes, hail, lightning, wind), wildfire, cyber threats, water quality/quantity issues, hazmat, and pandemic. The Steering Committee discussed grouping related hazards (e.g., severe weather including tornado, hail, lightning) versus separating these into individual hazard profiles.

Risk Assessment

The Steering Committee was provided a Risk Assessment worksheet to rank the probability and severity for each hazard identified in the previous exercise. Scores given were specific to their impact on GCWCID#1 operations and infrastructure. The Risk Assessment was discussed, and hazards were scored collectively as a committee. The hazard ranking was then compared to the State HMP for Region 4 and public input data. The Steering Committee discussed their scores and agreed on the ranking of Hazards (high, Medium, Low). The Risk Assessment results can be seen in the table below.

RISK ASSESSMENT: To rank hazard risk, probability and severity must be determined.

PROBABILITY: A measure of how likely an event will occur
SEVERITY: How much a hazard affects the functionality of society and natural environment

Hazard risk is measured using this equation: **RISK = PROBABILITY x SEVERITY**

Probability	Characteristics
4 – Highly Likely	Event is probable within the next calendar year These events have occurred, on average, once every 1-2 years in the past
3 – Likely	Event is probable within the next 10 years Event has a 10-50% chance of occurring in any given year These events have occurred, on average, once every 3-10 years in the past
2 – Possible	Event is probable within the next 50 years Event has a 2-10% chance of occurring in any given year These events have occurred, on average, once every 10-50 years in the past
1 – Unlikely	Event is probable within the next 200 years Event has a 0.5-2% chance of occurring in any given year These events have occurred, on average, once every 50-200 years in the past

Severity	Characteristics
8 – Catastrophic	Multiple deaths Complete shutdown of facilities for 30 or more days More than 50% of property is severely damaged
4 – Critical	Injuries and/or illnesses result in permanent disability Complete shutdown of critical facilities for at least 14 days More than 25% of property is severely damaged
2 – Limited	Injuries and/or illnesses do not result in permanent disability Complete shutdown of critical facilities for more than seven days More than 10% of property is severely damaged.
1 – Negligible	Injuries and/or illnesses are treatable with first aid Minor quality of life lost Shutdown of critical facilities and services for 24 hours or less Less than 10% of property is severely damaged

Hazard	Probability (1, 2, 3, 4)	Severity (1, 2, 4, 8)	Risk (P x S)	Ranking
Cyber Threats	4	8	3**2**	1, high
Hurricane	4	4	1**6**	1, high
Severe Winter Weather	4	4	1**6**	1, high
Water Quality & Quantity	2	4	8	2, medium
Hazardous Materials	1	8	8	2, medium
Flooding	3	2	6	2, medium
Severe Weather	4	1	4	2, medium
Extreme Heat	4	1	4	2, medium
Drought & Expansive Soils	4	1	4	2, medium
Pandemic	2	1	2	1, low
Fire	1	1	1	1, low
Dam/Levee Failure	1	1	1	1, low

Galveston County WCID #1 LHMP Steering Committee Meeting

August 6, 2024, 6:00 PM

Mission Statement

The Steering Committee discussed the need for a Mission Statement for the HMP. H-GAC staff presented examples and the Steering Committee worked together to draft the mission statement:

To be proactive in reducing risk and increasing resiliency of the WCID #1 water and wastewater systems during disasters by developing a hazard mitigation plan that focuses on protecting life, property, infrastructure, and the environment.

Next Steps

The core planning team will meet to further assess capabilities, make an inventory of assets for the GCWCID #1, and begin to brainstorm potential mitigation goals/objectives that align with the drafted mission statement and the vision of the GCWCID#1.

The next Steering Committee meeting is TBA.

Q&A

None

Attendance

Name	Organization	Title
Amanda Ashcroft	H-GAC	Resilience Planner
Cheryl Mergo	H-GAC	Senior Manager
Kathy Thomas	Communications Strategies, Galveston County WCID #1	Owner, Communications Consultant
Jeremy Conn	County Constable Precinct 4	Sergeant
A.M.	Galveston County WCID #1	Administrative Assistant
I.L.	Galveston County WCID #1	General Manager
K.M.	Galveston County WCID #1	Water & Wastewater Superintendent
Tony Garcia	Gulf Coast Water Authority	Plant Manager
Pastor William King III	Greater New Hope Baptist Church	Pastor, Citizen
Brad Burness	Galveston County Office of Emergency Management	Emergency Management Coordinator
Jeremy Borja	Galveston County Office of Emergency Management	Emergency Management Specialist
R. N.	HDR Inc., Galveston County WCID #1	Water/Wastewater Lead, District Engineer
Clint Weekley	Texas Department of Public Safety	DPS Sergeant

Galveston County WCID #1
DICKINSON'S Water District
Houston-Galveston Area Council

Galveston County WCID #1
Hazard Mitigation Plan Steering Committee Meeting
August 6, 2024

Name	Title	Organization	County	Email	Keep me informed about the LHMP ☒
Angela Maloney	Mgmt & Board Support	WCID #1	Gal	amaloney@gcwcid1tx.gov	X
Jeremy Banja	EM SPECIALIST	GC OEM	GAL	jeremy.banja@galvestoncountytx.gov	
Jeremy Conn	Sgt	GC Pct 4 Constable	GAL	jeremy.conn@galvestoncountytx.gov	
Tony Garcia	Plant Manager	Gulf Coast Water Auth	GAL	Tgarcia@gcwatx.gov	
Brad Burness	EMC	GCOEM	GAL	brad.burness@galvestoncountytx.gov	
Keith Morgan	Chief DVFD	DVFD	Gal	KMorgan@GCwcid1Tx.Gov	
William H. King III	Pastor		Gal	whking1i@gmail.com	
Ryan Nokelby	WCID #1 Engineer	HDR, Inc.	Gal	Ryan.Nokelby@hdrinc.com	X

Galveston County WCID #1
DICKINSON'S Water District
Houston-Galveston Area Council

Galveston County WCID #1
Hazard Mitigation Plan Steering Committee Meeting
August 6, 2024

Name	Title	Organization	County	Email	Keep me informed about the LHMP ☒
Clint Weekley	DPS Sergeant	DPS	Galveston	clint.weekley@dps.texas.gov	
om Cheryl Mergo					
om Kathy Thomas					
Ivan LANGFORD	GM	WCID #	Gal	ilangford@gcwcid1tx.gov	

Mission Statement ☐ Remove natural from #2
#2 good.
... To be proactive in reducing risk
... to water & wastewater systems

Risk Assessment

RISK ASSESSMENT: To rank hazard risk, probability and severity must be determined.

PROBABILITY: A measure of how likely an event will occur
SEVERITY: How much a hazard affects the functionality of society and natural environment

Use the tables above as a guide

Hazard	Probability (1, 2, 3, 4)	Severity (1, 2, 4, 8)	Risk (P x S)	Ranking
~~Hurricane~~				
Severe Winter Weather	4	4	16	1
Hurricane,	4	4	16	1
Flooding	3	2	6	2
Drought + Expansive soils	4	1	4	3
Extreme Heat	4	1	4	3
Severe Weather	4	1	4	3
Dam/Levee Failure	1	1	1	3
[redacted] fire	1	1	1	3
Cyber Threats	4	8	32	1
[redacted]				
[redacted]				
Water Quality & Quantity	2	4	8	2
Hazmat	1	8	8	2
Pandemic	2	1	2	3
[redacted]				

20ft Surge would put water plant underwater

Hurricane + Storm Surge

Hail Tornado Lightning Wind

IT (Internet Technology)
OT (operational technology)
PS (physical security)

*WCID #1
*Drought Contingency Plan

Gulf Coast Water Authority
↳ Water Supplier

Galveston County WCID #1 Local Hazard Mitigation Plan Development

Meeting #2

August 6, 2024

1

Today's Agenda

- Welcome and Introductions
- Kickoff Meeting Recap
- Hazard Identification
- Risk Assessment
- Next Steps
  - SC- Goals
  - CPT- Capability Assessment
- Q&A

2

Meeting Goals & Objectives

- Recap Kickoff Meeting
- Identify Hazards
- Conduct Risk Assessment
- Answer Questions
- Discuss Next Steps

3

Welcome and Introductions

Ivan Langford

Amanda Ashcroft

4





Who we are

The Galveston County Water Control and Improvement District #1 (WCID #1) provides drinking water, wastewater and contracted solid waste collection services to 8,500 households and businesses in the greater Dickinson area.

Galveston County WCID #1
Dickinson's Water District

Galveston County WCID #1
Dickinson's Water District

5

Our vision

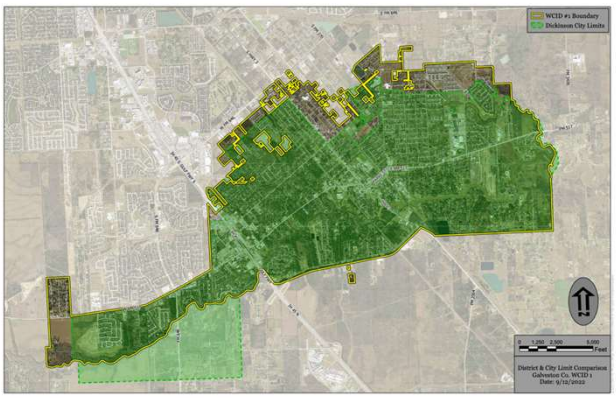
Provide excellent customer service by investing in infrastructure improvements, proactive communication, staff development and cost efficiencies

Galveston County WCID #1
Dickinson's Water District

Galveston County WCID #1
Dickinson's Water District

6

Our service area



- **DISTRIBUTE** 2.1 million gallons of drinking water a day
- **TREAT** 1.8 million gallons of sewage a day
- **CONTRACT** to pick up solid waste for 8,500 households and businesses

Galveston County WCID #1
Dickinson's Water District

Galveston County WCID #1
Dickinson's Water District

7

What is H-GAC?



H-GAC 13 Counties & City of Houston

h-gac.com

Serving Today • Planning for Tomorrow

Houston-Galveston Area Council

8



9

What is Hazard Mitigation Planning?

- Any action taken to reduce or eliminate the long-term risk to life, personal injury, and property damage that can result from a disaster
- The Hazard Mitigation Plan will assess the potential risk that natural hazards pose to buildings, infrastructure and equipment owned by WCID#1.

h-gac.com Serving Today • Planning for Tomorrow Houston-Galveston Area Council

10

Disaster Mitigation Act of 2000 (DMA 2000)

"to reduce the loss of life and property, human suffering, economic disruption, and disaster assistance costs resulting from natural disasters."

- Section 322 specifically addresses mitigation planning and requires FEMA approved hazard mitigation plans as a precondition for receiving FEMA mitigation funds.

11

Project Organization

Core Planning Team + Steering Committee = Planning Partnership

H-GAC Staff
Amanda Ashcroft
Cheryl Mergo

WCID #1 Staff
Ivan Langford
Angela Maloney
Ryan Nokelby
Kathy Thomas

Steering Committee
- Emergency Mgmt
- City Staff
- The Public
- County Staff
- Elected Officials
- Utility Companies
- Industry/Business
- Transportation
- Places of Worship
- ISDs
- Non-profits
- Shelters

12

Hazard Mitigation Plan Components

- WCID #1 Profile
- Planning Process
- ***Risk Assessment***
- Capability Assessment
- ***Hazard Identification (Hazard Profiles)***
- Mitigation Goals and Strategies
- Plan Implementation, Monitoring, and Maintenance
- Appendices

13

Planning Process



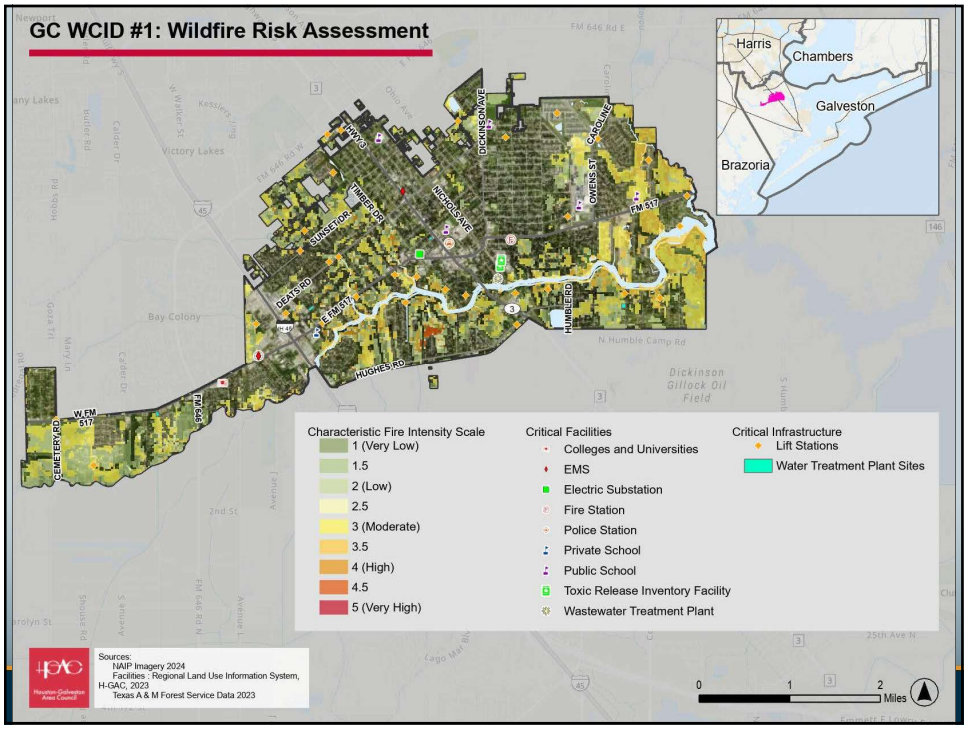
14


Risk and Capability Assessment
2
•Identify hazards
•Outline capabilities
•Assess risks
Identify Hazards
Location
Extent
Historic Occurrences
Future Probability
Climate Change
Update Assets/ Outline Capabilities
Critical Facilities
Community Lifelines
Critical Infrastructure
Population
Building Stock
h-gac.com
Serving Today • Planning for Tomorrow
Houston-Galveston Area Council

15


Critical Facilities & Community Lifelines
Water Systems
Critical Facilities- provide essential services to the community, especially before, during, and after a disaster.
Community Lifelines- provide services that allow continuity of operations of critical business and government functions and are crucial to the health and safety of residents.
Communications
Energy (Power & Fuel)
Food, Hydration, Shelter
Hazardous Materials
Safety and Security
Transportation
Health and Medical
h-gac.com
Serving Today • Planning for Tomorrow
Houston-Galveston Area Council

16



17

Mitigation Strategy

3

Set planning goals and objectives
Develop mitigation actions
Draft the action plan

- Goals/ Objectives
  - What outcomes do you want to achieve?
- Actions
  - What specific actions will be taken to reduce the risk of hazards?
- Action Plan
  - How will the actions be prioritized and implemented?

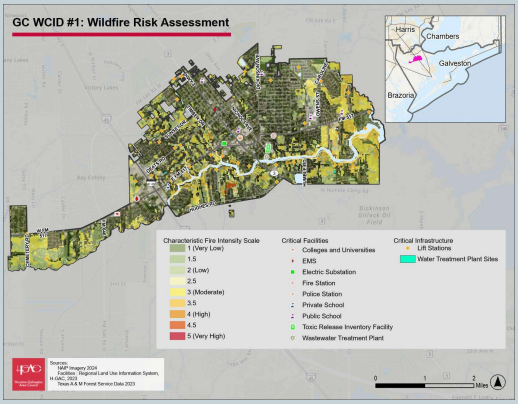
h-gac.com

Serving Today • Planning for Tomorrow

Houston-Galveston Area Council

18

- Goal:
  - Increase Public Preparedness and Engagement
- Objective:
  - Reduce flammable vegetation within areas of moderate or greater wildfire risk.
- Action:
  - Increase homeowner awareness about wildfire risk and safety measures, such as hazardous fuels reduction and creating defensible space through social media campaigns, public events, and informational flyers distributed in water bills.



19

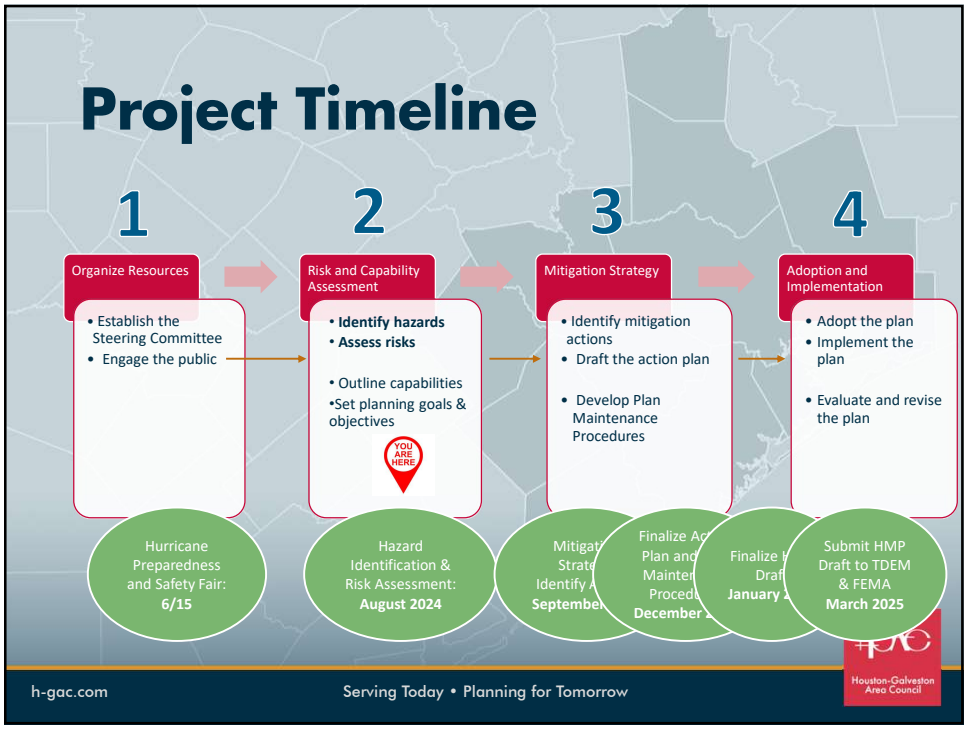
Adoption and Implementation

4

Adopt the plan
Implement the plan
Evaluate and revise the plan

- Plan Adoption
- Integration
  - What specific actions will be taken to reduce the risk of hazards?
- The Action Plan
  - Explore funding options to complete projects
    - Develop grant applications
      - Implement the projects

20

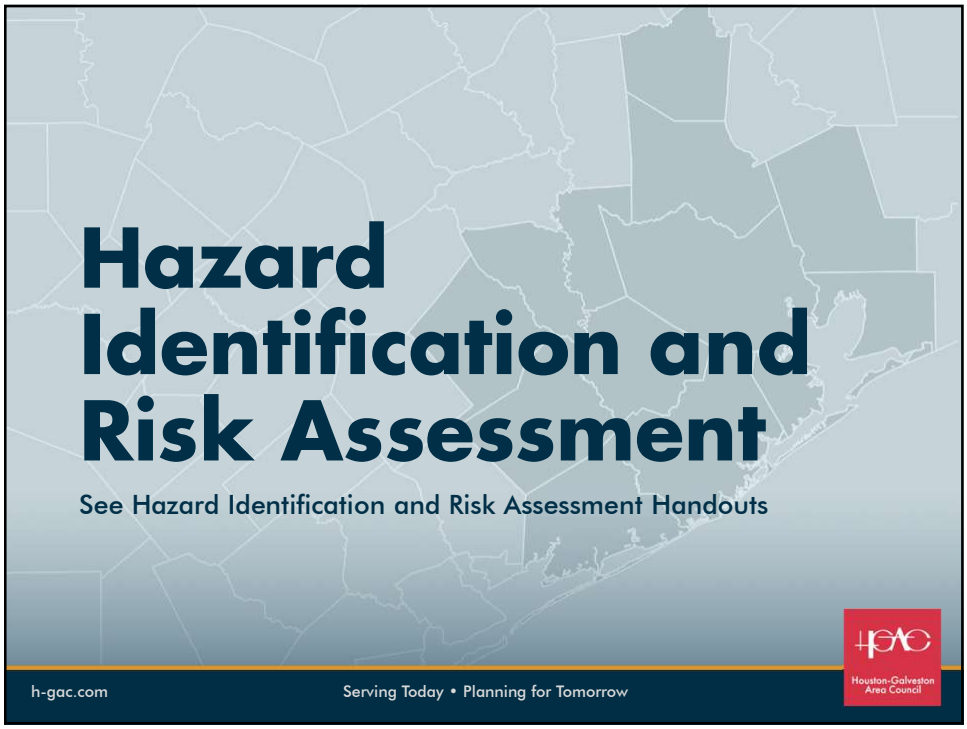


21

Outreach Methods

- What methods of public involvement have worked well in the past?
  - Community events
  - Questionnaires/surveys
  - Roundtable/forums
  - Social media
  - Web sites

22



23

Hazard Identification

City of Galveston

- ❑ Biologic Event
- ❑ Coastal Erosion
- ❑ Environmental Disaster
- ❑ Extreme Cold
- ❑ Extreme Heat
- ❑ Drought & Expansive Soils
- ❑ Fire (Wild & Urban)
- ❑ Flooding
- ❑ Hail
- ❑ Lightning
- ❑ Sea Level Change
- ❑ Tornado & Waterspout
- ❑ Tsunami
- ❑ Tropical Systems and Hurricanes
- ❑ Windstorm
- ❑ Winter Storm

Port of Galveston

- ❑ Coastal erosion/ land subsidence
- ❑ Cold Wave
- ❑ Drought
- ❑ Flooding
- ❑ Fog
- ❑ Heat Wave
- ❑ Hurricanes and tropical storms
- ❑ Lightning
- ❑ Pandemic
- ❑ Thunderstorms
- ❑ Tornadoes
- ❑ Winter storms

Chambers County

- ❑ Climate Change
- ❑ Drought
- ❑ Extreme Temperatures (heat and cold)
- ❑ Flooding (Street/Land)
- ❑ Flooding
- ❑ Geologic
  - ❑ (Landslide, sinkholes, subsidence)
- ❑ Hurricane/Tropical Storm
- ❑ Tornado
- ❑ Severe Weather
  - ❑ (high winds, lightning, hail)
- ❑ Severe Winter Storms
  - ❑ (blizzard, heavy snow, ice)
- ❑ Wildfire

h-gac.com Serving Today • Planning for Tomorrow Houston-Galveston Area Council

24

Our vision

Provide excellent customer service by investing in infrastructure improvements, proactive communication, staff development and cost efficiencies

Galveston County WCID #1
Dickinson's Water District

Galveston County WCID #1
Dickinson's Water District

25

HMP Mission Statement

- The mission of the WCID #1 Hazard Mitigation Plan is to…
  - reduce risk for WCID #1 assets that are vital for continuity of operations following hazard events.
  - reduce risk and increase the resiliency of the WCID #1 water system during natural disasters by developing a hazard mitigation plan that focuses on protecting life, property, infrastructure, and the environment.
  - protect and eliminate and/or reduce damages and disruptions to WCID #1 assets during disasters to maintain continuity of essential services.

26

Hazard Identification and Risk Assessment

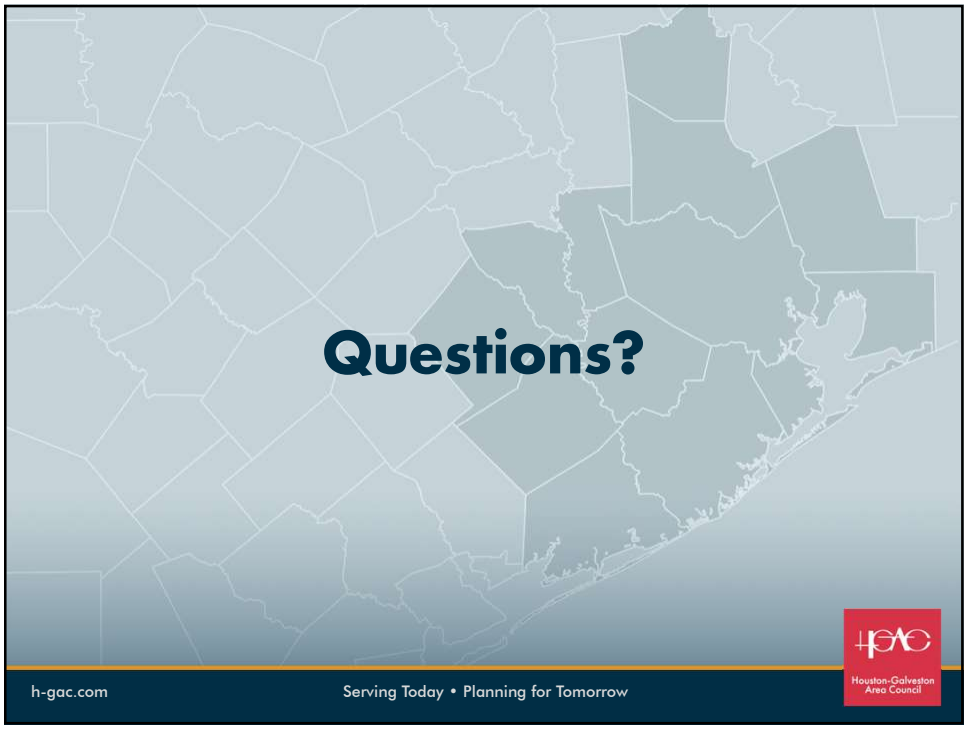
See Hazard Identification and Risk Assessment Handouts

27

Next Steps

- Steering Committee
  - Brainstorm goals
    - Align with the HMP Mission Statement
    - Can be broad or specific
- Core Planning Team
  - Capability Assessment
  - Brainstorm goals

28



29

Contact Information

Amanda Ashcroft, AICP
Planner, Community & Environmental
Houston-Galveston Area Council
Amanda.Ashcroft@h-gac.com
713-993-4545

h-gac.com
Serving Today • Planning for Tomorrow
Houston-Galveston Area Council

30

Houston-Galveston Area Council

Galveston County WCID #1 LHMP Steering Committee Meeting

August 6, 2024, 6:00 PM

Hazard Identification

B1. Does the plan include a description of the type, location and extent of all natural hazards that can affect the jurisdiction? Does the plan also include information on previous occurrences of hazard events and on the probability of future hazard events?
(Requirement 44 CFR § 201.6(c)(2)(i))

B1-a. The plan must include a description of all ***natural hazards*** that can affect the jurisdiction(s) in the planning area and their assets located outside of the planning area.

Natural hazards are a source of harm or difficulty created by a meteorological, environmental or geological event. Natural hazards impact the built environment.

Note: Identifying hazards includes identifying all the types of hazards that can occur, e.g., the different types of flood hazards (flash, riverine, storm surge, dam/levee failure, etc.).

2023 Texas State Hazard Mitigation Plan (SHMP) Hazards (All Regions):

Coastal Erosion	Hurricane, Tropical Storm, and Depression
Dam Failure	Land Subsidence
Drought	Lightning
Earthquake	Severe Coastal Flood
Expansive Soils	Severe Wind
Extreme Heat	Severe Winter Weather
Flood	Tornado
Hailstorm	Wildfire

Texas SHMP, Region 4, Hazard Rankings by Total Damages:

Hazard	Hazard Ranking	Total Damages (Property & Crop)
Hurricane	**1**	$4,084,033,024
Flood	**2**	$1,546,670,341
Severe Coastal Flood	**3**	$413,978,834
Drought	**4**	$171,229,891
Severe Wind	**5**	$79,397,008
Hailstorm	**6**	$65,439,927
Tornado	**7**	$61,350,962
Severe Winter Weather	**8**	$45,338,067
Lightning	**9**	$4,612,221
Extreme Heat	**10**	$0
Wildfire	**11**	$0

Region 4 Counties include Austin, Brazoria. Chambers, Colorado, Fort Bend, **Galveston**, Harris, Liberty, Matagorda, Montgomery, Walker, Waller, and Wharton

Note: The plan must provide the rationale if omitting any natural hazards that are commonly recognized to affect the participant(s) in the planning area.

Galveston County WCID #1 LHMP
Steering Committee Meeting

August 6, 2024, 6:00 PM

Public Input Event, 6/15/2024:

Participants at the Galveston County Disaster Preparedness Event on 6/15 were introduced to the project and asked to place a sticker next to their top 3 hazards of concern. For this exercise, respondents were asked to place emphasis on hazards of concern that could affect the WCID #1 infrastructure, facilities, and delivery of services to customers within the planning area. There were 43 total responses.

Hazard Name	# of Responses
Hurricane	24
Severe Weather (Thunderstorm, Hailstorm, Lightning)	19
Extreme Heat	15
Cyber Threats	14
Flooding	12
Water Quality & Quantity	12
Windstorm	11
Sea Level Rise	6
Climate Change (other than sea level rise)	3
Invasive Species	3
Drought & Expansive Soils	2
HazMat / Biological	2
Tornado	2
Geologic (Landslide, Sinkholes, Subsidence)	1
Winter Weather (Ice Storm, Heavy Snow, Blizzard)	1
Other	1

*Note: FEMA requires the addition of a hazard if there has been a recent disaster declaration for that hazard type. For example: Severe Ice Storm (2021), Flood (2024), Hurricane (2024) must be included in the LHMP. Additionally, **C4-b**. Each plan participant must identify one or more mitigation actions the participant(s) intends to implement for each hazard addressed in the risk assessment.*

Houston-Galveston Area Council

Galveston County WCID #1 LHMP
Steering Committee & Public Forum Meeting

October 24, 2024, 6:00 PM

A G E N D A

6:00 PM	**Steering Committee Meeting Begins**
	Wastewater Treatment Plant Annual Emergency Response Coordination & Scheduling of Field Exercise
6:30 PM	**Public Forum- Welcome and Introductions**
	Hazard Mitigation Overview • What is Hazard Mitigation • Project Organization • Planning Process • Project Timeline
	Dickinson Bicentennial Event Recap
	Hazard Identification & Capability Assessment Results
	Public Survey
	Goal Setting Exercise
	Next Steps • Plan Maintenance • Bicentennial Statistics- City of Dickinson Contacts • Drafting
	Questions?
8:00 PM	**Adjourn**

Galveston County WCID #1 LHMP
Steering Committee & Public Forum Meeting
October 24, 2024, 6:00 PM

Meeting Notes

Welcome and Introductions
The Galveston County Water Control Improvement District #1 (GCWCID #1) General Manager welcomed all in attendance and conducted the WWTP annual emergency response coordination & field exercise scheduling.

Dickinson Bicentennial Event Recap
H-GAC staff reviewed the City of Dickinson's Bicentennial public engagement event and responses and how they compared to the SC hazard rankings from the risk assessment meeting.

Hazard Identification/ Risk Assessment Results

Hazard Name	SC Ranking	Public Ranking	Difference
Cyber Threats	**1**	**10**	**9**
Dam / Levee Failure	12	13	1
Drought	8	5	3
Extreme Heat	7	6	1
Fire	11	12	1
Flooding	5	2	3
Geologic (Expansive Soils, Erosion)	9	11	2
HazMat / Toxic Release	**4**	**8**	**4**
Hurricane & Storm Surge	3	1	2
Pandemic	10	9	1
Severe Weather (Thunderstorm, Hailstorm, Lightning, Windstorm, Tornado)	6	3	3
Winter Weather (Ice Storm, Heavy Snow, Blizzard)	2	4	2
Dam/Levee Failure	**3**	**7**	**4**

Public Survey-
H-GAC staff gave an update on overall engagement activities including p0ublic survey response.

Survey Responses as of 11/1/2024:
Online Public Survey Responses: **41**
In-Person Public Survey Responses: **83**
Attended the SC meeting and public forum held on October 24th: **9** (all attendees were from the SC)

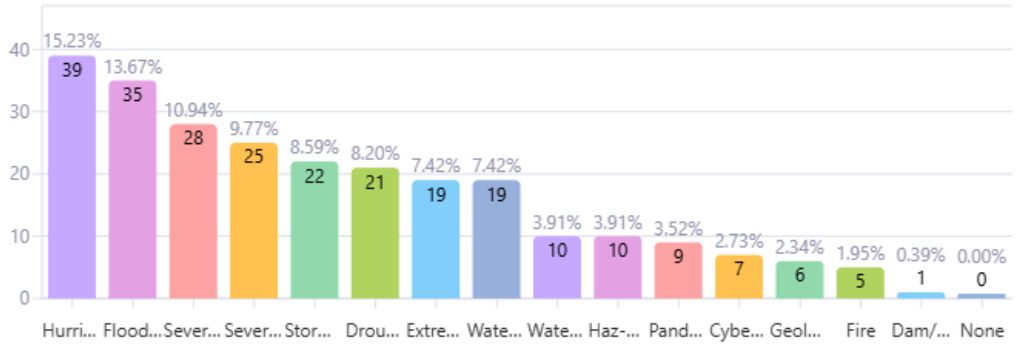
The SC agreed the survey will close on *November 21st*.

Galveston County WCID #1 LHMP
Steering Committee & Public Forum Meeting
October 24, 2024, 6:00 PM

Excerpts from the online survey:

Which hazards or events are you most concerned about in the next 1 to 5 years that may impact your water service? (check all that apply):

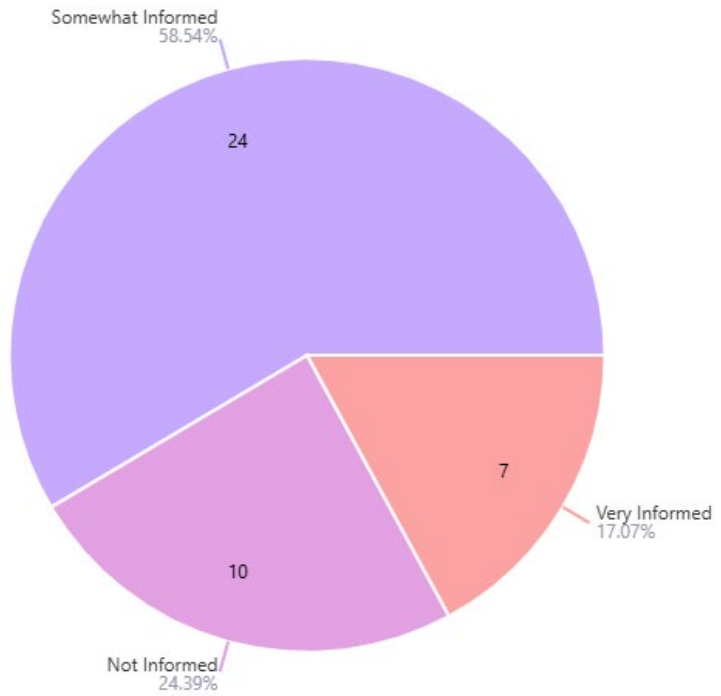
256 Responses - 0 Empty



Data	Response	%
Hurricanes	39	15.23%
Flooding (street, riverine, coastal, etc.)	35	13.67%
Severe Weather (tornado, hail, thunderstorms, li...	28	10.94%
Severe Winter Weather	25	9.77%
Storm Surge	22	8.59%
Drought	21	8.20%
Extreme Heat	19	7.42%
Water Quality	19	7.42%
Water Scarcity	10	3.91%
Haz-Mat/ Toxic Release	10	3.91%
Pandemic	9	3.52%
Cyber Threats	7	2.73%
Geological Hazards (Erosion, Expansive Soils)	6	2.34%
Fire	5	1.95%
Dam/Levee Failure	1	0.39%
None	0	0.00%

How informed do you feel about how hazards impact your water service?

41 Responses - 0 Empty



Data	Response	%
Somewhat Informed	24	58.54%
Not Informed	10	24.39%
Very Informed	7	17.07%

Galveston County WCID #1 LHMP
Steering Committee & Public Forum Meeting
October 24, 2024, 6:00 PM

Goal Setting Exercise

The Steering Committee was provided a Goals & Objectives worksheet to aid in brainstorming SMART goals for the HMP. Excerpts from this exercise, which was conducted as a group through discussions and feedback at the SC meeting, can be found below.

A. What are the most valuable assets vital to the continuity of service for the WCID and community?

Potable water	COMMUNICATIONS Government communication and private communications: fiber optic lines, radio towers, cellular towers, internet, etc.
EQUIPMENT Wastewater treatment plants, Lift stations, Pump stations, Elevated service tanks.	STAFF Employees (trained)
SUPPLIES Supplies on hand (fuel (generators), treatment chemicals (GCWA))	

B. What are the 3 biggest challenges facing the WCID/ community?

Floodplain elevation changes from 11' to 14' Impacts to infrastructure (WWTP, elevation, and improvements needed)	Aging infrastructure (dates back to the 60's) Funding to combat ^
Inflationary cost of construction and materials	Manufacturing/supply of WCID equipment (replacement took 1 year previously) Equipment and replacement parts due to delayed manufacturing, are hard to get. Not in a timely manner

C. What is your vision/wish list for the WCID 10 years from now?

Solution for WWTP- Replacement? Elevation?	Resilient critical community lifeline (the WCID)- able to adapt to frequent changes/hazards
Update educational materials for customers - How do natural hazards affect your services through WCID #1?	

Next Steps

The core planning team will continue biweekly meetings. The preliminary draft plan will start to be put together. As sections are finished, they will be sent out for review 1 week prior to any comments due back to the planning team. If further discussion is needed, a hybrid meeting will be scheduled with a minimum of 2 weeks advance notice to SC members.

Q&A

None

Galveston County WCID #1 LHMP
Steering Committee & Public Forum Meeting

October 24, 2024, 6:00 PM

Attendance

Name	Organization	Title
Amanda Ashcroft	H-GAC	Resilience Planner
Derek Hunt	City of Dickinson	Emergency Management Coordinator
Jeremy Conn	Galveston County Constable Pct. 4	Sergeant
A.M.	Galveston County WCID #1	Administrative Assistant
I.L.	Galveston County WCID #1	General Manager
K.M.	Galveston County WCID #1	Water & Wastewater Superintendent
Tony Garcia	Gulf Coast Water Authority	Plant Manager
Brad Burness	Galveston County Office of Emergency Management	Emergency Management Coordinator
Mauro Arce	Texas Department of Public Safety	DPS Sergeant

GOALS & OBJECTIVES

You are being asked to participate in a visioning exercise to consider the various elements linked to hazard vulnerability. These includ categories such as Government and Government Services; People; the Environment; the Economy; and the Community.

Goals should strive to be SMART:



A. What are the most valuable assets vital to continuity of service for the WCID and community?

Potable water	COMMUNICATIONS Government communication and private communications: fiber optic lines, radio towers, cellular towers, internet, etc.
EQUIPMENT Wastewater treatment plants, Lift stations, Pump stations, Elevated service tanks.	STAFF Employees (trained)
SUPPLIES Supplies on hand (fuel (generators), treatment chemicals (GCWA))	

Sample response from other communities:

Sample answers from another community are just that, ***examples****.*

~~•Wastewater treatment plants, Lift stations, Pump stations, Elevated service tanks.~~	~~•Government communication and private communications: fiber optic lines, radio towers, cellular towers, utility Wi-Fi-max radio communications~~
•WCID website, social media, employees, public servants	•Hospital
•Schools, libraries, animal services	•Local waterways, parks, and trails
•Historic areas & local culture, local festivals or events	•Transportation, bridges, streets. Local/national railroad lines, public transit, roadways, airport
•Businesses	•Fire/EMS/Police/ 911 system

B. What are the 3 biggest challenges facing the WCID/ community?

Floodplain elevation changes from 11' to 14' Impacts to infrastructure (WWTP, elevation and improvements needed)	Aging infrastructure (dates back to the 60's) Funding to combat ^
Inflationary cost of construction and materials	Manufacturing/supply of WCID equipment (replacement took 1 year previously) Equipment and replacement parts due to delayed manufacturing, hard to get. Not in a timely manner

Sample response from other communities:

*Sample answers from another community are just that, **examples**.*

•Population growth	•Expanding water/wastewater treatment capacity
•Underdeveloped water infrastructure	•Threat of Hurricane/Tropical storms
•Limited access to internet and City information	~~•Equipment and replacement parts due to delayed manufacturing, hard to get. Not in a timely manner~~
• English as second language: we don't have a set policy or SOP to standardize translation and interpretation services	•Aversion to perceived unchecked growth, traffic, water scarcity, forsaking our small-town charm
•Legislative changes that impact operations	•Lack of funding for capital improvements: issuing bonds

C. What is your vision/wish list for the WCID 10 years from now?

Solution for WWTP- Replacement? Elevation?	Resilient critical community lifeline (the WCID)- able to adapt to frequent changes/hazards
Update educational materials for customers - How do natural hazards effect your services through WCID #1?	

Sample response from other communities:

Sample answers from another community are just that, ***examples****.*

•Resilient critical community lifeline- able to adapt to frequent changes and leverage opportunities	•Increased public/private partnerships
•Better flood awareness and control • C	•Movement to cloud based IT infrastructure will provide additional resiliency to disaster
•Water replacement/upgrade programs	•Increased water treatment capacity
•Minimize damage and losses and preserve or restore the functions of natural systems.	•Educate citizens, elected officials, and property owners about hazards how to mitigation them.

Galveston County WCID #1 Local Hazard Mitigation Plan Development

Meeting #2

August 6, 2024

h-gac.com Serving Today • Planning for Tomorrow

Houston-Galveston Area Council

1

Page intentionally left blank
Placeholder- Survey Results, Comments on draft HMP

Today's Agenda

- Welcome and Introductions
- Kickoff Meeting Recap
- Hazard Identification
- Risk Assessment
- Next Steps
  - SC- Goals
  - CPT- Capability Assessment
- Q&A

h-gac.com Serving Today • Planning for Tomorrow

Houston-Galveston Area Council

2

Meeting Goals & Objectives

- Recap Kickoff Meeting
- Identify Hazards
- Conduct Risk Assessment
- Answer Questions
- Discuss Next Steps

3

Welcome and Introductions

Ivan Langford

Amanda Ashcroft

4





Who we are

The Galveston County Water Control and Improvement District #1 (WCID #1) provides drinking water, wastewater and contracted solid waste collection services to 8,500 households and businesses in the greater Dickinson area.

Galveston County WCID #1
Dickinson's Water District

Galveston County WCID #1
Dickinson's Water District

5

Our vision

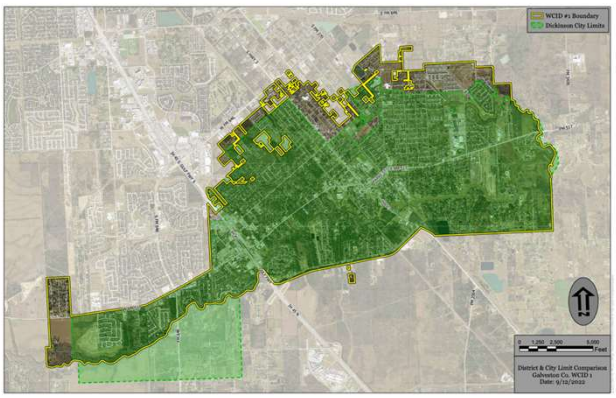
Provide excellent customer service by investing in infrastructure improvements, proactive communication, staff development and cost efficiencies

Galveston County WCID #1
Dickinson's Water District

Galveston County WCID #1
Dickinson's Water District

6

Our service area



- **DISTRIBUTE** 2.1 million gallons of drinking water a day
- **TREAT** 1.8 million gallons of sewage a day
- **CONTRACT** to pick up solid waste for 8,500 households and businesses

Galveston County WCID #1
Dickinson's Water District

Galveston County WCID #1
Dickinson's Water District

7

What is H-GAC?



H-GAC 13 Counties & City of Houston

h-gac.com

Serving Today • Planning for Tomorrow

Houston-Galveston Area Council

8



9

What is Hazard Mitigation Planning?

- Any action taken to reduce or eliminate the long-term risk to life, personal injury, and property damage that can result from a disaster
- The Hazard Mitigation Plan will assess the potential risk that natural hazards pose to buildings, infrastructure and equipment owned by WCID#1.

h-gac.com Serving Today • Planning for Tomorrow Houston-Galveston Area Council

10

Disaster Mitigation Act of 2000 (DMA 2000)

"to reduce the loss of life and property, human suffering, economic disruption, and disaster assistance costs resulting from natural disasters."

- Section 322 specifically addresses mitigation planning and requires FEMA approved hazard mitigation plans as a precondition for receiving FEMA mitigation funds.

11

Project Organization

Core Planning Team + Steering Committee = Planning Partnership

H-GAC Staff
Amanda Ashcroft
Cheryl Mergo

WCID #1 Staff
Ivan Langford
Angela Maloney
Ryan Nokelby
Kathy Thomas

Steering Committee
- Emergency Mgmt
- City Staff
- The Public
- County Staff
- Elected Officials
- Utility Companies
- Industry/Business
- Transportation
- Places of Worship
- ISDs
- Non-profits
- Shelters

12

Hazard Mitigation Plan Components

- WCID #1 Profile
- Planning Process
- ***Risk Assessment***
- Capability Assessment
- ***Hazard Identification (Hazard Profiles)***
- Mitigation Goals and Strategies
- Plan Implementation, Monitoring, and Maintenance
- Appendices

13

Planning Process



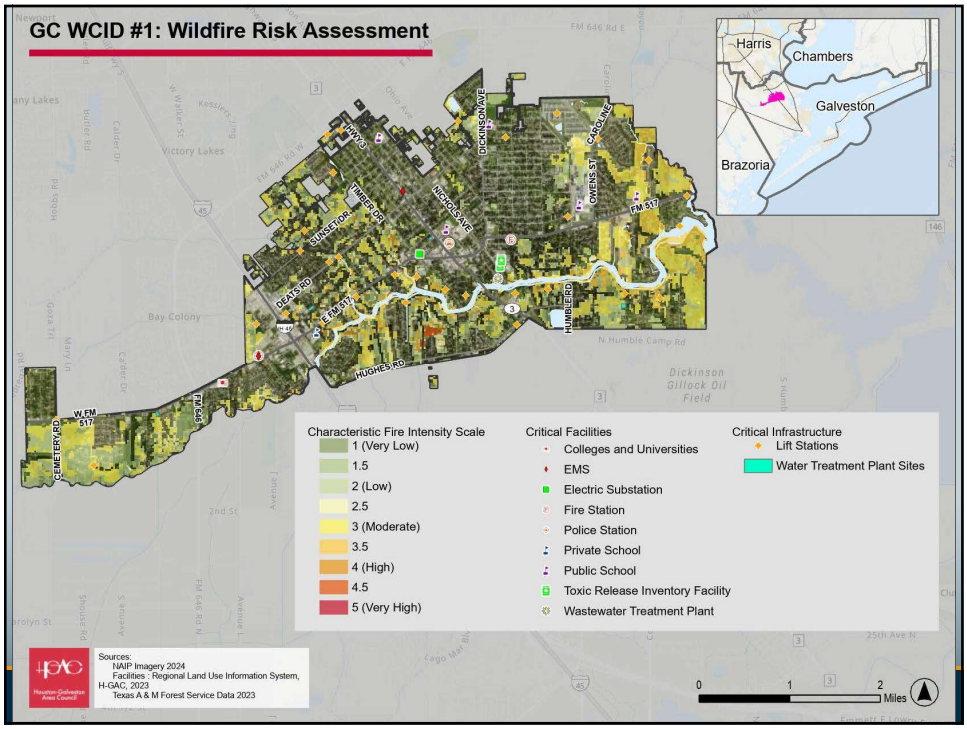
14


Risk and Capability Assessment
2
•Identify hazards
•Outline capabilities
•Assess risks
Identify Hazards
Location
Extent
Historic Occurrences
Future Probability
Climate Change
Update Assets/ Outline Capabilities
Critical Facilities
Community Lifelines
Critical Infrastructure
Population
Building Stock
h-gac.com
Serving Today • Planning for Tomorrow
Houston-Galveston Area Council

15


Critical Facilities & Community Lifelines
Water Systems
Critical Facilities- provide essential services to the community, especially before, during, and after a disaster.
Community Lifelines- provide services that allow continuity of operations of critical business and government functions and are crucial to the health and safety of residents.
Communications
Energy (Power & Fuel)
Food, Hydration, Shelter
Hazardous Materials
Safety and Security
Transportation
Health and Medical
h-gac.com
Serving Today • Planning for Tomorrow
Houston-Galveston Area Council

16



17

Mitigation Strategy

3

Set planning goals and objectives
Develop mitigation actions
Draft the action plan

- Goals/ Objectives
  - What outcomes do you want to achieve?
- Actions
  - What specific actions will be taken to reduce the risk of hazards?
- Action Plan
  - How will the actions be prioritized and implemented?

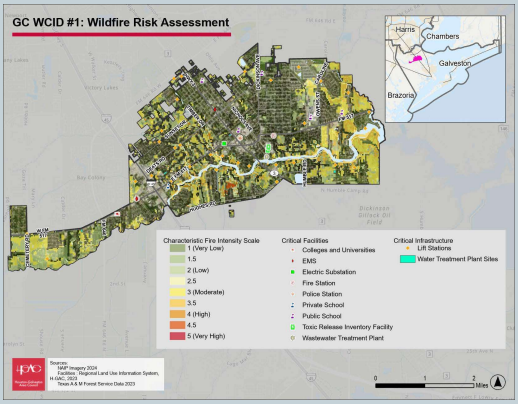
h-gac.com

Serving Today • Planning for Tomorrow

Houston-Galveston Area Council

18

- Goal:
  - Increase Public Preparedness and Engagement
- Objective:
  - Reduce flammable vegetation within areas of moderate or greater wildfire risk.
- Action:
  - Increase homeowner awareness about wildfire risk and safety measures, such as hazardous fuels reduction and creating defensible space through social media campaigns, public events, and informational flyers distributed in water bills.



19

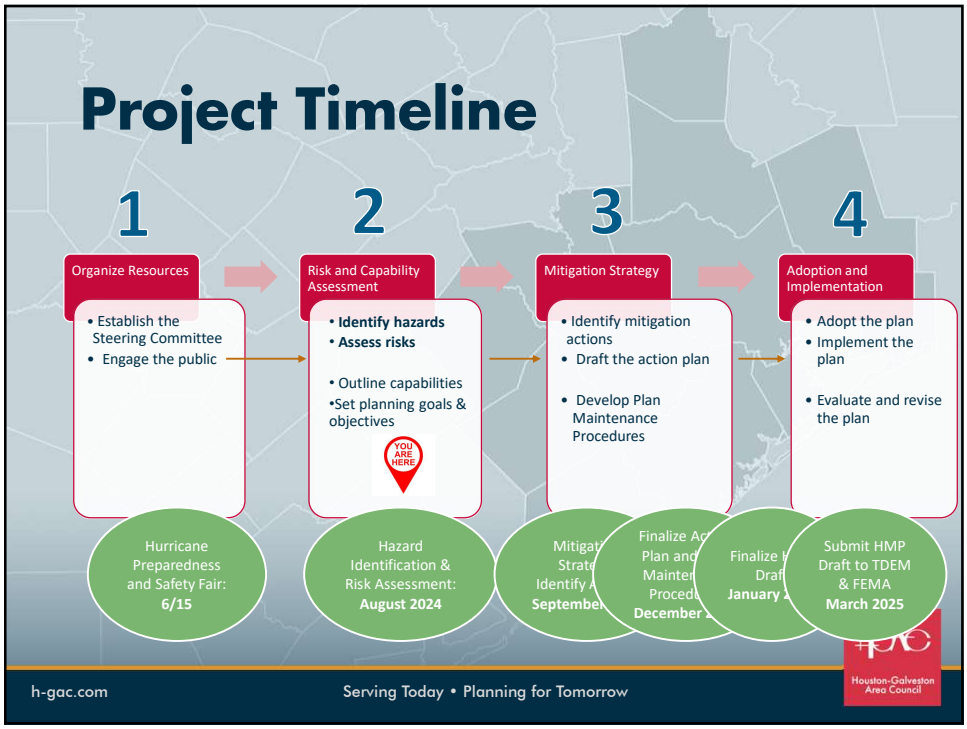
Adoption and Implementation

4

Adopt the plan
Implement the plan
Evaluate and revise the plan

- Plan Adoption
- Integration
  - What specific actions will be taken to reduce the risk of hazards?
- The Action Plan
  - Explore funding options to complete projects
    - Develop grant applications
      - Implement the projects

20

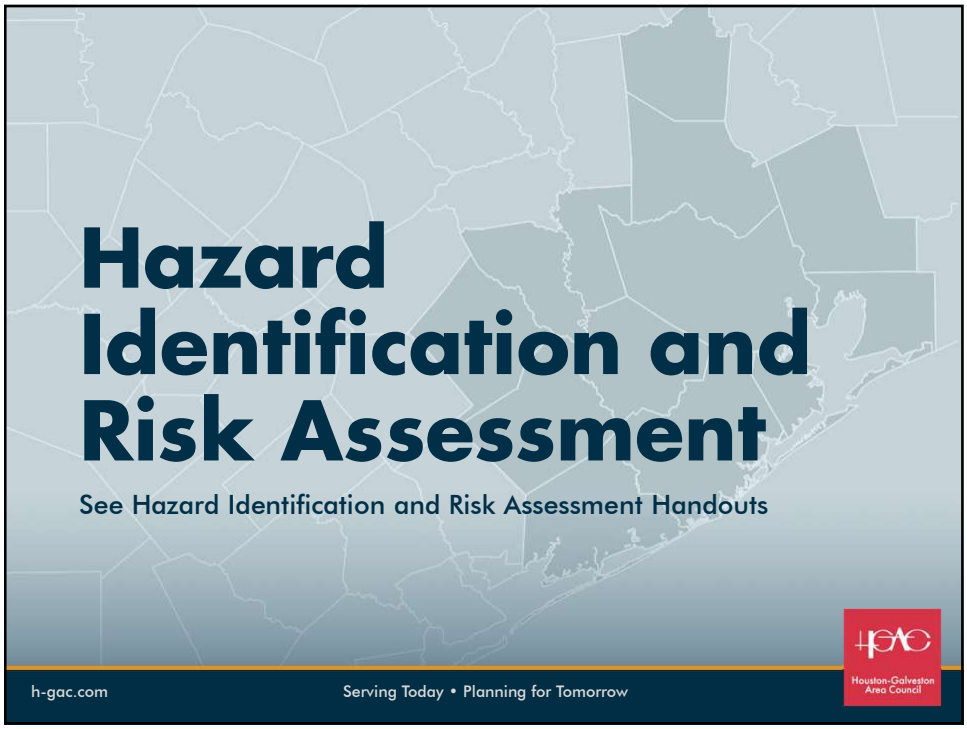


21

Outreach Methods

- What methods of public involvement have worked well in the past?
  - Community events
  - Questionnaires/surveys
  - Roundtable/forums
  - Social media
  - Web sites

22



23

Hazard Identification

City of Galveston

- ❑ Biologic Event
- ❑ Coastal Erosion
- ❑ Environmental Disaster
- ❑ Extreme Cold
- ❑ Extreme Heat
- ❑ Drought & Expansive Soils
- ❑ Fire (Wild & Urban)
- ❑ Flooding
- ❑ Hail
- ❑ Lightning
- ❑ Sea Level Change
- ❑ Tornado & Waterspout
- ❑ Tsunami
- ❑ Tropical Systems and Hurricanes
- ❑ Windstorm
- ❑ Winter Storm

Port of Galveston

- ❑ Coastal erosion/ land subsidence
- ❑ Cold Wave
- ❑ Drought
- ❑ Flooding
- ❑ Fog
- ❑ Heat Wave
- ❑ Hurricanes and tropical storms
- ❑ Lightning
- ❑ Pandemic
- ❑ Thunderstorms
- ❑ Tornadoes
- ❑ Winter storms

Chambers County

- ❑ Climate Change
- ❑ Drought
- ❑ Extreme Temperatures (heat and cold)
- ❑ Flooding (Street/Land)
- ❑ Flooding
- ❑ Geologic
  - ❑ (Landslide, sinkholes, subsidence)
- ❑ Hurricane/Tropical Storm
- ❑ Tornado
- ❑ Severe Weather
  - ❑ (high winds, lightning, hail)
- ❑ Severe Winter Storms
  - ❑ (blizzard, heavy snow, ice)
- ❑ Wildfire

h-gac.com Serving Today • Planning for Tomorrow Houston-Galveston Area Council

24

Our vision

Provide excellent customer service by investing in infrastructure improvements, proactive communication, staff development and cost efficiencies

Galveston County WCID #1
Dickinson's Water District

Galveston County WCID #1
Dickinson's Water District

25

HMP Mission Statement

- The mission of the WCID #1 Hazard Mitigation Plan is to…
  - reduce risk for WCID #1 assets that are vital for continuity of operations following hazard events.
  - reduce risk and increase the resiliency of the WCID #1 water system during natural disasters by developing a hazard mitigation plan that focuses on protecting life, property, infrastructure, and the environment.
  - protect and eliminate and/or reduce damages and disruptions to WCID #1 assets during disasters to maintain continuity of essential services.

26

Hazard Identification and Risk Assessment

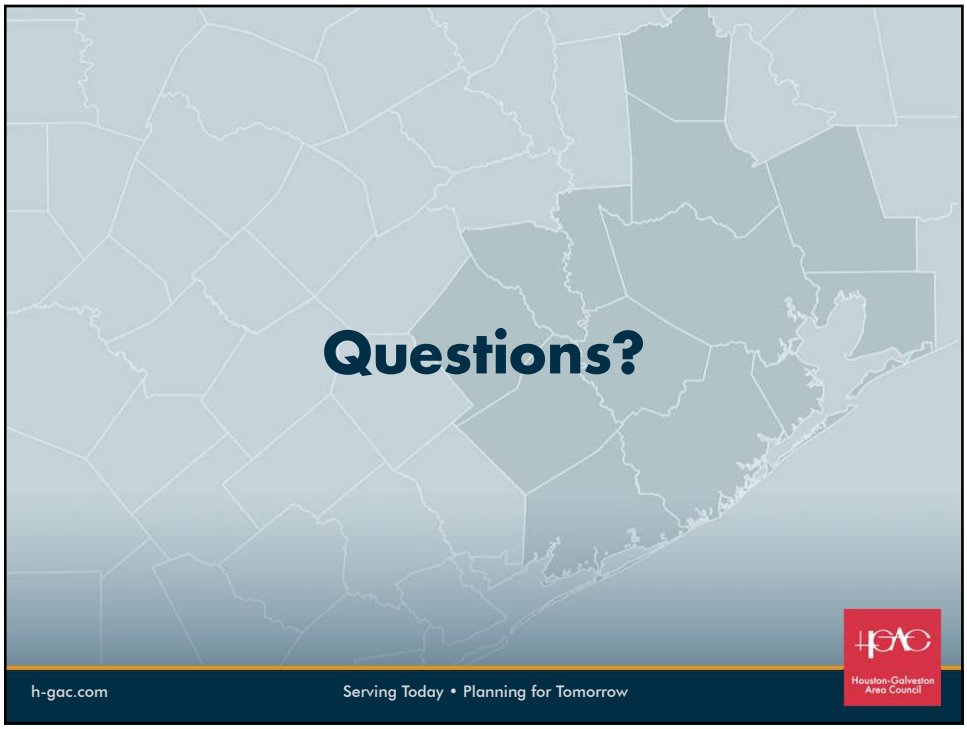
See Hazard Identification and Risk Assessment Handouts

27

Next Steps

- Steering Committee
  - Brainstorm goals
    - Align with the HMP Mission Statement
    - Can be broad or specific
- Core Planning Team
  - Capability Assessment
  - Brainstorm goals

28



29

Contact Information

Amanda Ashcroft, AICP
Planner, Community & Environmental
Houston-Galveston Area Council
Amanda.Ashcroft@h-gac.com
713-993-4545

h-gac.com
Serving Today • Planning for Tomorrow
Houston-Galveston Area Council

30

H-GAC and the Dickinson Water Control Improvement District (WCID) are soliciting feedback on the Draft Hazard Mitigation Plan, and will be hosting a public forum on:

July 24th, 2025, from 6-8 PM at the City of Dickinson's City Hall Council Chambers
4403 Highway 3, Dickinson, TX 77539, Dickinson, Texas 77539

This meeting is open to the public, and all are welcome to attend.
The purpose of this meeting is to provide a project overview from H-GAC staff of work conducted to date, solicit feedback from the steering committee and stakeholders on the draft plan, and outline next steps for plan adoption and submittal to FEMA for approval.

Preparing a Hazard Mitigation Plan requires the engagement of local governments, stakeholders, and residents in the planning process. **Your feedback** will help shape the future of the WCID as we work together towards a **safer, more resilient community**. See you there!

Although in person attendance is preferred, for those who cannot attend in person, a Zoom link will be provided closer to the meeting date. Additionally, an online survey for feedback can be accessed using the QR code below.



Questions, feedback, or other comments regarding the WCID Hazard Mitigation Plan can be sent to Amanda Ashcroft at Amanda.Ashcroft@h-gac.com

Public Forum and Feedback Survey for Draft Hazard Mitigation Plan

H-GAC and the Dickinson Water Control Improvement District (WCID) are soliciting feedback on the Draft Hazard Mitigation Plan, and will be hosting a public forum on:

July 24th, 2025, from 6-8 PM at the City of Dickinson's City Hall Council Chambers
4403 Highway 3, Dickinson, TX 77539, Dickinson, Texas 77539

This meeting is open to the public, and all are welcome to attend.

The purpose of this meeting is to provide a project overview from H-GAC staff of work conducted to date, solicit feedback from the steering committee and stakeholders on the draft plan, and outline next steps for plan adoption and submittal to FEMA for approval.

Preparing a Hazard Mitigation Plan requires the engagement of local governments, stakeholders, and residents in the planning process. **Your feedback** will help shape the future of the WCID as we work together towards a **safer, more resilient community**. See you there!

Additionally, please provide comments and feedback on the draft plan via this online survey.

Questions regarding the WCID #1 Hazard Mitigation Plan can be sent to Amanda Ashcroft at Amanda.Ashcroft@h-gac.com

NOTE: Although in person attendance is preferred, for those who cannot attend in person, a Zoom link is provided below.

Topic: Hazard Mitigation Plan Draft – Public Forum
Time: Jul 24, 2025 06:00 PM Central Time (US and Canada)

Join Zoom Meeting
Meeting ID: 860 1005 8996
Passcode: 272606

RECENT NEWS

Public Forum and Feedback Survey for Draft Hazard Mitigation Plan

2024 Water Quality Reports Available

GCWA Announces Annual Change to Water Disinfection April 7-21, 2025

Sign Up Now for WaterSmart to Pay Your Bill

Important Information About Bill Pay Changes

WCID #1 Holding Meeting to Develop Hazard Mitigation Plan

2023 Water Quality Reports Available

Use the WaterSmart Portal to Track Water Usage

Houston-Galveston Area Council

Dickinson WCID Hazard Mitigation Plan
Public Forum, Draft Plan Review

July 24, 2024, 6:00 PM

A G E N D A

6:00 PM	**Public Forum- Welcome and Introductions**
	Hazard Mitigation Overview • What is Hazard Mitigation • Project Organization • Planning Process • Project Timeline
	Public Comment on the Draft HMP
	Review of Online Survey Responses
	Next Steps
	Questions?
8:00 PM	**Adjourn**

Dickinson WCID Hazard Mitigation Plan
Public Forum, Draft Plan Review

July 24, 2024, 6:00 PM

Meeting Notes

Hazard Mitigation Overview

H-GAC staff gave an overview of the planning process to date for developing the Hazard Mitigation Plan.

Public Comment on the Draft HMP

For the public comment portion of the meeting, H-GAC staff asked for anyone wishing to make a public comment on the draft Hazard Mitigation Plan to raise a hand (or unmute if online). There were no public comments (in-person or online) from those present.

Review of Online Survey Responses

H-GAC staff reviewed online survey responses gathered on JotForm regarding comments on the draft Hazard Mitigation Plan. The survey was available in both English and Spanish. While the survey had 30 views, there were no responses/ comments left on the draft plan.

Next Steps

H-GAC staff reviewed next steps for the draft plan. The local mitigation plan review tool will be completed and sent to TDEM with the draft plan for review.

Attendance

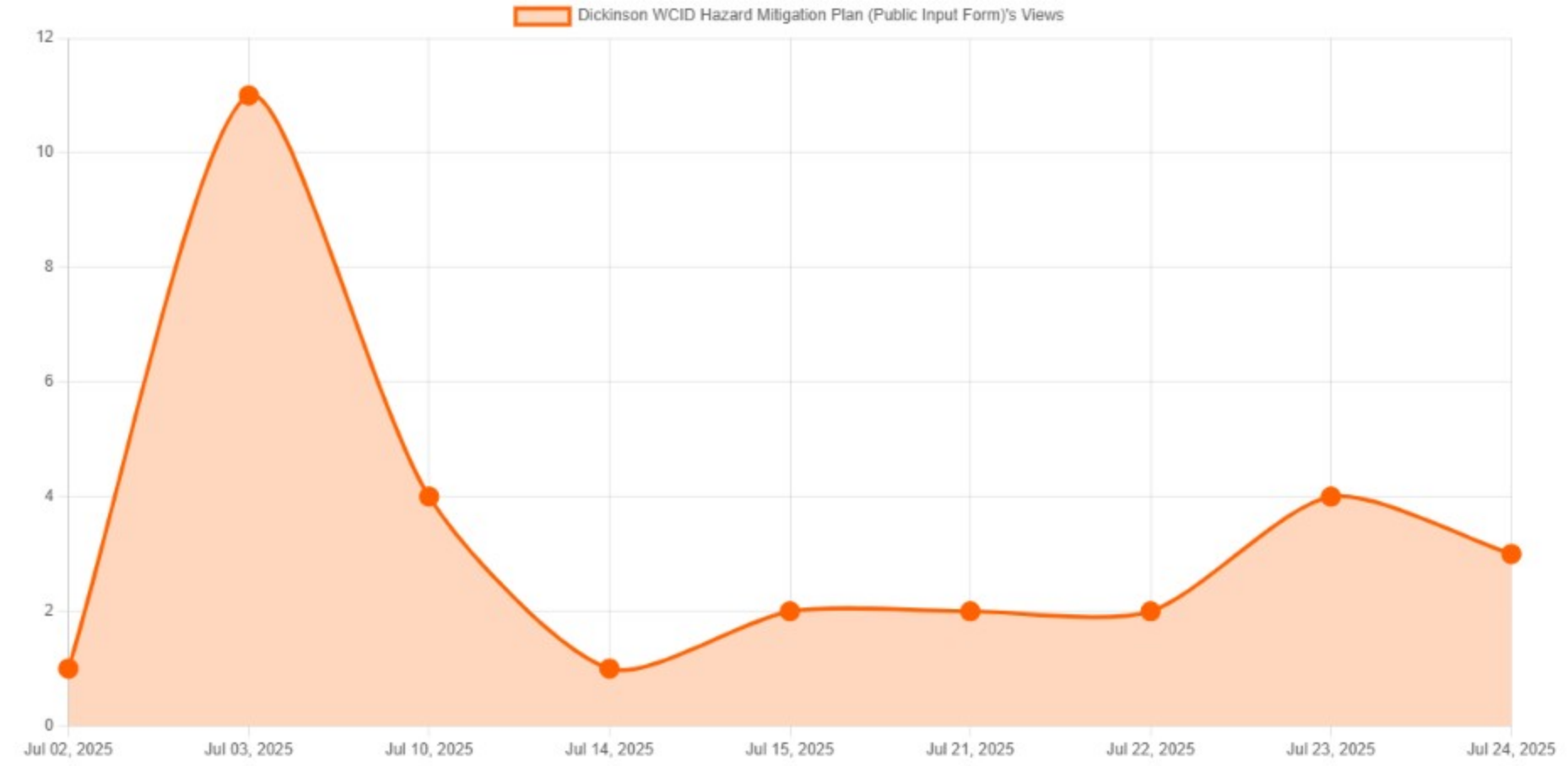
Name	Organization	Title
Amanda Ashcroft	H-GAC	Resilience Planner
Will McRory	SBP USA	Resilience Fellow
A.M.	WCID 1	Management & Board Support
I.L.	WCID 1	General Manager
K.M.	WCID 1, Dickinson Volunteer Fire Department	Water & Wastewater Superintendent, Fire Chief
R.N.	WCID 1, HDR	District Engineer
Tony Garcia	Gulf Coast Water Authority	Plant Manager
Mark Morgan	TDEM	County Liaison Officer

Galveston County WCID #1
DICKINSON'S Water District

Houston-Galveston Area Council

Dickinson WCID
Hazard Mitigation Plan Steering Committee Meeting & Public Forum
July 23, 2025

Name	Title	Organization	County	Email	Sign me up for updates via E-mail ☒
Amanda Ashcraft		H-GAC			
Will McCrory	Resilience Fellow	SBP USA	Travis	WMccrory@SBPUSA.org	x
Ryan Nokelby	District Engineer	WCID #1 / HDR	Galveston	Ryan.Nokelby@hdrinc.com	x
Ivan Langford	General Manager	WCID1	Galveston	ilangford@gcwcid1tx.gov	x
Mark Morgan	TDEM CLO	TDEM State		Mark.Morgan@[redacted]tdem.texas.	y
Tony Garcia	Plant Manager	GCWA	Galveston	tgarcia@gcwatx.gov	
Keith Morgan	Superintendent WCid	WCid1 + DVFD	Galveston	KMorgan@GLWicd1Tx.Gov	
Angela Maloney	Mgmt & Board Support	WCID1	Galveston	amaloney@gcwcid1tx.gov	



30
Views

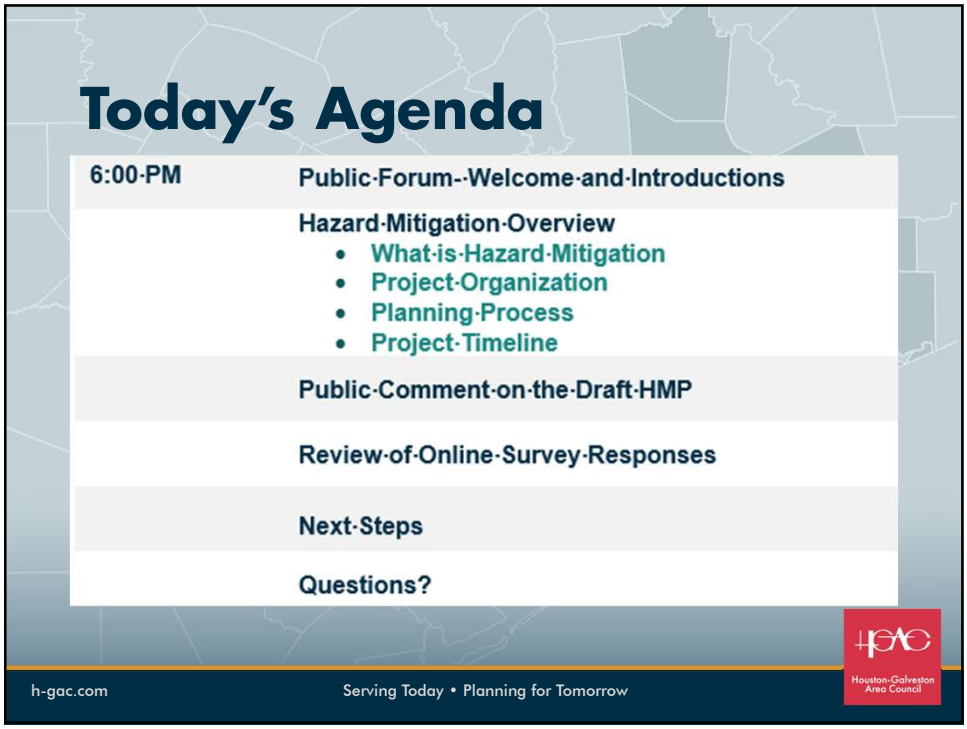
0
Responses

< 0.1%
Conversion Rate

00:00
Avg. Time


Dickinson WCID
Hazard Mitigation Plan
Public Forum
Draft Review
July 24, 2024
h-gac.com
Serving Today • Planning for Tomorrow
Houston-Galveston Area Council

1


Today's Agenda
6:00 PM
Public Forum -- Welcome and Introductions
Hazard Mitigation Overview
What is Hazard Mitigation
Project Organization
Planning Process
Project Timeline
Public Comment on the Draft HMP
Review of Online Survey Responses
Next Steps
Questions?
h-gac.com
Serving Today • Planning for Tomorrow
Houston-Galveston Area Council

2

Welcome and Introductions

h-gac.com Serving Today • Planning for Tomorrow

3

What is H-GAC?



H-GAC 13 Counties & City of Houston

h-gac.com Serving Today • Planning for Tomorrow

4

What is Hazard Mitigation Planning?

- Any action taken to reduce or eliminate the long-term risk to life, personal injury, and property damage that can result from a disaster
- The Hazard Mitigation Plan will assess the potential risk that natural hazards pose to buildings, infrastructure and equipment owned by WCID.

5

Disaster Mitigation Act of 2000 (DMA 2000)

"to reduce the loss of life and property, human suffering, economic disruption, and disaster assistance costs resulting from natural disasters."

- Section 322 specifically addresses mitigation planning and requires FEMA approved hazard mitigation plans as a precondition for receiving FEMA mitigation funds.

6


Project Organization
Core Planning Team
+
Steering Committee
=
Planning Partnership
H-GAC Staff
Amanda Ashcroft
Cheryl Mergo
WCID #1 Staff
Ivan Langford
Angela Maloney
Ryan Nokelby
Kathy Thomas
Emergency Mgmt
City Staff
The Public
County Staff
Elected Officials
Utility Companies
Industry/Business
Transportation
Places of Worship
ISDs
Non-profits
Shelters
h-gac.com
Serving Today • Planning for Tomorrow
Houston-Galveston Area Council

7


Planning Process
1
Organize Resources
•Establish the Steering Committee
•Engage the public
2
Risk and Capability Assessment
•Identify hazards
•Outline capabilities
•Assess risks
3
Mitigation Strategy
•Set planning goals & objectives
•Develop mitigation actions
•Draft the action plan
4
Adoption and Implementation
•Adopt the plan
•Implement the plan
•Evaluate and revise the plan
YOU ARE HERE
h-gac.com
Serving Today • Planning for Tomorrow
Houston-Galveston Area Council

8

Risk and Capability Assessment

2

- Identify hazards
- Outline capabilities
- Assess risks

- Identify Hazards
  - Location
  - Extent
  - Historic Occurrences
  - Future Probability
  - Climate Change
- Update Assets/ Outline Capabilities
  - Critical Facilities
  - Community Lifelines
  - Critical Infrastructure
  - Population
  - Building Stock



h-gac.com Serving Today • Planning for Tomorrow Houston-Galveston Area Council

9

Critical Facilities & Community Lifelines



- Critical Facilities- provide essential services to the community, especially before, during, and after a disaster.
- Community Lifelines- provide services that allow continuity of operations of critical business and government functions and are crucial to the health and safety of residents.



h-gac.com Serving Today • Planning for Tomorrow Houston-Galveston Area Council

10

Mitigation Strategy

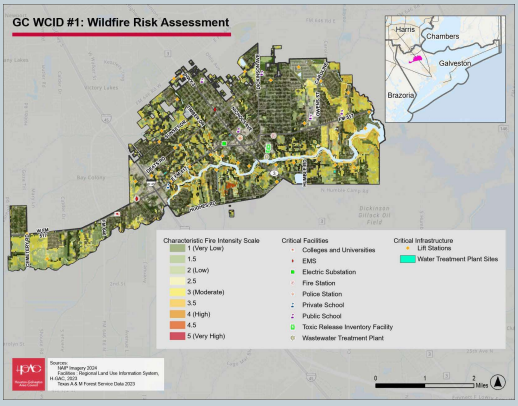
3

Set planning goals and objectives
Develop mitigation actions
Draft the action plan

- Goals/ Objectives
  - What outcomes do you want to achieve?
- Actions
  - What specific actions will be taken to reduce the risk of hazards?
- Action Plan
  - How will the actions be prioritized and implemented?

11

- Goal:
  - Increase Public Preparedness and Engagement
- Objective:
  - Reduce flammable vegetation within areas of moderate or greater wildfire risk.
- Action:
  - Increase homeowner awareness about wildfire risk and safety measures, such as hazardous fuels reduction and creating defensible space through social media campaigns, public events, and informational flyers distributed in water bills.



12


4
Adopt the plan
Implement the plan
Evaluate and revise the plan
YOU ARE HERE
Adoption and Implementation
Plan Adoption
Integration
What specific actions will be taken to reduce the risk of hazards?
The Action Plan
Explore funding options to complete projects
Develop grant applications
Implement the projects
h-gac.com
Serving Today • Planning for Tomorrow
Houston-Galveston Area Council

13


Public Comment
(3 minutes per speaker)
h-gac.com
Serving Today • Planning for Tomorrow
Houston-Galveston Area Council

14

Review of Survey Responses

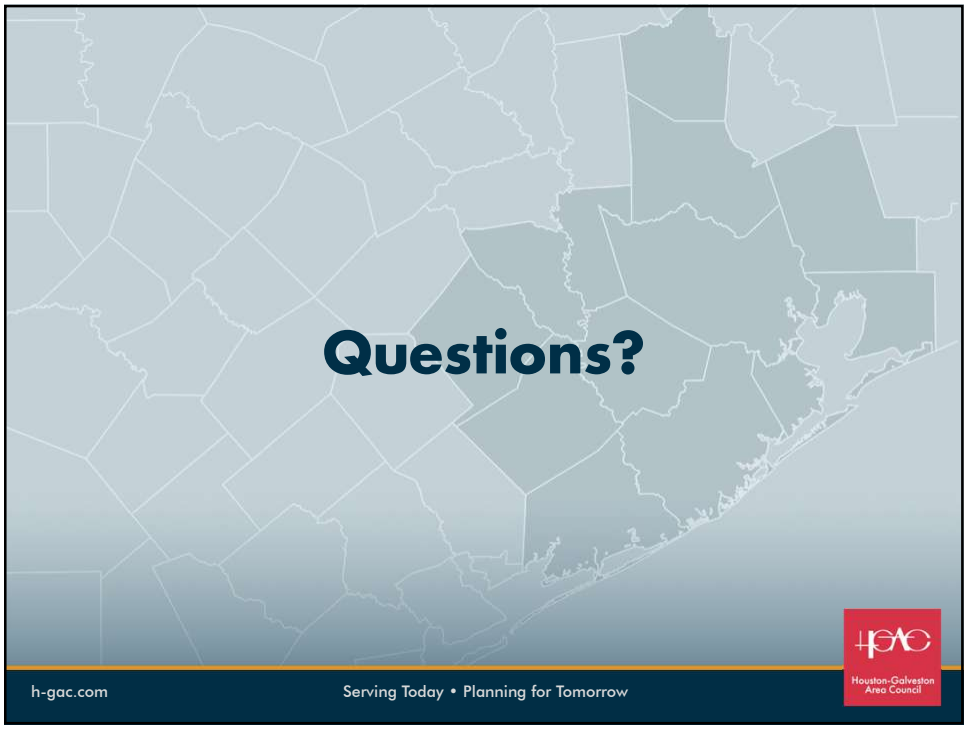
SCAN ME

15

Next Steps

- Core Planning Team
  - Incorporate comments
  - Plan Adoption
  - Complete the Local Mitigation Plan Review Tool
  - Submittal to TDEM/ FEMA

16



17

Contact Information

Amanda Ashcroft, AICP
Planner, Community & Environmental
Houston-Galveston Area Council
Amanda.Ashcroft@h-gac.com
713-993-4545

h-gac.com
Serving Today • Planning for Tomorrow
Houston-Galveston Area Council

18



Galveston County WCID #1

DICKINSON'S Water District

Houston-Galveston Area Council

Developing a Local Hazard Mitigation Plan

What are we doing?

Dickinson Water Control and Improvement District (WCID) is working in partnership with the Houston-Galveston Area Council (H-GAC) to develop a Local Hazard Mitigation Plan (LHMP). The WCID LHMP is a customized single-jurisdictional plan tailored for a water district that geographically covers people (water customers), property and critical water assets within the WCID's service area.

The **goal** of this plan is to make the WCID's service area and its customers less vulnerable and more resilient to future hazard events by identifying policies, actions and strategies that will help to reduce risk and prevent future losses.

The development of this plan will also make the Dickinson WCID eligible for certain federal disaster assistance. This includes FEMA's Hazard Mitigation Assistance (HMA) grants, including the Hazard Mitigation Grant Program (HMGP), Flood Mitigation Assistance (FMA) and other associated programs.

What is hazard mitigation?
FEMA defines "hazard mitigation" as any sustained action taken to reduce or eliminate the long-term risk to human life and property from hazards.

Why is hazard mitigation important?
Hazard mitigation actions lead to building stronger, safer and smarter communities. The goal of the hazard mitigation plan is to reduce or eliminate long-term risks to life and property caused by hazards or disasters. On average, each dollar spent on hazard mitigation saves society an average of $6 in avoided future losses, in addition to saving lives and preventing injuries. (Natural Hazard Mitigation Saves: 2017 Interim Report).

What will be included in the hazard mitigation plan?
The plan will identify and analyze natural hazards to which WCID #1 is susceptible and to identify policies, actions and strategies that will help to reduce risk and prevent future losses.

What can I do?

Public participation and feedback are vital parts of the hazard mitigation planning process.
This can include:

- Attending and participating in the HMP Steering Committee meetings
- Identifying mitigation actions for the plan
- Participating in the public input process
- Reviewing and providing comments on plan drafts, maps, and other HMP related components

Take our public survey here:

SCAN ME

Questions? Comments?

Contact Amanda Ashcroft, AICP
Amanda.Ashcroft@h-gac.com

Look for HMP updates at www.WCID1.com and on the district's Facebook page.

Dickinson Water Control and Improvement District (WCID) provides drinking water, wastewater and contracted solid waste collection services to more than 8,000 households and businesses in the greater Dickinson area.

WATER DISTRICT CUSTOMER SERVICE:
(281) 337-1576, Option 1

MORE INFO: www.wcid1.com

Galveston County WCID #1

DICKINSON'S Water District



Houston-Galveston Area Council

Desarrollar Plan Local de Mitigación de Riesgos Naturales

¿Qué estamos haciendo?

El Water Control Improvement District #1 (WCID #1) del condado de Galveston está trabajando en asociación con el Houston-Galveston Area Council (H-GAC) desarrollar Plan Local de Mitigación de Riesgos Naturales (LHMP) a través del programa de Texas General Land Office's LHMP.

El objetivo de este LHMP es hacer que el área de servicio de WCID #1 y sus clientes sean menos vulnerables y más resilientes a futuros peligros naturales mediante la identificación de políticas, acciones y estrategias que reducirán el riesgo.

Cuando FEMA aprueba el LHMP, el WCID #1 es elegible para solicitar asistencia financiera a través del Hazard Mitigation Grant Program (HMGP). Esto incluye subvenciones de Asistencia para la mitigación de riesgos (HMA), el Programa de subvenciones para la mitigación de riesgos (HMGP), el programa de Asistencia para la mitigación de inundaciones (FMA), y el programa de construcción de infraestructura y comunidades resilientes (BRIC).

¿Qué es la mitigación de riesgos?

FEMA define "mitigación de peligros" como cualquier acción sostenida adoptada para reducir o eliminar el riesgo a largo plazo para la vida humana y la propiedad debido a los peligros.

¿Por qué es importante la mitigación de riesgos?

Las acciones de mitigación de peligros conducen a la construcción de comunidades más fuertes, seguras e inteligentes. El objetivo del la mitigación de riesgos es reducir o eliminar los riesgos para la vida y la propiedad causados por peligros o desastres naturales.

¿Qué está incluido en el LHMP?

El LHMP inventariará los peligros potenciales a los que el WCID #1 es vulnerable, evaluar el riesgo para la infraestructura y las instalaciones críticas del WCID #1, y desarrollar una estrategia de mitigación para reducir el riesgo.

¿Qué puedo hacer?

La participación y los aportes del público son partes vitales del desarrollo de un LHMP. Esto incluye:

- Asistir y participar en las reuniones del Comité Directivo del LHMP.
- Participar en la opinión pública.
- Identificar acciones de mitigación para el plan.
- Revisar y dar comentarios sobre borradores de planes, mapas y otros componentes relacionados con LHMP.

Responde nuestra encuesta aquí

Escanee el código QR

¿Preguntas? ¿Comentarios?

Contacto Amanda Ashcroft, AICP
Amanda.Ashcroft@h-gac.com

Encuentre actualizaciones en www.WCID1.com y Facebook.

WCID #1 proporciona agua potable, aguas residuales y servicios contratados de recolección de desechos sólidos a más de 8,000 hogares y empresas en el área metropolitana de Dickinson.

WATER DISTRICT CUSTOMER SERVICE: (281) 337-1576, Opción 1

MÁS INFORMACIÓN: www.wcid1.com

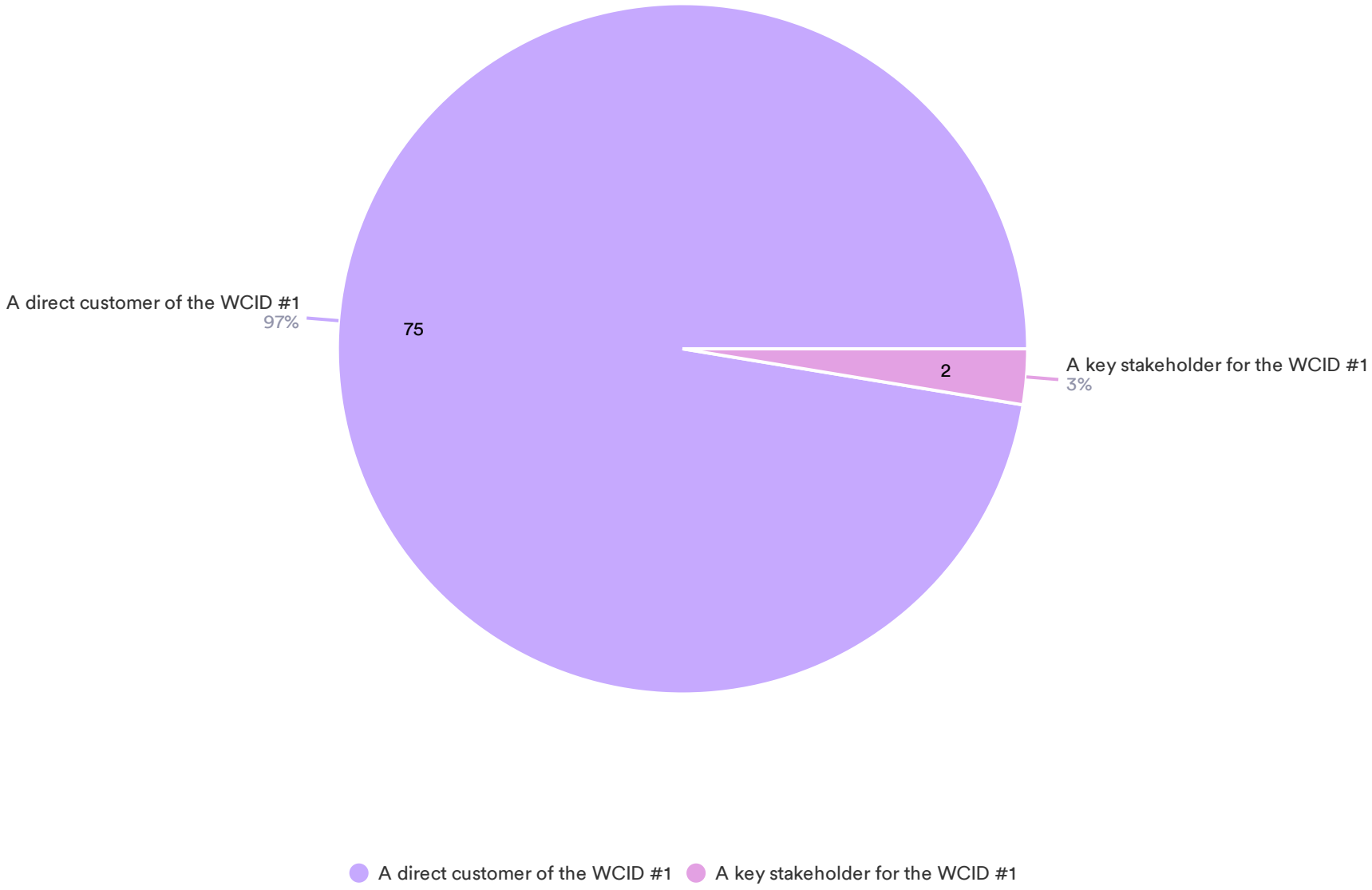
Appendix E:
Survey Results

Galveston County WCID #1 Local Hazard Mitigation Plan Survey

Galveston County WCID #1 Local Hazard Mitigation Plan Survey

Are you... ?

77 Responses



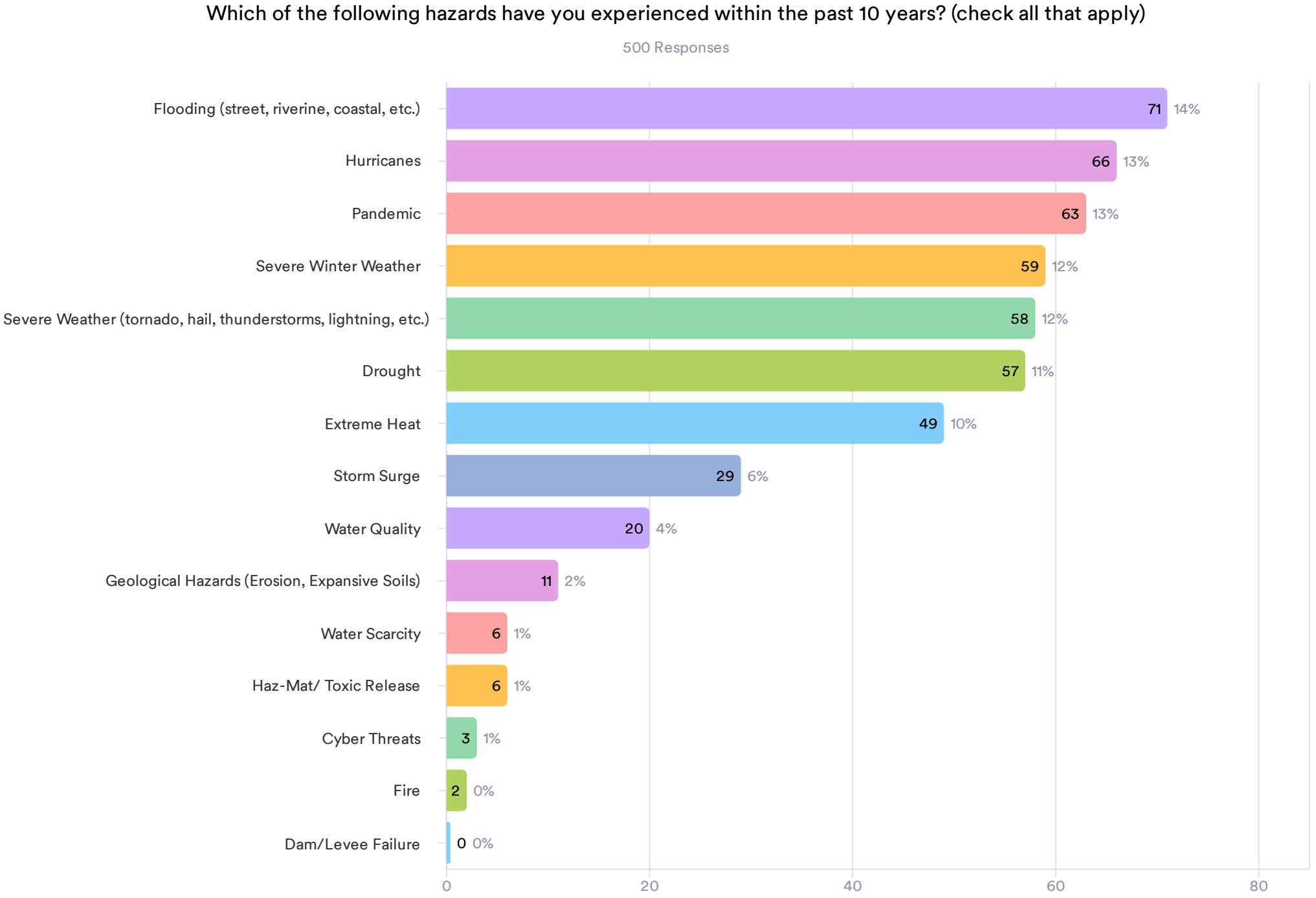
Galveston County WCID #1 Local Hazard Mitigation Plan Survey

What is your zip code?

77 Responses

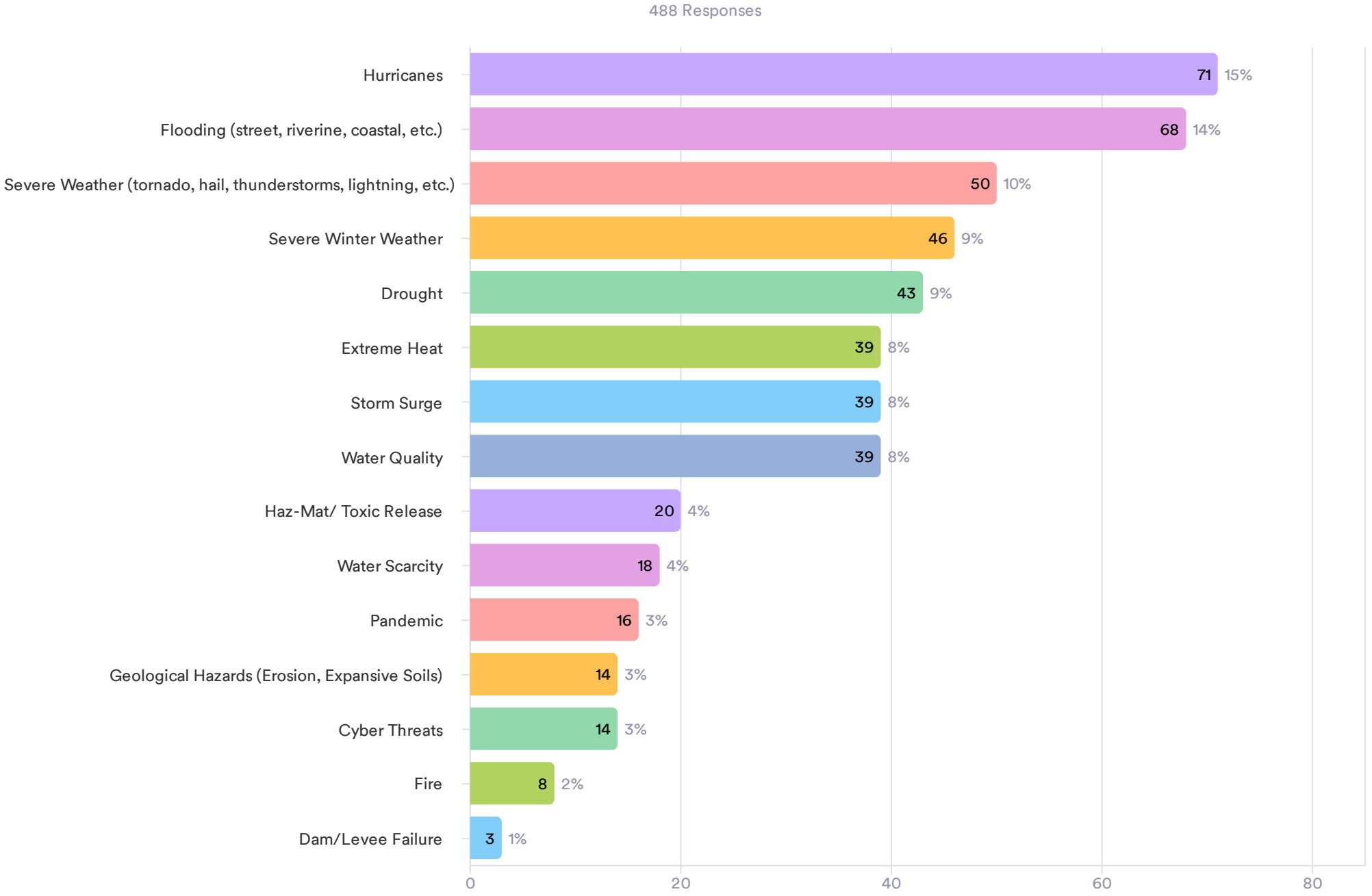
Data	Responses
77539	77

Galveston County WCID #1 Local Hazard Mitigation Plan Survey



Galveston County WCID #1 Local Hazard Mitigation Plan Survey

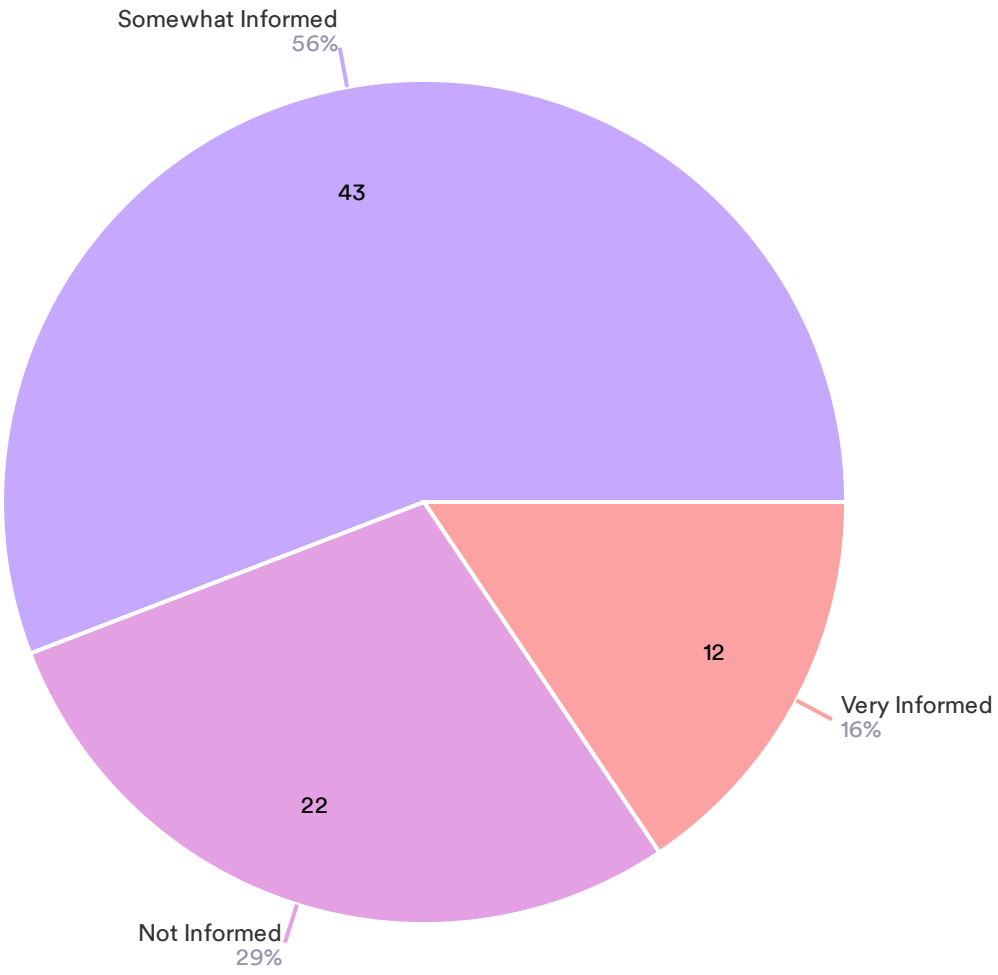
Which hazards or events are you most concerned about in the next 1 to 5 years that may impact your water service? (check all that apply)



Galveston County WCID #1 Local Hazard Mitigation Plan Survey

How informed do you feel about how hazards impact your water service?

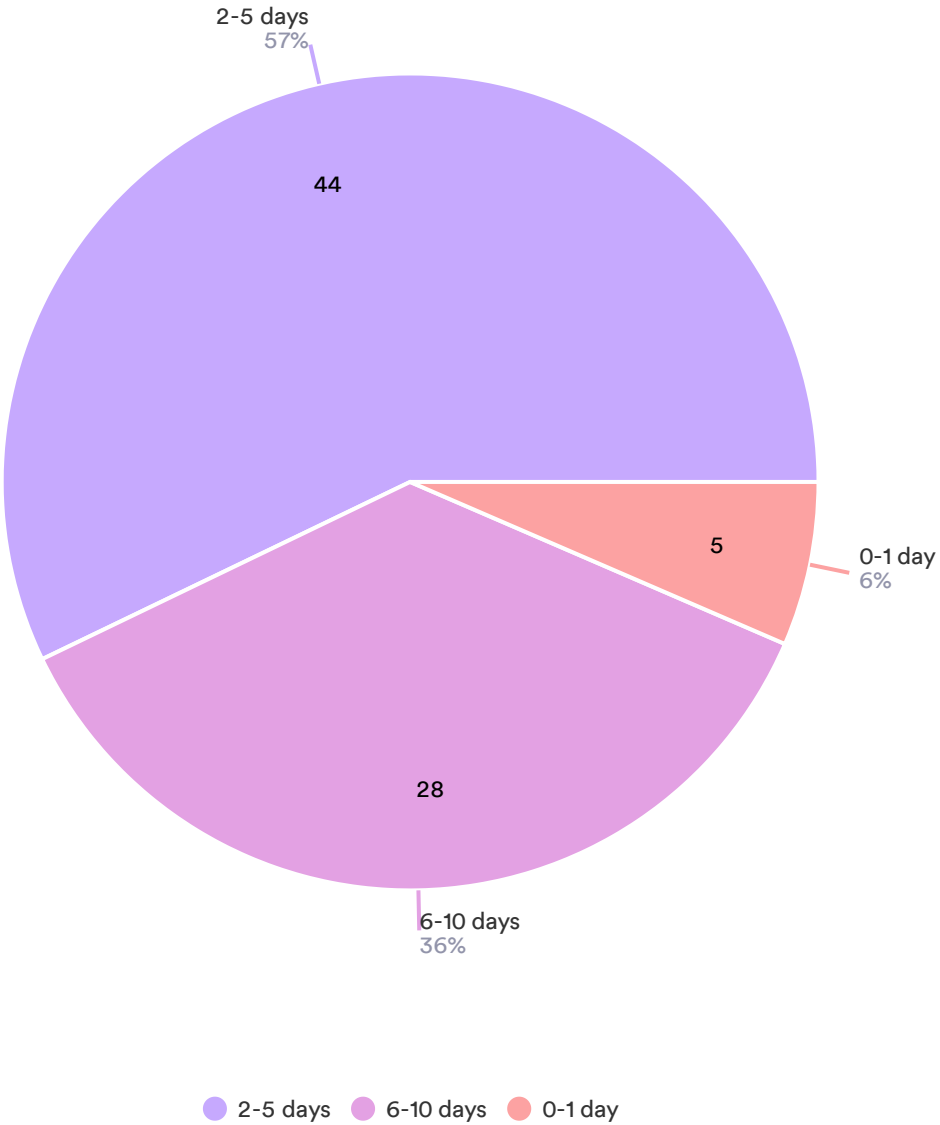
77 Responses



Galveston County WCID #1 Local Hazard Mitigation Plan Survey

How many days of food and water does your household have on hand in the event of a disaster?

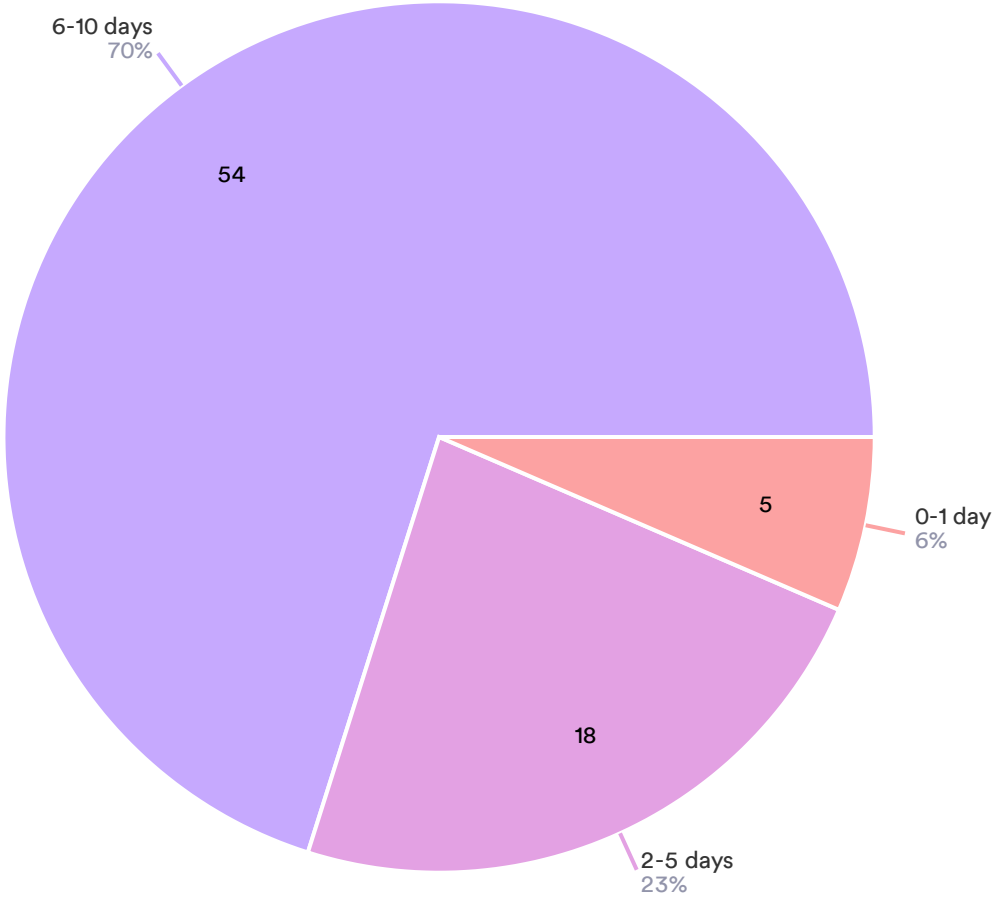
77 Responses



Galveston County WCID #1 Local Hazard Mitigation Plan Survey

How many days of vital supplies (medications, oxygen, etc.) does your household have on hand in the event of a disaster?

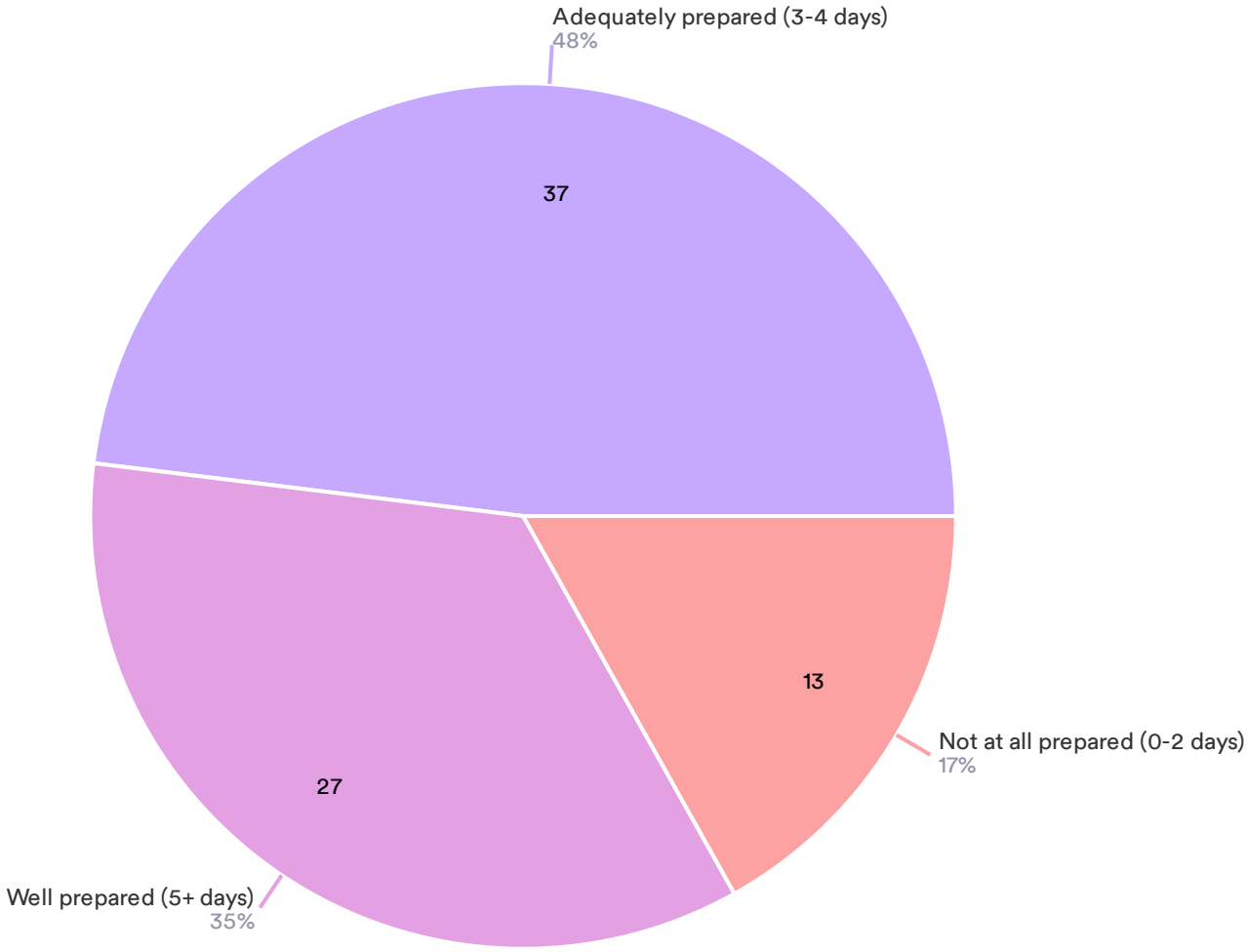
77 Responses



Galveston County WCID #1 Local Hazard Mitigation Plan Survey

How prepared is your household to go without electricity for one to five days?

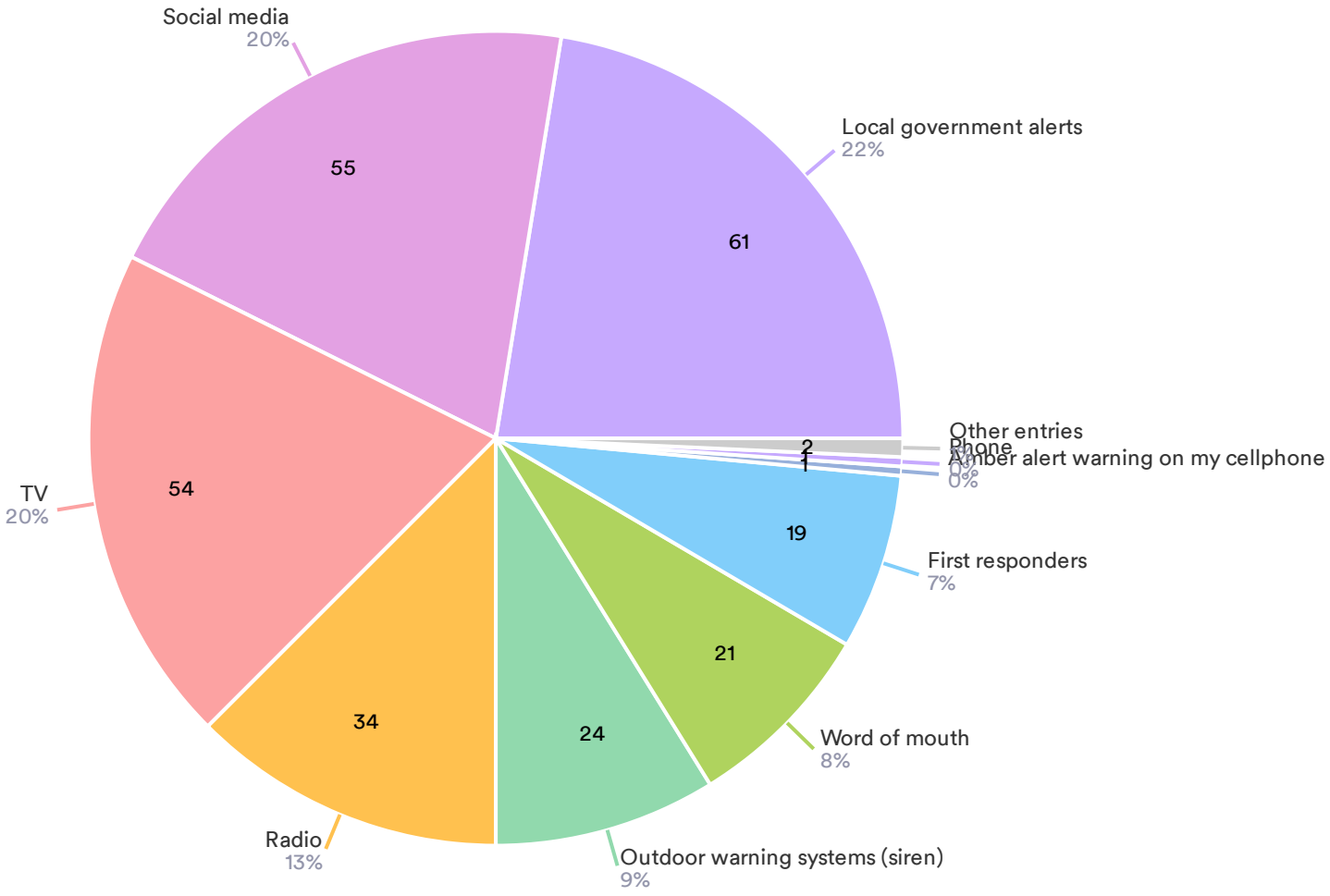
77 Responses



Galveston County WCID #1 Local Hazard Mitigation Plan Survey

How would you expect to be notified in the case of an immediate threat caused by a hazard? (check all that apply)

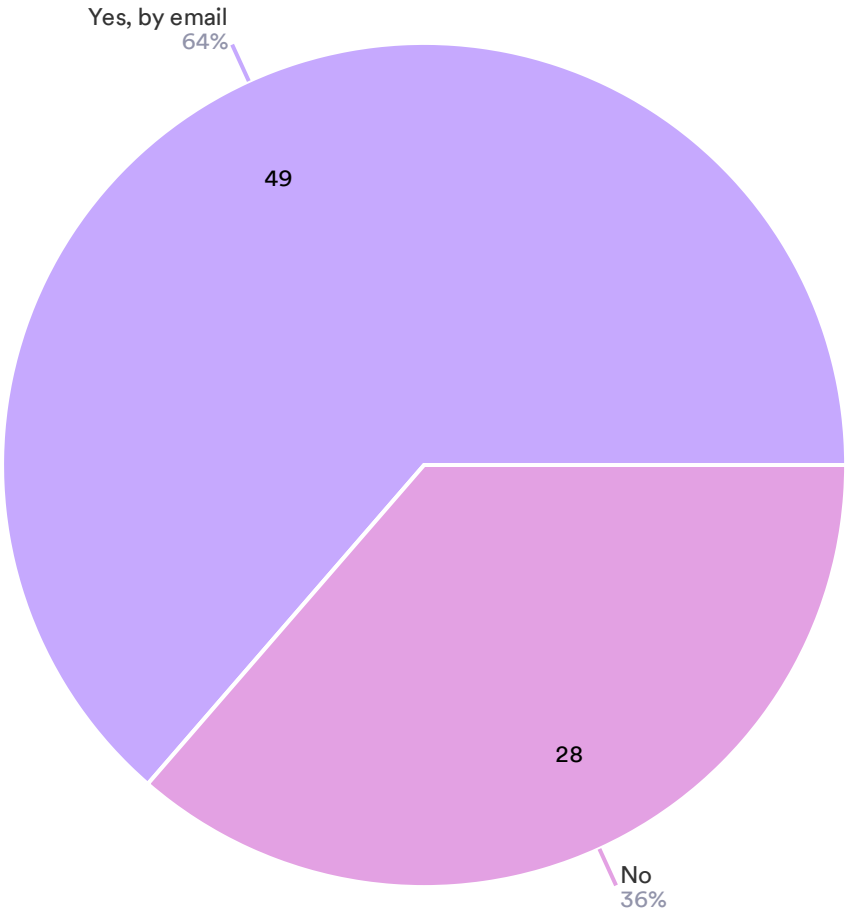
272 Responses



Galveston County WCID #1 Local Hazard Mitigation Plan Survey

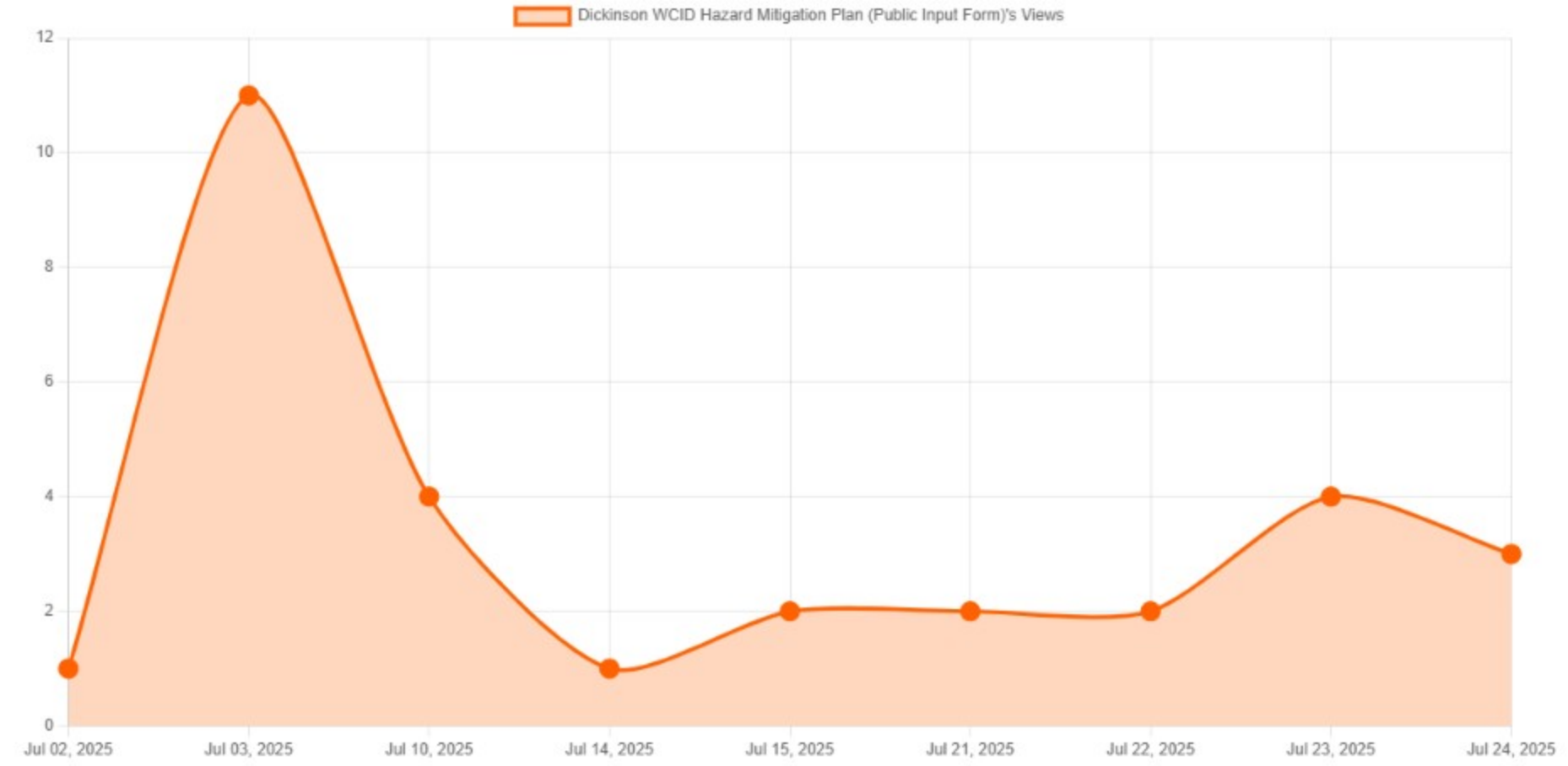
Would you like to receive updates on the WCID #1's LHMP planning process and future meetings?

77 Responses



Thank You!

Galveston County WCID #1 Local Hazard Mitigation Plan Survey



30
Views

0
Responses

< 0.1%
Conversion Rate

00:00
Avg. Time

Appendix F:
Plan Adoption

RESOLUTION NO. 2025-04

A RESOLUTION OF THE DICKINSON WATER CONTROL AND IMPROVEMENT DISTRICT ADOPTING THE DICKINSON WCID HAZARD MITIGATION PLAN

WHEREAS the Dickinson Water Control and Improvement District (District), formerly known as Galveston County Water Control and Improvement District #1, recognizes the threat that natural hazards pose to people and property within its service boundaries; and

WHEREAS the District has prepared a multi-hazard mitigation plan, hereby known as the Dickinson WCID Hazard Mitigation Plan, in accordance with federal laws, including the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended; the National Flood Insurance Act of 1968, as amended; and the National Dam Safety Program Act, as amended; and

WHEREAS the Dickinson WCID Hazard Mitigation Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property within the District's service boundaries from the impacts of future hazards and disasters; and

WHEREAS adoption by the District demonstrates its commitment to hazard mitigation and achieving the goals outlined in the Dickinson WCID Hazard Mitigation Plan.

NOW, THEREFORE, BE IT ORDAINED BY THE BOARD OF DIRECTORS OF DICKINSON WATER CONTROL AND IMPROVEMENT DISTRICT, DICKINSON, TEXAS:

Section 1. The District's Board of Directors hereby adopts the Dickinson WCID Hazard Mitigation Plan. While content related to the District may require revisions to meet the plan approval requirements, changes occurring after adoption will not require the District to re-adopt any further iterations of the plan. Subsequent plan updates following the approval period for this plan will require a separate adoption resolution.

ADOPTED by a vote of 5 in favor and 0 against, and 0 abstaining, this 18th day of August, 2025.

By: _____

Ron Morales, President

ATTEST: By: _____

Doreen Bridges, Secretary-Treasurer

APPROVED AS TO FORM: By: _____

Ivan Langford, General Manager

Prepared By:



Amanda Ashcroft, AICP, CFM