



Mayor | John Wright  
Mayor Pro-Tem | Travis Townsend  
Council Members | Cecil Booth, Christiene Daniel, Terry Roberts, Tanner Sartin  
City Manager | Chris Whittaker  
City Secretary | Michelle Perez

NOTICE IS HEREBY GIVEN PURSUANT TO V.T.C.A., GOVERNMENT CODE, CHAPTER 551, THAT THE CITY COUNCIL FOR THE CITY OF ANGLETON WILL CONDUCT A MEETING, OPEN TO THE PUBLIC, ON TUESDAY, APRIL 23, 2024, AT 6:00 P.M., AT THE CITY OF ANGLETON COUNCIL CHAMBERS LOCATED AT 120 S. CHENANGO STREET ANGLETON, TEXAS 77515.

### DECLARATION OF A QUORUM AND CALL TO ORDER

### PLEDGE OF ALLEGIANCE

### INVOCATION

### CITIZENS WISHING TO ADDRESS CITY COUNCIL

*The Presiding Officer may establish time limits based upon the number of speaker requests, the length of the agenda, and to ensure meeting efficiency, and may include a cumulative time limit. Citizens may speak at the beginning or at the time the item comes before council in accordance with Texas Government Code Section 551.007. No Action May be Taken by the City Council During Public Comments.*

### CEREMONIAL PRESENTATIONS

- [1.](#) Presentation of employee service award.
- [2.](#) Presentation of the Angleton Exchange Club Officer of the Year.
- [3.](#) Ceremonial Presentation of the April 2024 Keep Angleton Beautiful Yard of the Month and Business of the Month.
- [4.](#) Presentation of National Public Works Week Proclamation.
- [5.](#) Presentation of Angleton University Certificates.

### CONSENT AGENDA

*All of the following items on the Consent Agenda are considered to be self-explanatory by the Council and will be enacted with one motion. There will be no separate discussion of these items unless requested by the Mayor or a Council Member; in which event, the item will be removed from the consent agenda and considered separately.*

- [6.](#) Discussion and possible action on an interlocal agreement with Brazoria County for the collection of property taxes and Public Improvement District (PID) assessments.
- [7.](#) Discussion and possible action to award Bid No. 2024-02 Hospital Drive North Downing Street Intersection Point Repair Project to Matula Matula.

## **PUBLIC HEARINGS AND ACTION ITEMS**

- [8.](#) Conduct a public hearing, discussion, and possible action on a request for approval of a Strategic Partnership Agreement (SPA) to be made and entered into by and between the City of Angleton, Texas, through its City Council, and Brazoria County Municipal Utility District No. 82, under the authority of Section 43.0751 of the Texas Local Government Code.
- [9.](#) Conduct a public hearing, discussion, and possible action approve Ordinance No. 20240423-009 the Service and Assessment Plan (SAP) and Levy Assessment for the Riverwood Ranch North Public Improvement District.
- [10.](#) Conduct a public hearing, discussion, and possible action to approve Ordinance No. 20240423-0010 on the Amended & Restated Tax Increment Reinvestment Zone (TIRZ) No. 2 Project (Riverwood Ranch) and the Financing Plan.
- [11.](#) Conduct a public hearing, discussion, and possible action to approve Resolution No. 20240423-011 2024 Hazard Mitigation Plan.

## **REGULAR AGENDA**

- [12.](#) Discussion and possible action on the Brazoria County Courthouse Parking Lot and on-street parking details, including street signage.
- [13.](#) Discussion, update, and possible action on the City of Angleton signage regulations, Section 21.5-20- Signage Maintenance and Removal, regarding the repair or removal of business signs
- [14.](#) Update and discussion on the status of the March 15th severe storm debris.
- [15.](#) Discussion and possible action on a Conceptual Plan for Yaklin Dodge Dealership to be located adjacent and north of the Gulf Coast Ford Dealership property, which is located at 3000 SH 288 Access Road.
- [16.](#) Discussion and possible action to approve Resolution No. 20240423-016 an amended and restated Reimbursement Agreement for Riverwood Ranch North Public Improvement District between the City of Angleton and Riverwood Ranch, LLC, a Texas limited liability company.
- [17.](#) Discussion and possible action to approve a proposal with HDR for Engineering Services for the Henderson Road Roadway Alignment, Amendment No.1.

18. Update, discussion and possible action on the Transportation Alternatives grant for 288B and the proposed utility improvements on 288B from Cedar to Orange.

19. Discussion and possible action to approve Ordinance No. 20240423-019 Water Conservation Plan.

## **EXECUTIVE SESSION**

The City Council will hold executive session pursuant to the provisions of Chapter 551 Texas Government Code, in accordance with the authority contained therein:

20. Discussion and possible action on Consultation with Attorney regarding pending or contemplated litigation, pursuant to Section 551.071 of the Texas Local Government Code; (Case No. D-1-GN-23-007785; The City of Grand Prairie Texas, et al v. The State of Texas).

## **OPEN SESSION**

The City Council will now adjourn Executive Session, reconvene into Open Session pursuant to the provisions of Chapter 551 Texas Government Code and take action, if any, on item(s) discussed during Closed Executive Session.

## **ADJOURNMENT**

*If, during the course of the meeting and discussion of any items covered by this notice, City Council determines that a Closed or Executive Session of the Council is required, then such closed meeting will be held as authorized by Texas Government Code, Chapter 551, Section 551.071 - consultation with attorney; Section 551.072 - deliberation regarding real property; Section 551.073 - deliberation regarding prospective gift; Section 551.074 - personnel matters regarding the appointment, employment, evaluation, reassignment, duties, discipline, or dismissal of a public officer or employee; Section 551.076 - deliberation regarding security devices or security audit; Section 551.087 - deliberation regarding economic development negotiations; Section 551.089 - deliberation regarding security devices or security audits, and/or other matters as authorized under the Texas Government Code. If a Closed or Executive Session is held in accordance with the Texas Government Code as set out above, the City Council will reconvene in Open Session in order to take action, if necessary, on the items addressed during Executive Session.*

## **CERTIFICATION**

I, Michelle Perez, City Secretary, do hereby certify that this Notice of a Meeting was posted on the City Hall bulletin board, a place convenient and readily accessible to the general public at all times and to the City's website, [www.angleton.tx.us](http://www.angleton.tx.us), in compliance with Chapter 551, Texas Government Code. The said Notice was posted on the following date and time: Friday, April 19, 2024, by 6:00 p.m. and remained so posted continuously for at least 72 hours preceding the scheduled time of said meeting.

/S/ Michelle Perez  
Michelle Perez, TRMC  
City Secretary

*Public participation is solicited without regard to race, color, religion, sex, age, national origin, disability, or family status. In accordance with the Americans with Disabilities Act, persons with disabilities needing special accommodation to participate in this proceeding, or those requiring language assistance (free of charge) should contact the City of Angleton ADA Coordinator, Colleen Martin, no later than seventy-two (72) hours prior to the meeting, at (979) 849-4364 ext. 2132, email: [cmartin@angleton.tx.us](mailto:cmartin@angleton.tx.us).*



# AGENDA ITEM SUMMARY FORM

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**MEETING DATE:** April 9, 2024  
**PREPARED BY:** Brandy Follin, HR Coordinator  
**AGENDA CONTENT:** Presentation of employee service award.  
**AGENDA ITEM SECTION:** Ceremonial Presentation

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**BUDGETED AMOUNT:** \_\_\_\_\_ **FUNDS REQUESTED:** \_\_\_\_\_

**FUND:** \_\_\_\_\_

**EXECUTIVE SUMMARY:**

Presentation of employee service award to Colleen Martin for five years of dedicated service to the City of Angleton.

**RECOMMENDATION:**

Presentation of Service Award.



## AGENDA ITEM SUMMARY FORM

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**MEETING DATE:** April 23, 2024  
**PREPARED BY:** Lupe Valdez  
**AGENDA CONTENT:** Angleton Exchange Club Officer of the Year Presentation  
**AGENDA ITEM SECTION:** Ceremonial Presentation

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**BUDGETED AMOUNT:** N/A **FUNDS REQUESTED:** N/A

**FUND:** N/A

**EXECUTIVE SUMMARY:**

Angleton Exchange Club Officer of the Year Presentation

**RECOMMENDATION:**

N/A



# AGENDA ITEM SUMMARY FORM

**MEETING DATE:** 4/23/2024

**PREPARED BY:** Jason O'Mara, Assistant Director of Parks and Recreation

**AGENDA CONTENT:** Ceremonial Presentation of the April 2024 Keep Angleton Beautiful Yard of the Month and Business of the Month.

**AGENDA ITEM SECTION:** Ceremonial Presentation

**BUDGETED AMOUNT:** NA

**FUNDS REQUESTED:** NA

**FUND:** NA

**EXECUTIVE SUMMARY:**

Tracy Delesandri, Keep Angleton Beautiful Chairwoman, will present Yard of the Month to Kenneth and Elizabeth Leeper at 1008 S Belle Drive and Business of the Month to Soileau's at 1006 E Mulberry Street.

**RECOMMENDATION:**

Staff recommends City Council acknowledge the YOM and BOM with a plaque, picture, and KAB gift for their beautification efforts.

*Office of the* **MAYOR**  
City of Angleton, Texas  
**Proclamation**

**WHEREAS**, public works professionals focus on infrastructure, facilities and services that are of vital importance to sustainable and resilient communities and to the public health, high quality of life and well-being of the people of the City of Angleton; and,

**WHEREAS**, these infrastructure, facilities and services could not be provided without the dedicated efforts of public works professionals, who are engineers, managers, and employees responsible for rebuilding, improving, and protecting our citizens transportation, water supply, water treatment and solid waste systems, public buildings, and other structures and facilities; and,

**WHEREAS**, the year 2024 marks the 64<sup>th</sup> annual National Public Works Week sponsored by the American Public Works Association/Canadian Public Works Association with the theme, “Advancing Quality of Life For All”; and,

**NOW, THEREFORE, I, John Wright, Mayor of the City of Angleton, Texas,** along with the City of Angleton City Council, do hereby proclaim the week of May 19–25, 2024 as National Public Works Week and urges all citizens to join with the American Public Works Association and government agencies in activities, events, and ceremonies designed to pay tribute to our public works professionals to recognize the substantial contributions they make to protecting our national health, safety, and advancing quality of life for all

**“National Public Works Week”**

**PROCLAIMED this 23<sup>rd</sup> day of April, 2024.**

CITY OF ANGLETON, TEXAS

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John Wright  
Mayor





## AGENDA ITEM SUMMARY FORM

**MEETING DATE:** 4/23/2024

**PREPARED BY:** Phill Conner

**AGENDA CONTENT:** Discussion and possible action on interlocal agreement with Brazoria County for the collection of property taxes and PID assessments

**AGENDA ITEM SECTION:** Consent Agenda

**BUDGETED AMOUNT:** N/A

**FUNDS REQUESTED:** N/A

**FUND:** N/A

### EXECUTIVE SUMMARY:

The interlocal agreement with Brazoria County Tax Assessor Collector's office incorporates the following changes requested by Kristin Bulanek, Brazoria County Tax Assessor Collector.

- The cost of collecting per parcel increased from 0.32 per parcel to 0.36 per parcel in accordance with Section 6.27 of the Texas Property Tax Code with a review of such cost every 3 years (*Based on the number of parcels billed in Jan 2024, this increase will cost the City \$348.72*).
- How distributions are made to the taxing entities (*the payments will be made via ACH instead of wire transfers*)
- TNT Calculations/Designated Officer – Ensuring language is in accordance with the Texas Property Tax Code
- Adding consent for Penalty & Interest Waivers

### RECOMMENDATION:

Staff recommends the Council approve the interlocal agreement with Brazoria County for the collection of property taxes and PID assessments.

# BRAZORIA COUNTY PARCEL FEE CALCULATION

Entity Collection Costs for Tax Year 2024

April 18, 2024

Item 6.

## A. Salary Cost:

Position	Days per Week	# of Weeks	Total Days per Year	Work Days per Year	% of Year Spent on Entity Work In County
Salary Cost- Tax Assessor-Collector					
Peak Period May-Oct	4	26	104		
Off-Peak Oct-July	1	26	26		
			130	260	50.00%
Salary Cost- Chief TAC					
Peak Period July-Oct	3	17	51		
Off-Peak Oct-July	1	35	35		
			86	260	33.08%
Salary Cost- Chief Accountant					
Peak Period Oct-Feb	2	21	42		
Off-Peak Feb-Sept	1	31	31		
			73	260	28.08%
Salary Cost- Accounting Lead					
Peak Period Oct-Feb	2	21	42		
Off-Peak Feb-Sept	1	31	31		
			73	260	28.08%
Salary Cost- Accounting Assistant					
Peak Period Oct-Feb	2	21	42		
Off-Peak Feb-Sept	1	31	31		
			73	260	28.08%
Salary Cost- Assessing Supervisor					
Peak Period Oct-Feb	3	21	63		
Off-Peak Feb-Sept	1	31	31		
			94	260	36.15%
Salary Cost- Assessing Clerk					
Peak Period Oct-Feb	3	21	63		
Off-Peak Feb-Sept	1	31	31		
			94	260	36.15%
Salary Cost- Assessing Clerk					
Peak Period Oct-Feb	3	21	63		
Off-Peak Feb-Sept	1	31	31		
			94	260	36.15%
Salary Cost- Property Tax Supervisor					
Peak Period Oct-Feb	1	21	21		
Off-Peak Feb-Sept	0.75	31	23.25		
			44.25	260	17.02%
Salary Costs- Property Tax Collections Lead					
Peak Period Oct-Feb	1	21	21		
Off-Peak Feb-Sept	0.75	31	23.25		
			44.25	260	17.02%
Salary Costs- Property Tax Resale & Research Lead					

Peak Period Oct-Feb	3	21	63		
Off-Peak Feb-Sept	0.5	31	15.5		
			<u>78.5</u>	260	30.19%

Item 6.

Position	Salary	Percentage	Pass On Costs
1 Tax Assessor-Collector	\$ 142,570	50.00%	\$ 71,285
2 Chief TAC	\$ 98,623	33.08%	\$ 32,621
3 Chief Accountant	\$ 104,717	28.08%	\$ 29,401
4 Accounting Lead	\$ 55,118	28.08%	\$ 15,475
5 Accounting Assistant	\$ 53,556	28.08%	\$ 15,037
6 Assessing Supervisor	\$ 58,372	36.15%	\$ 21,104
7 Assessing Clerk	\$ 42,386	36.15%	\$ 15,324
8 Assessing Clerk	\$ 37,659	36.15%	\$ 13,615
10 Property Tax Supervisor	\$ 60,123	17.02%	\$ 10,232
11 Property Tax Collections Lead	\$ 44,853	17.02%	\$ 7,634
12 Property Tax Resale & Research Lead	\$ 44,853	30.19%	\$ 13,542
	<u>\$ 742,830</u>	<b>Total Item A:</b>	<u>\$ 245,271</u>

**B. Other Costs:**

Employee Benefits:

Position	Benefit Costs	Percentage	Pass On Costs
1 Tax Assessor-Collector	\$ 45,173	50.00%	\$ 22,587
2 Chief TAC	\$ 35,271	33.08%	\$ 11,667
3 Chief Accountant	\$ 36,644	28.08%	\$ 10,289
4 Accounting Lead	\$ 25,469	28.08%	\$ 7,151
5 Accounting Assistant	\$ 25,117	28.08%	\$ 7,052
6 Assessing Supervisor	\$ 26,202	36.15%	\$ 9,473
7 Assessing Clerk	\$ 22,600	36.15%	\$ 8,171
8 Assessing Clerk	\$ 21,535	36.15%	\$ 7,786
10 Property Tax Supervisor	\$ 26,597	17.02%	\$ 4,527
11 Property Tax Collections Lead	\$ 23,156	17.02%	\$ 3,941
12 Property Tax Resale & Research Lead	\$ 23,156	30.19%	\$ 6,991
	<u>\$ 310,921</u>	<b>Total:</b>	<u>\$ 99,633</u>

Office Supplies: 10% of Base

Office Supply Base Amt: \$ 36,000

Entity Portion: 10.0% \$ 3,600

Collections Software Expense: 10% of Base

Spindlemedia Base Amt: \$ 250,000 \$ 13,647

Entity Portion: 10.0% \$ 25,000

Bank Costs for Entities

ACH Charges \$ -

Truth-In-Taxation Software

\$ 1,200

FTP Site

\$ -

**Total Item B: \$ 143,080**

**C. Costs incurred with Contracted Collections:**

Total Item A: Salary Costs \$ 245,271

Total Item B: Other Costs \$ 143,080

**\$ 388,352**

**D. Parcel Count:**

Other than the County, the Tax Assessor-Collector collects for 54 other taxing entities, plus an additional 4 Public Improvement Districts, totaling 58 other taxing entities.

Non-County Parcel Count	1,066,023	
County (01 & 09) Parcel Count	485,344	<b>1,066,023</b>
Total Entity Parcel Count	1,551,367	
% of Total for Non-County Entities	68.72%	

Item 6.

**E. Cost Per Parcel:**

Item C: Actual cost =	<u>\$ 388,352</u>	<b>\$ 0.36</b>
Item D: Parcel Count =	<u>1,066,023</u>	

**Parcel Fee History**

Tax Year 2023	\$	0.32
Tax Year 2024	\$	<b>0.36</b>
Difference =	\$	<b>0.04</b>

THE STATE OF TEXAS            §  
  §  
COUNTY OF BRAZORIA         §

**INTERLOCAL COOPERATION AGREEMENT FOR  
COLLECTION OF TAXES AND PID ASSESSMENTS FOR  
CITY OF ANGLETON**

This Interlocal Cooperation Agreement (the “Agreement”) is made and entered into by and between **BRAZORIA COUNTY, TEXAS** (the “County”) and **CITY OF ANGLETON** (the “City”) (singularly and collectively, the “Party” and “Parties”) pursuant to the Interlocal Cooperation Act, Texas Government Code chapter 791, Texas Property Tax Code sections 6.23 and 6.24, and Texas Local Government Code section 372.0175, with the agreement, consent, and participation of the Brazoria County Tax Assessor-Collector (the “Tax Assessor-Collector”).

**I.  
RECITALS**

1.1 The County is a political subdivision of the State of Texas, acting by and through its Commissioners Court.

1.2 The City is a political subdivision of the State of Texas, acting by and through its governing body.

1.3 The Tax Assessor-Collector is the duly elected tax assessor-collector for Brazoria County, Texas.

1.4 Texas Property Tax Code section 6.24, Texas Local Government Code section 372.0175, and Texas Government Code chapter 791 authorize political subdivisions of the State of Texas to enter into interlocal contracts for the provision of tax assessment and collection services and public improvement district (“PID”) assessment collection services.

1.5 The County, with the approval of the Tax Assessor-Collector, has agreed to provide tax assessment and collection services and PID assessment collection services, as specified in this Agreement, for the City.

1.6 The City has agreed to authorize the County to provide tax assessment and collection services and PID assessment collection services, as specified in this Agreement, for the City.

1.7 The City has the authority to authorize the County to act as tax assessor-collector, as specified in this Agreement, and the County has the authority to act in that capacity.

1.8 The County and the City agree it is in the best interest of the citizens of Brazoria County to enter into this Agreement.

NOW, THEREFORE, for and in consideration of the premises and the mutual covenants

and agreements set forth in this Agreement, the County and the City agree as follows:

## **II. COUNTY OBLIGATIONS**

The County hereby agrees, during the term of this Agreement, to the following:

2.1 The County shall comply with all provisions of the Texas Property Tax Code and Local Government Code, as amended, regarding collection of ad valorem property taxes and PID assessments.

2.2 Except as otherwise provided in this Agreement, in all matters pertaining to the assessment and collection of taxes for the City, the County, through the Tax Assessor-Collector, shall perform the duties of tax assessment and collection and PID assessment collection for the City for accounts within the jurisdiction of the City. The County's duties under this Agreement include, but are not limited to, performing timely and accurate calculations and publications of applicable tax rates and entering into agreements for the payment of delinquent taxes by installment as provided by Texas Property Tax Code section 33.02.

2.3 The Tax Assessor-Collector shall provide customary notices and billings concerning taxes and PID assessments owed to the City and will collect and process through the County's bank account all income received therefrom, in the general manner and at the same times in which the Tax Assessor-Collector assesses and collects taxes for the County and other taxing entities.

2.4 The taxes and assessments collected by the County for the City shall be remitted by electronic automated clearing house transactions ("ACH") to the City's designated depository. Refunds to taxpayers and taxpayer checks returned from banks shall be deducted from County's remittance to the City. The Tax Assessor-Collector shall remit to the City all tax proceeds and PID assessments collected for the City no less than twice weekly during heavy payment periods, as determined by the Tax Assessor-Collector, and no less than once weekly during slow periods. Actual funds collected by the Tax Assessor-Collector shall be remitted to the City within three (3) business days of receipt during heavy payment periods and within five (5) business days during slow periods. Disbursements shall be subject to the City bearing any ACH transfer fee required by an agreement between the County and the County's depository then in effect.

2.5 The Tax Assessor-Collector shall provide the City monthly and annual reports as required by Texas Property Tax Code section 31.10.

2.6 The Tax Assessor-Collector shall provide the City annual reports, prepared by independent certified public accountants, on both the design of the system and compliance tests that are directed to specific objectives of internal accounting control. For the purpose of these reports, the "system" is the internal control structure policies and procedures of the office of the Tax Assessor-Collector, which includes the control environment, the accounting system, and the control procedures. These reports shall be in accordance with Statement of Auditing Standards Number 44, "Special-Purpose Reports on Internal Accounting Control at Service Organizations,"

as issued by the American Institute of Certified Public Accountants.

2.7 The Tax Assessor-Collector shall provide the City a copy of existing bonds required by Texas Property Tax Code section 6.28.

2.8 The County shall bill the City no later than the 31st day of December each year for the annual charge for assessing and collecting taxes and PID assessments under this Agreement.

2.9 In performing services under this Agreement, neither the Tax Assessor-Collector, nor any official, employee, or agent of the Tax-Assessor Collector or the County, shall be considered an officer or employee of the City.

### **III. CITY OBLIGATIONS**

The City hereby agrees, during the term of this Agreement, to the following:

3.1 The City shall comply with all provisions of the Texas Property Tax Code and Local Government Code, as amended, regarding collection of ad valorem property taxes and PID assessments.

3.2 The City shall adopt a tax rate in accordance with Texas Property Tax Code Section 26.05. The City shall reimburse the County for any additional costs incurred by County for any delay in adopting a tax rate.

3.3 For services related to the collection of ad valorem property taxes rendered pursuant to this Agreement, the City agrees to pay the County an annual charge of Thirty-Six Cents (\$0.36) per parcel as the actual costs incurred. The Parties acknowledge and agree the compensation under this Agreement is reasonable compensation, as allowed by Texas Property Tax Code section 6.27, which does not exceed the actual costs incurred, for assessing and collecting taxes for the City.

3.4 For services related to PID assessment collection rendered pursuant to this Agreement, the City shall also pay the County the following for each PID: (1) an annual charge of Thirty-Six Cents (\$0.36) per parcel and (2) an initial set-up fee of One Thousand Dollars and No Cents (\$1,000.00), as the actual costs incurred. The Parties acknowledge and agree the compensation under this Agreement is reasonable compensation, as allowed by Texas Property Tax Code Section 6.27, which does not exceed the actual costs incurred, for collecting PID assessments for the City.

3.5 The Parties further agree the amount to be paid by the City to the County under this Agreement may be evaluated by the Tax Assessor-Collector, at a minimum, every three (3) years. The Parties agree the amount to be paid by the City to the County under this Agreement may be adjusted by the Tax Assessor-Collector after an evaluation. In the event of an adjustment, the Tax Assessor-Collector shall notify the City in writing thirty (30) days prior to the effective date for the automatic renewal, and this Agreement shall then renew at the adjusted rate without need to amend this Agreement.

3.6 The City shall pay the County amounts billed under this Agreement forty-five (45) days after the City's receipt of the bill. If such amounts are not timely paid, the County may withhold the amounts from future disbursements.

3.7 The City shall ensure the Tax Assessor-Collector is notified no later than May 1 of the applicable year when requested to collect assessments for a new PID. The City shall also ensure the Tax Assessor-Collector is provided an assessment roll for each PID no later than September 1 of each year.

3.8 The City shall promptly provide to the Tax Assessor-Collector, without charge, copies of all records necessary for the performance of the duties and responsibilities of the County pursuant to this Agreement. The City shall provide accurate information to the Tax Assessor-Collector to permit the timely and accurate calculations and publications of applicable tax rates.

3.9 The City hereby designates the Tax Assessor-Collector as the person to perform calculations of all applicable tax rates and all other functions incident to those calculations, such as notices, as required by Texas Property Tax Code chapter 26 based on accurate information provided to the Tax Assessor-Collector from Appraisal Districts and the City.

3.10 The Parties acknowledge and agree that the City has and retains the exclusive authority to contract with private legal counsel for the collection of delinquent property taxes and PID assessments, as provided in Texas Property Tax Code section 6.30. The Tax Assessor-Collector shall cooperate with delinquent tax collection attorney(s) so designated and shall have the authority to pay said attorney(s) the fees or commissions agreed upon between the City and the attorney(s) out of the proceeds received from the collection of delinquent tax accounts and PID assessments. In the event the City does not designate private legal counsel for the collection of delinquent property taxes and PID assessments, the City shall utilize the same private legal counsel as the County.

3.11 In the event the County waives any penalty and/or interest on any parcel, pursuant to Texas Property Tax Code section 33.011, the City consents to the waiver of the penalty and/or interest on the same parcel and hereby authorizes the County to waive such penalty and/or interest on behalf of the City.

3.12 The City's performance under this Agreement is conditioned on the appropriation of funds by the City on an annual basis for payment of the amounts owed to the County under this Agreement and shall constitute a commitment of current revenues only. The failure by the City's governing body to appropriate funds sufficient for payment of the County's collections and performance herein shall be grounds for termination of this Agreement.

#### **IV. TERM AND TERMINATION**

4.1 This Agreement shall be effective on May 1, 2024, and shall remain in full force



and effect for one year, through April 30, 2025. This Agreement shall automatically renew on May 1, 2025, for a period of one (1) year, and shall automatically renew thereafter on an annual basis.

4.2 Either Party may terminate this Agreement for any reason by providing written notice to the other Party at least ninety (90) days prior to the date of termination. This Agreement may also be terminated at any time and for any reason, without any prior notice, upon written agreement by the Parties.

4.3 In the event of termination of this Agreement by the City, the City shall assume all contractual obligations entered into with the County for services rendered under this Agreement to the City for the duration of the term of the Agreement and any renewal, and the County shall be relieved of all contractual obligations under this Agreement.

## **V.** **ENTIRETY**

5.1 This Agreement and all promises contained in it supersede any and all other agreements, either oral or in writing, between the Parties with respect to the subject matter of this Agreement.

5.2 The Agreement contains all the covenants and agreements between the Parties relating in any way to their obligations under this Agreement.

5.3 Each Party acknowledges that no representations, inducements, promises, or agreements, orally or otherwise, have been made by any Party, or anyone acting on behalf of any Party, that are not set forth in this Agreement, and that no agreement, statement, or promise not contained in this Agreement shall be valid or binding.

## **VI.** **FORCE MAJEURE**

6.1 The Parties shall not be liable or responsible to each other for any delay, loss, failure, or inability to perform their obligations as described herein which is caused by “force majeure.” The term “force majeure” includes, but is not limited to, acts of God, strikes, acts of a public enemy, wars, mines or other items of ordnance, blockages, public rioting, lightning, fire, hurricanes, floods, storms, explosions, inability to obtain materials, supplies, labor permits, servitudes, or rights of way, acts or restraints of any governmental authority, epidemics, landslides, lightning storms, earthquakes, washouts, arrests, restraints of rulers and peoples, civil disturbances, breakage or accident to machinery or lines of equipment, temporary failures of equipment, freezing of equipment, and any other causes, whether of the kinds specifically enumerated above or otherwise, which are not reasonably within the control of the Parties and which by the exercise of reasonable due diligence could not reasonably be prevented or overcome.

6.2 In the event time limits are not met under this Agreement as a result of force majeure, the Party whose performance is due shall have an extension of the time limit or deadline

equal to the number of days for which the force majeure condition existed. After the force majeure condition has ended, the Agreement shall continue under the same operations and circumstances as existed prior to the force majeure event.

6.3 Events reasonably within the control of the respective Party shall not constitute force majeure and shall be remedied with the exercise of due diligence. The Parties shall use all reasonable means to remove all contingencies affecting the performance of this Agreement as quickly as is reasonably possible. This clause does not relieve any Party from its obligations to make any payments of amounts then due for previous work or obligations contemplated and performed under this Agreement, and neither Party's time for performance shall be extended for any event which is reasonably within the control of such Party.

**VII.**  
**LIABILITY, SUPPLEMENTAL SURETY BOND,**  
**AND NO IMMUNITY WAIVER**

7.1 Each party to this Agreement agrees that it shall have no liability whatsoever for the actions or omissions of an individual employed by another party, regardless of where the individual's actions occurred. Each party is solely responsible for the actions and/or omissions of its employees and officers.

7.2 The County recommends that the City obtain an additional and adequate surety bond for the County and Tax Assessor/Collector specifically related to all services, actual and anticipated, to be performed and rendered hereunder. The City agrees to pay all associated premiums for such bond

7.3 The Parties expressly understand and agree that, in the execution of this Agreement and the performance of obligations herein, the Parties do not waive, nor shall they be deemed to have waived, any immunity or defense that would otherwise be available to the Parties or their officials, officers, employees, and/or agents against claims arising in the exercise of governmental powers and functions, including, but not limited to, sovereign and/or governmental immunity. This Agreement is expressly made subject to the Parties' sovereign and/or governmental immunity, including, without limitation, Title 5 of the Texas Civil Practice and Remedies Code, and all applicable federal and state laws.

**VIII.**  
**MISCELLANEOUS**

8.1 Notices. Any notice required under this Agreement shall be in writing and shall be duly served when deposited, with proper postage prepaid, and duly registered or certified, return receipt requested, in a United States Post Office, addressed as specified below. If mailed, any notice of communication shall be deemed to be received three (3) days after the date of deposit in the United States mail. Unless otherwise provided in this Agreement, all notices shall be delivered at the following addresses:

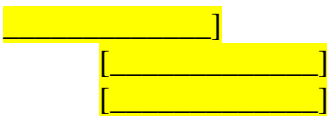
THE COUNTY:

Kristin R. Bulanek  
Brazoria County Tax Assessor-Collector  
111 East Locust  
Angleton, TX 77515

THE CITY:

John Wright  
Mayor, City of Angleton TX  
121 S. Velasco,  
Angleton, TX 77515

With a copy to:  
Chief – Civil Division  
Brazoria County Criminal  
District Attorney’s Office  
111 E. Locust, Suite 408A  
Angleton, Texas 77515



8.2 Severability. If any term or provision in this Agreement is, for any reason, held invalid, illegal, or unenforceable by any court of competent jurisdiction, the Parties shall by written amendment make it valid, legal, or enforceable; however, if any term or provision in this Agreement cannot be amended to make it valid, legal, or enforceable while still providing the effect desired by both Parties, said term or provision shall be deemed a separate, distinct, and independent provision, shall be constructed as having never been contained in this Agreement, and shall not affect the validity, legality, or enforceability of the remaining terms and provisions in this Agreement, which shall remain in full force and effect.

8.3 Amendment. No amendment, modification, or alteration of the terms or provisions of this Agreement shall be binding unless it is in writing, references this Agreement, is dated subsequent to the Effective Date of this Agreement, and is duly executed by authorized representatives of both Parties.

8.4 Authorized Representative. Each Party to this Agreement represents to the other Party that it is fully authorized to enter into this Agreement and to perform its obligations hereunder and that no waiver, consent, approval, or authorization from any third party is required to be obtained or made in connection with the execution, delivery, or performance of this Agreement in accordance with its terms, other than those that have been obtained.

8.5 No Joint Enterprise. Nothing in this Agreement shall be deemed or construed by the Parties, nor any third party, as creating a relationship of principal and agent, partnership, joint enterprise, common enterprise, joint venture, or joint owners between the Parties. This Agreement does not and shall not be construed to entitle either Party or any of their respective officials, employees, or agents, if applicable, to any benefit, privilege, or other amenities of employment from the other Party.

8.6 Successors and Assigns. Neither Party may assign or transfer its interest in or obligations under this Agreement, in whole or in part, without the prior written consent of the other Party. This Agreement binds and is for the sole and exclusive benefit of the Parties and their legal successors, including, without limitation, any successor governmental agency or entity to either Party.

8.7 Governing Law. This Agreement shall be governed by and construed in accordance with the laws and court decisions of the State of Texas.

8.8 Exclusive Jurisdiction and Venue. Exclusive jurisdiction and venue for all legal actions related to this Agreement shall be in Brazoria County, Texas. The Parties waive any objection to the adjudication of all court actions related to this Agreement in Brazoria County, Texas.

8.9 Authorship. This Agreement shall not be construed in favor of or against any Party on the basis that the Party did or did not authorize this Agreement.

8.10 Titles or Headings. Any titles or headings of sections and paragraphs in this Agreement are included solely for convenience, shall not be considered a part of the Agreement, shall not in any way serve to modify or restrict any term or provision, and shall not be considered in ascertaining intent.

8.11 Including. Wherever the word “including” is used, it is deemed to mean “including, without limitation.”

8.12 Counterparts. This Agreement may be executed in one or more counterparts, all of which together will be deemed an original.

**IN WITNESS WHEREOF**, the Parties have caused this Agreement to be executed by their following properly authorized officers, having the necessary authority to execute this Agreement on behalf of the Parties, and made this Agreement effective as of the last date listed below:

**BRAZORIA COUNTY, TEXAS:**

**CITY OF ANGLETON:**

By: \_\_\_\_\_  
L.M. “Matt” Sebesta, Jr.  
COUNTY JUDGE

By: \_\_\_\_\_  
John Wright  
Mayor

Date: \_\_\_\_\_

Date: \_\_\_\_\_

By: \_\_\_\_\_  
Kristin R. Bulanek  
TAX ASSESSOR-COLLECTOR

Date: \_\_\_\_\_



## AGENDA ITEM SUMMARY FORM

**MEETING DATE:** April 23, 2024

**PREPARED BY:** Chris Whittaker

**AGENDA CONTENT:** Award of Hospital Dr North Downing St Intersection Point Repair

**AGENDA ITEM SECTION:** Regular Agenda

**BUDGETED AMOUNT:** **FUNDS REQUESTED:**  
\$157,839.40

**FUND:**

### EXECUTIVE SUMMARY:

The intersection of Downing and Hospital is showing pavement failure and soil intrusion into the existing sanitary sewer system. HDR prepared a bid package (Plans and Specifications) to repair this area. The City has received seven (7) bids for the above referenced project. HDR has tabulated the bids, checked references, and prepared a letter of recommendation to award the project to Matula and Matula Construction, Inc. Please see the attached letter of recommendation.

**RECOMMENDATION:** Council to approve Matula and Matula Construction, Inc for the not to exceed amount of \$157,839.40 for the above referenced project.

LETTER OF RECOMMENDATION

FOR

City of Angleton

Hospital Dr North Downing St  
Intersection Point Repair Project



CITY OF ANGLETON

APRIL, 2024

HDR Project No. 10391496



HDR ENGINEERING, INC.  
4828 LOOP CENTRAL DRIVE, SUITE 700  
HOUSTON, TEXAS 77081  
(713) 622-9264



April 8, 2024

Mayor and City Council Members  
 City of Angleton, Texas  
 121 S. Velasco  
 Angleton, TX 77515

Re: Hospital Dr North Downing St Intersection Point Repair Project  
 City of Angleton, Texas  
 HDR Job No. 10391496

Dear Mayor and City Council Members:

On April 2, 2024, seven (7) bids were received on the above referenced project.

1. Bid Tabulation Sheet – seven (7) construction firms participated in the bidding process. Each bid was checked for mathematical errors and/or bid irregularities. Appropriate corrections to the errors were made and included in the attached bid tabulations. The errors did not affect the order of the bids. The project was bid with General, Drainage and Supplemental items. A bid tab is included in Section 1. The bids for the project are as follows:

CONTRACTOR	TOTAL (BASE BID AND SUPPLEMENTAL ITEMS)
<b>Matula &amp; Matula Construction, Inc. (Apparent Low Bidder)</b>	<b>\$157,839.40</b>
Skilled Construction Subs Unlimited, Inc.	161,991.00
Greater Houston Construction	168,945.00
HTI Construction, Inc.	177,775.00
Aranda Brothers Construction	230,345.00
Cold River Concrete Construction, LLC	251,805.00
DVL Enterprises LLC	289,600.00

2. Evaluation of the Apparent Low Bidder - The apparent low bidder is Matula & Matula Construction, Inc. HDR has reviewed their Statement of Qualifications and they have previously performed work for the City of Angleton. They have performed well on previous

hdrinc.com

4828 Loop Central Drive, Suite 800, Houston, TX 77081-2220  
 T (713) 622-9264 F 713.622.9265  
 Texas Registered Engineering Firm F-754

projects and staff stated that they would like to utilize them again. See Section 2 of this report for a list of references.

3. Telephone Conversations with References – Matula & Matula Construction, Inc. has performed many successful projects of the same size and nature. City staff has a good working relationship with them, and they are a firm that is capable of completing this project. Three (3) references were previously contacted by telephone and were asked to respond to a questionnaire. The Contractor received excellent ratings on their previous projects. The references indicated that they were impressed with the work Matula & Matula Construction, Inc. had performed and would use them again in the future. Section 3 of this report represents the three previous references previously contacted.

Matula & Matula Construction, Inc. appears to be a responsible firm that should be capable of performing the specific work in a satisfactory manner. For these reasons list above, HDR recommends that the City of Angleton award the Hospital Dr North Downing St Intersection Point Repair Project to Matula & Matula Construction, Inc for the not to exceed amount of \$157,839.40.

If you have any questions, please feel free to contact us, 713-622-9264.

Sincerely,

HDR ENGINEERING, INC.



John Peterson, P.E.  
Project Manager



# SECTION 1

## Bid Tabulation

Item	Unit	Quantity	Low Bidder		Shiloh Construction, Inc.		Greiner Houston Construction		HTI Construction, Inc.		Avada Brothers Construction		C&H River Country Construction, LLC		DVL Enterprises LLC	
			UNIT PRICE	TOTAL AMOUNT	UNIT PRICE	TOTAL AMOUNT	UNIT PRICE	TOTAL AMOUNT	UNIT PRICE	TOTAL AMOUNT	UNIT PRICE	TOTAL AMOUNT	UNIT PRICE	TOTAL AMOUNT	UNIT PRICE	TOTAL AMOUNT
<p><b>GENERAL ITEMS</b></p> <p>1 Traffic Control, including installation, maintenance and removal, and all associated incidentals, complete in place, the sum of:</p> <p>EA 1 \$ 8,660.10 \$ 8,660.10 \$ 1,000.00 \$ 1,000.00 \$ 9,400.00 \$ 9,400.00 \$ 20,000.00 \$ 20,000.00 \$ 25,000.00 \$ 25,000.00 \$ 30,000.00 \$ 30,000.00 \$ 25,000.00 \$ 25,000.00 \$ 30,000.00 \$ 30,000.00</p> <p>2 SVPF, including installation, maintenance and removal, and all associated incidentals, complete in place, the sum of:</p> <p>EA 1 \$ 4,131.20 \$ 4,131.20 \$ 4,000.00 \$ 4,000.00 \$ 1,750.00 \$ 1,750.00 \$ 5,000.00 \$ 5,000.00 \$ 8,500.00 \$ 8,500.00 \$ 2,000.00 \$ 2,000.00 \$ 8,500.00 \$ 8,500.00 \$ 2,000.00 \$ 2,000.00</p> <p><b>Total GENERAL ITEMS</b></p> <p>UNIT PRICE \$ 12,791.30 \$ 15,000.00 \$ 11,500.00 \$ 18,500.00 \$ 25,000.00</p>																
<p><b>PAVING ITEMS</b></p> <p>3 Remove and replace 6" reinforced concrete pavement and base materials, complete in place, including curb, slopewalk and paving leaders, complete in place, the sum of:</p> <p>SY 165 \$ 33.30 \$ 5,494.50 \$ 50.00 \$ 8,250.00 \$ 14,880.00 \$ 16,500.00 \$ 2,620.00 \$ 2,620.00 \$ 100.00 \$ 16,500.00 \$ 4,785.00 \$ 4,785.00 \$ 75.00 \$ 12,975.00 \$ 40.00 \$ 6,600.00</p> <p>4 Full depth concrete patch repair including 12" cement stabilized sand, 7" thick reinforced concrete pavement, including joints, dowels, pavement header with undercut and finishing, complete in place, the sum of:</p> <p>SY 165 \$ 136.80 \$ 22,672.00 \$ 196.00 \$ 32,670.00 \$ 214.00 \$ 35,310.00 \$ 225.00 \$ 37,125.00 \$ 280.00 \$ 46,200.00 \$ 350.00 \$ 57,750.00 \$ 280.00 \$ 46,200.00 \$ 350.00 \$ 57,750.00</p> <p>5 Repave sidewalk 6" reinforced concrete curb, including transitions, complete in place, the sum of:</p> <p>LF 55 \$ 42.00 \$ 2,310.00 \$ 28.00 \$ 1,540.00 \$ 24.00 \$ 1,320.00 \$ 40.00 \$ 2,200.00 \$ 20.00 \$ 1,100.00 \$ 45.00 \$ 2,475.00 \$ 40.00 \$ 1,760.00 \$ 2,200.00 \$ 2,200.00</p> <p>6 Remove and replace curb ramp and landing per detail, complete in place, the sum of:</p> <p>EA 8 \$ 2,487.50 \$ 19,900.00 \$ 1,567.00 \$ 12,536.00 \$ 4,000.00 \$ 32,000.00 \$ 2,000.00 \$ 16,000.00 \$ 2,000.00 \$ 16,000.00 \$ 2,500.00 \$ 20,000.00 \$ 7,500.00 \$ 60,000.00</p> <p>7 Rehabilitation existing concrete sanitary sewer mainline (18" diameter) with 1" concrete in place, complete in place, the sum of:</p> <p>VF 17 \$ 595.60 \$ 10,125.20 \$ 566.00 \$ 9,620.00 \$ 235.00 \$ 3,995.00 \$ 1,000.00 \$ 17,000.00 \$ 180.00 \$ 3,060.00 \$ 210.00 \$ 3,570.00 \$ 500.00 \$ 8,500.00</p> <p>8 Remove and replace 4" thick concrete sidewalk, complete in place, the sum of:</p> <p>SF 20 \$ 29.50 \$ 590.00 \$ 25.00 \$ 500.00 \$ 13.00 \$ 260.00 \$ 10.00 \$ 200.00 \$ 12.00 \$ 240.00 \$ 55.00 \$ 1,100.00 \$ 120.00 \$ 2,400.00</p> <p>9 Remove and replace sidewalk with 4" sidewalk with thickened edge, complete in place, the sum of:</p> <p>SF 300 \$ 36.80 \$ 11,040.00 \$ 31.75 \$ 9,525.00 \$ 14.00 \$ 4,200.00 \$ 10.00 \$ 3,000.00 \$ 13.00 \$ 3,900.00 \$ 10.00 \$ 3,000.00 \$ 120.00 \$ 3,600.00</p> <p>10 Thoroughly remove manholes, 12", with 6" equivalent manhole, including excavation, removal of existing curbs, and paving, complete in place, the sum of:</p> <p>LF 145 \$ 31.70 \$ 4,596.50 \$ 31.00 \$ 4,495.00 \$ 21.00 \$ 3,045.00 \$ 20.00 \$ 2,900.00 \$ 8.00 \$ 1,160.00 \$ 18.00 \$ 2,610.00 \$ 20.00 \$ 2,600.00</p> <p>11 Thoroughly remove manholes, 24", with 6" equivalent manhole, including excavation, removal of existing curbs, and paving, complete in place, the sum of:</p> <p>LF 50 \$ 59.70 \$ 2,985.00 \$ 31.00 \$ 1,550.00 \$ 43.00 \$ 2,150.00 \$ 20.00 \$ 1,000.00 \$ 20.00 \$ 1,000.00 \$ 25.00 \$ 1,250.00 \$ 30.00 \$ 1,500.00</p> <p>12 Remove and replace 6" thick concrete driveway, including backfill, reinforcement and joints, complete in place, the sum of:</p> <p>SY 25 \$ 242.40 \$ 6,060.00 \$ 309.00 \$ 7,725.00 \$ 180.00 \$ 4,500.00 \$ 120.00 \$ 3,000.00 \$ 100.00 \$ 2,500.00 \$ 450.00 \$ 1,125.00 \$ 200.00 \$ 5,000.00</p> <p>13 24-inch PVC DR18 sanitary sewer, including excavation, bedding and backfill, complete in place, the sum of:</p> <p>LF 20 \$ 81.60 \$ 1,632.00 \$ 713.00 \$ 14,260.00 \$ 360.00 \$ 7,200.00 \$ 500.00 \$ 10,000.00 \$ 80.00 \$ 1,600.00 \$ 925.00 \$ 18,500.00 \$ 400.00 \$ 8,000.00</p> <p>14 Trench safety for all excavation greater than 5' deep, complete in place, the sum of:</p> <p>LF 20 \$ 69.30 \$ 1,386.00 \$ 175.00 \$ 3,500.00 \$ 3.00 \$ 60.00 \$ 150.00 \$ 3,000.00 \$ 10.00 \$ 200.00 \$ 250.00 \$ 5,000.00 \$ - \$ -</p> <p>15 Type E inlet in sidewalk, including bedding and backfill, complete in place, the sum of:</p> <p>EA 1 \$ 3,283.10 \$ 3,283.10 \$ 10,000.00 \$ 10,000.00 \$ 6,000.00 \$ 6,000.00 \$ 6,000.00 \$ 6,000.00 \$ 13,000.00 \$ 13,000.00 \$ 6,500.00 \$ 6,500.00 \$ 17,500.00 \$ 17,500.00</p> <p>16 Remove existing inlet, all types, complete in place, the sum of:</p> <p>EA 1 \$ 277.10 \$ 277.10 \$ 2,000.00 \$ 2,000.00 \$ 6,500.00 \$ 6,500.00 \$ 1,000.00 \$ 1,000.00 \$ 500.00 \$ 500.00 \$ 1,500.00 \$ 1,500.00 \$ 2,000.00 \$ 2,000.00</p> <p>17 Remove and replace existing sanitary sewer, all sizes, all depths, complete in place, the sum of:</p> <p>LF 20 \$ 20.80 \$ 416.00 \$ 65.00 \$ 1,300.00 \$ 131.00 \$ 2,620.00 \$ 100.00 \$ 2,000.00 \$ 20.00 \$ 400.00 \$ 50.00 \$ 1,000.00 \$ 50.00 \$ 1,000.00 \$ 200.00 \$ 4,000.00</p>																
<p><b>SUPPLEMENTAL ITEMS</b></p> <p>18 Extra concrete-stabilized sand, complete in place, the sum of:</p> <p>CY 30 \$ 69.70 \$ 2,091.00 \$ 100.00 \$ 3,000.00 \$ 155.00 \$ 4,650.00 \$ 50.00 \$ 1,500.00 \$ 50.00 \$ 1,500.00 \$ 270.00 \$ 8,100.00 \$ 50.00 \$ 1,500.00 \$ 50.00 \$ 1,500.00</p> <p>19 Adjust existing, valve box, meter box, and/or cleanout to the finish with top of proposed pavement or finished grade, complete in place, the sum of:</p> <p>EA 2 \$ 72.50 \$ 145.00 \$ 500.00 \$ 1,000.00 \$ 2,000.00 \$ 2,000.00 \$ 200.00 \$ 400.00 \$ 400.00 \$ 800.00 \$ 350.00 \$ 700.00 \$ 2,000.00 \$ 4,000.00</p> <p>20 Contractor shall coordinate support, adjustment, or relocation of a power pole, complete in place, the sum of:</p> <p>EA 2 \$ 10,953.10 \$ 21,906.20 \$ 2,500.00 \$ 5,000.00 \$ 6,200.00 \$ 12,400.00 \$ 1,000.00 \$ 2,000.00 \$ 2,000.00 \$ 4,000.00 \$ 2,500.00 \$ 5,000.00 \$ 5,000.00 \$ 10,000.00 \$ 20,000.00</p> <p>21 18" RCP, ASTM C76, Class III storm sewer, rubber gasket joints, all depths, concrete stabilized sand bedding and backfill, complete in place, the sum of:</p> <p>LF 20 \$ 133.10 \$ 2,662.00 \$ 250.00 \$ 5,000.00 \$ 218.00 \$ 4,360.00 \$ 100.00 \$ 2,000.00 \$ 100.00 \$ 2,000.00 \$ 350.00 \$ 7,000.00 \$ 250.00 \$ 5,000.00</p> <p>22 Relocate existing fire hydrant assembly, complete in place, the sum of:</p> <p>EA 1 \$ 4,157.00 \$ 4,157.00 \$ 4,000.00 \$ 4,000.00 \$ 2,000.00 \$ 2,000.00 \$ 6,500.00 \$ 6,500.00 \$ 4,000.00 \$ 4,000.00 \$ 10,500.00 \$ 10,500.00 \$ - \$ -</p> <p>23 Extra 1.5 sack of cement per cubic yard added to the 7" concrete pavement (total of 7.0 sacks/cubic yard), complete in place, the sum of:</p> <p>SY 165 \$ 15.10 \$ 2,491.50 \$ 26.00 \$ 4,290.00 \$ 35.00 \$ 5,775.00 \$ 10.00 \$ 1,650.00 \$ 120.00 \$ 19,800.00 \$ 45.00 \$ 7,425.00 \$ - \$ -</p>																
<p><b>Total GENERAL ITEMS</b></p> <p>UNIT PRICE \$ 12,791.30 \$ 15,000.00 \$ 11,500.00 \$ 18,500.00 \$ 25,000.00</p> <p>TOTAL GENERAL ITEMS \$ 12,791.30 \$ 15,000.00 \$ 11,500.00 \$ 18,500.00 \$ 25,000.00</p> <p>TOTAL SUPPLEMENTAL ITEMS \$ 113,395.40 \$ 124,371.00 \$ 126,610.00 \$ 158,925.00 \$ 98,845.00</p> <p>TOTAL BASE BID (GENERAL-DRAINAGE-SUPPLEMENT) \$ 113,395.40 \$ 124,371.00 \$ 126,610.00 \$ 158,925.00 \$ 98,845.00</p>																
<p><b>TOTAL GENERAL ITEMS</b></p> <p>TOTAL DRAINAGE ITEMS \$ 12,791.30 \$ 15,000.00 \$ 11,500.00 \$ 18,500.00 \$ 25,000.00</p> <p>TOTAL SUPPLEMENTAL ITEMS \$ 113,395.40 \$ 124,371.00 \$ 126,610.00 \$ 158,925.00 \$ 98,845.00</p> <p>TOTAL BASE BID (GENERAL-DRAINAGE-SUPPLEMENT) \$ 113,395.40 \$ 124,371.00 \$ 126,610.00 \$ 158,925.00 \$ 98,845.00</p>																

TOTAL GENERAL ITEMS		TOTAL DRAINAGE ITEMS		TOTAL SUPPLEMENTAL ITEMS		TOTAL BASE BID (GENERAL-DRAINAGE-SUPPLEMENT)	
UNIT PRICE	\$ 12,791.30	\$ 15,000.00	\$ 11,500.00	\$ 18,500.00	\$ 25,000.00	\$ 98,845.00	\$ 30,500.00
TOTAL AMOUNT	\$ 113,395.40	\$ 124,371.00	\$ 126,610.00	\$ 158,925.00	\$ 98,845.00	\$ 251,985.00	\$ 286,600.00

Revisions Error Corrected by Engineer  
Represents Bid Withdrawn by Bidder

# SECTION 2

## References

**Work in Progress  
Contracts on Hand  
12/14/2023**

Project	Owner	Architect / Engineer	Phone No.	Contract Amount	Percent Complete	Scheduled Completion
Wells 3 & 3A	Brazosport Water Authority	CDM Smith	713-423-7300	\$ 2,374,000.00	90%	01/19/24
Glen Cove Lift Station Rehabilitation	League City, City of	Sander Engineer	713-784-4830	\$ 2,151,857.00	82%	02/16/24
Regional Lift Station Project	Missouri City, City of	Arkk Engineers	713-400-2755	\$ 1,581,830.00	67%	03/11/24
Lift Station Rehabilitation for Elkins (No.24) and Terrace View (No.507)	Sugar Land, City of	Sander Engineer HDR	713-784-4830	\$ 1,347,715.00	22%	05/03/24
2021 Street Bond Project - Package 2 Mustang Bayou Regional Lift Station	Angleton, City of	Engineering, Inc.	713-622-9264	\$ 1,519,185.90	88%	01/26/24
Force Main & Highway 6 Water Line Extension	Missouri City, City of	Arkk Engineers	713-400-2755	\$ 1,899,873.00	52%	03/29/24
Paving, Drainage & Utility Improvements on Azalea Street from Circle Way to Center Way	Lake Jackson, City of	City of Lake Jackson	979-415-2400	\$ 458,733.50	71%	01/12/24
2023 Concrete Paving & Maintenance	Angleton, City of	HDR Engineering, Inc.	713-622-9264	\$ 297,809.20	15%	02/16/24
Concrete Pavement Repairs 2023 - Bar X	Brazoria County	R.G. Miller	281-921-8753	\$ 1,061,889.40	14%	05/10/24

## Paving &amp; Utility Projects Completed

Project Name	Owner	Architect	Phone No.	Contract Amount	Completion
Water, Drainage Facilities & Paving and Appurtenances to Serve The Lake Jackson Town Center Reserves	WGC Lake Jackson LP	LJA Engineering	(713) 953-5200	\$ 585,811.35	02/28/17
Town Hall Site Improvements	Quintana, Town of	Cobb, Fendley, and Associates, Inc.	(281) 471-9650	\$ 47,625.20	09/30/17
Downtown Revitalization South Parking Place Phase (Carriage Square)	Lake Jackson, City of	City of Lake Jackson	(979) 415-2415	\$ 1,710,034.20	04/30/18
CDBG/Lake Jackson Pedestrian Mobility Improvements Circle Way Trail & Pedestrian Bridge	Lake Jackson, City of	City of Lake Jackson	(979) 415-2415	\$ 116,171.30	09/30/18
Oak Drive South Street Pavement & Drainage Rehabilitation Project Westbound Lane from Lake Road to 900 Ft. West	Lake Jackson, City of	City of Lake Jackson	(979) 415-2415	\$ 159,040.90	09/30/18
Construction of Parking Lot at Old City Park	Friendswood, City of	City of Friendswood	(281) 996-3239	\$ 392,600.18	12/31/18
Water, Sanitary Sewer, Drainage Facilities and Paving to Service Creekside Subdivision, Section Four	Brazosport Creekside, LLC	Randy L. Stroud, P.E.	(979) 849-3141	\$ 1,974,876.50	12/31/18
Paving, Drainage and Utilities Mangolia Street	NCHI Services, LLC	Baker & Lawson	(979) 849-6681	\$ 530,566.30	05/10/19
Southside Drive Paving and Drainage Improvements	Angleton, City of	HDR Engineering, Inc.	713-622-9264	\$ 1,800,352.93	05/05/20
2018 Paving Improvements	Angleton, City of	HDR Engineering, Inc.	713-622-9264	\$ 1,332,561.92	06/30/20
Peach Street Extension	Brazoria County	R.G. Miller Engineers	210-581-3600	\$ 764,322.38	05/31/20
Citizen's Convenience Center	Lake Jackson, City of	City of Lake Jackson	979-415-2400	\$ 196,129.45	03/29/21
Phase I Corinthian Cove	2401 Park Ave.	Oller Engineering, Inc.	806-993-6226	\$ 148,688.20	04/13/21
Paving, Drainage & Utility Improvements on South Yaupon St (Walnut to Oleander), Oleander St (Hickory to Maple), Hickory St (Mimosa to Oleander), Lotus St (Hickory to Past South Yaupon), Lotus Court and Bois D'Arc Street	Lake Jackson, City of	City of Lake Jackson	979-415-2400	\$ 3,343,155.33	04/16/21
First Street and Crawford Street Paving and Drainage Improvements	Kendleton, City of	Kaluza, Inc.	281-341-0808	\$ 560,200.92	07/21/21
Henderson Rd	Angleton, City of	Baker & Lawson	979-849-6681	\$ 499,117.80	07/26/21
Heritage Oaks, Section 7	Chris Peltier Homes	Baker & Lawson	979-849-6681	\$ 857,441.65	07/31/21
Bayou Bend Estates	Clint Peltier Custom Homes	Baker & Lawson	979-849-6681	\$ 889,684.14	01/04/22
Street Improvements	Richwood, City of	Strand Associates, Inc.	979-836-7937	\$ 1,467,287.86	03/25/22
Riverwood Ranch Subdivision, Section 2	Riverway Capital Partners	Baker & Lawson	979-849-6681	\$ 1,775,805.97	04/11/22
College Park Subdivision, Section 8	Woodland Development, LLC	Baker & Lawson	979-849-6681	\$ 956,589.26	05/19/22
Parking Lot Expansion	Brazoria Columbus Club	Baker & Lawson	979-849-6681	\$ 516,084.66	06/30/22
Kiber Reserve - Section 2	Waterstone Development Group	Baker & Lawson	979-849-6681	\$ 883,453.66	09/20/22
Elm Estates	Clint Peltier Custom Homes	Baker & Lawson	979-849-6681	\$ 918,823.61	09/30/22
Parking Lot	West Columbia, City of	City of West Columbia	979-345-3123	\$ 240,115.15	10/27/22
ITB#22-29 Concrete Pavement Repairs 2021-Bar X Winchester Trail (CR 969H) and Lone Star Trail (CR 968A)	Brazoria County	Brazoria County Engineering	979-864-1265	\$ 1,268,925.62	11/30/22
Street Panel Replacement at Various Locations	Lake Jackson, City of	City of Lake Jackson	979-415-2400	\$ 238,056.45	04/30/23
Brazoria County Courthouse Expansion Utility & Improvements Project	Angleton, City of	HDR Engineering, Inc.	713-622-9264	\$ 1,004,864.25	08/11/23
2021 Street Bond Project - Package 2	Angleton, City of	HDR Engineering, Inc.	713-622-9264	\$ 1,340,968.07	10/27/23

Item 7.

**Spot Repair & Slope Paving Projects Completed**

<b>Project Name</b>	<b>Owner</b>	<b>Engineer</b>	<b>Phone No.</b>	<b>Contract Amount</b>	<b>Date of Completion</b>
Slope Paving at Anchor Rd	Angleton Drainage District	Angleton Drainage District	(979) 849-2414	\$ 27,251.00	01/31/13
Storm Drain Work Along Colora Ln	Katy, City of	Katy, City of	(281) 391-4800	\$ 38,710.80	01/03/13
Fire House Drainage	Lake Jackson, City of	City of Lake Jackson	(979) 415-2400	\$ 214,922.39	05/07/13
Concrete Lined Ditch	Lake Jackson, City of	City of Lake Jackson	(979) 415-2400	\$ 49,914.00	07/31/13
2012 Community Development Storm Drainage and Sidewalk Improvements	Richwood, City of	John D Mercer & Associates	(409) 741-8500	\$ 156,409.80	09/13/13
R&R 164' of 30" Storm Drainage	Angleton, City of	Angleton, City of	(979) 849-4364	\$ 23,587.00	08/28/13
2013 Masters Drive for Fairways Subdivision	El Campo, City of	O'Malley Engineers, LLP	(979) 836-7937	\$ 77,086.60	10/07/13
2013 Southbend Drainage Project	Alvin, City of	City of Alvin	(281) 388-4284	\$ 276,797.10	02/27/14
2015-16 Concrete Pavement Spot Repairs in Various Locations	Lake Jackson, City of	City of Lake Jackson	(979) 415-2400	\$ 115,897.05	05/22/16
2016-17 Concrete Pavement Spot Repairs in Various Locations	Lake Jackson, City of	City of Lake Jackson	(979) 415-2400	\$ 96,135.50	02/28/17
Spot Repair of This Way	Lake Jackson, City of	City of Lake Jackson	(979) 415-2400	\$ 32,413.50	11/30/17
Oak Drive South Street Pavement & Drainage Rehabilitation Project Westbound Lane from Lake Road to 900 Ft. West	Lake Jackson, City of	City of Lake Jackson	(979) 415-2400	\$ 159,040.90	09/30/18
Water, Sanitary Sewer, Drainage Facilities and Paving to Serce Creekside Subdivision, Section Four	Brazosport Creekside LLC	Randy L. Stroud, P.E.	(979) 849-3141	\$ 1,974,889.00	12/31/18
Magnolia Ditch Repair	Lake Jackson, City of	City of Lake Jackson	(979) 415-2400	\$ 42,934.40	02/08/19
ITB#18-61 Culvert Replacement on CR 4	Brazoria County	Barker & Lawson	(979) 849-6681	\$ 233,362.76	05/31/19
Southside Drive Paving and Drainage Improvements	Angleton, City of	HDR Engineering, Inc.	(713) 622-9264	\$ 1,800,352.93	05/05/20
Paving, Drainage & Utility Improvements on South Yaupon St (Walnut to Oleander), Oleander St (Hickory to Maple), Hickory St (Mimosa to Oleander), Lotus St (Hickory to Past South Yaupon), Lotus Court and Bois D'Arc Street	Lake Jackson, City of	City of Lake Jackson	(979) 415-2400	\$ 3,343,155.33	04/16/21
First Street and Crawford Street Paving and Drainage Improvements	Kendleton, City of	Kaluza, Inc.	(281) 341-0808	\$ 560,200.92	07/21/21

SECTION 3  
Telephone Conversation  
With References



# CONTRACTOR REFERENCE FORM

Date: April 5, 2024  
 Project: 2024 Hospital Dr. North Downing St. Intersection Point Repair  
 Contractor: Matula & Matula Construction, Inc.

Reference Name: Sal Aguirre Company: City of Lake Jackson Contact: (979) 415-2400  
 Reference Projects: Oak Dr Pavement, Utility & Drainage \$1,309,749.38; Magnolia, Gardenia, Chinaberry & Laurel Streets Paving  
 Drainage and Utility Improvements \$\$2,170,887.17

Dear Mr. Aguirre: (by telephone)


Matula & Matula Construction, Inc. is the apparent responsive bidder for the above referenced project and has submitted your name as a reference. Reference responses will be included in the evaluation of lowest responsible bid proposals received for this project.

HDR would appreciate your time in rating your experience with this Contractor. Please circle the number corresponding to the response which best indicates your opinion of the Contractor or provide a short answer on the lines as it relates to each item.

	Excellent	Above Average	Average	Below Average	Poor						
Rate the Contractor's performance as a "team player".	10	9	8	7	6	5	4	3	2	1	No Opinion
How would you rate their ability to coordinate the work with neighboring property owners? Know exactly what it takes.	10	9	8	7	6	5	4	3	2	1	No Opinion
Rate the quality of construction, the Contractor's supervision and project management.	10	9	8	7	6	5	4	3	2	1	No Opinion
Rate the Contractor's ability to achieve completion of the project on time.	10	9	8	7	6	5	4	3	2	1	No Opinion
Were there many change orders on the project? If so, what were the reasons? Were the reasonable?											
Rate the Contractor's responsiveness to warranty work requests, and the quality of the work.	10	9	8	7	6	5	4	3	2	1	No Opinion
Rate the Contractor's ability to expeditiously closeout projects.	10	9	8	7	6	5	4	3	2	1	No Opinion
Did they have any problems with the job? If so, what was the nature of the problem? No. People in field are knowledgeable, find a way to make things easier and are reasonable. They will bring any problems to you. Trust them to point out issues, if any.	10	9	8	7	6	5	4	3	2	1	No Opinion
Rate the Contractor's restoration and clean-up work.	10	9	8	7	6	5	4	3	2	1	No Opinion

Would you want to work with this Contractor again? Primary/go-to contractor. Never tries to take advantage of us. Well controlled. Respects our procedures. Versatile – underground parking, paving, utilities, architectural projects. Has worked with them for the past 10 years. Never left them hanging in any way.

Thank you for your time in participating in the proposal evaluation process for this project.

Sincerely,  
  
 John Peterson, P.E.  
 Project Manager





# CONTRACTOR REFERENCE FORM

Date: April 5, 2024

Project: 2024 Hospital Dr. North Downing St. Intersection Point Repair

Contractor: Matula & Matula Construction, Inc.

Reference Name: Jared Engelke Company: Stand Associates, Inc. Contact: (979) 836-7937  
Reference Projects: City of Richwood, Street Improvements \$1,467,287.86

Dear Mr. Engelke: (by telephone)

Matula & Matula Construction, Inc. is the apparent responsive bidder for the above referenced project and has submitted your name as a reference. Reference responses will be included in the evaluation of lowest responsible bid proposals received for this project.

HDR would appreciate your time in rating your experience with this Contractor. Please circle the number corresponding to the response which best indicates your opinion of the Contractor or provide a short answer on the lines as it relates to each item.

	Excellent	Above Average	Average	Below Average	Poor	
Rate the Contractor's performance as a "team player".	10	9	8	7	6	5 4 3 2 1 No Opinion
How would you rate their ability to coordinate the work with neighboring property owners?	10	9	8	7	6	5 4 3 2 1 No Opinion
Rate the quality of construction, the Contractor's supervision and project management.	10	9	8	7	6	5 4 3 2 1 No Opinion
Rate the Contractor's ability to achieve completion of the project on time.	10	9	8	7	6	5 4 3 2 1 No Opinion
Were there many change orders on the project? If so, what were the reasons? Were the reasonable?	Did some storm sewer work but not in their control. Change in conditions(oyster shell). Change order prices were fair.					
Rate the Contractor's responsiveness to warranty work requests, and the quality of the work.	10	9	8	7	6	5 4 3 2 1 <u>No Opinion</u>
Rate the Contractor's ability to expeditiously closeout projects.	10	9	8	7	6	5 4 3 2 1 No Opinion
Did they have any problems with the job? If so, what was the nature of the problem?	10	9	8	7	6	5 4 3 2 1 No Opinion
Rate the Contractor's restoration and clean-up work.	10	9	8	7	6	5 4 3 2 1 No Opinion

Would you want to work with this Contractor again? City did not get any calls from residents. Went back year later no cracks on concrete streets! Some touch up or restoration but nothing significant. Brought problems to owner's attention and worked with them to fix. Very clean, take pride in keeping the worksite clean. Yes, anytime they have a street project, they will call Matula.

Thank you for your time in participating in the proposal evaluation process for this project.

Sincerely,

John Peterson, P.E.  
Project Manager



# CONTRACTOR REFERENCE FORM

Date: April 5, 2024  
 Project: 2024 Hospital Dr. North Downing St. Intersection Point Repair  
 Contractor: Matula & Matula Construction, Inc.

Reference Name: Doug Roessler Company: Baker & Lawson Engineering Contact: (979) 849-6681  
 Reference Projects: Riverwood Ranch Subdivision, Section 2 \$1,467,287.86 / College Park Subdivision, Section 8 \$1,775,805.97

Dear Mr. Roessler: (by telephone)


Matula & Matula Construction, Inc. is the apparent responsive bidder for the above referenced project and has submitted your name as a reference. Reference responses will be included in the evaluation of lowest responsible bid proposals received for this project.

HDR would appreciate your time in rating your experience with this Contractor. Please circle the number corresponding to the response which best indicates your opinion of the Contractor or provide a short answer on the lines as it relates to each item.

	Excellent	Above Average	Average	Below Average	Poor	
Rate the Contractor's performance as a "team player".	10	⑨	8	7	6	5 4 3 2 1 No Opinion
How would you rate their ability to coordinate the work with neighboring property owners? Know exactly what it takes.	10	⑨	⑧	7	6	5 4 3 2 1 No Opinion
Rate the quality of construction, the Contractor's supervision and project management.	⑩	⑨	8	7	6	5 4 3 2 1 No Opinion
Rate the Contractor's ability to achieve completion of the project on time.	⑩	9	8	7	6	5 4 3 2 1 No Opinion
Were there many change orders on the project? If so, what were the reasons? Were the reasonable?						
Rate the Contractor's responsiveness to warranty work requests, and the quality of the work.	⑩	9	8	7	6	5 4 3 2 1 No Opinion
Rate the Contractor's ability to expeditiously closeout projects.	⑩	9	8	7	6	5 4 3 2 1 No Opinion
Did they have any problems with the job? If so, what was the nature of the problem? No. People in field are knowledgeable, find a way to make things easier and are reasonable. They will bring any problems to you. Trust them to point out issues, if any.	⑩	9	8	7	6	5 4 3 2 1 No Opinion
Rate the Contractor's restoration and clean-up work.	10	⑨	8	7	6	5 4 3 2 1 No Opinion

Would you want to work with this Contractor again? We always hope that they will get the job if out for bid. Always conscious of what they are doing. We have worked with them for the last 15-20 years and highly recommend them. Have several projects in City of Lake Jackson— including a \$3 million street rehab project.

Thank you for your time in participating in the proposal evaluation process for this project.

Sincerely,  


John Peterson, P.E.  
 Project Manager



## AGENDA ITEM SUMMARY FORM

**MEETING DATE:** April 23, 2024

**PREPARED BY:** Otis T. Spriggs, AICP, Development Services Director

**AGENDA CONTENT:** Conduct a public hearing, discussion, and possible action on a request for approval of a Strategic Partnership Agreement (SPA) to be made and entered into by and between the City of Angleton, Texas, through its City Council, and Brazoria County Municipal Utility District No. 82, under the authority of Section 43.0751 of the Texas Local Government Code.

**AGENDA ITEM SECTION:** Public Hearings

**BUDGETED AMOUNT:** None.

**FUNDS REQUESTED:** None.

**FUND:** None

### EXECUTIVE SUMMARY:

The subject property is more commonly known as the District, encompassing 911.12 acres, more or less located at the Ashland Development tract bound by FM521 on the west, SH288 to the east, and Anchor Rd./CR 44 to the south, within the ETJ of the City of Angleton, Brazoria County, Texas. The Brazoria County Municipal Utility District No. 82 was authorized created by Acts 2021, 87th Leg., R.S., Ch. 113 (S.B. 2147), Sec. 1, effective May 23, 2021 and filed in January of 2022 with Secretary of State.

On June 27, 2023 City Council approved Resolution No. 20230627-006 granting consent to the creation of Brazoria County Municipal Utility District No. 82 per the development agreement with Anchor Holdings MP, LLC and Wildrock Holdings with the City of Angleton, Texas for the Ashland Development (Exhibit A District Description & Map).

The Brazoria County Municipal Utility District No. 82 has been created over approximately 911.12 acres of land located partially within the extraterritorial jurisdiction of the City of Angleton, Texas (the "City"). The purpose of the District is for the purchase, construction, extension, improvement, maintenance and operation of a waterworks and sanitary sewer system and a storm and drainage system, recreational facilities (if allowed by applicable law), road facilities and, subject to the laws of the State of Texas and the rules of the Texas

Commission on Environmental Quality, and firefighting facilities, as described in the executed development agreement.

This (SPA) Strategic Partnership Agreement establishes mutual agreements, covenants and conditions between the City and Brazoria County Municipal Utility District No. 82, as it relates to both limited purpose and full purpose annexation in the future. The SPA Agreement will define and clarify, through contractual agreement, the terms and conditions of the annexation of the District by the City and the relationship between the City and the District, including taxation and the provision of services by the City and matters related to the issuance of debt by the District.

Please note that the City Council consideration requires two public hearings for the SPA: As published: 6:00 pm on Tuesday, October 10, 2023 (Public Hearing-1 was completed), and 6:00 p.m. on October 24, 2023 (No Action Public Hearing 2, remained open).

Council will allow for final public input, discussion, and is asked to approve the Strategic Partnership Agreement (SPA) to be made and entered into by and between the City of Angleton, Texas, through its City Council, and Brazoria County Municipal Utility District No. 82, under the authority of Section 43.0751 of the Texas Local Government Code. The SPA provides for the terms and conditions covering the following important points of consideration:

- **We are contractually obligated to approve a Strategic Partnership Agreement because of the development agreement executed June of 2023.**
- **The Agreement outlines the benefits to the City.**
- **We will be partners with the Developer/County in negotiated the needed feeder road via TxDot which will serve the large scale development, of which we haven't had that will have a good mix of commercial development at our gateway, limited purpose annexation of the commercial use areas of the Development for the sole and exclusive purpose of imposing and collecting sales and use taxes within such areas. The SPA sets out the number of years to reach full purpose annexation in the future (30 Years).**
- **Provisions for City Fire Services, City's Solid Waste/Residential and Commercial trash services to be provided through the City's contracted vendor, and Police Protection are outlined in Article 4.**

#### **RECOMMENDATION:**

Council should conduct and complete the second public hearing and allow for final public input, discussion, and take possible action on a request for approval of the attached

Strategic Partnership Agreement (SPA) to be made and entered into by and between the City of Angleton, Texas, through its City Council, and Brazoria County Municipal Utility District No. 82, under the authority of Section 43.0751 of the Texas Local Government Code.

**STRATEGIC PARTNERSHIP AGREEMENT BETWEEN  
THE CITY OF ANGLETON TEXAS AND  
BRAZORIA COUNTY MUNICIPAL UTILITY DISTRICT NO. 82**

THE STATE OF TEXAS                   §  
  §        KNOW ALL MEN BY THESE PRESENTS:  
COUNTY OF BRAZORIA               §

This Strategic Partnership Agreement (“Agreement”) is made and entered into by and between the City of Angleton, Texas, a municipal corporation acting by and through its duly authorized City Council (“City”), and Brazoria County Municipal Utility District No. 82, acting by and through its duly authorized Board of Directors (“District”) under the authority of Section 43.0751 of the Texas Local Government Code (“Local Government Code”).

**RECITALS**

1. The District is a municipal utility district created by Article XVI, Section 59, Texas Constitution and generally operates under Chapters 49 and 54 of the Texas Water Code . A portion of the land to be included in the District is within the extra-territorial jurisdiction of the City, and a portion of the land to be included in the District is within the unincorporated area of Brazoria County, Texas.
2. The City is a home rule municipality organized and existing under the constitution and laws of the State of Texas.
3. The City and District are entering into this Strategic Partnership Agreement in accordance with Texas Local Government Code Section 43.0751 to plan for the future full–purpose annexation of the District by the City upon mutually acceptable terms.

The District encompasses approximately 512 acres, more or less, located within the extraterritorial jurisdiction of the City more fully described on Exhibit A and as depicted on Exhibit B attached to this Agreement (the “Development”); and Anchor Holdings MP, LLC (the “Owner”) has represented to the City and the District that it owns the Development.

4. The provisions of Tex. Local Gov’t Code Section 43.0751 state that the City and the District may enter into a strategic partnership agreement that provides for the terms and conditions which services will be provided and funded by the City and the District, the limited purpose annexation of a portion of the District Property, the eventual full purpose annexation of the District Property and such other lawful terms as the parties deem appropriate.
5. Certain areas within the Development may be developed for commercial uses and the City desires to annex the commercial use areas of the Development for the sole and exclusive purpose of imposing and collecting sales and use taxes within such areas. The District and the City desire that effective, efficient, and responsible local government be provided to citizens of the District and the City prior to, during, and after the City annexes the District for full purposes. To that end, the District and the City also desire to avoid any unnecessary

duplication of resources and taxes, and to provide for the orderly and seamless succession of the District as provided by a strategic partnership agreement; and

6. The District and the City each published notice of two public hearings concerning the adoption of this Agreement in accordance with the procedural requirements of the Act; and
7. The District conducted public hearings regarding this Agreement on December 14, 2023, and on December 20, 2023, and notice thereof having been given in accordance with the procedural requirements of Texas Local Government Code Section 43.0751.
8. The City conducted public hearings regarding this Agreement on October 10, 2023, and on October 24, 2023 and on April 23, 2024 which was a continuation of the second public hearing, in the City Council Chambers of the City Hall located at 121 S. Velasco Street in Angleton, Texas, notice thereof having been given in accordance with Texas Local Government Code Section 43.0751.
9. The District has, by formal action, after public hearings approved this Agreement on December 20, 2023, subject to final review and approval by the City and the District's Attorney, in open session at a meeting held in accordance with the Open Meetings Act.
10. The City has, by formal action, after public hearings approved this Agreement on April 23, 2024, in open session at a meeting held in accordance with the Open Meetings Act.
11. All procedural requirements imposed by state law for the adoption of this Agreement have been met.

NOW, THEREFORE, for and in consideration of the mutual agreements, covenants, and conditions contained in this Agreement, and other good and valuable consideration, the City and the District agree as follows:

**ARTICLE I**  
**DEFINITIONS, PURPOSE, AND LEGAL AUTHORITY**

**Section 1.01 Incorporation of Recitals.**

The recitals to this Agreement are hereby agreed to and adopted by the Parties as findings of fact and are incorporated herein for all purposes.

**Section 1.02 Terms Defined in this Agreement.**

In this Agreement, each of the following terms shall have the meaning indicated:

- a. "Agreement" means this Strategic Partnership Agreement between the City of Angleton and Brazoria County Municipal Utility District No. 82.
- b. "City" means the City of Angleton, Texas.

- c. “Code” or “the Code” means the provisions of Chapter 43 of the Texas Local Government Code in effect on January 1, 2021.
- d. “Consent Conditions” means those conditions relative to the operation of the District contained in City Ordinance No. 20230627-006 dated June 27, 2023.
- e. “District” means Brazoria County Municipal Utility District No. 82 in Brazoria County, Texas.
- f. “District Boundaries” means the boundaries of the District as they currently exist, including property heretofore annexed, as well as property that may hereafter be annexed by the District with the City's consent, such current boundaries being more particularly described in **Exhibit “A”** and depicted on **Exhibit “B”** attached to this Agreement.
- g. “District Facilities” means the water, wastewater, drainage, detention, recreational and road facilities, as well as such additional facilities which the District may now or in the future be authorized by law to construct, own, operate and maintain, which are necessary to serve development within the boundaries of the District, including those necessary facilities located outside the boundaries of the District.
- h. “Full Purpose Annexation Conversion Date” means the date on which the territory of the District becomes subject to the full jurisdiction of the City of Conroe.
- i. “Limited District” or “limited district” means the District after it is converted to a limited District pursuant to Section 3.02 below. For the avoidance of doubt, the conversion of the District into a Limited District as provided herein is a full purpose annexation.
- j. “Notice” means any formal notice or communication required or authorized to be given by one Party to another by this Agreement.
- k. “Parties” means the City and the District.
- l. “Party” means the City, or the District, as the case may be.
- m. “Period of Limited Purpose Annexation” means that period commencing on the effective date of the limited purpose annexation of the District, and ending upon the Full Purpose Annexation Conversion Date.
- n. “Utility Facilities” means the water and wastewater facilities necessary to serve development within the District Boundaries.
- o. “75% Developed” means that (i) 75% of the total projected number of residential lots at full build out within the District have been developed and delivered to homebuilders for home construction, and (ii) 75% of the commercial tracts within the District have been developed and conveyed to their respective end users.



- p. “95% Build Out” means that the District Facilities necessary to serve 95% of the developable land in the District have been constructed and the District has fully reimbursed the Developer, whether one or more, for such infrastructure.
- q. “100% Build Out” means that the District Facilities necessary to serve 100% of the developable land in the District have been constructed and the District has fully reimbursed the Developer, whether one or more, for such infrastructure.

### **Section 1.03 Purpose of the Agreement.**

The purpose of this Agreement is to define and clarify, through contractual agreement, the terms and conditions of the annexation of the District by the City and the relationship between the City and the District, including taxation and the provision of services by the City and matters related to the issuance of debt by the District.

### **Section 1.04 General Location and Description of the District.**

The District is a municipal utility district created by Acts 2021, 87<sup>th</sup> Leg., R.S., Ch. 113 (S.B. 2147), Sec. 1, effective May 23, 2021 and generally operates under Chapters 49 and 54 of the Texas Water Code. A portion of the land to be included in the District is within the extra-territorial jurisdiction of the City, and a portion of the land to be included in the District is within the unincorporated area of Brazoria County, Texas. Its current boundaries are described by metes and bounds in Exhibit “A” and depicted in Exhibit “B” attached to this Agreement.

### **Section 1.05 Effective Date of Agreement.**

Under the provisions of Section 43.0751(c) of the Local Government Code, this Agreement becomes effective on the date of adoption by the City. Upon adoption, the Agreement shall be filed by the District in the Real Property Records of Brazoria County, Texas.

## **ARTICLE II** **ANNEXATION OF THE DISTRICT**

### **Section 2.01 Annexation Procedure.**

- a. Pursuant to Section 43.0751(s) of the Code the City and the District have agreed that the annexation procedure established by this Agreement shall control over any other law and shall be the exclusive procedure applicable to the annexation of the District. The procedure established by this section shall apply to both limited purpose and full purpose annexation unless otherwise expressly provided.to
- b. The City shall annex the District by ordinance. Notice of a proposed annexation shall be given by City to the governing body of the District in writing not less than 180 days prior to the effective date of a proposed limited purpose annexation and not later than June 30 of any year prior to the year in which the proposed full purpose annexation will become effective. In addition the City shall conduct two public hearings on the proposed annexation. The hearings must be conducted on or after the 40<sup>th</sup> day but before the 20<sup>th</sup> day

before the adoption of the annexation ordinance. Notice of the public hearings shall be published in a newspaper of general circulation within the boundaries of the City and the District. Notice of the hearings must be published at least once on or after the 20<sup>th</sup> day but before the 10<sup>th</sup> day before the date of each public hearing. A single publication giving notice of both public hearings is sufficient provided that the date of publication falls within the notice period applicable to each hearing. Notice of the hearings must also be posted on the City's Internet website not later than the 10<sup>th</sup> day before the first public hearing and such notice must remain on the website through the completion of both public hearings. No additional notice of annexation shall be required. The notice and hearing requirements of this paragraph do not limit or qualify the District's consent to annexation as provided by this Agreement and the City shall not be required to obtain the additional consent of any other party.

- c. A limited purpose annexation ordinance may designate a date on which the status of the territory shall automatically be converted to full – purpose annexation, or the ordinance may provide for the continuation of the limited purpose annexation status for an indefinite period. A service plan is not required for a limited purpose annexation.
- d. If a limited purpose annexation ordinance provides for conversion to full – purpose annexation on a date certain, then at least ninety (90) days prior to the conversion date the City shall submit to the governing body of the District a proposed service plan for the delivery of full municipal services to the District following its conversion to full purpose annexation status. The service plan shall be adopted by ordinance prior to the conversion date. The notice and public hearing procedures applicable to the adoption of the annexation ordinance shall also be applicable to the adoption of the service plan ordinance. A copy of the proposed service plan shall be placed on the City's website at the same time that notice of the public hearing on the plan is posted on the website. Failure to timely adopt the service plan does not prevent conversion to full – purpose annexation but the date of conversion shall be automatically extended to the date that is thirty (30) days following the date of adoption of the service plan ordinance.
- e. If a limited purpose annexation ordinance does not specify a full – purpose annexation conversion date then prior to the adoption of a full purpose annexation ordinance the City shall comply with notice and hearing provisions of this section and shall include a proposed service plan with the written notice provided to the governing body of the District prior to publication of the public hearing notice or notices. A copy of the proposed service plan shall be posted on the City's website at the same time as the public hearing notice and the service plan will be presented at the public hearings.

### **Section 2.02 Limited Purpose Annexation.**

- a. The City may at any time annex the territory of the District for limited purposes as provided by Section 43.0751 of the Code and may by ordinance impose within the District any sales and use tax imposed by City within its full – purpose boundaries. The territory of the District shall not be subject to property taxation by the City prior to the date of full – purpose annexation and except as provided by the District Consent Conditions or otherwise provided herein, the territory of the District shall not be subject to ordinances, rules, or regulations of the City that are not ordinarily applied within the extraterritorial jurisdiction

of the City, nor shall the City be required to provide any service within the District that is not ordinarily provided by City within the City's extraterritorial jurisdiction.

- b. From and after the date of limited purpose annexation the residents of the District shall be entitled to vote in municipal elections as provided in Section 43.130 of the Code and such residents shall be entitled to use the park and recreational facilities of the City on the same basis as residents within the full purpose annexation limits of the City.
- c. District territory that is located within the extraterritorial jurisdiction of the City need not be contiguous to City in order to be annexed for limited purposes and the District expressly consents to such discontinuous limited purpose annexation as authorized by Section 43.0751(r) of the Code. To the extent not prohibited by law such consent also extends to the full purpose annexation of the discontinuous territory on a full – purpose annexation conversion date specified in the limited purpose annexation ordinance or by a separate full – purpose annexation ordinance if no automatic conversion date is established by the limited purpose annexation ordinance.

#### **Section 2.03 Full – Purpose Annexation.**

- a. Except as provided by 2.03(b), the District consents to full purpose annexation of the District by the City at any time on or after (i) the time the District's has achieved 95% Build Out, or (ii) January 1, 2054, whichever occurs first, and City agrees not to annex the District for full municipal purposes prior to such date. A Full Purpose Annexation Conversion Date specified in an ordinance providing for limited purpose annexation may not specify a Full Purpose Annexation Conversion Date earlier than the date provided by this paragraph.
- b. If the District is not at least 75% Developed as of the later of (i) \_ January 1, 2054, or (ii) two-hundred ten (210) days prior to the Full Purpose Annexation Conversion Date, the District's Board of Directors may elect to exercise a one-time (5) year extension of the date determined for full purpose annexation under Section 2.03(a) or the Full Purpose Annexation Conversion Date, as applicable. Written notice of an election pursuant to this section 2.03(b) shall be delivered to the City at least one hundred eighty (180) days prior to the date proposed for full purpose annexation.

#### **Section 2.04 Service Plan for the Provision of Full Municipal Services.**

- a. Prior to full-purpose annexation, the City shall prepare a service plan that provides for the extension of full municipal services to the territory of the District upon full – purpose annexation. The annexation service plan may provide for the conversion of the District to a limited district as hereinafter authorized and may provide for the continued operation and maintenance of all or a portion of the Utility Facilities by the limited district for so long as the limited district continues to exist; provided, however, that the annexation service plan shall provide for the conversion of the District to a Limited District if the District has not or will not have achieved 100% Build Out as of the Full Purpose Annexation Conversion Date, unless the City assumes all obligations of the District to complete the build-out of the District and to reimburse the District's developer(s). The service plan may also provide for the City to assume the responsibility for operation and maintenance of Utility Facilities in which case the City shall provide such utility services upon the same basis as they are provided by the City elsewhere in the municipality, but without obligating

the City to the limited district for payment of capacity charges, capital recovery fees or any other consideration for the use or possession of such Utility Facilities. As consideration for the operation and maintenance of such Utility Facilities the service plan may provide that the City shall have and may retain all revenues resulting from the provision of service to customers of the utility system.

- b. The service plan shall be attached to and adopted by the full – purpose annexation ordinance unless full – purpose annexation occurs automatically on a conversion date established by a limited purpose annexation ordinance. In such case the service plan shall be adopted by separate ordinance as provided in Section 2.01(d) of this Agreement.

### **Section 2.05 Notice to Landowners.**

The following notice, with appropriate modifications, shall be included in the notice to purchasers of real property in the District Information Form required to be recorded in the Real Property Records of Brazoria County, Texas, pursuant to Section 49.455 of the Texas Water Code:

All of the property within the boundaries of Brazoria County Municipal Utility District No. 82 (the “District”), as described in Exhibit A attached hereto, is subject to the terms and conditions of a Strategic Partnership Agreement (“SPA Agreement”) between the District and the City of Angleton (“City”), which was effective on April 9, 2024. The SPA Agreement allows full purpose municipal annexation of the District by the City at any time on or after the time after development in the District reaches 95% Build Out (as that term is defined in the SPA Agreement) or January 1, 2054 whichever occurs first, and permits limited purpose annexation of the District at any time. A copy of the SPA Agreement may be obtained by contacting the offices of the District.

Any land subsequently annexed into the District shall be included within District's notice obligation as set forth above.

## **ARTICLE III** **STATUS OF DISTRICT FOLLOWING FULL – PURPOSE ANNEXATION**

### **Section 3.01 Status of the District following full – purpose annexation.**

- a. Upon full-purpose annexation the City may, subject to the limitation hereafter provided, (1) abolish the District and assume its debts and obligations pursuant to Local Government Code Section 43.075, or (2) continue the District as a limited district upon the terms hereinafter provided. The District shall not be abolished but shall continue to exist as a limited district until 100% Build Out or as otherwise provided in Section 3.04 below.
- b. Following Full-Purpose Annexation. Upon full-purpose annexation and dissolution of the entire District under the provisions of Section 2.03, the City will assume all rights, assets, liabilities and obligations of the District (including all obligations to reimburse the developers within the District). Upon full annexation, and dissolution, the residents of the former District shall be treated as residents of the City for all purposes.

- c. Attempted Incorporation. Notwithstanding any provision herein to the contrary, in the event that an election is called pursuant to applicable law in connection with a bona fide petition for incorporation of a municipality that includes a substantial portion of the District, the City shall be entitled to immediately annex that portion of the District which is proposed to be incorporated; provided, however, the City acknowledges the requirements of 43.071(b) and agrees not to annex for full purposes less than all of the District.

### **Section 3.02 Limited district option.**

The City's full – purpose annexation ordinance may require that the District retain all obligation for any indebtedness of the District and continue to exist as a limited district for so long as may be necessary for the limited district to fully discharge all such indebtedness, including any landowner or developer reimbursement payments that the City would otherwise be obligated to pay upon annexation or dissolution of the District. The limited district shall continue to be known as "Brazoria County Municipal Utility District No. 82." The limited district shall continue until the City dissolves the District pursuant to Section 3.04 hereof. The limited district may not be dissolved without the consent of the City.

### **Section 3.03 Powers of limited district.**

Subject to the express terms of this Agreement and the Consent Conditions, the limited district shall have and may continue to exercise all powers of the District in the same manner as authorized prior to the conversion of the District to a limited district, except none of the District Facilities may be transferred to another party without the consent of the City. The limited district is expressly authorized and required to levy and collect taxes sufficient to meet the outstanding debt service requirements for debt previously issued by the District and to pay necessary operating expenses associated therewith.

### **Section 3.04 Dissolution of Limited District.**

The City may dissolve the limited district by ordinance at any time after 95% Build Out. Upon dissolution the city shall (1) take over all the property and other assets of the limited district, (2) assume all the debts, liabilities, and obligations of the limited district, and (3) perform all functions of the limited district, including the provision of services.

### **Section 3.05 Audit; Review of District Records.**

The District, at its sole expense, shall conduct an annual audit each year to the extent required by the Texas Water Code and the rules of the Texas Commission on Environmental Quality to be performed by an independent certified public accountant. The District shall file a copy of the completed audit with the City's Director of Finances. The District shall make its financial records available to the City for inspection during normal business hours and with prior reasonable notice.

**ARTICLE IV**  
**PROVISION OF MUNICIPAL SERVICES WITHIN THE DISTRICT**

**Section 4.01 City Fire Services.**

If the District provides for the provision of fire suppression services within the District Property, it shall first give the City the option to be the provider of such services. If the City is unable or unwilling to provide the services at a cost commensurate with that of other potential providers of such services, the District may contract with a third party. Payment to the City with regard to any fire suppression or related services provided under this Section by a separate written agreement shall be based upon the actual costs of the City, including reasonable overhead and prior capital expenditures, in providing such services.

**Section 4.02 Police Protection.**

If the District provides for the provision of enhanced police protection services within the District, it shall first give the City the option to be the provider of such services. If the City is unable or unwilling to provide the services at a cost commensurate with that of other potential providers of such services, the District may contract with a third party. Payment to the City with regard to any police protection provided under this Section by a separate written agreement shall be based upon the actual costs of the City, including reasonable overhead, in providing such services. One (1) year prior to full purpose annexation, the District will contract with the City to provide police protection services.

**Section 4.03**

The Parties have agreed the District will finance a traffic signal at County Road 44, and the City or other appropriate county or state agency shall assist the District in proper installation and placement.

**Section 4.04 Solid Waste.**

Residential and Commercial trash service will be provided by the District.

**ARTICLE V**  
**MISCELLANEOUS PROVISIONS**

**Section 5.01 Duplicate Counterparts.**

This Agreement may be executed in duplicate counterparts but shall not be effective unless executed by the City and the District.

**Section 5.02 Entire Agreement.**

- a. Except as expressly set forth in this Agreement, this Agreement is not intended to waive or limit the applicability of laws, regulations and ordinances applicable to the District or the City, nor does it waive the jurisdiction or sovereignty of any governmental body with

respect to the District or the City. Notwithstanding the foregoing, City may not adopt an ordinance or resolution annexing the District for full or limited purposes which contains terms inconsistent with this Agreement, unless this Agreement has been previously terminated as provided herein.

- b. As of this date there are no agreements, oral or written, between the Parties which are in conflict with this Agreement. Except as expressly provided by this Agreement, this Agreement, together with all of the attachments to this Agreement, constitutes the entire agreement between the Parties with respect to the terms and conditions governing the annexation of the District. No representations or agreements other than those specifically included in this Agreement shall be binding on either the City or the District.

### **Section 5.03 Notice.**

- a. It is contemplated that the Parties will contact each other concerning the subject matter of this Agreement. However, any Notice shall be given at the addresses below for each of the Parties.
- b. Notice may be given by:
- i. delivering the Notice to the Party to be notified;
  - ii. by depositing the Notice in the United States Mail, certified or registered, return receipt requested, postage prepaid, addressed to the Party to be notified; or
  - iii. by sending the Notice by telefax with confirming copy sent by mail to the Party to be notified.
- c. Notice deposited in the United States mail in the manner hereinabove described shall be deemed effective from and after the earlier of the date of actual receipt or three (3) days after the date of such deposit. Notice given in any other manner shall be effective only if and when received by the Party to be notified.
- d. For purposes of Notice, the addresses of the Parties shall, until changed as provided in this Section, be as follows:
- |                   |  |
|-------------------|--|
| City of Angleton: | City Manager<br>121 S. Velasco<br>Angleton, Texas 77515  |
| The District:     | Brazoria County Municipal Utility District No. 82<br>c/o The Muller Law Group, PLLC<br>202 Century Square Boulevard<br>Sugar Land, Texas 77479<br>Attn: Richard L. Muller, Jr. |
- e. The Parties may change their addresses for Notice purposes by providing ten (10) days written notice of the changed address to the other Party.

- f. If any date or period provided in this Agreement ends on a Saturday, Sunday, or legal holiday, the applicable period for calculating Notice is extended to the first business day following the Saturday, Sunday, or legal holiday.

#### **Section 5.04 Time.**

Time is of the essence in all matters pertaining to the performance of this Agreement.

#### **Section 5.05 Severability or Modification of Agreement as a Result of Modification of the State Code and Statutory Authority for the Agreement.**

- a. If any word, phrase, clause, sentence, paragraph, section, or other part of this Agreement, or the application of the word, phrase, clause, sentence, paragraph, section or other part of this Agreement to any person or circumstance is held by a court of competent jurisdiction to be invalid or unconstitutional for any reason, the Parties agree that they will amend or revise this Agreement to accomplish to the greatest degree practical the same purpose and objective of the part determined to be invalid or unconstitutional, including without limitation amendments or revisions to the terms and conditions of this Agreement pertaining to or affecting the rights and authority of the Parties in areas of the District annexed by the City pursuant to this Agreement, whether for limited or full purposes.
- b. If any word, phrase, clause, sentence, paragraph, section, or other part of this Agreement is modified in whole or in part as a result of amendments to the underlying state code and statutory authority for this Agreement, the Parties agree and understand that such modification may frustrate the purpose of this Agreement. The parties agree that they will attempt to amend or revise this Agreement to accomplish to the greatest degree practical (i) the same purpose and objective of the part of this Agreement affected by the modification of the underlying state code and statutory authority and (ii) the original intent and purpose of this Agreement. If the Parties cannot agree on any such amendment or revision within ninety (90) days from the effective date of amendment of the state code and statutory authority for this Agreement, then this Agreement shall terminate (except for the provisions of Article III which shall specifically survive such termination for the remaining term set forth in Section 4.13 below), unless the Parties agree to an extension of time for negotiation of the modification.

#### **Section 5.06 Waiver.**

Any failure by a Party to the Agreement to insist upon strict performance by the other Party of any provision of this Agreement shall not be deemed a waiver of the provision or of any other provision of the Agreement. The Party has the right at any time to insist upon strict performance of any of the provisions of the Agreement.

#### **Section 5.07 Applicable Law and Venue.**

The construction and validity of the Agreement shall be governed by the laws of the State of Texas. Venue shall be in Brazoria County, Texas.



### **Section 5.08 Reservation of Rights.**

To the extent not inconsistent with this Agreement, each Party reserves all rights, privileges and immunities under applicable law.

### **Section 5.09 Further Agreement and Documents.**

Both Parties agree that at any time after execution of this Agreement, they will, upon request of the other Party, exchange any other documents necessary to effectuate the terms of this Agreement. Both Parties also agree that they will do any further acts or things as the other Party may reasonably request to effectuate the terms of this Agreement.

### **Section 5.10 Incorporation of Exhibits and Other Documents by Reference.**

All Exhibits and other Documents attached to or referred to in this Agreement are incorporated into this Agreement by reference for the purposes set forth in this Agreement.

### **Section 5.11 Assignability, Successors, and Assigns.**

This Agreement shall not be assignable by the either party without the prior written consent of the other party, which consent shall not be unreasonably withheld, delayed or conditioned.

This Agreement shall be binding upon and inure to the benefit of the Parties and their respective representatives, successors and assigns.

### **Section 5.12 Amendment.**

This Agreement may only be amended in writing upon the approval of the governing bodies of the City and the District. To the extent allowed by law, the Parties do not intend to conduct additional hearings pursuant to Local Government Code Section 43.0751 prior to amending this Agreement.

### **Section 5.13 Term.**

Except as it may otherwise be terminated as set forth herein, this Agreement shall remain in effect until the earlier date to occur of the following: (i) thirty (30) years from the effective date of this Agreement, or (ii) the date the District (including the Limited District as applicable) shall cease to exist for any purpose pursuant to the terms of this Agreement. If the District is annexed for limited purposes prior to the expiration or termination of the Agreement, then upon such expiration or termination of the Agreement the territory of the District shall be automatically included within the full – purpose territory of the City.

### **Section 5.14 District's provision of Service outside Boundary.**

District shall not provide water or sanitary sewer service outside the District's Boundaries without the City's consent. However, this prohibition shall not apply to any reciprocal agreements entered into by District for emergency water supply. This prohibition shall further not apply to or prevent

the District from providing water or sanitary sewer service to other special districts that are part of a common development with the District.

### **Section 5.15 Sale or Encumbrance of Facilities.**

It is acknowledged that the District may not dispose of or discontinue any portion of the Facilities, other than in a conveyance of road facilities to the County or Texas Department of Transportation for ownership, operation, and maintenance, a conveyance of the Water and Wastewater facilities to the City for ownership, operation and maintenance, or a conveyance of drainage facilities to the County, Texas Department of Transportation, or Angleton Drainage District for ownership, operation, and maintenance.

### **Section 5.16 Design Standards for the Utility System.**

All water utility and sanitary sewer utility infrastructure and related appurtenances that are intended to become the property of the District must be designed and constructed to comply with the minimum standards made applicable by the City Code of Ordinances, as amended, to water supply and sanitary sewer utility infrastructure development within the corporate limits of the City. The water supply system must be capable of providing the volumes and pressures necessary to meet fire suppression standards established by the City, and the system must be equipped with fire hydrants that meet the minimum spacing requirements applicable to subdivision development within the corporate limits of the City. The water supply system must meet all TCEQ requirements. All drainage improvements shall be designed and constructed to comply with the applicable standards adopted by Brazoria County, Texas and Angleton Drainage District. The District and its developer(s), their successors and assigns, shall not be obligated to apply for, pay for, or obtain from the City any permit for construction of any public improvement or any City inspection of any public improvement.

If the District or its developer(s) desire to deviate from the standards set forth in this section, a Professional Engineer, licensed in the State of Texas, shall submit plans for the impacted water or sanitary sewer infrastructure, notating the planned deviations, for the City Engineer's review. The City will then do a completeness check and confirm submittal complete and once complete the City shall have thirty (30) days to approve, comment on or reject the plans. If the City has not taken action with respect to the planned deviations within the thirty (30) day period, the planned deviations will be deemed approved and the District or its developers may proceed with the construction of such infrastructure in accordance with the submitted plans, unless the thirty (30) day period is waived.

If required by the City, the District, acting through its Professional Engineer, licensed in the State of Texas, shall certify to the City that all water and sanitary sewer infrastructure has been designed and constructed in accordance with the applicable standard and the approved planned deviations, if any.

**ARTICLE VI**  
**DEFAULT AND REMEDIES FOR DEFAULT**

**Section 6.01 Default.**

- a. Upon the occurrence, or alleged occurrence, of an event of default under or violation of this Agreement, the non-defaulting Party shall send the defaulting Party Notice of its default or violation or alleged default or violation. Except as otherwise specifically provided in this Agreement, the defaulting Party must cure its default or violation within seventy-five (75) days following receipt of the Notice of default or violation unless curing such default in such time period is not reasonably possible and the Party who is alleged to be in default is taking all actions necessary to promptly cure the default. However, a Party is not considered in default of the terms contained herein unless Notice is actually given by the non-defaulting Party, and the alleged default has not been cured during the seventy-five (75) day cure period.
- b. If the default or violation is not cured by the defaulting Party within seventy-five (75) days of receiving the Notice, the non-defaulting Party may sue for enforcement or cancellation of this Agreement. However, prior to bringing any proceeding in a court of law or before a court of competent jurisdiction, the Parties may resolve the issue through mediation or arbitration. If the Parties agree to seek mediation or arbitration, they must participate in good faith. The Parties shall bear their own costs of the mediation or arbitration equally. The Parties further agree that the City is not obligated to resolve any dispute based on an arbitration decision under this Agreement if the arbitration decision compromises the City's sovereign immunity as a home rule city.
- c. If the Parties are unable to resolve their dispute through mediation or arbitration, the non-defaulting Party shall have the right to enforce the terms and provisions of this Agreement by specific performance or by such other legal or equitable relief to which the non-defaulting Party maybe legally entitled. Any remedy or relief described in this Agreement shall be cumulative of, and in addition to, any other remedies and relief available at law or in equity.
- d. If the defaulting Party fails to abide by these deadlines, the non-defaulting Party shall have all rights and remedies available in law and equity and all rights and remedies provided in this Agreement. The Parties acknowledge that the City's remedies shall include the right, in the City's sole discretion, to terminate this Agreement and proceed with full purpose annexation of the District, or any portion thereof, pursuant to the requirements otherwise applicable for such annexation as if this Agreement had never been entered into.
- e. All of these rights and remedies shall be cumulative.

*Signature pages follow*

**IN WITNESS WHEREOF**, this Agreement is executed in duplicate counterparts.

**CITY OF ANGLETON, TEXAS**

By: \_\_\_\_\_  
Mayor, City of Angleton

Attest:

\_\_\_\_\_  
City Secretary

THE STATE OF TEXAS

COUNTY OF BRAZORIA

This instrument was acknowledged before me on the \_\_\_ day of \_\_\_\_\_, \_\_\_\_\_,  
by \_\_\_\_\_, Mayor of the City of Angleton, Texas, for and on behalf of said city.

\_\_\_\_\_  
Notary Public in and for the State of Texas  
My Commission Expires: \_\_\_\_\_

**BRAZORIA COUNTY MUNICIPAL UTILITY DISTRICT NO. 82**

By: \_\_\_\_\_  
President, Board of Directors

Attest:

\_\_\_\_\_  
Secretary, Board of Directors

THE STATE OF TEXAS

COUNTY OF \_\_\_\_\_

This instrument was acknowledged before me on the \_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, by \_\_\_\_\_, President of Brazoria County Municipal Utility District No. 82, for and on behalf of said district.

\_\_\_\_\_  
Notary Public in and for the State of Texas  
My Commission Expires: \_\_\_\_\_

THE STATE OF TEXAS

COUNTY OF \_\_\_\_\_

This instrument was acknowledged before me on the \_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, by \_\_\_\_\_, Secretary of Brazoria County Municipal Utility District No. 82, for and on behalf of said district.

\_\_\_\_\_  
Notary Public in and for the State of Texas  
My Commission Expires: \_\_\_\_\_



## AGENDA ITEM SUMMARY FORM

**MEETING DATE:** April 23, 2024

**PREPARED BY:** Phillip Conner, Finance Director

**AGENDA CONTENT:** Public Hearing, Discussion and possible action to approve the SAP and Levy Assessment Ordinance No. for the Riverwood Ranch North Public Improvement District.

**AGENDA ITEM SECTION:** Public Hearing and Action Item

**BUDGETED AMOUNT:** None

**FUNDS REQUESTED:** None

**FUND:** None

### EXECUTIVE SUMMARY:

On October 24, 2023, the City passed and approved Resolution No. 20231024-010 authorizing the establishment of the District in accordance with the PID Act, which authorization was effective upon publication as required by the PID Act. The purpose of the District is to finance the Actual Costs of Authorized Improvements that confer a special benefit on approximately 35.608 acres located within the City.

The PID Act requires a Service Plan covering a period of at least five years and defining the annual indebtedness and projected cost of the Authorized Improvements and including a copy of the notice form required by Section 5.014 of the Texas Property Code, as amended. The Service Plan is contained in Section IV.

The PID Act requires that the Service Plan include an assessment plan (attached) that assesses the Actual Costs of the Authorized Improvements against Assessed Property within the District based on the special benefits conferred on such property by the Authorized Improvements. The Assessment Plan is contained in Section V.

The PID Act requires an Assessment Roll that states the Assessment against each Parcel determined by the method chosen by the City. The Assessment against each Assessed Property must be sufficient to pay the share of the Actual Costs apportioned to the Assessed Property and cannot exceed the special benefit conferred on the Assessed Property by the Authorized Improvements. The Assessment Roll is contained in Exhibit G-1.

## FINDINGS

Acting in its legislative capacity and based on information provided by the Owner and its engineer and reviewed by City staff and by third-party consultants retained by the City, the City Council is asked to consider the following:

- The costs of the Authorized Projects equal \$5,730,454 as shown on **Exhibit B**;
- The Assessed Property receives special benefit from the Authorized Projects equal to or greater than the Actual Cost of the Authorized Projects;
- The Initial Parcel will be allocated 100% of the Assessment levied for the Authorized Projects, which equals \$5,139,000 as shown on the Assessment Roll attached hereto as **Exhibit G-1**;
- The special benefit (\$5,730,454) received by the Initial Parcel from the Authorized Projects is equal to or greater than the amount of the Assessment (\$5,139,000) levied on the Initial Parcel for the Authorized Projects; and
- At the time the **City Council** will approved this Service and Assessment Plan, the Owner would have owned 100% of the Initial Parcel. The Owner acknowledges that the Authorized Projects confer a special benefit on the Initial Parcel and consented to the imposition of the Assessment to pay for the Actual Costs associated therewith. The Owner ratifies, confirms, accepts, agrees to, and approves: (1) the determinations and findings by the **City Council** as to the special benefits described herein and the applicable Assessment Ordinance; (2) the Service and Assessment Plan and the applicable Assessment Ordinance; and (3) the levying of the Assessment on the Initial Parcel.

## RECOMMENDATION:

Staff recommends adopting the Ordinance Consider Ordinance approving the SAP and Assessment Levy for the Riverwood North Public Improvement District, subject to final approval by the City Attorney.

**ORDINANCE NO. 20240423-009**

**AN ORDINANCE OF THE CITY OF ANGLETON, TEXAS APPROVING A SERVICE AND ASSESSMENT PLAN AND ASSESSMENT ROLL FOR AUTHORIZED IMPROVEMENTS FOR THE RIVERWOOD NORTH PUBLIC IMPROVEMENT DISTRICT (THE “DISTRICT”); MAKING A FINDING OF SPECIAL BENEFIT TO CERTAIN PROPERTY IN THE DISTRICT; LEVYING ASSESSMENTS AGAINST CERTAIN PROPERTY WITHIN THE DISTRICT AND ESTABLISHING A LIEN ON SUCH PROPERTY; PROVIDING FOR PAYMENT OF THE ASSESSMENT IN ACCORDANCE WITH CHAPTER 372, TEXAS LOCAL GOVERNMENT CODE, AS AMENDED; PROVIDING FOR SEVERABILITY AND PROVIDING AN EFFECTIVE DATE.**

**WHEREAS**, the City of Angleton, Texas (the “City”) received a petition meeting the requirements of Sec. 372.005 of the Public Improvement District Assessment Act (the “Act”) requesting the creation of a public improvement district over a portion of the area within the corporate limits of the City to be known as the Stonehaven Public Improvement District (the “District”); and

**WHEREAS**, the petition contained the signatures of the owners of taxable property representing more than fifty percent of the appraised value of taxable real property liable for assessment within the boundaries of the proposed District, as determined by the then current ad valorem tax rolls of the Brazoria County Appraisal District and the signatures of property owners who own taxable real property that constitutes more than fifty percent of the area of all taxable property that is liable for assessment by the City; and

**WHEREAS**, the City Council approved the creation of the PID by Resolution approved on October 24, 2023 (the "Creation Resolution"); and

**WHEREAS**, pursuant to Sections 372.013, 372.014, and 372.016 of the Act, the City Council has directed the preparation of a Preliminary Service and Assessment Plan (the “Service and Assessment Plan”) for Authorized Improvements within of the District (Authorized Improvements”) and an assessment roll for the District (the “Assessment Roll”) that states the assessment against each parcel of land within the District (the “Assessments”); and

**WHEREAS**, the City called a public hearing regarding the proposed levy of Assessments pursuant to the Preliminary Plan and the proposed Assessment Roll on property within the District, pursuant to Section 372.016 of the Act; and

**WHEREAS**, the City, pursuant to Section 372.016(b) of the Act, published notice in a newspaper of general circulation within the City to consider the proposed Service and Assessment Plan for the District and the levy of the Assessments, as defined in the Service and Assessment Plan, on property within the District; and



**WHEREAS**, the City Council, pursuant to Section 372.016(c) of the Act, caused the mailing of notice of the public hearing to consider the proposed Service and Assessment Plan and the Assessment Roll attached to the Service and Assessment Plan and the levy of Assessments on property within the District to the last known address of the owners of the property liable for the Assessments; and

**WHEREAS**, the City Council convened the public hearing at 6:00 p.m. on the 23rd day of April, 2024, at which all persons who appeared, or requested to appear, in person or by their attorney, were given the opportunity to contend for or contest the Service and Assessment Plan, the Assessment Roll, and the proposed Assessments, and to offer testimony pertinent to any issue presented on the amount of the Assessments, the allocation of the costs of the Authorized Improvements, the purposes of the Assessments, the special benefits of the Assessments, and the penalties and interest on annual installments and on delinquent annual installments of the Assessments; and

**WHEREAS**, the developer of property within the District as described in the Service and Assessment Plan for the District has commenced the construction and acquisition of the Authorized Improvements within the District; and

**WHEREAS**, the City wishes to levy assessments on the property within the District for the Authorized Improvements as set forth in the Service and Assessment Plan; and

**WHEREAS**, the City Council finds and determines that the Service and Assessment Plan and Assessment Roll attached thereto should be approved and that the Assessments should be levied on property within the District as provided in this Ordinance and the Service and Assessment Plan and Assessment Roll; and

**WHEREAS**, the City Council further finds that there were no written objections or evidence submitted to the City Secretary in opposition to the Service and Assessment Plan, the allocation of the costs of the Authorized Improvements, the Assessment Roll or the levy of Assessments; and

**WHEREAS**, the City Council closed the hearing, and, after considering all written and documentary evidence presented at the hearing, including all written comments and statements filed with the District, determined to proceed with the adoption of this Ordinance in conformity with the requirements of the Act.

**NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF ANGLETON, TEXAS, THAT:**

**Section 1.** Findings. The findings and determinations set forth in the preambles hereto are hereby incorporated by reference for all purposes.

**Section 2.** Terms. Terms not otherwise defined herein are defined in the Service and Assessment Plan attached hereto as Exhibit A.

**Section 3.** Findings. The findings and determinations set forth in the preambles are hereby incorporated by reference for all purposes. The City Council hereby finds, determined and orders, as follows:

- a. The apportionment of the Costs of the Authorized Improvements, and the Annual Collection Costs pursuant to the Service and Assessment Plan is fair and reasonable, reflects an accurate presentation of the special benefit each property will receive from the Authorized Improvements identified in the Service and Assessment Plan, and is hereby approved;
- b. The Service and Assessment Plan covers a period of at least five years and defines the annual indebtedness and projected costs for the Authorized Improvements;
- c. The Service and Assessment Plan apportions the costs of the Authorized Improvements to be assessed against each Assessed Property in the District and such apportionment is made on the basis of special benefits accruing to each Assessed Property within the District because of Authorized Improvements.
- d. All of the real property within the District which is being assessed in the amounts shown in the Service and Assessment Plan and Assessment Roll will be benefited by the Authorized Improvements proposed to be provided through the District in the Service and Assessment Plan, and each parcel of real property in the District will receive special benefits during the term of the Assessments equal to or greater than the total amount assessed;
- e. The method of apportionment of the costs of the Authorized Improvements and Annual Collection Costs set forth in the Service and Assessment Plan results in imposing equal shares of the costs of the Authorized Improvements and Administrative Expenses on property similarly benefited, and results in a reasonable classification and formula for the apportionment of the costs;
- f. The Service and Assessment Plan should be approved as the service plan and assessment plan for the District, as described in Sections 372.013 and 372.014 of the Act;
- g. The Assessment Roll in the form attached to the Service and Assessment Plan should be approved as the assessment roll for the District;
- h. The provisions of the Service and Assessment Plan relating to due and delinquency dates for the Assessments, interest on Annual Installments, interest and penalties on delinquent Assessments and delinquent Annual Installments, and procedures in connection with the imposition and collection of Assessments should be approved and will expedite collection of the Assessments in a timely manner in order to provide the improvements needed and required for the area within the District; and
- i. A written notice of the date, hour, place and subject of this meeting of the City Council was posted at a place convenient to the public for the time required by law preceding this meeting, as required by the Open Meetings Act, Chapter 551, Texas Government Code, as amended, and that this meeting has been open to

the public as required by law at all times during which this Ordinance and the subject matter hereof has been discussed, considered and formally acted upon.

**Section 4.** Assessment Plan. The Service and Assessment Plan is hereby accepted and approved pursuant to Sections 372.013 and 372.014 of the Act as a service plan and an assessment plan for the District.

**Section 5.** Assessment Roll. The Assessment Roll is hereby accepted and approved pursuant to Section 372.016 of the Act as the assessment roll for the Authorized Improvements within the District.

**Section 6.** Levy and Payment of Assessments for Costs of Authorized Improvements.

- a. The City Council hereby levies Assessments on each Assessed Property located within the District, as shown and described in the Service and Assessment Plan and the Assessment Roll, in the respective amounts shown on the Assessment Roll, as special assessments on the properties within the District as set forth in the Service and Assessment Plan and the Assessment Roll.
- b. The levy of the Assessments shall be effective on the date of execution of this Ordinance levying assessments and strictly in accordance with the terms of the Service and Assessment Plan.
- c. The collection of the Assessments shall be as described in the Service and Assessment Plan.
- d. Each Assessment may be pre-paid or paid in Annual Installments pursuant to the terms of the Service and Assessment Plan.
- e. Each Assessment shall bear interest at the rate or rates specified in the Service and Assessment Plan.
- f. Each Annual Installment shall be collected each year in the manner set forth in the Service and Assessment Plan.
- g. The Annual Collection Costs for Assessed Properties in the District shall be calculated pursuant to the terms of the Service and Assessment Plan.

**Section 7.** Method of Assessment. The method of apportioning the costs of the Authorized Improvements is as set forth in the Service and Assessment Plan.

**Section 8.** Penalties and Interest on Delinquent Assessments. Delinquent Assessments shall be subject to the penalties, interest, procedures and foreclosure sales set forth in the Service and Assessment Plan. The Assessments shall have lien priority as specified in the Act and the Service and Assessment Plan.

**Section 9.** Prepayments of Assessments. As provided in Section 372.018(f) of the Act and in the Service and Assessment Plan, the owner (the "Owner") of any Assessed Property in the

District may prepay the Assessments levied by this Ordinance as set forth in the Service and Assessment Plan.

**Section 10.** Lien Priority. As provided in the Act, the City Council and owners of the Assessed Property intend for the obligations, covenants and burdens on the owners of Assessed Property in the District, including without limitation such owner’s obligations related to payment of the Assessments and the Annual Installments, to constitute a covenant running with the land. The Assessments and the Annual Installments levied hereby shall be binding upon the Assessed Property in the District and the owners of Assessed Properties in the District, and their respective transferees, legal representatives, heirs, devisees, successors and assigns in the same manner and for the same period as such parties would be personally liable for the payment of ad valorem taxes under applicable law. Assessments shall have lien priority as specified in the Act.

**Section 11.** Administrator and Collector of Assessments.

- a. Administrator. The City shall administer the Service and Assessment Plan and the Assessments levied by this Ordinance. The City has appointed a third-party administrator (the “Administrator”) to administer the Service and Assessment Plan and the Assessments. The Administrator shall perform the duties of the Administrator described in the Service and Assessment Plan and in this Ordinance. The Administrator’s fees, charges and expenses for providing such services shall constitute an Annual Collection Cost
- b. Collector. The City may collect the assessments or may, by future action, appoint a third-party collector of the Assessments. The City is hereby authorized to enter into an agreement with a third-party for the collection of the Assessments. The City may also contract with any other qualified collection agent selected by the City or may collect the Assessments on its own behalf. The costs of such collection contracts shall constitute an Annual Collection Cost.

**Section 12.** Applicability of Tax Code. To the extent not inconsistent with this Ordinance and the Act or other laws governing public improvement districts, the provisions of the Texas Tax Code shall be applicable to the imposition and collection of Assessments by the City.

**Section 13.** Severability. If any provision, section, subsection, sentence, clause or phrase of this Ordinance, or the application of same to any person or set of circumstances is for any reason held to be unconstitutional, void or invalid, the validity of the remaining portions of this Ordinance or the application to other persons or sets of circumstances shall not be affected thereby, it being the intent of the City Council that no portion hereof, or provision or regulation contained herein shall become inoperative or fail by reason of any unconstitutionality, voidness or invalidity of any other portion hereof, and all provisions of this Ordinance are declared to be severable for that purpose.

**Section 14.** Effective Date. This Ordinance shall take effect, and the levy of the Assessments, and the provisions and terms of the Service and Assessment Plan shall be and become effective upon passage and execution thereof.

**PASSED AND APPROVED on second reading this 23<sup>rd</sup> day of April, 2024.**

[Remainder of Page left Intentionally Blank]

\_\_\_\_\_  
Mayor, City of Angleton

**ATTEST:**

\_\_\_\_\_  
City Secretary, City of Angleton

STATE OF TEXAS           §  
  §  
COUNTY OF BRAZORIA   §

Before me, the undersigned authority, on this day personally appeared \_\_\_\_\_ Mayor of the City of Angleton, known to me to be such persons who signed the above and acknowledged to me that such persons executed the above and foregoing Ordinance in my presence for the purposes stated therein.

Given under my hand and seal of office this \_\_\_\_\_.

\_\_\_\_\_  
Notary Public, State of Texas

[NOTARY STAMP]

EXHIBIT A  
SERVICE AND ASSESSMENT PLAN  
AND ASSESSMENT ROLL

# Riverwood Ranch North Public Improvement District

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SERVICE AND ASSESSMENT PLAN

APRIL 23, 2024



AUSTIN, TX | NORTH RICHLAND HILLS, TX | HOUSTON, TX



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## INTRODUCTION

Capitalized terms used in this Service and Assessment Plan shall have the meanings given to them in **Section I** unless otherwise defined in this Service and Assessment Plan or unless the context in which a term is used clearly requires a different meaning. Unless otherwise defined, a reference to a “Section”, “Exhibit” or an “Appendix” shall be a reference to a Section of this Service and Assessment Plan or an Exhibit or Appendix attached to and made a part of this Service and Assessment Plan for all purposes.

On October 24, 2023, the City passed and approved Resolution No. 20231024-010 authorizing the establishment of the District in accordance with the PID Act, which authorization was effective upon publication as required by the PID Act. The purpose of the District is to finance the Actual Costs of Authorized Improvements that confer a special benefit on approximately 35.608 acres located within the City, as described by the legal description on **Exhibit J** and depicted on **Exhibit A**.

The PID Act requires a Service Plan covering a period of at least five years and defining the annual indebtedness and projected cost of the Authorized Improvements and including a copy of the notice form required by Section 5.014 of the Texas Property Code, as amended. The Service Plan is contained in **Section IV**.

The PID Act requires that the Service Plan include an assessment plan that assesses the Actual Costs of the Authorized Improvements against Assessed Property within the District based on the special benefits conferred on such property by the Authorized Improvements. The Assessment Plan is contained in **Section V**.

The PID Act requires an Assessment Roll that states the Assessment against each Parcel determined by the method chosen by the City. The Assessment against each Assessed Property must be sufficient to pay the share of the Actual Costs apportioned to the Assessed Property and cannot exceed the special benefit conferred on the Assessed Property by the Authorized Improvements. The Assessment Roll is contained in **Exhibit G-1**.

## SECTION I: DEFINITIONS

**“Actual Costs”** mean, with respect to Authorized Improvements, the actual costs paid or incurred by or on behalf of the Owner[s], (either directly or through affiliates), including : (1) the costs for the design, planning, administration/management, acquisition, installation, construction and/or implementation and dedication of such Authorized Improvements; (2) the fees paid for obtaining permits, zoning, licenses, plan approvals, inspections or other governmental approvals for such Authorized Improvements; (3) the costs for external professional services, such as engineering, geotechnical, surveying, land planning, architectural landscapers, appraisals, legal, accounting, and similar professional services; (4) the costs for all labor, bonds, and materials, including equipment and fixtures, owing to contractors, builders, and materialmen engaged in connection with the acquisition, construction, or implementation of the Authorized Improvements; (5) all related permitting and public approval expenses, and architectural, engineering, legal, consulting, and other governmental fees, construction security, insurance premiums, directly related to the construction of the Authorized Improvements, and charges and (6) costs to implement, administer, and manage the above-described activities including, but not limited to, a construction management fee equal to four percent (4%) of construction costs if managed by or on behalf of the Owner[s].

**“Additional Interest”** means the amount collected by application of the Additional Interest Rate.

**“Additional Interest Rate”** means the 0.50% additional interest rate that may be charged on Assessments securing PID Bonds pursuant to Section 372.018 of the PID Act.

**“Administrator”** means the City or independent firm designated by the City who shall have the responsibilities provided in this Service and Assessment Plan, any Indenture, or any other agreement or document approved by the City related to the duties and responsibilities of the administration of the District. The initial Administrator is P3Works, LLC.

**“Annual Collection Costs”** mean the actual or budgeted costs and expenses related to the operation of the District, including, but not limited to, costs and expenses for: (1) the Administrator; (2) City staff; (3) legal counsel, engineers, accountants, financial advisors, and other consultants engaged by the City; (4) calculating, collecting, and maintaining records with respect to Assessments and Annual Installments; (5) preparing and maintaining records with respect to Assessment Rolls and Annual Service Plan Updates; (6) paying and redeeming PID Bonds, if issued; (7) investing or depositing Assessments and Annual Installments; (8) complying with this Service and Assessment Plan, the PID Act, and any Indenture, with respect to the PID Bonds, if issued, including the City’s continuing disclosure requirements; and (9) the paying agent/registrar and Trustee in connection with PID Bonds, if issued, including their respective

legal counsel. Annual Collection Costs collected but not expended in any year shall be carried forward and applied to reduce Annual Collection Costs for subsequent years.

**“Annual Installment”** means the annual installment payment on an Assessment as calculated by the Administrator and approved by the City Council, that includes: (1) principal; (2) interest; (3) Annual Collection Costs; and (4) Additional Interest, if applicable.

**“Annual Service Plan Update”** means an update to this Service and Assessment Plan prepared no less frequently than annually by the Administrator and approved by the City Council.

**“Assessed Property”** means any Parcel within the District against which an Assessment is levied.

**“Assessment”** means an assessment levied against Assessed Property, and imposed pursuant to an Assessment Ordinance and the provisions herein, as shown on an Assessment Roll, subject to reallocation upon the subdivision of such Assessed Property or reduction according to the provisions herein and in the PID Act.

**“Assessment Ordinance”** means an ordinance adopted by the City Council in accordance with the PID Act that levies an Assessment on the Assessed Property, as shown on any Assessment Roll.

**“Assessment Plan”** means the methodology employed to assess the Actual Costs of the Authorized Improvements against the Assessed Property based on the special benefits conferred on such property by the Authorized Improvements, more specifically set forth and described in **Section V**.

**“Assessment Roll”** means any assessment roll for the Assessed Property, including the Assessment Roll attached as **Exhibit G-1**, as updated, modified or amended from time to time in accordance with the procedures set forth herein and in the PID Act, including updates prepared in connection with the levy of an Assessment, the issuance of PID Bonds, if issued, or in any Annual Service Plan Updates.

**“Authorized Improvements”** means the improvements authorized by Section 372.003 of the PID Act, as described in **Section III**, as further depicted on **Exhibit H**.

**“Authorized Projects”** means the Authorized Improvements, Bond Issuance Costs, District Formation Expenses and First Year Annual Collection Costs.

**“Bond Issuance Costs”** means the costs associated with issuing PID Bonds, including but not limited to, attorney fees, financial advisory fees, consultant fees, appraisal fees, printing costs, publication costs, capitalized interest, reserve fund requirements, underwriter’s discount, fees charged by the Texas Attorney General, and any other cost or expense directly associated with the issuance of any series of PID Bonds.

**“Captured Appraised Value”** means the total taxable value of the property located within the boundary of the TIRZ for a given year less the total taxable value of the property located within the boundary of the TIRZ for the year set forth in the TIRZ NO. 2 Ordinance.

**“City”** means the City of Angleton, Texas.

**“City Council”** means the governing body of the City.

**“County”** means Brazoria County, Texas.

**“Delinquent Collection Costs”** mean costs related to the foreclosure on Assessed Property and the costs of collection of delinquent Assessments, delinquent Annual Installments, or any other delinquent amounts due under this Service and Assessment Plan, including penalties and reasonable attorney’s fees actually paid, but excluding amounts representing interest and penalty interest.

**“District”** means the Riverwood Ranch North Public Improvement District containing approximately 35.608 acres located within the City, as generally depicted on **Exhibit A**, and described on **Exhibit J**.

**“District Formation Expenses”** means the costs associated with forming the District, including but not limited to, attorney fees, consultant fees, and any other cost or expense directly associated with the establishment of the District.

**“Engineer’s Report”** means the report provided by a licensed professional engineer that describes the Authorized Improvements, including their costs, location, and benefit, and is attached hereto as **Appendix A**.

**“Estimated Buildout Value”** means the estimated value of an Assessed Property with fully constructed buildings, as provided by the Owner and confirmed by the City Council, by considering such factors as density, lot size, proximity to amenities, view premiums, location, market conditions, historical sales, builder contracts, discussions with homebuilders, reports from third party consultants, or any other factors that, in the judgment of the City, may impact value. The Estimated Buildout Value for each Lot Type is shown on **Exhibit E**.

**“First Year Annual Collection Costs”** means the Annual Collection Costs associated with the first year of the District.

**“Initial Parcel”** means all of Assessed Property against which the entire Assessment is levied, as more specifically described in **Exhibit J**.

**“Indenture”** means an Indenture of Trust entered into between the City and the Trustee in connection with the issuance of each series of PID Bonds, if issued, as amended from time to time, setting forth the terms and conditions related to a series of PID Bonds.

**“Landowner Consent”** means the Consent executed by the Owner relating to the Assessed Property owned by the Owner in the District.

**“Lot”** means (1) for any portion of the District for which a final subdivision plat has been recorded in the Official Public Records of the County, a tract of land described by “lot” in such subdivision plat; and (2) for any portion of the District for which a subdivision plat has not been recorded in the Official Public Records of the County, a tract of land anticipated to be described as a “lot” in a final recorded subdivision plat as shown on a concept plan or a preliminary plat. A “Lot” shall not include real property owned by a government entity, even if such property is designated as a separate described tract or lot on a recorded Subdivision Plat.

**“Lot Type”** means a classification of final building Lots with similar characteristics (e.g., lot size, home product, Estimated Buildout Value, etc.), as determined by the Administrator and confirmed by the City Council. In the case of single-family residential Lots, the Lot Type shall be further defined by classifying the residential Lots by the Estimated Buildout Value of the Lot as provided by the Owner, and confirmed by the City Council, as shown on **Exhibit E**.

**“Lot Type 1”** means a Lot marketed to homebuilders as a 50’ Lot. The buyer disclosure for Lot Type 1 is attached as **Appendix B**.

**“Lot Type 2”** means a Lot marketed to homebuilders as a 60’ Lot. The buyer disclosure for Lot Type 2 is attached as **Appendix B**.

**“Maximum Assessment”** means, for each Lot, an Assessment equal to the lesser of (1) the amount calculated pursuant to **Section VI.A**, or (2) the amount shown on **Exhibit E**.

**“Non-Benefited Property”** means Parcels within the boundaries of the District that accrue no special benefit from the Authorized Improvements as determined by the City Council.

**“Notice of PID Assessment Lien Termination”** means a document that shall be recorded in the Official Public Records of the County evidencing the termination of a lien, a form of which is attached as **Exhibit I**.

**“Owner”** means Riverwood Ranch, LLC and any successors or assigns thereof that intends to develop the property in the District for the ultimate purpose of transferring title to end users.

**“Parcel”** or **“Parcel(s)”** means a specific property within the District identified by either a tax parcel identification number assigned by the Brazoria Central Appraisal District for real property tax purposes, by legal description, or by lot and block number in a final subdivision plat recorded in the Official Public Records of the County, or by any other means determined by the City.

**“PID Act”** means Chapter 372, Texas Local Government Code, as amended.

**“PID Bonds”** means any bonds issued by the City in one or more series and secured in whole or in part by Assessments.

**“Prepayment”** means the payment of all or a portion of an Assessment before the due date of the final Annual Installment thereof. Amounts received at the time of a Prepayment which represent a payment of principal, interest, or penalties on a delinquent installment of an Assessment are not to be considered a Prepayment, but rather are to be treated as the payment of the regularly scheduled Annual Installment.

**“Prepayment Costs”** means interest, including Additional Interest and Annual Collection Costs, to the date of Prepayment.

**“Reimbursement Agreement”** means that certain “Riverwood North Public Improvement District Reimbursement Agreement”, effective February 13, 2024 by and between the City and the Owner.

**“Service and Assessment Plan”** means this Riverwood Ranch North Public Improvement District Service and Assessment Plan, as updated, amended, or supplemented from time to time.

**“Service Plan”** means the plan that defines the annual indebtedness and projected costs of the Authorized Improvements, and covers a period of at least five years, more specifically described in **Section IV**.

**“TIRZ No. 2”** means City of Angleton Tax Increment Reinvestment Zone No. 2.

**“TIRZ Administrative Costs”** means those reasonable costs paid or incurred by or on behalf of the City to create and/or administer the TIRZ.

**“TIRZ No. 2 Agreement”** means the Facilities and Creation Costs Reimbursement Agreement, effective as of July 14, 2020, as amended.

**“TIRZ No. 2 Annual Credit Amount”** is defined in **Section V.F**, which amount shall not annually exceed the TIRZ No. 2 Maximum Annual Credit Amount, and which shall be transferred from the TIRZ No. 2 Fund to the applicable pledged revenue fund pursuant to the TIRZ No. 2 Agreement.

**“TIRZ No. 2 Fund”** means the tax increment fund created pursuant to the TIRZ No. 2 Ordinance where TIRZ No. 2 Revenues are deposited annually.

**“TIRZ No. 2 Maximum Annual Credit Amount”** means for each Lot Type, the amount of TIRZ No. 2 Revenues that resulted in an equivalent tax rate of \$1.50 per \$100 of assessed value for such Lot Type taking into consideration the City tax rate and the equivalent tax rate of the District Annual Installment, taking into consideration the 2023 tax rates and assumed Estimated Buildout Value at the time the City Council approved the 2024 Assessment Ordinance levying the District Assessment, as further described in **Section V.F** and shown on **Exhibit F**.

**“TIRZ No. 2 Ordinance”** means Ordinance No. 2022-11-14 (7A) adopted by the City Council approving the TIRZ No. 2 Project Plan and authorizing the use of TIRZ No. 2 Revenues for project costs under the Chapter 311, Texas Tax Code as amended, and related to certain public improvements as provided for in the TIRZ No. 2 Project Plan.

**“TIRZ No. 2 Project Plan”** means the City of Angleton Tax Increment Reinvestment Zone No. 2 Final Project and Financing Plan, prepared and adopted by the Board of Directors of the TIRZ and approved by the City (including any amendments or supplements thereto).

**“TIRZ No. 2 Revenues”** mean, for each year, the amounts which are deposited in the TIRZ No. 2 Fund pursuant to the TIRZ No. 2 Ordinance, TIRZ No. 2 Project Plan, and the Facilities and Creation Costs Reimbursement Agreement.

**“Trustee”** means the trustee or successor trustee under an Indenture.

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## SECTION II: THE DISTRICT

The District includes approximately 35.608 contiguous acres located within the corporate limits of the City, the boundaries of which are more particularly described on **Exhibit J**, and depicted on **Exhibit A**. Development of the District is anticipated to include approximately 144 Lots developed into single-family homes and townhomes.

## SECTION III: AUTHORIZED IMPROVEMENTS

Based on information provided by the Owner and its engineer and reviewed by the City staff and by third-party consultants retained by the City, the City has determined that the Authorized Improvements confer a special benefit on the Assessed Property. Authorized Improvements will be designed and constructed in accordance with the City's standards and specifications and will be owned and operated by the City unless otherwise noted. The budget for the Authorized Improvements is shown on **Exhibit B**.

### A. Authorized Improvements

- *Streets - Paving*

Improvements including mobilization, subgrade stabilization, road base, asphalt, concrete and reinforcing steel for roadways, testing, sidewalks, handicapped ramps, and streetlights. All related demolition, tree removal, clearing and grubbing, earthwork, excavation, retaining walls, intersections, signage and striping, and re-vegetation of all disturbed areas within the right-of-way are included. Improvements including erosion control measures (e.g., erosion matting, rock berms, silt fence, inlet protection), construction entrance, SWPPP sign and inspections, and re-vegetation of all disturbed areas within the District are included. The erosion control improvements will provide benefit to all Lots within the District. The street improvements will provide benefit to each Lot within the District.

- *Clearing & Grubbing*

Improvements including clearing and grubbing, excavation, and embankment for the limits of the District.

- *Drainage – Storm Water*

Includes earthen channels, swales, curb and drop inlets, storm sewer piping and boxes, headwalls, manholes, concrete flumes, rock rip rap, detention ponds, concrete outfalls, and testing as well as all related earthwork, excavation, erosion control and all necessary appurtenances required to provide storm drainage for all lots within the District.

- *Potable Water*

Improvements including trench excavation and embedment, trench safety, piping, encasement, service connections, hydrants, service for park, testing, related earthwork, excavation, erosion control and all other necessary appurtenances required to provide water service to all Lots within the District.

- *Wastewater*

Improvements including trench excavation and embedment, trench safety, piping, encasing, boring, manholes, lift station, force main, service connections, testing, related earthwork, excavation, erosion control and all necessary appurtenances required to provide wastewater service to all Lots within the District.

- *Landscaping, Parks and Amenities*

The District includes landscaped areas and grass covered areas within the subdivision. These improvements include erosion control measures, earthwork, site improvements, planting, and vegetation. The landscaping, parks and amenities improvements will provide benefit to all lots within the District.

- *Drainage - Detention*

Improvements including clearing, pond excavation and embankment, soil testing, channels, rock riprap walls, construction of outfall structures, erosion controls, revegetation and utility improvements are also included.

- *Contingency*

Estimated potential cost fluctuations for construction costs.

- *Soft Costs*

Costs related to designing, constructing, and installing the Authorized Improvements to include land planning and design, City fees, inspection fees, engineering, construction management material testing, and survey.

## **B. Bond Issuance Costs**

- *Debt Service Reserve Fund*

Equals the amount to be deposited in a debt service reserve fund under an applicable Indenture in connection with the issuance of PID Bonds.

- *Capitalized Interest*

Equals the amount required to be deposited for the purpose of paying capitalized interest on a series of PID Bonds under an applicable Indenture in connection with the issuance of such PID Bonds.

- *Underwriter's Discount*

Equals a percentage of the par amount of a particular series of PID Bonds related to the costs of underwriting such PID Bonds.

- *Underwriter's Counsel Fees*

Equals a percentage of the par amount of a particular series of PID Bonds reserved for the underwriter's attorney fees.

- *Cost of Issuance*

Includes costs of issuing a particular series of PID Bonds, including but not limited to issuer fees, attorney's fees, financial advisory fees, consultant fees, appraisal fees, printing costs, publication costs, City's costs, fees charged by the Texas Attorney General, and any other cost or expense directly associated with the issuance of PID Bonds.

**C. Other Costs**

- *District Formation Expenses*

Costs associated with forming the District, including but not limited to 1<sup>st</sup> year District administration reserves, and any other cost or expense directly associated with the establishment of the District.

[Remainder of page intentionally left blank]

## SECTION IV: SERVICE PLAN

The PID Act requires the Service Plan to cover a period of at least five years. The Service Plan is required to define the annual projected costs and indebtedness for the Authorized Improvements undertaken within the District during the five-year period. The Service Plan is also required to include a copy of the buyer disclosure notice form required by Section 5.014 of the Texas Property Code, as amended. The Service Plan must be reviewed and updated in each Annual Service Plan Update. **Exhibit C** summarizes the initial Service Plan for the District. Per the PID Act and Section 5.014 of the Texas Property Code, as amended, this Service and Assessment Plan, and any future Annual Service Plan Updates, shall include a form of the buyer disclosures for the District. The buyer disclosures are attached hereto as **Appendix B**.

**Exhibit D** summarizes the sources and uses of funds required to construct the Authorized Improvements. The sources and uses of funds shown on **Exhibit D** shall be updated in an Annual Service Plan Update to show any budget revisions and the amount required to fund the required reserves and issue any PID Bonds at the time the PID Bonds are issued.

## SECTION V: ASSESSMENT PLAN

The PID Act allows the City Council to apportion the costs of the Authorized Improvements to the Assessed Property based on the special benefit received from the Authorized Improvements. The PID Act provides that such costs may be apportioned: (1) equally per front foot or square foot; (2) according to the value of property as determined by the City Council, with or without regard to improvements constructed on the property; or (3) in any other manner approved by the City Council that results in imposing equal shares of such costs on property similarly benefited. The PID Act further provides that the City Council may establish by ordinance or order reasonable classifications and formulas for the apportionment of the cost between the City and the area to be assessed and the methods of assessing the special benefits for various classes of improvements.

This section of this Service and Assessment Plan describes the special benefit received by each Parcel within the District as a result of the Authorized Improvements and provides the basis and justification for the determination that this special benefit equals or exceeds the amount of the Assessments to be levied on the Assessed Property for such Authorized Improvements.

The determination by the City Council of the assessment methodologies set forth below is the result of the discretionary exercise by the City Council of its legislative authority and governmental powers and is conclusive and binding on the Owner and all future owners of the Assessed Property.

### A. Assessment Methodology

Acting in its legislative capacity and based on information provided by the Owner and its engineer and reviewed by the City staff and by third-party consultants retained by the City, the City Council has determined that the costs of the Authorized Projects shall be allocated entirely to the Initial Parcel. Upon subdivision of an Assessed Property, the Actual Costs of the Authorized Projects, Bond Issuance Costs relating to the PID Bonds, if issued, District Formation Expenses, and First Year Annual Collection Costs, shall be reallocated based on Estimated Buildout Value as further described in **Section VI**.

The costs of the Authorized Projects shall be allocated to each Parcel within the District based on the ratio of the Estimated Buildout Value of each Parcel designated as Assessed Property to the total Estimated Buildout Value of the District. Currently, the Initial Parcel is the only Parcel within the District, and as such, the Initial Parcel is allocated 100% of the costs of the Authorized Projects.

Assessments will be levied on the Initial Parcel in the amount shown on the Assessment Roll, attached hereto as **Exhibit G-1**. The projected Annual Installments are shown on **Exhibit G-2**. Upon division or subdivision of the Initial Parcel, the Assessments will be reallocated pursuant to **Section VI**.

The Maximum Assessment for each Lot Type is shown on **Exhibit E**. In no case will the Assessment for Lots classified as Lot Type 1 or Lot Type 2, respectively, exceed the corresponding Maximum Assessment for each Lot Type classification.

### B. Findings of Special Benefit

Acting in its legislative capacity and based on information provided by the Owner and its engineer and reviewed by City staff and by third-party consultants retained by the City, the City Council has found and determined the following:

- The costs of the Authorized Projects equal \$5,730,454 as shown on **Exhibit B**;
- The Assessed Property receives special benefit from the Authorized Projects equal to or greater than the Actual Cost of the Authorized Projects;
- The Initial Parcel will be allocated 100% of the Assessment levied for the Authorized Projects, which equals \$5,139,000 as shown on the Assessment Roll attached hereto as **Exhibit G-1**;
- The special benefit (\$5,730,454) received by the Initial Parcel from the Authorized Projects is equal to or greater than the amount of the Assessment (\$5,139,000) levied on the Initial Parcel for the Authorized Projects; and

- At the time the City Council approved this Service and Assessment Plan, the Owner owned 100% of the Initial Parcel. The Owner acknowledged that the Authorized Projects confer a special benefit on the Initial Parcel and consented to the imposition of the Assessment to pay for the Actual Costs associated therewith. The Owner ratified, confirmed, accepted, agreed to, and approved: (1) the determinations and findings by the City Council as to the special benefits described herein and the applicable Assessment Ordinance; (2) the Service and Assessment Plan and the applicable Assessment Ordinance; and (3) the levying of the Assessment on the Initial Parcel.

### **C. Annual Collection Costs**

The Annual Collection Costs shall be paid for annually by the owner of each Parcel pro rata based on the ratio of the amount of outstanding Assessment remaining on the Parcel to the total outstanding Assessment. The Annual Collection Costs shall be collected as part of and in the same manner as Annual Installments in the amounts shown on the Assessment Roll, which may be revised based on Actual Costs incurred in Annual Service Plan Updates.

### **D. Additional Interest**

The interest rate on Assessments securing each respective series of PID Bonds, if issued, may exceed the interest rate on each respective series of PID Bonds by the Additional Interest Rate. To the extent required by any Indenture, Additional Interest shall be collected as part of each Annual Installment and shall be deposited pursuant to the applicable Indenture.

The interest on the Assessment securing the Reimbursement Obligation shall be set at a rate of 6.00% pursuant to the PID Act. The PID Act requires the rate set on unpaid amounts due under a Reimbursement Agreement may not exceed five percent above the highest average index rate for tax-exempt bonds for a period of not more than five years and may not exceed two percent above the same index rate for the following two-year period. The index rate utilized to set the rate on the Reimbursement Obligation is the S&P Municipal Bond High Yield Index, which rate is 5.72% as of January 31, 2023. The rate set by this Service and Assessment Plan of 6.00% for the seven-year period is less than 2% above the S&P Municipal Bond High Yield Index. Once PID Bonds are issued, the interest rate on the Assessments will equal the interest rate on the bonds plus additional interest. The Annual Installment pursuant to the Reimbursement Agreement will not include Additional Interest unless and until PID Bonds secured by the Assessment are issued.

### **E. TIRZ No. 2 Annual Credit Amount**

The City Council, in accordance with the TIRZ No. 2 Agreement, has agreed to use a portion of TIRZ No. 2 Revenues generated from each Assessed Property to offset a portion of the principal and interest of such property's Assessment.

1. The principal and interest portion of the Annual Installment for an Assessed Property shall receive a TIRZ No. 2 Annual Credit Amount equal to the TIRZ No. 2 Revenue generated by the Assessed Property for the previous Tax Year (e.g. TIRZ No. 2 Revenue collected from the Assessed Property for Tax Year 2024 shall be applied as the TIRZ No. 2 Annual Credit Amount applicable to the Assessed Property’s Annual Installment to be collected in Tax Year 2025), but in no event shall the TIRZ No. 2 Annual Credit Amount exceed the TIRZ No. 2 Maximum Annual Credit Amount shown in **Section V.F.2** as calculated on **Exhibit F** for each Assessed Property.
2. The TIRZ No. 2 Maximum Annual Credit Amount available to reduce the principal and interest portion of the Annual Installment for an Assessed Property is calculated for each Lot Type, as shown on **Exhibit E**. The TIRZ No. 2 Maximum Annual Credit Amount is calculated so that the average Annual Installment for each Lot Type minus the TIRZ No. 2 Maximum Annual Credit Amount for each Lot Type does not produce an equivalent tax rate for such Lot Type which exceeds the competitive, composite equivalent ad valorem tax rate (\$1.50 per \$100 of assessed value) taking into consideration the 2023 tax rates of all applicable overlapping taxing units and the equivalent tax rate of the Annual Installments based on assumed buildout values at the time Assessment Ordinance is approved. The resulting TIRZ No. 2 Maximum Annual Credit Amount for each Lot Type is shown below:

1.	Lot Type 1:	\$402.00
2.	Lot Type 2:	\$424.00

3. After the TIRZ No. 2 Annual Credit Amount is applied to provide a credit towards the principal and interest portion of the Annual Installment for the Assessed Property, any excess TIRZ No. 2 Revenues available from the Riverwood Ranch North PID Account of the TIRZ No. 2 Fund shall be transferred to the City.

**SECTION VI: TERMS OF THE ASSESSMENTS**

Any reallocation of Assessments as described in this **Section VI** shall be considered an administrative action of the City and will not be subject to the notice or public hearing requirements under the PID Act.

**A. Reallocation of Assessments**

*A. Upon Division Prior to Recording of Subdivision Plat*

Upon the division of any Assessed Property (without the recording of a subdivision plat), the Administrator shall reallocate the Assessment for the Assessed Property prior to the division among the newly divided Assessed Properties according to the following formula:

$$A = B \times (C \div D)$$

Where the terms have the following meanings:

A = the Assessment for the newly divided Assessed Property

B = the Assessment for the Assessed Property prior to division

C = the Estimated Buildout Value of the newly divided Assessed Property

D = the sum of the Estimated Buildout Value for all of the newly divided Assessed Properties

The calculation of the Assessment of an Assessed Property shall be performed by the Administrator and shall be based on the Estimated Buildout Value of that Assessed Property, as provided by the Owner, relying on information from homebuilders, market studies, appraisals, Official Public Records of the County, and any other relevant information regarding the Assessed Property. The Estimated Buildout Values for Lot Type 1 and Lot Type 2, within the District, are shown on **Exhibit E** and will not change in future Annual Service Plan Updates but **Exhibit E** may be updated in future Annual Service Plan Updates to account for additional Lot Types. The calculation as confirmed by the City Council shall be conclusive and binding.

The sum of the Assessments for all newly divided Assessed Properties shall equal the Assessment for the Assessed Property prior to subdivision. The calculation shall be made separately for each newly divided Assessed Property. The reallocation of an Assessment for an Assessed Property that is a homestead under Texas law may not exceed the Assessment prior to the reallocation. Any reallocation pursuant to this section shall be reflected in the Annual Service Plan Update immediately following such reallocation.

***B. Upon Subdivision by a Recorded Subdivision Plat***

Upon the subdivision of any Assessed Property based on a recorded subdivision plat, the Administrator shall reallocate the Assessment for the Assessed Property prior to the subdivision among the new subdivided Lots based on Estimated Buildout Value according to the following formula:

$$A = [B \times (C \div D)]/E$$

Where the terms have the following meanings:

A = the Assessment for the newly subdivided Lot

B = the Assessment for the Parcel prior to subdivision

C = the sum of the Estimated Buildout Value of all newly subdivided Lots with same Lot Type



D = the sum of the Estimated Buildout Value for all of the newly subdivided Lots excluding Non-Benefitted Property

E= the number of newly subdivided Lots with same Lot Type

Prior to the recording of a subdivision plat, the Owner shall provide the City an Estimated Buildout Value as of the date of the recorded subdivision plat for each Lot created by the recorded subdivision plat. The calculation of the Assessment for a Lot shall be performed by the Administrator and confirmed by the City Council based on Estimated Buildout Value information provided by the Owner, homebuilders, third party consultants, and/or the Official Public Records of the County regarding the Lot. The Estimated Buildout Values for Lot Type 1 and Lot Type 2 are shown on **Exhibit E** and will not change in future Annual Service Plan Updates. The calculation as confirmed by the City Council shall be conclusive and binding.

The sum of the Assessments for all newly subdivided Lots shall not exceed the Assessment for the portion of the Assessed Property subdivided prior to subdivision. The calculation shall be made separately for each newly subdivided Assessed Property. The reallocation of an Assessment for an Assessed Property that is a homestead under Texas law may not exceed the Assessment prior to the reallocation. Any reallocation pursuant to this section shall be reflected in the Annual Service Plan Update immediately following such reallocation.

### *C. Upon Consolidation*

If two or more Lots or Parcels are consolidated into a single Lot or Parcel, the Administrator shall allocate the Assessments against the Lots or Parcels before the consolidation to the consolidated Lot or Parcel, which allocation shall be approved by the City Council in the next Annual Service Plan Update immediately following such consolidation. The Assessment for any resulting Lot may not exceed the Maximum Assessment for the applicable Lot Type and compliance may require a mandatory Prepayment of Assessments pursuant to **Section VI.C**.

## **B. Mandatory Prepayment of Assessments**

If an Assessed Property or a portion thereof is conveyed to a party that is exempt from payment of the Assessment under applicable law, or the owner causes a Lot, Parcel or portion thereof to become Non-Benefitted Property, the owner of such Lot, Parcel or portion thereof shall pay to the City, or cause to be paid to the City, the full amount of the Assessment, plus all Prepayment Costs and Delinquent Collection Costs for such Assessed Property, prior to any such conveyance or act, and no such conveyance shall be effective until the City receives such payment. Following

payment of the foregoing costs in full, the City shall provide the owner with a recordable “Notice of Assessment Termination,” a form of which is attached hereto as **Exhibit I**.

### **C. True-Up of Assessments if Maximum Assessment Exceeded at Plat**

Prior to the City approving a final subdivision plat, the Administrator will verify that such plat will not result in the Assessment per Lot for any Lot Type to exceed the Maximum Assessment. If the Administrator determines that the resulting Assessment per Lot for any Lot Type will exceed the Maximum Assessment for that Lot Type, then (1) the Assessment applicable to such Lot Type shall be reduced to the Maximum Assessment, and (2) the person or entity filing the plat shall pay to the City or cause to be paid to the City the amount the Assessment was reduced, plus Prepayment Costs and Delinquent Collection Costs, if any, prior to the City approving the final plat. The City’s approval of a plat without payment of such amounts does not eliminate the obligation of the person or entity filing the plat to pay such amounts. At no time shall the aggregate Assessments for any Lot exceed the Maximum Assessment for such Lot.

### **D. Reduction of Assessments**

If the Actual Costs of completed Authorized Improvements are less than the Assessments, then (i) in the event PID Bonds have not been issued for the purpose of financing Authorized Improvements affected by such reduction in Actual Costs, the City Council shall reduce each Assessment, and the TIRZ No. 2 Annual Credit Amount, applicable only to Lots within the District, on a pro rata basis such that the sum of the resulting reduced Assessments for all Assessed Property equals the reduced Actual Costs that were expended, or (ii) in the event that PID Bonds have been issued for the purpose of financing Authorized Improvements affected by such reduction in Actual Costs, the Trustee shall apply amounts on deposit in the applicable account of the project fund created under the Indenture relating to such series of PID Bonds as directed by the City pursuant to the terms of such Indenture, and the TIRZ No. 2 Annual Credit Amount will be reduced by the same proportion as the Assessments. Such excess PID Bond proceeds shall be used as set forth in such Indenture. The Assessments shall never be reduced to an amount less than the amount required to pay all outstanding debt service requirements on all outstanding PID Bonds.

The Administrator shall update (and submit to the City Council for review and approval as part of the next Annual Service Plan Update) the Assessment Roll and corresponding Annual Installments to reflect the reduced Assessments.

### **E. Prepayment of Assessments**

The owner of any Assessed Property may, at any time, pay all or any part of an Assessment in accordance with the PID Act. Prepayment Costs, if any, may be paid from a reserve established under the applicable Indenture. If an Annual Installment has been billed, or the Annual Service

Plan Update has been approved by the City Council prior to the Prepayment, the Annual Installment shall be due and payable and shall be credited against the Prepayment.

If an Assessment on an Assessed Property is prepaid in full, with Prepayment Costs, (1) the Administrator shall cause the Assessment to be reduced to zero on said Assessed Property and the Assessment Roll to be revised accordingly; (2) the Administrator shall prepare the revised Assessment Roll and submit such revised Assessment Roll to the City Council for review and approval as part of the next Annual Service Plan Update; (3) the obligation to pay the Assessment and corresponding Annual Installments shall terminate with respect to said Assessed Property; and (4) the City shall provide the owner with a recordable "Notice of PID Assessment Lien Termination.", a form of which is included as **Exhibit I**.

If an Assessment on an Assessed Property is prepaid in part: (1) the Administrator shall cause the Assessment to be reduced and the Assessment Roll revised accordingly; (2) the Administrator shall prepare the revised Assessment Roll and submit such revised Assessment Roll to the City Council for review and approval as part of the next Annual Service Plan Update; and (3) the obligation to pay the Assessment will be reduced to the extent of the Prepayment made.

#### **F. Payment of Assessment in Annual Installments**

Assessments that are not paid in full shall be due and payable in Annual Installments. **Exhibit G-2** shows the estimated Annual Installments. Annual Installments are subject to adjustment in each Annual Service Plan Update.

Annual Installments are subject to adjustment in each Annual Service Plan Update. Until a plat has been recorded on a Parcel and a Property ID has been assigned by the Appraisal District the Annual Installment will be allocated to each Property ID within the District based on the Brazoria Central Appraisal District acreage for billing purposes only.

Prior to the recording of a final subdivision plat, if any Parcel shown on the Assessment Roll is assigned multiple tax parcel identification numbers for billing and collection purposes, the Annual Installment shall be allocated pro rata based on the acreage of the Parcel not including any Non-Benefitted Property, as shown by the Brazoria Central Appraisal District for each tax parcel identification number.

The Administrator shall prepare and submit to the City Council for its review and approval an Annual Service Plan Update to allow for the billing and collection of Annual Installments. Each Annual Service Plan Update shall include updated Assessment Rolls and updated calculations of Annual Installments. The Annual Collection Costs for a given Assessment shall be paid by the owner of each Parcel pro rata based on the ratio of the amount of outstanding Assessment remaining on the Parcel to the total outstanding Assessment. Annual Installments shall be reduced by any credits applied under an applicable Indenture, such as capitalized interest,

interest earnings on account balances, and any other funds available to the Trustee for such purposes. Annual Installments shall be collected by the City in the same manner and at the same time as ad valorem taxes. Annual Installments shall be subject to the penalties, procedures, and foreclosure sale in case of delinquencies as set forth in the PID Act and in the same manner as ad valorem taxes due and owing to the City. To the extent permitted by the PID Act or other applicable law, the City Council may provide for other means of collecting Annual Installments, but in no case shall the City take any action, or fail to take any action, that would cause it to be in default under any Indenture. Assessments shall have the lien priority specified in the PID Act.

Sales of the Assessed Property for nonpayment of Annual Installments shall be subject to the lien for the remaining unpaid Annual Installments against the Assessed Property, and the Assessed Property may again be sold at a judicial foreclosure sale if the purchaser fails to timely pay any of the remaining unpaid Annual Installments as they become due and payable.

The City reserves the right to refund PID Bonds, if issued, in accordance with applicable law, including the PID Act. In the event of a refunding, the Administrator shall recalculate the Annual Installments so that total Annual Installments will be sufficient to pay the refunding bonds, and the refunding bonds shall constitute "PID Bonds."

Each Annual Installment of an Assessment, including interest on the unpaid principal of the Assessment, shall be updated annually. Each Annual Installment shall be due when billed and shall be delinquent if not paid prior to February 1 of the following year. The initial Annual Installments of the Assessments shall be due when billed and shall be delinquent if not paid prior to February 1, 2025.

Failure of an owner of an Assessed Property to receive an invoice for an Annual Installment shall not relieve said owner of the responsibility for payment of the Assessment. Assessments, or Annual Installments thereof, that are delinquent shall incur Delinquent Collection Costs.

#### **G. Prepayment as a Result of an Eminent Domain Proceeding or Taking**

Subject to applicable law, if any portion of any Parcel of Assessed Property is taken from an owner as a result of eminent domain proceedings or if a transfer of any portion of any Parcel of Assessed Property is made to an entity with the authority to condemn all or a portion of the Assessed Property in lieu of or as a part of an eminent domain proceeding (a "**Taking**"), the portion of the Assessed Property that was taken or transferred (the "**Taken Property**") shall be reclassified as Non-Benefited Property.

For the Assessed Property that is subject to the Taking as described in the preceding paragraph, the Assessment that was levied against the Assessed Property (when it was included in the Taken Property) prior to the Taking shall remain in force against the remaining Assessed Property (the Assessed Property less the Taken Property) (the "**Remaining Property**") following the

reclassification of the Taken Property as Non-Benefitted Property, subject to an adjustment of the Assessment applicable to the Remaining Property after any required Prepayment as set forth below. The owner of the Remaining Property will remain liable to pay, pursuant to the terms of this Service and Assessment Plan, as updated, and the PID Act, the Assessment that remains due on the Remaining Property, subject to an adjustment in the Assessment applicable to the Remaining Property after any required Prepayment as set forth below. Notwithstanding the foregoing, if the Assessment that remains due on the Remaining Property exceeds the applicable Maximum Assessment, the owner of the Remaining Property will be required to make a Prepayment in an amount necessary to ensure that the Assessment against the Remaining Property does not exceed such Maximum Assessment, in which case the Assessment applicable to the Remaining Property will be reduced by the amount of the partial Prepayment. If the City receives all or a portion of the eminent domain proceeds (or payment made in an agreed sale in lieu of condemnation), such amount shall be credited against the amount of Prepayment, with any remainder credited against the Assessment on the Remaining Property.

In all instances the Assessment remaining on the Remaining Property shall not exceed the applicable Maximum Assessment.

By way of illustration, if an owner owns 100 acres of Assessed Property subject to a \$100 Assessment and 10 acres is taken through a Taking, the 10 acres of Taken Property shall be reclassified as Non-Benefitted Property and the remaining 90 acres constituting the Remaining Property shall be subject to the \$100 Assessment (provided that this \$100 Assessment does not exceed the Maximum Assessment on the Remaining Property). If the Administrator determines that the \$100 Assessment reallocated to the Remaining Property would exceed the Maximum Assessment, as applicable, on the Remaining Property by \$10, then the owner shall be required to pay \$10 as a Prepayment of the Assessment against the Remaining Property and the Assessment on the Remaining Property shall be adjusted to \$90.

Notwithstanding the previous paragraphs in this subsection, if the owner of the Remaining Property notifies the City and the Administrator that the Taking prevents the Remaining Property from being developed for any use which could support the Estimated Buildout Value requirement, the owner shall, upon receipt of the compensation for the Taken Property, be required to prepay the amount of the Assessment required to buy down the outstanding Assessment to the applicable Maximum Assessment on the Remaining Property to support the Estimated Buildout Value requirement. The owner will remain liable to pay the Assessment on both the Taken Property and the Remaining Property until such time that such Assessment has been prepaid in full.

Notwithstanding the previous paragraphs in this subsection, the Assessments shall never be reduced to an amount less than the amount required to pay all outstanding debt service requirements on all outstanding PID Bonds, if issued.

## **SECTION VII: ASSESSMENT ROLL**

The Assessment Roll is attached as **Exhibit G-1**. The Administrator shall prepare and submit to the City Council for review and approval proposed revisions to the Assessment Roll and Installments for each Parcel as part of each Annual Service Plan Update.

## **SECTION VIII: ADDITIONAL PROVISIONS**

### **A. Calculation Errors**

If the owner of a Parcel claims that an error has been made in any calculation required by this Service and Assessment Plan, including, but not limited to, any calculation made as part of any Annual Service Plan Update, the owner's sole and exclusive remedy shall be to submit a written notice of error to the Administrator by December 1st of each year following City Council's approval of the calculation. Otherwise, the owner shall be deemed to have unconditionally approved and accepted the calculation. The Administrator shall provide a written response to the City Council and the owner not later than 30 days after receipt of such a written notice of error by the Administrator. The City Council shall consider the owner's notice of error and the Administrator's response at a public meeting, and, not later than 30 days after closing such meeting, the City Council shall make a final determination as to whether an error has been made. If the City Council determines that an error has been made, the City Council shall take such corrective action as is authorized by the PID Act, this Service and Assessment Plan, the applicable Assessment Ordinance, the applicable Indenture, or as otherwise authorized by the discretionary power of the City Council. The determination by the City Council as to whether an error has been made, and any corrective action taken by the City Council, shall be final and binding on the owner and the Administrator.

### **B. Amendments**

Amendments to this Service and Assessment Plan must be made by the City Council in accordance with the PID Act. To the extent permitted by the PID Act, this Service and Assessment Plan may be amended without notice to owners of the Assessed Property: (1) to correct mistakes and clerical errors; (2) to clarify ambiguities; and (3) to provide procedures to collect Assessments, Annual Installments, and other charges imposed by this Service and Assessment Plan.

### **C. Administration and Interpretation**

The Administrator shall: (1) perform the obligations of the Administrator as set forth in this Service and Assessment Plan; (2) administer the District for and on behalf of and at the direction of the City Council; and (3) interpret the provisions of this Service and Assessment Plan. Interpretations of this Service and Assessment Plan by the Administrator shall be in writing and shall be appealable to the City Council by owners of Assessed Property adversely affected by the interpretation. Appeals shall be decided by the City Council after holding a public meeting at which all interested parties have an opportunity to be heard. Decisions by the City Council shall be final and binding on the owners of Assessed Property and developers and their successors and assigns.

#### **D. Form of Buyer Disclosure; Filing in Real Property Records**

Per Section 5.014 of the Texas Property Code, as amended, this Service and Assessment Plan, and any future Annual Service Plan Updates, shall include a form of the buyer disclosures for the District. The buyer disclosures are attached hereto in **Appendix B**. Within seven days of approval by the City Council, the City shall file and record in the real property records of the County the executed ordinance approving this Service and Assessment Plan, or any future Annual Service Plan Updates. The executed ordinance, including any attachments, approving this Service and Assessment Plan or any future Annual Service Plan Updates shall be filed and recorded in the real property records of the County in its entirety.

#### **E. Severability**

If any provision of this Service and Assessment Plan is determined by a governmental agency or court to be unenforceable, the unenforceable provision shall be deleted and, to the maximum extent possible, shall be rewritten to be enforceable. Every effort shall be made to enforce the remaining provisions.

## EXHIBITS

The following Exhibits are attached to and made a part of this Service and Assessment Plan for all purposes:

- Exhibit A** District Boundary Map
- Exhibit B** Project Costs
- Exhibit C** Service Plan
- Exhibit D** Sources and Uses of Funds
- Exhibit E** Maximum Assessment
- Exhibit F** TIRZ No. 2 Maximum Annual Credit Amount
- Exhibit G-1** Assessment Roll
- Exhibit G-2** Annual Installments
- Exhibit H** Maps of Authorized Improvements
- Exhibit I** Form of Notice of PID Assessment Lien Termination
- Exhibit J** District Boundary Description



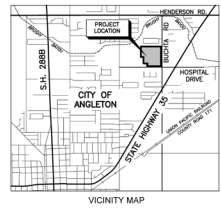
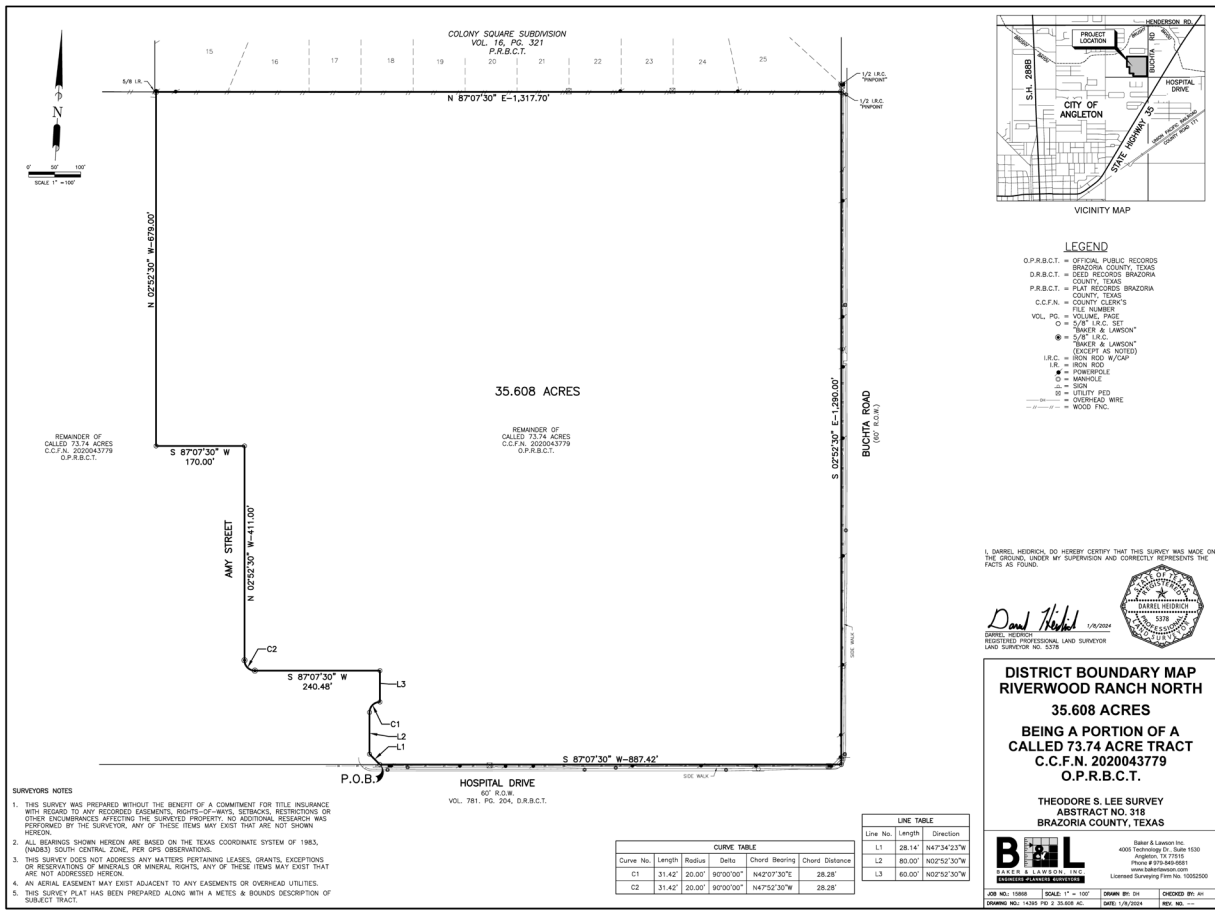
## APPENDICES

The following Appendices are attached to and made a part of this Service and Assessment Plan for all purposes:

**Appendix A** Engineer's Report

**Appendix B** Buyer Disclosures

# EXHIBIT A – DISTRICT BOUNDARY MAP



- LEGEND**
- O.P.R.B.C.T. = OFFICIAL PUBLIC RECORDS BRAZORIA COUNTY, TEXAS
  - D.R.B.C.T. = DEED RECORDS BRAZORIA COUNTY, TEXAS
  - P.R.B.C.T. = PLAT RECORDS BRAZORIA COUNTY, TEXAS
  - C.C.F.N. = COUNTY CLERK'S FILE NUMBER
  - VOL. PG. = VOLUME, PAGE
  - = 5/8" I.R.C. SET (BAKER & LAWSON)
  - = 5/8" I.R.C. (EXCEPT AS NOTED)
  - I.R.C. = IRON ROD W/CAP
  - I.B. = IRON ROD
  - ▲ = POWERPOLE
  - = MANHOLE
  - = SIGN
  - = UTILITY PEG
  - = OVERHEAD WIRE
  - = WOOD PILE

I, DARREL HEERRICH, DO HEREBY CERTIFY THAT THIS SURVEY WAS MADE ON THE GROUND, UNDER MY SUPERVISION AND CORRECTLY REPRESENTS THE FACTS AS FOUND.

*Darrel Heerrich*  
1/26/2014

DARREL HEERRICH  
REGISTERED PROFESSIONAL LAND SURVEYOR  
LAND SURVEYOR NO. 5378

**DISTRICT BOUNDARY MAP  
RIVERWOOD RANCH NORTH  
35.608 ACRES  
BEING A PORTION OF A  
CALLED 73.74 ACRE TRACT  
C.C.F.N. 2020043779  
O.P.R.B.C.T.**

**THEODORE S. LEE SURVEY  
ABSTRACT NO. 318  
BRAZORIA COUNTY, TEXAS**

- SURVEYOR'S NOTES**
1. THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A COMMITMENT FOR TITLE INSURANCE WITH REGARD TO ANY RECORDS EASEMENTS, RIGHTS-OF-WAY, EASEMENTS, RESTRICTIONS OR OTHER ENCUMBRANCES AFFECTING THE SURVEYED PROPERTY. NO ADDITIONAL RESEARCH WAS PERFORMED BY THE SURVEYOR, ANY OF THESE ITEMS MAY EXIST THAT ARE NOT SHOWN HEREON.
  2. ALL BEARINGS SHOWN HEREON ARE BASED ON THE TEXAS COORDINATE SYSTEM OF 1983, (NAD83) SOUTH CENTRAL ZONE, PER GPS OBSERVATIONS.
  3. THIS SURVEY DOES NOT ADDRESS ANY MATTERS PERTAINING TO LEASES, GRANTS, EXCEPTIONS OR RESERVATIONS OF MINERALS OR MINERAL RIGHTS, ANY OF THESE ITEMS MAY EXIST THAT ARE NOT ADDRESSED HEREON.
  4. AN AERIAL EASEMENT MAY EXIST ADJACENT TO ANY EASEMENTS OR OVERHEAD UTILITIES.
  5. THIS SURVEY PLAT HAS BEEN PREPARED ALONG WITH A METES & BOUNDS DESCRIPTION OF SUBJECT TRACT.

Curve No.	Length	Radius	Delta	Chord Bearing	Chord Distance
C1	31.42	20.00'	90°00'00"	N42°07'30"E	28.28'
C2	31.42	20.00'	90°00'00"	N47°52'30"W	28.28'

Line No.	Length	Direction
L1	28.14'	N47°14'27"W
L2	80.00'	N02°52'30"W
L3	60.00'	N02°52'30"W

**B.L.** Baker & Lawson Inc.  
4001 Springwood Dr., Suite 1000  
Angleton, TX 77515  
Phone: 409.466.6661  
www.bakerandlawson.com  
REGISTERED PROFESSIONAL SURVEYORS  
LICENSED SURVEYING FIRM NO. 10522500

JTS NO. 10000 SCALE: 1" = 100' DRAWN BY: CHL CHECKED BY: CHL  
DRAWING NO.: 1435 PD 2 26.068 AC. DATE: 1/26/2014 REV. NO. ---

## EXHIBIT B – PROJECT COSTS

	Total Costs <sup>1</sup>	Authorized Improvements	
		%	Costs
<i>Authorized Improvements</i>			
Streets - Paving	\$ 1,536,146	100.00%	1,536,146
Clearing & Grubbing	200,000	100.00%	200,000
Drainage - Storm Water	325,050	100.00%	325,050
Potable Water	307,830	100.00%	307,830
Wastewater	438,650	100.00%	438,650
Landscaping, Parks and Amenities	127,230	100.00%	127,230
Drainage - Detention	391,251	100.00%	391,251
Contingency	815,822	100.00%	815,822
Soft Costs <sup>2</sup>	643,468	100.00%	643,468
	\$ 4,785,448		\$ 4,785,448
<i>Bond Issuance Costs<sup>3</sup></i>			
Debt Service Reserve Fund	\$ 382,496		\$ 382,496
Capitalized Interest	-		-
Underwriter Discount	154,170		154,170
Cost of Issuance	308,340		308,340
	\$ 845,006		\$ 845,006
<i>District Formation Expenses</i>			
District Formation Expenses	\$ 50,000		\$ 50,000
	\$ 50,000		\$ 50,000
<i>Other Costs</i>			
Deposit to Administrative Fund	\$ 50,000		\$ 50,000
	\$ 50,000		\$ 50,000
<b>Total</b>	<b>\$ 5,730,454</b>		<b>\$ 5,730,454</b>

**Footnotes:**

[1] Costs were determined by the Engineer's Report attached hereto as **Appendix A**.

[2] Soft Costs include Land Planning, Design, City Fees, Inspection Fees, Engineering, Material Testing and Survey.

[3] PID bond are not being issued at this time. Bond Issuance Costs are illustrated as estimates and subject to change if PID Bonds are issued.

**EXHIBIT C – SERVICE PLAN**

		District				
Annual Installments Due		1/31/2025	1/31/2026	1/31/2027	1/31/2028	1/31/2029
Principal		\$ 75,000	\$ 77,000	\$ 81,000	\$ 85,000	\$ 90,000
Interest <sup>1</sup>		307,496	303,840	299,220	294,360	289,260
Additional Interest <sup>2</sup>		-	-	-	-	-
	(1)	\$ 382,496	\$ 380,840	\$ 380,220	\$ 379,360	\$ 379,260
Annual Collection Costs	(2)	\$ 50,000	\$ 51,000	\$ 52,020	\$ 53,060	\$ 54,122
<b>Total Annual Installments</b>	<b>(3) = (1) + (2)</b>	<b>\$ 432,496</b>	<b>\$ 431,840</b>	<b>\$ 432,240</b>	<b>\$ 432,420</b>	<b>\$ 433,382</b>

**Footnotes:**

[1] Interest is levied at a rate of 6% pursuant to the PID Act and once PID Bonds are issued, shall adjust to the interest rate on the PID Bonds plus Additional Interest.

[2] PID Bonds are not being issued at this time. The levy is pursuant to the Facilities and Creation Costs Reimbursement Agreement and Additional Interest will be collected if PID Bonds are issued.

## EXHIBIT D – SOURCES AND USES OF FUNDS

	District
<b>Sources of Funds</b>	
Reimbursement Obligation	\$ 5,139,000
Owner Contribution <sup>1</sup>	591,454
<b>Total Sources of Funds</b>	<b>\$ 5,730,454</b>
<b>Uses of Funds</b>	
Authorized Improvements	\$ 4,785,448
	\$ 4,785,448
<i>Bond Issuance Costs<sup>2</sup></i>	
Debt Service Reserve Fund	\$ 382,496
Capitalized Interest	-
Underwriter Discount	154,170
Cost of Issuance	308,340
	\$ 845,006
<i>District Formation Expenses</i>	
District Formation Expenses	\$ 50,000
	\$ 50,000
<i>Other Costs</i>	
Deposit to Administrative Fund	50,000
	\$ 50,000
<b>Total Uses of Funds</b>	<b>\$ 5,730,454</b>

**Footnotes:**

[1] Non-reimbursable to the Owner/Developer through PID Bonds or Assessments.

[2] PID Bonds are not being issued at this time, thus Bond Issuance Costs are estimates of potential future costs and are subject to change if PID Bonds are issued.

## EXHIBIT E – MAXIMUM ASSESSMENT

Lot Type	Units <sup>1</sup>	Finished Lot Value		Estimated Buildout Value <sup>2</sup>		Assessment		Total Maximum Assessment	
		Per Unit	Total	Per Unit	Total	Per Unit	Total	Per Unit	Total
1	80	60,000	\$ 4,800,000	\$ 285,000	\$ 22,800,000	\$ 34,872	\$ 2,789,743	\$ 34,872	\$ 2,789,743
2	64	65,000	\$ 4,160,000	\$ 300,000	\$ 19,200,000	\$ 36,707	\$ 2,349,257	\$ 36,707	\$ 2,349,257
<b>Total/Weighted Average</b>	<b>144</b>		<b>8,960,000</b>		<b>42,000,000</b>		<b>\$ 5,139,000</b>		<b>\$ 5,139,000</b>

**Footnotes:**

[1] Per Developer on January 10, 2024.

[2] Per the Preliminary Appraisal dated July 26, 2023.

**EXHIBIT F – TIRZ NO. 2 MAXIMUM ANNUAL CREDIT AMOUNT**

Lot Type	Units	TIRZ No. 2 Maximum Annual Credit Amount	
		Amount	Per Unit
Lot Type 1	80	\$ (0.1412)	\$ (402)
Lot Type 2	64	\$ (0.1412)	\$ (424)
<b>Total</b>	<b>144</b>		<b>\$ (412)</b>

**EXHIBIT G-1 – ASSESSMENT ROLL**

Property ID	Lot Type	Outstanding Assessment <sup>1,3</sup>	Principal	Interest	Additional Interest	Annual Collection Costs	Annual Installment Due 1/31/2025 <sup>1,2</sup>
168834	Initial Parcel	\$ 5,139,000.00	\$ 75,000.00	\$ 307,496.00	\$ -	\$ 50,000.00	\$ 432,496.00
<b>Total</b>		<b>\$ 5,139,000.00</b>	<b>\$ 75,000.00</b>	<b>\$ 307,496.00</b>	<b>\$ -</b>	<b>\$ 50,000.00</b>	<b>\$ 432,496.00</b>

**Footnotes:**

- [1] Total may not match the Outstanding Assessment and Annual Installment due to rounding.
- [2] The Annual Installment covers the period January 1, 2024 to December 31, 2024, is due by January 31, 2025.
- [3] Outstanding Assessment prior to 1/31/2025 Annual Installment.



## EXHIBIT G-2 – ANNUAL INSTALLMENTS

Installment Due 1/31	Reimbursement Obligation				Annual Collection Costs	Total Annual Installment Due <sup>3,4</sup>
	Principal	Interest <sup>1,2</sup>	Additional Interest <sup>2</sup>			
2025	\$ 75,000	\$ 307,496	\$ -	\$ 50,000	\$ 432,496	
2026	\$ 77,000	\$ 303,840	\$ -	\$ 51,000	\$ 431,840	
2027	\$ 81,000	\$ 299,220	\$ -	\$ 52,020	\$ 432,240	
2028	\$ 85,000	\$ 294,360	\$ -	\$ 53,060	\$ 432,420	
2029	\$ 90,000	\$ 289,260	\$ -	\$ 54,122	\$ 433,382	
2030	\$ 94,000	\$ 283,860	\$ -	\$ 55,204	\$ 433,064	
2031	\$ 99,000	\$ 278,220	\$ -	\$ 56,308	\$ 433,528	
2032	\$ 104,000	\$ 272,280	\$ -	\$ 57,434	\$ 433,714	
2033	\$ 109,000	\$ 266,040	\$ -	\$ 58,583	\$ 433,623	
2034	\$ 115,000	\$ 259,500	\$ -	\$ 59,755	\$ 434,255	
2035	\$ 121,000	\$ 252,600	\$ -	\$ 60,950	\$ 434,550	
2036	\$ 127,000	\$ 245,340	\$ -	\$ 62,169	\$ 434,509	
2037	\$ 134,000	\$ 237,720	\$ -	\$ 63,412	\$ 435,132	
2038	\$ 141,000	\$ 229,680	\$ -	\$ 64,680	\$ 435,360	
2039	\$ 149,000	\$ 221,220	\$ -	\$ 65,974	\$ 436,194	
2040	\$ 157,000	\$ 212,280	\$ -	\$ 67,293	\$ 436,573	
2041	\$ 165,000	\$ 202,860	\$ -	\$ 68,639	\$ 436,499	
2042	\$ 174,000	\$ 192,960	\$ -	\$ 70,012	\$ 436,972	
2043	\$ 184,000	\$ 182,520	\$ -	\$ 71,412	\$ 437,932	
2044	\$ 194,000	\$ 171,480	\$ -	\$ 72,841	\$ 438,321	
2045	\$ 205,000	\$ 159,840	\$ -	\$ 74,297	\$ 439,137	
2046	\$ 216,000	\$ 147,540	\$ -	\$ 75,783	\$ 439,323	
2047	\$ 229,000	\$ 134,580	\$ -	\$ 77,299	\$ 440,879	
2048	\$ 242,000	\$ 120,840	\$ -	\$ 78,845	\$ 441,685	
2049	\$ 256,000	\$ 106,320	\$ -	\$ 80,422	\$ 442,742	
2050	\$ 270,000	\$ 90,960	\$ -	\$ 82,030	\$ 442,990	
2051	\$ 286,000	\$ 74,760	\$ -	\$ 83,671	\$ 444,431	
2052	\$ 302,000	\$ 57,600	\$ -	\$ 85,344	\$ 444,944	
2052	\$ 320,000	\$ 39,480	\$ -	\$ 87,051	\$ 446,531	
2053	\$ 338,000	\$ 20,280	\$ -	\$ 88,792	\$ 447,072	
<b>Total</b>	<b>\$ 5,139,000</b>	<b>\$ 5,954,936</b>	<b>\$ -</b>	<b>\$ 2,028,404</b>	<b>\$ 13,122,340</b>	

**Footnotes:**

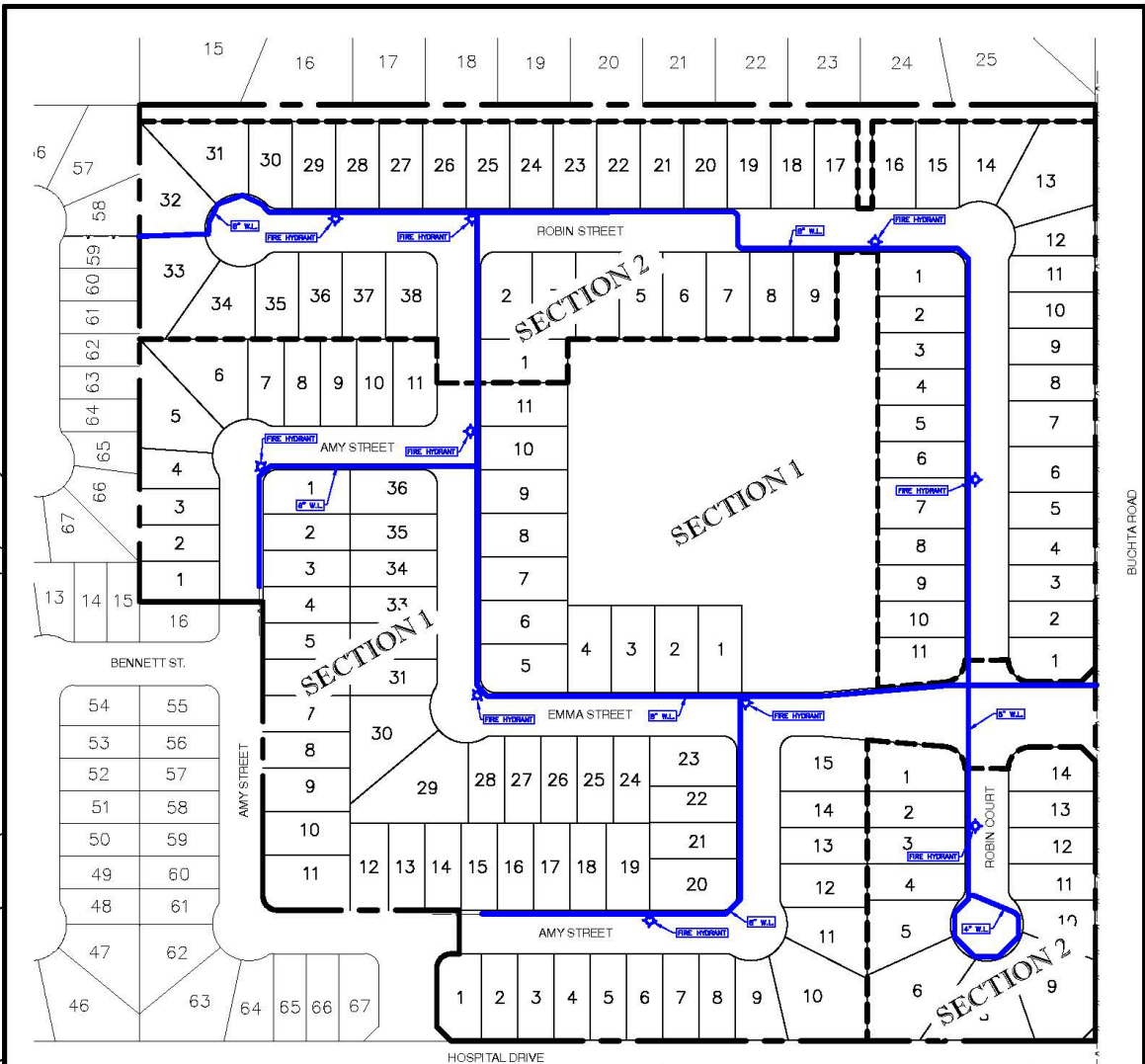
[1] Interest on the Improvement Area #1 Reimbursement Obligation is calculated at a rate of 6.00% which is less than 2% above the S&P Municipal Bond High Yield Index, which was 5.72% as of January 31, 2024.

[2] If PID Bonds are issued, the interest on the Assessments will adjust to the interest rate on the PID Bonds plus Additional Interest which will be collected if PID Bonds are issued.

[3] Excludes the TIRZ Annual Credit Amount which will be calculated annually in each Annual Service Plan Update.

[4] The figures shown above are estimates only and subject to change in Annual Service Plan Updates. Changes in Annual Collection Costs, reserve fund requirements, interest earnings, or other available offsets could increase or decrease the amounts shown.

**EXHIBIT H – MAPS OF AUTHORIZED IMPROVEMENTS**



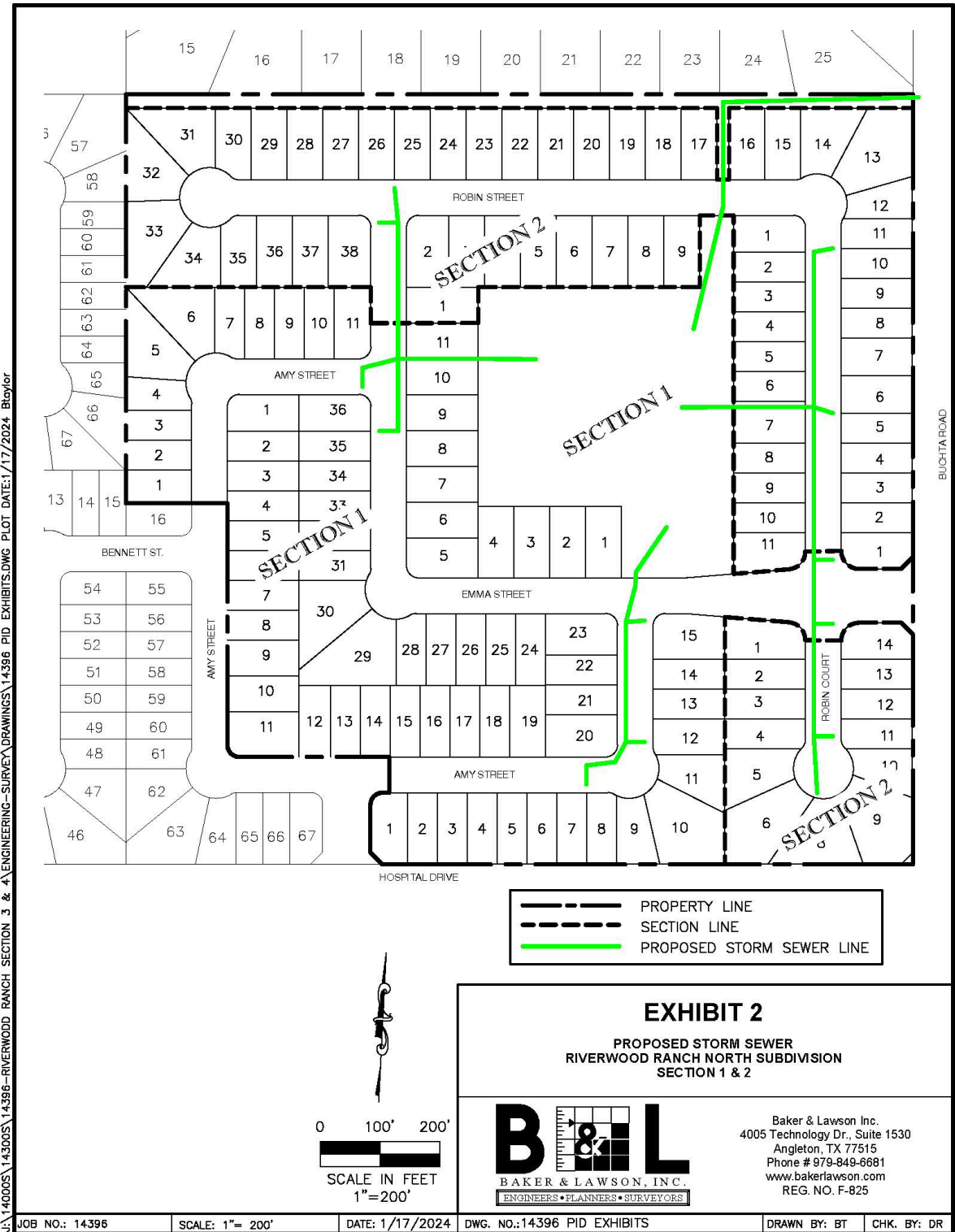
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**EXHIBIT 1**  
**PROPOSED WATERLINE TIE-IN**  
**RIVERWOOD RANCH NORTH SUBDIVISION**  
**SECTION 1 & 2**

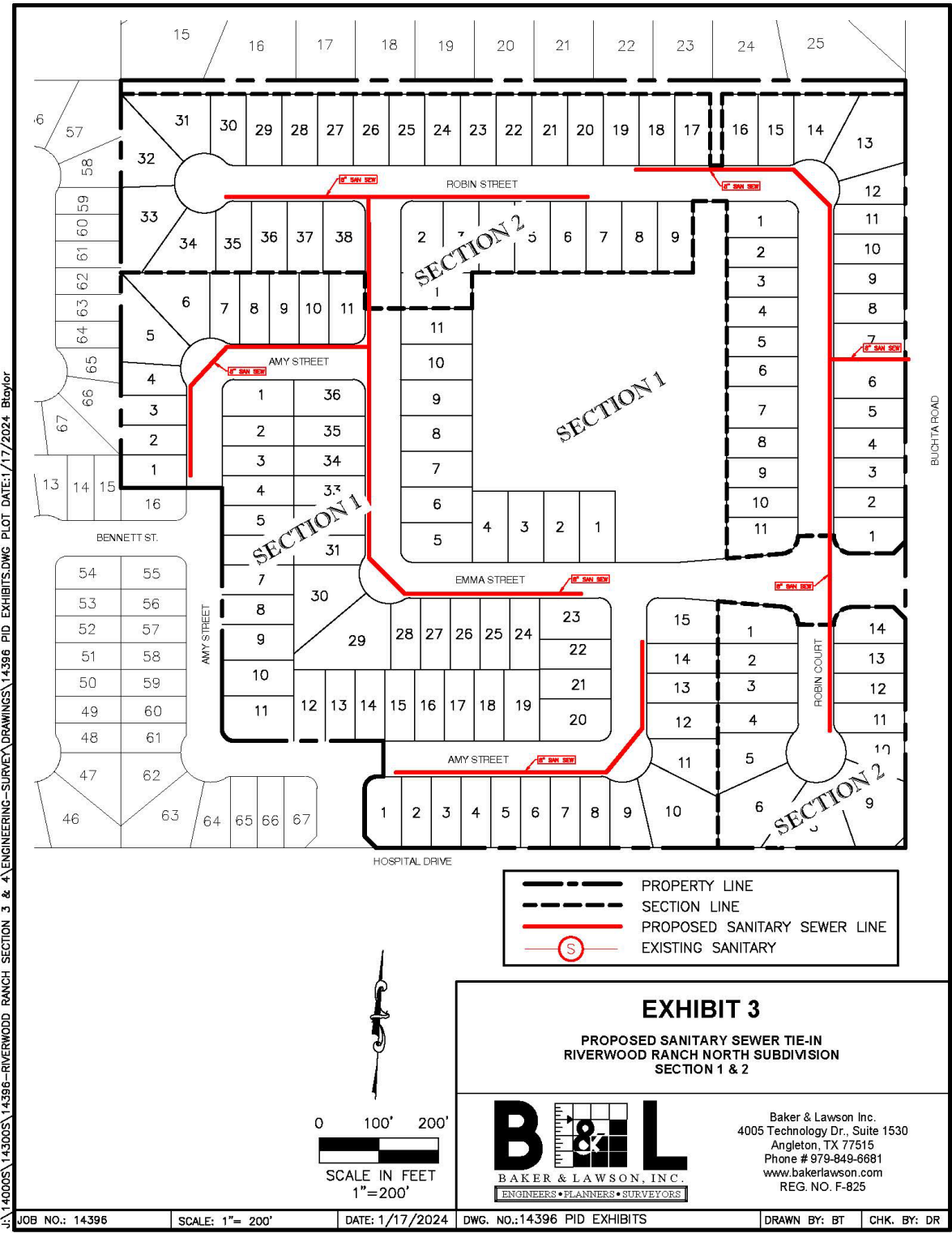
**BAKER & LAWSON, INC.**  
ENGINEERS • PLANNERS • SURVEYORS

Baker & Lawson Inc.  
 4005 Technology Dr., Suite 1530  
 Angleton, TX 77515  
 Phone # 979-849-6681  
 www.bakerlawson.com  
 REG. NO. F-825

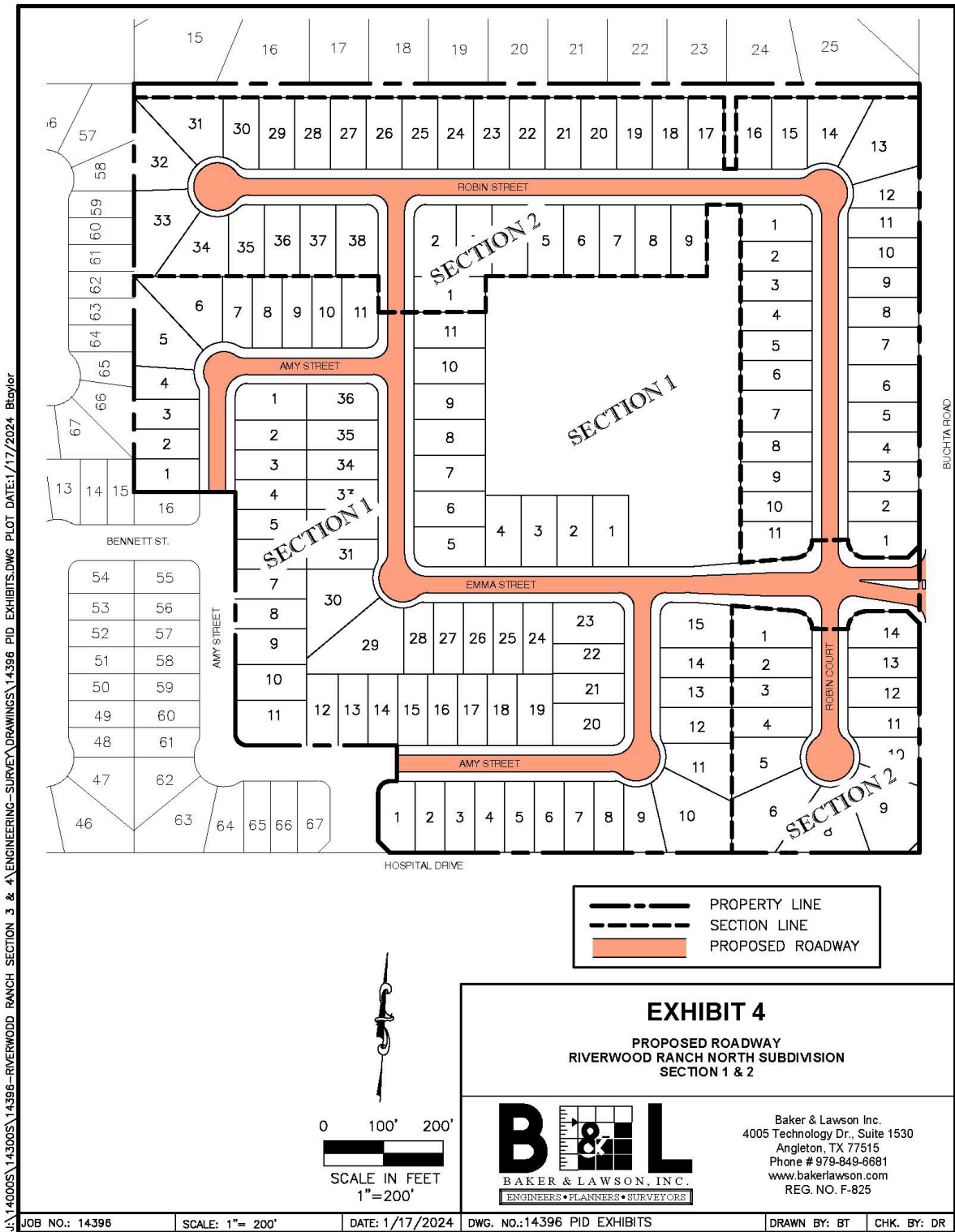
JOB NO.: 14396	SCALE: 1" = 200'	DATE: 1/17/2024	DWG. NO.: 14396 PID EXHIBITS
DRAWN BY: BT		CHK. BY: DR	



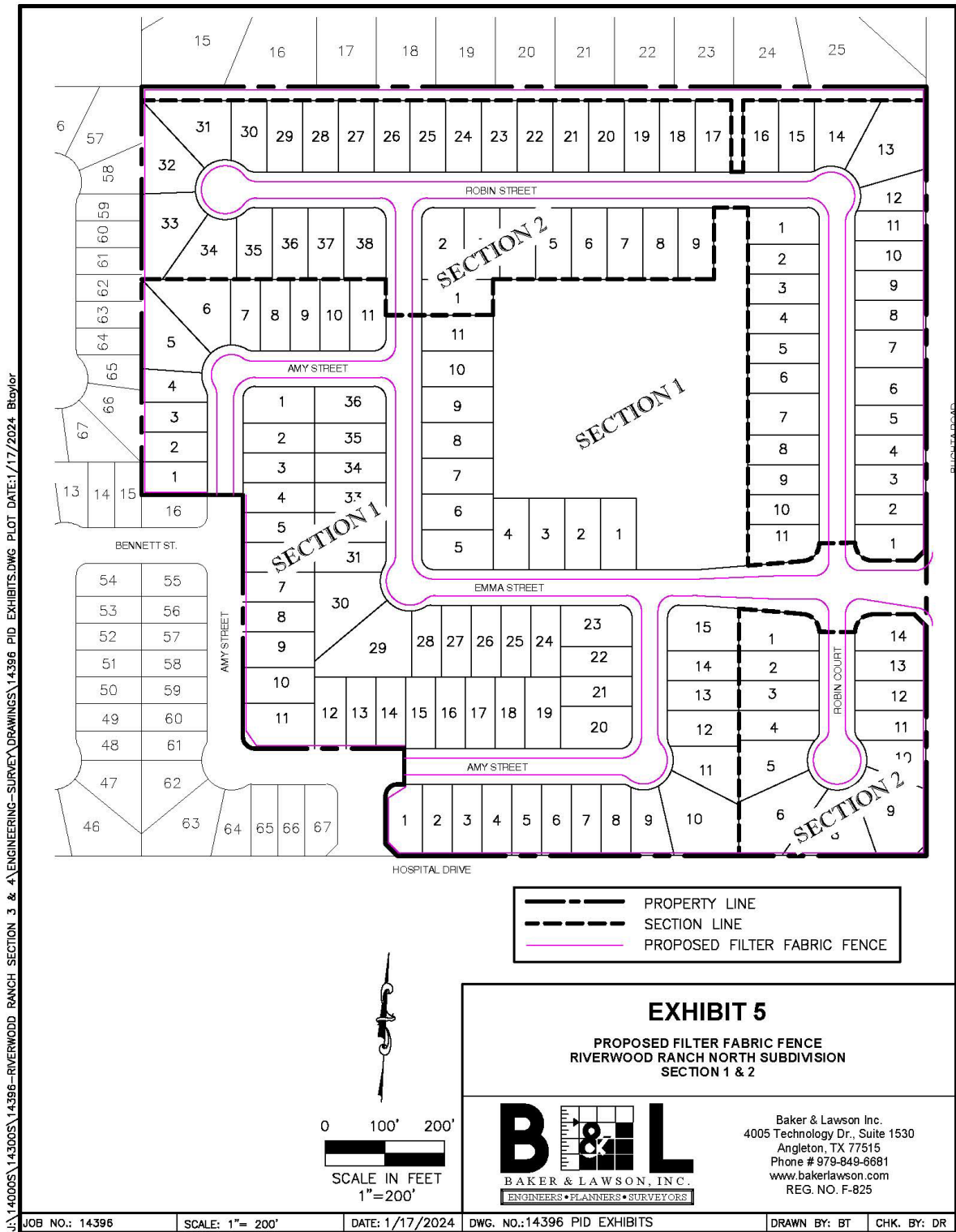
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**EXHIBIT I – FORM OF NOTICE OF PID ASSESSMENT LIEN TERMINATION**



P3Works, LLC  
9284 Huntington Square, Ste 100  
North Richland Hills, TX 76182

[Date]  
Brazoria County Clerk’s Office  
Honorable \_\_\_\_\_  
1524 E Mulberry St  
Angleton, TX 77515

**Re: City of Angleton Lien Release documents for filing**

Dear Ms./Mr. \_\_\_\_\_,

Enclosed is a lien release that the City of Angleton is requesting to be filed in your office. Lien release for [insert legal description]. Recording Numbers: \_\_\_\_\_ [Plat]. Please forward copies of the filed documents to my attention:

City of Angleton  
Attn: [City Secretary]  
120 S. Chenango Street  
Angleton, TX 77515

Please contact me if you have any questions or need additional information.

Sincerely,  
[Signature]

P3Works, LLC  
(817) 393-0353  
Admin@P3-Works.com  
www.P3-Works.com





WHEREAS, the property owners of the Property have paid unto the City the Lien Amount.

**RELEASE**

NOW THEREFORE, the City, the owner and holder of the Lien, Instrument No. \_\_\_\_\_, in the Real Property Records of Brazoria County, Texas, in the amount of the Lien Amount against the Property releases and discharges, and by these presents does hereby release and discharge, the above-described Property from said Lien held by the undersigned securing said indebtedness.

EXECUTED to be EFFECTIVE this the \_\_\_\_ day of \_\_\_\_\_, 20\_\_.

**CITY OF ANGLETON, TEXAS,**  
A Texas home rule municipality,

By: \_\_\_\_\_  
[Manager Name], City Manager

ATTEST:

\_\_\_\_\_  
[Secretary Name], City Secretary

STATE OF TEXAS                   §  
   §  
COUNTY OF BRAZORIA         §

This instrument was acknowledged before me on the \_\_\_\_ day of \_\_\_\_\_, 20\_\_, by [City Manager], for the City of Angleton, Texas, a Texas home rule municipality, on behalf of said municipality.

\_\_\_\_\_  
Notary Public, State of Texas

## EXHIBIT J – DISTRICT BOUNDARY DESCRIPTION



County: Brazoria  
 Project: District Boundary Riverwood Ranch North  
 Job No.: 14396

### FIELD NOTES FOR 35,608 ACRE TRACT

Being a 35.608 acre tract of land, located in the T.S. Lee Survey, Abstract No. 318, in Brazoria County, Texas, being a portion of a called 73.74 acre tract in the name Riverwood Ranch Land Holdings, LLC, a Texas limited liability company, as recorded in County Clerks File No. (C.C.F.N.) 2020043779 of the Official Public Records, Brazoria County, Texas (O.P.R.B.C.T.), being referred to herein after as the above reference tract of land, said 35.608 acre tract being more particularly described by metes and bounds as follows (bearings are based on the Texas Coordinate System of 1983, (NAD83) South Central Zone, per GPS observations):

**BEGINNING** at 5/8-inch iron rod with cap stamped "Baker & Lawson" set on the South line of the above referenced tract, same being the North right of way line of Hospital Drive;

**THENCE** North 47°34'23" West, over and across the above referenced tract, a distance of 28.14 feet to a 5/8-inch iron rod with cap stamped "Baker & Lawson" set for corner;

**THENCE** North 02°52'30" West, over and across the above referenced tract, a distance of 80.00 feet to a 5/8-inch iron rod with cap stamped "Baker & Lawson" set for corner, being the beginning of a curve to the right;

**THENCE** over and across the above referenced tract and said curve to the right an arc distance of 31.42 feet to a 5/8-inch iron rod with cap stamped "Baker & Lawson" set for corner, said curve having a radius of 20.00 feet, a central angle of 90°00'00", a chord bearing of North 42°07'30" East and a distance of 28.28 feet;

**THENCE** North 02°52'30" West, over and across the above referenced tract, a distance of 60.00 feet to a 5/8-inch iron rod with cap stamped "Baker & Lawson" set for corner, being the beginning of a curve to the right;

**THENCE** South 87°07'30" West, over and across the above referenced tract, a distance of 240.48 feet to a 5/8-inch iron rod with cap stamped "Baker & Lawson" found for corner, being the beginning of a curve to the right;

**THENCE** over and across the above referenced tract and said curve to the right an arc distance of 31.42 feet to a 5/8-inch iron rod with cap stamped "Baker & Lawson" set for corner, said curve having a radius of 20.00 feet, a central angle of 90°00'00", a chord bearing of North 47°52'30" East and a distance of 28.28 feet;

**THENCE** North 02°52'30" West, over and across the above referenced tract, a distance of 411.00 feet to a 5/8-inch iron rod with cap stamped "Baker & Lawson" set for corner;

**THENCE** South 87°07'30" West, over and across the above referenced tract a distance of 170.00 feet to a 5/8-inch iron rod with cap stamped "Baker & Lawson" set for corner;

**THENCE** North 02°52'30" West, over and across the above referenced tract, a distance of 679.00 feet to a 5/8-inch iron rod with cap stamped "Baker & Lawson" found for corner, being on the North line of the above referenced tract, same being the South line of Colony Square Subdivision, as recorded in Volume 16, Page 321 of the Plat Records, Brazoria County, Texas (P.R.B.C.T.);

**THENCE** North 87°07'30" East, along the common line of the above referenced tract and said Colony Square Subdivision, a distance of 1,317.70 feet to a 1/2 inch iron rod with cap stamped "Pinpoint" found for corner, being the Northeast corner of the above referenced tract, same being on the West right of way line of Buchta Road;

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4005 Technology Dr., Suite 1530, Angleton, Texas 77515 • Phone: (979) 849-6681  
 Texas Firm Registration No. 10052500



**THENCE** South 02°52'30" East, along the common line of the above referenced tract and said Buchta Road, a distance of 1,290.00 feet to a 5/8-inch iron rod with cap stamped "Baker & Lawson" set for corner, being the Southeast corner of the above referenced tract, same being on said North right of way line of Hospital Drive;

**THENCE** South 87°07'30" West, along the common line of the above referenced tract and said North right of way line of Hospital drive, a distance of 887.42 feet to the **POINT OF BEGINNING** of the herein described tract, containing 35.608 acres of land, more or less.

*Darrel Heidrich* 01/08/2024  
Darrel Heidrich  
Registered Professional Land Surveyor  
Texas Registration No. 5378



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4005 Technology Dr., Suite 1530, Angleton, Texas 77515 • Phone: (979) 849-6681  
Texas Firm Registration No. 10052500

**APPENDIX A –ENGINEER’S REPORT**

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**Riverwood Ranch North Subdivision - Sections 1 & 2  
PUBLIC IMPROVEMENTS DISTRICT (PID) ENGINEER'S REPORT – RIVERWOOD RANCH NORTH PID**

January 10, 2024

**INTRODUCTION**

Riverwood Ranch North Subdivision is a proposed master planned subdivision community by Riverwood Ranch, LLC. The development proposes 144 single family residential lots and is located on 35.608 contiguous acres located within the corporate limits of the City of Angleton, Brazoria County, Texas. The subject property is located north of Hospital Drive situated between N. Downing Street to the west and Buchta Road to the east. The community will include open space and a detention ponds in the subdivision.

Riverwood Ranch North PID (The District) consists of Sections 1 and 2 and is approximately 35.608 acres.

This report includes the supporting documentation for the issuance of The District bonds by the City of Angleton. The bonds are to be used to finance the public infrastructure items listed below that are necessary for buildout of Sections 1 and 2.

**Development Improvements**

**Clearing and Grubbing**

Clearing and Grubbing includes clear and grub, excavation and embankment for the limits of the District.

**Streets - Paving**

Improvements including mobilization, subgrade stabilization, road base, asphalt, concrete and reinforcing steel for roadways, testing, sidewalks, handicapped ramps, and streetlights. All related demolition, tree removal, clearing and grubbing, earthwork, excavation, retaining walls, intersections, signage and striping, and revegetation of all disturbed areas within the right-of-way are included. Improvements including erosion control measures (e.g. erosion matting, rock berms, silt fence, inlet protection), construction entrance, SWPPP sign and inspections and re-vegetation of all disturbed areas within The District are included. The erosion control improvements will provide benefit to all lots within The District. The street improvements will provide benefit to each lot within The District.

**Drainage - Detention**

Detention includes clearing, pond excavation and embankment, soil testing, channels, rock riprap walls, construction of outfall structures, erosion controls, revegetation and utility improvements are also included.

DOUGLAS B. ROESLER, P.E. - Principal Engineer  
4005 TECHNOLOGY DRIVE, SUITE 1530, ANGLETON, TEXAS 77515  
(979) 849-6681 • Fax (979) 849-4689

Texas Registered Engineering Firm F-825 • Texas Board Of Professional Land Surveying No. 10052500

#### **Drainage - Storm Water**

Improvements included earthen channels, swales, curb and drop inlets, storm sewer piping and boxes, headwalls, manholes, concrete flumes, rock rip rap, detention ponds, concrete outfalls, and testing as well as all related earthwork, excavation, erosion control and all necessary appurtenances required to provide storm drainage for all lots within The District.

#### **Potable Water**

Improvements including trench excavation and embedment, trench safety, piping, encasement, service connections, hydrants, service for park, testing, related earthwork, excavation, erosion control and all other necessary appurtenances required to provide water service to all lots within The District.

#### **Wastewater**

Improvements including trench excavation and embedment, trench safety, piping, encasing, boring, manholes, lift station, force main, service connections, testing, related earthwork, excavation erosion control and all necessary appurtenances required to provide wastewater service to all lots within The District .

#### **Landscaping, Parks and Amenities**

The District includes fencing, sidewalks, irrigation, in addition to landscaped areas and grass covered areas within the subdivision. These improvements include erosion control measures, earthwork, site improvements, planting and vegetation. The landscaping, parks and amenities improvements will provide benefit to all lots within The District.

#### **Soft Costs**

Costs related to designing, constructing, installing, and financing The District Improvements, including land planning and design, City fees, engineering, soil testing survey, construction management, legal fees, consultant fees, contingency, inspection fees, and other PID costs incurred and paid by the Developer. The soft cost will provide benefit to all lots within The District.

#### **Development Costs**

An Engineers' Opinion of Probable Cost (OPC) has been prepared for The District improvement described above and is included as the Public Improvement District Cost Estimate. This Opinion of Probable Cost is based on contractor pricing and Baker & Lawson, Inc. reasonable professional judgement and experience and does not constitute a warranty, expressed or implied. Actual costs may vary.

#### **Development and Construction Schedule**

Section 1 and Section 2

Construction Commenced – October 17, 2023  
 Estimated Completion of Construction and 1<sup>st</sup> Lot Delivery - March 15, 2024  
 Estimated 1<sup>st</sup> Home Closing – September 15, 2024

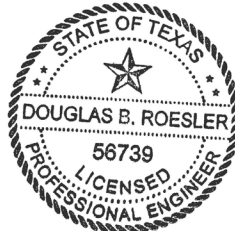
There are no private improvements or major improvements to Riverwood Ranch North Sections 1 & 2.

Thank you for your review of this letter and the associated plat and related information. Should you have any questions or wish to discuss this submittal in detail, please contact me at (979) 849-6681 or [drosler@bakerlawson.com](mailto:drosler@bakerlawson.com)

Sincerely,



Douglas B. Roesler, P.E.  
President  
TBPE Firm No. F-825  
TBPLS Firm No. 100525200

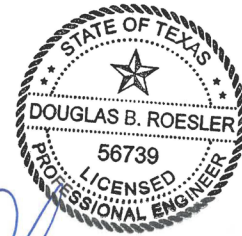


01-11-24

**RIVERWOOD RANCH NORTH PUBLIC IMPROVEMENT DISTRICT  
PID REIMBURSEMENT SUMMARY**

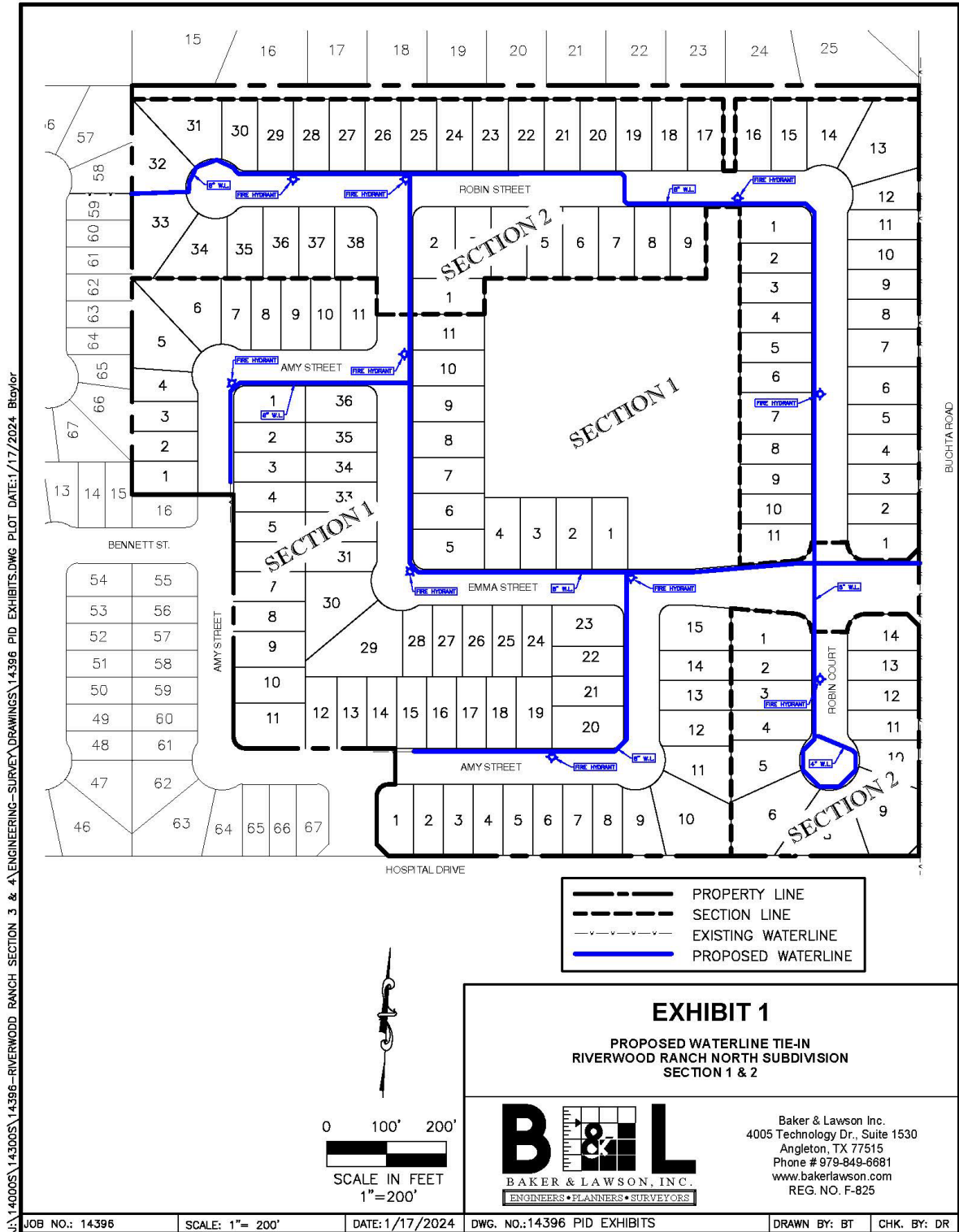
Type	Description	Budget Amount	Note
Hard costs	Clearing & Grubbing	\$ 200,000.00	
Hard costs	Potable Water	\$ 307,830.10	
Hard costs	Drainage - Storm Sewer	\$ 325,050.13	
Hard costs	Wastewater	\$ 438,650.29	\$ 2,998,927.23
Hard costs	Drainage - Detention	\$ 391,250.85	
Hard costs	Streets - Paving	\$ 1,536,145.86	
Hard costs	Landscape - Planting	\$ 66,430.20	
Hard costs	Hardscape - Fencing, Fountain, Walking Trails, etc.	\$ 255,284.50	\$ 382,514.70
Hard costs	Landscape - Irrigation	\$ 38,300.00	
Hard costs	Landscape - Architect	\$ 22,500.00	
Soft costs	Engineering	\$ 290,160.00	
Soft costs	Legal Fee	\$ 50,000.00	
Soft costs	PID Creation	\$ 50,000.00	
Soft costs	Accounting Fee	\$ 50,000.00	
Soft costs	Predevelopment Costs	\$ 18,000.00	
Soft costs	City Fees	\$ 39,510.33	
Contingency	Contingency	\$ 815,822.45	20% of total costs
Management Fee	Construction Management Fee	\$ 195,797.39	4% of total PID eligible costs
<b>Total Development Costs</b>		<b>\$ 5,090,732.10</b>	

**TOTAL PID REIMBURSEMENT AMOUNT \$ 5,090,732.10**

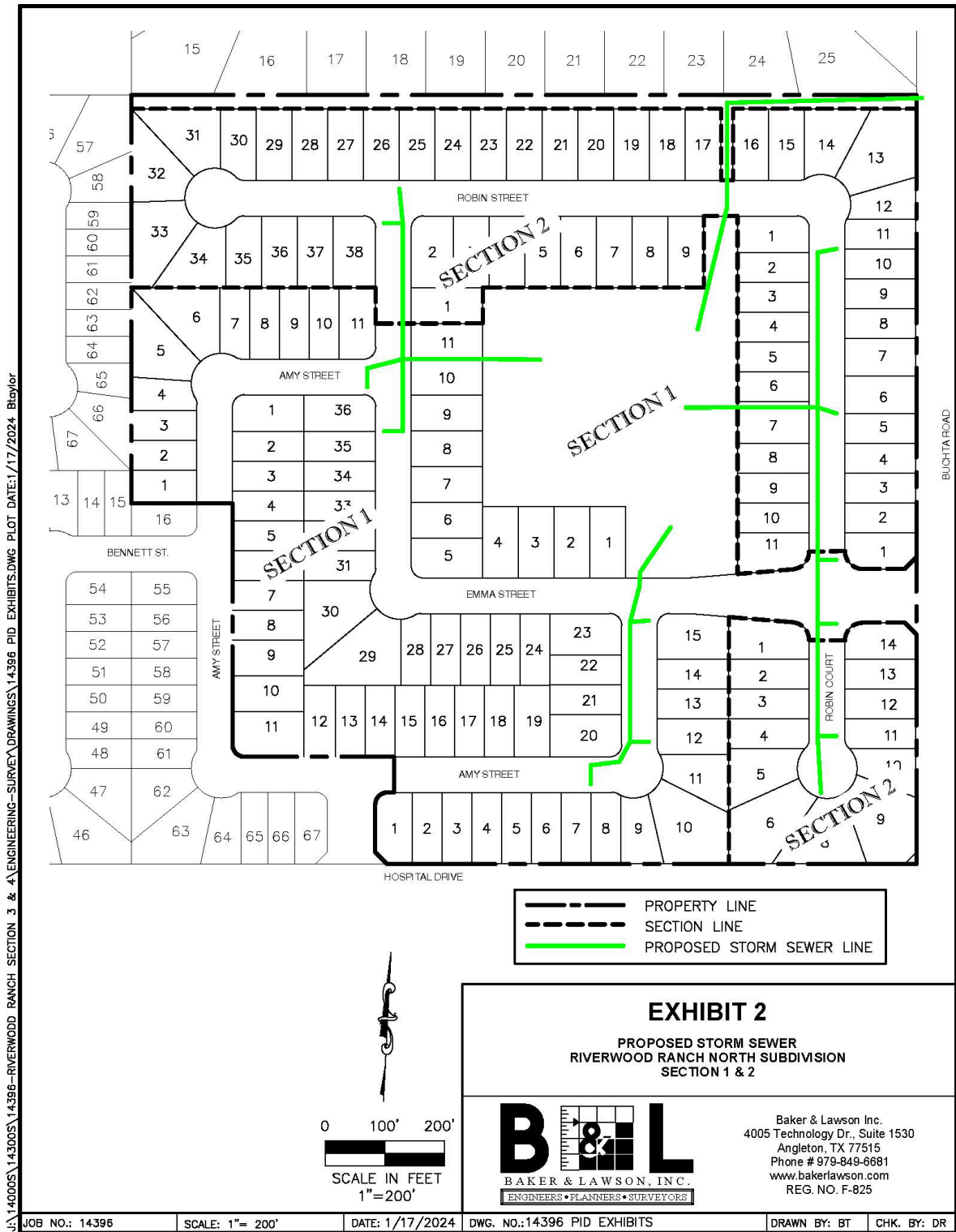


*[Handwritten Signature]* 01-11-24  
TBPE Firm No. F-825

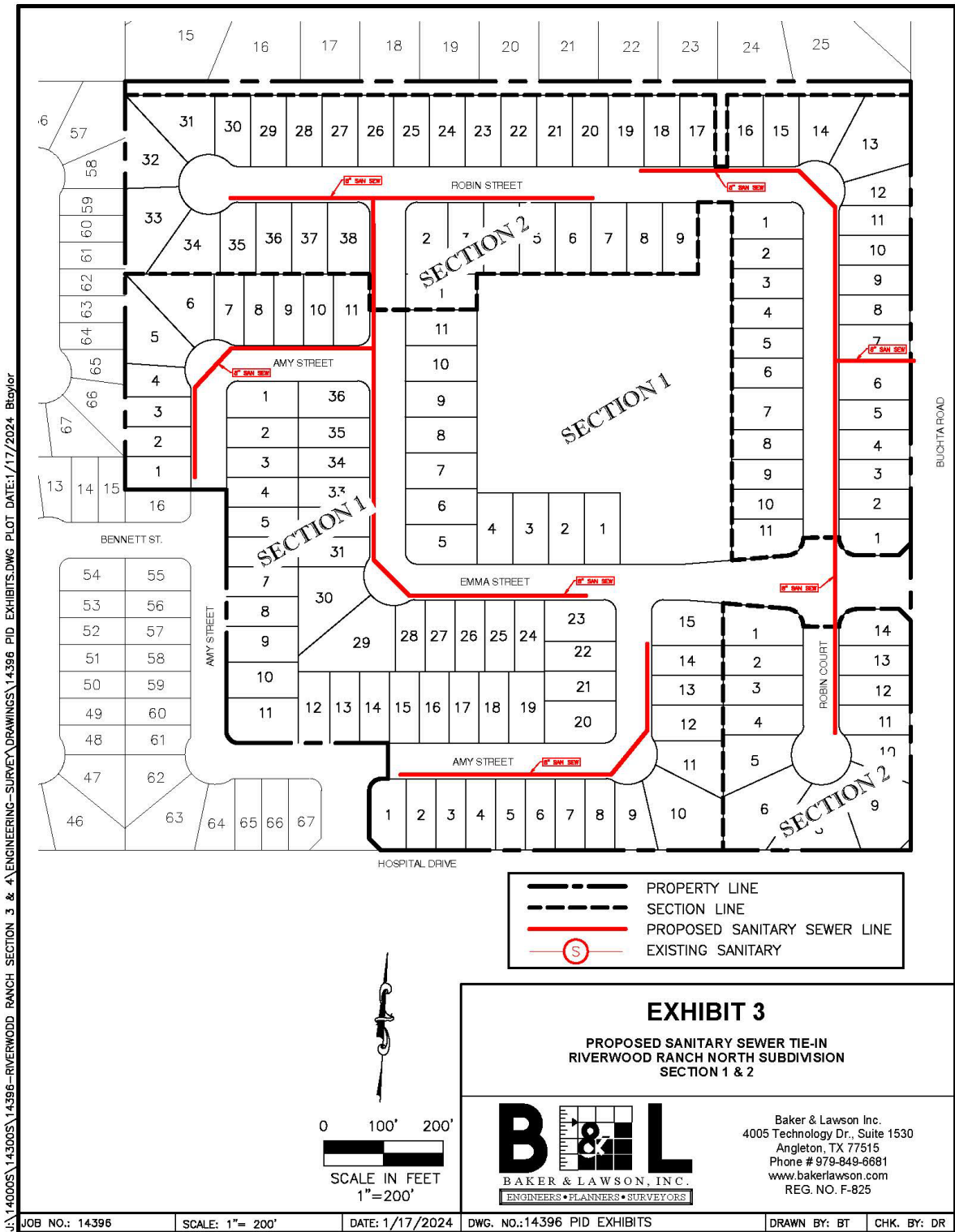


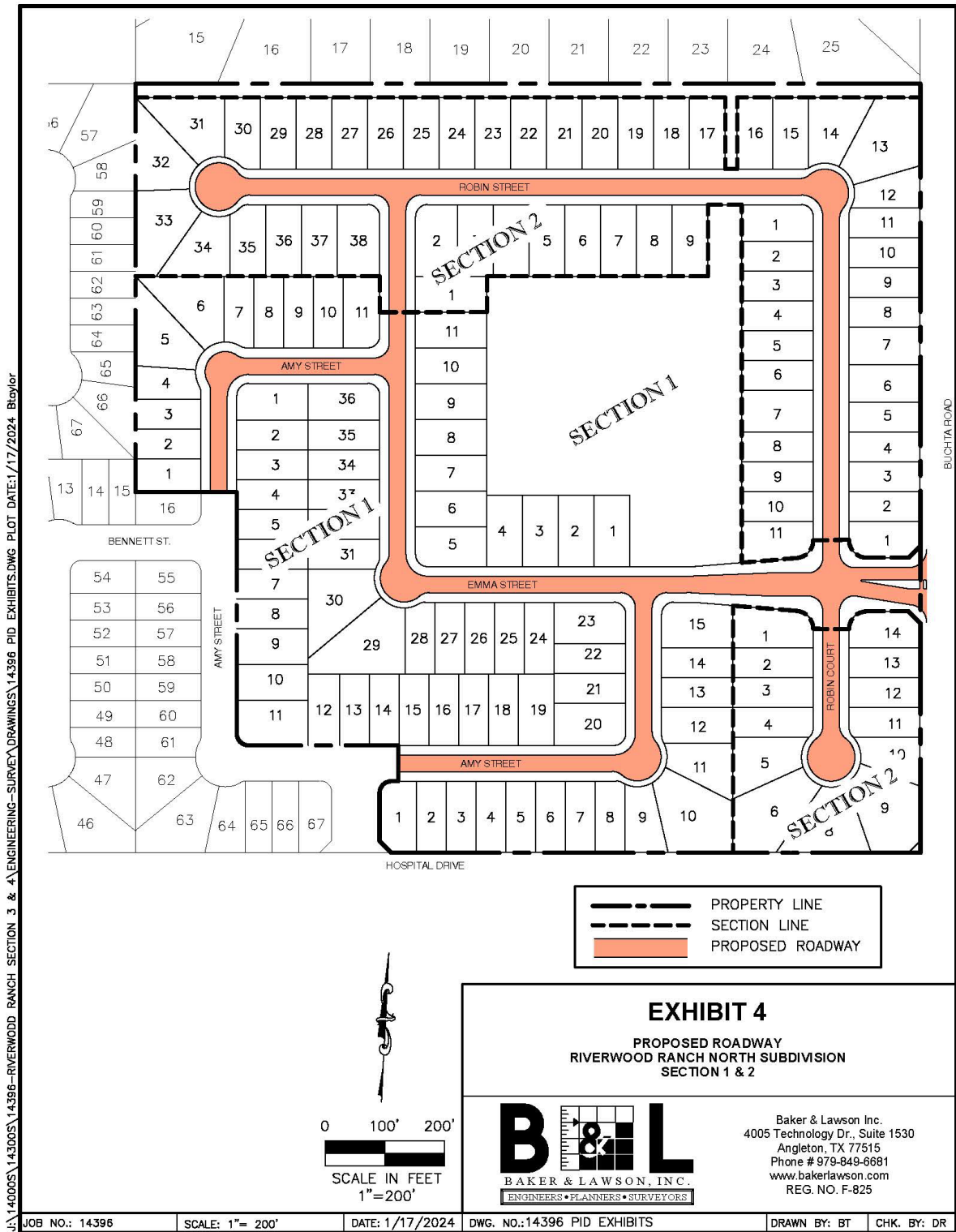


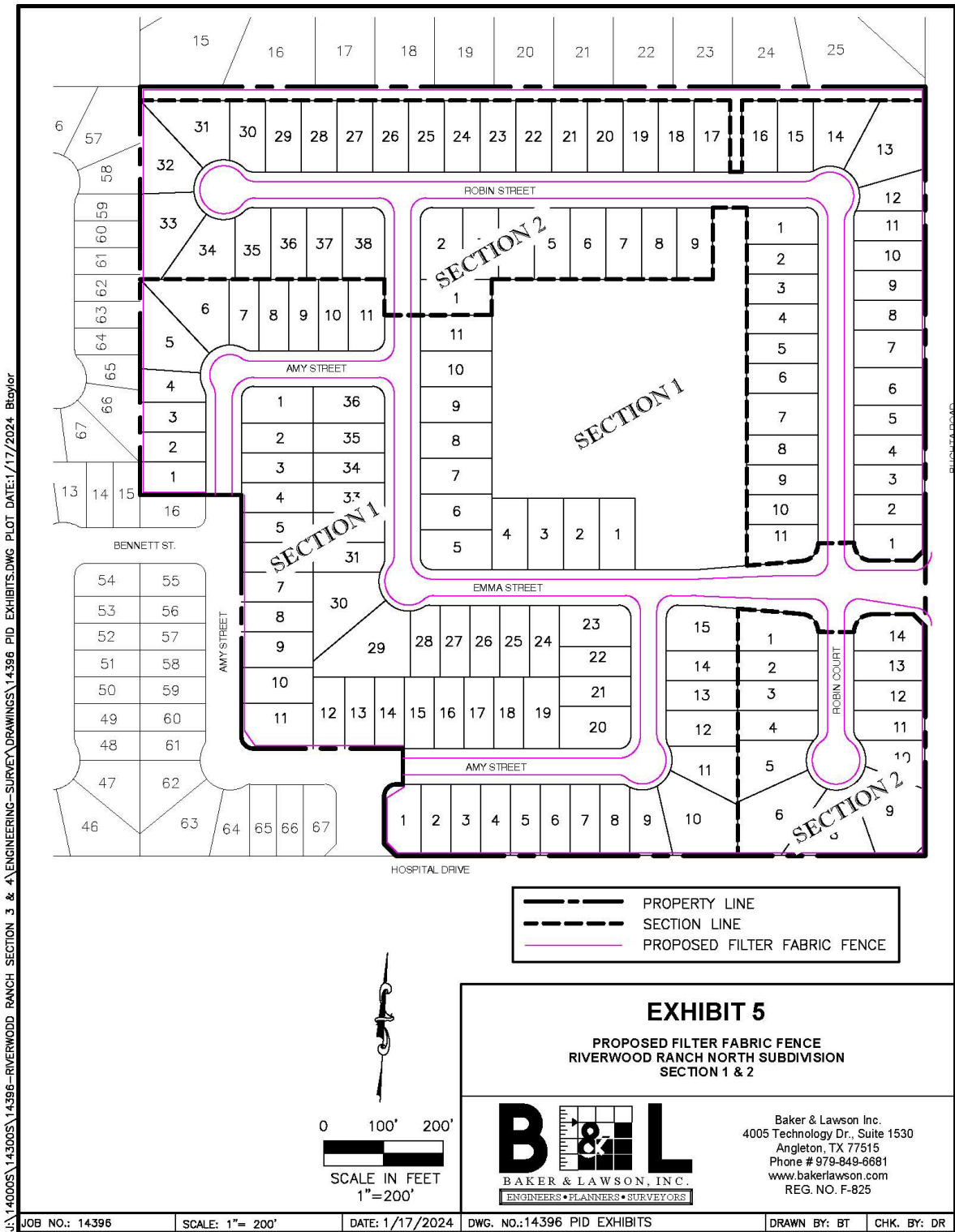
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## APPENDIX B – BUYER DISCLOSURES

Forms of the buyer disclosures for the following Lot Types are found in this Appendix:

- Initial Parcel
- Lot Type 1
- Lot Type 2

**RIVERWOOD RANCH NORTH PUBLIC IMPROVEMENT DISTRICT BUYER  
DISCLOSURE INITIAL PARCEL**

NOTICE OF OBLIGATIONS RELATED TO PUBLIC IMPROVEMENT DISTRICT

A person who proposes to sell or otherwise convey real property that is located in a public improvement district established under Subchapter A, Chapter 372, Local Government Code (except for public improvement districts described under Section 372.005), or Chapter 382, Local Government Code, shall first give to the purchaser of the property this written notice, signed by the seller.

For the purposes of this notice, a contract for the purchase and sale of real property having a performance period of less than six months is considered a sale requiring the notice set forth below.

This notice requirement does not apply to a transfer:

- 1) under a court order or foreclosure sale;
- 2) by a trustee in bankruptcy;
- 3) to a mortgagee by a mortgagor or successor in interest or to a beneficiary of a deed of trust by a trustor or successor in interest;
- 4) by a mortgagee or a beneficiary under a deed of trust who has acquired the land at a sale conducted under a power of sale under a deed of trust or a sale under a court-ordered foreclosure or has acquired the land by a deed in lieu of foreclosure;
- 5) by a fiduciary in the course of the administration of a decedent's estate, guardianship, conservatorship, or trust;
- 6) from one co-owner to another co-owner of an undivided interest in the real property;
- 7) to a spouse or a person in the lineal line of consanguinity of the seller;
- 8) to or from a governmental entity; or
- 9) of only a mineral interest, leasehold interest, or security interest

The following notice shall be given to a prospective purchaser before the execution of a binding contract of purchase and sale, either separately or as an addendum or paragraph of a purchase contract. In the event a contract of purchase and sale is entered into without the seller having provided the required notice, the purchaser, subject to certain exceptions, is entitled to terminate the contract.

A separate copy of this notice shall be executed by the seller and the purchaser and must be filed in the real property records of the county in which the property is located at the closing of the purchase and sale of the property.

AFTER RECORDING<sup>1</sup> RETURN TO:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

NOTICE OF OBLIGATION TO PAY IMPROVEMENT DISTRICT ASSESSMENT TO  
CITY OF ANGLETON, TEXAS  
CONCERNING THE FOLLOWING PROPERTY

\_\_\_\_\_  
STREET ADDRESS

**INITIAL PARCEL PRINCIPAL ASSESSMENT: \$5,139,000.00**

As the purchaser of the real property described above, you are obligated to pay assessments to City of Angleton, Texas, for the costs of a portion of a public improvement or services project (the "Authorized Improvements") undertaken for the benefit of the property within ***Riverwood Ranch North Public Improvement District*** (the "District") created under Subchapter A, Chapter 372, Local Government Code.

AN ASSESSMENT HAS BEEN LEVIED AGAINST YOUR PROPERTY FOR THE AUTHORIZED IMPROVEMENTS, WHICH MAY BE PAID IN FULL AT ANY TIME. IF THE ASSESSMENT IS NOT PAID IN FULL, IT WILL BE DUE AND PAYABLE IN ANNUAL INSTALLMENTS THAT WILL VARY FROM YEAR TO YEAR DEPENDING ON THE AMOUNT OF INTEREST PAID, COLLECTION COSTS, ADMINISTRATIVE COSTS, AND DELINQUENCY COSTS.

The exact amount of the assessment may be obtained from City of Angleton. The exact amount of each annual installment will be approved each year by the Angleton City Council in the annual service plan update for the District. More information about the assessments, including the amounts and due dates, may be obtained from City of Angleton.

Your failure to pay any assessment or any annual installment may result in penalties and interest being added to what you owe or in a lien on and the foreclosure of your property.

<sup>1</sup> To be included in separate copy of the notice required by Section 5.0143, Tex. Prop. Code, to be executed at the closing of the purchase and sale and to be recorded in the deed records of Brazoria County when updating for the Current Information of Obligation to Pay Improvement District Assessment.



[The undersigned purchaser acknowledges receipt of this notice before the effective date of a binding contract for the purchase of the real property at the address described above.

DATE:

DATE:

\_\_\_\_\_  
SIGNATURE OF PURCHASER

\_\_\_\_\_  
SIGNATURE OF PURCHASER

The undersigned seller acknowledges providing this notice to the potential purchaser before the effective date of a binding contract for the purchase of the real property at the address described above.

DATE:

DATE:

\_\_\_\_\_  
SIGNATURE OF SELLER

\_\_\_\_\_  
SIGNATURE OF SELLER]<sup>2</sup>

<sup>2</sup> To be included in copy of the notice required by Section 5.014, Tex. Prop. Code, to be executed by seller in accordance with Section 5.014(a-1), Tex. Prop. Code.

[The undersigned purchaser acknowledges receipt of this notice before the effective date of a binding contract for the purchase of the real property at the address described above. The undersigned purchaser acknowledged the receipt of this notice including the current information required by Section 5.0143, Texas Property Code, as amended.

DATE:

DATE:

\_\_\_\_\_  
SIGNATURE OF PURCHASER

\_\_\_\_\_  
SIGNATURE OF PURCHASER

STATE OF TEXAS

§  
§  
§

COUNTY OF \_\_\_\_\_

The foregoing instrument was acknowledged before me by \_\_\_\_\_ and \_\_\_\_\_, known to me to be the person(s) whose name(s) is/are subscribed to the foregoing instrument, and acknowledged to me that he or she executed the same for the purposes therein expressed.

Given under my hand and seal of office on this \_\_\_\_\_, 20\_\_.

Notary Public, State of Texas]<sup>3</sup>

<sup>3</sup> To be included in separate copy of the notice required by Section 5.0143, Tex. Prop. Code, to be executed at the closing of the purchase and sale and to be recorded in the deed records of Brazoria County.

[The undersigned seller acknowledges providing a separate copy of the notice required by Section 5.014 of the Texas Property Code including the current information required by Section 5.0143, Texas Property Code, as amended, at the closing of the purchase of the real property at the address above.

DATE:

DATE:

\_\_\_\_\_  
SIGNATURE OF SELLER

\_\_\_\_\_  
SIGNATURE OF SELLER

STATE OF TEXAS

§  
§  
§

COUNTY OF \_\_\_\_\_

The foregoing instrument was acknowledged before me by \_\_\_\_\_ and \_\_\_\_\_, known to me to be the person(s) whose name(s) is/are subscribed to the foregoing instrument, and acknowledged to me that he or she executed the same for the purposes therein expressed.

Given under my hand and seal of office on this \_\_\_\_\_, 20\_\_.

Notary Public, State of Texas]<sup>4</sup>

<sup>4</sup> To be included in separate copy of the notice required by Section 5.0143, Tex. Prop. Code, to be executed at the closing of the purchase and sale and to be recorded in the deed records of Brazoria County.

## ANNUAL INSTALLMENTS - INITIAL PARCEL

Installment Due 1/31	Reimbursement Obligation			Annual Collection Costs	Total Annual Installment Due <sup>3,4</sup>
	Principal	Interest <sup>1,2</sup>	Additional Interest <sup>2</sup>		
2025	\$ 75,000	\$ 307,496	\$ -	\$ 50,000	\$ 432,496
2026	\$ 77,000	\$ 303,840	\$ -	\$ 51,000	\$ 431,840
2027	\$ 81,000	\$ 299,220	\$ -	\$ 52,020	\$ 432,240
2028	\$ 85,000	\$ 294,360	\$ -	\$ 53,060	\$ 432,420
2029	\$ 90,000	\$ 289,260	\$ -	\$ 54,122	\$ 433,382
2030	\$ 94,000	\$ 283,860	\$ -	\$ 55,204	\$ 433,064
2031	\$ 99,000	\$ 278,220	\$ -	\$ 56,308	\$ 433,528
2032	\$ 104,000	\$ 272,280	\$ -	\$ 57,434	\$ 433,714
2033	\$ 109,000	\$ 266,040	\$ -	\$ 58,583	\$ 433,623
2034	\$ 115,000	\$ 259,500	\$ -	\$ 59,755	\$ 434,255
2035	\$ 121,000	\$ 252,600	\$ -	\$ 60,950	\$ 434,550
2036	\$ 127,000	\$ 245,340	\$ -	\$ 62,169	\$ 434,509
2037	\$ 134,000	\$ 237,720	\$ -	\$ 63,412	\$ 435,132
2038	\$ 141,000	\$ 229,680	\$ -	\$ 64,680	\$ 435,360
2039	\$ 149,000	\$ 221,220	\$ -	\$ 65,974	\$ 436,194
2040	\$ 157,000	\$ 212,280	\$ -	\$ 67,293	\$ 436,573
2041	\$ 165,000	\$ 202,860	\$ -	\$ 68,639	\$ 436,499
2042	\$ 174,000	\$ 192,960	\$ -	\$ 70,012	\$ 436,972
2043	\$ 184,000	\$ 182,520	\$ -	\$ 71,412	\$ 437,932
2044	\$ 194,000	\$ 171,480	\$ -	\$ 72,841	\$ 438,321
2045	\$ 205,000	\$ 159,840	\$ -	\$ 74,297	\$ 439,137
2046	\$ 216,000	\$ 147,540	\$ -	\$ 75,783	\$ 439,323
2047	\$ 229,000	\$ 134,580	\$ -	\$ 77,299	\$ 440,879
2048	\$ 242,000	\$ 120,840	\$ -	\$ 78,845	\$ 441,685
2049	\$ 256,000	\$ 106,320	\$ -	\$ 80,422	\$ 442,742
2050	\$ 270,000	\$ 90,960	\$ -	\$ 82,030	\$ 442,990
2051	\$ 286,000	\$ 74,760	\$ -	\$ 83,671	\$ 444,431
2052	\$ 302,000	\$ 57,600	\$ -	\$ 85,344	\$ 444,944
2052	\$ 320,000	\$ 39,480	\$ -	\$ 87,051	\$ 446,531
2053	\$ 338,000	\$ 20,280	\$ -	\$ 88,792	\$ 447,072
<b>Total</b>	<b>\$ 5,139,000</b>	<b>\$ 5,954,936</b>	<b>\$ -</b>	<b>\$ 2,028,404</b>	<b>\$ 13,122,340</b>

**Footnotes:**

[1] Interest on the Improvement Area #1 Reimbursement Obligation is calculated at a rate of 6.00% which is less than 2% above the S&P Municipal Bond High Yield Index, which was 5.72% as of January 31, 2024.

[2] If PID Bonds are issued, the interest on the Assessments will adjust to the interest rate on the PID Bonds plus Additional Interest which will be collected if PID Bonds are issued.

[3] Excludes the TIRZ Annual Credit Amount which will be calculated annually in each Annual Service Plan Update.

[4] The figures shown above are estimates only and subject to change in Annual Service Plan Updates. Changes in Annual Collection Costs, reserve fund requirements, interest earnings, or other available offsets could increase or decrease the amounts shown.

**RIVERWOOD RANCH NORTH PUBLIC IMPROVEMENT DISTRICT BUYER  
DISCLOSURE LOT TYPE 1**

NOTICE OF OBLIGATIONS RELATED TO PUBLIC IMPROVEMENT DISTRICT

A person who proposes to sell or otherwise convey real property that is located in a public improvement district established under Subchapter A, Chapter 372, Local Government Code (except for public improvement districts described under Section 372.005), or Chapter 382, Local Government Code, shall first give to the purchaser of the property this written notice, signed by the seller.

For the purposes of this notice, a contract for the purchase and sale of real property having a performance period of less than six months is considered a sale requiring the notice set forth below.

This notice requirement does not apply to a transfer:

- 1) under a court order or foreclosure sale;
- 2) by a trustee in bankruptcy;
- 3) to a mortgagee by a mortgagor or successor in interest or to a beneficiary of a deed of trust by a trustor or successor in interest;
- 4) by a mortgagee or a beneficiary under a deed of trust who has acquired the land at a sale conducted under a power of sale under a deed of trust or a sale under a court-ordered foreclosure or has acquired the land by a deed in lieu of foreclosure;
- 5) by a fiduciary in the course of the administration of a decedent's estate, guardianship, conservatorship, or trust;
- 6) from one co-owner to another co-owner of an undivided interest in the real property;
- 7) to a spouse or a person in the lineal line of consanguinity of the seller;
- 8) to or from a governmental entity; or
- 9) of only a mineral interest, leasehold interest, or security interest

The following notice shall be given to a prospective purchaser before the execution of a binding contract of purchase and sale, either separately or as an addendum or paragraph of a purchase contract. In the event a contract of purchase and sale is entered into without the seller having provided the required notice, the purchaser, subject to certain exceptions, is entitled to terminate the contract.

A separate copy of this notice shall be executed by the seller and the purchaser and must be filed in the real property records of the county in which the property is located at the closing of the purchase and sale of the property.

AFTER RECORDING<sup>1</sup> RETURN TO:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

NOTICE OF OBLIGATION TO PAY IMPROVEMENT DISTRICT ASSESSMENT TO  
CITY OF ANGLETON, TEXAS  
CONCERNING THE FOLLOWING PROPERTY

\_\_\_\_\_  
STREET ADDRESS

**LOT TYPE 1 PRINCIPAL ASSESSMENT: \$34,871.79**

As the purchaser of the real property described above, you are obligated to pay assessments to City of Angleton, Texas, for the costs of a portion of a public improvement or services project (the "Authorized Improvements") undertaken for the benefit of the property within *Riverwood Ranch North Public Improvement District* (the "District") created under Subchapter A, Chapter 372, Local Government Code.

AN ASSESSMENT HAS BEEN LEVIED AGAINST YOUR PROPERTY FOR THE AUTHORIZED IMPROVEMENTS, WHICH MAY BE PAID IN FULL AT ANY TIME. IF THE ASSESSMENT IS NOT PAID IN FULL, IT WILL BE DUE AND PAYABLE IN ANNUAL INSTALLMENTS THAT WILL VARY FROM YEAR TO YEAR DEPENDING ON THE AMOUNT OF INTEREST PAID, COLLECTION COSTS, ADMINISTRATIVE COSTS, AND DELINQUENCY COSTS.

The exact amount of the assessment may be obtained from City of Angleton. The exact amount of each annual installment will be approved each year by the Angleton City Council in the annual service plan update for the District. More information about the assessments, including the amounts and due dates, may be obtained from City of Angleton.

Your failure to pay any assessment or any annual installment may result in penalties and interest being added to what you owe or in a lien on and the foreclosure of your property.

<sup>1</sup> To be included in separate copy of the notice required by Section 5.0143, Tex. Prop. Code, to be executed at the closing of the purchase and sale and to be recorded in the deed records of Brazoria County when updating for the Current Information of Obligation to Pay Improvement District Assessment.

[The undersigned purchaser acknowledges receipt of this notice before the effective date of a binding contract for the purchase of the real property at the address described above.

DATE:

DATE:

\_\_\_\_\_  
SIGNATURE OF PURCHASER

\_\_\_\_\_  
SIGNATURE OF PURCHASER

The undersigned seller acknowledges providing this notice to the potential purchaser before the effective date of a binding contract for the purchase of the real property at the address described above.

DATE:

DATE:

\_\_\_\_\_  
SIGNATURE OF SELLER

\_\_\_\_\_  
SIGNATURE OF SELLER]<sup>2</sup>

<sup>2</sup> To be included in copy of the notice required by Section 5.014, Tex. Prop. Code, to be executed by seller in accordance with Section 5.014(a-1), Tex. Prop. Code.

[The undersigned purchaser acknowledges receipt of this notice before the effective date of a binding contract for the purchase of the real property at the address described above. The undersigned purchaser acknowledged the receipt of this notice including the current information required by Section 5.0143, Texas Property Code, as amended.

DATE:

DATE:

\_\_\_\_\_  
SIGNATURE OF PURCHASER

\_\_\_\_\_  
SIGNATURE OF PURCHASER

STATE OF TEXAS

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§

COUNTY OF \_\_\_\_\_

The foregoing instrument was acknowledged before me by \_\_\_\_\_ and \_\_\_\_\_, known to me to be the person(s) whose name(s) is/are subscribed to the foregoing instrument, and acknowledged to me that he or she executed the same for the purposes therein expressed.

Given under my hand and seal of office on this \_\_\_\_\_, 20\_\_.

Notary Public, State of Texas]<sup>3</sup>

<sup>3</sup> To be included in separate copy of the notice required by Section 5.0143, Tex. Prop. Code, to be executed at the closing of the purchase and sale and to be recorded in the deed records of Brazoria County.



[The undersigned seller acknowledges providing a separate copy of the notice required by Section 5.014 of the Texas Property Code including the current information required by Section 5.0143, Texas Property Code, as amended, at the closing of the purchase of the real property at the address above.

DATE:

DATE:

\_\_\_\_\_  
SIGNATURE OF SELLER

\_\_\_\_\_  
SIGNATURE OF SELLER

STATE OF TEXAS

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COUNTY OF \_\_\_\_\_

The foregoing instrument was acknowledged before me by \_\_\_\_\_ and \_\_\_\_\_, known to me to be the person(s) whose name(s) is/are subscribed to the foregoing instrument, and acknowledged to me that he or she executed the same for the purposes therein expressed.

Given under my hand and seal of office on this \_\_\_\_\_, 20\_\_.

Notary Public, State of Texas]<sup>4</sup>

<sup>4</sup> To be included in separate copy of the notice required by Section 5.0143, Tex. Prop. Code, to be executed at the closing of the purchase and sale and to be recorded in the deed records of Brazoria County.

**ANNUAL INSTALLMENTS - LOT TYPE 1**

Installment Due 1/31	Reimbursement Obligation			Annual Collection Costs	Total Annual Installment Due <sup>3,4</sup>
	Principal	Interest <sup>1,2</sup>	Additional Interest <sup>2</sup>		
2025	\$ 508.93	\$ 2,086.58	\$ -	\$ 339.29	\$ 2,934.79
2026	\$ 522.50	\$ 2,061.77	\$ -	\$ 346.07	\$ 2,930.34
2027	\$ 549.64	\$ 2,030.42	\$ -	\$ 352.99	\$ 2,933.06
2028	\$ 576.79	\$ 1,997.44	\$ -	\$ 360.05	\$ 2,934.28
2029	\$ 610.71	\$ 1,962.84	\$ -	\$ 367.25	\$ 2,940.80
2030	\$ 637.86	\$ 1,926.19	\$ -	\$ 374.60	\$ 2,938.65
2031	\$ 671.79	\$ 1,887.92	\$ -	\$ 382.09	\$ 2,941.80
2032	\$ 705.71	\$ 1,847.61	\$ -	\$ 389.73	\$ 2,943.06
2033	\$ 739.64	\$ 1,805.27	\$ -	\$ 397.53	\$ 2,942.44
2034	\$ 780.36	\$ 1,760.89	\$ -	\$ 405.48	\$ 2,946.73
2035	\$ 821.07	\$ 1,714.07	\$ -	\$ 413.59	\$ 2,948.73
2036	\$ 861.79	\$ 1,664.81	\$ -	\$ 421.86	\$ 2,948.45
2037	\$ 909.29	\$ 1,613.10	\$ -	\$ 430.30	\$ 2,952.68
2038	\$ 956.79	\$ 1,558.54	\$ -	\$ 438.90	\$ 2,954.23
2039	\$ 1,011.07	\$ 1,501.14	\$ -	\$ 447.68	\$ 2,959.89
2040	\$ 1,065.36	\$ 1,440.47	\$ -	\$ 456.63	\$ 2,962.46
2041	\$ 1,119.64	\$ 1,376.55	\$ -	\$ 465.77	\$ 2,961.96
2042	\$ 1,180.71	\$ 1,309.37	\$ -	\$ 475.08	\$ 2,965.17
2043	\$ 1,248.57	\$ 1,238.53	\$ -	\$ 484.58	\$ 2,971.68
2044	\$ 1,316.43	\$ 1,163.61	\$ -	\$ 494.28	\$ 2,974.32
2045	\$ 1,391.07	\$ 1,084.63	\$ -	\$ 504.16	\$ 2,979.86
2046	\$ 1,465.71	\$ 1,001.16	\$ -	\$ 514.24	\$ 2,981.12
2047	\$ 1,553.93	\$ 913.22	\$ -	\$ 524.53	\$ 2,991.68
2048	\$ 1,642.14	\$ 819.99	\$ -	\$ 535.02	\$ 2,997.15
2049	\$ 1,737.14	\$ 721.46	\$ -	\$ 545.72	\$ 3,004.32
2050	\$ 1,832.14	\$ 617.23	\$ -	\$ 556.63	\$ 3,006.01
2051	\$ 1,940.71	\$ 507.30	\$ -	\$ 567.77	\$ 3,015.78
2052	\$ 2,049.29	\$ 390.86	\$ -	\$ 579.12	\$ 3,019.27
2052	\$ 2,171.43	\$ 267.90	\$ -	\$ 590.70	\$ 3,030.03
2053	\$ 2,293.57	\$ 137.61	\$ -	\$ 602.52	\$ 3,033.70
<b>Total</b>	<b>\$ 34,871.79</b>	<b>\$ 40,408.49</b>	<b>\$ -</b>	<b>\$ 13,764.17</b>	<b>\$ 89,044.45</b>

**Footnotes:**

[1] Interest is calculated at a rate of 6.00% for illustrative purposes.

[2] If PID Bonds are issued, the interest on the Assessments will adjust to the interest rate on the PID Bonds plus Additional Interest which will be collected if PID Bonds are issued.

[3] Excludes the TIRZ Annual Credit Amount which will be calculated annually in each Annual Service Plan Update.

[4] The figures shown above are estimates only and subject to change in Annual Service Plan Updates. Changes in Annual Collection Costs, reserve fund requirements, interest earnings, or other available offsets could increase or decrease the amounts shown.

Annual Installment Schedule to Notice  
of Obligation to Pay Improvement District Assessment

**RIVERWOOD RANCH NORTH PUBLIC IMPROVEMENT DISTRICT BUYER  
DISCLOSURE LOT TYPE 2**

NOTICE OF OBLIGATIONS RELATED TO PUBLIC IMPROVEMENT DISTRICT

A person who proposes to sell or otherwise convey real property that is located in a public improvement district established under Subchapter A, Chapter 372, Local Government Code (except for public improvement districts described under Section 372.005), or Chapter 382, Local Government Code, shall first give to the purchaser of the property this written notice, signed by the seller.

For the purposes of this notice, a contract for the purchase and sale of real property having a performance period of less than six months is considered a sale requiring the notice set forth below.

This notice requirement does not apply to a transfer:

- 1) under a court order or foreclosure sale;
- 2) by a trustee in bankruptcy;
- 3) to a mortgagee by a mortgagor or successor in interest or to a beneficiary of a deed of trust by a trustor or successor in interest;
- 4) by a mortgagee or a beneficiary under a deed of trust who has acquired the land at a sale conducted under a power of sale under a deed of trust or a sale under a court-ordered foreclosure or has acquired the land by a deed in lieu of foreclosure;
- 5) by a fiduciary in the course of the administration of a decedent's estate, guardianship, conservatorship, or trust;
- 6) from one co-owner to another co-owner of an undivided interest in the real property;
- 7) to a spouse or a person in the lineal line of consanguinity of the seller;
- 8) to or from a governmental entity; or
- 9) of only a mineral interest, leasehold interest, or security interest

The following notice shall be given to a prospective purchaser before the execution of a binding contract of purchase and sale, either separately or as an addendum or paragraph of a purchase contract. In the event a contract of purchase and sale is entered into without the seller having provided the required notice, the purchaser, subject to certain exceptions, is entitled to terminate the contract.

A separate copy of this notice shall be executed by the seller and the purchaser and must be filed in the real property records of the county in which the property is located at the closing of the purchase and sale of the property.

AFTER RECORDING<sup>1</sup> RETURN TO:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

NOTICE OF OBLIGATION TO PAY IMPROVEMENT DISTRICT ASSESSMENT TO  
CITY OF ANGLETON, TEXAS  
CONCERNING THE FOLLOWING PROPERTY

\_\_\_\_\_  
STREET ADDRESS

**LOT TYPE 2 PRINCIPAL ASSESSMENT: \$36,707.14**

As the purchaser of the real property described above, you are obligated to pay assessments to City of Angleton, Texas, for the costs of a portion of a public improvement or services project (the "Authorized Improvements") undertaken for the benefit of the property within *Riverwood Ranch North Public Improvement District* (the "District") created under Subchapter A, Chapter 372, Local Government Code.

AN ASSESSMENT HAS BEEN LEVIED AGAINST YOUR PROPERTY FOR THE AUTHORIZED IMPROVEMENTS, WHICH MAY BE PAID IN FULL AT ANY TIME. IF THE ASSESSMENT IS NOT PAID IN FULL, IT WILL BE DUE AND PAYABLE IN ANNUAL INSTALLMENTS THAT WILL VARY FROM YEAR TO YEAR DEPENDING ON THE AMOUNT OF INTEREST PAID, COLLECTION COSTS, ADMINISTRATIVE COSTS, AND DELINQUENCY COSTS.

The exact amount of the assessment may be obtained from City of Angleton. The exact amount of each annual installment will be approved each year by the Angleton City Council in the annual service plan update for the District. More information about the assessments, including the amounts and due dates, may be obtained from City of Angleton.

Your failure to pay any assessment or any annual installment may result in penalties and interest being added to what you owe or in a lien on and the foreclosure of your property.

<sup>1</sup> To be included in separate copy of the notice required by Section 5.0143, Tex. Prop. Code, to be executed at the closing of the purchase and sale and to be recorded in the deed records of Brazoria County when updating for the Current Information of Obligation to Pay Improvement District Assessment.

[The undersigned purchaser acknowledges receipt of this notice before the effective date of a binding contract for the purchase of the real property at the address described above.

DATE:

DATE:

\_\_\_\_\_  
SIGNATURE OF PURCHASER

\_\_\_\_\_  
SIGNATURE OF PURCHASER

The undersigned seller acknowledges providing this notice to the potential purchaser before the effective date of a binding contract for the purchase of the real property at the address described above.

DATE:

DATE:

\_\_\_\_\_  
SIGNATURE OF SELLER

\_\_\_\_\_  
SIGNATURE OF SELLER]<sup>2</sup>

<sup>2</sup> To be included in copy of the notice required by Section 5.014, Tex. Prop. Code, to be executed by seller in accordance with Section 5.014(a-1), Tex. Prop. Code.

[The undersigned purchaser acknowledges receipt of this notice before the effective date of a binding contract for the purchase of the real property at the address described above. The undersigned purchaser acknowledged the receipt of this notice including the current information required by Section 5.0143, Texas Property Code, as amended.

DATE:

DATE:

\_\_\_\_\_  
SIGNATURE OF PURCHASER

\_\_\_\_\_  
SIGNATURE OF PURCHASER

STATE OF TEXAS

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§  
§

COUNTY OF \_\_\_\_\_

The foregoing instrument was acknowledged before me by \_\_\_\_\_ and \_\_\_\_\_, known to me to be the person(s) whose name(s) is/are subscribed to the foregoing instrument, and acknowledged to me that he or she executed the same for the purposes therein expressed.

Given under my hand and seal of office on this \_\_\_\_\_, 20\_\_.

Notary Public, State of Texas]<sup>3</sup>

<sup>3</sup> To be included in separate copy of the notice required by Section 5.0143, Tex. Prop. Code, to be executed at the closing of the purchase and sale and to be recorded in the deed records of Brazoria County.

[The undersigned seller acknowledges providing a separate copy of the notice required by Section 5.014 of the Texas Property Code including the current information required by Section 5.0143, Texas Property Code, as amended, at the closing of the purchase of the real property at the address above.

DATE:

DATE:

\_\_\_\_\_  
SIGNATURE OF SELLER

\_\_\_\_\_  
SIGNATURE OF SELLER

STATE OF TEXAS

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§

COUNTY OF \_\_\_\_\_

The foregoing instrument was acknowledged before me by \_\_\_\_\_ and \_\_\_\_\_, known to me to be the person(s) whose name(s) is/are subscribed to the foregoing instrument, and acknowledged to me that he or she executed the same for the purposes therein expressed.

Given under my hand and seal of office on this \_\_\_\_\_, 20\_\_.

Notary Public, State of Texas]<sup>4</sup>

<sup>4</sup> To be included in separate copy of the notice required by Section 5.0143, Tex. Prop. Code, to be executed at the closing of the purchase and sale and to be recorded in the deed records of Brazoria County.

## ANNUAL INSTALLMENTS - LOT TYPE 2

Reimbursement Obligation					
Installment Due 1/31	Principal	Interest <sup>1,2</sup>	Additional Interest <sup>2</sup>	Annual Collection Costs	Total Annual Installment Due <sup>3,4</sup>
2024	\$ 535.71	\$ 2,196.40	\$ -	\$ 357.14	\$ 3,089.26
2025	\$ 550.00	\$ 2,170.29	\$ -	\$ 364.29	\$ 3,084.57
2026	\$ 578.57	\$ 2,137.29	\$ -	\$ 371.57	\$ 3,087.43
2027	\$ 607.14	\$ 2,102.57	\$ -	\$ 379.00	\$ 3,088.72
2028	\$ 642.86	\$ 2,066.14	\$ -	\$ 386.58	\$ 3,095.58
2029	\$ 671.43	\$ 2,027.57	\$ -	\$ 394.31	\$ 3,093.31
2030	\$ 707.14	\$ 1,987.29	\$ -	\$ 402.20	\$ 3,096.63
2031	\$ 742.86	\$ 1,944.86	\$ -	\$ 410.24	\$ 3,097.96
2032	\$ 778.57	\$ 1,900.29	\$ -	\$ 418.45	\$ 3,097.31
2033	\$ 821.43	\$ 1,853.57	\$ -	\$ 426.82	\$ 3,101.82
2034	\$ 864.29	\$ 1,804.29	\$ -	\$ 435.36	\$ 3,103.93
2035	\$ 907.14	\$ 1,752.43	\$ -	\$ 444.06	\$ 3,103.63
2036	\$ 957.14	\$ 1,698.00	\$ -	\$ 452.94	\$ 3,108.09
2037	\$ 1,007.14	\$ 1,640.57	\$ -	\$ 462.00	\$ 3,109.72
2038	\$ 1,064.29	\$ 1,580.14	\$ -	\$ 471.24	\$ 3,115.67
2039	\$ 1,121.43	\$ 1,516.29	\$ -	\$ 480.67	\$ 3,118.38
2040	\$ 1,178.57	\$ 1,449.00	\$ -	\$ 490.28	\$ 3,117.85
2041	\$ 1,242.86	\$ 1,378.29	\$ -	\$ 500.09	\$ 3,121.23
2042	\$ 1,314.29	\$ 1,303.71	\$ -	\$ 510.09	\$ 3,128.09
2043	\$ 1,385.71	\$ 1,224.86	\$ -	\$ 520.29	\$ 3,130.86
2044	\$ 1,464.29	\$ 1,141.71	\$ -	\$ 530.70	\$ 3,136.70
2045	\$ 1,542.86	\$ 1,053.86	\$ -	\$ 541.31	\$ 3,138.02
2046	\$ 1,635.71	\$ 961.29	\$ -	\$ 552.14	\$ 3,149.14
2047	\$ 1,728.57	\$ 863.14	\$ -	\$ 563.18	\$ 3,154.89
2048	\$ 1,828.57	\$ 759.43	\$ -	\$ 574.44	\$ 3,162.44
2049	\$ 1,928.57	\$ 649.71	\$ -	\$ 585.93	\$ 3,164.22
2050	\$ 2,042.86	\$ 534.00	\$ -	\$ 597.65	\$ 3,174.51
2051	\$ 2,157.14	\$ 411.43	\$ -	\$ 609.60	\$ 3,178.17
2052	\$ 2,285.71	\$ 282.00	\$ -	\$ 621.79	\$ 3,189.51
2053	\$ 2,414.29	\$ 144.86	\$ -	\$ 634.23	\$ 3,193.37
<b>Total</b>	<b>\$ 36,707.14</b>	<b>\$ 42,535.26</b>	<b>\$ -</b>	<b>\$ 14,488.60</b>	<b>\$ 93,731.00</b>

**Footnotes:**

[1] Interest is calculated at a rate of 6.00% for illustrative purposes.

[2] If PID Bonds are issued, the interest on the Assessments will adjust to the interest rate on the PID Bonds plus Additional Interest which will be collected if PID Bonds are issued.

[3] Excludes the TIRZ Annual Credit Amount which will be calculated annually in each Annual Service Plan Update.

[4] The figures shown above are estimates only and subject to change in Annual Service Plan Updates. Changes in Annual Collection Costs, reserve fund requirements, interest earnings, or other available offsets could increase or decrease the amounts shown.





## AGENDA ITEM SUMMARY FORM

**MEETING DATE:** April 23, 2024

**PREPARED BY:** Phillip Conner, Finance Director

**AGENDA CONTENT:** Hold a Public Hearing and Discussion and take possible action on Ordinance No. on the Amended & Restated Tax Increment Reinvestment Zone (TIRZ) No. 2 Project (Riverwood Ranch) and the Financing Plan.

**AGENDA ITEM SECTION:** Public Hearing Item

**BUDGETED AMOUNT:** None

**FUNDS REQUESTED:** None

**FUND:** None

### EXECUTIVE SUMMARY:

October 24, 2023, the City Council passed and approved a Resolution No. 20231024-010 creating the Riverwood Ranch North Public Improvement District (the "District") covering approximately 35.608 acres of land described by metes and bounds in said Resolution.

The City Council is asked to hold a public hearing in accordance with Section 311.003 of the Act regarding the amendment of the Zone as identified within the City of Angleton, Texas Tax Increment Reinvestment Zone No. 2, Amended and Restated Final Project and Finance Plan (attached).

- Review of Amended & Restated Project and Financing Plan for TIRZ No. 2
- Recommend approval of Ordinance on the Amended and Restated TIRZ No. 2 Project and Financing Plan

### RECOMMENDATION:

Council should hold the Public Hearing and accept the positive recommendation of the TIRZ Board to approve the Ordinance on the Riverwood Ranch Amended and Restated TIRZ No. 2 Project and Financing Plan.

**ORDINANCE NO. 20240423-010**

**AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF ANGLETON, TEXAS, AMENDING THE PROJECT COSTS OF CITY OF ANGLETON, TEXAS TAX INCREMENT REINVESTMENT ZONE NO. 2; APPROVING AN AMENDED AND RESTATED FINAL PROJECT AND FINANCE PLAN FOR CITY OF ANGLETON, TEXAS TAX INCREMENT REINVESTMENT ZONE NO. 2 (RIVERWOOD RANCH REINVESTMENT ZONE); MAKING CERTAIN FINDINGS; PROVIDING SEVERABILITY PROVIDING REPEAL; PROVIDING A PENALTY; AND AN IMMEDIATE EFFECTIVE DATE.**

**WHEREAS**, the City of Angleton, Texas (the "City"), pursuant to Chapter 311 of the Texas Tax Code, as amended (the "Act"), may designate a geographic area within the City as a tax increment reinvestment zone if the area satisfies the requirements of the Act; and

**WHEREAS**, pursuant to and as required by the Act, the City Council of the City (the "City Council") prepared a City of Angleton, Texas Tax Increment Reinvestment Zone No. 2, City of Angleton, Texas, Preliminary Project and Finance Plan (the "Preliminary Project and Finance Plan") for City of Angleton, Texas Tax Increment Reinvestment Zone No. 2 (Riverwood Ranch Reinvestment Zone), ("TIRZ No. 2"); and

**WHEREAS**, on July 14, 2020, the City Council approved Ordinance No. 20200714-012 creating TIRZ No. 2 (the "Creation Ordinance"), pursuant to the Act, which contained approximately 78.10 acres; and

**WHEREAS**, on September 12, 2023, the City Council approved Ordinance No. 20230912-017, which adopted City of Angleton, Texas Tax Increment Reinvestment Zone No. 2, Final Project and Finance Plan (the "Final Project and Finance Plan"); and

**WHEREAS**, the City may amend the project costs of TIRZ No. 2, subject to the requirements of the Act, and , on April 23, 2024 the TIRZ Board recommended approval of the amendment of the TIRZ No. 2 project costs; and

**WHEREAS**, the City Council has prepared the City of Angleton Tax Increment Reinvestment Zone No. 2, Amended and Restated Final Project and Finance Plan (the "Amended Plan"), attached hereto as **Exhibit A**, inclusive of the Zone amendment; and

**WHEREAS**, a notice of public hearing on amending the TIRZ No. 2 Amended Plan was published in the FACTS, a newspaper of general circulation within the City, on April 11, 2024, which date is not later than the seventh (7<sup>th</sup>) day prior to the public hearing held on April 23, 2024; and

**WHEREAS**, on April 23, 2024, the City Council in accordance with Texas Tax Code Sec. 311.011 held a public hearing on the following: (i) the inclusion of property within the Zone; (ii) the

amendment of the Zone, (iii) the boundaries of the zone; (iv) the concept of tax increment financing, and/or (v) the proposed amended project costs for the Zone; and

**WHEREAS**, at the public hearing on April 23, 2024, interested persons were allowed to speak for or against: (i) the inclusion of property within the Zone; (ii) the amendment of the Zone, (iii) the boundaries of the zone; (iv) the concept of tax increment financing, and/or (v) the proposed amended project costs for the Zone; and

**WHEREAS**, the City has taken all actions required to create and amend TIRZ No. 2 Amended Plan including, but not limited to, all actions required by the Act, the Texas Open Meetings Act, and all other laws applicable to the creation and amendment of the TIRZ No. 2 Project and Finance Plan; and

**WHEREAS**, on April 23, 2024, the City of Angleton Board of TIRZ No. 2, recommended approval of the Amended Plan, a copy of which is attached hereto as **Exhibit A**.

**NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF ANGLETON, TEXAS:**

**SECTION 1. RECITALS.** That the recitals, findings, and determinations contained in the preamble to this Ordinance are incorporated into the body of this Ordinance as if fully set forth in this Section and are hereby found and declared to be true and correct legislative findings and are adopted as part of this Ordinance for all purposes.

**SECTION 2. TERM AMENDMENT.**

That the City Council does hereby amend the project costs of TIRZ No. 2 (Riverwood Ranch Reinvestment Zone) to \$10,520,419.00 including Administrative Costs as set out in the Amended and Restated Final Project and Finance Plan.

**SECTION 3. AMENDED PLAN.**

That the City Council does hereby approve the Amended and Restated Final Project and Finance Plan, a copy of which is attached hereto as **Exhibit A** and incorporated herein for all purposes.

**SECTION 4. SEVERABILITY.**

That if any provision, section, subsection, sentence, clause or phrase of this Ordinance, or the application of same to any person or set of circumstances, is for any reason held to be invalid, the validity of the remaining provisions of this Ordinance or their application to other persons or sets of circumstances shall not be affected thereby, it being the intent of the City Council in adopting this Ordinance that no provision of this Ordinance shall become inoperative because of the invalidity of another provision; and, therefore, all provisions of this Ordinance are declared severable for that purpose.

**SECTION 5. REPEAL.**

All ordinances or parts of ordinances inconsistent with the terms of this ordinance are hereby repealed; provided, however, that such repeal shall be only to the extent of such inconsistency and in all other respects this ordinance shall be cumulative of other ordinances regulating and

governing the subject matter covered by this ordinance.

**SECTION 6. PENALTY**

Any person who violates or causes, allows, or permits another to violate any provision of this Ordinance shall be deemed guilty of a misdemeanor and, upon conviction thereof, shall be punished by a fine of not more than Five Hundred and No/100 Dollars (\$500.00). Each occurrence of any such violation of this Ordinance shall constitute a separate offense. Each day on which any such violation of this Ordinance occurs shall constitute a separate offense.

**SECTION 7.**

It is hereby officially found and determined that the meeting at which this Ordinance was passed was open to the public, and that public notice of the time, place and purpose of said meeting was given as required by the Open Meetings Act, Texas Government Code, Chapter 551.

**SECTION 8. EFFECTIVE DATE.**

This Ordinance shall take effect immediately upon its passage in accordance with the Charter of the City, as provided by law.

**PASSED, AND APPROVED ON THIS THE 23<sup>RD</sup> DAY OF APRIL 2024.**

CITY OF ANGLETON, TEXAS

\_\_\_\_\_  
John Wright  
Mayor

ATTEST:

\_\_\_\_\_  
Michelle Perez, TRMC  
City Secretary

**Exhibit A**  
**City of Angleton, Texas Tax Increment Reinvestment Zone No. 2**  
**Amended and Restated Final Project and Finance Plan**

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CITY OF ANGLETON  
TAX INCREMENT REINVESTMENT ZONE NO. 2  
AMENDED & RESTATED PROJECT AND FINANCE PLAN  
APRIL 23, 2024

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## SECTION 1: DEFINITIONS

Capitalized terms used in this Amended Plan shall have the meanings given to them in **Section I** below unless otherwise defined in this Amended Plan or unless the context in which a term is used clearly requires a different meaning.

Unless otherwise defined, a reference to a “Section,” or an “Exhibit,” shall be a reference to a Section of this Amended Plan or an Exhibit attached to and made a part of this Amended Plan for all purposes.

“**Act**” means Chapter 311, Texas Tax Code, Tax Increment Financing Act, as amended.

“**Administrative Costs**” means the actual, direct costs paid or incurred by or on behalf of the City to administer the Zone, including reasonable charges for the time spent by employees of the City in connection with the implementation of this Amended Plan, planning, engineering, legal services, organizational costs, reasonable third-party administration costs, publicizing costs, costs of operating the Zone and project facilities paid by or on behalf of the City that are directly related to the administration of the Zone, as well as payments made at the discretion of the governing body of the municipality that it finds necessary or convenient to the administration and operation of the Zone or to the implementation of this Amended Plan for the Zone. Administrative Costs shall include costs incurred prior to the adoption of this Amended Plan.

“**Amended Plan**” means this *Amended and Restated City of Angleton Reinvestment Zone No. 2, Final Project and Finance Plan*.

“**Appraisal District**” means the Brazoria County Central Appraisal District.

“**Board**” means the Board of Directors for the Zone.

“**Captured Appraised Value**” means the taxable value of the Zone, on a parcel-by-parcel basis for each year during the term of the Zone, as calculated and confirmed annually by the Appraisal District, less the Tax Increment Base.

“**City**” means the City of Angleton, Texas.

“**City Council**” means the governing body of the City.

“**City TIRZ Increment**” means the portion of the City’s ad valorem tax increment equal to twenty-seven percent (27%) of the ad valorem real property taxes collected and received by the City on the Captured Appraised Value in the Zone, as further described in **Section 12**.



**“Creation Ordinance”** means Ordinance No. 20200714-012 adopted by the City Council on July 14, 2020, designating the creation of the Zone and the Board.

**“Facilities and Creation Costs Agreement”** means the Facilities and Creation Costs Reimbursement Agreement entered into by the City and the Owner on July 14, 2020.

**“Feasibility Study”** means the economic feasibility study as prepared at the creation of the Preliminary Plan as updated and amended by this Amended Plan, as further described in **Section 9**, and shown on **Exhibit E-1**, as it may subsequently be amended.

**“Final Plan”** means the City of Angleton Reinvestment Zone No. 2, Final Project and Finance Plan adopted by the City Council on September 12, 2023, by approval of Ordinance No. 20230912-017.

**“Owner”** means Riverwood Ranch, LLC and any successors or assigns thereof that completed development of the property in the Zone for the ultimate purpose of transferring title to end users.

**“Preliminary Plan”** means the *City of Angleton Reinvestment Zone No. 2, Preliminary Project and Finance Plan*, approved by the City Council on July 14, 2020.

**“Project Costs”** means the total costs for projects in the Zone, including Administrative Costs.

**“Property”** means 78.10 acres of land as depicted on **Exhibit A-1** and described in **Exhibit H**.

**“Public Improvements”** means the public improvements including roads, water, wastewater, storm water, landscaping and parks, detention, interest and financing costs and related infrastructure that serves the Property.

**“Riverwood Ranch Developer”** means Riverwood Ranch, LLC and any successors or assigns thereof that completed development of the property in the Zone for the ultimate purpose of transferring title to end users.

**“Riverwood Ranch North PID Assessment”** means an Assessment levied against the Assessed Property within the Riverwood Ranch North PID as further described in the Riverwood Ranch North PID Service and Assessment Plan.

**“Riverwood Ranch North PID Service and Assessment Plan”** means that certain Riverwood Ranch North Public Improvement District Service and Assessment Plan, as originally adopted by the City on April 23, 2024 pursuant to Ordinance No. [REDACTED], and as amended from time to time.

**“Riverwood Ranch North Property”** means the approximate 35.62 acres of land located within the Zone owned by the Riverwood Ranch Developer, and depicted on **Exhibit A-3**.

**“Riverwood Ranch North Public Improvement District”** means the Riverwood Ranch North Public Improvement District, which includes certain of the Property within its boundaries, created by Resolution No. 20231010-008 of the City passed on October 10, 2023.

**“Riverwood Ranch PID Assessment”** means an Assessment levied against the Assessed Property within the Riverwood Ranch PID as further described in the Riverwood Ranch PID Service and Assessment Plan.

**“Riverwood Ranch PID Service and Assessment Plan”** means that certain Riverwood Ranch Public Improvement District Service and Assessment Plan, as originally adopted by the City on October 12, 2021 pursuant to Ordinance No. 20211012-013, and as amended from time to time.

**“Riverwood Ranch Property”** means the approximate 42.48 acres of land located within the Zone owned by the Riverwood Ranch Developer, and depicted on **Exhibit A-2**.

**“Riverwood Ranch Public Improvement District”** means the Riverwood Ranch Public Improvement District, which includes certain of the Property within its boundaries, created by Resolution No. 20191112-011 of the City passed on November 12, 2019.

**“Tax Increment Base”** means total appraised value of taxable real property in the Zone at the time of creation of the Zone.

**“TIRZ No. 2 Annual Credit Amount”** means the City TIRZ Increment remaining after the payment of Administrative Costs designated towards the principal and interest portion of the Annual Installment of Assessments for the Assessed Property (each as defined in the Riverwood Ranch PID Service and Assessment Plan and the Riverwood Ranch North PID Service and Assessment Plan), as calculated and further described in Section V.F of the Riverwood Ranch PID Service and Assessment Plan and the Riverwood Ranch North PID Service and Assessment Plan, as amended, which amount shall not exceed the TIRZ Maximum Annual Credit Amount.

**“TIRZ Maximum Annual Credit Amount”** means the amount set forth for each Lot Type as further described in the Riverwood Ranch PID Service and Assessment Plan and the Riverwood Ranch North PID Service and Assessment Plan.

**“TIRZ No. 2 Fund”** means the tax increment fund created by the City and segregated from all other funds of the City.

**“Zone”** means City of Angleton Tax Increment Reinvestment Zone No. 2, as depicted on **Exhibit A-1**, and described in **Exhibit H**.

## SECTION 2: INTRODUCTION

### 2.1 Authority and Purpose

The City created the Zone using the authority under the Act to designate a contiguous or noncontiguous geographic area within the corporate limits or extraterritorial jurisdiction of the City as a tax increment reinvestment zone to promote development or redevelopment of the area because the City Council determined that development or redevelopment would not occur solely through private investment in the reasonably foreseeable future, that the Zone is economically feasible, and that creation of the Zone was in the best interest of the City and the property in the Zone. The purpose of the Zone is to facilitate such development or redevelopment by financing the Project Costs, and other projects benefiting the Zone, plus other costs incidental to those expenditures, all of which costs are authorized by the Act.

### 2.2 Eligibility Requirements

An area is eligible under the Act to be designated as a tax increment reinvestment zone if the area:

- 1) substantially arrests or impairs the sound growth of the municipality designating the Zone, retards the provision of housing accommodations, or constitutes an economic or social liability and is a menace to the public health, safety, morals, or welfare in its present condition; or
- 2) is predominantly open or undeveloped and, because of obsolete platting, deterioration of structures or site improvements, or other factors, substantially impairs or arrests the sound growth of the City; or
- 3) is in a federally assisted new community located in the City or in an area immediately adjacent to a federally assisted new community; or
- 4) is in an area described in a petition requesting that the area be designated as a reinvestment zone, if the petition is submitted to the governing body of the City by the owners of property constituting at least fifty percent (50%) of the appraised value of the property in the area according to the most recent certified appraisal roll for the county in which the area is located.

The City cannot, however, designate a zone if more than thirty percent (30%) of the property in the proposed zone, excluding property that is publicly owned, is used for residential purposes, or if the total appraised value of taxable real property in the proposed zone and in existing reinvestment zones exceeds fifty percent (50%) of the total appraised value of taxable real property in the City and in industrial districts created by the City.

### 2.3 The Zone

The Property within the Zone is currently located within the corporate limits of the City. The Property is predominantly open, undeveloped or underdeveloped, and substantially impairs and arrests the sound growth of the City. Due to its size, location, and physical characteristics development would not occur solely through private investment in the foreseeable future. The Property lacks public infrastructure and requires economic incentive to attract development for the purpose of providing long-term economic benefits including, but not limited to, increased real property tax base for all taxing units in the Zone. If the Public Improvements are financed as contemplated by this Final Plan, the City envisions that the Property will be developed to take full advantage of the opportunity to bring to the City, a quality development that will significantly enhance the value of all taxable real property in the Zone and will be of general benefit to the City.

### 2.4 Preliminary Plan and Hearing

Before the City Council adopted the Creation Ordinance, the City Council prepared a Preliminary Plan in accordance with the Act and held a public hearing on the creation of the Zone and its benefits to the City and to the Property, at which public hearing interested persons were given the opportunity to speak for and against the creation of the Zone, the boundaries of the Zone and the concept of tax increment financing, and at which hearing the owners of the Property, who have all petitioned for the Zone's creation, were given a reasonable opportunity to protest the inclusion of their Property in the Zone. The requirement of the Act for a preliminary reinvestment zone financing plan was satisfied by the Preliminary Plan, the purpose of which was to describe, in general terms, the development of the Zone, and the public improvements that would be undertaken by the Zone. A description of the uses of the Property is located in **Exhibit F**, and confirmed by the adoption of this Amended Plan.

### 2.5 Creation of the Zone

Upon the closing of the July 14, 2020 public hearing, the City Council approved the Creation Ordinance and made the following findings:

- 1) that development or redevelopment of the Property would not occur solely through private investment in the reasonably foreseeable future, and
- 2) that the Zone is feasible, and
- 3) that improvements in the Zone will significantly enhance the value of all the taxable real property in the Zone and will be of general benefit to the City, and
- 4) that the Zone met the eligibility requirements of the Act.

Among other provisions required by the Act, the Creation Ordinance appointed the Board.

## 2.6 Council Action

### 2.6.1 Facilities and Creation Costs Agreement

On July 14, 2020, the City Council approved the Facilities and Creation Costs Agreement which terminated all previous agreement involving the Zone, and agreed to contribute twenty-seven percent (27%) of the tax increment collected by the City on the Captured Taxable Value of real property from Developer’s Land (“Tax Increment”) to a TIRZ Increment Fund created by the City. This Amended Plan provides a more detailed description of how such projects will be undertaken and financed by the Zone.

### 2.6.2 Final Project and Finance Plan

On September 12, 2023, the City Council approved Ordinance No. 20230912-017, adopting a Final Plan for the Zone.

### 2.6.3 Amended Plan

On April 23, 2024, the Board reviewed and recommended to the City Council this Amended Plan, which amends and restates the Final Plan in its entirety. The City Council shall consider this Amended Plan, pursuant to which the City will contribute the City TIRZ Increment into the TIRZ Fund to fund the Project Costs benefiting the Zone.

## SECTION 3: DESCRIPTION AND MAPS

### 3.1 Existing Uses and Conditions

The Property was zoned Planned Development when the Zone was created. The Planned Development zoning ordinance remains in effect, as amended on January 12, 2021. The majority of the Property was undeveloped or underdeveloped, at the time of creation. Development required extensive public infrastructure that: (1) the City could not provide, and (2) would not be provided solely through private investment in the foreseeable future.

### 3.2 Current Uses

The current uses of the Property in the City include single-family residential and open space, as shown on **Exhibit G**.

## SECTION 4: PROPOSED CHANGES TO ORDINANCES, PLANS, CODES, RULES, AND REGULATIONS

The Property is wholly located in the corporate limits of the City and shall be subject to the City’s zoning regulation. The City has exclusive jurisdiction over the subdivision and platting of the property within the Property and the design, construction, installation, and inspection of water,

sewer, drainage, roadway, and other public infrastructure. No proposed changes to zoning ordinances, comprehensive plan, building codes, subdivision rules, or other municipal ordinances are planned.

## **SECTION 5: RELOCATION OF DISPLACED PERSONS**

No persons were displaced and in need of relocation due to the creation of the Zone or will be due to the implementation of this Amended Plan.

## **SECTION 6: NON-PROJECT COSTS**

Non-project costs are costs that were spent to develop in the Zone but will not be financed by the Zone, and were financed by other funds. The list of non-project costs is shown on **Exhibit C** and are estimated to be approximately \$71,390,500.

## **SECTION 7: PUBLIC IMPROVEMENTS**

### **7.1 Categories of Public Improvements**

All Public Improvements were designed and constructed or will be designed and constructed in accordance with all applicable City standards and were or will be otherwise inspected, approved, and accepted by the City or other public entity operating and maintaining the infrastructure.

### **7.2 Locations of Public Improvements**

The locations of the Public Improvements are or will be completed and not expected to change; and the Public Improvements have been or will be accepted by the City or other public entities providing services.

## **SECTION 8: PROJECT COSTS**

### **8.1 Project Costs**

The total Project Costs for the Zone, which include the Administrative Costs, are estimated to be \$10,520,419. The Riverwood Ranch Projects are estimated to be \$4,510,321, and the Riverwood Ranch North Projects are estimated to be \$5,622,177, as shown on **Exhibit B**.

### **8.2 Estimated Administrative Costs**

The Administrative Costs are estimated to be \$10,000 annually and escalating at two percent (2%) thereafter, and shall be paid each year from the Zone.

### 8.3 Estimated Timeline of Incurred Costs

The Administrative Costs will be incurred annually beginning at the time the Zone was created and through the duration of the Zone. It is estimated the Project Costs began to be incurred during calendar years 2021 and shall continue through 2026 as shown on **Exhibit D**.

## SECTION 9: ECONOMIC FEASIBILITY

### 9.1 Feasibility Study

The Feasibility Study, as shown on **Exhibit E-1**, focuses on only direct financial benefits (i.e. ad valorem tax revenues from the development of Public Improvements in the Zone). Based on the Feasibility Study, during the term of the Zone, new development (which would not have occurred but for the Zone) will generate approximately \$15,346,537 in total new City real property tax revenue for the City. Approximately \$4,143,565 will be deposited into the TIRZ No. 2 Fund to pay for the Project Costs over the life of the Zone. The remaining real property tax revenue over that period, estimated at \$11,202,972 shall be retained by the City.

One hundred percent (100%) of all taxing revenues generated for other taxing entities by the new development within the Zone will be retained by the respective taxing entities. Based on the foregoing, the feasibility of the Zone has been demonstrated.

## SECTION 10: ESTIMATED BONDED INDEBTEDNESS

No bonded indebtedness issued by the City pursuant to the Act is contemplated.

## SECTION 11: APPRAISED VALUE

### 11.1 Taxable Increment Base

The Tax Increment Base of the Zone at the time of creation was \$125,440, and was confirmed by the Appraisal District. Each year, the Appraisal District shall confirm the current Captured Appraised Value. The taxable value of the Zone as of Tax Year 2022 is \$7,417,869 and Tax Year 2023 is \$8,447,390.

### 11.2 Estimated Captured Appraised Value

It is estimated that upon expiration of the term of the Zone, the total Captured Appraised Value of taxable real property in the Zone will be approximately \$135,473,472, as shown on **Exhibit E-1**. The actual Captured Appraised Value, as certified by the Appraisal District, for each year, will be used to calculate the annual City TIRZ Increment, pursuant to this Amended Plan.



## SECTION 12: METHOD OF FINANCING

This Amended Plan shall obligate the City to deposit the City TIRZ Increment into the TIRZ No. 2 Fund. For example, in FY 2024, the City's ad valorem tax rate is \$0.52301 per \$100 of assessed value, therefore the City would contribute \$0.14121 per \$100 of the Captured Appraised Value in the Zone levied and collected, into the TIRZ No. 2 Fund.

The revenue produced by the Zone shall be used annually as follows:

- 1) For reasonable Administrative Costs of the Zone; then
- 2) The TIRZ No. 2 Annual Credit Amount; then
- 3) Any remaining TIRZ Revenue after the first two obligations shall be transferred to the General Fund of the City.

All payments of Project Costs shall be made solely from the TIRZ No. 2 Fund and from no other funds of the City, unless otherwise approved by the governing body. The TIRZ No. 2 Fund shall only be used to pay the Project Costs. The City may amend this Amended Plan in compliance with the Facilities and Creation Costs Agreement, and the Act, including but not limited to what is considered a Project Cost.

The Public Improvements are to be constructed within the boundaries of the Riverwood Ranch PID and the Riverwood Ranch North PID and are to be financed in part by the City via the levy of Riverwood Ranch PID Assessments and Riverwood Ranch North PID Assessments, as further described in the Riverwood Ranch PID Service and Assessment Plan and the Riverwood Ranch North Service and Assessment Plan. In accordance with the Facilities and Creation Costs Agreement, the Zone shall contribute to the Public Improvements annually, in the form of the TIRZ No. 2 Annual Credit Amount, as further described in the Riverwood Ranch PID Service and Assessment Plan and the Riverwood Ranch North PID Service and Assessment Plan, and as depicted on **Exhibit G**.

## SECTION 13: DURATION OF THE ZONE, TERMINATION

### 13.1 Duration

The stated term of the Zone commenced upon the execution of the Creation Ordinance and shall continue until December 31, 2050, with the last increment being deposited by January 31, 2051, unless otherwise terminated in accordance with the Creation Ordinance, or the Act.

### 13.2 Termination

The Zone shall terminate on the earlier of (i) December 31, 2050, or (ii) at such time that the Project Costs have been paid in full. If upon expiration of the stated term of the Zone, the

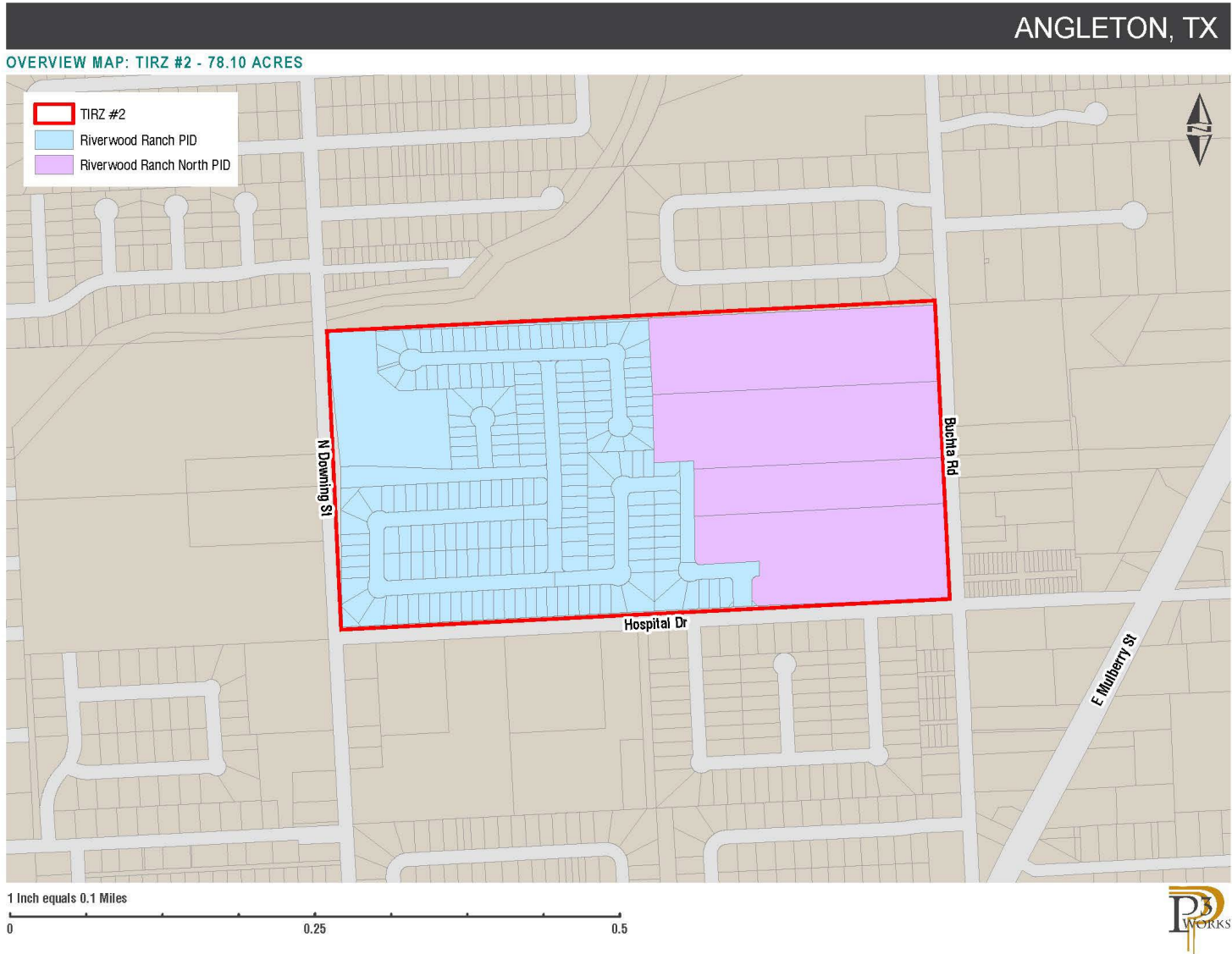
obligations of the Zone have not been fully funded by the TIRZ No. 2 Fund, the City shall have no obligation to pay the shortfall and the term shall not be required to be extended. Nothing in this section is intended to prevent the City from extending the term of the Zone in accordance with the Act.

## LIST OF EXHIBITS

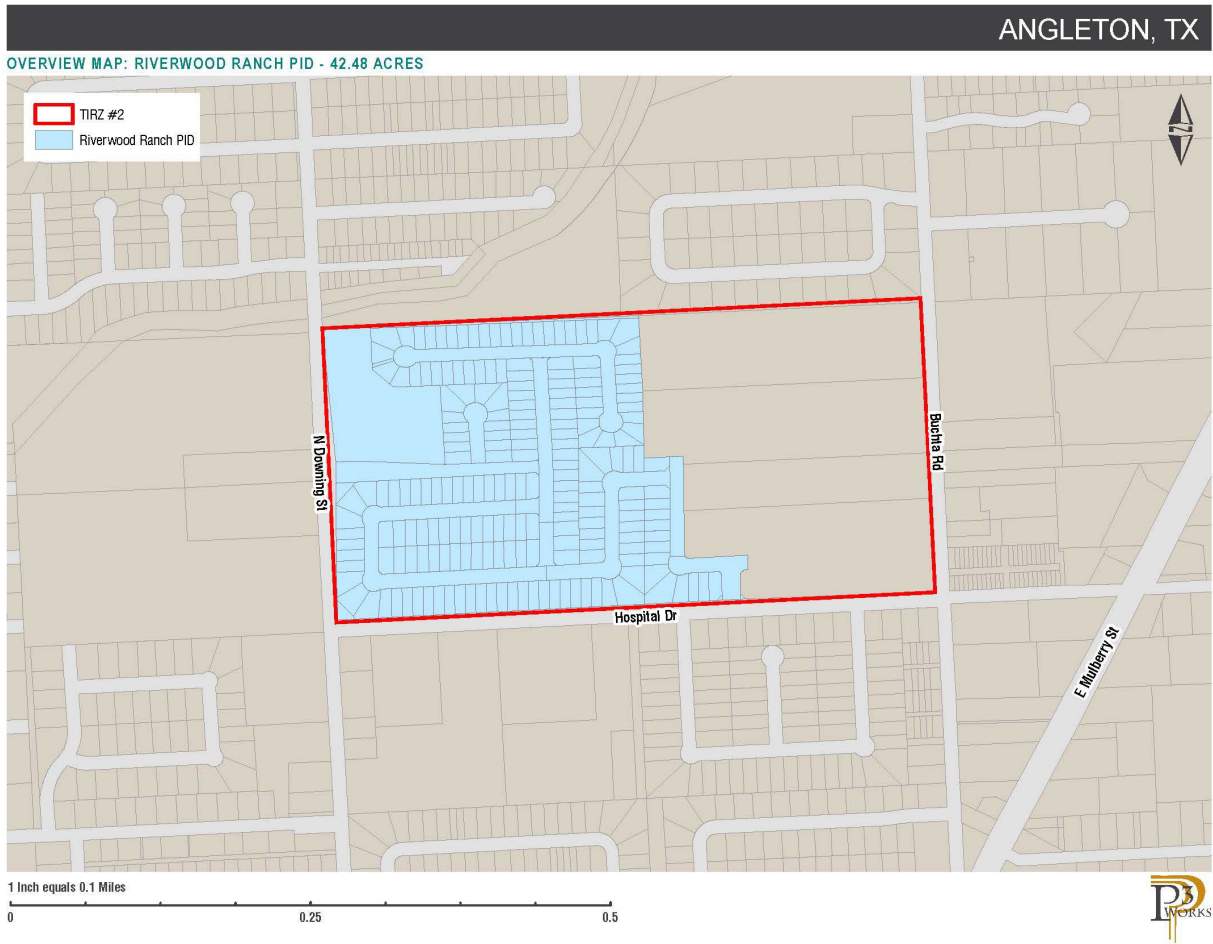
<b>Exhibit A-1</b>	Map of the Zone
<b>Exhibit A-2</b>	Map of the Riverwood Ranch Property
<b>Exhibit A-3</b>	Map of the Riverwood Ranch North Property
<b>Exhibit B</b>	Project Costs
<b>Exhibit C</b>	Non-Project Costs
<b>Exhibit D</b>	Estimated Timeline of Incurred Costs
<b>Exhibit E-1</b>	Feasibility Study
<b>Exhibit E-2</b>	Riverwood Ranch Feasibility Study
<b>Exhibit E-3</b>	Riverwood Ranch North Feasibility Study
<b>Exhibit F-1</b>	Map of the Public Improvements for Riverwood Ranch
<b>Exhibit F-2</b>	Map of the Public Improvements for Riverwood Ranch North
<b>Exhibit G</b>	Proposed Uses of the Property
<b>Exhibit H</b>	Legal Description

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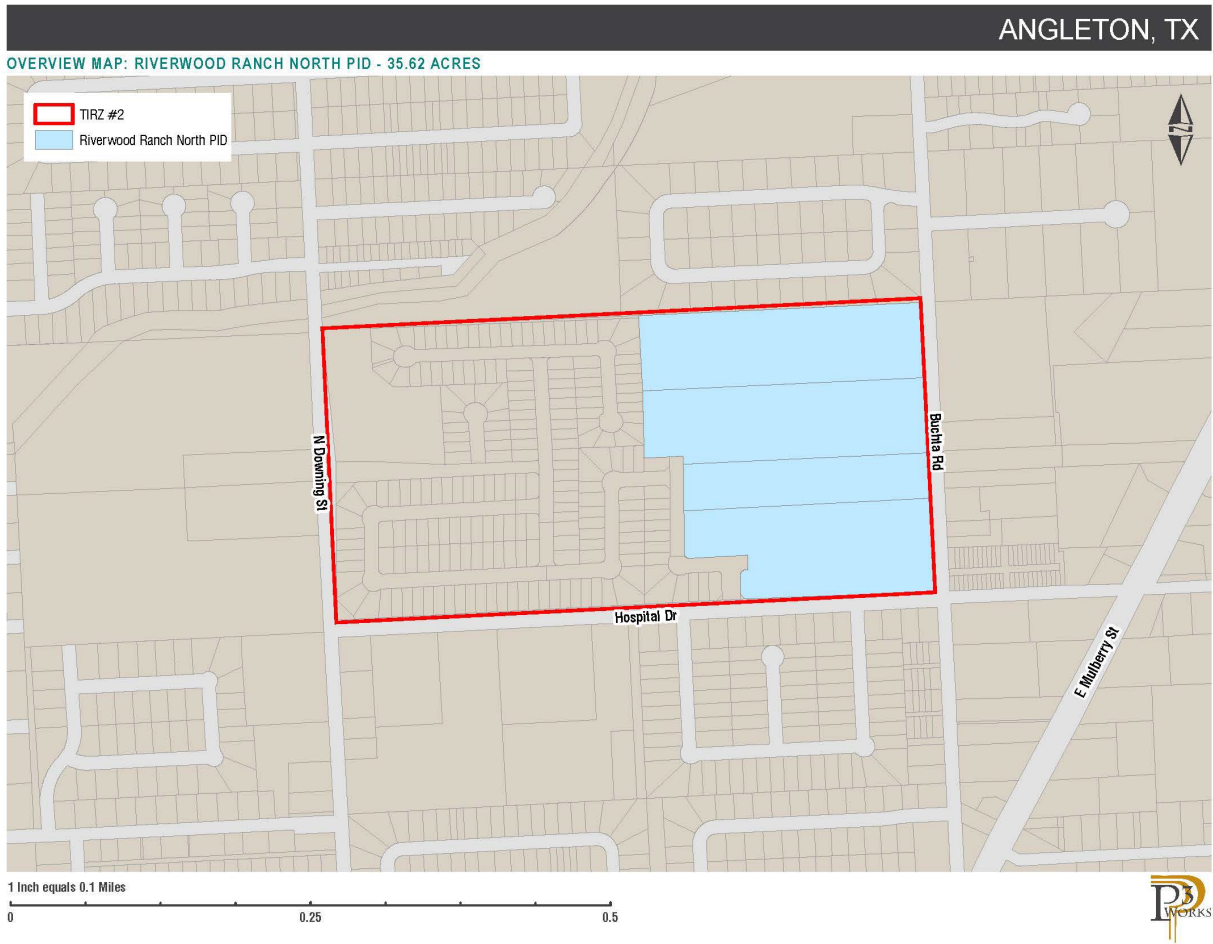
# EXHIBIT A-1 – MAP OF THE ZONE



# EXHIBIT A-2 – MAP OF THE RIVERWOOD RANCH PROPERTY



# EXHIBIT A-3 - MAP OF THE RIVERWOOD RANCH NORTH PROPERTY



## EXHIBIT B – PROJECT COSTS

Reinvestment Zone Number Two, City of Angleton, Texas	
Project Costs	
Public Improvements	Total
<b>Riverwood Ranch Projects<sup>1</sup></b>	
Roadway	\$ 1,698,506
Water	\$ 376,407
Wastewater	\$ 452,137
Storm Water	\$ 655,617
Landscape and Park	\$ 425,589
Contingency	\$ 360,826
Soft Costs	\$ 541,238
<b>Subtotal</b>	<b>\$ 4,510,321</b>
<b>Riverwood Ranch North Projects<sup>1</sup></b>	
Streets - Paving	\$ 1,536,146
Clearing & Grubbing	\$ 200,000
Drainage - Storm Water	\$ 325,050
Potable Water	\$ 307,830
Wastewater	\$ 438,650
Landscaping, Parks and Amenities	\$ 127,230
Drainage - Detention	\$ 391,251
Contingency	\$ 815,822
Soft Costs	\$ 643,468
Interest and Financing Costs <sup>2</sup>	\$ 836,729
<b>Subtotal</b>	<b>\$ 5,622,177</b>
<b>Public Improvements Subtotal</b>	<b>\$ 10,132,497</b>
<b>Administrative Costs</b>	<b>387,922</b>
<b>Total Project Costs<sup>1</sup></b>	<b>\$ 10,520,419</b>

(1) As provided by the Owner.

(2) Allocable share of the estimated financing costs of the Public Improvements for Riverwood Ranch North, subject to change.

**EXHIBIT C – NON-PROJECT COSTS**

Development	Lot Type <sup>1</sup>	Units	Lot Value		Buildout Value		Non-Project Costs
			Per Unit	Total	Per Unit	Total	
Riverwood Ranch	45' Lot	148	\$ 42,750	6,327,000	\$ 226,500	33,522,000	27,195,000
Riverwood Ranch	50' Lot	30	\$ 47,500	1,425,000	\$ 247,000	7,410,000	5,985,000
Riverwood Ranch	60' Lot	27	\$ 57,000	1,539,000	\$ 268,500	7,249,500	5,710,500
<b>Subtotal</b>		<b>205</b>		<b>\$ 9,291,000</b>		<b>\$ 48,181,500</b>	<b>\$ 38,890,500</b>
Riverwood Ranch North	50' Lot	80	\$ 60,000	4,800,000	\$ 285,000	22,800,000	18,000,000
Riverwood Ranch North	60' Lot	64	\$ 65,000	4,160,000	\$ 300,000	19,200,000	15,040,000
<b>Subtotal</b>		<b>144</b>		<b>\$ 8,960,000</b>		<b>\$ 42,000,000</b>	<b>\$ 33,040,000</b>
<b>Total</b>		<b>349</b>		<b>\$ 18,251,000</b>		<b>\$ 90,181,500</b>	<b>\$ 71,930,500</b>

**Footnotes:**

(1) Based on data provided by the Owner on January 11, 2024.



**EXHIBIT D – ESTIMATED TIMELINE OF INCURRED COSTS**

**City of Angleton Tax Increment Reinvestment Zone No. 2  
Estimated Timeline of Incurred Project Costs**

Zone Year	Calendar Year	Administrative Costs	Riverwood Ranch Projects	Riverwood Ranch North Projects	Total Project Costs <sup>1</sup>	
					Annual	Cumulative
Base	2020					
1	2021	\$ -	\$ 545,427	\$ -	\$ 545,427	\$ 545,427
2	2022	\$ -	\$ 125,646	\$ -	\$ 125,646	\$ 671,073
3	2023	\$ 10,000	\$ 1,764,818	\$ 1,157,851	\$ 2,932,668	\$ 3,603,741
4	2024	\$ 10,200	\$ 854,407	\$ 4,272,247	\$ 5,136,854	\$ 8,740,595
5	2025	\$ 10,404	\$ 738,999	\$ 192,079	\$ 941,482	\$ 9,682,077
6	2026	\$ 10,612	\$ 481,024	\$ -	\$ 491,636	\$ 10,173,713
7	2027	\$ 10,824	\$ -	\$ -	\$ 10,824	\$ 10,184,538
8	2028	\$ 11,041	\$ -	\$ -	\$ 11,041	\$ 10,195,578
9	2029	\$ 11,262	\$ -	\$ -	\$ 11,262	\$ 10,206,840
10	2030	\$ 11,487	\$ -	\$ -	\$ 11,487	\$ 10,218,327
11	2031	\$ 11,717	\$ -	\$ -	\$ 11,717	\$ 10,230,043
12	2032	\$ 11,951	\$ -	\$ -	\$ 11,951	\$ 10,241,994
13	2033	\$ 12,190	\$ -	\$ -	\$ 12,190	\$ 10,254,184
14	2034	\$ 12,434	\$ -	\$ -	\$ 12,434	\$ 10,266,618
15	2035	\$ 12,682	\$ -	\$ -	\$ 12,682	\$ 10,279,300
16	2036	\$ 12,936	\$ -	\$ -	\$ 12,936	\$ 10,292,237
17	2037	\$ 13,195	\$ -	\$ -	\$ 13,195	\$ 10,305,431
18	2038	\$ 13,459	\$ -	\$ -	\$ 13,459	\$ 10,318,890
19	2039	\$ 13,728	\$ -	\$ -	\$ 13,728	\$ 10,332,618
20	2040	\$ 14,002	\$ -	\$ -	\$ 14,002	\$ 10,346,620
21	2041	\$ 14,282	\$ -	\$ -	\$ 14,282	\$ 10,360,903
22	2042	\$ 14,568	\$ -	\$ -	\$ 14,568	\$ 10,375,471
23	2043	\$ 14,859	\$ -	\$ -	\$ 14,859	\$ 10,390,330
24	2044	\$ 15,157	\$ -	\$ -	\$ 15,157	\$ 10,405,487
25	2045	\$ 15,460	\$ -	\$ -	\$ 15,460	\$ 10,420,947
26	2046	\$ 15,769	\$ -	\$ -	\$ 15,769	\$ 10,436,716
27	2047	\$ 16,084	\$ -	\$ -	\$ 16,084	\$ 10,452,800
28	2048	\$ 16,406	\$ -	\$ -	\$ 16,406	\$ 10,469,206
29	2049	\$ 16,734	\$ -	\$ -	\$ 16,734	\$ 10,485,940
30	2050	\$ 17,069	\$ -	\$ -	\$ 17,069	\$ 10,503,009
31	2051	\$ 17,410	\$ -	\$ -	\$ 17,410	\$ 10,520,419
<b>Total</b>		<b>\$ 387,922</b>	<b>\$ 4,510,321</b>	<b>\$ 5,622,177</b>	<b>\$ 10,520,419</b>	

(1) Estimate provided for illustrative purposes only.

## EXHIBIT E-1 – FEASIBILITY STUDY

Reinvestment Zone Number Two, City of Angleton, Texas Feasibility Study										
Zone Year	Calendar Year	Growth/Year <sup>1</sup>	Added Development Value <sup>2</sup>	New Taxable Value	Incremental Value	City				
						TIRZ Increment			Retained New Revenue	
						%	Annual	Cumulative	Annual	Cumulative
Base	2020				125,440					
1	2021	2%	-	1,156,510	1,031,070	27%	-	-	-	-
2	2022	2%	6,238,229	7,417,869	7,292,429	27%	1,456	1,456	3,937	3,937
3	2023	2%	1,437,053	\$8,892,630	8,767,190	27%	10,298	11,754	27,842	31,779
4	2024	2%	27,997,550	37,068,033	36,942,593	27%	12,380	24,134	33,473	65,252
5	2025	2%	38,599,680	76,409,074	76,283,634	27%	52,168	76,302	141,047	206,299
6	2026	2%	9,748,250	87,685,505	87,560,065	27%	107,723	184,025	291,251	497,549
7	2027	2%	5,501,635	94,940,850	94,815,410	27%	123,647	307,672	334,304	831,853
8	2028	2%	-	96,839,667	96,714,227	27%	133,892	441,564	362,005	1,193,858
9	2029	0.0%	-	96,839,667	96,714,227	27%	136,574	578,137	369,254	1,563,112
10	2030	0.0%	-	96,839,667	96,714,227	27%	136,574	714,711	369,254	1,932,367
11	2031	2%	-	98,776,460	98,651,020	27%	136,574	851,285	369,254	2,301,621
12	2032	2%	-	100,751,989	100,626,549	27%	139,309	990,593	376,649	2,678,270
13	2033	2%	-	102,767,029	102,641,589	27%	142,098	1,132,691	384,192	3,062,462
14	2034	2%	-	104,822,369	104,696,929	27%	144,944	1,277,635	391,885	3,454,347
15	2035	2%	-	106,918,817	106,793,377	27%	147,846	1,425,481	399,732	3,854,079
16	2036	2%	-	109,057,193	108,931,753	27%	150,807	1,576,288	407,737	4,261,816
17	2037	2%	-	111,238,337	111,112,897	27%	153,826	1,730,114	415,901	4,677,717
18	2038	2%	-	113,463,104	113,337,664	27%	156,906	1,887,021	424,228	5,101,945
19	2039	0.0%	-	113,463,104	113,337,664	27%	160,048	2,047,069	432,723	5,534,668
20	2040	0.0%	-	113,463,104	113,337,664	27%	160,048	2,207,117	432,723	5,967,391
21	2041	2%	-	115,732,366	115,606,926	27%	160,048	2,367,165	432,723	6,400,113
22	2042	2%	-	118,047,013	117,921,573	27%	163,253	2,530,418	441,387	6,841,500
23	2043	2%	-	120,407,953	120,282,513	27%	166,521	2,696,939	450,224	7,291,724
24	2044	2%	-	122,816,112	122,690,672	27%	169,855	2,866,794	459,238	7,750,962
25	2045	2%	-	125,272,435	125,146,995	27%	173,256	3,040,050	468,432	8,219,394
26	2046	2%	-	127,777,883	127,652,443	27%	176,724	3,216,774	477,811	8,697,205
27	2047	2%	-	130,333,441	130,208,001	27%	180,262	3,397,037	487,376	9,184,581
28	2048	2%	-	132,940,110	132,814,670	27%	183,871	3,580,908	497,133	9,681,715
29	2049	0.0%	-	132,940,110	132,814,670	27%	187,552	3,768,460	507,086	10,188,800
30	2050	0.0%	-	132,940,110	132,814,670	27%	187,552	3,956,013	507,086	10,695,886
31	2051	2%	-	135,598,912	135,473,472	27%	187,552	4,143,565	507,086	11,202,972
<b>Total</b>				<b>89,522,397</b>			<b>4,143,565</b>		<b>11,202,972</b>	

Assumptions	Footnotes
2020 Base Taxable Value <sup>3</sup>	1) Values increased at 2% annually with two years of no growth each decade to simulate an economic downturn. 2) Based on data provided by the Developer. 3) As provided by the Appraisal District.
2022 Taxable Value	
2023 Taxable Value	
City AV Rate	

## EXHIBIT E-2 – RIVERWOOD RANCH FEASIBILITY STUDY

**Reinvestment Zone No. 2, City of Angleton, Texas  
Riverwood Ranch Feasibility Study**

Zone Year	Calendar Year	Growth/ Year <sup>1</sup>	Taxable Value			City TIRZ Increment		
			Added Development Value <sup>2</sup>	New Taxable Value	Incremental Value	%	Annual	Cumulative
Base	2020			73,080				
1	2021			622,207	549,126	27%	-	-
2	2022	2%	6,238,229	6,872,879	6,799,799	27%	775	775
3	2023	2%	1,437,053	8,447,390	8,374,310	27%	9,602	10,378
4	2024	2%	20,184,800	28,801,138	28,728,058	27%	11,826	22,203
5	2025	2%	9,772,134	39,149,295	39,076,215	27%	40,568	62,771
6	2026	2%	8,452,172	48,384,452	48,311,372	27%	55,181	117,952
7	2027	2%	5,501,635	54,853,776	54,780,696	27%	68,222	186,174
8	2028	2%	-	55,950,851	55,877,771	27%	77,358	263,532
9	2029	0.0%	-	55,950,851	55,877,771	27%	78,907	342,439
10	2030	0.0%	-	55,950,851	55,877,771	27%	78,907	421,346
11	2031	2%	-	57,069,868	56,996,788	27%	78,907	500,253
12	2032	2%	-	58,211,266	58,138,186	27%	80,487	580,740
13	2033	2%	-	59,375,491	59,302,411	27%	82,099	662,839
14	2034	2%	-	60,563,001	60,489,921	27%	83,743	746,582
15	2035	2%	-	61,774,261	61,701,181	27%	85,420	832,002
16	2036	2%	-	63,009,746	62,936,666	27%	87,130	919,132
17	2037	2%	-	64,269,941	64,196,861	27%	88,875	1,008,008
18	2038	2%	-	65,555,340	65,482,260	27%	90,655	1,098,662
19	2039	0.0%	-	65,555,340	65,482,260	27%	92,470	1,191,132
20	2040	0.0%	-	65,555,340	65,482,260	27%	92,470	1,283,602
21	2041	2%	-	66,866,447	66,793,367	27%	92,470	1,376,072
22	2042	2%	-	68,203,776	68,130,696	27%	94,321	1,470,393
23	2043	2%	-	69,567,851	69,494,771	27%	96,210	1,566,603
24	2044	2%	-	70,959,208	70,886,128	27%	98,136	1,664,739
25	2045	2%	-	72,378,392	72,305,312	27%	100,101	1,764,839
26	2046	2%	-	73,825,960	73,752,880	27%	102,105	1,866,944
27	2047	2%	-	75,302,479	75,229,399	27%	104,149	1,971,093
28	2048	2%	-	76,808,529	76,735,449	27%	106,234	2,077,327
29	2049	0.0%	-	76,808,529	76,735,449	27%	108,361	2,185,688
30	2050	0.0%	-	76,808,529	76,735,449	27%	108,361	2,294,049
31	2051	2%	-	78,344,700	78,271,620	27%	108,361	2,402,410
<b>Total</b>				<b>51,586,022</b>			<b>2,402,410</b>	

Assumptions	
2020 Base Taxable Value <sup>3</sup>	\$ 73,080
2022 Taxable Value	\$ 7,417,869
2023 Taxable Value	\$ 8,447,390
City AV Rate	0.52301

Footnotes:
(1) Includes 2% value increase annually, with two years of no growth each decade to simulate an economic downturn.
(2) Based on data provided by the Developer.
(3) As provided by the Appraisal District.

**EXHIBIT E-3 - RIVERWOOD RANCH NORTH FEASIBILITY STUDY**

Reinvestment Zone No. 2, City of Angleton, Texas Riverwood Ranch North Feasibility Study									
Zone	Year	Calendar Year	Growth/ Year <sup>1</sup>	Taxable Value			City TIRZ Increment		
				Added Development Value <sup>2</sup>	New Taxable Value	Incremental Value	%	Annual	Cumulative
Base		2020			52,360				
1		2021			534,303	481,944	27%	-	-
2		2022	2%		544,990	492,630	27%	681	681
3		2023	2%		445,240	392,880	27%	696	1,376
4		2024	2%	7,812,750	8,266,895	8,214,535	27%	555	1,931
5		2025	2%	28,827,546	37,259,779	37,207,419	27%	11,600	13,531
6		2026	2%	1,296,078	39,301,053	39,248,693	27%	52,542	66,073
7		2027	2%	-	40,087,074	40,034,714	27%	55,424	121,497
8		2028	2%	-	40,888,815	40,836,455	27%	56,534	178,032
9		2029	0%	-	40,888,815	40,836,455	27%	57,667	235,698
10		2030	0%	-	40,888,815	40,836,455	27%	57,667	293,365
11		2031	2%	-	41,706,591	41,654,231	27%	57,667	351,032
12		2032	2%	-	42,540,723	42,488,363	27%	58,821	409,853
13		2033	2%	-	43,391,538	43,339,178	27%	59,999	469,852
14		2034	2%	-	44,259,368	44,207,008	27%	61,201	531,053
15		2035	2%	-	45,144,556	45,092,196	27%	62,426	593,479
16		2036	2%	-	46,047,447	45,995,087	27%	63,676	657,156
17		2037	2%	-	46,968,396	46,916,036	27%	64,951	722,107
18		2038	2%	-	47,907,764	47,855,404	27%	66,252	788,359
19		2039	0%	-	47,907,764	47,855,404	27%	67,578	855,937
20		2040	0%	-	47,907,764	47,855,404	27%	67,578	923,515
21		2041	2%	-	48,865,919	48,813,559	27%	67,578	991,094
22		2042	2%	-	49,843,237	49,790,877	27%	68,931	1,060,025
23		2043	2%	-	50,840,102	50,787,742	27%	70,311	1,130,336
24		2044	2%	-	51,856,904	51,804,544	27%	71,719	1,202,056
25		2045	2%	-	52,894,042	52,841,682	27%	73,155	1,275,211
26		2046	2%	-	53,951,923	53,899,563	27%	74,620	1,349,830
27		2047	2%	-	55,030,962	54,978,602	27%	76,113	1,425,944
28		2048	2%	-	56,131,581	56,079,221	27%	77,637	1,503,581
29		2049	0%	-	56,131,581	56,079,221	27%	79,191	1,582,772
30		2050	0%	-	56,131,581	56,079,221	27%	79,191	1,661,964
31		2051	2%	-	57,254,212	57,201,852	27%	79,191	1,741,155
<b>Total</b>					<b>37,936,374</b>			<b>1,741,155</b>	

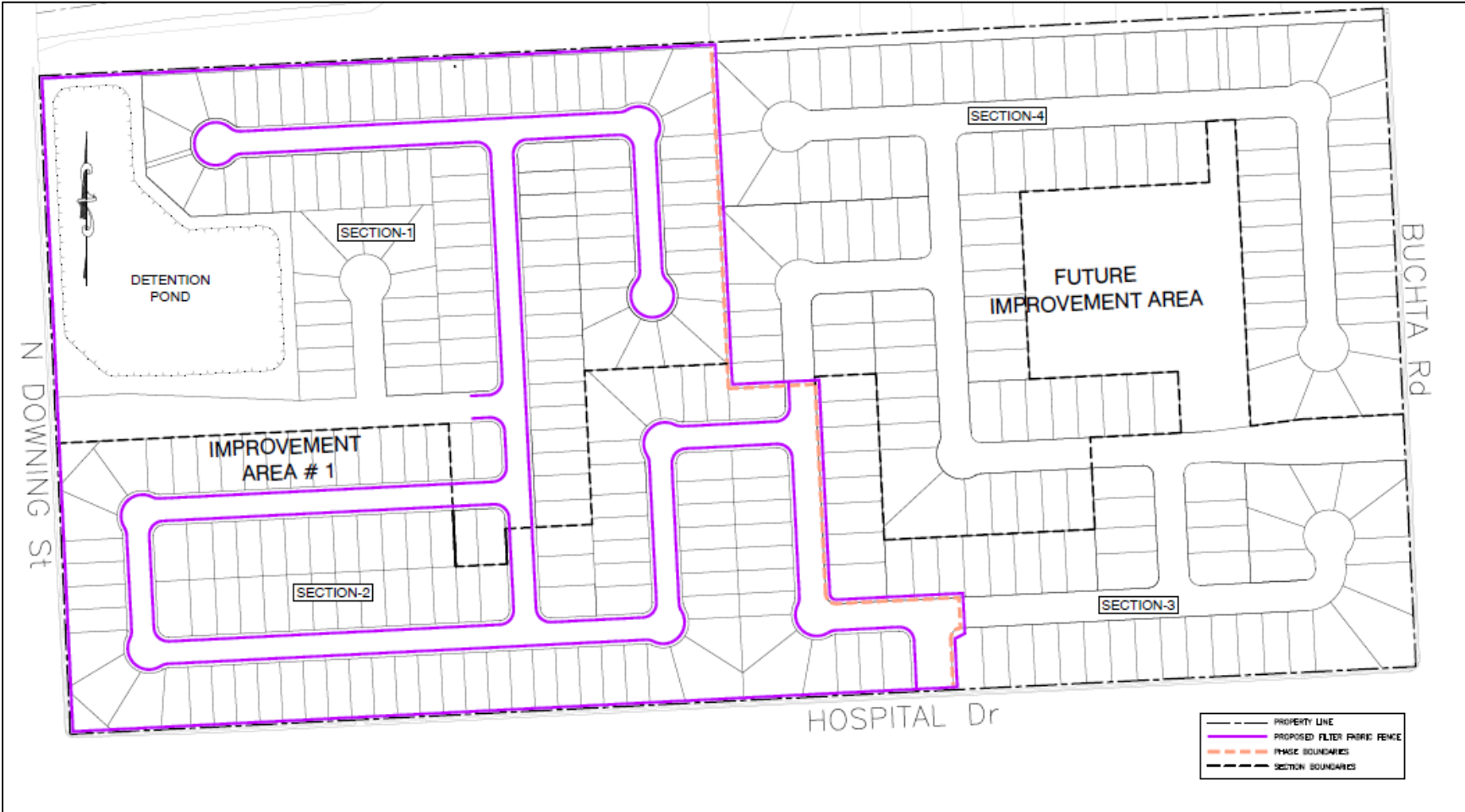
  

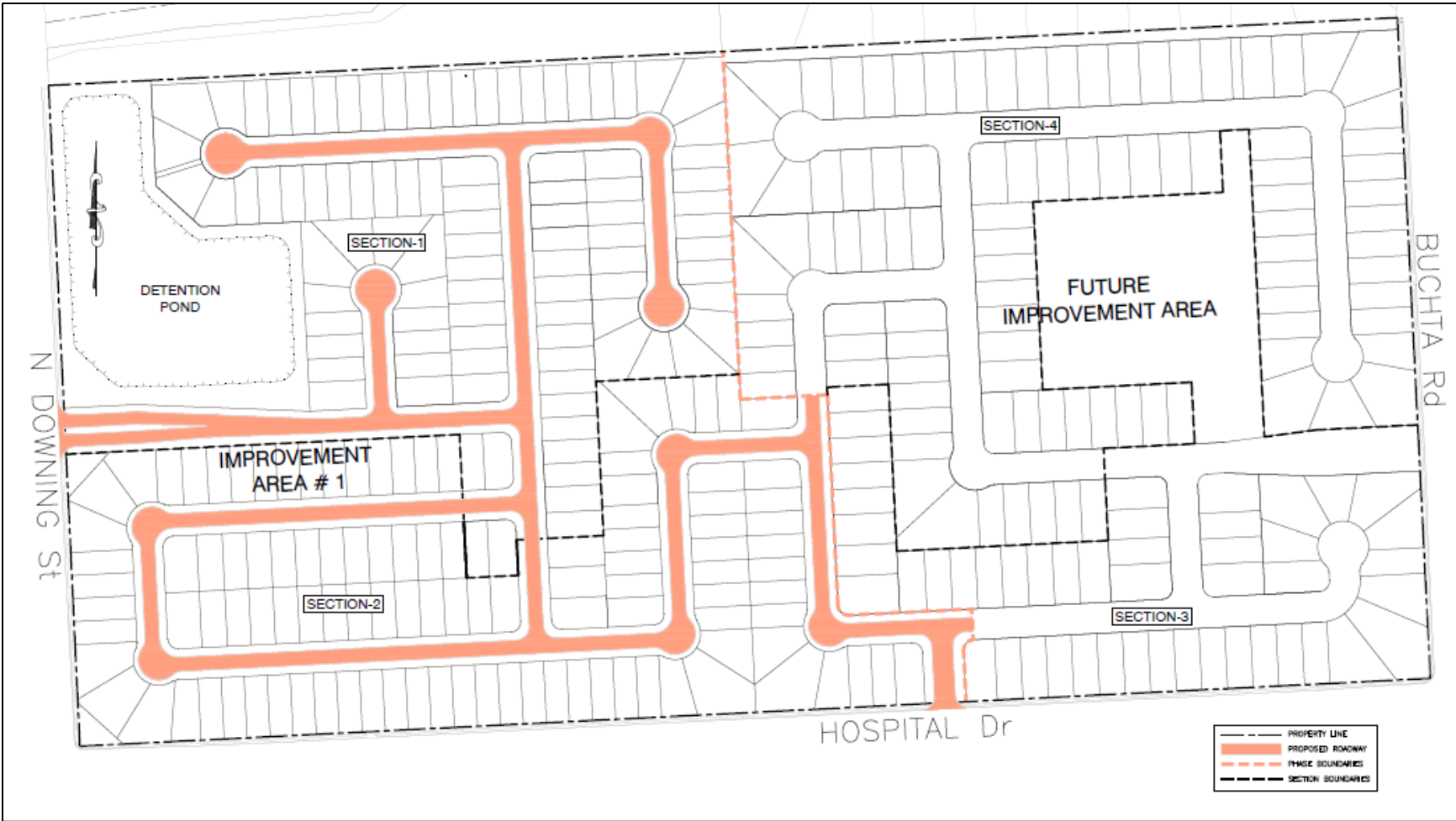
Assumptions	
2020 Base Taxable Value <sup>3</sup>	\$ 52,360
2023 Taxable Value	\$ 445,240
City AV Rate	0.52301

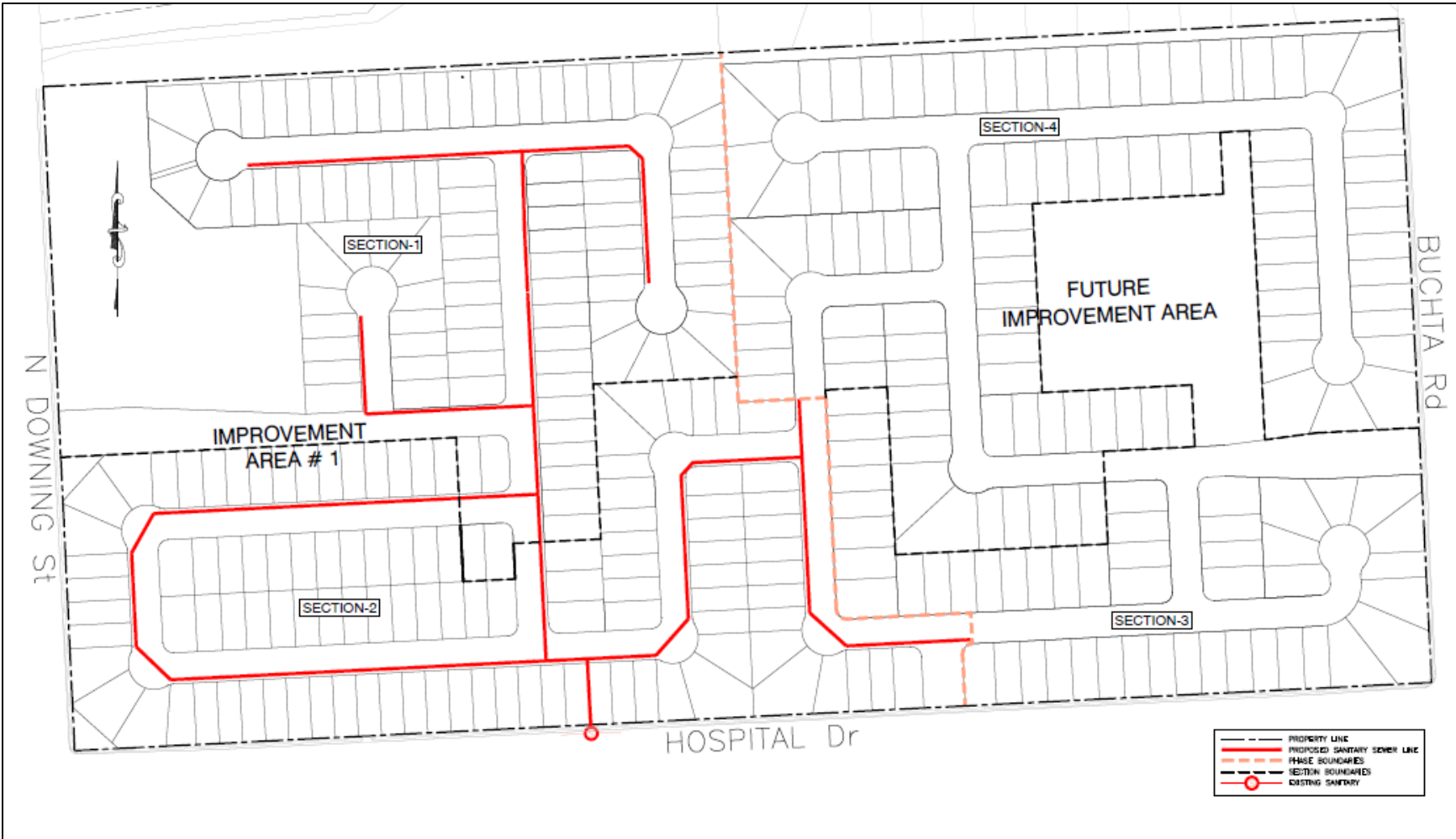
  

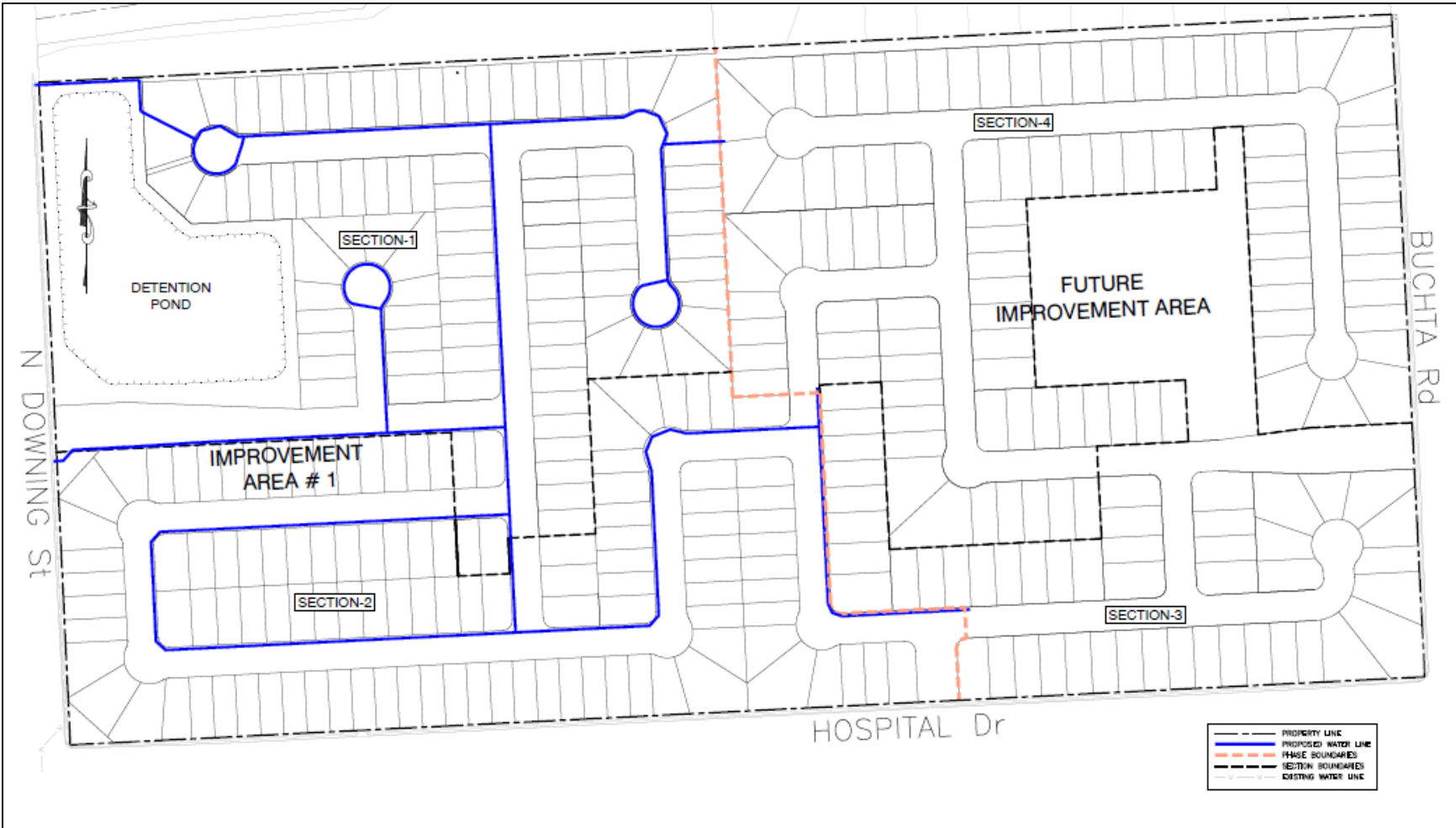
Footnotes:	
(1)	Includes 2% value increase annually, with two years of no growth each decade to simulate an economic downturn.
(2)	Based on data provided by the Developer.
(3)	As provided by the Appraisal District.

**EXHIBIT F-1 – MAP OF THE PUBLIC IMPROVEMENTS FOR RIVERWOOD RANCH**



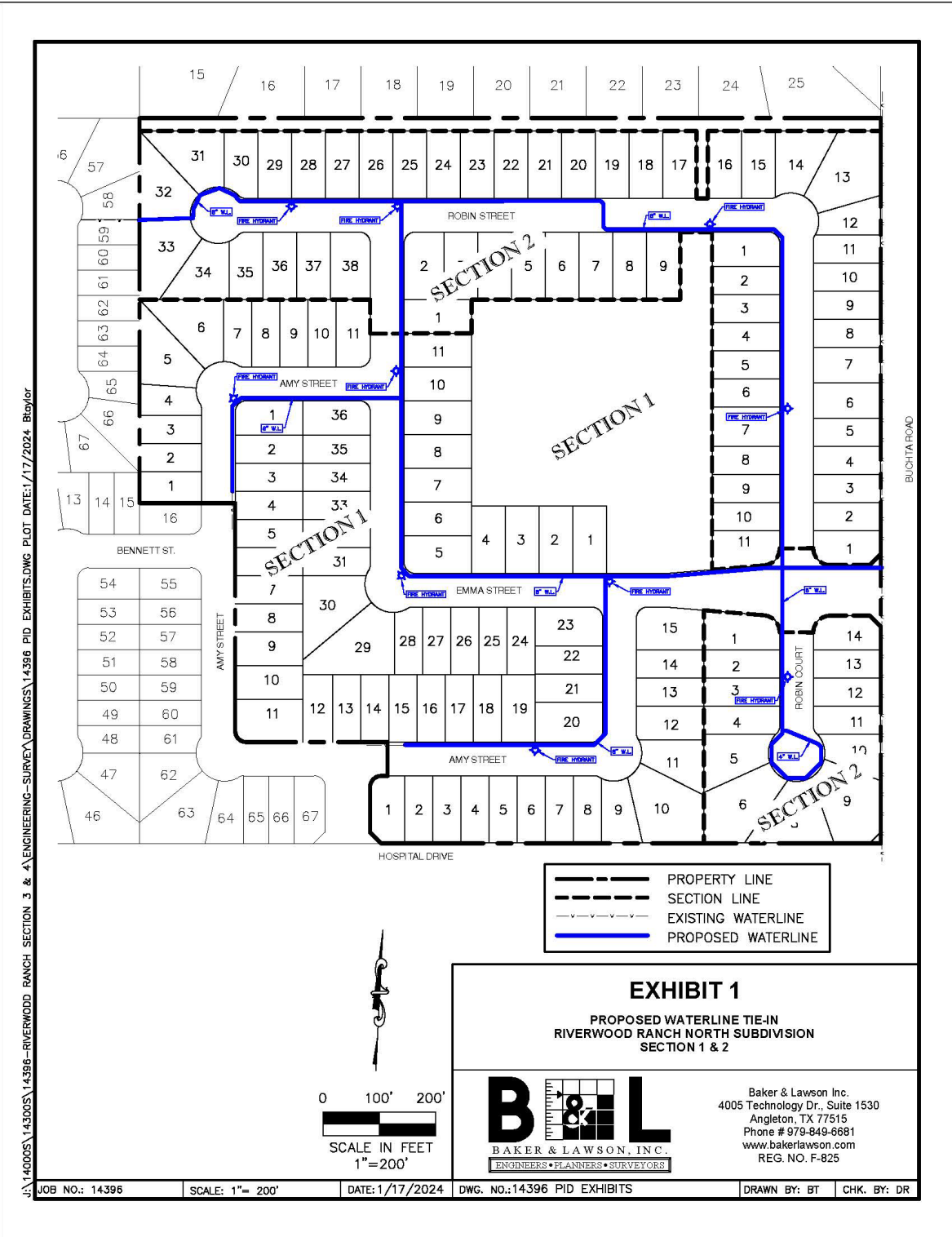


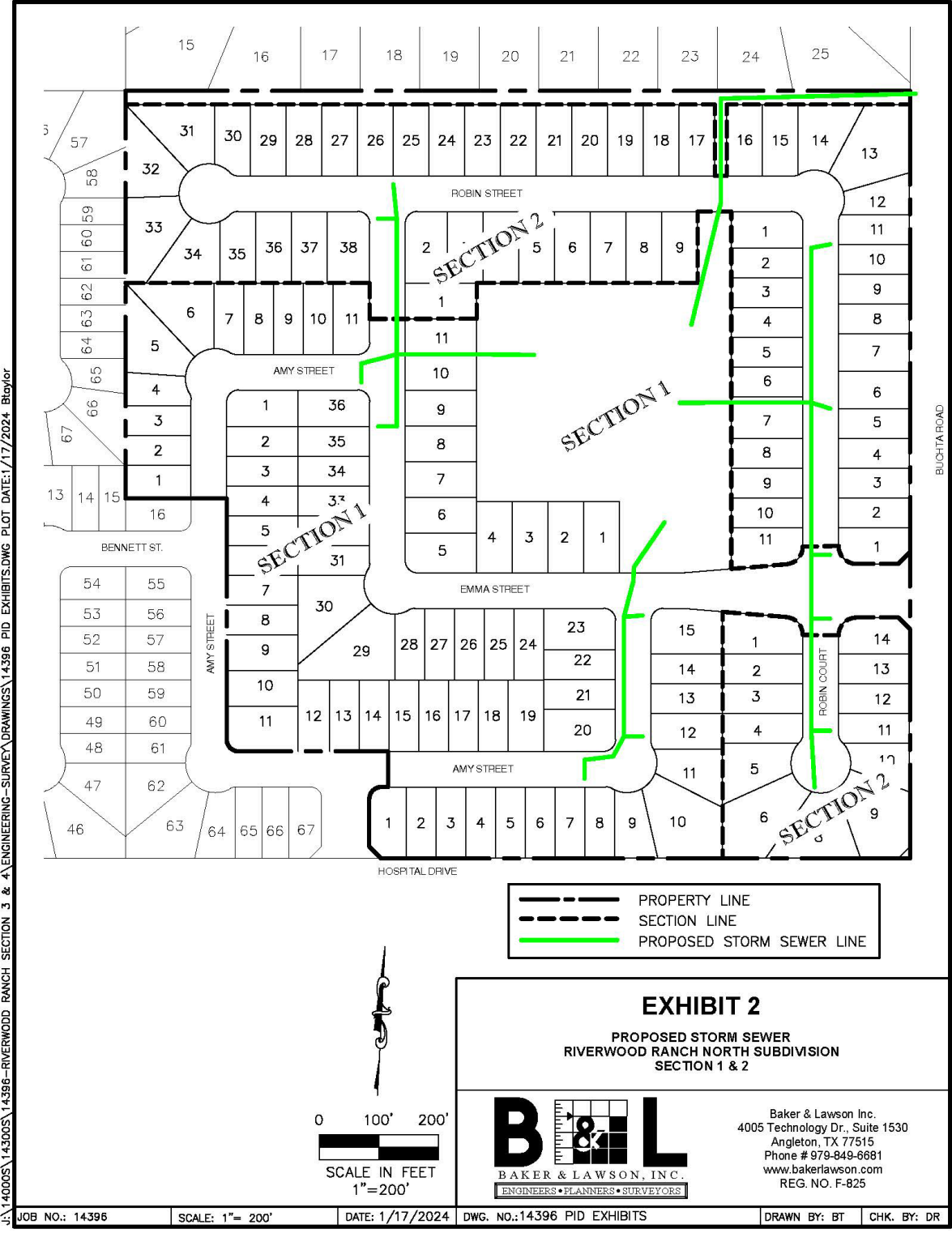


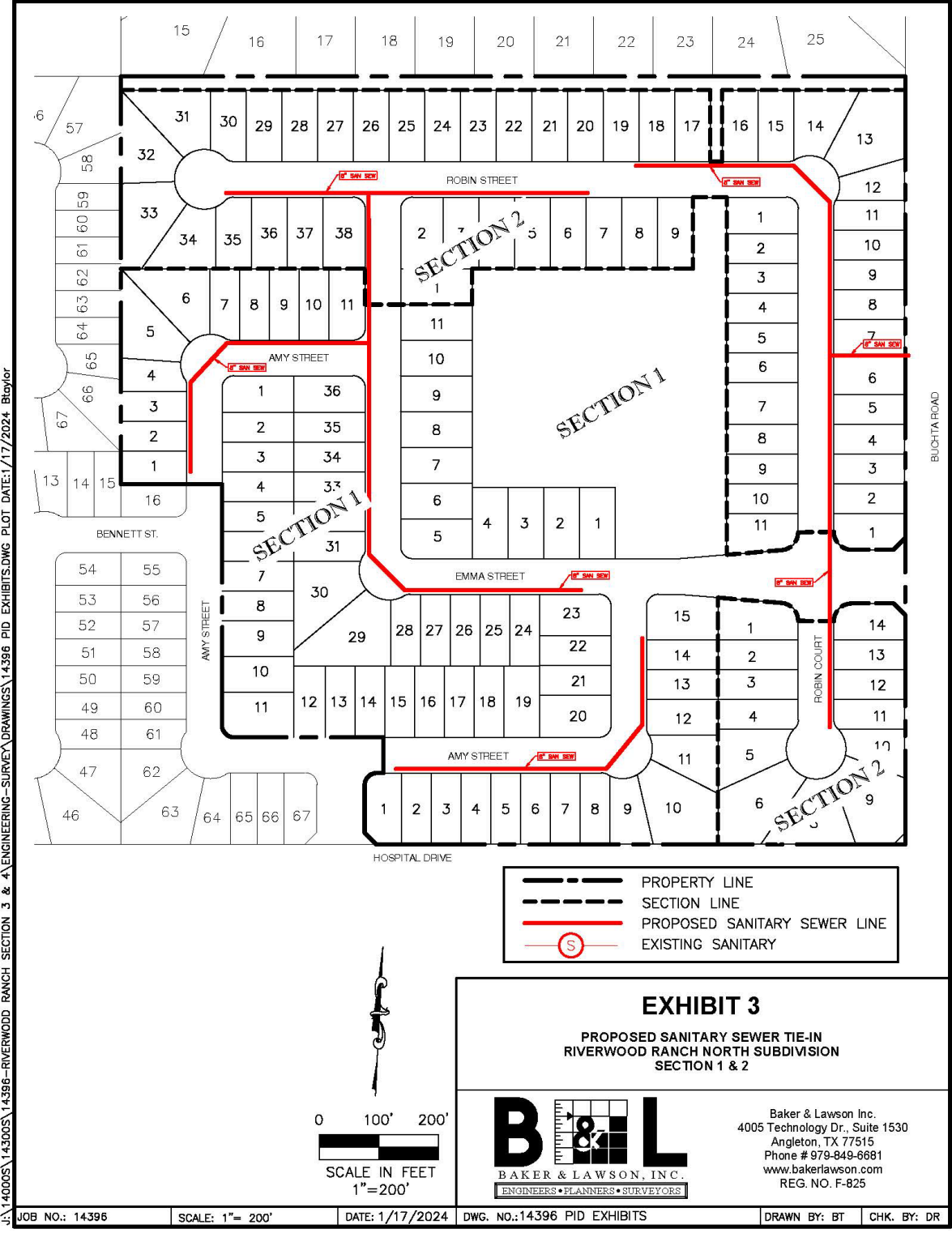




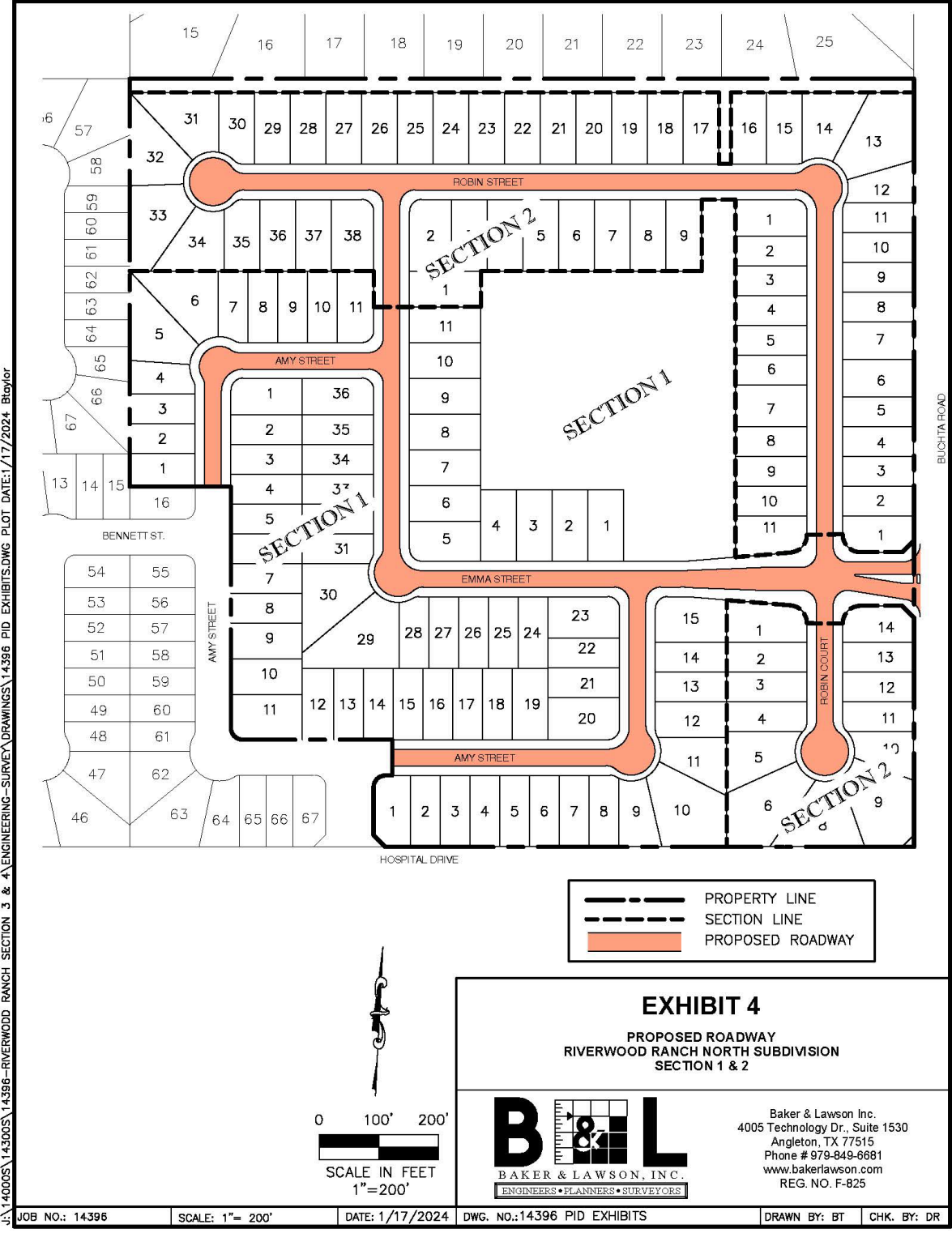
# EXHIBIT F-2 – MAP OF THE PUBLIC IMPROVEMENTS FOR RIVERWOOD RANCH NORTH



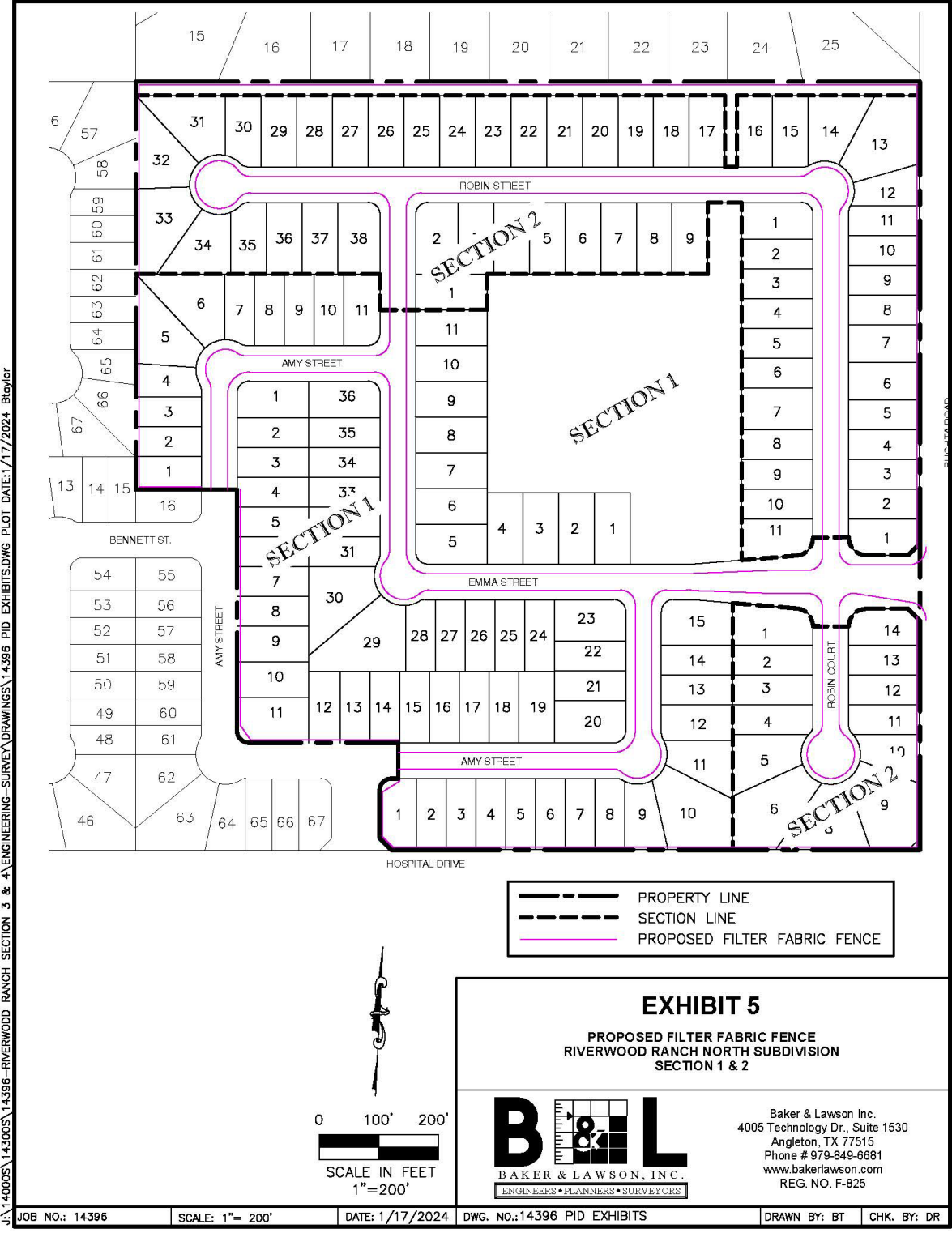




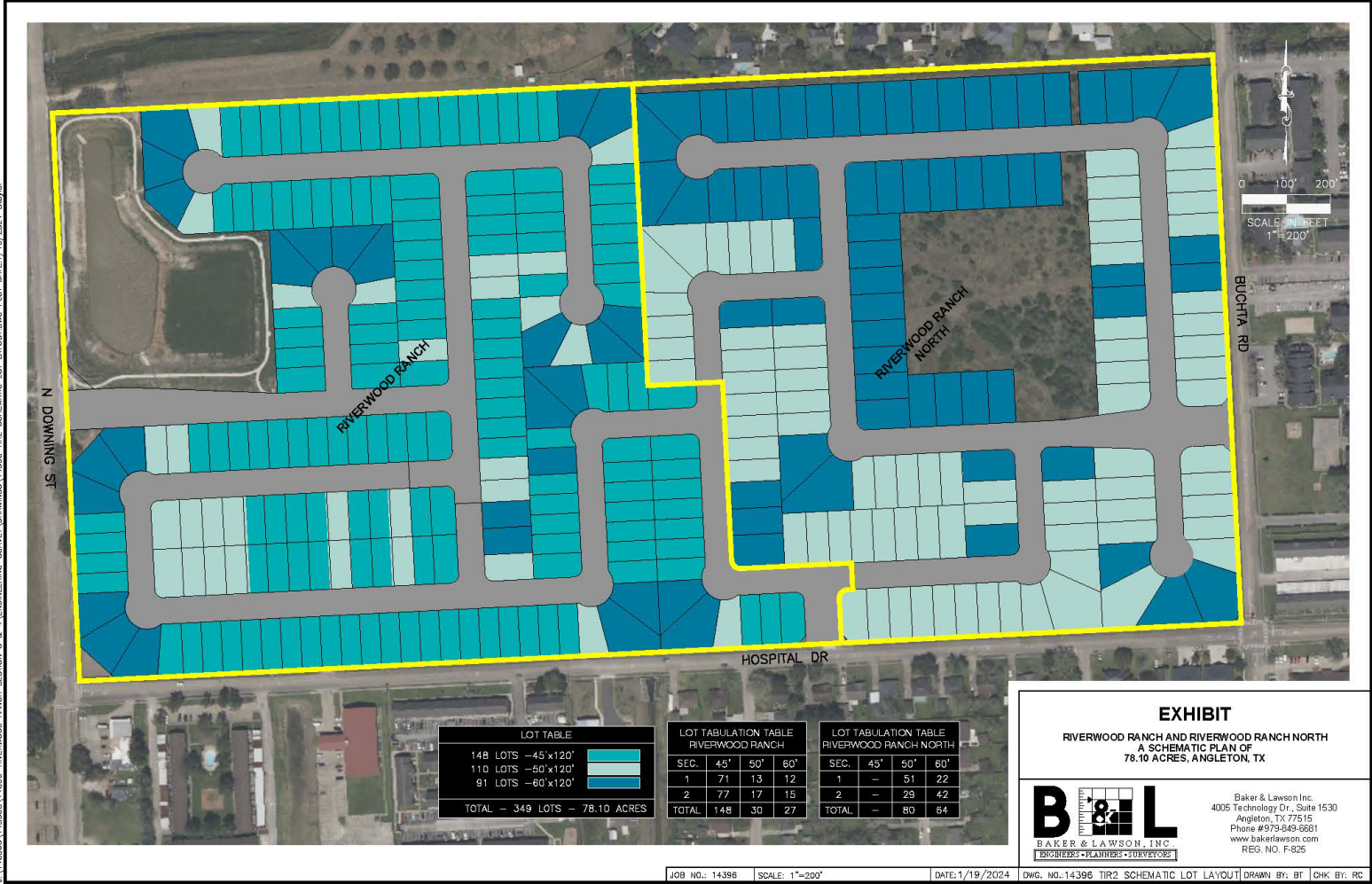
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J:\4000S\14300S\14396--RIVERWOOD RANCH SECTION 3 & 4\ENGINEERING-SURVEY\DRAWINGS\14396 PID EXHIBITS.DWG PLOT DATE: 1/17/2024 Blaytor



**EXHIBIT G – PROPOSED USES OF THE PROPERTY**



## EXHIBIT H – LEGAL DESCRIPTION

County: Brazoria  
 Project: 78 Acres Downing Rd  
 Job No.: 12939

### FIELD NOTES FOR 78.10 ACRE

Being a tract of land containing 78.10 acre (3,401,974 square feet), located within T. S. Lee Survey, Abstract Number (No.) 318, in Brazoria County, Texas; Said 78.10 acre being all of Lots 2, 3, 14 and 15 of the subdivision of the T. S. Lee Survey, Abstract 318 recorded in Volume (Vol.) 42, Page (Pg.) 164 of the Brazoria County Deed Records (B.C.D.R.); Said 78.10 acres being more particularly described by metes and bounds as follows (bearings are based on the Texas Coordinate System of 1983, (NAD83) South Central Zone, per GPS observations):

**BEGINNING** at a 5/8-inch iron rod found on the east right-of-way (R.O.W.) line of North Downing Street (variable width), at the southwest corner of Brookhollow S/D Section II, a subdivision of record in Vol. 16, Pg. 21 of the Brazoria County Plat Records (B.C.P.R.), for the northwest corner of said Lot 15 and the herein described tract;

Thence, with the south lines of said Brookhollow S/D Section II and Colony Square S/D, a subdivision of record in Vol. 16, pg. 321 of the B.C.P.R., with the north lines of said Lots 15 and 14, North 87 degrees 07 minutes 30 seconds East, a distance of 2,635.39 feet to a found 1/2-inch iron rod with cap stamped "Pinpoint" on the west R.O.W. line of Buchta Road (variable width) at the southeast corner of said Colony Square S/D, for the northeast corner of said Lot 14 and the herein described tract;;

Thence, with the west R.O.W. line of Buchta Road and the east lines of said lots 14 and 3, South 02 degrees 52 minutes 30 seconds East, a distance of 1,290.00 feet to a 5/8-inch iron rod with cap stamped "BAKER & LAWSON" set at the northwest corner of the intersection of said Buchta Road and Hospital Drive (sixty feet wide per Vol. 781, Pg. 204 B.C.D.R.), for the southeast corner of herein described tract;

Thence, with the north R.O.W. line of said Hospital Drive and the south lines of said Lots 3 and 2, South 87 degrees 07 minutes 30 seconds West, a distance of 2,638.99 feet to a 5/8-inch iron rod with cap stamped "BAKER & LAWSON" set for the northeast corner of the intersection of said Downing Road and said Hospital Drive, for the southwest corner of the herein described tract;

THENCE, with the east R.O.W. line of said Downing Road and the west line of said Lots 2 and 15, North 02 degrees 42 minutes 55 seconds West, a distance of 1,290.01 feet to the **POINT OF BEGINNING** and containing 78.10 acres of land.

A land title survey of the herein described tract has been prepared by Baker & Lawson Inc. and accompanies this metes and bounds description.

  
 Devin R. Royal  
 Registered Professional Land Surveyor  
 Texas Registration No. 6667



Baker & Lawson Inc.  
 Texas Firm Registration No. 10052500  
 PH: (979) 849-6681  
 January 4, 2019  
 Revised: June 6, 2019



## AGENDA ITEM SUMMARY FORM

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**MEETING DATE:** 04/23/2024  
**PREPARED BY:** Jamie Praslicka  
**AGENDA CONTENT:** Discussion and possible action for the 2024 Hazard Mitigation Plan  
**AGENDA ITEM SECTION:** Regular Agenda

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**BUDGETED AMOUNT:** N/A **FUNDS REQUESTED:** N/A

**FUND:** N/A

**EXECUTIVE SUMMARY:**

The Office of Emergency Management is seeking approval for the 2024 Hazard Mitigation Plan. In collaboration with the Houston-Galveston Area Council, the City of Angleton has developed and implemented its own Hazard Mitigation Plan, which takes into account the potential hazards that Angleton could face. Previously, the City of Angleton was part of the Brazoria County Hazard Mitigation Plan, but it has since taken steps to become independent and develop its own plan. Previously, the City of Angleton was included in the Brazoria County Hazard Mitigation Plan, but since then, it has taken steps to become independent of its plan.

**RECOMMENDATION:**

Approval of the 2024 Hazard Mitigation Plan



**RESOLUTION NO. 20240423-011**

**A RESOLUTION BY THE CITY COUNCIL OF THE CITY OF ANGLETON, TEXAS, ADOPTING THE HOUSTON-GALVESTON AREA COUNCIL OF GOVERNMENTS – CITY OF ANGLETON HAZARD MITIGATION PLAN, AND VESTING THE MAYOR WITH THE RESPONSIBILITY, AUTHORITY, AND MEANS TO INFORM ALL CONCERNED PARTIES OF THIS ACTION; FINDING THAT THE MEETING COMPLIED WITH THE OPEN MEETINGS ACT; AND DECLARING AN EFFECTIVE DATE.**

**WHEREAS**, certain areas of the City of Angleton are subject to periodic flooding and other natural hazards with the potential to cause damage to people and properties within the area; and

**WHEREAS**, the City of Angleton desires to prepare and mitigate for such circumstances; and

**WHEREAS**, under the Disaster Mitigation Act of 2000, the United States Federal Emergency Management Agency (FEMA) requires that local jurisdictions have in place a FEMA-approved Hazard Mitigation Plan as a condition of receipt of certain future federal mitigation funding after November 1, 2004; and

**WHEREAS**, the Houston-Galveston Area Council of Governments (H-GAC) in partnership with the City of Angleton Office of Emergency Management, in order to meet this requirement, have initiated and completed the development of a Hazard Mitigation Plan for the City of Angleton

**NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF ANGLETON, TEXAS:**

**SECTION 1.** That the findings set out in the preamble of this resolution are in all things approved and adopted.

**SECTION 2.** That the City Council of the City of Angleton, Texas adopts the Houston-Galveston Area Council of Governments – City of Angleton Hazard Mitigation Plan; and vests the Mayor of the City of Angleton, with the responsibility, authority, and the means to:

- (a) Inform all concerned parties of this action
- (b) Develop an addendum to this Hazard Mitigation Plan if the city's unique situation warrants such an addendum.

**SECTION 3.** That the City Council of the City of Angleton, Texas appoints the Mayor of the City to ensure that the Hazard Mitigation Plan is reviewed at least annually and that any needed adjustment to the Hazard Mitigation Plan is developed and presented to the City of Angleton City Council for consideration.

**SECTION 4.** That the City Council of the City of Angleton, Texas agrees to take such other official action as may be reasonably necessary to carry out the objectives of the Hazard Mitigation Plan.

**SECTION 5.** That the meeting at which this resolution was approved was in all things conducted in strict compliance with the Texas Open Meetings Act, Texas Government Code Chapter 551.

**SECTION 6.** This resolution shall be effective immediately upon passage.

**PASSED AND APPROVED ON THIS THE 23rd DAY OF APRIL 2024.**

CITY OF ANGLETON, TEXAS

\_\_\_\_\_  
John Wright  
Mayor

ATTEST:

\_\_\_\_\_  
Michelle Perez, TRMC  
City Secretary

## **Notice of Public Hearing**

**H-GAC, in partnership with the City of Angleton Office of Emergency Management will be hosting a public hearing regarding the draft City of Angleton Hazard Mitigation Plan on April 23rd, 2024, at 6:00 PM.**

**The Public Hearing will be held at the City Council Chambers at 120 S Chenango St., Angleton, TX 77515**

The purpose of the public hearing is to receive comments from all interested individuals regarding the draft City of Angleton Hazard Mitigation Plan before considering final adoption by City Council.

The goal of the Hazard Mitigation Plan is to reduce or eliminate long-term risk to life and property from natural hazard events by identifying and implementing cost-effective mitigation actions. Mitigation is defined by the Federal Emergency Management Agency (FEMA) as sustained actions taken to reduce or eliminate long-term risk to people and property from natural hazards and their effects. A Hazard Mitigation Committee comprised of representatives from the city, surrounding neighbors, and community partners was convened to assess the risks and vulnerabilities to natural hazards that are prevalent to the City of Angleton and the region and to make recommendations on mitigating the effects of such hazards.

The Disaster Mitigation Act of 2000, as amended, requires that local governments, develop, adopt, and update natural hazard mitigation plans every 5 years to remain eligible for federal assistance and funding.

A copy of the draft City of Angleton Hazard Mitigation Plan is now available for review and public comments online at: <https://www.h-gac.com/regional-hazard-mitigation-planning>

Members of the community are encouraged to attend to offer feedback.

Jamie Praslicka  
Emergency Management Coordinator





# City of Angleton Hazard Mitigation Plan 2024



Prepared by: The Houston-Galveston Area Council  
Amanda Ashcroft, AICP

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## List of Acronyms

<b>ASL</b>	above sea level
<b>ASTDR</b>	Agency for Toxic Substances and Disease Registry
<b>BCA</b>	Benefit Cost Analysis
<b>CDBG-MIT</b>	Community Development Block Grant Mitigation
<b>CDC</b>	Centers for Disease Control and Prevention
<b>COLE</b>	Coefficient of Linear Extent
<b>CPZ</b>	Community Protection Zone
<b>CRF</b>	Community Risk Factor
<b>CRS</b>	Community Rating System
<b>DBIR</b>	Data Breach Investigations Report
<b>DDoS</b>	Distributed Denial of Service
<b>DMA 2000</b>	Disaster Mitigation Act of 2000
<b>EAL</b>	expected annual loss
<b>EDT</b>	Eastern Daylight Time
<b>EID</b>	Emerging Infectious Diseases
<b>EM</b>	Emergency
<b>FEMA</b>	Federal Emergency Management Agency
<b>FIRM</b>	Flood Insurance Rate Map
<b>FIS</b>	Fire Intensity Scale
<b>FMA</b>	Flood Mitigation Assistance
<b>FPF</b>	Federal Policy Fee
<b>FSA</b>	Farm Service Agency
<b>GIS</b>	Geographic Information Systems
<b>GLO</b>	Texas General Land Office
<b>H-GAC</b>	The Houston-Galveston Area Council
<b>HLR</b>	Historic loss ratio
<b>HMA</b>	Hazard Mitigation Assistance
<b>HMC</b>	Hazard Mitigation Committee
<b>HMAP</b>	Hazard Mitigation Action Plan
<b>HMGP</b>	Hazard Mitigation Grant Program
<b>HMP</b>	Hazard Mitigation Plan
<b>ICC</b>	Increased Cost of Compliance
<b>K</b>	Susceptibility of the soil to water erosion
<b>LEP</b>	Linear Extensibility Percent
<b>LHMP</b>	Local Hazard Mitigation Plan
<b>LS</b>	Combined effects of slope length and steepness
<b>MRLC</b>	Multi-Resolution Land Characteristics
<b>NCC</b>	Network Control Center
<b>NCEI</b>	National Center for Environmental Information
<b>NCHH</b>	National Center for Healthy Housing
<b>NDFD</b>	National Digital Forecast Database

<b>NFIP</b>	National Flood Insurance Program
<b>NHC</b>	National Hurricane Center
<b>NLCD</b>	National Land Cover Database
<b>NLDN</b>	National Lightning Detection Network
<b>nmi</b>	nautical miles
<b>NOAA</b>	National Oceanic and Atmospheric Administration
<b>NRI</b>	National Risk Index
<b>NSSL</b>	NOAA's National Severe Storms Laboratory
<b>NWS</b>	National Weather Service
<b>P</b>	probability
<b>PMT</b>	Plan Maintenance Team
<b>PT</b>	Planning Team
<b>PVI</b>	Pandemic Vulnerability Index
<b>R</b>	Rainfall and runoff factor
<b>RHMP</b>	Regional Hazard Mitigation Plan
<b>RL</b>	repetitive loss
<b>RUSLE</b>	Revised Universal Soil Loss Equation
<b>S</b>	severity
<b>SED</b>	State Executive Director
<b>SFHA</b>	special flood hazard areas
<b>SPC</b>	Storm Prediction Center
<b>SRL</b>	severe repetitive loss
<b>SVI</b>	Social Vulnerability Index
<b>TCEQ</b>	Texas Commission on Environmental Quality
<b>TDEM</b>	Texas Division of Emergency Management
<b>TWRA</b>	Texas Wildfire Risk Assessment
<b>TxWrap</b>	Texas Wildfire Risk Assessment Portal
<b>USDA</b>	United States Department of Agriculture
<b>USDM</b>	United States Drought Monitor
<b>USLE</b>	Universal Soil Loss Equation
<b>VPI</b>	Vulnerable Population Index
<b>WSSI</b>	Winter Storm Severity Index
<b>WUI</b>	wildland urban interface

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## Section 1: Introduction

This section includes the introduction of the plan. This section contains background context, the planning need, purpose, scope, and organization of the plan.

## Section 1: Introduction

In 2011, Brazoria County's Hazard Mitigation Plan (HMP) was updated as part of a seven-county Regional Hazard Mitigation Plan (RHMP) led by H-GAC. In 2018, due to new regulations and planning recommendations, Brazoria County prepared a countywide multi-jurisdictional HMP, of which the City of Angleton was a participating jurisdiction. The City of Angleton partnered with the Houston-Galveston Area Council (H-GAC) for a new Local Hazard Mitigation Plan (LHMP) for 2024.

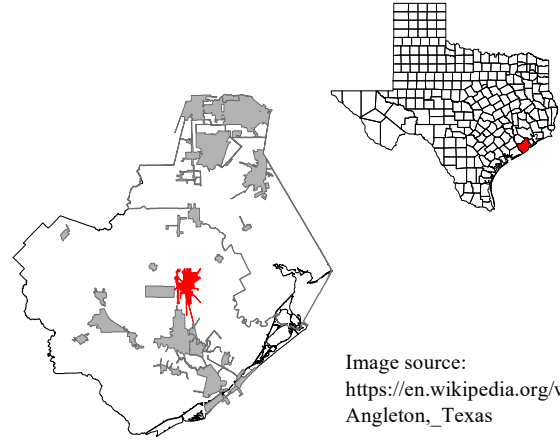


Image source:  
[https://en.wikipedia.org/wiki/Angleton,\\_Texas](https://en.wikipedia.org/wiki/Angleton,_Texas)

## History

On April 28, 2006, the Federal Emergency Management Agency (FEMA) and the Texas Division of Emergency Management (TDEM) approved the first Regional Hazard Mitigation Plan which was later updated in 2011. These RHMPs were a collaboration between 85 local governments to identify regional hazards, vulnerabilities, and 300+ mitigation projects that could be implemented within the region. The 2018, due to new regulation and planning recommendations, Brazoria County, in which the City of Angleton was a participating jurisdiction to the plan, prepared a new countywide multijurisdictional Hazard Mitigation Plan that included a more robust assessment of natural hazards, newly uncovered vulnerabilities, more advanced analysis techniques, and a more effective and informed mitigation strategy. In 2022 The City of Angleton was awarded a LHMP Program grant through H-GAC from the Texas General Land Office (GLO) to develop a new HMP for the city.

## Purpose of Plan

The purpose of The City of Angleton's LHMP is to reduce the loss of life and property within the city, lessen the negative impacts of natural disasters, and increase the resiliency of the community to hazards. Vulnerability to several natural hazards has been identified through a risk assessment, public input, research, and analysis. These hazards threaten the safety of residents and have the potential to damage or destroy both public and private property, disrupt the local economy, and impact the overall quality of life of individuals who live, work, and play in the city. While natural hazards cannot be eliminated, the effective reduction of a hazard's impact can be accomplished through thoughtful planning and action.

The concept and practice of reducing risks to people and property from known hazards is generally referred to as hazard mitigation. One of the most effective tools a community can use to reduce hazard vulnerability is developing, adopting, and updating a hazard mitigation plan as needed. A hazard mitigation plan establishes the broad community vision and guiding principles for reducing hazard risk, including the development of specific mitigation actions designed to eliminate or reduce identified vulnerabilities.

## Planning Need

HMPs should serve as a living document that outlines the communities' long-term strategies to reducing damage to life, and property, and increasing the resilience to the natural hazards it is affected by. HMPs must be updated every 5 years per the Disaster Mitigation Act of 2000 (DMA 2000). This plan serves as the 2024 LHMP for the City of Angleton. The 2024 City of Angleton HMP adhered to the FEMA updated policy guide (FP-206-21-0002), Released on April 19, 2022. The new policy guide became

effective on April 19, 2023. Updates included but were not limited to expanding outreach efforts to include those from various community lifelines within the in the planning process, extensive mapping updates to critical facilities, community lifelines, and other data to visually highlight vulnerabilities to identified hazards, updating the process for risk and capability assessments, and including new hazards to incorporate based on recent events such as winter storms and the Covid-19 Pandemic of 2020.

## Scope of Plan

This HMP includes the following participating jurisdictions:

- City of Angleton

The HMP profiles the following hazards:

- Hurricanes, Tropical Storms & Tropical Depressions
- Flooding
- Winter Weather
- Tornado
- Extreme Heat
- Wildfire
- Drought & Expansive Soils
- Severe Thunderstorm & Lightning
- Hail
- Windstorm
- Erosion
- Emerging Infectious Diseases
- Cybersecurity

## Plan Organization

The 2024 City of Angleton HMP contains 8 sections:

Section 1 is the introduction of the plan. This section contains background context, the planning need, purpose, scope, and organization of the HMP.

Section 2 identifies the planning process, which involves a description of the HMP methodology and development process, identifying Planning Team members, Hazard Mitigation Committee members, roles and responsibilities of those members, stakeholder involvement efforts, meeting dates and summaries, and plan development resources.

Section 3 contains the community profile, which provides a history of hazard events, an overview of the planning area, geographic setting, land use and land cover, population demographics, vulnerable population information, housing and household arrangements, loss estimations, critical facilities, repetitive loss, and severe repetitive loss properties, NFIP and CRS participation, and NFIP policies in force information.

Section 4 outlines the risk assessment procedures and identifies hazards ranked by risk that affect the City of Angleton.

Section 5 includes the capability assessment, which includes a summary and description of the existing plans, programs, and regulatory mechanisms that support hazard mitigation within the planning area.

Section 6 is broken down into subsections for each hazard of concern to the city identified during the risk assessment. It contains descriptions of identified hazards, hazard location, extent, history of events, probability of future events, and climate change impacts. Additionally, vulnerability is addressed for all hazards and includes a probable risk level, an estimate of property and crop damages, number of events, fatalities and injuries, average annual events, changes in frequency, and estimated annualized losses, where applicable.

Section 7 covers the mitigation strategy summary, which provides the mitigation goals, objectives, and action items included in the Hazard Mitigation Action Plan in response to identified hazards.

Section 8 provides an overview of plan maintenance procedures which includes information on monitoring, evaluating, and updating the plan, and a description of how this plan will be incorporated into existing programs.

The appendices cover the hazard summary data (Hazus), H-GAC created maps, a comprehensive list of critical facilities, meeting documentation, and plan adoption.

Appendix A- Hazus Results  
Appendix B- H-GAC Maps  
Appendix C- Critical Facilities

Appendix D- Meeting Documentation  
Appendix E- Survey Results  
Appendix F- Plan Adoption

## Section 2: Planning Process

This section summarizes the planning process, which involves a description of the HMP methodology and development process, identifying Planning Team members, Hazard Mitigation Committee members, roles and responsibilities of those members, stakeholder involvement efforts, meeting dates and summaries, and plan development resources.

## Section 2: Planning Process

### Overview

Hazard mitigation is any sustained action taken to reduce or eliminate the long-term risk to people and property from hazards and their effects. It includes long-term solutions that reduce the impact of disasters in the future. A core assumption of hazard mitigation is that pre-disaster investments will significantly reduce the demand for post-disaster assistance by alleviating the need for emergency response, repair, recovery, and reconstruction<sup>1</sup>.

Hazard mitigation planning is the process of identifying natural hazards, assessing hazard vulnerability and risk, understanding community capabilities and resources, and determining how to minimize or manage those risks. In partnership with the City of Angleton, H-GAC approached the hazard mitigation planning process by establishing a Planning Team (PT) and a Hazard Mitigation Committee (HMC) as outlined in the tables below. The PT included H-GAC staff and the point of contact for the 's Office of Emergency Management. The HMC was comprised of representatives from the City of Angleton and a wide range of stakeholders within the city and surrounding areas. All members identified were asked to participate in the HMC or attend an HMP meeting throughout the planning process via email, website(s), the H-GAC website, and social media. All meetings hosted for this plan update were open to the public.

The PT outlined roles and expectations during the Kickoff meeting, which included the following:

- 1) *Participate in the process.*
  - a) It must be documented in the plan that each participating jurisdiction participates in the process that generated the plan. At each meeting of the Hazard Mitigation Committee for this planning process, we will be documenting attendance, participation, and the collection of any handouts or worksheets provided to you. If you cannot attend the scheduled Hazard Mitigation Committee meeting, attendance can be supplemented with a 1-1 meeting with H-GAC staff.
- 2) *Consistency Review.*
  - a) Review of existing documents pertinent to each jurisdiction
- 3) *Action Review.*
  - a) For plan updates, a review of the strategies from your prior action plan to determine those that have been accomplished and how they were accomplished; and why those that have not been accomplished were not completed.
- 4) *Update Localized Risk Assessment.*
  - a) Each jurisdiction will complete the Risk Identification/Risk Assessment by either working individually and averaging scores among all participating jurisdictions, working together as a group, or a combination of both to remove hazards not associated with the defined jurisdictional area or determining if any hazards need to be added or updated.
- 5) *Capability assessment.*
  - a) Each planning partner must identify and review their individual regulatory, technical, and financial capabilities with regards to the implementation of hazard mitigation actions.
- 6) *Personalize mitigation recommendations & create an Action Plan.*
  - a) Identify and prioritize mitigation recommendations specific to each jurisdiction's defined area.
- 7) *Incorporate Public Participation.*
  - a) Representatives from a broad range of sectors, community lifelines, organizations that support underserved communities, the public and community-based organizations need to be given the opportunity to provide input on, and participate in, the planning process. The Hazard Mitigation Committee will assist with various tasks, when needed, for these types of events.

## Planning Team

The City of Angleton and H-GAC established the Planning Team in February 2023 during a pre-kickoff meeting in preparation for the full kickoff meeting held on March 16, 2023. Members were asked to attend all public meetings either in person or online (if applicable). Online materials, surveys, forms, and documentation are provided in Appendix D. Representatives from the City's Office of Emergency Management served as liaisons between H-GAC and stakeholders, staff, and members of the public who were unable to attend the meetings.

Table 2.1: City of Angleton Planning Team Members

Representative Name & Position/Title	Jurisdiction
Glenn LaMont, Emergency Management Coordinator (retired)	City of Angleton
Jamie Praslicka, Emergency Management Coordinator (current)	City of Angleton
Cheryl Mergo, Senior Manager	H-GAC
Amanda Ashcroft, AICP, Planner	H-GAC

## Hazard Mitigation Committee

The City of Angleton and H-GAC established the Hazard Mitigation Committee in February 2023 in preparation for the kickoff meeting held on 3/16/2023. Members were asked to participate in the HMC via email by the City's Emergency Management Coordinator. A concentrated effort was made to include those who oversee, or aid, underserved populations to participate in this planning process. Members of the HMC were asked to attend all public meetings either in person or online (if applicable). Online materials, surveys, forms, and documentation are provided in Appendix D. Representatives from the city's Office of Emergency Management served as liaisons between H-GAC and stakeholders, staff, and members of the public who were unable to attend the meetings.

Table 2.2: City of Angleton Hazard Mitigation Committee Members

Representative Name	Organization	Title
Anthony Norris	City of Angleton	Fire Captain
Beth Reimschissel	UTMB	Administrator, Angleton Danbury Campus Associate Chief Nursing & Patient Care Services Officer
Breah Knappe	ActionS, Inc of Brazoria County	Executive Director
Bryan Sidebottom	City of Lake Jackson	Assistant Chief - Emergency Operations   Deputy EOC Coordinator
Chamane M. Barrow	Brazoria County Center for Independent Living	
Chris Whittaker	City of Angleton	Manager
Corey Lukasheay	City of Angleton	Fire Department Lieutenant
Glenn LaMont	City of Angleton	Emergency Management Coordinator
Jamie Praslicka	City of Angleton	Emergency Management Coordinator
Hector Renteria	City of Angleton	Assistant Public Works Director
John Deptuch	City of Angleton	Safety & Facilities Coordinator
John Peterson	HDR	Engineer
Karen Gibson	Angleton Drainage District	Office Manager
KJ Rabe	The Coalition for Barrier Free Living, Inc., Brazoria County Center for Independent Living	Senior Independent Living-Community Integration Specialist (Sr. IL-CIS)



Otis Spriggs	City of Angleton	Director of Development Services/ Planner
Pam Goodson	Brazoria County Center for Independent Living	Independent Living Program Manager
Roberto Muñoz	Angleton ISD	Assistant Superintendent of Student Services
Sara Grether Richards	Country Village Care	Owner
Stephenie Pharr	UTMB	Director, Ambulatory Care Services
Will Blackstock	City of Clute	Director of Parks and Recreation / Deputy Emergency Management Coordinator
Cheryl Mergo	Senior Manager	H-GAC
Amanda Ashcroft, AICP	Planner	H-GAC

### Meeting Dates & Details

Members of the HMC, as well as stakeholders, met regularly to identify hazards, assess risks, review critical facilities, and assist at workshops or public events/hearings to organize, set-up, assist, and answer questions from the public. All members of the HMC had the opportunity to review the draft plan and assist with public outreach efforts and events. Table 2.3 below outlines the participation by each member invited to serve on the HMC for various meetings held throughout the planning process. This does not reflect all planning activities conducted by the PT or HMC. There were various individual meetings between jurisdictions and the PT, phone calls, and other forms of correspondence that are not reflected here. All meeting materials, including agendas, notes, list of attendees, completed worksheets, and outreach notices for public meetings can be found in Appendix A.

Table 2.3: Participation Matrix

Representative Name	Organization	Kickoff Meeting 3/16/23	Risk & Capability Assessment 4/20/23	Public Meeting Planning 8/23/23	Public Meeting #1 9/14/23	Public Meeting, Facebook Live 10/11/23	Plan Draft Review 2/27/24
Anthony Norris	City of Angleton						
Beth Reimschuessel	UTMB		X				
Breah Knape	ActionS, Inc of Brazoria County						
Bryan Sidebottom	City of Lake Jackson	X	X				
Chamane M. Barrow	Brazoria County Center for Independent Living						
Chris Whittaker	City of Angleton				X		
Corey Lukasheay	City of Angleton	X	X				
Glenn LaMont	City of Angleton	X	X				
Jamie Praslicka	City of Angleton			X	X	X	X
Hector Renteria	City of Angleton	X	X				
John Deptuch	City of Angleton	X	X		X		
John Peterson	HDR	X	X				
Karen Gibson	Angleton Drainage District						

KJ Rabe	The Coalition for Barrier Free Living, Inc., Brazoria County Center for Independent Living		X				
Otis Spriggs	City of Angleton		X				
Pam Goodson	Brazoria County Center for Independent Living		X				
Roberto Muñoz	Angleton ISD						
Sara Grether Richards	Country Village Care	X					
Stephenie Pharr	UTMB		X				
Will Blackstock	City of Clute	X					
Cheryl Mergo	H-GAC	X	X	X	X		
Amanda Ashcroft	H-GAC	X	X	X	X	X	X

\*Entered the plan on 9/23/2023

#### *March 16, 2023: Hazard Mitigation Kickoff Meeting*

The PT hosted a kickoff meeting of the HMC on March 22, 2023, at the Angleton City Hall located at 121 S Velasco St, Angleton, TX 77515. The purpose of the kickoff meeting was to introduce the hazard mitigation planning process and its importance to all attendees, to gather feedback and input about various hazards and local vulnerabilities, and to discuss the risk assessment for the city. The HMC was given a presentation covering the benefits of hazard mitigation, the planning process and timeline, updates to FEMA policies surrounding hazard mitigation plans that took effect in April 2023, and expectations for those participating in the HMC. The committee discussed the next steps for the planning process and the risk assessment. Before the meeting, community members and stakeholders were invited to attend and learn about the hazard mitigation planning process through meeting notices posted on social media, the H-GAC website, and the Angleton city website.

#### *April 20, 2023: Risk and Capability Assessment Meeting*

The PT hosted a meeting to cover the capability assessment worksheet and collected completed risk assessment worksheets from HMC members on April 20, 2023, at the Angleton City Hall located at 121 S Velasco St, Angleton, TX 77515. The purpose of this meeting was to review the capability assessment worksheet and instructions. The HMC then reviewed the various sections of the capability assessment worksheet. The categories discussed were:

- 1) Prevention- Administrative or regulatory actions that influence how land is developed and buildings are built. Examples include planning & zoning, building codes, open space preservation, and floodplain regulations.
- 2) Property Protection- Modification or removal of existing buildings to protect them from a hazard. Examples include purchase, relocation, raised elevation, and structural retrofits.
- 3) Natural Resource Protection- Preservation or restoration of the functions of natural systems while minimizing hazard losses. Examples include floodplain protection, forest management, and slope stabilization.

- 4) Structural Projects- Modification of the natural conditions for or progression of a hazard. Examples include dams, levees, seawalls, detention/retention basins, channel modification, retaining walls, and storm sewers.
- 5) Emergency Services- Protection of people and property during and immediately after a hazard event. Examples include warning systems, evacuation planning, emergency response training, and protection of emergency facilities.
- 6) Public Education and Awareness- Informing of citizens about hazards and the techniques they can use to protect themselves and their property. Examples include outreach, school education, library materials, and demonstration events.

The capability assessment also had areas where participants would be tasked with identifying opportunities to enhance local capabilities to better integrate hazard mitigation into their plans, programs, and day-to-day operations. The committee completed the capability assessment worksheet together at this meeting.

The committee then discussed the online survey development that would be used to gather input from stakeholders within the city, the next steps for the planning process, discussed public engagement event planning, and what events could look like to gather input. Before the meeting, community members and stakeholders were invited to attend and learn about the hazard mitigation planning process through meeting notices posted on social media, the H-GAC website, and the Angleton city website.

#### *June 17, 2023: Brazoria County Hurricane and Disaster Preparedness Expo*

A public event hosted by Brazoria County took place on June 17, 2023, from 8:30 AM - 2:00 PM at the Brazoria County Fairgrounds located at 901 S Downing Rd, Angleton, TX, 77515. This was a heavily attended event that offered community members various information about risks and resources available to them, with free food, emergency vehicle tours, raffle prizes of emergency preparedness items (including generators), and even an HEB mascot appearance for kids. Many children and adults were in attendance and stopped by the H-GAC table which was set up with interactive activities for residents to provide their feedback on hazards of concern for Brazoria County and the City of Angleton. Data collected was sorted out for Brazoria County and City of Angleton residents via color coding respondents. All Brazoria County data was provided to the point of contact in charge of updating the Brazoria County HMP. Feedback activities were organized in a variety of formats from large, printed maps where participants could mark areas of concern within their community or add critical facilities to the map, an input exercise where participants had to assign dollars to mitigation project ideas, feedback worksheets that discussed how emergency notifications were received within the and how these communications could be improved, and a dot exercise where participants had to notate their top three hazards of concern within the using stickers. Public input helps the project team analyze potential hazards affecting residents and recommend possible actions to reduce their impact. H-GAC also provided information about the HMP and its importance, disaster preparedness flyers with preparedness checklists for vulnerable populations on the back (translated in 4 different languages), and flyers with a QR code that linked to the online survey that also gave a brief overview of the HMP and why input was needed.

#### *August 14, 2023: Public Engagement Planning*

The PT met briefly via Microsoft Teams to discuss planning a public engagement event to solicit more public feedback, types of activities to include, and timing. The public meeting event was scheduled for September 19th, 2023, from 6:00- 8:00 PM at the First Presbyterian Church located at 130 South Arcola Street, Angleton, TX 77515.

### *September 19, 2023: Public Meeting Event*

A public meeting was hosted on September 19th, 2023, from 6:00- 8:00 PM at the First Presbyterian Church located at 130 South Arcola Street, Angleton, TX 77515. The purpose of this meeting was to provide a hazard mitigation planning project overview from the PT and HMC members in attendance and solicit feedback and information from stakeholders. Feedback activities were organized in a variety of formats from large, printed maps where participants could mark areas of concern within their community or add critical facilities to the map, an input exercise where participants had to assign dollars to mitigation project ideas, feedback worksheets that discussed how emergency notifications were received within the and how these communications could be improved, and a dot exercise where participants had to notate their top three hazards of concern within the using stickers. Public input helps the project team analyze potential hazards affecting residents and recommend possible actions to reduce their impact. Unfortunately, no residents showed up to this meeting.

### *October 11, 2023: Public Engagement Planning*

A public meeting was hosted via Facebook Live on October 11, 2023, from 1:00-2:00 PM. The purpose of this meeting was to provide a hazard mitigation planning project overview from the PT and HMC members in attendance and solicit feedback and information from stakeholders. Community members could provide comments live during the meeting or reach out to PT members after the meeting via email or phone. There were some residents in attendance for this event, but no questions were asked. The survey was also shared and QR code provided during the meeting.

### *February 27, 2024: Draft Plan Review*

The PT held a meeting to discuss and provide feedback on draft sections of the plan that were completed and any changes that needed to occur for plan development to be completed.

## **Participation & Public Input**

Public input and participation are a crucial element of hazard mitigation planning. Public input was solicited and gathered via the following ways for this plan update:

- 1) Community Events
  - a) The PT had the opportunity to set up a table and collect feedback from citizens and residents of Brazoria County at the Hurricane and Disaster Preparedness Expo hosted on Saturday, June 17, 2023. This was a heavily attended event that offered community members various information about risks and resources available to them, with free food, emergency vehicle tours, raffle prizes of emergency preparedness items (including generators), and even the H-E-B mascot. Many children and adults were in attendance and stopped by the H-GAC table setup with interactive activities to offer their feedback on hazards of concern for Angleton. Data collected was sorted out for Brazoria County and City of Angleton residents. All Brazoria County data was provided to the point of contact in charge of updating the Brazoria County HMP.
- 2) An online survey
  - a) The online survey was open from May 8, 2023, to October 31, 2023. In total, there were only 2 responses to the survey. Survey questions asked participants about hazards of concern, vulnerable community assets, how they receive information regarding hazards, what the city can do to better communicate about hazards.

### 3) Public Meetings

- a) A public meeting was hosted on September 19th, 2023, from 6:00- 8:00 PM at the First Presbyterian Church located at 130 South Arcola Street, Angleton, TX 77515. Feedback activities were organized in a variety of formats from large, printed maps where participants could mark areas of concern within their community or add critical facilities to the map, an input exercise where participants had to assign dollars to mitigation project ideas, feedback worksheets that discussed how emergency notifications were received within the and how these communications could be improved, and a dot exercise where participants had to notate their top three hazards of concern within the using stickers. Unfortunately, no residents showed up to this meeting.
- b) A Facebook Live Event was hosted on October 11, 2023, from 1:00-2:00 PM.

### 4) Draft Plan Public Input Survey

- a) The online survey was opened on March 27, 2023, to gather public comments regarding the finished draft of the City of Angleton HMP for 2024. A full list of survey results can be found in Appendix E

Feedback and input from the public were used to identify vulnerabilities within the city, identify valuable assets, identify critical facilities, and further develop the risk assessment. Additionally, H-GAC hosted all HMP-related materials online and advertised meeting information, presentations, and meeting notes for those who were unable to attend through this public-facing website: <https://www.h-gac.com/regional-hazard-mitigation-planning>.

## Plan Development Resources

The City of Angleton HMP was developed using existing plans, studies, reports, and technical information. Materials and historical data were used to inform participants throughout the planning process, evaluate and analyze hazards, and develop the mitigation strategy. For a full list of references, see endnotes.

Plan Development Resources: Existing Documents and Data	
<a href="#">2023 Texas State Hazard Mitigation Plan</a>	<a href="#">List of Reports and Publications   2022 Census of Agriculture   USDA/NASS</a>
<a href="#">2023 Data Breach Investigations Report   Verizon</a>	<a href="#">Losing Ground: Flood Data Visualization Tool (nrdc.org)</a>
<a href="#">2023 Texas State Hazard Mitigation Plan</a>	<a href="#">Major Land Resource Area (MLRA)   Natural Resources Conservation Service (usda.gov)</a>
<a href="#">American Community Survey (ACS) (census.gov)</a>	<a href="#">Mayo Clinic</a>
<a href="#">Association of State Dam Safety</a>	<a href="#">MRLC Viewer</a>
<a href="#">Census.gov</a>	<a href="#">National Centers for Environmental Information (NCEI) (noaa.gov)</a>
<a href="#">FEMA 2013 Mitigation Ideas</a>	<a href="#">National Institute of Allergy and Infectious Diseases (NIAID) (nih.gov)</a>
<a href="#">FEMA 2021 Mitigation Action Portfolio</a>	<a href="#">National Institute of Environmental Health Sciences: NIEHS Home page (nih.gov)</a>
<a href="#">FEMA 2022 Local Mitigation Planning Policy Guide</a>	<a href="#">National Oceanic and Atmospheric Administration (noaa.gov)</a>
<a href="#">FEMA 2023 Local Mitigation Planning Handbook</a>	<a href="#">National Weather Service</a>
<a href="#">FEMA Declared Disasters</a>	<a href="#">NOAA National Severe Storms Laboratory</a>
<a href="#">FEMA Flood Map Service Center</a>	<a href="#">NOAA Storm Event Database</a>
<a href="#">FEMA Hazardous Response Capabilities</a>	<a href="#">Office of the Texas State Climatologist (tamu.edu)</a>
<a href="#">Flood Insurance Data and Analytics (floodsmart.gov)</a>	<a href="#">Plan Ahead for Disasters   Ready.gov</a>
<a href="#">HEAT.gov - National Integrated Heat Health Information System</a>	<a href="#">Texas A&amp;M Forest Service Wildfire Risk Assessment Portal</a>
<a href="#">H-GAC 2011 Regional Hazard Mitigation Plan</a>	<a href="#">TSHA (tshaonline.org)</a>
<a href="#">H-GAC 2018 Multijurisdictional Hazard Mitigation Plan</a>	<a href="#">USGS HIFLD Open Data</a>
<a href="#">H-GAC Regional Demographic Snapshot</a>	<a href="#">Vaisala National Lightning Detection Network (NLDN) Flash Data (Restricted) (noaa.gov)</a>
<a href="#">H-GAC Regional Flood Information</a>	<a href="#">Web Soil Survey - Home (usda.gov)</a>

## Section 3: Community Profile

This section contains the community profile, which provides a history of hazard events, an overview of the planning area, geographic setting, land use and land cover, population demographics, vulnerable population information, housing and household arrangements, loss estimations, critical facilities, repetitive loss and severe repetitive loss properties, NFIP and CRS participants, and NFIP policies in force.

## Section 3: Community Profile

### History of Hazard Events

The City of Angleton has persevered through many natural disasters. Table 3.1 below lists the presidentially declared emergency and major disaster declarations that the city has experienced since 1953. Each disaster is costly and challenging. Presidential disaster declarations are issued for hazard events that cause more damage than state and local governments can handle without assistance from the federal government. A presidential disaster declaration mobilizes federal recovery programs to assist disaster victims, businesses, and public entities. A review of these presidential disaster declarations helps establish the probability of reoccurrence and assists in identifying targets for risk reduction through potential mitigation actions. Table 3-1 shows FEMA disaster declarations for Brazoria County, in which the City of Angleton is located.<sup>1,2</sup>

Table 3.1: Presidential Disaster Declarations

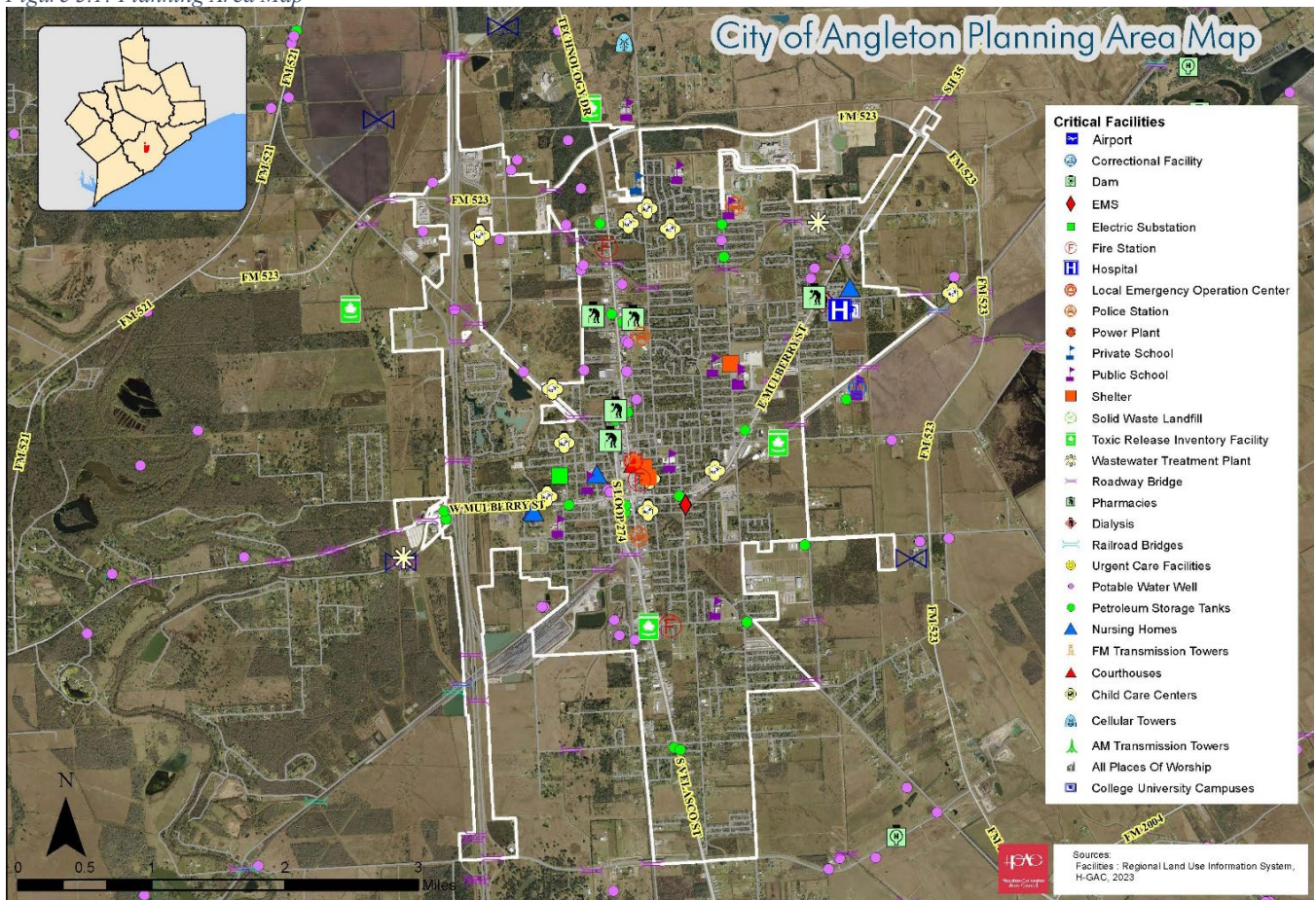
Declaration Date	Disaster No.	Declaration Type	Incident Type	Title
7/11/1973	398	Major Disaster Declaration	Flood	Severe Storms and Flooding
7/28/1979	595	Major Disaster Declaration	Flood	Texas Storms, Flash Floods
9/25/1979	603	Major Disaster Declaration	Flood	Texas Severe Storms, Flooding
8/19/1983	689	Major Disaster Declaration	Hurricane	Hurricane Alicia
4/12/1991	900	Major Disaster Declaration	Severe Storm	Texas Flooding, Severe Storm, Tornado
12/26/1991	930	Major Disaster Declaration	Flood	Severe Thunderstorms
9/10/1993	3113	Emergency Declaration	Drought	Extreme Fire Hazard
10/18/1994	1041	Major Disaster Declaration	Flood	Severe Thunderstorms and Flooding
8/26/1998	1239	Major Disaster Declaration	Severe Storm	Tropical Storm Charley
10/21/1998	1257	Major Disaster Declaration	Flood	TX-Flooding 10/18/98
9/1/1999	3142	Emergency Declaration	Fire	Extreme Fire Hazards
9/2/2005	3216	Emergency Declaration	Hurricane	Hurricane Katrina Evacuation
9/21/2005	3261	Emergency Declaration	Hurricane	Hurricane Rita
9/24/2005	1606	Major Disaster Declaration	Hurricane	Hurricane Rita
1/11/2006	1624	Major Disaster Declaration	Fire	Extreme Wildfire Threat
3/14/2008	3284	Emergency Declaration	Fire	Wildfires
8/29/2008	3290	Emergency Declaration	Hurricane	Hurricane Gustav
9/10/2008	3294	Emergency Declaration	Hurricane	Hurricane Ike
9/13/2008	1791	Major Disaster Declaration	Hurricane	Hurricane Ike
5/29/2015	4223	Major Disaster Declaration	Severe Storm	Severe Storms, Tornadoes, Straight-Line Winds and Flooding
4/25/2016	4269	Major Disaster Declaration	Flood	Severe Storms and Flooding
6/11/2016	4272	Major Disaster Declaration	Flood	Severe Storms and Flooding
8/25/2017	4332	Major Disaster Declaration	Hurricane	Texas Hurricane Harvey
3/13/2020	3458	Emergency Declaration	Biological	COVID-19
3/25/2020	4485	Major Disaster Declaration	Biological	COVID-19 Pandemic
2/14/2021	3554	Emergency Declaration	Severe Ice Storm	Severe winter storm
2/19/2021	4586	Major Disaster Declaration	Severe Ice Storm	Severe winter storms



### Planning Area Overview

The following information will showcase data, demographics, and items specific to the City of Angleton. The City of Angleton serves as the county seat for Brazoria County. The largest industries in Brazoria County, TX are Health Care & Social Assistance (23,747 people), Manufacturing (21,998 people), and Construction (18,526 people), and the highest-paying industries are Utilities (\$99,892), Mining, Quarrying, & Oil & Gas Extraction (\$93,500), and Manufacturing (\$86,730). The most common job groups, by number of people living in Brazoria County, TX, are Management Occupations (20,136 people), Office & Administrative Support Occupations (18,113 people), and Sales & Related Occupations (14,011 people). Angleton’s median household income is just above the \$73,035 median income for the State of Texas. Brazoria County's annual median household income is \$91,972 and the City of Angleton’s median household income is \$77,235. <sup>3</sup> The county's unemployment rate in 2022 was 4.5%, higher than the national average of 3.9%. <sup>4,5</sup>

Figure 3.1: Planning Area Map



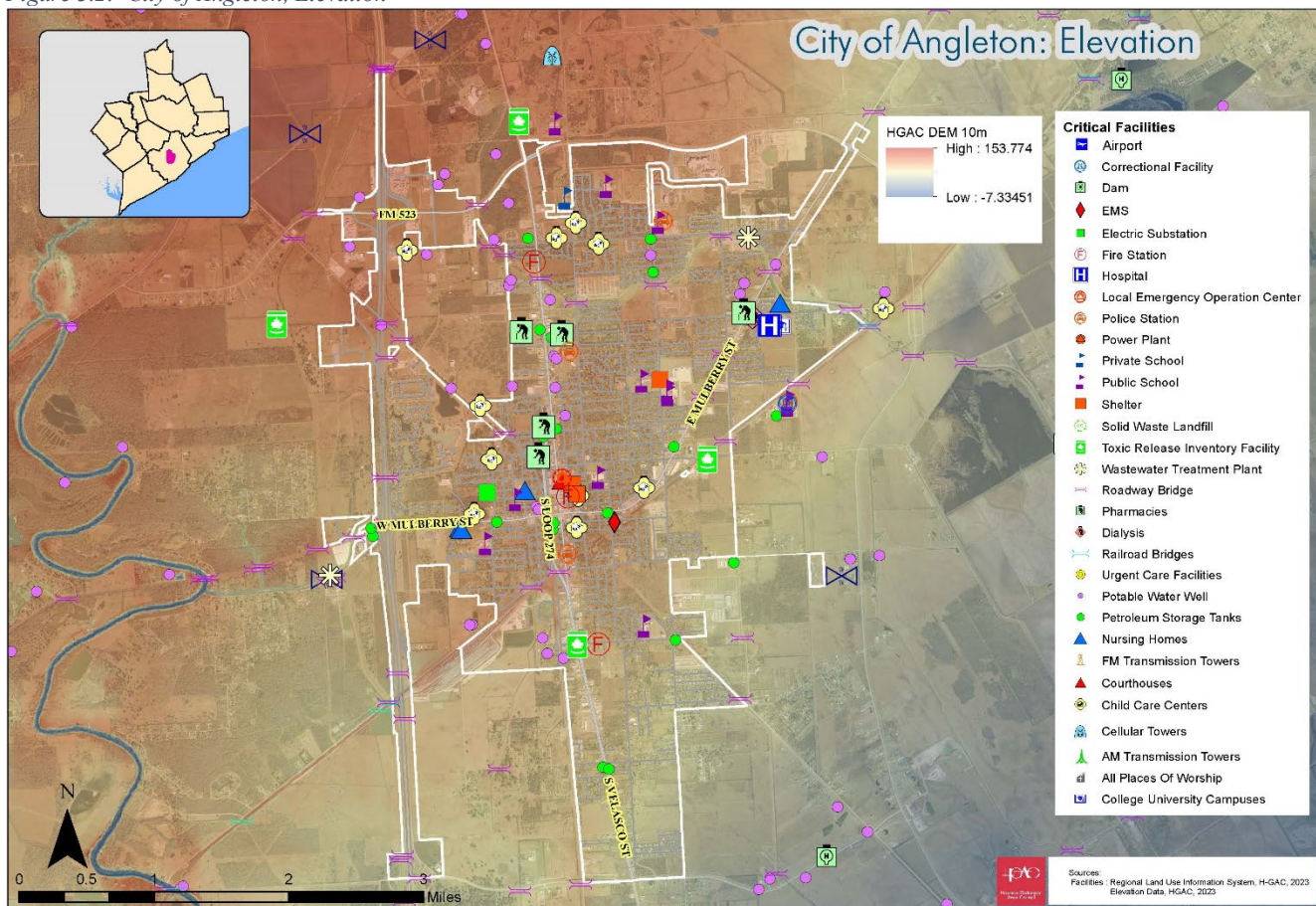
According to the 2020 US Census data, The City of Angleton’s population was 19,610.<sup>3</sup> Population, according to the Texas Demographic Center Population Estimates Program, is expected to slowly increase over time. The city saw a 2.4% increase from 2020 to 2023.<sup>6</sup> Population change includes two major components: natural increase (births minus deaths) and net migration (in-migrants minus out-migrants). Net migration includes both international migrants from other countries and domestic migrants (those who moved from other counties in other states or other counties within Texas.) A component of change is determined to be a driver if it comprises more than 50% of the total population change. Between 2010 and 2019, population change in Texas was comprised of 51% net migration and

49% natural increase. From 2021-2022 population change in Texas was comprised of 74% net migration and 25% natural increase. Drivers of population change within Brazoria County are due primarily to net migration.<sup>7</sup>

### Geographic Setting

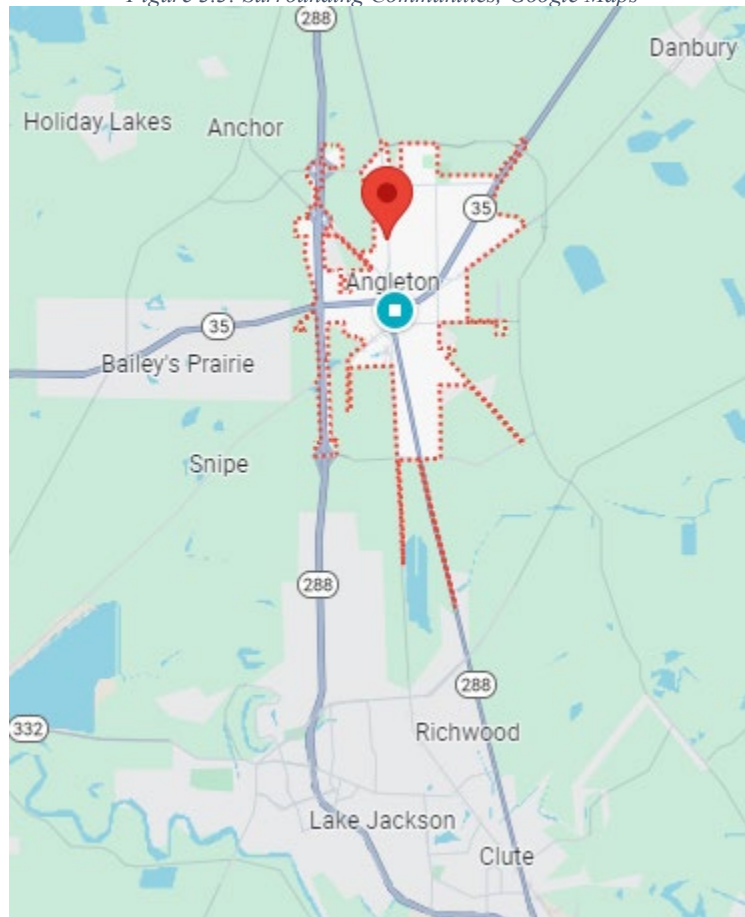
The City of Angleton serves as the county seat for Brazoria County and lies at the intersection of State Highway 288, State Highway 35, and the Union Pacific Railroad. The city is located East of the Brazos River and Oyster Creek and sits approximately 50 miles inland from the Gulf Coast.<sup>8</sup> Elevations within the city are higher in the northwest at range from 108 feet above sea level (ASL), to 2 feet ASL in the southeast. Figure 3.2 shows the elevation of Angleton and surrounding areas.

Figure 3.2: City of Angleton, Elevation



Neighboring communities include the Village of Bonney to the North, the city of Danbury to the Northeast the cities of Richwood, Clute, and Lake Jackson to the South, The Village of Bailey’s Prairie to the West, and the Town of Holiday Lakes to the Northwest.

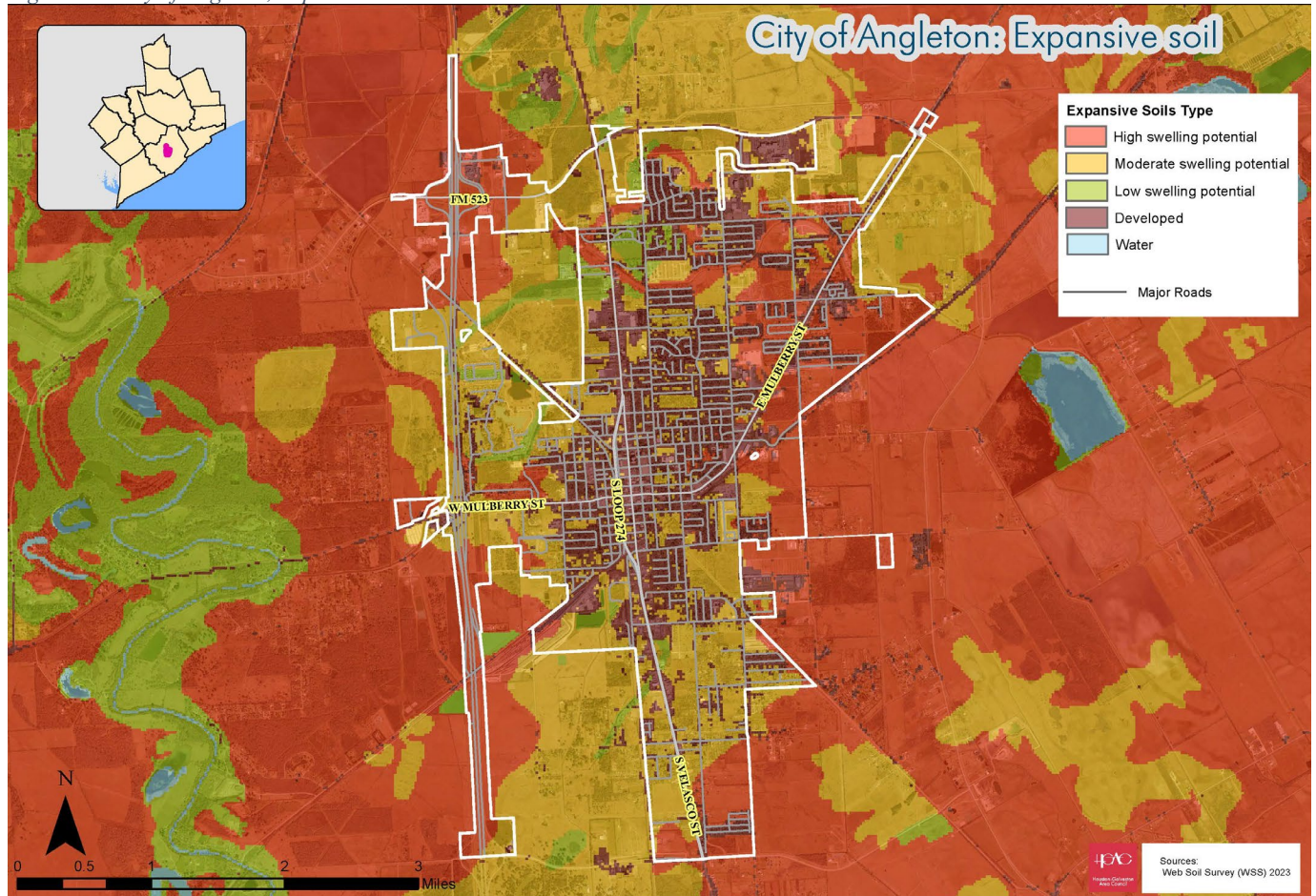
Figure 3.3: Surrounding Communities, Google Maps



### Soil Composition

Brazoria County is comprised of soils within the Coast Prairie and Coast Saline Prairie land resource area. Soils within these areas and the city range from deep, dark-colored clays and loams in the south, and deep, dark-gray, neutral to slightly acid clay loams and clays in the north. Soils within the Coast Saline Prairie, in which a majority of the city sits, have very slow surface drainage due to the water table being located at or near the surface and elevation ASL is only a few feet.<sup>9</sup> Expansive soils refer to those that are clay rich. Due to their clay content, these soils can absorb large quantities of water that cause them to expand, whereas in dry periods the soils will contract and cause the ground to shrink and crack. In areas where development exists, these soils can cause issues with slab-on-grade foundations and infrastructure due to the potential uneven change in volume. This can cause subsidence, cracked foundations, broken pipes, or other detrimental effects to buried infrastructure.<sup>10, 11</sup> The City of Angleton is covered primarily with moderate and high swell potential soils. There are very small pockets of land within the city that have low swelling potential. Figure 3.4 below shows the expansive soils and shrink-swell potential for the city. Full-size maps can be found in Appendix B.

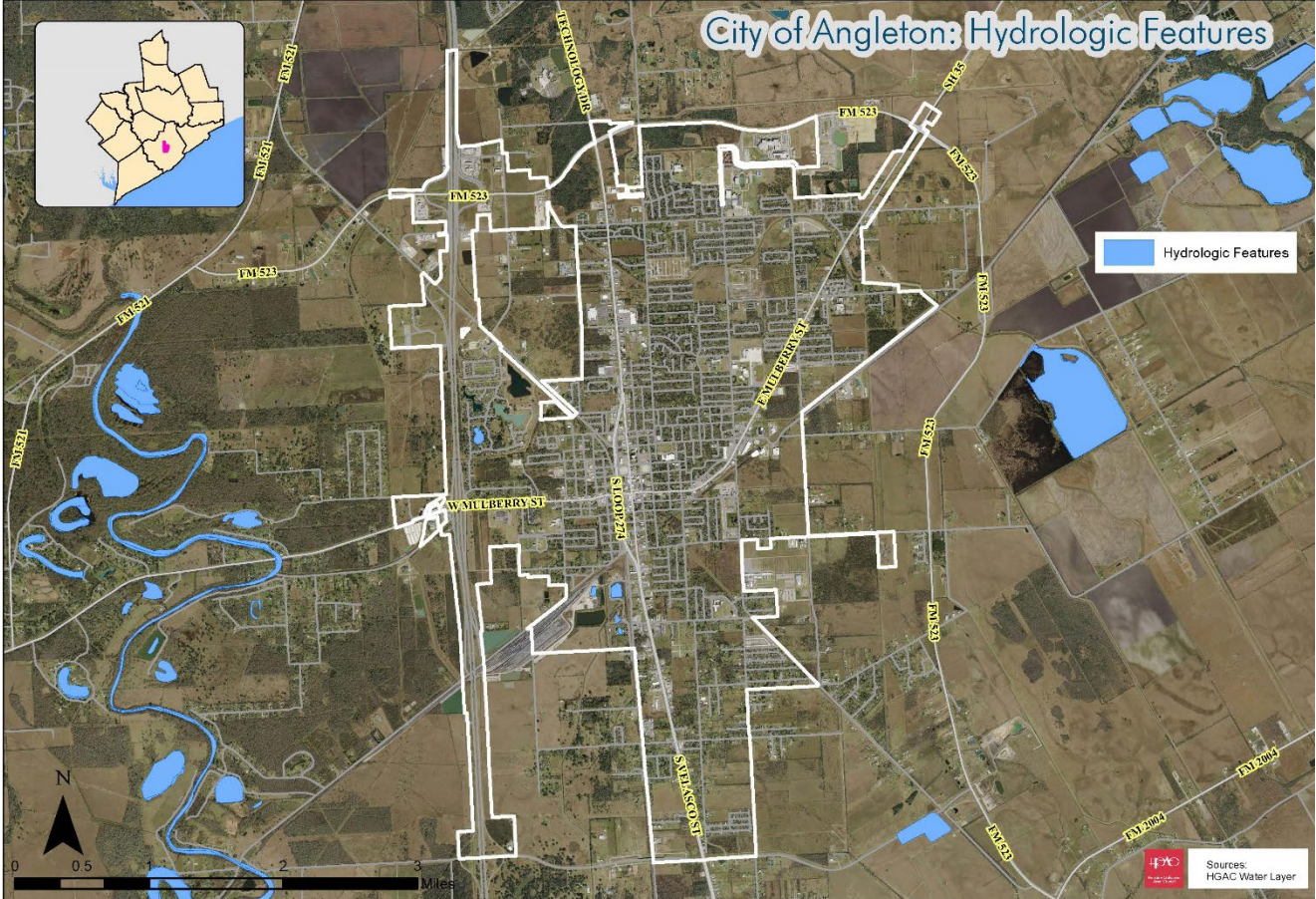
Figure 3.4: City of Angleton, Expansive Soils



### Hydrologic Features

There are very few areas of the city that are covered by surface water (found in rivers, creeks, and other hydrologic features). The City of Angleton lies within the drainage basin of the San Jacinto-Brazos Coastal Basin.<sup>12</sup> Figure 3.5 shows hydrologic features located within the city and near the city limits.

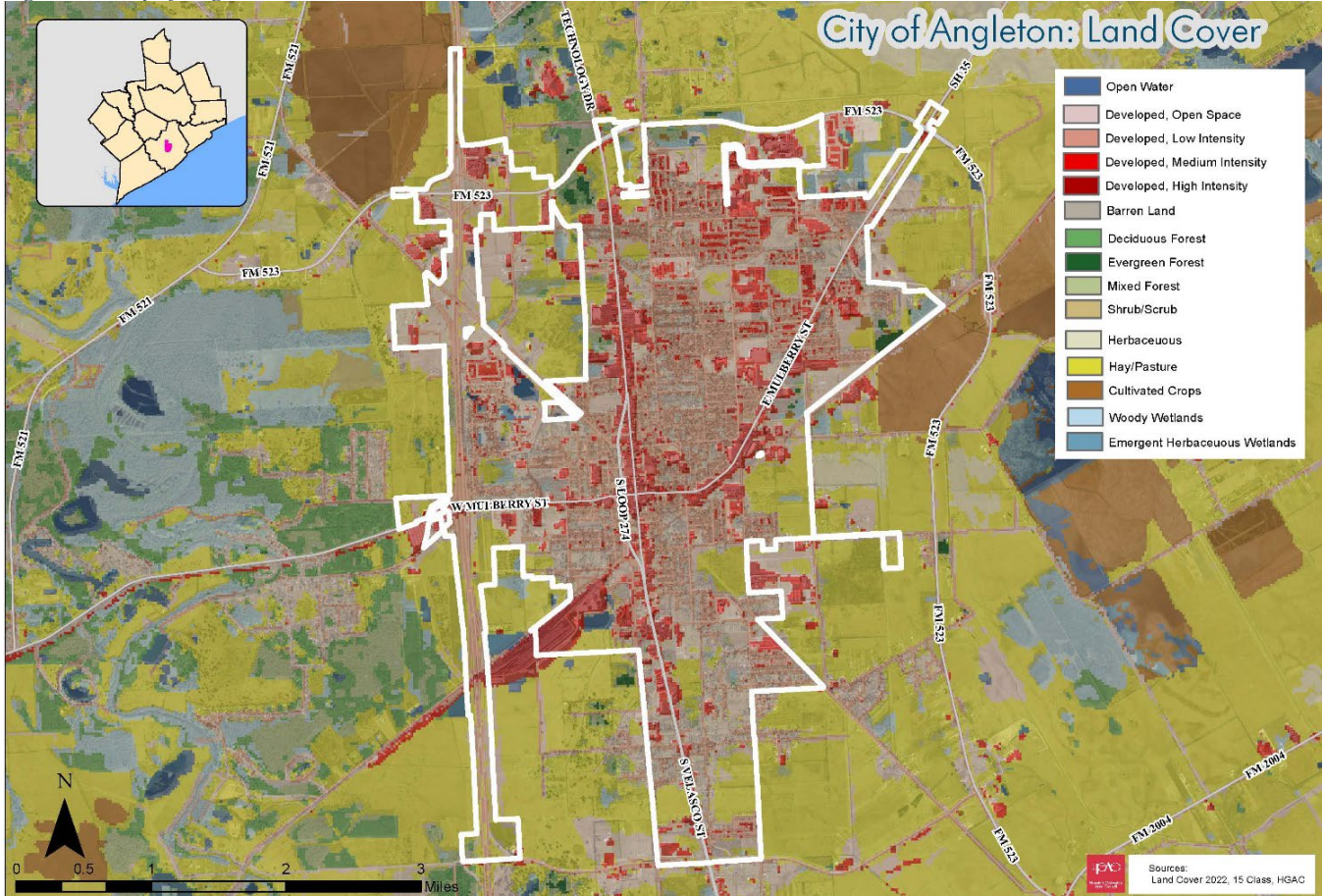
Figure 3.5: City of Angleton, Hydrologic Features



### Land Use and Land Cover

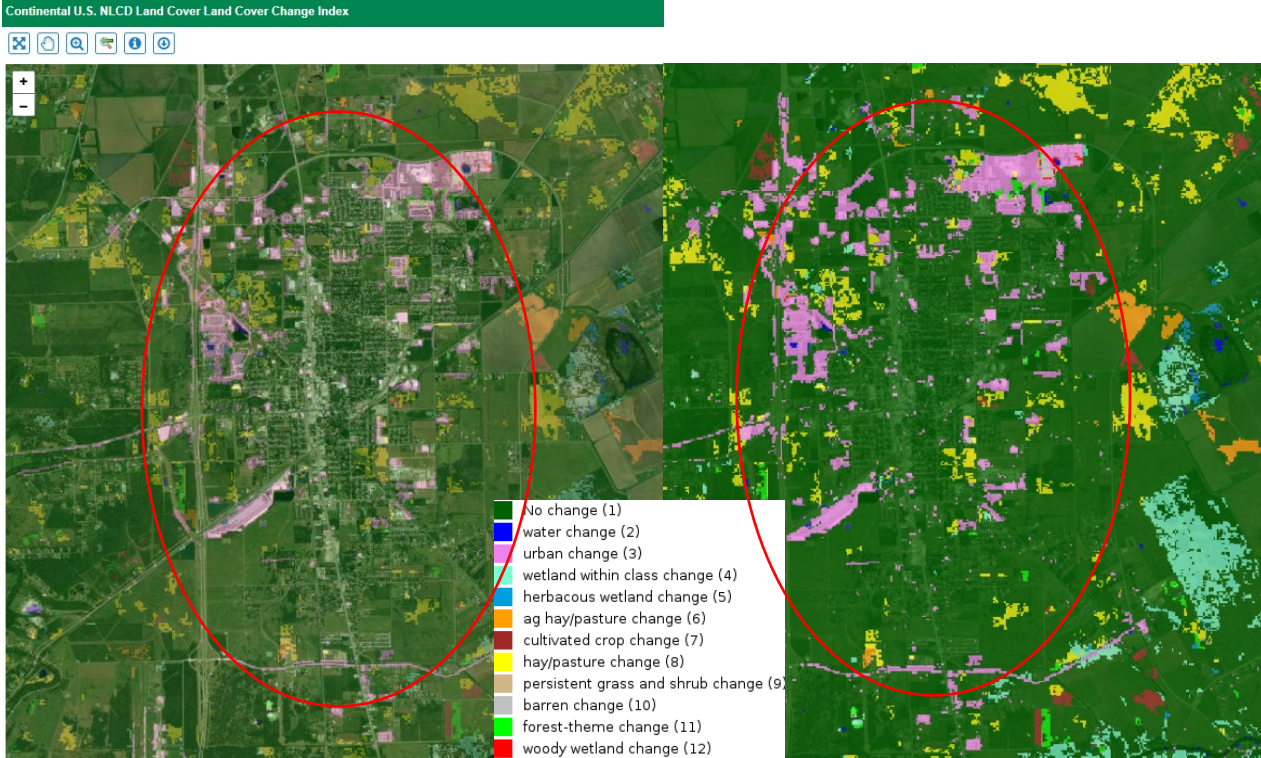
Land cover is primarily developed land of varying intensities within the city limits followed by hay/pasture lands and areas of wetlands and cultivated crops. Figure 3.6 shows the land cover composition of the City of Angleton.

Figure 3.6: City of Angleton, Land Cover, 2022



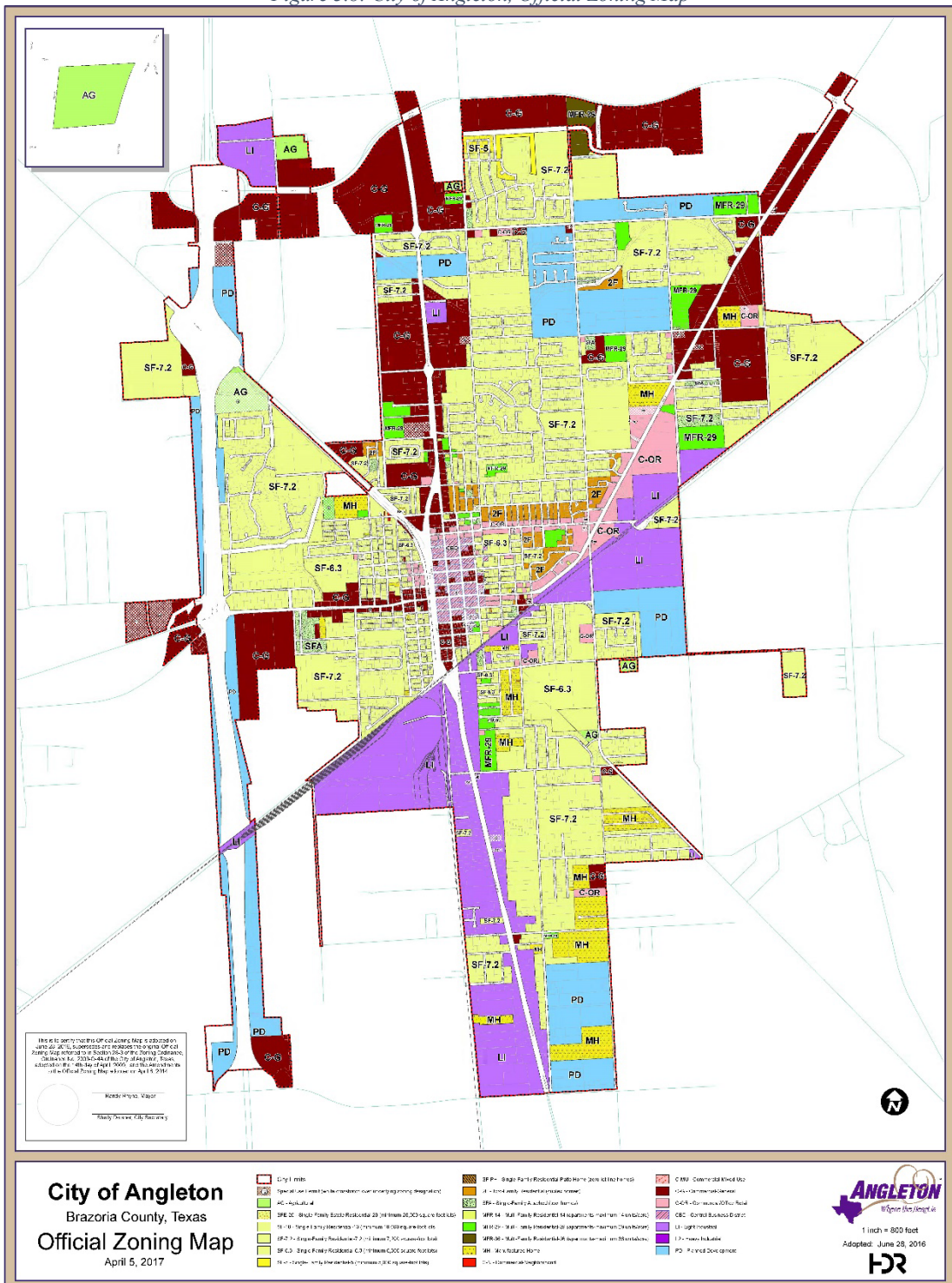
The Multi-Resolution Land Characteristics (MRLC) consortium is a group of federal agencies that coordinate and generate consistent and relevant land cover information at the national scale for a wide variety of environmental, land management, and modeling applications. The creation of this consortium has resulted in the mapping of the lower 48 United States, Hawaii, Alaska, and Puerto Rico into a comprehensive land cover product termed, the National Land Cover Database (NLCD), from decadal Landsat satellite imagery and other supplementary datasets. The land cover change index, a dataset of the MRLC and NLCD, highlights a simple way to visualize changes in land cover that have occurred over epochs. Within the city, land use changes seen within the last 20 years include hay/pasture change, minimal areas of water, wetland, forest-theme change, and some cultivated crop change. The greatest area of change from 2001-2021 has seen a boom in urban expansion to the north and west of the city, and along major thoroughfares such as State Highway 288 and along the Union Pacific Railroad to the southwest.<sup>13</sup> Figure 3.7 below highlights these land cover changes that have taken place over the last 20 years. The city limits can be found within the red-circled area. Two varying degrees of data transparency are provided to give a better sense of the location of the city and the data/land use change visualizations within city limits.

Figure 3.7: City of Angleton, Land Cover Change, 2001-202115 (Transparency 70%- Left, Transparency 30%- Right)



Zoning refers to the process by which a municipality divides its geographic area into different zones or districts, each with its own set of regulations governing land use, building heights, density, and other characteristics. Zoning regulations are intended to promote orderly development, protect property values, and ensure that land uses are compatible with their surrounding areas. Zoning regulations can be used to accomplish a variety of goals, such as promoting residential, commercial, or industrial development in certain areas; protecting natural resources or historic landmarks, and separating incompatible land uses such as industrial and residential areas. The authority for Texas municipalities to regulate land use through zoning is found in Chapter 211 of the Texas Local Government Code. Specifically, Section 211.001 provides: “A municipality may regulate the use of land within its boundaries by establishing zoning districts for the municipality and by regulating the location, use, and construction of buildings, structures, and other improvements within those zoning districts.”<sup>14</sup> The City of Angleton’s most recent zoning map is dated April 5, 2017.<sup>15</sup>

Figure 3.8: City of Angleton, Official Zoning Map



- City Limits
- Special Use Permit (white crosshatch over underlying zoning designation)
- AG - Agricultural
- SFE-20 - Single Family Estate Residential-20 (minimum 20,000 square-foot lots)
- SF-10 - Single Family Residential-10 (minimum 10,000 square-foot lots)
- SF-7.2 - Single-Family Residential-7.2 (minimum 7,200 square-foot lots)
- SF-6.3 - Single-Family Residential-6.3 (minimum 6,300 square-foot lots)
- SF-5 - Single-Family Residential-5 (minimum 5,000 square-foot lots)
- SF-PH - Single-Family Residential-Patio Home (zero-lot-line homes)
- 2F - Two-Family Residential (duplex homes)
- SFA - Single-Family Attached (townhomes)
- MFR-14 - Multi-Family Residential-14 (apartments-maximum 14 units/acre)
- MFR-29 - Multi-Family Residential-29 (apartments-maximum 29 units/acre)
- MFR-36 - Multi-Family Residential-36 (apartments-maximum 36 units/acre)
- MH - Manufactured Home
- C-N - Commercial-Neighborhood
- C-MU - Commercial-Mixed-Use
- C-G - Commercial-General
- C-OR - Commercial/Office Retail
- CBD - Central Business District
- LI - Light Industrial
- L2 - Heavy Industrial
- PD - Planned Development



### Population and Demographics

The City of Angleton has seen its population grow at a slow, but steady pace over time. Between the 2010 and 2020 census population growth was 3%. Brazoria County has seen an average of a 2.5% increase in its population per year since 1971.<sup>16</sup> The projected population for Brazoria County from 2020-2040 is expected to see a 26.3% increase, while population from 2020-2060 is projected to see a 48.3% increase.<sup>6</sup> As the population in the county grows, it can be expected that the population within the City of Angleton will increase as well. Figure 3.9 shows the population distribution per 1000 persons by census tract for the last census in 2020.

Figure 3.9: City of Angleton, Population Distribution Map, 2020 Census

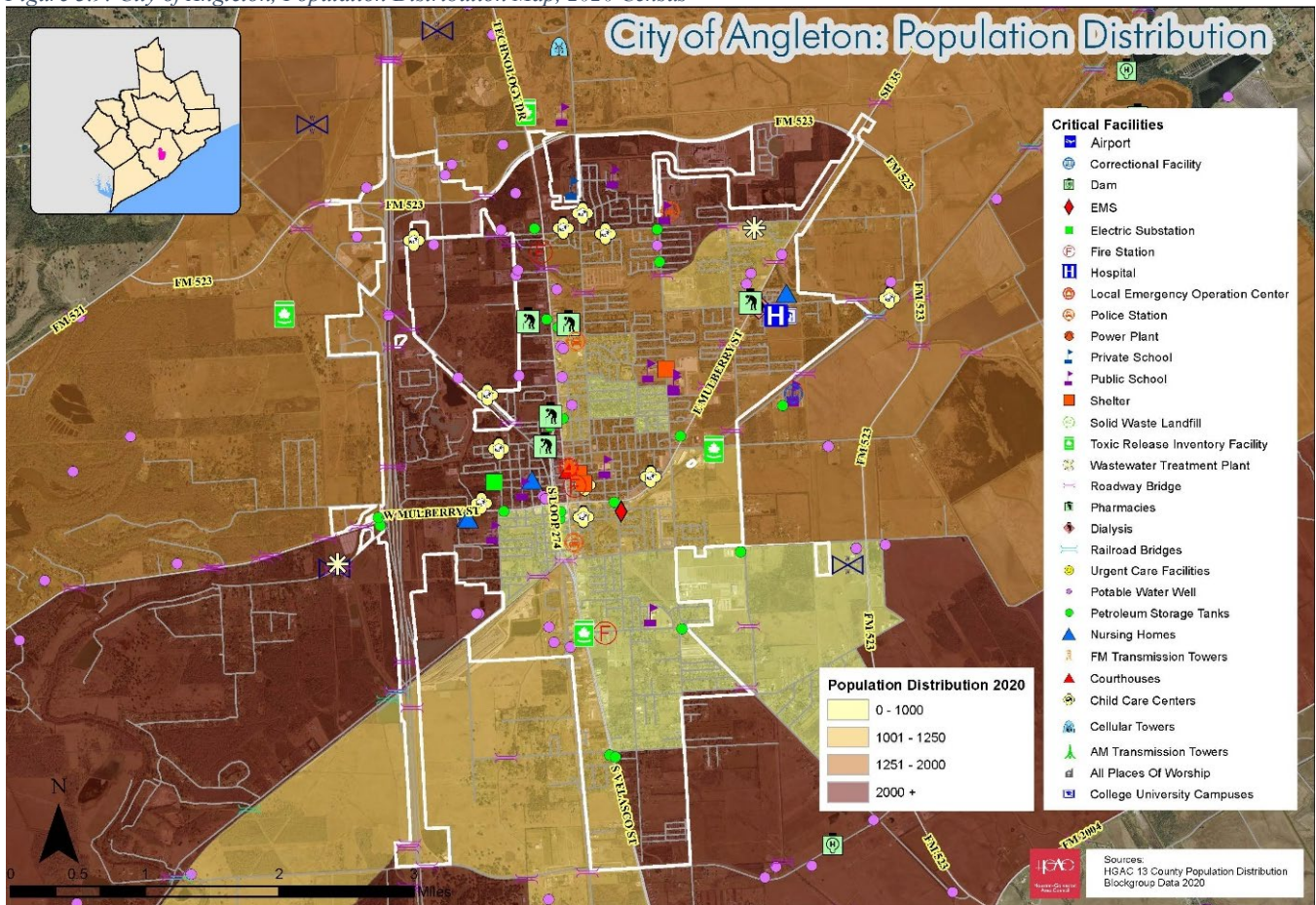


Table 3.2: City of Angleton Population Trends, 1970 to 2020<sup>6,7</sup>

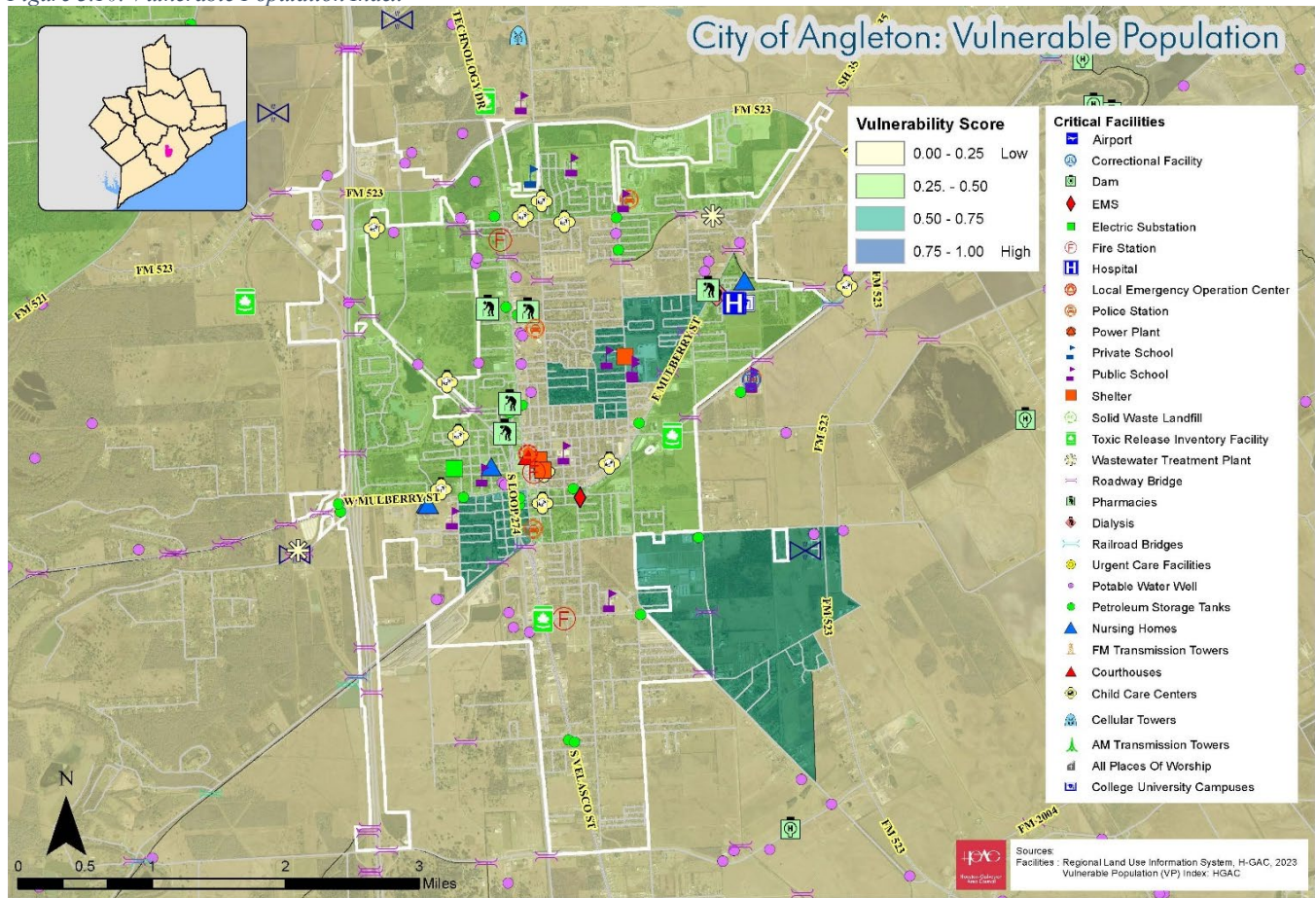
Year	Population Count	Population Change	Percent (%) Change
1970	9,770		
1980	13,929	4,159	42.5%
1990	17,140	3,211	23%
2000	18,130	990	5.8%
2010	18,862	732	4%
2020	19,610	748	4%

The 's population demographics, per the 2020 census, consists of 60.7% White population, 25.6% Hispanic or Latino population, 9.8% African American population, 3.1% Asian population, and .8% multiracial. 16% of the population in the city is 65 or older, this is higher than the State average of 13.4%. The poverty rate for the County is 12%, less than the State average of 14%.<sup>17</sup>

### Vulnerable Population

The Vulnerable Population Index (VPI), a dataset developed by H-GAC, identifies areas throughout the region that may not have the means or the resources to act when a natural disaster occurs. For this plan, vulnerable populations include any households without a car, single female households with a child or children in the home, individuals living below the poverty line, individuals who are disabled, Hispanic individuals, individuals who are non-Hispanic, and non-white, and individuals who are 65 years and older.<sup>18</sup> The areas in the county with the greatest proportion of these individuals are defined as the most vulnerable areas in Brazoria County, denoted by a higher vulnerability score. Figure 3.10 provides this VPI for the City of Angleton. Defining and mapping vulnerable populations provides the opportunity to demonstrate where the most need is throughout the county.

Figure 3.10: Vulnerable Population Index



While age and income have been traditional indicators of vulnerable populations, the Centers for Disease Control and Prevention (CDC) in partnership with the Agency for Toxic Substances and Disease Registry (ASTDR) has developed a Social Vulnerability Index (SVI) that can be generated at the county level. This is a more recent tool used to identify socially vulnerable populations with additional risk factors. The CDC and ASTDR define socially vulnerable populations using factors such as poverty, lack of access to transportation, and crowded housing, to name a few. These factors may weaken a community’s ability to prevent human suffering and financial loss in a disaster. The SVI uses U.S. Census data to determine the social vulnerability of every census tract. The SVI ranks each tract on a total of 16 social factors and groups them into four related themes. Figure 3.10 below depicts the social vulnerability of communities in Brazoria County by census tract.<sup>21</sup> Factoring in these additional aspects of social vulnerability and

grouping them by themes gives the county a bigger picture of vulnerable populations. Brazoria's social vulnerability score is 0.6174 overall. Scores range from 0-1, with 1 being the highest level of vulnerability within the nation. A score of 0.6174 indicates a medium to high level of vulnerability.<sup>19</sup>

Figure 3.11: Brazoria County Overall CDC/ASTDR Social Vulnerability

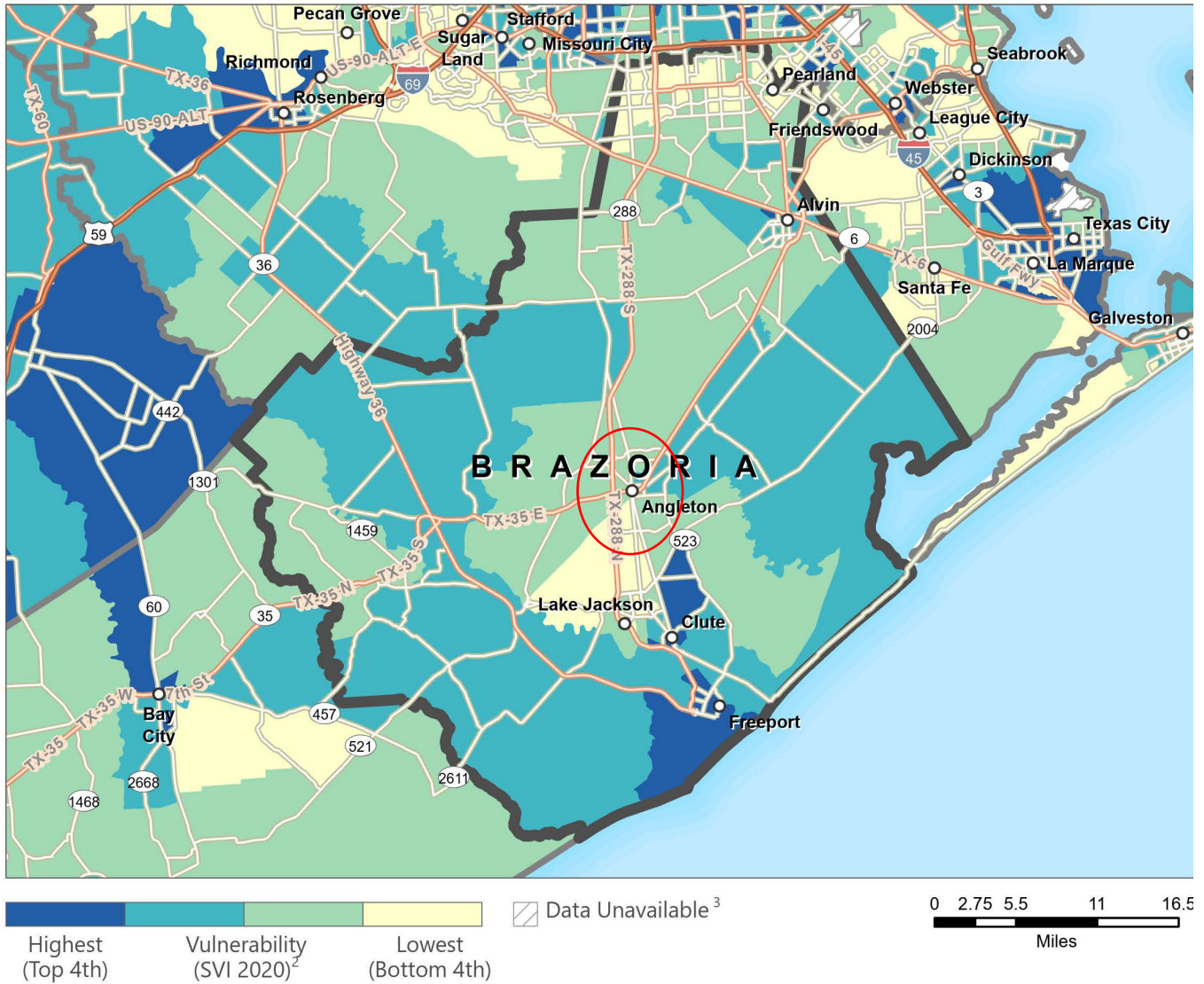
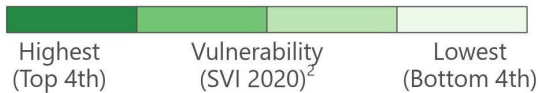
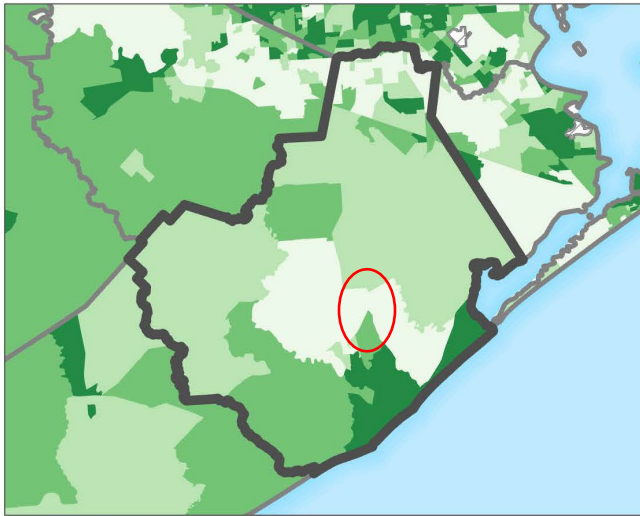
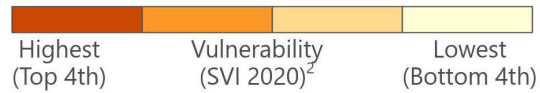
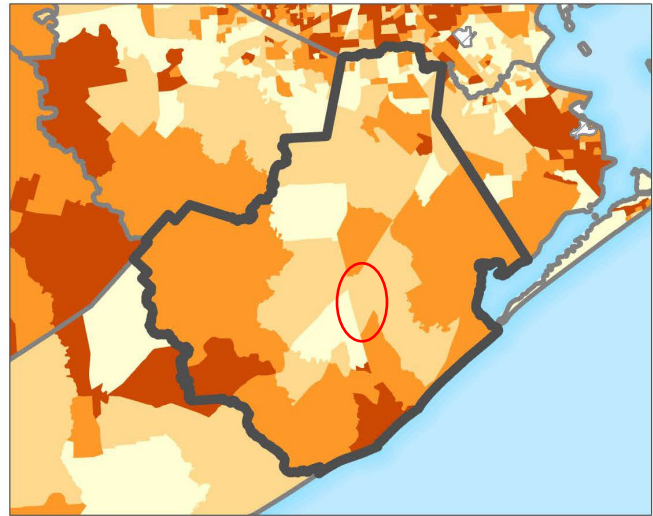


Figure 3.12: Brazoria County Themes for CDC/ASTDR Social Vulnerability

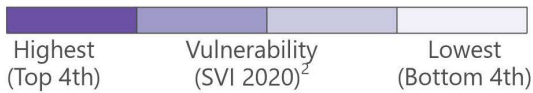
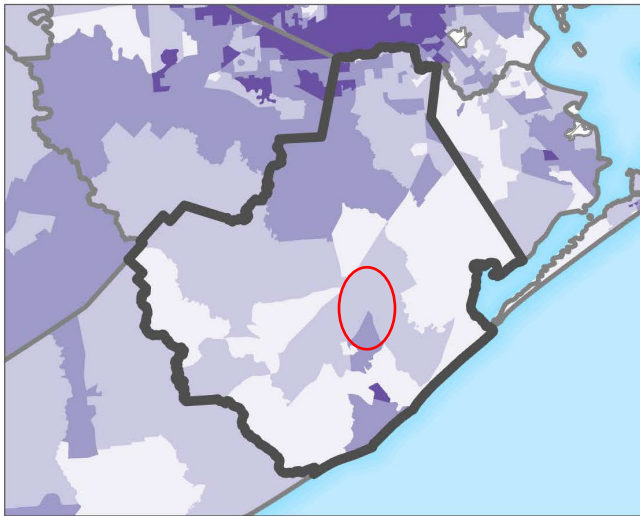
Socioeconomic Status<sup>5</sup>



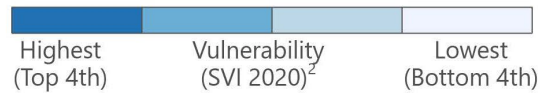
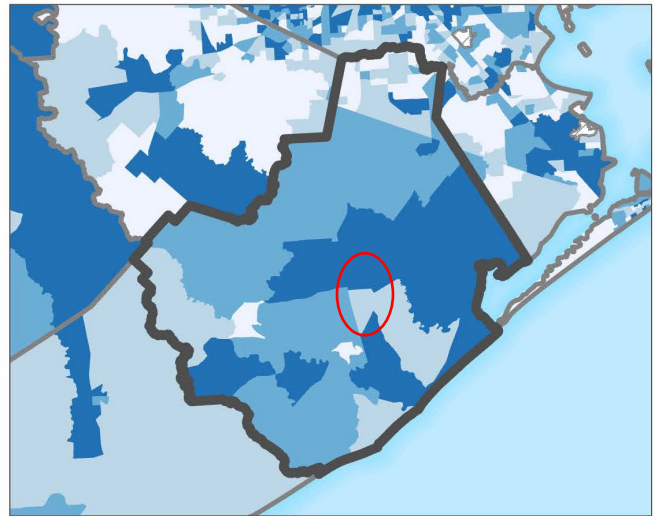
Household Characteristics<sup>6</sup>



Racial and Ethnic Minority Status<sup>7</sup>



Housing Type/Transportation<sup>8</sup>



**Data Sources:** <sup>2</sup>CDC/ATSDR/GRASP, U.S. Census Bureau, Esri® StreetMapTM Premium.

**Notes:** <sup>1</sup>Overall Social Vulnerability: All 16 variables. <sup>3</sup>Census tracts with 0 population. <sup>4</sup>The CDC/ATSDR SVI combines percentile rankings of US Census American Community Survey (ACS) 2016-2020 variables, for the state, at the census tract level. <sup>5</sup>Socioeconomic Status: Below 150% Poverty, Unemployed, Housing Costs Burden, No High School Diploma, No Health Insurance. <sup>6</sup>Household Characteristics: Aged 65 and Older, Aged 17 and Younger, Civilian with a Disability, Single-Parent Household, English Language Proficiency. <sup>7</sup>Race/Ethnicity: Hispanic or Latino (of any race); Black and African American, Not Hispanic or Latino; American Indian and Alaska Native, Not Hispanic or Latino; Asian, Not Hispanic or Latino; Native Hawaiian and Other Pacific Islander, Not Hispanic or Latino; Two or More Races, Not Hispanic or Latino; Other Races, Not Hispanic or Latino. <sup>8</sup>Housing Type/Transportation: Multi-Unit Structures, Mobile Homes, Crowding, No Vehicle, Group Quarters.

**Projection:** NAD 1983 Texas Statewide Mapping System.

**References:** Flanagan, B.E., et al., A Social Vulnerability Index for Disaster Management. *Journal of Homeland Security and Emergency Management*, 2011. 8(1).  
 CDC/ATSDR SVI web page: <https://www.atsdr.cdc.gov/placeandhealth/svi/index.html>.

## Housing and Living Arrangements

As of July 1, 2022, there were 7,892 housing units within the city, with 7,681 households. A household is defined by the U.S. Census Bureau as all the persons who occupy a housing unit and a housing unit as a house, an apartment, a mobile home, a group of rooms, or a single room that is occupied (or if vacant, is intended for occupancy) as separate living quarters. The median price of a single-family home in Angleton was listed at \$151,400 in 2021.<sup>20</sup>

## Loss Estimations

A Hazus analysis was conducted for 4 scenarios within the city: a 100-year flood scenario, a 500-year flood scenario, a 100-year hurricane scenario, and a 500-year hurricane scenario. Hazus is a regional multi-hazard loss estimation model that was developed by FEMA and the National Institute of Building Sciences. 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.<sup>23</sup> For this section, the 100-year flood scenario will be highlighted regarding potential losses of building stock, debris generation, and shelter requirements. The full Hazus analysis for all scenarios can be found in Appendix A. Hazus estimates that about 6,443 buildings will be at least moderately damaged. This is over 24% of the total number of buildings in the scenario. There are an estimated 3,212 buildings that will be completely destroyed.

Table 3.3: Building Exposure by Occupancy Type for the Scenario

Occupancy	Exposure (\$1000)	Percent of Total
Residential	\$1,496,724	52.3%
Commercial	\$901,761	31.5%
Industrial	\$55,502	1.9%
Agricultural	\$7,084	0.2%
Religion	\$42,490	1.55%
Government	\$51,178	1.8%
Education	\$307,167	10.7%
<b>Total</b>	<b>\$2,862,006</b>	<b>100%</b>

## Economic Loss

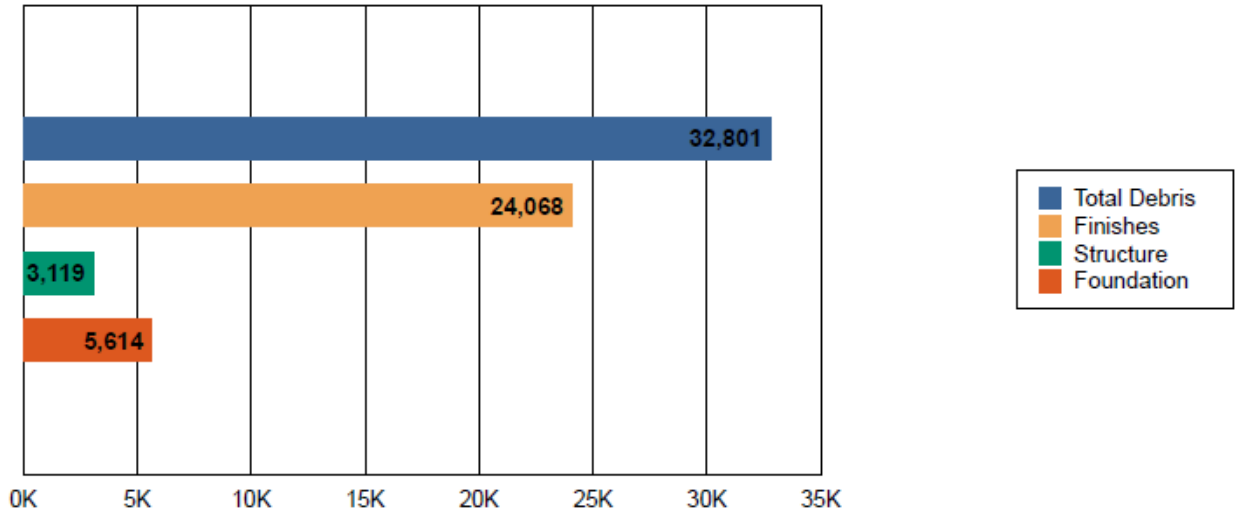
The total economic loss estimated for the flood is 4,708.47 million dollars, which represents 164.52 % of the total replacement value of the scenario buildings. The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are 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 the 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 2,498.14 million dollars. 47% of the estimated losses were related to the business interruption of the region. The residential occupancies made up 27.55% of the total loss.

## 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 (drywall, 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

32,801 tons of debris will be generated. Finishes comprise 73% of the total, Structure comprises 10% of the total, and Foundation comprises 17%. If the debris tonnage is converted into an estimated number of truckloads, it will require 1313 truckloads (at 25 tons/truck) to remove the debris generated by a flood.<sup>21</sup>

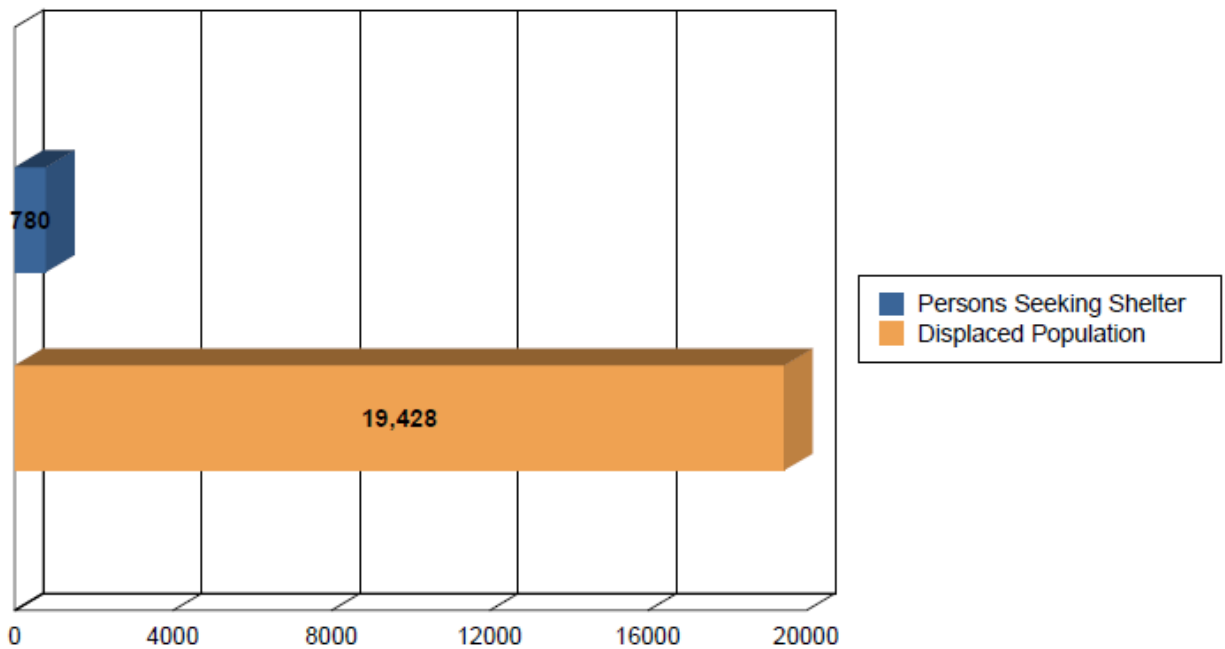
Figure 3.13: Debris Breakdown in Tons



### 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 6,476 households (or 19,428 of people) will be displaced due to the flood in this scenario. Displacement includes households evacuated from within or very near to the inundated area. Of these, 780 people (out of a total population of 19,429) will seek temporary shelter in public shelters.<sup>21</sup>

Figure 3.14: Displaced Population/Persons Seeking Short-Term Public Shelter



### Critical Facilities and Lifelines

H-GAC maintains a database of critical facilities that was expanded for this plan update based on updated policy guidance from FEMA. The HMC provided additional critical facility data when available at meetings, the PT also collected critical facility information from stakeholders at the public meetings and events. It was determined that there are 179 critical facilities with Angleton. A summary of these facilities is provided below.<sup>22</sup> A full list of critical facilities can be found in Appendix C.

Table 3.4: Critical Facilities & Community Lifelines

Asset Description	Quantity	Amount in a floodplain
AM Transmission Tower	0	0
Cellular Tower	2	0
Childcare Facility	11	0
College/ University Campus	1	0
Correctional Facility	3	0
Courthouse	1	0
Dam	0	0
Dialysis Center	1	0
Elder Care Facility	5	0
Electric Substation	3	0
EMS	1	0
Fire Station	4	0
FM Transmission Tower	0	0
Hospitals/Urgent Care	1	0
Local Emergency Operation Center	1	0
Oil or Gas Well	1	0
Petroleum Storage Tank	26	0
Pharmacy	5	0
Place of Worship	26	0
Police Station	5	0
Potable Water Well	20	2
Power Plant	0	0
Private Schools	1	0
Public Schools	13	0
Railroad Bridge	8	2
Roadway Bridge	26	12
Shelters	3	0
Solid Waste Landfill	2	0
Toxic Release Inventory Facility	6	0
Urgent Care	1	0
Wastewater Outfall	0	0
Wastewater Treatment Plant	2	1
Residential Units	7,673	
Commercial Units	346	

**Repetitive Loss and Severe Repetitive Loss Properties**

FEMA defines a repetitive loss (RL) structure as “a structure covered under a National Flood Insurance Program (NFIP) flood insurance policy that:

- (1) Has incurred flood-related damage on 2 occasions, in which the cost of repair, on average, equaled or exceeded 25% of the value of the structure at the time of each such flood event; and
- (2) At the time of the second incidence of flood-related damage, the contract for flood insurance contains increased cost of compliance (ICC) coverage.”<sup>23</sup>

A severe repetitive loss (SRL) property is defined as “a structure that is covered under an NFIP flood insurance policy and has incurred flood-related damage:

- (1) For which 4 or more separate claims payments have been made under flood insurance coverage under subchapter B of this chapter, with the amount of each claim (including building and contents payments) exceeding \$5,000, and with the cumulative amount of such claims payments exceeding \$20,000; or
- (2) For which at least 2 separate flood insurance claims payments (building payments only) have been made, with a cumulative amount of such claims exceeding the value of the insured structure.<sup>24</sup>

According to available data from 2023, the city has a total of 97 RL properties, of which 18 are designated as SRL properties. This does not include RL or SRL properties that have already been mitigated. Only 23 of these RL and SRL properties are insured through the NFIP. Total SRL property claim payments for the City of Angleton are \$2,560,751.56. There is an average of 5.6 NFIP claims per SRL property within the city.<sup>25, 26</sup> Table 3.5 outlines the structure type (residential, commercial, institutional, etc.), and number of records for RL and SRL properties within the city, including the number of those structures that were insured under the NFIP.

*Table 3.5: RL and SRL Properties, City of Angleton  
(Source: FEMA, Correspondence with the Floodplain Management and Insurance Branch)*

Jurisdiction Name	Residential RLPs	Non-Residential RLPs	Total RLPs	SRL Properties	Number of NFIP Insured Properties
Angleton	87	10	97	18	23

FEMA Guidance specifies that NFIP flood insurance claim information is subject to The Privacy Act of 1974, as amended. The Act prohibits public release of policyholder names, or names of financial assistance recipients and the amount of the claim payment or assistance. After flooding events, local officials are responsible for inspecting flood-damaged structures in the special flood hazard areas (SFHA) to determine if they are substantially damaged (50% or more damaged). If so, the property owner is required to bring a non-conforming structure into compliance with the local floodplain ordinance. For the City of Angleton, the Floodplain Administrator for Brazoria County is responsible for handling these NFIP claims.

**National Flood Insurance Program Participation**

The NFIP is a federal program administered through FEMA that enables property owners in participating communities to purchase insurance as a protection against flood losses. Communities must maintain eligibility in the NFIP by adopting and enforcing floodplain management regulations intended to prevent unsafe development in the floodplain, thus reducing future flood damage. FEMA creates flood maps, or Flood Insurance Rate Maps (FIRM) to support the NFIP.<sup>27, 28</sup> These flood maps are periodically updated and outline SFHA. The SFHA is the area where the NFIP floodplain management regulations must be enforced and the area where the mandatory purchase of flood insurance applies.<sup>29</sup>



### The Community Rating System (CRS)

The CRS is a voluntary incentive program that recognizes and encourages community floodplain management practices that exceed the minimum requirements of the NFIP. Participation in the CRS program is voluntary and includes many benefits for a community, such as discounted flood insurance premiums that relate to the community's level of efforts that reduce risk from flooding and strengthen floodplain management. Currently, the City of Angleton does not participate in the CRS Program.<sup>30</sup>

Table 3.6: Community Participation in the NFIP and CRS Program

Jurisdiction	Participating	Date Joined	Current Effective FIRM Date	CRS Participation
Angleton	Y	06/21/74	12/30/20	N

### NFIP Policies in Force

The table below summarizes the NFIP policies in force for Brazoria County and the City of Angleton. In total, there are 1,142 NFIP insured properties within the city.<sup>31</sup>

Table 3.7: NFIP Insured Properties

Community Name (Number)	Policies in Force	Total Coverage	Total Written Premium + FPF
BRAZORIA COUNTY (485458)	33,963	\$10,621,664,000	\$26,637,225
ANGLETON (480064)	1,142	\$353,911,000	\$762,629

Community Name- The official NFIP name of the community in which the policy resides.

Community Number- The 6-character community ID in which the policy resides.

Total Coverage- The total building and contents coverage for the policies in force.

Total Written Premium + FPF (Federal Policy Fee)- This represents the sum of the premium and FPF for the policies in force.

## Section 4: Risk Assessment

This section outlines the risk assessment procedures and identifies hazards ranked by risk that affect the City of Angleton.

## Section 4: RISK ASSESSMENT

The 2023 Texas State Hazard Mitigation Plan identified 11 major natural hazards that affect the region. These include hurricanes, floods, wildfires, drought, and tornados. The PT and HMC identified 17 hazards, 12 of which are natural hazards, which could affect the city. Not all hazards were profiled for this plan. Hazards not profiled were drinking water/aging infrastructure, train derailment, and dam/levee failure.

### Risk Assessment

The HMC was provided with a Risk Assessment worksheet prepared by H-GAC staff. The worksheet outlined the purpose of the Risk Assessment, important items to keep in mind while completing the worksheet, probability and severity scores, including characteristics for those scores that were relatable, and a guide for how to calculate hazard rankings determined by the probability and severity scores. The Risk Assessment ranked the hazards identified by scoring the probability and severity of each hazard. A risk score was then determined by multiplying the probability (P) by the severity (S). Tables including scores and associated characteristics can be found below. Appendix D includes completed worksheets and a summary of hazard ranking scores from participating members of the HMC.

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

### Hazards Ranked by Risk

Each identified hazard in the table below poses a risk to the City of Angleton. Ranking the hazards from greatest to lowest risk allows the communities to prioritize their resources and focus efforts where they are most needed. Identified hazards were given a risk score as determined by participating jurisdictions and the HMC, those hazards were then categorized with a risk rating of High, Moderate, or Low.

Risk Rating	Ranking	Hazards
High	1	Hurricanes, Tropical Storms, & Depressions
	2	Flooding
	3	Dam/Levee Failure*
Moderate	4	Winter Weather
	5	Tornado
	6	Drinking Water/Aging Infrastructure*
	7	Extreme Heat
	8	Wildfire
	9	Drought & Expansive Soils
	10	Severe Thunderstorms & Lightning
Low	11	Hail
	12	Cybersecurity
	13	Windstorm
	14	Train Derailment*
	15	Erosion
	16	Earthquake*
	17	Emerging Infectious Diseases

\* Indicates a hazard that was not profiled but was identified as a hazard of concern by the HMC.

Dam/Levee Failure was not profiled in this plan as there are no dams/levees within Angleton city limits. All dams/levees near the city have been classified as 'Low' in the hazard potential classification. Due to the risk of this hazard being negligible, it will not be profiled in this plan. Drinking water/aging infrastructure and train derailment were not profiled in this plan as they are not natural hazards. Earthquakes, while a natural hazard that affects some areas of Texas, are not considered to be a threat for the City of Angleton. The risk of an earthquake affecting a city as far south as Angleton is minimal. The risk of an earthquake is lowest among the Gulf Coast as the area is not located near any plate boundaries.

## Section 5: Capability Assessment

This section includes the capability assessment, which includes a summary and description of the existing plans, programs, and regulatory mechanisms that support hazard mitigation within the planning area.

## Section 5: CAPABILITY ASSESSMENT

### Capability Assessment

A Capability Assessment is a process of evaluating the existing capabilities, including resources such as staff time, funding, and infrastructure, that the city currently has at its disposal to utilize for hazard risk reduction. The HMC completed local capability and risk assessment surveys for the City of Angleton to collect data on hazards that affect the area, the city's ability to mitigate damages from these hazards, and current plans or programs in place to help mitigate natural hazards. The HMC also identified factors impacting their capabilities to address hazards within the city. The PT used the information to assess the overall risk within the planning area, and to determine a strategy to integrate the HMP into their current planning mechanisms. A condensed version of the information is provided below. The full capability assessment worksheets and responses can be found in Appendix D.

### List of Existing Plans & Regulations

- |   |   |
|---|---|
| CIP: Capital Improvements Plan          | FPO: Floodplain Ordinance               |
| COMP: Comprehensive Land Use Plan       | HMP: Hazard Mitigation Plan             |
| COOP: Continuity of Operations Plan     | NHSO: Natural Hazard Specific Ordinance |
| DRP: Disaster Recovery Plan             | REP: Radiological Emergency Plan        |
| EDP: Economic Development Plan          | SMP: Stormwater Management Plan         |
| EOP: Emergency Operations Plan          | SO: Subdivision Regulation              |
| FMP: Floodplain Management Plan         | TP: Transportation Plan                 |
| FDPO: Flood Damage Prevention Ordinance | ZO: Zoning Ordinance                    |

Table 5.1: Existing Plans and Regulations by Participating Jurisdictions

Jurisdiction	CIP	COMP	COOP	DRP	EDP	EOP	FMP	FDPO	FPO	HMP	NHSO	REP	SMP	SO	TP	ZO
Angleton	X	X	X	X		X	X	X	X	X		X	X	X	X	X

### Capability Limitations and Expansion Opportunities

The city and HMC examined any existing authorities, policies, programs, and resources, then identified ways to improve upon and expand these existing authorities to support the mitigation strategy.

Table 5.2: Capability Limitations and Expansion Opportunities

Jurisdiction	Capability Limitations and Expansion Opportunities
Angleton	Identified an inadequate budget as a factor that decreases their capability to implement mitigation actions and reduce future damages. Angleton will apply for state and federal funding to help fund mitigation actions that reduce the impact of natural hazards. They also plan to expand their mutual aid agreements to address flood emergency response needs.

## Section 6: Hazard Identification & Risk Analysis

This section is broken down into subsections for each hazard of concern to the city identified during the risk assessment. It contains descriptions of identified hazards, hazard location, extent, history of events, probability of future events, and climate change impacts. Additionally, vulnerability is addressed for all hazards and includes a probable risk level, an estimate of property and crop damages, number of events, fatalities and injuries, average annual events, changes in frequency, and estimated annualized losses, where applicable.

## **Section 6: HAZARD IDENTIFICATION & RISK ANALYSIS**

- 6.1 Hurricanes, Tropical Storms, & Depressions
- 6.2 Flooding
- 6.3 Winter Weather
- 6.4 Tornado
- 6.5 Extreme Heat
- 6.6 Wildfire
- 6.7 Drought & Expansive Soils
- 6.8 Severe Thunderstorms & Lightning
- 6.9 Hail
- 6.10 Cybersecurity
- 6.11 Windstorm
- 6.12 Erosion
- 6.13 Emerging Infectious Diseases



# Section 6.1: Hurricanes, Tropical Storms, and Tropical Depressions



## 6.1 Hurricanes, Tropical Storms, and Tropical Depressions

Hurricanes form from the development of thunderstorms that are fueled by warm water and air over the ocean. Tropical waves and disturbances can lead to the formation of tropical cyclones. A tropical cyclone is a rotating, organized system of clouds and thunderstorms that originates over tropical or subtropical waters and has a closed low-level circulation. Tropical cyclones can produce intense rainfall of more than 6 inches, resulting in heavy flooding. Other dangers associated with the formation of these storms include storm surges, damaging winds, rip currents, and tornadoes.<sup>32</sup> Slower moving larger storms can produce more rainfall and more dangerous outcomes. Classifications of tropical cyclones; tropical depressions, tropical storms, hurricanes, and major hurricanes are defined in the table below.<sup>33</sup>

Table 6.1.1: Tropical Cyclone Classifications

Classification	Definition
<b>Tropical Depression</b>	A tropical cyclone with maximum sustained winds of 38 mph (33 knots) or less. Tropical depressions can bring heavy downpours and sustained winds strong enough to generate rough surf and life-threatening rip currents.
<b>Tropical Storm</b>	A tropical cyclone with maximum sustained winds of 39 to 73 mph (34 to 63 knots). These storms are assigned a name and start to become more organized and circular.
<b>Hurricane</b>	A tropical cyclone with maximum sustained winds of 74 mph (64 knots) or higher. Hurricanes have very pronounced circulation of which an area of clear weather, an “eye” forms in the center.
<b>Major Hurricane</b>	A tropical cyclone with maximum sustained winds of 111 mph (96 knots) or higher, corresponding to a Category 3, 4 or 5 on the Saffir-Simpson Hurricane Wind Scale.

Hurricane season for Texas officially begins on June 1 and ends on November 30. The greatest threat of landfall for the Texas coast occurs between the beginning of June and the end of October. The NWS issues hurricane and tropical storm watches and warnings when these hazards are forming. These watches and warnings are issued or will remain in effect after a tropical cyclone becomes post-tropical when such a storm poses a significant threat to life and property. The National Weather Service (NWS) allows the National Oceanic and Atmospheric Administration’s (NOAA) National Hurricane Center (NHC) to issue advisories during the post-tropical stage. Whenever a tropical cyclone or a subtropical storm has formed in the Atlantic or Eastern North Pacific, the NOAA NHC issues tropical cyclone advisory products at least every 6 hours at 5 AM, 11 AM, 5 PM, and 11 PM Eastern Daylight Time (EDT). When a coastal tropical storm or hurricane watches or warnings are in effect, the NHC issues Tropical Cyclone Public Advisories every 3 hours. The table below provides definitions of these tropical watches and warnings.<sup>34</sup>

Table 6.1.2: Tropical Watches and Warnings

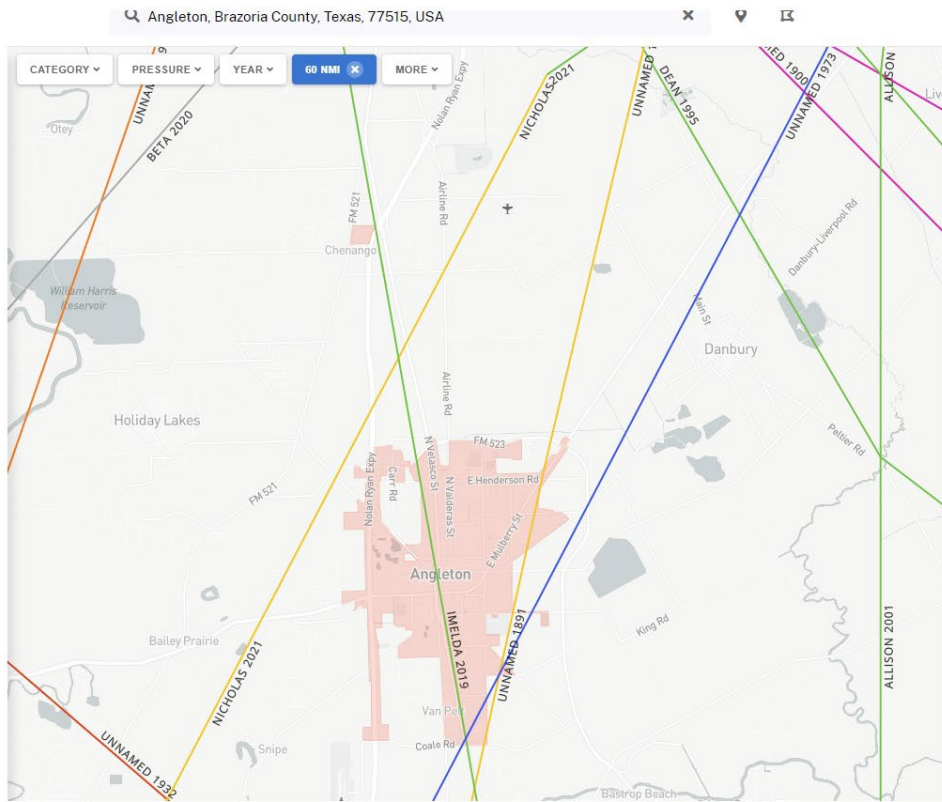
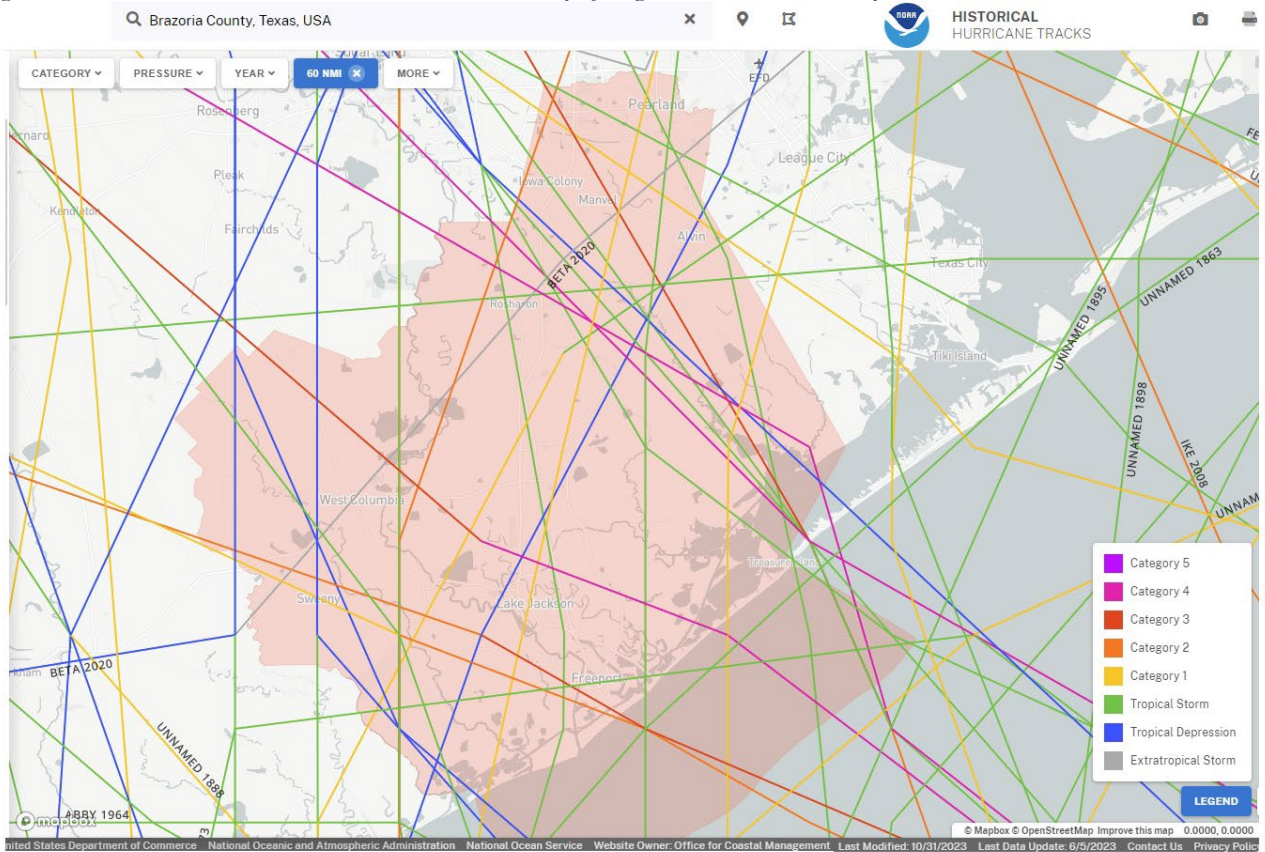
Name	Definition
<b>Advisories</b>	
<b>Tropical Cyclone Public Advisory</b>	Contains a list of all current coastal watches and warnings associated with an ongoing or potential tropical cyclone, a post-tropical cyclone, or a subtropical cyclone. Provides the cyclone position, maximum sustained winds, current motion, and a description of the hazards associated with the storm.
<b>Watches</b>	
<b>Tropical Storm Watch</b>	Tropical storm conditions (sustained winds of 39 to 73 mph) are possible within the specified area within 48 hours.
<b>Storm Surge Watch</b>	There is a possibility of life-threatening inundation from rising water moving inland from the shoreline somewhere within the specified area, generally within 48 hours.
<b>Hurricane Watch</b>	Hurricane conditions (sustained winds of 74 mph or greater) are possible within your area. Because it may not be safe to prepare for a hurricane once winds reach

	tropical storm force, The NHC issues hurricane watches 48 hours before it anticipates tropical storm-force winds.
<b>Warnings</b>	
<b>Tropical Storm Warning</b>	Tropical storm conditions (sustained winds of 39 to 73 mph) are expected within your area within 36 hours.
<b>Storm Surge Warning</b>	There is a danger of life-threatening inundation from rising water moving inland from the shoreline somewhere within the specified area, generally within 36 hours. If you are under a storm surge warning, check for evacuation orders from your local officials.
<b>Extreme Wind Warning</b>	Extreme sustained winds of a major hurricane (115 mph or greater), usually associated with the eyewall, are expected to begin within an hour. Take immediate shelter in the interior portion of a well-built structure.
<b>Hurricane Warning</b>	Hurricane conditions (sustained winds of 74 mph or greater) are expected somewhere within the specified area. NHC issues a hurricane warning 36 hours in advance of tropical storm-force winds to give you time to complete your preparations. All preparations should be complete. Evacuate immediately if so ordered.

**Location**

The city of Angleton is located approximately 18 miles inland from the Gulf of Mexico. Wind and the rains generated by hurricanes, tropical storms, and depressions do have a significant impact on flooding and windstorm-related damages within the city. Flooding is profiled in Section 6.2 of this HMP, while the Windstorm profile can be found in Section 6.10. The figures below, based on NOAA’s Historical Hurricane Tracks interactive map, show the historical hurricane, tropical storms, and tropical depression tracks that have crossed into the City of Angleton and Brazoria County. It is important to remember that these storms, named or unnamed, do not have to cross the county or city boundaries for the planning area to be at risk from their impacts. There has been a total of 88 of these storms that have occurred within 60 nmi of Brazoria County, while 30 storms have crossed through the county directly and 3 storms have crossed through the Angleton City limits.<sup>35</sup>

Figure 6.1.1: Historical Hurricane Tracks within 60 nmi, City of Angleton & Brazoria County



## Extent

Hurricane intensity is measured through the Saffir-Simpson Hurricane Wind Scale. The scale was originally developed by wind engineer Herb Saffir and meteorologist Bob Simpson. It has been an excellent tool for alerting the public about the possible impacts of various intensity hurricanes. The scale does not address the potential for other hurricane-related impacts, such as storm surges, rainfall-induced floods, and tornadoes. This wind caused damage general descriptions of the scale are to an extent dependent upon the local building codes in effect and how well and how long they have been enforced.<sup>36</sup> The scale gives a 1 to 5 rating based only on a hurricane's maximum sustained wind speed and estimates potential property damage at each scale. Hurricanes of Category 3 and higher are known as major hurricanes. These hurricanes can cause devastating to catastrophic wind damage and significant loss of life due to the strength of their winds. Hurricanes of all categories can produce deadly storm surges, rain-induced floods, and tornadoes. These hazards require people to take protective action, including evacuating from areas vulnerable to storm surges.<sup>37</sup>

Table 6.1.3: The Saffir-Simpson Hurricane Wind Scale

Category	Sustained Wind Speeds	Types of Damage Due to Hurricane Winds
1	74-95 mph	<b>Very dangerous winds will produce some damage:</b> People, livestock, and pets struck by flying or falling debris could be injured or killed. Well-constructed frame homes could have damage to roof, shingles, vinyl siding and gutters. Large branches of trees will snap, and shallowly rooted trees may be toppled. Extensive damage to power lines and poles likely will result in power outages that could last a few to several days.
2	96-110 mph	<b>Extremely dangerous winds will cause extensive damage:</b> There is a substantial risk of injury or death to people, livestock, and pets due to flying and falling debris. Older (mainly pre-1994 construction) manufactured homes have a very high chance of being destroyed and the flying debris generated can shred nearby manufactured homes. Newer manufactured homes can also be destroyed. Well-constructed frame homes could sustain major roof and siding damage. Many shallowly rooted trees will be snapped or uprooted and block numerous roads. Near-total power loss is expected with outages that could last from several days to weeks.
3	111-129 mph	<b>Devastating damage will occur:</b> There is a high risk of injury or death to people, livestock, and pets due to flying and falling debris. Nearly all older (pre-1994) manufactured homes will be destroyed. Newer manufactured homes will sustain severe damage with the potential for complete roof failure and wall collapse. Well-built framed homes may incur major damage or removal of roof decking and gable ends. Many trees will be snapped or uprooted, blocking numerous roads. Electric and water will be unavailable for several days to weeks after the storm passes.
4	130-156 mph	<b>Catastrophic damage will occur:</b> There is a very high risk of injury or death to people, livestock, and pets due to flying and falling debris. Nearly all older (pre-1994) manufactured homes will be destroyed. A high percentage of newer manufactured homes also will be destroyed. Poorly constructed homes can sustain complete collapse of all walls as well as the loss of the roof structure. Well-built homes also can sustain severe damage with loss of most of the roof structure and/or some exterior walls. Most trees will be snapped or uprooted, and power poles downed. Fallen trees and power poles will isolate residential areas. Power outages will last weeks to possibly months. Most of the area will be uninhabitable for weeks or months.
5	157 mph or higher	<b>Catastrophic damage will occur:</b> People, livestock, and pets are at very high risk of injury or death from flying or falling debris, even if indoors in manufactured homes or framed homes. Almost complete destruction of all manufactured homes will occur, regardless of age or construction. A high percentage of frame homes will be destroyed, with total roof failure and wall collapse. Extensive damage to roof covers, windows, and doors will occur.

Fallen trees and power poles will isolate residential areas. Power outages will last for weeks to possibly months. Most of the area will be uninhabitable for weeks or months.

### Historic Occurrences

NOAA collects historic climate data for the entire nation. NOAA's storm event data can be accessed on the National Center for Environmental Information (NCEI) storm events database. These events are shown at the county level with some referencing a specific location, city, or zone. The database currently contains data from January 1950 to December 2023, as entered by NOAA's NWS. Due to changes in the data collection and processing procedures over time, there are unique periods of record available depending on the event type. The table below highlights events for this hazard that have occurred within Brazoria County from 1950-2023.<sup>38</sup>

Table 6.1.4: City of Angleton Hurricane, Tropical Storms, and Tropical Depressions (1950-2023)

Date	Area Impacted	Event Type	Injuries/Deaths	Property Damage	Crop Damage
8/21/1998	BRAZORIA (ZONE)	Tropical Storm	0/0	\$5,000	\$0.00
9/7/1998	BRAZORIA (ZONE)	Tropical Storm	0/1	\$28,700,000	\$0.00
6/5/2001	BRAZORIA (ZONE)	Tropical Storm	0/0	\$22,200,000	\$0.00
9/5/2002	BRAZORIA (ZONE)	Tropical Storm	0/0	\$0.00	\$0.00
7/14/2003	BRAZORIA (ZONE)	Hurricane (Typhoon)	0/0	\$1,270,000	\$0.00
8/30/2003	BRAZORIA (ZONE)	Tropical Storm	0/0	\$30,000	\$0.00
9/1/2003	BRAZORIA (ZONE)	Tropical Storm	0/0	\$8,000	\$0.00
9/23/2005	BRAZORIA (ZONE)	Hurricane (Typhoon)	0/0	\$500,000	\$0.00
9/12/2008	BRAZORIA (ZONE)	Hurricane (Typhoon)	0/0	\$700,000,000	\$0.00
6/15/2015	BRAZORIA (ZONE)	Tropical Storm	0/0	\$0.00	\$0.00
6/21/2017	BRAZORIA (ZONE)	Tropical Storm	0/0	\$0.00	\$0.00
8/25/2017	BRAZORIA (ZONE)	Tropical Storm	0/0	\$0.00	\$0.00
7/25/2020	BRAZORIA ISLANDS (ZONE)	Tropical Storm	0/0	\$0.00	\$0.00
7/25/2020	COASTAL BRAZORIA (ZONE)	Tropical Storm	0/0	\$0.00	\$0.00
9/13/2021	BRAZORIA ISLANDS (ZONE)	Tropical Storm	0/0	\$0.00	\$0.00
9/13/2021	INLAND BRAZORIA (ZONE)	Tropical Storm	0/0	\$0.00	\$0.00
<b>TOTALS:</b>			<b>0/1</b>	<b>\$752,713,000</b>	<b>\$0</b>

### Presidential Disaster Declarations

There have been 16 federally declared hurricane, tropical storms, or tropical depression related disasters in Brazoria County since 1950. There were also 2 severe storm disasters and 2 coastal storms that mentioned a hurricane or tropical storm in their declaration title and were included in the table below.

Table 6.1.5: Federal Disaster Declarations for Hurricanes, Tropical Storms, and Tropical Depressions

Date	Disaster Number	Declaration Types	Incident Type	Declaration Title
8/19/1983	689	Major Disaster Declaration	Hurricane	HURRICANE ALICIA
8/26/1998	1239	Major Disaster Declaration	Severe Storm	TROPICAL STORM CHARLEY
9/23/1998	1245	Major Disaster Declaration	Severe Storm	HURRICANE GEORGES - TEXAS
6/9/2001	1379	Major Disaster Declaration	Coastal Storm	TROPICAL STORM ALLISON

9/26/2002	1434	Major Disaster Declaration	Coastal Storm	TROPICAL STORM FAY
7/17/2003	1479	Major Disaster Declaration	Hurricane	HURRICANE CLAUDETTE
9/2/2005	3216	Emergency Declaration	Hurricane	HURRICANE KATRINA EVACUATION
9/21/2005	3261	Emergency Declaration	Hurricane	HURRICANE RITA
9/24/2005	1606	Major Disaster Declaration	Hurricane	HURRICANE RITA
8/18/2007	3277	Emergency Declaration	Hurricane	HURRICANE DEAN
8/29/2008	3290	Emergency Declaration	Hurricane	HURRICANE GUSTAV
9/10/2008	3294	Emergency Declaration	Hurricane	HURRICANE IKE
9/13/2008	1791	Major Disaster Declaration	Hurricane	HURRICANE IKE
7/26/2020	3530	Emergency Declaration	Hurricane	HURRICANE HANNA
8/25/2017	4332	Major Disaster Declaration	Hurricane	HURRICANE HARVEY
8/24/2020	3540	Emergency Declaration	Hurricane	TROPICAL STORMS MARCO AND LAURA

### *U.S. Department of Agriculture (USDA) Disaster Declarations*

The Secretary of Agriculture is authorized to designate counties as disaster areas to make emergency (EM) loans available to producers suffering losses in those counties and in counties that are contiguous to a designated county. In addition to EM loan eligibility, other emergency assistance programs, such as USDA Farm Service Agency (FSA) disaster assistance programs, have historically used disaster designations as an eligibility trigger. USDA Secretarial disaster designations must be requested of the Secretary of Agriculture by a governor or the governor's authorized representative, by an Indian Tribal Council leader, or by an FSA State Executive Director (SED). The Secretarial disaster designation is the most widely used. When there is a presidential disaster declaration, FEMA immediately notifies the USDA FSA of the primary counties named in the presidential declaration. USDA disaster declarations for the City of Angleton since 2018 are listed in the table below.<sup>39</sup>

*Table 6.1.6: USDA Declared Disasters (2018-2023), Hurricane, Tropical Storms, and Tropical Depressions*

Crop Disaster Year	Disaster Description	Designation Number
2021	Hurricane Nicholas	S5115

### **Probability of Future Occurrences**

The State of Texas HMP estimates the occurrence of hurricanes, tropical storms, and tropical depressions is trending upward, with a 400% increase in the 5-year planning cycle between 2017-2021.<sup>40</sup> According to FEMA's National Risk Index (NRI) for hurricanes within Brazoria County, annualized frequency values are 0.2 events per year over 73 years of record (1949-2021), with 43 events on record for this timeframe.<sup>41</sup>

### **Populations at Risk**

FEMA's NRI utilizes data from multiple sources including historical hazard events, hazard intensity, exposure of people and property to hazards, socioeconomic factors, and community resilience indicators. The NRI also incorporates hazard data to determine the frequency and intensity of various natural hazards. This information helps assess the likelihood of specific hazards occurring in different regions.

The NRI considers the exposure of communities to hazards and incorporates factors such as population density, infrastructure systems, and critical facilities that may be at risk during a hazard event. The NRI

also generates risk scores for communities across the U.S. that provide a relative ranking of areas based on their overall risk level. This helps to identify areas that may require additional resources and attention for mitigation and planning efforts. The NRI risk equation includes 3 components. Expected annual loss (EAL) represents the average economic loss in dollars resulting from natural hazards each year, the Community Risk Factor (CRF) is a scaling factor that incorporates social vulnerability (the susceptibility of social groups to the adverse impacts of natural hazards), and community resilience (the ability of a community to prepare for anticipated natural hazards, adapt to changing conditions, and withstand and recover rapidly from disruptions). The outcome, the risk index, represents the potential negative impacts of natural hazards on the county level or individually by census tracts. The NRI EAL score and rating, represent a community's relative level of expected loss each year when compared to all other communities at the same level.<sup>42</sup>

Populations at risk for hurricanes, tropical storms, and tropical depressions include the entire county and the City of Angleton as this hazard has no geographic boundaries. Hurricanes can cause property damage, flooding, lack of access to critical facilities that provide food, water, medications, or other forms of medical assistance, and lack of utilities such as electricity and clean water, which can increase the risk of illness. The National Center for Healthy Housing (NCHH) includes at-risk populations for several hazards. For hurricanes, these include older adults, children, people experiencing homelessness, people with disabilities, and people with chronic health conditions. Older adults, in addition to the dangers listed above, can also face social isolation, lack of electricity needed to run medical equipment, and lack of access to other critical supplies. In younger populations, such as children, hurricanes can disrupt schooling and the normal day-to-day routines they thrive on. This can not only jeopardize their academic success, it can also cause mental and emotional stress. Children are more at risk and vulnerable to certain medical conditions like asthma, lead poisoning, allergies, and bacterial infections which can be caused by the resulting flood damage and increased moisture of hurricanes. For people experiencing homelessness, housing and adequate shelter are critical in keeping populations safe during these types of hazard events so hurricanes can be life-threatening for this population if adequate shelter is not located and utilized. People with disabilities may require additional assistance to stay safe and prepare for these hazards such as creating a support network, finding accessible transportation to evacuate or get medical attention, and loss of power for needed medical equipment. Likewise, those with chronic health conditions may need similar assistance as those with disabilities. People with chronic health conditions also face exposure to diseases or illnesses from standing water and increased exposure to these illnesses when utilizing a shelter or evacuation center.<sup>43</sup> People living in mobile homes are also at greater risk of injury and death from these hazards. Despite mobile homes providing a form of shelter, tornadoes and dangerous winds produced by hurricanes, tropical storms, and tropical depressions can cause mobile homes and even mobile homes that utilize anchoring to be seriously damaged or destroyed when winds gust over 80 mph.

EAL for the City of Angleton was derived by creating a report that used census tract information for tracts that included the Angleton city limits. These were census tracts 48039662100, 48039662200, 48039662400, 48039662300, 48039662500, 48039663100, and 48039664100. EAL according to the FEMA NRI for hurricane events for these census tracts is listed as very high, with one tract rating relatively high. EAL values, risk index ratings, risk index scores, social vulnerability, and community resilience for each census tract can be found in the figures below.<sup>44</sup> Additionally, the FEMA NRI lists the historic loss ratio (HLR), a hazard- and county-specific estimate of the percentage of the exposed consequence type (building value, population, or agriculture value) expected to be lost due to a hazard occurrence, for hurricanes within Brazoria County as relatively high.<sup>45</sup> Tropical storms and tropical depressions are not included in the FEMA NRI and were omitted here.



Figure 6.1.2: Risk Index by Census Tract, City of Angleton, Hurricane

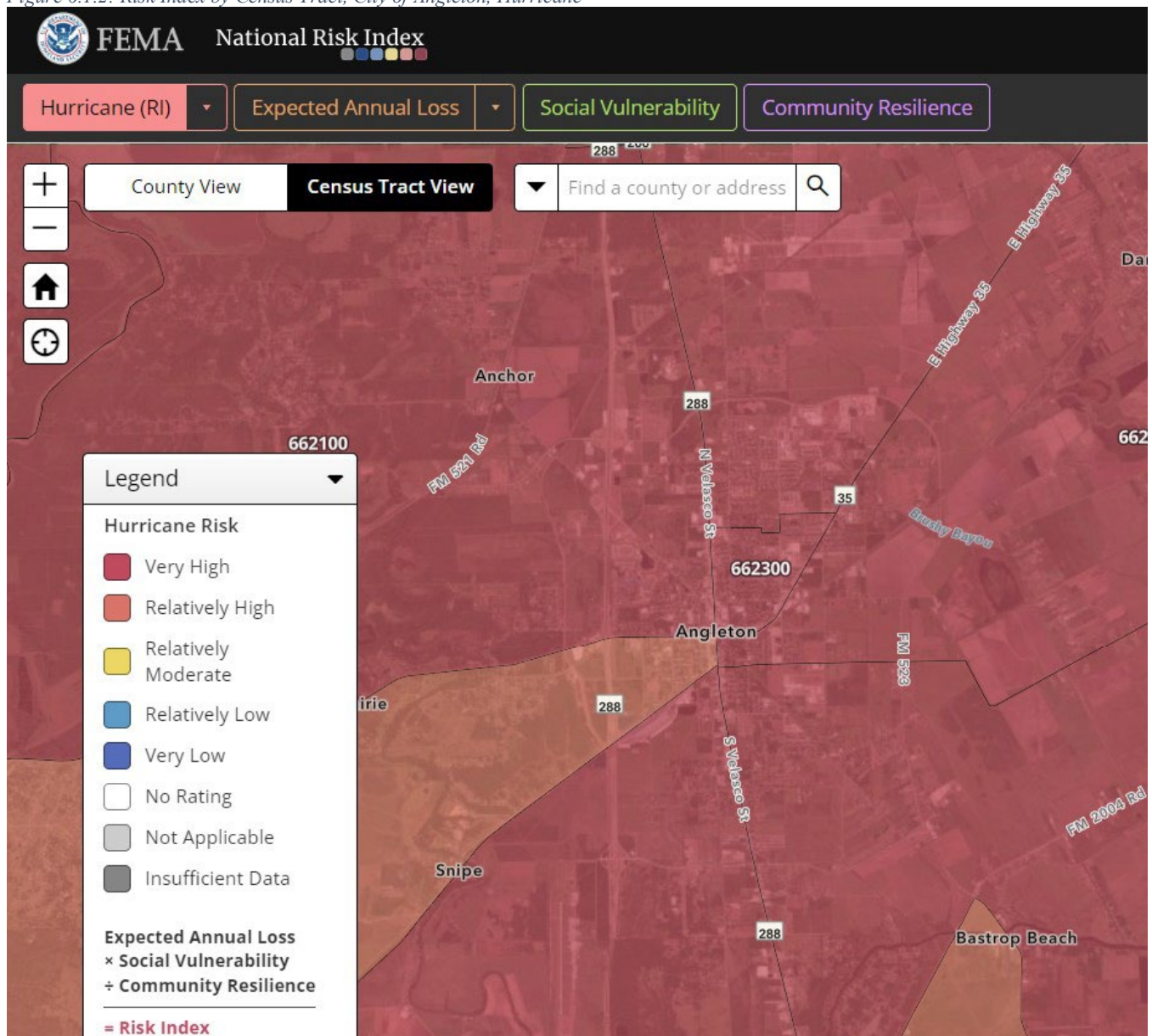


Figure 6.1.3: Expected Annual Loss by Census Tract, City of Angleton, Hurricane

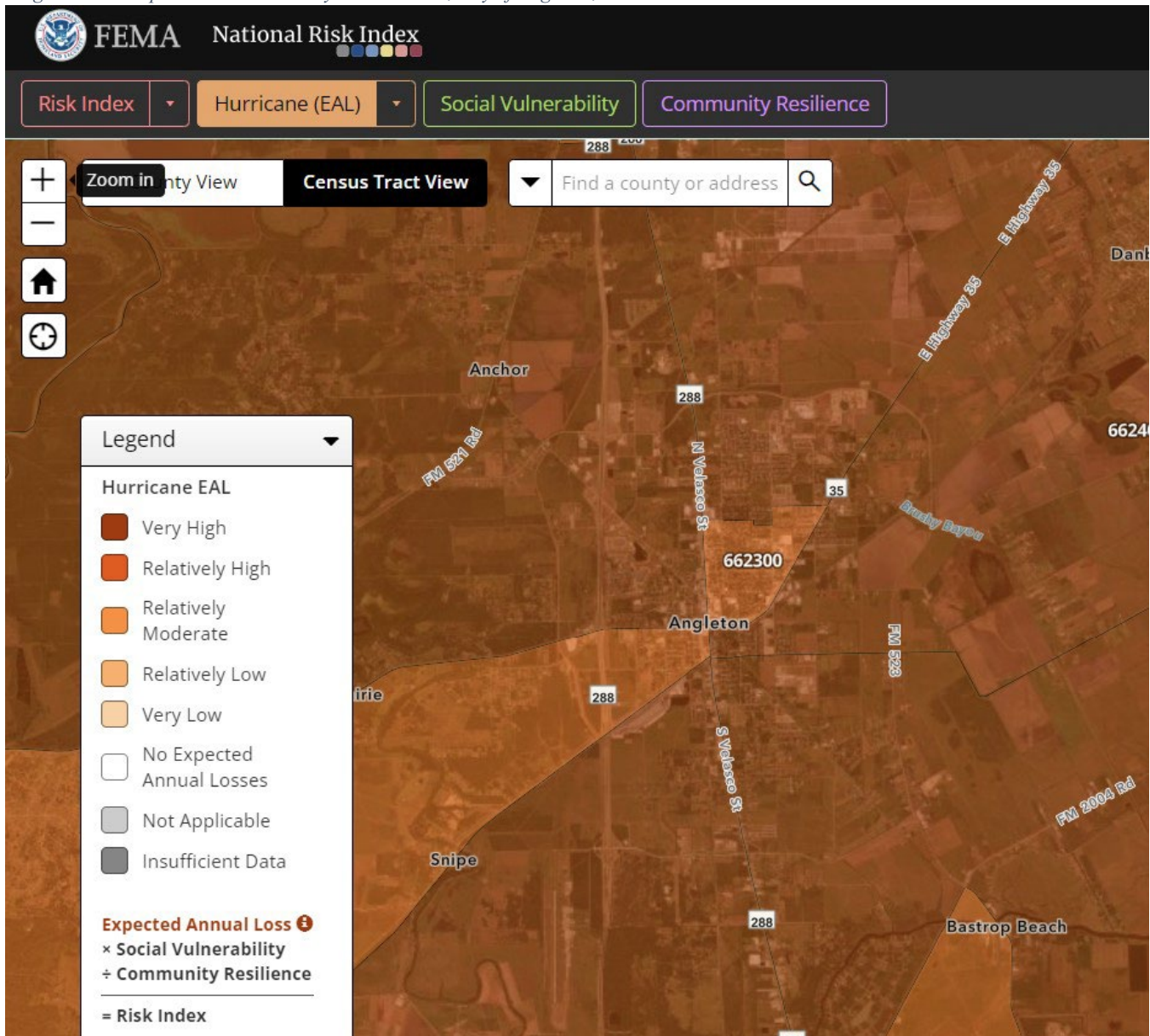


Figure 6.1.4: Social Vulnerability by Census Tract, City of Angleton

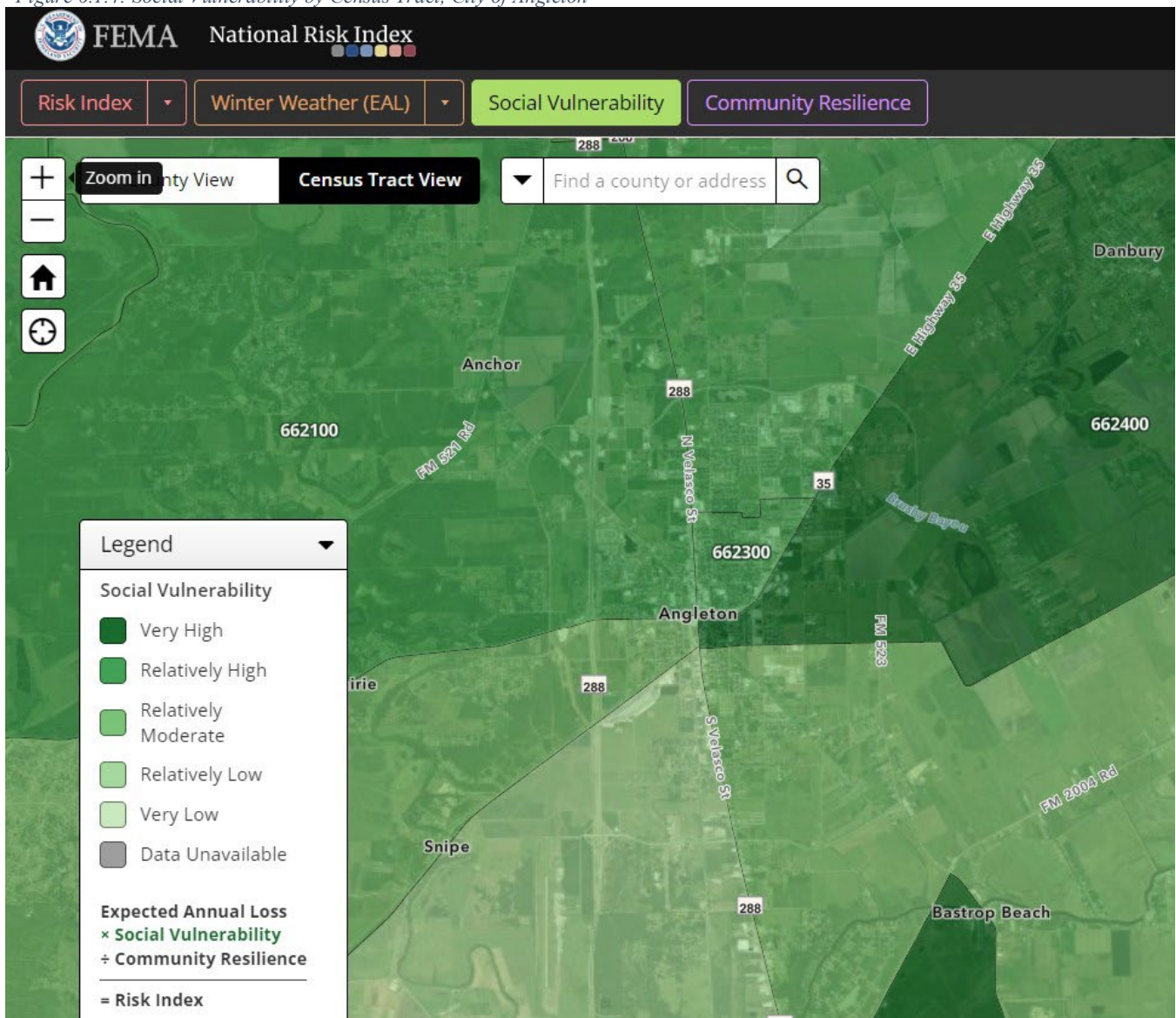


Figure 6.1.5: Community Resilience by Census Tract, City of Angleton

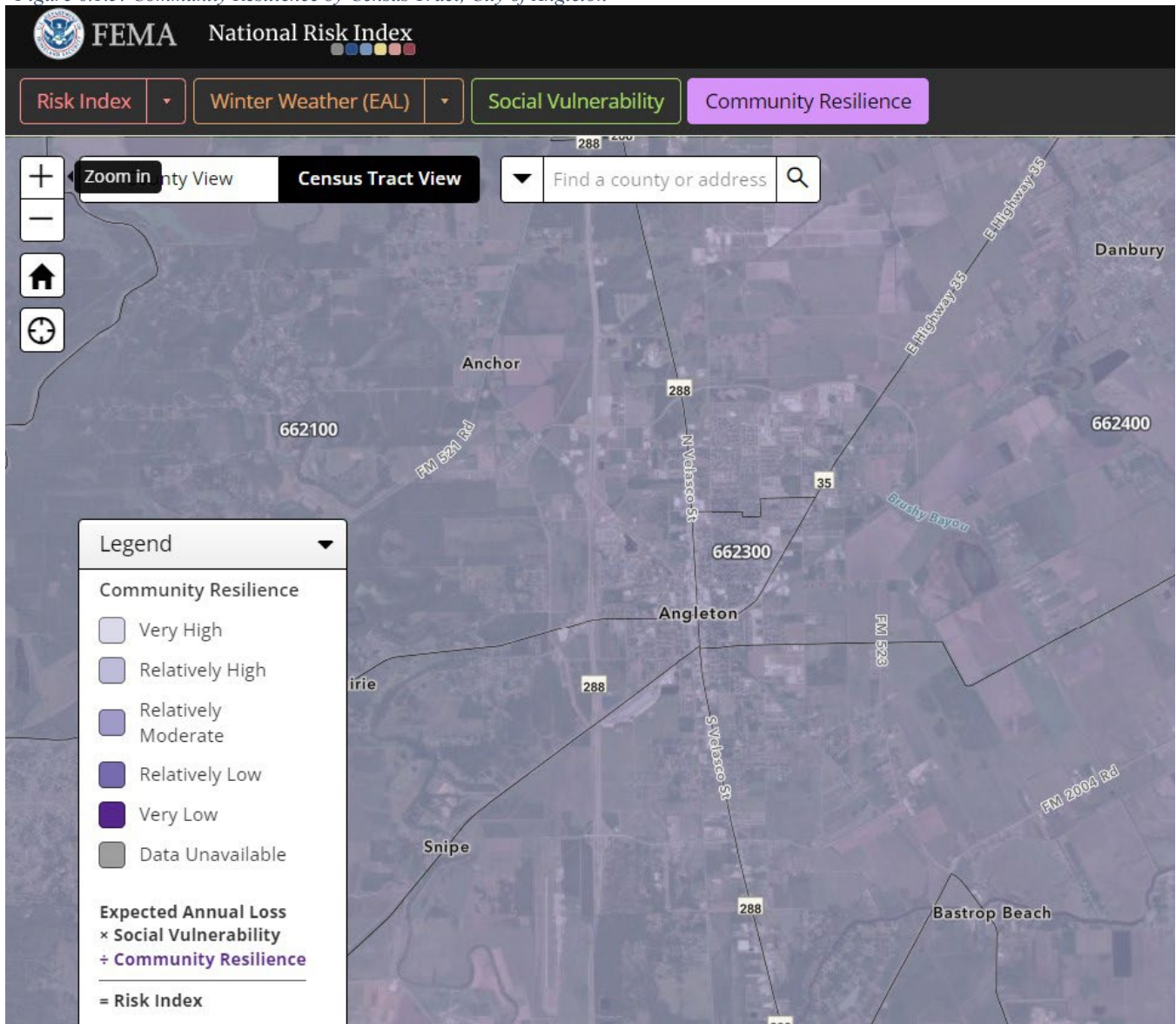


Figure 6.1.6: FEMA NRI Summary by Census Tract, City of Angleton, Hurricane

Rank	Community	State	Risk Index Rating	Risk Index Score	National Percentile
1	Census tract 48039662400	TX	Very High	98.33	0  100
2	Census tract 48039662200	TX	Very High	97.88	0  100
3	Census tract 48039663100	TX	Very High	97.78	0  100
4	Census tract 48039662100	TX	Very High	97.49	0  100
5	Census tract 48039664100	TX	Very High	96.77	0  100
6	Census tract 48039662300	TX	Very High	96.04	0  100
7	Census tract 48039662500	TX	Relatively High	91.91	0  100

Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Risk Index Score
1	Census tract 48039662400	TX	\$2,610,634	Very High	Relatively Moderate	1.43	\$3,745,913	98.33
2	Census tract 48039662200	TX	\$2,490,831	Relatively High	Relatively Moderate	1.34	\$3,331,662	97.88
3	Census tract 48039663100	TX	\$3,262,887	Relatively Low	Relatively Moderate	1	\$3,265,585	97.78
4	Census tract 48039662100	TX	\$2,524,451	Relatively High	Relatively Moderate	1.22	\$3,088,959	97.49
5	Census tract 48039664100	TX	\$2,561,745	Relatively Moderate	Relatively Moderate	1.05	\$2,684,512	96.77
6	Census tract 48039662300	TX	\$1,736,324	Relatively High	Relatively Moderate	1.38	\$2,393,047	96.04
7	Census tract 48039662500	TX	\$1,278,006	Relatively Moderate	Relatively Moderate	1.12	\$1,427,229	91.91

**Climate Change Impacts**

According to the Office of the Texas State Climatologist, hurricanes, tropical storms, and tropical depressions, though unpredictable in quantity between 5-year planning cycles, will continue to intensify due to other climate-related factors such as the environmental conditions for thunderstorm intensity rising, warmer temperatures, and increasing ocean temperatures. As temperatures increase, the amount of energy available to fuel these storms, especially those that form over warm tropical waters of the Atlantic Ocean and Gulf of Mexico is expected to increase.<sup>43</sup>

*Table 6.1.7: Climate Change Impacts Summary, Hurricane, Tropical Storms, and Tropical Depressions*

<b>Location</b>	The location of hurricanes, tropical storms, and tropical depressions is not expected to change.
<b>Extent/Intensity</b>	The extent and intensity of hurricanes, tropical storms, and tropical depressions are not expected to change.
<b>Frequency</b>	There are no clear trends in hurricanes, tropical storms, and tropical depression frequency. This is due to considerable variability in conditions that lead to these hazards occurring. However, these hazards occur most frequently in warmer months. For the Texas coast, hurricane season officially begins on June 1 and ends on November 30. The greatest threat of landfall for these hazards occurs between the beginning of June through October.
<b>Duration</b>	The duration of hurricanes, tropical storms, and tropical depressions is not likely to change, however, their intensity is expected to increase due to rising temperatures and the proximity of the county and city to the Gulf of Mexico, which aids in fueling thunderstorms and tropical cyclone formation when waters are warm and thunderstorm development is more likely.

# Section 6.2: Flooding



## 6.2 Flooding

Floodplains are the primary tool used by FEMA to determine areas at risk of flooding. The periodic flooding of lands adjacent to rivers, streams, and shorelines is a natural and inevitable occurrence that can be expected based on established recurrence intervals. The recurrence interval of a flood is the average time interval, in years, that can be anticipated between flood events of a certain magnitude. Using the recurrence interval with land and precipitation modeling, forecasters can estimate the probability and likely location of flooding. These are expressed as floodplains. The most used floodplain measurements are the 100-year floodplain and the 500-year floodplain. The 100-year floodplain is an SFHA that will be inundated by the flood event having a 1-percent chance of being equaled or exceeded in any given year. The 1-percent (1 in 100) annual chance flood is also referred to as the base flood.<sup>46</sup> The 500-year floodplain, or the 0.2% annual chance flood, is a flooding event that has a 0.2 percent (1 in 500) chance of occurring in any given year at any given location.

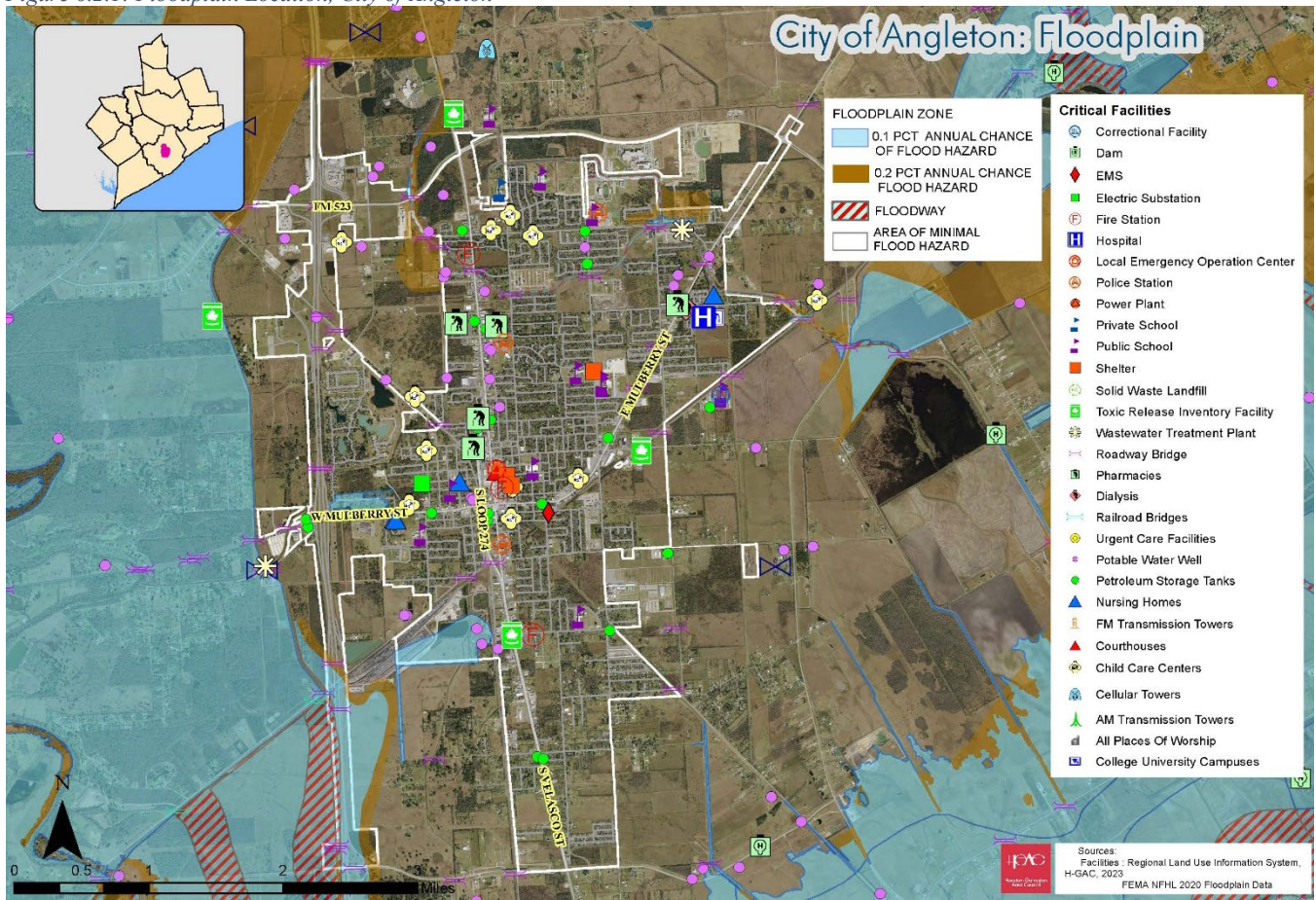
Four different types of flooding can affect an area: coastal, riverine, flash flooding, and groundwater flooding. For this HMP the flooding section focuses on coastal, riverine, and flash flooding as those are historically the types of floods that have occurred within the area. Riverine Flooding is when streams and rivers exceed the capacity of their natural or constructed channels to accommodate water flow and water overflows the banks, spilling out into adjacent low-lying, dry land.<sup>47</sup> Riverine flooding can occur during heavy periods of rain that cause rivers and streams to crest their banks and can take days, weeks, to months to subside back to normal levels. Coastal Flooding is when water inundates or covers normally dry coastal land as a result of high or rising tides or storm surges.<sup>48</sup> Flash Flooding is defined by the NWS as “A rapid and extreme flow of high water into a normally dry area or a rapid water level rise in a stream or creek above a predetermined flood level. Ongoing flooding can intensify to flash flooding in cases where intense rainfall results in a rapid surge of rising flood waters. Commonly it occurs within six hours of a heavy rain event. However, flash floods can also occur within hours or even minutes if a dam or levee fails or rapid ponding of water caused by torrential rainfall.”<sup>49</sup>

### Location

Figure 6.2.1 below shows the location of floodplains within the City of Angleton. Areas depicted by differentiating colors on the map show the locations of the 100-year and 500-year floodplains, as well as the floodway.

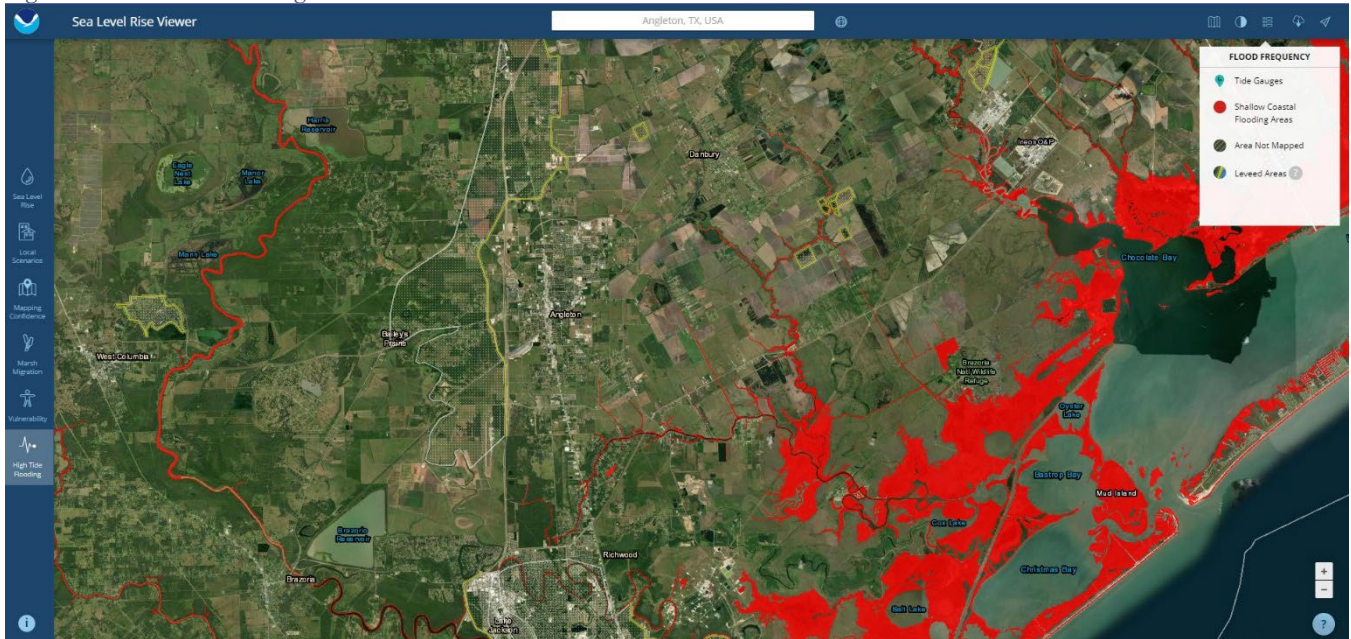


Figure 6.2.1: Floodplain Location, City of Angleton



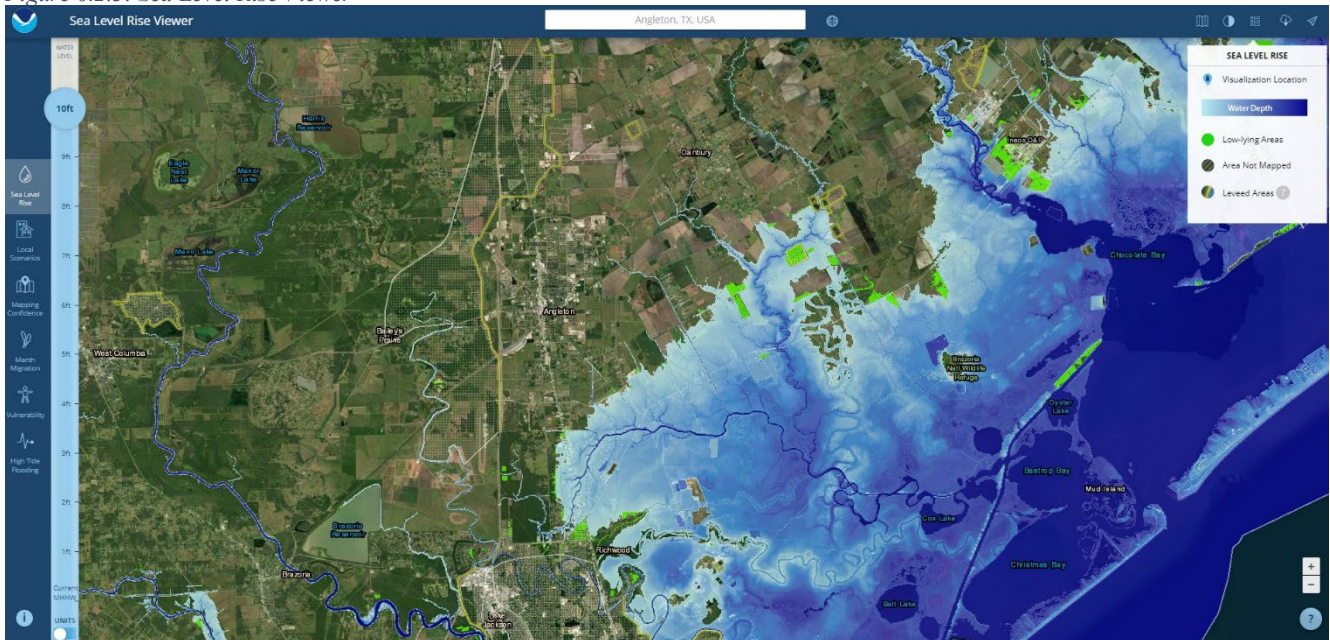
Coastal flooding is a result of rising tides or storm surges. As sea levels continue to rise due to various factors such as warming oceans, melting glaciers, and melting ice sheets raising global sea levels, the risk of coastal flooding for the city will increase. Using data based on the Surging Seas Risk Finder, there is a 95% risk of at least one flood over 5 ft taking place between today and 2050 in the Angleton area.<sup>50</sup> This would minimally impact the city as it is further inland than other coastal areas. Including impacts from other hazards, such as rising sea levels and storm surges from a hurricane, the city would be at a greater risk of flooding. Per NOAA, annual occurrences of tidal flooding have increased 5 to 10-fold since the 1960s. The changes in high tide flooding over time are greatest where elevation is lower. “Today’s flood will become tomorrow’s high tide, as sea level rise will cause flooding to occur more frequently and last for longer durations of time.” Figure 6.2.2 below highlights areas that are currently considered shallow coastal flooding areas by NOAA, or areas currently subject to tidal flooding/recurrent or nuisance flooding.<sup>51</sup>

Figure 6.2.2: Coastal Flooding Areas Viewer



A sea level rise of 10 ft shows the inundation footprint entering city limits to the south and northeast. Areas that are hydrologically connected to the ocean are shown in shades of blue (darker blue means a greater depth of water).

Figure 6.2.3: Sea Level Rise Viewer



## Extent

The NWS categorizes riverine flooding levels into four categories, minor, moderate, major, and record flooding. Table 6.1.1 below outlines these categories and their descriptions. Once a river reaches flood stage, an established gage height for a given location in which a rise in surface water begins to create a hazard to lives, property, or businesses, the NWS utilizes these categories to describe flood severity.

Table 6.2.1: NWS Flood Categories

Flood Category	Description
Minor Flooding	Minimal or no property damage is expected, but the flooding could possibly cause some public threat or inconvenience.
Moderate Flooding	Some inundation of structures and roads near streams is expected. Some evacuations of people and or a transfer of property to higher elevations are necessary.
Major Flooding	Extensive inundation of structures and roads in addition to the possible significant evacuations of people and/or transfer of property to higher elevations.
Record Flooding	Flooding which equals or exceeds the highest stage or discharge observed at a given site during the period of record.

Flash Floods can be caused by several things, but they are most often caused due to extremely heavy rainfall from thunderstorms. The intensity of the rainfall, the location and distribution of the rainfall, the land use and topography, vegetation types and growth/density, soil type, and soil water content all determine how quickly flooding may occur, and influence where it may occur.<sup>52</sup>

Coastal flooding is characterized by the NWS using the following threat levels, map colors, and descriptions for specified areas within the vicinity of the coast based on the adverse effects of surf conditions as saltwater is deposited onto the beach.<sup>53</sup>

Table 6.2.2: NWS Coastal Flood Categories

Threat Level	Description
Extreme	"An Extreme Threat to Life and Property within the Coastal Zone from Saltwater Flooding." Persistent battering surf conditions (lasting more than 36 hours), or major extra-tropical storm surge event. The potential for widespread breaching of dunes and seawalls. Near-shore roads may become weakened or washed out affecting local escape routes. Shoreline structures may experience significant damage resulting in local evacuations. Significant damage to marinas and piers may occur.
High	"A High Threat to Life and Property within the Coastal Zone from Saltwater Flooding." Battering surf conditions (lasting less than 36 hours), or moderate extra-tropical storm surge event. The potential for surf to breach dunes and seawalls in scattered locations which may begin to affect sections of near-shore roads and shoreline structures. Some damage to marinas and piers may occur.
Moderate	"A Moderate Threat to Life and Property within the Coastal Zone from Saltwater Flooding." High (very heavy) surf conditions which may cause major beach erosion. The potential for surf to breach dunes and seawalls in isolated locations, mainly in historically vulnerable spots.
Low	"A Low Threat to Life and Property within the Coastal Zone from Saltwater Flooding." High (heavy) surf conditions which may cause moderate beach erosion.
Very Low	"A Very Low Threat to Life and Property within the Coastal Zone from Saltwater Flooding." Rough surf conditions which may cause minor beach erosion.
Non-Threatening	"No Threat to Life and Property within the Coastal Zone from Saltwater Flooding." Surf conditions are non-threatening.

Flooding causes widespread and varying degrees of damage. The magnitude or extent of flood damage is expressed by using the maximum depth of flood water during a specific flood event. Structures inundated by 4 feet or more of flood water are considered an absolute loss. Other forms of loss include damage to roads and bridges, agriculture damages, loss of services, injury, or death. "In addition to

property damage, flooding can also cut off access to utilities, emergency services, and transportation, and may impact the overall economic well-being of an area.

### Historic Occurrences

NOAA collects historic climate data for the entire nation. NOAA's storm event data can be accessed on the NCEI Storm Events Database. These events are shown at the county level with some referencing a specific location, city, or zone. The database currently contains data from January 1950 to December 2023, as entered by NOAA's NWS. Due to changes in the data collection and processing procedures over time, there are unique periods of record available depending on the event type. The table below highlights events for this hazard that have occurred within Brazoria County from 1950-2023. Events that occurred within the City of Angleton are highlighted in purple.<sup>38</sup>

Table 6.2.3: City of Angleton Flood Events (1950-2023)

Event Date	Event Type	Injuries	Fatalities	Property Damage (\$)	Crop Damage (\$)
1/27/1997	Flash Flood	0	0	\$5,000	\$-
4/11/1997	Flash Flood	0	0	\$5,000	\$-
4/25/1997	Flash Flood	0	0	\$10,000	\$-
6/18/1997	Flash Flood	0	0	\$5,000	\$-
10/13/1997	Flash Flood	0	0	\$20,000	\$-
1/4/1998	Flash Flood	0	0	\$7,000	\$-
1/6/1998	Flash Flood	0	0	\$2,000	\$-
3/16/1998	Flash Flood	0	0	\$3,000	\$-
9/10/1998	Flash Flood	0	0	\$-	\$-
9/11/1998	Flash Flood	0	0	\$-	\$-
10/17/1998	Flood	0	0	\$-	\$-
10/18/1998	Flash Flood	0	0	\$3,000	\$-
11/12/1998	Flood	0	0	\$-	\$-
9/13/2000	Flash Flood	0	0	\$150,000	\$-
6/5/2001	Flash Flood	0	0	\$-	\$-
6/7/2001	Flash Flood	0	0	\$-	\$-
6/8/2001	Flash Flood	0	0	\$-	\$-
6/8/2001	Flash Flood	0	0	\$-	\$-
6/9/2001	Flash Flood	0	0	\$-	\$-
6/9/2001	Flash Flood	0	0	\$-	\$-
8/30/2001	Flash Flood	0	0	\$30,000	\$-
8/31/2001	Flash Flood	0	0	\$500,000	\$-
9/2/2001	Flash Flood	0	0	\$80,000	\$-
4/8/2002	Flash Flood	0	0	\$5,000	\$-
5/17/2002	Flash Flood	0	0	\$1,000	\$-
8/15/2002	Flash Flood	0	0	\$50,000	\$-
8/15/2002	Flash Flood	0	0	\$90,000	\$-
9/6/2002	Flash Flood	0	0	\$25,000	\$-
9/7/2002	Flash Flood	0	0	\$250,000	\$-
9/9/2002	Flash Flood	0	0	\$30,000	\$-
9/10/2002	Flash Flood	0	0	\$30,000	\$-
10/24/2002	Flash Flood	0	0	\$75,000	\$-
11/5/2002	Flash Flood	0	0	\$35,000	\$-
12/4/2002	Flash Flood	0	0	\$2,000	\$-
9/4/2003	Flash Flood	0	0	\$10,000	\$-

Event Date	Event Type	Injuries	Fatalities	Property Damage (\$)	Crop Damage (\$)
10/9/2003	Flash Flood	0	0	\$15,000	\$-
11/17/2003	Flash Flood	0	0	\$5,000	\$-
6/23/2004	Flash Flood	0	0	\$5,000	\$-
10/16/2006	Flash Flood	0	0	\$500,000	\$-
4/25/2007	Flash Flood	0	0	\$15,000	\$-
5/28/2007	Flash Flood	0	0	\$110,000	\$-
5/28/2007	Flash Flood	0	0	\$-	\$-
4/24/2009	Flash Flood	0	0	\$1,000	\$-
7/1/2010	Flash Flood	0	0	\$-	\$-
7/1/2010	Flash Flood	0	0	\$500,000	\$-
7/1/2010	Flash Flood	0	0	\$1,250,000	\$-
1/22/2015	Flash Flood	0	0	\$1,000	\$-
4/14/2015	Flash Flood	0	0	\$-	\$-
4/17/2015	Flash Flood	0	0	\$5,000	\$-
4/17/2015	Flash Flood	0	0	\$8,000	\$-
5/12/2015	Flash Flood	0	0	\$75,000	\$-
8/20/2015	Flash Flood	0	0	\$-	\$-
8/28/2016	Flash Flood	0	0	\$12,000	\$-
3/29/2017	Flash Flood	0	0	\$-	\$-
4/18/2017	Flash Flood	0	0	\$450,000	\$-
4/18/2017	Flash Flood	0	0	\$-	\$-
8/26/2017	Flash Flood	0	0	\$2,000,000,000	\$100,000
8/26/2017	Flash Flood	0	0	\$-	\$-
8/28/2017	Flash Flood	0	0	\$-	\$-
8/28/2017	Flash Flood	0	0	\$-	\$-
8/28/2017	Flash Flood	0	0	\$-	\$-
9/18/2019	Flash Flood	0	0	\$-	\$-
5/1/2021	Flash Flood	0	0	\$5,000	\$-
<b>Brazoria County Totals:</b>				<b>\$2,004,380,000</b>	<b>\$100,000</b>
<b>City of Angleton Totals:</b>				<b>\$418,000</b>	<b>\$-</b>

Rows highlighted in purple are events that reference the City of Angleton within the event narrative or event location (beginning or end).  
 \$- No dollar amount (\$0.00).

### *Presidential Disaster Declarations*

There have been seven federally declared flood disasters in the City of Angleton since 1950. Additionally, four disaster declaration events mention flooding in their title but are categorized as severe storms for incident type. These are also included in the table below.<sup>1</sup>

Table 6.2.4: Federally Declared Disasters, Flood

Declaration Year	Incident Type	Incident Title	Disaster Number	Declaration Type
1973	Flood	SEVERE STORMS & FLOODING	398	Major Disaster Declaration
1979	Flood	STORMS & FLASH FLOODS	595	Major Disaster Declaration
1979	Flood	SEVERE STORMS & FLOODING	603	Major Disaster Declaration
1992	Flood	SEVERE THUNDERSTORMS	930	Major Disaster Declaration
1995	Flood	SEVERE THUNDERSTORMS AND FLOODING	1041	Major Disaster Declaration
1999	Flood	TX-FLOODING 10/18/98	1257	Major Disaster Declaration
2016	Flood	SEVERE STORMS AND FLOODING	4272	Major Disaster Declaration

Declaration Year	Incident Type	Incident Title	Disaster Number	Declaration Type
1991	Severe Storm	SEVERE STORMS, TORNADOES & FLOODING	900	Major Disaster Declaration
2003	Severe Storm	SEVERE STORMS, TORNADOES AND FLOODING	1439	Major Disaster Declaration
2015	Severe Storm	SEVERE STORMS, TORNADOES, STRAIGHT-LINE WINDS AND FLOODING	4223	Major Disaster Declaration
2016	Severe Storm	SEVERE STORMS, TORNADOES, STRAIGHT-LINE WINDS, AND FLOODING	4245	Major Disaster Declaration

*USDA Disaster Declarations*

The USDA authorizes the Secretary of Agriculture to designate counties as disaster areas to make EM loans available to producers suffering losses in those counties and in counties that are contiguous to a designated county. In addition to EM loan eligibility, other emergency assistance programs, such as FSA disaster assistance programs, have historically used disaster designations as an eligibility trigger. USDA Secretarial disaster designations must be requested of the Secretary of Agriculture by a governor or the governor’s authorized representative, by an Indian Tribal Council leader or by an FSA SED. The Secretarial disaster designation is the most widely used. When there is a presidential disaster declaration, FEMA immediately notifies FSA of the primary counties named in a Presidential declaration. USDA Disaster Declarations for the City of Angleton since the last HMP are listed in the table below.<sup>39</sup>

*Table 6.2.5: USDA Declared Disasters (2018-2023), Flood*

Crop Disaster Year	Disaster Description	Designation Number
2019	Excessive moisture and flooding	S4534

*National Flood Insurance Program Participation*

The NFIP is a federal program administered through FEMA that enables property owners in participating communities to purchase insurance as a protection against flood losses. Communities must maintain eligibility in the NFIP by adopting and enforcing floodplain management regulations intended to prevent unsafe development in the floodplain, thus reducing future flood damage. FEMA creates flood maps, or FIRMs to support the NFIP.<sup>27,28</sup> These flood maps are periodically updated and outline SFHA. The SFHA is the area where the NFIP floodplain management regulations must be enforced and the area where the mandatory purchase of flood insurance applies.<sup>29</sup>

*The Community Rating System*

The CRS is a voluntary incentive program that recognizes and encourages community floodplain management practices that exceed the minimum requirements of the NFIP. Participation in the CRS program is voluntary and includes many benefits for a community, such as discounted flood insurance premiums that relate to the community’s level of efforts that reduce risk from flooding and strengthen floodplain management. Currently, the City of Angleton does not participate in the CRS Program.<sup>30</sup>

*As seen in Section 3- Table 3.6: Community Participation in the NFIP and CRS Program*

Jurisdiction	Participating	Date Joined	Current Effective FIRM Date	CRS Participation
Angleton	Y	06/21/74	12/30/20	N

*Repetitive Loss and Severe Repetitive Loss Properties*

FEMA defines a RL structure as “a structure covered under an NFIP flood insurance policy that:

- (3) Has incurred flood-related damage on 2 occasions, in which the cost of repair, on average, equaled or exceeded 25% of the value of the structure at the time of each such flood event; and
- (4) At the time of the second incidence of flood-related damage, the contract for flood insurance contains ICC coverage.”<sup>23</sup>

A SRL property is defined as “a structure that is covered under an NFIP flood insurance policy and has incurred flood-related damage:

- (3) For which 4 or more separate claims payments have been made under flood insurance coverage under subchapter B of this chapter, with the amount of each claim (including building and contents payments) exceeding \$5,000, and with the cumulative amount of such claims payments exceeding \$20,000; or
- (4) For which at least 2 separate flood insurance claims payments (building payments only) have been made, with a cumulative amount of such claims exceeding the value of the insured structure.”<sup>24</sup>

According to available data from 2023, the city has a total of 97 RL properties, of which 18 are designated as SRL properties. This does not include RL or SRL properties that have already been mitigated. Only 23 of these RL and SRL properties are insured through the NFIP. Total SRL property claim payments for the City of Angleton are \$2,560,751.56. There is an average of 5.6 NFIP claims per SRL property within the city.<sup>25,26</sup> Table 3.5 outlines the structure type (residential, commercial, institutional, etc.), and number of records for RL and SRL properties within the city, including the number of those structures that were insured under the NFIP.

*As seen in Section 3- Table 3.5: RL and SRL Properties, City of Angleton  
(Source: FEMA, Correspondence with the Floodplain Management and Insurance Branch)*

Jurisdiction Name	Residential RLPs	Non-Residential RLPs	Total RLPs	SRL Properties	Number of NFIP Insured Properties
Angleton	87	10	97	18	23

FEMA Guidance specifies that NFIP flood insurance claim information is subject to The Privacy Act of 1974, as amended. The Act prohibits public release of policyholder names, or names of financial assistance recipients and the amount of the claim payment or assistance. After flooding events, local officials are responsible for inspecting flood-damaged structures in the SFHA to determine if they are substantially damaged (50% or more damaged). If so, the property owner is required to bring a non-conforming structure into compliance with the local floodplain ordinance. For the City of Angleton, the Floodplain Administrator for Brazoria County is responsible for handling these NFIP claims.

*Flood Mitigation Assistance Repetitive Loss and Severe Repetitive Loss Properties*

FEMA supports a handful of Hazard Mitigation Assistance (HMA) programs that support mitigation activities by providing funding that helps support mitigation projects. One such program is Flood Mitigation Assistance (FMA), this competitive program provides funding to states, local communities, federally recognized tribes, and territories that can be used for projects that reduce or eliminate the risk of repetitive flood damage to structures insured by the NFIP. While individual homeowners are not eligible to apply for FMA grant funds, a community in good standing (those that have a FEMA-approved HMP and are in good standing with the NFIP) can apply on their behalf. Homeowners who do receive FMA grant funds are required to have active NFIP flood insurance policies, and the NFIP flood insurance policy must be maintained for the life of the structure.<sup>54</sup> Table 3.6 outlines the jurisdiction, structure type (residential, commercial, institutional, etc.), and number of records for RL and SRL properties under the FMA program within the city.

Table 6.2.6: FMA RL and SRL Properties, City of Angleton (Source: FEMA, Floodplain Management and Insurance Branch)

Jurisdiction Name	Residential FMA RLPs	Non-Residential FMA RLPs	Total FMA RLPs	FMA SRL Properties
City of Angleton	3	0	10	18

### NFIP Policies in Force

The table below summarizes the NFIP policies in force for Brazoria County and the City of Angleton. In total, there are 1,142 NFIP-insured properties within the city.<sup>31</sup>

As seen in Section 3- Table 3.7: NFIP Insured Properties, City of Angleton

Community Name (Number)	Policies in Force	Total Coverage	Total Written Premium + FPF
BRAZORIA COUNTY (485458)	33,963	\$10,621,664,000	\$26,637,225
ANGLETON (480064)	1,142	\$353,911,000	\$762,629

Community Name- The official NFIP name of the community in which the policy resides.

Community Number- The 6-character community ID in which the policy resides.

Total Coverage- The total building and contents coverage for the policies in force.

Total Written Premium + FPF (Federal Policy Fee)- This represents the sum of the premium and FPF for the policies in force.

### Probability of Future Occurrences

According to RiskFactor, a site that publishes climate risk data to quantify and communicate risk for properties with the U.S., the City of Angleton has a moderate risk of flooding over the next 30 years. This means flooding is likely to impact day-to-day life within the community. This is based on the level of risk the properties face rather than the proportion of properties with risk.”<sup>55</sup> Flooding and flash floods will continue to occur within the City of Angleton. The FEMA NRI utilizes data from multiple sources including historical hazard events, hazard intensity, exposure of people and property to hazards, socioeconomic factors, and community resilience indicators. The NRI also incorporates hazard data to determine the frequency and intensity of various natural hazards. This information helps assess the likelihood of specific hazards occurring in different regions. According to the FEMA NRI for coastal flooding annualized frequency values are 3.7 events per year. While for riverine flooding the annualized frequency values are 2.1 events per year over 24 years of record 1996-2019, with 51 events on record.<sup>41</sup>

### Populations at Risk

FEMA’s NRI utilizes data from multiple sources including historical hazard events, hazard intensity, exposure of people and property to hazards, socioeconomic factors, and community resilience indicators. The NRI also incorporates hazard data to determine the frequency and intensity of various natural hazards. This information helps assess the likelihood of specific hazards occurring in different regions.

The NRI considers the exposure of communities to hazards and incorporates factors such as population density, infrastructure systems, and critical facilities that may be at risk during a hazard event. The NRI also generates risk scores for communities across the U.S. that provide a relative ranking of areas based on their overall risk level. This helps to identify areas that may require additional resources and attention for mitigation and planning efforts. The NRI risk equation includes 3 components. EAL represents the average economic loss in dollars resulting from natural hazards each year, the CRF is a scaling factor that incorporates social vulnerability (the susceptibility of social groups to the adverse impacts of natural hazards), and community resilience (the ability of a community to prepare for anticipated natural hazards, adapt to changing conditions, and withstand and recover rapidly from disruptions). The outcome, the risk index, represents the potential negative impacts of natural hazards on the county level or individually by census tracts. The NRI EAL score and rating, represent a community’s relative level of expected loss each year when compared to all other communities at the same level.<sup>42</sup>



Populations at risk for flooding are similar to that noted in Section 6.1 for hurricanes, tropical storms, and tropical depressions. Populations at risk include the entire county and the City of Angleton as this hazard has no geographic boundaries. Those living within or near 100 or 500-year floodplains as well as floodways are at a higher risk for this hazard. Flooding can cause property damage, displacement, lack of access to critical facilities that provide food, water, medications, or other forms of medical assistance, and lack of utilities such as electricity and clean water which can increase the risk of illness. The NCHH summarizes at-risk populations for several hazards. For flooding these include older adults, children, people experiencing homelessness, people with disabilities, and people with chronic health conditions. In addition to the dangers listed above, older adults can face social isolation, lack of electricity needed to run medical equipment, lack of access to a vehicle for evacuation, and lack of access to other critical supplies. In younger populations, such as children, flood events can disrupt schooling and the normal day-to-day routines they thrive on. This can not only jeopardize their academic success but can also cause mental and emotional stress. Children are more at risk and vulnerable to certain medical conditions like asthma, lead poisoning, allergies, and bacterial infections which can be caused by the resulting flood damage and increased moisture. For people experiencing homelessness, adequate shelter is critical in keeping populations safe during flood events. People with disabilities may require additional assistance to stay safe and prepare for these hazards such as creating a support network, finding accessible transportation to evacuate or get medical attention, and loss of power for needed medical equipment. Likewise, those with chronic health conditions may need similar assistance as those with disabilities. People with chronic health conditions also face exposure to diseases or illnesses from standing water and increased exposure to these illnesses when utilizing a shelter or evacuation center to escape the flood. Additionally, flooding of homes and businesses can cause mold to thrive if not treated promptly. This can exacerbate illness among the general population but especially among those with chronic health conditions.<sup>43</sup>

EAL for the City of Angleton was derived by creating a report that used census tract information for tracts that included the Angleton city limits. These were census tracts 48039662100, 48039662200, 48039662400, 48039662300, 48039662500, 48039663100, and 48039664100. EAL according to the FEMA NRI for coastal flood events for these census tracts is listed as relatively low, with one tract rating relatively moderate and another with no rating. according to the FEMA NRI for riverine flood events for these census tracts are listed as very high, with one tract having no rating. EAL values, risk index ratings, risk index scores, social vulnerability, and community resilience for each census tract can be found in the figures below.<sup>44</sup> Additionally, the FEMA NRI lists the HLR, a hazard- and county-specific estimate of the percentage of the exposed consequence type (building value, population, or agriculture value) expected to be lost due to a hazard occurrence, for coastal and riverine within Brazoria County as very low and relatively low, respectively.<sup>44</sup>

Figure 6.2.4: Risk Index by Census Tract, City of Angleton, Coastal Flooding

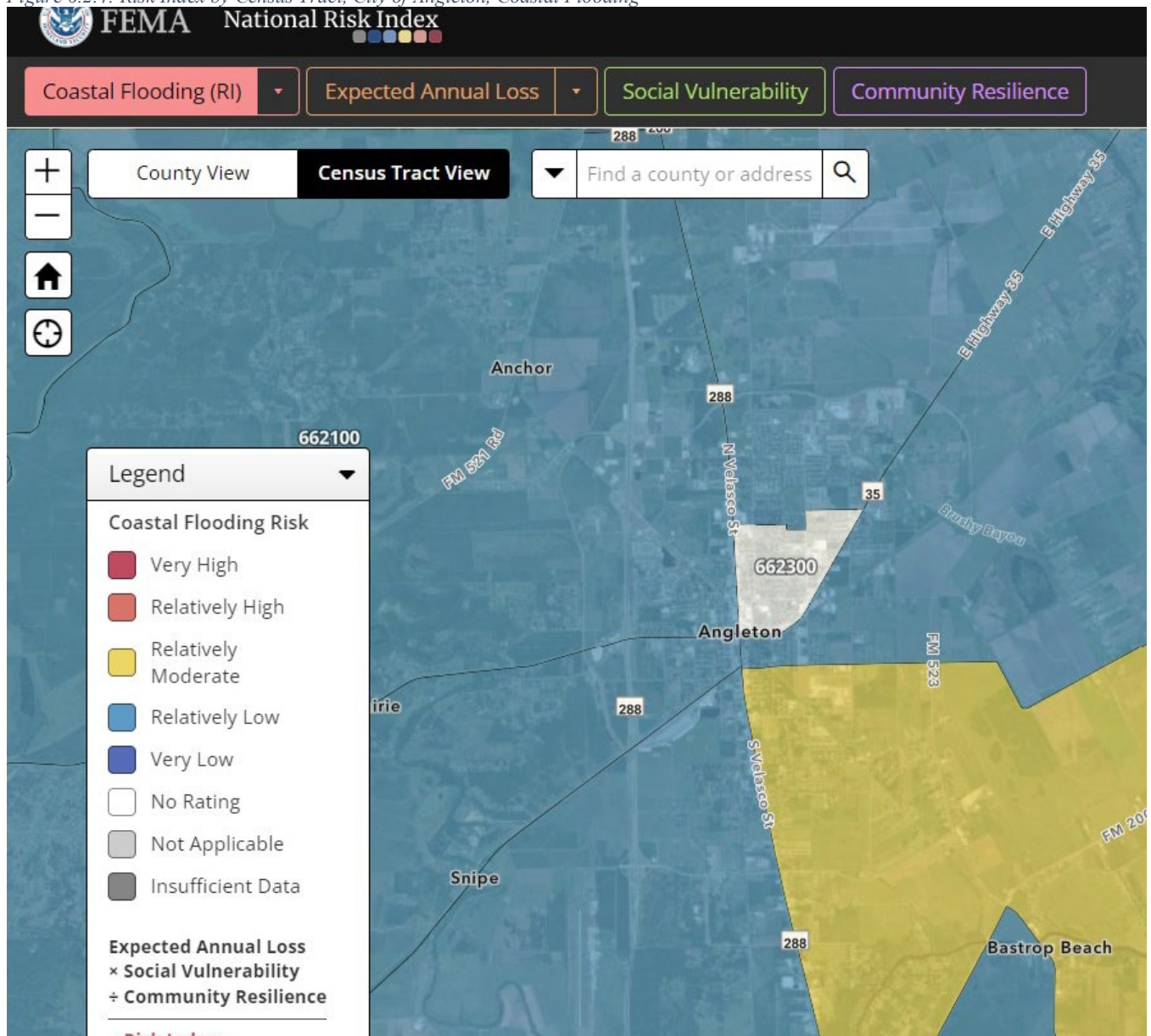


Figure 6.2.5: Risk Index by Census Tract, City of Angleton, Riverine Flooding

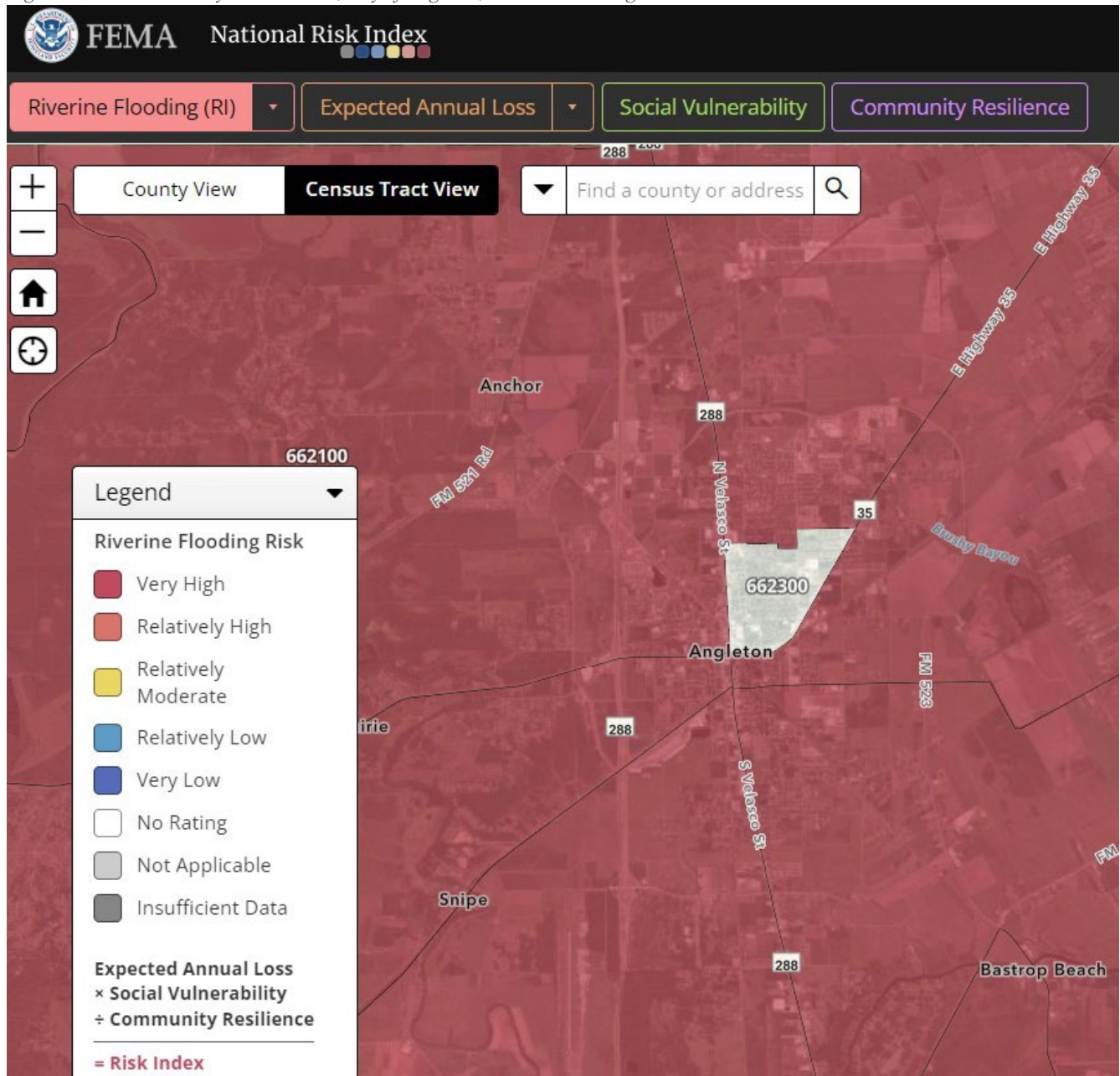


Figure 6.2.6: Expected Annual Loss by Census Tract, City of Angleton, Coastal Flooding

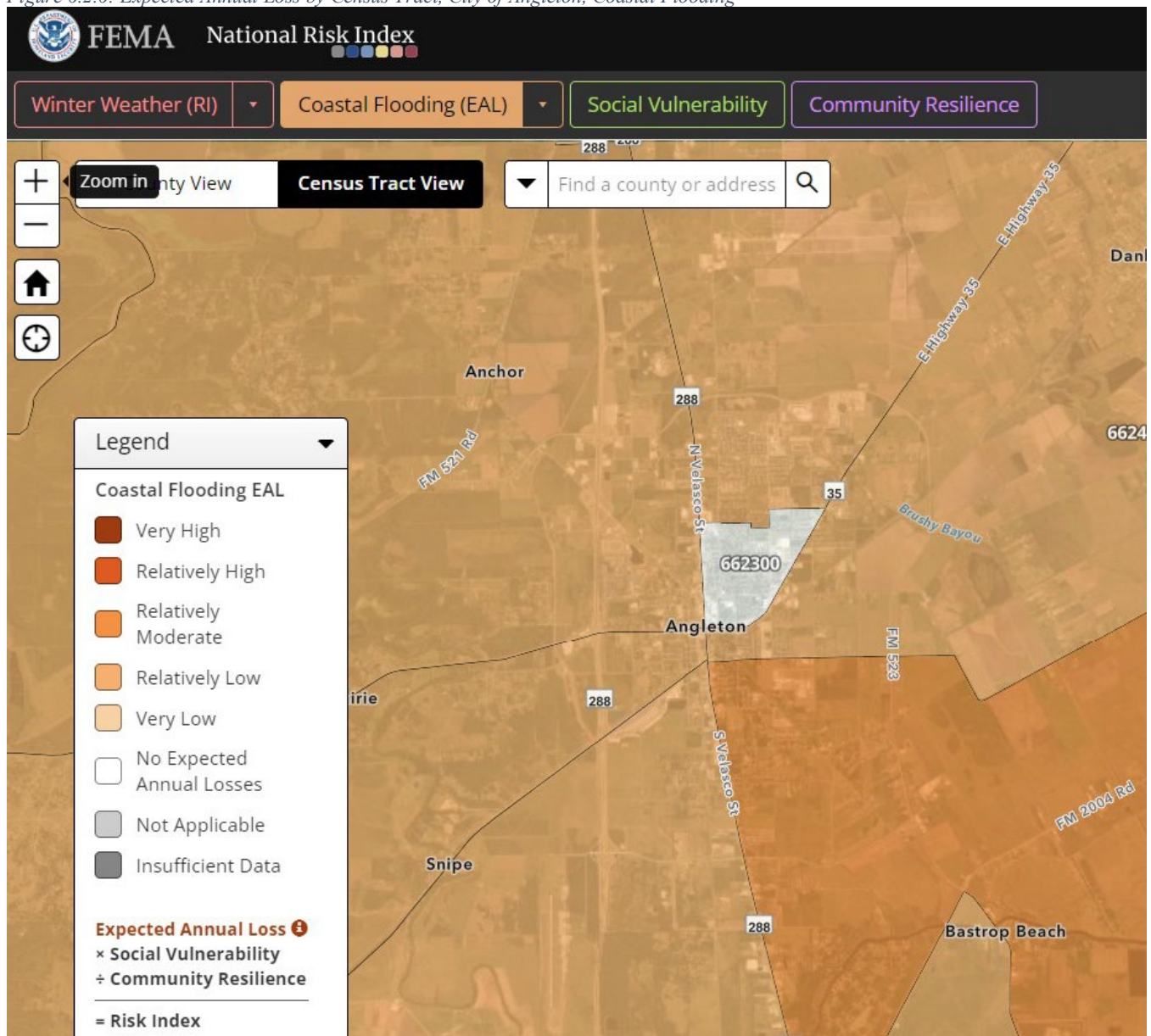


Figure 6.2.7: Expected Annual Loss by Census Tract, City of Angleton, Riverine Flooding

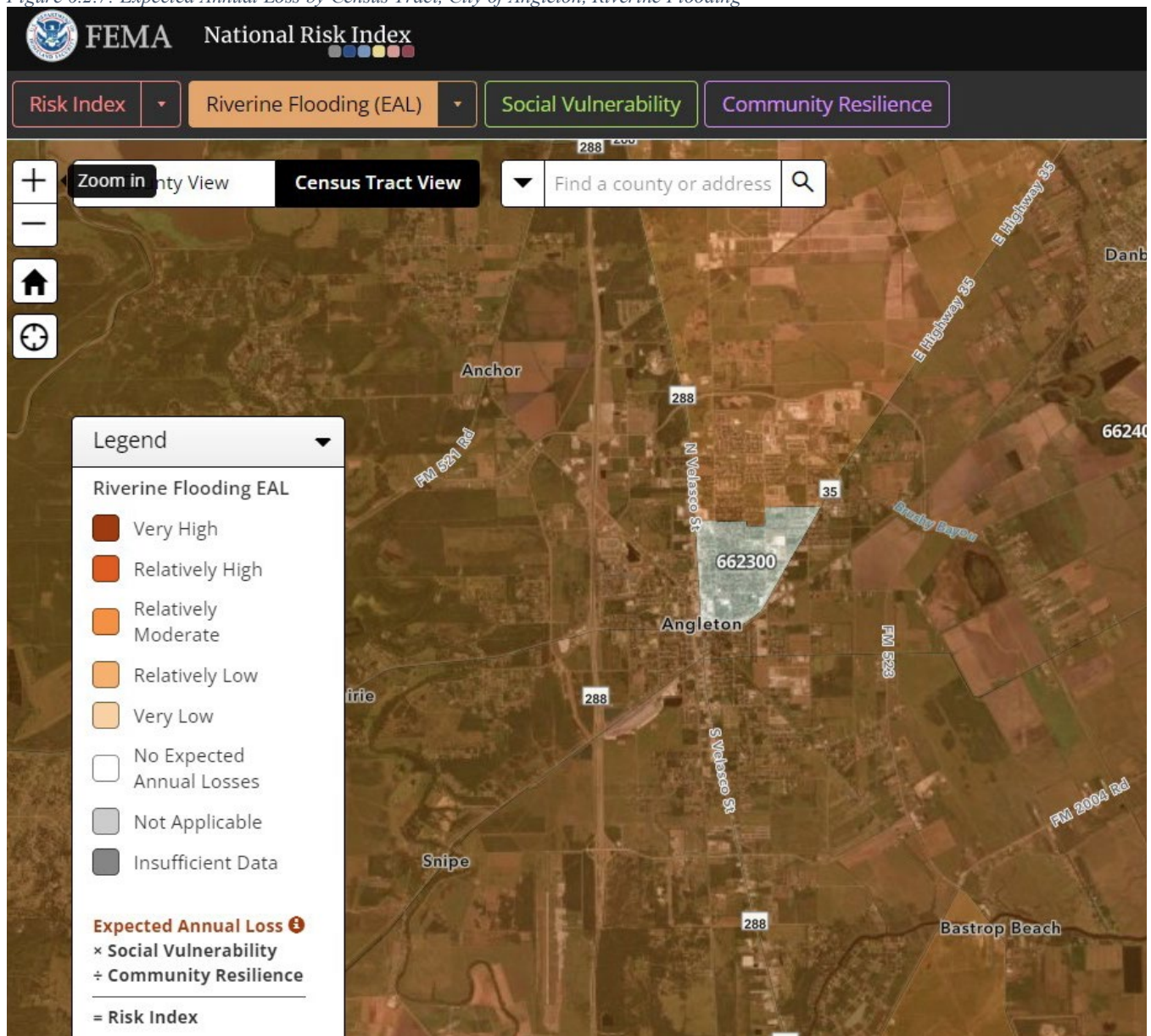


Figure 6.2.8: Social Vulnerability by Census Tract, City of Angleton

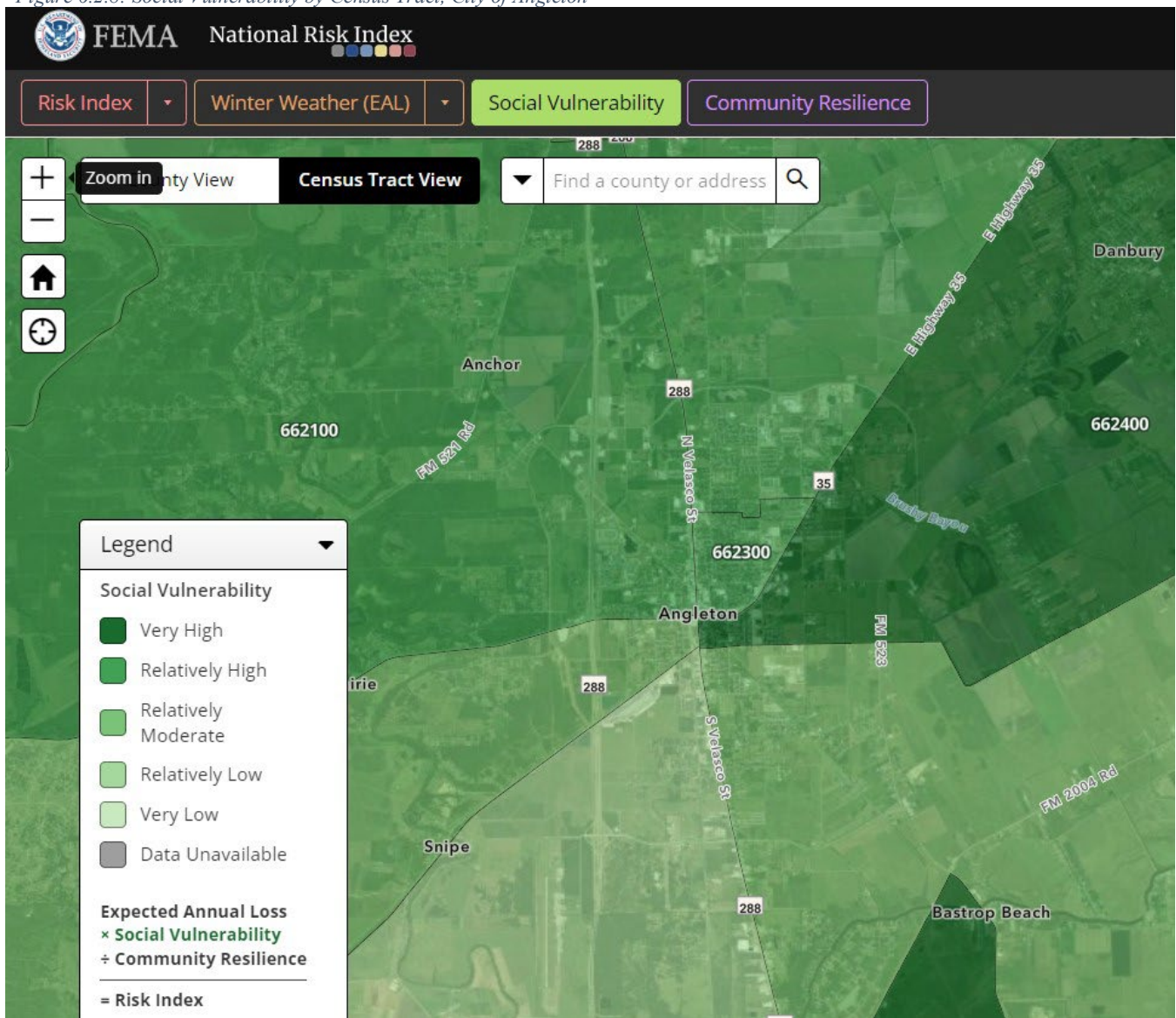


Figure 6.2.9: Community Resilience by Census Tract, City of Angleton

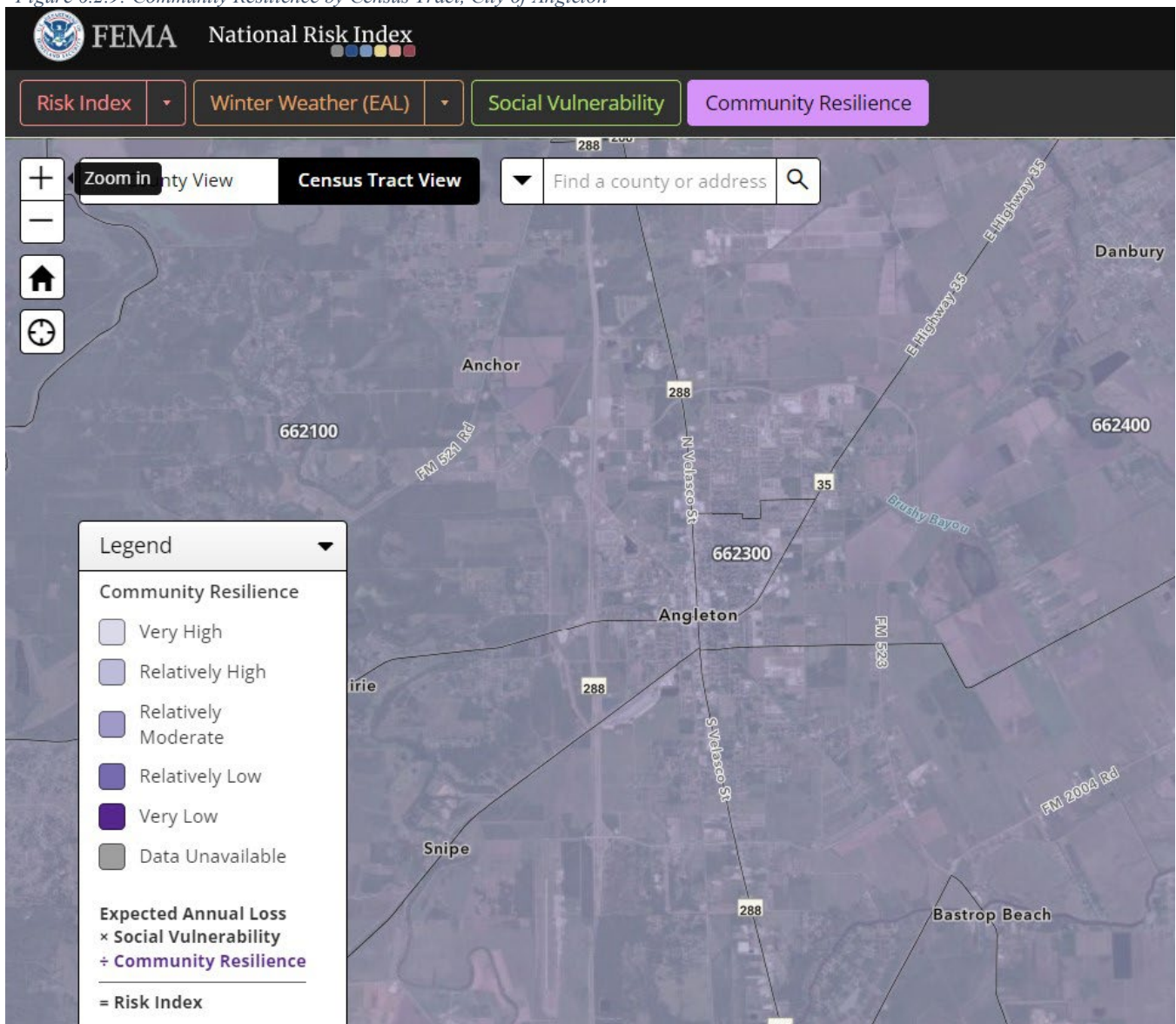






Figure 6.2.10: FEMA NRI Summary by Census Tract, City of Angleton, Coastal Flooding

Rank	Community	State	Risk Index Rating	Risk Index Score	National Percentile
1	Census tract 48039664100	TX	Relatively Moderate	96.73	0  100
2	Census tract 48039663100	TX	Relatively Low	92.42	0  100
3	Census tract 48039662500	TX	Relatively Low	89	0  100
4	Census tract 48039662100	TX	Relatively Low	88.72	0  100
5	Census tract 48039662400	TX	Relatively Low	85.13	0  100
6	Census tract 48039662200	TX	Relatively Low	84.15	0  100
	Census tract 48039662300	TX	No Rating	0	0  100

Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Risk Index Score
1	Census tract 48039664100	TX	\$111,846	Relatively Moderate	Relatively Moderate	1.05	\$117,206	96.73
2	Census tract 48039663100	TX	\$22,853	Relatively Low	Relatively Moderate	1	\$22,872	92.42
3	Census tract 48039662500	TX	\$7,576	Relatively Moderate	Relatively Moderate	1.12	\$8,460	89
4	Census tract 48039662100	TX	\$6,482	Relatively High	Relatively Moderate	1.22	\$7,932	88.72
5	Census tract 48039662400	TX	\$2,077	Very High	Relatively Moderate	1.43	\$2,981	85.13
6	Census tract 48039662200	TX	\$1,731	Relatively High	Relatively Moderate	1.34	\$2,316	84.15
	Census tract 48039662300	TX	\$0	Relatively High	Relatively Moderate	1.38	\$0	0



Figure 6.2.11: FEMA NRI Summary by Census Tract, City of Angleton, Riverine Flooding

Rank	Community	State	Risk Index Rating	Risk Index Score	National Percentile
1	Census tract 48039663100	TX	Very High	99.97	0   ██████████   100
2	Census tract 48039664100	TX	Very High	99.89	0   ██████████   100
3	Census tract 48039662100	TX	Very High	99.89	0   ██████████   100
4	Census tract 48039662500	TX	Very High	99.84	0   ██████████   100
5	Census tract 48039662400	TX	Very High	98.86	0   ██████████   100
6	Census tract 48039662200	TX	Very High	98.6	0   ██████████   100
	Census tract 48039662300	TX	No Rating	0	0   ██████████   100

Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Risk Index Score
1	Census tract 48039663100	TX	\$10,593,051	Relatively Low	Relatively Moderate	1	\$10,601,810	99.97
2	Census tract 48039664100	TX	\$5,775,706	Relatively Moderate	Relatively Moderate	1.05	\$6,052,497	99.89
3	Census tract 48039662100	TX	\$4,935,902	Relatively High	Relatively Moderate	1.22	\$6,039,649	99.89
4	Census tract 48039662500	TX	\$4,520,531	Relatively Moderate	Relatively Moderate	1.12	\$5,048,358	99.84
5	Census tract 48039662400	TX	\$958,338	Very High	Relatively Moderate	1.43	\$1,375,088	98.86
6	Census tract 48039662200	TX	\$861,407	Relatively High	Relatively Moderate	1.34	\$1,152,193	98.6
	Census tract 48039662300	TX	\$0	Relatively High	Relatively Moderate	1.38	\$0	0

### Climate Change Impacts

Factors such as climate-driven changes like increasing precipitation and warmer sea surface temperatures may also affect the probability of future floods within Brazoria County and the City of Angleton. Precipitation changes within the next 15 to 30 years are expected to be 10%-15% heavier due to increased surface temperatures. These increased temperatures cause more evaporation, making more water available in the atmosphere for rain events. Increased sea surface temperatures can cause a greater intensity of hurricanes and precipitation. Storms are also likely to be more severe.<sup>56</sup> According to the Office of the Texas State Climatologist, riverine flooding in Texas is projected to have no substantial change through 2036. This is due to the construction of dams and reservoirs for flood management that occurred and continues to occur within the 20th century. There is a mixture of historical trends categorized by season, but there is no one clear trend to project future flood probabilities. In addition, meteorological drivers of riverine flooding (increased rainfall intensity and decreased soil moisture) are projected to have competing influences. If there is an increasing trend present in riverine flooding, it will be at the most extreme flood events or in the wettest parts of the state where there is so much rainfall that a decrease in soil moisture would have little mitigating impact.<sup>57</sup> The table below summarizes the expected climate change impacts of flooding.

Table 6.2.7: Climate Change Impacts, Flooding

<b>Location</b>	The location of floods is not expected to change
<b>Extent/Intensity</b>	The extent and intensity of flooding within the County may change due to increased precipitation, stronger storms, and rising surface temperatures.
<b>Frequency</b>	There are no clear trends in flood frequency due to considerable variability, flood management measures, and competing meteorological drivers.
<b>Duration</b>	The duration of flood events is not likely to change.

# Section 6.3: Winter Weather



### 6.3 Winter Weather

Winter weather is defined by NWS as “a winter weather phenomenon (such as snow, sleet, ice, wind chill) that impacts public safety, transportation, and/or commerce. It typically occurs during the climatological winter season between October 15 and April 15.”<sup>58</sup>

#### Location

Winter weather occurs on a regional scale and can happen anywhere within the state or the county.

#### Extent

The Winter Storm Severity Index (WSSI) is a new product (released in 2022) of the NWS that forecasts the potential impacts of winter storms. NWS has implemented the WSSI to provide the public with a tool that attempts to convey the complexities and hazards associated with winter storms as they relate to potential societal impacts. The WSSI is created using Geographic Information Systems (GIS) by screening the official NWS gridded forecasts from the National Digital Forecast Database (NDFD) for winter weather elements and combining those data with non-meteorological or static information datasets such as land use, climatology, urban areas, etc. The outcome is a graphical depiction of anticipated overall impacts on society due to winter weather. There are numerous datasets used or derived as part of calculating the WSSI.

Table 6.3.1: Winter Storm Severity Index Datasets

Data Source	Dataset
<b>Official NWS Forecast datasets from NDFD</b>	<ul style="list-style-type: none"> <li>• 6-hour snow accumulation</li> <li>• 6-hour ice accumulation</li> <li>• 6-hour precipitation accumulation (Quantitative Precipitation Forecasts)</li> <li>• Wind speed (hourly time steps)</li> <li>• Temperature (hourly time steps)</li> </ul>
<b>Additional derived forecast parameters from other official NWS NDFD</b>	<ul style="list-style-type: none"> <li>• Total snowfall</li> <li>• Total ice accumulation</li> <li>• Maximum wind speed within each 6-hour period</li> <li>• 6-hourly snowfall accumulation rate</li> <li>• 6-hourly snow-liquid ratio</li> <li>• Average snow-liquid ratio</li> </ul>
<b>Daily National Snow Analyses are obtained from the NWS National Operational Hydrologic Remote Sensing Center</b>	<ul style="list-style-type: none"> <li>• Snow depth</li> <li>• Snowpack temperature</li> <li>• Snow water equivalent</li> </ul>
<b>Non-forecast datasets</b>	<ul style="list-style-type: none"> <li>• Urban area designation</li> <li>• Land-use designations</li> <li>• NOAA/NCEI gridded annual snowfall climatology</li> </ul>

The WSSI consists of a series of component algorithms, each of which uses meteorological and non-meteorological data to model the predicted severity of specific characteristics of winter weather. Each of the components produces a 0 to 5 output scale value that equates to the potential severity based on the winter weather hazards. The final WSSI value is the maximum value from all the sub-components. The 4 impact levels are given the following descriptors: Minor, Moderate, Major, and Extreme. In addition to the impact levels, a Winter Weather Area is also shown to depict the extent of the winter weather conditions. The WSSI output provides colors, impact classifications, and definitions of the overall expected severity of winter weather, as depicted in the table below.

Table 6.3.2: Winter Storm Severity Index Impact Classifications and Definitions

Map Color	Associated Impacts	WSSI Definition
	No Impacts	N/A
	Limited Impacts, Winter Weather Area	<b>Expect winter weather.</b> Winter driving conditions: <b>Drive carefully.</b>
	Minor Impacts	<b>Expect a few inconveniences to daily life.</b> Winter driving conditions: <b>Use caution while driving.</b>
	Moderate Impacts	<b>Expect disruptions to daily life.</b> Winter driving conditions: Hazardous driving conditions. <b>Use extra caution while driving.</b> Closures and disruptions to infrastructure may occur.
	Major Impacts	<b>Expect considerable disruptions to daily life.</b> Winter driving conditions: Dangerous or impossible driving conditions. <b>Avoid travel if possible.</b> Widespread closures and disruptions to infrastructure may occur.
	Extreme Impacts	<b>Expect substantial disruptions to daily life.</b> Winter driving conditions: Extremely dangerous or impossible driving conditions. <b>Travel is not advised.</b> Extensive and widespread closures and disruptions to infrastructure may occur. Life-saving actions may be needed.

The specific sub-components of the WSSI are:

- Snow Load Index- Indicates potential infrastructure impacts due to the weight of the snow. This index accounts for the land cover type. For example, more forested and urban areas will show increased severity versus the same snow conditions in grasslands.
- Snow Amount Index- Indicates potential impacts due to the total amount of snow or the snow accumulation rate. This index also normalizes for climatology, such that regions of the country that experience, on average, less snowfall will show a higher level of severity for the same amount of snow that is forecast across a region that experiences more snowfall on average. Designated urban areas are also weighted a little more than non-urban areas.
- Ice Accumulation- Indicates potential infrastructure impacts (e.g., roads/bridges) due to combined effects and severity of ice and wind. Designated urban areas are also weighted a little more than non-urban areas. Please note that not all NWS offices provide ice accumulation information in the NDFD. In those areas, the ice accumulation is not calculated.
- Blowing Snow Index- Indicates the potential disruption due to blowing and drifting snow. This index accounts for land use type. For example, more densely forested areas will show less blowing snow than open grassland areas.
- Flash Freeze Index- Indicates the potential impacts of flash freezing (temperatures starting above freezing and quickly dropping below freezing) during or after precipitation events.
- Ground Blizzard- Indicates the potential travel-related impacts of strong winds interacting with pre-existing snow cover. This is the only sub-component that does not require snow to be forecast for calculations to be made. The NOHRSC snow cover data along with forecast winds are used to model the ground blizzard. Adjustments are made based on the land cover type. For example, heavily forested areas will have a lower ground blizzard severity than the same conditions occurring across open areas.<sup>59</sup>

NOAA and the NWS also have a variety of watches, warnings, and advisories for freeze, frost, wind, and ice events. A watch is generally issued in the 24 to 72-hour forecast time frame when the risk of a hazardous winter weather event has increased (50 to 80% certainty that warning thresholds will be met). It is intended to provide enough lead time so those who need to set their plans in motion can do so.

Warnings are issued when a hazardous winter weather event is occurring, is imminent, or has a very high probability of occurrence (generally greater than 80%). A warning is used for conditions posing a threat to life or property. Advisories are issued when a hazardous winter weather event is occurring, is imminent, or has a very high probability of occurrence (generally greater than 80%). An advisory is for less serious conditions that cause significant inconvenience and, if caution is not exercised, could lead to situations that may threaten life and/or property. The table below describes the various winter weather warnings, watches, and advisories below.<sup>60</sup>

Table 6.3.3: Winter Weather-Related Warnings, Watches, and Advisories

Watch/ Warning/ Advisory	Description
Winter Storm Watch	Issued when conditions are favorable for a significant winter storm event (heavy sleet, heavy snow, ice storm, heavy snow and blowing snow, or a combination of events.)
Wind Chill Watch	Issued when there is the potential for a combination of extremely cold air and strong winds to create dangerously low wind chill values.
Freeze Watch	Issued when there is a potential for significant, widespread freezing temperatures within the next 24-36 hours.
Winter Storm Warning	Issued for a significant winter weather event including snow, ice, sleet, blowing snow, or a combination of these hazards. Travel will become difficult or impossible in some situations. Delay your travel plans until conditions improve.
Wind Chill Warning	Issued for a combination of very cold air and strong winds that will create dangerously low wind chill values. This level of wind chill will result in frostbite and lead to hypothermia if precautions are not taken. Avoid going outdoors and wear warm protective clothing if you must venture outside.
Freeze Warning	Issued when significant, widespread freezing temperatures are expected.
Ice Storm Warning	Are usually issued for ice accumulation of around 1/4 inch or more. This amount of ice accumulation will make travel dangerous or impossible and likely lead to snapped power lines and falling tree branches. Travel is strongly discouraged.
Blizzard Warning	Issued for frequent gusts greater than or equal to 35 mph accompanied by falling and/or blowing snow, frequently reducing visibility to less than 1/4 mile for three hours or more. A Blizzard Warning means severe winter weather conditions are expected or occurring. Falling and blowing snow with strong winds and poor visibilities are likely, leading to whiteout conditions making travel extremely difficult. Do not travel. If you must travel, have a winter survival kit with you. If you get stranded, stay with your vehicle, and wait for help to arrive.
Winter Weather Advisory	Issued for any amount of freezing rain, or when 2 to 4 inches of snow (alone or in combination with sleet and freezing rain) is expected to cause a significant inconvenience, but not serious enough to warrant a warning.
Wind Chill Advisory	Issued when wind chills of -5F to -19F are expected east of the Blue Ridge Mountains and when wind chills of -10 to -24F are expected along and west of the Blue Ridge Mountains and in Frederick and Carroll Counties in Maryland.
Frost Advisory	Issued when the minimum temperature is forecast to be 33 to 36 degrees on clear and calm nights during the growing season.

## Historic Occurrences

NOAA collects historic climate data for the entire nation. NOAA's storm event data can be accessed on the NCEI Storm Events Database. These events are shown at the county level with some referencing a specific location, city, or zone. The database currently contains data from January 1950 to December 2023, as entered by NOAA's NWS. Due to changes in the data collection and processing procedures over time, there are unique periods of record available depending on the event type. The table below highlights events for this hazard that have occurred within Brazoria County from 1950-2023.<sup>38</sup>

Table 6.3.4: Historic Occurrences, Winter Weather

Event Date	Event Type	Injuries	Fatalities	Property Damage (\$)	Crop Damage (\$)
1/12/1997	Ice Storm	0	0	\$-	\$-
12/4/2009	Winter Storm	0	0	\$-	\$-
2/3/2011	Ice Storm	0	0	\$-	\$-
1/28/2014	Winter Weather	0	0	\$-	\$-
12/8/2017	Heavy Snow	0	0	\$-	\$-
2/15/2021	Cold/Wind Chill	0	1	\$880,000	\$-
2/15/2021	Cold/Wind Chill	0	0	\$-	\$-
2/15/2021	Cold/Wind Chill	0	0	\$-	\$-
<b>Totals:</b>		0	1	\$880,000	\$-

Rows highlighted in purple are events that reference the City of Angleton within the event narrative or event location (beginning or end).  
\$- No dollar amount (\$0.00).

## Presidential Disaster Declarations

There have been 2 disaster declarations for winter weather within the City of Angleton since 1953.<sup>1</sup>

Table 6.3.5: Federal Disaster Declarations, Winter Weather

Declaration Date	Incident Type	Title	Disaster Number	Declaration Type
2/14/2021	Severe Ice Storm	Severe Winter Storm	3554	Emergency Declaration
2/19/2021	Severe Ice Storms	Severe Winer Storms	4586	Major Disaster Declaration

## USDA Disaster Declarations

The Secretary of Agriculture is authorized to designate counties as disaster areas to make emergency EM loans available to producers suffering losses in those counties and in counties that are contiguous to a designated county. In addition to EM loan eligibility, other emergency assistance programs, such as FSA disaster assistance programs, have historically used disaster designations as an eligibility trigger. USDA Secretarial disaster designations must be requested of the Secretary of Agriculture by a governor or the governor's authorized representative, by an Indian Tribal Council leader, or by an FSA SED. The Secretarial disaster designation is the most widely used. When there is a presidential disaster declaration, FEMA immediately notifies FSA of the primary counties named in a Presidential declaration. USDA Disaster Declarations for the City of Angleton since 2018 are listed in the table below.<sup>39</sup>

Table 6.3.6: USDA Disaster Declarations (2018-2023), Winter Weather

Crop Disaster Year	Disaster Description	Designation Number
None		

## Probability of Future Occurrences

The table below shows FEMA NRI annualized frequency values for winter weather and related hazards.

*Table 6.3.7: Annualized Frequency Values, Cold Wave, Ice Storm, and Winter Weather*

<b>Hazard Type</b>	<b>Annualized Frequency</b>	<b>Events on Record</b>	<b>Period of Record</b>
<b>Cold Wave</b>	0.2 events per year	3	2005-2021 (16 years)
<b>Ice Storm</b>	0.7 events per year	43	1949-2021 (73 years)
<b>Winter Weather</b>	0.5 events per year	7	2005-2021 (16 years)

## Populations at Risk

FEMA's NRI utilizes data from multiple sources including historical hazard events, hazard intensity, exposure of people and property to hazards, socioeconomic factors, and community resilience indicators. The NRI also incorporates hazard data to determine the frequency and intensity of various natural hazards. This information helps assess the likelihood of specific hazards occurring in different regions.

The NRI considers the exposure of communities to hazards and incorporates factors such as population density, infrastructure systems, and critical facilities that may be at risk during a hazard event. The NRI also generates risk scores for communities across the U.S. that provide a relative ranking of areas based on their overall risk level. This helps to identify areas that may require additional resources and attention for mitigation and planning efforts. The NRI risk equation includes 3 components. EAL represents the average economic loss in dollars resulting from natural hazards each year. The CRF is a scaling factor that incorporates social vulnerability (the susceptibility of social groups to the adverse impacts of natural hazards) and community resilience (the ability of a community to prepare for anticipated natural hazards, adapt to changing conditions, and withstand and recover rapidly from disruptions) into the NRI. The outcome, the risk index, represents the potential negative impacts of natural hazards. The NRI EAL score, and rating, represent a community's relative level of expected loss each year when compared to all other communities at the same level.<sup>48</sup>

The Gulf Coast and Southeast Texas region are generally not used to snow, ice, and freezing temperatures. When cold air penetrates south across Texas and Florida, into the Gulf of Mexico, temperatures fall below freezing. This can kill vulnerable vegetation, such as flowering plants and the citrus fruit crop. Wet snow and ice rapidly accumulate on trees with leaves, causing the branches to snap under the load. Motorists are generally unaccustomed to driving on slick roads and traffic accidents increase. Some buildings are poorly insulated or lack heat altogether. Local towns may not have snow removal equipment or treatments available, such as sand or salt for icy roads.<sup>61</sup> Populations at risk include adults over 65 years of age and children, who according to the CDC are the most vulnerable populations to winter weather-related illnesses. Winter weather and ice storms can cause dangerous driving conditions, falling trees, and power outages in homes. The most notable vulnerabilities throughout the county to this hazard are the dangerous driving conditions and power outages.

The NCHH summarizes at-risk populations for several hazards. These include older adults, children, people experiencing homelessness, people with disabilities, and people with chronic health conditions. In addition to the dangers listed above, older adults can face social isolation, lack of electricity needed to run medical equipment, lack of access to a vehicle for evacuation, and lack of access to other critical supplies. In younger populations, such as children, winter weather and related hazard events can disrupt schooling and the normal day-to-day routines they thrive on. This can not only jeopardize their academic success but can also cause mental and emotional stress. Children are more at risk when their exposure to these



extreme temperatures is prolonged. For people experiencing homelessness, adequate shelter is critical in keeping populations safe during winter weather and related events. People with disabilities may require additional assistance to stay safe and prepare for these hazards such as creating a support network, finding accessible transportation to evacuate or get medical attention, and loss of power for needed medical equipment. Likewise, those with chronic health conditions may need similar assistance as those with disabilities. People with chronic health conditions also face exposure to diseases or illnesses from prolonged exposure to extreme temperatures and increased exposure to these illnesses when utilizing a shelter, warming center, or evacuation center. Additionally, freezing temperatures can cause damage to homes and businesses in the form of burst pipes, which can cause mold to thrive if not treated promptly. This can exacerbate illness among the general population but especially among those with chronic health conditions. When heating systems or power outages can't adequately maintain a safe temperature households may turn to using space heaters, fireplaces, or appliances that aren't meant for heating (such as ovens or stoves) for warmth. This increases the risk of fires and negatively impacts indoor air quality. Additionally, carbon monoxide poisoning can be a risk for those who utilize generators too close to the home or indoors. These issues disproportionately affect low-income communities and families who may lack the resources to pay for safe heating in their homes.<sup>43</sup>

The FEMA NRI accounts for winter weather in various formats, these are cold waves, ice storms, and winter weather. EAL Exposure Values for Brazoria County, which includes the City of Angleton, each year according to the FEMA NRI for these hazards are listed as relatively low.<sup>42</sup> EAL Exposure Values and EAL Values can be found in the tables and figures below.

Table 6.3.8: Expected Annual Loss Exposure Values, Cold Wave, Ice Storm, and Winter Weather

Hazard Type	Building Value (\$)	Population Equivalence (\$)/ Population (#)	Agricultural Value (\$)	EAL Total (\$)
<b>Cold Wave, Ice Storm, and Winter Weather</b>	\$57,433,464,365	\$4,309,091,556,009/ 371,473.41	\$91,232,428	\$4,364,260,048,386

Table 6.3.9: Expected Annual Loss Values, Cold Wave, Ice Storm, and Winter Weather

Hazard Type	Building Value (\$)	Population Equivalence (\$)/ Population (#)	Agriculture Value
<b>Cold Wave</b>	\$12,102	\$1,220,169/ 0.11	\$45,826
<b>Ice Storm</b>	\$4,492	\$85,003/ 0.01	N/A
<b>Winter Weather</b>	\$10,586	\$462,229/ 0.04	\$1,198

N/A- Not Applicable

EAL for the City of Angleton was derived by creating a report that used census tract information for tracts that included the Angleton city limits. These were census tracts 48039662100, 48039662200, 48039662400, 48039662300, 48039662500, 48039663100, and 48039664100. EAL values, risk index ratings, risk index scores, social vulnerability, and community resilience for each census tract can be found in the figures below.<sup>44</sup> Additionally, the FEMA NRI lists the historic loss ratio HLR, a hazard- and county-specific estimate of the percentage of the exposed consequence type (building value, population, or agriculture value) expected to be lost due to a hazard occurrence, for cold waves and ice storms within the county as very low. Winter weather HLR is listed as relatively moderate.<sup>44</sup>

Figure 6.3.1: Risk Index by Census Tract, Cold Wave

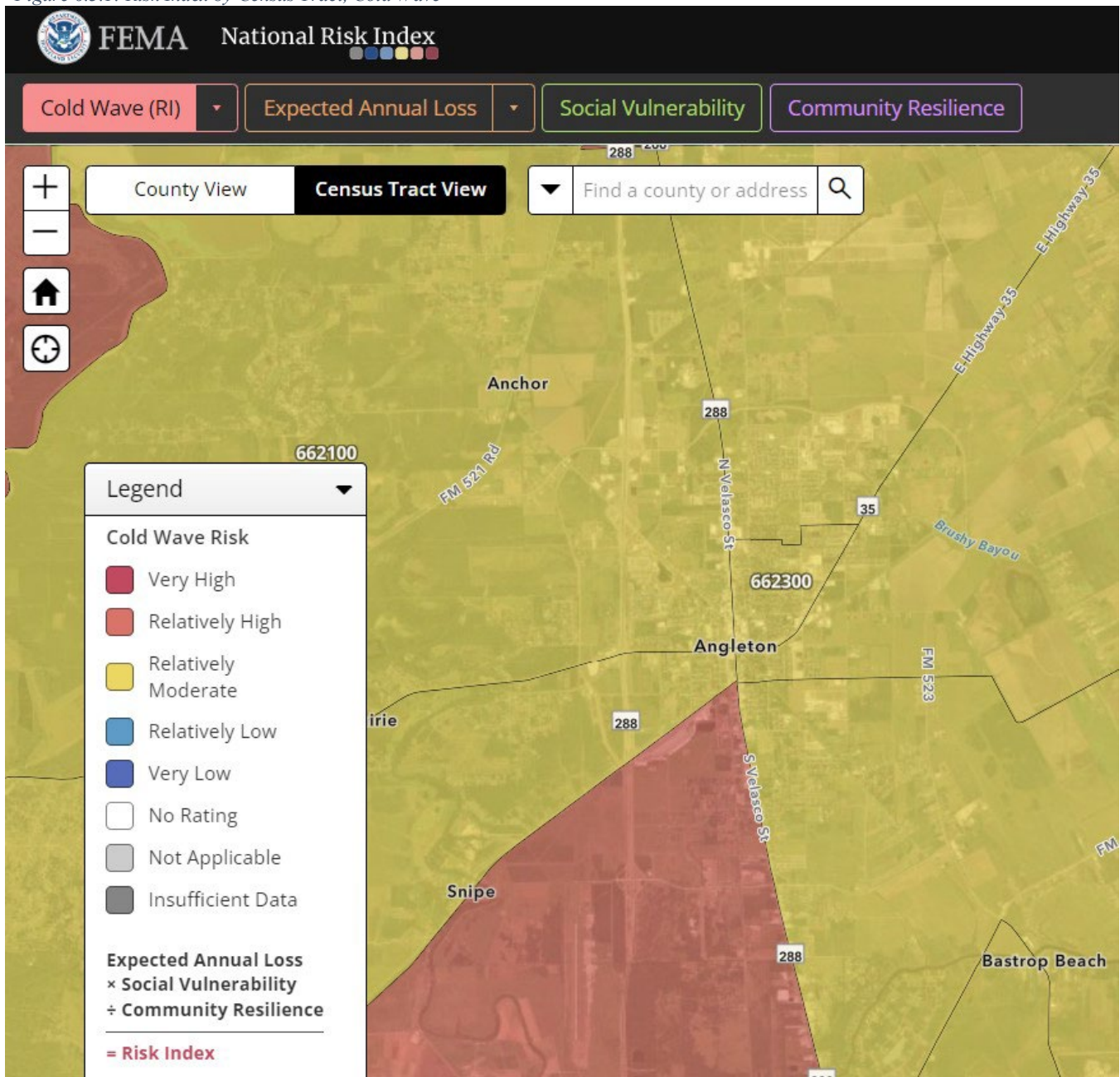


Figure 6.3.2: Risk Index by Census Tract, Ice Storm

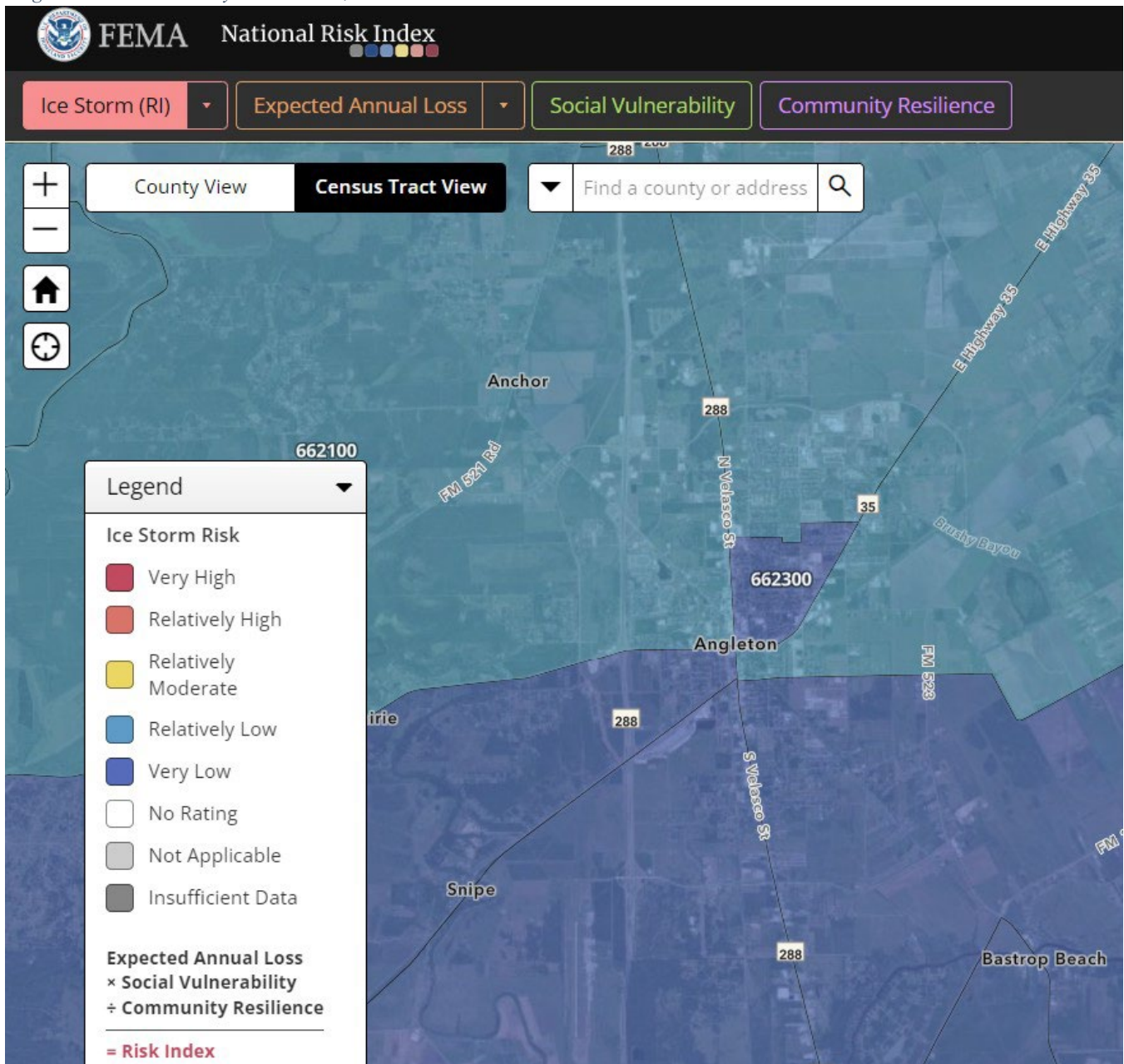


Figure 6.3.3: Risk Index by Census Tract, Winter Weather

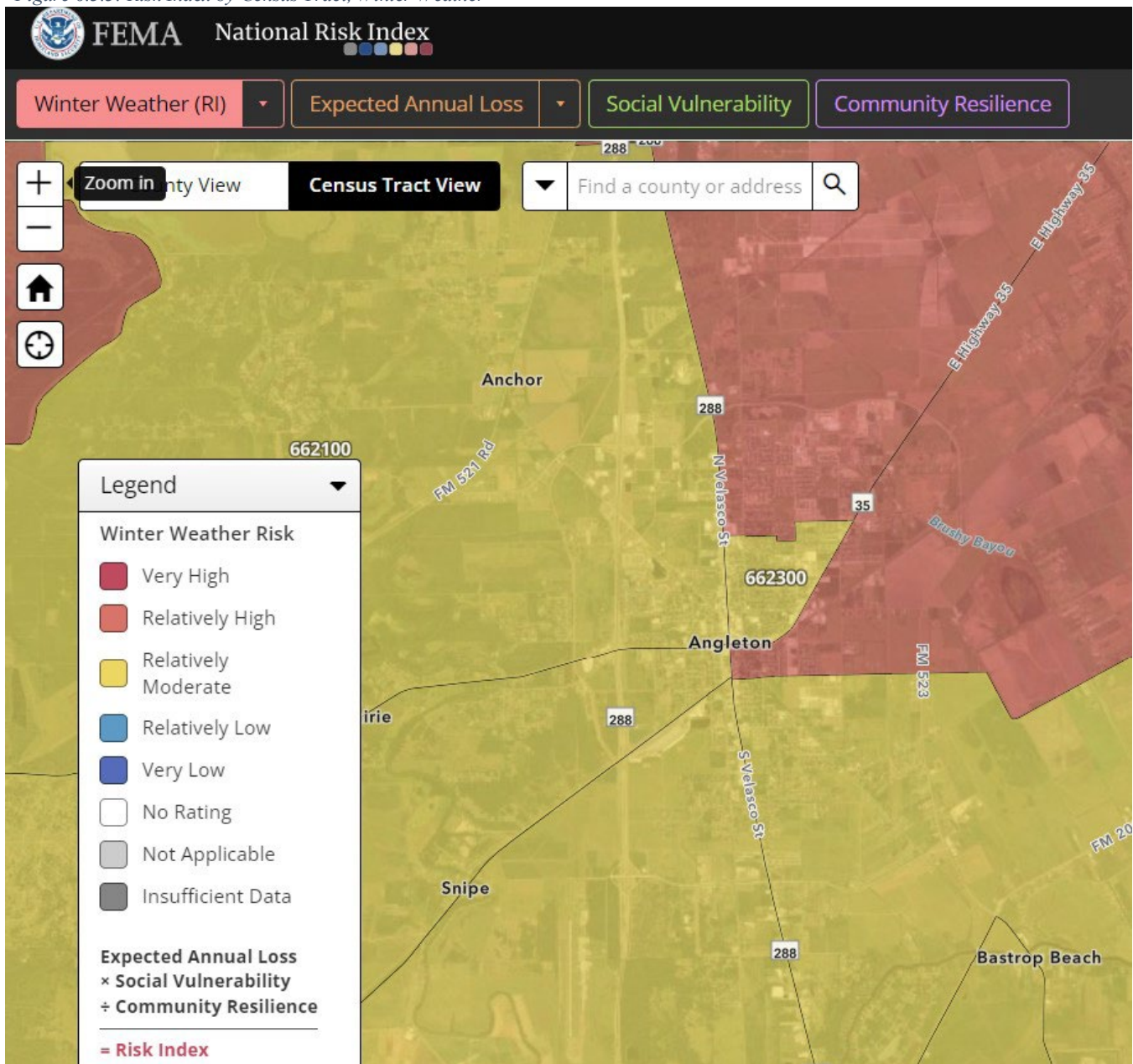


Figure 6.3.4: Social Vulnerability by Census Tract, City of Angleton

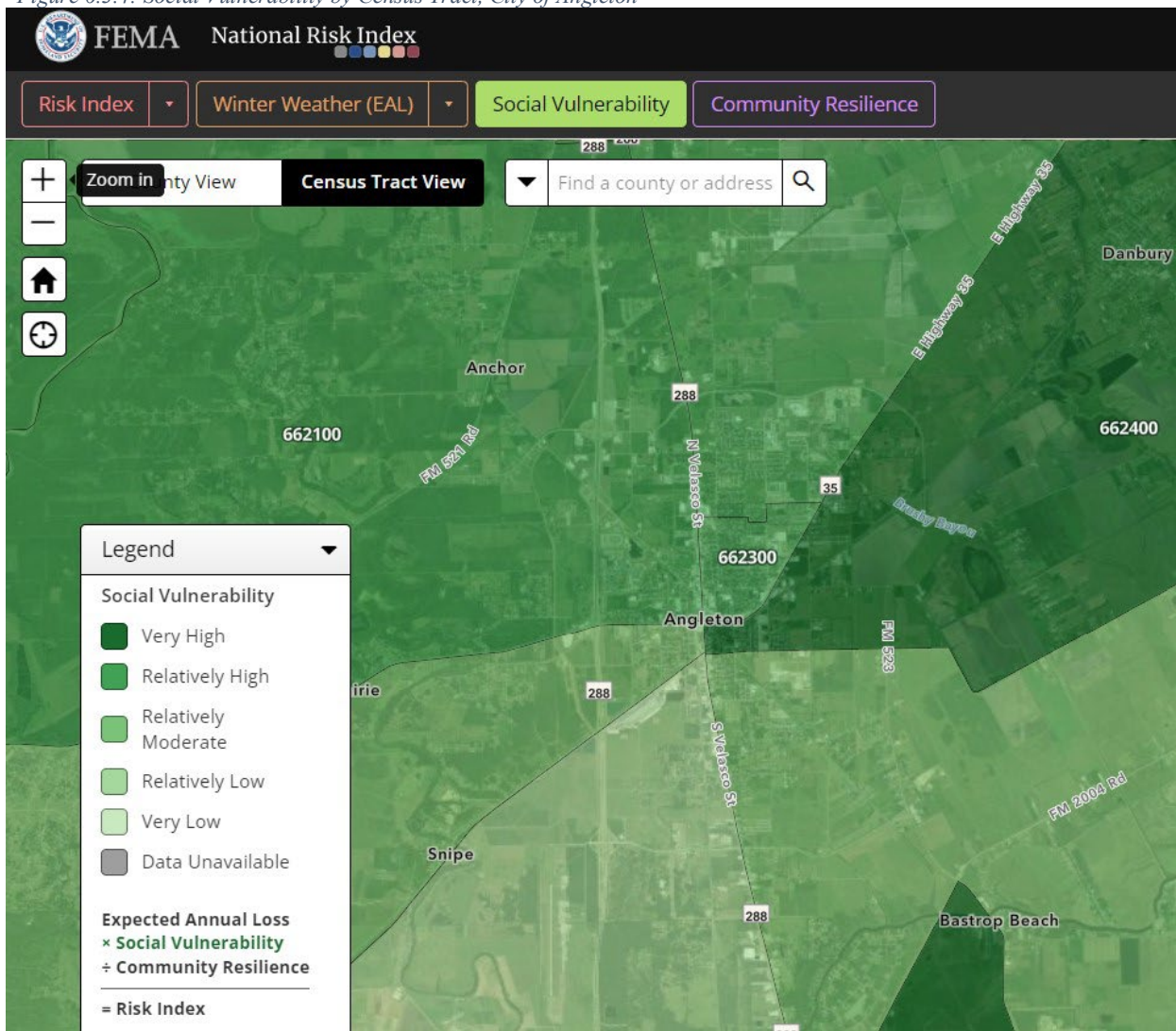


Figure 6.3.5: Community Resilience by Census Tract, City of Angleton

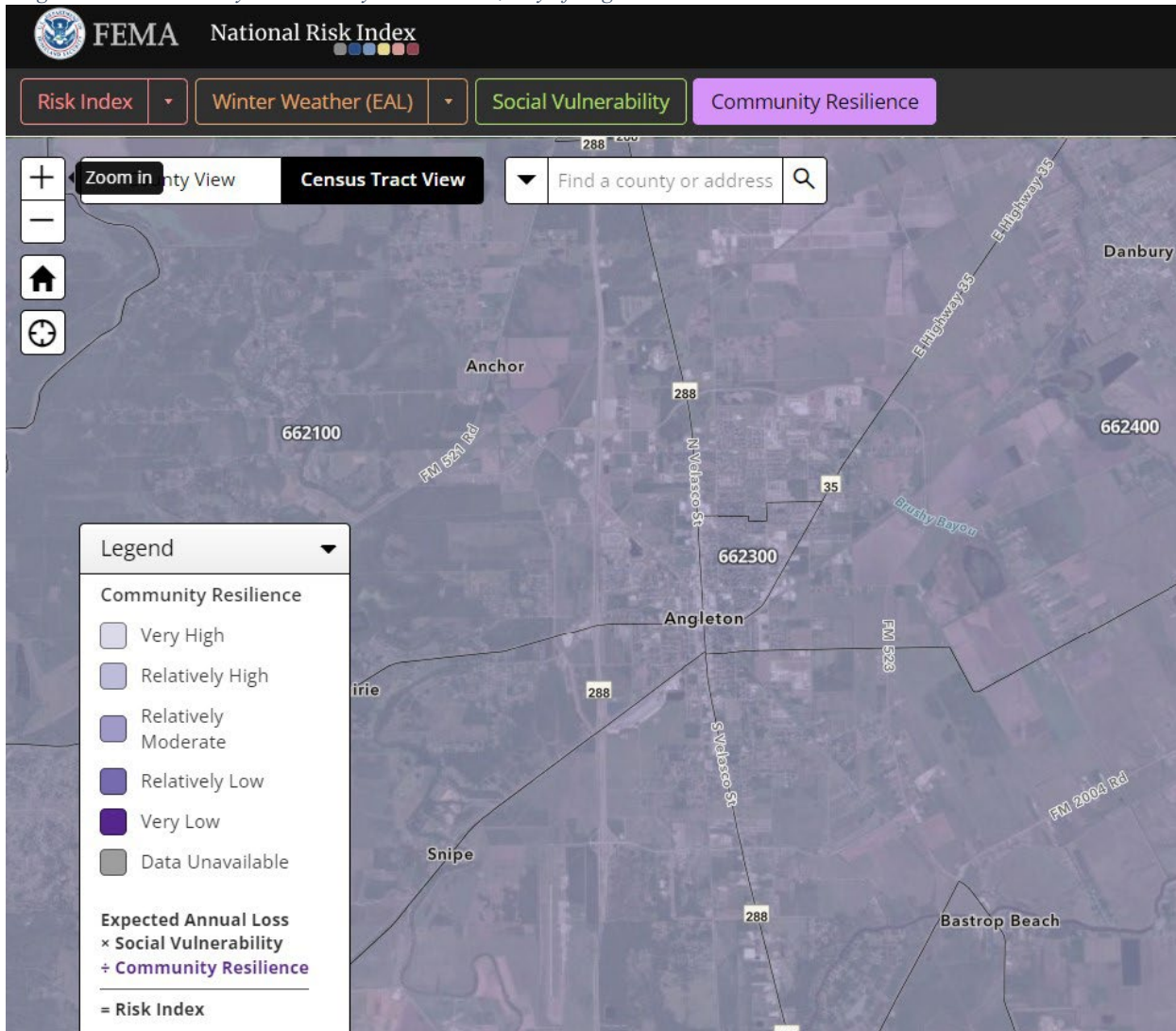
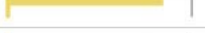


Figure 6.3.6: FEMA NRI Summary, Cold Wave

Rank	Community	State	Risk Index Rating	Risk Index Score	National Percentile
1	Census tract 48039663100	TX	Relatively High	91.33	0  100
2	Census tract 48039662200	TX	Relatively Moderate	89.49	0  100
3	Census tract 48039662400	TX	Relatively Moderate	89.42	0  100
4	Census tract 48039664100	TX	Relatively Moderate	88.89	0  100
5	Census tract 48039662100	TX	Relatively Moderate	87.67	0  100
6	Census tract 48039662300	TX	Relatively Moderate	84.32	0  100
7	Census tract 48039662500	TX	Relatively Moderate	77.74	0  100

Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Risk Index Score
1	Census tract 48039663100	TX	\$33,873	Relatively Low	Relatively Moderate	1	\$33,901	91.33
2	Census tract 48039662200	TX	\$21,068	Relatively High	Relatively Moderate	1.34	\$28,180	89.49
3	Census tract 48039662400	TX	\$19,509	Very High	Relatively Moderate	1.43	\$27,993	89.42
4	Census tract 48039664100	TX	\$25,346	Relatively Moderate	Relatively Moderate	1.05	\$26,561	88.89
5	Census tract 48039662100	TX	\$19,375	Relatively High	Relatively Moderate	1.22	\$23,707	87.67
6	Census tract 48039662300	TX	\$13,009	Relatively High	Relatively Moderate	1.38	\$17,929	84.32
7	Census tract 48039662500	TX	\$9,728	Relatively Moderate	Relatively Moderate	1.12	\$10,864	77.74




Figure 6.3.7: FEMA NRI Summary, Ice Storm

Rank	Community	State	Risk Index Rating	Risk Index Score	National Percentile
1	Census tract 48039662200	TX	Relatively Low	38.68	0  100
2	Census tract 48039662400	TX	Relatively Low	35.11	0  100
3	Census tract 48039662100	TX	Relatively Low	34.75	0  100
4	Census tract 48039663100	TX	Very Low	31.86	0  100
5	Census tract 48039662300	TX	Very Low	29.28	0  100
6	Census tract 48039664100	TX	Very Low	29.15	0  100
7	Census tract 48039662500	TX	Very Low	19.22	0  100

Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Risk Index Score
1	Census tract 48039662200	TX	\$1,259	Relatively High	Relatively Moderate	1.34	\$1,684	38.68
2	Census tract 48039662400	TX	\$1,019	Very High	Relatively Moderate	1.43	\$1,462	35.11
3	Census tract 48039662100	TX	\$1,180	Relatively High	Relatively Moderate	1.22	\$1,443	34.75
4	Census tract 48039663100	TX	\$1,273	Relatively Low	Relatively Moderate	1	\$1,275	31.86
5	Census tract 48039662300	TX	\$821	Relatively High	Relatively Moderate	1.38	\$1,132	29.28
6	Census tract 48039664100	TX	\$1,072	Relatively Moderate	Relatively Moderate	1.05	\$1,124	29.15
7	Census tract 48039662500	TX	\$570	Relatively Moderate	Relatively Moderate	1.12	\$636	19.22



Figure 6.3.8: FEMA NRI Summary, Winter Weather

Rank	Community	State	Risk Index Rating	Risk Index Score	National Percentile
1	Census tract 48039662200	TX	Relatively High	87.13	0  100
2	Census tract 48039662400	TX	Relatively High	85.92	0  100
3	Census tract 48039662100	TX	Relatively Moderate	85.5	0  100
4	Census tract 48039663100	TX	Relatively Moderate	85.15	0  100
5	Census tract 48039664100	TX	Relatively Moderate	83.1	0  100
6	Census tract 48039662300	TX	Relatively Moderate	82.29	0  100
7	Census tract 48039662500	TX	Relatively Moderate	71.67	0  100

Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Risk Index Score
1	Census tract 48039662200	TX	\$8,474	Relatively High	Relatively Moderate	1.34	\$11,335	87.13
2	Census tract 48039662400	TX	\$7,190	Very High	Relatively Moderate	1.43	\$10,316	85.92
3	Census tract 48039662100	TX	\$8,165	Relatively High	Relatively Moderate	1.22	\$9,991	85.5
4	Census tract 48039663100	TX	\$9,718	Relatively Low	Relatively Moderate	1	\$9,726	85.15
5	Census tract 48039664100	TX	\$8,036	Relatively Moderate	Relatively Moderate	1.05	\$8,421	83.1
6	Census tract 48039662300	TX	\$5,790	Relatively High	Relatively Moderate	1.38	\$7,980	82.29
7	Census tract 48039662500	TX	\$3,928	Relatively Moderate	Relatively Moderate	1.12	\$4,387	71.67

### Climate Change Impacts

As stated above, the Gulf Coast and Southeast Texas region are generally not used to snow, ice, and freezing temperatures. According to the Office of the Texas State Climatologist, in the southern part of the state and in coastal regions, snow is rare, but nonetheless, large accumulations of snow are possible. Climate model projections have shown the risk of snowfall consistently decreases in climates like that of Texas.<sup>58</sup>

Table 6.3.10: Climate Change Impacts, Winter Weather

<b>Location</b>	The location of winter weather is not expected to change.
<b>Extent/Intensity</b>	The extent of winter weather is not expected to change.
<b>Frequency</b>	The frequency of winter weather is expected to decrease.
<b>Duration</b>	The duration of winter weather is expected to decrease.

# Section 6.4: Tornado



## 6.4 Tornado

A Tornado is defined by the NWS as “a violently rotating column of air touching the ground, usually attached to the base of a thunderstorm.”<sup>62</sup> Tornadoes are one of the most violent storms, with the strongest tornadoes being capable of massive destruction. In extreme cases, winds from a tornado may approach 300 miles per hour, with damage paths that can be more than one mile wide and 50 miles long. These catastrophic tornadoes are often produced by supercell thunderstorms.<sup>63</sup>

### Location

Tornadoes do not have any specific geographic boundary and can occur anywhere if the right conditions are present. From 1951-2011, nearly 62.7 percent of all Texas tornadoes occurred within the three months of April, May, and June, with almost one-third of the total tornadoes occurring in May.<sup>64</sup> The State of Texas has the highest average annual number of tornadoes per state, with an average of 136 tornadoes per year over 30 years, as seen in Figure 6.4.1.<sup>65</sup> Figure 6.4.2 depicts Brazoria County’s total number of tornadoes per year between 61-80 instances.<sup>66</sup>

Figure 6.4.1: Annual Tornadoes per State, 1993-2022

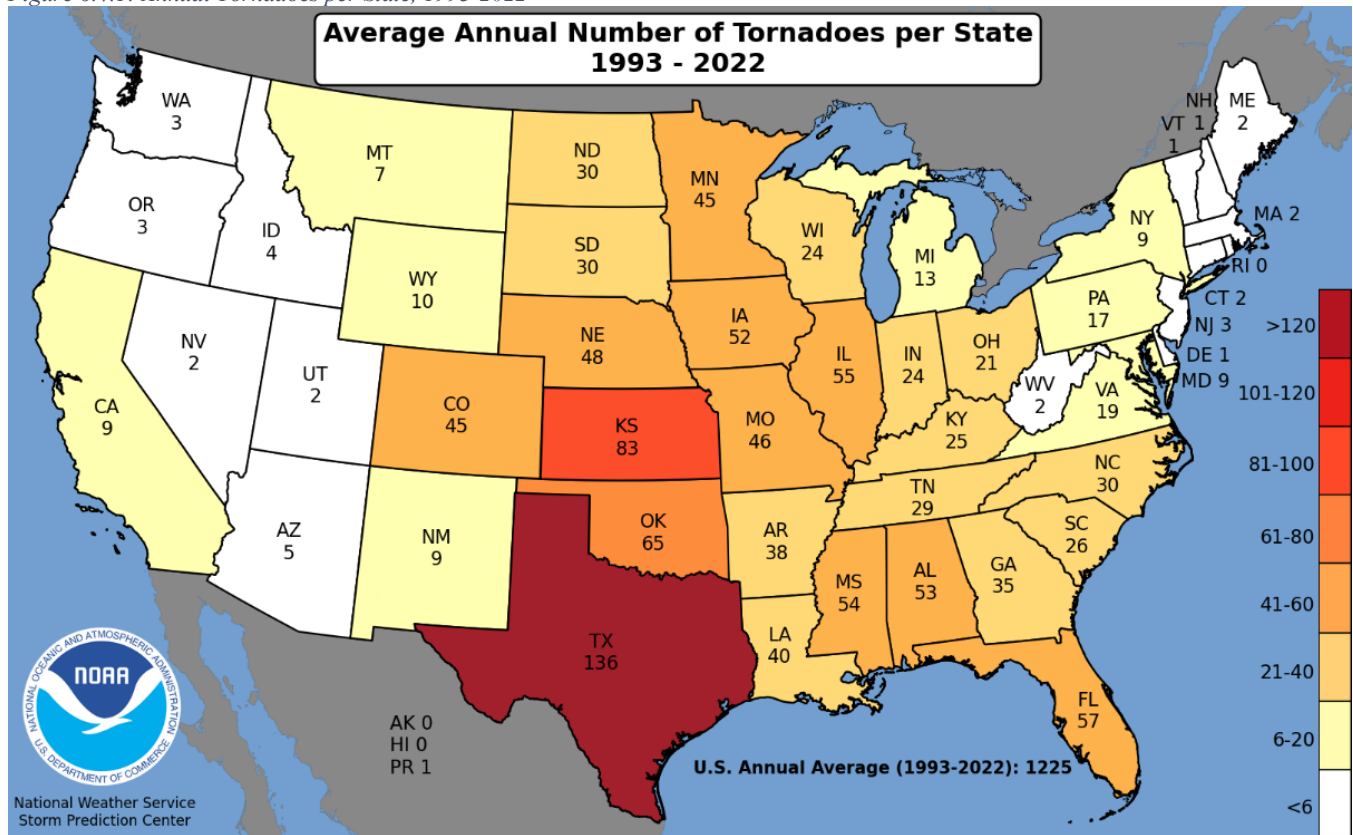
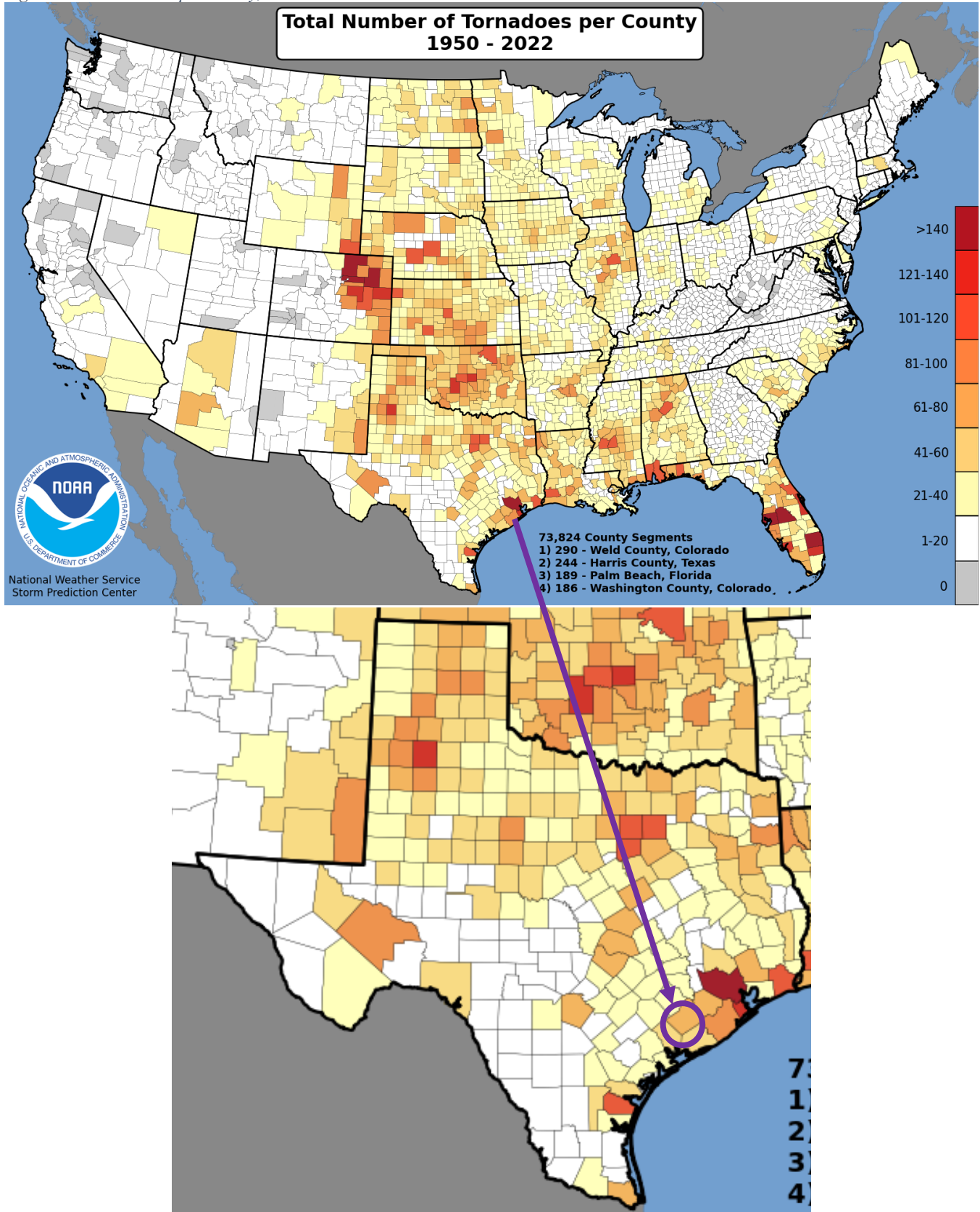


Figure 6.4.2: Tornadoes per County, 1950-2022



**Extent**

Tornado intensity is ranked using the Enhanced Fujita Scale (EF- Scale), a rating of how strong a tornado was. It is calculated by surveying the damage and comparing it with damage to similar objects at certain

wind speeds. The EF-Scale is not meant to be used as a measure of how strong a tornado currently on the ground is. The EF-Scale incorporates 28 damage indicators such as building type, structures, and trees. For each damage indicator, there are 8 degrees of damage ranging from the beginning of visible damage to complete destruction of the damage indicator.<sup>67</sup>

Table 6.4.1: Enhanced Fujita Scale Descriptions

EF Rating	Wind Speed	Typical Damage
0	65-85	Light damage. Peels surface off some roofs; some damage to gutters or siding; branches broken off trees; shallow-rooted trees pushed over.
1	86-110	Moderate damage. Roofs severely stripped; mobile homes overturned or badly damaged; loss of exterior doors; windows and other glass broken.
2	111-135	Considerable damage. Roofs torn off well-constructed houses; foundations of frame homes shifted; mobile homes destroyed; large trees snapped or uprooted; light-object missiles generated; cars lifted off ground.
3	136-165	Severe damage. Entire stories of well-constructed houses destroyed; severe damage to large buildings such as shopping malls; trains overturned; trees debarked; heavy cars lifted off the ground and thrown; structures with weak foundations blown away some distance.
4	166-200	Devastating damage. Whole frame houses Well-constructed houses and whole frame houses completely leveled; cars thrown, and small missiles generated.
5	>200	Incredible damage. Strong frame houses leveled off foundations and swept away; automobile-sized missiles fly more than 109 yards; high-rise buildings have significant structural deformation; incredible phenomena will occur.

Table 6.4.2: EF-Scale Damage Indicators

Number (Details Linked)	Damage indicator	Abbreviation
<a href="#">1</a>	Small barns, farm outbuildings	SBO
<a href="#">2</a>	One- or two-family residences	FR12
<a href="#">3</a>	Single-wide mobile home (MHSW)	MHSW
<a href="#">4</a>	Double-wide mobile home	MHDW
<a href="#">5</a>	Apt, condo, townhouse (3 stories or less)	ACT
<a href="#">6</a>	Motel	M
<a href="#">7</a>	Masonry apt. or motel	MAM
<a href="#">8</a>	Small retail bldg. (fast food)	SRB
<a href="#">9</a>	Small professional (doctor office, branch bank)	SPB
<a href="#">10</a>	Strip mall	SM
<a href="#">11</a>	Large shopping mall	LSM
<a href="#">12</a>	Large, isolated ("big box") retail bldg.	LIRB
<a href="#">13</a>	Automobile showroom	ASR
<a href="#">14</a>	Automotive service building	ASB
<a href="#">15</a>	School - 1-story elementary (interior or exterior halls)	ES
<a href="#">16</a>	School - jr. or sr. high school	JHSH
<a href="#">17</a>	Low-rise (1-4 story) bldg.	LRB
<a href="#">18</a>	Mid-rise (5-20 story) bldg.	MRB
<a href="#">19</a>	High-rise (over 20 stories)	HRB
<a href="#">20</a>	Institutional bldg. (hospital, govt. or university)	IB
<a href="#">21</a>	Metal building system	MBS
<a href="#">22</a>	Service station canopy	SSC
<a href="#">23</a>	Warehouse (tilt-up walls or heavy timber)	WHB

<a href="#">24</a>	Transmission line tower	TLT
<a href="#">25</a>	Free-standing tower	FST
<a href="#">26</a>	Free standing pole (light, flag, luminary)	FSP
<a href="#">27</a>	Tree - hardwood	TH
<a href="#">28</a>	Tree - softwood	TS

**Historic Occurrences**

NOAA collects historic climate data for the entire nation. NOAA's storm event data can be accessed on the NCEI Storm Events Database. The database currently contains data from January 1950 to December 2023, as entered by NOAA's NWS. Due to changes in the data collection and processing procedures over time, there are unique periods of record available depending on the event type. These events are shown at the county level with some referencing a specific location, city, or zone. There have been 129 tornadoes within Brazoria County since 1950. The City of Angleton has been listed in 13 of these events as recorded by the NCEI, either within the location (beginning or ending) or the event narrative.

There have been 11 new tornado or funnel cloud events in Brazoria County since 2018. Figure 6.4.3 below depicts historic tornado occurrences and their tracks within the City of Angleton, while the table below highlights events for this hazard that have occurred within Brazoria County since 2018. Events that occurred within the City of Angleton are highlighted in purple.<sup>38</sup>

Figure 6.4.3: Tornado Paths, City of Angleton

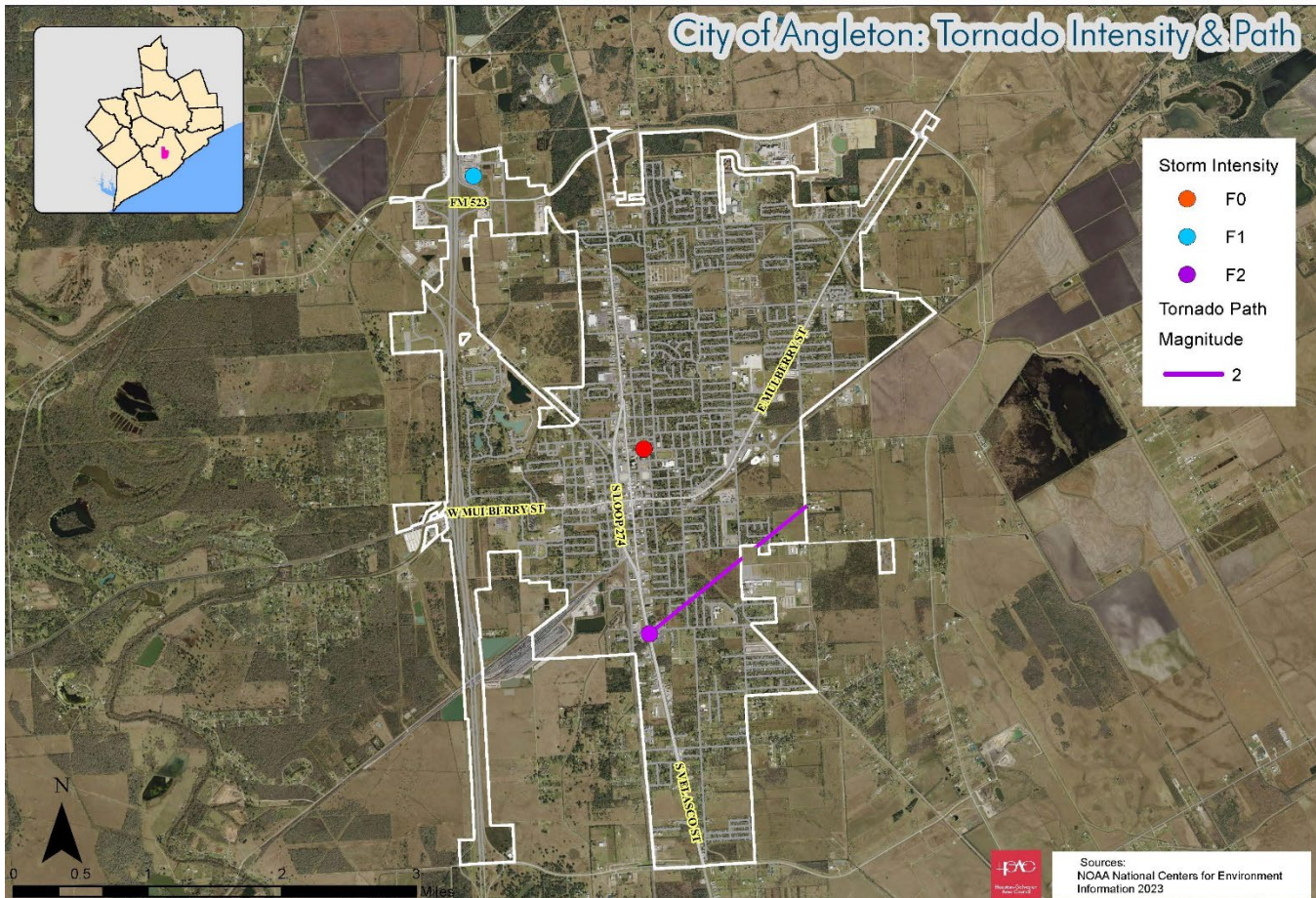


Table 6.4.3: Tornado Occurrences, City of Angleton

Date	Event Type/ Rating	Location	Injuries	Fatalities	Property Damage (\$)	Crop Damage (\$)
3/29/2018	Tornado/ EF0	Manvel Coyle ARPT	0	0	\$1,000	\$-
5/23/2018	Funnel Cloud	Rosharon	0	0	\$-	\$-
5/23/2018	Funnel Cloud	Alvin	0	0	\$-	\$-
9/9/2018	Funnel Cloud	Freeport	0	0	\$-	\$-
10/15/2018	Funnel Cloud	Chenango	0	0	\$-	\$-
10/31/2018	Tornado/ EF0	Angleton	0	0	\$30,000	\$-
3/30/2019	Funnel Cloud	Brazoria	0	0	\$-	\$-
7/14/2019	Funnel Cloud	Hinkles Ferry	0	0	\$-	\$-
8/14/2021	Funnel Cloud	Angleton Bailes ARPT	0	0	\$-	\$-
3/22/2022	Tornado/ EF0	Danbury	0	0	\$1,000	\$-
1/24/2023	Tornado/ EF0	Manvel	0	0	\$-	\$-

Rows highlighted in purple are events that reference the City of Angleton within the event narrative or event location (beginning or end).  
 \$- No dollar amount (\$0.00).

### Presidential Disaster Declarations

There have been 0 disaster declarations for tornado, however 4 disaster designations have included tornado in the declaration title for Brazoria County. The declaration incident type for these events is listed as a “severe storm”.<sup>1</sup>

Table 6.4.4: Federal Disaster Declarations, Tornado

Declaration Year	Incident Type	Incident Title	Disaster Number	Declaration Type
1991	Severe Storm	SEVERE STORMS, TORNADOES & FLOODING	900	Major Disaster Declaration
2003	Severe Storm	SEVERE STORMS, TORNADOES AND FLOODING	1439	Major Disaster Declaration
2015	Severe Storm	SEVERE STORMS, TORNADOES, STRAIGHT-LINE WINDS AND FLOODING	4223	Major Disaster Declaration
2016	Severe Storm	SEVERE STORMS, TORNADOES, STRAIGHT-LINE WINDS, AND FLOODING	4245	Major Disaster Declaration

### USDA Disaster Declarations

The Secretary of Agriculture is authorized to designate counties as disaster areas to make EM loans available to producers suffering losses in those counties and in counties that are contiguous to a designated county. In addition to EM loan eligibility, other emergency assistance programs, such as FSA disaster assistance programs, have historically used disaster designations as an eligibility trigger. USDA Secretarial disaster designations must be requested of the Secretary of Agriculture by a governor or the governor’s authorized representative, by an Indian Tribal Council leader or by an FSA SED. The Secretarial disaster designation is the most widely used. When there is a presidential disaster declaration, FEMA immediately notifies FSA of the primary counties named in a Presidential declaration. USDA Disaster Declarations for the City of Angleton since the last HMP are listed in the table below.<sup>39</sup>

Table 6.4.5: USDA Declared Disasters (2018-2023), Tornado

Crop Disaster Year	Disaster Description	Designation Number
None		

## Probability of Future Occurrences

Tornado season usually refers to the time of year the U.S. sees the most tornadoes. The peak “tornado season” for the southern Plains (e.g., Texas, Oklahoma, and Kansas) is from May into early June. On the Gulf Coast, it is earlier in the spring.<sup>66</sup> According to the FEMA NRI for tornadoes within Brazoria County, annualized frequency values are 1.1 events per year over 72 years of record (1950-2021), with 63 events on record for this timeframe.<sup>42</sup>

## Populations at Risk

FEMA’s NRI utilizes data from multiple sources including historical hazard events, hazard intensity, exposure of people and property to hazards, socioeconomic factors, and community resilience indicators. The NRI also incorporates hazard data to determine the frequency and intensity of various natural hazards. This information helps assess the likelihood of specific hazards occurring in different regions.

The NRI considers the exposure of communities to hazards and incorporates factors such as population density, infrastructure systems, and critical facilities that may be at risk during a hazard event. The NRI also generates risk scores for communities across the U.S. that provide a relative ranking of areas based on their overall risk level. This helps to identify areas that may require additional resources and attention for mitigation and planning efforts. The NRI risk equation includes 3 components. EAL represents the average economic loss in dollars resulting from natural hazards each year. The CRF is a scaling factor that incorporates social vulnerability (the susceptibility of social groups to the adverse impacts of natural hazards) and community resilience (the ability of a community to prepare for anticipated natural hazards, adapt to changing conditions, and withstand and recover rapidly from disruptions) into the NRI. The outcome, the risk index, represents the potential negative impacts of natural hazards. The NRI EAL score, and rating, represent a community’s relative level of expected loss each year when compared to all other communities at the same level.<sup>42</sup>

All residents within the county are exposed to this hazard. The impacts of a tornado on the life, health, and safety of City of Angleton residents depend on several factors, including the severity of the event and adequate warning time being provided to residents to take shelter. Tornadoes can lead to a disruption in emergency response services, shelters, electricity, clean water, and other forms of necessary medical assistance while repairs are made to critical facilities or power is being restored within the county.

The NCHH summarizes at-risk populations for several hazards. These include older adults, people experiencing homelessness, people with disabilities, and people with chronic health conditions. In addition to the dangers listed above, older adults can face social isolation, lack of electricity needed to run medical equipment, lack of access to a vehicle for evacuation, and lack of access to other critical supplies. Evacuation for these events is fast-paced, and older adults may not be able to seek adequate shelter before a tornado impacts their area. For people experiencing homelessness, adequate shelter is critical in keeping populations safe during a tornado. People with disabilities may require additional assistance to stay safe and prepare for these hazards and their after-effects such as creating a support network, finding accessible transportation to evacuate or get medical attention, and loss of power for needed medical equipment. Likewise, those with chronic health conditions may need similar assistance as those with disabilities. Residents impacted may be displaced or require temporary to long-term sheltering. In addition, downed trees, damaged buildings, and debris carried by winds associated with tornadoes can lead to further injury or loss of life. Socially vulnerable populations are most susceptible based on several factors, including their physical and financial ability to react or respond during or directly following a hazard event. These



issues disproportionately affect low-income communities and families who may lack the resources to pay for damages to their homes, lack insurance, or lack the resources to replace home contents or personal belongings.<sup>43</sup> Those living in mobile/manufactured housing are also at greater risk from this hazard as even anchored mobile homes can be seriously damaged or destroyed when winds gust over 80 mph.<sup>68</sup>

EAL Exposure Values and EAL Values for Brazoria County can be found in the tables below.

Table 6.4.6: Expected Annual Loss Exposure Values, Tornado

Hazard Type	Building Value (\$)	Population Equivalence (\$)/ Population (#)	Agricultural Value (\$)	EAL Total (\$)
<b>Tornado</b>	\$57,514,822,174	\$4,309,098,400,000/ 371,474	\$91,232,428	\$4,366,704,454,602

Table 6.4.7: Expected Annual Loss Values, Tornado

Hazard Type	Building Value (\$)	Population Equivalence (\$)/ Population (#)	Agriculture Value
<b>Tornado</b>	\$3,081,036	\$15,053,946/ 1.30	\$1,815

N/A- Not Applicable

EAL for the City of Angleton was derived by creating a report that used census tract information for tracts that included the Angleton city limits. These were census tracts 48039662100, 48039662200, 48039662400, 48039662300, 48039662500, 48039663100, and 48039664100. EAL according to the FEMA NRI for tornado events for these census tracts is listed as relatively high, with one tract rating relatively moderate. EAL values, risk index ratings, risk index scores, social vulnerability, and community resilience for each census tract can be found in the figures below.<sup>44</sup> Additionally, the FEMA NRI lists the HLR, a hazard- and county-specific estimate of the percentage of the exposed consequence type (building value, population, or agriculture value) expected to be lost due to a hazard occurrence, for tornado within Brazoria County as very low.<sup>44</sup>

Figure 6.4.4: Risk Index by Census Tract, Tornado

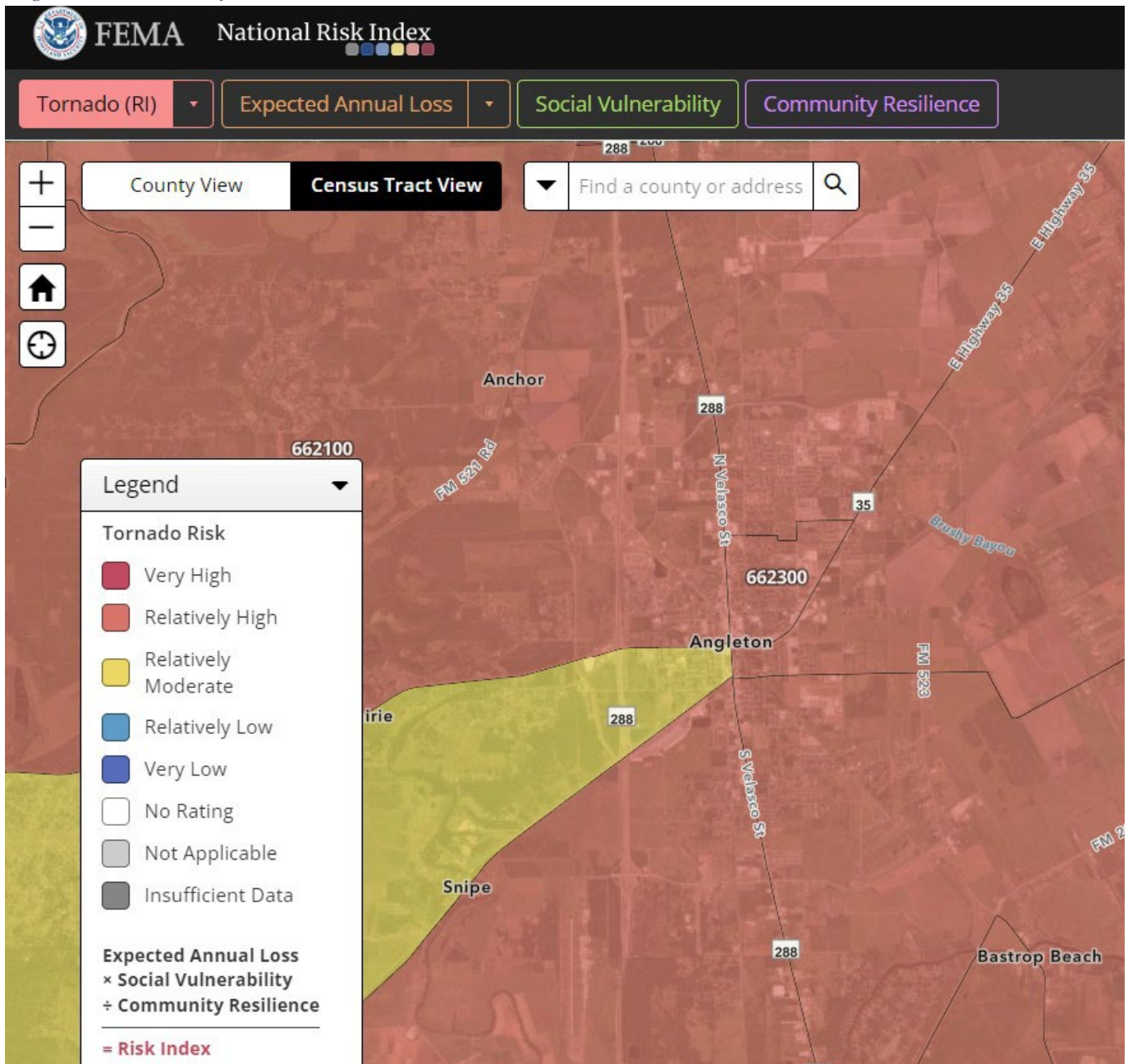


Figure 6.4.5: Social Vulnerability by Census Tract, City of Angleton

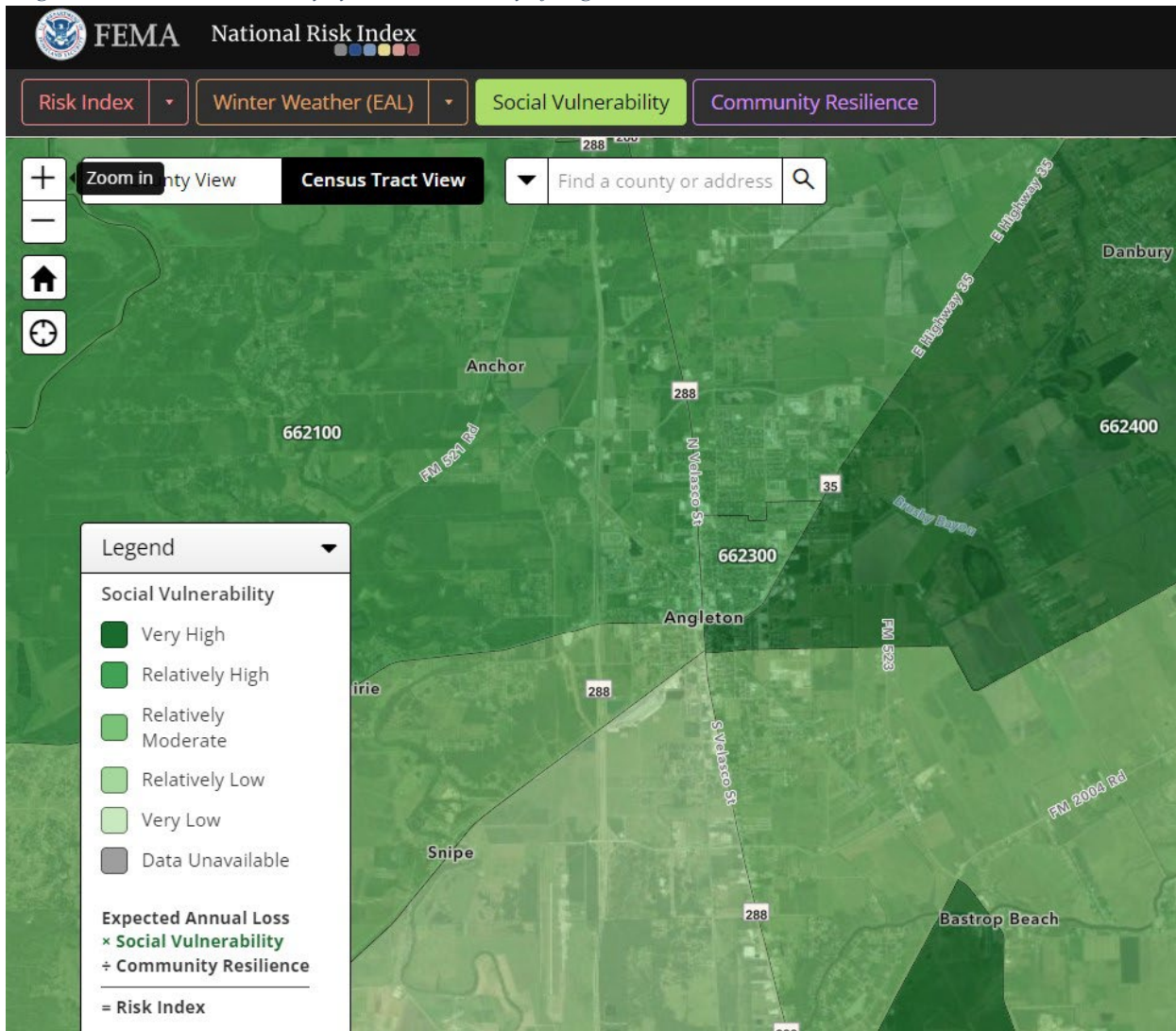


Figure 6.4.6: Community Resilience by Census Tract, City of Angleton

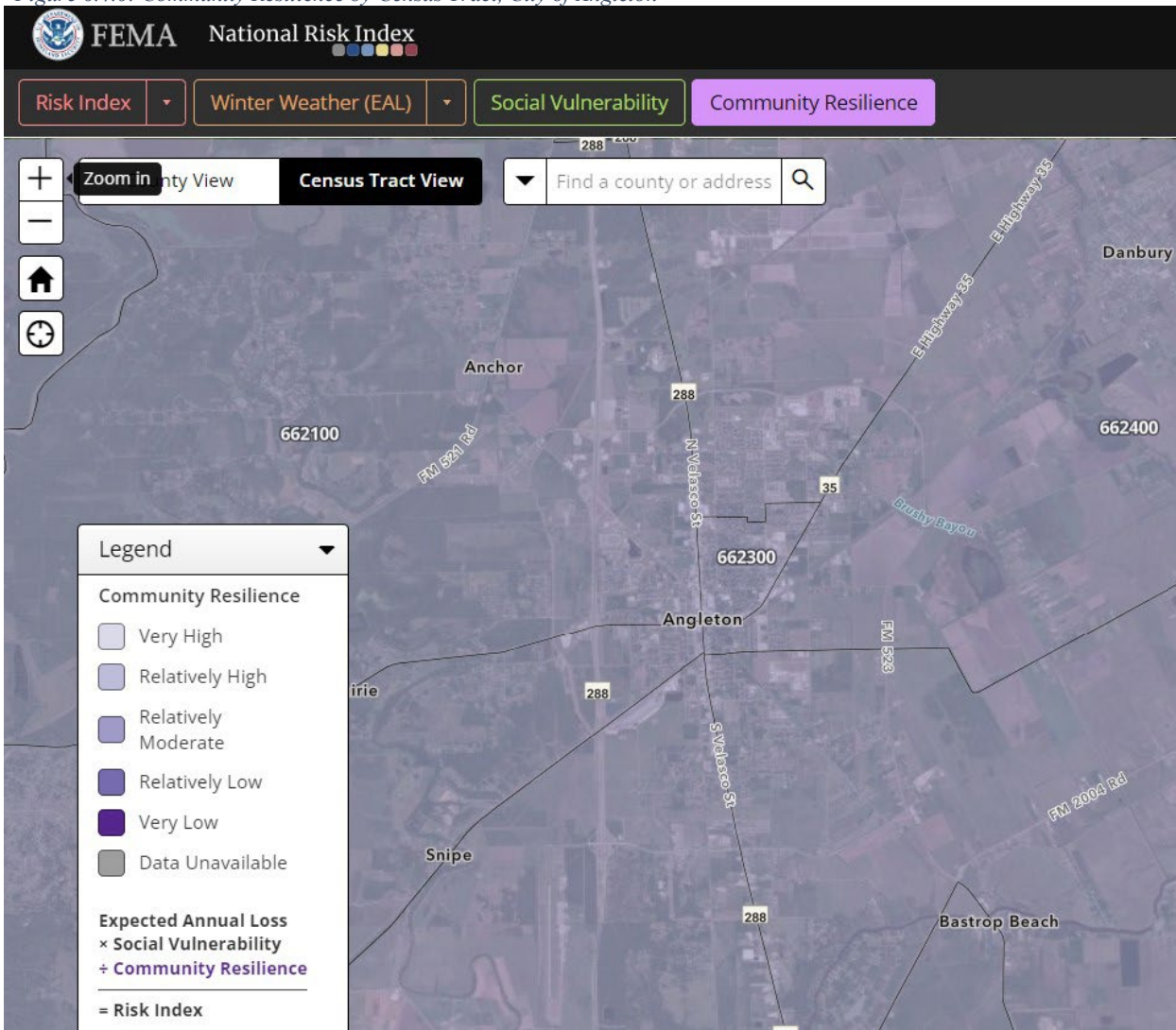


Figure 6.4.7: FEMA NRI Summary, Tornado

Rank	Community	State	Risk Index Rating	Risk Index Score	National Percentile
1	Census tract 48039662200	TX	Relatively High	90.46	0   ██████████   100
2	Census tract 48039662400	TX	Relatively High	88.45	0   ██████████   100
3	Census tract 48039662100	TX	Relatively High	87.86	0   ██████████   100
4	Census tract 48039663100	TX	Relatively High	85.62	0   ██████████   100
5	Census tract 48039664100	TX	Relatively High	82.1	0   ██████████   100
6	Census tract 48039662300	TX	Relatively High	81.79	0   ██████████   100
7	Census tract 48039662500	TX	Relatively Moderate	68.07	0   ██████████   100

Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Risk Index Score
1	Census tract 48039662200	TX	\$277,476	Relatively High	Relatively Moderate	1.34	\$371,144	90.46
2	Census tract 48039662400	TX	\$234,585	Very High	Relatively Moderate	1.43	\$336,599	88.45
3	Census tract 48039662100	TX	\$267,801	Relatively High	Relatively Moderate	1.22	\$327,686	87.86
4	Census tract 48039663100	TX	\$296,693	Relatively Low	Relatively Moderate	1	\$296,939	85.62
5	Census tract 48039664100	TX	\$245,675	Relatively Moderate	Relatively Moderate	1.05	\$257,449	82.1
6	Census tract 48039662300	TX	\$184,461	Relatively High	Relatively Moderate	1.38	\$254,228	81.79
7	Census tract 48039662500	TX	\$131,736	Relatively Moderate	Relatively Moderate	1.12	\$147,118	68.07

### Climate Change Impacts

According to the Office of the Texas State Climatologist, “The most robust trend in tornado activity is a tendency of more tornadoes in large outbreaks, but the factors apparently driving that trend are not projected to continue.”<sup>58</sup> Severe thunderstorms and lightning are more likely to occur in summer months when temperatures are higher and moisture from the gulf helps to fuel thunderstorm development, which could lead to the development of tornadoes along the front of the storm if the right conditions exist.

Table 6.4.8: Climate Change Impacts, Tornado

<b>Location</b>	The location of tornadoes is not expected to change.
<b>Extent/Intensity</b>	The extent and intensity of tornadoes within the county may change (increase) due to increased temperatures and energy available to fuel severe thunderstorms from the warm air within the Gulf of Mexico.
<b>Frequency</b>	Tornado frequency is not expected to change. 62.7 percent of all Texas tornadoes occurred within the three-month period of April, May, and June, with almost one-third of the total tornadoes occurring in May
<b>Duration</b>	The duration of tornado events is not likely to change, however the intensity of them, or outbreaks is expected to increase.

# Section 6.5: Extreme Heat



## 6.5 Extreme Heat

Heat events, or extreme heat, is defined by the CDC as summertime temperatures that are much hotter and/or humid than average.<sup>69</sup> The US Department of Homeland Security's Ready.gov website takes this definition a step further by defining extreme heat as "a period of high heat and humidity with temperatures above 90°F for at least two to three days." Among all weather-related hazards, extreme heat is responsible for the highest number of annual deaths as the body must work extra hard to maintain a normal temperature.<sup>70</sup> Heat-related illnesses, like heat exhaustion or heat stroke, happen when the body is not able to properly cool itself. While the body normally cools itself by sweating, during extreme heat, this might not be enough. In these cases, a person's body temperature rises faster than it can cool itself down. This can cause damage to the brain and other vital organs. The table below provides classifications of various heat-related NWS warnings and watches for extreme heat.<sup>71</sup>

Table 6.5.1: NWS Heat-Related Watches and Warnings

Name	Definition
<b>Excessive Heat Outlook</b>	<b>Be Aware!</b> The outlooks are issued when the potential exists for an excessive heat event in the next 3-7 days. An Outlook provides information to those who need considerable lead-time to prepare for the event.
<b>Excessive Heat Watch</b>	<b>Be Prepared!</b> Heat watches are issued when conditions are favorable for an excessive heat event in the next 24 to 72 hours. A Watch is used when the risk of a heat wave has increased but its occurrence and timing is still uncertain.
<b>Excessive Heat Warning</b>	<b>Take Action!</b> An Excessive Heat Warning is issued within 12 hours of the onset of extremely dangerous heat conditions. The general rule of thumb for this Warning is when the maximum heat index temperature is expected to be 105°F or higher for at least 2 days and nighttime air temperatures will not drop below 75°F; however, these criteria vary across the country, especially for areas not used to extreme heat conditions. If you don't take precautions immediately when conditions are extreme, you may become seriously ill or even die.
<b>Heat Advisory</b>	<b>Take Action!</b> A Heat Advisory is issued within 12 hours of the onset of extremely dangerous heat conditions. The general rule of thumb for this Advisory is when the maximum heat index temperature is expected to be 100°F or higher for at least 2 days, and nighttime air temperatures will not drop below 75°F; however, these criteria vary across the country, especially for areas that are not used to dangerous heat conditions. Take precautions to avoid heat illness. If you don't take precautions, you may become seriously ill or even die.

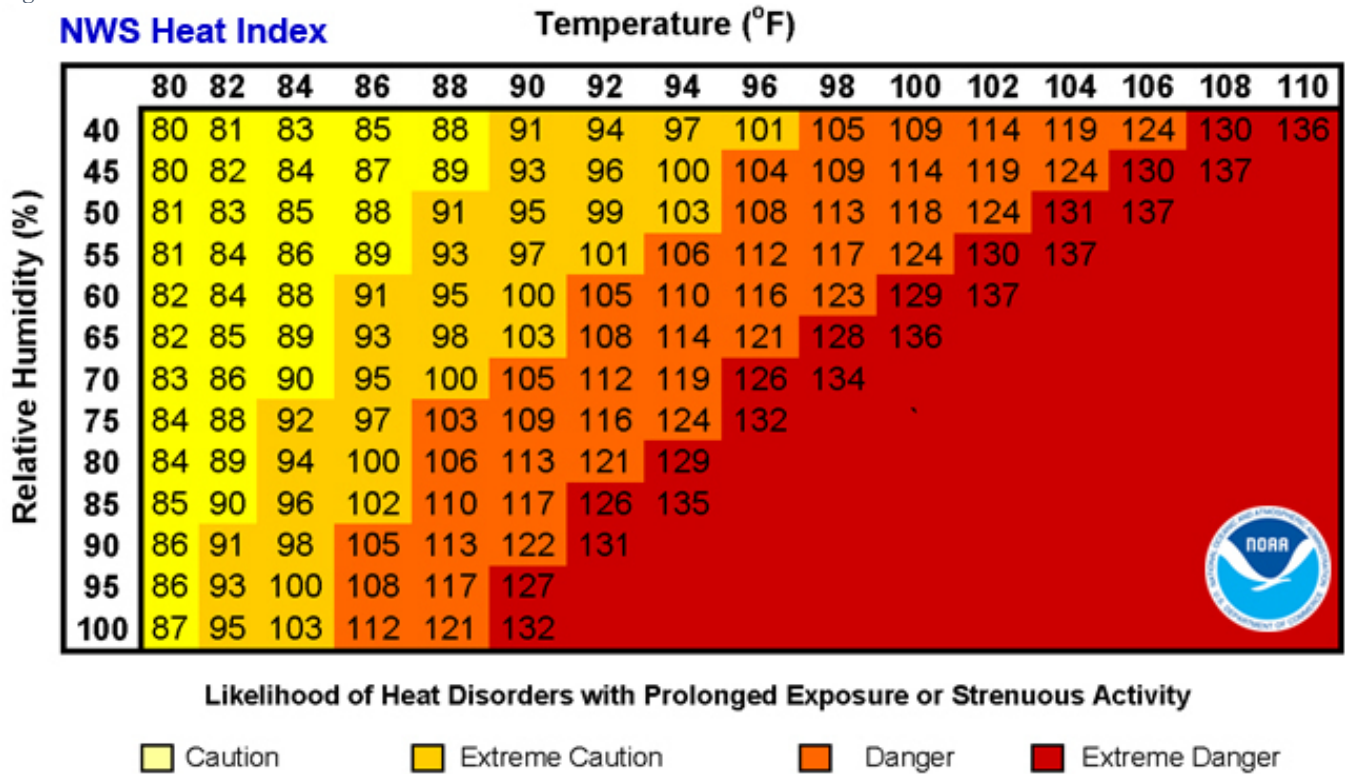
### Location

The risk of an extreme heat event occurring applies the same to the entire county. The City of Angleton experiences the highest temperatures in the months of June to August, with average temperatures between 90°F and 100°F degrees. In more developed areas, the "urban heat island" effect (increased air temperatures in urban areas in contrast to cooler surrounding rural areas.) can occur due to higher concentrations of buildings and pavement. These materials absorb more heat during the day and radiate it at night, prohibiting temperatures from cooling as much compared to rural areas.<sup>72</sup>

### Extent

The intensity of heat and extreme heat events are measured by temperature and humidity. NOAA's heat index or the "Apparent Temperature" is an accurate measure of how hot it feels when the relative humidity is added to the actual air temperature.<sup>99</sup> The figure below outlines the NOAA NWS heat index for shaded areas. In direct sunlight, these heat index values can be increased by up to 15°F. At temperatures over 103°F dangerous heat disorders can begin with prolonged exposure to the heat or increased physical activity in the heat.<sup>73</sup>

Figure 6.5.1: NOAA NWS Heat Index



The table below outlines various effects on the body in relation to the heat index and associated temperature from the figure above.

Table 6.5.2: Heat Index

Color	Heat Index	Classification	Effect on the body
	Caution	80°F - 90°F	Fatigue possible with prolonged exposure and/or physical activity
	Extreme Caution	90°F - 103°F	Heat stroke, heat cramps, or heat exhaustion possible with prolonged exposure and/or physical activity
	Danger	103°F - 124°F	Heat cramps or heat exhaustion likely, and heat stroke possible with prolonged exposure and/or physical activity
	Extreme Danger	125°F or higher	Heat stroke highly likely

### Historic Occurrences

NOAA collects historic climate data for the entire nation. NOAA's storm event data can be accessed on the NCEI Storm Events Database. These events are shown at the county level with some referencing a specific location, city, or zone. The database currently contains data from January 1950 to December 2023, as entered by NOAA's NWS. Due to changes in the data collection and processing procedures over time, there are unique periods of record available depending on the event type. The table below highlights events for this hazard that have occurred within Brazoria County from 1950-2023.<sup>38</sup> The previous 13 occurrences of heat or excessive heat all occurred within the last year, 2023.



Table 6.5.3: Heat Events (1950-2023)

Event Date	Event Type	Injuries	Fatalities	Property Damage (\$)	Crop Damage (\$)
6/26/1999	Heat	0	0	\$-	\$-
8/1/1999	Heat	0	0	\$-	\$-
7/6/2000	Heat	0	0	\$-	\$-
8/29/2000	Heat	0	0	\$-	\$-
9/1/2000	Heat	0	0	\$-	\$-
6/24/2009	Heat	0	0	\$-	\$-
6/9/2019	Heat	0	0	\$-	\$-
6/9/2019	Heat	0	0	\$-	\$-
6/16/2023	Excessive Heat	0	0	\$-	\$-
6/16/2023	Excessive Heat	0	0	\$-	\$-
6/25/2023	Excessive Heat	0	0	\$-	\$-
7/12/2023	Excessive Heat	0	0	\$-	\$-
8/5/2023	Excessive Heat	0	0	\$-	\$-
8/5/2023	Excessive Heat	0	0	\$-	\$-
8/5/2023	Excessive Heat	0	0	\$-	\$-
8/23/2023	Excessive Heat	0	0	\$-	\$-
8/23/2023	Excessive Heat	0	0	\$-	\$-
8/23/2023	Excessive Heat	0	0	\$-	\$-
9/5/2023	Heat	0	0	\$-	\$-
9/5/2023	Heat	0	0	\$-	\$-
9/5/2023	Heat	0	0	\$-	\$-

### Presidential Disaster Declarations

There have been no federally declared heat or extreme heat disaster declarations in Brazoria County or the City of Angleton since 1950.

### USDA Disaster Declarations

The Secretary of Agriculture is authorized to designate counties as disaster areas to make EM loans available to producers suffering losses in those counties and in counties that are contiguous to a designated county. In addition to EM loan eligibility, other emergency assistance programs, such as FSA disaster assistance programs, have historically used disaster designations as an eligibility trigger. USDA Secretarial disaster designations must be requested of the Secretary of Agriculture by a governor or the governor's authorized representative, by an Indian Tribal Council leader, or by an FSA SED. The Secretarial disaster designation is the most widely used. When there is a presidential disaster declaration, FEMA immediately notifies FSA of the primary counties named in a Presidential declaration. USDA Disaster Declarations for Brazoria County and the City of Angleton since 2018 are listed in the table below.<sup>39</sup>

Table 6.5.4: USDA Declared Disasters (2018-2023), Extreme Heat

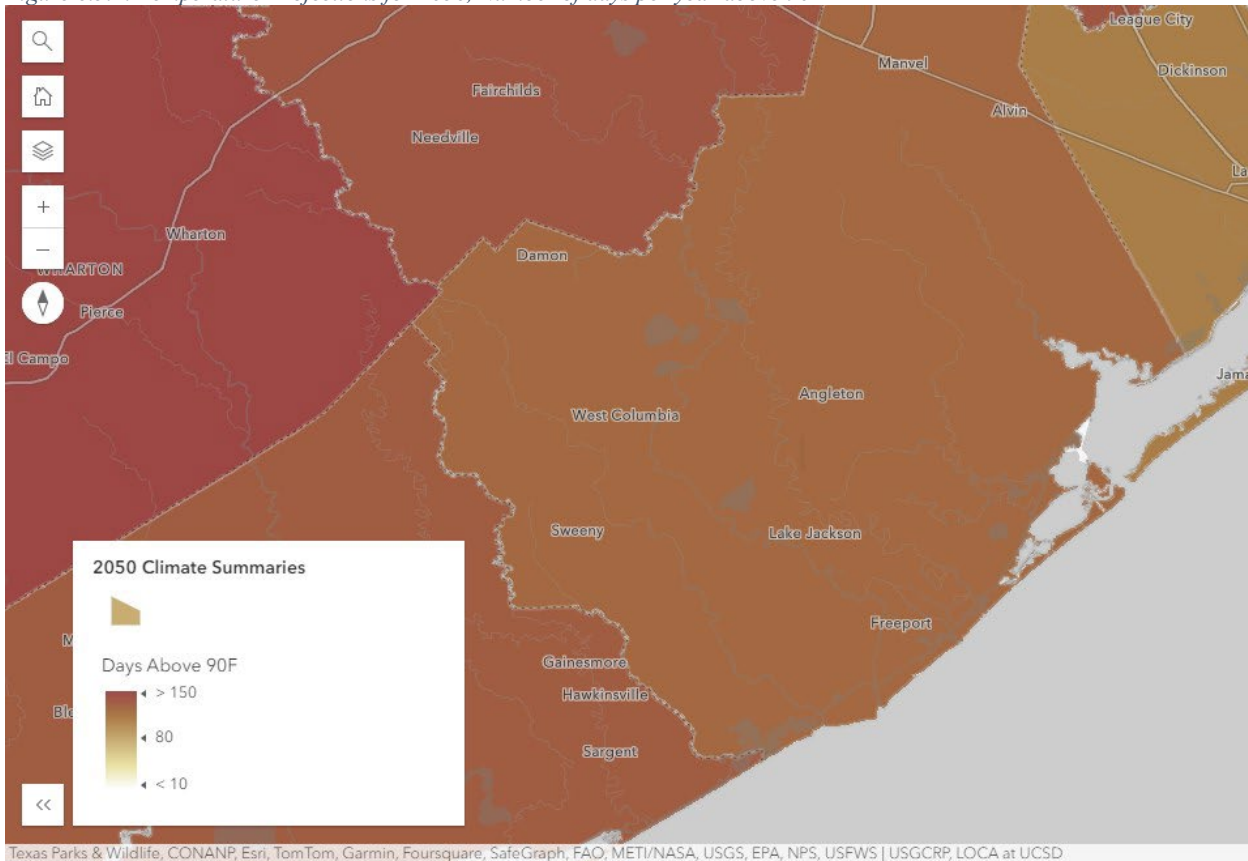
Crop Disaster Year	Disaster Description	Designation Number
2022	Excessive Heat	S5350
2023	Excessive Heat and Drought	S5569

### Probability of Future Occurrences

The State of Texas HMP estimates the occurrence of extreme heat and heat events is trending upward, with a 600.5% increase in the 5-year planning cycle between 2017-2021.<sup>40</sup> According to the FEMA NRI

for heat waves in Brazoria County, in which the City of Angleton is located, annualized frequency values are 0.2 events per year over a 16-year period of record (2005-2021), with 2 events on record for this timeframe.<sup>42</sup> This may change in the near future as NRI data is updated and more recent heat events that have occurred within the county occurred after the reporting period used by the NRI. Additionally, as seen in the figures below, projections for the number of days per year above 90°F, and the number of days per year warmer than the top 1% historically, have both increased since previous reporting periods. These projections are expected to increase further by 2050.<sup>74</sup>

Figure 6.5.2: Temperature Projections for 2050, Number of days per year above 90°F



Zoom to

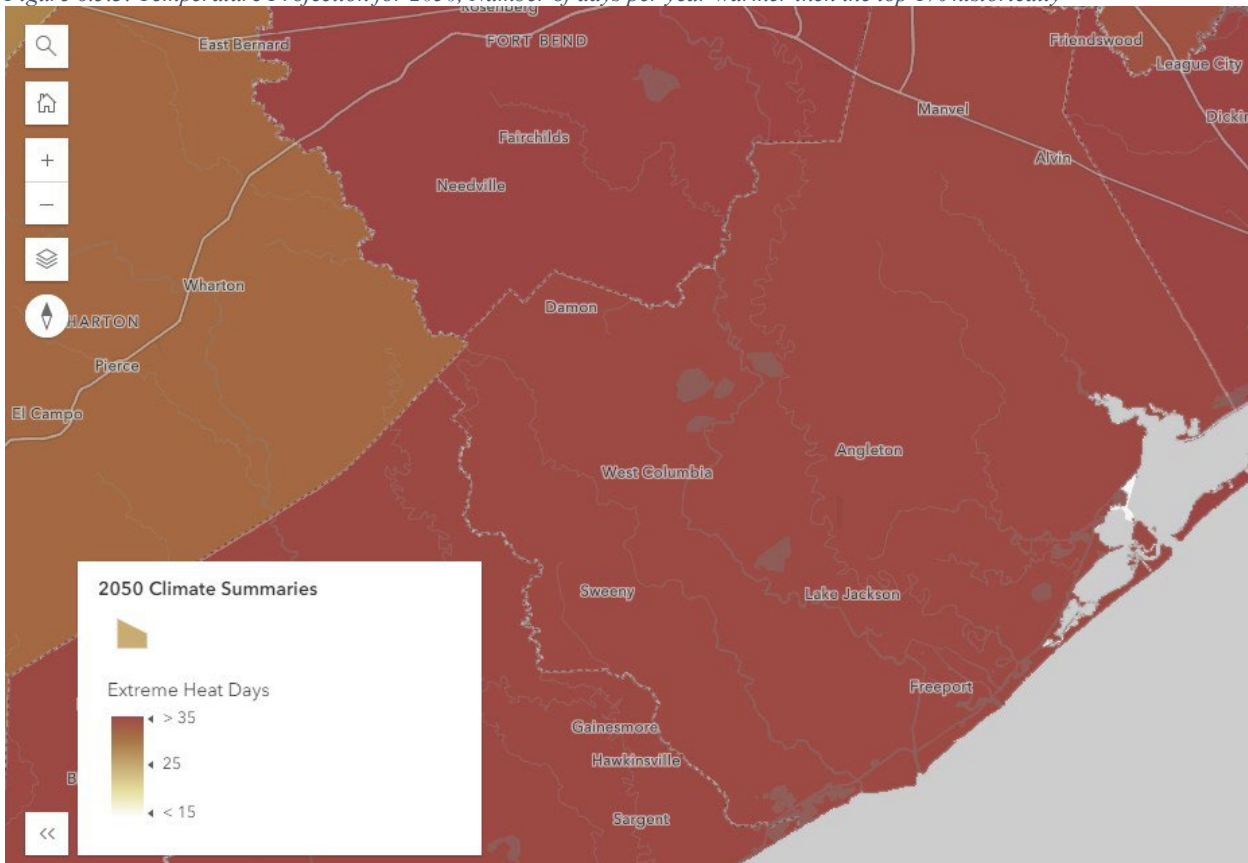
**Temperature Projection for 2050**  
Brazoria, Texas

Number of days per year above 90 °F  
**124**

Historically (1976-2005), the area experienced 77 days above 90 °F.

Source: LOCA RCP 8.5

Figure 6.5.3: Temperature Projection for 2050, Number of days per year warmer than the top 1% historically



### Temperature Projection for 2050

Brazoria, Texas

Number of days per year warmer than the top 1% historically

**35**

Historically (1976-2005), the area experienced 4 extreme heat days.

Source: LOCA RCP 8.5

## Populations at Risk

FEMA's NRI utilizes data from multiple sources including historical hazard events, hazard intensity, exposure of people and property to hazards, socioeconomic factors, and community resilience indicators. The NRI also incorporates hazard data to determine the frequency and intensity of various natural hazards. This information helps assess the likelihood of specific hazards occurring in different regions.

The NRI considers the exposure of communities to hazards and incorporates factors such as population density, infrastructure systems, and critical facilities that may be at risk during a hazard event. The NRI also generates risk scores for communities across the U.S. that provide a relative ranking of areas based on their overall risk level. This helps to identify areas that may require additional resources and attention for mitigation and planning efforts. The NRI risk equation includes 3 components. EAL represents the average economic loss in dollars resulting from natural hazards each year. The CRF is a scaling factor that incorporates social vulnerability (the susceptibility of social groups to the adverse impacts of natural hazards) and community resilience (the ability of a community to prepare for anticipated natural hazards, adapt to changing conditions, and withstand and recover rapidly from disruptions) into the NRI. The outcome, the risk index, represents the potential negative impacts of natural hazards. The NRI EAL score, and rating, represent a community's relative level of expected loss each year when compared to all other communities at the same level.<sup>42</sup>

While heat events have the potential to damage buildings and crops, vulnerable populations are most at risk in the county during these events. The National Integrated Heat Health Information System lists those most at risk for extreme heat as older/elderly adults, children, athletes, pregnant people, people with disabilities, people with chronic health conditions/pre-existing conditions, homeless populations, emergency responders, pets and service animals, and outdoor/indoor workers.

In older populations, health conditions like cardiovascular issues can be exacerbated by extreme heat. During power outages that may occur during peak heat hours of the day, older populations may be disproportionately affected if they require access to life-sustaining devices. Older adults and children are more vulnerable to this hazard because they are unable to thermoregulate. Children also play outside often which exposes them to the same risks due to the combination of exposure and exertion. Athletes are similar in their risk as outdoor activities, sometimes while wearing protective gear, in combination with exposure and exertion will trap heat. As athletes are expected to push themselves physically, the line between acceptable levels of exertion and dangerous levels of exertion during heat may be blurred. Those who are pregnant are more vulnerable to this hazard due to a general increase in their core body temperature regardless of the air temperature, but also because extreme heat events can increase the likelihood of common challenges during pregnancy (excessive sweating and heat rash). Extreme heat also poses health risks for pregnant people and the developing fetus. There is increasing evidence that extreme heat can increase the risk of preterm birth, low birth weight, fetal death, and infant mortality. High temperatures can cause stress on the body which exacerbates respiratory and cardiovascular diseases, diabetes, and renal disease. Some medical conditions, such as obesity and heart disease, increase people's sensitivity to heat, putting them at greater risk of heat illnesses. In addition, some medications (such as some antidepressants, diuretics, and beta-blockers) taken for a chronic illness may increase an individual's sensitivity to heat by interfering with the body's ability to regulate temperature, fluids, or electrolytes. Homeless populations are more at risk of this hazard as they may face significant stress due to their living conditions, insomnia due to poor sleeping arrangements, and lack of food or

spoiled food, which also contributes to a higher risk for heat-related illness and death. Additionally, they may not seek medical treatment during a heat event due to distance, lack of access to transportation, and lack of financial resources. Their access to cooling centers or shelters may be limited due to distance and lack of transportation, building hours of access, stigma, and several other factors. People who live in rural areas may have even less access to these resources and services. If the temperature at night remains high, homeless populations are further at risk as the body will be unable to cool itself off. Emergency responders are at a greater risk due to their often heavy and bulky equipment that can trap heat it, like firefighters. Pets and service animals have differing thermoneutral zones depending on their age, size, and breed. Pets and service animals have a higher metabolic rate which makes them more vulnerable to this hazard. Service animals also face the added risk of burning their paw pads as paved surfaces become hot during a heat wave. Those who work outdoors, or indoors without access to air conditioning are also at a higher risk for heat-related illnesses. Most often these jobs require a level of physical exertion and exposure, and can also require personal protective clothing that can trap heat and prevent cooling. Workers may also not have access to water and shade.<sup>75</sup>

EAL Exposure Values and EAL Values for Brazoria County can be found in the tables below.

Table 6.5.5: Expected Annual Loss Exposure Values, Heat Wave

Hazard Type	Building Value (\$)	Population Equivalence (\$)/ Population (#)	Agricultural Value (\$)	EAL Total (\$)
Heat Wave	\$57,514,792,486	\$4,309,091,556,009/ 371,4733.41	\$91,232,428	\$4,366,697,580,923

Table 6.5.6: Expected Annual Loss Values, Heat Wave

Hazard Type	Building Value (\$)	Population Equivalence (\$)/ Population (#)	Agriculture Value
Heat Wave	\$236	\$321,675/ 0.03	\$11

N/A- Not Applicable

EAL for the City of Angleton was derived by creating a report that used census tract information for tracts that included the Angleton city limits. These were census tracts 48039662100, 48039662200, 48039662400, 48039662300, 48039662500, 48039663100, and 48039664100. EAL according to the FEMA NRI for heat wave events for these census tracts is listed as relatively low. EAL values, risk index ratings, risk index scores, social vulnerability, and community resilience for each census tract can be found in the figures below.<sup>44</sup> Additionally, the FEMA NRI lists the HLR, a hazard- and county-specific estimate of the percentage of the exposed consequence type (building value, population, or agriculture value) expected to be lost due to a hazard occurrence, for heat wave within Brazoria County is listed as very low.<sup>44</sup> This may change in the near future as the FEMA NRI data is updated and recent heat events that have occurred within the county are added to the reporting and analyzation period used by the NRI.

Figure 6.5.4: Risk Index by Census Tract, Heat Wave

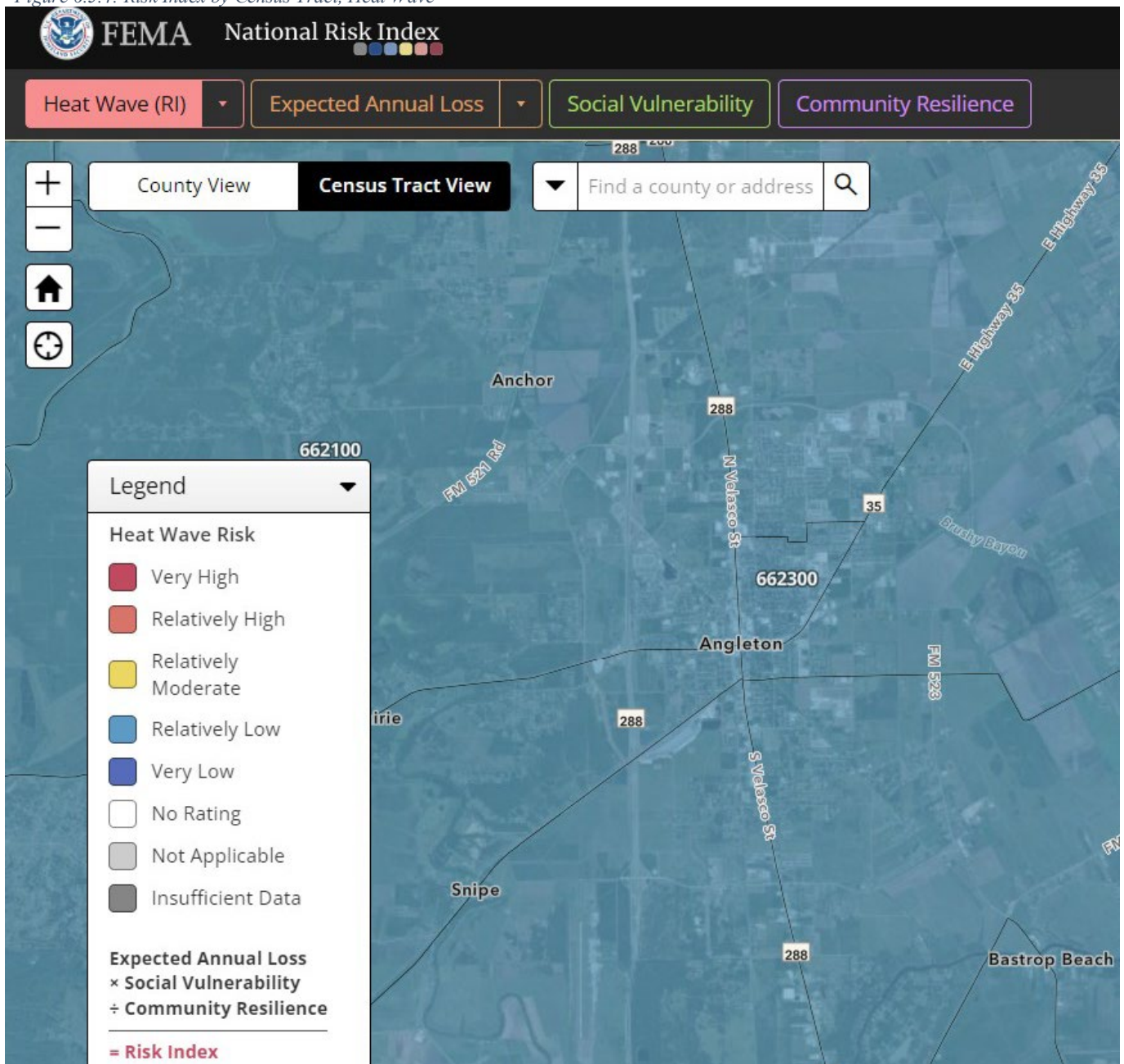


Figure 6.5.5: Social Vulnerability by Census Tract, City of Angleton

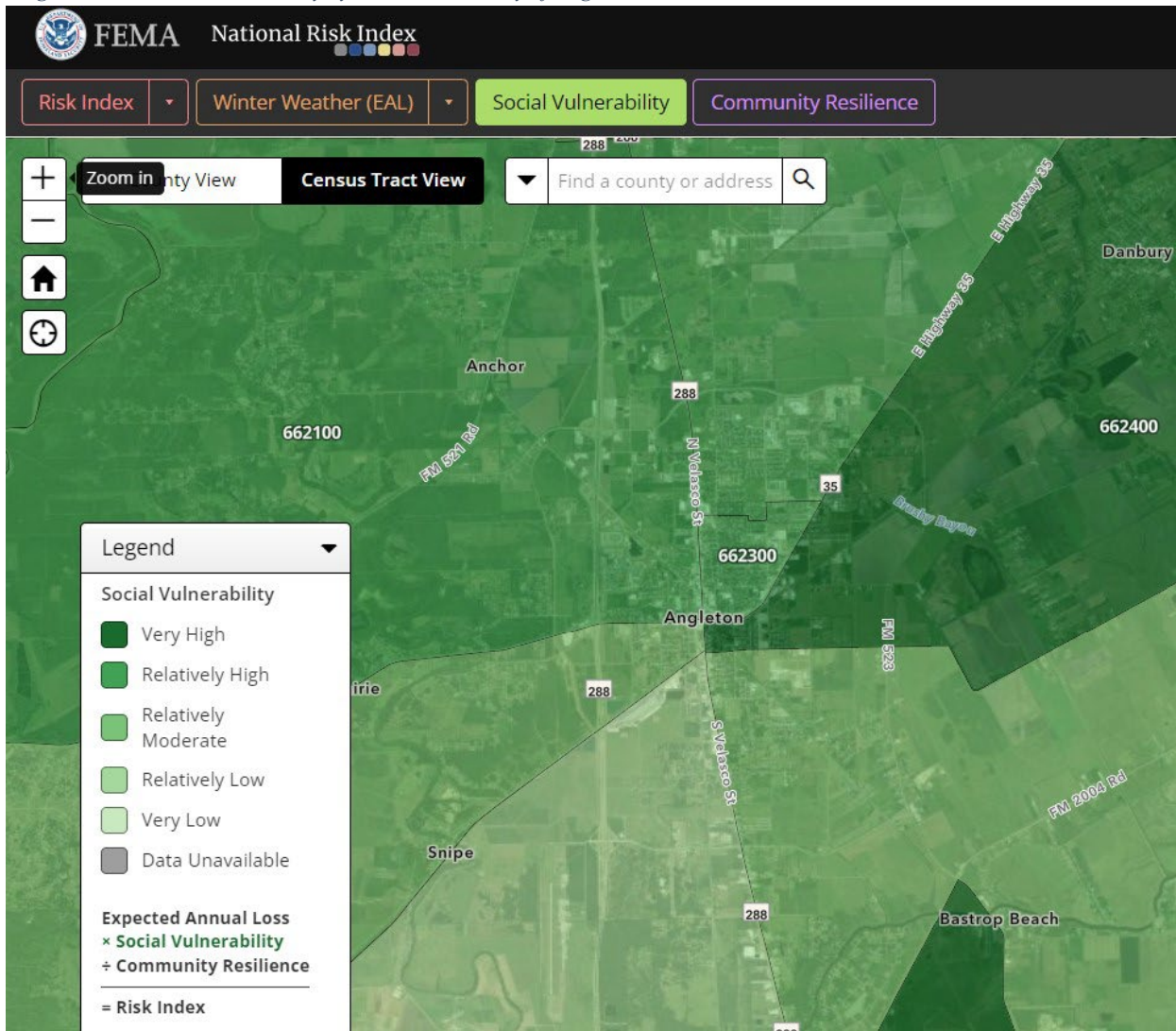




Figure 6.5.6: Community Resilience by Census Tract, City of Angleton

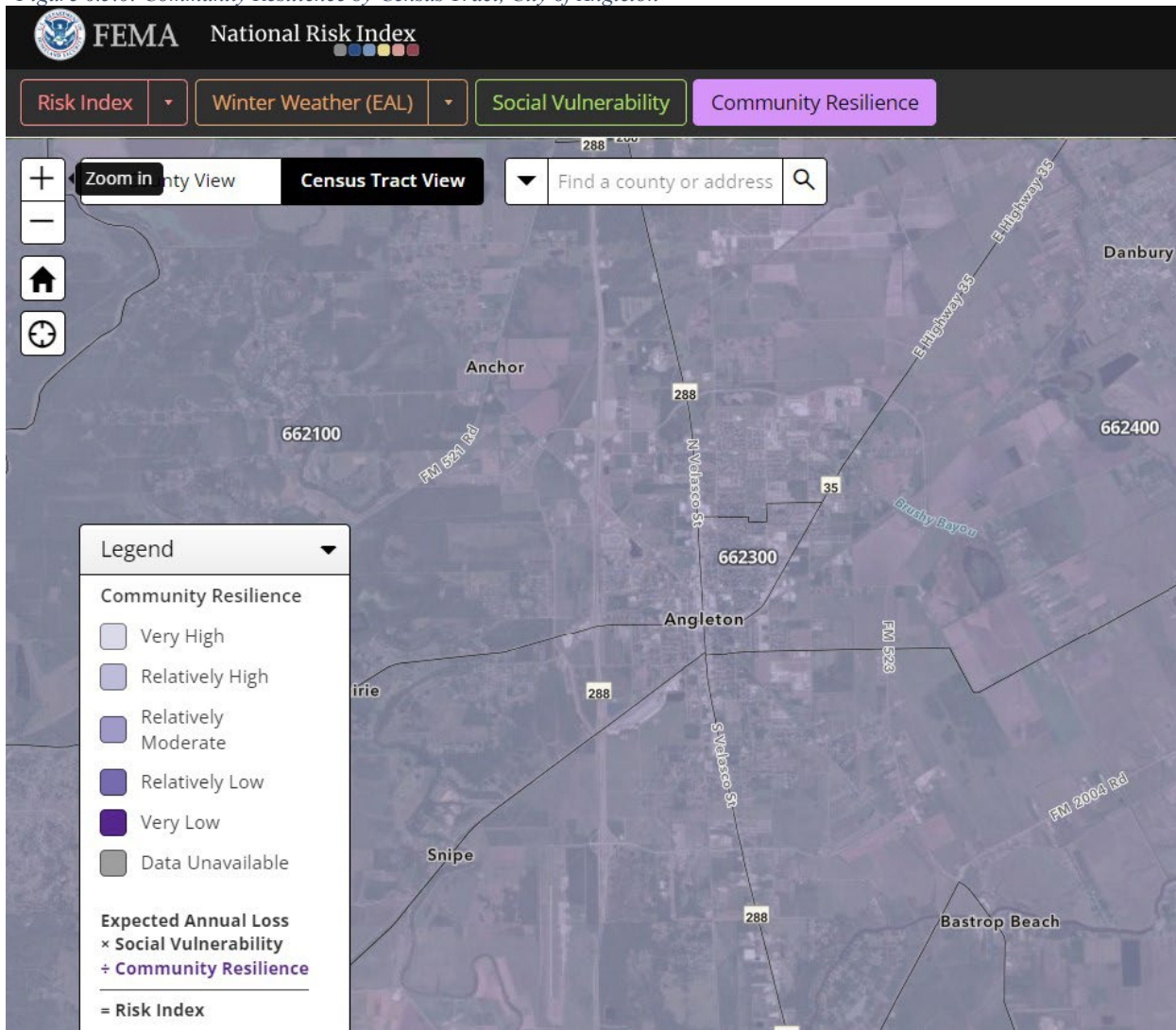


Figure 6.5.7: FEMA NRI Summary, Heat Wave

Rank	Community	State	Risk Index Rating	Risk Index Score	National Percentile
1	Census tract 48039663100	TX	Relatively Low	46.39	0  100
2	Census tract 48039662200	TX	Relatively Low	45.74	0  100
3	Census tract 48039662400	TX	Relatively Low	44.53	0  100
4	Census tract 48039662100	TX	Relatively Low	43.69	0  100
5	Census tract 48039664100	TX	Relatively Low	43.18	0  100
6	Census tract 48039662300	TX	Relatively Low	40.17	0  100
7	Census tract 48039662500	TX	Relatively Low	31.52	0  100

Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Risk Index Score
1	Census tract 48039663100	TX	\$7,459	Relatively Low	Relatively Moderate	1	\$7,465	46.39
2	Census tract 48039662200	TX	\$5,372	Relatively High	Relatively Moderate	1.34	\$7,186	45.74
3	Census tract 48039662400	TX	\$4,659	Very High	Relatively Moderate	1.43	\$6,685	44.53
4	Census tract 48039662100	TX	\$5,185	Relatively High	Relatively Moderate	1.22	\$6,345	43.69
5	Census tract 48039664100	TX	\$5,880	Relatively Moderate	Relatively Moderate	1.05	\$6,161	43.18
6	Census tract 48039662300	TX	\$3,699	Relatively High	Relatively Moderate	1.38	\$5,099	40.17
7	Census tract 48039662500	TX	\$2,480	Relatively Moderate	Relatively Moderate	1.12	\$2,770	31.52

### Climate Change Impacts

According to the Office of the Texas State Climatologist, extreme heat has recently become more frequent and more severe. For example, extreme summer heat is approaching values not seen since the early part of the 20th Century and is likely to surpass those numbers by 2036. The typical number of triple-digit days by 2036 is projected to be substantially larger, about 40%, than typical values so far in the 21st Century.<sup>43</sup> Additionally, with an increase in development and impervious pavement in areas the heat island effect will become more prominent in urban areas of the county. The fourth national climate assessment, an authoritative assessment of the science of climate change with a focus on the United States, notes that the annual average temperature over the contiguous U.S. increased by 1.2°F over the period 1986–2016 relative to 1901–1960. The frequency of heat waves has increased since the mid-1960s. Climate projections indicate that extreme heat events will be more frequent and intense in coming decades.<sup>76</sup>

Table 6.5.7: Climate Change Impacts Summary, Extreme Heat

<b>Location</b>	The location of extreme heat and heat events are expected to increase in urban areas of the county.
<b>Extent/Intensity</b>	The extent and intensity of extreme heat and heat events are expected to increase.
<b>Frequency</b>	The frequency of extreme heat and heat events is expected to increase.
<b>Duration</b>	The duration of extreme heat and heat events is expected to increase.

## Section 6.6: Wildfire



## 6.6 Wildfire

Wildfire refers to any non-structure fire that occurs in the wildland, an area in which development is essentially nonexistent except for roads, railroads, power lines, and similar transportation or utility structures. This definition does not refer to fires that are conducted via prescribed burns.<sup>77</sup> Wildfires typically occur more often in the summer during dry months and can be exacerbated by droughts or drought-like conditions when plants and other brush contain less moisture and easily ignite. In Texas, nearly 85 percent of wildfires occur within two miles of a community. Wildfires can be ignited by a variety of causes from lightning strikes, downed powerlines, smoking (or improper disposal of cigarettes), debris burning, and fireworks.

### Location

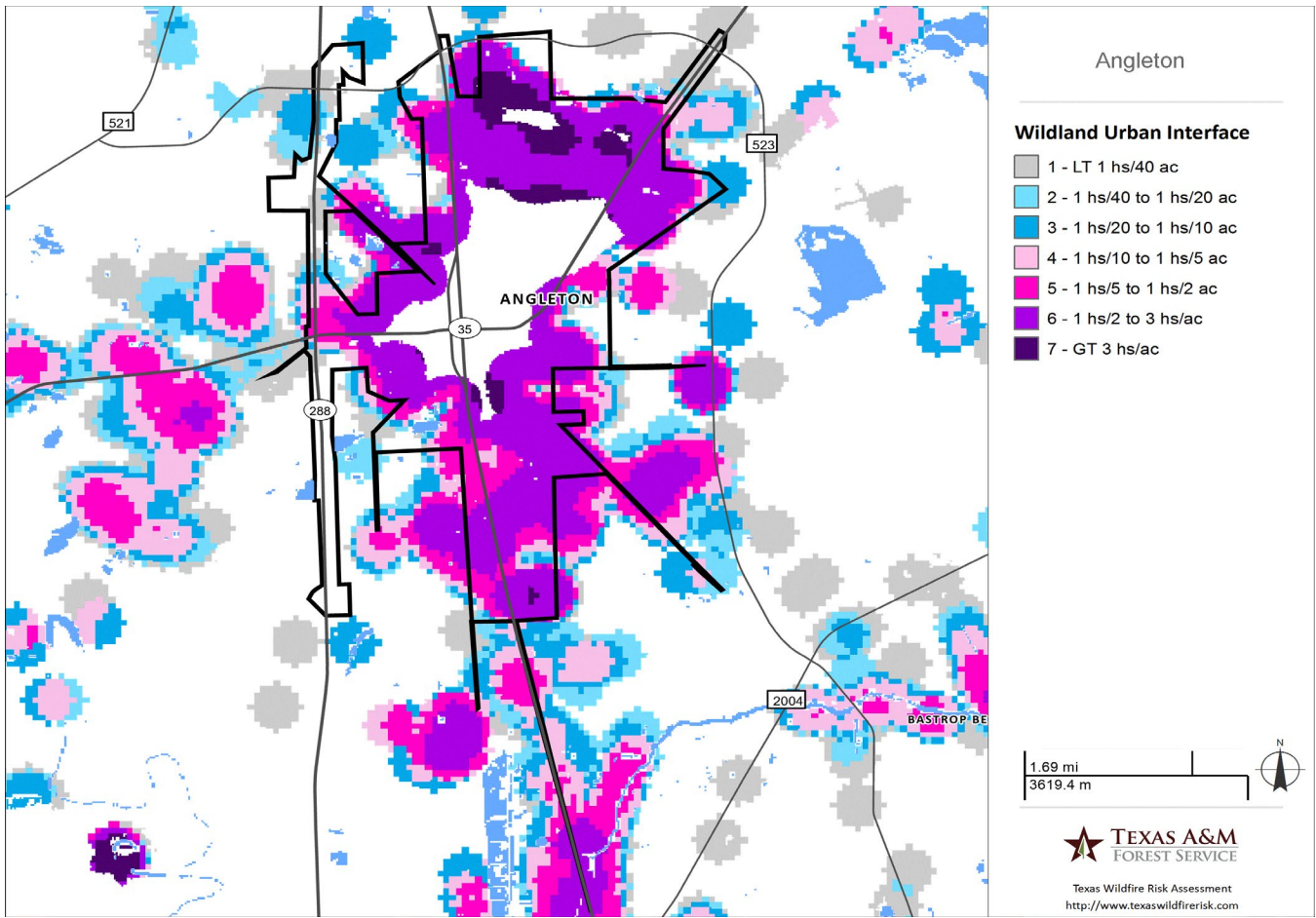
This is a reoccurring natural hazard in every Texas county and has no geographic boundary. The Texas Wildfire Risk Assessment (TWRA) Explorer is the primary mechanism for the Texas A&M Forest Service to deploy wildfire risk information and create awareness about wildfire issues across the state.<sup>78</sup> The Texas Wildfire Risk Assessment Portal (TxWRAP) allows users to easily view their wildfire risk online. TxWRAP uses a variety of factors such as wildfire threat, wildland urban interface, surface fuels, historic wildfire ignitions, fire behavior, and much more to determine the fire potential of specific land areas and depicts through a set of rating areas that are most prone to wildfires.<sup>79</sup> Particularly vulnerable are the Wildland Urban Interface (WUI) areas.

The WUI is the area where development, people, and homes, mix with areas of wildland or other vegetation. It is within these areas that wildfire risks substantially increase. With continued population growth throughout the county, the WUI zones will become more abundant. Since most wildfires are caused by human activities, the intersection of WUI and drought is particularly dangerous. Wildfires and their size can vary greatly depending on a variety of factors such as location, fire intensity, and duration. It is estimated that 6,168 people or 68.5 % percent (23,596) of residents within the City of Angleton live within the WUI. The table and Figure below depict the population and acreage in each of the WUI zones within the City of Angleton, which closely follow housing density.

Table 6.6.1: WUI Population and Acres, City of Angleton

Housing Density	WUI Population	Percent of WUI Population	WUI Acres	Percent of WUI Acres
LT 1hs/40ac	4	0.0 %	236	5.2 %
1hs/40ac to 1hs/20ac	0	0.0 %	111	2.4 %
1hs/20ac to 1hs/10ac	18	0.1 %	210	4.6 %
1hs/10ac to 1hs/5ac	43	0.3 %	261	5.7 %
1hs/5ac to 1hs/2ac	386	2.4 %	683	15.0 %
1hs/2ac to 3hs/1ac	10,464	64.7 %	2,661	58.5 %
GT 3hs/1ac	5,253	32.5 %	390	8.6 %
<b>Total</b>	<b>16,168</b>	<b>100.0 %</b>	<b>4,552</b>	<b>100.0 %</b>

Figure 6.6.1: WUI Zones, City of Angleton



**Extent**

Characteristic Fire Intensity Scale (FIS) specifically identifies areas where significant fuel hazards and associated dangerous fire behavior potential exist based on a weighted average of four percentile weather categories. This is like 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. The Characteristic FIS is described in the table below.

Table 6.6.2: Characteristic FIS Descriptions

Wildfire Intensity Class	Description
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- 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- Moderate	Flames up to 8 feet in length; short-range spotting is possible. Trained firefighters will find these fires difficult to suppress without support from aircraft or engines, but dozer and plows are generally effective. Increasing potential for harm or damage to life and property.

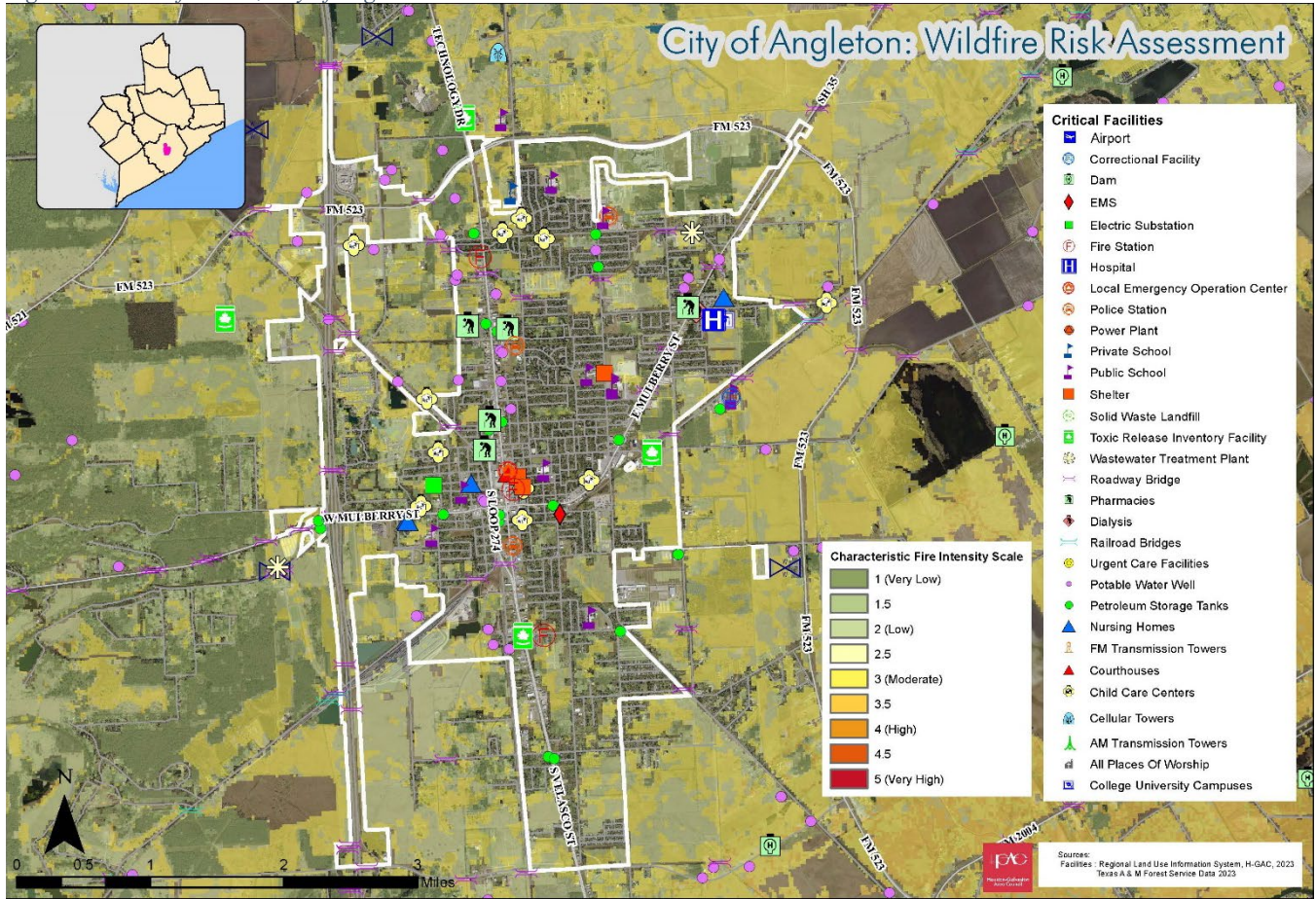
	4- High	Large Flames, up to 30 feet in length; short-range spotting common; medium range spotting possible. Direct attack by trained firefighters, engines, and dozers is generally ineffective, indirect attack may be effective. Significant potential for harm or damage to life and property.
	5- Very High	Very large flames up to 150 feet in length; profuse short-range spotting, frequent long-range spotting; strong fire-induced winds. Indirect attack marginally effective at the head of the fire. Great potential for harm or damage to life and property.

The table below show the class, acreage, and percent within each class within the City of Angleton. The figure below shows these wildfire intensity areas from TxWrap in relation to critical facilities within the city.

Table 6.6.3: Fire Intensity Scale Acreage, City of Angleton

Class	Acres	Percent
Non-Burnable	4,284	64.6 %
1 (Very Low)	323	4.9 %
1.5	168	2.5 %
2 (Low)	1,022	15.4 %
2.5	34	0.5 %
3 (Moderate)	799	12.0 %
3.5	2	0.0 %
4 (High)	0	0.0 %
4.5	0	0.0 %
5 (Very High)	0	0.0 %
<b>Totals:</b>	<b>6,632</b>	<b>100.0 %</b>

Figure 6.6.2: Wildfire Risk, City of Angleton



### Historic Occurrences

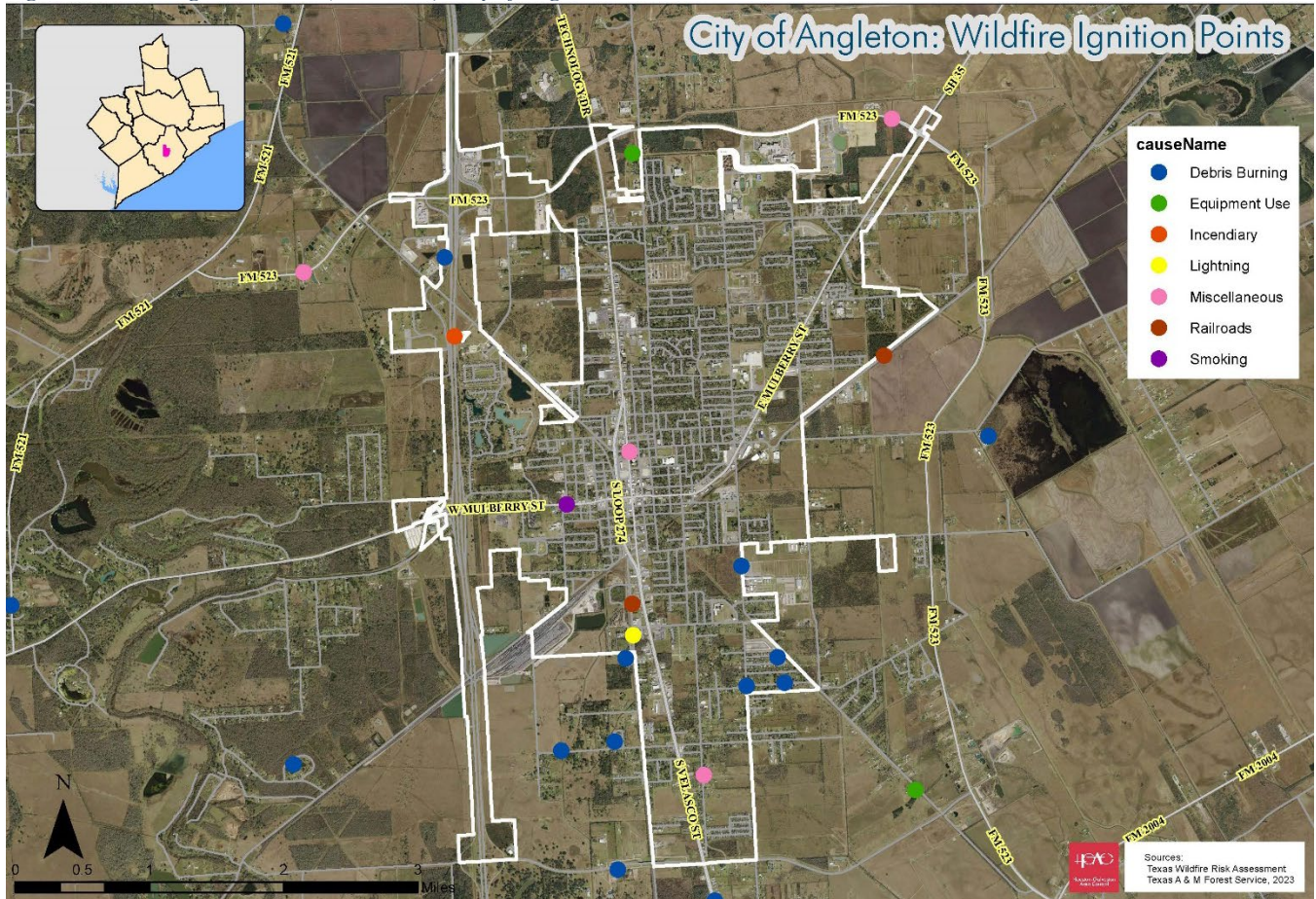
The Texas A&M Forest Service tracks wildfire events, acres destroyed, and the initial ignition cause of the fire. The table below shows the historical data associated with burns that caused recorded damage. Figure 6.6.3 shows the point location of all fire ignitions from 2005-2024, symbolized by color to depict the cause of the fire. There were no ignition points reported after 2012 for the City of Angleton.

Table 6.6.4: Fire Ignition Point Causes (2018-2021)

Cause Name	Damaged Acres	Start Date
Railroads	2	1/1/2009
Debris Burning	1	1/23/2009
Debris Burning	1	1/25/2009
Incendiary	6	1/29/2009
Miscellaneous	2	1/29/2009
Miscellaneous	1	6/28/2012
Miscellaneous	1	8/3/2012
Smoking	0.1	8/29/2012
Lightning	0.1	9/23/2012
Debris Burning	2	9/26/2012



Figure 6.6.3: Fire Ignition Points (2000-2023), City of Angleton



The measure of wildfire occurrence used in the TWRA is called the Wildfire Ignition Density. Wildfire Ignition Density is the likelihood of a wildfire starting based on historical ignition patterns. Occurrence is derived by modeling historic wildfire ignition locations to create an average ignition rate map. The ignition rate is measured in the number of fires per year per 1000 acres. Five years of historic fire report data was used to create the ignition points for all Texas fires. Data was obtained from federal, state and local fire department report data sources for the years 2005 to 2009. The compiled wildfire occurrence database was cleaned to remove duplicate records and to correct inaccurate locations. The database was then modeled to create a density map reflecting historical fire ignition rates. The Ignition Density map, below, is derived at a 30-meter resolution. This scale of data was chosen to be consistent with the accuracy of the primary surface fuels dataset used in the assessment. While not appropriate for site specific analysis, it is appropriate for regional, county, or local planning efforts.<sup>80</sup>

Figure 6.6.4: Wildfire Ignition Density, City of Angleton

*Presidential Disaster Declarations*

There have been 2 disaster declarations for fire/wildfire within Brazoria County, in which the City of Angleton is located, since 1953, as depicted in the table below.<sup>1</sup>

Table 6.6.5: Disaster Declarations, Wildfire

Declaration Date	Incident Type	Title	Disaster Number	Declaration Type
9/1/1999	Fire	Extreme Fire Hazards	3142	Emergency Declaration
1/11/2006	Fire	Extreme Wildfire Threat	1624	Major Disaster Declaration

*USDA Disaster Declarations*

The Secretary of Agriculture is authorized to designate counties as disaster areas to make EM loans available to producers suffering losses in those counties and in counties that are contiguous to a designated county. In addition to EM loan eligibility, other emergency assistance programs, such as FSA disaster assistance programs, have historically used disaster designations as an eligibility trigger. USDA Secretarial disaster designations must be requested of the Secretary of Agriculture by a governor or the governor's authorized representative, by an Indian Tribal Council leader or by an FSA SED. The Secretarial disaster designation is the most widely used. When there is a presidential disaster declaration, FEMA immediately notifies FSA of the primary counties named in a Presidential declaration. USDA Disaster Declarations for the City of Angleton since the last HMP are listed in the table below.<sup>40</sup>

Table 6.6.6: USDA Declared Disasters (2018-2023), Wildfire

Crop Disaster Year	Disaster Description	Designation Number
		None

### Probability of Future Occurrences

As jurisdictions across the state move into wildland and increase the WUI areas, the potential for wildfires substantially increases. Wildfire probability depends on a variety of factors such as local weather conditions, topographic factors, and existing fuels within a given area (natural vegetation or wildlands). A variety of activities can spark wildfires, most of which are human induced such as camping, debris burning, and smoking can affect the number and the extent of wildfires within a given year. Wildfires can occur at any time of the year under the right conditions. Wildfires can be exacerbated by droughts, which are more likely to occur in summer months when temperatures are higher, and precipitation is less frequent. According to the FEMA NRI for drought, annualized frequency values for drought are 22.3 events per year over a 22-year period of record for Brazoria County (2000-2021), while annualized frequency values for wildfires is 0.162% chance per year based on the 2021 dataset. The probability of future occurrences of wildfires for the county, per FEMA's NRI, is relatively moderate.<sup>42</sup>

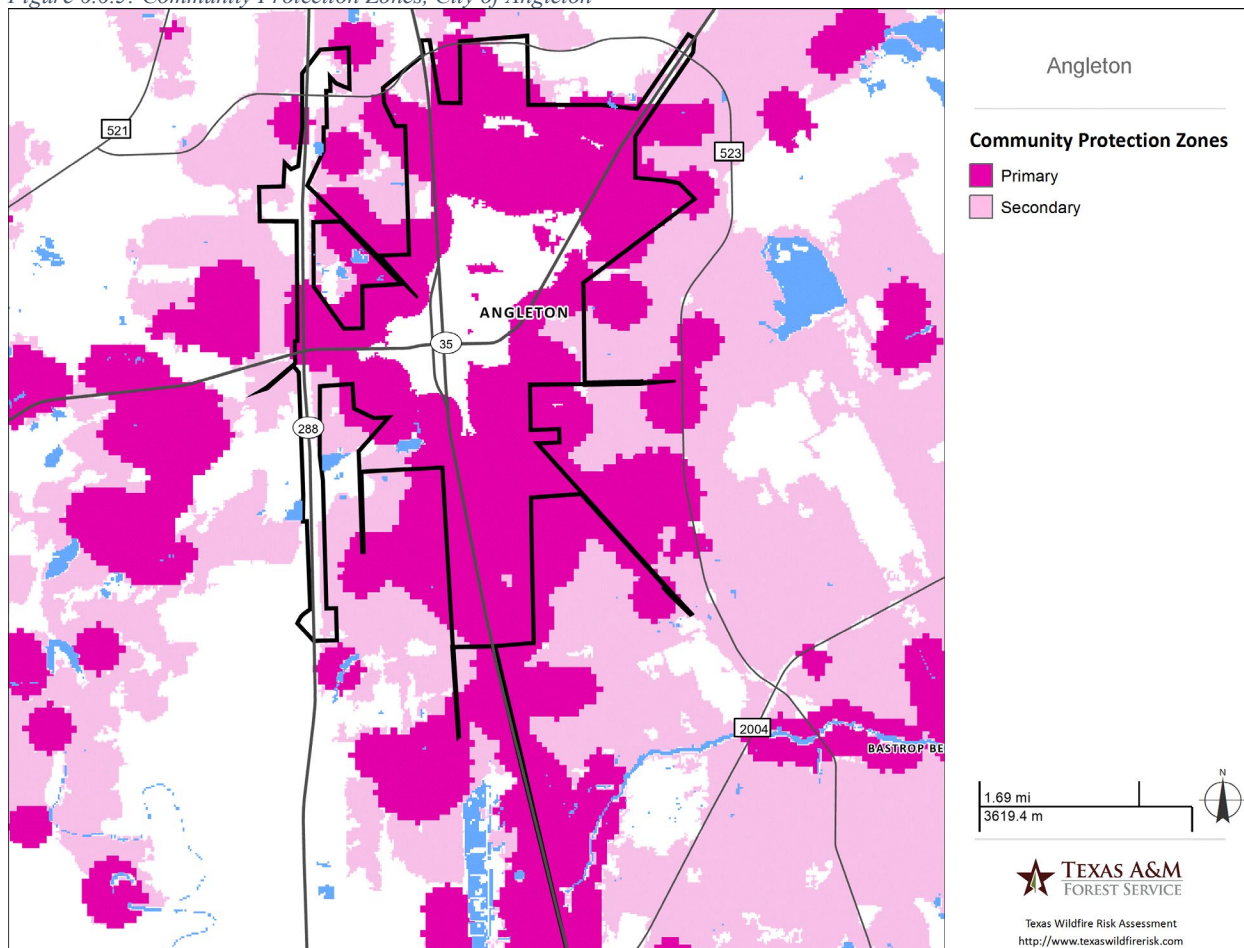
### Populations at Risk

The TFS outlines Community Protection Zones (CPZ), areas that are outlined as primary and secondary and should be the highest priority for mitigation planning activities. CPZs are based on where population and housing density is highest using data regarding surrounding fire potential and fire behavior. Per the TFS "General consensus among fire planners is that for fuel mitigation treatments to be effective in reducing wildfire hazard, they must be conducted within a close distance of a community. In Texas, the WUI housing density has been used to reflect populated areas in place of community boundaries. This ensures that CPZs reflect where people are living in the wildland, not jurisdictional boundaries." The table and figure below outline these primary and secondary CPZs and their acreage within the City of Angleton.

Table 6.6.7: Community Protection Zone Acreage

Class	Acres	Percent
Primary	4,355	88.6 %
Secondary	563	11.4 %
<b>Total</b>	<b>4,918</b>	<b>100.0 %</b>

Figure 6.6.5: Community Protection Zones, City of Angleton



Wildfires negatively impact air quality impacting the surrounding areas and areas further away depending on how wind direction and the fire intensity distribute the smoke. This smoke exposure can put certain vulnerable populations at greater risk of adverse effects from this hazard event. According to the Environmental Protection Agency, these vulnerable populations include People with asthma and other respiratory diseases, people with cardiovascular disease, children (18 years of age or younger), pregnant people older adults, people of low socio-economic status, and outdoor workers. Underlying respiratory diseases result in compromised health status that can result in the triggering of severe respiratory responses by environmental irritants, such as wildfire smoke. Underlying circulatory diseases result in compromised health status that can result in the triggering of severe cardiovascular events by environmental irritants, such as wildfire smoke. In younger populations, children’s lungs are still developing, and there is a greater likelihood of increased exposure to wildfire smoke resulting from more time spent outdoors, engagement in more vigorous activity, and inhalation of more air per pound of body weight compared to adults. Pregnancy-related physiologic changes (e.g., increased breathing rates) may increase vulnerability to environmental exposures, such as wildfire smoke. In addition, during critical development periods, the fetus may experience increased vulnerability to these exposures. In older populations, there is a higher prevalence of pre-existing lung and heart disease and decline of physiologic process, such as defense mechanisms. This can lead to exacerbation of heart and lung diseases can lead to emergency department visits, hospital admissions, and even death. Those of low socioeconomic status are vulnerable to these types of hazards as they have less access to health care which could lead to higher likelihood of untreated or insufficient treatment of underlying health

conditions (asthma, diabetes), and greater exposure to wildfire smoke resulting from less access to measures to reduce exposure such as air conditioning. Outdoor workers can be more vulnerable to this hazard due to increased exposure of smoke.<sup>81</sup>

FEMA’s NRI utilizes data from multiple sources including historical hazard events, hazard intensity, exposure of people and property to hazards, socioeconomic factors, and community resilience indicators. The NRI also incorporates hazard data to determine the frequency and intensity of various natural hazards. This information helps assess the likelihood of specific hazards occurring in different regions.

The NRI considers the exposure of communities to hazards and incorporates factors such as population density, infrastructure systems, and critical facilities that may be at risk during a hazard event. The NRI also generates risk scores for communities across the U.S. that provide a relative ranking of areas based on their overall risk level. This helps to identify areas that may require additional resources and attention for mitigation and planning efforts. The NRI risk equation includes 3 components. EAL represents the average economic loss in dollars resulting from natural hazards each year. The CRF is a scaling factor that incorporates social vulnerability (the susceptibility of social groups to the adverse impacts of natural hazards) and community resilience (the ability of a community to prepare for anticipated natural hazards, adapt to changing conditions, and withstand and recover rapidly from disruptions) into the NRI. The outcome, the risk index, represents the potential negative impacts of natural hazards. The NRI EAL score, and rating, represent a community’s relative level of expected loss each year when compared to all other communities at the same level.<sup>42</sup>

EAL Exposure Values and EAL Values for Brazoria County can be found in the tables below.

Table 6.6.8: Expected Annual Loss Exposure Values, Wildfire

Hazard Type	Building Value (\$)	Population Equivalence (\$)/ Population (#)	Agricultural Value (\$)	EAL Total (\$)
Wildfire	\$3,126,143,435	\$215,215,491,648/ 18,553.06	\$6,997,533	\$218,348,632,616

Table 6.6.9: Expected Annual Loss Values, Wildfire

Hazard Type	Building Value (\$)	Population Equivalence (\$)/ Population (#)	Agriculture Value
Wildfire	\$950,240	\$99,306/ 0.01	\$370

N/A- Not Applicable

EAL for the City of Angleton was derived by creating a report that used census tract information for tracts that included the Angleton city limits. These were census tracts 48039662100, 48039662200, 48039662400, 48039662300, 48039662500, 48039663100, and 48039664100. EAL according to the FEMA NRI for wildfire events for these census tracts is listed as relatively moderate, with one tract rating relatively high and one rating relatively low. EAL values, risk index ratings, risk index scores, social vulnerability, and community resilience for each census tract can be found in the figures below.<sup>44</sup> Additionally, the FEMA NRI lists the HLR, a hazard- and county-specific estimate of the percentage of the exposed consequence type (building value, population, or agriculture value) expected to be lost due to a hazard occurrence, for wildfire within Brazoria County is listed as very low.<sup>44</sup>

Figure 6.6.6: Risk Index by Census Tract, Wildfire

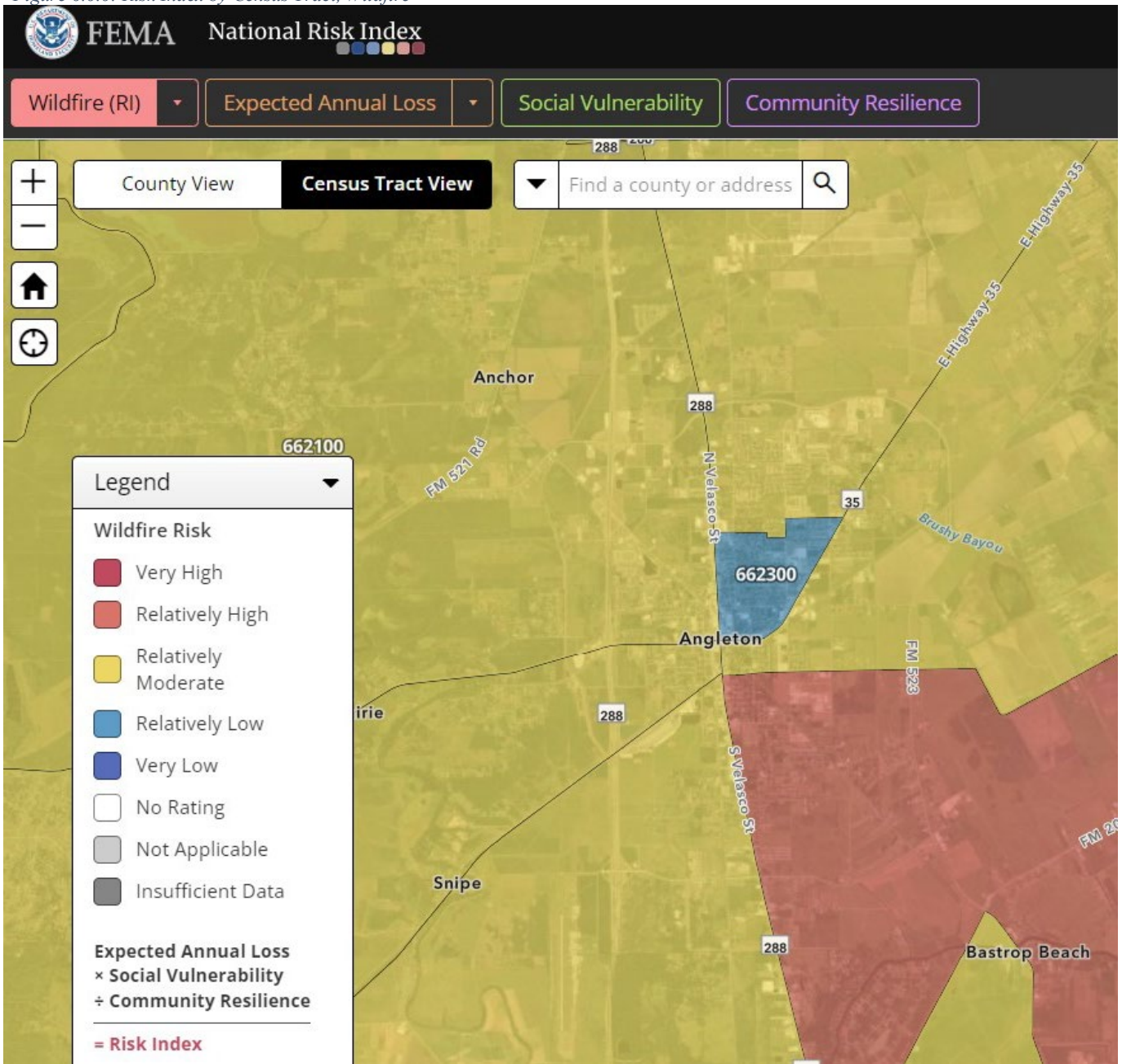


Figure 6.6.7: Social Vulnerability by Census Tract, City of Angleton

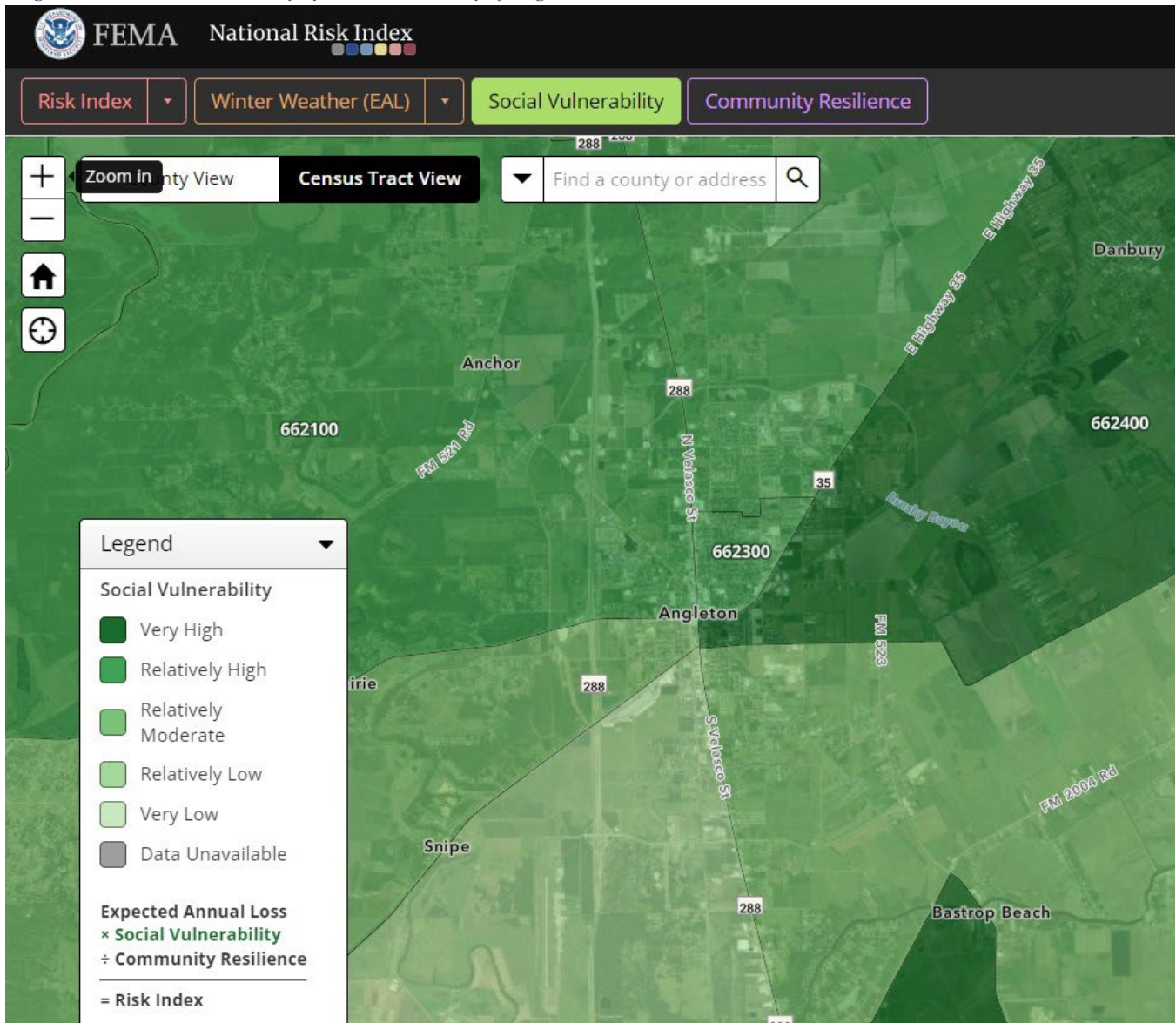


Figure 6.6.8: Community Resilience by Census Tract, City of Angleton

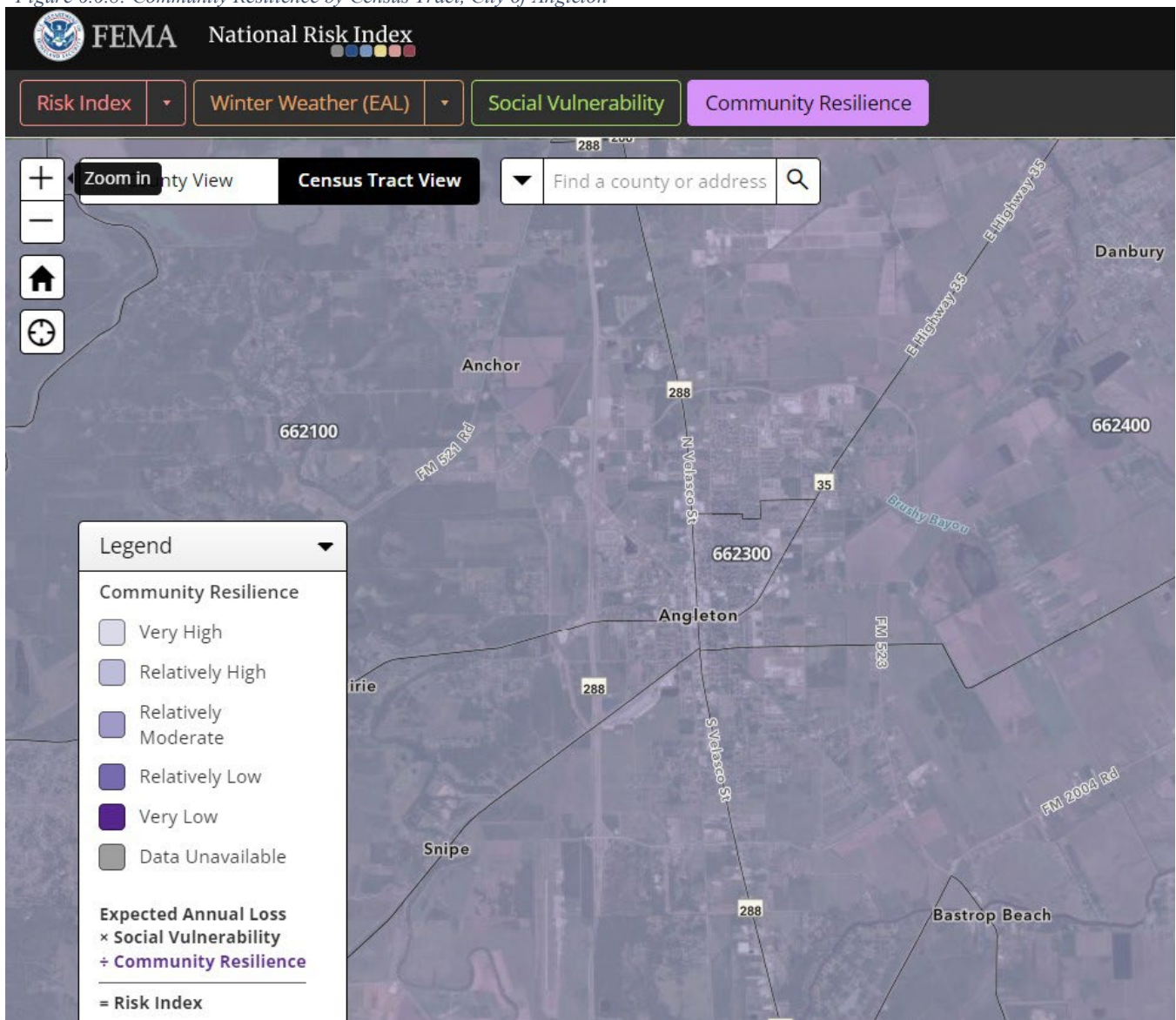




Figure 6.6.9: FEMA NRI Summary, Wildfire

Rank	Community	State	Risk Index Rating	Risk Index Score	National Percentile
1	Census tract 48039664100	TX	Relatively High	96.61	0      100
2	Census tract 48039662400	TX	Relatively Moderate	91.8	0      100
3	Census tract 48039662100	TX	Relatively Moderate	91.48	0      100
4	Census tract 48039662200	TX	Relatively Moderate	89.74	0      100
5	Census tract 48039663100	TX	Relatively Moderate	89.63	0      100
6	Census tract 48039662500	TX	Relatively Moderate	85.48	0      100
7	Census tract 48039662300	TX	Relatively Low	82.69	0      100

Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Risk Index Score
1	Census tract 48039664100	TX	\$238,969	Relatively Moderate	Relatively Moderate	1.05	\$250,422	96.61
2	Census tract 48039662400	TX	\$40,817	Very High	Relatively Moderate	1.43	\$58,566	91.8
3	Census tract 48039662100	TX	\$44,275	Relatively High	Relatively Moderate	1.22	\$54,176	91.48
4	Census tract 48039662200	TX	\$26,570	Relatively High	Relatively Moderate	1.34	\$35,539	89.74
5	Census tract 48039663100	TX	\$34,568	Relatively Low	Relatively Moderate	1	\$34,597	89.63
6	Census tract 48039662500	TX	\$12,653	Relatively Moderate	Relatively Moderate	1.12	\$14,131	85.48
7	Census tract 48039662300	TX	\$5,669	Relatively High	Relatively Moderate	1.38	\$7,813	82.69

### Climate Change Impacts

Wildfires are often a natural phenomenon and part of the normal cycle of the natural environment that help keep ecosystems healthy. Weather conditions often affect the duration of a wildfire and how it will grow. These factors are lower precipitation, high temperatures, wind, and more.<sup>82</sup> Wildfires are more likely to occur during summer months and during periods of drought. According to the Office of the Texas State Climatologist, drivers of wildfire risk are projected to increase the risk of wildfires throughout the state, primarily due to increased rates of drying and increased fuel load.<sup>43</sup>

Table 6.6.10: Climate Change Impacts, Wildfire

<b>Location</b>	The location of wildfires is not expected to change. Areas within or near the WUI are at the greatest risk.
<b>Extent/Intensity</b>	The extent and intensity of wildfires within the county may change (increase) due to rising surface temperatures, heat events, and increases in drought severity.
<b>Frequency</b>	Weather and other factors that lead to wildfires are expected to increase throughout the state, thus the frequency of wildfires is expected to increase.
<b>Duration</b>	There is no clear trend regarding the duration of wildfire events.

# Section 6.7: Drought & Expansive Soils



## 6.7 Drought & Expansive Soils

The NWS defines drought as “A deficiency of moisture that results in adverse impacts on people, animals, or vegetation over a sizeable area.” The American Meteorological Survey defines drought as “A period of abnormally dry weather sufficiently long enough to cause a serious hydrological imbalance.”<sup>83</sup> Drought can have several different classifications for monitoring purposes. Table 6.7.1 below outlines these classifications and their definitions.

Table 6.7.1: Drought Classifications

Drought Classification	Definition
<b>Meteorological</b>	When dry weather patterns dominate an area.
<b>Hydrological</b>	When low water supply becomes evident in the water system.
<b>Agricultural</b>	When crops become affected by drought.
<b>Socioeconomic</b>	When the supply and demand of various commodities is affected by drought.
<b>Ecological</b>	When natural ecosystems are affected by drought.

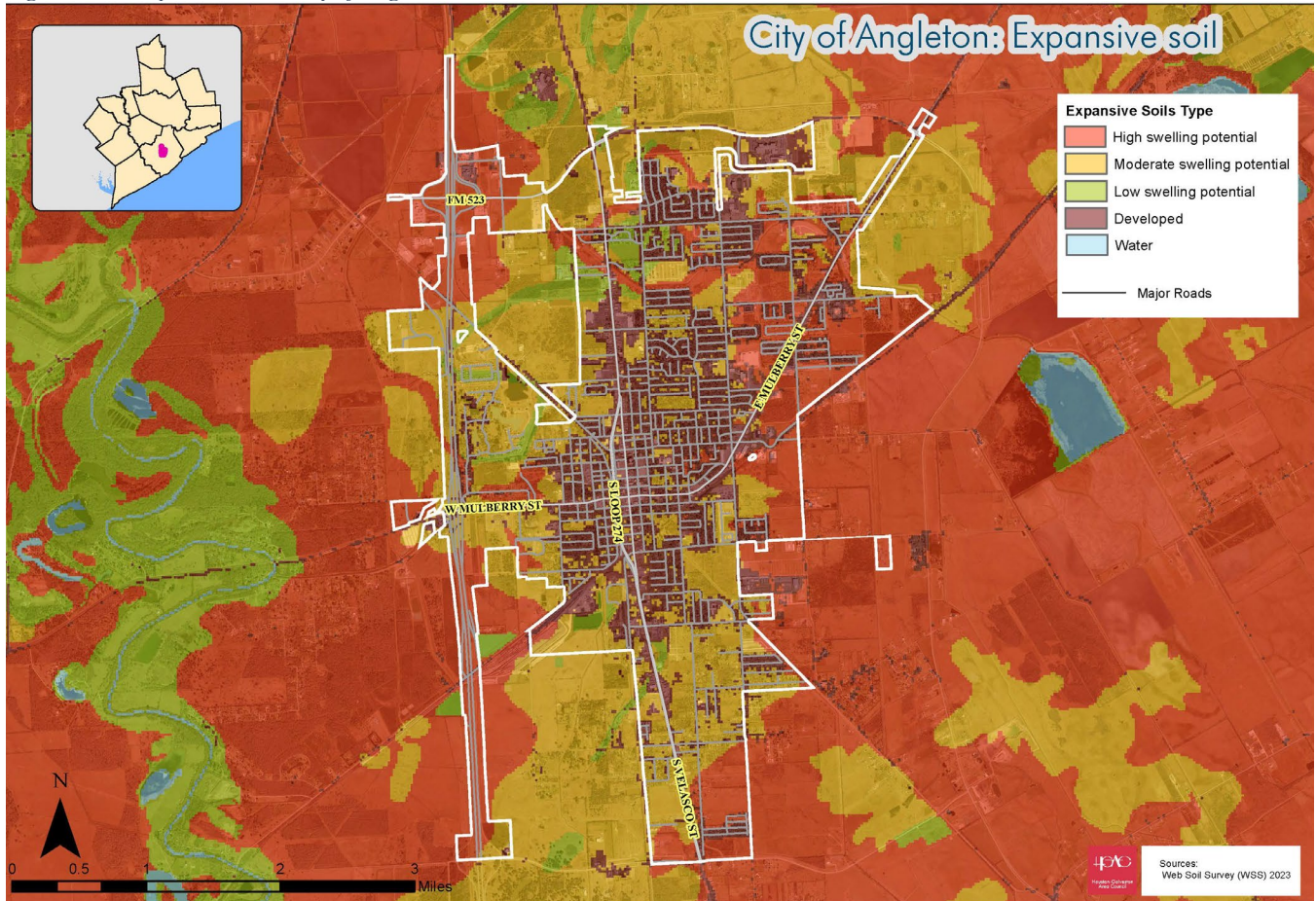
Expansive or swelling soils are soils intertwined with layers of various clay particles that can absorb large quantities of water. Changes in precipitation or other moisture conditions cause these soils to shrink and swell. They can expand up to 20% by volume when exposed to water and exert a force of up to 30,000 pounds per square foot, enough to break up any structure they encounter. Expansive soils are one of the nation’s most prevalent causes of damage to buildings and construction. Annual losses are estimated in the billions of dollars. Losses include severe structural damage, cracked driveways, cracked or upheaval in sidewalks, slab on grade foundations, roads, and highway structures, which can lead to the condemnation of buildings and disruption of pipelines and sewer lines. The destructive forces of these soils may be upward, horizontal, or both, and can be exacerbated by drought conditions.<sup>84</sup> For this plan update, drought & expansive soils are included in the same hazard profile as they directly correlate to greater losses and risk for the county.

### Location

Drought can lead to a wide range of impacts on agriculture, public health, water quality, ecosystems, transportation, and wildfire risk. This is a reoccurring natural hazard in every Texas county and has no geographic boundary. Droughts are also difficult to predict and monitor as the effects vary from region to region.<sup>85</sup> All of the City of Angleton and its residents are susceptible to drought and its impacts.

Similarly, expansive soils pose a greater risk during times of drought followed by heavy rainfall and periods of dryness. Figure 6.7.1 below shows the expansive soil locations and their shrink-swell potentials within the City of Angleton. Areas with high shrink-swell potentials are more at risk for damage than those with low shrink-swell potential.

Figure 6.7.1: Expansive Soils, City of Angleton



**Extent**

The U.S. Drought Monitor (USDM) is a map that is updated each Thursday to show the location and intensity of drought across the country. The USDM uses a five-category system to classify levels of drought. These categories, seen in Figure 6.7.9 below, show experts’ assessments of conditions related to dryness and drought including observations of how much water is available in streams, lakes, and soils compared to usual for the same time of year.<sup>86</sup>

Figure 6.7.2: Drought Monitor Categories

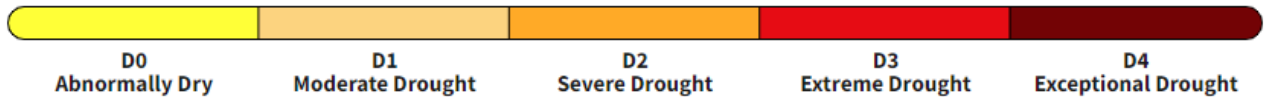
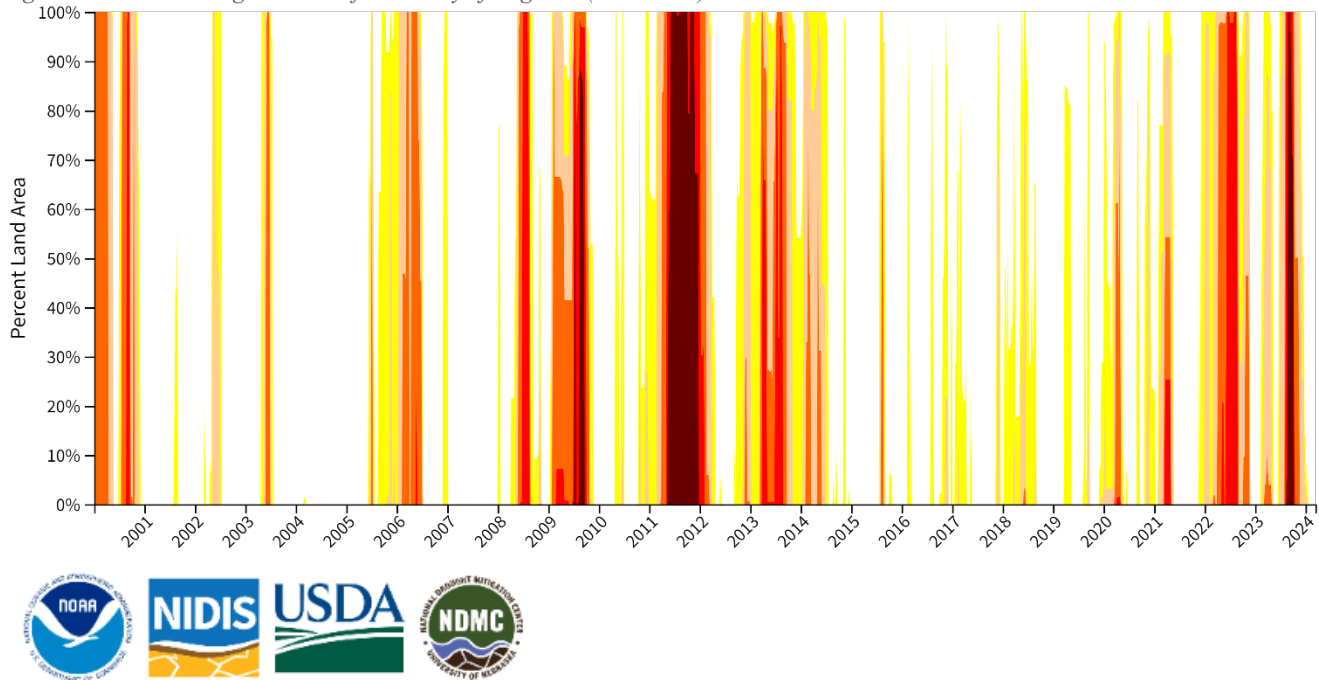


Figure 6.7.3 shows the USDM Drought Categories for Brazoria County, of which the City of Angleton is located, since 2000. The risk of drought occurring applies the same to the entire county. There are no known factors that make one area or community more prone to drought events than another. However, drought can adversely impact individuals employed in agriculture and natural resources over other industries. Severe droughts can also lead to crop and livestock losses, impacting the food supply and economy.<sup>87</sup>

Figure 6.7.3: U.S. Drought Monitor for the City of Angleton (2000-2024)



The chart below shows the Linear Extensibility Percent (LEP) and Coefficient of Linear Extent (COLE) to show the Shrink-Swell Class of expansive soils. COLE is a test frequently used to characterize expansive soils. COLE is a measure expressed as a fraction of the change in a soil sample dimension from the moist to dry state. The LEP is a measure expressed as a percentage of the change in a soil sample dimension from the moist to dry state. The Shrink-Swell Class is found in comparing these two measurements. A Moderate to Very High rating marks soils that have the potential to contract and expand, leading to damage to critical infrastructure, foundations, and transportation structures. The city is located almost entirely within areas that have soils with moderate and high shrink-swell potentials.

Table 6.7.2: Linear Extensibility Percent & Coefficient of Linear Extent for Expansive Soils

Shrink-Swell Class	Linear Extensibility Percent	Coefficient of Linear Extent
Low	3	0.03
Moderate	3 to 6	.03-.06
High	6 to 9	.06-.09
Very High	Greater than or equal to 9	Greater than or equal to 0.09

### Historic Occurrences

NOAA collects historic climate data for the entire nation. NOAA's storm event data can be accessed on the NCEI Storm Events Database. These events are shown at the county level with some referencing a specific location, city, or zone. The database currently contains data from January 1950 to December 2023, as entered by NOAA's NWS. Due to changes in the data collection and processing procedures over time, there are unique periods of record available depending on the event type. The table below highlights events for this hazard that have occurred within Brazoria County from 1950-2023.

Table 6.7.3: Brazoria County Drought Events (1950-2023)

Event Date	Event Type	Injuries	Fatalities	Property Damage (\$)	Crop Damage (\$)
4/1/1996	Drought	0	0	\$-	\$-
5/1/1996	Drought	0	0	\$-	\$-

6/1/1996	Drought	0	0	\$-	\$-
5/1/1998	Drought	0	0	\$-	\$-
6/1/1998	Drought	0	0	\$-	\$-
7/1/1998	Drought	0	0	\$-	\$-
8/1/1998	Drought	0	0	\$1,000,000	\$7,300,000
8/1/2000	Drought	0	0	\$-	\$-
9/1/2000	Drought	0	0	\$-	\$-
4/5/2022	Drought	0	0	\$-	\$-
4/5/2022	Drought	0	0	\$-	\$-
4/26/2022	Drought	0	0	\$-	\$-
5/1/2022	Drought	0	0	\$-	\$-
5/1/2022	Drought	0	0	\$-	\$-
5/1/2022	Drought	0	0	\$-	\$-
5/1/2022	Drought	0	0	\$-	\$-
6/1/2022	Drought	0	0	\$-	\$-
6/1/2022	Drought	0	0	\$-	\$-
6/1/2022	Drought	0	0	\$-	\$-
7/1/2022	Drought	0	0	\$-	\$-
7/1/2022	Drought	0	0	\$-	\$-
8/1/2022	Drought	0	0	\$-	\$-
8/1/2022	Drought	0	0	\$-	\$-
9/1/2023	Drought	0	0	\$-	\$-
9/1/2023	Drought	0	0	\$-	\$-
9/1/2023	Drought	0	0	\$-	\$-
10/1/2023	Drought	0	0	\$-	\$-
10/1/2023	Drought	0	0	\$-	\$-
10/1/2023	Drought	0	0	\$-	\$-

### *Presidential Disaster Declarations*

Presidential major disaster declarations, which must be requested of the President by a governor, are administered through FEMA. A Presidential major disaster declaration can be made within days or hours of the initial request. There have been no federally declared drought disasters for drought within the county since 1950.<sup>1</sup>

### *USDA Disaster Declarations*

The Secretary of Agriculture is authorized to designate counties as disaster areas to make emergency EM loans available to producers suffering losses in those counties and in counties that are contiguous to a designated county. In addition to EM loan eligibility, other emergency assistance programs, such as FSA disaster assistance programs, have historically used disaster designations as an eligibility trigger. USDA Secretarial disaster designations must be requested of the Secretary of Agriculture by a governor or the governor's authorized representative, by an Indian Tribal Council leader, or by an FSA SED. The Secretarial disaster designation is the most widely used. When there is a presidential disaster declaration, FEMA immediately notifies FSA of the primary counties named in a Presidential declaration. USDA Disaster Declarations for Brazoria County since 2018 are listed in the table below.<sup>39</sup>

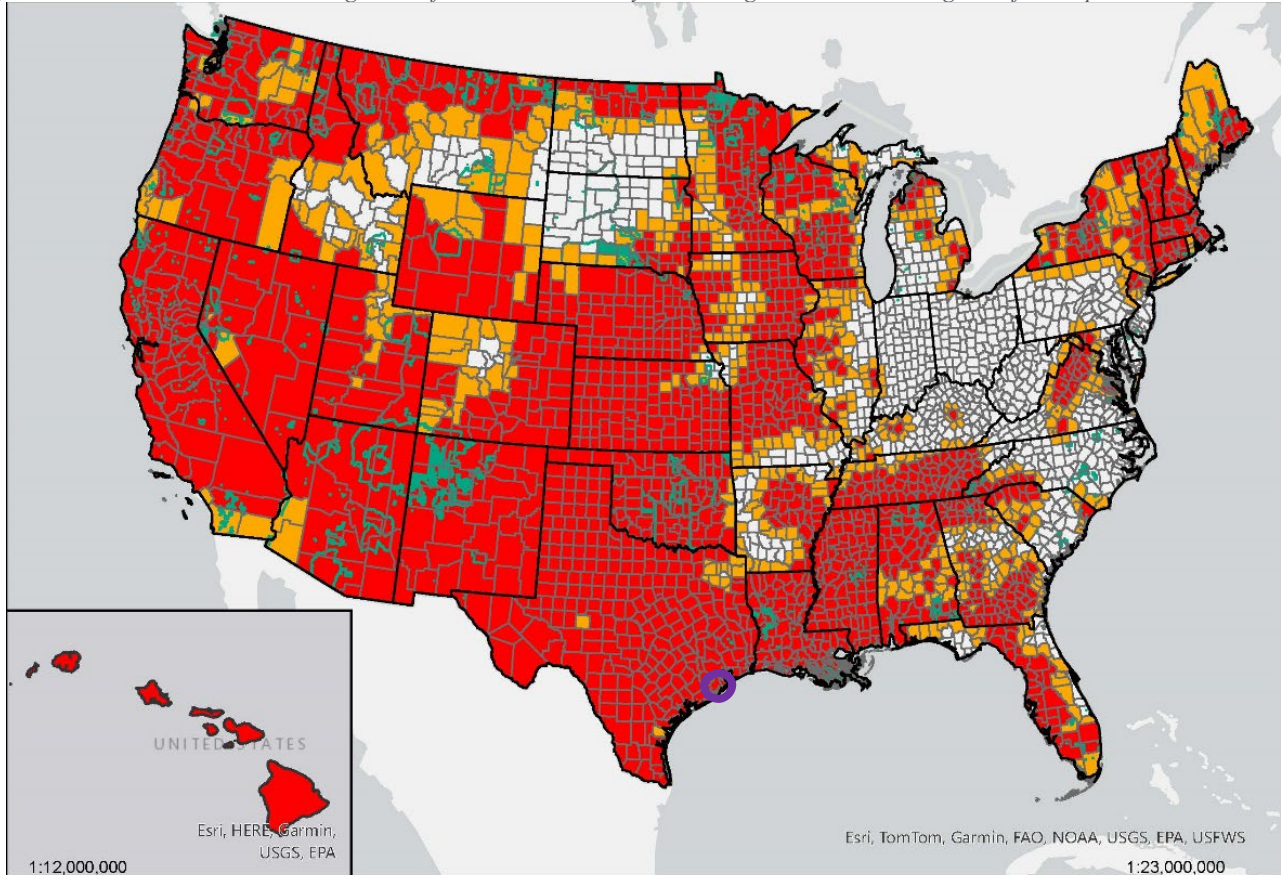
Table 6.7.4: USDA Declared Disasters (2018-2023), Drought

Crop Disaster Year	Disaster Description	Designation Number
2020	Drought-FAST TRACK	S4654
2020	Drought-FAST TRACK	S4669
2021	Drought-FAST TRACK	S4932
2022	Drought-FAST TRACK	S5188
2022	Drought-FAST TRACK	S5197

2022	Drought-FAST TRACK	S5209
2022	Drought-FAST TRACK	S5214
2023	Drought-FAST TRACK	S5499

Figure 6.7.4 below displays counties declared primary (red) or contiguous (orange) disaster counties, where producers may be eligible for emergency aid. Brazoria is listed as a primary county for CY 2023 and is outlined in purple.

Figure 6.7.4: Secretarial Disaster Designations for CY 2023, Primary and Contiguous Counties Designated for Crop Disaster Losses



**All Secretarial Designations as of January 10, 2024**

**Total All Crop Approval Designations**



United States Department of Agriculture  
 Farm Service Agency  
 Program Delivery/Safety Net Division  
 January 10, 2024

- State Boundary
- County Boundary
- Tribal Lands
- Primary Counties: 1,617
- Contiguous Counties: 648

Historic occurrences of expansive soils and related damages are not currently tracked or documented in any dataset from local, state, or national levels. Damages to homeowners and business owners are typically shouldered by the individuals when they are discovered. Though the effects and extent of expansive soils have been studied over a great period, there is no system in place and no future tracking method for these damages or associated costs. Thus, there is no way to quantify or show historic occurrences of this hazard.

**Probability of Future Occurrences**

Droughts are more likely to occur in summer months when temperatures are higher, and precipitation is less frequent. according to the FEMA NRI for drought, annualized frequency values for drought are 22.3 events per year over a 22-year period of record (2000-2021).<sup>42</sup> There have been 770 reports of drought

for the county during this period of record. Impacts from expansive soils are directly associated with both drought and flooding hazards. The probability of future occurrences of drought can be found above in this hazard profile. The flooding hazard profile can be found in section 6.2.

**Populations at Risk**

FEMA’s NRI utilizes data from multiple sources including historical hazard events, hazard intensity, exposure of people and property to hazards, socioeconomic factors, and community resilience indicators. The NRI also incorporates hazard data to determine the frequency and intensity of various natural hazards. This information helps assess the likelihood of specific hazards occurring in different regions.

The NRI considers the exposure of communities to hazards and incorporates factors such as population density, infrastructure systems, and critical facilities that may be at risk during a hazard event. The NRI also generates risk scores for communities across the U.S. that provide a relative ranking of areas based on their overall risk level. This helps to identify areas that may require additional resources and attention for mitigation and planning efforts. The NRI risk equation includes 3 components. EAL represents the average economic loss in dollars resulting from natural hazards each year. The CRF is a scaling factor that incorporates social vulnerability (the susceptibility of social groups to the adverse impacts of natural hazards) and community resilience (the ability of a community to prepare for anticipated natural hazards, adapt to changing conditions, and withstand and recover rapidly from disruptions) into the NRI. The outcome, the risk index, represents the potential negative impacts of natural hazards. The NRI EAL score, and rating, represent a community’s relative level of expected loss each year when compared to all other communities at the same level.<sup>42</sup>

Populations most at risk, or that may be disproportionately affected by drought impacts according to the National Integrated Drought Information System are people with chronic health conditions or respiratory illnesses, people with compromised immune systems, and people with mental health or mood disorders. Drought impacts on public health include changes in air quality, changes in water quality and quantity, increased incidence of illness and disease, and mental health effects. Air quality can decrease during drought events because of dust storms or wildfires. Particulates in the air irritate the lungs and bronchial passages and exacerbate chronic respiratory conditions. Drought conditions can also put those with compromised immune systems at risk as drought conditions can change how often and where certain diseases occur. Mosquitoes that carry West Nile virus can move to new locations when water bodies become stagnant and create new breeding grounds. There is also a higher risk for contracting a lung infection called Valley Fever, caused by a fungus in the soil, in dry and dusty soil conditions. Complex relationships between drought and its associated economic consequences can increase mood disorders, domestic violence, and suicide.<sup>88</sup>

EAL Exposure Values and EAL Values for Brazoria County for drought can be found below.

*Table 6.7.5: Expected Annual Loss Exposure Values, Drought*

Hazard Type	Building Value (\$)	Population Equivalence (\$)/ Population (#)	Agricultural Value (\$)	EAL Total (\$)
Drought	N/A	N/A	\$44,293,143	\$44,293,143

N/A- Not Applicable



Table 6.7.6: Expected Annual Loss Values, Drought

Hazard Type	Building Value (\$)	Population Equivalence (\$)/ Population (#)	Agriculture Value
<b>Drought</b>	N/A	N/A	\$305,509

N/A- Not Applicable

Expansive soils are not included in the NRI. However, businesses and residents can be impacted by expensive financial costs to repair foundations and water lines for public facilities. School districts, homeowners, and business owners could also be impacted by broken pipes, cracked foundations, and other structural costly repairs caused by expanding and contracting soils. Pipes in critical facilities may also lead to a loss of service, or damaged roads/bridges can increase response time for emergency personnel. While newer buildings can be impacted; older buildings including critical facilities and homes are more likely to be impacted due to older buildings being exposed to numerous weather events and seasons, having building standards that do not take expansive soils into account, and the lack of engineering solutions to mitigate expansive soils used in the past.

EAL for the City of Angleton was derived by creating a report that used census tract information for tracts that included the Angleton city limits. These were census tracts 48039662100, 48039662200, 48039662400, 48039662300, 48039662500, 48039663100, and 48039664100. EAL according to the FEMA NRI for drought events for these census tracts is listed as relatively low, with two tract rating relatively moderate and one with no rating. EAL values, risk index ratings, risk index scores, social vulnerability, and community resilience for each census tract can be found in the figures below.<sup>44</sup> Additionally, the FEMA NRI lists the HLR, a hazard- and county-specific estimate of the percentage of the exposed consequence type (building value, population, or agriculture value) expected to be lost due to a hazard occurrence, for drought within Brazoria County is listed as very low.<sup>44</sup>

Figure 6.7.5: Risk Index by Census Tract, Drought

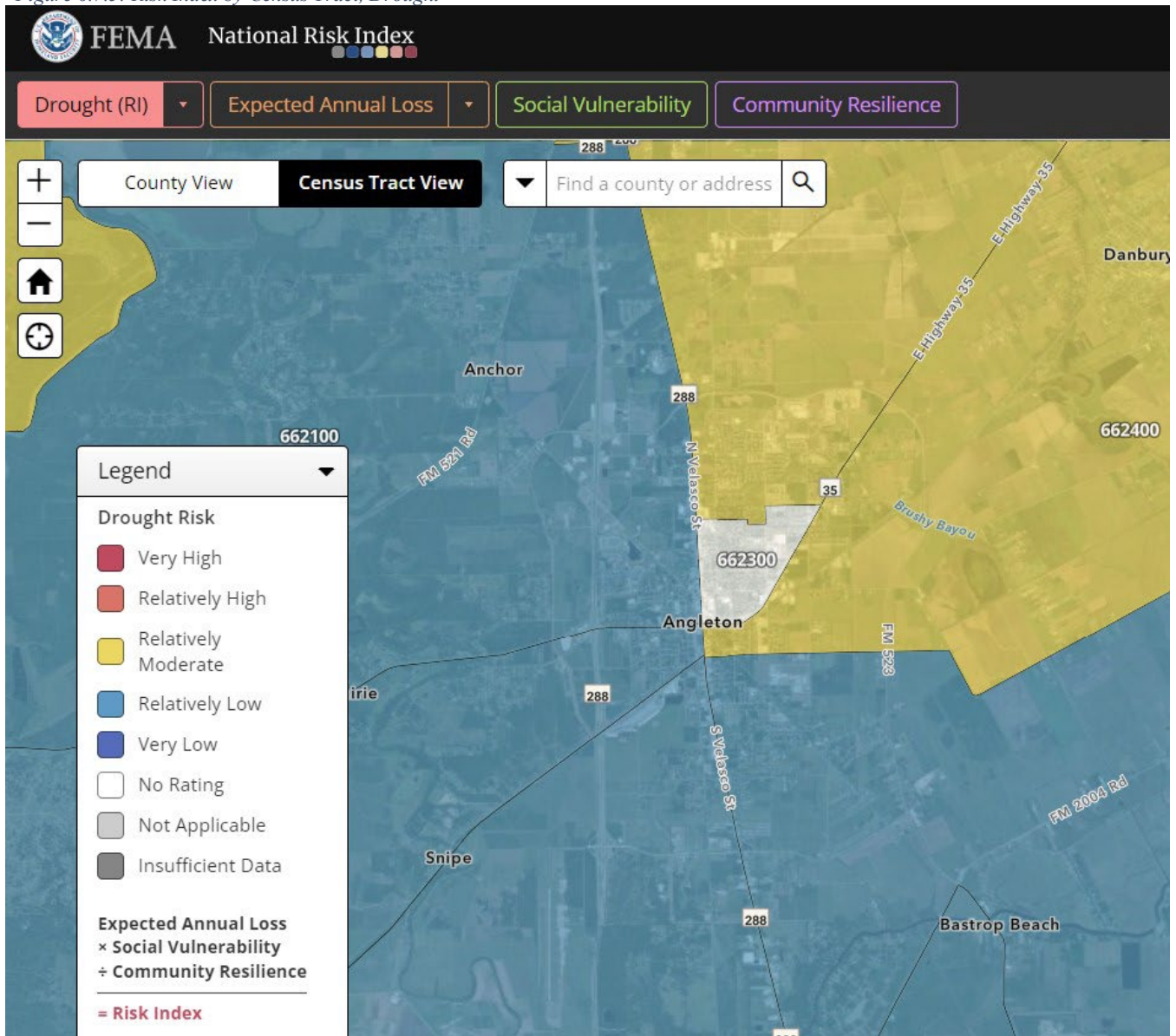


Figure 6.7.6: Social Vulnerability by Census Tract, City of Angleton

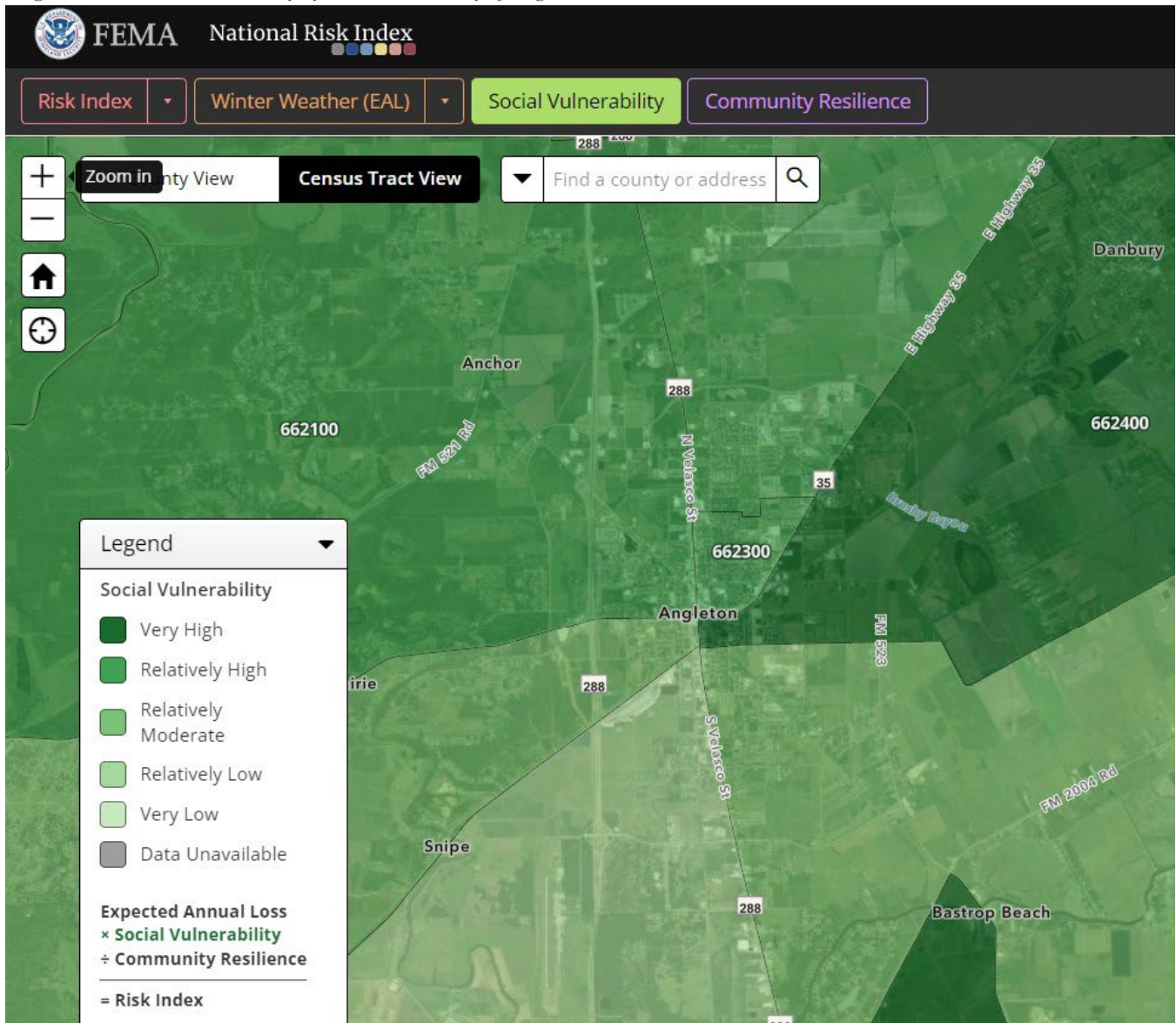


Figure 6.7.7: Community Resilience by Census Tract, City of Angleton

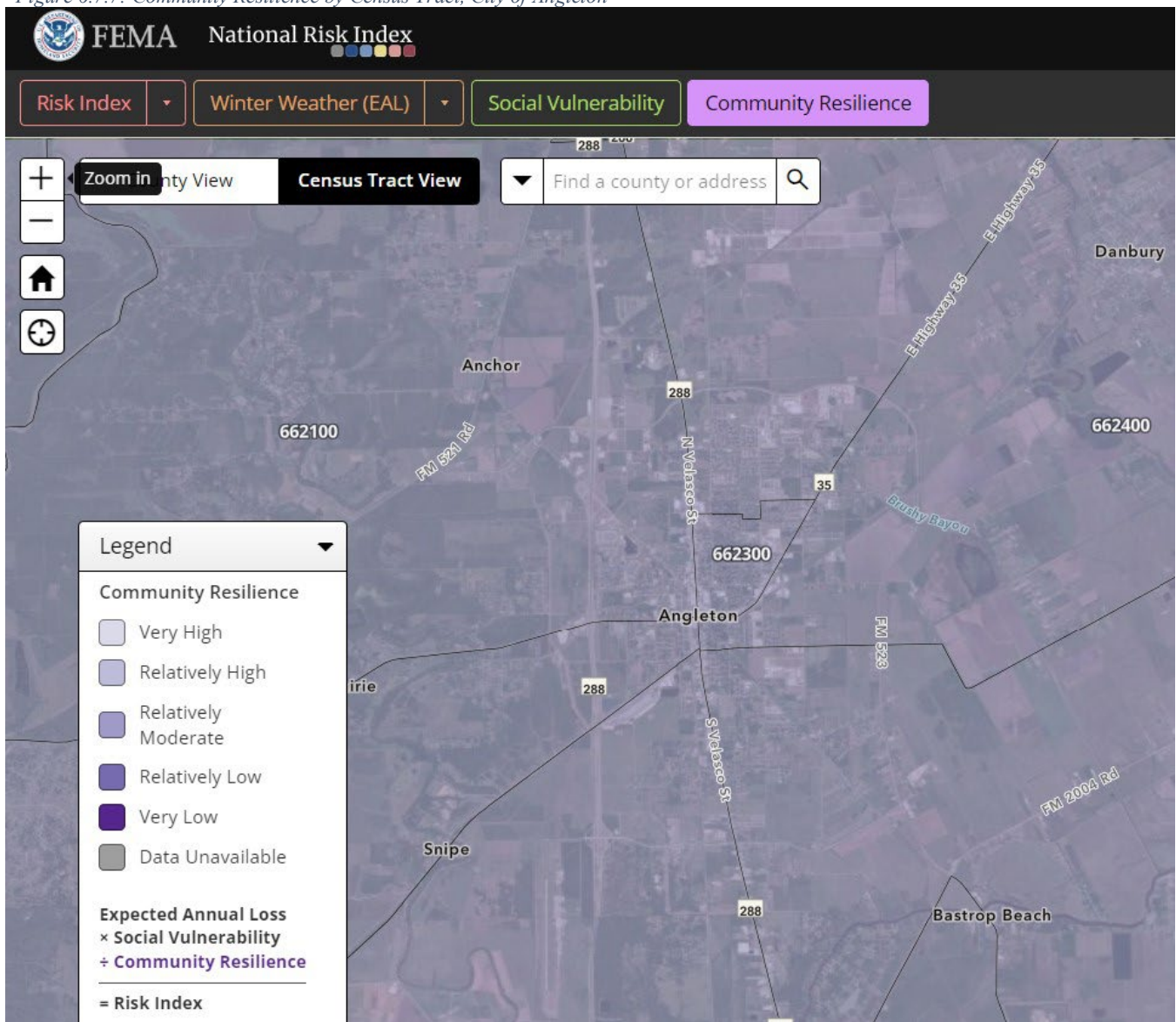


Figure 6.7.8: FEMA NRI Summary, Drought

Rank	Community	State	Risk Index Rating	Risk Index Score	National Percentile
1	Census tract 48039662400	TX	Relatively Moderate	94.82	0      100
2	Census tract 48039662200	TX	Relatively Moderate	94.81	0      100
3	Census tract 48039663100	TX	Relatively Low	90.6	0      100
4	Census tract 48039662100	TX	Relatively Low	88.91	0      100
5	Census tract 48039664100	TX	Relatively Low	87.92	0      100
6	Census tract 48039662500	TX	Relatively Low	86.45	0      100
	Census tract 48039662300	TX	No Rating	0	0      100

Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Risk Index Score
1	Census tract 48039662400	TX	\$19,096	Very High	Relatively Moderate	1.43	\$27,400	94.82
2	Census tract 48039662200	TX	\$20,340	Relatively High	Relatively Moderate	1.34	\$27,206	94.81
3	Census tract 48039663100	TX	\$6,833	Relatively Low	Relatively Moderate	1	\$6,839	90.6
4	Census tract 48039662100	TX	\$3,455	Relatively High	Relatively Moderate	1.22	\$4,228	88.91
5	Census tract 48039664100	TX	\$3,030	Relatively Moderate	Relatively Moderate	1.05	\$3,175	87.92
6	Census tract 48039662500	TX	\$1,856	Relatively Moderate	Relatively Moderate	1.12	\$2,072	86.45
	Census tract 48039662300	TX	\$0	Relatively High	Relatively Moderate	1.38	\$0	0

### Climate Change Impacts

According to the Office of the Texas State Climatologist, it is impossible to make a quantitative statewide projection of drought trends. However, most factors at play point to an increase in drought severity.<sup>58</sup> It can be inferred that the impacts of climate change on expansive soils will grow as drought and flooding risks and associated impacts become more prevalent.

Table 6.7.7: Climate Change Impacts, Drought & Expansive Soils

<b>Location</b>	The location of droughts and expansive soils is not expected to change.
<b>Extent/Intensity</b>	The extent and intensity of drought and associated risks from expansive soils within the county may change (increase) due to increased precipitation and stronger storms which can lead to an increase in flooding events and rising surface temperatures, heat events, and increases in drought severity.
<b>Frequency</b>	There are no clear trends in drought frequency due to considerable variability in conditions that lead to droughts. Since expansive soils pose the most risk during periods of drought and flooding, and there is no way to data to track losses due to expansive soils, the frequency of expansive soil impacts also shows no clear trends.
<b>Duration</b>	The duration of drought events is not likely to change, however the intensity of droughts is expected to increase.

# Section 6.8: Severe Thunderstorms & Lightning



## 6.8 Severe Thunderstorm & Lightning

The NWS defines a thunderstorm as “A local storm produced by a cumulonimbus cloud and accompanied by lightning and thunder.” A severe thunderstorm is defined as “A thunderstorm that produces a tornado, winds of at least 58 mph (50 knots), and/or hail at least 1" in diameter. Structural wind damage may imply the occurrence of a severe thunderstorm. A thunderstorm wind equal to or greater than 40 mph (35 knots) and/or hail of at least 1" is defined as approaching severe.”<sup>89</sup> Thunderstorms form when certain factors are present. These are moisture, instability, lifting, and in the case of severe thunderstorms wind shear. The difference between thunderstorms and severe thunderstorm formation resides in the wind field or wind shear.<sup>90</sup> There are different types of thunderstorms with varying characteristics and degrees of severity.<sup>91</sup> Descriptions of these can be found in Table 6.3.1.

Table 6.8.1: Types of Thunderstorms

Type of Thunderstorm	Description
<b>Ordinary Cell (Pulse Thunderstorm)</b>	A one-time updraft and one-time downdraft. The rising updraft will suspend growing raindrops until the point where the weight of the water is greater than what can be supported. Drag between the air and the falling drops begins to diminish the updraft, which allows more raindrops to fall. While hail and gusty wind can develop, these occurrences are typically not severe. However, if atmospheric conditions are right and the ordinary cell is strong enough, more than one cell can potentially form and can include microburst winds (usually less than 70 mph/112 km/h) and weak tornadoes.
<b>Multi-Cell Cluster</b>	A thunderstorm with numerous cells in various stages of development merging together. While each individual thunderstorm cell in a multi-cell cluster behaves as a single cell, the prevailing atmospheric conditions are such that as the first cell matures, it is carried downstream by the upper-level winds, with a new cell forming upwind of the previous cell to take its place. Sometimes the atmospheric conditions encourage vigorous new cell growth – they form so fast that each new cell develops further and further upstream. Tremendous rainfall amounts can be produced over very small areas by back-building thunderstorms.
<b>Multi-cell Line (Squall Line)</b>	Thunderstorms that form in a line and can extend laterally for hundreds of miles. These "squall lines" can persist for many hours and produce damaging winds and hail. Updrafts, and therefore new cells, continually re-form at the leading edge of the system, with rain and hail following behind. Individual thunderstorm updrafts and downdrafts along the line can become quite strong, resulting in episodes of large hail and strong outflow winds that move rapidly ahead of the system. While the leading edge of squall lines occasionally form tornadoes, they primarily produce "straight-line" wind damage, a result of the force of the downdraft spreading horizontally as it reaches the Earth's surface.
<b>Supercell Thunderstorms</b>	Supercell thunderstorms are a special kind of single cell thunderstorm that can persist for many hours. They are responsible for nearly all of the significant tornadoes produced in the U.S. and for most of the hailstones larger than golf ball size. Supercells are also known to produce extreme winds and flash flooding.

Lightning is defined by NWS as “A visible electrical discharge produced by a thunderstorm. The discharge may occur within or between clouds, between the cloud and air, between a cloud and the ground, or between the ground and a cloud.”<sup>92</sup> Lightning accompanies all thunderstorms and poses a threat to lives and property. While the odds of being struck by lightning are relatively low (1/1,222,000)<sup>93</sup>, lightning kills about 20 people per year while hundreds more are injured or suffer lifelong neurological damage.<sup>94</sup> There are different types of lightning with varying characteristics. Most lightning starts within a thunderstorm and travels through the cloud.<sup>95</sup> Descriptions of these can be found in Table 6.8.2.

Table 6.8.2: Types of Lightning

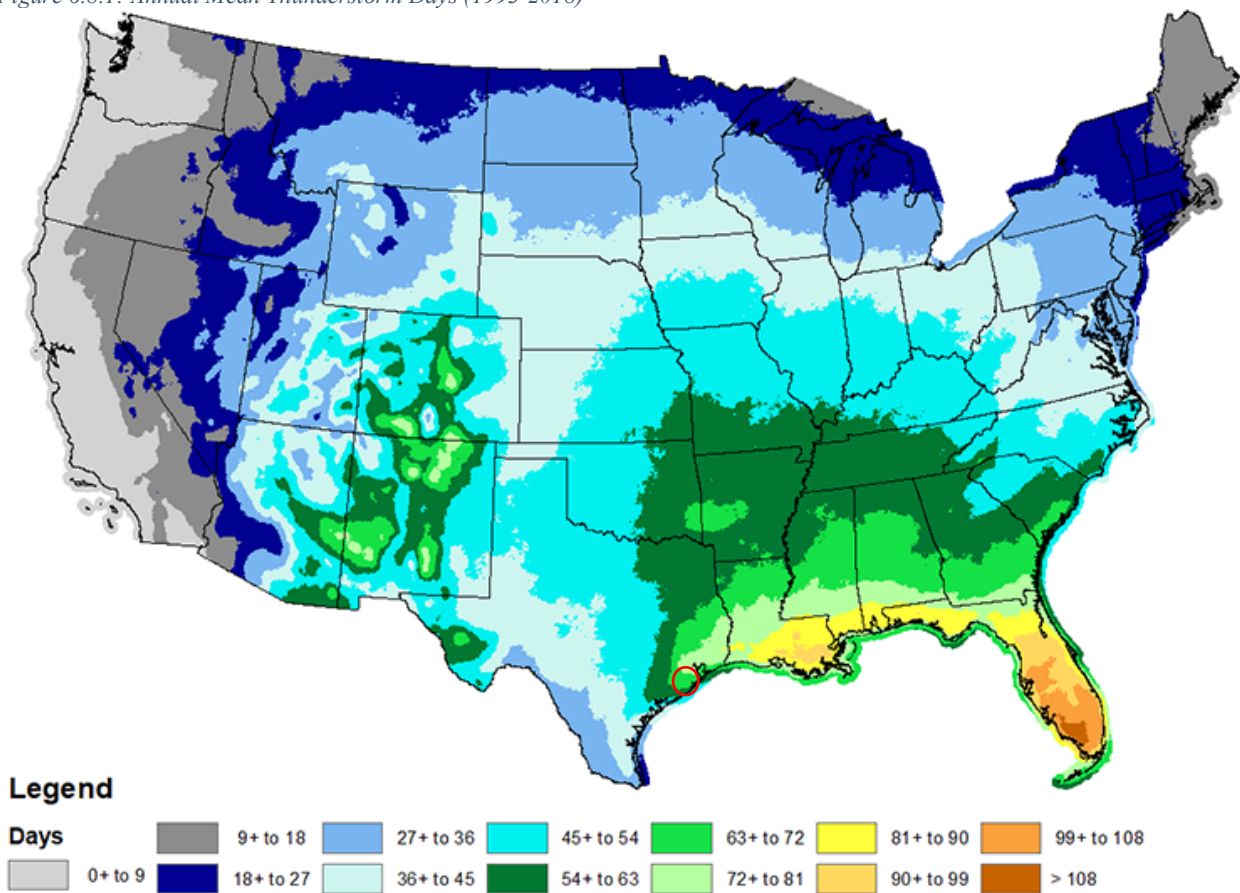
Type of Lightning	Description
<b>Cloud-to-Ground Flashes (Cloud-to-Ground Lightning)</b>	A channel of negative charge, called a stepped leader, will zigzag downward in roughly 50-yard segments in a forked pattern. This stepped leader is invisible to the human eye, and shoots to the ground in less time than it takes to blink. As it nears the ground, the negatively charged stepped leader causes streamer channels of positive charge to reach upward, normally from taller objects in the area, such as a tree, house, or telephone pole. When the oppositely charged leader and streamer connect, a powerful electrical current begins flowing. This return stroke current of bright luminosity travels about 60,000 miles per second back towards the cloud.
	A “ <b>bolt from the blue</b> ” is Cloud-to-Ground lightning which starts inside a cloud, goes out the side of the storm, then travels horizontally away from the cloud before going to ground. A bolt from the blue can strike ground at a spot with “blue sky” above it.  <i>Even a storm that is 6 miles away can be dangerous.</i>
<b>Cloud Flashes (Intra-Cloud Lightning)</b>	Many flashes of lightning within a cloud that do not reach the ground. Cloud flashes sometimes have visible channels that extend out into the air around the storm

**Location**

Thunderstorms, and the accompanying lightning, are not confined to any geographic boundaries. These hazards can happen anywhere, during any time of the year. However, typically thunderstorms will occur in warmer months such as Summer and Spring, and during the warmest parts of the day. Figure 6.8.1 shows the average number of thunderstorm days each year throughout the U.S. (defined as two lightning flashes within 10 nautical miles (nmi) radius). The most frequent occurrence is in the southeastern states due to warm, moist air from the Gulf of Mexico and Atlantic Ocean are readily available to fuel atmospheric conditions that produce thunderstorms. The City of Angleton is in an area that can see anywhere from 63-72 thunderstorm days per year as indicated by the red circled area on the figure below.<sup>96</sup>









Figure 6.8.1: Annual Mean Thunderstorm Days (1993-2018)



**Extent**

Thunderstorm intensity can be measured by NWS and the Storm Prediction Center (SPC) of the NWS risk categories. The SPC issues Convective Outlooks that depict non-severe thunderstorm areas and severe thunderstorm threats across the contiguous United States, along with a text narrative. The categorical forecast specifies the level of the overall severe weather threat via numbers, descriptive labeling, and colors, as seen in the figure below. The probabilistic forecast directly expresses the best estimate of a severe weather event occurring within 25 miles of a given point.<sup>97</sup>

Figure 6.8.2: Severe Thunderstorm Risk Categories

THUNDERSTORMS (no label)	1 - MARGINAL (MRGL)	2 - SLIGHT (SLGT)	3 - ENHANCED (ENH)	4 - MODERATE (MDT)	5 - HIGH (HIGH)
No severe* thunderstorms expected	Isolated severe thunderstorms possible	Scattered severe storms possible	Numerous severe storms possible	Widespread severe storms likely	Widespread severe storms expected
Lightning/flooding threats exist with <u>all</u> thunderstorms	Limited in duration and/or coverage and/or intensity	Short-lived and/or not widespread, isolated intense storms possible	More persistent and/or widespread, a few intense	Long-lived, widespread and intense	Long-lived, very widespread and particularly intense
					

\* NWS defines a severe thunderstorm as measured wind gusts to at least 58 mph, and/or hail to at least one inch in diameter, and/or a tornado. All thunderstorm categories imply lightning and the potential for flooding. Categories are also tied to the probability of a severe weather event within 25 miles of your location.



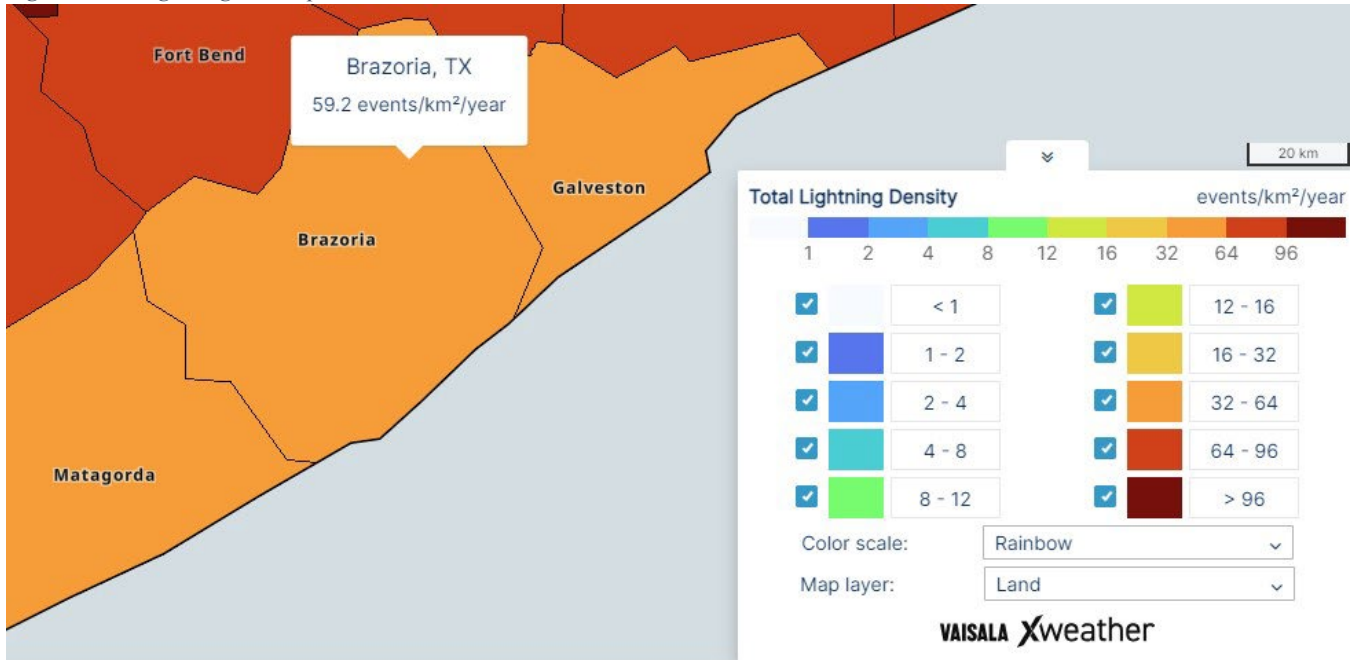
## National Weather Service

[www.spc.noaa.gov](http://www.spc.noaa.gov)



The National Lightning Detection Network (NLDN) consists of over 100 remote, ground-based sensing stations located across the United States that instantaneously detect the electromagnetic signals given off when lightning strikes the earth's surface. These remote sensors send the raw data via a satellite-based communications network to the Network Control Center (NCC) operated by Vaisala Inc. in Tucson, Arizona. Within seconds of a lightning strike, the NCC's central analyzers process information on the location, time, polarity, and communicated to users across the country. Through a partnership with Vaisala and cooperative effort with the U.S. Air Force 14th Weather Squadron, summarized daily files from 1986 to present are archived at the NOAA NCEI. Through a contract with Vaisala, the raw data from NCEI is available only to government and military users.<sup>98</sup> Through use of Vaisala's Interactive Global Lightning Density Map, Figure 6.8.3 shows the average number of lightning events per km<sup>2</sup> per year for the Brazoria County. This interactive map utilizes data from 2016 to 2022.<sup>99</sup>

Figure 6.8.3: Lightning Events per Year



**Historic Occurrences**

NOAA collects historic climate data for the entire nation. NOAA's storm event data can be accessed on the NCEI Storm Events Database. These events are shown at the county level with some referencing a specific location, city, or zone. The database currently contains data from January 1950 to December 2023, as entered by NOAA's NWS. Due to changes in the data collection and processing procedures over time, there are unique periods of record available depending on the event type. There are 198 events listed in the Storm Events Database for thunderstorm and lightning. The table below highlights a condensed version of events for this hazard that have occurred within Brazoria County from 2018-2023. Events that occurred within the City of Angleton are highlighted in purple.<sup>38</sup>

Table 6.8.3: City of Angleton Severe Thunderstorm and Lightning Events (2018-2023)

Date	Location	Event Type	Injuries	Fatalities	Property Damage (\$)	Crop Damage (\$)	Wind Speed (knots)
3/29/2018	Brazoria	Thunderstorm Wind	0	0	\$1,000	\$-	51
3/29/2018	Sweeny	Thunderstorm Wind	0	0	\$-	\$-	52
3/29/2018	Alvin	Thunderstorm Wind	0	0	\$-	\$500	50
5/26/2018	Iowa Colony	Thunderstorm Wind	0	0	\$3,000	\$3,000	56
5/26/2018	Bonney	Thunderstorm Wind	0	0	\$15,000	\$0	58
5/26/2018	Angleton	Thunderstorm Wind	0	0	\$-	\$-	52
5/26/2018	Van Pelt	Thunderstorm Wind	0	0	\$-	\$-	51
10/31/2018	Alvin	Thunderstorm Wind	0	0	\$-	\$-	50
4/7/2019	Oyster Creek	Thunderstorm Wind	0	0	\$7,000	\$3,000	51
5/4/2019	Pearland	Thunderstorm Wind	0	0	\$-	\$2,000	52
8/14/2019	Iowa Colony	Lightning	0	0	\$-	\$-	ND
1/11/2020	Pearland	Thunderstorm Wind	0	0	\$3,000	\$-	52
5/16/2020	Pearland	Thunderstorm Wind	0	0	\$2,000	\$2,000	53
1/6/2021	Manvel	Thunderstorm Wind	0	0	\$-	\$-	50
5/18/2021	Angleton	Thunderstorm Wind	0	0	\$-	\$-	50

5/28/2021	Alvin	Thunderstorm Wind	0	0	\$-	\$-	50
12/18/2021	Pearland Arpt	Thunderstorm Wind	0	0	\$-	\$-	52
3/22/2022	Old Brazoria	Thunderstorm Wind	0	0	\$20,000	\$-	50
5/25/2022	Iowa Colony	Thunderstorm Wind	0	0	\$-	\$-	50
6/21/2023	Hastings	Thunderstorm Wind	0	0	\$-	\$-	50

Rows highlighted in purple are events that reference the City of Angleton within the event narrative or event location (beginning or end).

\$- No dollar amount (\$0.00).

ND- No Data

### *Presidential Disaster Declarations*

There have been 6 disaster declarations for severe storms within Brazoria County, in which the City of Angleton is located, as depicted in the table below. There were 0 disaster declarations for lightning.<sup>1</sup>

Table 6.8.4: Federal Disaster Declarations, Severe Thunderstorm

Declaration Date	Incident Type	Title	Disaster Number	Declaration Type
4/12/1991	Severe Storm	Severe Storms, Tornadoes & Flooding	900	Major Disaster Declaration
8/26/1998	Severe Storm	Tropical Storm Charley	1239	Major Disaster Declaration
9/23/1998	Severe Storm	Hurricane Georges- Texas	1245	Major Disaster Declaration
11/5/2002	Severe Storm	Severe Storms, Tornadoes & Flooding	1439	Major Disaster Declaration
5/29/2015	Severe Storm	Severe storms, tornadoes, straight-line winds, and flooding	4223	Major Disaster Declaration
11/25/2015	Severe Storm	Severe storms, tornadoes, straight-line winds, and flooding	4245	Major Disaster Declaration

### *USDA Disaster Declarations*

The Secretary of Agriculture is authorized to designate counties as disaster areas to make EM loans available to producers suffering losses in those counties and in counties that are contiguous to a designated county. In addition to EM loan eligibility, other emergency assistance programs, such as FSA disaster assistance programs, have historically used disaster designations as an eligibility trigger. USDA Secretarial disaster designations must be requested of the Secretary of Agriculture by a governor or the governor's authorized representative, by an Indian Tribal Council leader or by an FSA SED. The Secretarial disaster designation is the most widely used. When there is a presidential disaster declaration, FEMA immediately notifies FSA of the primary counties named in a Presidential declaration. USDA Disaster Declarations for Brazoria County since 2018 are listed in the table below. These declarations included USDA declarations for excessive rain. There were no USDA disaster declaration categorized under severe storms or thunderstorms.<sup>39</sup>

Table 6.8.5: USDA Declared Disasters (2018-2023), Severe Thunderstorm and Lightning

Crop Disaster Year	Disaster Description	Designation Number
2019	Excessive moisture and flooding	S4534
2021	Excessive moisture and excessive rainfall	S5052
2021	Excessive moisture and excessive rainfall	S5053
2021	Excessive Moisture	S5088
2021	Excessive Moisture	S5089

### Probability of Future Occurrences

Severe thunderstorms and lightning are more likely to occur in summer months when temperatures are higher and moisture from the gulf helps to fuel thunderstorm development. According to the FEMA NRI for lightning, annualized frequency values for lightning in Brazoria County are 80.2 events per year over a 22-year period of record (1991-2012), with 1,590 events on record for this timeframe. Severe thunderstorm is not included in the FEMA NRI.<sup>42</sup>

### Populations at Risk

Populations at risk for severe thunderstorms and lightning include similar groups to those listed under Section 6.1 as hurricanes, tropical storms, and tropical depressions can bring some of the same hazards to vulnerable populations. Severe storms and lightning can cause property damage, flooding, lack of access to critical facilities that provide food, water, medications, or other forms of medical assistance, and lack of utilities such as electricity and clean water, which can increase the risk of illness. According to the NCHH, those at a greater risk from these hazards include older adults, children, people experiencing homelessness, people with disabilities, and people with chronic health conditions. Older adults, in addition to the dangers listed above, can also face social isolation, lack of electricity needed to run medical equipment, and lack of access to other critical supplies. In younger populations, such as children, severe storms can disrupt schooling via power outages, the need to shelter in place during the school-day, or even necessary evacuation or early-release days due to inclement weather. This can not only jeopardize their academic success, but it can also cause mental and emotional stress, as well as add stress to adults who work full-time and rely on schooling during normal work hours to keep children occupied and safe. Children are more vulnerable to certain medical conditions like asthma, lead poisoning, allergies, and bacterial infections which can be caused by the resulting flood damage and increased moisture of severe storms. For people experiencing homelessness, housing and adequate shelter are critical in keeping populations safe during these types of hazard events. People with disabilities may require additional assistance to stay safe and prepare for these hazards such as creating a support network, finding accessible transportation to evacuate or get medical attention, and loss of power for needed medical equipment. Likewise, those with chronic health conditions may need similar assistance as those with disabilities. People with chronic health conditions also face exposure to diseases or illnesses from standing water and increased exposure to these illnesses when utilizing a shelter or evacuation centers due to power outages or the resulting flooding. People living in mobile homes are also at greater risk of injury and death from these hazards. Despite mobile homes providing a form of shelter, severe storms are the catalyst for strong winds and tornadoes. Dangerous winds can cause mobile homes and even mobile homes that utilize anchoring to be seriously damaged or destroyed when winds gust over 80 mph.<sup>69</sup>

FEMA's NRI utilizes data from multiple sources including historical hazard events, hazard intensity, exposure of people and property to hazards, socioeconomic factors, and community resilience indicators. The NRI also incorporates hazard data to determine the frequency and intensity of various natural hazards. This information helps assess the likelihood of specific hazards occurring in different regions. The NRI considers the exposure of communities to hazards and incorporates factors such as population density, infrastructure systems, and critical facilities that may be at risk during a hazard event. The NRI also generates risk scores for communities across the U.S. that provide a relative ranking of areas based on their overall risk level. This helps to identify areas that may require additional resources and attention for mitigation and planning efforts. The NRI risk equation includes 3

components. EAL represents the average economic loss in dollars resulting from natural hazards each year. The CRF is a scaling factor that incorporates social vulnerability (the susceptibility of social groups to the adverse impacts of natural hazards) and community resilience (the ability of a community to prepare for anticipated natural hazards, adapt to changing conditions, and withstand and recover rapidly from disruptions) into the NRI. The outcome, the risk index, represents the potential negative impacts of natural hazards. The NRI EAL score, and rating, represent a community's relative level of expected loss each year when compared to all other communities at the same level.<sup>42</sup>

EAL Exposure Values and EAL Values for Brazoria County can be found in the tables below. The FEMA NRI does not include severe storms in its analysis, lightning is included in the tables below.

Table 6.8.6: Expected Annual Loss Exposure Values, Lightning

Hazard Type	Building Value (\$)	Population Equivalence (\$)/ Population (#)	Agricultural Value (\$)	EAL Total (\$)
<b>Lightning</b>	\$57,514,822,174	\$4,309,098,400,000 / 371,474.00	\$6,997,533	\$4,366,613,222,174

Table 6.8.7: Expected Annual Loss Values, Lightning

Hazard Type	Building Value (\$)	Population Equivalence (\$)/ Population (#)	Agriculture Value
<b>Lightning</b>	\$52,101	\$2,076,681 / 0.18	N/A

N/A- Not Applicable

EAL for the City of Angleton was derived by creating a report that used census tract information for tracts that included the Angleton city limits. These were census tracts 48039662100, 48039662200, 48039662400, 48039662300, 48039662500, 48039663100, and 48039664100. EAL according to the FEMA NRI for lightning events for these census tracts is listed as relatively high, with two tracts rating very high. EAL values, risk index ratings, risk index scores, social vulnerability, and community resilience for each census tract can be found in the figures below.<sup>44</sup> Additionally, the FEMA NRI lists the HLR, a hazard- and county-specific estimate of the percentage of the exposed consequence type (building value, population, or agriculture value) expected to be lost due to a hazard occurrence, for lightning within Brazoria County is listed as relatively low.<sup>42</sup>

Figure 6.8.4: Risk Index by Census Tract, Lightning

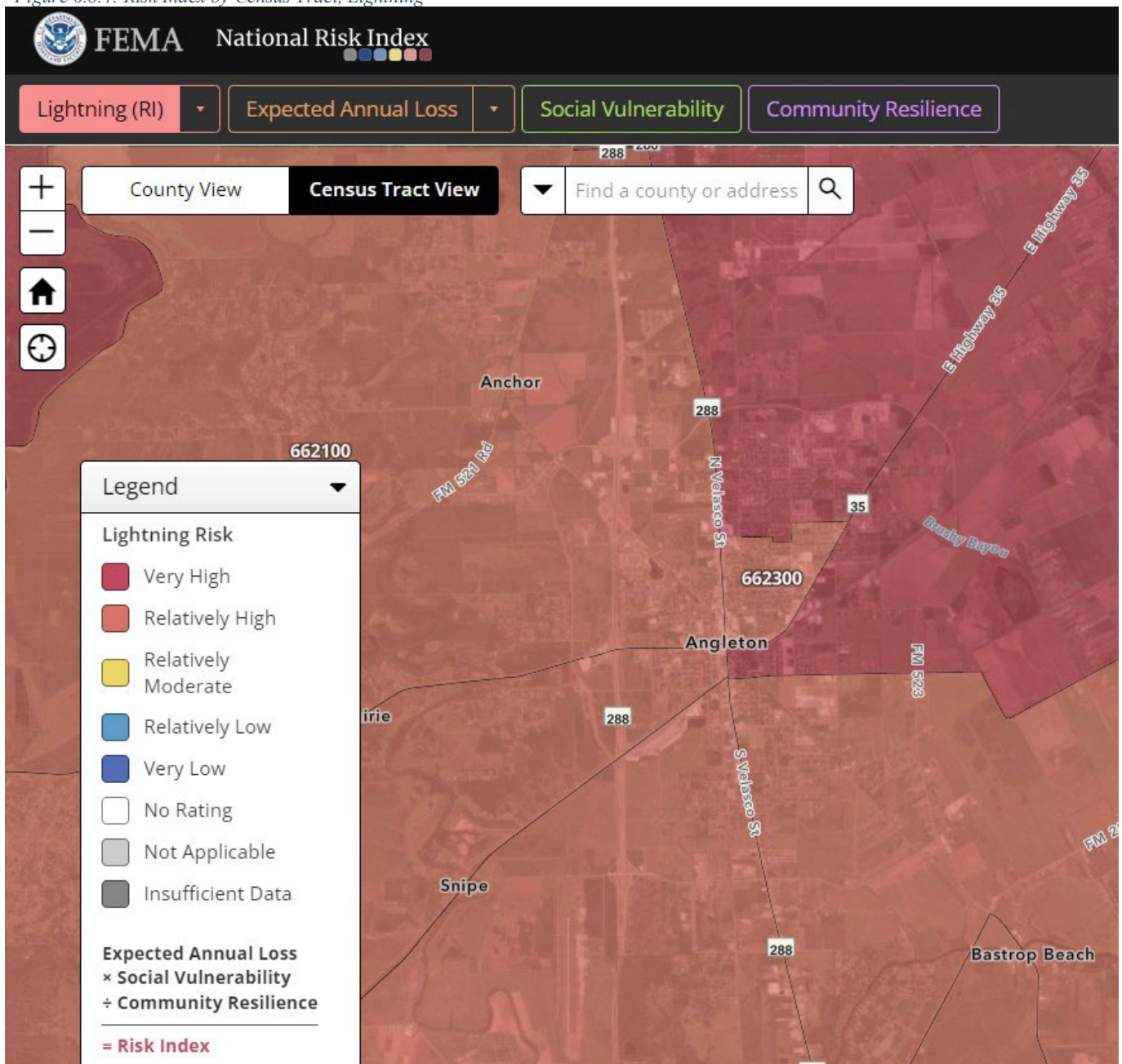


Figure 6.8.5: Social Vulnerability by Census Tract, City of Angleton

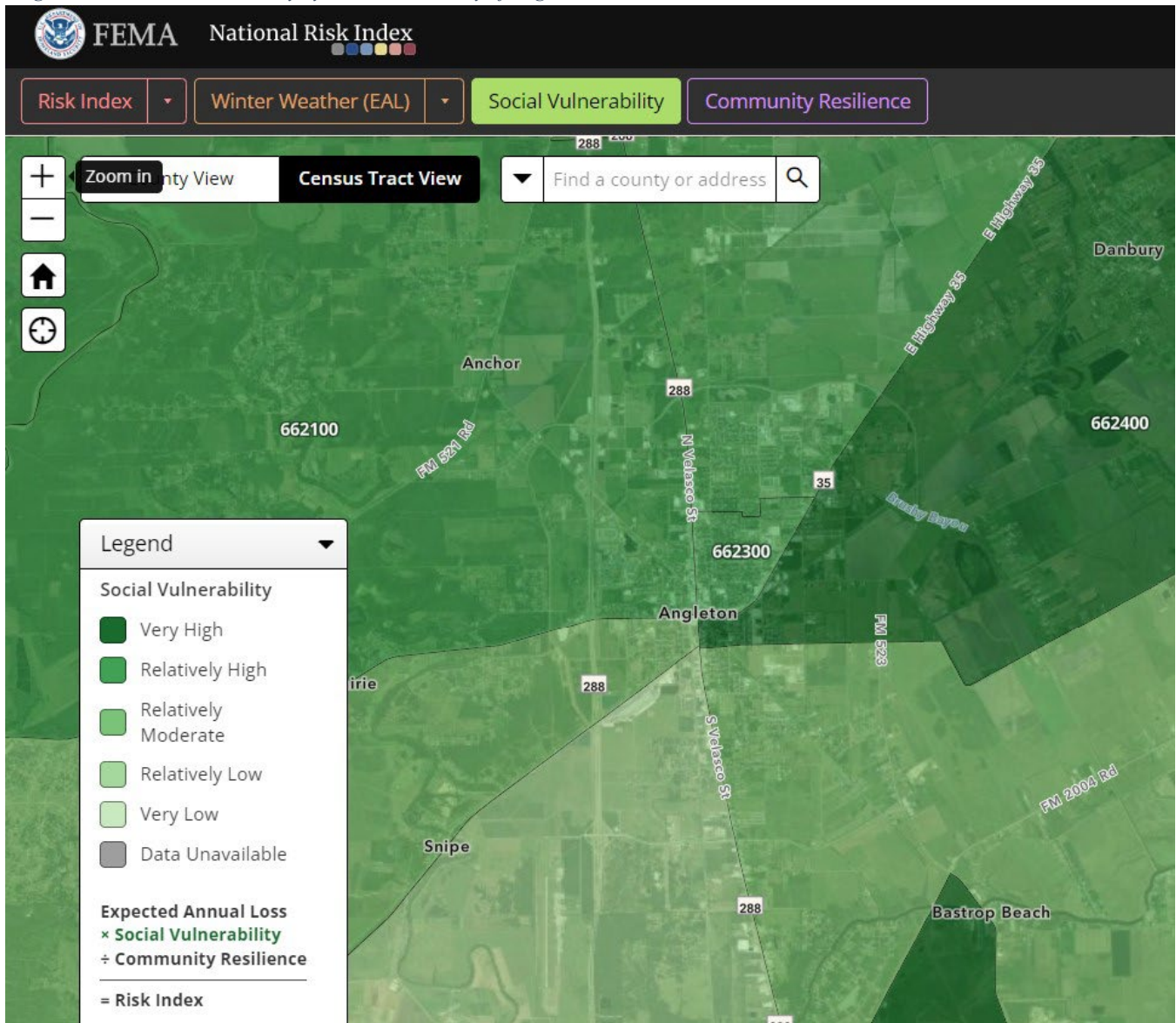




Figure 6.8.6: Community Resilience by Census Tract, City of Angleton

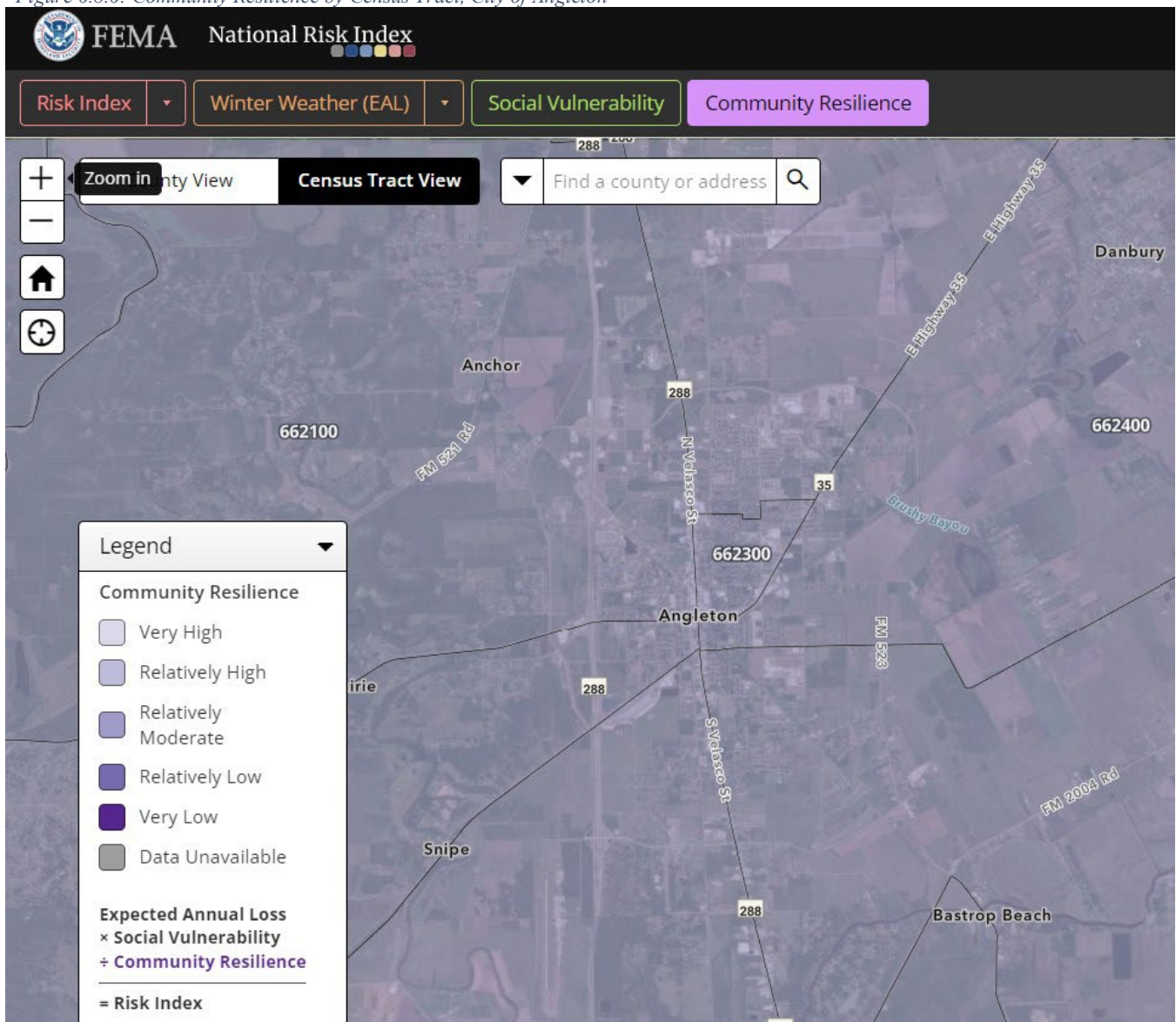


Figure 6.8.7: FEMA NRI Summary, Lightning

Rank	Community	State	Risk Index Rating	Risk Index Score	National Percentile
1	Census tract 48039662200	TX	Very High	95.22	0  100
2	Census tract 48039662400	TX	Very High	94.59	0  100
3	Census tract 48039662100	TX	Relatively High	93.43	0  100
4	Census tract 48039664100	TX	Relatively High	91.13	0  100
5	Census tract 48039663100	TX	Relatively High	90.49	0  100
6	Census tract 48039662300	TX	Relatively High	89.72	0  100
7	Census tract 48039662500	TX	Relatively High	77.54	0  100

Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Risk Index Score
1	Census tract 48039662200	TX	\$30,018	Relatively High	Relatively Moderate	1.34	\$40,152	95.22
2	Census tract 48039662400	TX	\$26,441	Very High	Relatively Moderate	1.43	\$37,939	94.59
3	Census tract 48039662100	TX	\$28,243	Relatively High	Relatively Moderate	1.22	\$34,559	93.43
4	Census tract 48039664100	TX	\$28,218	Relatively Moderate	Relatively Moderate	1.05	\$29,571	91.13
5	Census tract 48039663100	TX	\$28,448	Relatively Low	Relatively Moderate	1	\$28,471	90.49
6	Census tract 48039662300	TX	\$19,807	Relatively High	Relatively Moderate	1.38	\$27,298	89.72
7	Census tract 48039662500	TX	\$14,173	Relatively Moderate	Relatively Moderate	1.12	\$15,828	77.54

### Climate Change Impacts

According to the Office of the Texas State Climatologist, the climate data record for severe thunderstorms is poor, and severe thunderstorms are too small to be simulated directly by present-day climate models. Over the past few decades, the severe storm environment over Texas has changed in complex and opposing ways. The amount of energy available for convection has decreased, and the amount of energy needed to initiate convection has increased at the same time. This suggests that environmental conditions have become less favorable for the occurrence of thunderstorms. However, the amount of low-level shear has increased, which would be expected to make thunderstorms more likely to become severe once they develop.

Changes in severe storm environments have not been uniform throughout the year, with environments becoming more favorable for severe thunderstorms and significant hail in Texas early in the spring and less favorable later in the spring. Lightning occurs most often during the months of May and June. Climate model simulations imply different prospects going forward. As temperatures increase, the amount of energy available to fuel these storms is simulated to increase as temperature and low-level moisture increase. This results in an overall increase in the number of days capable of producing severe thunderstorms. With these complex trends and partially contradictory information between models and

observations, there is low confidence in any ongoing trend in the overall frequency and severity of severe thunderstorms.<sup>43</sup>

Table 6.8.8: Climate Change Impacts, Severe Thunderstorm and Lightning

<b>Location</b>	The location of severe thunderstorms and lightning is not expected to change.
<b>Extent/Intensity</b>	The extent and intensity of severe thunderstorms and lightning within the county may change (increase) due to increased temperatures and energy available to fuel severe thunderstorm development and the accompanying lightning.
<b>Frequency</b>	There are no clear trends in severe thunderstorms and lightning frequency due to considerable variability in conditions that lead to them occurring. However, these hazards occur most frequently in warmer months, around May and June.
<b>Duration</b>	The duration of severe thunderstorms and lightning events is not likely to change, however the intensity of them is expected to increase due to rising temperatures and the proximity of the County to the Gulf of Mexico.

# Section 6.9: Hail



## 6.9 Hail

NOAA’s National Severe Storms Laboratory (NSSL) defines hail as “A form of precipitation consisting of solid ice that forms inside thunderstorm updrafts. Hail can damage aircraft, homes and cars, and can be deadly to livestock and people.”<sup>100</sup> Hail varieties are determined by how they grow and the maximum size. These differentiating frozen precipitations and their definitions from NOAA’s NSSL can be seen in the table below.<sup>101</sup>

Table 6.9.1: Types of Frozen Precipitation

Frozen Precipitation Type	Description
<b>Snow</b>	forms mainly when water vapor turns to ice without going through the liquid stage. This process is called deposition. Snow can form in the gentle updrafts of stratus clouds or at high altitudes in very cold regions of a thunderstorm.
<b>Graupel</b>	soft, small pellets formed when supercooled water droplets (at a temperature below 32°F) freeze onto a snow crystal, a process called riming. If the riming is particularly intense, the rimed snow crystal can grow to an appreciable size but remain less than 0.2 inches. Graupel is also called snow pellets or soft hail, as the graupel particles are particularly fragile and generally disintegrate when handled.
<b>Sleet</b>	small ice particles that form from the freezing of liquid water drops, such as raindrops. At ground level, sleet is only common during winter storms when snow melts as it falls, and the resulting water refreezes into sleet prior to hitting the ground. In thunderstorms, sleet is possible above the melting level where cloud droplets become supercooled and may instantaneously freeze when making contact with other cloud particles or debris, such as dust particles. Sleet is also called ice pellets.
<b>Hail</b>	frozen precipitation that can grow to very large sizes through the collection of water that freezes onto the hailstone’s surface. Hailstones begin as embryos, which include graupel or sleet, and then grow in size. Hailstones can have a variety of shapes and include lumps and bumps that may even take the shape of small spikes. Hailstones must be at least 0.2 inches in size.

When forecasting for hail, forecasters look for deep moist convection, in addition to adequate updraft to keep the hailstone aloft for an appropriate amount of time, sufficient supercooled water near the hailstone to enable growth as it travels through an updraft, and a piece of ice, snow or dust for it to grow upon. There is no clear distinction between storms that do and do not produce hailstones. Nearly all severe thunderstorms probably produce hail aloft, though it may melt before reaching the ground.

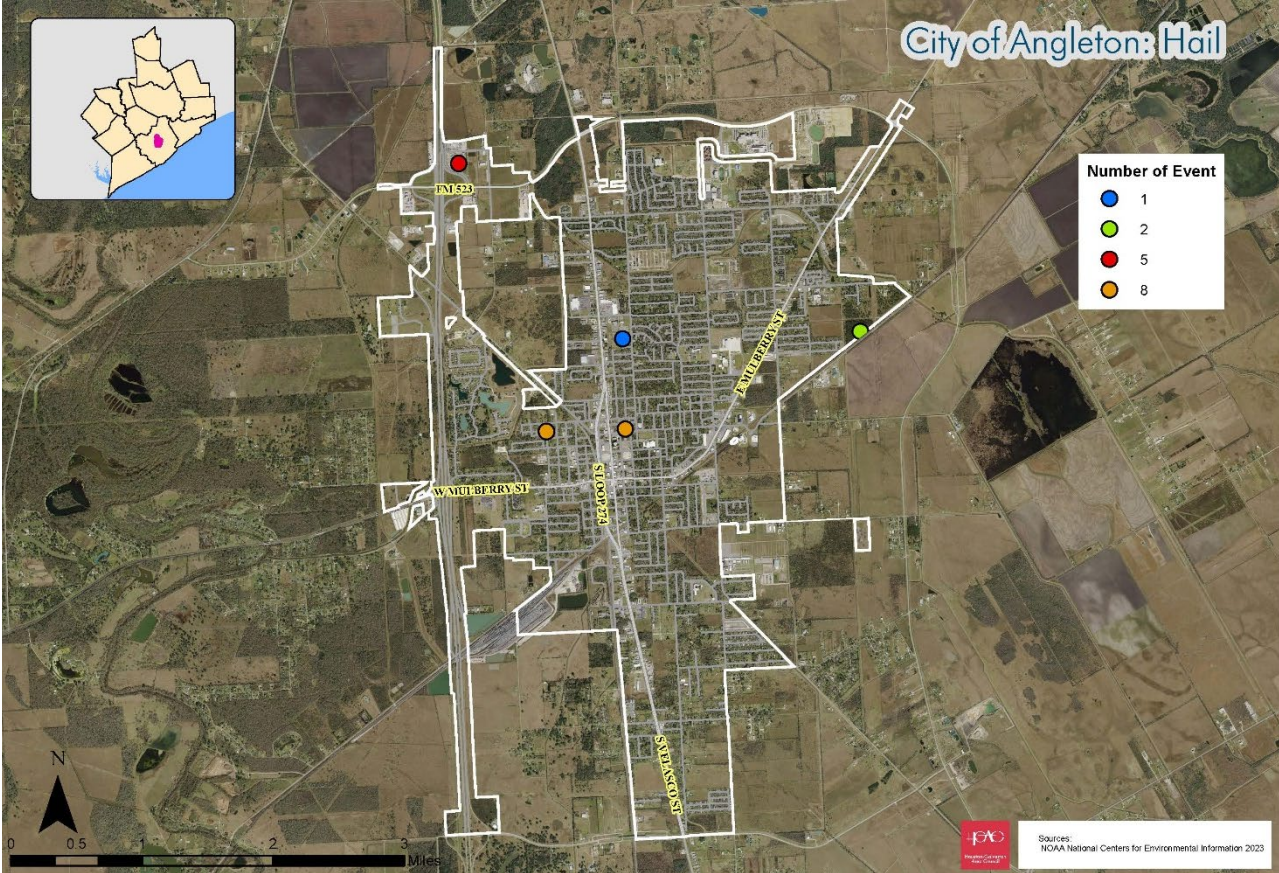
Multi-cell thunderstorms can produce many small hailstones that are relatively short-lived and do not grow. In contrast, supercell thunderstorms have sustained updrafts that support large hail formation by repeatedly lifting the hailstones into the very cold air at the top of the thunderstorm cloud where they can accumulate more layers of ice. In general, hail 2 inches or larger in diameter is associated with supercells. Hail falls to the ground when the thunderstorm's updraft can no longer support the weight of the ice. The stronger the updraft, the larger the hailstone can grow. Additionally, large hail often appears near the area within a thunderstorm where tornadoes are most likely to form<sup>102</sup>

### Location

Similar to the Severe Thunderstorms & Lightning (Section 6.8) hazard profile, and the Tornado (Section 6.4) hazard profile, hail is not confined to any geographic boundaries and can occur if the right conditions are present within a thunderstorm, such as a supercell with a strong updraft. The entire county is at risk for this hazard. Thunderstorms and hail can happen at any time of the year. Typically, they occur most in warmer months such as Summer and Spring, and during the warmest parts of the day. Warm, moist air from the Gulf of Mexico is readily available to help fuel atmospheric conditions that produce

thunderstorms and the updrafts that bring hail and damaging winds associated with them. City of Angleton is in an area that can see anywhere from 54-81 thunderstorm days per year.<sup>97</sup> Figure 6.9.1 depicts the locations within the county where previous hails events have occurred.

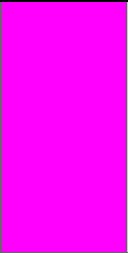
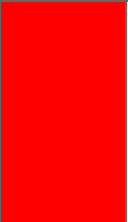

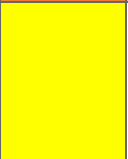


Figure 6.9.1: Previous Occurrences of Hail Locations, City of Angleton



**Extent**

The NWS classifies a hailstorm as “severe” if there is hail 0.75 inches in diameter or greater. Hail threats are categorized from non-threatening to extreme with associated map colors to depict hazard levels, as seen in the table below. NWS also generalizes hail sizes as small (less than 0.75 inches in diameter), large (0.75-1.75 inches in diameter), very large (1.75-2.75 inches in diameter), and giant (hail larger than 2.75 inches).<sup>103</sup>

Table 6.9.2: Severe Hail Threat Levels and Descriptions

Severe Hail Threat Level	Map Color	Threat Level Descriptions
Extreme		<p><b>"An Extreme Threat to Life and Property from Severe Hail."</b></p> <ul style="list-style-type: none"> <li>• Within 12 miles of a location, a moderate likelihood or greater (16% probability or greater) of severe hail, with storms capable of baseball to softball sized stones. <i>See diameter description below.</i></li> <li>• A high likelihood or greater (26% probability or greater) of severe hail, with storms capable of golf ball to baseball sized hail stones.</li> <li>• A very high likelihood (36% or greater) of severe hail, with storms capable of nickel to golf ball sized hail stones.</li> </ul>
High		<p><b>"A High Threat to Life and Property from Severe Hail."</b></p> <ul style="list-style-type: none"> <li>• Within 12 miles of a location, a low likelihood (6% to 15% probability) of severe hail, with storms capable of baseball to softball sized stones.</li> <li>• A moderate likelihood (16% to 25% probability) of very large hail (golf ball to baseball sized hail stones).</li> <li>• A high likelihood (26% to 35% probability) of large hail (nickel to golf ball sized hail stones).</li> </ul>
Moderate		<p><b>"A Moderate Threat to Life and Property from Severe Hail."</b></p> <ul style="list-style-type: none"> <li>• Within 12 miles of a location, a very low likelihood (2% to 5% probability) of severe hail, with storms capable of baseball to softball sized stones.</li> <li>• A low likelihood (6% to 15% probability) of severe hail, with storms capable of golf ball to baseball sized hail stones.</li> <li>• A moderate likelihood (16% to 25% probability) of severe hail, with storms capable of nickel to golf ball sized hail stones.</li> </ul>
Low		<p><b>"A Low Threat to Life and Property from Severe Hail."</b></p> <ul style="list-style-type: none"> <li>• Within 12 miles of a location, a very low likelihood (2% to 5% probability) of severe hail, with storms capable of golf ball to baseball sized hail stones</li> <li>• A low likelihood (6% to 15% probability) of severe hail, with storms capable of nickel to golf ball sized hail stones.</li> </ul>
Very Low		<p><b>"A Very Low Threat to Life and Property from Severe Hail."</b></p> <ul style="list-style-type: none"> <li>• Within 12 miles of a location, a very low likelihood (2% to 5% probability) of severe hail, with storms capable of nickel to golf ball sized hail stones.</li> <li>• A low likelihood or greater (6% or greater) of small hail (less than 3/4 inch).</li> </ul>
Non-Threatening		<p><b>"No Discernable Threat to Life and Property from Severe Hail."</b></p> <ul style="list-style-type: none"> <li>• Within 12 miles of a location, environmental conditions do not support the occurrence of severe hail.</li> </ul>

Hail intensity is measured by the TORRO scale. The scale starts with H0 and goes to H10 with each increment of intensity or damage potential related to hail size, texture, numbers, fall speed, speed of storm translation, and strength of the accompanying wind. The table below outlines the TORRO Hail Intensity Scale and some associated size comparisons.<sup>104</sup>

Table 6.9.3: TORRO Hail Intensity Scale

Scale	Intensity category	Typical hail diameter (in)	Size Comparison	Typical damage impacts
H0	Hard hail	Up to 0.33	Pea	No damage
H1	Potentially damaging	0.33-0.60	Marble	Slight general damage to plants, crops
H2	Significant	0.60-0.80	Dime	Significant damage to fruit, crops, vegetation
H3	Severe	0.80-1.20	Nickel	Severe damage to fruit and crops, damage to glass and plastic structures, paint and wood scored
H4	Severe	1.20-1.60	Quarter	Widespread glass damage, vehicle bodywork damage
H5	Destructive	1.60-2.0	Half Dollar	Wholesale destruction of glass, damage to tiled roofs, significant risk of injuries

<b>H6</b>	Destructive	2.0-2.4	Ping Pong Ball	Bodywork of grounded aircraft dented; brick walls pitted
<b>H7</b>	Destructive	2.4-3.0	Golf Ball	Severe roof damage, risk of serious injuries
<b>H8</b>	Destructive	3.0-3.5	Hen Egg	(Severest recorded in the British Isles) Severe damage to aircraft bodywork
<b>H9</b>	Super Hailstorms	3.5-4.0	Tennis Ball	Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open
<b>H10</b>	Super Hailstorms	>4.0	Baseball	Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open

**Historic Occurrences**

NOAA collects historic climate data for the entire nation. NOAA's storm event data can be accessed on the NCEI Storm Events Database. These events are shown at the county level with some referencing a specific location, city, or zone. The database currently contains data from January 1950 to December 2023, as entered by NOAA's NWS. Due to changes in the data collection and processing procedures over time, there are unique periods of record available depending on the event type. There have been 124 recorded events for hail within the storm events database. The table below highlights a condensed versions of events for this hazard that have occurred within Brazoria County since 2018. Events that occurred within the City of Angleton are highlighted in purple.<sup>38</sup>

*Table 6.9.4: City of Angleton Hail Events (2018-2023)*

Date	Location	Event Type	Injuries	Fatalities	Property Damage	Crop Damage	Magnitude (in.)
5/26/2018	Manvel	Hail	0	0	\$-	\$-	1
5/26/2018	Manvel	Hail	0	0	\$-	\$-	0.75
5/26/2018	Angleton	Hail	0	0	\$-	\$-	0.75
2/26/2019	Iowa Colony	Hail	0	0	\$-	\$-	1
2/26/2019	Alvin	Hail	0	0	\$-	\$-	1
1/6/2021	Manvel Coyle Arpt	Hail	0	0	\$-	\$-	1
5/6/2022	Pearland Arpt	Hail	0	0	\$-	\$-	0.88

Rows highlighted in purple are events that reference the City of Angleton within the event narrative or event location (beginning or end).  
 \$- No dollar amount (\$0.00).  
 ND- No Data

*Presidential Disaster Declarations*

There have been no disaster declarations in which hail was included Brazoria County.<sup>1</sup>

*USDA Disaster Declarations*

The Secretary of Agriculture is authorized to designate counties as disaster areas to make EM loans available to producers suffering losses in those counties and in counties that are contiguous to a designated county. In addition to EM loan eligibility, other emergency assistance programs, such as FSA disaster assistance programs, have historically used disaster designations as an eligibility trigger. USDA Secretarial disaster designations must be requested of the Secretary of Agriculture by a governor or the governor’s authorized representative, by an Indian Tribal Council leader, or by an FSA SED. The Secretarial disaster designation is the most widely used. When there is a presidential disaster declaration, FEMA immediately notifies FSA of the primary counties named in a Presidential declaration. USDA Disaster Declarations for Brazoria County, in which the City of Angleton since the last HMP for this hazard are listed in the table below.<sup>39</sup>



Table 6.9.5: USDA Declared Disasters (2018-2023), Hail

Crop Disaster Year	Disaster Description	Designation Number
None		

**Probability of Future Occurrences**

Severe thunderstorms and hail associated with them are more likely to occur in summer months when temperatures are higher and moisture from the gulf helps to fuel thunderstorm development. According to the FEMA NRI for hail, annualized frequency values are 1.7 events per year over a 34-year period of record (1986-2021), with 54 events on record for this timeframe.<sup>42</sup>

**Populations at Risk**

Hail can occur during thunderstorms, but larger hail occurs more often during warmer months because the heat that builds the thunderstorms up higher in the air also strengthens these storms and can create sustained updrafts, as mentioned above. Populations most at risk for hail include outdoor workers, athletes, and pets/animals. Outdoor workers, such as farmers or landscapers have a higher chance of exposure to hail due to the nature of their work. Likewise, athletes can be caught in a hailstorm and are more exposed to their hazard when engaged in outdoor activities. Pets and animals are also at risk from hail due to their increased exposure to outdoor elements. To cause serious injury to humans and animals, hail would have to be relatively larger in size (1” or larger).

FEMA’s NRI utilizes data from multiple sources including historical hazard events, hazard intensity, exposure of people and property to hazards, socioeconomic factors, and community resilience indicators. The NRI also incorporates hazard data to determine the frequency and intensity of various natural hazards. This information helps assess the likelihood of specific hazards occurring in different regions. The NRI considers the exposure of communities to hazards and incorporates factors such as population density, infrastructure systems, and critical facilities that may be at risk during a hazard event. The NRI also generates risk scores for communities across the U.S. that provide a relative ranking of areas based on their overall risk level. This helps to identify areas that may require additional resources and attention for mitigation and planning efforts. The NRI risk equation includes 3 components. EAL represents the average economic loss in dollars resulting from natural hazards each year. The CRF is a scaling factor that incorporates social vulnerability (the susceptibility of social groups to the adverse impacts of natural hazards) and community resilience (the ability of a community to prepare for anticipated natural hazards, adapt to changing conditions, and withstand and recover rapidly from disruptions) into the NRI. The outcome, the risk index, represents the potential negative impacts of natural hazards. The NRI EAL score, and rating, represent a community’s relative level of expected loss each year when compared to all other communities at the same level.<sup>42</sup>

EAL Exposure Values and EAL Values for Brazoria County can be found in the tables below.

Table 6.9.6: Expected Annual Loss Exposure Values, Hail

Hazard Type	Building Value (\$)	Population Equivalence (\$)/ Population (#)	Agricultural Value (\$)	EAL Total (\$)
Hail	\$57,514,822,174	\$4,309,098,400,000 / 371,474.00	\$91,232,428	\$4,366,704,454,602

Table 6.9.7: Expected Annual Loss Values, Hail

Hazard Type	Building Value (\$)	Population Equivalence (\$)/ Population (#)	Agriculture Value
Hail	\$52,221	\$283,548 / 0.02	\$20,506

EAL for the City of Angleton was derived by creating a report that used census tract information for tracts that included the Angleton city limits. These were census tracts 48039662100, 48039662200, 48039662400, 48039662300, 48039662500, 48039663100, and 48039664100. EAL according to the FEMA NRI for hail events for these census tracts is listed as relatively low. EAL values, risk index ratings, risk index scores, social vulnerability, and community resilience for each census tract can be found in the figures below.<sup>44</sup> Additionally, the FEMA NRI lists the HLR, a hazard- and county-specific estimate of the percentage of the exposed consequence type (building value, population, or agriculture value) expected to be lost due to a hazard occurrence, for hail within Brazoria County as very low.<sup>42</sup>

Figure 6.9.2: Risk Index by Census Tract, Hail

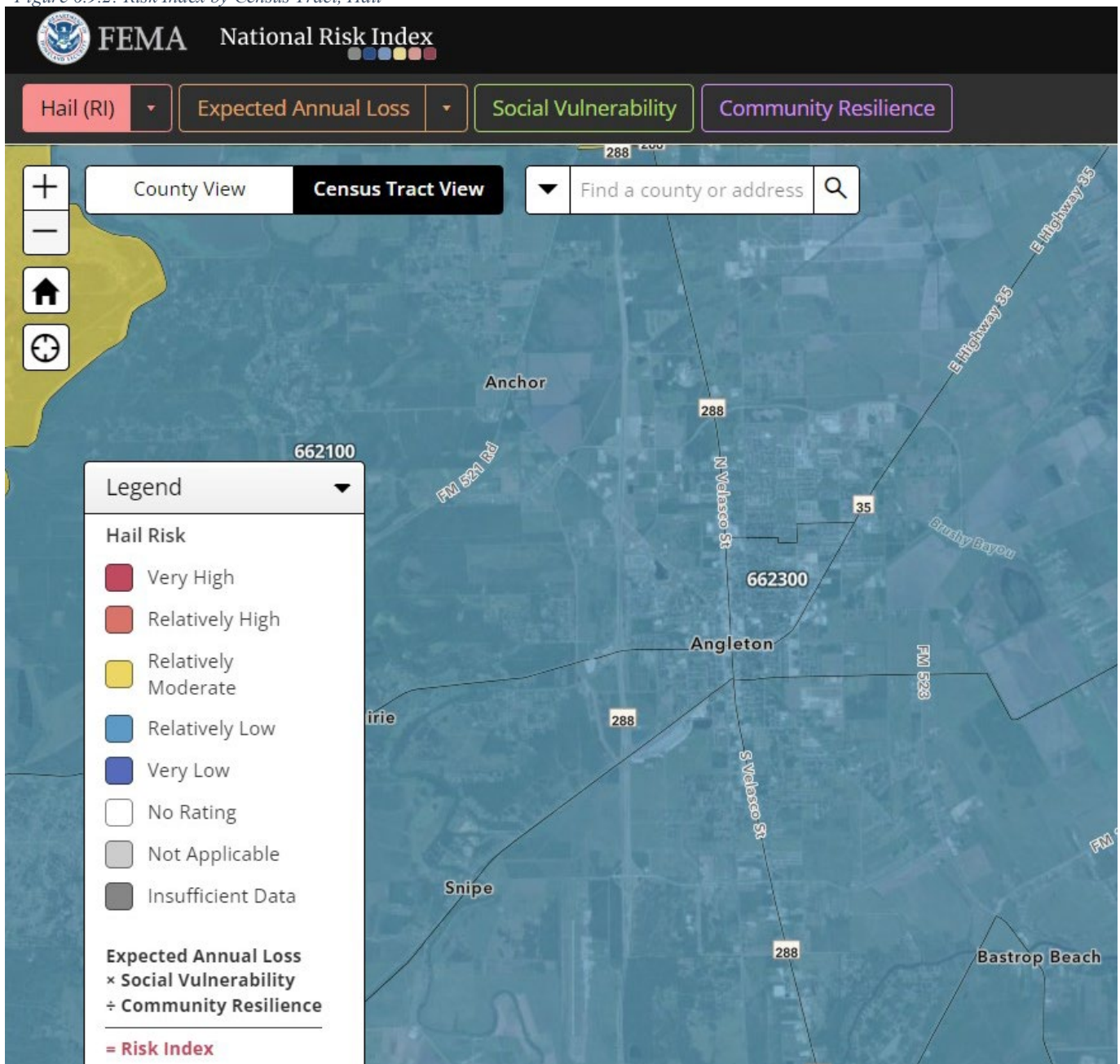


Figure 6.9.3: Social Vulnerability by Census Tract, City of Angleton

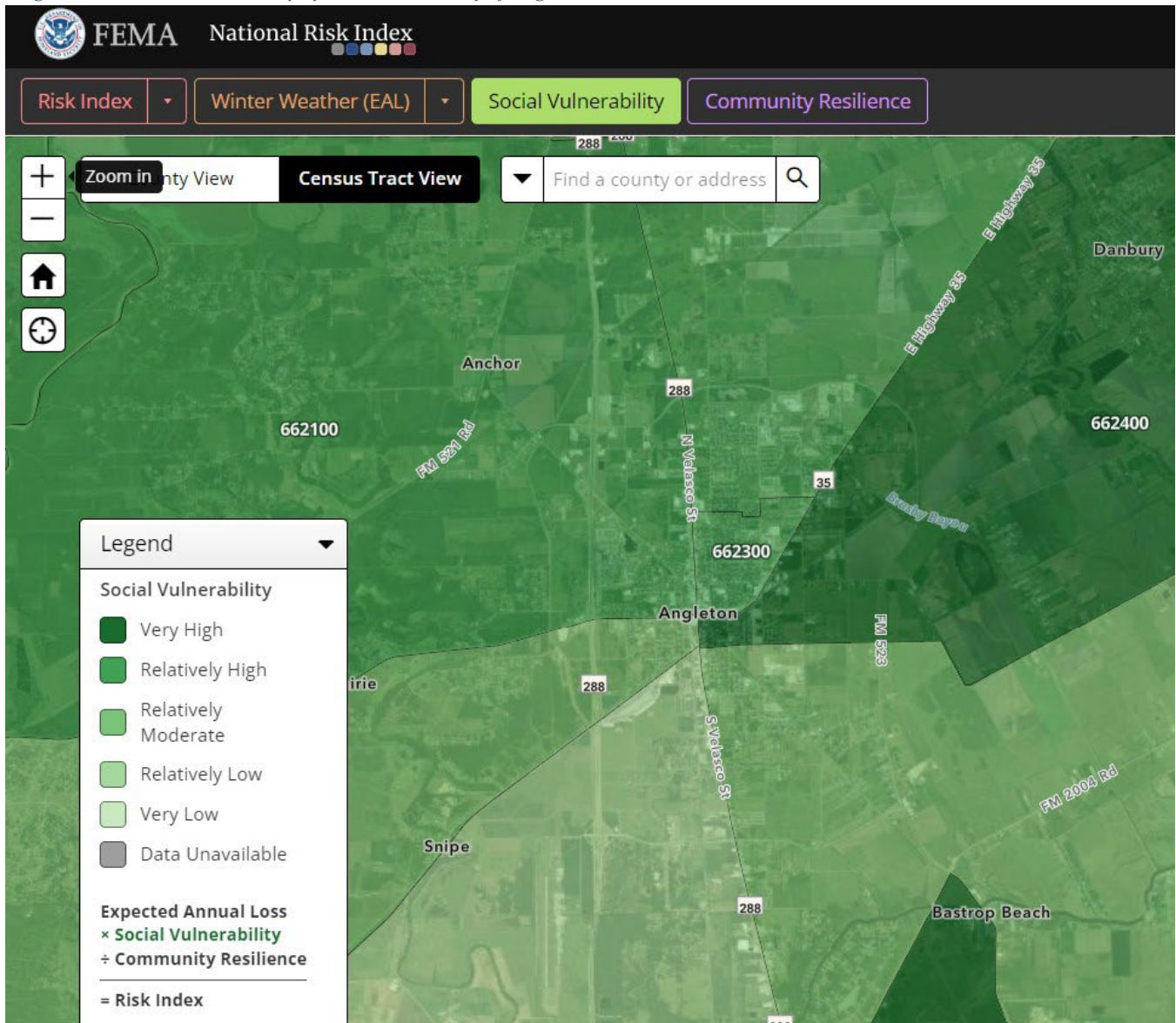


Figure 6.9.4: Community Resilience by Census Tract, City of Angleton

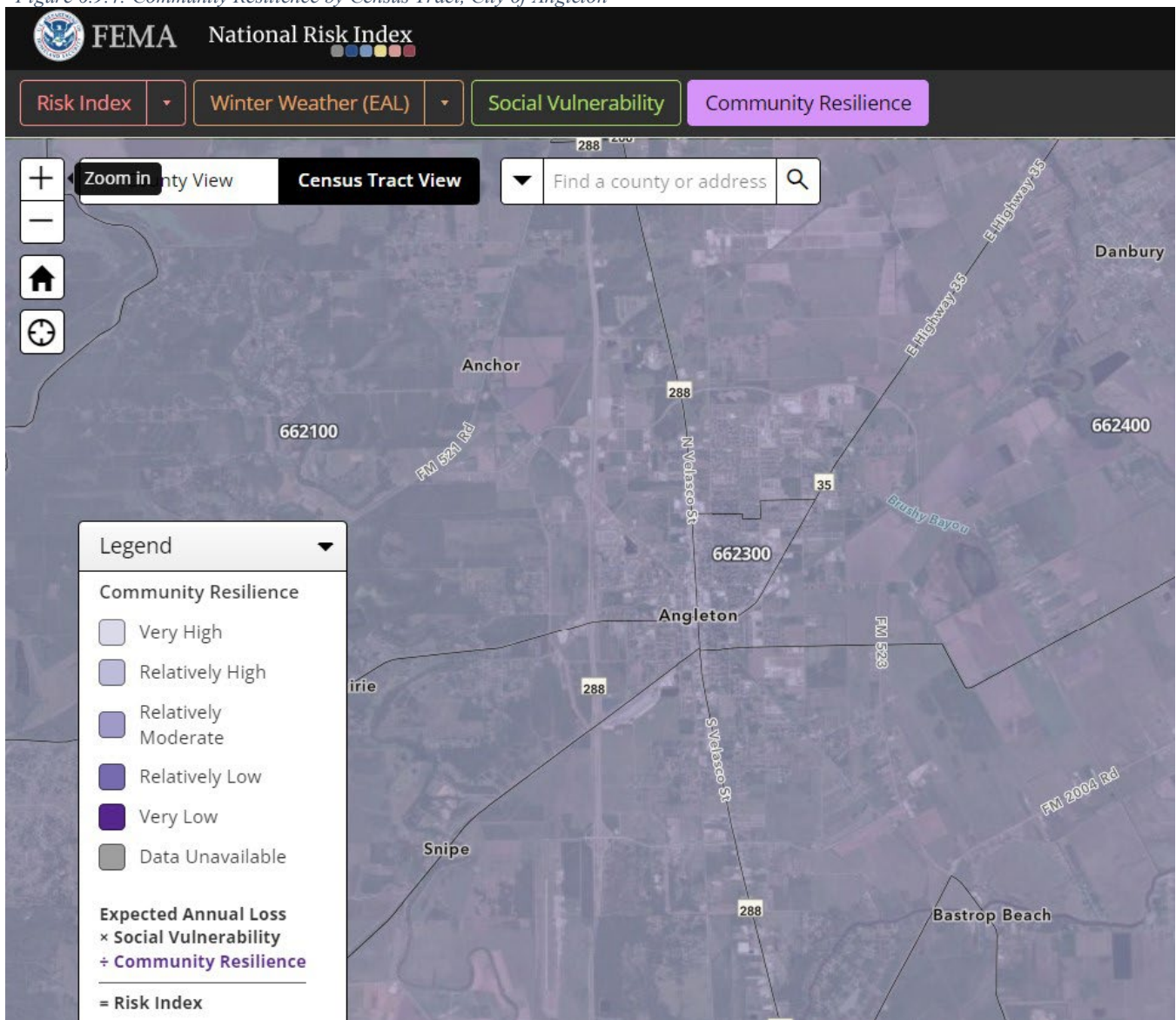


Figure 6.9.5: FEMA NRI Summary, Hail

Rank	Community	State	Risk Index Rating	Risk Index Score	National Percentile
1	Census tract 48039662200	TX	Relatively Low	69.71	0      100
2	Census tract 48039662400	TX	Relatively Low	67.81	0      100
3	Census tract 48039662100	TX	Relatively Low	66.94	0      100
4	Census tract 48039663100	TX	Relatively Low	65.41	0      100
5	Census tract 48039664100	TX	Relatively Low	63.35	0      100
6	Census tract 48039662300	TX	Relatively Low	62.73	0      100
7	Census tract 48039662500	TX	Relatively Low	58.02	0      100

Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Risk Index Score
1	Census tract 48039662200	TX	\$6,099	Relatively High	Relatively Moderate	1.34	\$8,158	69.71
2	Census tract 48039662400	TX	\$4,842	Very High	Relatively Moderate	1.43	\$6,948	67.81
3	Census tract 48039662100	TX	\$5,260	Relatively High	Relatively Moderate	1.22	\$6,436	66.94
4	Census tract 48039663100	TX	\$5,602	Relatively Low	Relatively Moderate	1	\$5,607	65.41
5	Census tract 48039664100	TX	\$4,497	Relatively Moderate	Relatively Moderate	1.05	\$4,713	63.35
6	Census tract 48039662300	TX	\$3,249	Relatively High	Relatively Moderate	1.38	\$4,477	62.73
7	Census tract 48039662500	TX	\$2,789	Relatively Moderate	Relatively Moderate	1.12	\$3,115	58.02

### Climate Change Impacts

Since tornadoes, windstorms, and hail are heavily associated with severe thunderstorm development, this section will mirror that of Section 6.8, seen previously. According to the Office of the Texas State Climatologist, the climate data record for severe thunderstorms is poor and severe thunderstorms are too small to be simulated directly by present-day climate models. Over the past few decades, the severe storm environment over Texas has changed in complex and opposing ways. The amount of energy available for convection has decreased, and the amount of energy needed to initiate convection has increased at the same time. This suggests that environmental conditions have become less favorable for the occurrence of thunderstorms. However, the amount of low-level shear has increased, which would be expected to make thunderstorms more likely to become severe once they develop. Changes in severe storm environments have not been uniform throughout the year, with environments becoming more favorable for severe thunderstorms and significant hail in Texas early in the spring and less favorable later in the spring. Warmer temperatures are likely to lead to less hail overall, particular during the summer, but increases in available thunderstorm energy may lead to an increase of the risk of very large hail earlier in springtime. With these complex trends and partially contradictory information between models and observations, there is low confidence in any ongoing trend in the overall frequency and severity of severe thunderstorms.<sup>58</sup>

Table 6.9.8: Climate Change Impacts Summary, Hail

<b>Location</b>	The location of hail is not expected to change.
<b>Extent/Intensity</b>	The extent and intensity of hail is not expected to change. However, environments are becoming more favorable for hail in early spring.
<b>Frequency</b>	There are no clear trends in the frequency of hail within the county.
<b>Duration</b>	The duration of hail is not expected to change.

# Section 6.10: Windstorm





## 6.10 Windstorm

Damaging winds are often called straight-line winds to differentiate the damage they cause from tornadoes or other hazards. Winds that cause damage at the ground are a result of outflows generated by a thunderstorm downdraft. Damaging winds are classified as those exceeding 50-60 mph. Damage from severe winds accounts for half of all damage reports and is more common than damage from tornadoes. Wind speeds can reach up to 100 mph and can produce a damage path extending for hundreds of miles. These damaging winds are often associated with other hazards such as thunderstorms, tornadoes, hurricanes, tropical storms, and tropical depressions.<sup>105</sup> Windstorms, or damaging winds, include many different variations. These damaging wind types and their definitions from NOAA can be seen in the table below.<sup>106</sup>

Table 6.10.8: Types of Damaging Winds

Damaging Wind Type	Description
<b>Straight-line Wind</b>	Used to define thunderstorm wind, which is not linked with rotation and is mainly used to differentiate from tornadic winds
<b>Down Draft</b>	A small-scale column of air that sinks toward the ground
<b>Macroburst</b>	An outward burst of strong winds that are more than 2.5 miles in diameter, occurs when a strong downdraft reaches the surface
<b>Microburst</b>	A small, concentrated downburst that produces an outward burst of relatively strong winds near the surface. Microbursts are less than 4 km in diameter and short-lived, lasting only five to 10 minutes. Maximum wind speeds sometimes exceed 100 mph. There are two kinds of microbursts: wet and dry. <ul style="list-style-type: none"> <li>• A wet microburst is accompanied by heavy precipitation at the surface.</li> <li>• A dry microburst is common in places like the high plains and occur with little or no precipitation reaching the ground.</li> </ul>
<b>Downburst</b>	A general term to describe macro and microbursts
<b>Gust Front</b>	The leading edge of rain-cooled air that clashes with a warm thunderstorm inflow
<b>Derecho</b>	A widespread and long-lived windstorm is associated with rapidly moving showers or thunderstorms. A typical derecho consists of numerous microbursts, downbursts, and downburst clusters. If the wind damage swath extends more than 240 miles and includes wind gusts of at least 58 mph or greater along most of its length, then the event may be classified as a derecho.

### Location

Similar to thunderstorms (Section 6.8), and the Tornado (Section 6.4) hazard profiles, windstorms/damaging winds are not confined to any geographic boundaries and can occur anywhere if the right conditions are present. The entire county is at risk for this hazard type. Thunderstorms will typically occur in warmer months such as Summer and Spring, and during the warmest parts of the day. Warm, moist air from the Gulf of Mexico is readily available to help fuel atmospheric conditions that produce thunderstorms and the damaging winds associated with them. The City of Angleton is in an area that can see anywhere from 63-72 thunderstorm days per year.<sup>97</sup>

### Extent

Wind intensity is measured by the NWS through the Beaufort Wind Scale. One of the first scales to estimate wind speeds and their effects was created by Britain's Admiral Sir Francis Beaufort (1774-1857). He developed the scale in 1805 to help sailors estimate the winds via visual observations. The scale starts with 0 and goes to a force of 12. The Beaufort scale is still used today to estimate wind strengths.<sup>107</sup> The table below outlines the measurements used by the Beaufort Wind Scale for use on land.

Table 6.10.9: Beaufort Wind Scale

Force	Speed (mph)	Description	Specifications for use on land
0	0-1	Calm	Calm; smoke rises vertically.
1	1-3	Light Air	Direction of wind shown by smoke drift, but not by wind vanes.
2	4-7	Light Breeze	Wind felt on face; leaves rustle; ordinary vanes moved by wind.
3	8-12	Gentle Breeze	Leaves and small twigs in constant motion; wind extends light flag.
4	13-18	Moderate Breeze	Raises dust and loose paper; small branches are moved.
5	19-24	Fresh Breeze	Small trees in leaf begin to sway; crested wavelets form on inland waters.
6	25-31	Strong Breeze	Large branches in motion; whistling heard in telegraph wires; umbrellas used with difficulty.
7	32-38	Near Gale	Whole trees in motion; inconvenience felt when walking against the wind.
8	39-46	Gale	Breaks twigs off trees; generally impedes progress.
9	47-54	Severe Gale	Slight structural damage occurs (chimneypots and slates removed)
10	55-63	Storm	Seldom experienced inland; trees uprooted; considerable structural damage occurs.
11	64-72	Violent Storm	Very rarely experienced; accompanied by wide-spread damage.
12	72-83	Hurricane	Reference the Saffir-Simpson Hurricane Scale

Additionally, NOAA and the NWS issues watches, warnings, and advisories for wind events when wind speeds can pose a hazard or are life-threatening. Table 6.10.3 describes the various wind-related warnings, watches, and advisories below.<sup>108</sup>

Table 6.10.10: Wind-Related Warnings, Watches, and Advisories

Watch/ Warning/ Advisory	Description
<b>High Wind Warning</b>	Sustained, strong winds with even stronger gusts are happening. Seek shelter. If you are driving, keep both hands on the wheels and slow down.
<b>High Wind Watch</b>	Sustained, strong winds are possible. Secure loose outdoor items and adjust plans as necessary so you're not caught outside.
<b>Wind Advisories</b>	Strong winds are occurring but are not so strong as to warrant a High Wind Warning. Objects that are outdoors should be secured and caution should be taken if driving.
<b>Hurricane Force Wind Warning</b>	Hurricane Force Wind Warnings are issued for locations along the water when one or both of the following conditions are expected to begin within 36 hours and are not directly associated with a tropical cyclone: sustained winds of 64 knots or greater or frequent gusts (duration of two or more hours) of 64 knots (74 mph) or greater.

### Historic Occurrences

NOAA collects historic climate data for the entire nation. NOAA's storm event data can be accessed on the NCEI Storm Events Database. These events are shown at the county level with some referencing a specific location, city, or zone. The database currently contains data from January 1950 to December 2023, as entered by NOAA's NWS. Due to changes in the data collection and processing procedures over time, there are unique periods of record available depending on the event type. The table below highlights events for this hazard that have occurred within Brazoria County from 1950-2023.<sup>38</sup>

Table 6.10.11: City of Angleton Wind Events (1950-2023)

Date	Location	Event Type	Injuries	Fatalities	Property Damage (\$)	Crop Damage (\$)	Wind Speed (knots/mpg)
2/20/1997	Brazoria (Zone)	Strong Wind	0	0	\$2,000	\$-	ND
1/22/2017	Brazoria (Zone)	Strong Wind	0	0	\$1,500	\$-	38/43
<b>TOTALS:</b>			<b>0</b>	<b>0</b>	<b>\$3,500</b>	<b>\$-</b>	<b>N/A</b>

ND- No Data, N/A- Not Applicable  
 \$- No dollar amount (\$0.00).

### Presidential Disaster Declarations

There has been 2 disaster declaration in which wind (straight-line winds) was included in the declaration title for Brazoria County. However, the declarations are listed as “severe storm” for the incident type.<sup>1</sup>

Table 6.10.12: Federal Disaster Declarations, Tornado/Microburst

Declaration Date	Incident Type	Title	Disaster Number	Declaration Type
5/29/2015	Severe Storm	Severe storms, tornadoes, straight-line winds, and flooding	4223	Major Disaster Declaration
11/25/2015	Severe Storm	Severe storms, tornadoes, straight-line winds, and flooding	4245	Major Disaster Declaration

### USDA Disaster Declarations

The Secretary of Agriculture is authorized to designate counties as disaster areas to make EM loans available to producers suffering losses in those counties and in counties that are contiguous to a designated county. In addition to EM loan eligibility, other emergency assistance programs, such as FSA disaster assistance programs, have historically used disaster designations as an eligibility trigger. USDA Secretarial disaster designations must be requested of the Secretary of Agriculture by a governor or the governor’s authorized representative, by an Indian Tribal Council leader, or by an FSA SED. The Secretarial disaster designation is the most widely used. When there is a presidential disaster declaration, FEMA immediately notifies FSA of the primary counties named in a Presidential declaration. USDA Disaster Declarations for Brazoria County since 2018 are listed in the table below.<sup>39</sup>

Table 6.10.13: USDA Declared Disasters (2018-2023), Windstorm

Crop Disaster Year	Disaster Description	Designation Number
<b>None</b>		

### Probability of Future Occurrences

Severe thunderstorms and their associated damaging winds are more likely to occur in summer months when temperatures are higher and moisture from the gulf helps to fuel thunderstorm development. According to the FEMA NRI for strong wind events, annualized frequency values are 1.1 events per year over a 34-year period of record (1986-2021), with 34 events on record for this timeframe.<sup>42</sup>

### Populations at Risk

Populations at risk for strong wind events include similar groups to those listed under the Section 6.4 (Tornado) and Section 6.8 (Severe Thunderstorms & Lightning) hazard profiles. All residents within the county are exposed to this hazard. The impacts of a strong winds on the life, health, and safety of City of Angleton residents depend on several factors, including the severity of the event and adequate warning time being provided to residents to secure projectiles and take shelter. Strong wind events can lead to a disruption in emergency response services, loss of electricity, loss of clean water, and delayed forms of necessary medical assistance while repairs are made to critical facilities or power is being restored within the county.

The NCHH summarizes at-risk populations for several hazards. For strong wind events, these include older adults, people experiencing homelessness, people with disabilities, and people with chronic health conditions. In addition to the dangers listed above, older adults can face social isolation, lack of electricity needed to run medical equipment, lack of access to a vehicle for evacuation, and lack of access to other critical supplies. Evacuation for these events is fast-paced, and older adults may not be able to seek adequate shelter or secure dangerous projectiles on their property before a wind event impacts their area. For people experiencing homelessness, adequate shelter is critical in keeping populations safe during these events as they are heavily associated with severe thunderstorms and even tornadoes. People with disabilities may require additional assistance to stay safe and prepare for these hazards and their after-effects such as creating a support network, finding accessible transportation to evacuate or get medical attention, and loss of power for needed medical equipment. Likewise, those with chronic health conditions may need similar assistance as those with disabilities. Residents impacted may be displaced or require temporary to long-term sheltering. In addition, downed trees, damaged buildings, and debris carried by the strong winds associated with severe thunderstorms or tornadoes can lead to further injury or loss of life. Socially vulnerable populations are most susceptible based on several factors, including their physical and financial ability to react or respond during or directly following a hazard event. These issues disproportionately affect low-income communities and families who may lack the resources to pay for damages to their homes, lack insurance, or lack the resources to replace home contents or personal belongings.<sup>43</sup> Those living in mobile/manufactured housing are also at greater risk from this hazard as even anchored mobile homes can be seriously damaged or destroyed when winds gust over 80 mph.<sup>69</sup>

FEMA's NRI utilizes data from multiple sources including historical hazard events, hazard intensity, exposure of people and property to hazards, socioeconomic factors, and community resilience indicators. The NRI also incorporates hazard data to determine the frequency and intensity of various natural hazards. This information helps assess the likelihood of specific hazards occurring in different regions. The NRI considers the exposure of communities to hazards and incorporates factors such as population density, infrastructure systems, and critical facilities that may be at risk during a hazard event. The NRI also generates risk scores for communities across the U.S. that provide a relative ranking of areas based on their overall risk level. This helps to identify areas that may require additional resources and attention for mitigation and planning efforts. The NRI risk equation includes 3

components. EAL represents the average economic loss in dollars resulting from natural hazards each year. The CRF is a scaling factor that incorporates social vulnerability (the susceptibility of social groups to the adverse impacts of natural hazards) and community resilience (the ability of a community to prepare for anticipated natural hazards, adapt to changing conditions, and withstand and recover rapidly from disruptions) into the NRI. The outcome, the risk index, represents the potential negative impacts of natural hazards. The NRI EAL score, and rating, represent a community’s relative level of expected loss each year when compared to all other communities at the same level.<sup>42</sup>

EAL Exposure Values and EAL Values for Brazoria County can be found in the tables below.

Table 6.10.14: Expected Annual Loss Exposure Values, Strong Wind

Hazard Type	Building Value (\$)	Population Equivalence (\$)/ Population (#)	Agricultural Value (\$)	EAL Total (\$)
<b>Strong Wind</b>	\$57,514,822,174	\$4,309,098,400,000 / 371,474.00	\$6,997,533	\$4,366,613,222,174

Table 6.10.15: Expected Annual Loss Values, Strong Wind

Hazard Type	Building Value (\$)	Population Equivalence (\$)/ Population (#)	Agriculture Value
<b>Strong Wind</b>	\$161,599	\$50,688 / 0.00	\$512

N/A- Not Applicable

EAL for the City of Angleton was derived by creating a report that used census tract information for tracts that included the Angleton city limits. These were census tracts 48039662100, 48039662200, 48039662400, 48039662300, 48039662500, 48039663100, and 48039664100. EAL according to the FEMA NRI for strong wind events for these census tracts is listed as relatively low, with one tract rating very low. EAL values, risk index ratings, risk index scores, social vulnerability, and community resilience for each census tract can be found in the figures below.<sup>44</sup> Additionally, the FEMA NRI lists the HLR, a hazard- and county-specific estimate of the percentage of the exposed consequence type (building value, population, or agriculture value) expected to be lost due to a hazard occurrence, for strong wind events within Brazoria County is listed as very low.<sup>42</sup>

Figure 6.10.7: Risk Index by Census Tract, Strong Wind

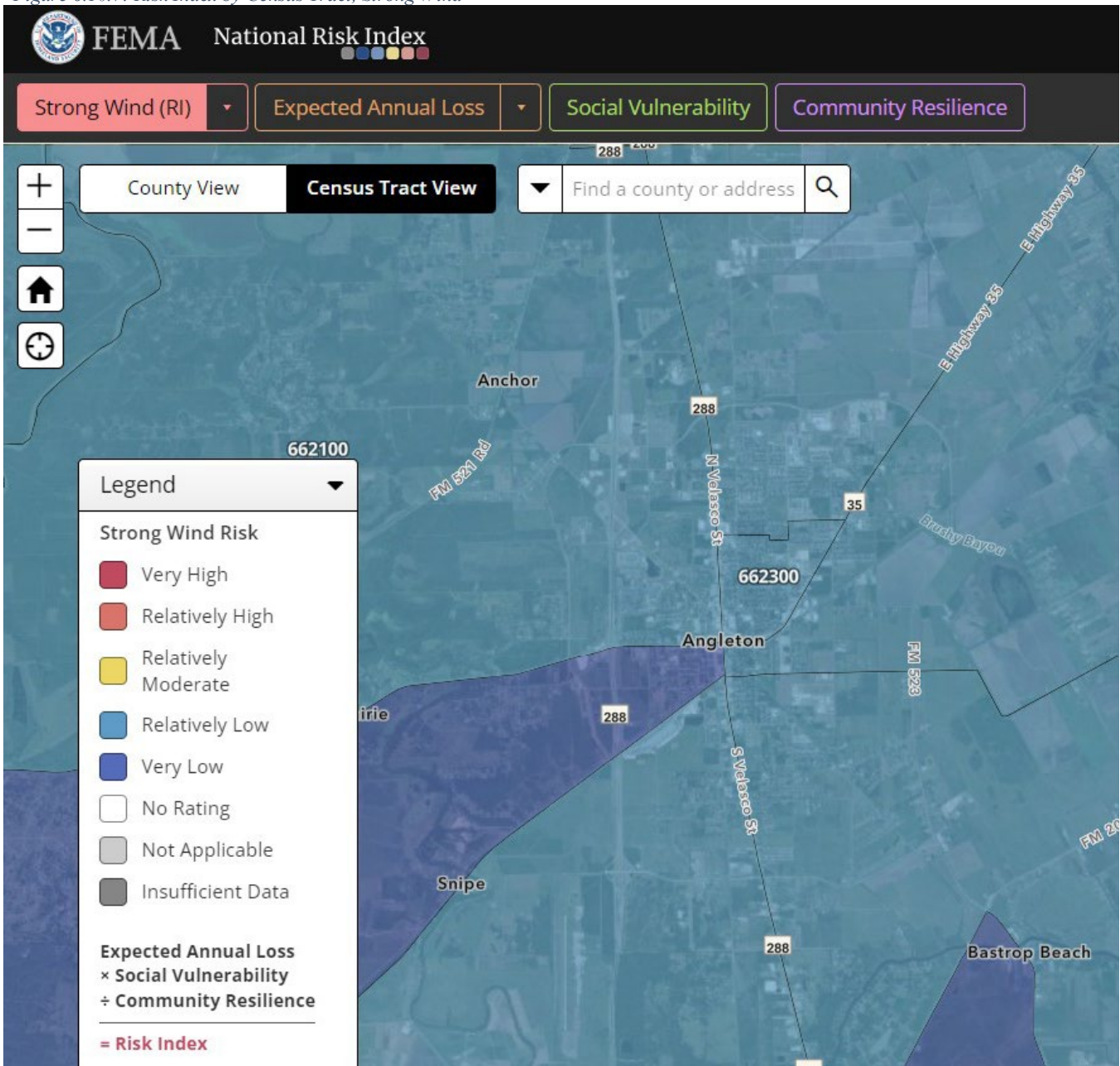


Figure 6.10.8: Social Vulnerability by Census Tract, City of Angleton

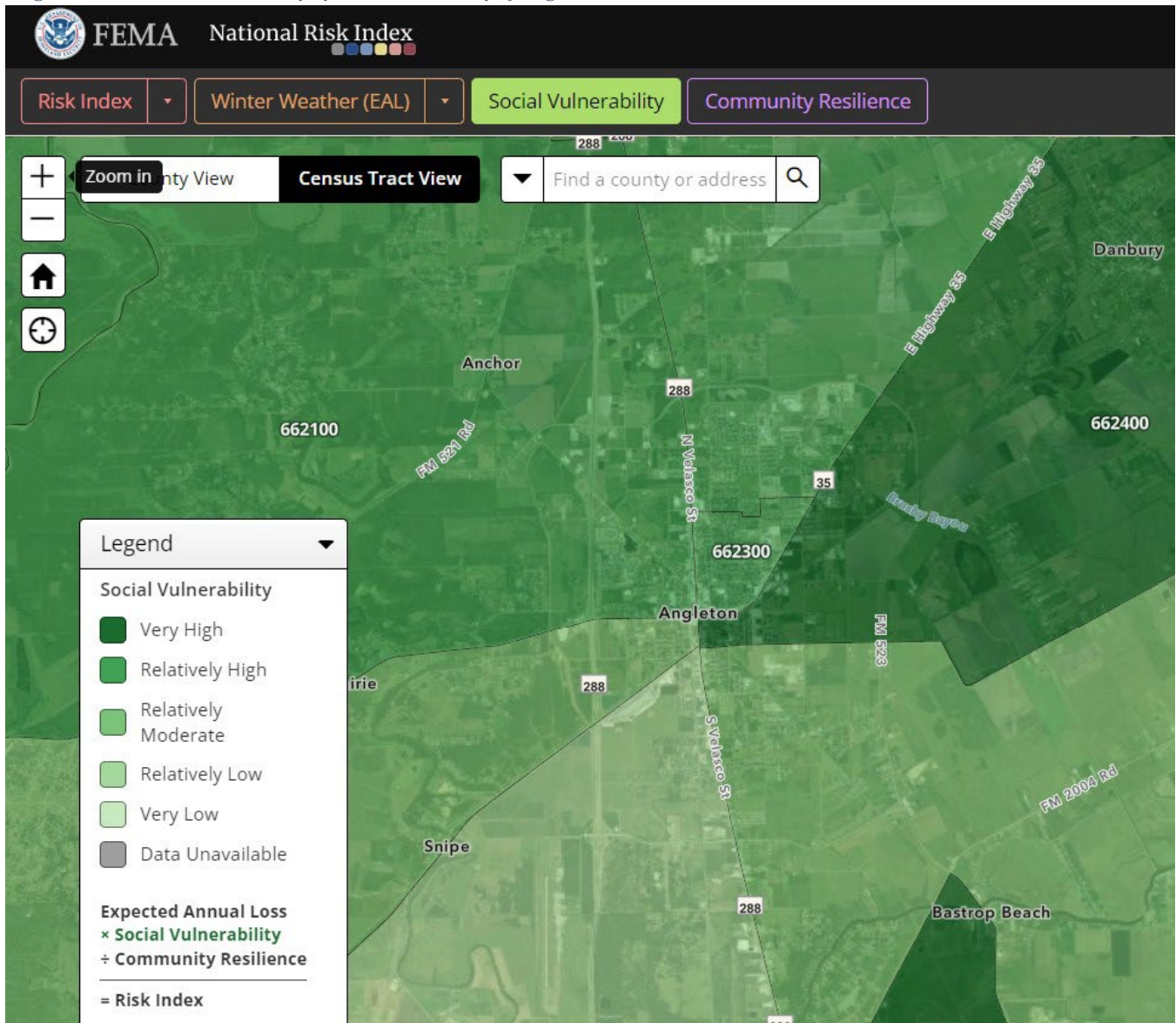


Figure 6.10.9: Community Resilience by Census Tract, City of Angleton

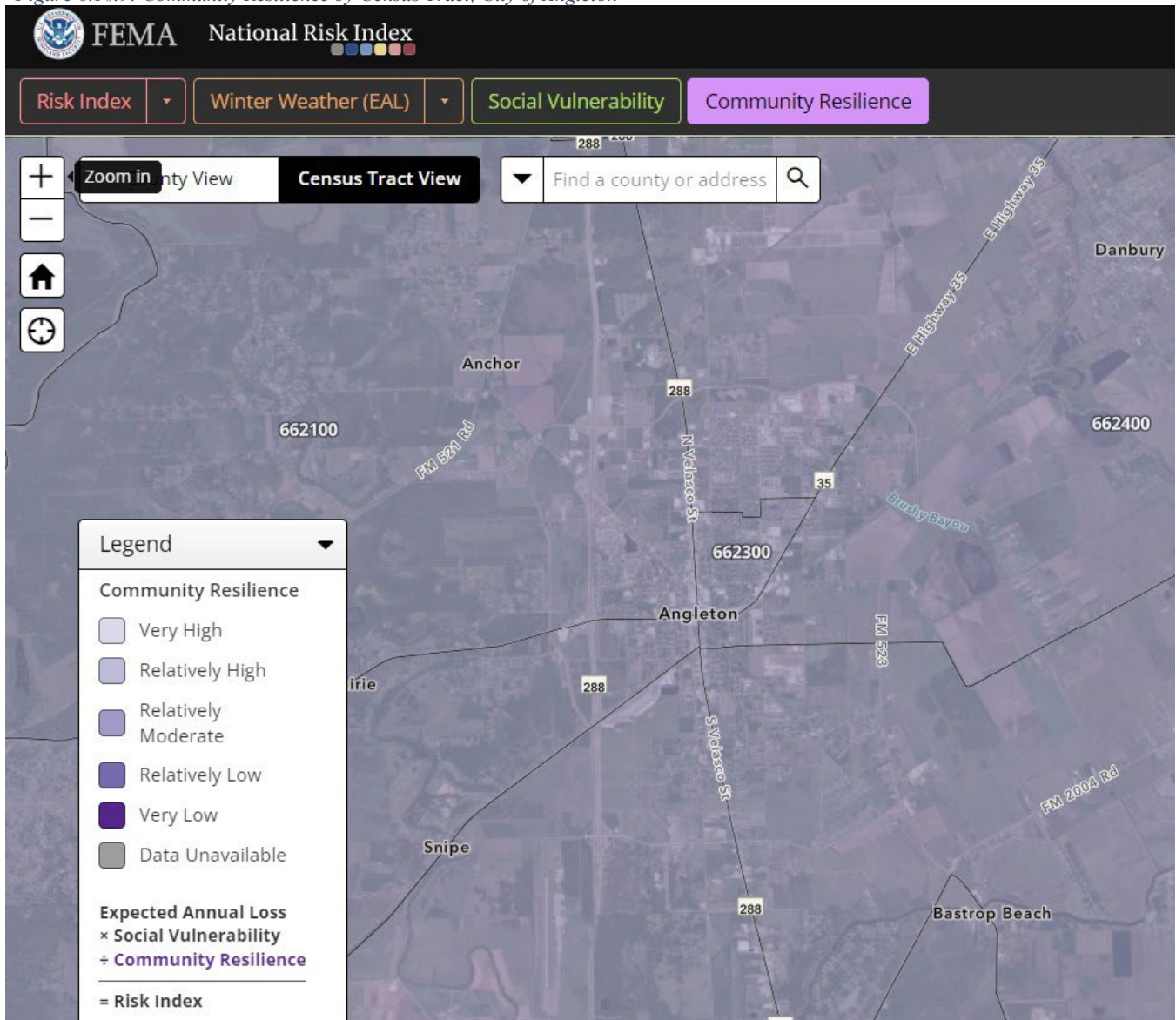




Figure 6.10.10: FEMA NRI Summary, Strong Wind

Rank	Community	State	Risk Index Rating	Risk Index Score	National Percentile
1	Census tract 48039662400	TX	Relatively Low	33.37	0  100
2	Census tract 48039662200	TX	Relatively Low	33.2	0  100
3	Census tract 48039662100	TX	Relatively Low	32.02	0  100
4	Census tract 48039663100	TX	Relatively Low	31.69	0  100
5	Census tract 48039664100	TX	Relatively Low	28.89	0  100
6	Census tract 48039662300	TX	Relatively Low	27.75	0  100
7	Census tract 48039662500	TX	Very Low	23.5	0  100

Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Risk Index Score
1	Census tract 48039662400	TX	\$2,831	Very High	Relatively Moderate	1.43	\$4,062	33.37
2	Census tract 48039662200	TX	\$3,010	Relatively High	Relatively Moderate	1.34	\$4,026	33.2
3	Census tract 48039662100	TX	\$3,026	Relatively High	Relatively Moderate	1.22	\$3,702	32.02
4	Census tract 48039663100	TX	\$3,629	Relatively Low	Relatively Moderate	1	\$3,632	31.69
5	Census tract 48039664100	TX	\$2,796	Relatively Moderate	Relatively Moderate	1.05	\$2,930	28.89
6	Census tract 48039662300	TX	\$1,942	Relatively High	Relatively Moderate	1.38	\$2,676	27.75
7	Census tract 48039662500	TX	\$1,601	Relatively Moderate	Relatively Moderate	1.12	\$1,788	23.5

### Climate Change Impacts

Since windstorms and strong winds are heavily related to severe thunderstorm development, this section will mirror that of Section 6.8 seen previously. According to the Office of the Texas State Climatologist, the climate data record for severe thunderstorms is poor and severe thunderstorms are too small to be simulated directly by present-day climate models. Over the past few decades, the severe storm environment over Texas has changed in complex and opposing ways. The amount of energy available for convection has decreased, and the amount of energy needed to initiate convection has increased at the same time. This suggests that environmental conditions have become less favorable for the occurrence of thunderstorms. However, the amount of low-level shear has increased, which would be expected to make thunderstorms more likely to become severe once they develop.

Changes in severe storm environments have not been uniform throughout the year, with environments becoming more favorable for severe thunderstorms and significant hail in Texas early in the spring and less favorable later in the spring. Strong winds associated with severe storms occur most often during the months of May and June. Climate model simulations imply different prospects in the future. As temperatures increase, the amount of energy available to fuel these storms is simulated to increase as temperature and low-level moisture increase. This results in an overall increase in the number of days capable of producing severe thunderstorms. With these complex trends and partially contradictory

information between models and observations, there is low confidence in any ongoing trend in the overall frequency and severity of severe thunderstorms.<sup>58</sup>

Table 6.10.16: Climate Change Impacts Summary, Windstorm

<b>Location</b>	The location of windstorms is not expected to change.
<b>Extent/Intensity</b>	The extent and intensity of windstorms within the county may change (increase) due to increased temperatures and energy available to fuel severe thunderstorms.
<b>Frequency</b>	There are no clear trends in windstorm frequency just as there are no clear trends in severe thunderstorm frequency. This is due to considerable variability in conditions that lead to them occurring. However, these hazards occur most frequently in warmer months, around May and June.
<b>Duration</b>	The duration of windstorms is not likely to change, however, the intensity of them is expected to increase due to rising temperatures and the proximity of the county to the Gulf of Mexico aiding to fuel thunderstorms.

# Section 6.11: Erosion



## 6.11 Erosion

Soil erosion consists of a series of natural processes that move earth and rock material. The land surface is worn away through the detachment and transport of soil and rock by moving water, wind, and other geologic agents.<sup>109</sup> Erosion removes topsoil (areas with the highest levels of organic matter and nutrients), reduces levels of organic matter within the soil, and creates a less favorable environment for plants due to breakdown within the soil structure. The different types of erosion are described in table 6.11.1 below.

FEMA defines erosion as “The process of the gradual wearing away of land masses. Erosion can occur along coasts and rivers and streams.” Although flood-related erosion is covered by flood insurance, this hazard is not covered under the NFIP. The mapping and regulatory standards of the NFIP do not currently address erosion, however, CRS credit is given to communities that include this hazard in their regulations, planning, public information, hazard disclosure, and flood warning programs. For example: communities that have established setbacks and other requirements in areas subject to erosion.

Table 6.11.1: Types of Erosion<sup>110</sup>

Type of Erosion	Description
<b>Wind Erosion</b>	Wind erosion is a natural process that moves loose soil from one location to another. Wind erosion can harm the fields where it picks up soil, as well as the areas where the dirt—and whatever minerals and contaminants it includes—are deposited. It can also have health impacts: worsening air quality, obscuring visibility, and causing people to experience breathing difficulties.
<b>Water Erosion, Rainfall</b>	Occurs when the rainfall intensity that hits the ground exceeds the absorbing capacities or the infiltration rate of soil affected. This leads to soil in water runoff and sediment transport to waterways resulting in deterioration in soil and water quality.
<b>Water Erosion, Sheet</b>	Sheet erosion is the removal of soil in thin, uniform layers (sheets) by raindrop impact and shallow surface water flow. Sheet erosion can sometimes be difficult to detect unless the soil is deposited nearby or if the damage is already severe. This erosion process removes the fine soil particles that contain most of the important nutrients and organic matter.
<b>Water Erosion, Rill</b>	Occurs when runoff becomes concentrated enough to cut small rivulets in the soil that carry sediment down hillsides.
<b>Water Erosion, Gully</b>	Gully Erosion is the washing away of soil through deep grooves or channels across unprotected land. Gully erosion can refer to soil being washed away through human-made drainage lines or describe the process of soil traveling through grooves created by hard rains. Farmers will typically fill these grooves back in with fresh soil as a temporary solution. Gully erosion can hinder the ability to plow fields and grow crops.
<b>Water Erosion, Bank</b>	The progressive undercutting, scouring, and slumping of natural rivers and streams as well as man-made drainage channels by the intense movement of water. When land managers remove vegetation or ranchers allow their livestock to overgraze the land near streams and riverbanks, it can exacerbate the problem.

### Location

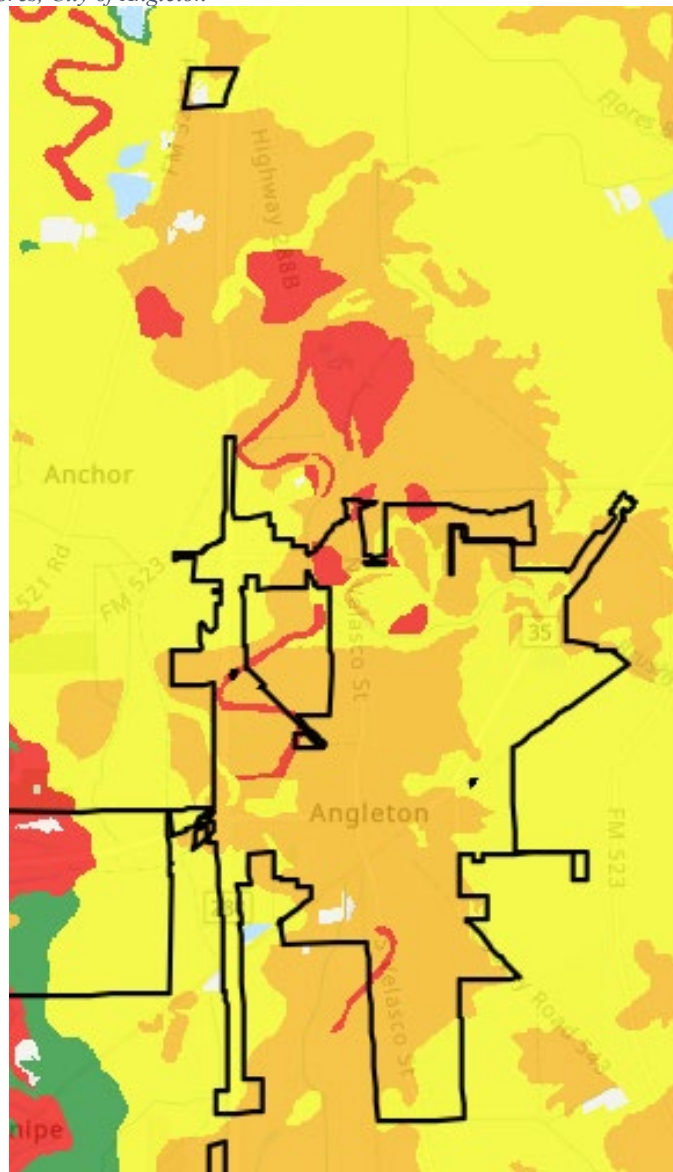
Soil erosion is typically measured in a variety of ways, both qualitative and quantitative. Within the county, inland erosion due to water is the main hazard of concern. One method is the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE). Potential erodibility for sheet and rill erosion is estimated by multiplying the following factors of the Universal Soil Loss Equation USLE: Rainfall and runoff factor (R), Susceptibility of the soil to water erosion (K), and Combined effects of slope length and steepness (LS). The K factor represents the susceptibility of soil to water erosion.<sup>111</sup>

Past management or misuse of a soil by intensive cropping can increase a soil's erodibility. The K factor may need to be increased if the subsoil is exposed or where the organic matter has been depleted, the soil's structure destroyed, or soil compaction has reduced permeability.<sup>112</sup> Table 6.11.2 below shows K factor scores, soil descriptions, and their associated soil erodibility. Figure 6.11.1 depicts these k-factors within the City of Angleton. K-factors with high erodibility of 0.4 or greater are depicted in red. The legend breaks down the soil erodibility factor and how they were colored on the map. There are very few areas within the city that have a high erodibility score.

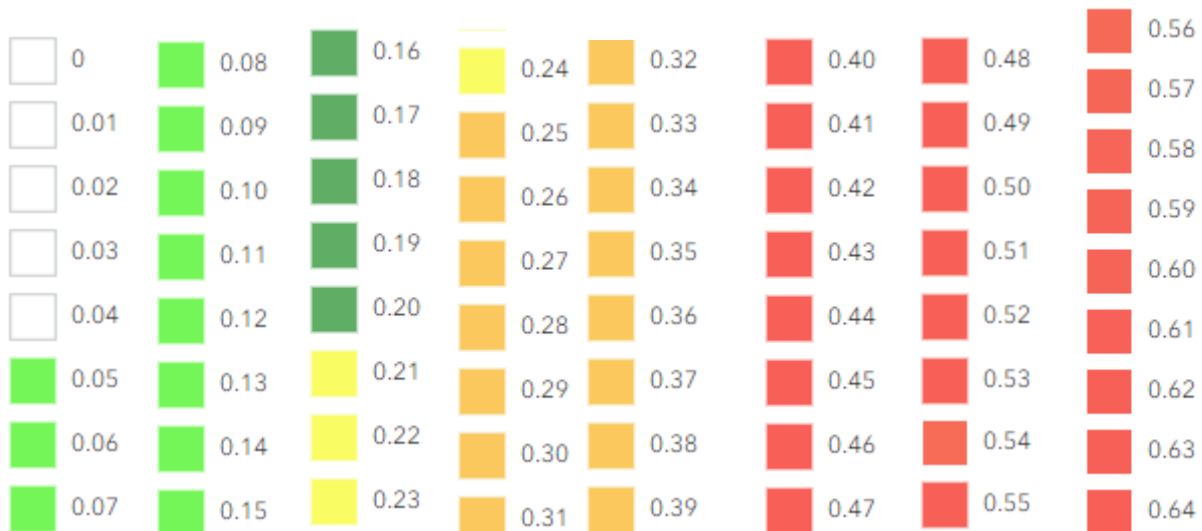
Table 6.11.2: K Factor, Soil Erodibility Scores

<b>K-Factor</b>	<b>Soil Description</b>	<b>Erodibility</b>
<b>0.05 to 0.15</b>	High in clay	Resistant to detachment
<b>0.05 to 0.2</b>	Coarse textured soils, such as sandy soils	Low runoff, easily detached
<b>0.25 to 0.4</b>	Medium textured soils, such as the silt loam soils	Moderately susceptible to detachment and they produce moderate runoff
<b>&gt;0.4</b>	Soils with a high silt content	Most erodible of all soils, easily detached; tend to crust and produce high rates of runoff

Figure 6.11.1: Soil Erodibility Scores, City of Angleton



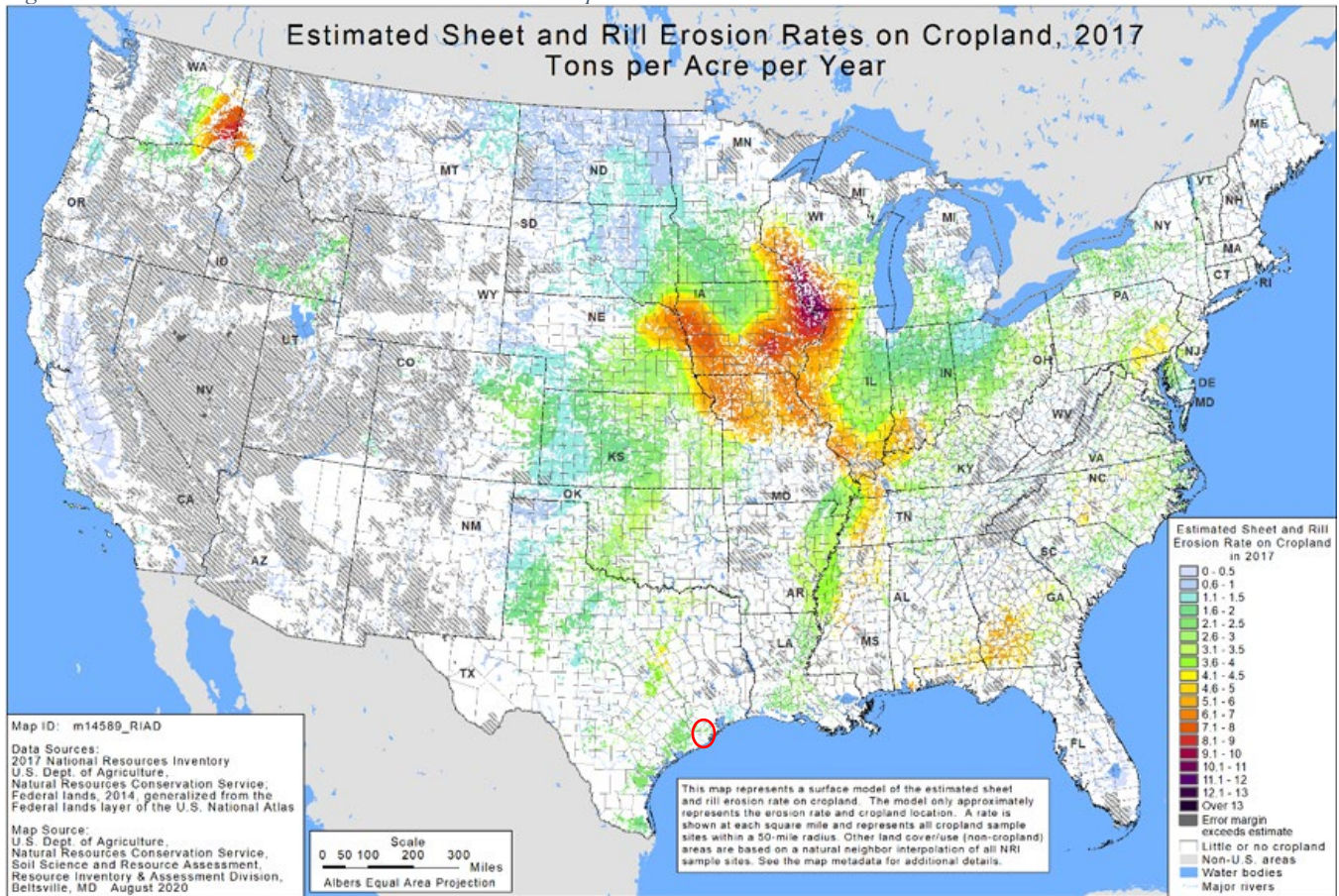
Legend- Soil Erodibility, K Factors



### Extent

Soil erosion and its risk of occurring is difficult to measure without proper documentation techniques in place. Measuring certain properties in specific locations in the field, such as the surface and aggregate stability of the soil, infiltration rates, organic matter content, and sediment delivery ratios are all necessary components to quantify the rate of erosion in a given area. Furthermore, using these quantitative measurements with photographs or visual observations of the soil or landmarks at specific locations would help to paint a clearer picture if erosion is occurring or likely to occur. Soil erosion rates on cropland within the U.S. decreased 35 percent between 1982 and 2017. The water (sheet and rill) erosion rate declined from 3.89 tons per acre per year to 2.67 tons per acre per year, and the erosion rate due to wind decreased from 3.24 tons per acre per year to 1.96 tons per acre per year.<sup>113</sup> Figure 6.11.2 shows the estimated sheet and rill erosion rates on cropland in tons per acre per year within the U.S. The rate of erosion due to sheet and rill within areas of Brazoria County ranged from 2.1 to 2.5 tons per acre per year. Within the City of Angleton has very few areas of erodible soils within the city limits (as seen above). This map is derived from the 2017 summary resource report developed by the U.S. Department of Agriculture Natural Resources Conservation Service. It is the most recent report available and was published in 2020.

Figure 6.11.2: Estimated Sheet and Rill Erosion Rate on Cropland within the U.S.



## Historic Occurrences

### Presidential Disaster Declarations

There have been no disaster declarations for erosion within Brazoria County, in which the City of Angleton is located, since 1950.<sup>1</sup>

### USDA Disaster Declarations

The Secretary of Agriculture is authorized to designate counties as disaster areas to make EM loans available to producers suffering losses in those counties and in counties that are contiguous to a designated county. In addition to EM loan eligibility, other emergency assistance programs, such as FSA disaster assistance programs, have historically used disaster designations as an eligibility trigger. USDA Secretarial disaster designations must be requested of the Secretary of Agriculture by a governor or the governor’s authorized representative, by an Indian Tribal Council leader or by an FSA SED. The Secretarial disaster designation is the most widely used. When there is a presidential disaster declaration, FEMA immediately notifies FSA of the primary counties named in a Presidential declaration. USDA Disaster Declarations for Brazoria County since 2018 are listed in the table below.<sup>39</sup>

Table 6.11.3: USDA Declared Disasters (2018-2023), Erosion

Crop Disaster Year	Disaster Description	Designation Number
	None	

## Probability of Future Occurrences

As mentioned above, the rate of erosion on croplands has been decreasing across the U.S. over time. It is hard to estimate the probability of future occurrence for this hazard due to a lack of data regarding previous erosion events through any formal system.

## Populations at Risk

Populations at risk from erosion include those who work in agricultural fields. Erosion can greatly affect agriculture production through lost revenue and agricultural production. Those who own private property particularly along areas near creek and rivers may be more susceptible to this hazard as river cresting can exacerbate erosion damage that could require costly repairs and infrastructure reinforcement. The FEMA NRI does not account for erosion within its various analysis of natural hazards.

## Climate Change Impacts

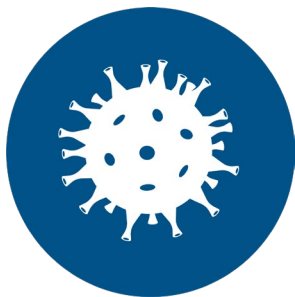
Climate change can increase the impacts felt from water erosion from more frequent and intense rainfall, longer periods of extreme heat and drought can lead to an increase in wind erosion, and as wildfires destroy areas- the loss of vegetation and groundcover are more prone to erosion by both wind and water. In addition, soil erosion can drive climate change. Soil is a vast storage center for carbon dioxide, organic matter, and microbes. When soil becomes degraded it can release carbon back into the atmosphere.<sup>58</sup>

Table 6.11.4: Climate Change Impacts, Erosion

<b>Location</b>	The location of erosion is not expected to change.
<b>Extent/Intensity</b>	The extent of erosion is not expected to change.
<b>Frequency</b>	The frequency of erosion is not expected to change. The rate of erosion on croplands have been decreasing across the U.S. over time. Frequency of this hazard is difficult to estimate.
<b>Duration</b>	The duration of erosion is not expected to change.



# Section 6.12: Emerging Infectious Diseases



## 6.12 Emerging Infectious Diseases

Emerging Infectious Diseases (EID) are defined by the National Institute of Allergy and Infectious Diseases as “infectious diseases that have newly appeared in a population or have existed but are rapidly increasing in incidence or geographic range.”<sup>114</sup> Similarly, a pandemic is a disease outbreak that spans several countries and affects many people. Pandemics are most often caused by viruses which can easily spread from person to person.<sup>115</sup> This hazard profile will refer to EID and use the 2019 coronavirus, SARS-CoV-2, pandemic to give a clearer picture of the risk and vulnerability of this new hazard of concern for the county.

### Location

The risk of EID applies the same to the entire county as this hazard has no geographic boundaries. However, areas that are more densely populated can contribute to the rapid spread of EID.

### Extent

The extent of an infected population depends on how the illness is spread and methods of transmissibility and detection. In areas that are more densely populated, contact between infected and uninfected individuals may be greater than in rural areas leading to more chances for infection.

### Historic Occurrences

Pandemics can emerge anywhere and quickly spread. It is difficult to predict when or where the next pandemic will occur.<sup>116</sup> According to the CDC, five pandemics have occurred within the US since 1918. The table below outlines these pandemics, when they occurred, and the underlying cause.<sup>117</sup>

Table 6.12.1: Historic Pandemic Occurrences in the US

Pandemic Name	Estimated Deaths (US only)	Cause
1918 Pandemic	675,000	Influenza virus, H1N1
1957- 1958 Pandemic	116,000	Influenza virus, H2N2
1968 Pandemic	100,000	Influenza virus, H3N2
2009 H1N1 Pandemic	12,469	Influenza virus, H1N1 pdm09 virus
2020 Covid-19 Pandemic	1,181,607	SARS-CoV-2 virus

### Presidential Disaster Declarations

There have been 2 federally declared emerging infectious disease related disaster declarations in Brazoria County, in which the City of Angleton is located, for EID listed under biological incidents.

Table 6.12.2: Federal Disaster Declarations for Emerging Infectious Diseases

Date	Disaster Number	Declaration Types	Incident Type	Declaration Title
3/13/2020	3458	Major Disaster Declaration	Biological	Covid-19
3/25/2020	4485	Emergency Declaration	Biological	Covid-19 Pandemic

### USDA Disaster Declarations

The Secretary of Agriculture is authorized to designate counties as disaster areas to make EM loans available to producers suffering losses in those counties and in counties that are contiguous to a designated county. In addition to EM loan eligibility, other emergency assistance programs, such as FSA disaster assistance programs, have historically used disaster designations as an eligibility trigger. USDA Secretarial disaster designations must be requested of the Secretary of Agriculture by a governor or the governor’s authorized representative, by an Indian Tribal Council leader, or by an FSA SED. The

Secretarial disaster designation is the most widely used. When there is a presidential disaster declaration, FEMA immediately notifies FSA of the primary counties named in a Presidential declaration. USDA Disaster Declarations for Brazoria County since 2018 are listed in the table below.<sup>39</sup>

Table 6.12.3: USDA Declared Disasters (2018-2023), Emerging Infectious Diseases

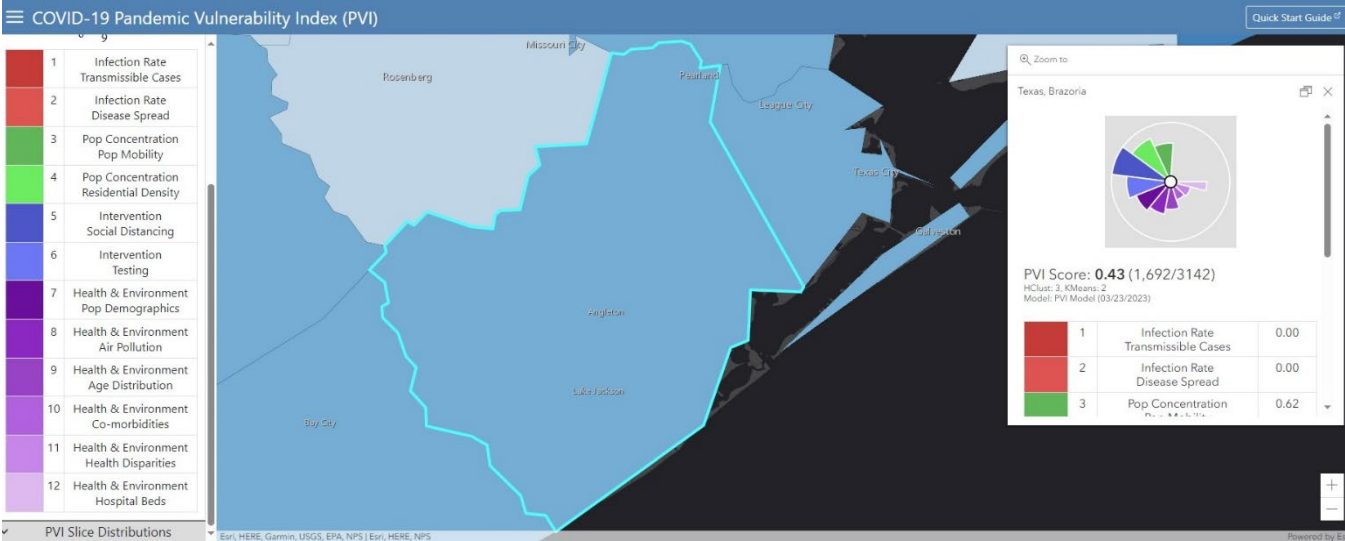
Crop Disaster Year	Disaster Description	Designation Number
	None	

**Probability of Future Occurrences**

EID and pandemics can emerge anywhere and quickly spread. It is difficult to predict when or where the next pandemic will occur. As seen in The National Center for Biotechnology Information review titled “The consequences of human actions on risks for infectious diseases”, The number of events of emerging infections has been increasing over the last 100 years. EIDs have been reviewed extensively during the last two decades, and it is now generally accepted that most drivers of emerging diseases are ecological, and the majority of these caused by anthropogenic influences such as increased travelling and transport of animals and goods; changes in ecosystems; deforestation and reforestation; altered land use; increased irrigation and creation of water dams and reservoirs; and urbanization.<sup>118</sup>

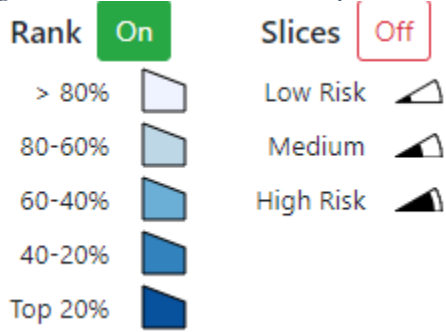
The National Institute of Environmental Health Sciences developed the COVID-19 Pandemic Vulnerability Index (PVI) Dashboard. This Dashboard creates risk profiles, called PVI Scorecards, for each county in the United States. The PVI summarizes and visualizes overall risk in a radar chart, which is a type of pie chart with various data sources comprising each slice of the pie. City of Angleton saw 114,526 Covid-19 cases and 1,025 deaths during the most recent pandemic. As seen in the figure below, Brazoria County’s PVI score is 0.43.<sup>119</sup>

Figure 6.12.1: Pandemic Vulnerability Index, City of Angleton



The slices shown in the chart to the right indicate a different data source (as described on the left of the figure). The information from each slice is combined to generate a PVI score for each county. A 0.43 PVI score puts Brazoria in the > 80% vulnerability ranking. Additionally, the bigger the “slice” shown for each item in the pie chart indicates the county has a higher risk for that area.

Figure 6.12.2: Pandemic Vulnerability Index Ranking Legend



**Populations at Risk**

EID can vary on severity for different populations based on age, underlying conditions, and how the disease is spread. The last 5 pandemics experienced in the US were respiratory illnesses. Populations that were/are most at risk include people who are older, those with heart or lung conditions, people with compromised immune systems, and people who are obese or diabetic.<sup>120</sup>

**Climate Change Impacts**

According to the CDC, milder winters, warmer summers, and fewer days of frost make it easier for these and other infectious diseases to expand into new geographic areas and infect more people. As climate changes, new infections may emerge that threaten human health or livelihood.<sup>121</sup>

Table 6.12.4: Climate Change Impacts Summary, Emerging Infectious Diseases

<b>Location</b>	The location of EID is expected to increase in urban areas of the county.
<b>Extent/Intensity</b>	The extent and intensity of EID is expected to increase.
<b>Frequency</b>	Frequency of EID is expected to increase.
<b>Duration</b>	There is no clear trend in duration of EID.

# Section 6.13: Cybersecurity



## 6.13 Cybersecurity

The Internet has improved communication, innovation, and access to information, however due to its largely open and unregulated nature municipal governments are more vulnerable to the hazards associated with cybersecurity threats and incidents. FEMA defines cyberattacks as “malicious attempts to access or damage a computer or network system.” Cyberattacks can lead to the loss of money or the theft of personal, financial, and medical information.” Cybersecurity involves preventing, detecting, and responding to those cyberattacks that can have wide-ranging effects on individuals, organizations, the community, and the nation.<sup>122</sup> Cyber terrorism refers to an attack on information technology itself in a way that would radically disrupt networked services. For example, cyber terrorists could disable networked emergency systems or hack into networks housing critical financial information. Cyberattacks can take many forms. They can use computers, mobile phones, gaming systems and other devices, they can include fraud or identity theft, block access or delete personal documents and pictures, may target children, and may cause problems with business services, transportation, and power.<sup>123</sup> The table below outlines some key terms and definitions for this hazard of concern.

Table 6.13.1: Key terms and definitions for Cybersecurity

Key terms	Definition
<b>Threat actor</b>	Who is behind the event? This could be the external “bad guy” that launches a phishing campaign or an employee who leaves sensitive documents in their seat back pocket.
<b>Threat action</b>	What tactics (actions) were used to affect an asset? The seven primary categories of threat actions include: Malware, Hacking, Social, Misuse, Physical, Error and Environmental.
<b>Incident</b>	A security event that compromises the integrity, confidentiality or availability of an information asset.
<b>Breach</b>	An incident that results in the confirmed disclosure—not just potential exposure—of data to an unauthorized party. A Distributed Denial of Service (DDoS) attack, for instance, is most often an incident rather than a breach, since no data is exfiltrated. That doesn’t make it any less serious.

### Location

These attacks have no set geographic boundary and can occur anywhere, facilitated by the internet. Cybersecurity is an evolving, borderless challenge especially if there are vulnerabilities in software, unsecure or weak passwords, social engineering attacks, and unsecure internet connections.

### Extent

The effect of a cyber-attack event can vary depending on the type of attack and the magnitude of the event or events. According to the Verizon Data Breach Investigations Report (DBIR), “There are four key paths leading cyber-attacks: Credentials, Phishing, Exploiting vulnerabilities, and Botnets. All four are pervasive in all areas of the DBIR, and no organization is safe without a plan to handle each of them.”<sup>124</sup>

### Historic Occurrences

There have been no historic occurrences or documented cyber-attacks within the City of Angleton. According to the Verizon DBIR, the North American Region (comprised of the US and Canada) has experienced 9,036 cybersecurity incidents, 1,924 of those with confirmed data disclosure between November 1, 2021, through October 31, 2022. 85% of breaches were due to system intrusion, basic web application attacks and social engineering. Threat actors for these breaches included external (94%), internal (12%), multiple (9%), and partner (2%). Motives for these cyber-attacks were financial (99%),

espionage (1%), and grudge (1%). Data comprised included credentials (67%), internal (50%), personal (38%), and other (24%).

#### *Presidential Disaster Declarations*

There have been no federally declared cyber-attack or cyber terrorism-related disaster declarations in Brazoria County, in which the City of Angleton is located, since 1950.

#### *USDA Disaster Declarations*

Cyber-attacks and cyber terrorism are a human-caused hazard, there are no USDA Disaster Declarations associated with the hazard.

### **Probability of Future Occurrences**

As cybercriminals become more sophisticated in the future, the county's vulnerability to cyber-attacks may change significantly. It is difficult to predict the probability of future occurrences due to the unpredictable nature of this hazard. Opportunistic criminals might also leverage natural disasters to target already vulnerable systems.

To decrease the number of future cybersecurity related attacks, FEMA suggests a variety of prevention methods that can be incorporated now, such as: keeping anti-virus software updated, using strong passwords. Changing passwords monthly, watching for suspicious activity, checking account statements and credit reports regularly, using secure internet communications, using a Virtual Private Network that creates a secure connection, using antivirus solutions (malware, and firewalls) to block threats., regularly back up files in an encrypted file or encrypted file storage device, limiting any personal information shared online, changing privacy settings, and protecting home networks.<sup>125</sup>

### **Populations at Risk**

Everyone is equally at risk for this hazard within Brazoria County and the City of Angleton. As the US becomes increasingly reliant on technology, the vulnerability to cyber threats will increase. A significant number of people fear data breaches as the outcomes result in disruptions to sectors like transportation and healthcare and include societal impacts like mistrust.

### **Climate Change Impacts**

Because terrorism is a human-caused hazard, no climate change impacts are associated with the hazard.

## Section 7: Mitigation Strategy

This section covers the mitigation strategy summary, which provides the mitigation goals, objectives, and action items included in the Hazard Mitigation Action Plan in response to identified hazards.



## Section 7: MITIGATION STRATEGY

The planning process, hazard analysis, and vulnerability assessment are foundations for a meaningful hazard mitigation strategy. The mitigation strategy provides an outline for how the county and the local jurisdictions aim to address and reduce the risks associated with the natural hazards identified in the HMP and reduce the potential impact on residents and structures. The mitigation strategy is divided into three sections the mission statement, goals and objectives, and the mitigation action plan (HMAP). The mission statement provides the overall purpose of the mitigation strategy and the HMP. The goals and objectives provide milestones for how the county aims to meet this purpose. The mitigation action plan details specific mitigation actions, or projects, programs, and policies the county aims to meet these goals and objectives.

### Mission Statement

The HMP aims to implement new policies, programs, and projects to reduce the risks and impacts associated with natural hazards, including public education and partnerships between local officials and residents.

### Goals

- 1) Educate citizens regarding emergency situations related to hazards.
- 2) Develop publications and educational information on all hazards and make them easily accessible to all within the City of Angleton.
- 3) Promote the use of emergency notification systems and weather alerts for all hazards.
- 4) Decrease the risk to life and property from hazards through planning, preparation, and mitigation.
- 5) Develop policies and strategies to effectively manage and reduce risk.
- 6) Increase the resiliency of the City of Angleton through projects and strategies that reduce the impacts of hazards.
- 7) Enhance coordination between local jurisdictions, county, state, and federal agencies.
- 8) Support the continuity of operations before, during, and after hazard events.
- 9) Incorporate hazard mitigation into community planning such as codes/ordinances, day-to-day operations, and projects.
- 10) Identify, protect, and assist socially vulnerable populations in recovery from hazard impacts.

### Objectives

- Protect the lives and property of residents and business owners.
- Eliminate the number of vulnerable structures in areas susceptible to repetitive flooding.
- Increase public education and awareness of hazards that affect the city.
- Provide alternative power sources for critical facilities and infrastructure.
- Upgrade deteriorating infrastructure.

### Mitigation Action Plan

The mitigation action plan explains the specific programs, policies, and projects that the county and the local jurisdictions aim to implement for the county to reach its HMAP objectives and goals. The mitigation action plan provides the details of each mitigation action including which local department will oversee implementing the actions, how the city intends to fund these actions, and the estimated time for implementing these actions.

The city submitted its mitigation actions based on the greatest vulnerabilities, goals, and needs. Each action was evaluated for feasibility using FEMA's Benefit Cost Analysis (BCA) Toolkit. The actions are separated by jurisdiction and include the BCA score for each. Mitigation actions below were given a priority rating of high, medium, or low based on feasibility, potential funding, BCA score, and implementation timelines.

## Mitigation Actions, City of Angleton

Jurisdiction:	City of Angleton	Action Number:	A1
Hazard(s) Addressed:	Flooding Hurricanes, Tropical Storms & Tropical Depressions Windstorm Tornado Severe Thunderstorms & Lightning Winter Weather Extreme Heat		
Project Title:	Generator for Lift Station # 8		
Project Description:	Purchase and install Generator for Lift Station # 8 which is the second largest lift station within the City of Angleton.		
Responsible Entity:	City of Angleton Public Works & Emergency Management Departments		
Losses Avoided:	Loss of wastewater utilities to a majority of city residents due to power outage.		
Priority Rating:	High- 1		
Partners:	N/A		
Cost Estimate:	161,173.20	Timeframe:	12 -24 months
<b>Potential Funding Sources:</b>	HMPG	<b>Benefit-Cost Analysis:</b>	42.53
Is this action related to a critical facility or lifeline?			Yes
Does this action reduce the effects of hazards on existing buildings?			No
Does this action reduce the effects of hazards for new buildings, infrastructure, or future development?			Yes
Does the action identify, analyze, and prioritize actions related to continued compliance with the NFIP?			Yes

Jurisdiction:	City of Angleton	Action Number:	A2
Hazard(s) Addressed:	Flooding Hurricanes, Tropical Storms & Tropical Depressions Windstorm Tornado Severe Thunderstorms & Lightning Winter Weather Extreme Heat		
Project Title:	Generator for Storm Water Pump		
Project Description:	Install a generator on Storm Water pump		
Responsible Entity:	City of Angleton Public Works & Emergency Management Departments		
Losses Avoided:	Life safety and prevention of homes lost due to rising water flooding as a backup in the event of power loss.		
Priority Rating:	High- 1		
Partners:	N/A		
Cost Estimate:	\$134,528	Timeframe:	12-24 months
<b>Potential Funding Sources:</b>	HMGP	<b>Benefit-Cost Analysis:</b>	1.10
Is this action related to a critical facility or lifeline?			Yes
Does this action reduce the effects of hazards on existing buildings?			No
Does this action reduce the effects of hazards for new buildings, infrastructure, or future development?			Yes
Does the action identify, analyze, and prioritize actions related to continued compliance with the NFIP?			Yes

Jurisdiction:	City of Angleton	Action Number:	A3
Hazard(s) Addressed:	Flooding Hurricanes, Tropical Storms & Tropical Depressions Windstorm Tornado Severe Thunderstorms & Lightning Winter Weather Extreme Heat		
Project Title:	Install a Permanent 350KW 277/480v, 3PH, 60hz Generator to the City Recreation Center		
Project Description:	Install a permanent generator that will power the City's Recreation Center so it can be used during and after a disaster event to shelter and stage city staff and provide a recovery center immediately after a disaster.		
Responsible Entity:	City of Angleton Parks and Recreation & Emergency Management Departments		
Losses Avoided:	Damage to a key piece of city infrastructure		
Priority Rating:	High- 1		
Partners:	N/A		
Cost Estimate:	\$250,000	Timeframe:	12 months
<b>Potential Funding Sources:</b>	HMPG, CDBG-MIT	<b>Benefit-Cost Analysis:</b>	0.43
Is this action related to a critical facility or lifeline?			Yes
Does this action reduce the effects of hazards on existing buildings?			Yes
Does this action reduce the effects of hazards for new buildings, infrastructure, or future development?			Yes
Does the action identify, analyze, and prioritize actions related to continued compliance with the NFIP?			No

Jurisdiction:	City of Angleton	Action Number:	A4
Hazard(s) Addressed:	Hurricanes, Tropical Storms, & Depressions Flooding Winter Weather Tornado Extreme Heat Wildfire Drought & Expansive Soils Severe Thunderstorms & Lightning Hail Cybersecurity Windstorm Erosion Emerging Infectious Diseases		
Project Title:	Public Education Materials		
Project Description:	Implement an outreach and education campaign to educate the public on all hazards that affect the City of Angleton		
Responsible Entity:	City of Angleton Parks Emergency Management Department		
Losses Avoided:	Increase in citizen education regarding hazards- preservation of property, decreased financial losses due to natural hazards, and mitigating the loss of human life and injuries		
Priority Rating:	Medium- 2		
Partners:	N/A		
Cost Estimate:	\$5,000	Timeframe:	12 months
<b>Potential Funding Sources:</b>	HMPG, Local funds, staff time/wages	<b>Benefit-Cost Analysis:</b>	N/A
Is this action related to a critical facility or lifeline?			No
Does this action reduce the effects of hazards on existing buildings?			No
Does this action reduce the effects of hazards for new buildings, infrastructure, or future development?			No
Does the action identify, analyze, and prioritize actions related to continued compliance with the NFIP?			No

## Section 8: Plan Maintenance

This section provides an overview of plan maintenance procedures which includes information on monitoring, evaluating, and updating the plan, and a description of how this plan will be incorporated into existing programs.

## Section 8: PLAN MAINTENANCE

To remain an effective tool, the HMP will undergo continuous review and updates. This practice is known as plan maintenance and requires monitoring, evaluating, updating, and implementing the entirety of the written plan and planning process. To accomplish this, a Plan Maintenance Team (PMT) has been determined and is comprised of representatives from various departments within the City of Angleton. The Plan Maintenance Team Leader shall be the City of Angleton Emergency Management Coordinator.

### Public Involvement

Continued stakeholder and public involvement will remain a vital component of the HMP. The HMP will be hosted on the City of Angleton and H-GAC websites, and public input can be submitted at any time to the listed contacts. The PMT Leader is responsible for documenting public feedback and presenting the comments for discussion at each annual Plan Maintenance meeting.

The PMT Leader will also conduct outreach and invite the public to annual Plan Maintenance meetings. The PMT Leader will notify the public of all annual meetings by posting meeting flyers and agendas online via the city website and social media and providing printed copies of the meeting agenda flyers at city buildings 30 days prior to the meetings. In addition, the city will seek input from the public on the status of existing hazards, emerging vulnerabilities, and evaluate the HMP's strategy with the public. During each meeting, the PMT will provide an open comment forum for interactive discussion with the public. The development of new goals and strategies will be a joint effort between the PMT Leader, PMT, and public participants.

### Procedures & Schedule

Procedures ensure that the goals, objectives, and mitigation strategy are regularly examined for feasibility and that the HMP remains a relevant and adaptive tool. The PMT will meet annually and hold its first meeting within one year after the plan's approval date. An additional mid-year meeting will be held 18 months prior to the plan's expiration to develop a timeline and strategy to update the HMP.

Any new mitigation actions, strategies, required studies, suggestions for improvements, or changes to the entire written plan or planning process will be submitted to the PMT Leader. The representative will evaluate the items for compliance with TDEM and FEMA regulations before leading the process to adopt or approve the new items or suggestions. Recommended changes, updates, and revisions will be implemented based on available funding to support revisions and updates and will be assigned to appropriate officials with pre-determined timelines for completion. Updates to the HMP will then be adopted by the appropriate governing body.

Table 8.1.1: Plan Maintenance: Evaluation & Monitoring Procedures

Method and Procedures	Schedule	Responsible Entity
The PMT Leader will advertise all annual meetings via city websites, social media pages, and post flyers at the City Hall and city buildings 30 days prior to the meetings.	30 days prior to annual meetings	PMT Leader
The PMT Leader is responsible for evaluating the entire plan prior to the meeting. Each PMT member will be asked to identify and discuss any deficiencies in the plan as it relates to their jurisdiction. Each PMT member will discuss their findings followed by public input and comments.	Annually	PMT Leader, PMT member for each participating department, and Public

<p>Emerging hazards, risks, and vulnerabilities will be identified and discussed.</p> <ol style="list-style-type: none"> <li>1) PMT members are responsible for monitoring each natural hazard and providing a written and/or verbal update on any new occurrences and emerging risks.</li> <li>2) The PMT Leader will seek input from participants and the public at the annual meetings by opening the meeting for public comment.</li> <li>3) Newly identified hazards, risks, and vulnerabilities will be assigned to a PMT member to research and monitor.</li> </ol>	<p>Annually</p>	<p>Public and all PMT members</p>
<p>The PMT will evaluate the mitigation goals and objectives to ensure the HMP remains relevant, and the strategy continues to be effective.</p> <ol style="list-style-type: none"> <li>1) PMT members will identify new projects and/or re-prioritize existing strategies, emerging hazards, and shifting priorities.</li> <li>2) Mitigation strategies for the newly identified hazards, risks, and vulnerabilities will be proposed and discussed.</li> <li>3) Funding sources and cooperation for new initiatives will be determined.</li> </ol>	<p>Annually</p>	<p>PMT member for each participating department</p>
<p>The city will evaluate its progress in implementing the HMP and suggest improvements to the entire current written plan, public participation, and planning process.</p> <ol style="list-style-type: none"> <li>1) Representatives will publicly discuss progress and submit written progress reports to the PMT Leader.</li> <li>2) Completed and ongoing mitigation actions will be discussed by the responsible entity.</li> <li>3) Unaddressed mitigation actions will be evaluated for relevancy and/or amended to increase feasibility.</li> <li>4) The feasibility of the mitigation strategy will be evaluated, and any necessary revisions will be proposed.</li> <li>5) The PMT Leader will report on all suggestions received throughout the past year on the planning process and the entire written plan and discuss how to incorporate these suggestions into current and future planning efforts.</li> </ol>	<p>Annually</p>	<p>PMT, the responsible department identified in the mitigation action up for discussion, and the public.</p>
<p>The PMT will develop a timeline and strategy to update the plan 12-18 months before it expires. The update strategy will include:</p> <ol style="list-style-type: none"> <li>1) Identify entities responsible for drafting and submitting the update to TDEM.</li> <li>2) Send appropriate representatives to G-318 training.</li> <li>3) Determine funding needs and funding sources for plan update.</li> <li>4) Review the entirety of the plan; discuss hazards, vulnerabilities and impacts identified in the plan and what to include/ revise in the update</li> </ol>	<p>12-18 months prior to HMP expiration</p>	<p>PMT Leader and PMT</p>

**Plan Integration**

Integrating the HMP into local planning mechanisms is key to its success. Effective integration allows communities to benefit from existing plans and procedures to further reduce their vulnerability and risk. Upon approval of the plan and approval of updates or revisions, as proposed by the PMT, each participating department will follow the pre-determined actions:

To update and revise existing planning mechanisms to further integrate the HMP the PMT will follow a basic process(es) described in this section.

- 1.) Propose a policy, strategy, or regulatory amendment to City Council.

- 2.) Advertise the amendment 15 days prior to the meeting where it will be discussed. Advertising procedures for the public meeting(s) are outlined in the public involvement measures described in Section 8 of this plan.
- 3.) Provide the public, elected officials, and governing bodies the opportunity to discuss and comment upon proposed change(s).
- 4.) If the proposal is accepted, the change is implemented by the City Council.

Several existing plans and programs that require integration of the HMP have been identified by the PT. The PMT will initiate the process described above. As each participating jurisdiction develops or approves new planning mechanisms, the mechanism’s name and the integration method will be added to the HMP.

Table 8.1.2: Adoption and Integration Procedures

Participating Jurisdiction	Adoption and Integration Procedures
City of Angleton	HMP and plan amendments will be presented to the City Council by the City of Angleton Emergency Management Office. An agenda for the meeting will be posted 30 days in advance, and a 30-day period of public comment will be provided. Upon approval, the approved HMP will be integrated into existing planning mechanisms described in Table 8.1.2.

Table 8.1.3: Integration of HMP and Planning Mechanisms

Plan Name	Integration Methods
Disaster Recovery Plan	Both plans should be updated and maintained in accordance with the other plan’s goals and strategies. The HMP will be consulted before any revisions or updates to the disaster recovery plans are made.
Floodplain Management Plan	The City of Angleton's floodplain regulations and floodplain management, as provided by the Angleton Drainage District, will provide preventative measures to prevent future development in the floodplains, and it also provides corrective guidance on development in the floodplain. When the regulations are updated, it will be reflected in the mitigation action strategy for flooding in Section 6.2 of this plan.
Emergency Operations Plan	Both plans will be continuously evaluated and monitored. Any Emergency Operations Plan updates will refer to, incorporate, and/or complement the HMP.
Subdivision/Zoning Ordinance	The city will review its codes and propose the adoption of codes that support mitigation activities defined in the HMP when appropriate.
Planning & Development Regulations	Each department has reviewed the vulnerabilities defined in the HMP and will adopt codes that support mitigation strategy and mitigation activities. PMT members will propose code amendments to the appropriate governing body, following to process to amend codes in the city, and document any regulation amendments to be included in the HMP.
Annual Budget	The City of Angleton and each participating jurisdiction will review their annual budget each year for opportunities to fund their highest-priority mitigation actions.
Flood Damage Prevention Ordinance	When the plan is updated or revised, the PMT will propose the adoption of codes that support mitigation strategy and mitigation activities.
Comprehensive Plan	Both plans will be continuously evaluated and monitored. Any Comprehensive Plan updates will refer to, incorporate, and/or complement the HMP.
Capital Improvements Plan	The city will review its capital improvement plan for projects that can also serve as natural hazard mitigation infrastructure. The CIP will be updated with project schedules and policies that support the implementation of each jurisdiction's highest-priority projects.



## References

- <sup>1</sup> Federal Emergency Management Agency. “Declared Disasters” Retrieved from: <https://www.fema.gov/disaster/declarations>
- <sup>2</sup> Federal Emergency Management Agency. “Disaster Declarations for States and Counties” Retrieved from: <https://www.fema.gov/data-visualization/disaster-declarations-states-and-counties>
- <sup>3</sup> U.S. Census Bureau. “QuickFacts, Brazoria County, Texas. Angleton, City, Texas” Retrieved from: <https://www.census.gov/quickfacts/fact/table/brazoriacountytexas,angletoncitytexas/PST045222>
- <sup>4</sup> U.S. Bureau of Labor Statistics, Unemployment Rate in Brazoria County, TX. Retrieved from FRED, Federal Reserve Bank of St. Louis: <https://fred.stlouisfed.org/series/TXBRAZ0URN>
- <sup>5</sup> U.S. Bureau of Labor Statistics, Unemployment Rate in Texas. Retrieved from FRED, Federal Reserve Bank of St. Louis: <https://fred.stlouisfed.org/series/LAUST480000000000003A>
- <sup>6</sup> Texas Demographic Center, Population Estimates and Projections Program. Retrieved at: [https://demographics.texas.gov/Resources/TPEPP/Estimates/2022/2022\\_txpopest\\_place.pdf](https://demographics.texas.gov/Resources/TPEPP/Estimates/2022/2022_txpopest_place.pdf)
- <sup>7</sup> Texas Demographic Center, “What's driving population change in Texas counties?”. Retrieved at: <https://idser.maps.arcgis.com/apps/MapSeries/index.html?appid=99dbf561151b4a2993248557e8f7aa56>
- <sup>8</sup> Mary Beth Jones, “Angleton, Texas” Handbook of Texas Online. Retrieved from: <https://www.tshaonline.org/handbook/entries/angleton-tx>. Published by the Texas State Historical Association.
- <sup>9</sup> United States Department of Agriculture, Natural Resources Conservation Service. 2022. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture, Agriculture Handbook 296. Retrieved from: <https://www.nrcs.usda.gov/resources/data-and-reports/major-land-resource-area-mlra>
- <sup>10</sup> Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Official Soil Series Descriptions. Retrieved from: <https://www.nrcs.usda.gov/resources/data-and-reports/official-soil-series-descriptions-osd>
- <sup>11</sup> Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Official Soil Series Descriptions. Retrieved from: <https://websoilsurvey.nrcs.usda.gov/app/>
- <sup>12</sup> Texas Water Development Board, River Basins. Retrieved at: [https://www.twdb.texas.gov/surfacewater/rivers/river\\_basins/index.asp](https://www.twdb.texas.gov/surfacewater/rivers/river_basins/index.asp)
- <sup>13</sup> Multi-Resolution Land Characteristics Consortium, National Land Cover Database. CONUS Land Cover Change Index Retrieved from: <https://www.mrlc.gov/viewer/>
- <sup>14</sup> Texas Local Government Code § 211.001. Regulation of land use, structures, businesses, and related activities, Municipal regulatory authority, general zoning regulations. Retrieved from: <https://statutes.capitol.texas.gov/SOTWDOcs/LG/htm/LG.211.htm>
- <sup>15</sup> The City of Angleton, Official Zoning Map. Retrieved at: <https://www.angleton.tx.us/DocumentCenter/View/2257/Official-Zoning-Map-04-2017-PDF?bidId=>
- <sup>16</sup> USA Facts, “Our Changing Population: Brazoria County, Texas”. Retrieved from: <https://usafacts.org/data/topics/people-society/population-and-demographics/our-changing-population/state/texas/county/brazoria-county/?endDate=2022-01-01&startDate=1971-01-01>
- <sup>17</sup> U.S. Census Bureau. “Profile, Angleton City, Texas” Retrieved from: [https://data.census.gov/profile/Angleton\\_city,\\_Texas?g=160XX00US4803264](https://data.census.gov/profile/Angleton_city,_Texas?g=160XX00US4803264)
- <sup>18</sup> H-GAC, “Vulnerable Population Index (VPI)”, Retrieved from: <https://www.h-gac.com/getmedia/d2d9690a-929e-4721-ae5c-3f6035da5f94/vulnerable-population-indexing.pdf>
- <sup>19</sup> Centers for Disease Control and Prevention/Agency for Toxic Substances and Disease Registry/Geospatial Research, Analysis, and Services Program. CDC/ATSDR Social Vulnerability Index Interactive Map 2020 Database Texas. [https://svi.cdc.gov/Documents/CountyMaps/2020/Texas/Texas2020\\_Brazoria.pdf](https://svi.cdc.gov/Documents/CountyMaps/2020/Texas/Texas2020_Brazoria.pdf).
- <sup>20</sup> Data USA. “Angleton, TX Profile” Retrieved from: <https://datausa.io/profile/geo/angleton-tx/#housing>
- <sup>21</sup> Federal Emergency Management Agency. “Hazus” Retrieved from: <https://www.fema.gov/flood-maps/products-tools/hazus>
- <sup>22</sup> Homeland Infrastructure Foundation-Level Data (HIFLD), Open Data. Retrieved from: <https://hifld-geoplatform.opendata.arcgis.com/>
- <sup>23</sup> 44 Code of Federal Regulations 77.2(i). Retrieved from: [https://www.ecfr.gov/current/title-44/chapter-I/subchapter-B/part-77/section-77.2#p-77.2\(i\)](https://www.ecfr.gov/current/title-44/chapter-I/subchapter-B/part-77/section-77.2#p-77.2(i))

- <sup>24</sup> 44 Code of Federal Regulations 77.2(j). Retrieved from: [https://www.ecfr.gov/current/title-44/part-77/section-77.2#p-77.2\(j\)](https://www.ecfr.gov/current/title-44/part-77/section-77.2#p-77.2(j))
- <sup>25</sup> Natural Resources Defense Council (NRDC), “Losing Ground: Flood Data Visualization Tool”. Retrieved from: <https://www.nrdc.org/resources/losing-ground-flood-visualization-tool>
- <sup>26</sup> Federal Emergency Management Agency. “Flood Insurance Data and Analytics”. Retrieved from: <https://nfipservices.floodsmart.gov//reports-flood-insurance-data>
- <sup>27</sup> Federal Emergency Management Agency. “Community Status Book”. Retrieved from: <https://www.fema.gov/flood-insurance/work-with-nfip/community-status-book>
- <sup>28</sup> Federal Emergency Management Agency. “Flood Insurance”. Retrieved from: <https://www.fema.gov/flood-insurance>
- <sup>29</sup> Federal Emergency Management Agency. “Special Flood Hazard Area (SFHA)”. Retrieved from: <https://www.fema.gov/glossary/special-flood-hazard-area-sfha>
- <sup>30</sup> Federal Emergency Management Agency. “Community Rating System”. Retrieved from: <https://www.fema.gov/floodplain-management/community-rating-system>
- <sup>31</sup> Federal Emergency Management Agency. “Flood Insurance Data and Analytics”. Retrieved from: <https://nfipservices.floodsmart.gov//reports-flood-insurance-data>
- <sup>32</sup> National Oceanic and Atmospheric Administration’s National Hurricane Center, “Hurricane Preparedness - Hazards”, Retrieved at: <https://www.nhc.noaa.gov/prepare/hazards.php>
- <sup>33</sup> National Oceanic and Atmospheric Administration’s National Hurricane Center, “Tropical Cyclone Climatology”, Retrieved at: <https://www.nhc.noaa.gov/climo/>
- <sup>34</sup> National Oceanic and Atmospheric Administration’s National Weather Service, “Hurricane and Tropical Storm Watches, Warnings, Advisories and Outlooks”. Retrieved at: <https://www.weather.gov/safety/hurricane-ww>
- <sup>35</sup> National Oceanic and Atmospheric Administration, “Historical Hurricane Tracks”, Retrieved at: <https://coast.noaa.gov/hurricanes/#map=4/32/-80>
- <sup>36</sup> National Oceanic and Atmospheric Administration’s National Hurricane Center, “The Saffir-Simpson Hurricane Wind Scale, Updated May 2021”, Retrieved at: [www.nhc.noaa.gov/pdf/sshws.pdf](http://www.nhc.noaa.gov/pdf/sshws.pdf)
- <sup>37</sup> National Oceanic and Atmospheric Administration’s National Hurricane Center, “Saffir-Simpson Hurricane Wind Scale”, Retrieved at: <https://www.nhc.noaa.gov/aboutsshws.php>
- <sup>38</sup> National Oceanic and Atmospheric Administration’s National Centers for Environmental Information, Storm Events Database. Retrieved from: <https://www.ncdc.noaa.gov/stormevents/>
- <sup>39</sup> U.S. Department of Agriculture, Farm Service Agency, “Disaster Designation Information”. Retrieved from: <https://www.fsa.usda.gov/programs-and-services/disaster-assistance-program/disaster-designation-information/index>
- <sup>40</sup> Texas Division of Emergency Management, “Texas State Hazard Mitigation Plan”. Retrieved at: [https://txdem.sharepoint.com/:b/s/TDEMWebsiteFiles/EYpeKiYJdYtCtdoSyqIYGDQBJ\\_2RMO0QEOjIVSjC9c2fzA?e=wZwXcQ](https://txdem.sharepoint.com/:b/s/TDEMWebsiteFiles/EYpeKiYJdYtCtdoSyqIYGDQBJ_2RMO0QEOjIVSjC9c2fzA?e=wZwXcQ)
- <sup>41</sup> Federal Emergency Management Agency, National Risk Index Dataset and Online Tool. Retrieved at: <https://hazards.fema.gov/nri/map>
- <sup>42</sup> Federal Emergency Management Agency, National Risk Index County Profile, Brazoria County, Texas. Retrieved at: <https://hazards.fema.gov/nri/report/viewer?dataLOD=Counties&dataIDs=C48039>
- <sup>43</sup> National Center for Healthy Housing, Emergency Preparedness and Response: Hurricanes, “At-Risk Populations”. Retrieved at: <https://nchh.org/information-and-evidence/learn-about-healthy-housing/emergencies/hurricanes/at-risk-populations/>
- <sup>44</sup> Federal Emergency Management Agency, National Risk Index, Risk Comparison Report (Census Tracts: T48039662100, T48039662200, T48039662400, T48039662300, T48039662500, T48039663100, and T48039664100). Retrieved at: <https://hazards.fema.gov/nri/report/viewer?dataLOD=Census%20tracts&dataIDs=T48039662100,T48039662200,T48039662400,T48039662300,T48039662500,T48039663100,T48039664100>
- <sup>45</sup> Federal Emergency Management Agency, National Risk Index, “Historic Loss Ratio”. Retrieved at: <https://hazards.fema.gov/nri/historic-loss-ratio>
- <sup>46</sup> Federal Emergency Management Agency, “Flood Zones.” Retrieved from: <https://www.fema.gov/glossary/flood-zones#:~:text=SFHA%20are%20defined%20as%20the,flood%20or%20100%2Dyear%20flood>
- <sup>47</sup> Federal Emergency Management Agency, National Risk Index, Riverine Flooding. Retrieved at: <https://hazards.fema.gov/nri/riverine-flooding>

- <sup>48</sup> Federal Emergency Management Agency, National Risk Index, Coastal Flooding. Retrieved at: <https://hazards.fema.gov/nri/coastal-flooding>
- <sup>49</sup> National Weather Service, “Flood Preparedness Week - Flooding and Related Phenomena.” Retrieved from: [https://www.weather.gov/ffc/flood\\_awareness\\_flooding](https://www.weather.gov/ffc/flood_awareness_flooding)
- <sup>50</sup> Surging Seas, Risk Finder, Angleton, Texas, USA. Retrieved at: [https://riskfinder.climatecentral.org/place/angleton.tx.us?comparisonType=place&forecastType=NOAA2017\\_int\\_p50&level=5&unit=ft](https://riskfinder.climatecentral.org/place/angleton.tx.us?comparisonType=place&forecastType=NOAA2017_int_p50&level=5&unit=ft)
- <sup>51</sup> NOAA, Sea Level Rise Viewer. Retrieved from: <https://coast.noaa.gov/slr/#>
- <sup>52</sup> National Weather Service, “Flash Flooding Definition.” Retrieved from: <https://www.weather.gov/phi/FlashFloodingDefinition>
- <sup>53</sup> National Weather Service, “Coastal Flood Threat.” Retrieved from: [https://www.weather.gov/mlb/coastalflood\\_threat](https://www.weather.gov/mlb/coastalflood_threat)
- <sup>54</sup> Federal Emergency Management Agency, Hazard Mitigation Assistance Program and Policy Guide, Flood Mitigation Assistance. Retrieved from: <https://www.fema.gov/grants/mitigation/guide/part-10/d>
- <sup>55</sup> Risk Factor, “Does Angleton have Flood Risk?”. Retrieved from: [https://riskfactor.com/city/angleton-tx/4803264\\_fsid/flood](https://riskfactor.com/city/angleton-tx/4803264_fsid/flood)
- <sup>56</sup> Risk Factor, “Does Angleton have Flood Risk?”. Retrieved from: [https://riskfactor.com/city/angleton-tx/4803264\\_fsid/flood](https://riskfactor.com/city/angleton-tx/4803264_fsid/flood)
- <sup>57</sup> Texas A&M University Office of the Texas State Climatologist, Assessment of Historic and Future Trends of Extreme Weather in Texas, 1900-2036, 2021 update. Retrieved from: <https://climatexas.tamu.edu/files/ClimateReport-1900to2036-2021Update>
- <sup>58</sup> National Oceanic and Atmospheric Administration’s National Weather Service, “National Weather Service Expanded Winter Weather Terminology”. Retrieved at: <https://www.weather.gov/bgm/WinterTerms>
- <sup>59</sup> National Oceanic and Atmospheric Administration’s National Weather Service, “Winter Storm Severity Index (WSSI), Product/Service Description Document”. Retrieved at: [https://www.wpc.ncep.noaa.gov/wwd/wssi/WSSI\\_PDD\\_2022-23.pdf](https://www.wpc.ncep.noaa.gov/wwd/wssi/WSSI_PDD_2022-23.pdf)
- <sup>60</sup> National Oceanic and Atmospheric Administration’s National Weather Service, Watch/Warning/Advisory Definitions”. Retrieved at: <https://www.weather.gov/lwx/WarningsDefined>
- <sup>61</sup> National Oceanic and Atmospheric Administration’s National Severe Storms Laboratory, “Severe Weather 101- Winter Weather”. Retrieved at: <https://www.nssl.noaa.gov/education/svrwx101/winter/forecasting/>
- <sup>62</sup> National Oceanic and Atmospheric Administration’s National Weather Service, “Tornado Definition”. Retrieved at: <https://www.weather.gov/phi/TornadoDefinition#:~:text=Tornado%20%2D%20A%20violently%20rotating%20column,nature%22s%20most%20violent%20storms.>
- <sup>63</sup> Texas Division of Emergency Management, “Texas State Hazard Mitigation Plan”. Retrieved at: [https://txdem.sharepoint.com/:b/s/TDEMWebsiteFiles/EYpeKiYJdYtCtdoSyqIYGDQBJ\\_2RMO0QEOjIVSjC9c2fzA?e=wZwXcQ](https://txdem.sharepoint.com/:b/s/TDEMWebsiteFiles/EYpeKiYJdYtCtdoSyqIYGDQBJ_2RMO0QEOjIVSjC9c2fzA?e=wZwXcQ)
- <sup>64</sup> Texas Almanac, “Texas Tornadoes”. Retrieved at: <https://www.texasalmanac.com/articles/texas-tornados#:~:text=The%20greatest%20number%20of%20tornadoes,of%20spring%20tornadoes%20in%20Texas>
- <sup>65</sup> National Oceanic and Atmospheric Administration’s National Weather Service, Storm Prediction Center, “Average Annual Number of Tornadoes per State (1993-2022)”. Retrieved at: [https://www.spc.noaa.gov/wcm/ustormaps/1993-2022-stateavg\\_tornadoes.png](https://www.spc.noaa.gov/wcm/ustormaps/1993-2022-stateavg_tornadoes.png)
- <sup>66</sup> National Oceanic and Atmospheric Administration’s National Weather Service, Storm Prediction Center, “Total Number of Tornadoes per County (1950-2022)”. Retrieved at: <https://www.spc.noaa.gov/wcm/ustormaps/tornadoes-by-county.png>
- <sup>67</sup> National Oceanic and Atmospheric Administration’s National Severe Storms Laboratory, “Severe Weather 101- Tornadoes”. Retrieved at: <https://www.nssl.noaa.gov/education/svrwx101/tornadoes/>
- <sup>68</sup> National Oceanic and Atmospheric Administration’s National Severe Storms Laboratory, “Severe Weather 101- Damaging Winds FAQ”. Retrieved at: <https://www.nssl.noaa.gov/education/svrwx101/wind/faq/>
- <sup>69</sup> Centers for Disease Control and Prevention, “About Extreme Heat”. Retrieved at: [https://www.cdc.gov/disasters/extremeheat/heat\\_guide.html](https://www.cdc.gov/disasters/extremeheat/heat_guide.html)
- <sup>70</sup> FEMA, Ready.gov, “Extreme Heat”. Retrieved at: <https://www.ready.gov/heat>
- <sup>71</sup> National Oceanic and Atmospheric Administration’s National Weather Service, “Glossary- Heat”. Retrieved at: <https://w1.weather.gov/glossary/index.php?word=Heat>
- <sup>72</sup> National Integrated Heat Health Information System, Urban Heat Islands. Retrieved at: <https://www.heat.gov/pages/urban-heat-islands>
- <sup>73</sup> National Oceanic and Atmospheric Administration’s National Weather Service, “What is the heat index?”. Retrieved at: <https://www.weather.gov/ama/heatindex>
- <sup>74</sup> National Integrated Heat Health Information System, Current Conditions and Future Outlooks. Retrieved at: <https://www.heat.gov/>
- <sup>75</sup> National Integrated Heat Health Information System, “Who Is Most at Risk To Extreme Heat?”. Retrieved at: <https://www.heat.gov/pages/who-is-at-risk-to-extreme-heat>

- <sup>76</sup> USGCRP, 2017: Climate Science Special Report: Fourth National Climate Assessment, Volume I [Wuebbles, D.J., D.W. Fahey, K.A. Hibbard, D.J. Dokken, B.C. Stewart, and T.K. Maycock (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, 470 pp, doi: 10.7930/J0J964J6. Retrieved at: <https://science2017.globalchange.gov/>
- <sup>77</sup> Texas A&M Forest Service, Wildland Firefighting Terminology Glossary. Retrieved at: [https://tfsweb.tamu.edu/uploadedFiles/TFS\\_Main/Finance\\_and\\_Administration/Communications/Wildland%20Fire%20Glossary%20of%20terms%20TFS.pdf](https://tfsweb.tamu.edu/uploadedFiles/TFS_Main/Finance_and_Administration/Communications/Wildland%20Fire%20Glossary%20of%20terms%20TFS.pdf)
- <sup>78</sup> Texas A&M Forest Service, Wildfire Risk, About TxWrap. Retrieved at: <https://texaswildfirerisk.com/#about>
- <sup>79</sup> Texas A&M Forest Service, Wildfire Risk. Retrieved at: <https://tfsweb.tamu.edu/WildfireRisk/>
- <sup>80</sup> Texas A&M Forest Service, TxWRAP, Wildfire Ignition Density Layer Information. Retrieved at: <https://wrap.texaswildfirerisk.com/Map/Pro#map-themes>
- <sup>81</sup> U.S. Environmental Protection Agency, “Which Populations Experience Greater Risks of Adverse Health Effects Resulting from Wildfire Smoke Exposure?”, Retrieved from: <https://www.epa.gov/wildfire-smoke-course/which-populations-experience-greater-risks-adverse-health-effects-resulting>
- <sup>82</sup> National Geographic, “Wildfires”. Retrieved at: <https://education.nationalgeographic.org/resource/wildfires/>
- <sup>83</sup> National Oceanic and Atmospheric Administration’s National Integrated Drought Information System, “What is Drought-Drought Basics”. Retrieved at: <https://www.drought.gov/what-is-drought/drought-basics>
- <sup>84</sup> Colorado Geological Survey, “Expansive Soil and Rock”. Retrieved at: <https://coloradogeologicalsurvey.org/hazards/expansive-soil-rock/>
- <sup>85</sup> National Oceanic and Atmospheric Administration’s National Integrated Drought Information System, “Drought Basics-Types of Droughts”. Retrieved at: <https://www.drought.gov/what-is-drought/drought-basics#types-of-drought>
- <sup>86</sup> National Oceanic and Atmospheric Administration’s National Integrated Drought Information System, “U.S. Drought Monitor (USDM)”. Retrieved at: <https://www.drought.gov/data-maps-tools/us-drought-monitor>
- <sup>87</sup> National Oceanic and Atmospheric Administration’s National Integrated Drought Information System, “Historical Data and Conditions”. Retrieved at: <https://www.drought.gov/historical-information>
- <sup>88</sup> National Integrated Drought Information System, Public Health. Retrieved at: <https://www.drought.gov/topics/public-health>
- <sup>89</sup> National Oceanic and Atmospheric Administration’s National Weather Service, Glossary, Severe Thunderstorm. Retrieved at: <https://w1.weather.gov/glossary/index.php?word=severe+thunderstorm>
- <sup>90</sup> Weather.Gov, “Thunderstorm Ingredients”. Retrieved at: [https://www.weather.gov/source/zhu/ZHU\\_Training\\_Page/thunderstorm\\_stuff/Thunderstorms/thunderstorms.htm](https://www.weather.gov/source/zhu/ZHU_Training_Page/thunderstorm_stuff/Thunderstorms/thunderstorms.htm)
- <sup>91</sup> National Oceanic and Atmospheric Administration, “Types of Thunderstorms”, Retrieved at: <https://www.noaa.gov/jetstream/tstrmtypes>
- <sup>92</sup> National Oceanic and Atmospheric Administration’s National Weather Service, Glossary, Lightning. Retrieved at: <https://w1.weather.gov/glossary/index.php?word=Lightning>
- <sup>93</sup> National Oceanic and Atmospheric Administration’s National Weather Service, “How Dangerous is Lightning?”, Retrieved at: <https://www.weather.gov/safety/lightning-odds>
- <sup>94</sup> National Oceanic and Atmospheric Administration’s National Weather Service, “Lightning Victims”, Retrieved at: <https://www.weather.gov/safety/lightning-victims#:~:text=Lightning%20kills%20about%2020%20people,survivors%20suffer%20lifelong%20neurological%20damage>
- <sup>95</sup> National Oceanic and Atmospheric Administration’s National Severe Storms Laboratory, “Severe Weather 101-Lightning”, Retrieved at: <https://www.nssl.noaa.gov/education/svrwx101/lightning/types/>
- <sup>96</sup> Annual number of thunderstorm days in the U.S. From: Koehler, Thomas L., 2019: Cloud-to-Ground Lightning Flash Density and Thunderstorm Day Distributions over the Contiguous United States Derived from NLDN Measurements: 1993-2018. Retrieved at: <https://www.noaa.gov/jetstream/thunderstorms>
- <sup>97</sup> National Oceanic and Atmospheric Administration’s National Weather Service, Storm Prediction Center, SPC Products. Retrieved at: <https://www.spc.noaa.gov/misc/about.html>
- <sup>98</sup> National Oceanic and Atmospheric Administration’s National Centers for Environmental Information, “Vaisala National Lightning Detection Network Flash Data (Restricted)”. Retrieved at: <https://www.ncei.noaa.gov/access/metadata/landing-page/bin/iso?id=gov.noaa.ncdc:C00989>
- <sup>99</sup> Vaisala, Interactive Global Lightning Density Map. Retrieved at: [https://interactive-lightning-map.vaisala.com/?\\_ga=2.5242931.1264928209.1618846219-1260101299.1617036001](https://interactive-lightning-map.vaisala.com/?_ga=2.5242931.1264928209.1618846219-1260101299.1617036001)
- <sup>100</sup> National Oceanic and Atmospheric Administration’s National Severe Storms Laboratory, “Severe Weather 101- Hail”, Retrieved at: <https://www.nssl.noaa.gov/education/svrwx101/hail/>
- <sup>101</sup> National Oceanic and Atmospheric Administration’s National Severe Storms Laboratory, “Severe Weather 101- Hail Types”, Retrieved at: <https://www.nssl.noaa.gov/education/svrwx101/hail/types/>
- <sup>102</sup> National Oceanic and Atmospheric Administration’s National Severe Storms Laboratory, “Severe Weather 101- Hail FAQ”, Retrieved at: <https://www.nssl.noaa.gov/education/svrwx101/hail/faq/>
- <sup>103</sup> National Oceanic and Atmospheric Administration’s National Weather Service, “Hail Threat Defined”. Retrieved at: [https://www.weather.gov/mlb/hail\\_threat](https://www.weather.gov/mlb/hail_threat)

- <sup>104</sup> The Tornado and Storm Research Organization, “The TORRO Hailstorm Intensity Scale”. Retrieved at: <https://www.torro.org.uk/research/hail/hyscale>
- <sup>105</sup> National Oceanic and Atmospheric Administration’s National Severe Storms Laboratory, “Severe Weather 101- Wind”. Retrieved at: <https://www.nssl.noaa.gov/education/svrwx101/wind/>
- <sup>106</sup> National Oceanic and Atmospheric Administration’s National Severe Storms Laboratory, “Severe Weather 101- Wind Types”. Retrieved at: <https://www.nssl.noaa.gov/education/svrwx101/wind/types/>
- <sup>107</sup> National Oceanic and Atmospheric Administration’s National Weather Service, “Beaufort Wind Scale”. Retrieved at: <https://www.weather.gov/mfl/beaufort>
- <sup>108</sup> National Oceanic and Atmospheric Administration’s National Weather Service, “Wind Warnings, Watches and Advisories”. Retrieved at: <https://www.weather.gov/safety/wind-ww>
- <sup>109</sup> U.S. Department of Agriculture, Natural Resources Conservation Service, “Erosion and Sediment Delivery”. Retrieved at: [https://www.nrcs.usda.gov/sites/default/files/2022-09/Erosion\\_%26\\_sediment\\_delivery\\_IA-NRCS\\_Procedures.pdf](https://www.nrcs.usda.gov/sites/default/files/2022-09/Erosion_%26_sediment_delivery_IA-NRCS_Procedures.pdf)
- <sup>110</sup> Natural Resources Defense Council, Soil Erosion 101. Retrieved at: <https://www.nrdc.org/stories/soil-erosion-101>
- <sup>111</sup> U.S. Department of Agriculture, Natural Resources Conservation Service, Field Guide Technical Document, “Highly Erodible Land”. Retrieved at: [https://efotg.sc.egov.usda.gov/references/public/MD\\_defunct/HEL\\_323.htm](https://efotg.sc.egov.usda.gov/references/public/MD_defunct/HEL_323.htm)
- <sup>112</sup> Institute of Water Research, K Factor. Retrieved at: <http://www.iwr.msu.edu/rusle/kfactor.htm>
- <sup>113</sup> U.S. Department of Agriculture. 2020. Summary Report: 2017 National Resources Inventory, Natural Resources Conservation Service, Washington, DC, and Center for Survey Statistics and Methodology, Iowa State University, Ames, Iowa. Retrieved from: [https://www.nrcs.usda.gov/sites/default/files/2022-10/2017NRISummary\\_Final.pdf](https://www.nrcs.usda.gov/sites/default/files/2022-10/2017NRISummary_Final.pdf)
- <sup>114</sup> National Institute of Allergy and Infectious Diseases, “NIAID Emerging Infectious Diseases/Pathogens”. Retrieved at: <https://www.niaid.nih.gov/research/emerging-infectious-diseases-pathogens>
- <sup>115</sup> FEMA, Ready.gov, “Pandemics”. Retrieved at: <https://www.ready.gov/pandemic>
- <sup>116</sup> FEMA, Ready.gov, “Novel Pandemic Hazard Sheet”. Retrieved at: [https://www.ready.gov/sites/default/files/2020-11/novel-pandemic\\_hazard-sheet.pdf](https://www.ready.gov/sites/default/files/2020-11/novel-pandemic_hazard-sheet.pdf)
- <sup>117</sup> CDC, “Past Flu Pandemics”. Retrieved at: <https://www.cdc.gov/flu/pandemic-resources/basics/past-pandemics.html>
- <sup>118</sup> Lindahl JF, Grace D. The consequences of human actions on risks for infectious diseases: a review. *Infect Ecol Epidemiol*. 2015 Nov 27;5:30048. doi: 10.3402/iee.v5.30048. PMID: 26615822; PMCID: PMC4663196. Retrieved at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4663196/>
- <sup>119</sup> National Institute of Environmental Health Sciences, Covid-19 Pandemic Vulnerability Index (PVI). Retrieved at: <https://covid19pvi.niehs.nih.gov/>
- <sup>120</sup> Mayo Clinic, “COVID-19: Who's at higher risk of serious symptoms?”. Retrieved at: <https://www.mayoclinic.org/diseases-conditions/coronavirus/in-depth/coronavirus-who-is-at-risk/art-20483301#:~:text=The%20risk%20of%20developing%20dangerous,systems%2C%20obesity%2C%20or%20diabetes.>
- <sup>121</sup> CDC, “OUR RISK FOR INFECTIOUS DISEASES”. Retrieved at: <https://www.cdc.gov/ncezid/pdf/climate-change-and-infectious-diseases-H.pdf>
- <sup>122</sup> FEMA, Ready.Gov, “Cybersecurity”. Retrieved at: <https://www.ready.gov/cybersecurity>
- <sup>123</sup> FEMA, Cyberattack. Retrieved at: <https://community.fema.gov/ProtectiveActions/s/article/Cyberattack>
- <sup>124</sup> Verizon 2023, Data Breach Investigations Report. Retrieved at: <https://www.verizon.com/business/resources/reports/dbir/>
- <sup>125</sup> FEMA, Ready.Gov, “Cyber-attack Information Sheet”. Retrieved at: [https://www.ready.gov/sites/default/files/2020-11/ready\\_cyberattack\\_information-sheet.pdf](https://www.ready.gov/sites/default/files/2020-11/ready_cyberattack_information-sheet.pdf)

# Appendix A

## HAZUS RESULTS



## Hazus: Flood Global Risk Report

**Region Name:** City of Angleton

**Flood Scenario:** 100yr

**Print Date:** Friday, March 17, 2023

**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.*



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## 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 4 square miles and contains 345 census blocks. The region contains over 7 thousand households and has a total population of 19,429 people. The distribution of population by State and County for the study region is provided in Appendix B.

There are an estimated 7,979 buildings in the region with a total building replacement value (excluding contents) of 2,862 million dollars. Approximately 86.64% of the buildings (and 52.30% of the building value) are associated with residential housing.



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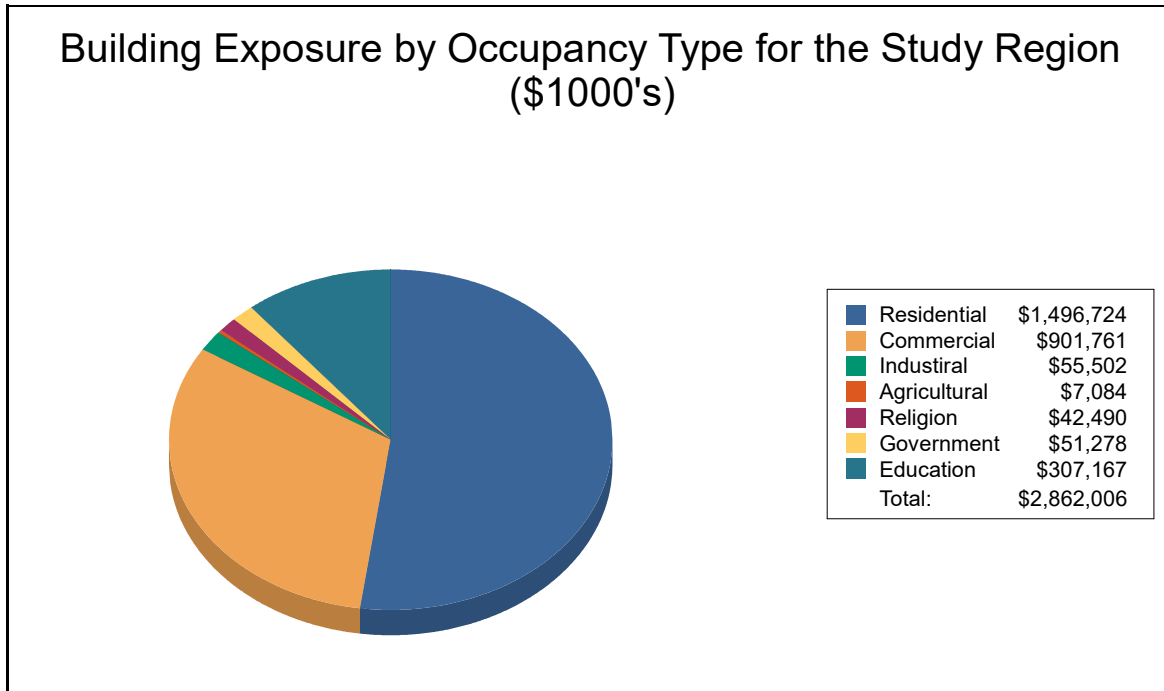
## Building Inventory

### General Building Stock

Hazus estimates that there are 7,979 buildings in the region which have an aggregate total replacement value of 2,862 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	1,496,724	52.3%
Commercial	901,761	31.5%
Industrial	55,502	1.9%
Agricultural	7,084	0.2%
Religion	42,490	1.5%
Government	51,278	1.8%
Education	307,167	10.7%
<b>Total</b>	<b>2,862,006</b>	<b>100%</b>



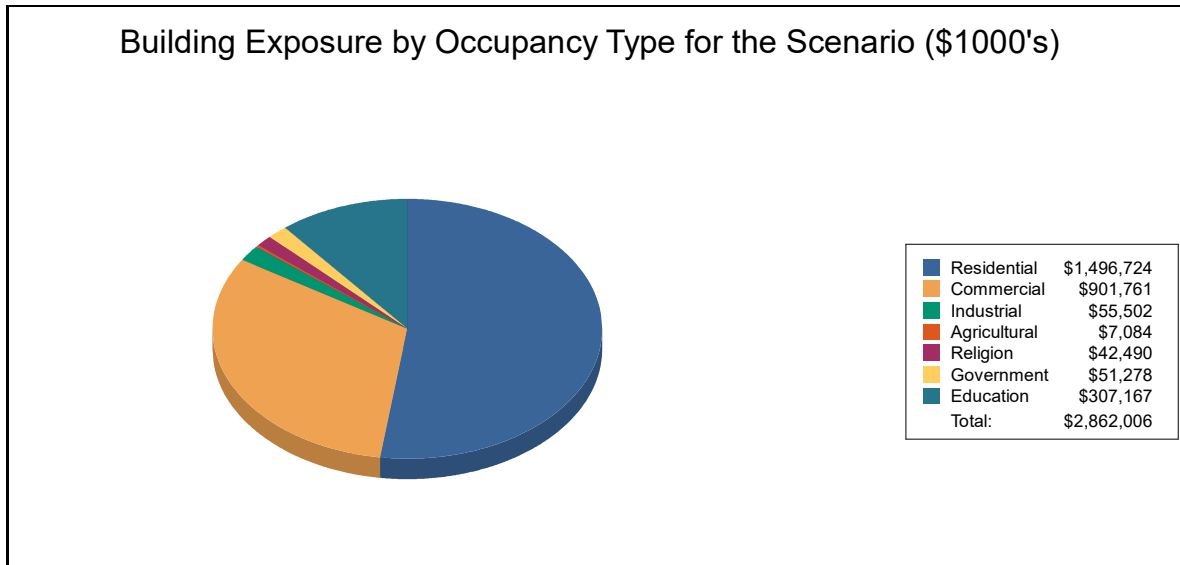
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**Table 2**  
**Building Exposure by Occupancy Type for the Scenario**

Occupancy	Exposure (\$1000)	Percent of Total
Residential	1,496,724	52.3%
Commercial	901,761	31.5%
Industrial	55,502	1.9%
Agricultural	7,084	0.2%
Religion	42,490	1.5%
Government	51,278	1.8%
Education	307,167	10.7%
<b>Total</b>	<b>2,862,006</b>	<b>100%</b>



**Essential Facility Inventory**

For essential facilities, there are 1 hospitals in the region with a total bed capacity of 64 beds. There are 17 schools, 7 fire stations, 6 police stations and 1 emergency operation center.



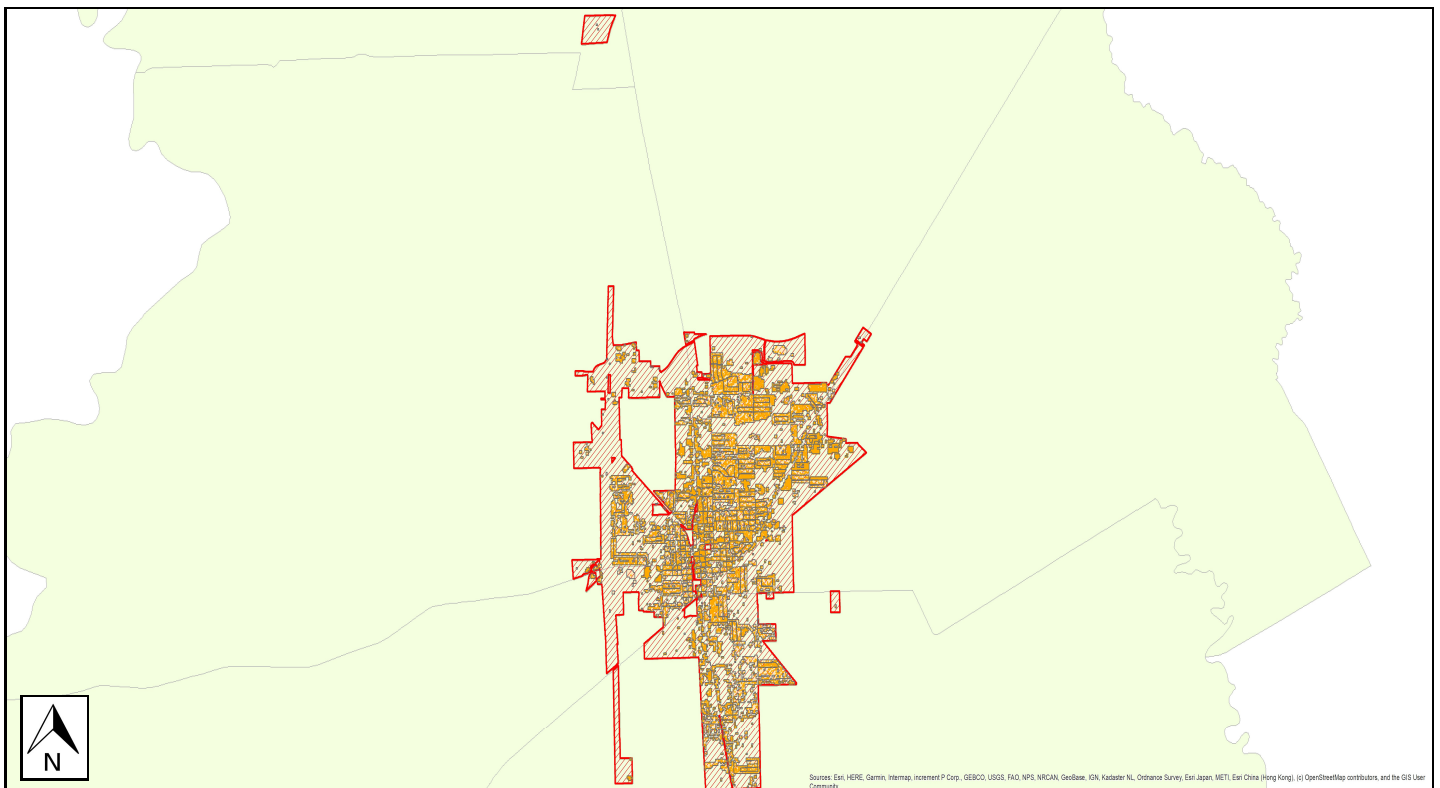
## Flood Scenario Parameters

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

<b>Study Region Name:</b>	Angelton_flood
<b>Scenario Name:</b>	100yr
<b>Return Period Analyzed:</b>	100
<b>Analysis Options Analyzed:</b>	No What-Ifs

### Study Region Overview Map

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



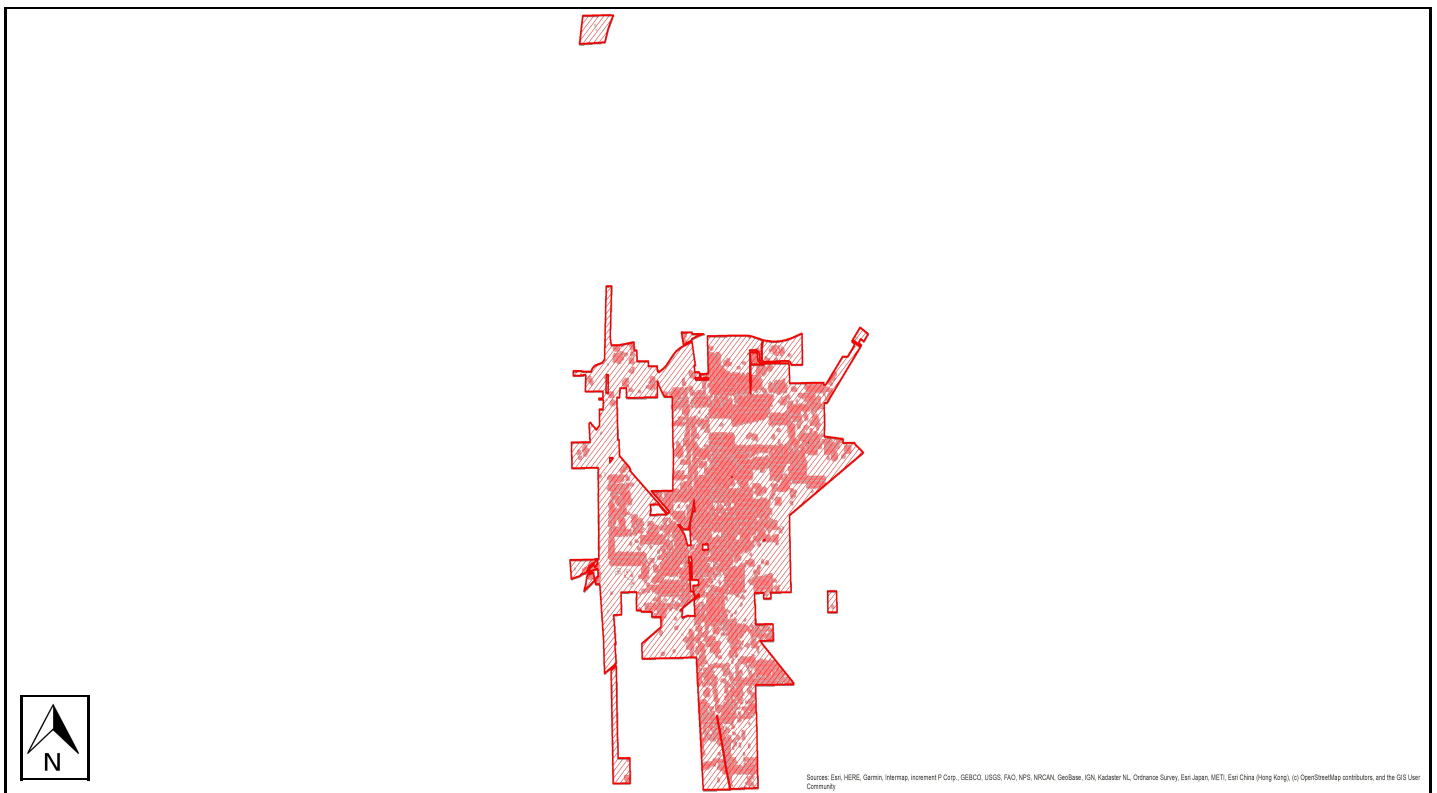


## Building Damage

### General Building Stock Damage

Hazus estimates that about 6,443 buildings will be at least moderately damaged. This is over 24% of the total number of buildings in the scenario. There are an estimated 3,212 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**



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**Table 3: Expected Building Damage by Occupancy**

Occupancy	1-10		11-20		21-30		31-40		41-50		>50	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Agriculture	0	0	0	0	4	80	1	20	0	0	0	0
Commercial	0	0	62	10	119	18	223	34	244	38	0	0
Education	1	13	7	88	0	0	0	0	0	0	0	0
Government	0	0	21	100	0	0	0	0	0	0	0	0
Industrial	0	0	0	0	1	5	3	14	9	41	9	41
Religion	0	0	16	100	0	0	0	0	0	0	0	0
Residential	1	0	230	4	1,070	19	343	6	878	15	3,203	56
<b>Total</b>	<b>2</b>		<b>336</b>		<b>1,194</b>		<b>570</b>		<b>1,131</b>		<b>3,212</b>	

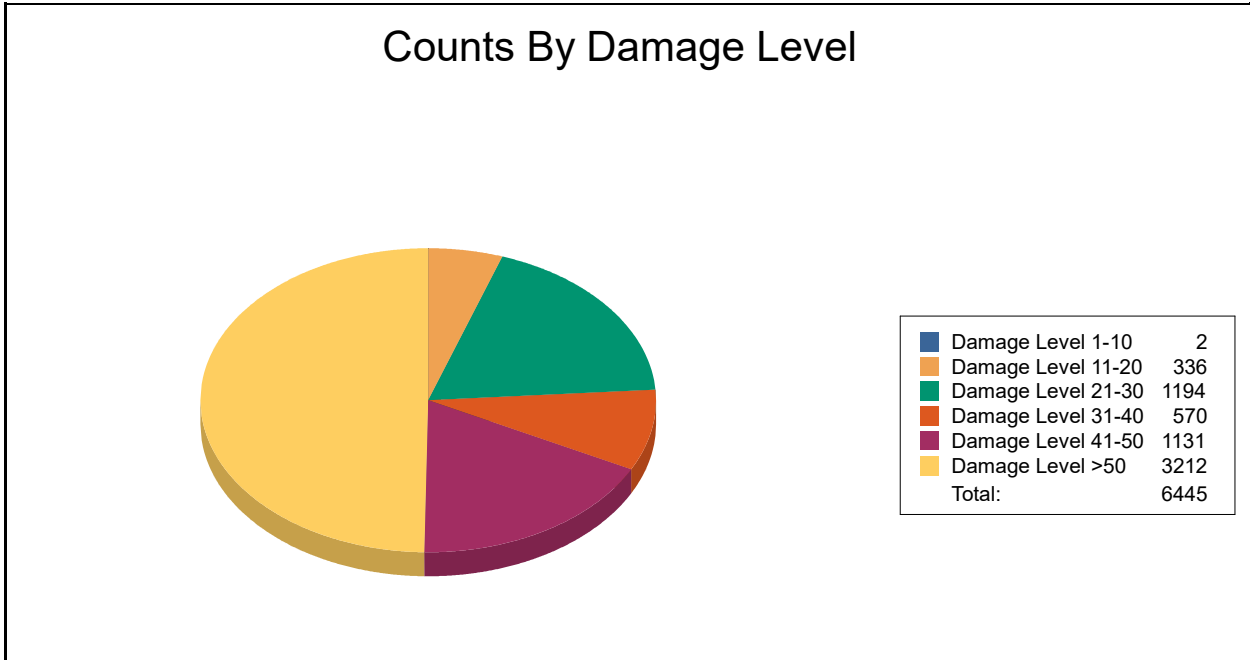




Table 4: Expected Building Damage by Building Type

Building Type	1-10		11-20		21-30		31-40		41-50		>50	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Concrete	0	0	4	8	10	20	20	40	16	32	0	0
ManufHousing	0	0	0	0	11	1	0	0	46	5	865	94
Masonry	2	0	47	7	133	20	111	17	162	24	209	31
Steel	0	0	21	11	32	16	65	34	76	39	0	0
Wood	1	0	234	5	986	22	371	8	827	18	2,129	47



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## Essential Facility Damage

Before the flood analyzed in this scenario, the region had 64 hospital beds available for use. On the day of the scenario flood event, the model estimates that 64 hospital beds are available in the region.

**Table 5: Expected Damage to Essential Facilities**

Classification	# Facilities			
	Total	At Least Moderate	At Least Substantial	Loss of Use
Emergency Operation Centers	1	0	0	0
Fire Stations	7	0	0	0
Hospitals	1	0	0	0
Police Stations	6	0	0	0
Schools	17	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.



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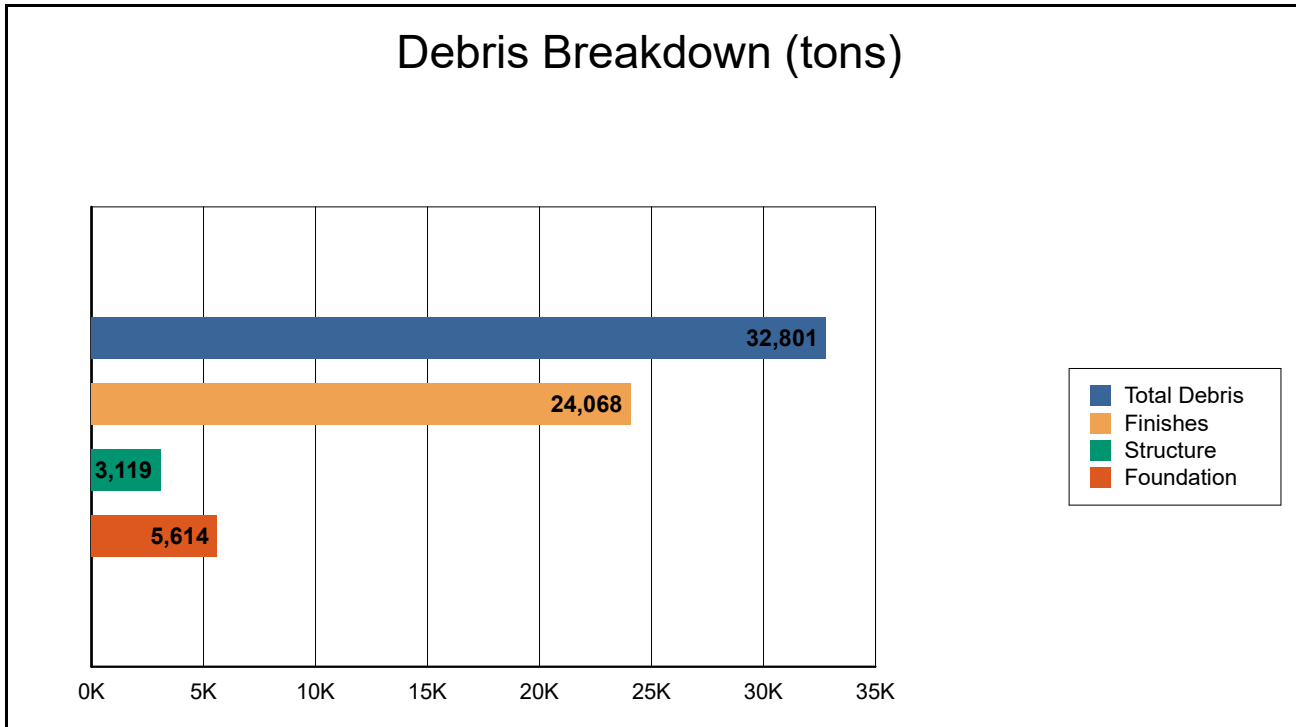




## Induced Flood Damage

### 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 32,801 tons of debris will be generated. Of the total amount, Finishes comprises 73% of the total, Structure comprises 10% of the total, and Foundation comprises 17%. If the debris tonnage is converted into an estimated number of truckloads, it will require 1313 truckloads (@25 tons/truck) to remove the debris generated by the flood.

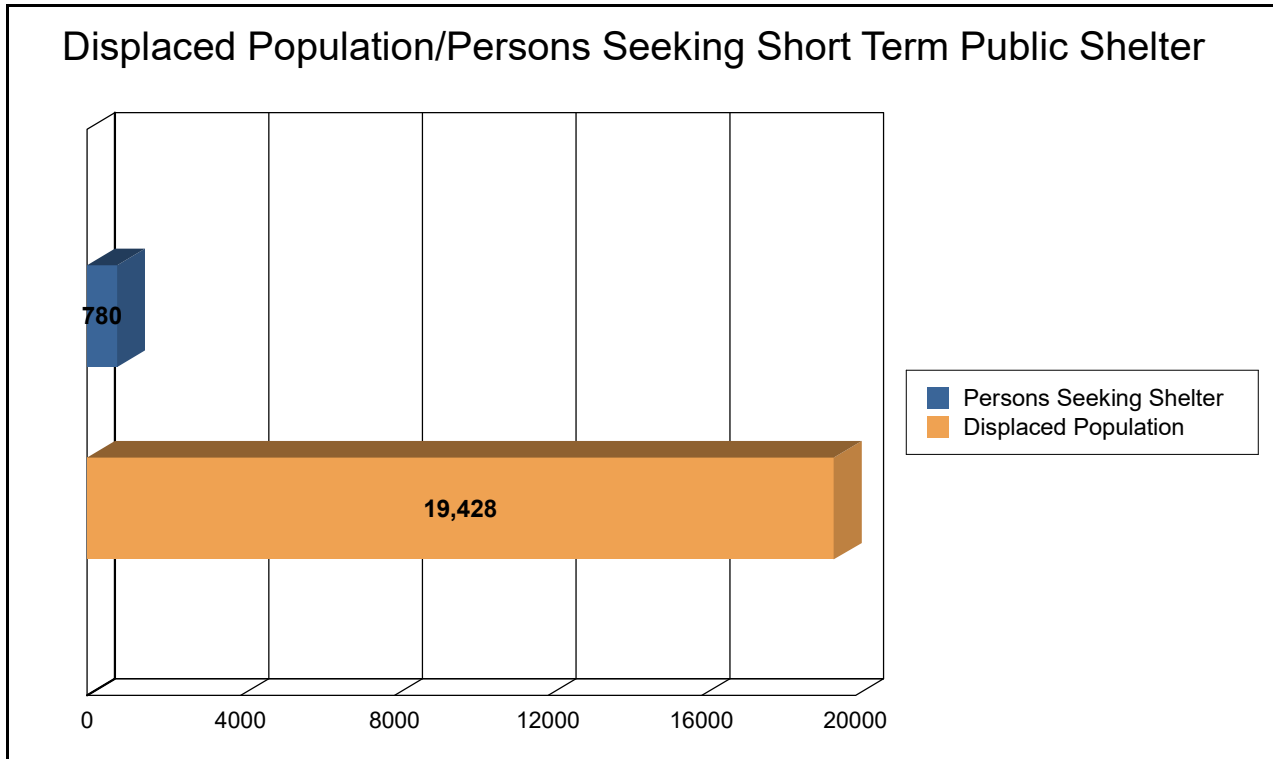




## Social Impact

### 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 6,476 households (or 19,428 of people) will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 780 people (out of a total population of 19,429) will seek temporary shelter in public shelters.





## Economic Loss

The total economic loss estimated for the flood is 4,708.47 million dollars, which represents 164.52 % 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 2,498.14 million dollars. 47% of the estimated losses were related to the business interruption of the region. The residential occupancies made up 27.55% of the total loss. Table 6 below provides a summary of the losses associated with the building damage.

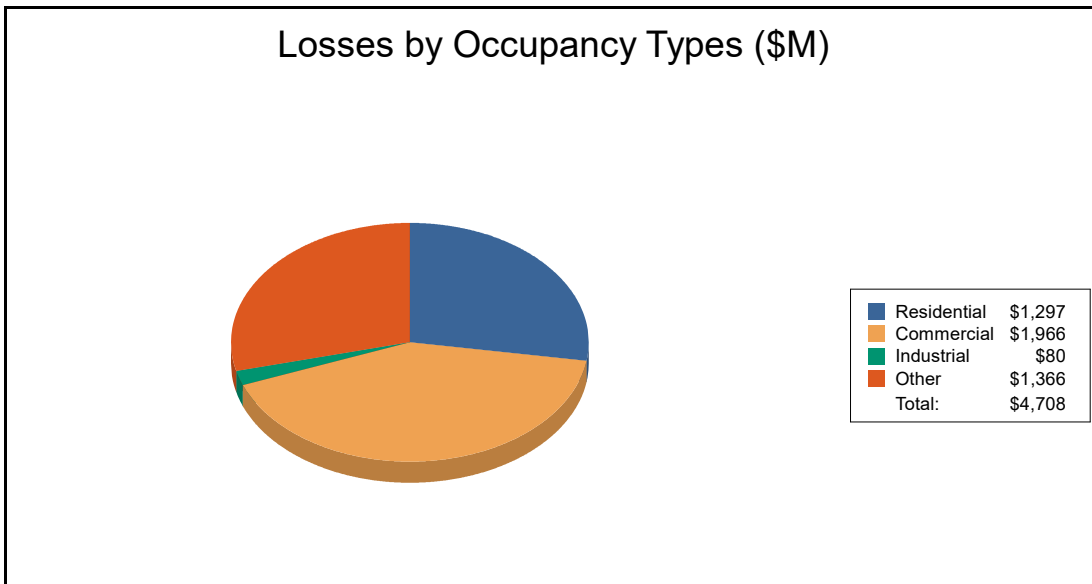


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**Table 6: Building-Related Economic Loss Estimates**  
(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
<u>Building Loss</u>						
	Building	674.94	297.00	19.79	54.40	1,046.13
	Content	384.52	591.65	45.36	351.09	1,372.62
	Inventory	0.00	63.33	9.39	6.68	79.40
	<b>Subtotal</b>	<b>1,059.47</b>	<b>951.97</b>	<b>74.53</b>	<b>412.17</b>	<b>2,498.14</b>
<u>Business Interruption</u>						
	Income	6.18	452.44	1.33	147.86	607.80
	Relocation	152.78	129.12	1.26	72.98	356.15
	Rental Income	64.17	89.97	0.38	8.07	162.59
	Wage	14.55	342.12	2.31	724.82	1,083.79
	<b>Subtotal</b>	<b>237.68</b>	<b>1,013.64</b>	<b>5.27</b>	<b>953.73</b>	<b>2,210.33</b>
<u>ALL</u>	<b>Total</b>	<b>1,297.15</b>	<b>1,965.61</b>	<b>79.81</b>	<b>1,365.90</b>	<b>4,708.47</b>





## Appendix A: County Listing for the Region

Texas

- Brazoria



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**Appendix B: Regional Population and Building Value Data**

	Population	Building Value (thousands of dollars)		
		Residential	Non-Residential	Total
<b>Texas</b>				
Brazoria	19,429	1,496,724	1,365,282	2,862,006
<b>Total</b>	<b>19,429</b>	<b>1,496,724</b>	<b>1,365,282</b>	<b>2,862,006</b>
<b>Total Study Region</b>	<b>19,429</b>	<b>1,496,724</b>	<b>1,365,282</b>	<b>2,862,006</b>



## Hazus: Flood Global Risk Report

**Region Name:** City of Angleton

**Flood Scenario:** 500yr

**Print Date:** Sunday, March 19, 2023

**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.*



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## 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 4 square miles and contains 345 census blocks. The region contains over 7 thousand households and has a total population of 19,429 people. The distribution of population by State and County for the study region is provided in Appendix B.

There are an estimated 7,979 buildings in the region with a total building replacement value (excluding contents) of 2,862 million dollars. Approximately 86.64% of the buildings (and 52.30% of the building value) are associated with residential housing.



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## Building Inventory

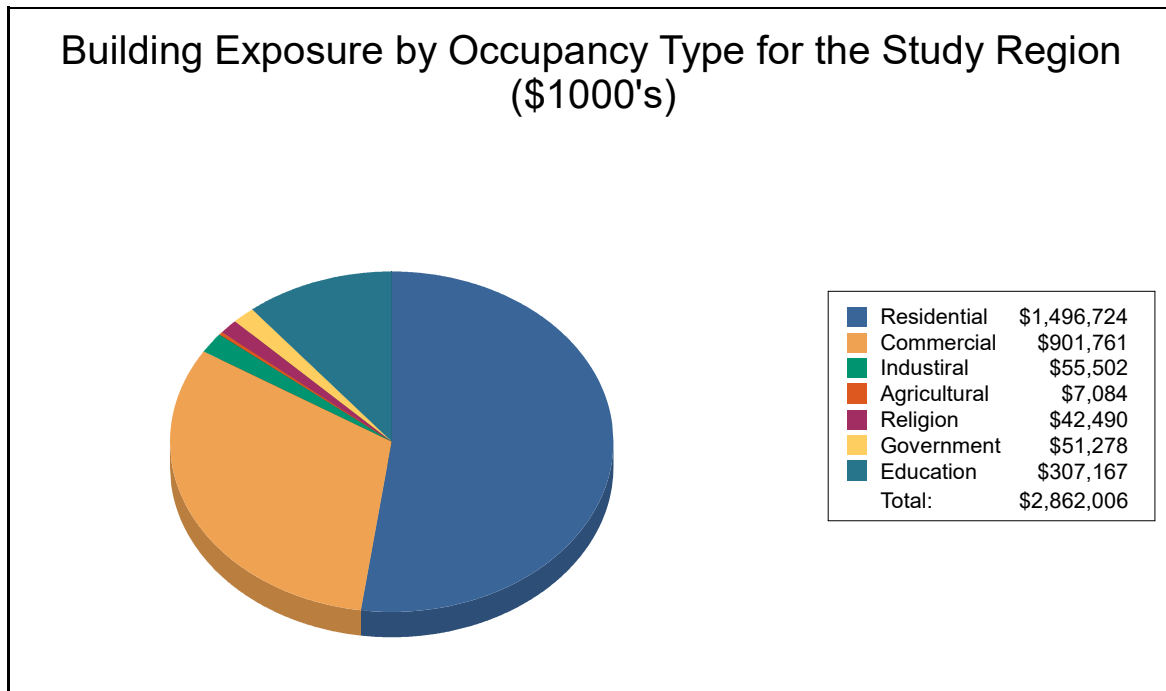
### General Building Stock

Hazus estimates that there are 7,979 buildings in the region which have an aggregate total replacement value of 2,862 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	1,496,724	52.3%
Commercial	901,761	31.5%
Industrial	55,502	1.9%
Agricultural	7,084	0.2%
Religion	42,490	1.5%
Government	51,278	1.8%
Education	307,167	10.7%
<b>Total</b>	<b>2,862,006</b>	<b>100%</b>

**Building Exposure by Occupancy Type for the Study Region**  
**(\$1000's)**



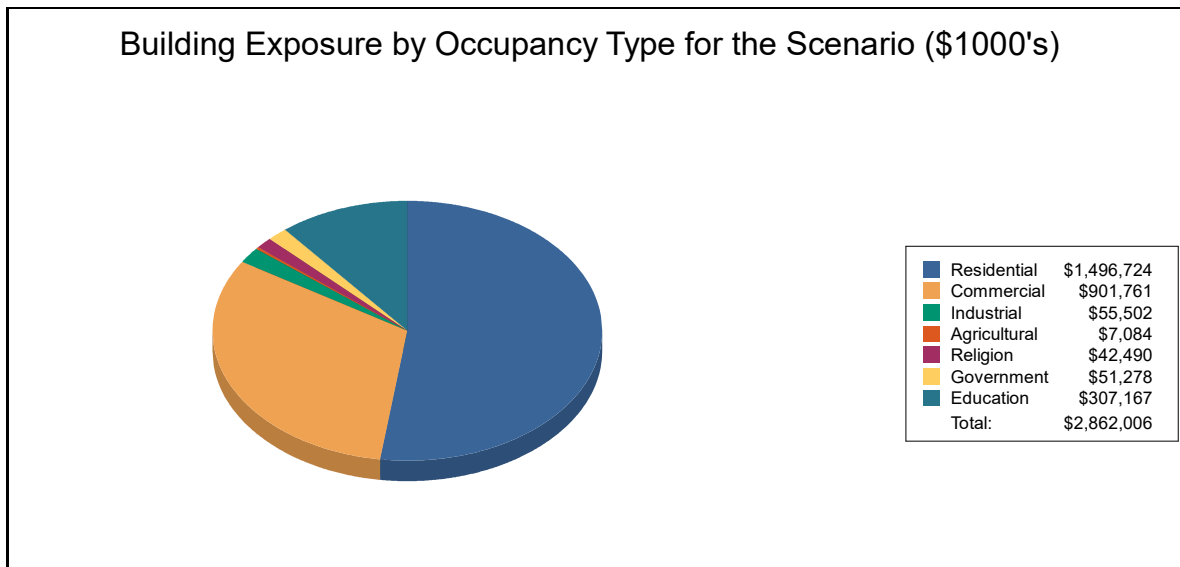
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**Table 2**  
**Building Exposure by Occupancy Type for the Scenario**

Occupancy	Exposure (\$1000)	Percent of Total
Residential	1,496,724	52.3%
Commercial	901,761	31.5%
Industrial	55,502	1.9%
Agricultural	7,084	0.2%
Religion	42,490	1.5%
Government	51,278	1.8%
Education	307,167	10.7%
<b>Total</b>	<b>2,862,006</b>	<b>100%</b>



**Essential Facility Inventory**

For essential facilities, there are 1 hospitals in the region with a total bed capacity of 64 beds. There are 17 schools, 7 fire stations, 6 police stations and 1 emergency operation center.



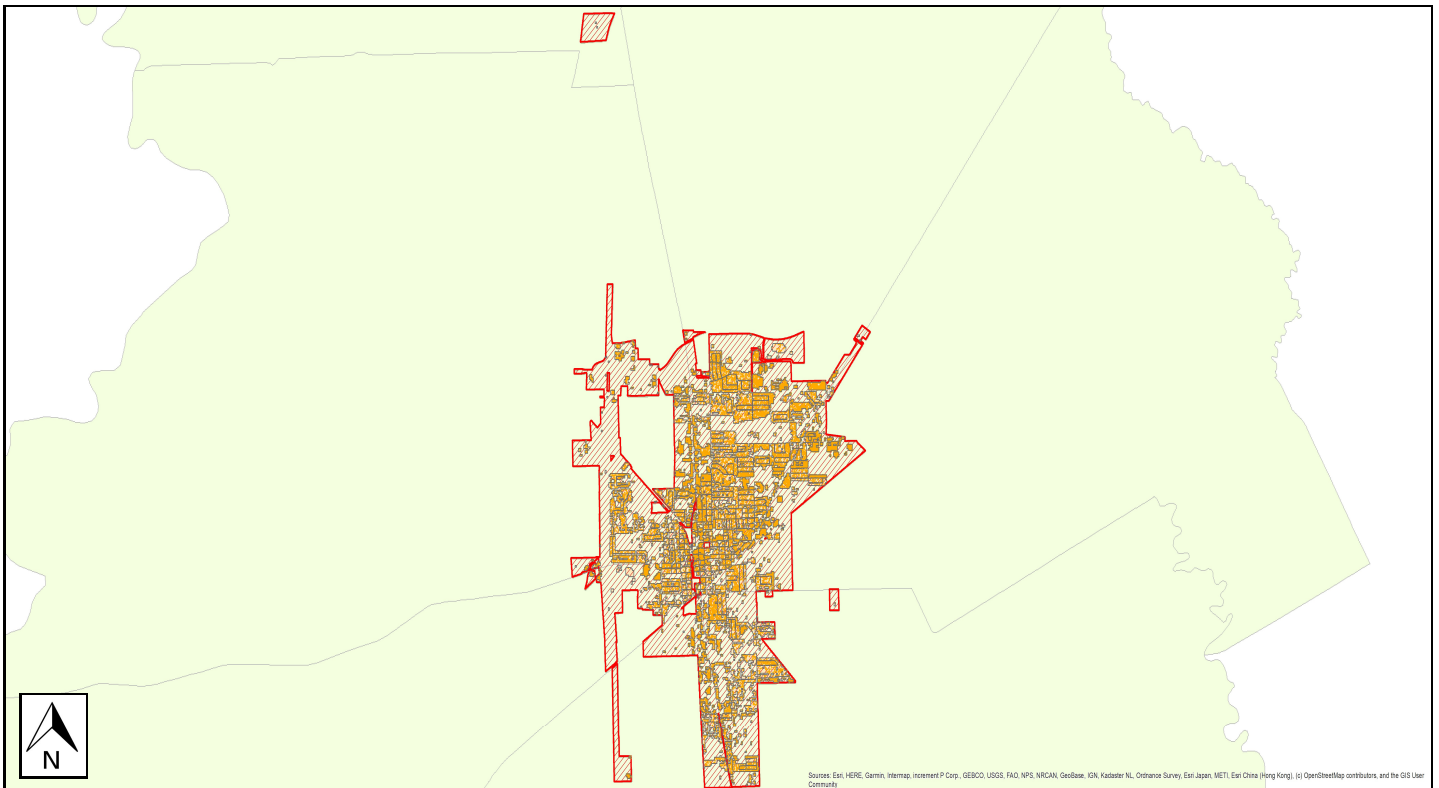
## Flood Scenario Parameters

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

<b>Study Region Name:</b>	Angleton_500yr
<b>Scenario Name:</b>	500yr
<b>Return Period Analyzed:</b>	500
<b>Analysis Options Analyzed:</b>	No What-Ifs

### Study Region Overview Map

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



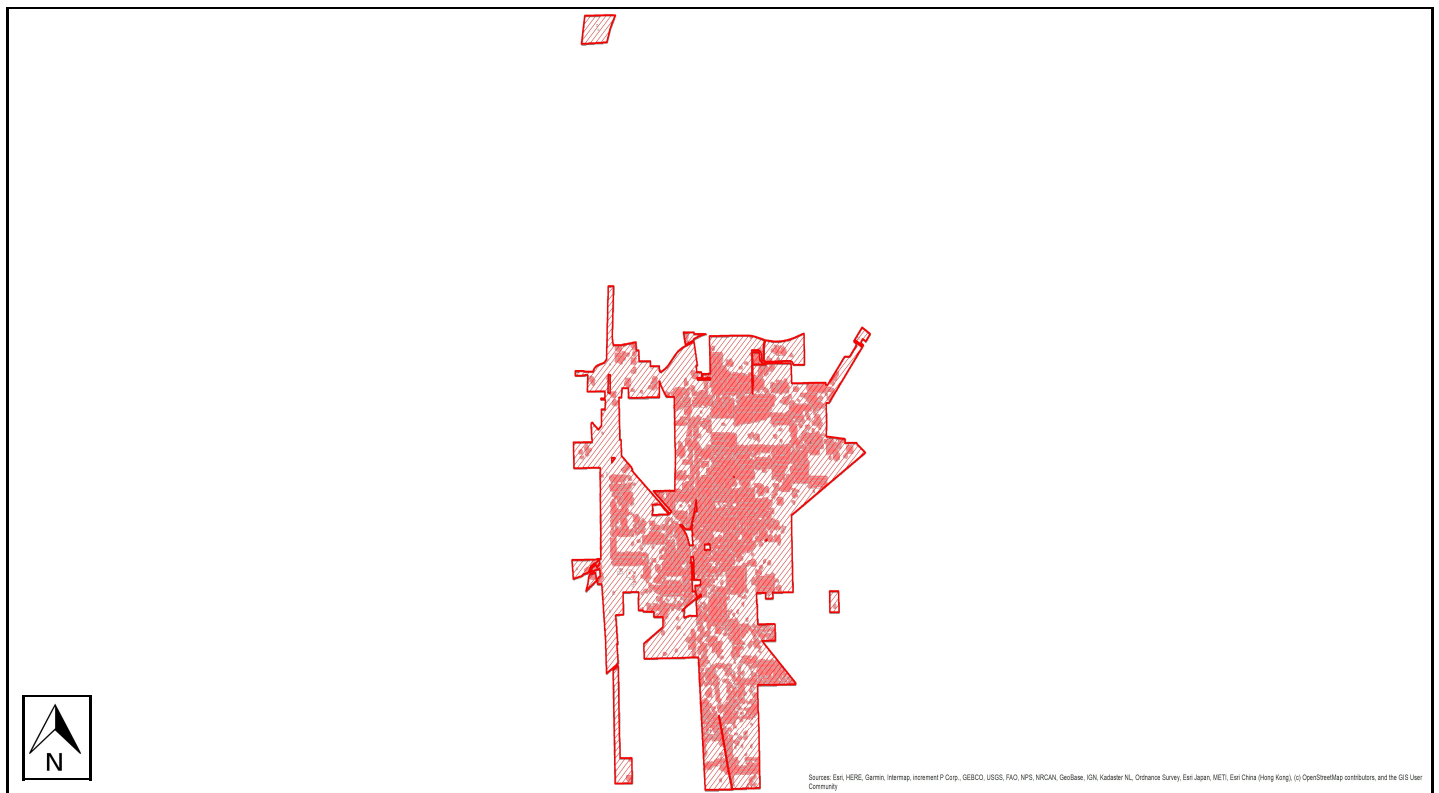


## Building Damage

### General Building Stock Damage

Hazus estimates that about 6,439 buildings will be at least moderately damaged. This is over 24% of the total number of buildings in the scenario. There are an estimated 3,263 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.

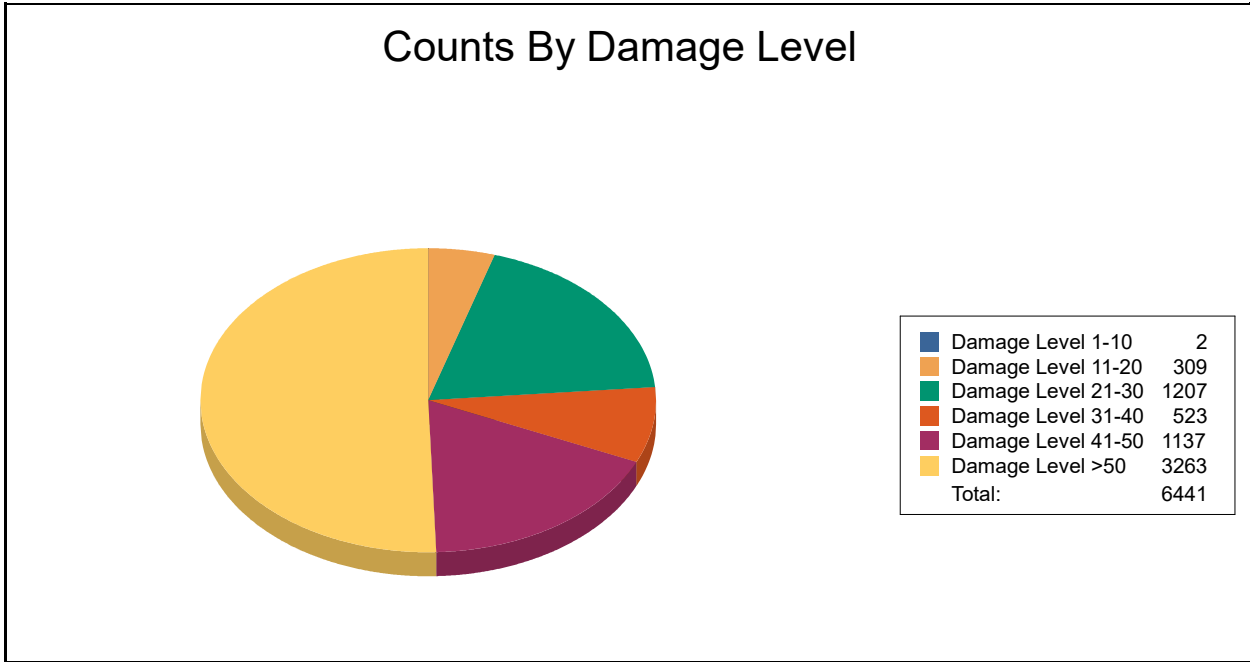
**Total Economic Loss (1 dot = \$300K) Overview Map**





**Table 3: Expected Building Damage by Occupancy**

Occupancy	1-10		11-20		21-30		31-40		41-50		>50	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Agriculture	0	0	0	0	4	80	1	20	0	0	0	0
Commercial	0	0	54	8	122	19	213	33	249	39	0	0
Education	1	10	9	90	0	0	0	0	0	0	0	0
Government	0	0	22	100	0	0	0	0	0	0	0	0
Industrial	0	0	0	0	1	5	4	18	9	41	8	36
Religion	0	0	12	100	0	0	0	0	0	0	0	0
Residential	1	0	212	4	1,080	19	305	5	879	15	3,255	57
<b>Total</b>	<b>2</b>		<b>309</b>		<b>1,207</b>		<b>523</b>		<b>1,137</b>		<b>3,263</b>	





**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	4	8	10	21	18	38	16	33	0	0
ManufHousing	0	0	0	0	10	1	0	0	41	4	871	94
Masonry	2	0	45	7	136	21	102	16	167	25	206	31
Steel	0	0	20	10	34	18	62	32	78	40	0	0
Wood	1	0	215	5	996	22	333	7	831	18	2,179	48



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## Essential Facility Damage

Before the flood analyzed in this scenario, the region had 64 hospital beds available for use. On the day of the scenario flood event, the model estimates that 64 hospital beds are available in the region.

**Table 5: Expected Damage to Essential Facilities**

Classification	# Facilities			
	Total	At Least Moderate	At Least Substantial	Loss of Use
Emergency Operation Centers	1	0	0	0
Fire Stations	7	0	0	0
Hospitals	1	0	0	0
Police Stations	6	0	0	0
Schools	17	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.



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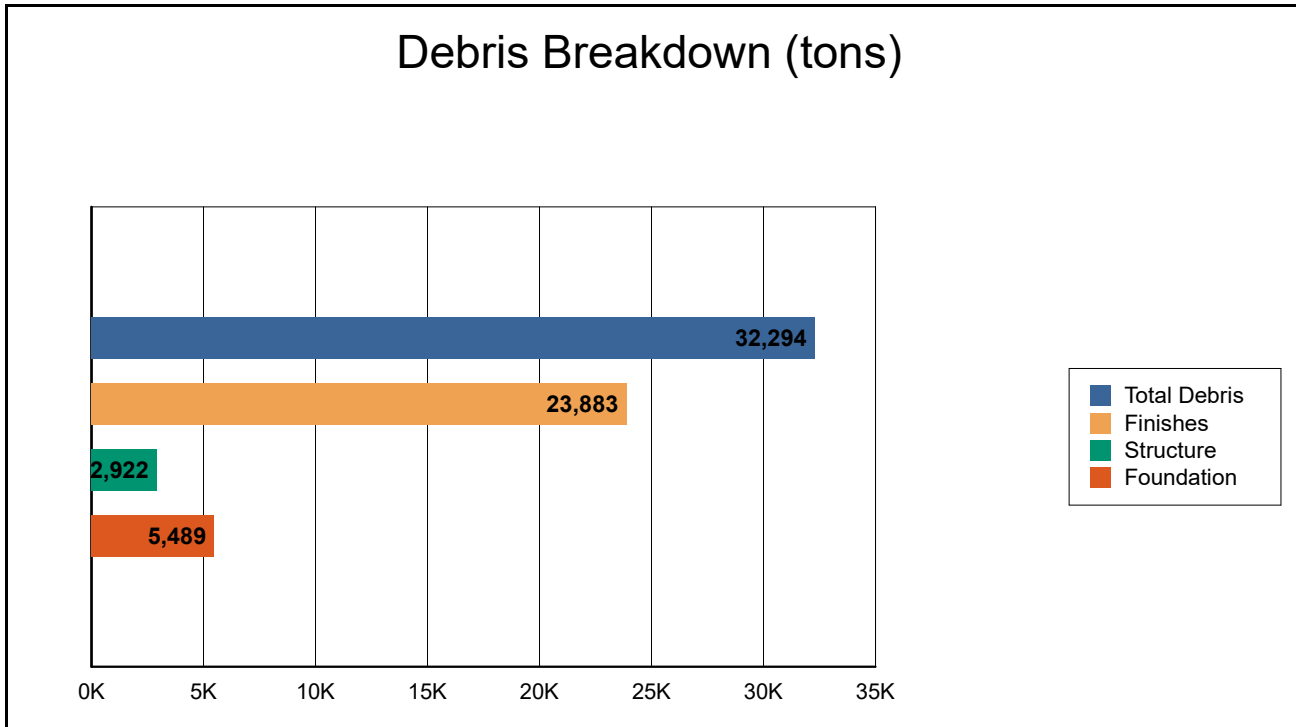




## Induced Flood Damage

### 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 32,294 tons of debris will be generated. Of the total amount, Finishes comprises 74% of the total, Structure comprises 9% of the total, and Foundation comprises 17%. If the debris tonnage is converted into an estimated number of truckloads, it will require 1292 truckloads (@25 tons/truck) to remove the debris generated by the flood.

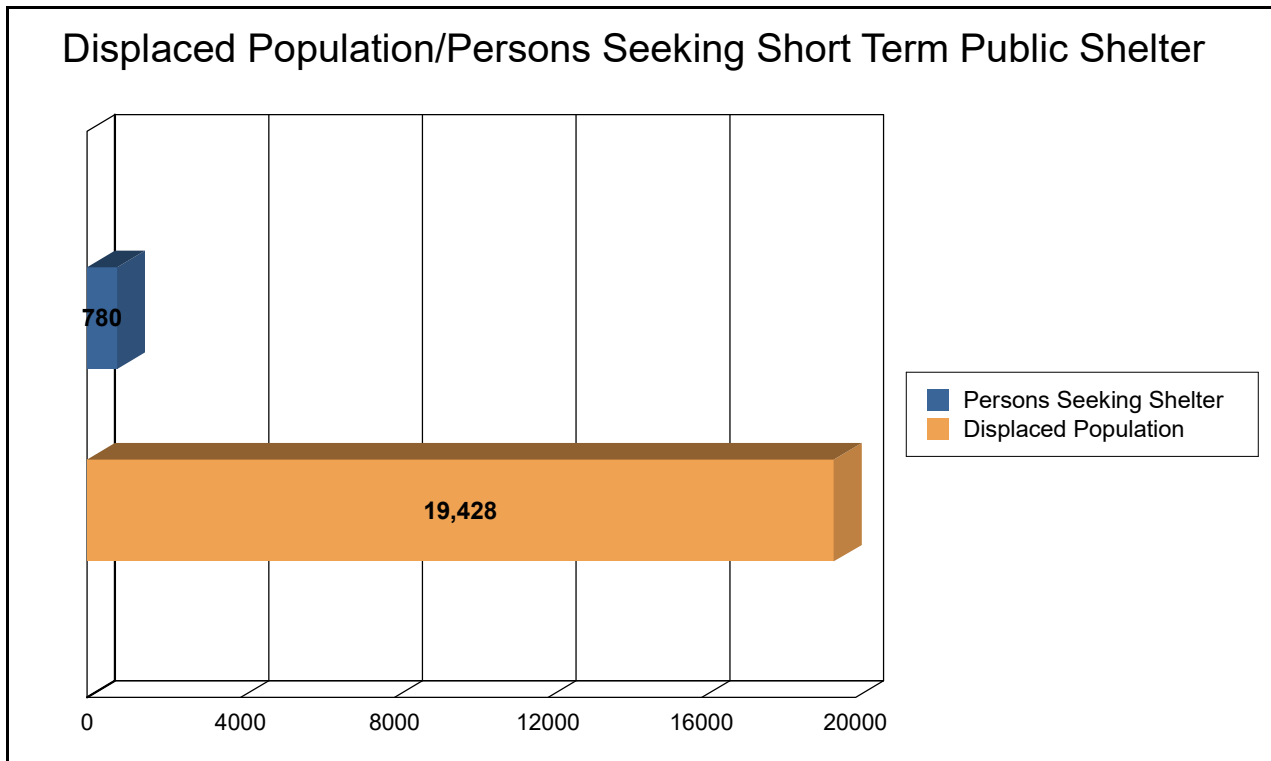




## Social Impact

### 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 6,476 households (or 19,428 of people) will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 780 people (out of a total population of 19,429) will seek temporary shelter in public shelters.





## Economic Loss

The total economic loss estimated for the flood is 4,733.58 million dollars, which represents 165.39 % 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 2,511.20 million dollars. 47% of the estimated losses were related to the business interruption of the region. The residential occupancies made up 27.61% of the total loss. Table 6 below provides a summary of the losses associated with the building damage.

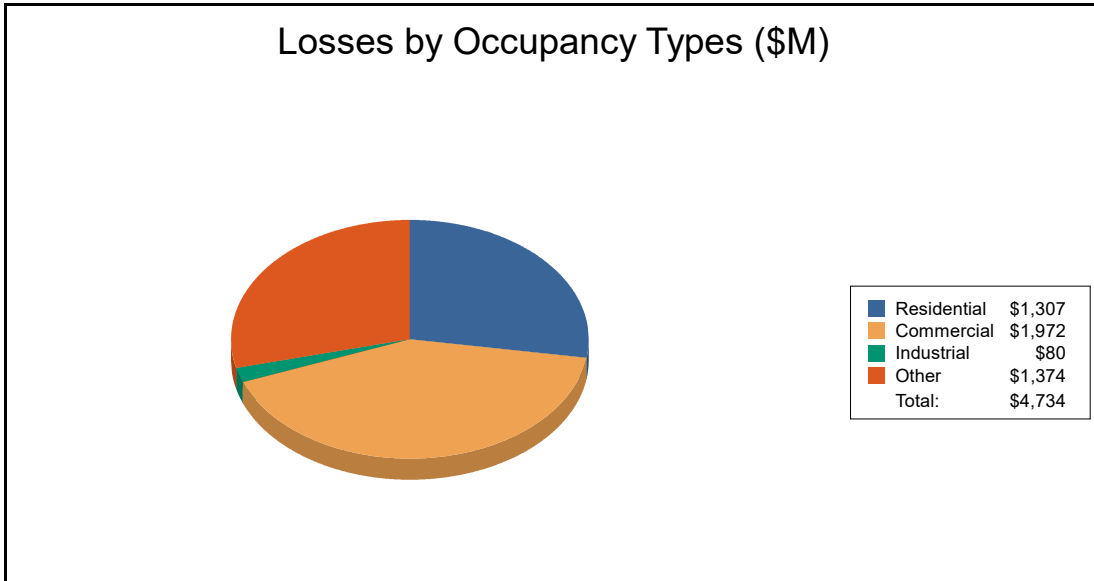


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**Table 6: Building-Related Economic Loss Estimates**  
(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
<u>Building Loss</u>						
	Building	679.09	297.88	20.00	55.39	1,052.36
	Content	386.94	594.04	45.74	352.66	1,379.37
	Inventory	0.00	63.34	9.44	6.68	79.47
	<b>Subtotal</b>	<b>1,066.03</b>	<b>955.27</b>	<b>75.18</b>	<b>414.73</b>	<b>2,511.20</b>
<u>Business Interruption</u>						
	Income	6.18	453.74	1.33	149.27	610.52
	Relocation	154.93	129.46	1.26	73.70	359.35
	Rental Income	65.09	90.23	0.38	8.11	163.81
	Wage	14.55	343.68	2.31	728.17	1,088.70
	<b>Subtotal</b>	<b>240.74</b>	<b>1,017.11</b>	<b>5.27</b>	<b>959.25</b>	<b>2,222.38</b>
<u>ALL</u>	<b>Total</b>	<b>1,306.77</b>	<b>1,972.38</b>	<b>80.45</b>	<b>1,373.98</b>	<b>4,733.58</b>





## Appendix A: County Listing for the Region

Texas

- Brazoria



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**Appendix B: Regional Population and Building Value Data**

	Population	Building Value (thousands of dollars)		
		Residential	Non-Residential	Total
<b>Texas</b>				
Brazoria	19,429	1,496,724	1,365,282	2,862,006
<b>Total</b>	<b>19,429</b>	<b>1,496,724</b>	<b>1,365,282</b>	<b>2,862,006</b>
<b>Total Study Region</b>	<b>19,429</b>	<b>1,496,724</b>	<b>1,365,282</b>	<b>2,862,006</b>



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# Hazus: Hurricane Global Risk Report

**Region Name:** City of Angleton

**Hurricane Scenario:** Probabilistic 100-year Return Period

**Print Date:** Thursday, March 23, 2023

**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 Hurricane. These results can be improved by using enhanced inventory data.*

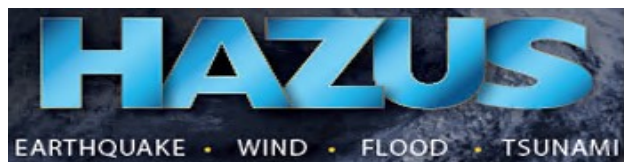


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## General Description of the Region

Hazus is a regional multi-hazard loss estimation model that was developed by the Federal Emergency Management Agency and the National Institute of Building Sciences. 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 hurricane loss estimates provided in this report are based on a region that includes 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 287.02 square miles and contains 7 census tracts. There are over 14 thousand households in the region and a total population of 40,172 people. The distribution of population by State and County is provided in Appendix B.

There are an estimated 16 thousand buildings in the region with a total building replacement value (excluding contents) of 6,238 million dollars. Approximately 87% of the buildings (and 60% of the building value) are associated with residential housing.



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## Building Inventory

### General Building Stock

Hazus estimates that there are 16,538 buildings in the region which have an aggregate total replacement value of Table 1 presents the relative distribution of the value with respect to the general occupancies. Appendix B provides distribution of the building value by State and County.

### Building Exposure by Occupancy Type

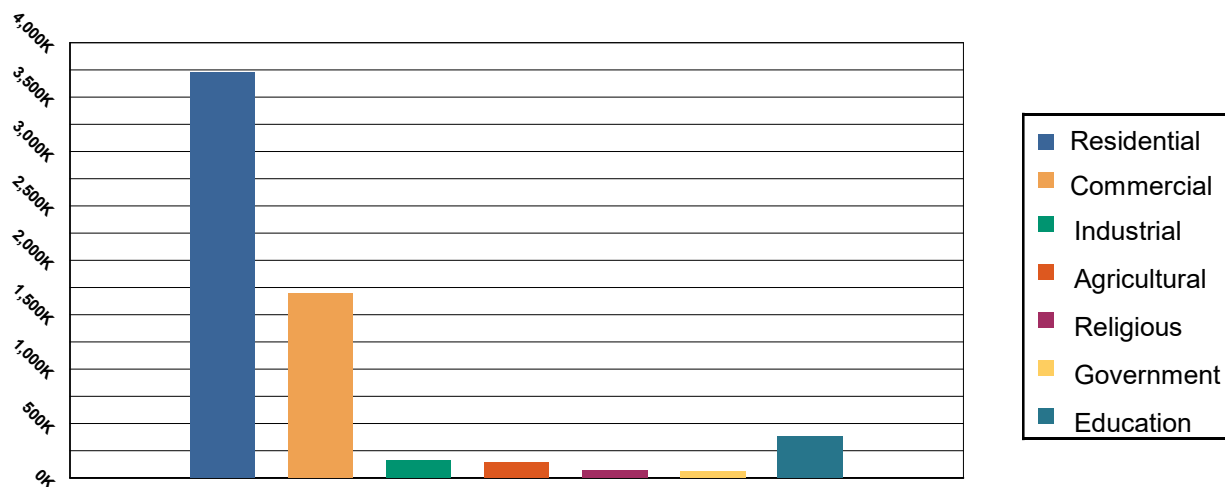


Table 1: Building Exposure by Occupancy Type

Occupancy	Exposure (\$1000)	Percent of Tot
Residential	3,726,718	59.74 %
Commercial	1,696,797	27.20%
Industrial	164,816	2.64%
Agricultural	140,638	2.25%
Religious	70,163	1.12%
Government	57,090	0.92%
Education	381,940	6.12%
<b>Total</b>	<b>6,238,162</b>	<b>100.00%</b>

### Essential Facility Inventory

For essential facilities, there are 1 hospitals in the region with a total bed capacity of 64 beds. There are 17 schools, 6 fire stations, 6 police stations and 1 emergency operation facilities.



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## Hurricane Scenario

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

**Scenario Name:** Probabilistic

**Type:** Probabilistic



## Building Damage

### General Building Stock Damage

Hazus estimates that about 6,080 buildings will be at least moderately damaged. This is over 37% of the total number of buildings in the region. There are an estimated 712 buildings that will be completely destroyed. The definition of the 'damage states' is provided in the Hazus Hurricane technical manual. Table 2 below summarizes the expected damage by general occupancy for the buildings in the region. Table 3 summarizes the expected damage by general building type.

### Expected Building Damage by Occupancy

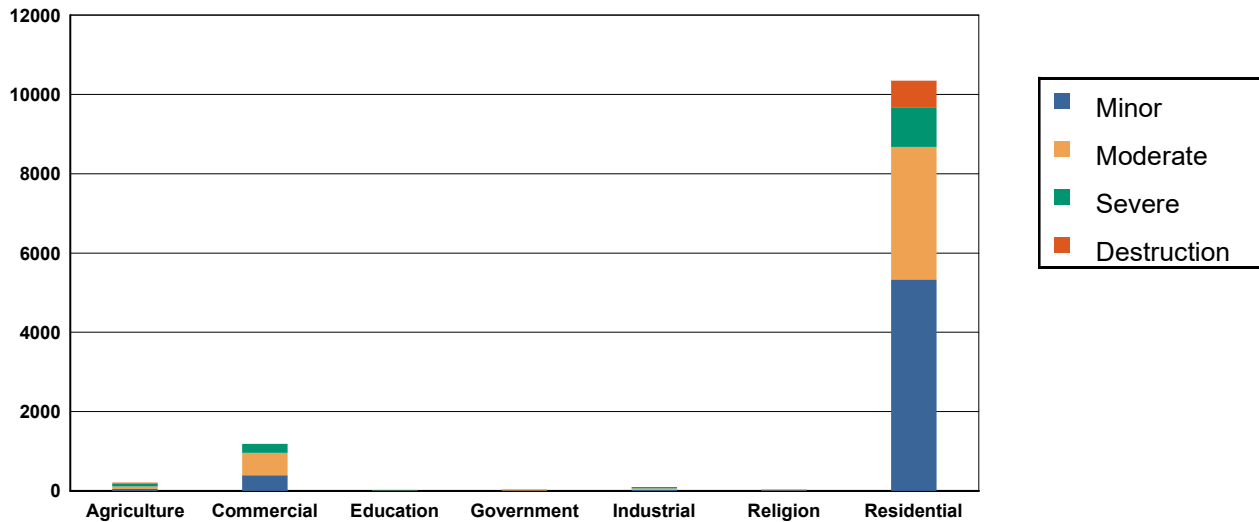


Table 2: Expected Building Damage by Occupancy : 100 - year Event

Occupancy	None		Minor		Moderate		Severe		Destruction	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Agriculture	57.89	21.76	47.93	18.02	64.81	24.37	72.85	27.39	22.52	8.46
Commercial	377.42	24.10	398.30	25.43	558.92	35.69	228.95	14.62	2.42	0.15
Education	6.40	24.61	5.61	21.58	7.51	28.90	6.47	24.88	0.01	0.03
Government	12.37	28.11	10.59	24.07	12.21	27.75	8.82	20.05	0.01	0.02
Industrial	37.02	28.26	31.02	23.68	35.54	27.13	26.90	20.53	0.53	0.40
Religion	12.97	28.82	12.80	28.45	11.97	26.61	7.24	16.09	0.01	0.03
Residential	4,113.81	28.45	5,334.02	36.89	3,342.27	23.11	983.39	6.80	686.51	4.75
<b>Total</b>	<b>4,617.88</b>		<b>5,840.27</b>		<b>4,033.23</b>		<b>1,334.62</b>		<b>712.01</b>	



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**Table 3: Expected Building Damage by Building Type : 100 - year Event**

Building Type	None		Minor		Moderate		Severe		Destruction	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Concrete	66	22.41	54	18.44	113	38.60	60	20.54	0	0.01
Masonry	555	26.30	542	25.69	628	29.73	343	16.23	43	2.05
MH	1,010	51.19	287	14.55	357	18.11	58	2.93	261	13.23
Steel	138	22.23	100	16.03	253	40.70	129	20.82	1	0.21
Wood	2,994	25.96	4,702	40.77	2,649	22.97	789	6.84	401	3.47



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### **Essential Facility Damage**

Before the hurricane, the region had 64 hospital beds available for use. On the day of the hurricane, the model estimates that 0 hospital beds (0%) are available for use by patients already in the hospital and those injured by the hurricane. After one week, 0% of the beds will be in service. By 30 days, 100% will be operational.



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### Thematic Map of Essential Facilities

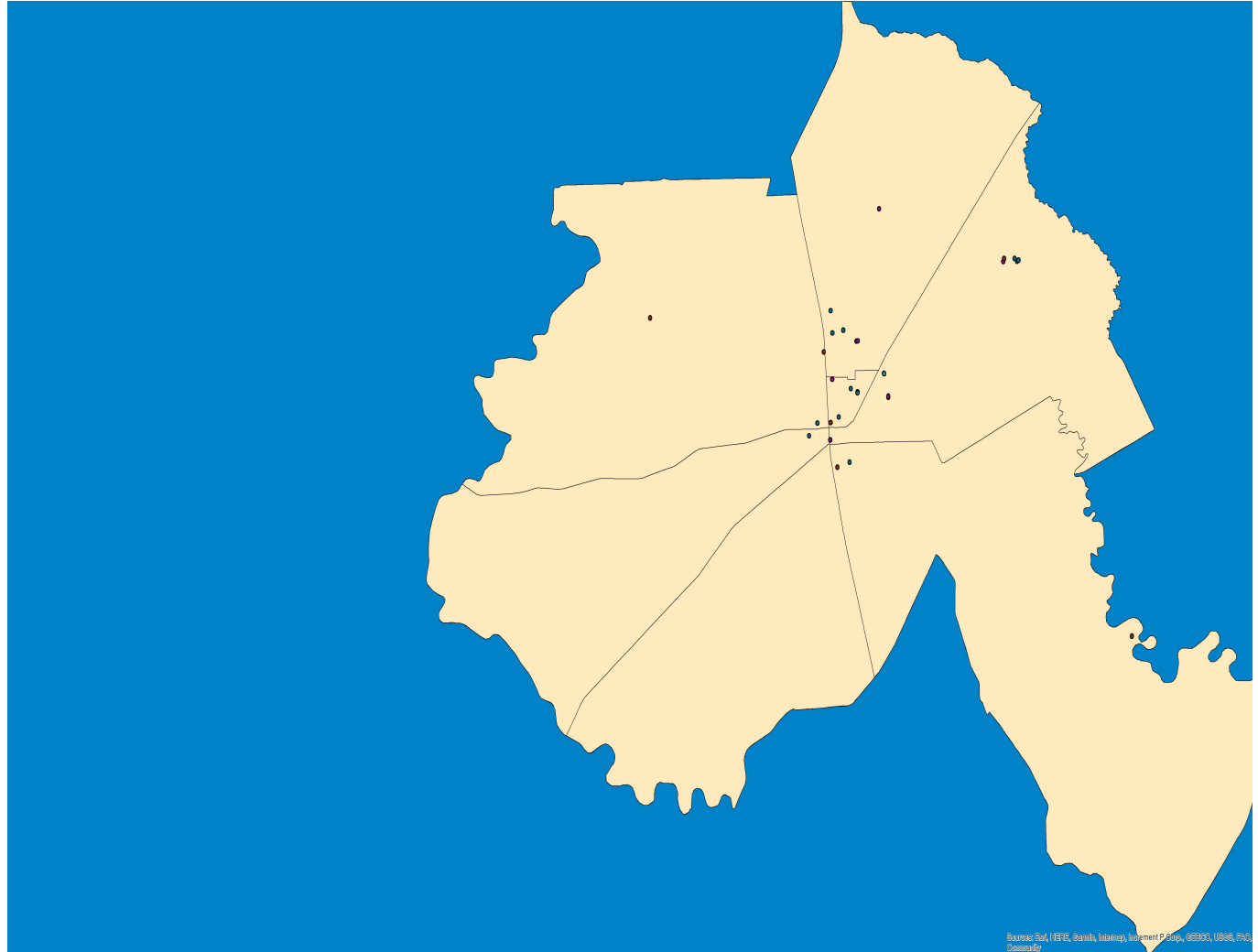


Table 4: Expected Damage to Essential Facilities

Classification	Total	# Facilities		
		Probability of at Least Moderate Damage > 50%	Probability of Complete Damage > 50%	Expected Loss of Use < 1 day
EOCs	1	0	0	1
Fire Stations	6	1	0	6
Hospitals	1	1	0	0
Police Stations	6	5	0	6
Schools	17	17	0	0

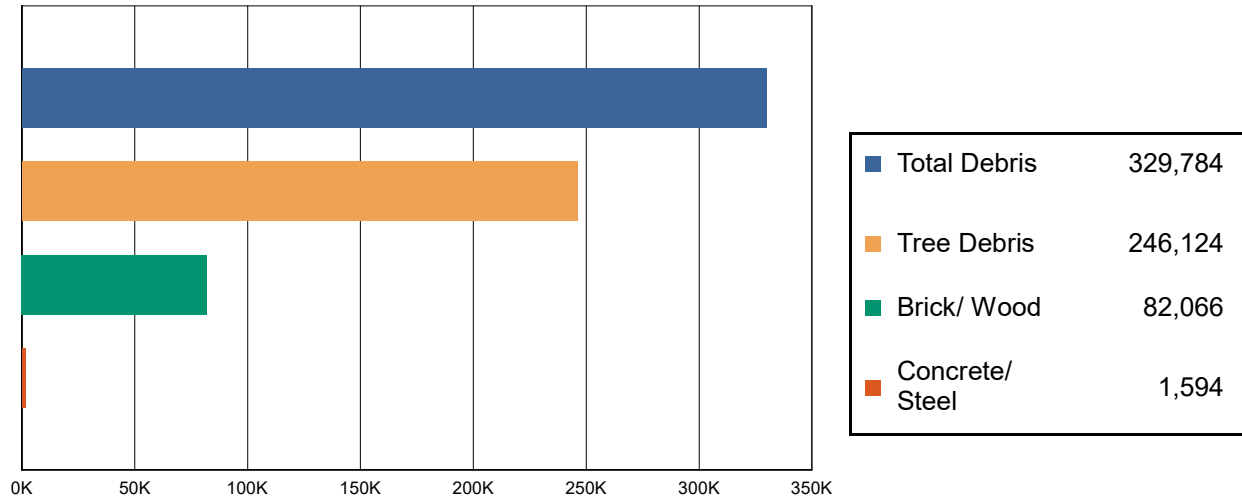


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## Induced Hurricane Damage

### Debris Generation

#### Estimated Debris (Tons)



Hazus estimates the amount of debris that will be generated by the hurricane. The model breaks the debris into four general categories: a) Brick/Wood, b) Reinforced Concrete/Steel, c) Eligible Tree Debris, and d) Other Tree Debris. 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 329,784 tons of debris will be generated. Of the total amount, 217,568 tons (66%) is Other Tree Debris. Of the remaining 112,216 tons, Brick/Wood comprises 73% of the total, Reinforced Concrete/Steel comprises of 1% of the total, with the remainder being Eligible Tree Debris. If the building debris tonnage is converted to an estimated number of truckloads, it will require 3346 truckloads (@25 tons/truck) to remove the building debris generated by the hurricane. The number of Eligible Tree Debris truckloads will depend on how the 28,556 tons of Eligible Tree Debris are collected and processed. The volume of tree debris generally ranges from about 4 cubic yards per ton for chipped or compacted tree debris to about 10 cubic yards per ton for bulkier, uncompacted debris.

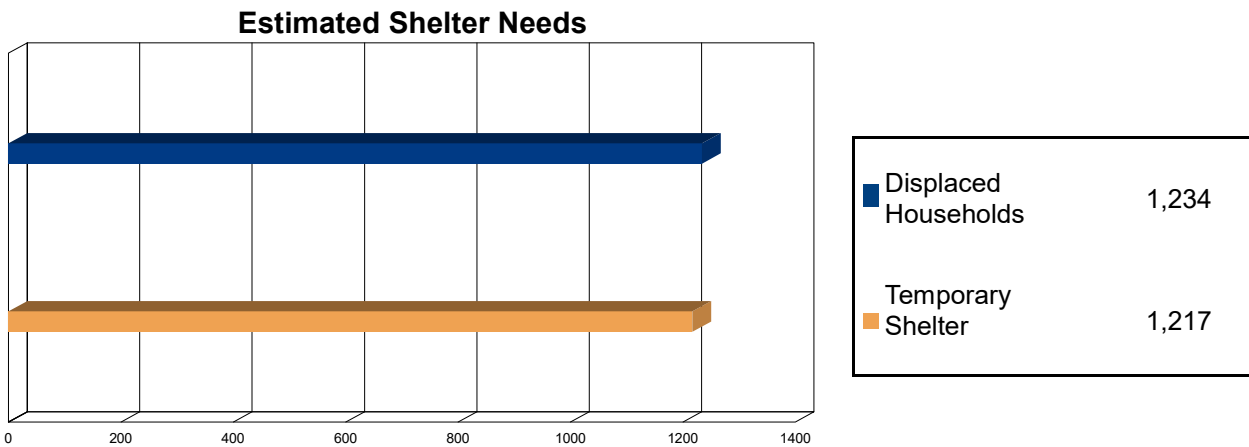




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## Social Impact

### Shelter Requirement



Hazus estimates the number of households that are expected to be displaced from their homes due to the hurricane and the number of displaced people that will require accommodations in temporary public shelters. The model estimates 1,234 households to be displaced due to the hurricane. Of these, 1,217 people (out of a total population of 40,172) will seek temporary shelter in public shelters.



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## Economic Loss

The total economic loss estimated for the hurricane is 1327.9 million dollars, which represents 21.29 % of the total replacement value of the region's buildings.

### Building-Related Losses

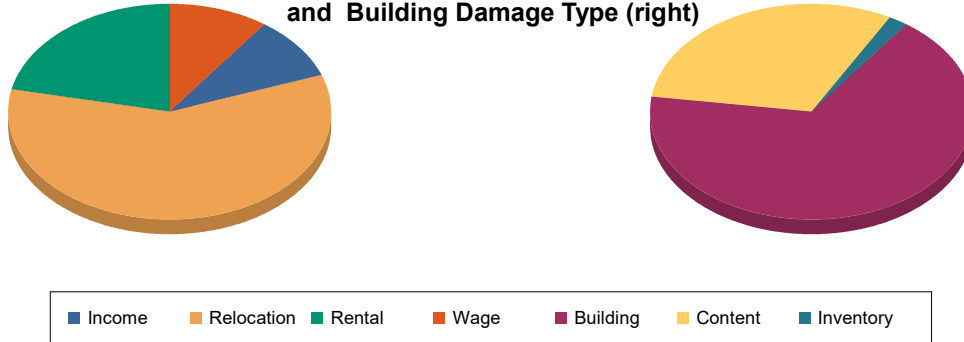
The building related losses are broken into two categories: direct property damage losses and business interruption losses. The direct property damage losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses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

The total property damage losses were 1,328 million dollars. 15% of the estimated losses were related to the business interruption of the region. By far, the largest loss was sustained by the residential occupancies which made up over 60% of the total loss. Table 5 below provides a summary of the losses associated with the building damage.



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Loss by Business Interruption Type (left) and Building Damage Type (right)



Loss Type by General Occupancy

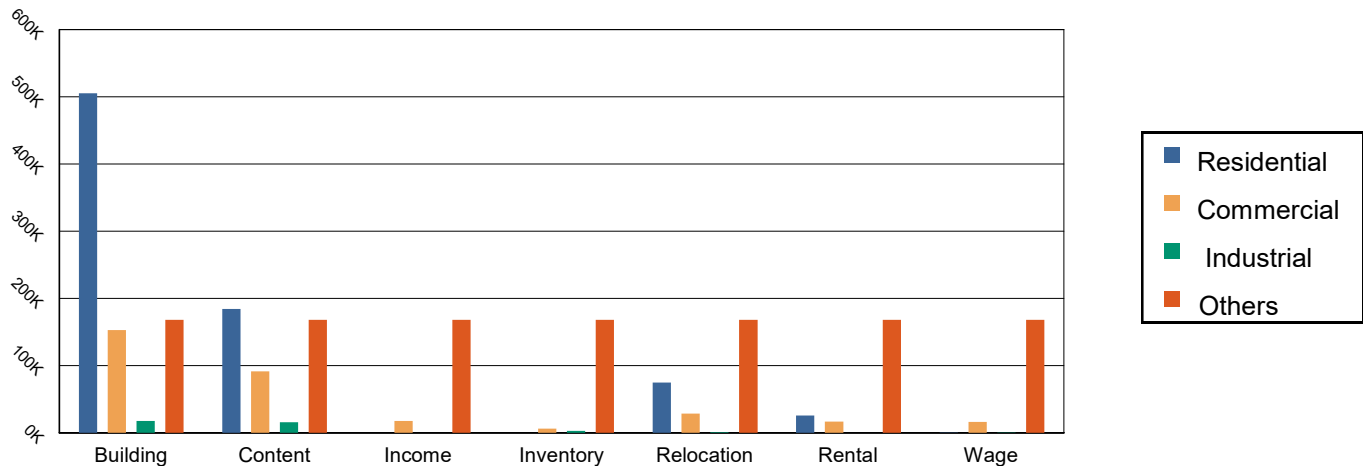


Table 5: Building-Related Economic Loss Estimates  
(Thousands of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
<b>Property Damage</b>						
	Building	505,018.32	152,706.46	17,865.72	78,859.40	754,449.89
	Content	184,315.66	91,339.33	15,714.59	54,161.98	345,531.56
	Inventory	0.00	6,321.30	2,793.32	13,493.86	22,608.47
	<b>Subtotal</b>	<b>689,333.98</b>	<b>250,367.09</b>	<b>36,373.63</b>	<b>146,515.24</b>	<b>1,122,589.93</b>
<b>Business Interruption Loss</b>						
	Income	298.44	17,808.34	278.32	1,180.61	19,565.71
	Relocation	74,789.14	28,803.23	1,117.49	16,162.78	120,872.64
	Rental	25,738.15	16,850.62	268.18	1,271.01	44,127.96
	Wage	702.45	16,338.51	457.51	3,246.90	20,745.37
	<b>Subtotal</b>	<b>101,528.18</b>	<b>79,800.70</b>	<b>2,121.49</b>	<b>21,861.30</b>	<b>205,311.68</b>



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Total

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<b>Total</b>	<b>790,862.16</b>	<b>330,167.79</b>	<b>38,495.12</b>	<b>168,376.54</b>	<b>1,327,901.61</b>
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**Appendix A: County Listing for the Region**

Texas  
- Brazoria



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## Appendix B: Regional Population and Building Value Data

	Population	Building Value (thousands of dollars)		
		Residential	Non-Residential	Total
<b>Texas</b>				
Brazoria	40,172	3,726,718	2,511,444	6,238,162
<b>Total</b>	<b>40,172</b>	<b>3,726,718</b>	<b>2,511,444</b>	<b>6,238,162</b>
<b>Study Region Total</b>	<b>40,172</b>	<b>3,726,718</b>	<b>2,511,444</b>	<b>6,238,162</b>



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# Hazus: Hurricane Global Risk Report

**Region Name:** City of Angleton

**Hurricane Scenario:** Probabilistic 500-year Return Period

**Print Date:** Thursday, March 23, 2023

**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 Hurricane. These results can be improved by using enhanced inventory data.*



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Social Impact	8
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Appendix B: Regional Population and Building Value Data	11



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## General Description of the Region

Hazus is a regional multi-hazard loss estimation model that was developed by the Federal Emergency Management Agency and the National Institute of Building Sciences. 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 hurricane loss estimates provided in this report are based on a region that includes 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 287.02 square miles and contains 7 census tracts. There are over 14 thousand households in the region and a total population of 40,172 people. The distribution of population by State and County is provided in Appendix B.

There are an estimated 16 thousand buildings in the region with a total building replacement value (excluding contents) of 6,238 million dollars. Approximately 87% of the buildings (and 60% of the building value) are associated with residential housing.



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## Building Inventory

### General Building Stock

Hazus estimates that there are 16,538 buildings in the region which have an aggregate total replacement value of Table 1 presents the relative distribution of the value with respect to the general occupancies. Appendix B provides distribution of the building value by State and County.

### Building Exposure by Occupancy Type

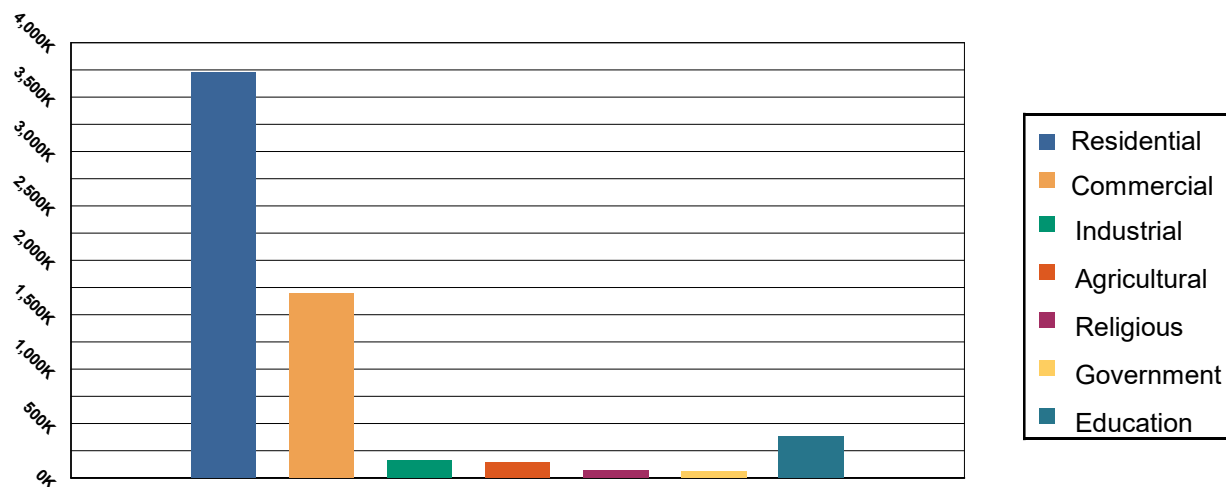


Table 1: Building Exposure by Occupancy Type

Occupancy	Exposure (\$1000)	Percent of Tot
Residential	3,726,718	59.74 %
Commercial	1,696,797	27.20%
Industrial	164,816	2.64%
Agricultural	140,638	2.25%
Religious	70,163	1.12%
Government	57,090	0.92%
Education	381,940	6.12%
<b>Total</b>	<b>6,238,162</b>	<b>100.00%</b>

### Essential Facility Inventory

For essential facilities, there are 1 hospitals in the region with a total bed capacity of 64 beds. There are 17 schools, 6 fire stations, 6 police stations and 1 emergency operation facilities.



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## Hurricane Scenario

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

**Scenario Name:** Probabilistic

**Type:** Probabilistic



## Building Damage

### General Building Stock Damage

Hazus estimates that about 11,931 buildings will be at least moderately damaged. This is over 72% of the total number of buildings in the region. There are an estimated 2,697 buildings that will be completely destroyed. The definition of the 'damage states' is provided in the Hazus Hurricane technical manual. Table 2 below summarizes the expected damage by general occupancy for the buildings in the region. Table 3 summarizes the expected damage by general building type.

### Expected Building Damage by Occupancy

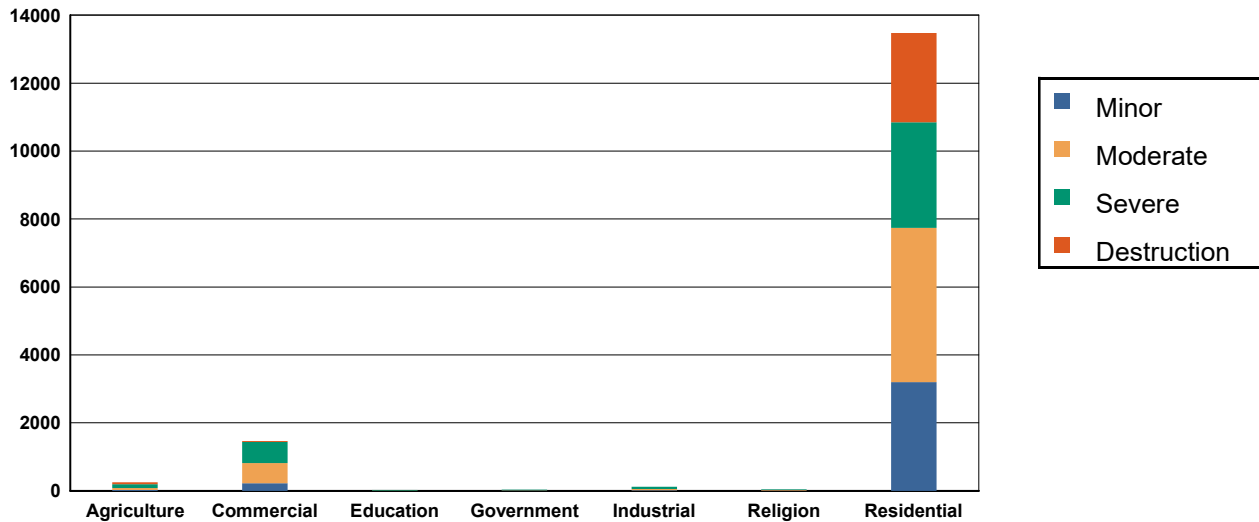


Table 2: Expected Building Damage by Occupancy : 500 - year Event

Occupancy	None		Minor		Moderate		Severe		Destruction	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Agriculture	16.14	6.07	23.29	8.76	56.61	21.28	117.48	44.16	52.48	19.73
Commercial	100.81	6.44	222.75	14.22	590.96	37.74	630.06	40.23	21.42	1.37
Education	2.03	7.81	2.80	10.77	7.04	27.09	14.02	53.93	0.10	0.39
Government	3.72	8.46	5.69	12.93	12.81	29.12	21.61	49.11	0.17	0.38
Industrial	11.27	8.61	17.05	13.02	37.46	28.60	63.51	48.48	1.70	1.30
Religion	3.61	8.01	7.48	16.62	14.38	31.97	19.24	42.75	0.30	0.66
Residential	986.64	6.82	3,203.84	22.16	4,540.93	31.40	3,107.33	21.49	2,621.26	18.13
<b>Total</b>	<b>1,124.23</b>		<b>3,482.90</b>		<b>5,260.20</b>		<b>3,973.25</b>		<b>2,697.42</b>	



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**Table 3: Expected Building Damage by Building Type : 500 - year Event**

Building Type	None		Minor		Moderate		Severe		Destruction	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Concrete	20	6.79	22	7.66	101	34.34	150	51.08	0	0.13
Masonry	157	7.41	312	14.77	670	31.75	825	39.08	147	6.98
MH	361	18.29	234	11.84	478	24.24	182	9.23	718	36.41
Steel	42	6.83	42	6.73	214	34.43	314	50.62	9	1.39
Wood	620	5.38	2,812	24.38	3,805	32.99	2,574	22.32	1,723	14.94



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### **Essential Facility Damage**

Before the hurricane, the region had 64 hospital beds available for use. On the day of the hurricane, the model estimates that 0 hospital beds (0%) are available for use by patients already in the hospital and those injured by the hurricane. After one week, 0% of the beds will be in service. By 30 days, 100% will be operational.



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### Thematic Map of Essential Facilities

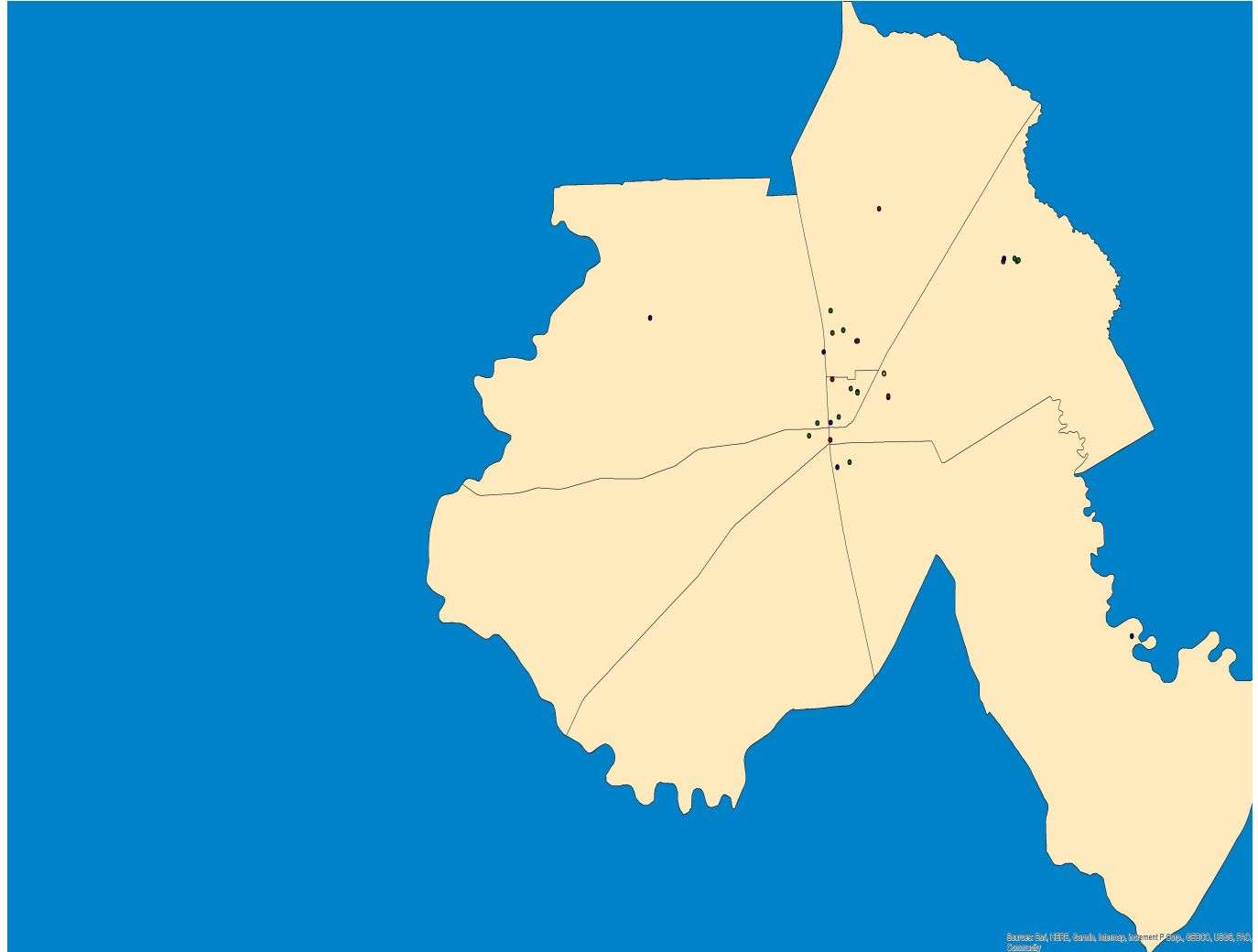


Table 4: Expected Damage to Essential Facilities

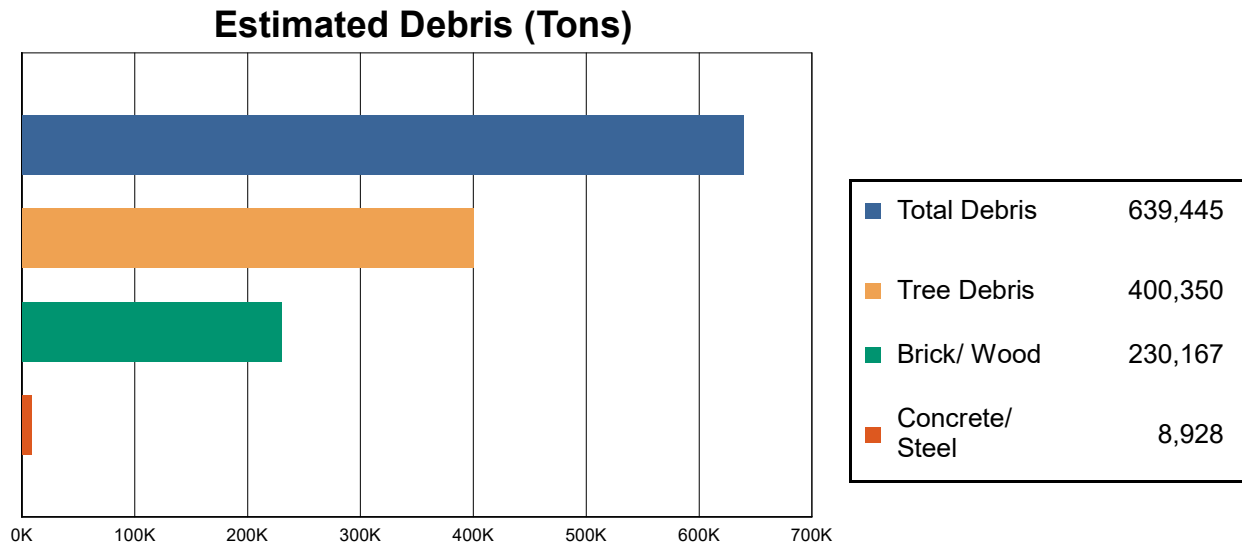
Classification	Total	# Facilities		
		Probability of at Least Moderate Damage > 50%	Probability of Complete Damage > 50%	Expected Loss of Use < 1 day
EOCs	1	1	0	0
Fire Stations	6	6	0	6
Hospitals	1	1	0	0
Police Stations	6	6	0	0
Schools	17	17	0	0



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## Induced Hurricane Damage

### Debris Generation



Hazus estimates the amount of debris that will be generated by the hurricane. The model breaks the debris into four general categories: a) Brick/Wood, b) Reinforced Concrete/Steel, c) Eligible Tree Debris, and d) Other Tree Debris. 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 639,445 tons of debris will be generated. Of the total amount, 353,322 tons (55%) is Other Tree Debris. Of the remaining 286,123 tons, Brick/Wood comprises 80% of the total, Reinforced Concrete/Steel comprises of 3% of the total, with the remainder being Eligible Tree Debris. If the building debris tonnage is converted to an estimated number of truckloads, it will require 9564 truckloads (@25 tons/truck) to remove the building debris generated by the hurricane. The number of Eligible Tree Debris truckloads will depend on how the 47,028 tons of Eligible Tree Debris are collected and processed. The volume of tree debris generally ranges from about 4 cubic yards per ton for chipped or compacted tree debris to about 10 cubic yards per ton for bulkier, uncompacted debris.

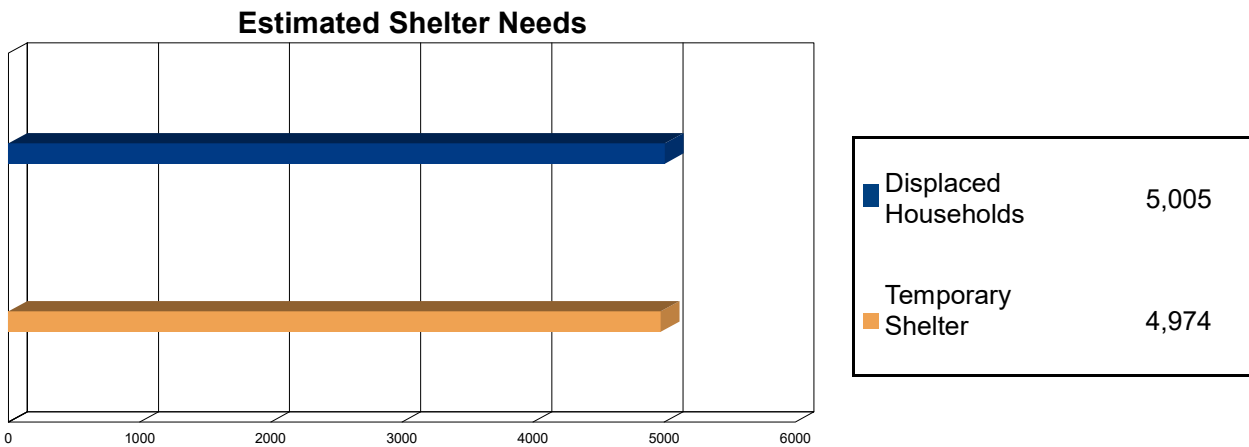




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## Social Impact

### Shelter Requirement



Hazus estimates the number of households that are expected to be displaced from their homes due to the hurricane and the number of displaced people that will require accommodations in temporary public shelters. The model estimates 5,005 households to be displaced due to the hurricane. Of these, 4,974 people (out of a total population of 40,172) will seek temporary shelter in public shelters.



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## Economic Loss

The total economic loss estimated for the hurricane is 3642.0 million dollars, which represents 58.38 % of the total replacement value of the region's buildings.

### Building-Related Losses

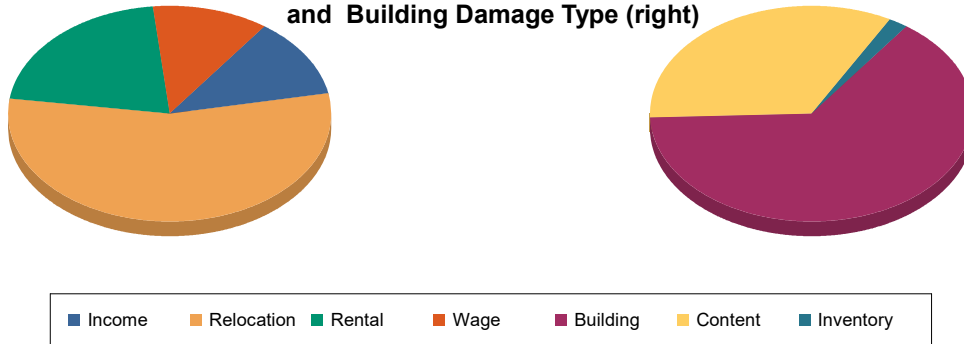
The building related losses are broken into two categories: direct property damage losses and business interruption losses. The direct property damage losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses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

The total property damage losses were 3,642 million dollars. 14% of the estimated losses were related to the business interruption of the region. By far, the largest loss was sustained by the residential occupancies which made up over 61% of the total loss. Table 5 below provides a summary of the losses associated with the building damage.



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Loss by Business Interruption Type (left) and Building Damage Type (right)



Loss Type by General Occupancy

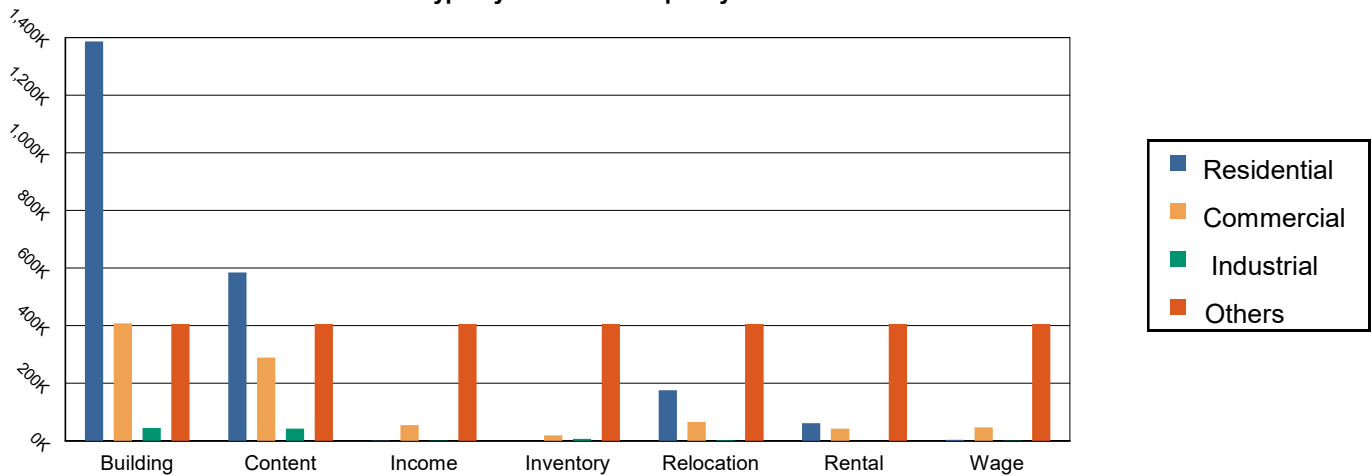


Table 5: Building-Related Economic Loss Estimates  
(Thousands of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
<b>Property Damage</b>						
	Building	1,386,829.77	407,630.97	44,423.46	186,757.08	2,025,641.27
	Content	584,925.75	288,492.65	42,135.82	138,696.30	1,054,250.52
	Inventory	0.00	18,710.15	7,376.13	33,873.63	59,959.91
	<b>Subtotal</b>	<b>1,971,755.52</b>	<b>714,833.77</b>	<b>93,935.41</b>	<b>359,327.01</b>	<b>3,139,851.71</b>
<b>Business Interruption Loss</b>						
	Income	1,301.19	54,622.67	735.19	3,048.01	59,707.06
	Relocation	176,056.35	65,376.62	2,224.48	33,811.93	277,469.38
	Rental	61,185.80	42,396.08	597.09	2,858.49	107,037.45
	Wage	3,060.62	47,278.85	1,200.08	6,426.35	57,965.90
	<b>Subtotal</b>	<b>241,603.96</b>	<b>209,674.21</b>	<b>4,756.84</b>	<b>46,144.77</b>	<b>502,179.78</b>



FEMA

Total

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Total	2,213,359.48	924,507.98	98,692.25	405,471.78	3,642,031.48
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FEMA

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**Appendix A: County Listing for the Region**

Texas  
- Brazoria



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## Appendix B: Regional Population and Building Value Data

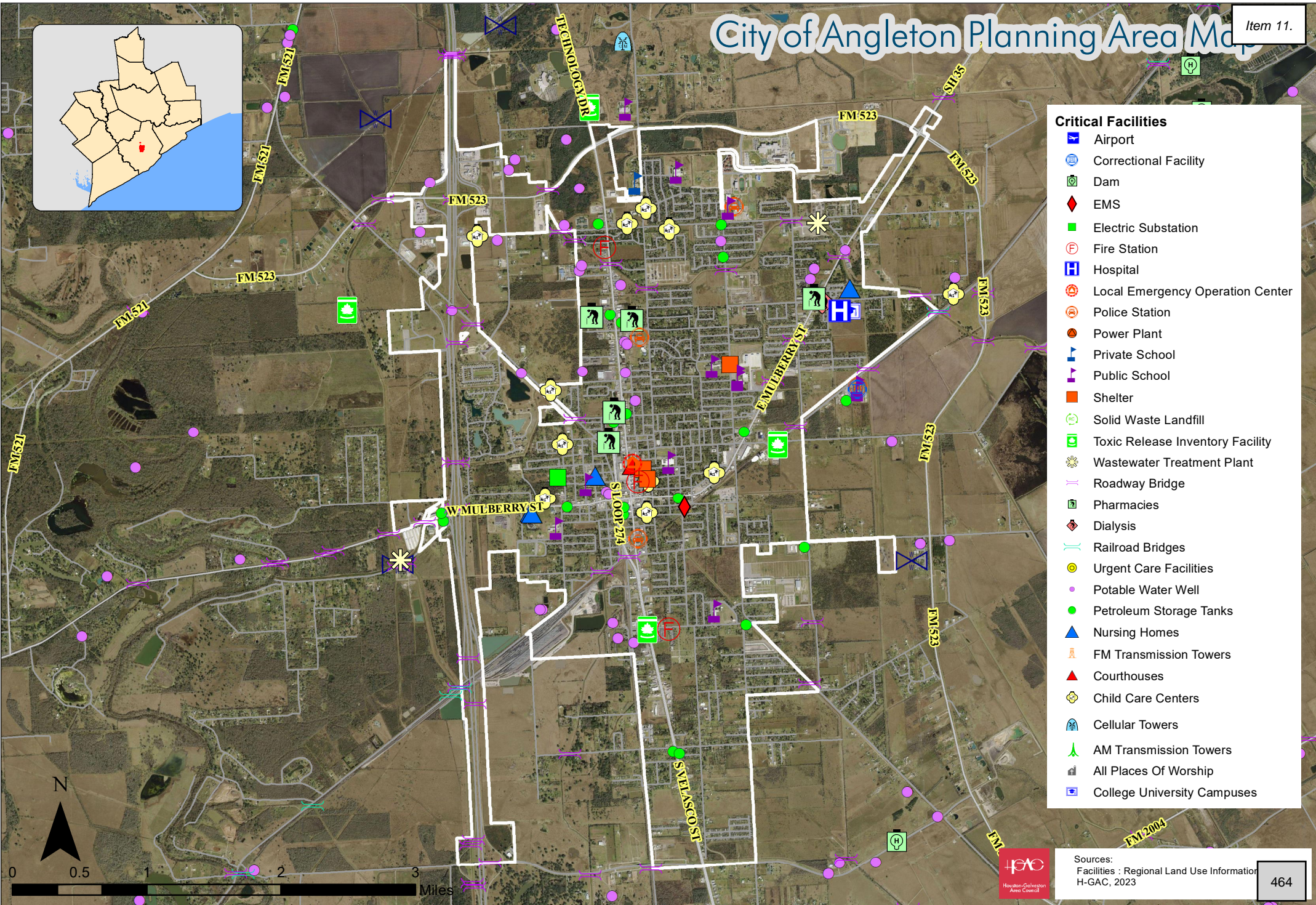
	Population	Building Value (thousands of dollars)		
		Residential	Non-Residential	Total
<b>Texas</b>				
Brazoria	40,172	3,726,718	2,511,444	6,238,162
<b>Total</b>	<b>40,172</b>	<b>3,726,718</b>	<b>2,511,444</b>	<b>6,238,162</b>
<b>Study Region Total</b>	<b>40,172</b>	<b>3,726,718</b>	<b>2,511,444</b>	<b>6,238,162</b>

# Appendix B

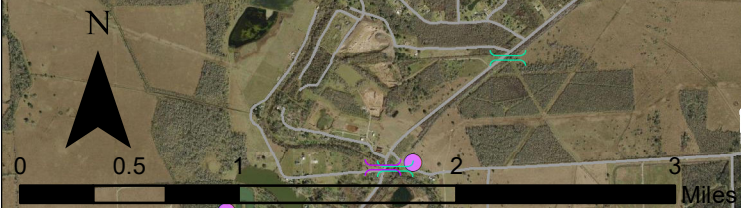
## H-GAC MAPS

# City of Angleton Planning Area Map

Item 11.



- Critical Facilities**
- Airport
  - Correctional Facility
  - Dam
  - EMS
  - Electric Substation
  - Fire Station
  - Hospital
  - Local Emergency Operation Center
  - Police Station
  - Power Plant
  - Private School
  - Public School
  - Shelter
  - Solid Waste Landfill
  - Toxic Release Inventory Facility
  - Wastewater Treatment Plant
  - Roadway Bridge
  - Pharmacies
  - Dialysis
  - Railroad Bridges
  - Urgent Care Facilities
  - Potable Water Well
  - Petroleum Storage Tanks
  - Nursing Homes
  - FM Transmission Towers
  - Courthouses
  - Child Care Centers
  - Cellular Towers
  - AM Transmission Towers
  - All Places Of Worship
  - College University Campuses

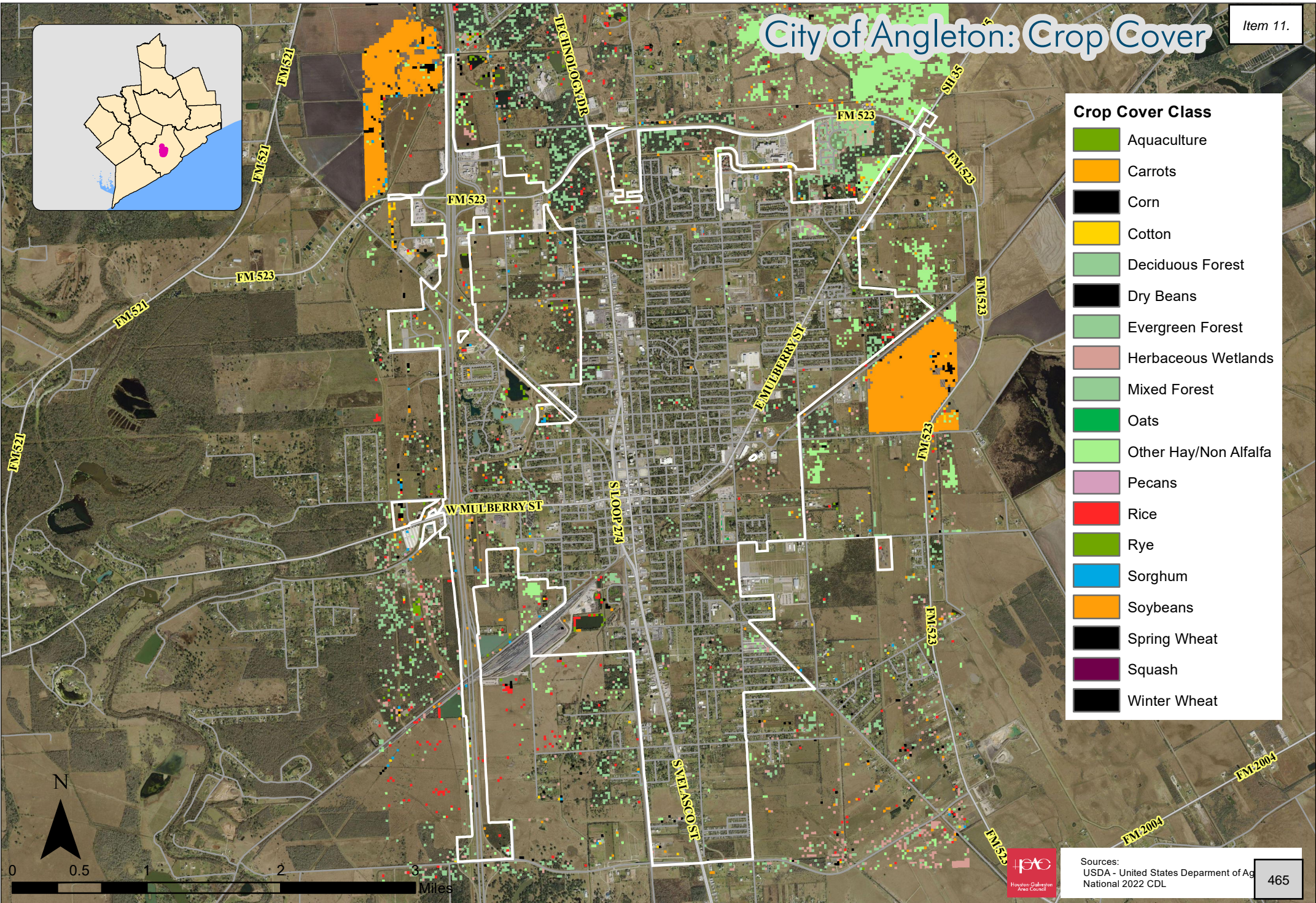
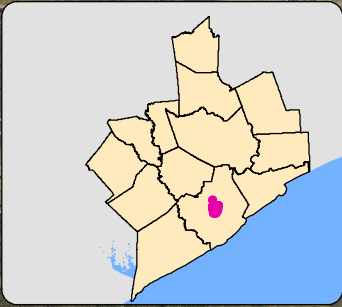


Sources:  
Facilities - Regional Land Use Information  
H-GAC, 2023



# City of Angleton: Crop Cover

Item 11.

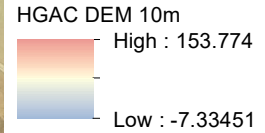
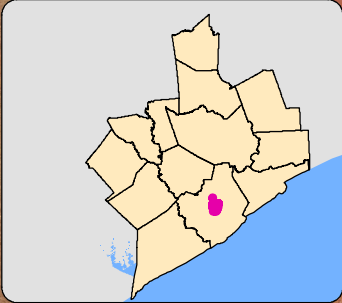


Crop Cover Class	
	Aquaculture
	Carrots
	Corn
	Cotton
	Deciduous Forest
	Dry Beans
	Evergreen Forest
	Herbaceous Wetlands
	Mixed Forest
	Oats
	Other Hay/Non Alfalfa
	Pecans
	Rice
	Rye
	Sorghum
	Soybeans
	Spring Wheat
	Squash
	Winter Wheat

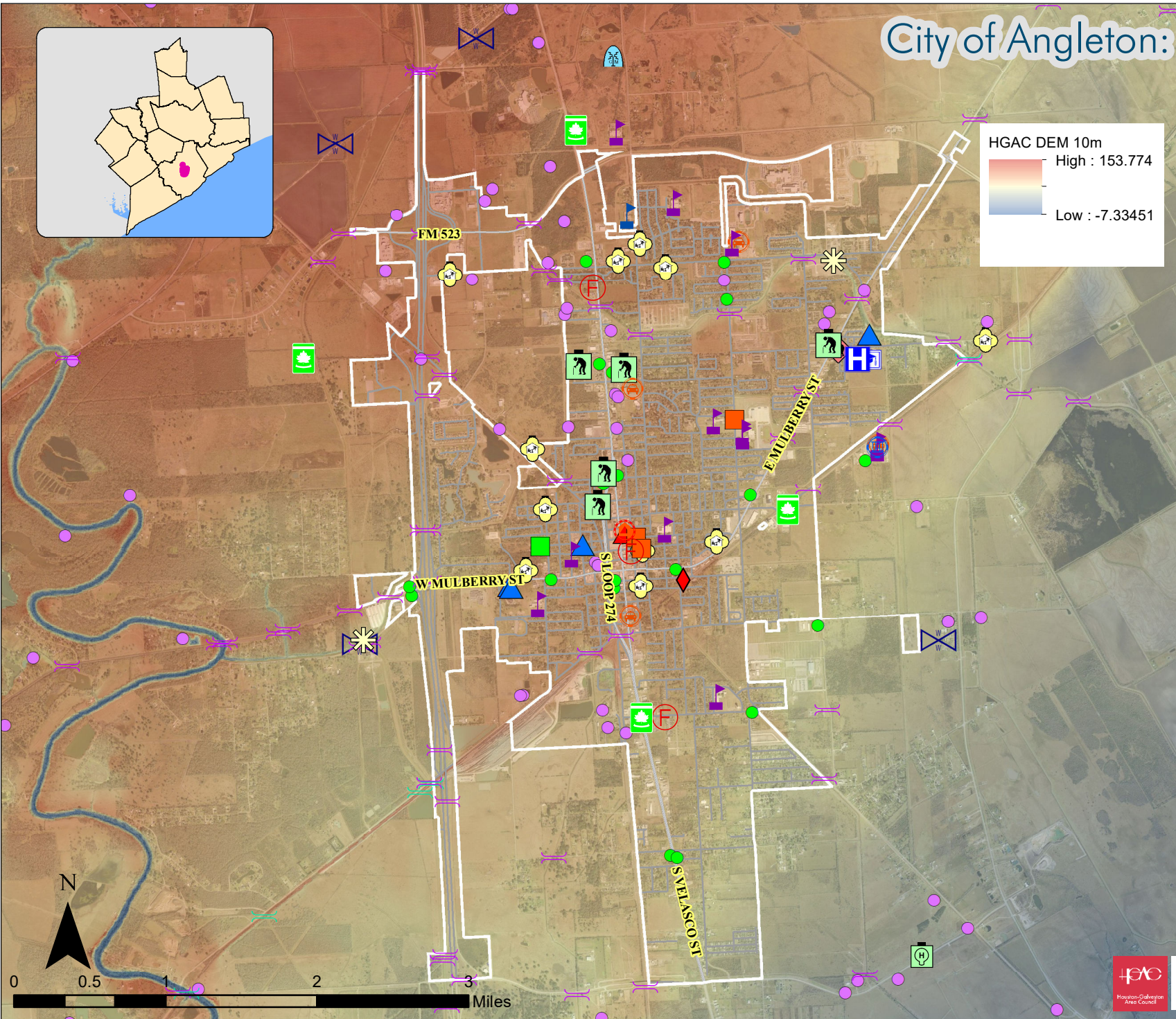


# City of Angleton: Elevation

Item 11.



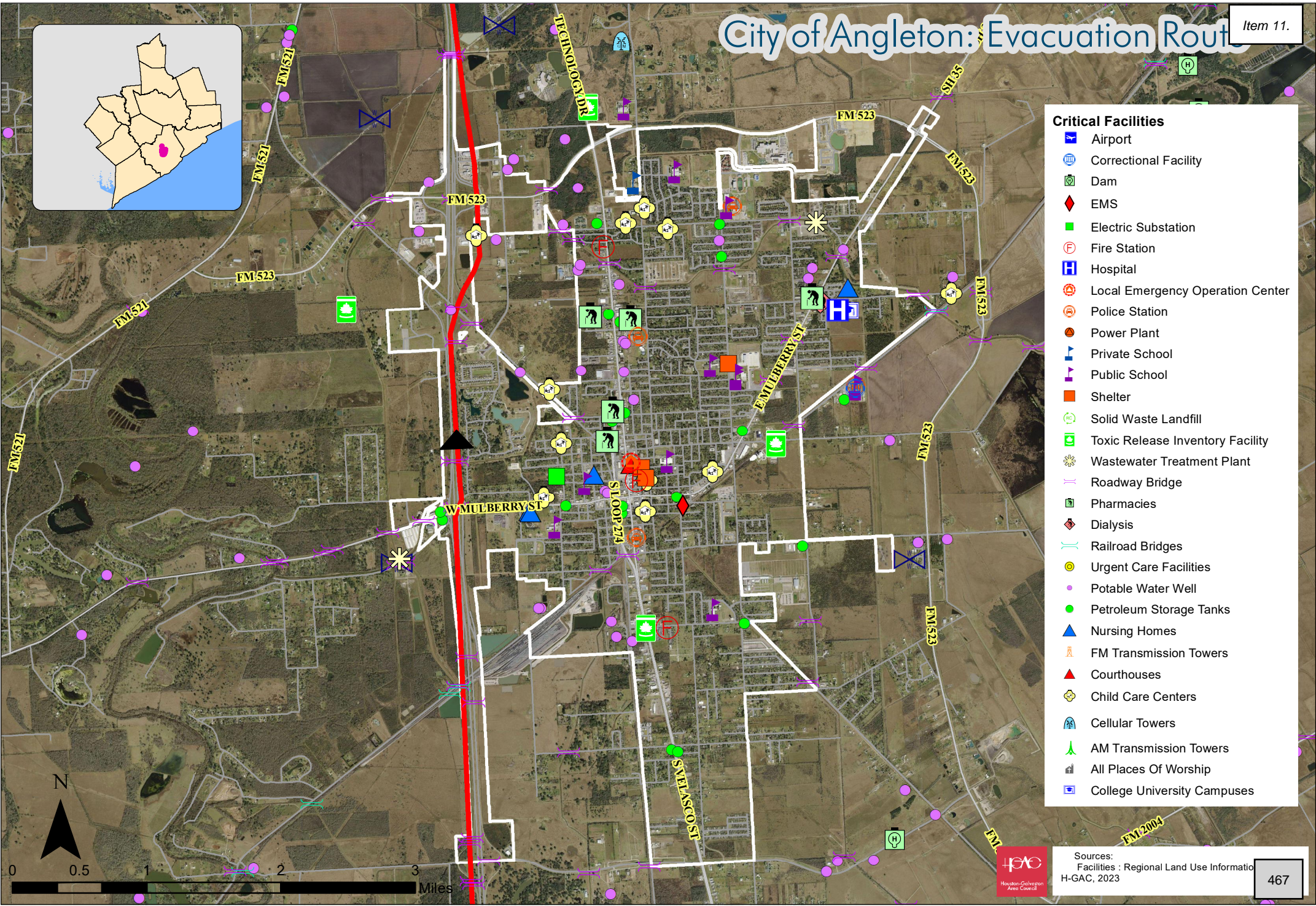
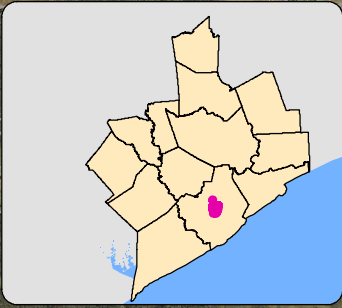
- Critical Facilities**
- Airport
  - Correctional Facility
  - Dam
  - EMS
  - Electric Substation
  - Fire Station
  - Hospital
  - Local Emergency Operation Center
  - Police Station
  - Power Plant
  - Private School
  - Public School
  - Shelter
  - Solid Waste Landfill
  - Toxic Release Inventory Facility
  - Wastewater Treatment Plant
  - Roadway Bridge
  - Pharmacies
  - Dialysis
  - Railroad Bridges
  - Urgent Care Facilities
  - Potable Water Well
  - Petroleum Storage Tanks
  - Nursing Homes
  - FM Transmission Towers
  - Courthouses
  - Child Care Centers
  - Cellular Towers
  - AM Transmission Towers
  - All Places Of Worship
  - College University Campuses



Sources : Regional Land Use Information System, H  
 Elevation Data, HGAC, 2023

# City of Angleton: Evacuation Route

Item 11.



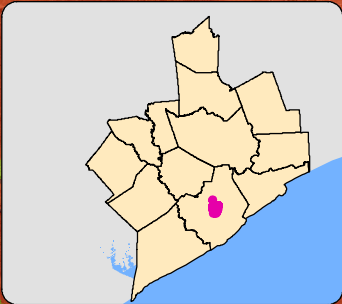
- Critical Facilities**
- Airport
  - Correctional Facility
  - Dam
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  - Cellular Towers
  - AM Transmission Towers
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  - College University Campuses



Sources:  
Facilities : Regional Land Use Information  
H-GAC, 2023

# City of Angleton: Expansive soil

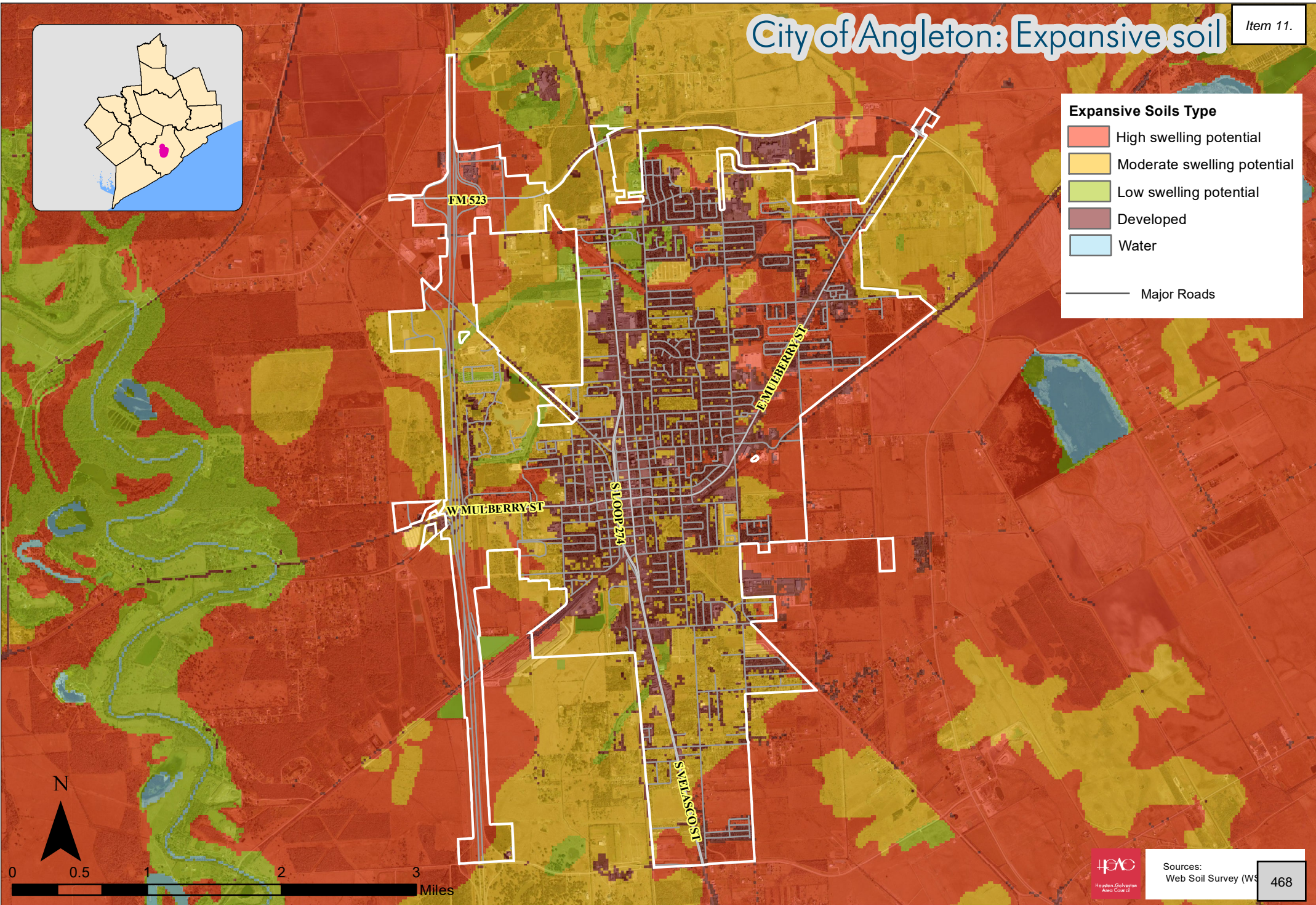
Item 11.



**Expansive Soils Type**

- High swelling potential
- Moderate swelling potential
- Low swelling potential
- Developed
- Water

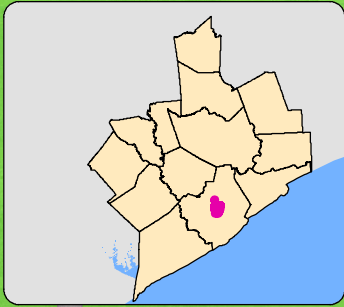
Major Roads



Sources:  
Web Soil Survey (WSS) 468

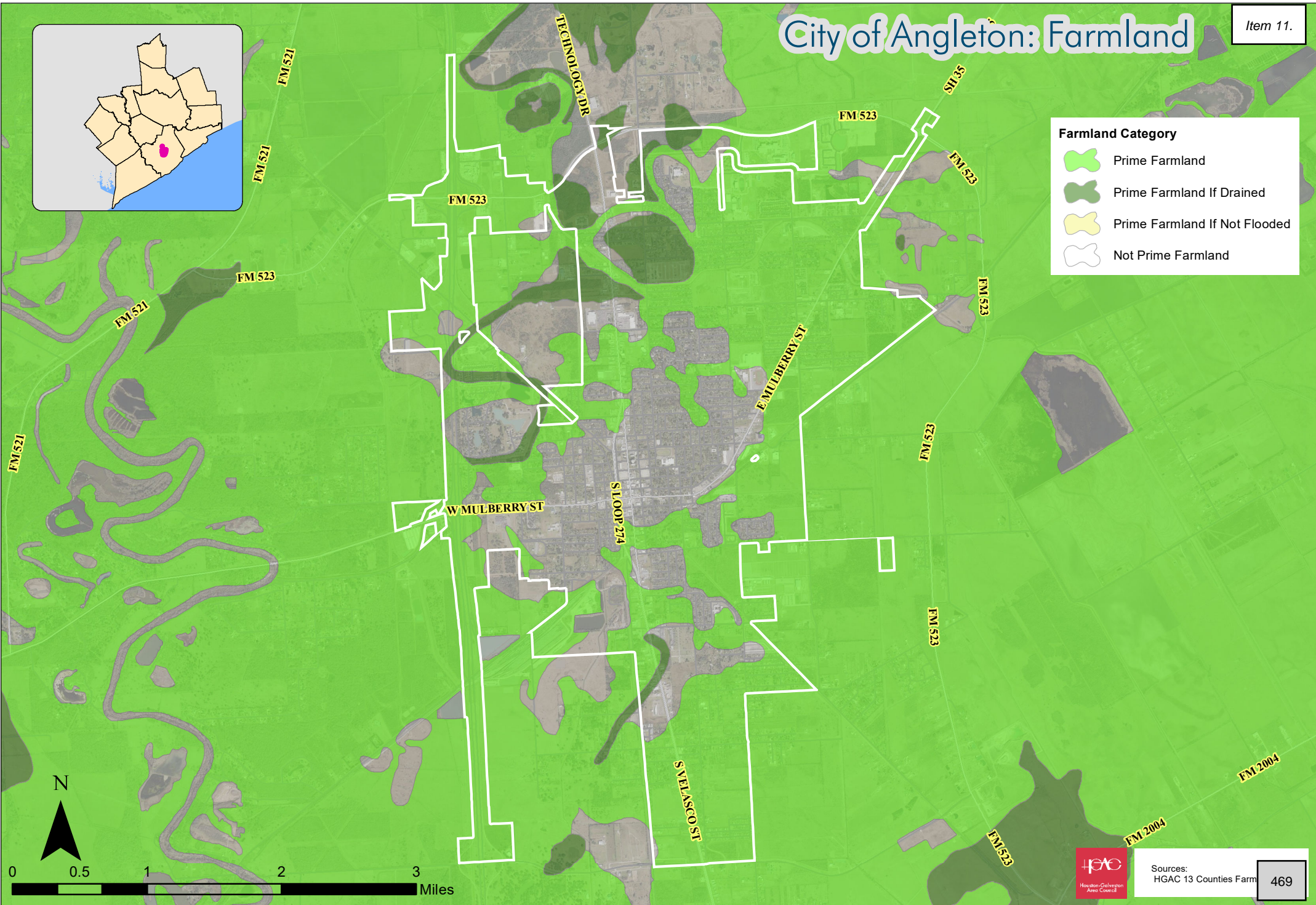
# City of Angleton: Farmland

Item 11.



**Farmland Category**

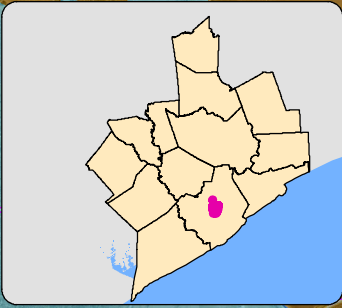
- Prime Farmland
- Prime Farmland If Drained
- Prime Farmland If Not Flooded
- Not Prime Farmland



Sources:  
HGAC 13 Counties Farm

# City of Angleton: Floodplain

Item 11.

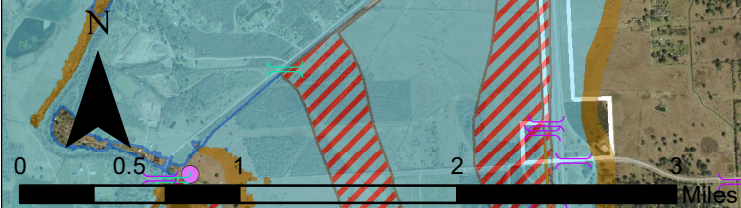
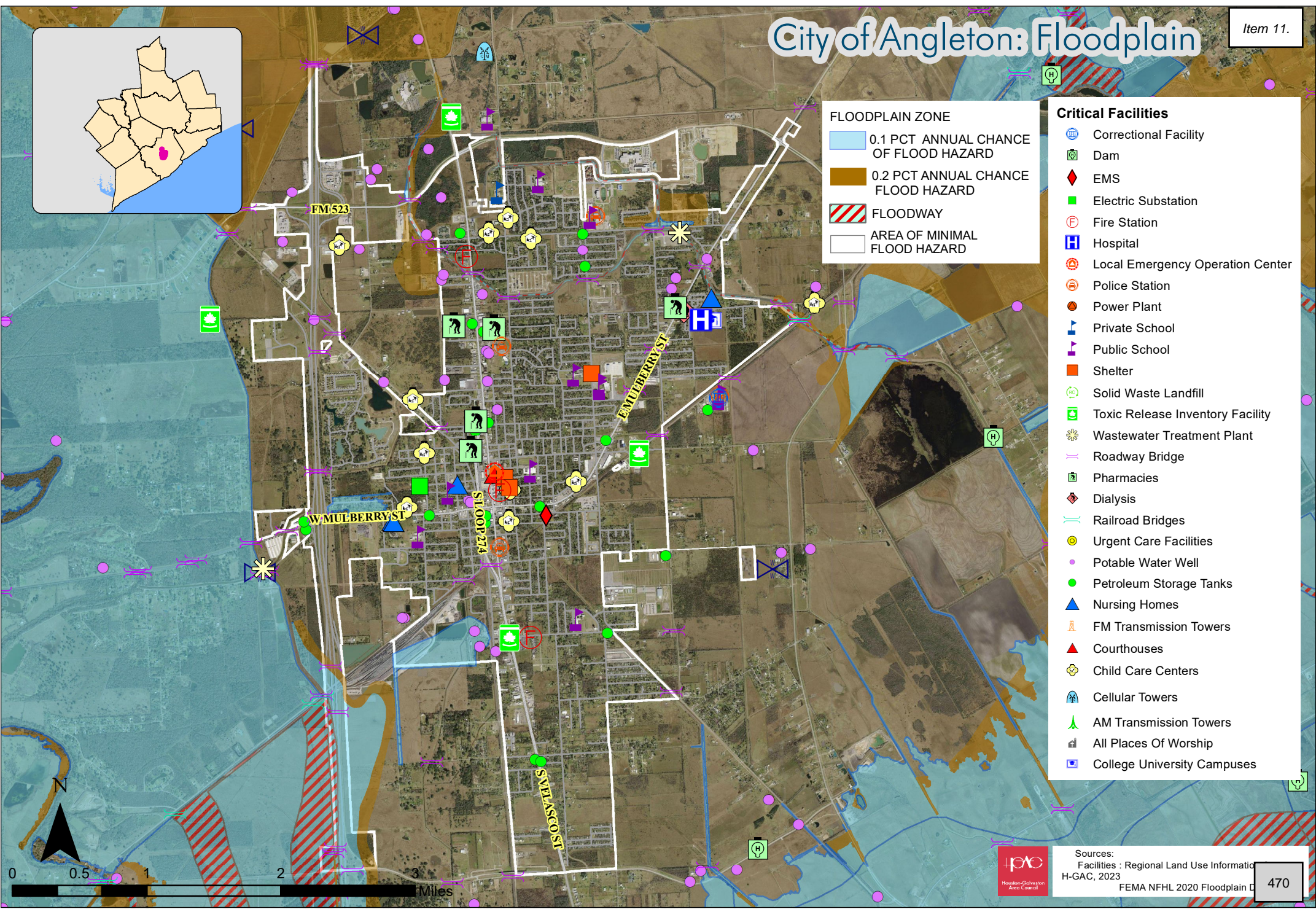


**FLOODPLAIN ZONE**

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

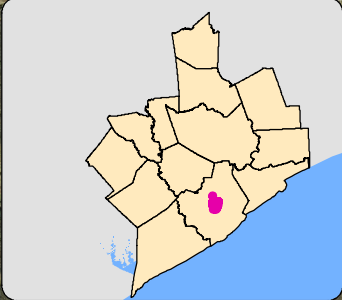
**Critical Facilities**

- Correctional Facility
- Dam
- EMS
- Electric Substation
- Fire Station
- Hospital
- Local Emergency Operation Center
- Police Station
- Power Plant
- Private School
- Public School
- Shelter
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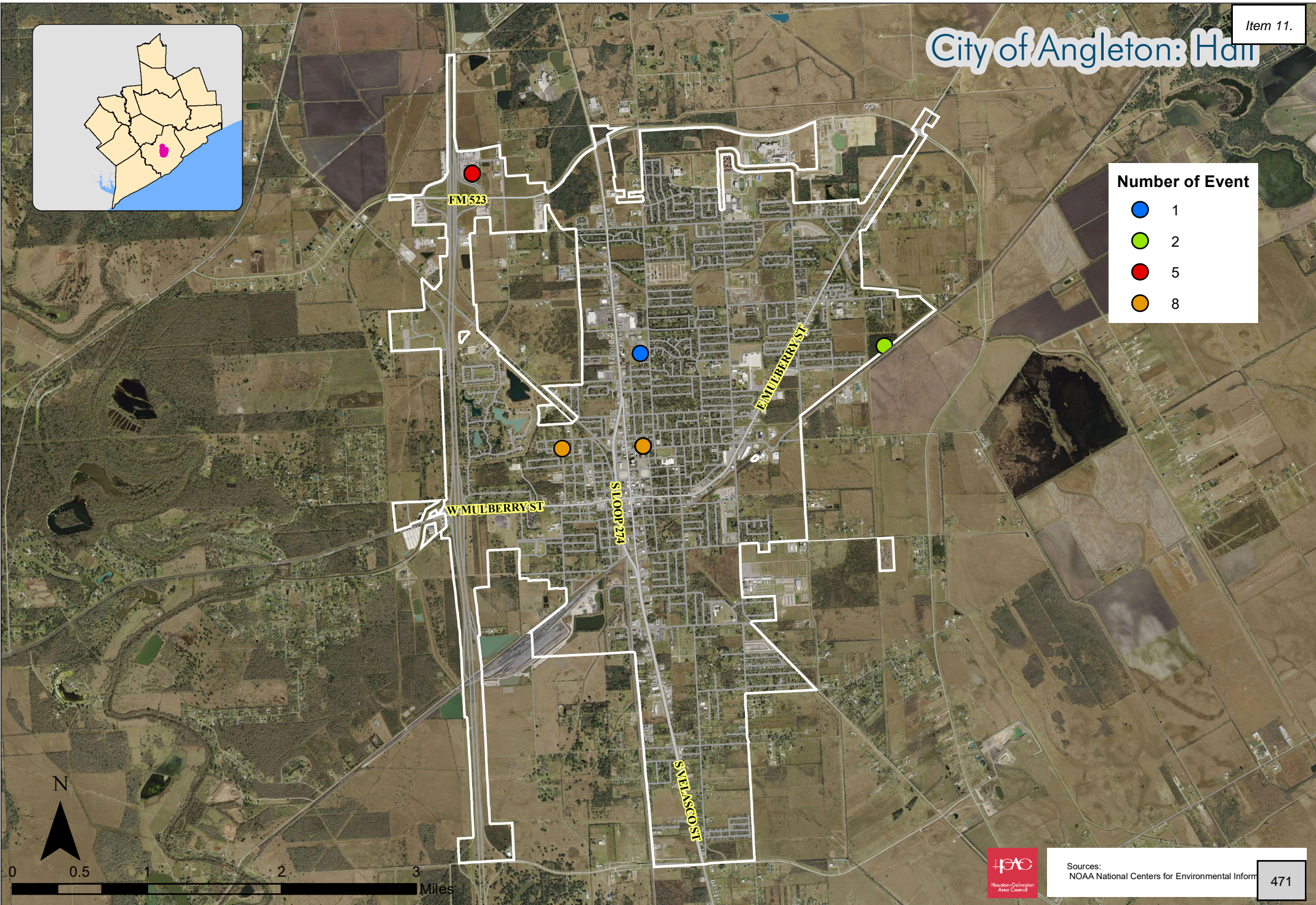
Sources:  
 Facilities : Regional Land Use Information  
 H-GAC, 2023  
 FEMA NFHL 2020 Floodplain D

# City of Angleton: Har



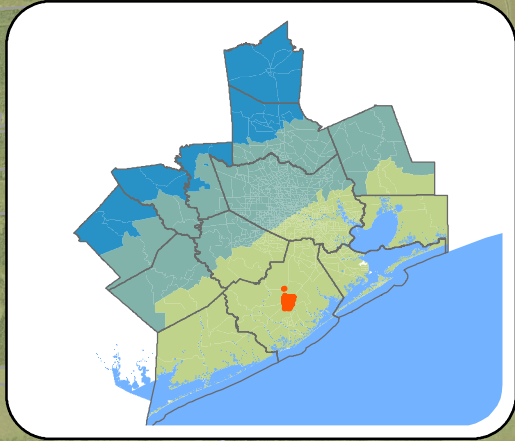
**Number of Event**

- 1
- 2
- 5
- 8



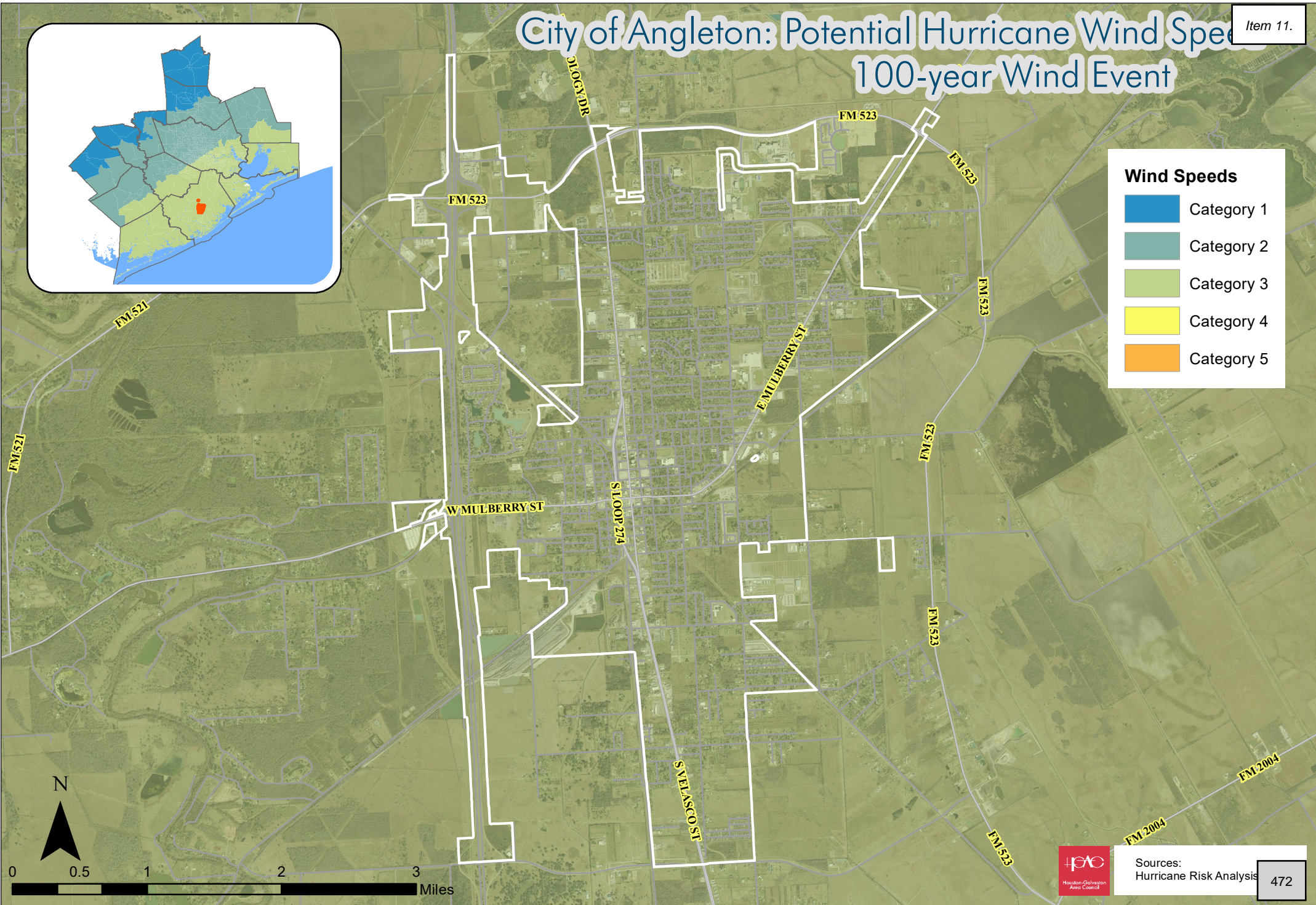
Sources:  
NOAA National Centers for Environmental Inform

# City of Angleton: Potential Hurricane Wind Speed 100-year Wind Event



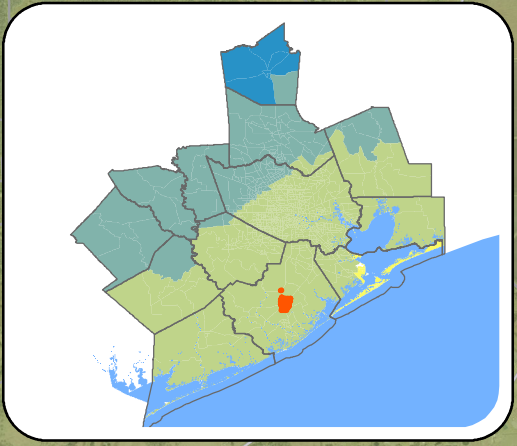
**Wind Speeds**

- Category 1
- Category 2
- Category 3
- Category 4
- Category 5



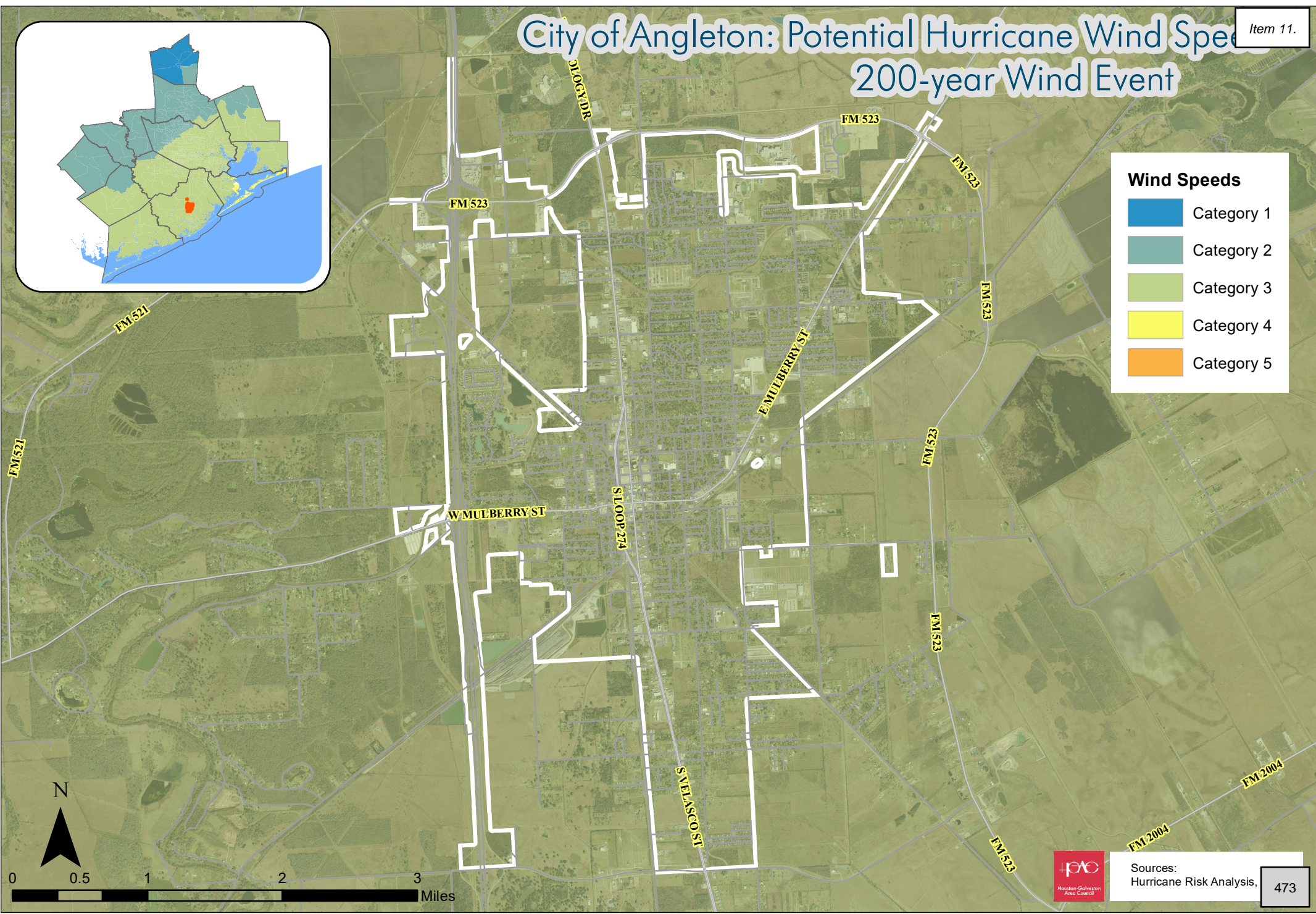


# City of Angleton: Potential Hurricane Wind Speed 200-year Wind Event

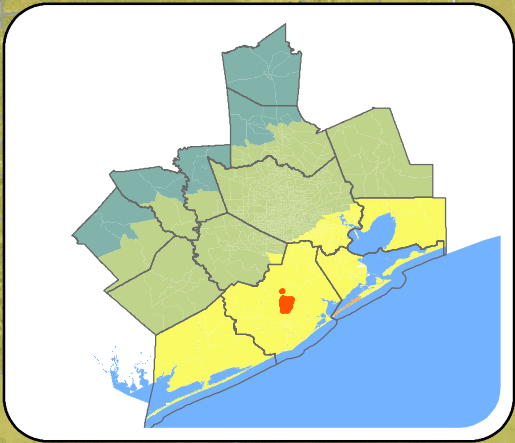


**Wind Speeds**

- Category 1
- Category 2
- Category 3
- Category 4
- Category 5

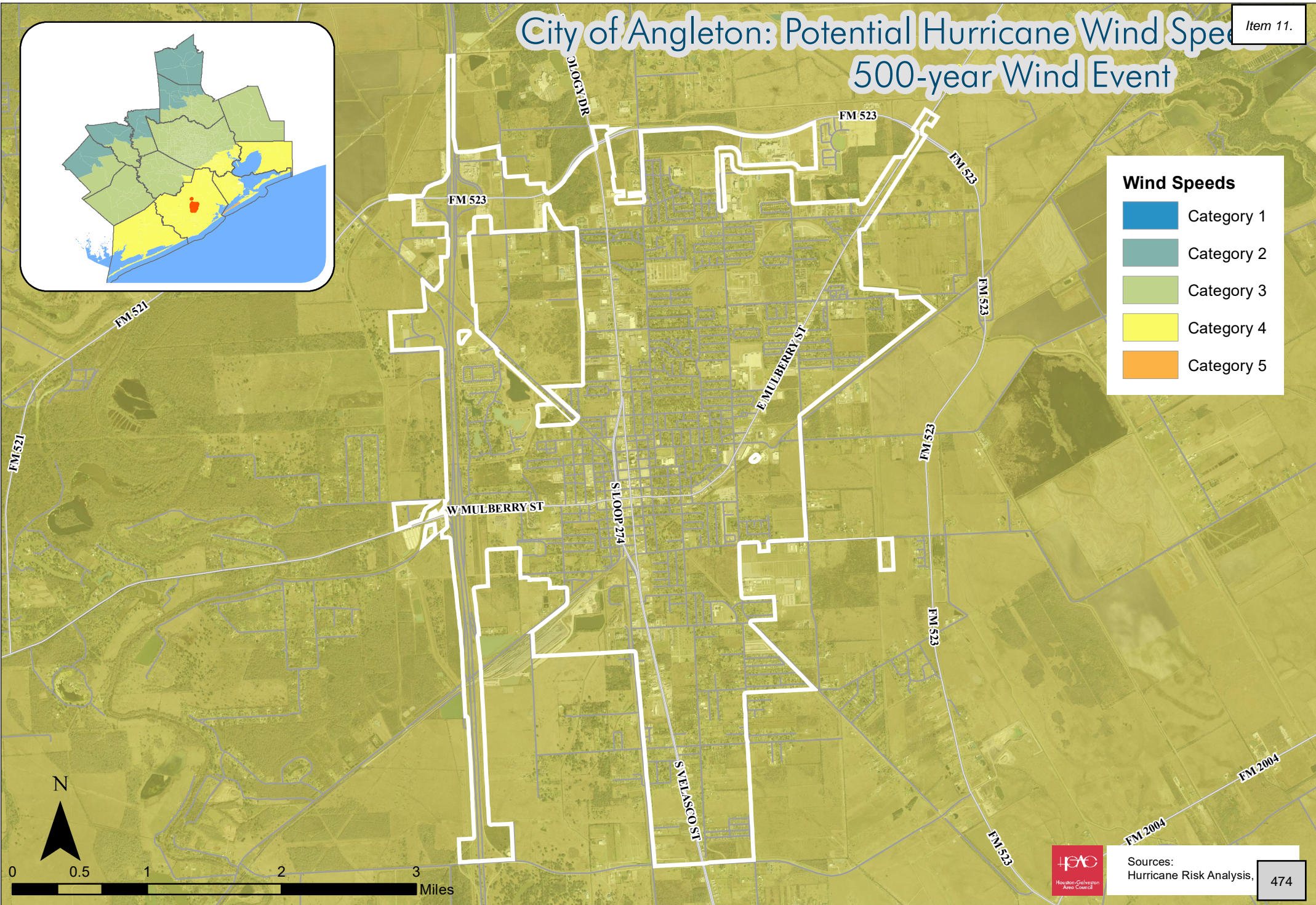


# City of Angleton: Potential Hurricane Wind Speed 500-year Wind Event



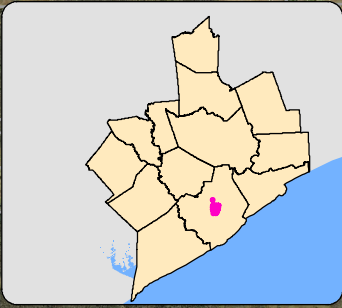
**Wind Speeds**

- Category 1
- Category 2
- Category 3
- Category 4
- Category 5

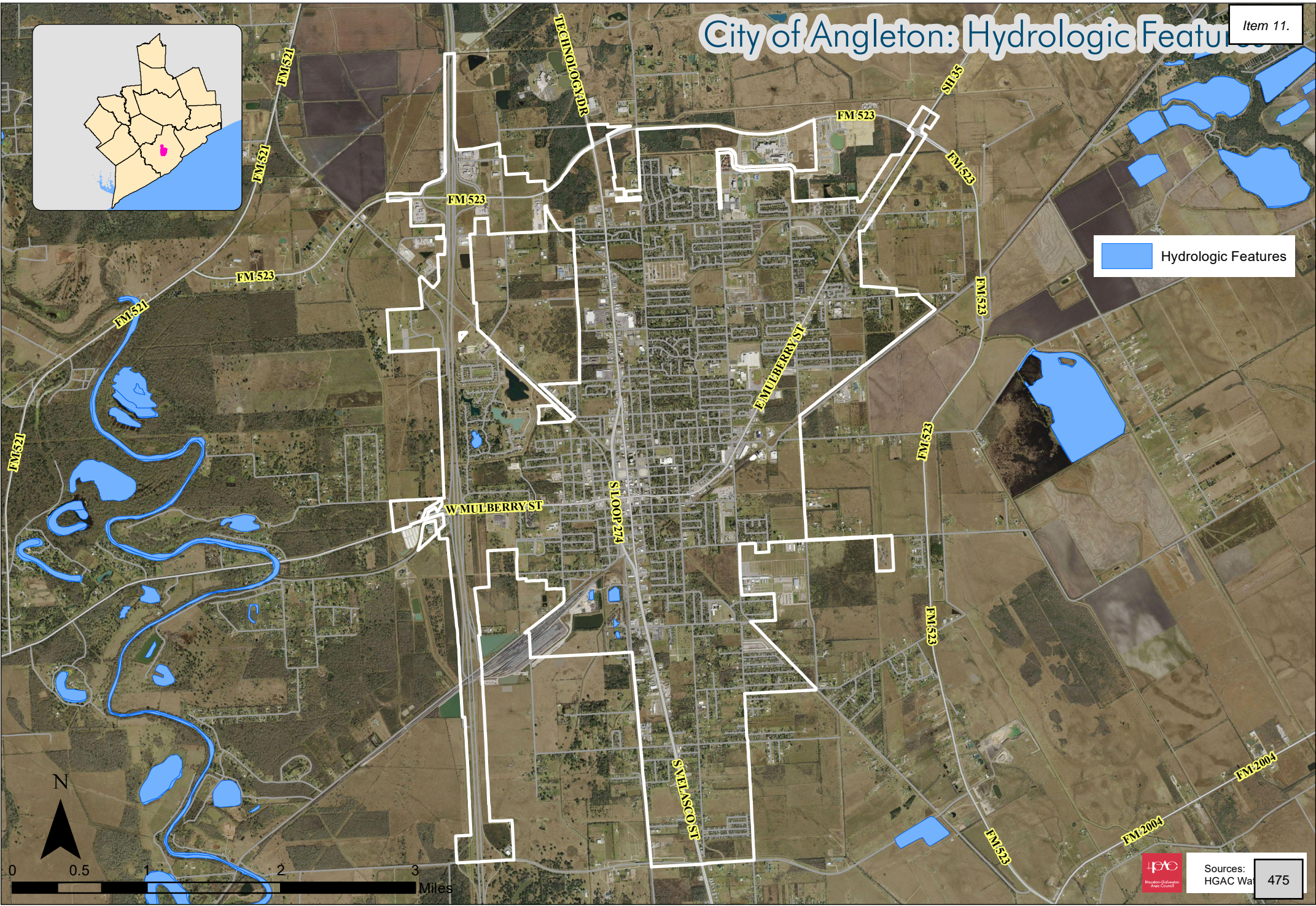


# City of Angleton: Hydrologic Features

Item 11.

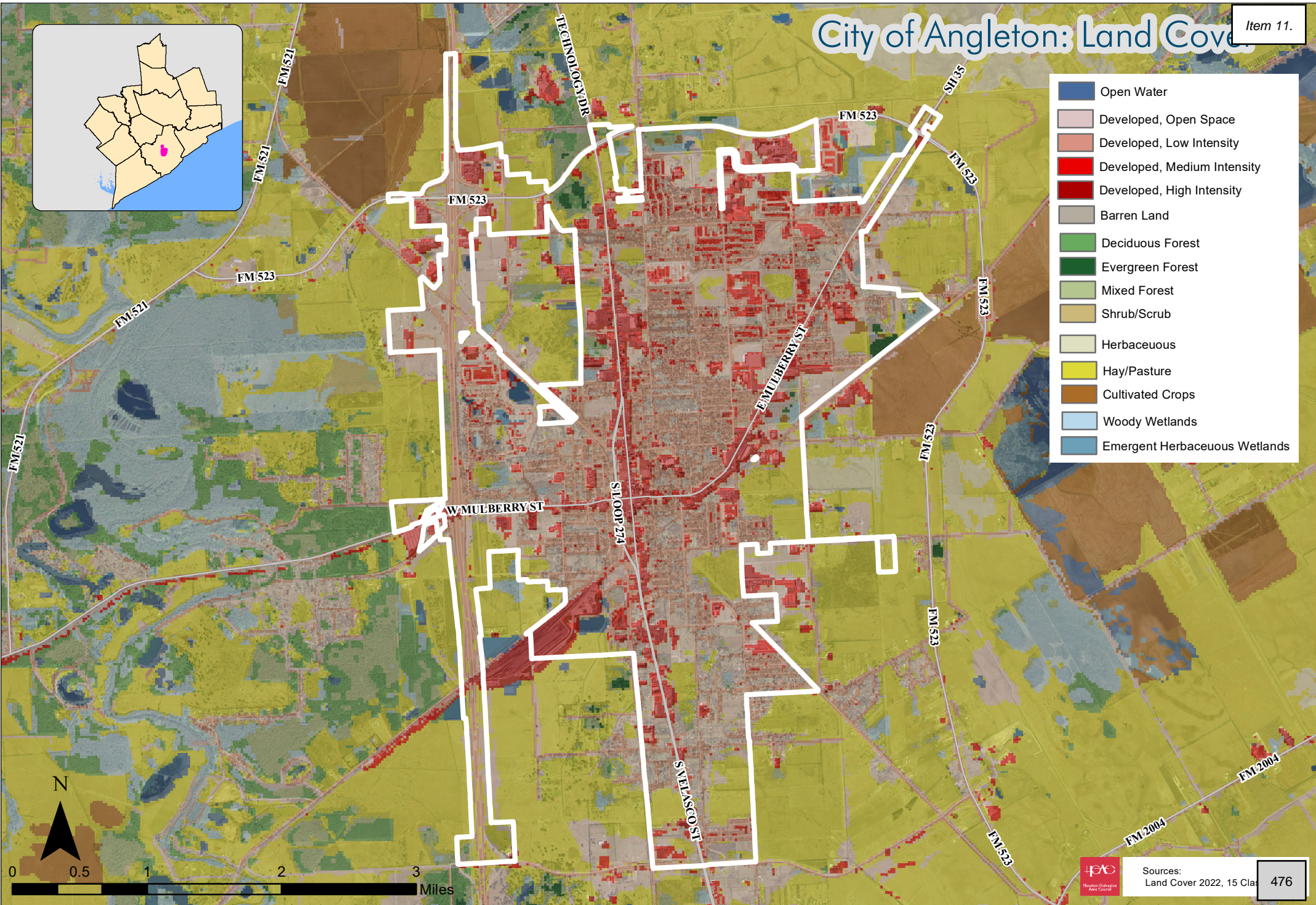
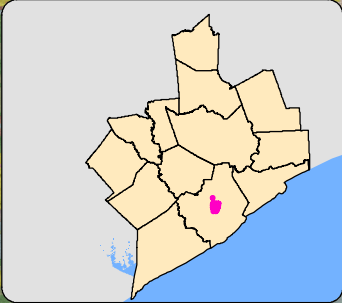


Hydrologic Features

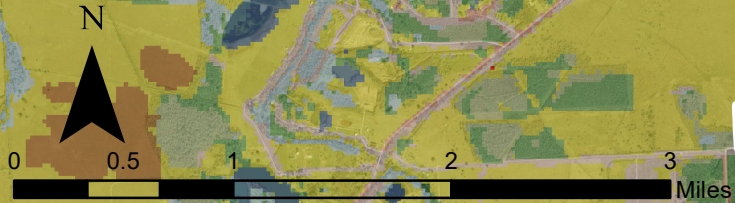


# City of Angleton: Land Cover

Item 11.

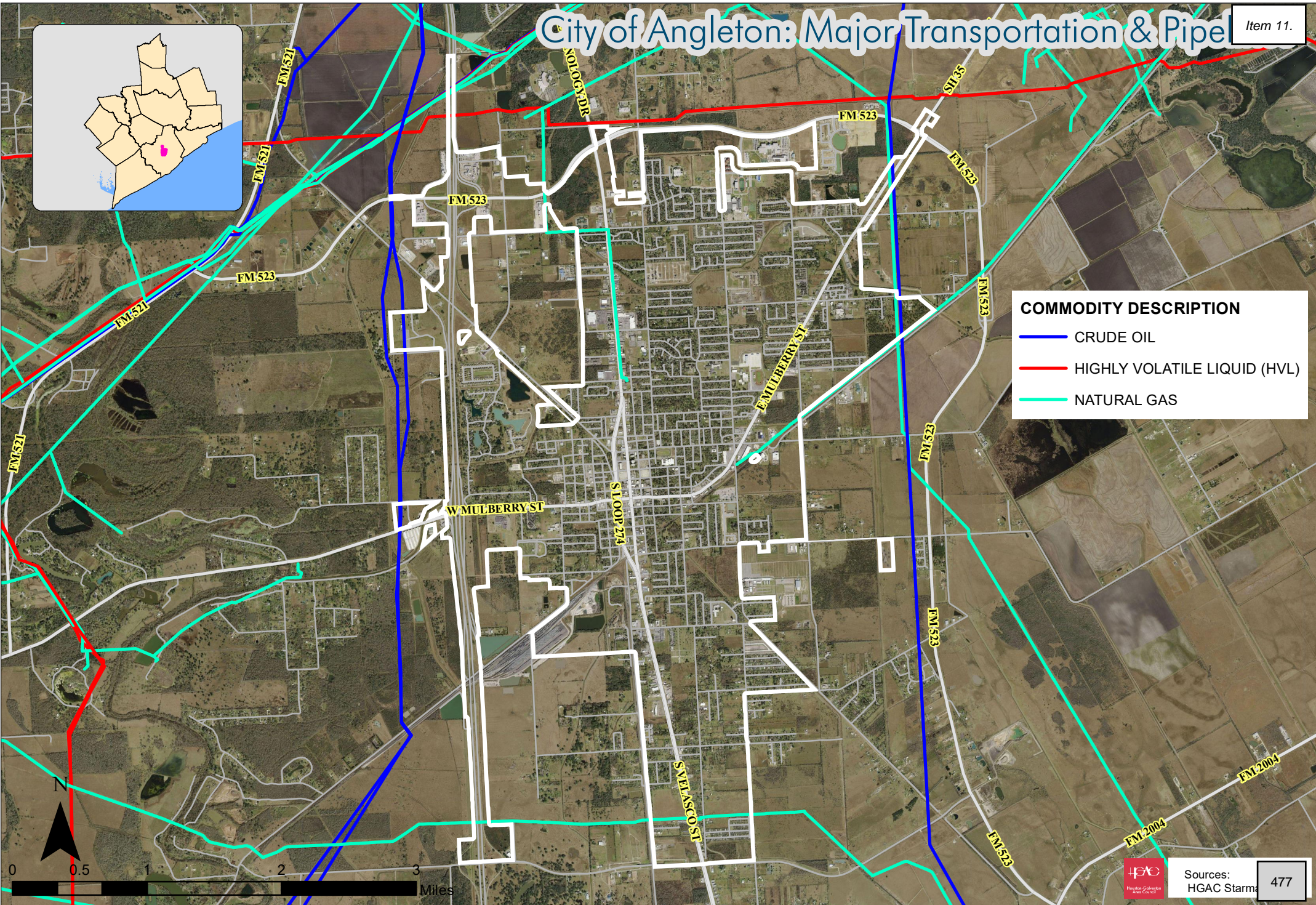
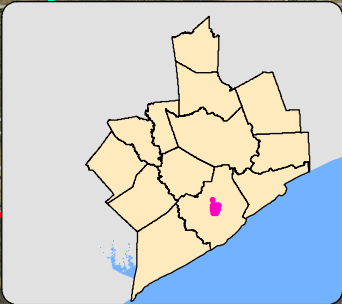


- Open Water
- Developed, Open Space
- Developed, Low Intensity
- Developed, Medium Intensity
- Developed, High Intensity
- Barren Land
- Deciduous Forest
- Evergreen Forest
- Mixed Forest
- Shrub/Scrub
- Herbaceous
- Hay/Pasture
- Cultivated Crops
- Woody Wetlands
- Emergent Herbaceous Wetlands



# City of Angleton: Major Transportation & Pipe

Item 11.



**COMMODITY DESCRIPTION**

- CRUDE OIL
- HIGHLY VOLATILE LIQUID (HVL)
- NATURAL GAS

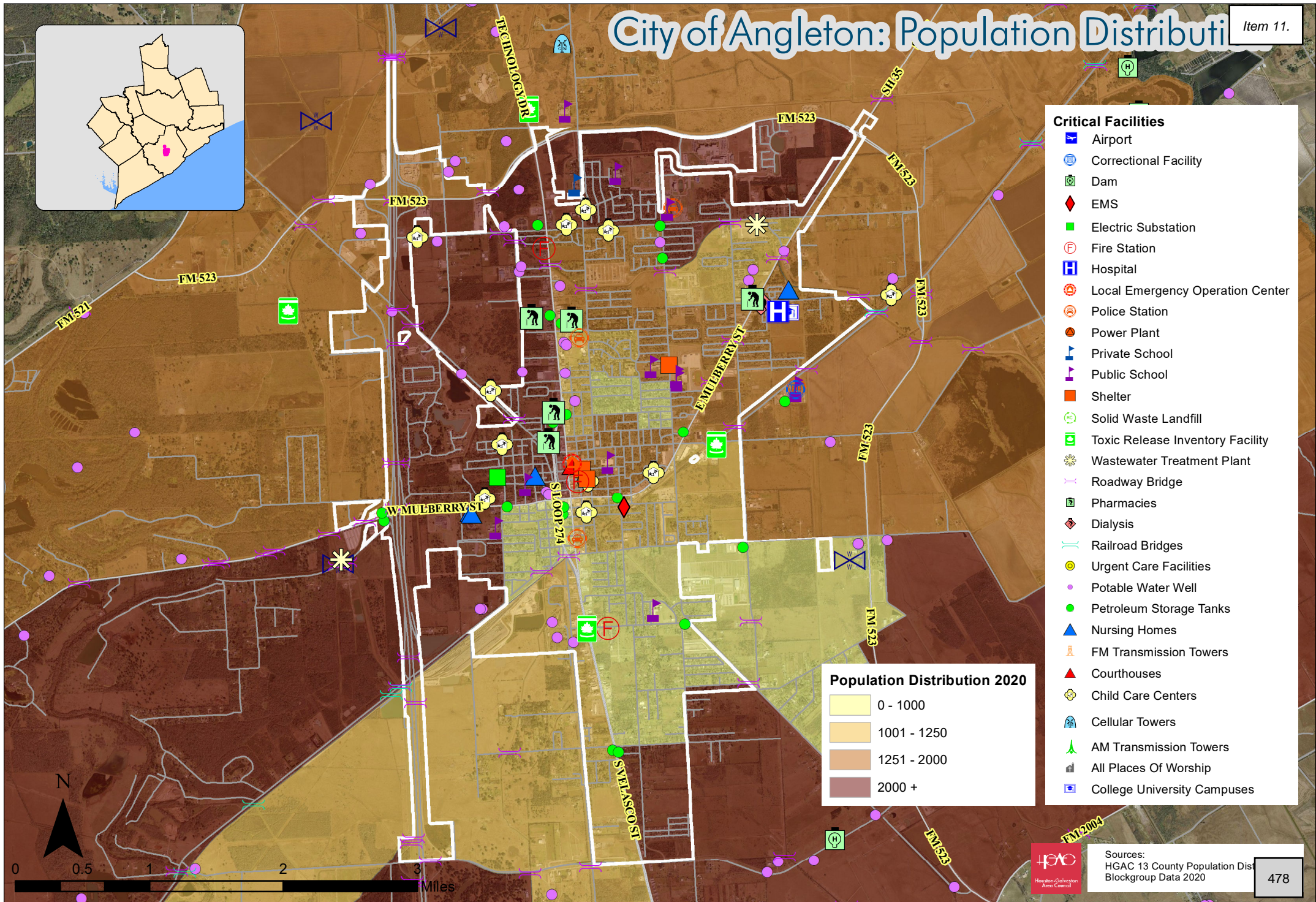
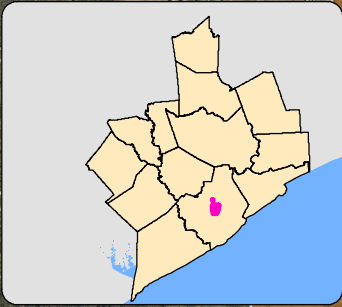


Sources:  
HGAC Storm

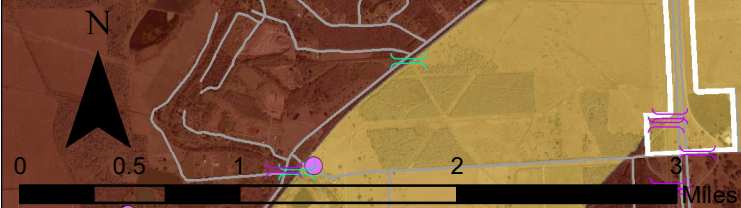
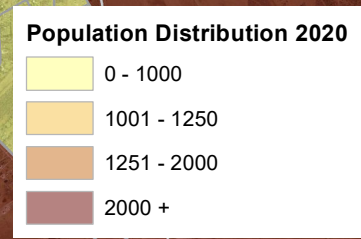
477

# City of Angleton: Population Distribution

Item 11.

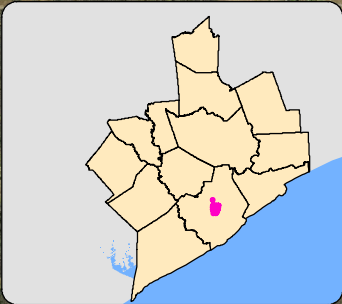


- Critical Facilities**
- Airport
  - Correctional Facility
  - Dam
  - EMS
  - Electric Substation
  - Fire Station
  - Hospital
  - Local Emergency Operation Center
  - Police Station
  - Power Plant
  - Private School
  - Public School
  - Shelter
  - Solid Waste Landfill
  - Toxic Release Inventory Facility
  - Wastewater Treatment Plant
  - Roadway Bridge
  - Pharmacies
  - Dialysis
  - Railroad Bridges
  - Urgent Care Facilities
  - Potable Water Well
  - Petroleum Storage Tanks
  - Nursing Homes
  - FM Transmission Towers
  - Courthouses
  - Child Care Centers
  - Cellular Towers
  - AM Transmission Towers
  - All Places Of Worship
  - College University Campuses



# City of Angleton: Tornado Intensity &

Item 11.

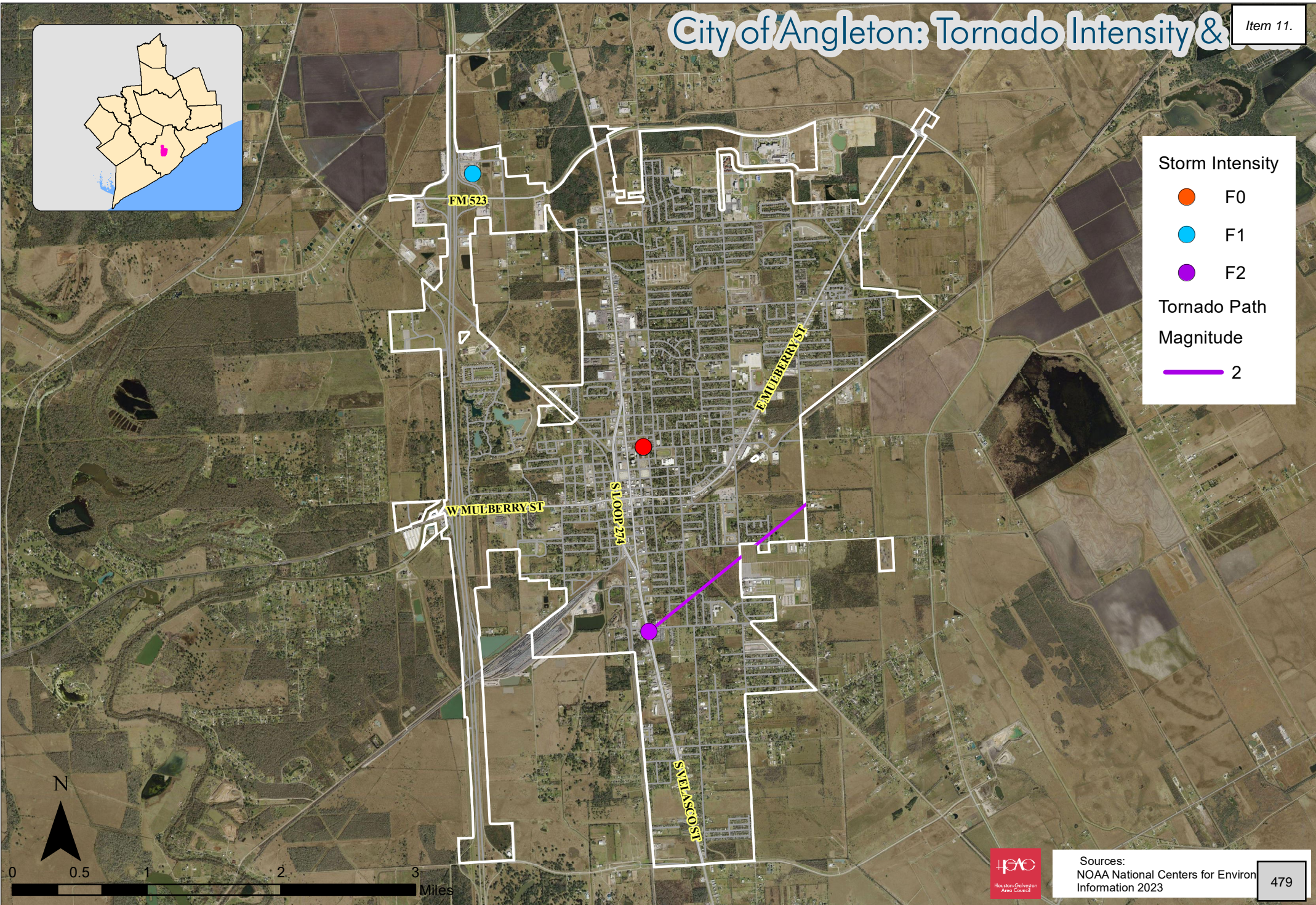


**Storm Intensity**

- F0 (Red circle)
- F1 (Blue circle)
- F2 (Purple circle)

**Tornado Path Magnitude**

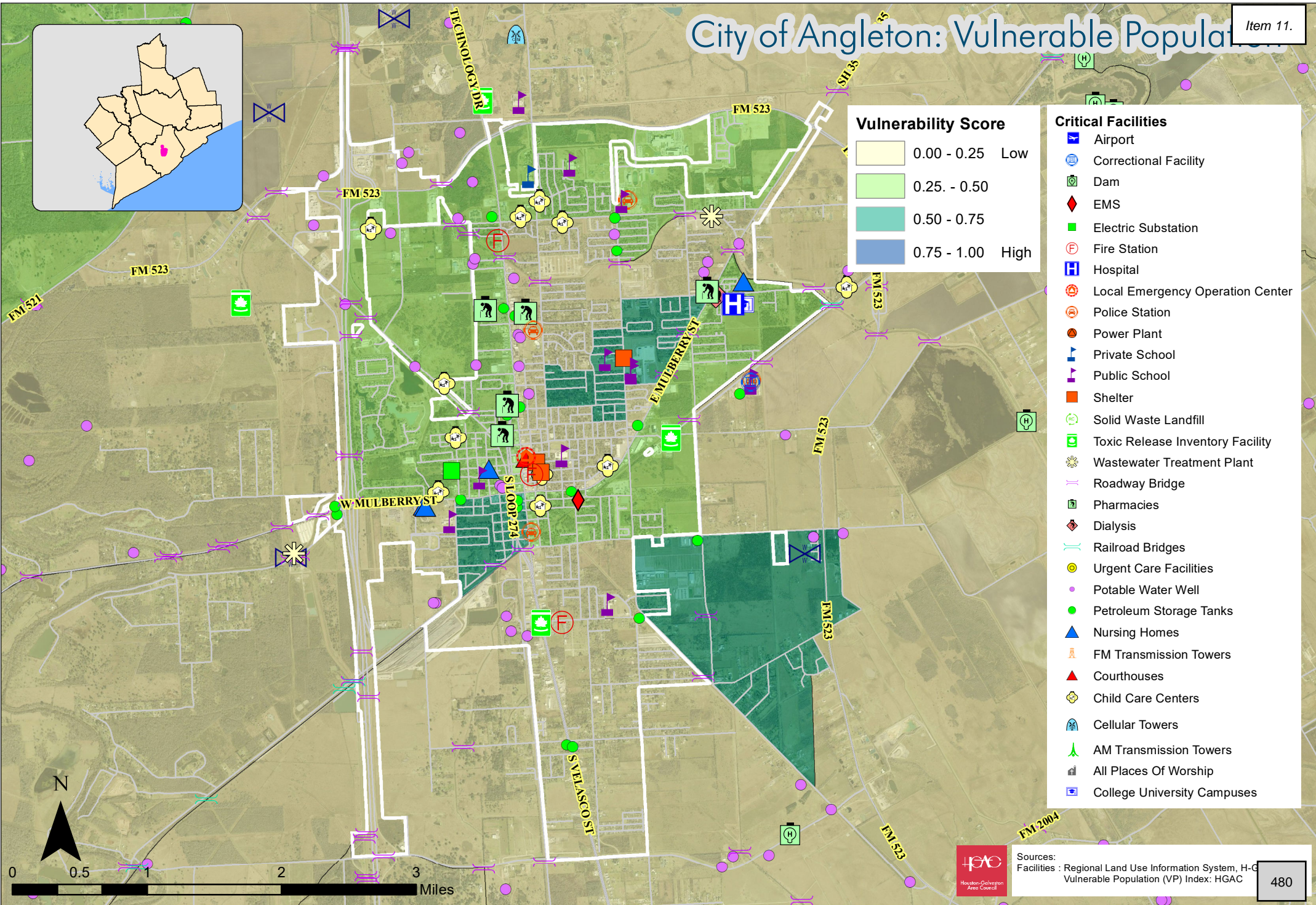
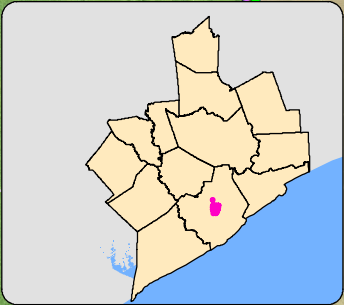
- 2 (Purple line)



Sources:  
NOAA National Centers for Environmental Information 2023

# City of Angleton: Vulnerable Populations

Item 11.



**Vulnerability Score**

Lightest Yellow	0.00 - 0.25	Low
Light Green	0.25 - 0.50	
Medium Green	0.50 - 0.75	
Dark Green	0.75 - 1.00	High

**Critical Facilities**

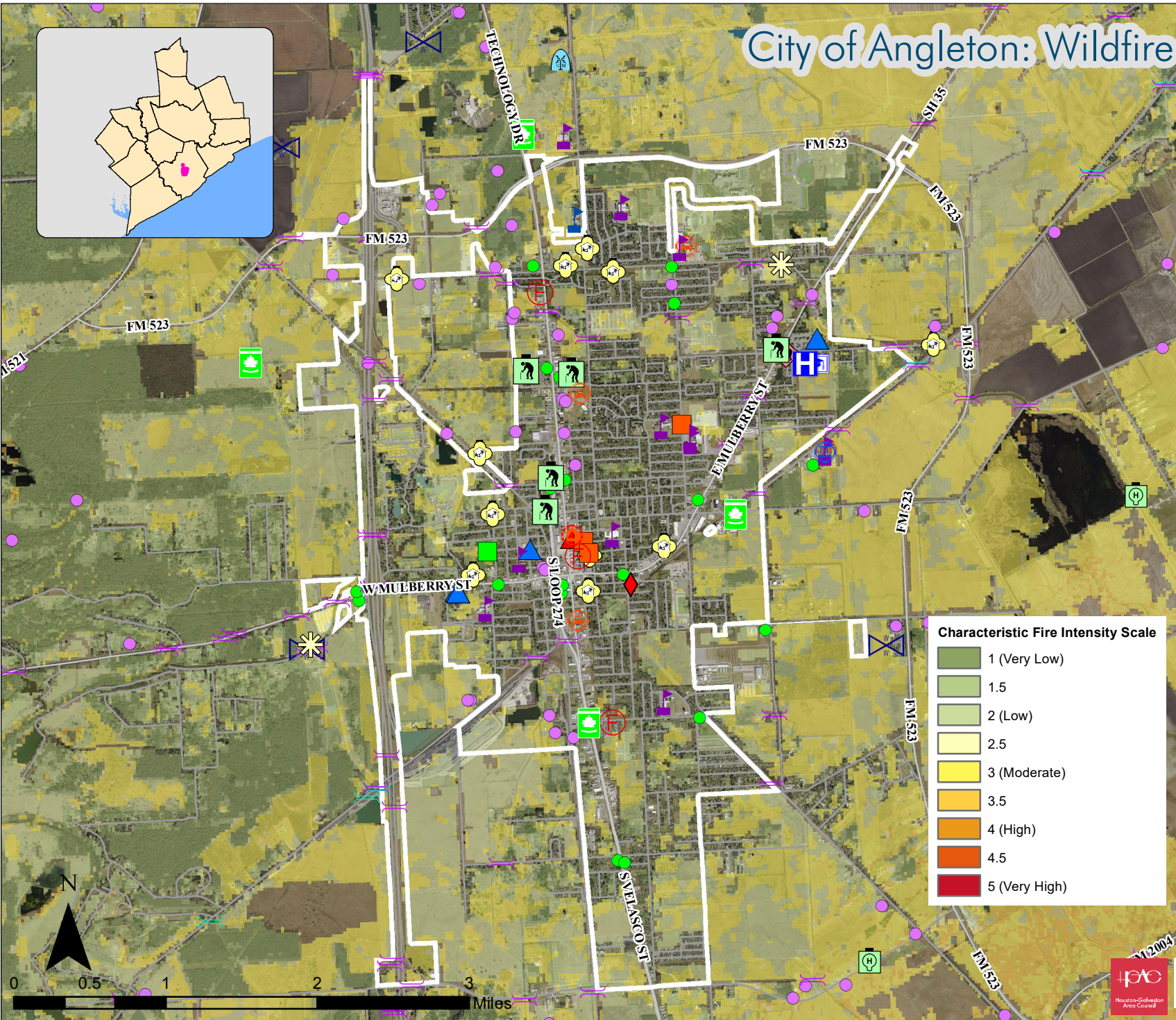
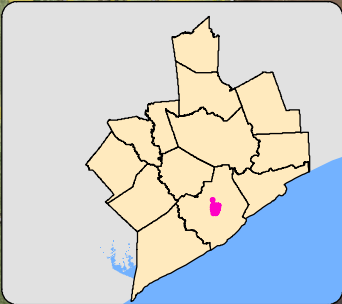
- Airport
- Correctional Facility
- Dam
- EMS
- Electric Substation
- Fire Station
- Hospital
- Local Emergency Operation Center
- Police Station
- Power Plant
- Private School
- Public School
- Shelter
- Solid Waste Landfill
- Toxic Release Inventory Facility
- Wastewater Treatment Plant
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- Pharmacies
- Dialysis
- Railroad Bridges
- Urgent Care Facilities
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- Petroleum Storage Tanks
- Nursing Homes
- FM Transmission Towers
- Courthouses
- Child Care Centers
- Cellular Towers
- AM Transmission Towers
- All Places Of Worship
- College University Campuses



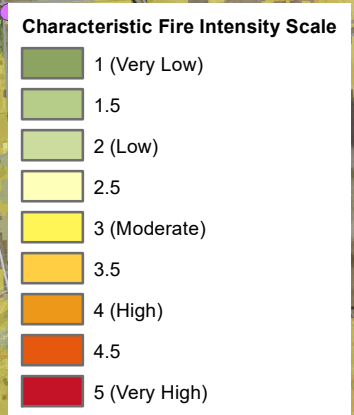
Sources:  
 Facilities : Regional Land Use Information System, H-G  
 Vulnerable Population (VP) Index: HGAC



# City of Angleton: Wildfire Risk Assessment



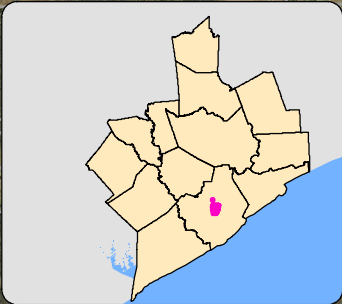
- Critical Facilities**
- Airport
  - Correctional Facility
  - Dam
  - EMS
  - Electric Substation
  - Fire Station
  - Hospital
  - Local Emergency Operation Center
  - Police Station
  - Power Plant
  - Private School
  - Public School
  - Shelter
  - Solid Waste Landfill
  - Toxic Release Inventory Facility
  - Wastewater Treatment Plant
  - Roadway Bridge
  - Pharmacies
  - Dialysis
  - Railroad Bridges
  - Urgent Care Facilities
  - Potable Water Well
  - Petroleum Storage Tanks
  - Nursing Homes
  - FM Transmission Towers
  - Courthouses
  - Child Care Centers
  - Cellular Towers
  - AM Transmission Towers
  - All Places Of Worship
  - College University Campuses



Sources:  
Facilities : Regional Land Use Information System, Houston-Galveston Area Council  
Texas A & M Forest Service Data 2023

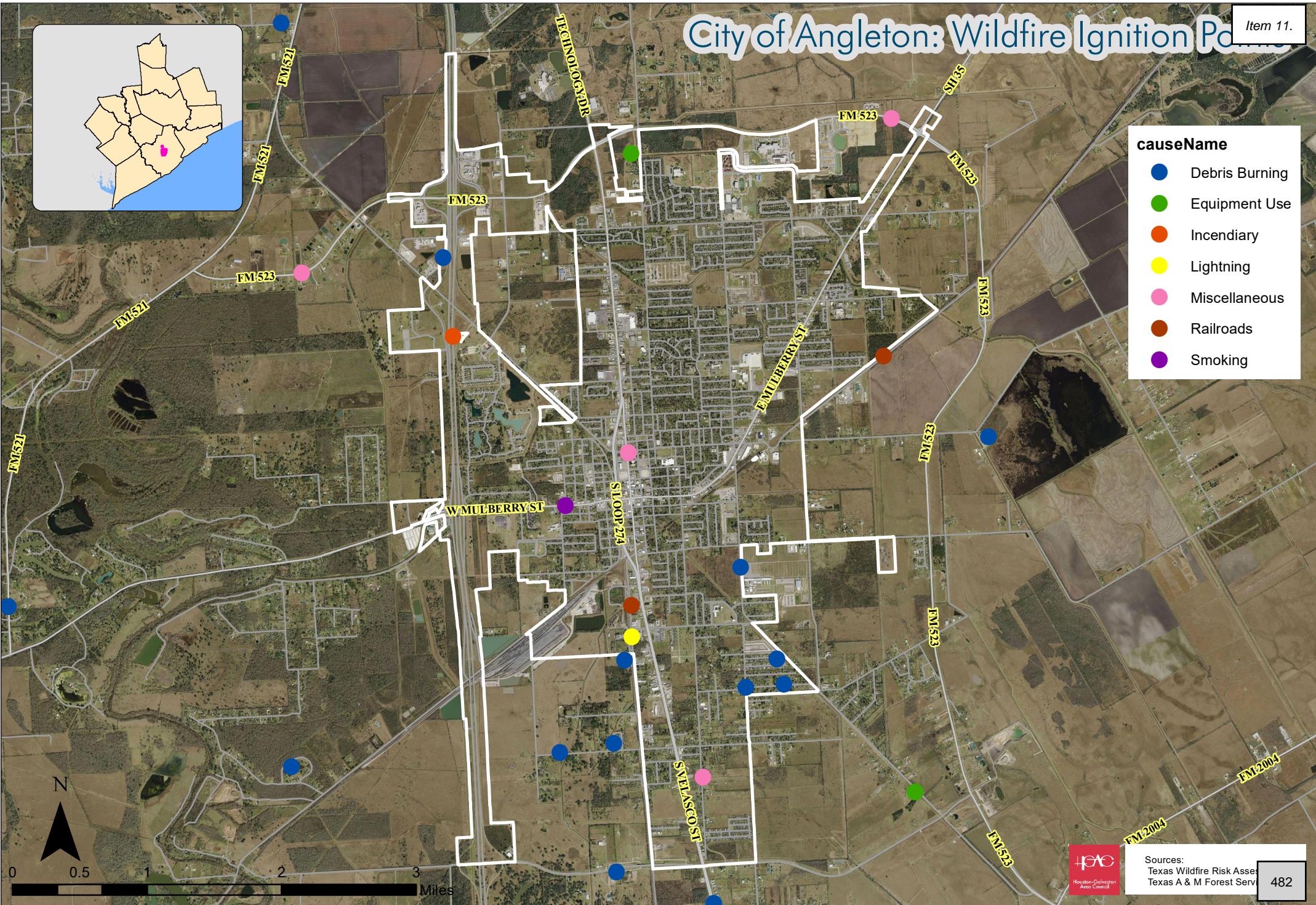
# City of Angleton: Wildfire Ignition Points

Item 11.



**causeName**

- Debris Burning
- Equipment Use
- Incendiary
- Lightning
- Miscellaneous
- Railroads
- Smoking



# Appendix C

## CRITICAL FACILITIES

Type	Name	Address	City	Zip code	County	Latitude	Longitude
Correctional Facility	Brazoria County Detention Center	3602 COUNTY RD 45	Angleton	77515	Brazoria	29.2429	-95.4086
Correctional Facility	Brazoria Juvenile Detention Center	20875 COUNTY RD 171	Angleton	77515	Brazoria	29.1755	-95.4035
Correctional Facility	Scott Prison	6999 RETRIEVE	Angleton	77515	Brazoria	29.0917	-95.4814
Electric Substation	Retrieve		Angleton	77515	Brazoria	29.0999	-95.4928
Electric Substation	Unknown304596		Angleton	77515	Brazoria	29.2267	-95.4281
Electric Substation	Angleton		Angleton	77515	Brazoria	29.1670	-95.4406
EMS	Angleton Area Emergency Medical Services	600 EAST ORANGE STREET	Angleton	77515	Brazoria	29.1634	-95.4252
Fire Station	Angleton Fire Department, Station 2	Cemetery Road	Angleton	77515	Brazoria	29.1502	-95.4276
Fire Station	Angleton Volunteer Fire Department, Station 1	221 North Chenango Street	Angleton	77515	Brazoria	29.1663	-95.4308
Fire Station	Angleton Volunteer Fire Department, Station 3	2743 North Velasco Street	Angleton	77515	Brazoria	29.1916	-95.4341
Fire Station	Holiday Lakes Fire Department	200 Texas Avenue	Angleton	77515	Brazoria	29.2039	-95.5165
Hospital	Utmb Health- Angleton Danbury Campus	132 EAST HOSPITAL DRIVE	Angleton	77515	Brazoria	29.1840	-95.4054
Local Emergency Operation Center	Brazoria County Emergency Operations Center	111 EAST LOCUST STREET	Angleton	77515	Brazoria	29.1683	-95.4314
Police Station	Brazoria County Sheriff's Office/ Jail	3602 COUNTY ROAD 45	Angleton	77515	Brazoria	29.2430	-95.4078
Police Station	Brazoria County Juvenile Detention Center	20875 COUNTY ROAD 171	Angleton	77515	Brazoria	29.1758	-95.4034
Police Station	Angleton ISD Police Department	1201 HENDERSON ROAD	Angleton	77515	Brazoria	29.1956	-95.4180
Police Station	Angleton Police Department	104 CANNAN DRIVE	Angleton	77515	Brazoria	29.1819	-95.4301
Police Station	Texas Department of Public Safety- Highway Patrol Region 2 District A Sergeant 0 Area 7	501 SOUTH VELASCO STREET	Angleton	77515	Brazoria	29.1601	-95.4310
Private School	Angleton Christian School	3133 N VALDERAS ST	Angleton	77515	Brazoria	29.1984	-95.4300

Type	Name	Address	City	Zip code	County	Latitude	Longitude
Public School	Brazoria County Juvenile Justice Alternative Education Program		Angleton	77515	Brazoria	29.1754	-95.4034
Public School	Brazoria County Alternative Education Center		Angleton	77515	Brazoria	29.1757	-95.4034
Public School	Frontier Elementary		Angleton	77515	Brazoria	29.2064	-95.4309
Public School	Central Elementary		Angleton	77515	Brazoria	29.1682	-95.4269
Public School	Angleton High School		Angleton	77515	Brazoria	29.1955	-95.4186
Public School	Northside Elementary		Angleton	77515	Brazoria	29.1784	-95.4212
Public School	Angleton High School		Angleton	77515	Brazoria	29.1955	-95.4186
Public School	Westside Elementary		Angleton	77515	Brazoria	29.1615	-95.4410
Public School	Southside Elementary		Angleton	77515	Brazoria	29.1520	-95.4218
Public School	Brazoria County Juvenile Detention		Angleton	77515	Brazoria	29.1773	-95.4181
Public School	Angleton Junior High School		Angleton	77515	Brazoria	29.1769	-95.4181
Public School	Student Alternative Center		Angleton	77515	Brazoria	29.1661	-95.4371
Public School	Rancho Isabella Elementary		Angleton	77515	Brazoria	29.1995	-95.4249
Shelter	First Baptist Church - Angleton	237 E. Locust	Angleton	77515	Brazoria	29.1676	-95.4301
Shelter	UMC family life center	219 N. Arcola St.	Angleton	77515	Brazoria	29.1665	-95.4296
Shelter	Angleton ISD admin building	1900 N. Downing	Angleton	77515	Brazoria	29.1786	-95.4190
Solid Waste Landfill	Seabreeze environmental landfill	10310 FM 523	Angleton	77515	Brazoria	29.0896	-95.3666
Solid Waste Landfill	Brazoria County Recycling Center Transfer Station facility	10315 FM 523	Angleton	77515	Brazoria	29.1169	-95.3777
Toxic Release Inventory Facility	Allegheny Petroleum Products Co.	22614 N HIGHWAY 288	Angleton	77515	Brazoria	29.2648	-95.4515
Toxic Release Inventory Facility	Mallinckrodt diagnostics division	1111 S. VELASCO	Angleton	77515	Brazoria	29.1503	-95.4302
Toxic Release Inventory Facility	Oil patch brazos valley	22614 N HIGHWAY 288B	Angleton	77515	Brazoria	29.1857	-95.4659
Toxic Release Inventory Facility	Benchmark electronics	3000 TECHNOLOGY DR	Angleton	77515	Brazoria	29.2067	-95.4354
Toxic Release Inventory Facility	Greif Brothers Corp	1508 E. CEDAR ST.	Angleton	77515	Brazoria	29.1698	-95.4135
Toxic Release Inventory Facility	3m Angleton	1508 E CEDAR ST	Angleton	77515	Brazoria	29.1698	-95.4135

Type	Name	Address	City	Zip code	County	Latitude	Longitude
Wastewater Treatment Plant	Oyster Creek WWTP	500 SEBESTA RD	Angleton	77515	Brazoria	29.1586	-95.4603
Wastewater Treatment Plant	Brushy Bayou WWTF	BRUSHY BAYOU 2000F NW ST HWY35	Angleton	77515	Brazoria	29.1936	-95.4077
College/ University Campus	Utmb Health- Angleton Danbury Campus	132 E Hospital Dr.	Angleton	77515	Brazoria	29.1846	-95.4050
Place of Worship	Central Assembly of God	709 W MULBERRY ST	Angleton	77515	Brazoria	29.16	-95.44
Place of Worship	First Missionary Baptist Church	PO BOX 125	Angleton	77515	Brazoria	29.18	-95.43
Place of Worship	New Bethel Baptist Church of Angleton	304 W LIVE OAK ST	Angleton	77515	Brazoria	29.17	-95.44
Place of Worship	Brazosport Baptist Temple	1203 COUNTY ROAD 205	Angleton	77515	Brazoria	29.09	-95.42
Place of Worship	His Hands Puppeteers	1013 SOUTHERN OAKS DR	Angleton	77515	Brazoria	29.18	-95.45
Place of Worship	Sermon on the Mound	2700 E HIGHWAY 35	Angleton	77516	Brazoria	29.19	-95.4
Place of Worship	Christ our Savior Lutheran Church	125 COUNTY ROAD 201B	Angleton	77515	Brazoria	29.07	-95.42
Place of Worship	Mt Pisgah Baptist Church	PO BOX 2174	Angleton	77515	Brazoria	29.18	-95.43
Place of Worship	Holy Comforter Episcopal Church	PO BOX 786	Angleton	77515	Brazoria	29.18	-95.43
Place of Worship	Church of God of Prophecy	313 N PARRISH ST	Angleton	77515	Brazoria	29.17	-95.44
Place of Worship	General Council of the Assemblies of God	PO BOX 1492	Angleton	77515	Brazoria	29.18	-95.43
Place of Worship	Angleton Hispanic Foursquare Church	3133 N VALDERAS ST	Angleton	77516	Brazoria	29.2	-95.43
Place of Worship	First Assembly of God	329 N ANDERSON ST	Angleton	77516	Brazoria	29.17	-95.43
Place of Worship	David Hancock Ministries	PO BOX 532	Angleton	77515	Brazoria	29.18	-95.43
Place of Worship	Angleton foursquare church	501 KARANKAWA ST	Angleton	77516	Brazoria	29.19	-95.44
Place of Worship	Cool water cowboy church	203 COUNTY ROAD 840	Angleton	77515	Brazoria	29.09	-95.42
Place of Worship	New Life Church of Angleton Inc	302 COUNTY ROAD 47	Angleton	77515	Brazoria	29.27	-95.38
Place of Worship	Christ's Servants Church	308 LAURIE LN	Angleton	77516	Brazoria	29.16	-95.43
Place of Worship	Loves Gate Ministry	203 CORNELIA LN	Angleton	77515	Brazoria	29.16	-95.5
Place of Worship	Iglesia Misionera Fuentes de Agua Viva	1379 COUNTY ROAD 687	Angleton	77515	Brazoria	29.07	-95.42
Place of Worship	Hope City Ministries Inc	112 BLACK OAK DR	Angleton	77515	Brazoria	29.15	-95.47
Place of Worship	Burrell Chapel Baptist Church	PO BOX 873	Angleton	77515	Brazoria	29.18	-95.43
Place of Worship	Gulf Coast Baptist Association	2700 E HIGHWAY 35	Angleton	77515	Brazoria	29.19	-95.4
Place of Worship	Second Baptist Church of Angleton	1817 SHANKS RD	Angleton	77515	Brazoria	29.14	-95.42
Place of Worship	Holiday Lakes Baptist church Angleton	RR 4 BOX 762	Angleton	77515	Brazoria	29.17	-95.43

Type	Name	Address	City	Zip code	County	Latitude	Longitude
Place of Worship	Northway Baptist Church	1421 BUCHTA RD	Angleton	77516	Brazoria	29.18	-95.41
Pharmacy	Kroger	1804 NORTH VELASCO STREET	Angleton	77515	Brazoria	29.183704	-95.430961
Pharmacy	Walmart Supercenter - 527	1801 NORTH VELASCO STREET	Angleton	77515	Brazoria	29.184137	-95.435903
Pharmacy	Cvs - 6725	601 NORTH LOOP 274	Angleton	77515	Brazoria	29.170625	-95.434274
Pharmacy	Walgreens - 4373	1001 LOOP 274	Angleton	77515	Brazoria	29.173849	-95.433524
Pharmacy	The medicine shoppe pharmacy / long term care rx	2301 EAST MULBERRY STREET	Angleton	77515	Brazoria	29.185439	-95.408537
Dialysis Center	Angleton kidney center	102 E. HOSPITAL DRIVE	Angleton	77515	Brazoria	29.185034	-95.407457
Urgent Care	Angleton er	1116 E Mulberry St.	Angleton	77515	Brazoria	29.1696	-95.41699013
Petroleum Storage Tank	Handy plus 45 -80003229	2301 W HIGHWAY 35	Angleton	77515	Brazoria	29.16263	-95.45489
Petroleum Storage Tank	Corner market 6	1039 S VELASCO ST	Angleton	77515	Brazoria	29.15058	-95.4297
Petroleum Storage Tank	R b Stewart Petroleum Products	215 S FRONT ST	Angleton	77515	Brazoria	29.162778	-95.432743
Petroleum Storage Tank	Brazoria County mosquito control	1500 E KIBER ST	Angleton	77515	Brazoria	29.15862	-95.41064
Petroleum Storage Tank	Buc-ees 13	2299 E MULBERRY ST	Angleton	77515	Brazoria	29.18497	-95.40862
Petroleum Storage Tank	Murphy USA 5695	1803 N VELASCO ST	Angleton	77515	Brazoria	29.18431	-95.43363
Petroleum Storage Tank	Velasco shell	2901 N VELASCO ST	Angleton	77515	Brazoria	29.19419	-95.43475
Petroleum Storage Tank	Angleton express	1000 N VELASCO ST	Angleton	77515	Brazoria	29.17362	-95.43201
Petroleum Storage Tank	Country food 3	2851 N DOWNING RD	Angleton	77515	Brazoria	29.19369	-95.41964
Petroleum Storage Tank	Speedy express 33	22602 N HIGHWAY 288B	Angleton	77515	Brazoria	29.26536	-95.45092
Petroleum Storage Tank	Brazoria County pct 2	21017 COUNTY ROAD 171	Angleton	77515	Brazoria	29.17429	-95.40492
Petroleum Storage Tank	G & G Mini mart	2609 N DOWNING RD	Angleton	77515	Brazoria	29.19014	-95.41949
Petroleum Storage Tank	Brazoria County Airport North Fuel Farm	8015 AIRPORT WAY	Angleton	77515	Brazoria	29.11372	-95.45967
Petroleum Storage Tank	Buc-ees 21	931 LOOP 274	Angleton	77515	Brazoria	29.1728	-95.4336
Petroleum Storage Tank	Buc-ees 25	2304 W MULBERRY ST	Angleton	77515	Brazoria	29.16349	-95.45509
Petroleum Storage Tank	Mulberry mart	1235 E MULBERRY ST	Angleton	77515	Brazoria	29.17129	-95.41758
Petroleum Storage Tank	Smiths grocery	637 W MULBERRY ST	Angleton	77515	Brazoria	29.16377	-95.439613

Type	Name	Address	City	Zip code	County	Latitude	Longitude
Petroleum Storage Tank	Cross country store	26056 FM 521 RD	Angleton	77515	Brazoria	29.216112	-95.471594
Petroleum Storage Tank	Mmpk	2100 S VELASCO ST	Angleton	77515	Brazoria	29.137038	-95.427515
Petroleum Storage Tank	Circle a grocery	1100 CEMETARY RD	Angleton	77515	Brazoria	29.150461	-95.4181
Petroleum Storage Tank	E-z gas & food store	2113 S VELASCO ST	Angleton	77515	Brazoria	29.136807	-95.426774
Petroleum Storage Tank	Save step food mart	530 E MULBERRY ST	Angleton	77515	Brazoria	29.16437	-95.425959
Petroleum Storage Tank	Brazoria County Airport South Fuel Farm	8000 AIRPORT WAY	Angleton	77515	Brazoria	29.10866	-95.45944
Petroleum Storage Tank	Wal-mart supercenter 527	1801 N VELASCO ST	Angleton	77515	Brazoria	29.184105	-95.435669
Petroleum Storage Tank	Kroger 256	1804 N VELASCO ST	Angleton	77515	Brazoria	29.183433	-95.432255
Petroleum Storage Tank	Angleton Tilden c o w83610	140 W ORANGE ST	Angleton	77515	Brazoria	29.16352	-95.43264
Courthouse	Brazoria County courthouse	111 East Locust Street	Angleton	77515	Brazoria	29.16866106	-95.43137226
Childcare Facility	Ajh summer camp	1201 W HENDERSON RD	Angleton	77515	Brazoria	29.19331	-95.449661
Childcare Facility	Brazoria County head start - Angleton campus	651 W MILLER ST	Angleton	77515	Brazoria	29.17053	-95.43999
Childcare Facility	Greenhouse cc and lc	700 E HENDERSON RD	Angleton	77515	Brazoria	29.19338	-95.42606
Childcare Facility	Happy faces Angleton	2924 N VALDERAS ST	Angleton	77515	Brazoria	29.19569	-95.42881
Childcare Facility	Holy comforter day school	227 S CHENANGO ST	Angleton	77515	Brazoria	29.16289	-95.42985
Childcare Facility	Imagination Station Learning Academy - 44	1107 ANCHOR RD	Angleton	77515	Brazoria	29.17638	-95.44122
Childcare Facility	Imagination Station Learning Academy - hospital drive	948 HOSPITAL DR	Angleton	77515	Brazoria	29.185462	-95.391372
Childcare Facility	Kingdom class academy	938 E MYRTLE ST	Angleton	77515	Brazoria	29.167	-95.42142
Childcare Facility	Methodist day school	219 N ARCOLA ST	Angleton	77515	Brazoria	29.16634	-95.42955
Childcare Facility	Tiny treasures learning ctr	724 W MULBERRY ST	Angleton	77515	Brazoria	29.164736	-95.44232
Childcare Facility	Usk Tae Kwon Do summer program	213 E HENDERSON RD	Angleton	77515	Brazoria	29.19413	-95.43121
Cellular Tower	Verizon Wireless	24788 Country Road 48	Angleton	77515	BRAZORIA	29.214139	-95.431056
Cellular Tower	AT&T Mobility Spectrum LLC	2021 BRAZOSPORT BOULEVARD	Angleton	77515	BRAZORIA	29.067111	-95.319889



Type	Name	Address	City	County	Zip Code	Latitude	Longitude	Notes: Facility Type	Notes: Population
Elder Care Facility	Cypress Woods Care Center	135 1/2 HOSPITAL DR	Angleton	Brazoria	77515	29.186391	-95.404015	Nursing Home	105
Elder Care Facility	White's Cottage Center	332 MARSHALL ALLEY	Angleton	Brazoria	77515	29.167068	-95.436005	Assisted Living	16
Elder Care Facility	Country Village Care Inc	721 W MULBERRY	Angleton	Brazoria	77515	29.163273	-95.444121	Assisted Living	32
Elder Care Facility	K's Place Personal Care Home LLC	25806 CR 46	Angleton	Brazoria	77515	29.223526	-95.35615	Assisted Living	12
Elder Care Facility	Country Village Care Inc	721 W MULBERRY	Angleton	Brazoria	77515	29.163127	-95.443965	Nursing Home	136

Type	Name	Address	City	Zip code	County	Latitude	Longitude	Notes: Well Type	Notes: State Well ID Number
Potable Water Well	City of Angleton	--	Angleton	--	Brazoria	29.194167	-95.438889	Withdrawal of Water	6553513
Potable Water Well	Texas-Louisiana Power Co.	--	Angleton	--	Brazoria	29.165278	-95.434722	Withdrawal of Water	6553805
Potable Water Well	City of Angleton Well #3	--	Angleton	--	Brazoria	29.165001	-95.434445	Withdrawal of Water	6553801
Potable Water Well	City of Angleton Well #9	--	Angleton	--	Brazoria	29.189167	-95.437222	Withdrawal of Water	6553510
Potable Water Well	Mrs. W.B. Pruitt	--	Angleton	--	Brazoria	29.148889	-95.431944	Withdrawal of Water	6553808
Potable Water Well	Intermedics Headquarters	--	Angleton	--	Brazoria	29.198056	-95.436945	Withdrawal of Water	6553514
Potable Water Well	Anchor Road MHP Well #1	--	Angleton	--	Brazoria	29.185278	-95.453056	Withdrawal of Water	6553516
Potable Water Well	City of Angleton Well #10	--	Angleton	--	Brazoria	29.178333	-95.437222	Withdrawal of Water	6553511
Potable Water Well	Martha Paricer	--	Angleton	--	Brazoria	29.149445	-95.433889	Withdrawal of Water	6553809
Potable Water Well	Richmond Tank Car Co.	--	Angleton	--	Brazoria	29.151112	-95.434445	Withdrawal of Water	6553802
Potable Water Well	City of Angleton Well #7	--	Angleton	--	Brazoria	29.178055	-95.431944	Withdrawal of Water	6553501
Potable Water Well	City of Angleton Well #6	--	Angleton	--	Brazoria	29.181389	-95.431944	Withdrawal of Water	6553503
Potable Water Well	City of Angleton Well #1	--	Angleton	--	Brazoria	29.181111	-95.431667	Withdrawal of Water	6553515
Potable Water Well	City of Angleton Well #2	--	Angleton	--	Brazoria	29.165001	-95.434445	Withdrawal of Water	6553803
Potable Water Well	City of Angleton Well #8	--	Angleton	--	Brazoria	29.1875	-95.432222	Withdrawal of Water	6553506
Potable Water Well	City of Angleton Well #13	--	Angleton	--	Brazoria	29.188611	-95.408334	Withdrawal of Water	6553607
Potable Water Well	City of Angleton Well #4	--	Angleton	--	Brazoria	29.189722	-95.436944	Withdrawal of Water	6553804
Potable Water Well	Brazoria Co. WC & ID #8	--	Angleton	--	Brazoria	29.1875	-95.408889	Withdrawal of Water	6553605
Potable Water Well	City of Angleton Well #12	--	Angleton	--	Brazoria	29.190556	-95.404445	Withdrawal of Water	6553606
Potable Water Well	City of Angleton Well #5	--	Angleton	--	Brazoria	29.175	-95.430833	Withdrawal of Water	6553502
Oil or Gas Well	Lee Oil Unit #1	--	Angleton	--	Brazoria	29.191945	-95.419722	Oil or Gas	6553509

Type	Name	City	Zip code	County	Latitude	Longitude	Notes: Location	Notes: Average Daily T
Roadway Bridge	CR 220	Angleton	--	Brazoria	29.12566	-95.45038	2.6 MI SOUTH OF SH 35	6,680
Roadway Bridge	SH 288 SB OFF RAMP	Angleton	--	Brazoria	29.127639	-95.452683	0.15 MI NORTH OF CR 220	6,680
Roadway Bridge	SH 288 SB OFF RAMP	Angleton	--	Brazoria	29.128206	-95.452358	0.2 MI NORTH OF CR 220	6,680
Roadway Bridge	SH 288 NB	Angleton	--	Brazoria	29.142851	-95.451642	1.25 MI S OF SH 35	17,706
Roadway Bridge	CR 491- GIFFORD LN	Angleton	--	Brazoria	29.14393	-95.41045	0.01 MI W OF FM 523	610
Roadway Bridge	SH 288 SB	Angleton	--	Brazoria	29.147794	-95.45233	1.25 MI S OF SH 35	6,307
Roadway Bridge	BRYAN ST	Angleton	--	Brazoria	29.156648	-95.435575	0.28 MI E OF S WALKER ST	1,300
Roadway Bridge	LOOP 274	Angleton	--	Brazoria	29.158204	-95.432145	0.4 MI S. OF SH 35	12,906
Roadway Bridge	SH 288 SB	Angleton	--	Brazoria	29.163945	-95.453284	1.30 MI W OF SH 288 BUS	11,720
Roadway Bridge	SH 288 NB	Angleton	--	Brazoria	29.16401	-95.452937	1.30 MI W OF SH 288 BUS	11,720
Roadway Bridge	SH 288 NB	Angleton	--	Brazoria	29.16893	-95.4528	0.35 MI N OF SH 35	11,978
Roadway Bridge	SH 288 SB	Angleton	--	Brazoria	29.168954	-95.453439	0.35 MI N OF SH 35	12,415
Roadway Bridge	CR 171	Angleton	--	Brazoria	29.17172	-95.41122	0.50 MI NE OF SH 35	2,770
Roadway Bridge	SH 35	Angleton	--	Brazoria	29.176652	-95.41381	2.15 MI SW OF LP 558	9,016
Roadway Bridge	SH 35	Angleton	--	Brazoria	29.18108	-95.411091	5.6 MILE WEST OF SPUR 28	9,016
Roadway Bridge	SH 288 NB OFF RAMP	Angleton	--	Brazoria	29.181824	-95.452461	0.15 MI SOUTH OF CR 220	6,480
Roadway Bridge	CR 44(SH 288 Ramp)	Angleton	--	Brazoria	29.18373	-95.45054	0.06 Mi SE of SH 288	2,770
Roadway Bridge	CR 44	Angleton	--	Brazoria	29.185493	-95.452361	1.5 MI NORTH OF SH 35	27,720
Roadway Bridge	VALDERAS ST	Angleton	--	Brazoria	29.187074	-95.428987	0.45 MI S OF HENDERSON RD	3,110
Roadway Bridge	DOWNING RD	Angleton	--	Brazoria	29.188758	-95.419177	0.35 MI S OF HENDERSON RD	5,100
Roadway Bridge	SH 35	Angleton	--	Brazoria	29.189762	-95.405268	1.10 MI SW OF FM 523	9,016
Roadway Bridge	BS 288B	Angleton	--	Brazoria	29.189799	-95.433294	1.75 MI N OF SH 35	18,960
Roadway Bridge	BUCHTA RD	Angleton	--	Brazoria	29.193819	-95.410987	0.01 MI S OF HENDERSON RD	1,000
Roadway Bridge	FM 523	Angleton	--	Brazoria	29.197244	-95.452321	2.35 MI N OF SH 35	19,660
Roadway Bridge	SH 288 NB	Angleton	--	Brazoria	29.212704	-95.451873	1.05 MI N OF FM 523	11,414
Roadway Bridge	SH 288 SB	Angleton	--	Brazoria	29.2129	-95.452443	1.05 MI N OF FM 523	11,445

Type	Name	Address	City	Zip code	County	Latitude	Longitude	Notes: Unique ID	Notes: Bridge Type
Railroad Bridge	NONE	--	Angleton	--	Brazoria	29.201479	-95.373529	W1590_TX9478	Above Water
Railroad Bridge	NONE	--	Angleton	--	Brazoria	29.209705	-95.365331	W1589_TX9477	Above Water
Railroad Bridge	NONE	--	Angleton	--	Brazoria	29.132379	-95.471982	W1406_TX9765	Above Water
Railroad Bridge	NONE	--	Angleton	--	Brazoria	29.143789	-95.454591	W1436_TX9790	Above Water
Railroad Bridge	NONE	--	Angleton	--	Brazoria	29.183669	-95.393317	W1167_TX9702	Above Water
Railroad Bridge	OYSTER CREEK	--	Angleton	--	Brazoria	29.125215	-95.480727	W2636_TX10770	Above Water
Railroad Bridge	None	--	Angleton	--	Brazoria	29.112287	-95.429834	W722_TX76442	Above Water
Railroad Bridge	None	--	Angleton	--	Brazoria	29.144587	-95.453367	W1615_TX77030	Above Water

# Appendix D

## MEETING DOCUMENTATION



# City of Angleton Hazard Mitigation Plan Kickoff Meeting

March 16, 2023

## A G E N D A

**9:30 AM**                      **Registration & Sign-in**

**10:00 AM**                      **Welcome & Introductions**

**10:20 AM**                      **Overview of Hazard Mitigation Plans & Procedures**

H-GAC staff will provide an overview of hazard mitigation plans, benefits, meeting objectives, activities, H-GAC's planning process, roles & responsibilities, and project timelines.

**Next Steps**

**Hazard Identification & Risk Assessment**

**11:30 AM**                      **Adjourn**



# City of Angleton Hazard Mitigation Plan Kickoff Meeting

March 16, 2023

## ATTENDANCE

Name	Title	Organization
Glenn LaMont	City of Angleton	Emergency Management Coordinator
Hector Renteria	City of Angleton	Assistant Public Works Director
John Deptuch	City of Angleton	Safety & Facilities Coordinator
Chris Whittaker	City of Angleton	City Manager
Corey Lukasheay	City of Angleton	Fire Department Lieutenant
John Peterson	HDR	City Engineer
Will Blackstock	City of Clute	Director of Parks and Recreation / Deputy Emergency Management Coordinator
Bryan Sidebottom	City of Lake Jackson	Assistant Chief - Emergency Operations   Deputy EOC Coordinator
Sara Grether Richards	Country Village Care	Owner
Cheryl Mergo	H-GAC	Senior Manager
Amanda Ashcroft	H-GAC	Planner

## MEETING NOTES

### Welcome and Introductions

Glenn LaMont welcomed participants and explained the reasons behind hazard mitigation planning as well as some of the benefits of mitigation. The hazard mitigation planning committee members introduced their name, title, and the organization they represented.

### Overview of Hazard Mitigation Plans & Procedures

Amanda reviewed the meeting agenda. Amanda went over meeting goals and objectives- to explain hazard mitigation, review the benefits of developing a hazard mitigation plan, provide an overview of the planning process, and to inform the committee about their role in the planning process. The plan is funded by a GLO grant through H-GAC. Amanda explained that despite there being no match requirement for this instance of funding, there will be various methods of documentation you see throughout the planning process that exist solely to calculate match for any future needs.

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 communities to have a mitigation plan to be 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 and any changes to the plan template were summarized to the committee.



# City of Angleton Hazard Mitigation Plan Kickoff Meeting

March 16, 2023

Roles and Responsibilities of the Hazard Mitigation Planning Committee were outlined.

- To attend meetings, including public hearings or meetings/workshops that occur during the plan update process
- To assist with coordination or participation in the public input process- this could mean collecting and relaying valuable local information, data, or soliciting input from citizens or professionals
- To make decisions on the planning process and content- this includes reviewing plan updates and providing timely feedback (this include submitting any worksheets or handouts we provide you)
- To review and adopt the plan for it to be approved by FEMA

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

Amanda reviewed the tentative project timeline and discussed HAZUS being run in-house, to be completed before the next meeting. The committee scheduled the next meeting for Thursday, April 20<sup>th</sup> from 10:00 AM – 11:30 AM. The committee agreed keeping the same date/time and meeting hybrid (teams and in-person) would allow for greater attendance and input.

### Next Steps

Amanda outlined next steps for the local planning team and members of the hazard mitigation planning committee. Committee members should provide any additional stakeholder contacts to H-GAC and Glenn LaMont so they can be included in future updates regarding the plan. H-GAC staff will begin running the HAZUS model for outputs to help inform the continuation of the risk assessment activity that the next meeting will cover.

### Hazard identification and Risk Assessment

Amanda passed out a risk assessment handout and listed hazards from the 2018 Brazoria County Multi-Jurisdictional Hazard Mitigation Plan that the City of Angleton was a participating jurisdiction of. She outlined updates the hazard mitigation planning committee may want to make to certain hazard titles or regroupings and gave examples of what 2023 plans were doing similarly.

Listed Hazard for the 2018 plan included: Flooding, Hurricanes & Tropical Storms, Wildfire, Drought, Lightning, Heat, Hail, Winter Weather, Tornado, Dam/Levee Failure, Coastal Erosion, and Expansive Soils.

The hazard mitigation committee began working on the hazard identification and risk assessment handout for the remainder of the meeting.

**Meeting adjourned at 11:00 AM.**



# 2023 City of Angleton Hazard Mitigation Plan Update

Meeting #1: Kickoff Meeting  
March 16, 2023  
10 AM - 12 PM

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## Meeting Goals & Objectives

- **Explain** hazard mitigation
- Review the **benefits** of developing a hazard mitigation plan
- Provide an overview of the **planning process**
- Inform about **your role** in the planning process

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## Introductions

- Name
- Organization
- How has a hazard impacted you? (optional)

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## What is Hazard Mitigation Planning?

- Hazard Mitigation Planning- Acting before disaster strikes.
- Mitigation- any sustained action taken to ***reduce or eliminate long-term risk*** to life and property from a hazard event

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## 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

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## 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 state and local governments to prepare hazard mitigation plans as a precondition for receiving FEMA mitigation project grants.

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## Updated Policies

- On April 19, 2022, FEMA released the updated state and local mitigation planning policies.
- These updated policies will be in effect for all mitigation plans approved on or after:

**April 19, 2023.**

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## Updated Policies

- Defines who local governments must include in the planning process.
- Requires local governments to include the effects of climate change and other future conditions in the risk assessment.
- Recognizes the important role of adopting and enforcing building codes and land use/development ordinances
- Facilitates stronger alignment with other FEMA mitigation program & incorporates new FEMA grant programs

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## Participation Requirements

- The whole community approach
  - Emergency Management
  - County/City Staff
  - The General Public!
  - Elected Officials
  - Utility Companies
  - Industry/Business
  - ISDs

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## Participation Requirements

1. Attend meetings, including public hearings or meetings/workshops that occurs during the plan update process
2. Assist with coordination or participation in the public input process
3. Review plan updates and provide timely feedback
4. Adopt & Implement the plan

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## Outreach Methods

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

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## Tentative Project Timeline

- **March 14**, Meeting 1: Kickoff ←
- **April**, Meeting #2: Hazard Identification & Risk Assessment
- **May**, Meeting #3: Capability Assessment
- **June**, Public Input Workshop
- **July**, Meeting #4: Policy Development & Project Identification (Mitigation Action Plan)
- **August**, Draft Plan Available for Public Comment
- **Meeting #5**: Adoption & Implementation

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## Project Objectives

- A fully updated Hazard Mitigation Plan which complies with State and Federal guidance

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## Hazard Identification

- 2018 Hazards

Flooding	Hurricanes & Tropical Storms
Wildfire	Drought
Lightning	Heat
Hail	Winter Weather
Tornado	Dam/Levee Failure
Coastal Erosion	Expansive Soils

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## Updating Hazards for 2023

- Add pandemic and extreme temperature hazards?
- Are there any new hazards to include?
- Are there any hazards to remove or combine?

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## 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.

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## Next Steps

- Provide any additional stakeholder contacts
  - ⑩ Hazard Mitigation Committee members, participants
- Determine meeting #2 date for hazard identification & risk assessment
  - All
- Run HAZUS
  - H-GAC Staff

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## Contact Information

**Amanda Ashcroft, AICP**

*Planner, Community & Environmental*

Houston-Galveston Area Council

Amanda.Ashcroft@h-gac.com

713-993-4545

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# City of Angleton 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 (P) (1, 2, 3, 4)	Severity (S) (1, 2, 4, 8)	Risk (P x S)	Ranking
Flood	3/4	8/4	16	1
Fire	2	2	4	5
Hail	2	1	3	6
Freeze	3	2	6	4
Hurricane	4	8/4	<del>16</del>	1
Drought	4	2	8	3
Levee Failure	2	8/4	8	3
Tornado	3	8/4	12	2
Train Derailment	3	2	6	4
Cyber Water Crime	3	<del>4</del>	12	2
Terrorism	2/1	4	4	5
Earthquake	1	2	3	6





# City of Angleton 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 (P) (1, 2, 3, 4)	Severity (S) (1, 2, 4, 8)	Risk (P x S)	Ranking
Hurricanes/storms	4	8	32	1
Drought	3	2	6	8
Flooding	4	8	32	2
Lightning	4	<del>4</del>	16	4
Wildfire	4	<del>4</del>	16	3
Winter weather	2	4	8	6
HEAT	4	2	8	7
Dam/Levee failure	2	8	16	5
Hail	2	2	4	9



## City of Angleton 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 (P) (1, 2, 3, 4)	Severity (S) (1, 2, 4, 8)	Risk (P x S)	Ranking
Heat	4	4	8	5
Drought	3	2	5	6
lightning	2	1	3	13
Flooding	3	8/4	11/6	4
hail	2	2	4	8
winter weather	2	4	6	7
Dam/levee	2	8/4	10/6	10
Expansive soil	2	2	4	11
Coastal Erosion	1	1	2	17
wind storm	3	2	5	3
drinking water	3	8	11	2
wild fire	2	2	4	9
Hurricanes	4	8	12	1
tornado	1	8	9	13/1



# City of Angleton 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 and Tropical Storm	3	3	9	2
Dam Levee Failure	2	3	6	4
Flooding	3	1	3	6
Drought	4	1	4	5
Expansive Soils	4	1	4	5
Lighting	3	1	3	7
Winter Weather	3	1	3	7
Hail	3	1	3	7
Tornado	3	5	15	1
Aging Infrastructure (Water & Sewer Facilities)	4	2	8	3

**From:** Jamie Praslicka <jpraslicka@angleton.tx.us>  
**Sent:** Monday, February 12, 2024 01:03 PM  
**To:** Ashcroft, Amanda <Amanda.Ashcroft@h-gac.com>  
**Subject:** Re: [EXTERNAL] Draft HMP Comments

1. Hurricanes
2. Flooding
3. Excessive Heat/Drought
4. Severe weather / Tornado/Windstorm
5. Winter Weather / Hail
6. Aging Infrastructure
7. Cyber Security
8. Hazmat
9. Wildfire
10. Levee Failure
11. Erosion
12. Earthquake

How do these look?

Jamie Praslicka  
Emergency Management Coordinator  
979-900-5370  
[www.angleton.tx.us](http://www.angleton.tx.us)  
City of Angleton  
121 S. Velasco  
Angleton, TX 77515





# City of Angleton

## Hazard Mitigation Plan Committee Meeting

April 20, 2023

### A G E N D A

**10:00 AM**                      **Welcome & Sign-in**

**10:05 AM**                      **March Meeting Recap**

H-GAC staff will provide an overview of meeting notes and hazards ranked by risk, as determined by the committee at the previous meeting.

**Risk Categories**

**Questions from last meeting**

**Where are we now?**

H-GAC staff will discuss project timeline and next steps

**Capability Assessment Overview**

**10:45 AM**                      **Capability Assessment Exercise**

**11:30 AM**                      **Adjourn**



# City of Angleton

## Hazard Mitigation Plan Committee Meeting

April 20, 2023

### ATTENDANCE

Name	Title	Organization
Amanda Ashcroft	H-GAC	Planner
Beth Reimschissel	UTMB	Administrator, Angleton Danbury Campus Associate Chief Nursing & Patient Care Services Officer
Bryan Sidebottom	City of Lake Jackson	Assistant Chief - Emergency Operations   Deputy EOC Coordinator
Cheryl Mergo	H-GAC	Senior Manager
Corey Lukasheay	City of Angleton	Fire Department Lieutenant
Glenn LaMont	City of Angleton	Emergency Management Coordinator
Hector Renteria	City of Angleton	Assistant Public Works Director
John Deptuch	City of Angleton	Safety & Facilities Coordinator
John Peterson	HDR	City Engineer
KJ Rabe	Brazoria County Center for Independent Living	Senior Independent Living-Community Integration Specialist (Sr. IL-CIS)
Otis Spriggs	City of Angleton	Director of Development Services/City Planner
Pam Goodson	Brazoria County Center for Independent Living	Independent Living Program Manager
Stephenie Pharr	UTMB	Director, Ambulatory Care Services



# City of Angleton

## Hazard Mitigation Plan Committee Meeting

April 20, 2023

### MEETING NOTES

#### **Welcome and Introductions**

Glenn LaMont welcomed participants and had those in attendance who were new introduce their name, title, and the organization they represented.

#### **March Meeting Recap**

Amanda went over meeting topics and discussion items from the kickoff and risk identification/assessment meeting held in March. She thanked everyone for returning their handouts and explained that results would be summarized and reviewed next meeting.

Amanda reviewed questions from last meeting and provided some clarity regarding including cyber security projects into the Hazard Mitigation Plan. Amanda presented a new project timeline. Since the risk assessment was returned today, and the capability assessment is being conducted today, we are ahead of schedule and the Hazard Mitigation Committee will not meet in May. This will allow for H-GAC staff to draft pieces of the plan and prepare materials for public outreach events occurring in June, such as the Brazoria County Hurricane Expo occurring on June 17<sup>th</sup>. Amanda informed the committee that H-GAC staff had secured a booth at the expo to share information about, and solicit public feedback for, the Hazard Mitigation Plan from those in attendance.

#### **Capability Assessment**

Amanda reviewed what a capability assessment is in relation to hazard mitigation planning, the categories of capabilities that fall within the capability assessment, and why this process is important to hazard mitigation planning. Categories discussed were:

1. Prevention- Administrative or regulatory actions that influence the way land is developed and buildings are built. Examples include planning & zoning, building codes, open space preservation, and floodplain regulations.
2. Property Protection- Modification or removal of existing buildings to protect them from a hazard. Examples include purchase, relocation, raised elevation, and structural retrofits.
3. Natural Resource Protection- Preservation or restoration of the functions of natural systems while minimizing hazard losses. Examples include floodplain protection, forest management, and slope stabilization.
4. Structural Projects- Modification of the natural conditions for or progression of a hazard. Examples include dams, levees, seawalls, detention/retention basins, channel modification, retaining walls, and storm sewers.
5. Emergency Services- Protection of people and property during and immediately after a hazard event. Examples include warning systems, evacuation planning, emergency response training, and protection of emergency facilities.
6. Public Education and Awareness- Informing of citizens about hazards and the techniques they can use to protect themselves and their property. Examples include outreach, school education, library materials, and demonstration events.

#### **Public & Stakeholder Online Survey**

Amanda discussed the development of an online survey component for the plan update. H-GAC staff are working on building and making the survey live for public input soon. When the survey is live a link will be sent out to the Hazard Mitigation Committee to share.



# City of Angleton

## Hazard Mitigation Plan Committee Meeting

April 20, 2023

### Next Steps

Amanda outlined next steps for the local planning team and members of the hazard mitigation planning committee. Committee members should provide their completed capability assessment forms to the local planning team- Glan LaMont and H-GAC staff.

There will be no meeting in May 2023. There will be a public outreach event in June to solicit public input on the plan and its components.

After the presentation, the Hazard Mitigation Planning Committee worked through the Capability Assessment worksheet together.

**Meeting adjourned at 11:35 AM.**





# Hazard Mitigation Plan Worksheet Capability Assessment

**2018 Capability Assessment:**

- |                                     |  |
|-------------------------------------|--|
| HMP: Hazard Mitigation Plan         | SARA: SARA Title III Emergency Response Plan                                   |
| DRP: Disaster Recovery Plan         | TP: Transportation Plan  |
| CP: Comprehensive Land Use Plan     | REG-PL: Regional Planning  |
| FMP: Floodplain Management Plan     | SO: Subdivision Ordinance  |
| SMP: Stormwater Management Plan     | FDPO: Flood Damage Prevention Ordinance  |
| EOP: Emergency Operations Plan      | MA: Mutual Aid Agreements  |
| COOP: Continuity of Operations Plan | CRS: Community Rating System   |
| REP: Radiological Emergency Plan    | CIP: Capital Improvements Plan (that regulates infrastructure in hazard areas) |

Jurisdiction	DRP	CP	FMP	SMP	EOP	COOP	REP	SARA	TP	REG	SO	AB	MA	FDPO	CRS	CIP
Angleton	x	x	x	x	x	x	x	x	x	x	x	x	X	x		x

Jurisdiction	Capability Expansion Opportunities
Angleton	<p>Identified an inadequate budget as a factor that decreases their capability to implement mitigation actions and reduce future damages.</p> <p>Angleton will apply for state and federal funding to help fund mitigation actions that reduce the impact of natural hazards. They also plan to expand their mutual aid agreements to address flood emergency response needs.</p>



# Hazard Mitigation Plan Worksheet Capability Assessment

Name: Due date: First Friday in May-5th

Title and Employer: \_\_\_\_\_

Jurisdiction represented: \_\_\_\_\_

Date: \_\_\_\_\_

Amount of time worked  
on this document: \_\_\_\_\_

**Please return your filled worksheet to [Amanda.Ashcroft@h-gac.com](mailto:Amanda.Ashcroft@h-gac.com)**

Does the plan document each jurisdiction’s existing authorities, policies, programs and resources, and its ability to expand on and improve these existing policies and programs?  
*(Requirement §201.6(c)(3))*



# Hazard Mitigation Plan Worksheet Capability Assessment

<b>Building Code, Permitting, and Inspections</b>	<b>Yes/ No</b>	<b>1. Are codes adequately enforced?</b>
Building Code	Yes <input type="checkbox"/>	Version/Year: <b>2015 electric code-2014</b>
Building Code Effectiveness Grading Schedule (BCEGS)	No <input type="checkbox"/>	Score:
Fire department ISO rating	Yes	Rating: <b>4</b>
Site plan review requirements	Yes	<b>yes</b>
Other (if any)		

<b>Planning, Ordinances, &amp; Regulatory Capability</b>	<b>Yes/ No</b>	<b>1. Is the plan/ordinance an effective measure for reducing hazard impacts? 2. Is the ordinance adequately administered and enforced?</b>
Capital Improvements Plan (Regulates infrastructure in hazard areas)		Yes- 2021, update annually
Comprehensive Plan	Yes <input type="checkbox"/>	<b>2007, pending update 2025</b>
Continuity of Operations Plan		<b>None</b>
Disaster Recovery Plan	Yes <input type="checkbox"/>	<b>(will look up year)</b>
Economic Development Plan	No <input type="checkbox"/>	
Emergency Operations Plan	Yes <input type="checkbox"/>	<b>2021</b>
Floodplain Management Plan	No <input type="checkbox"/>	Covered by Angleton Drainage District, floodplain section in code (2020)
Hazard Mitigation Plan	Yes <input type="checkbox"/>	<b>Expires 9/30/2023</b>
Radiological Emergency Plan	Yes <input type="checkbox"/>	<b>2022</b>
Regional Planning	No <input type="checkbox"/>	
SARA Title III Emergency Response Plan	No <input type="checkbox"/>	
Stormwater Management Plan		<b>Part of the County Ms4 permit</b>
Transportation Plan	Yes <input type="checkbox"/>	Transportation annex to EOP and a thoughtfare plan
Zoning Ordinance	Yes <input type="checkbox"/>	



# Hazard Mitigation Plan Worksheet Capability Assessment

Planning, Ordinances, & Regulatory Capability	Yes/ No	1. Is the plan/ordinance an effective measure for reducing hazard impacts? 2. Is the ordinance adequately administered and enforced?
Subdivision Regulation/Ordinance	Yes <input type="checkbox"/>	
Flood Damage Prevention Ordinance	Yes <input type="checkbox"/>	
Floodplain Ordinance	Yes <input type="checkbox"/>	
Natural hazard specific ordinance (Stormwater, wildfire, etc.)	No <input type="checkbox"/>	
National Flood Insurance Program	Yes <input type="checkbox"/>	
Flood insurance rate maps	Yes <input type="checkbox"/>	2020
Community Rating System	No <input type="checkbox"/>	TBD
Acquisition of land for open space and public recreation uses	Yes <input type="checkbox"/>	Parkland dedication ordinance, Purchased acreage on Cemetary for new park
Other (if any)		Rolling park land into drainage relief and retention becoming an amenity used by the community
<b>How can these capabilities be expanded and improved to reduce risk?</b>		



# Hazard Mitigation Plan Worksheet Capability Assessment

## Administrative & Technical Capability

Identify whether your community has the following administrative and technical capabilities. These include staff and their skills and tools that can be used for mitigation planning and to implement specific mitigation actions. For smaller jurisdictions without local staff resources, if there are public resources at the next higher-level government that can provide technical assistance, indicate so in your comments.

Administration	Yes/ No	1. Describe capability. 2. Is coordination effective?
Planning Commission	Yes <input type="checkbox"/>	Meet monthly
Planning Committee	Yes <input type="checkbox"/>	Sub-committees/TBD
Maintenance programs to reduce risk (e.g., tree trimming, clearing drainage systems)	No <input type="checkbox"/>	Require development agreements on all new large scale developments, maintenance activities occur (part of checklist before large storm events and prep)
Mutual aid agreement(s)	No <input type="checkbox"/>	Lake Jackson for Fire Dept. Others- not a formal agreement

Staff	Yes/ No FT/ PT <sup>1</sup>	1. Is staffing adequate to enforce regulations? 2. Is staff trained on hazards and mitigation? 3. Is coordination between agencies and staff effective?
Chief Building Official	Yes <input checked="" type="radio"/> No <input type="radio"/> FT <input checked="" type="radio"/> PT <input type="radio"/>	yes yes, certifying staff for CFM Yes
Civil Engineer	Yes <input checked="" type="radio"/> No <input type="radio"/> FT <input checked="" type="radio"/> PT <input type="radio"/>	HDR-Consulting Yes, yes, yes
Community Planner	Yes <input checked="" type="radio"/> No <input type="radio"/> FT <input checked="" type="radio"/> PT <input type="radio"/>	yes, yes, yes
Emergency Management	Yes <input checked="" type="radio"/> No <input type="radio"/> FT <input checked="" type="radio"/> PT <input type="radio"/>	Yes yes yes
Floodplain Administrator	Yes <input checked="" type="radio"/> No <input type="radio"/> FT <input checked="" type="radio"/> PT <input type="radio"/>	HDR/ADD(drainage district overlap)-Consulting Yes, yes, yes Staff getting CFM
GIS Coordinator	Yes <input checked="" type="radio"/> No <input type="radio"/> FT <input checked="" type="radio"/> PT <input type="radio"/>	HDR-Consulting Yes, yes, yes

<sup>1</sup> Full-time (FT) or part-time (PT) position



# Hazard Mitigation Plan Worksheet Capability Assessment

Staff	Yes/ No FT/ PT <sup>1</sup>	1. Is staffing adequate to enforce regulations? 2. Is staff trained on hazards and mitigation? 3. Is coordination between agencies and staff effective?
Grant Manager	Yes <input checked="" type="radio"/> No <input type="radio"/> FT <input checked="" type="radio"/> PT <input type="radio"/>	Consulting/contract
Local Staff who can assess community's vulnerability to hazards	Yes <input checked="" type="radio"/> No <input type="radio"/> FT <input checked="" type="radio"/> PT <input type="radio"/>	PW Directors, Fire Marshal, Building inspectors
Other (if any)		

Technical	Yes/ No	1. Describe capability. 2. Has capability been used to assess/mitigate risk in the past?
Warning systems/services (Reverse 911, outdoor warning signals)	Yes <input type="checkbox"/>	CodeRed- mass notification Warning sirens- in process
Hazard data and information	Yes <input type="checkbox"/>	SDS, ERP for plants, MS4
Grant writing	Yes <input type="checkbox"/>	TWDB funding in processm GLO previously Post-Harvey mitigation funds for various projects
HAZUS Analysis	Yes <input type="checkbox"/>	
Other (if any)		

**How can these capabilities be expanded and improved to reduce risk?**

<sup>1</sup> Full-time (FT) or part-time (PT) position



# Hazard Mitigation Plan Worksheet Capability Assessment

## Financial Capability

Identify whether your jurisdiction has access to or is eligible to use the below funding resources for hazard mitigation.

Financial	Access/ Eligibility (Yes/ No)	1. Has the funding resource been used in past and for what type of activities? 2. Could the resource be used to fund future mitigation actions?
Authority to levy Taxes for specific purposes (Such as mitigation projects)	No <input type="checkbox"/>	
Capital Improvement Plan/ 1- & 5-Year plan	Yes <input type="checkbox"/>	
Capital improvements project funding	No <input type="checkbox"/>	
Community Development Block Grant	Yes <input type="checkbox"/>	
Applied for grants in the past	Yes <input type="checkbox"/>	
Awarded a grant in the past	Yes <input type="checkbox"/>	
Gas/Electric Service Fees	No <input type="checkbox"/>	
Stormwater Service Fees	No <input type="checkbox"/>	
Water/Sewer Service Fees	Yes <input type="checkbox"/>	
Development Impact Fees	Yes <input type="checkbox"/>	2 active impact areas in the city that are defined and working on city-wide
Impact fees for new development	Yes <input type="checkbox"/>	<b>--Duplicate--</b>
Incur debt through General Obligation Revenue or Special Tax Bonds	Yes <input type="checkbox"/>	
Incur debt through private activities	No <input type="checkbox"/>	
Other federal funding programs	Yes <input type="checkbox"/>	<b>ARPA, CARES, GLO</b>
State funding programs	Yes <input type="checkbox"/>	actively pursuing state revolving fund clean drinking water
Other (if any)		
<b>How can these capabilities be expanded and improved to reduce risk?</b>		



# Hazard Mitigation Plan Worksheet Capability Assessment

## Education and Outreach Capability

Identify education and outreach programs and methods already in place that could be used to implement mitigation activities and communicate hazard-related information.

Education and Outreach	Yes/ No	1. Describe program/organization and how relates to disaster resilience and mitigation. 2. Could the program/organization help implement future mitigation activities?
Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access, and functional needs populations, etc. (Ex. CERT Teams, Red Cross)	Yes <input type="checkbox"/>	County- CERT teams Emergency preparedness- STEER Redcross GulfCoast Transit District
Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	Yes <input type="checkbox"/>	City sends out education Angleton University Fire Safety- BCCIL October- Fire Prevention Month! Fire Safety, BBQ Safety, related safety messages throughout the year Keep Angleton Beautiful Community Wide cleanup (2x/yr) DEA Druge take back days 24/7 permanenet drop off box at PD Several events throughout thethrough communications dept year (please list here)
Natural Disaster or Safety related school programs	Yes <input type="checkbox"/>	
Storm Ready Certification	No <input type="checkbox"/>	
Other (if any)		
<b>How can these capabilities be expanded and improved to reduce risk?</b>		





# Hazard Mitigation Plan Worksheet Capability Assessment

Education and Outreach	Yes/ No	1. Describe program/organization and how relates to 2. disaster resilience and mitigation. 3. Could the program/organization help implement future mitigation activities?
Firewise Communities Certification	No <input type="button" value="v"/>	
Tree City USA	No <input type="button" value="v"/>	
Public-private partnership initiatives addressing disaster-related issues	Yes	works with 2 churches to setup shelter, food pantry Actions- nonprofit that brings food to elderly and uses city rec for social activities Angleton residents can bring household hazardous waste to pearland
Other (if any)		
<b>How can these capabilities be expanded and improved to reduce risk?</b>		

Overall Capability	Limited/Moderate/High
Does the community have the financial resources needed to implement mitigation projects?	
Does the community have the staff/expertise to implement projects?	
Is there community support to implement projects?	
Does the community staff have time to devote to hazard mitigation?	
<b>How can these overall capabilities be expanded and improved to reduce risk?</b>	



# Hazard Mitigation Plan Worksheet Capability Assessment

## Political Capability

The local political climate must be considered in designing mitigation strategies, as it could be the most difficult hurdle to overcome in accomplishing their adoption and implementation. Hazard mitigation may not be a local priority or may conflict with or be seen as an impediment to other goals of the community.

<b>Political Capability</b>	<b>1. List any examples of local political capability</b> <b>Guiding development away from hazard areas, restricting development within hazard areas, or enforcing development standards that go beyond minimum state or federal requirements (e.g., building codes, floodplain management)</b>

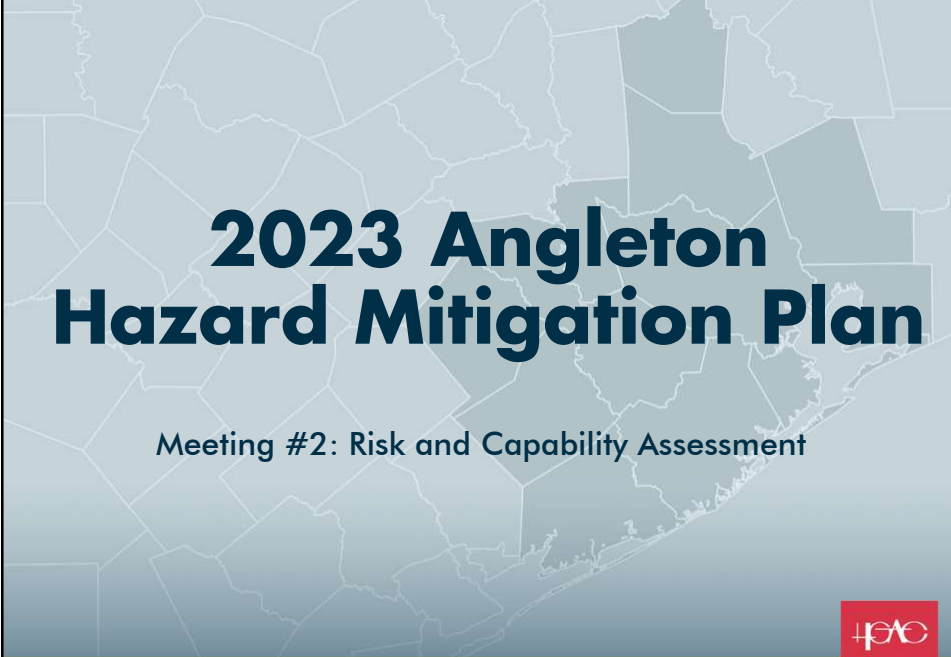
## Capability Self-Assessment

Rate the following capability areas as “limited”, “moderate”, or “high” with what you perceive to be the jurisdiction’s ability in implementing hazard mitigation activities.

Jurisdiction	Building Code, Permitting, and Inspections	Planning, Ordinances, & Regulatory Capability	Administrative & Technical Capability	Financial Capability	Education and Outreach Capability	Political Capability	Overall Capability
City of Angleton	Moder <input type="checkbox"/>	Moder <input type="checkbox"/>	Moder <input type="checkbox"/>	Limited <input type="checkbox"/>	Moder <input type="checkbox"/>	Moder <input type="checkbox"/>	Moder <input type="checkbox"/>

**What are some barriers to implementing proposed mitigation strategies?**


**What mechanisms could enhance or further implementation of proposed mitigation strategies?**



# 2023 Angleton Hazard Mitigation Plan

Meeting #2: Risk and Capability Assessment

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## Meeting Agenda

- Welcome
- March Meeting Recap:
  - Risk Identification Categories
  - Questions from last meeting
  - Where are we now?
- Capability Assessment
  - What is it?
  - Types of resources
- Worksheets

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# March Meeting Recap: 2018 Hazards Ranked by Risk

Risk Rating	Ranking	Hazard Name
High	1	Flooding
	2	Hurricanes and Tropical Storms
	3	Tornadoes
Moderate	4	Drought
	5	Lightning
	6	Heat Events
	7	Hail
Low	8	Expansive Soils
	9	Winter Weather
	12	Coastal Erosion

**Hazards Ranked by Risk**

Each identified hazard poses a risk to Brazoria County. Ranking the hazards from greatest to lowest risk allows the communities to prioritize their resources and focus efforts where they are most needed.

Risk Rating	Ranking	Hazards
High	1	Flooding
	2	Hurricanes and Tropical Storms
	3	Tornadoes
Moderate	4	Drought
	5	Lightning
	6	Heat Events
	7	Hail
Low	8	Expansive Soils
	9	Winter Weather
	12	Coastal Erosion

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# Questions from last meeting

- Cyber security & man-made hazards?
  - BRIC and FMA awards cannot fund a stand-alone cybersecurity project. An eligible cybersecurity activity must serve as a functional component of an eligible mitigation activity and otherwise meet all applicable programmatic requirements.

Example: Harden facilities (buildings, wiring, rooms) that house the cybersecurity system component such as computers, hardware, or the system's servers

Source: [https://www.fema.gov/sites/default/files/document/fema\\_bric-fma-cybersecurity-information-activities-112022.pdf](https://www.fema.gov/sites/default/files/document/fema_bric-fma-cybersecurity-information-activities-112022.pdf)

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## Tentative Project Timeline


- **March 16**, Meeting 1: Kickoff
- **April 20**, Meeting #2: Hazard Identification & Risk Assessment ←
- **May**, Meeting #3: Capability Assessment
- **June**, Public Input Workshop
- **July**, Meeting #4: Policy Development & Project Identification (Mitigation Action Plan)
- **August**, Draft Plan Available for Public Comment
- **Meeting #5: Adoption & Implementation**

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## Updated Project Timeline

	March	April	May	June	July	August	Sept.	Oct.	Nov.
Kickoff Meeting									
Risk Assessment		HAZUS							
Capability Assessment		We are Here							
Public Input Workshop/ Events				#1 June 17 <sup>th</sup>			#2		#3
Mitigation Action Plan Workshop									
Plan Drafting									
Review Final Draft									
Plan Adoption									
Submit Plan to State & FEMA									

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## Capability Assessment

- What you are doing
- What you are not doing
- What you can do
- What you are doing wrong?

...helps to determine which mitigation actions are practical and likely to be implemented given a local government's various resources and capabilities.

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## Capability Assessment Components

- 1) An inventory of a local jurisdiction's relevant existing plans, ordinances, and programs
- 2) Analysis of a local jurisdiction's capacity to carry out existing plans, ordinances, and programs.

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# Policy & Regulatory Inventory

- Adequate building codes
- Land use, zoning and subdivision regulations
- Floodplain and storm water ordinances
- Comprehensive plans
- Capital improvement and transportation plans
- Facilities and needs studies
- Population growth and future development studies
- Economic development plans
- Emergency management response and recovery plans
- National Flood Insurance Program (NFIP) participation
- NFIP Community Rating System programs



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2 / 9 | - 100% + | [ ] [ ]

## Hazard Mitigation Plan Worksheet Capability Assessment

Building Code, Permitting, and Inspections	Yes/ No	1. Are codes adequately enforced?
Building Code	No	Version/Year:
Building Code Effectiveness Grading Schedule (BCEGS)	No	Score:
Fire department ISO rating	No	Rating:
Site plan review requirements	No	
Other (if any)		

Planning, Ordinances, & Regulatory Capability	Yes/ No	1. Is the plan/ordinance an effective measure for reducing hazard impacts? 2. Is the ordinance adequately administered and enforced?
Capital Improvements Plan (Regulates infrastructure in hazard areas)		
Comprehensive Plan		
Continuity of Operations Plan		
Disaster Recovery Plan		

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## Planning, Ordinances, and Regulatory Capability

- Demonstrate commitment to guiding and managing growth, development, and redevelopment in a responsible manner
  - Examples: Mitigation planning, comprehensive land use planning, enforcement of zoning ordinances and building codes, protecting environmental resources in the community

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## Administrative and Technical Capability

- Staff and skills for planning and mitigation such as:
  - Engineers
  - Planners
  - GIS analysts
  - Building inspectors
  - Emergency managers
  - Grant writers

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## Financial Capability

- Resources available to fund mitigation actions such as:
  - Operating budgets
  - Stormwater utility fees
  - Development impact fees



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## Education and Outreach Capability

- Existing programs that implement mitigation and communicate risk such as:
  - School programs
  - Firewise communities
  - Storm Ready communities
  - Hazard awareness campaigns
    - *Example: Tornado Awareness Month!*
  - Public Information Officer
  - Community newsletter



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## Political Capability

- Guiding development away from identified hazard areas
- Restricting public investments or capital improvements within hazard areas
- Enforcing local development standards that go beyond minimum state or federal requirements
  - (e.g., building codes, floodplain management)



## Next Steps

- HAZUS, Website updates, Public & stakeholder survey, Begin drafting plan
  - H-GAC Staff
- Complete & return Capability Assessment worksheet, Determine dates for public events in June/July
  - Hazard Mitigation Committee



## Public & Stakeholder Online Survey

- Survey questions are being adapted from FEMA's Local Mitigation Planning Handbook and incorporating other sources
- When available: please share!

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## Contact Information

**Amanda Ashcroft, AICP**

*Planner, Community & Environmental*

Houston-Galveston Area Council

Amanda.Ashcroft@h-gac.com

713-993-4545

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CITY OF ANGLETON

# Local Hazard Mitigation Plan



# Public Meeting



**2 Hour Event**

**Learn about the Hazard Mitigation Plan and provide valuable local feedback!**

**Date:**

**Thursday**  
September 14, 2023

**Location:**

**First Presbyterian Church**  
130 South Arcola Street  
Angleton, TX 77515

**Time:**

6:00- 8:00 PM

**6-7 PM: COME LEARN ABOUT THE HAZARD MITIGATION PLAN.  
7-8 PM: MAKE YOUR VOICE HEARD!**

**Provide input at stations around the room.**

**For More Information: [www.h-gac.com/regional-hazard-mitigation-planning](http://www.h-gac.com/regional-hazard-mitigation-planning)**



# 2023 Multijurisdictional Hazard Mitigation Plan Update

City of Angleton  
Public Meeting  
September 2023

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## Meeting Agenda

- Introductions
- Overview
- Planning Process
- Timeline
- Data Gathering Exercises

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# Introductions

- WHO AM I?
  - Amanda Ashcroft, AICP
    - Planner at H-GAC within the Community & Environmental Planning Department
  
- Hazard Mitigation Planning Committee
  - Members Present- Introductions
    - (Name, Title, Jurisdiction represented)
  
- Last Plan
  - FEMA approval: 9/30/2018
  - Expired: 9/29/2023
  - New FEMA Policy updates



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**The purpose of hazard mitigation is to implement actions that eliminate the risk from hazards or reduce the severity of the effects of hazards on people and property.**



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# Overview

- What is a natural hazard?
  - naturally occurring event vs. man-made
  - destructive or negative impact on health, safety, life, and/or property
  
- WHAT IS MITIGATION?
  - Steps, or actions, taken by the public, municipal leadership, or private entities to reduce the negative impacts
    - Hazard mitigation is any sustainable action that reduces or eliminates long-term risk to people and property from future disasters.

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# Mitigation actions

- Examples:
  - Removing property or infrastructure from hazard areas
  - Assisting and supporting naturally occurring resilient areas
  - Strategic planning and hardening the built environment



**Elevated HVAC unit**  
 The Zulu Social Aid and Pleasure Club reduced risk to its HVAC unit by elevating the unit significantly above ground level.

Source: [NEW ORLEANS BUILDING HARDENING GUIDE](#)

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## Overview- Funding

- Federal funding
  - Hazard Mitigation Grant Program (HMGP)
  - Flood Mitigation Assistance (FMA)
  - Pre-Disaster Mitigation Grant Program (PDM)
  - Building Resilient Infrastructure and Communities (BRIC)
    - Buyout Program Implementation/Residential Elevations
    - Residential and Commercial Floodproofing
    - Flood Control Projects
    - Coastal Resilience
    - Nature Based Solutions
    - Infrastructure and Utility Hardening
  - Hazard Mitigation Grant Program- Post Fire

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## Overview- Why are we here?

- Public participation and feedback are vital parts of the hazard mitigation planning process!
- What can I do to stay involved?
  - Attend meetings
  - Provide data
  - Identify Natural Hazards
    - What hazards have impacted your community?
    - Where do hazards have the most destructive or negative impact on health, safety, life, and/or property within your community?
  - Locate assets, infrastructure, at-risk communities
    - What tools do you have to support your community through disasters?
    - What tools do you need?
- Identify what we can we do in the future to be more resilient!
- Break the disaster cycle!

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# Who Else Can We Reach Out To?

**Businesses**

**Academia**

**Private Organizations**

**Nonprofit Organizations**

**Community-based Organizations**

**Entities that provide support to underserved communities and socially vulnerable populations**  
**“Community Lifelines”**

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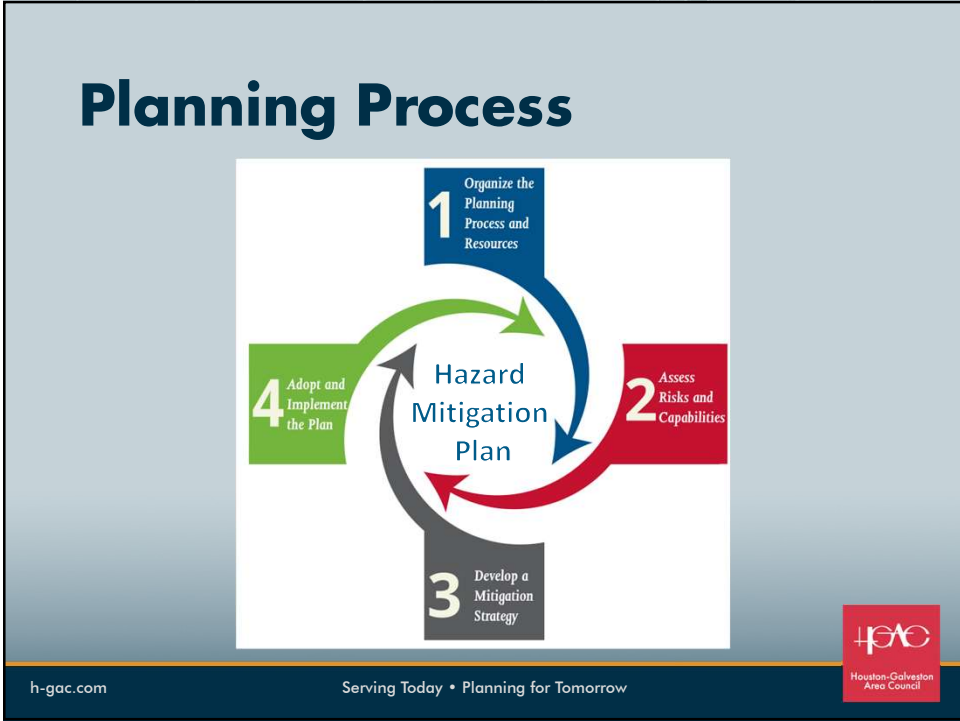
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# Community Lifelines

 Safety and Security	 Food, Water, Shelter	 Health and Medical	 Energy (Power & Fuel)	 Communications	 Transportation	 Hazardous Materials
 Law Enforcement/Security	 Food	 Medical Care	 Power (Grid)	 Infrastructure	 Highway/Roadway	 Facilities
 Fire Services	 Water	 Patient Movement	 Fuel	 Alerts, Warnings, and Messages	 Mass Transit	 HAZMAT, Pollutants, Contaminants
 Search and Rescue	 Shelter	 Public Health		 911 and Dispatch	 Railway	
 Government Services	 Agriculture	 Fatality Management		 Responder Communications	 Aviation	
 Community Safety		 Medical Supply Chain		 Finance	 Maritime	




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# Timeline

	March	April	May	June	July	August	Sept.	Oct.	Nov.	
Kickoff Meeting										
Risk Assessment		HAZUS								
Capability Assessment										
Public Input Events				#1			We are Here		#3	
HMAP Meeting										
Plan Drafting										
Review Final Plan Draft										
Plan Adoption by jurisdictions										
Submit Plan to State & FEMA										


  
 Houston-Galveston Area Council

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# Data Gathering Exercises

- Stations around the room
  - Instructions at each station
  - HMP Committee members and H-GAC staff are available to answer your questions
  
- Online survey- Still open



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# How can I stay Informed?

## Hazard Mitigation Planning

The H-GAC region is susceptible to a range of natural disasters like flooding, tornadoes, drought, and wildfires. Hazard mitigation is the use of long- and short-term strategies (such as planning, policy changes, programs, projects, and other activities) to reduce or alleviate the loss of life, personal injury, and property damage that can result from a disaster. While we cannot eliminate the threat of disasters, sound planning, collaboration, and preemptive action can help minimize their impacts.

FEMA requires every locality to maintain a hazard mitigation plan that examines the risk and impact of natural disasters and provides strategies for reducing impacts to people and property. A Hazard Mitigation Plan must be updated every 5 years to ensure relevancy and continued support from FEMA for its mitigation projects.

H-GAC has helped several counties develop or update their hazard mitigation plans, ensuring that participating communities are eligible for FEMA mitigation funding. H-GAC is committed to working with local governments to ensure that the region is as prepared as possible. Previous and current hazard mitigation work can be found below.

### Hazard Mitigation Plans

- Austin County 1 ▼
- Brazoria County 1 ▼
- Chambers County 1 ▼
- City of Angleton ▼

#### Hazard Mitigation Planning

##### Contact Information

Would you like to contact us about this topic?  
Please contact:

**Amanda Ashcroft**  
[Amanda.Ashcroft@h-gac.com](mailto:Amanda.Ashcroft@h-gac.com)  
 713-993-4545

[www.h-gac.com/regional-hazard-mitigation-planning](http://www.h-gac.com/regional-hazard-mitigation-planning)

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**Hazard Mitigation Plans**

Austin County 1

H-GAC, in partnership with Austin County, City of Bellville, City of Brazos Country, City of Industry, City of San Felipe, City of Sealy, City of South Frydek, and City of Wallis is developing a Hazard Mitigation Plan for Austin County, Texas.

Preparing a plan requires the engagement of local governments, stakeholders, and residents in the planning process. If you are an Austin County stakeholder, please consider taking this brief survey, joining us at an upcoming meeting, or sharing these plan update efforts with other stakeholders.

Meeting announcements and materials can be found below:

**Meeting #1- Kickoff, 3/22/2023 @ 1:30 PM**  
[Meeting Notes](#)  
[Presentation](#)

**Meeting #2- Risk and Capability Assessment, 4/26/2023 @ 1:30 PM**  
[Meeting Notes](#)  
[Presentation](#)

**Meeting #3- Public Outreach Strategy, 6/21/2023 @ 1:00 PM via Microsoft Teams**  
[Meeting Notes](#)  
[Presentation](#)


Two public hearings will be hosted on July 19<sup>th</sup> and July 20<sup>th</sup> from 6:00- 8:00 PM. The purpose of these public hearings is to provide a project overview from H-GAC and solicit feedback and information from stakeholders. Public input will help the project team to analyze potential hazards affecting residents and recommend possible actions to reduce their impact.

[Public Hearing Flyer](#)

**Public Hearing #1- July 19, 2023 from 6-8 PM** at the [Austin County Fair Convention & Expo Center](#) in Bellville, TX  
**Public Hearing #2- July 20, 2023 from 6-8 PM** at the [W.E Hill Community Center](#) in Sealy, TX

**2018 Austin County Hazard Mitigation Plan**

H-GAC, in partnership with Austin County, City of Bellville, City of Brazos Country, Town of San Felipe, City of Sealy, and City of Wallis developed a Hazard Mitigation Plan for Austin County, Texas in 2018. This plan expires on 11/5/2023 and will be replaced by current planning efforts.

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**Contact Information**

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

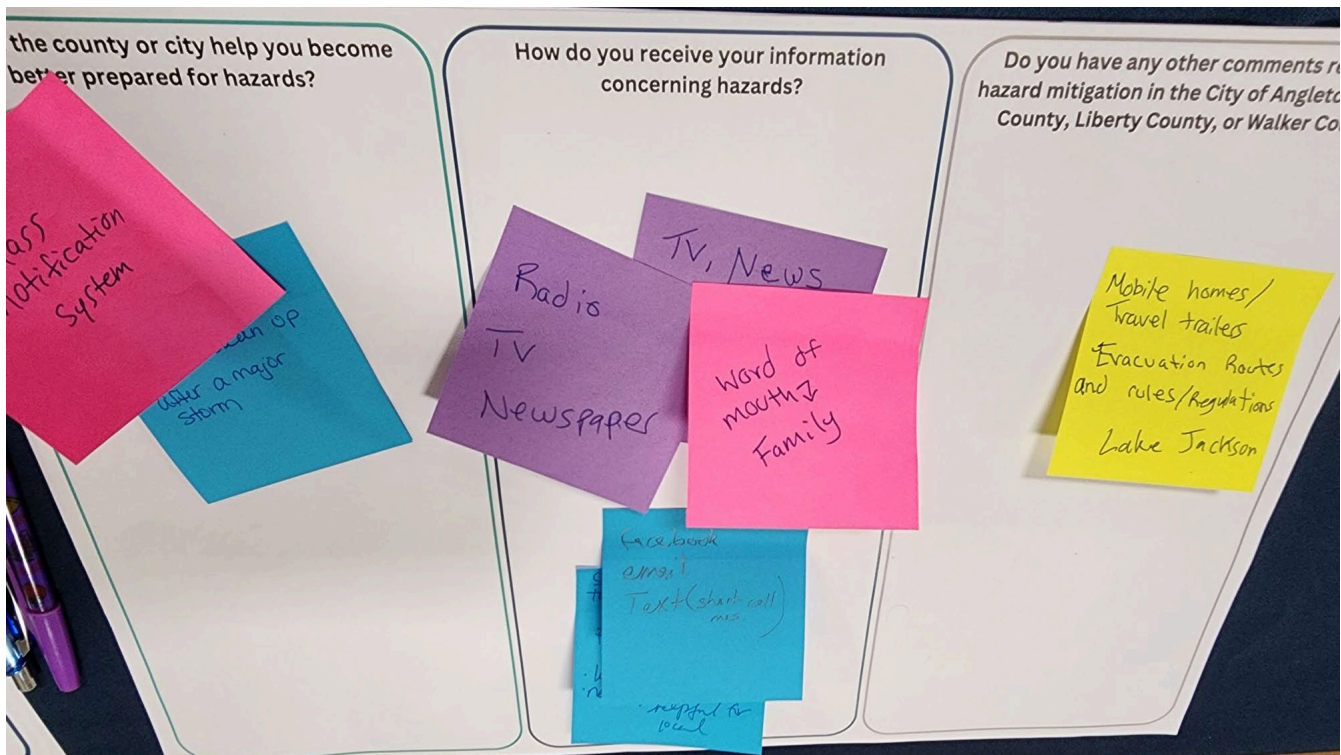
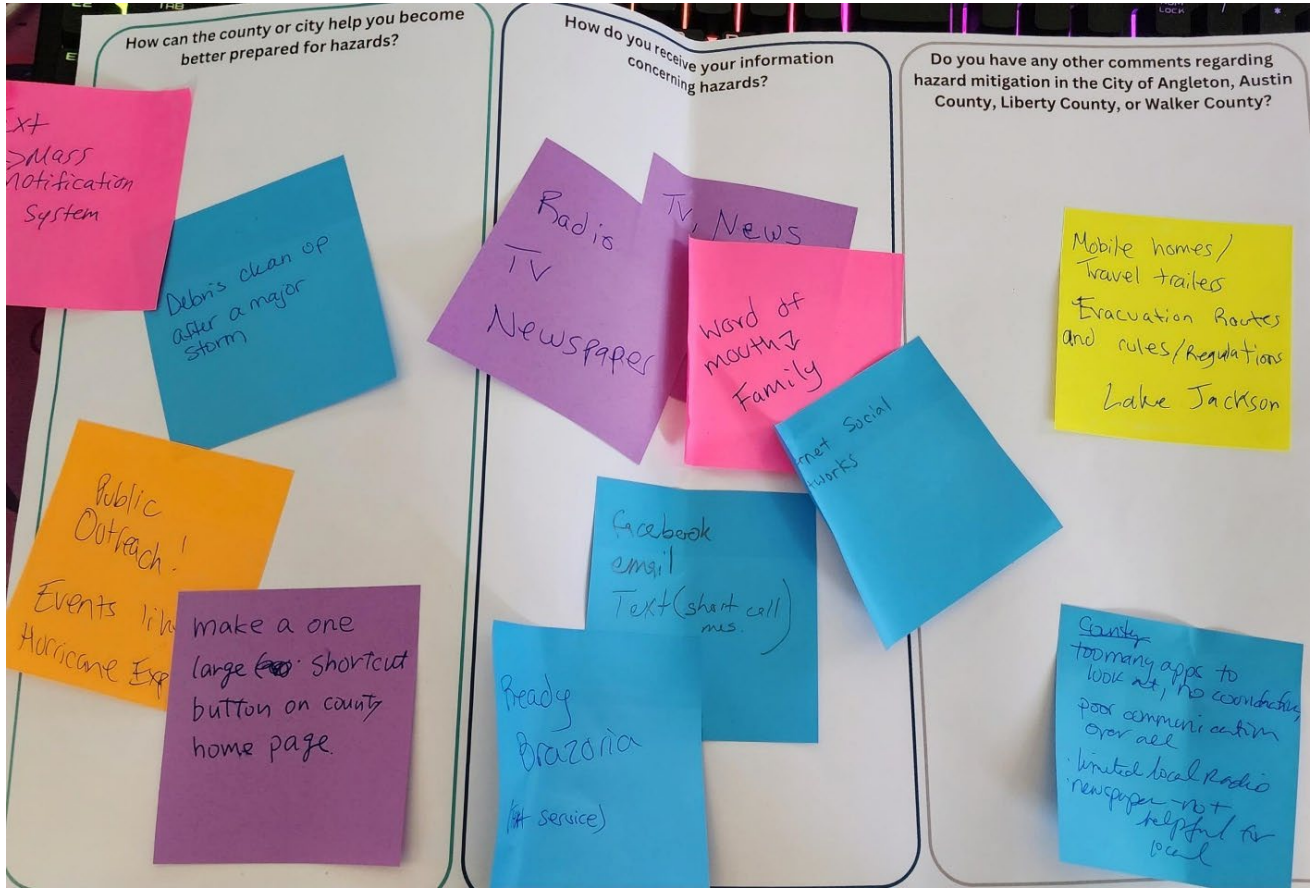
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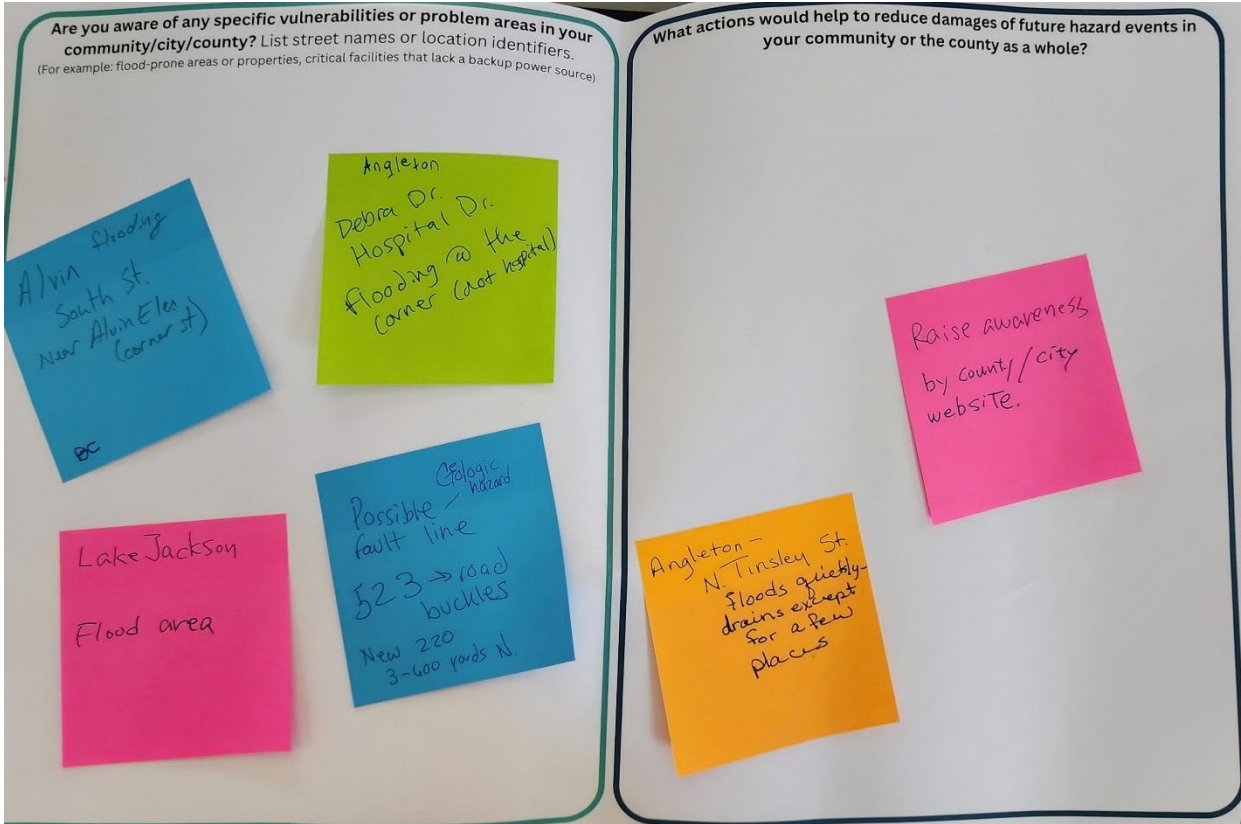


**Brazoria County Hurricane Expo, 6/17/2023- Event Photos**





Brazoria County Hurricane Expo, 6/17/2023- Event Photos



Brazoria County Hurricane Expo, 6/17/2023- Event Photos



# Appendix E

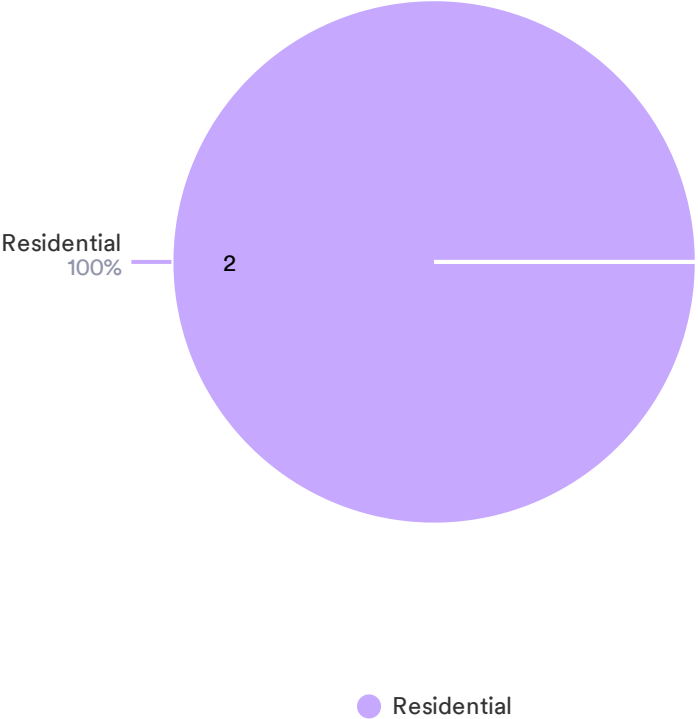
## SURVEY RESULTS

# Hazard Mitigation Plan Survey

City of Angleton

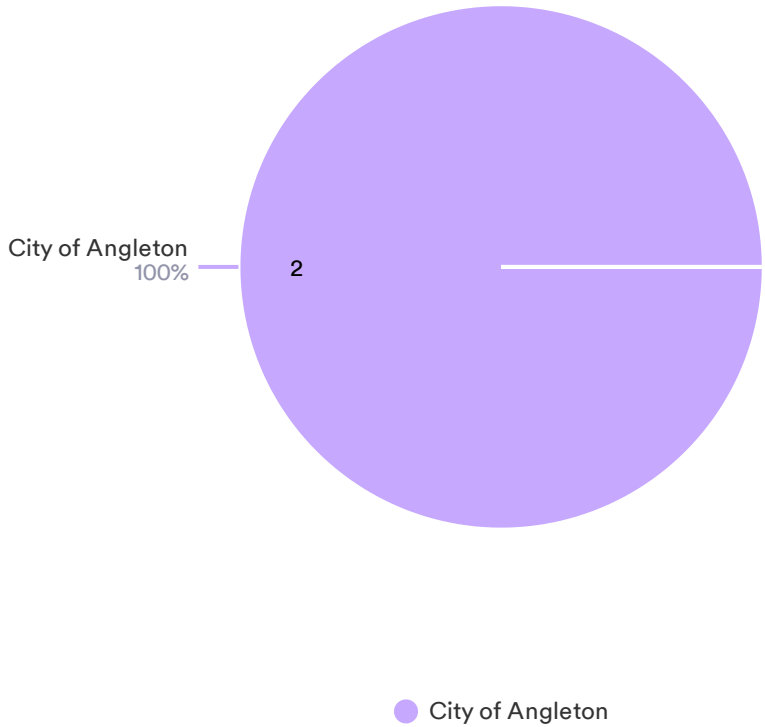
Are you responding on behalf of a residential or commercial property?

2 Responses



In which county or city is the residential or commercial property located?

2 Responses



In what city is the property located?

2 Responses

Data	Responses
Angleton	2

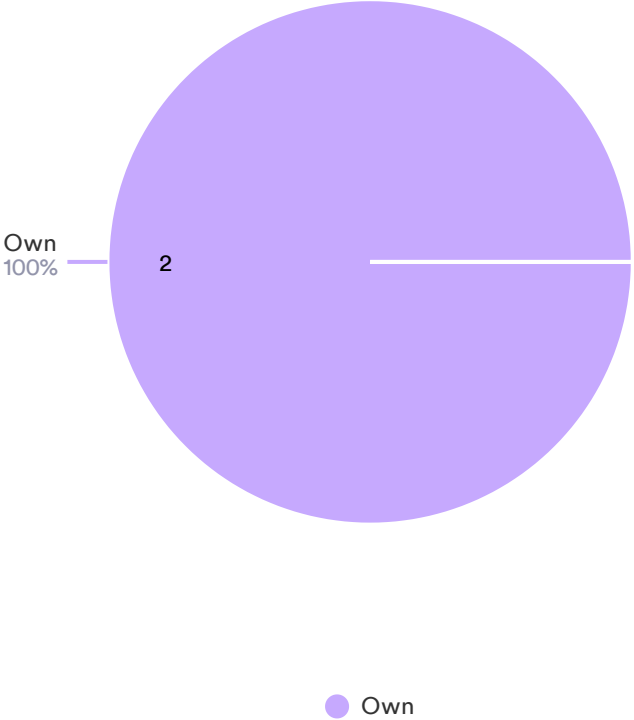
What is the zip code for the property?

2 Responses

Data	Responses
77515	2

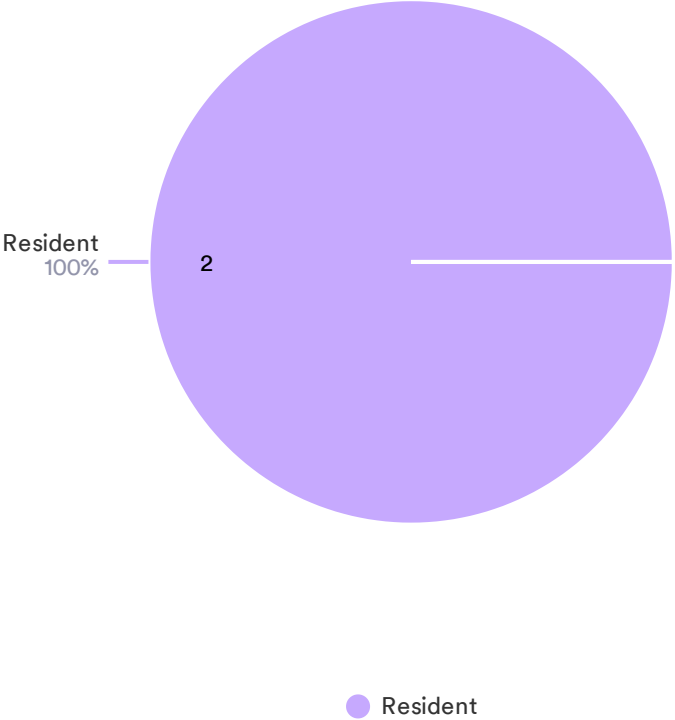
Do you own or rent your place of residence/business?

2 Responses



Which of the following best defines your role in the community?

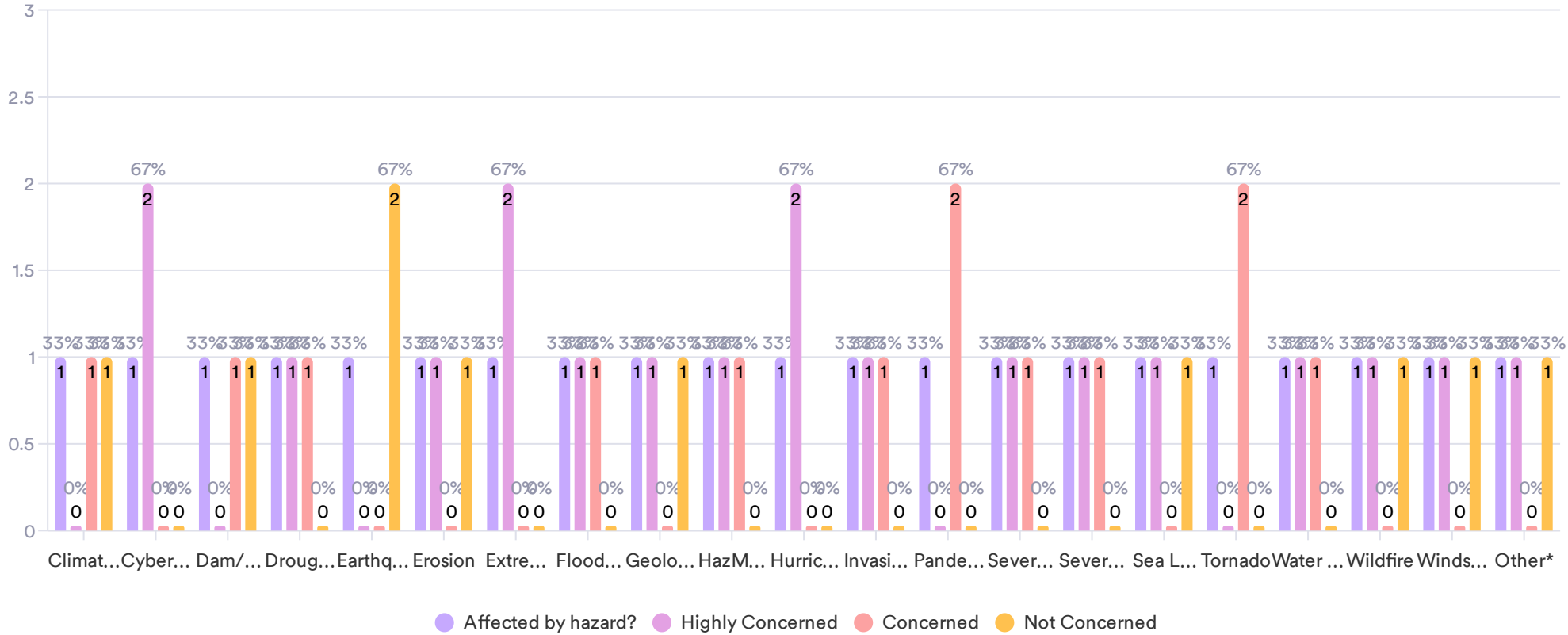
2 Responses





This question includes a list of hazards and will ask you a two-part question. In the past 5 years, have you been affected by each hazard and how concerned are you about each hazard?

2 Responses

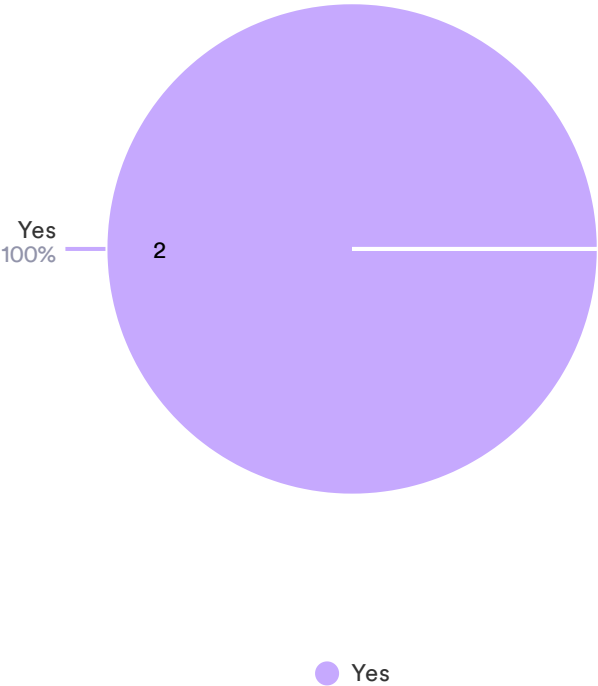


\*Please specify the "other" hazard for which you have a concern if indicated above.

0 Response

In the past 5 years, has your home or business been damaged by a hazard event? (Ex: pipes freezing during periods of cold temperatures, flooding of your home/business, tornado damage to your property, etc.)

2 Responses



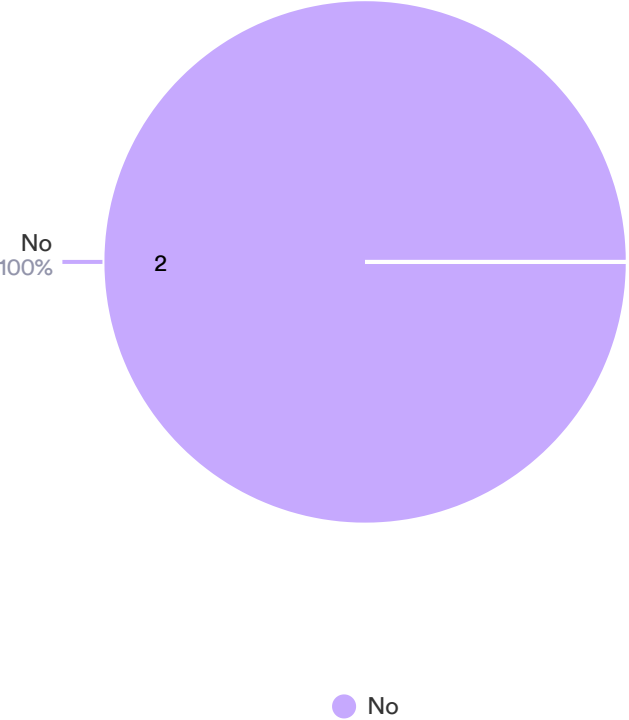
Please describe any relevant details such as the date of occurrence, duration, area affected (e.g., yard, building, roof), etc.

2 Responses

Data	Responses
Jan 2021. Burst pipe. Downstairs kitchen, living room and laundry room affected and replaced.	1
Pipes froze due to extreme winter temperatures in February 2021. Fence blew down during Hurricane Ike in 2008.	1

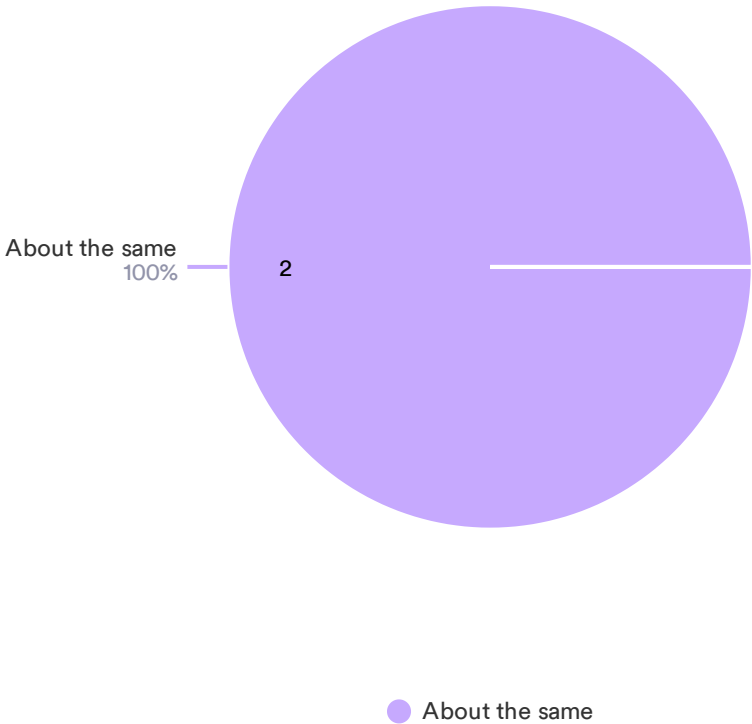
Did you report the damages to your local police or fire departments or to an emergency management agency?

2 Responses



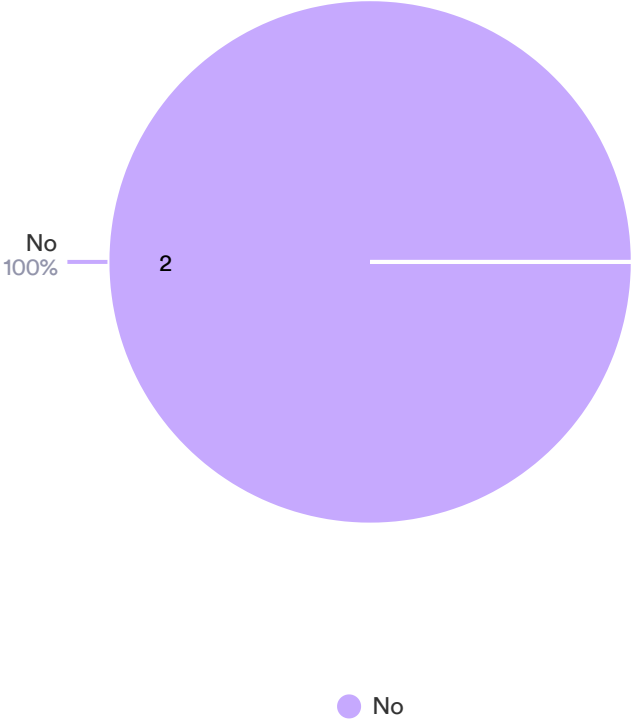
Is your property about the same, less, or more prone to flooding now than it was 5 years ago?

2 Responses



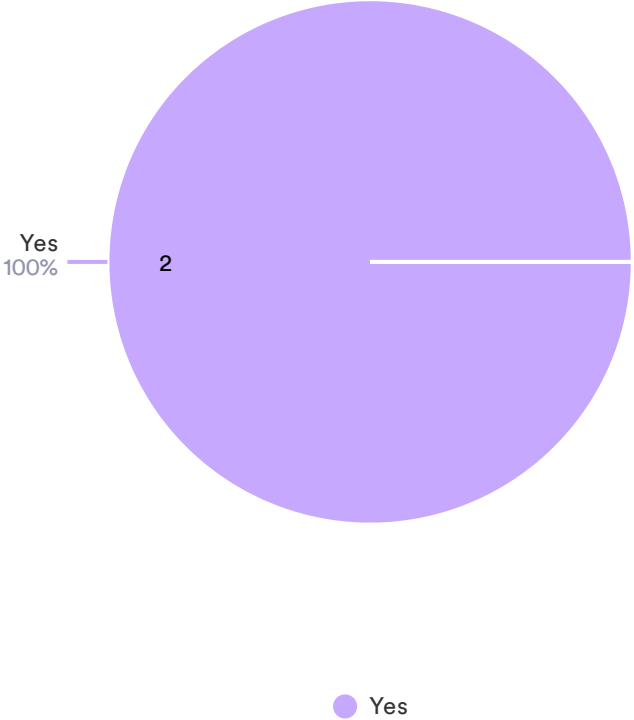
To the best of your knowledge, is your property located in a designated floodplain or special flood hazard area?

2 Responses



Do you have flood insurance through the National Flood Insurance Program?

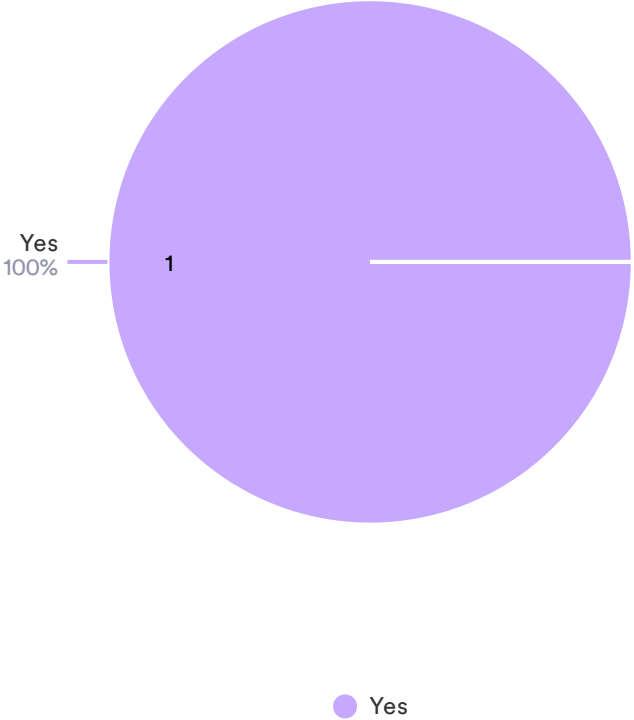
2 Responses





If your property is located outside of the floodplain, do you have flood insurance?

1 Response



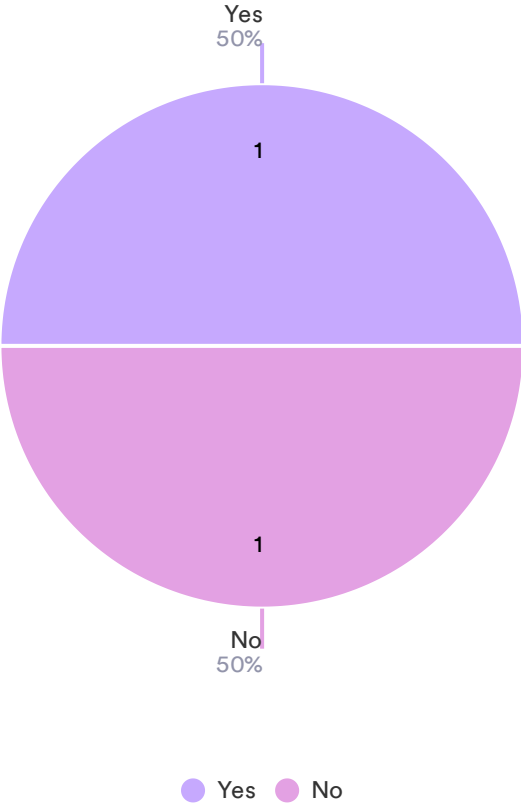
If you do not have flood insurance, please select the reasons that may apply.

0 Response



Have you taken any actions to make your home or community more resilient to hazards?

2 Responses



Please specify what actions you have taken to make your home or community more resilient to hazards?

1 Response

Data	Responses
Purchase all insurances. Keep trees away from my roof. Insulated pipes.	1

Please identify any specific vulnerabilities that you are aware of in your community/city/county (e.g., flood-prone areas or properties, critical facilities that lack a backup power source, etc.) List street names and other specific location identifiers if possible.

1 Response

Data	Responses
Our local recreation center on Valderas Street could use a generator so it can be a public shelter.	1

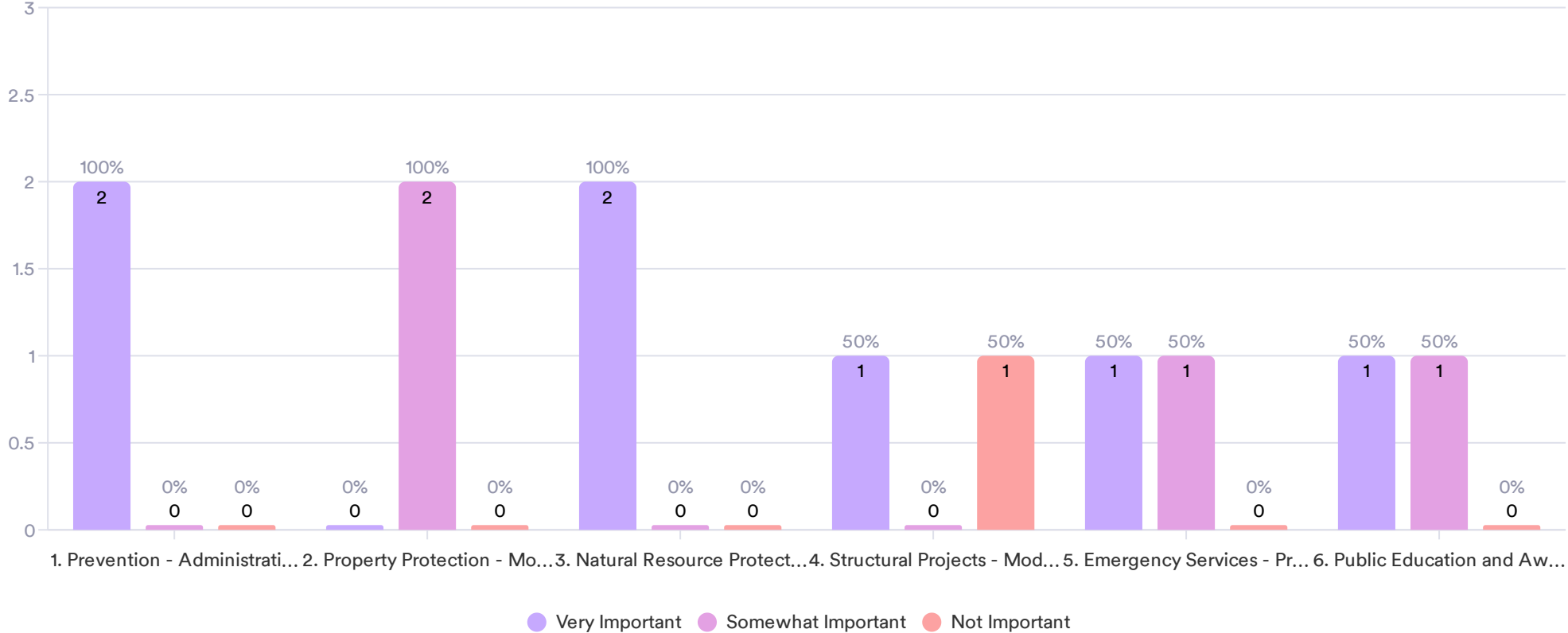
Which of the following categories of community assets do you believe are most susceptible to the impacts caused by hazards? Please rank the below in order of vulnerability with 1 being most vulnerable and 6 being least vulnerable. Drag and drop each category to change your order preference.

12 Responses

Data	Responses
2: Infrastructure - Damage or loss of bridges, utilities, schools, etc.	2
3: Governance - Ability to maintain order/provide public amenities and services	1
6: Cultural/Historic - Damage or loss of libraries, museums, fairgrounds, etc.	1
1: Human - Loss of Life/injuries	1
5: Cultural/Historic - Damage or loss of libraries, museums, fairgrounds, etc.	1
3: Economic - Business closures/job losses	1
4: Environmental - Damage or loss of forests, wetlands, waterways, etc.	1
5: Governance - Ability to maintain order/provide public amenities and services	1
Other entries	3

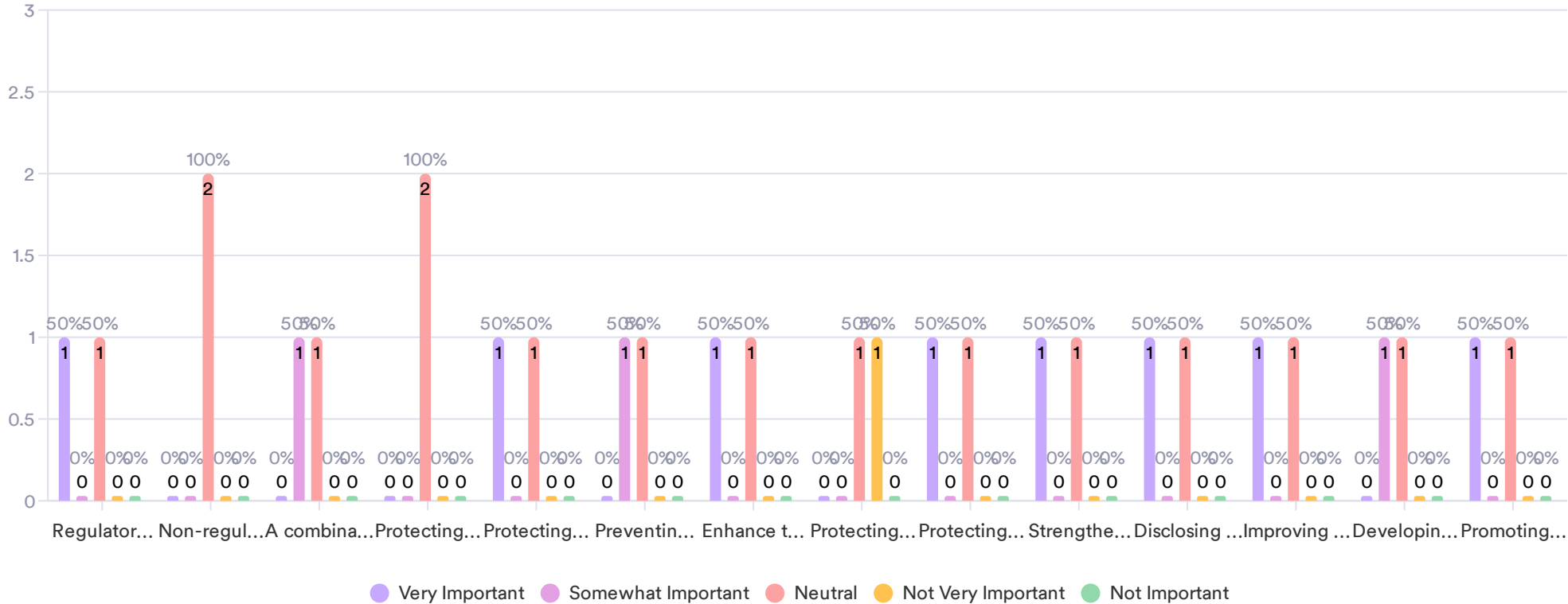
Several community-wide activities can reduce our risk from hazards. In general, these activities fall into one of six broad categories. Please tell us how important you think each category below is for your community.

2 Responses



Natural hazards can have a significant impact on a community but planning for these events before they can occur can help lessen the impacts. The following questions will help us determine priorities of our residents regarding planning for natural hazards. Please tell us how important each of the following strategies is to you.

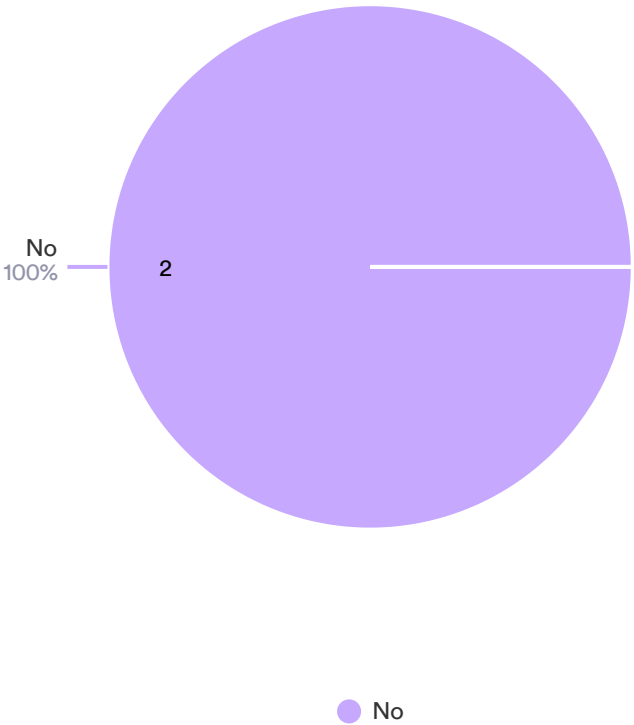
2 Responses





Do you have project ideas for how to protect the community from the impacts of hazards?

2 Responses

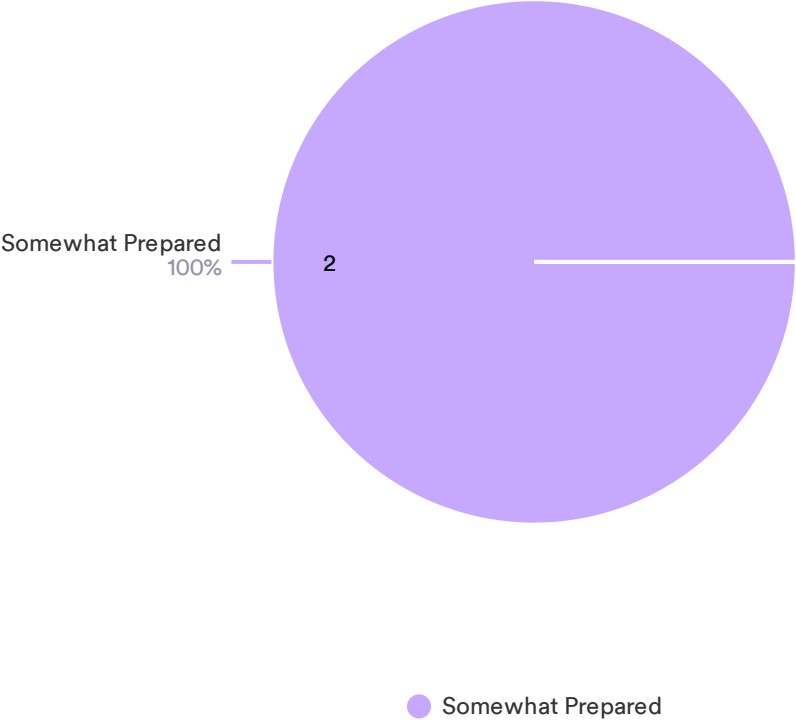


Please provide additional details about your project ideas for how to protect the community from the impacts of hazards.

0 Response

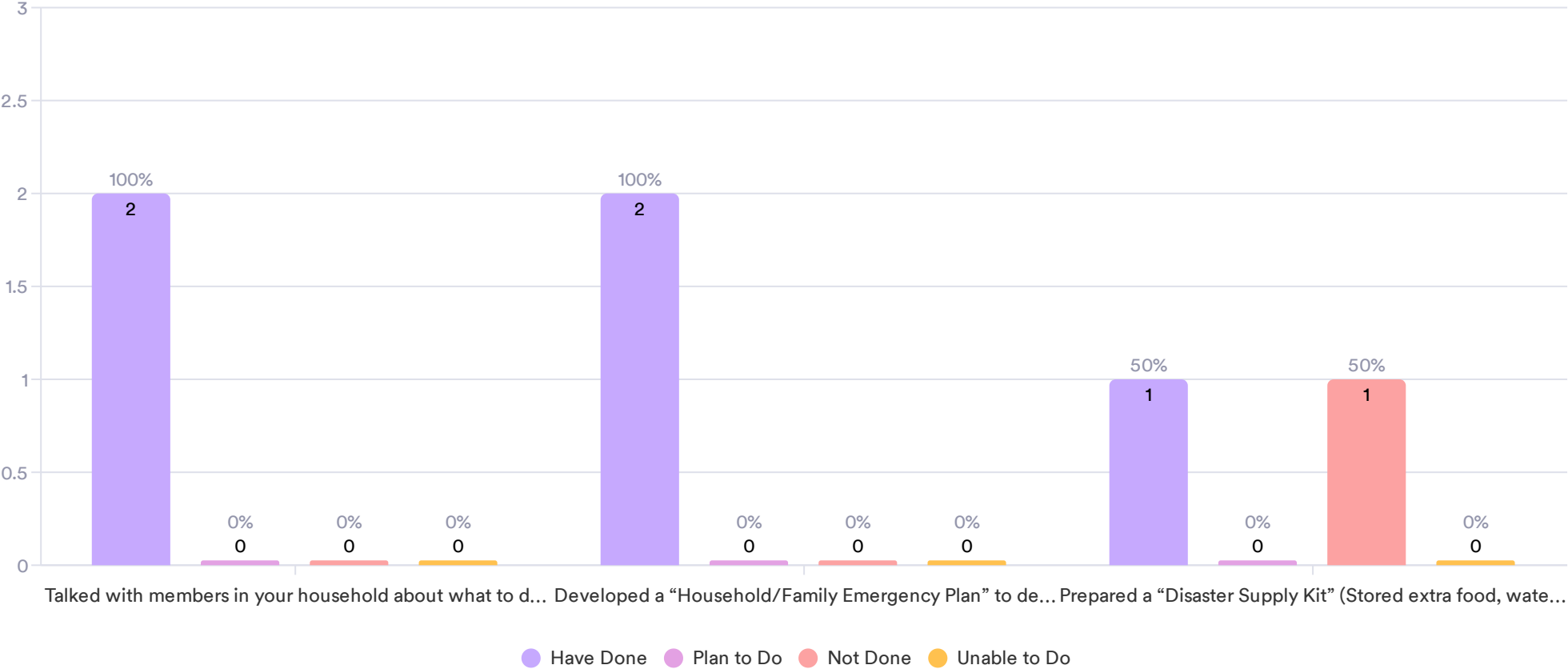
How prepared do you feel your household is to endure the impacts of natural hazard events likely to occur within your community?

2 Responses

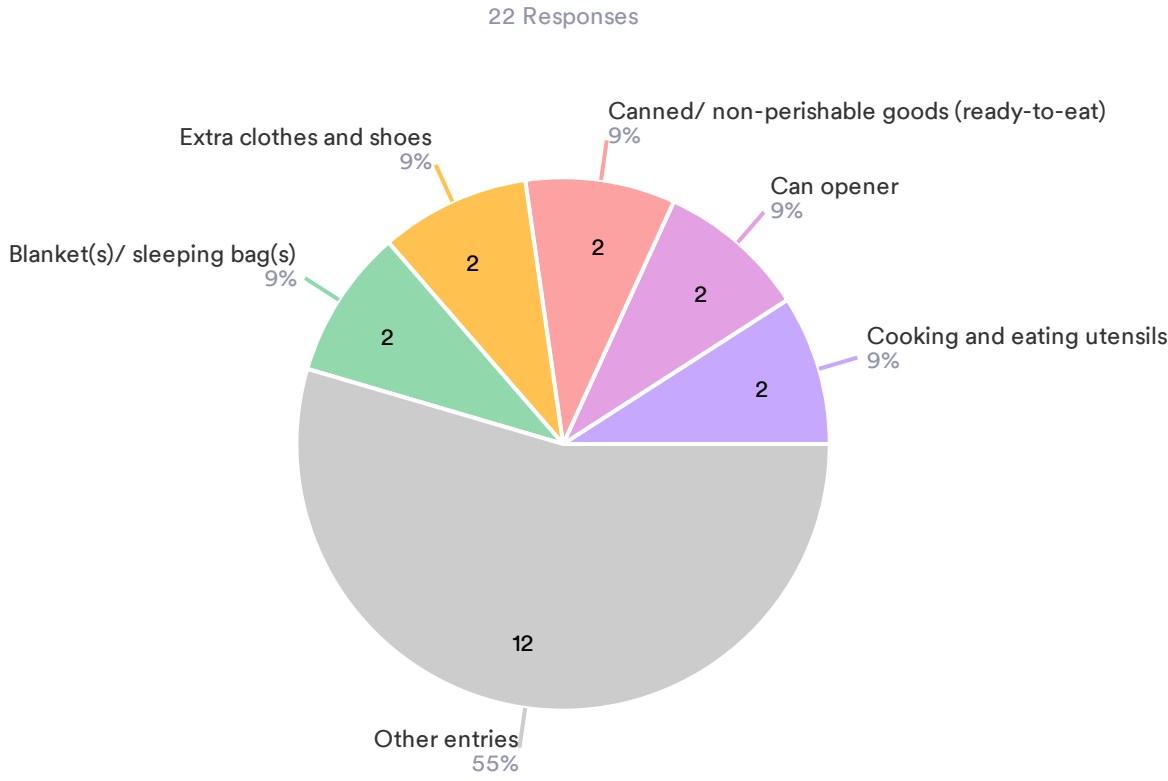


In your household, have you or another member done any of the following:

2 Responses

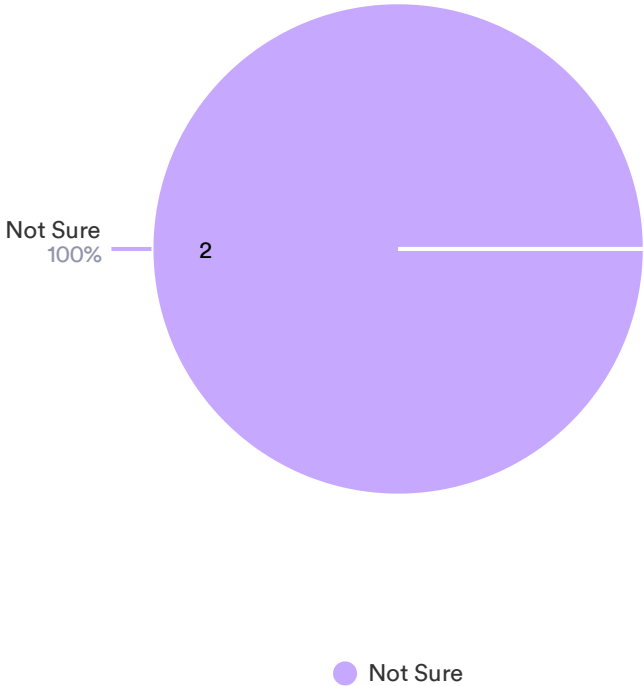


If a disaster occurred today such that all services were cut off from your home (power, gas, water, sewer), and you could not leave or access a store for 72 hours, which of these items do you have readily available? Please check all that apply.



Do you feel emergency services (fire, ambulance, police, hospital, etc.) are adequately prepared to deal with a disaster in your community/city/county?

2 Responses

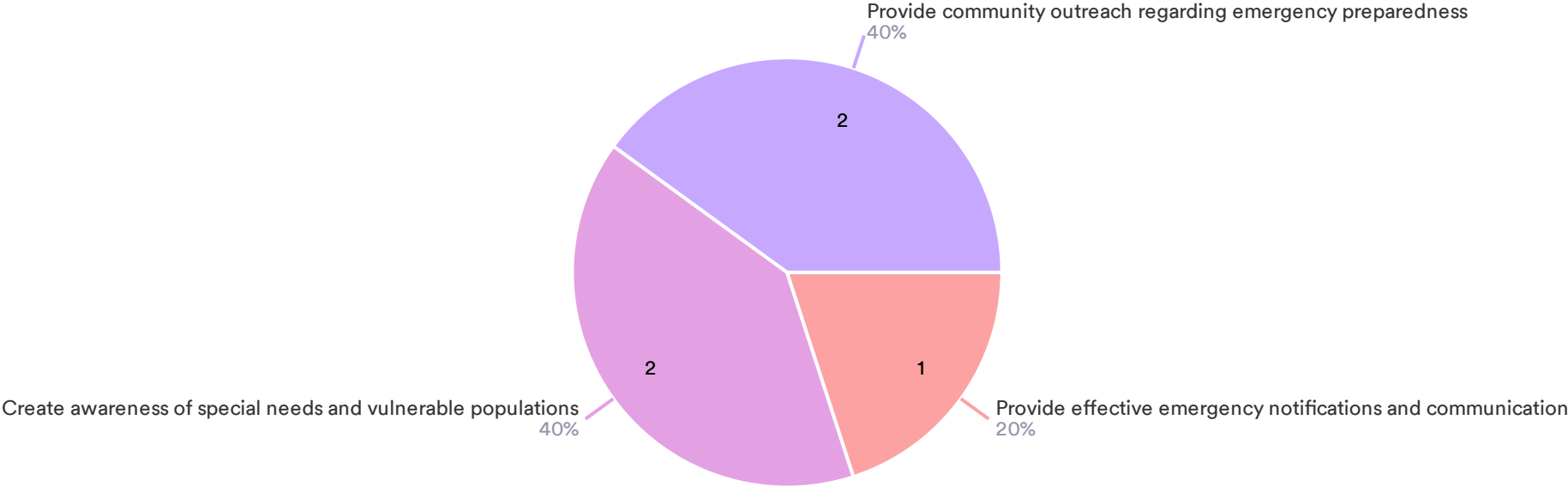


Briefly explain why you feel emergency services (fire, ambulance, police, hospital, etc.) are not adequately prepared to deal with a natural disaster in your community/city/county.

0 Response

How can the county or city help you become better prepared for a disaster? Check all that apply.

5 Responses

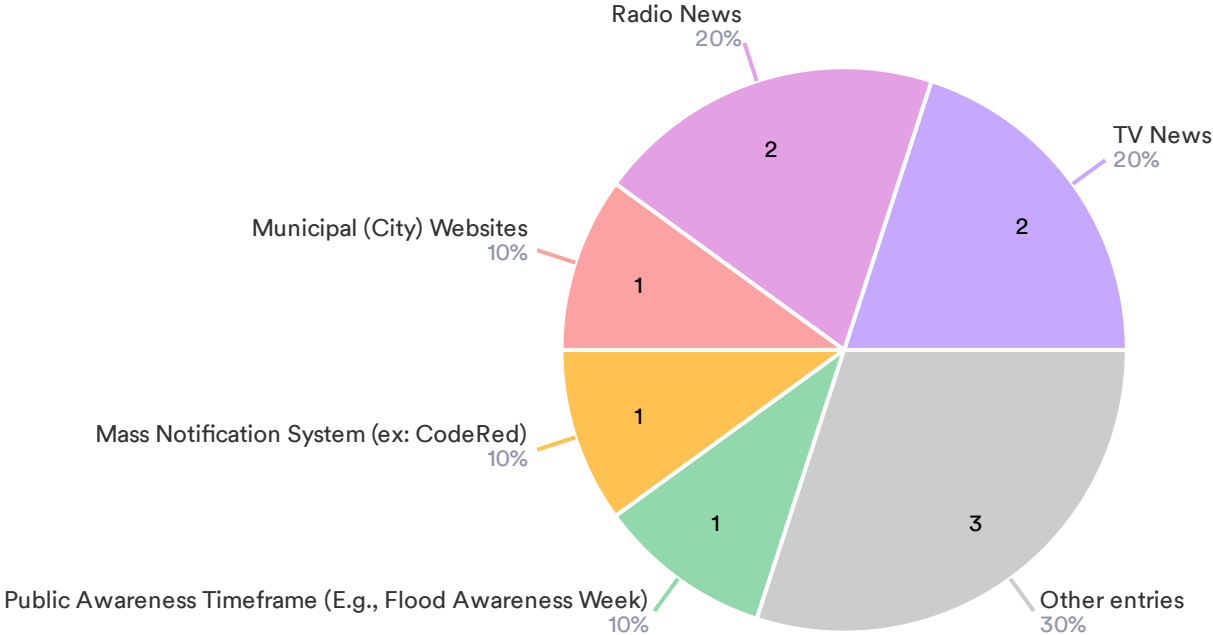


- Provide community outreach regarding emergency preparedness
- Create awareness of special needs and vulnerable populations
- Provide effective emergency notifications and communication



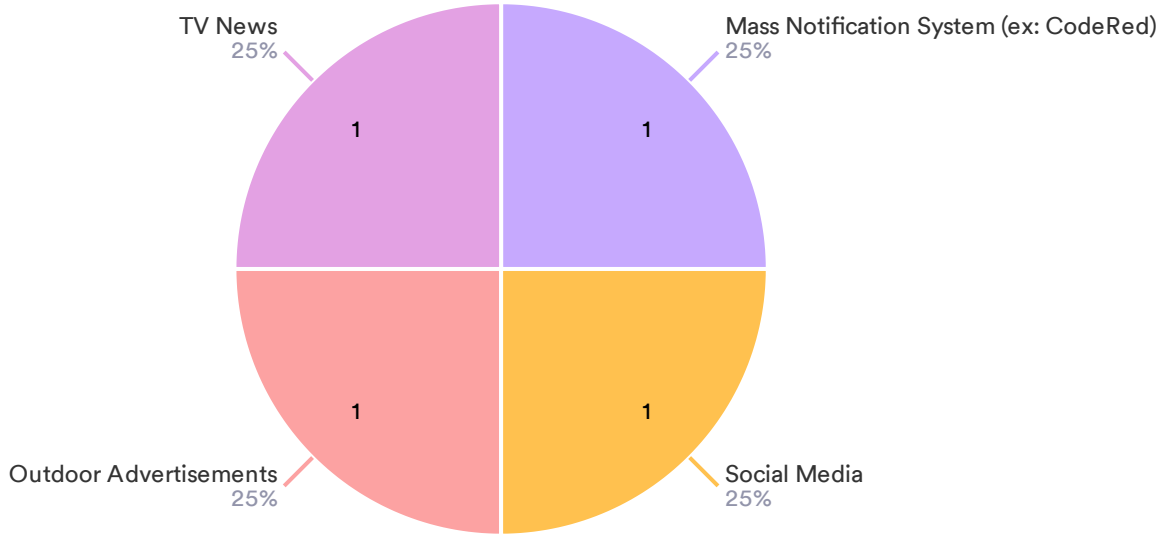
How do you receive your information concerning a disaster? (Check all that apply)

10 Responses



Of the communication methods listed, identify the top 3 methods that would be most effective for you to receive information and help to make your household, home, or business safer from disasters. (You may ONLY select 3)

4 Responses



Do you have any other comments, questions, or concerns regarding hazard mitigation in the City of Angleton, Austin County, Liberty County, or Walker County?

1 Response

Data	Responses
Long survey and not easy to fill in	1

# Thank You!

Hazard Mitigation Plan Survey

# Appendix F

## PLAN ADOPTION



## AGENDA ITEM SUMMARY FORM

**MEETING DATE:** April 23, 2024

**PREPARED BY:** Otis T. Spriggs, AICP, Development Services Director  
Hector Renteria, Public Works Director

**AGENDA CONTENT:** Discussion, update and possible action on the Brazoria County Courthouse Parking Lot and on-street parking details, including street signage.

**AGENDA ITEM SECTION:** Consent Agenda Item.

**BUDGETED AMOUNT:** None

**FUNDS REQUESTED:**

**FUND:** None

### EXECUTIVE SUMMARY:

The subject property and project area encompasses the four-(4) block area of the Brazoria County Courthouse Annex Project (Locust Street, Arcola Street, Magnolia Street, and Chenango Street. (Key Map is Attached).

The parking around Brazoria County Courthouse and Administration Building is steadily increasing due to the growing County population, size of the jury duty calls, and construction of the new buildings. The County has observed that on-street parking along city streets including Locust, Arcola, Magnolia, and Live Oak has increased since the opening on the new Administration Building. The County constructed two large parking lots including 410 parking spots before the construction of the new building. However, most visitors to the downtown corridor are using the on-street parking even before these parking lots are full.

Due to the lack of pavement markings and signage along the streets, these visitors are parallel parking along both sides of the streets, and in front of stop signs, crosswalks, and fire hydrants. This non-controlled street parking is creating issues for vehicles traveling these city streets, pedestrians going to the Courthouse, and city residents. The East side of Arcola Street, Live Oak Street, and Magnolia Street are in the residential area of the city and therefore the courthouse parking along these areas is adversely affecting these city residents.

Brazoria County is requesting that the City of Angleton partners with Brazoria County in installing pavement markings and signage to control parking and direct people to the County parking lots. The County is proposing to add angled parking along the West side of Arcola Street and add "No Parking Anytime" signs along the East side. The County is also proposing that "No Courthouse Parking" signs are installed along the East portion of Live Oak, Locust, and Magnolia Street. Finally,

the County is proposing the addition of wayfinding signs to help direct traffic to the county parking lots. The attached exhibit shows the proposed pavement markings and signage plan.

**Below is the summary of responsibilities that the County is proposing for the City and County.**

**Responsibilities of the City of Angleton:**

- Fabricating a total of 42 signs including “No Parking Anytime,” “No Courthouse Parking,” and “Stop” Signs (See Exhibit for quantity details)
- Approval of pavement marking and signage installation on City Streets

**Responsibilities of Brazoria County:**

- Fabrication of wayfinding signs (See Exhibit for quantity details)
- Installation of all signs
- Installation of all pavement markings

**RECOMMENDATION:**

City Council is asked to approve the Brazoria County Courthouse Parking Lot and on-Street Parking Details, including street signage plan as proposed and attached.

**Matt Hanks, P.E.**  
COUNTY ENGINEER

**Karen McKinnon, P.E.**  
ASST. COUNTY ENGINEER

(979) 864-1265  
OFFICE



**Wael Tabara, P.E., CFM**  
ASST. COUNTY ENGINEER

**Barbara X. Martinez, P.E.**  
STAFF ENGINEER

(979) 864-1270  
FAX

Item 12.

**BRAZORIA COUNTY ENGINEERING**

451 N VELASCO, SUITE 230  
ANGLETON, TEXAS 77515

April 11, 2024

Otis Spriggs  
Director of Development Services/City Planner  
121 S Velasco  
Angleton, TX 77515  
ospriggs@angleton.tx.us

RE: Parking around Brazoria County Courthouse and Administration Building

Dear Mr. Spriggs,

The parking around Brazoria County Courthouse and Administration Building is steadily increasing due to the growing County population, size of the jury duty calls, and construction of the new buildings. The County has observed that on-street parking along city streets including Locust, Arcola, Magnolia, and Live Oak has increased since the opening on the new Administration Building. The County constructed two large parking lots including 410 parking spots before the construction of the new building. However, most visitors to the downtown corridor are using the on-street parking even before these parking lots are full. Due to the lack of pavement markings and signage along the streets, these visitors are parallel parking along both sides of the streets, and in front of stop signs, crosswalks, and fire hydrants. This non-controlled street parking is creating issues for vehicles traveling these city streets, pedestrians going to the Courthouse, and city residents. The East side of Arcola Street, Live Oak Street, and Magnolia Street are in the residential area of the city and therefore the courthouse parking along these areas are adversely affecting these city residents.

Brazoria County is requesting that the City of Angleton partners with us to installing pavement markings and signage to control parking and direct people to the county parking lots. The County is proposing to add angled parking along the West side of Arcola Street and add “No Parking Anytime” signs along the East side. The County is also proposing that “No Courthouse Parking” signs are installed along the East portion of Live Oak, Locust, and Magnolia Street. Finally, the County is proposing the addition of wayfinding signs to help direct traffic to the county parking lots. The attached exhibits show the proposed pavement markings and signage plan.



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- Installation of all pavement markings

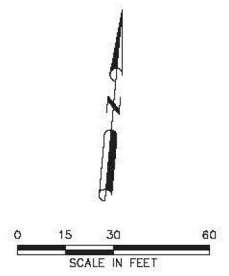
Brazoria County appreciates our partnership with the City of Angleton and thank you in advance for your assistance on this project.

Please contact me or Matt Hanks if you have any questions or concerns.

Sincerely,

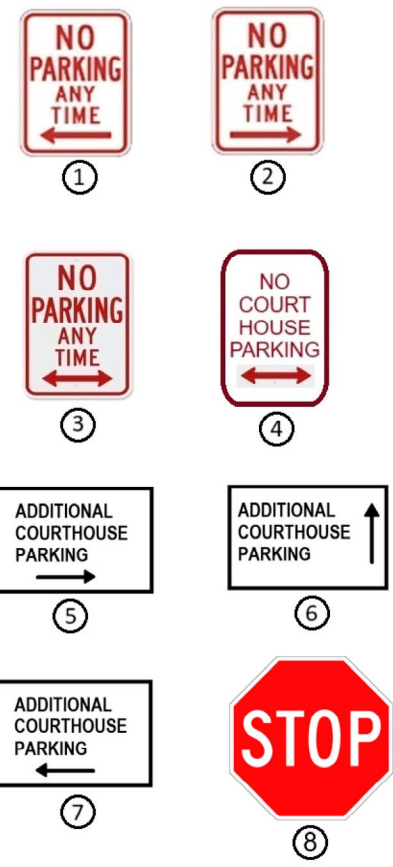


Karen O. McKinnon  
Assistant County Engineer

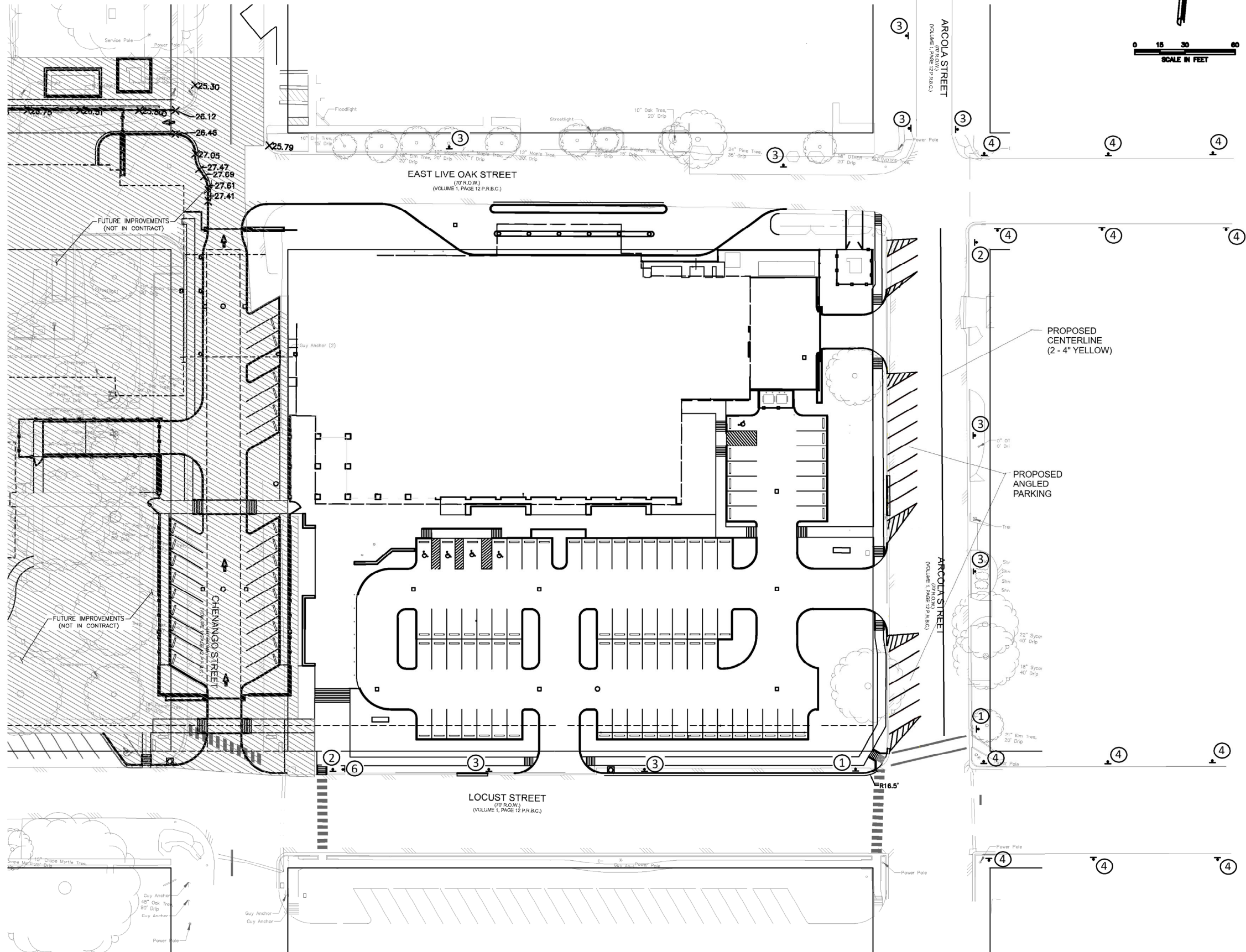
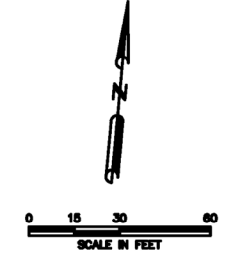


	SIGNAGE							
	①	②	③	④	⑤	⑥	⑦	⑧
SHEET 1 OF 3	2	2	11	12		1		
SHEET 2 OF 3	1	1	2	6	2	1	2	1
SHEET 3 OF 3	1	1	2					
TOTAL	4	4	15	18	2	2	2	1
FABRICATION	CITY				COUNTY			CITY
COUNTY WILL INSTALLED ALL SIGNS.								

	PAVEMENT MARKING	
	CENTERLINE (LF)	PARKING SPOTS # OF SPOTS
SHEET 1 OF 3	325	15
SHEET 2 OF 3	325	12
SHEET 3 OF 3	325	EXISTING
TOTAL	975	27
COUNTY WILL INSTALLED ALL PAVEMENT MARKINGS.		



<b>BRAZORIA COUNTY COURTHOUSE EXPANSION</b>	
SUMMARY OF PAVEMENT MARKING AND SIGNAGE PLAN FOR SURROUNDING CITY STREETS	
SHEET 1 OF 1	
586	



1



2



3



4



5



6



7



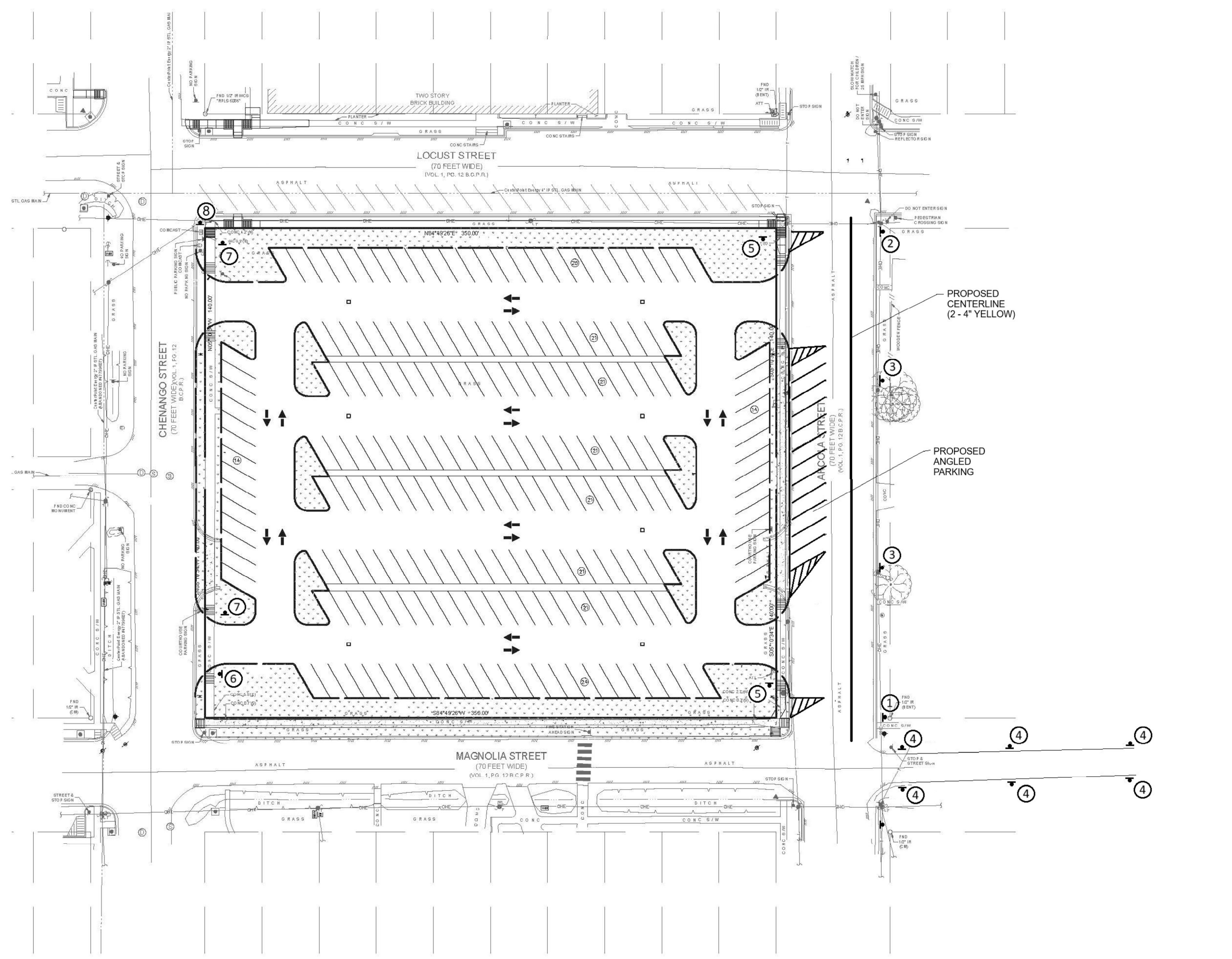
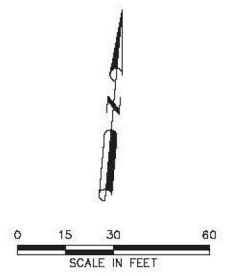
8

**BRAZORIA COUNTY  
COURTHOUSE EXPANSION**

**PAVEMENT MARKING AND  
SIGNAGE PLAN  
FOR SURROUNDING  
CITY STREETS**

SHEET 1 OF 3

587

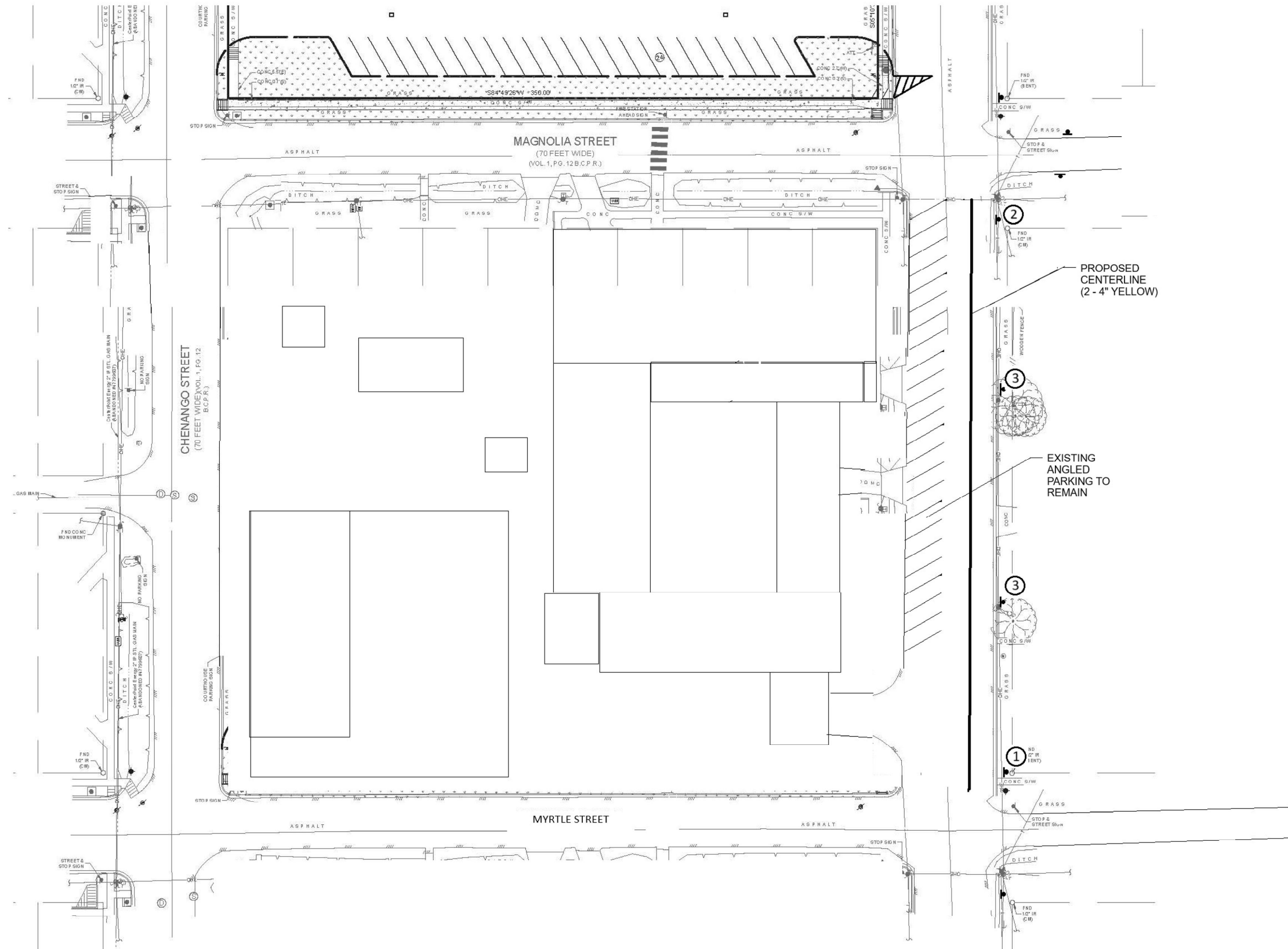
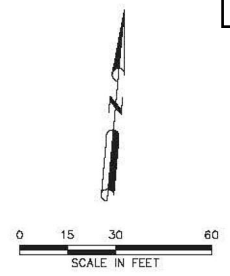


- 1 NO PARKING ANY TIME (Left Arrow)
- 2 NO PARKING ANY TIME (Right Arrow)
- 3 NO PARKING ANY TIME (Double Arrow)
- 4 NO COURT HOUSE PARKING (Double Arrow)
- 5 ADDITIONAL COURTHOUSE PARKING (Right Arrow)
- 6 ADDITIONAL COURTHOUSE PARKING (Up Arrow)
- 7 ADDITIONAL COURTHOUSE PARKING (Left Arrow)
- 8 STOP

BRAZORIA COUNTY  
COURTHOUSE EXPANSION

PAVEMENT MARKING AND  
SIGNAGE PLAN  
FOR SURROUNDING  
CITY STREETS

F:\Brazoria County - 00161619.01 - Courthouse Parking Lots11.00\_CAD\11.01 Drawings\C8\_Dimensional Control Site plan & Striping Plan (East).dwg Apr 20, 2020-10:47am



- ① NO PARKING ANY TIME (left arrow)
- ② NO PARKING ANY TIME (right arrow)
- ③ NO PARKING ANY TIME (left arrow)
- ④ NO COURT HOUSE PARKING (left arrow)
- ⑤ ADDITIONAL COURTHOUSE PARKING (right arrow)
- ⑥ ADDITIONAL COURTHOUSE PARKING (up arrow)
- ⑦ ADDITIONAL COURTHOUSE PARKING (left arrow)
- ⑧ STOP

**BRAZORIA COUNTY  
COURTHOUSE EXPANSION**

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PAVEMENT MARKING AND  
SIGNAGE PLAN  
FOR SURROUNDING  
CITY STREETS

SHEET 3 OF 3

589



## AGENDA ITEM SUMMARY FORM

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**MEETING DATE:** 4/23/24

**PREPARED BY:** Kyle Reynolds

**AGENDA CONTENT:** Discussion, update, and possible action on the City of Angleton Signage Regulations, Section 21.5-20- Signage maintenance and removal, regarding the repair or removal of business signs

**AGENDA ITEM SECTION:** Regular Agenda

---

**BUDGETED AMOUNT:** N/A **FUNDS REQUESTED:** N/A

**FUND:** N/A

**EXECUTIVE SUMMARY:**

Development Services will discuss the signs needing repair or removal and how Code Enforcement can and will enforce Sec. 21.5-20 of the sign ordinance. An inventory of abandoned or damaged signs is provided as an attachment.

**RECOMMENDATION:**

Council is asked to receive the update from Development Services and give direction and input.

Sec. 21.5-20. - Sign maintenance and removal.

- (a) *Maintenance.* All signs shall be thoroughly and continuously maintained in a safe condition. All signs shall be painted at least every two years, and the paint shall be kept in good condition, except for parts made of galvanized or noncorroding metal or treated with effective wood preservative. All parts shall be free from deterioration, termite infestation, rot, or loosening. All signs shall be able to withstand safely at all times the wind pressures specified in any applicable law. If any sign is not so maintained, the sign inspector shall give written notice to the owner, lessee, or permittee thereof to so maintain the sign, and said person shall comply with said notice.
- (b) *Unsafe signs.* If any sign in the opinion of the sign inspector becomes insecure, in danger of falling, or otherwise unsafe, the sign inspector shall give written notice of the condition of the sign to the owner, lessor, or permittee of the sign. Said person shall correct the unsafe condition of the sign in a manner to be approved by the sign inspector in conformity with the provisions of this chapter.
- (c) *Unlawful signs.* If any sign is installed, erected, constructed, altered, maintained, or used in violation of any of the terms of this chapter, the sign inspector shall give written notice to the owner, lessee, permittee of the sign to alter the sign so as to comply with this chapter, and said person shall do so.
- (d) *Removal of signs.*
- (1) Any notice to bring any sign into compliance with this chapter shall state that the sign may be subject to removal after a hearing. If such order is not complied with within 30 days, the sign inspector may initiate proceedings to revoke the permit and remove the sign at the expense of the owners, lessee, or permittee. Any sign company which received a permit for any removed sign or sign covered by a revoked permit shall be deemed to have forfeited the performance bond required by this chapter, and the sign inspector shall apply the proceeds of said bond to the removal of the sign.
  - (2) Any abandoned sign may be removed by the city at the expense of the owner, lessee, or permittee of the sign or the premises.
  - (3) The city shall be entitled to a lien against any premises from which the city removes a sign, to secure reimbursement to the city of all costs of removal.
  - (4) Any sign in violation of this chapter may be seized, transported, and impounded by the sign inspector after a hearing as provided by the Code of Ordinances. The custodian of the storage area shall maintain records of where such signs were located when they were impounded and the date of impoundment, and shall hold the signs in the storage area for a period of not more than 30 days. Any sign so held may be deemed by the owner thereof upon the payment of a fee to the city consisting of those sign seizure and daily storage fees as listed in the fee

schedule of the City of Angleton. Such fees shall be in addition to and not in lieu of any fine imposed upon such owner for violation of this chapter. Any sign impounded and stored and not redeemed by the owner thereof within 30 days may be destroyed or sold at auction by the city.

- (5) The removal of any sign by the city or the sign inspector under any provision of this chapter shall require a hearing before the board of adjustment and a determination by said board that the sign should be removed. The procedure shall be the same as for revocation of a permit.

(Ord. No. 2303, § 20, 6-15-93; Ord. No. 2507, § 20, 9-4-01; Ord. No. 20210810-009, § 49, 8-10-21)



Aarons	1846 N. Velasco	Storm Damage to pole sign
China Buffet	1227 N. Velasco	Closed business, sign needs to be removed
McDonalds	1716 N. Velasco	Storm damage to pole sign
TGB	1717 N. Velasco	Storm Damage to pole sign
Puerto Vallarta	1708 N. Velasco	Storm damage to pole sign
Americas Best Value	1235 N. Velasco	Storm damage to pole sign
MF Nails strip	1121 N. Velasco	2 old pole signs need to be removed
Ace Cash Express	1103 N. Velasco	Storm damage to community sign/ one sign on community :
Peters Cut Rate	1036 N. Velasco	Storm damage to pole sign
Annas House Boutique	518 E. Mulberry	Residential home that needs old sign removed
Old Pizza Hut	911 E. Mulberry	Old pole sign that needs to be removed
H&S Gun Club	2301 E. Mulberry	off premise advertising/ needs to be removed
Nenas	621 W. Mulberry	Old used car pole sign needs to be removed
Early Bird	500 W. Mulberry	Storm damage to pole sign/ tatherd banner on building need
Durans BBQ	2024 E. Mulberry	Closed business/ advertising sign needs remov
Jeters Antiques	2300 E. Mulberry	Off premise advertising/ needs rem
Old Budget Inn	2209 E. Mulberry	Old pole sign needs removed
TLC-HCS	933 E. Mulberry	Closed business/ wall signage needs removed
Will Clark Realty	1100 N. Velasco	Storm damage to pole sign
Quik Quak Carwash	1722 N. Velasco	Old Shell pole sign needs removed
China Wok	630 N. Velasco	Storm Damage to pole sign
County Seat Barber	1228 E. Mulberry	Closed business/ advertisement needs to be removed
Old Hamilton Studio	2038 E. Mulberry	Old pole sign needs removed
UTMB Health	2323 E. Mulberry	Closed business/ advertisement needs to be removed
Label Warehouse	1220 E. Mulberry	Closed business/ advertisement needs to be removed
Old Baytown Seafood	1527 E. Mulberry	Old pole sig SIGN SURVEY (THRU out TOWN)
288B N/S- 35 E/W	A few banner flags are tethered/ need removed	



# AGENDA ITEM SUMMARY FORM

**MEETING DATE:** 04/23/2024

**PREPARED BY:** Jamie Praslicka

**AGENDA CONTENT:** Discussion on status of the March 15<sup>th</sup> Severe Storm Debris

**AGENDA ITEM SECTION:** Regular Agenda

**BUDGETED AMOUNT:** N/A

**FUNDS REQUESTED:** N/A

**FUND:** N/A

**EXECUTIVE SUMMARY:**

The Office of Emergency Management will provide an update on the management of the debris from the March 15<sup>th</sup> severe storm.

**RECOMMENDATION:**

N/A



## AGENDA ITEM SUMMARY FORM

**MEETING DATE:** April 23, 2024

**PREPARED BY:** Otis T. Spriggs, AICP, Director of Development Services

**AGENDA CONTENT:** Discussion and possible input from City Council on a Conceptual Plan for Yaklin Dodge Dealership to be located adjacent and north of the Gulf Coast Ford Dealership property, which is located at 3000 SH 288 Access Road.

**AGENDA ITEM SECTION:** Regular Agenda

**BUDGETED AMOUNT:** None

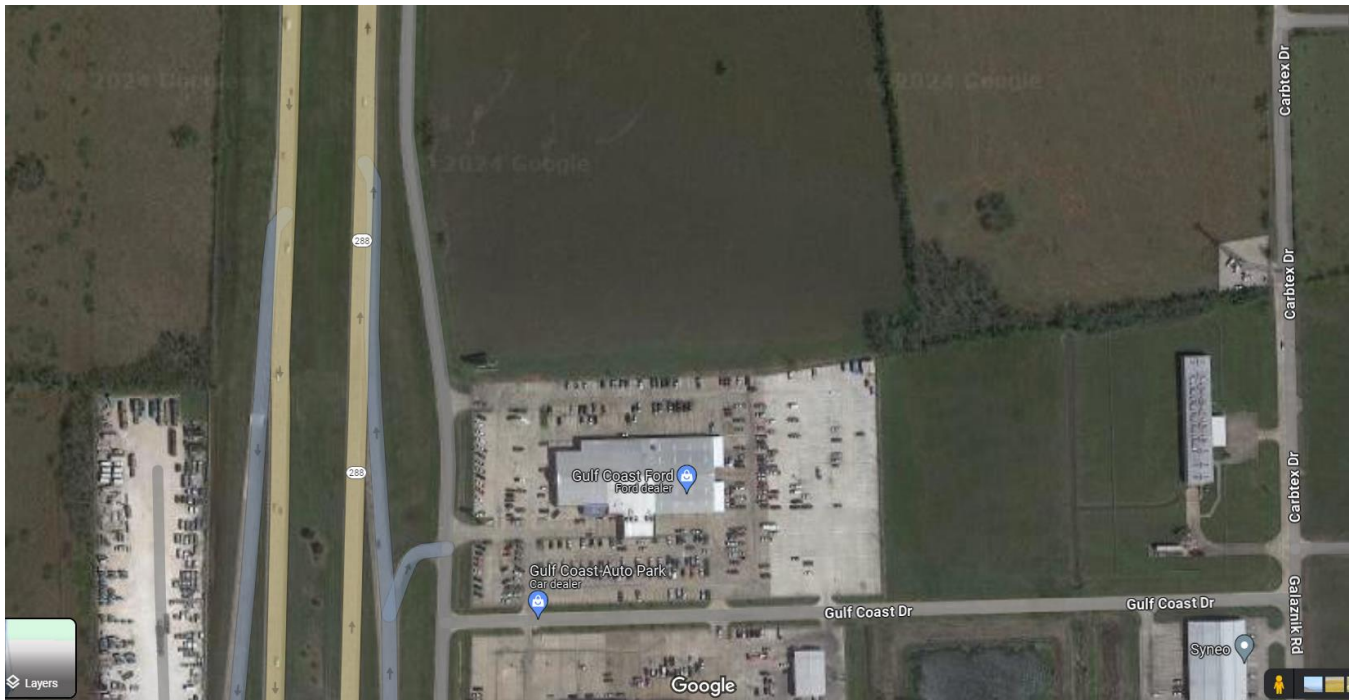
**FUNDS REQUESTED:** None

**FUND:** None

**EXECUTIVE SUMMARY:**

Yaklin Chrysler Dodge Jeep Ram currently located at 1212 S. Velasco St. is in discussion with City Development Staff to be relocated to a new site located north of the Gulf Coast Ford Dealership property, which is located at 3000 SH 288 Access Road. N The site is currently in the City's ETJ.

The owner would like to introduce the project to City Council and gain input on possible services that will be needed from a capacity standpoint on water and sewer.



**RECOMMENDATION:**

Staff recommends holding discussion and receive information regarding the new Yaklin Automobile Dealership Concept presentation.

CITY PLANNING COMMISSION  
03 022939

I HEREBY CERTIFY THAT THE ABOVE AND FOREGOING REPLAT OF ANGLETON COMMERCIAL SUBDIVISION NO. 6 WAS APPROVED THIS 20th DAY OF April, 2003, BY THE CITY PLANNING COMMISSION OF ANGLETON, TEXAS.

CHAIRMAN  
*David P. Jones*

WITNESS MY HAND THIS 20th DAY OF April, 2003.

CITY SECRETARY  
*Crystal R. Gumble*

CITY COUNCIL

I HEREBY CERTIFY THAT THE ABOVE AND FOREGOING REPLAT OF ANGLETON COMMERCIAL SUBDIVISION NO. 6 WAS APPROVED THIS 20th DAY OF April, 2003, BY THE CITY COUNCIL OF ANGLETON, TEXAS.

MAYOR  
*David P. Jones*

SAID ADDITION SHALL BE SUBJECT TO ALL OF THE REQUIREMENTS OF THE CODE OF ORDINANCES OF THE CITY OF ANGLETON, TEXAS.

WITNESS MY HAND THIS 20th DAY OF April, 2003.

CITY SECRETARY  
*Crystal R. Gumble*

BY THE APPROVAL AND RECORDING OF THIS REPLAT OF PORTIONS OF ANGLETON COMMERCIAL SUBDIVISION NO. 6, THE PRIOR DEDICATIONS OF STREETS AND EASEMENTS, WHERE IN CONFLICT WITH THOSE SHOWN ON THIS PLAT ARE NULL AND VOID.

ANGLETON DRAINAGE DISTRICT  
ACCEPTED, THIS 20th DAY OF April, 2003, BY THE ANGLETON DRAINAGE DISTRICT.

THE BOARD OF SUPERVISORS OF THE ANGLETON DRAINAGE DISTRICT DOES NOT WARRANT, REPRESENT OR GUARANTEE:

- THAT DRAINAGE FACILITIES OUTSIDE THE BOUNDARIES OF THE SUBDIVISION ARE AVAILABLE TO RECEIVE RUNOFF FROM THE FACILITIES DESCRIBED IN THIS PLAT.
- THAT DRAINAGE FACILITIES DESCRIBED IN THIS PLAT ARE ADEQUATE FOR RAINFALL IN EXCESS OF ANGLETON DRAINAGE DISTRICT MINIMUM REQUIREMENTS.
- THAT BUILDING ELEVATION REQUIREMENTS HAVE BEEN DETERMINED BY THE ANGLETON DRAINAGE DISTRICT.
- THAT THE DISTRICT ASSUMES ANY RESPONSIBILITY FOR CONSTRUCTION, OPERATION, OR MAINTENANCE OF SUBDIVISION DRAINAGE FACILITIES.

THE DISTRICT'S REVIEW IS BASED SOLELY ON THE DOCUMENTATION SUBMITTED FOR REVIEW, AND ON THE RELIANCE ON THE REPORT SUBMITTED BY THE TEXAS REGISTERED PROFESSIONAL ENGINEER. THE DISTRICT'S REVIEW IS NOT INTENDED NOR WILL SERVE AS A SUBSTITUTION OF THE OVERALL RESPONSIBILITY AND/OR DECISION MAKING POWER OF THE PARTY SUBMITTING THE PLAT OR PLAN HEREIN, THEIR OR ITS PRINCIPALS OR AGENTS.

CHAIRMAN  
*David P. Jones*

MEMBER  
*Francis P. McCullough*

MEMBER  
*William Sparks*

THE STATE OF TEXAS  
COUNTY OF BRAZORIA

KNOW ALL MEN BY THESE PRESENTS, THAT:

I, FRANCIS P. McCULLOUGH, PRESIDENT, CARBTEX CORPORATION, OWNER OF TRACT 3A AS SHOWN ON THE REPLAT OF ANGLETON COMMERCIAL SUBDIVISION NO. 6, FILED FOR RECORD IN VOLUME 20, PAGES 253 & 254 OF THE PLAT RECORDS OF BRAZORIA COUNTY, TEXAS DO HEREBY SUBMIT TO THE PUBLIC ALL STREETS AND EASEMENTS SHOWN HEREON FOR THEIR USE FOREVER, AND DO HEREBY DEDICATE TO THE PUBLIC ALL STREETS AND EASEMENTS SHOWN HEREON FOR THEIR USE FOREVER, AND DO BIND OURSELVES, OUR HEIRS, SUCCESSORS, AND ASSIGNS TO WARRANT AND DEFEND THE TITLE OF THE LAND SO DEDICATED BY, THROUGH AND UNDER THE UNDERSIGNED, BUT NOT OTHERWISE.

WITNESS MY HAND THIS 20th DAY OF April, 2003.

*Francis P. McCullough*  
FRANCIS P. McCULLOUGH, PRESIDENT  
CARBTEX CORPORATION

THE STATE OF TEXAS  
COUNTY OF BRAZORIA

KNOW ALL MEN BY THESE PRESENTS, THAT:

BEFORE ME, THE UNDERSIGNED AUTHORITY, ON THIS DAY PERSONALLY APPEARED FRANCIS P. McCULLOUGH, PRESIDENT, CARBTEX CORPORATION, KNOWN TO ME TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT, AND ACKNOWLEDGED TO ME THAT HE EXECUTED THE SAME FOR THE PURPOSES AND CONSIDERATIONS SET FORTH ON BEHALF OF SAID CORPORATION.

GIVEN UNDER MY HAND AND SEAL THIS 30th DAY OF April, 2003.

*Crystal R. Gumble*  
CRYSTAL R. GUMBLE  
Notary Public, State of Texas  
My Comm. Expires September 21, 2004

THE STATE OF TEXAS  
COUNTY OF BRAZORIA

KNOW ALL MEN BY THESE PRESENTS, THAT:

I, CATHY HIRNIC, VICE PRESIDENT, FOR THE BENEFIT OF COMMERCIAL STATE BANK OF EL CAMPO, TEXAS, OWNER AND HOLDER OF A NOTE AND LIEN AGAINST TRACT 3A, AS SHOWN ON THE REPLAT, REPLAT OF ANGLETON COMMERCIAL SUBDIVISION NO. 6, FILED FOR RECORD IN VOLUME 20, PAGES 253-254 OF THE PLAT RECORDS OF BRAZORIA COUNTY, TEXAS, AS EVIDENCED BY THAT CERTAIN INSTRUMENT OF RECORD AT FILM BOOK NUMBER 02-049129 IN THE OFFICE OF THE COUNTY CLERK OF BRAZORIA COUNTY, TEXAS, DO HEREBY IN ALL THINGS SUBORDINATE OUR INTEREST IN SAID PROPERTY TO THE PURPOSES AND EFFECTS OF SAID PLAT AND WE HEREBY CONFIRM THAT WE ARE THE PROPER OWNERS OF A NOTE AND LIEN AND HAVE NOT ASSIGNED THE SAME NOR ANY PART THEREOF.

WITNESS MY HAND AND SEAL THIS 19th DAY OF February, 2003.

*Cathy Hirnic*  
CATHY HIRNIC, VICE PRESIDENT  
COMMERCIAL STATE BANK OF EL CAMPO, TEXAS

THE STATE OF TEXAS  
COUNTY OF BRAZORIA

KNOW ALL MEN BY THESE PRESENTS, THAT:

BEFORE ME, THE UNDERSIGNED AUTHORITY, ON THIS DAY PERSONALLY APPEARED CATHY HIRNIC, VICE PRESIDENT, FOR THE BENEFIT OF COMMERCIAL STATE BANK OF EL CAMPO, TEXAS, KNOWN TO ME TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE ABOVE AND FOREGOING INSTRUMENT, AND ACKNOWLEDGED TO ME THAT SHE EXECUTED THE SAME FOR THE PURPOSES AND CONSIDERATIONS THEREIN EXPRESSED AND IN THE CAPACITY THEREIN SET FORTH, AND AS AN ACT AND DEED OF SAID COMMERCIAL STATE BANK OF EL CAMPO, TEXAS.

GIVEN UNDER MY HAND AND SEAL THIS 19th DAY OF February, 2003.

*Susan Joyce*  
SUSAN JOYCE  
Notary Public, State of Texas  
Commission Expires 01-07-2006

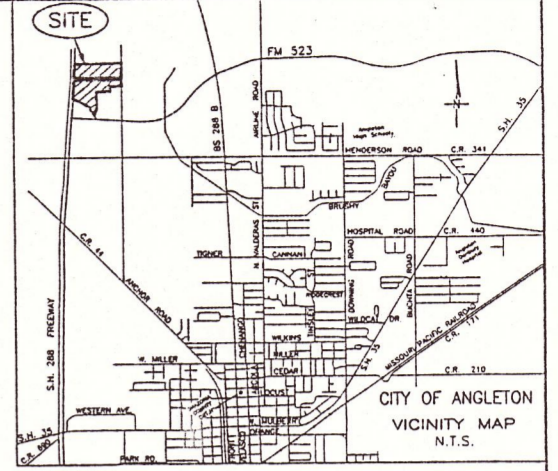
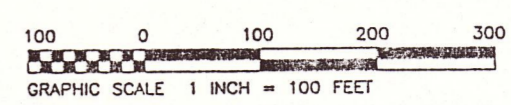
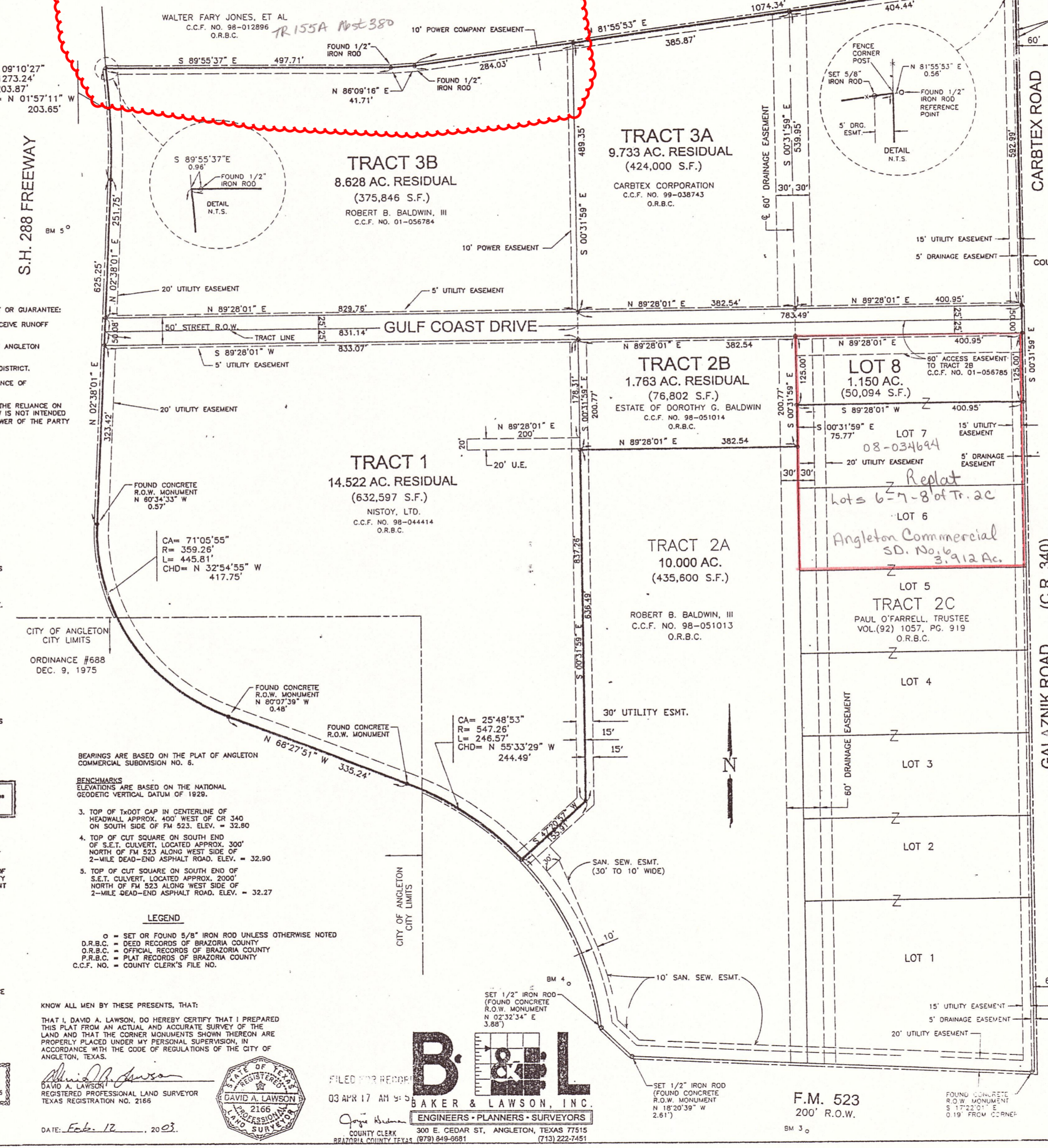
NOTE:  
DEVELOPER WILL BE RESPONSIBLE FOR RELOCATION OF ALL PUBLIC UTILITIES ASSOCIATED WITH THE CONSTRUCTION OF GULF COAST DRIVE, AT OWNERS' & PLANNERS' EXPENSE.

PLAT RECORDS  
Vol 23 Page 289-290

REPLAT OF TRACTS 1, 2B, 3A, 3B, AND LOT 8 OF TRACT 2C

# ANGLETON COMMERCIAL SUBDIVISION NO. 6

IN THE J. DE J. VALDERAS SURVEY, ABSTRACT 380



THE STATE OF TEXAS  
COUNTY OF BRAZORIA

KNOW ALL MEN BY THESE PRESENTS, THAT:

I, PAUL O'FARRELL, TRUSTEE, OWNER OF LOT 8, TRACT 2C, AS SHOWN ON THE REPLAT OF ANGLETON COMMERCIAL SUBDIVISION NO. 6, FILED FOR RECORD IN VOLUME 20, PAGES 253-254 OF THE PLAT RECORDS OF BRAZORIA COUNTY, TEXAS, DO HEREBY SUBMIT TO THE PUBLIC ALL STREETS AND EASEMENTS SHOWN HEREON AND DO HEREBY DEDICATE TO THE PUBLIC ALL STREETS AND EASEMENTS SHOWN HEREON FOR THEIR USE FOREVER, AND DO BIND OURSELVES, OUR HEIRS, SUCCESSORS, AND ASSIGNS TO WARRANT AND DEFEND THE TITLE OF THE LAND SO DEDICATED.

WITNESS MY HAND THIS 12th DAY OF Feb., 2003.

*Paul O'Farrell*  
PAUL O'FARRELL, TRUSTEE

THE STATE OF TEXAS  
COUNTY OF BRAZORIA

KNOW ALL MEN BY THESE PRESENTS, THAT:

BEFORE ME, THE UNDERSIGNED AUTHORITY, ON THIS DAY PERSONALLY APPEARED PAUL O'FARRELL, KNOWN TO ME TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT, AND ACKNOWLEDGED TO ME THAT HE EXECUTED THE SAME FOR THE PURPOSES AND CONSIDERATIONS THEREIN SET FORTH.

GIVEN UNDER MY HAND AND SEAL THIS 12th DAY OF Feb., 2003.

*Robin R. Crouch*  
ROBIN R. CROUCH  
Notary Public in and for the State of Texas  
My Comm. Expires 1-11-2007

THE STATE OF TEXAS  
COUNTY OF BRAZORIA

KNOW ALL MEN BY THESE PRESENTS, THAT:

I, ROBERT B. BALDWIN, III, PRESIDENT OF BALDWIN INTERESTS, INC., A GENERAL PARTNER OF NISTOY, LTD., A TEXAS LIMITED PARTNERSHIP, OWNER OF TRACT 2B AS SHOWN ON THE REPLAT OF ANGLETON COMMERCIAL SUBDIVISION NO. 6, FILED FOR RECORD IN VOLUME 20, PAGES 209-210 OF THE PLAT RECORDS OF BRAZORIA COUNTY, TEXAS, DO HEREBY SUBMIT TO THE PUBLIC ALL STREETS AND EASEMENTS SHOWN HEREON AND DO HEREBY DEDICATE TO THE PUBLIC ALL STREETS AND EASEMENTS SHOWN HEREON FOR THEIR USE FOREVER, AND DO BIND OURSELVES, OUR HEIRS, SUCCESSORS, AND ASSIGNS TO WARRANT AND DEFEND THE TITLE OF THE LAND SO DEDICATED.

WITNESS MY HAND THIS 12th DAY OF Feb., 2003.

*Robert B. Baldwin III*  
ROBERT B. BALDWIN, III, PRESIDENT, BALDWIN INTERESTS, INC.

THE STATE OF TEXAS  
COUNTY OF BRAZORIA

KNOW ALL MEN BY THESE PRESENTS, THAT:

BEFORE ME, THE UNDERSIGNED AUTHORITY, ON THIS DAY PERSONALLY APPEARED ROBERT B. BALDWIN, III, KNOWN TO ME TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT, AND ACKNOWLEDGED TO ME THAT HE EXECUTED THE SAME FOR THE PURPOSES AND CONSIDERATIONS THEREIN SET FORTH.

GIVEN UNDER MY HAND AND SEAL THIS 12th DAY OF Feb., 2003.

*Robin R. Crouch*  
ROBIN R. CROUCH  
Notary Public in and for the State of Texas  
My Comm. Expires 1-11-2007

THE STATE OF TEXAS  
COUNTY OF BRAZORIA

KNOW ALL MEN BY THESE PRESENTS, THAT:

I, ROBERT B. BALDWIN, III, INDEPENDENT CO-EXECUTOR OF THE ESTATE OF DOROTHY G. BALDWIN, DECEASED, OWNER OF TRACT 2B AS SHOWN ON THE REPLAT OF ANGLETON COMMERCIAL SUBDIVISION NO. 6, FILED FOR RECORD IN VOLUME 20, PAGES 209-210 OF THE PLAT RECORDS OF BRAZORIA COUNTY, TEXAS, DO HEREBY SUBMIT TO THE PUBLIC ALL STREETS AND EASEMENTS SHOWN HEREON AND DO HEREBY DEDICATE TO THE PUBLIC ALL STREETS AND EASEMENTS SHOWN HEREON FOR THEIR USE FOREVER, AND DO BIND OURSELVES, OUR HEIRS, SUCCESSORS, AND ASSIGNS TO WARRANT AND DEFEND THE TITLE OF THE LAND SO DEDICATED.

WITNESS MY HAND THIS 12th DAY OF Feb., 2003.

*Robert B. Baldwin III*  
ROBERT B. BALDWIN, III, INDEPENDENT CO-EXECUTOR

THE STATE OF TEXAS  
COUNTY OF BRAZORIA

KNOW ALL MEN BY THESE PRESENTS, THAT:

BEFORE ME, THE UNDERSIGNED AUTHORITY, ON THIS DAY PERSONALLY APPEARED ROBERT B. BALDWIN, III, KNOWN TO ME TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT, AND ACKNOWLEDGED TO ME THAT HE EXECUTED THE SAME FOR THE PURPOSES AND CONSIDERATIONS THEREIN SET FORTH.

GIVEN UNDER MY HAND AND SEAL THIS 12th DAY OF Feb., 2003.

*Robin R. Crouch*  
ROBIN R. CROUCH  
Notary Public in and for the State of Texas  
My Comm. Expires 1-11-2007

THE STATE OF TEXAS  
COUNTY OF BRAZORIA

KNOW ALL MEN BY THESE PRESENTS, THAT:

I, ROBERT B. BALDWIN, III, OWNER OF TRACT 3B, SUBDIVIDED IN THE FOREGOING REPLAT OF ANGLETON COMMERCIAL SUBDIVISION NO. 6, IN THE J. DE J. VALDERAS SURVEY, ABSTRACT 380, BRAZORIA COUNTY, TEXAS, DO HEREBY SUBMIT TO THE PUBLIC ALL STREETS AND EASEMENTS SHOWN HEREON AND DO HEREBY DEDICATE TO THE PUBLIC ALL STREETS AND EASEMENTS SHOWN HEREON FOR THEIR USE FOREVER, AND DO BIND OURSELVES, OUR HEIRS, SUCCESSORS, AND ASSIGNS TO WARRANT AND DEFEND THE TITLE OF THE LAND SO DEDICATED.

WITNESS MY HAND THIS 12th DAY OF Feb., 2003.

*Robert B. Baldwin III*  
ROBERT B. BALDWIN, III

THE STATE OF TEXAS  
COUNTY OF BRAZORIA

KNOW ALL MEN BY THESE PRESENTS, THAT:

BEFORE ME, THE UNDERSIGNED AUTHORITY, ON THIS DAY PERSONALLY APPEARED ROBERT B. BALDWIN, III, KNOWN TO ME TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT, AND ACKNOWLEDGED TO ME THAT HE EXECUTED THE SAME FOR THE PURPOSES AND CONSIDERATIONS THEREIN SET FORTH.

GIVEN UNDER MY HAND AND SEAL THIS 12th DAY OF Feb., 2003.

*Robin R. Crouch*  
ROBIN R. CROUCH  
Notary Public in and for the State of Texas  
My Comm. Expires 1-11-2007

REPLAT OF TRACTS 1, 2B, 3A, 3B & LOT 8 OF TRACT 2C  
ANGLETON COMMERCIAL SUBDIVISION NO. 6

A RE-SUBDIVISION OF TRACT 1 AND TRACT 2B OF THE RE-PLAT OF ANGLETON COMMERCIAL SUBDIVISION NO. 6 AS RECORDED IN VOLUME 20, PAGES 209 & 210; TRACT 3A, TRACT 3B AND LOT 8 OF TRACT 2C OF THE RE-PLAT OF ANGLETON COMMERCIAL SUBDIVISION NO. 6 AS RECORDED IN VOLUME 20, PAGES 253 & 254; AND TRACT 1, TRACT 2B, LOT 8 OF TRACT 2C, AND TRACT 3B OF THE RE-PLAT OF ANGLETON COMMERCIAL SUBDIVISION NO. 6 AS RECORDED IN VOLUME 23, PAGES 127 & 128, ALL IN THE PLAT RECORDS OF BRAZORIA COUNTY, TEXAS

SCALE: 1" = 100'  
DRAWING DATE: JULY 30, 2002  
DRAWING FILE: 8897-REPLAT.DWG  
REVISED: JANUARY 3, 2003

DAVID A. LAWSON  
REGISTERED PROFESSIONAL LAND SURVEYOR  
TEXAS REGISTRATION NO. 2165

**B & L**  
BAKER & LAWSON, INC.  
ENGINEERS • PLANNERS • SURVEYORS  
300 E. CEDAR ST., ANGLETON, TEXAS 77515  
(409) 848-6681 (713) 222-7451

FILED FOR RECORD  
03 APR 17 AM 9:59  
COUNTY CLERK  
BRAZORIA COUNTY, TEXAS

F.M. 523  
200' R.O.W.  
BM 3

DATE: Feb. 12, 2003.

City of Angleton  
Yaklin CPDJ Car Dealership Utility Extension  
Cost Estimate

Item No.	Quantity	Unit	Item Description	Unit Price	Total Amount
<b>UTILITY ITEMS</b>					
1	490	L.F.	8" PVC water line, all depths, complete in place, the sum of:	\$ 60.00	\$ 29,400.00
2	2	EA.	8" wet connection, complete in place, the sum of:	\$ 1,000.00	\$ 2,000.00
3	1	EA.	12" wet connection, complete in place, the sum of:	\$ 1,400.00	\$ 1,400.00
4	2	EA.	8" gate box and valve, complete in place, the sum of:	\$ 1,600.00	\$ 3,200.00
5	1	EA.	12" gate box and valve, complete in place, the sum of:	\$ 2,100.00	\$ 2,100.00
6	500	L.F.	8" PVC sanitary sewer, all depths, complete in place, the sum of:	\$ 50.00	\$ 25,000.00
7	3	EA.	4' diameter sanitary sewer manhole, all depths, complete in place, the sum of:	\$ 5,000.00	\$ 15,000.00
8	1,000	L.F.	Well pointing	\$ 20.00	\$ 20,000.00
9	1,000	L.F.	Wet condition bedding	\$ 10.00	\$ 10,000.00

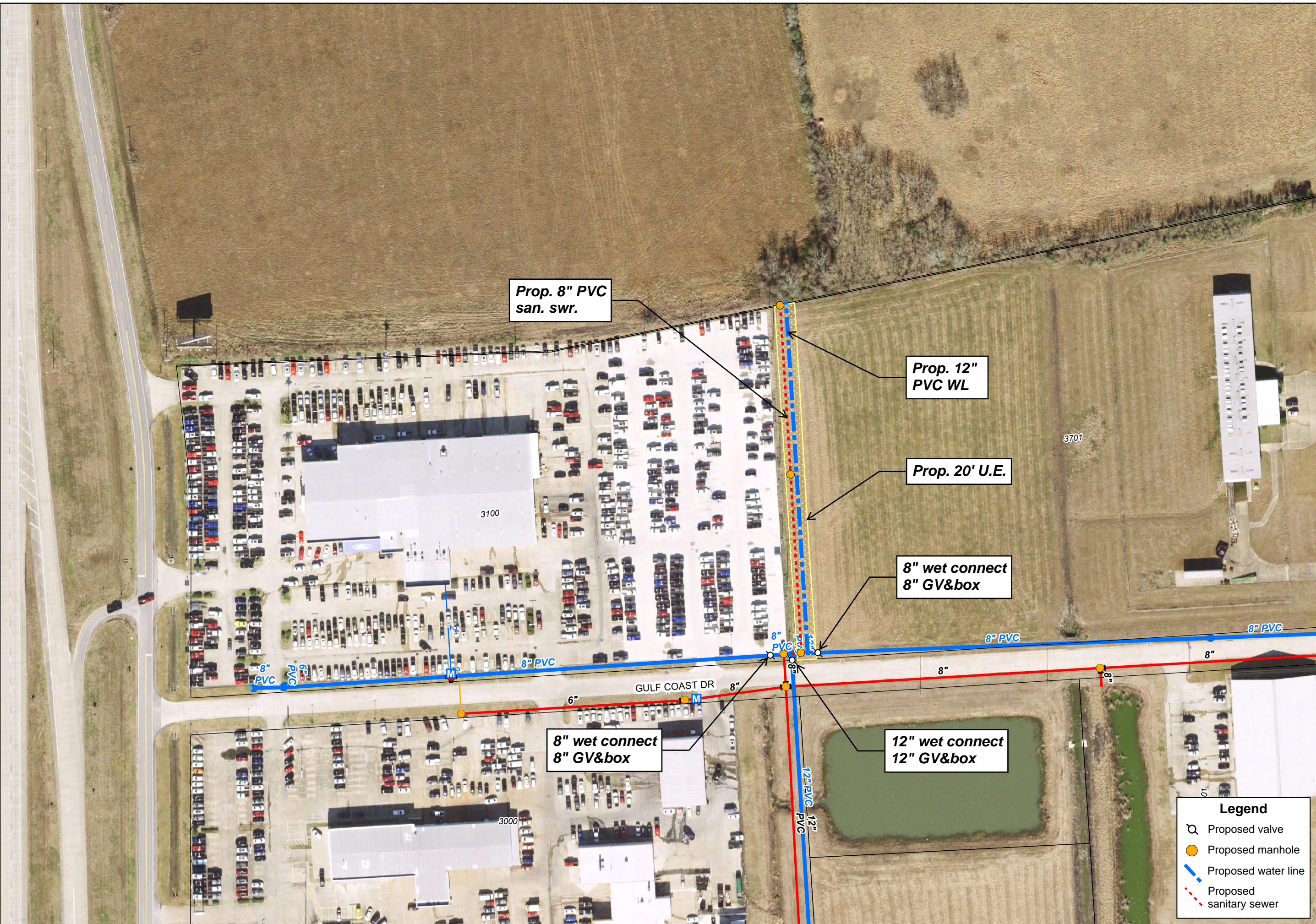
CONSTRUCTION COST:	\$ 108,100.00
MISCELLANEOUS ITEMS (30%):	\$ 32,430.00
<b>TOTAL CONSTRUCTION COST:</b>	<b>\$ 140,530.00</b>

ENGINEERING DESIGN:	\$ 20,000.00
†REAL ESTATE ACQUISITION:	\$ 24,500.00
SURVEYING SERVICES:	\$ 4,000.00
GEOTECHNICAL SERVICES:	\$ 1,500.00
<u>*CONSTRUCTION ADMINISTRATION:</u>	<u>\$ 10,000.00</u>
<b>TOTAL FEE &amp; LAND ACQUISITION:</b>	<b>\$ 60,000.00</b>

**Opinion of Total Project Cost Estimate: \$ 200,530.00**

†Cost to obtain 20' utility easement from nearby tract

\*Cost does not include construction observation



**Legend**

- ⊗ Proposed valve
- Proposed manhole
- Proposed water line
- - - Proposed sanitary sewer

Disclaimer: This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and represents only the approximate relative location of property boundaries. Gov. C. S. 2501.102. The user is encouraged to independently verify all information contained in this product. The City of Angleton makes no representation or warranty as to the accuracy of this product or to its fitness for a particular purpose. The user: (1) accepts the product AS IS, WITH ALL FAULTS; (2) assumes all responsibility for the use thereof; and (3) releases the City of Angleton from any damage, loss, or liability arising from such use.

City of Angleton GIS Mapping

1" = 120'







**RESOLUTION NO. 20240423-016**

**RESOLUTION OF THE CITY COUNCIL OF THE CITY OF ANGLETON, TEXAS APPROVING AN AMENDED AND RESTATED REIMBURSEMENT AGREEMENT RELATING TO THE RIVERWOOD RANCH NORTH PUBLIC IMPROVEMENT DISTRICT.**

**WHEREAS**, on October 24, 2023 the City Council of the City of Angleton, Texas (the “City”) passed and approved a resolution creating the Riverwood Ranch North Public Improvement District (the “District”) covering approximately 35.608 acres of land described by metes and bounds in said Resolution (the “District Property”); and

**WHEREAS**, the purpose of the District is to finance public improvements (the “Authorized Improvements”) as provided by Chapter 372, Texas Local Government Code, as amended (the “PID Act”) that promote the interests of the City and confer a special benefit on the Assessed Property within the District; and

**WHEREAS**, the District Property is being developed, and special assessments will be levied against the benefitted property within the District to pay the costs of certain public improvements that confer a special benefit on the benefitted properties within the District; and

**WHEREAS**, Riverwood Ranch, LLC a Texas limited liability company (the “Developer”) is the developer of the District Property and is now developing the District; and

**WHEREAS**, the City Council intends to pass and approve an ordinance (the “Assessment Ordinance”) which, among other things, will approve a service and assessment plan (the “SAP”) that will levy assessments on assessable property the District (the “Assessments”), and establish the dates upon which interest on such Assessments will begin to accrue and collection of such assessments will begin; and

**WHEREAS**, from revenues received from the Assessments levied on property within the District and pursuant to the SAP, the City intends to pay for or reimburse the Developer for all of a portion of the costs of certain public improvements to be constructed in the District (the “Public Improvements”); and

**WHEREAS**, the City and the Developer have previously entered into a reimbursement agreement on February 13, 2024 (the “Original Agreement”) to memorialize the City’s intent to reimburse the Developer for certain costs relating to the Public Improvements, but now wish to amend and restate the Original Agreement to add additional provisions, and hereby amend and restated the Original Agreement it in its entirety as set forth herein (as amended and restated, the “Reimbursement Agreement”); and

**WHEREAS**, the City and the Developer wish to enter into the Reimbursement Agreement to evidence the City’s intention to pay or reimburse the Developer for all or a portion of the costs of

the Public Improvements from the Assessments levied on assessable property within the District;  
Now Therefore,

**BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF ANGLETON, TEXAS:**

**SECTION 1.** The capitalized terms defined in the recitals to this Resolution are hereby approved and adopted as a part of this Resolution. Capitalized terms not herein defined are defined in the Reimbursement Agreement or in the Service and Assessment Plan.

**SECTION 2.** The City Council hereby approves the Reimbursement Agreement in substantially the form attached hereto as **Exhibit A**, with such changes as may be approved by the City Manager, and authorizes the Mayor to execute and the City Secretary to attest such Agreement.

**SECTION 3.** This resolution shall take effect immediately from and after its passage by the City Council of the City.

**PASSED, APPROVED AND EFFECTIVE on the 23<sup>rd</sup> day of April, 2024.**

CITY OF ANGLETON, TEXAS

\_\_\_\_\_  
John Wright  
Mayor  
City of Angleton, Texas

ATTEST:

\_\_\_\_\_  
Michelle Perez, TRMC  
City Secretary  
City of Angleton, Texas

[SEAL]

**EXHIBIT A**  
**REIMBURSEMENT AGREEMENT**

**AMENDED AND RESTATED RIVERWOOD RANCH NORTH PUBLIC  
IMPROVEMENT DISTRICT  
REIMBURSEMENT AGREEMENT**

This Amended and Restated Riverwood Ranch North Public Improvement District Reimbursement Agreement (this “Reimbursement Agreement”) is executed by and between the City of Angleton, Texas (the “City”) and Riverwood Ranch, LLC a Texas limited liability company, (the “Developer”) (individually referred to as a “Party” and collectively as the “Parties”) to be effective as of April 23, 2024 (the “Effective Date”) and shall supersede any prior approved reimbursement agreement.

**RECITALS**

**WHEREAS**, on October 24, 2023, the City Council passed and approved a resolution creating the Riverwood Ranch North Public Improvement District (the “District”) covering approximately 35.608 acres of land described by metes and bounds in said Resolution (the “District Property”); and

**WHEREAS**, the purpose of the District is to finance public improvements (the “Public Improvements”) as provided by Subchapter A of Chapter 372, Texas Local Government Code, as amended (the “PID Act”) that promote the interests of the City and confer a special benefit on the Assessed Property within the District; and

**WHEREAS**, the District Property is currently being developed and the City intends to levy special assessments against property in the District (the “Assessed Property”) to pay the costs of certain public improvements (the “Public Improvements”) that confer a special benefit on the Assessed Property within the District; and

**WHEREAS**, the Developer has begun construction certain the Public Improvements within the District (the “Public Improvement Projects”) within the District and the City intends to approve an ordinance (the “Assessment Ordinance”) levying assessments on the Assessed Property (the “Assessments”) and to approve a service and assessment plan for the District which sets forth the Assessments against all property within the District (the “Service and Assessment Plan” or “SAP”); and

**WHEREAS**, the City and the Developer desire to enter into this Reimbursement Agreement (the “Reimbursement Agreement”) to reflect the reimbursement due to the Developer for the costs of the Public Improvement Projects pursuant to the approved SAP and to express the City’s intent to reimburse the Developer for certain costs of the Public Improvement Projects; and

**WHEREAS**, all revenue received and collected by the City from the collection of the Assessments and Annual Installments (excluding Delinquent Collection Costs and Annual Collection Costs) (the “Assessment Revenue”) shall be deposited first for the payment of debt service on Bonds to be issued by the City (the “Future Bonds”) and second, into an assessment fund, that is segregated from all other funds of the City (the “Reimbursement Fund”); and

**WHEREAS**, the Assessment Revenue deposited into the Reimbursement Fund shall be used to reimburse Developer and its assigns for the cost of the Public Improvement Projects advanced in a principal amount to be set forth in the SAP, plus interest as set forth herein; and

**WHEREAS**, the obligations of the City to use the Assessments hereunder is authorized by the PID Act; and

**WHEREAS**, terms not otherwise defined in this Reimbursement Agreement shall have the meanings assigned in the Service and Assessment Plan;

**NOW, THEREFORE, FOR AND IN CONSIDERATION OF THE MUTUAL COVENANTS OF THE PARTIES SET FORTH IN THIS REIMBURSEMENT AGREEMENT AND FOR VALUABLE CONSIDERATION THE RECEIPT AND ADEQUACY OF WHICH ARE ACKNOWLEDGED, THE PARTIES AGREE AS FOLLOWS:**

1. The recitals in the “WHEREAS” clauses of this Reimbursement Agreement are true and correct, create obligations of the Parties, and are incorporated as part of this Reimbursement Agreement for all purposes.
2. The City intends to levy Assessments to finance the cost of the Public Improvement Projects and to reimburse the Developer for the costs of such Public Improvement Projects incurred by Developer prior to the levy and/or to pay directly the costs of the Public Improvement Projects.
3. Strictly subject to the terms, conditions, and requirements and solely from the revenues as herein provided and in accordance with the SAP, the City agrees to pay the Developer and the Developer shall be entitled to receive from the City, the amount equal to the actual costs of the Public Improvement Projects paid by the Developer as set forth in the SAP, in accordance with the terms of this Reimbursement Agreement, in a principal amount not to exceed the amount hereafter set forth in the SAP (the “Reimbursement Obligation”), plus interest accrued, as provided in Section 2(a) below. The City hereby covenants to create, concurrently with the execution of this Reimbursement Agreement, a separate fund to be designated the “Reimbursement Fund”. The Reimbursement Obligation is payable from Assessment Revenue to be deposited in the Reimbursement Fund as described below and in accordance with the Development Agreement and the SAP:
  - a. The Reimbursement Obligation is payable solely from: (i) Assessment Revenue received and collected by the City from Assessments deposited an account within the Reimbursement Fund after the payment of debt service on Future Bonds(ii) the net proceeds (after funding reserve funds, payment of costs of issuance, including the costs paid or incurred by the City and City Administrative Expenses) of one or more series of Future Bonds issued by the City to fund all or a portion of the Reimbursement Obligation in accordance with the terms of the Development

Agreement and the SAP and secured by the Assessment Revenue; or (iii) a combination of items (i) and (ii) immediately above. The Assessment Revenue shall be received, collected and deposited into the applicable account of the Reimbursement Fund subject to the following limitations:

- i. Calculation of the Assessments in the District and the first Annual Installment due, shall begin as shall be provided in the SAP.
  - ii. Assessments collected for the Reimbursement Obligation listed above shall accrue simple interest annually at the rate set forth in the SAP, such rate to be in compliance with Subsections 372.023(e)(1) and (e)(2) of the PID Act. Such interest shall accrue upon levy of the Assessments only for the portion of the Assessment that is not allocated to outstanding Future Bonds. If accrued, interest shall begin and continue on the unpaid principal amount of the Assessments as set forth in the SAP until the earlier of (i) the expiration of the term set forth in the SAP, or (ii) the issuance of Future Bonds to fund a portion of the Reimbursement Obligation, as reduced by annual payments made pursuant to (iv) below.
  - iii. Assessment Revenue dedicated to the payment of all or a portion of the Reimbursement Obligation and interest thereon, shall be deposited into the Reimbursement Fund after the payment of debt service on the outstanding Future Bonds.
  - iv. The Developer shall receive the Unpaid Balance in annual installments as set forth in the SAP and herein from the applicable account of the Reimbursement Fund, for the time period set forth in the SAP or until Future Bonds are issued to fund such Reimbursement Obligation, and as allowed under Section 2(a) above.
4. The Reimbursement Obligation, as set forth in the SAP, plus the interest as described above, if accruing, are collectively, the “Unpaid Balance.” The Unpaid Balance is secured by and payable solely from Assessment Revenue received and collected for such purpose and deposited into the Reimbursement Fund subject to Section 3(a)(iv), and Section 5 herein. No other City funds, revenue, taxes, or income of any kind shall be used to pay the Unpaid Balance, even if the Unpaid Balance is not paid in full by the term of this Agreement, as set forth herein. Payment of Assessment Revenue from the applicable account of the Reimbursement Fund after the payment of debt service on outstanding Future Bonds, shall be made annually to the Developer subject to the term of this Reimbursement Agreement as set forth in Section 22. The outstanding Unpaid Balance and the Reimbursement Obligation shall be reduced by the amount of each annual payment to the Developer from the applicable account of the Reimbursement Fund or Future Bond proceeds paid to Developer.

5. This Reimbursement Agreement shall not, under any circumstances, give rise to or create a charge against the general credit or taxing power of the City or a debt or other obligation of the City payable from any source other than Assessment Revenue received, collected and deposited into the Reimbursement Fund. The City covenants that it will comply with the provisions of this Reimbursement Agreement, the Development Agreement, and the PID Act, including provisions relating to the administration of the District and the enforcement and collection of assessments, and all other covenants provided therein. Notwithstanding its collection efforts, if the City fails to receive all or any part of the Assessment Revenue or does not receive an amount in excess of the annual debt service due on the outstanding Future Bonds, and, as a result, is unable to make transfers from the Reimbursement Fund for payments to the Developer as required under this Reimbursement Agreement, such failure and inability shall not constitute a Failure or Event of Default (both defined below) by the City under this Reimbursement Agreement.
6. Future Bonds may be issued to reimburse the cost of completed Public Improvement Projects as set forth in the SAP. If Future Bonds are issued to fund all or a portion of the Reimbursement Obligation after the levy of the Assessments, the net proceeds of such Future Bonds shall be used to pay the outstanding Reimbursement Obligation, as reduced by payments made pursuant to Section 3 herein, due to the Developer under this Reimbursement Agreement for the costs of the Public Improvement Projects as set forth in the SAP. However, no Future Bonds shall be issued until all Public Improvement Projects assessed for pursuant to the SAP and the Amenities (as defined in Section 28 below) have been completed and ownership has transferred. This Reimbursement Agreement shall terminate on the earlier of (i) the issuance of Future Bonds in the aggregate to fund the entire Reimbursement Obligation as reduced by payments made pursuant to Section 3 herein, (ii) the reimbursement of Public Improvement Project costs as set forth in the SAP, (iii) the expiration of the Assessments as set forth in the SAP, (iv) termination of this Agreement pursuant to an Event of Default or termination event herein or under any prior agreement with the Developer relating to the District or the land therein, or (v) the Public Improvements and the Amenities for the development within which the District is located, have not been constructed and ownership transferred within one year of the date of this Reimbursement Agreement. Notwithstanding the foregoing, the Developer shall only be entitled to repayment of the costs of the Public Improvement Projects in the amounts set forth in the SAP. The Developer represents and warrants that it will not request payment with respect to any portion of the Public Improvement Project that is not part of the Public Improvement Projects identified in the SAP and it will follow all procedures set forth in the Development Agreement with respect to certification for payments, including for payments of the Unpaid Balance from the Reimbursement Fund.
7. The Developer has the right to convey, transfer, assign, mortgage, pledge, or otherwise encumber, in whole or in part without the consent of (but with written notice to) the City,



the Developer's right, title, or interest in the revenue streams identified in this Reimbursement Agreement including, but not limited to, any right, title, or interest of the Developer in and to payment of the Unpaid Balance (any of the foregoing, a "Transfer," and the person or entity to whom the Transfer is made, a "Transferee"). Notwithstanding the foregoing, however, no Transfer shall be effective until five (5) days after Developer's written notice of the Transfer is received by the City, including for each Transferee the information required by Section 11 below. The Developer may not transfer its obligation to construct the Public Improvements under any prior agreement with the City regarding the District or its land without the City's consent. The City may rely on any notice of a Transfer received from the Developer without obligation to investigate or confirm the validity or occurrence of such Transfer. No conveyance, transfer, assignment, mortgage, pledge or other encumbrance shall be made by the Developer or any successor or assignee of the Developer that results in the City being an "obligated person" within the meaning of Rule 15c2-12 of the United States Securities and Exchange Commission. The Developer waives all rights or claims against the City for any such funds provided to a third party as a result of a Transfer for which the City has received notice. The City shall not be required to make payments pursuant to this Reimbursement Agreement to more than two parties, nor shall it be required to execute any consent or make any representations or covenants relating to such assignment.

8. The obligations of the City under this Reimbursement Agreement are non-recourse and payable only from the Reimbursement Fund and such obligations do not create a debt or other obligation payable from any other City revenues, taxes, income, or property. None of the City or any of its elected or appointed officials or any of its officers or employees shall incur any liability hereunder to the Developer or any other party in their individual capacities by reason of this Reimbursement Agreement or their acts or omissions under this Reimbursement Agreement.
9. Nothing in this Reimbursement Agreement is intended to constitute a waiver by the City of any remedy the City may otherwise have outside this Reimbursement Agreement against the Developer, any Transferee, or any other person or entity involved in the design, construction or installation of the Public Improvement Projects. The obligations of Developer hereunder shall be those as a Party hereto and not solely as an owner of property in the District. Nothing herein shall be constructed, nor is intended, to affect the City's or Developer's rights and duties to perform their respective obligations under other agreements, regulations and ordinances.
10. This Reimbursement Agreement is being executed and delivered, and is intended to be performed in the State of Texas. Except to the extent that the laws of the United States may apply to the terms hereof, the substantive laws of the State of Texas shall govern the validity, construction, enforcement, and interpretation of this Reimbursement Agreement.

In the event of a dispute involving this Reimbursement Agreement, exclusive venue for such dispute shall lie in any court of competent jurisdiction in Harris County, Texas.

11. Any notice required or contemplated by this Reimbursement Agreement shall be signed by or on behalf of the Party giving the Notice, and shall be deemed effective as follows: (i) when delivered by a national company such as FedEx or UPS with evidence of delivery signed by any person at the delivery address regardless of whether such person was the named addressee; or (ii) 72 hours after the notice was deposited with the United States Postal Service, Certified Mail, Return Receipt Requested. Any Party may change its address by delivering written notice of such change in accordance with this section. All Notices given pursuant to this Section shall be addressed as follows:

To the City:                   City Manager  
121 S. Velasco  
Angleton, TX 77515

With a copy to:               Attn: Judith El Masri, City Attorney  
Randle Law Office Ltd, L.L.P  
820 Gessner, Suite 1570  
Memorial City Plaza II  
Houston, TX 77024

To the Developer:           Attn: Michael Foley  
Riverwood Ranch LLC  
1027 Yale Street  
Houston, Texas 77008

With a copy to:               Attn: John G. Cannon  
Coats | Rose, P.C.  
9 Greenway Plaza, Suite 1000  
Houston, Texas 77046

12. Notwithstanding anything herein to the contrary, nothing herein shall otherwise authorize or permit the use by the City of the Assessments contrary to the provisions of the PID Act.

13. Remedies:

- a. If either Party fails to perform an obligation imposed on such Party by this Reimbursement Agreement (a “Failure”) and such Failure is not cured after written notice and the expiration of the cure periods provided in this section, then such Failure shall constitute an “Event of Default.” Upon the occurrence of a Failure by a non-performing Party, the other Party shall notify the non-performing Party and all Transferees of the non-performing Party in writing specifying in reasonable detail the nature of the Failure. The non-performing Party to whom notice of a

Failure is given shall have at least 30 days from receipt of the notice within which to cure the Failure; however, if the Failure cannot reasonably be cured within 30 days and the non-performing Party has diligently pursued a cure within such 30-day period and has provided written notice to the other Party that additional time is needed, then the cure period shall be extended for an additional 30 day period so long as the non-performing Party cures such default within 90 days. Any Transferee shall have the same rights as the Developer to enforce the obligations of the City under this Reimbursement Agreement and shall also have the right, but not the obligation, to cure any alleged Failure by the Developer within the same time periods that are provided to the Developer. The election by a Transferee to cure a Failure by the Developer shall constitute a cure by the Developer.

- b. Notwithstanding the foregoing, the following are Events of Default under this Agreement:
- i. The Developer shall fail to pay to the City any monetary sum hereby required of it as and when the same shall become due and payable and shall not cure such default within thirty (30) days after the later of the date on which written notice thereof is given by the City to the Developer, as provided in this Agreement.
  - ii. Either Party shall fail to comply in any material respect with any term, provision or covenant of this Reimbursement Agreement, and shall not cure such failure within ninety (90) days after written notice thereof is given by to the defaulting Party as provided in this Agreement;
  - iii. The filing by Developer of a voluntary proceeding under present or future bankruptcy, insolvency, or other laws respecting debtors, rights;
  - iv. The consent by Developer to an involuntary proceeding under present or future bankruptcy, insolvency, or other laws respecting debtor's rights;
  - v. The entering of an order for relief against Developer or the appointment of a receiver, trustee, or custodian for all or a substantial part of the property or assets of Developer in any involuntary proceeding, and the continuation of such order, judgment or degree unstayed for any period of ninety (90) consecutive days;
  - vi. The failure by Developer or any affiliate to pay impositions, and Assessments on property owned by the Developer and/or any affiliates within the PID, if such failure is not cured within thirty (30) days after notice thereof is given by the City to the Developer as provided in this Reimbursement Agreement;
  - vii. A Developer event of default under the any agreement with the City regarding the District or its land which continues beyond its cure period;

- viii. The Developer shall breach any material covenant or default in the performance of any material obligation hereunder; or
  - ix. The City shall fail to pay any monetary sum due pursuant to this Agreement provided that Developer has adequately submitted documentation of the costs of the Public Improvement Projects to the City for reimbursement.
- c. If the City is in Default, the Developer's sole and exclusive remedies shall be to: (1) seek a writ of mandamus to compel performance by the City; or (2) seek specific enforcement of this Reimbursement Agreement
- d. If the Developer is in Default, the City may pursue any legal or equitable remedy or remedies, including, without limitation, actual damages, and termination of this Agreement. The City shall not terminate this Reimbursement Agreement unless it delivers to the Developer a second notice expressly providing that the City will terminate within thirty (30) additional days. Termination or non-termination of this Reimbursement Agreement upon a Developer Event of Default shall not prevent the City from suing the Developer for specific performance, actual damages, excluding punitive, special and consequential damages, injunctive relief or other available remedies with respect to obligations that expressly survive termination. In the event the Developer fails to pay any of the expenses or amounts or perform any obligation specified in this Reimbursement Agreement, then to the extent such failure constitutes an Event of Default hereunder, the City may, but shall not be obligated to do so, pay any such amount or perform any such obligations and the amount so paid and the reasonable out of pocket costs incurred by the City in said performance shall be due and payable by the Developer to the City within thirty (30) days after the Developer's receipt of an itemized list of such costs.
- e. No remedy herein conferred or reserved is intended to be exclusive of any other available remedy or remedies, but each and every such remedy shall be cumulative and shall be in addition to every other remedy given hereunder now or hereafter existing at law or in equity.
- f. The exercise of any remedy herein conferred or reserved shall not be deemed a waiver of any other available remedy.
14. The Developer shall assume the defense of, and indemnify and hold harmless the City's inspector, the City employees, officials, officers, representative and agents of the City and each of them (each an "Indemnified Party") from and against, all actions, damages, claims, loses or expense of every type and description to which they may be subject or put, by reason of, or resulting from the breach of any provisions of this Reimbursement Agreement by the Developer, the Developer's nonpayment under contracts between the Developer and its consultants, engineers, advisors, contractors, subcontractors and suppliers in the provision of the Public Improvement Projects constructed by Developer, or any claims by

persons employed by the Developer relating to the construction of such projects. Notwithstanding the foregoing, no indemnification is given hereunder for any action, damage, claim, loss or expense directly attributable to the willful misconduct or gross negligence of any Indemnified Party. The City does not waive its defenses and immunities, whether governmental, sovereign, official or otherwise and nothing in this Reimbursement Agreement is intended to or shall confer any right or interest in any person not a party hereto.

15. To the extent there is a conflict between this Reimbursement Agreement and an indenture securing the Future Bonds issued to fund the Reimbursement Obligation or the SAP, the indenture securing such Future Bonds or the SAP shall control as the provisions relate to the Assessments.
16. The failure by a Party to insist upon the strict performance of any provision of this Reimbursement Agreement by the other Party, or the failure by a Party to exercise its rights upon a Default by the other Party shall not constitute a waiver of such Party's right to insist and demand strict compliance by such other Party with the provisions of this Reimbursement Agreement.
17. The City does not waive or surrender any of its governmental powers, immunities, or rights except to the extent permitted by law and necessary to allow the Developer to enforce its remedies under this Reimbursement Agreement.
18. Nothing in this Reimbursement Agreement, express or implied, is intended to or shall be construed to confer upon or to give to any person or entity other than the City and the Developer and its assigns any rights, remedies, or claims under or by reason of this Reimbursement Agreement, and all covenants, conditions, promises, and agreements in this Reimbursement Agreement shall be for the sole and exclusive benefit of the City and the Developer.
19. The City represents and warrants that this Reimbursement Agreement has been approved by official action by the City Council of the City in accordance with all applicable public notice requirements (including, but not limited to, notices required by the Texas Open Meetings Act) and that the individual executing this Reimbursement Agreement on behalf of the City has been duly authorized to do so. The Developer represents and warrants that this Reimbursement Agreement has been approved by appropriate action of the Developer, and that the individual executing this Reimbursement Agreement on behalf of the Developer has been duly authorized to do so. Each Party respectively acknowledges and agrees that this Reimbursement Agreement is binding upon such Party and is enforceable against such Party, in accordance with its terms and conditions and to the extent provided by law.

20. This Reimbursement Agreement represents the entire agreement of the Parties and no other agreement, statement or promise made by any Party or any employee, officer or agent of any Party with respect to any matters covered hereby that is not in writing and signed by all the Parties to this Agreement shall be binding. This Reimbursement Agreement shall not be modified or amended except in writing signed by the Parties. If any provision of this Reimbursement Agreement is determined by a court of competent jurisdiction to be unenforceable for any reason, then: (a) such unenforceable provision shall be deleted from this Reimbursement Agreement; and (b) the remainder of this Reimbursement Agreement shall remain in full force and effect and shall be interpreted to give effect to the intent of the Parties.
21. This Reimbursement Agreement may be executed in any number of counterparts, each of which shall be deemed an original.
22. The term of this Reimbursement Agreement is the earlier of (i) the expiration of the Assessments as set forth in the SAP, (ii) the date the Unpaid Balance is paid in full in accordance herewith, (iii) the issuance of one or more series of Future Bonds to fund, in the aggregate, all of the Reimbursement Obligation, as reduced by payments made pursuant to Section 3 herein, or (iv) termination pursuant to an Event of Default under this Agreement or under the Development Agreement, whichever occurs first. If a series of Future Bonds does not fully fund the Reimbursement Obligation as set forth in the Service and Assessment Plan, the remaining amount of the Reimbursement Obligation remains outstanding and subject to annual payments and/or payment from an additional series of Future Bonds. If the Developer Defaults under this Reimbursement Agreement or the Development Agreement, the Development Agreement shall not terminate with respect to the costs of the Public Improvement Projects that have been previously approved by the City pursuant to a Certification for Payment (as defined in the Development Agreement) prior to the date of Default.
23. Each Party shall use good faith, due diligence and reasonable care in the performance of its respective obligations under this Reimbursement Agreement, and time shall be of the essence in such performance; however, in the event a Party is unable, due to Force Majeure, to perform its obligations under this Reimbursement Agreement, then the obligations affected by the Force Majeure shall be temporarily suspended. Within fifteen (15) business days after the occurrence of a Force Majeure, the Party claiming the right to temporarily suspend its performance, shall give Notice to all the Parties, including a detailed explanation of the Force Majeure and a description of the action that will be taken to remedy the Force Majeure and resume full performance at the earliest possible time. For purposes of this Reimbursement Agreement, "Force Majeure" means any act that (i) materially and adversely affects the affected Party's ability to perform the relevant obligations under this Reimbursement Agreement or delays such affected Party's ability to do so, (ii) is beyond the reasonable control of the affected Party, (iii) is not due to the

affected Party's fault or negligence and (iv) could not be avoided, by the Party who suffers it, by the exercise of commercially reasonable efforts. "Force Majeure" shall include: (a) natural phenomena, such as storms, floods, lightning and earthquakes; (b) wars, civil disturbances, revolts, insurrections, terrorism, sabotage and threats of sabotage or terrorism; (c) transportation disasters, whether by ocean, rail, land or air; (d) strikes or other labor disputes that are not due to the breach of any labor agreement by the affected Party; (e) fires; (f) epidemics or pandemics that result in a governmental action that stops or delays construction or halts, impedes or delays the operations of the City; and (g) actions or omissions of a governmental authority (including the actions of the City in its capacity as a governmental authority) that were not caused by, voluntarily induced or promoted by the affected Party (including the submission of incomplete or erroneous information to the City), or brought about by the breach of its obligations under this Reimbursement Agreement or any applicable law or failure to comply with City regulations; provided, however, that under no circumstances shall Force Majeure include any of the following events: (u) changes in market condition; (v) any strike or labor dispute involving the employees of the Developer or any affiliate of the Developer, other than industry or nationwide strikes or labor disputes; or (w) the occurrence of any manpower, material or equipment shortages.

24. Any amounts or remedies due pursuant to this Reimbursement Agreement are not subject to acceleration.
25. Statutory Verifications. The Developer makes the following representations and covenants pursuant to Chapters 2252, 2271, 2274, and 2276, Texas Government Code, as heretofore amended (the "Government Code"), in entering into this Reimbursement Agreement. As used in such verifications, "affiliate" means an entity that controls, is controlled by, or is under common control with the Developer within the meaning of SEC Rule 405, 17 C.F.R. § 230.405, and exists to make a profit. Liability for breach of any such verification during the term of this Reimbursement Agreement shall survive until barred by the applicable statute of limitations, and shall not be liquidated or otherwise limited by any provision of this Reimbursement Agreement, notwithstanding anything in this Reimbursement Agreement to the contrary.

Not a Sanctioned Company. The Developer represents that neither it nor any of its parent company, wholly- or majority-owned subsidiaries, and other affiliates is a company identified on a list prepared and maintained by the Texas Comptroller of Public Accounts under Section 2252.153 or Section 2270.0201, Government Code. The foregoing representation excludes the Developer and each of its parent company, wholly- or majority-owned subsidiaries, and other affiliates, if any, that the United States government has affirmatively declared to be excluded from its federal sanctions regime relating to Sudan or Iran or any federal sanctions regime relating to a foreign terrorist organization.

No Boycott of Israel. The Developer hereby verifies that it and its parent company, wholly- or majority-owned subsidiaries, and other affiliates, if any, do not boycott Israel and will

not boycott Israel during the term of this Reimbursement Agreement. As used in the foregoing verification, “boycott Israel” has the meaning provided in Section 2271.001, Government Code.

*No Discrimination Against Firearm Entities.* The Developer hereby verifies that it and its parent company, wholly- or majority-owned subsidiaries, and other affiliates, if any, do not have a practice, policy, guidance, or directive that discriminates against a firearm entity or firearm trade association and will not discriminate against a firearm entity or firearm trade association during the term of this Reimbursement Agreement. As used in the foregoing verification, “discriminate against a firearm entity or firearm trade association” has the meaning provided in Section 2274.001(3), Government Code.

*No Boycott of Energy Companies.* The Developer hereby verifies that it and its parent company, wholly- or majority-owned subsidiaries, and other affiliates, if any, do not boycott energy companies and will not boycott energy companies during the term of this Reimbursement Agreement. As used in the foregoing verification, “boycott energy companies” has the meaning provided in Section 2276.001(1), Government Code.

26. Form 1295. The Developer will provide a completed and notarized Form 1295 generated by the Texas Ethics Commission's electronic filing application in accordance with the provisions of Section 2252.908 of the Texas Government Code and the rules promulgated by the Texas Ethics Commission (a "Form 1295"), in connection with entry into this Agreement. Upon receipt of the Developer's Form 1295, the City agrees to acknowledge the Developer's Form 1295 through its electronic filing application. The Developer and the City understand and agree that, with the exception of information identifying the City and the contract identification number, the City is not responsible for the information contained in the Developer's Form 1295 and the City has not verified such information.

27. Make-Whole Provision.

- a. If in any calendar year the City issues debt obligations that would be qualified tax-exempt obligations but for the issuance or proposed issuance of PID Bonds, the Developer shall pay to the City a fee (the “PID Bond Fee”) to compensate the City for the interest savings the City would have achieved had the debt issued by the City been qualified tax-exempt obligations. Prior to issuance of any PID Bonds, the City’s financial advisor shall calculate the PID Bond Fee based on the issued and planned debt issuances for the City and shall notify the Developer of the total amount of the PID Bond Fee prior to the issuance of the PID Bonds. The Developer agrees to pay the PID Bond Fee to the City within ten (10) business days after receiving notice from the City of the amount of PID Bond Fee due to the City. If the City has not forgone the ability to issue a series of obligations as qualified tax exempt obligations, the PID Bond Fee shall be held in a segregated account of the City and if the total amount of debt obligations sold or entered into by the City in the calendar year in which the PID Bonds are issued are less than the bank qualification limits (currently \$10 million per calendar year), then the PID Bond Fee shall be returned to the Developer. The City shall not be required to sell any series of PID Bonds until the Developer has paid the estimated PID Bond Fee.



- b. If the City is planning to issue debt obligations as qualified tax exempt obligations prior to the issuance of PID Bonds in any calendar year, the City may (but is not obligated to) notify the Developer that it is planning to issue qualified tax-exempt obligations that may limit the amount of debt that the City can issue in a calendar year. In connection with the delivery of such notice, the City's financial advisor shall provide a calculation of the interest savings that the City would achieve by issuing the obligations the City plans to issue in the year as qualified tax-exempt obligations as opposed to non-qualified tax exempt obligations. If following the receipt of such notice the Developer asks the City to forego designating the obligations as qualified tax exempt obligations in order to preserve capacity for PID Bonds, the Developer shall pay to the City a fee to compensate the City for the interest savings the City would have achieved had the debt issued by the City been qualified tax-exempt obligations. The Developer agrees to pay the PID Bond Fee to the City within ten (10) business days after receiving notice from the City of the amount of PID Bond Fee due to the City. Upon receipt of the PID Bond Fee, the City agrees not to designate the obligations planned for issuance as qualified tax exempt obligations. Such payment is compensation to the City for choosing to forego the designation of obligations as qualified tax exempt obligations, and the PID Bond Fee may be used for any lawful purpose of the City.
28. Amenities. As used herein the "Amenities" consist of the improvements illustrated on the Riverwood Ranch Playground Proposal attached hereto as Exhibit "A" and described in the cost estimate attached hereto as Exhibit "B"; provided, however, that the total amount of reimbursement for such Amenities from any source shall be limited to \$105,000.
29. Choice of Law. This Agreement shall be governed by the laws of the State of Texas.
30. Out of State Issuer. This Agreement may not be assigned to an out-of-state issuer of debt and the City shall not participate in any third-party financing relating to the Assessment Revenues received by the Developer pursuant to this Agreement.
31. Standing Letter. If requested by the Texas Attorney General, the Developer will file a standing letter addressing the representations made in Section 25 of this Agreement in a form acceptable to the Texas Attorney General.

[SIGNATURE PAGES TO FOLLOW]

Executed by Developer and City to be effective on the Effective Date.

RIVERWOOD RANCH, LLC  
a Texas limited liability company

By: RPDC, Inc. a Texas corporation,  
its manager

By: \_\_\_\_\_  
John Santasiero, President

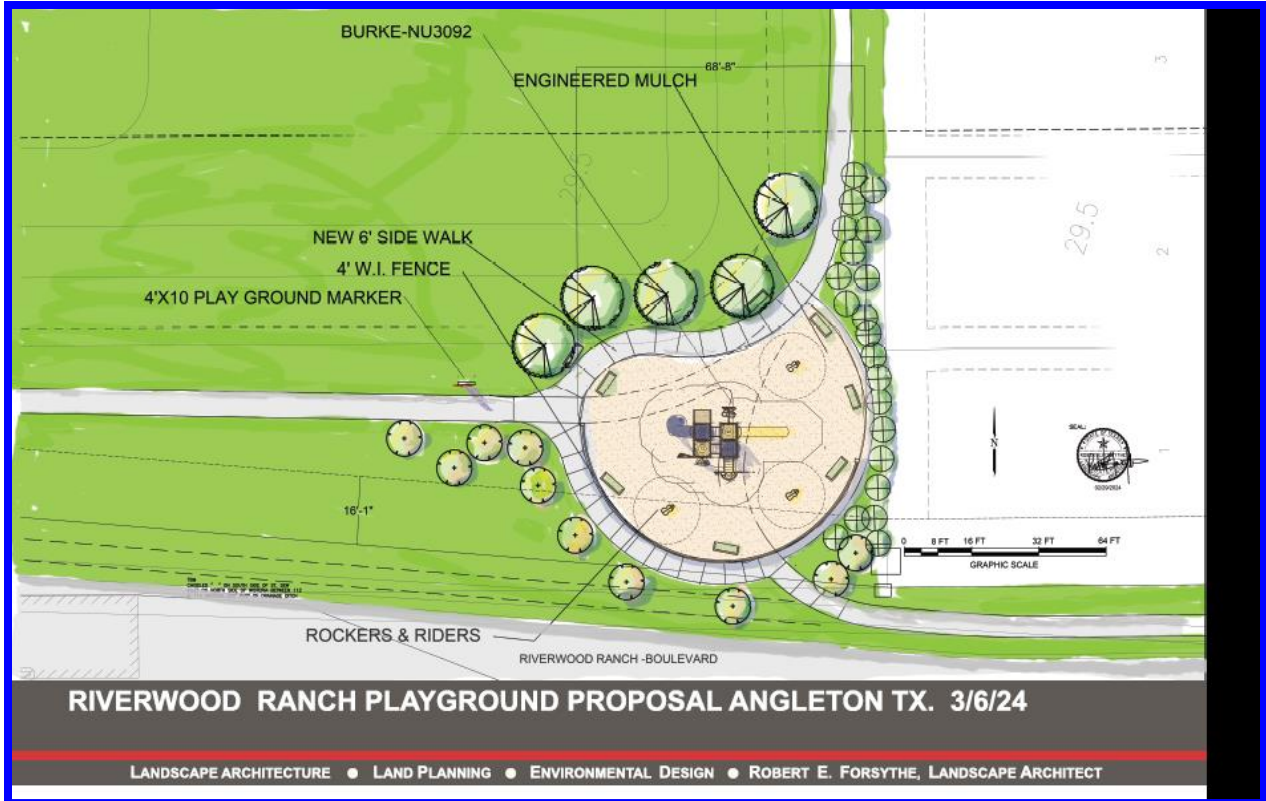
ATTEST:

**CITY OF ANGLETON**

\_\_\_\_\_  
City Secretary

\_\_\_\_\_  
Mayor

EXHIBIT "A"  
PLAYGROUND PROPOSAL



## EXHIBIT "B"

COST ESTIMATE OF PLAYGROUND PROPOSAL**RIVERWOOD RANCH PLAYGROUND**

<u>Item</u>	<u>QTY</u>	<u>Unit</u>	<u>Description of Item with Unit Price Written in Words</u>	<u>Unit Price</u>	<u>Amount</u>
<b>HARDSCAPE</b>					
<u>1</u>	<u>670</u>	<u>SF</u>	<u>Removal of existing sidewalk</u> <u>@</u>	<u>\$ 2.50</u>	<u>\$ 1,675.00</u>
<u>2</u>	<u>177</u>	<u>LF</u>	<u>Furnish and Install a new 6' sidewalk</u> <u>@</u>	<u>\$ 30.00</u>	<u>\$ 5,310.00</u>
<u>3</u>	<u>1</u>	<u>EA</u>	<u>Furnish and Install Burke MU3092 play structure</u> <u>@</u>	<u>\$ 65,000.00</u>	<u>\$ 65,000.00</u>
<u>4</u>	<u>3</u>	<u>EA</u>	<u>Furnish and Install Burke rockers</u> <u>@</u>		<u>\$ 13,000.00</u>
<u>5</u>	<u>7</u>	<u>EA</u>	<u>Furnish and Install 6' park benches (Kay Park)</u> <u>@</u>	<u>\$ 3,000.00</u>	<u>\$ 21,000.00</u>
<u>6</u>	<u>75</u>	<u>LF</u>	<u>Furnish and Install 2' wide concrete curb</u> <u>@</u>	<u>\$ 10.00</u>	<u>\$ 750.00</u>
<u>7</u>	<u>2,905</u>	<u>SF</u>	<u>Furnish and Install playground area, 12" deep with concrete edging and engineered mulch</u> <u>@</u>	<u>\$ 5.00</u>	<u>\$ 14,525.00</u>
<u>8</u>	<u>180</u>	<u>LF</u>	<u>Furnish and Install Drainage pipe, 6" perforated and covered with gravel</u> <u>@</u>	<u>\$ 35.00</u>	<u>\$ 6,300.00</u>
<u>9</u>	<u>5810</u>	<u>SF</u>	<u>Furnish and Install filter cloth, 2 layer (2905 each) for playground</u> <u>@</u>	<u>\$ 0.70</u>	<u>\$ 4,067.00</u>
<u>10</u>	<u>92</u>	<u>LF</u>	<u>Furnish and Install 4' high wrought iron protection barrier</u> <u>@</u>	<u>\$ 45.00</u>	<u>\$ 4,140.00</u>
<u>11</u>	<u>1</u>	<u>EA</u>	<u>Furnish and Install a 4' X 10' tall carten steel playground marker with stainless steel lettering and a "Rules" plaque</u> <u>@</u>	<u>\$ 7,500.00</u>	<u>\$ 7,500.00</u>
<b>PLANTING</b>					
<u>1</u>	<u>5</u>	<u>EA</u>	<u>Furnish and Install 30 gallon Bald Cypress</u> <u>@</u>	<u>\$ 350.00</u>	<u>\$ 1,750.00</u>
<u>2</u>	<u>10</u>	<u>EA</u>	<u>Furnish and Install 30 gallon Crepe Myrtles (white)</u> <u>@</u>	<u>\$ 350.00</u>	<u>\$ 3,500.00</u>
<u>3</u>	<u>20</u>	<u>EA</u>	<u>Furnish and Install 15 gallon Wax Myrtles</u> <u>@</u>	<u>\$ 150.00</u>	<u>\$ 3,000.00</u>
<u>4</u>	<u>130</u>	<u>SY</u>	<u>Furnish and Install solid sod</u> <u>@</u>	<u>\$ 4.00</u>	<u>\$ 520.00</u>
<b>IRRIGATION</b>					
<u>1</u>	<u>1</u>	<u>LS</u>	<u>Revise existing irrigation system to fit new development</u> <u>@</u>	<u>\$ 5,000.00</u>	<u>\$ 5,000.00</u>

Exhibit "B"

<u>TOTAL PLANTING, IRRIGATION AND HARDSCAPE</u>		<u>\$ 157,557.00</u>
<u>Contingency</u>	<u>20%</u>	<u>\$ 31,511.40</u>
<u>Design - Engineer &amp; Architect</u>	<u>10%</u>	<u>\$ 15,755.70</u>
<u>Total</u>		<u><u>\$ 204,824.10</u></u>

Document comparison by Workshare 9.5 on Wednesday, March 20, 2024 1:05:40 PM

Input:	
Document 1 ID	netdocuments://4870-8556-2799/1
Description	Reimbursement Agreement - Riverwood North PID
Document 2 ID	netdocuments://4870-8556-2799/2
Description	Reimbursement Agreement - Riverwood North PID
Rendering set	Standard

Legend:	
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<del>Deletion</del>	
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Inserted cell	
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Statistics:	
	Count
Insertions	160
Deletions	29
Moved from	0
Moved to	0
Style change	0
Format changed	0
Total changes	189

**AMENDED AND RESTATED RIVERWOOD RANCH NORTH PUBLIC  
IMPROVEMENT DISTRICT  
REIMBURSEMENT AGREEMENT**

This Amended and Restated Riverwood Ranch North Public Improvement District Reimbursement Agreement (this “Reimbursement Agreement”) is executed by and between the City of Angleton, Texas (the “City”) and Riverwood Ranch, LLC a Texas limited liability company, (the “Developer”) (individually referred to as a “Party” and collectively as the “Parties”) to be effective as of ~~March, 26~~April 23, 2024 (the “Effective Date”) and shall supersede any prior approved reimbursement agreement.

**RECITALS**

**WHEREAS**, on October 24, 2023, the City Council passed and approved a resolution creating the Riverwood Ranch North Public Improvement District (the “District”) covering approximately 35.608 acres of land described by metes and bounds in said Resolution (the “District Property”); and

**WHEREAS**, the purpose of the District is to finance public improvements (the “Public Improvements”) as provided by Subchapter A of Chapter 372, Texas Local Government Code, as amended (the “PID Act”) that promote the interests of the City and confer a special benefit on the Assessed Property within the District; and

**WHEREAS**, the District Property is currently being developed and the City intends to levy special assessments against property in the District (the “Assessed Property”) to pay the costs of certain public improvements (the “Public Improvements”) that confer a special benefit on the Assessed Property within the District; and

**WHEREAS**, the Developer has begun construction certain the Public Improvements within the District (the “Public Improvement Projects”) within the District and the City intends to approve an ordinance (the “Assessment Ordinance”) levying assessments on the Assessed Property (the “Assessments”) and to approve a service and assessment plan for the District which sets forth the Assessments against all property within the District (the “Service and Assessment Plan” or “SAP”); and

**WHEREAS**, the City and the Developer desire to enter into this Reimbursement Agreement (the “Reimbursement Agreement”) to reflect the reimbursement due to the Developer for the costs of the Public Improvement Projects pursuant to the approved SAP and to express the City’s intent to reimburse the Developer for certain costs of the Public Improvement Projects; and

**WHEREAS**, all revenue received and collected by the City from the collection of the Assessments and Annual Installments (excluding Delinquent Collection Costs and Annual Collection Costs) (the “Assessment Revenue”) shall be deposited first for the payment of debt



service on Bonds to be issued by the City (the “Future Bonds”) and second, into an assessment fund, that is segregated from all other funds of the City (the “Reimbursement Fund”); and

**WHEREAS**, the Assessment Revenue deposited into the Reimbursement Fund shall be used to reimburse Developer and its assigns for the cost of the Public Improvement Projects advanced in a principal amount to be set forth in the SAP, plus interest as set forth herein; and

**WHEREAS**, the obligations of the City to use the Assessments hereunder is authorized by the PID Act; and

**WHEREAS**, terms not otherwise defined in this Reimbursement Agreement shall have the meanings assigned in the Service and Assessment Plan;

**NOW, THEREFORE, FOR AND IN CONSIDERATION OF THE MUTUAL COVENANTS OF THE PARTIES SET FORTH IN THIS REIMBURSEMENT AGREEMENT AND FOR VALUABLE CONSIDERATION THE RECEIPT AND ADEQUACY OF WHICH ARE ACKNOWLEDGED, THE PARTIES AGREE AS FOLLOWS:**

1. The recitals in the “WHEREAS” clauses of this Reimbursement Agreement are true and correct, create obligations of the Parties, and are incorporated as part of this Reimbursement Agreement for all purposes.
2. The City intends to levy Assessments to finance the cost of the Public Improvement Projects and to reimburse the Developer for the costs of such Public Improvement Projects incurred by Developer prior to the levy and/or to pay directly the costs of the Public Improvement Projects.
3. Strictly subject to the terms, conditions, and requirements and solely from the revenues as herein provided and in accordance with the SAP, the City agrees to pay the Developer and the Developer shall be entitled to receive from the City, the amount equal to the actual costs of the Public Improvement Projects paid by the Developer as set forth in the SAP, in accordance with the terms of this Reimbursement Agreement, in a principal amount not to exceed the amount hereafter set forth in the SAP (the “Reimbursement Obligation”), plus interest accrued, as provided in Section 2(a) below. The City hereby covenants to create, concurrently with the execution of this Reimbursement Agreement, a separate fund to be designated the “Reimbursement Fund”. The Reimbursement Obligation is payable from Assessment Revenue to be deposited in the Reimbursement Fund as described below and in accordance with the Development Agreement and the SAP:
  - a. The Reimbursement Obligation is payable solely from: (i) Assessment Revenue received and collected by the City from Assessments deposited an account within the Reimbursement Fund after the payment of debt service on Future Bonds(ii)

the net proceeds (after funding reserve funds, payment of costs of issuance, including the costs paid or incurred by the City and City Administrative Expenses) of one or more series of Future Bonds issued by the City to fund all or a portion of the Reimbursement Obligation in accordance with the terms of the Development Agreement and the SAP and secured by the Assessment Revenue; or (iii) a combination of items (i) and (ii) immediately above. The Assessment Revenue shall be received, collected and deposited into the applicable account of the Reimbursement Fund subject to the following limitations:

- i. Calculation of the Assessments in the District and the first Annual Installment due, shall begin as shall be provided in the SAP.
  - ii. Assessments collected for the Reimbursement Obligation listed above shall accrue simple interest annually at the rate set forth in the SAP, such rate to be in compliance with Subsections 372.023(e)(1) and (e)(2) of the PID Act. Such interest shall accrue upon levy of the Assessments only for the portion of the Assessment that is not allocated to outstanding Future Bonds. If accrued, interest shall begin and continue on the unpaid principal amount of the Assessments as set forth in the SAP until the earlier of (i) the expiration of the term set forth in the SAP, or (ii) the issuance of Future Bonds to fund a portion of the Reimbursement Obligation, as reduced by annual payments made pursuant to (iv) below.
  - iii. Assessment Revenue dedicated to the payment of all or a portion of the Reimbursement Obligation and interest thereon, shall be deposited into the Reimbursement Fund after the payment of debt service on the outstanding Future Bonds.
  - iv. The Developer shall receive the Unpaid Balance in annual installments as set forth in the SAP and herein from the applicable account of the Reimbursement Fund, for the time period set forth in the SAP or until Future Bonds are issued to fund such Reimbursement Obligation, and as allowed under Section 2(a) above.
4. The Reimbursement Obligation, as set forth in the SAP, plus the interest as described above, if accruing, are collectively, the “Unpaid Balance.” The Unpaid Balance is secured by and payable solely from Assessment Revenue received and collected for such purpose and deposited into the Reimbursement Fund subject to Section 3(a)(iv), and Section 5 herein. No other City funds, revenue, taxes, or income of any kind shall be used to pay the Unpaid Balance, even if the Unpaid Balance is not paid in full by the term of this Agreement, as set forth herein. Payment of Assessment Revenue from the applicable account of the Reimbursement Fund after the payment of debt service on outstanding Future Bonds, shall be made annually to the Developer subject to the term of

this Reimbursement Agreement as set forth in Section 22. The outstanding Unpaid Balance and the Reimbursement Obligation shall be reduced by the amount of each annual payment to the Developer from the applicable account of the Reimbursement Fund or Future Bond proceeds paid to Developer.

5. This Reimbursement Agreement shall not, under any circumstances, give rise to or create a charge against the general credit or taxing power of the City or a debt or other obligation of the City payable from any source other than Assessment Revenue received, collected and deposited into the Reimbursement Fund. The City covenants that it will comply with the provisions of this Reimbursement Agreement, the Development Agreement, and the PID Act, including provisions relating to the administration of the District and the enforcement and collection of assessments, and all other covenants provided therein. Notwithstanding its collection efforts, if the City fails to receive all or any part of the Assessment Revenue or does not receive an amount in excess of the annual debt service due on the outstanding Future Bonds, and, as a result, is unable to make transfers from the Reimbursement Fund for payments to the Developer as required under this Reimbursement Agreement, such failure and inability shall not constitute a Failure or Event of Default (both defined below) by the City under this Reimbursement Agreement.
6. Future Bonds may be issued to reimburse the cost of completed Public Improvement Projects as set forth in the SAP. If Future Bonds are issued to fund all or a portion of the Reimbursement Obligation after the levy of the Assessments, the net proceeds of such Future Bonds shall be used to pay the outstanding Reimbursement Obligation, as reduced by payments made pursuant to Section 3 herein, due to the Developer under this Reimbursement Agreement for the costs of the Public Improvement Projects as set forth in the SAP. However, no Future Bonds shall be issued until all Public Improvement Projects assessed for pursuant to the SAP and the Amenities (as defined in Section 28 below) have been completed and ownership has transferred. This Reimbursement Agreement shall terminate on the earlier of (i) the issuance of Future Bonds in the aggregate to fund the entire Reimbursement Obligation as reduced by payments made pursuant to Section 3 herein, (ii) the reimbursement of Public Improvement Project costs as set forth in the SAP, (iii) the expiration of the Assessments as set forth in the SAP, (iv) termination of this Agreement pursuant to an Event of Default or termination event herein or under any prior agreement with the Developer relating to the District or the land therein, or (v) the Public Improvements and the Amenities for the development within which the District is located, have not been constructed and ownership transferred within one year of the date of this Reimbursement Agreement. Notwithstanding the foregoing, the Developer shall only be entitled to repayment of the costs of the Public Improvement Projects in the amounts set forth in the SAP. The Developer represents and warrants that it will not request payment with respect to any portion of the Public Improvement Project

that is not part of the Public Improvement Projects identified in the SAP and it will follow all procedures set forth in the Development Agreement with respect to certification for payments, including for payments of the Unpaid Balance from the Reimbursement Fund.

7. The Developer has the right to convey, transfer, assign, mortgage, pledge, or otherwise encumber, in whole or in part without the consent of (but with written notice to) the City, the Developer's right, title, or interest in the revenue streams identified in this Reimbursement Agreement including, but not limited to, any right, title, or interest of the Developer in and to payment of the Unpaid Balance (any of the foregoing, a "Transfer," and the person or entity to whom the Transfer is made, a "Transferee"). Notwithstanding the foregoing, however, no Transfer shall be effective until five (5) days after Developer's written notice of the Transfer is received by the City, including for each Transferee the information required by Section 11 below. The Developer may not transfer its obligation to construct the Public Improvements under any prior agreement with the City regarding the District or its land without the City's consent. The City may rely on any notice of a Transfer received from the Developer without obligation to investigate or confirm the validity or occurrence of such Transfer. No conveyance, transfer, assignment, mortgage, pledge or other encumbrance shall be made by the Developer or any successor or assignee of the Developer that results in the City being an "obligated person" within the meaning of Rule 15c2-12 of the United States Securities and Exchange Commission. The Developer waives all rights or claims against the City for any such funds provided to a third party as a result of a Transfer for which the City has received notice. The City shall not be required to make payments pursuant to this Reimbursement Agreement to more than two parties, nor shall it be required to execute any consent or make any representations or covenants relating to such assignment.
8. The obligations of the City under this Reimbursement Agreement are non-recourse and payable only from the Reimbursement Fund and such obligations do not create a debt or other obligation payable from any other City revenues, taxes, income, or property. None of the City or any of its elected or appointed officials or any of its officers or employees shall incur any liability hereunder to the Developer or any other party in their individual capacities by reason of this Reimbursement Agreement or their acts or omissions under this Reimbursement Agreement.
9. Nothing in this Reimbursement Agreement is intended to constitute a waiver by the City of any remedy the City may otherwise have outside this Reimbursement Agreement against the Developer, any Transferee, or any other person or entity involved in the design, construction or installation of the Public Improvement Projects. The obligations of Developer hereunder shall be those as a Party hereto and not solely as an owner of property in the District. Nothing herein shall be constructed, nor is intended, to affect the

City’s or Developer’s rights and duties to perform their respective obligations under other agreements, regulations and ordinances.

- 10. This Reimbursement Agreement is being executed and delivered, and is intended to be performed in the State of Texas. Except to the extent that the laws of the United States may apply to the terms hereof, the substantive laws of the State of Texas shall govern the validity, construction, enforcement, and interpretation of this Reimbursement Agreement. In the event of a dispute involving this Reimbursement Agreement, exclusive venue for such dispute shall lie in any court of competent jurisdiction in Harris County, Texas.
- 11. Any notice required or contemplated by this Reimbursement Agreement shall be signed by or on behalf of the Party giving the Notice, and shall be deemed effective as follows:
  - (i) when delivered by a national company such as FedEx or UPS with evidence of delivery signed by any person at the delivery address regardless of whether such person was the named addressee; or
  - (ii) 72 hours after the notice was deposited with the United States Postal Service, Certified Mail, Return Receipt Requested. Any Party may change its address by delivering written notice of such change in accordance with this section. All Notices given pursuant to this Section shall be addressed as follows:

To the City:                   City Manager  
   121 S. Velasco  
   Angleton, TX 77515

With a copy to:                Attn: Judith El Masri, City Attorney  
   Randle Law Office Ltd, L.L.P  
   820 Gessner, Suite 1570  
   Memorial City Plaza II  
   Houston, TX 77024

To the Developer:            Attn: Michael Foley  
   Riverwood Ranch LLC  
   1027 Yale Street  
   Houston, Texas 77008

With a copy to:                Attn: John G. Cannon  
   Coats | Rose, P.C.  
   9 Greenway Plaza, Suite 1000  
   Houston, Texas 77046

- 12. Notwithstanding anything herein to the contrary, nothing herein shall otherwise authorize or permit the use by the City of the Assessments contrary to the provisions of the PID Act.

13. Remedies:

- a. If either Party fails to perform an obligation imposed on such Party by this Reimbursement Agreement (a “Failure”) and such Failure is not cured after written notice and the expiration of the cure periods provided in this section, then such Failure shall constitute an “Event of Default.” Upon the occurrence of a Failure by a non-performing Party, the other Party shall notify the non-performing Party and all Transferees of the non-performing Party in writing specifying in reasonable detail the nature of the Failure. The non-performing Party to whom notice of a Failure is given shall have at least 30 days from receipt of the notice within which to cure the Failure; however, if the Failure cannot reasonably be cured within 30 days and the non-performing Party has diligently pursued a cure within such 30-day period and has provided written notice to the other Party that additional time is needed, then the cure period shall be extended for an additional 30 day period so long as the non-performing Party cures such default within 90 days. Any Transferee shall have the same rights as the Developer to enforce the obligations of the City under this Reimbursement Agreement and shall also have the right, but not the obligation, to cure any alleged Failure by the Developer within the same time periods that are provided to the Developer. The election by a Transferee to cure a Failure by the Developer shall constitute a cure by the Developer.
- b. Notwithstanding the foregoing, the following are Events of Default under this Agreement:
  - i. The Developer shall fail to pay to the City any monetary sum hereby required of it as and when the same shall become due and payable and shall not cure such default within thirty (30) days after the later of the date on which written notice thereof is given by the City to the Developer, as provided in this Agreement.
  - ii. Either Party shall fail to comply in any material respect with any term, provision or covenant of this Reimbursement Agreement, and shall not cure such failure within ninety (90) days after written notice thereof is given by to the defaulting Party as provided in this Agreement;
  - iii. The filing by Developer of a voluntary proceeding under present or future bankruptcy, insolvency, or other laws respecting debtors, rights;
  - iv. The consent by Developer to an involuntary proceeding under present or future bankruptcy, insolvency, or other laws respecting debtor’s rights;
  - v. The entering of an order for relief against Developer or the appointment of a receiver, trustee, or custodian for all or a substantial part of the

property or assets of Developer in any involuntary proceeding, and the continuation of such order, judgment or degree unstayed for any period of ninety (90) consecutive days;

- vi. The failure by Developer or any affiliate to pay impositions, and Assessments on property owned by the Developer and/or any affiliates within the PID, if such failure is not cured within thirty (30) days after notice thereof is given by the City to the Developer as provided in this Reimbursement Agreement;
  - vii. A Developer event of default under the any agreement with the City regarding the District or its land which continues beyond its cure period;
  - viii. The Developer shall breach any material covenant or default in the performance of any material obligation hereunder; or
  - ix. The City shall fail to pay any monetary sum due pursuant to this Agreement provided that Developer has adequately submitted documentation of the costs of the Public Improvement Projects to the City for reimbursement.
- c. If the City is in Default, the Developer's sole and exclusive remedies shall be to: (1) seek a writ of mandamus to compel performance by the City; or (2) seek specific enforcement of this Reimbursement Agreement
- d. If the Developer is in Default, the City may pursue any legal or equitable remedy or remedies, including, without limitation, actual damages, and termination of this Agreement. The City shall not terminate this Reimbursement Agreement unless it delivers to the Developer a second notice expressly providing that the City will terminate within thirty (30) additional days. Termination or non-termination of this Reimbursement Agreement upon a Developer Event of Default shall not prevent the City from suing the Developer for specific performance, actual damages, excluding punitive, special and consequential damages, injunctive relief or other available remedies with respect to obligations that expressly survive termination. In the event the Developer fails to pay any of the expenses or amounts or perform any obligation specified in this Reimbursement Agreement, then to the extent such failure constitutes an Event of Default hereunder, the City may, but shall not be obligated to do so, pay any such amount or perform any such obligations and the amount so paid and the reasonable out of pocket costs incurred by the City in said performance shall be due and payable by the Developer to the City within thirty (30) days after the Developer's receipt of an itemized list of such costs.
- e. No remedy herein conferred or reserved is intended to be exclusive of any other available remedy or remedies, but each and every such remedy shall be

cumulative and shall be in addition to every other remedy given hereunder now or hereafter existing at law or in equity.

- f. The exercise of any remedy herein conferred or reserved shall not be deemed a waiver of any other available remedy.
14. The Developer shall assume the defense of, and indemnify and hold harmless the City's inspector, the City employees, officials, officers, representative and agents of the City and each of them (each an "Indemnified Party") from and against, all actions, damages, claims, losses or expense of every type and description to which they may be subject or put, by reason of, or resulting from the breach of any provisions of this Reimbursement Agreement by the Developer, the Developer's nonpayment under contracts between the Developer and its consultants, engineers, advisors, contractors, subcontractors and suppliers in the provision of the Public Improvement Projects constructed by Developer, or any claims by persons employed by the Developer relating to the construction of such projects. Notwithstanding the foregoing, no indemnification is given hereunder for any action, damage, claim, loss or expense directly attributable to the willful misconduct or gross negligence of any Indemnified Party. The City does not waive its defenses and immunities, whether governmental, sovereign, official or otherwise and nothing in this Reimbursement Agreement is intended to or shall confer any right or interest in any person not a party hereto.
  15. To the extent there is a conflict between this Reimbursement Agreement and an indenture securing the Future Bonds issued to fund the Reimbursement Obligation or the SAP, the indenture securing such Future Bonds or the SAP shall control as the provisions relate to the Assessments.
  16. The failure by a Party to insist upon the strict performance of any provision of this Reimbursement Agreement by the other Party, or the failure by a Party to exercise its rights upon a Default by the other Party shall not constitute a waiver of such Party's right to insist and demand strict compliance by such other Party with the provisions of this Reimbursement Agreement.
  17. The City does not waive or surrender any of its governmental powers, immunities, or rights except to the extent permitted by law and necessary to allow the Developer to enforce its remedies under this Reimbursement Agreement.
  18. Nothing in this Reimbursement Agreement, express or implied, is intended to or shall be construed to confer upon or to give to any person or entity other than the City and the Developer and its assigns any rights, remedies, or claims under or by reason of this Reimbursement Agreement, and all covenants, conditions, promises, and agreements in



this Reimbursement Agreement shall be for the sole and exclusive benefit of the City and the Developer.

19. The City represents and warrants that this Reimbursement Agreement has been approved by official action by the City Council of the City in accordance with all applicable public notice requirements (including, but not limited to, notices required by the Texas Open Meetings Act) and that the individual executing this Reimbursement Agreement on behalf of the City has been duly authorized to do so. The Developer represents and warrants that this Reimbursement Agreement has been approved by appropriate action of the Developer, and that the individual executing this Reimbursement Agreement on behalf of the Developer has been duly authorized to do so. Each Party respectively acknowledges and agrees that this Reimbursement Agreement is binding upon such Party and is enforceable against such Party, in accordance with its terms and conditions and to the extent provided by law.
20. This Reimbursement Agreement represents the entire agreement of the Parties and no other agreement, statement or promise made by any Party or any employee, officer or agent of any Party with respect to any matters covered hereby that is not in writing and signed by all the Parties to this Agreement shall be binding. This Reimbursement Agreement shall not be modified or amended except in writing signed by the Parties. If any provision of this Reimbursement Agreement is determined by a court of competent jurisdiction to be unenforceable for any reason, then: (a) such unenforceable provision shall be deleted from this Reimbursement Agreement; and (b) the remainder of this Reimbursement Agreement shall remain in full force and effect and shall be interpreted to give effect to the intent of the Parties.
21. This Reimbursement Agreement may be executed in any number of counterparts, each of which shall be deemed an original.
22. The term of this Reimbursement Agreement is the earlier of (i) the expiration of the Assessments as set forth in the SAP, (ii) the date the Unpaid Balance is paid in full in accordance herewith, (iii) the issuance of one or more series of Future Bonds to fund, in the aggregate, all of the Reimbursement Obligation, as reduced by payments made pursuant to Section 3 herein, or (iv) termination pursuant to an Event of Default under this Agreement or under the Development Agreement, whichever occurs first. If a series of Future Bonds does not fully fund the Reimbursement Obligation as set forth in the Service and Assessment Plan, the remaining amount of the Reimbursement Obligation remains outstanding and subject to annual payments and/or payment from an additional series of Future Bonds. If the Developer Defaults under this Reimbursement Agreement or the Development Agreement, the Development Agreement shall not terminate with respect to the costs of the Public Improvement Projects that have been previously been

approved by the City pursuant to a Certification for Payment (as defined in the Development Agreement) prior to the date of Default.

23. Each Party shall use good faith, due diligence and reasonable care in the performance of its respective obligations under this Reimbursement Agreement, and time shall be of the essence in such performance; however, in the event a Party is unable, due to Force Majeure, to perform its obligations under this Reimbursement Agreement, then the obligations affected by the Force Majeure shall be temporarily suspended. Within fifteen (15) business days after the occurrence of a Force Majeure, the Party claiming the right to temporarily suspend its performance, shall give Notice to all the Parties, including a detailed explanation of the Force Majeure and a description of the action that will be taken to remedy the Force Majeure and resume full performance at the earliest possible time. For purposes of this Reimbursement Agreement, “Force Majeure” means any act that (i) materially and adversely affects the affected Party’s ability to perform the relevant obligations under this Reimbursement Agreement or delays such affected Party’s ability to do so, (ii) is beyond the reasonable control of the affected Party, (iii) is not due to the affected Party’s fault or negligence and (iv) could not be avoided, by the Party who suffers it, by the exercise of commercially reasonable efforts. “Force Majeure” shall include: (a) natural phenomena, such as storms, floods, lightning and earthquakes; (b) wars, civil disturbances, revolts, insurrections, terrorism, sabotage and threats of sabotage or terrorism; (c) transportation disasters, whether by ocean, rail, land or air; (d) strikes or other labor disputes that are not due to the breach of any labor agreement by the affected Party; (e) fires; (f) epidemics or pandemics that result in a governmental action that stops or delays construction or halts, impedes or delays the operations of the City; and (g) actions or omissions of a governmental authority (including the actions of the City in its capacity as a governmental authority) that were not caused by, voluntarily induced or promoted by the affected Party (including the submission of incomplete or erroneous information to the City), or brought about by the breach of its obligations under this Reimbursement Agreement or any applicable law or failure to comply with City regulations; provided, however, that under no circumstances shall Force Majeure include any of the following events: (u) changes in market condition; (v) any strike or labor dispute involving the employees of the Developer or any affiliate of the Developer, other than industry or nationwide strikes or labor disputes; or (w) the occurrence of any manpower, material or equipment shortages.
24. Any amounts or remedies due pursuant to this Reimbursement Agreement are not subject to acceleration.
25. Statutory Verifications. The Developer makes the following representations and covenants pursuant to Chapters 2252, 2271, 2274, and 2276, Texas Government Code, as heretofore amended (the “Government Code”), in entering into this Reimbursement Agreement. As used in such verifications, “affiliate” means an entity that controls, is

controlled by, or is under common control with the Developer within the meaning of SEC Rule 405, 17 C.F.R. § 230.405, and exists to make a profit. Liability for breach of any such verification during the term of this Reimbursement Agreement shall survive until barred by the applicable statute of limitations, and shall not be liquidated or otherwise limited by any provision of this Reimbursement Agreement, notwithstanding anything in this Reimbursement Agreement to the contrary.

*Not a Sanctioned Company.* The Developer represents that neither it nor any of its parent company, wholly- or majority-owned subsidiaries, and other affiliates is a company identified on a list prepared and maintained by the Texas Comptroller of Public Accounts under Section 2252.153 or Section 2270.0201, Government Code. The foregoing representation excludes the Developer and each of its parent company, wholly- or majority-owned subsidiaries, and other affiliates, if any, that the United States government has affirmatively declared to be excluded from its federal sanctions regime relating to Sudan or Iran or any federal sanctions regime relating to a foreign terrorist organization.

*No Boycott of Israel.* The Developer hereby verifies that it and its parent company, wholly- or majority-owned subsidiaries, and other affiliates, if any, do not boycott Israel and will not boycott Israel during the term of this Reimbursement Agreement. As used in the foregoing verification, “boycott Israel” has the meaning provided in Section 2271.001, Government Code.

*No Discrimination Against Firearm Entities.* The Developer hereby verifies that it and its parent company, wholly- or majority-owned subsidiaries, and other affiliates, if any, do not have a practice, policy, guidance, or directive that discriminates against a firearm entity or firearm trade association and will not discriminate against a firearm entity or firearm trade association during the term of this Reimbursement Agreement. As used in the foregoing verification, “discriminate against a firearm entity or firearm trade association” has the meaning provided in Section 2274.001(3), Government Code.

*No Boycott of Energy Companies.* The Developer hereby verifies that it and its parent company, wholly- or majority-owned subsidiaries, and other affiliates, if any, do not boycott energy companies and will not boycott energy companies during the term of this Reimbursement Agreement. As used in the foregoing verification, “boycott energy companies” has the meaning provided in Section 2276.001(1), Government Code.

26. Form 1295. The Developer will provide a completed and notarized Form 1295 generated by the Texas Ethics Commission's electronic filing application in accordance with the provisions of Section 2252.908 of the Texas Government Code and the rules promulgated by the Texas Ethics Commission (a "Form 1295"), in connection with entry into this Agreement. Upon receipt of the Developer's Form 1295, the City agrees to acknowledge the Developer's Form 1295 through its electronic filing application. The Developer and the City understand and agree that, with the exception of information identifying the City and the contract identification number, the City is not responsible

for the information contained in the Developer's Form 1295 and the City has not verified such information.

27. Make-Whole Provision.

- a. If in any calendar year the City issues debt obligations that would be qualified tax-exempt obligations but for the issuance or proposed issuance of PID Bonds, the Developer shall pay to the City a fee (the "PID Bond Fee") to compensate the City for the interest savings the City would have achieved had the debt issued by the City been qualified tax-exempt obligations. Prior to issuance of any PID Bonds, the City's financial advisor shall calculate the PID Bond Fee based on the issued and planned debt issuances for the City and shall notify the Developer of the total amount of the PID Bond Fee prior to the issuance of the PID Bonds. The Developer agrees to pay the PID Bond Fee to the City within ten (10) business days after receiving notice from the City of the amount of PID Bond Fee due to the City. If the City has not forgone the ability to issue a series of obligations as qualified tax exempt obligations, the PID Bond Fee shall be held in a segregated account of the City and if the total amount of debt obligations sold or entered into by the City in the calendar year in which the PID Bonds are issued are less than the bank qualification limits (currently \$10 million per calendar year), then the PID Bond Fee shall be returned to the Developer. The City shall not be required to sell any series of PID Bonds until the Developer has paid the estimated PID Bond Fee.
- b. If the City is planning to issue debt obligations as qualified tax exempt obligations prior to the issuance of PID Bonds in any calendar year, the City may (but is not obligated to) notify the Developer that it is planning to issue qualified tax-exempt obligations that may limit the amount of debt that the City can issue in a calendar year. In connection with the delivery of such notice, the City's financial advisor shall provide a calculation of the interest savings that the City would achieve by issuing the obligations the City plans to issue in the year as qualified tax-exempt obligations as opposed to non-qualified tax exempt obligations. If following the receipt of such notice the Developer asks the City to forego designating the obligations as qualified tax exempt obligations in order to preserve capacity for PID Bonds, the Developer shall pay to the City a fee to compensate the City for the interest savings the City would have achieved had the debt issued by the City been qualified tax-exempt obligations. The Developer agrees to pay the PID Bond Fee to the City within ten (10) business days after receiving notice from the City of the amount of PID Bond Fee due to the City. Upon receipt of the PID Bond Fee, the City agrees not to designate the obligations planned for issuance as qualified tax exempt obligations. Such payment is compensation to the City for choosing to forego the designation of obligations as qualified tax exempt obligations, and the PID Bond Fee may be used for any lawful purpose of the City.

28. Amenities. As used herein the "Amenities" consist of the improvements illustrated on the Riverwood Ranch Playground Proposal attached hereto as Exhibit "A" and

described in the cost estimate attached hereto as Exhibit “B”; provided, however, that the total amount of reimbursement for such Amenities from any source shall be limited to \$105,000. -

29. Choice of Law. This Agreement shall be governed by the laws of the State of Texas.

30. Out of State Issuer. This Agreement may not be assigned to an out-of-state issuer of debt and the City shall not participate in any third-party financing relating to the Assessment Revenues received by the Developer pursuant to this Agreement.

31. Standing Letter. If requested by the Texas Attorney General, the Developer will file a standing letter addressing the representations made in Section 25 of this Agreement in a form acceptable to the Texas Attorney General.

[SIGNATURE PAGES TO FOLLOW]

Executed by Developer and City to be effective on the Effective Date.

corporation,

RIVERWOOD RANCH, LLC  
a Texas limited liability company

By: RPDC, Inc. a Texas

its manager

By: \_\_\_\_\_  
John Santasiero, President

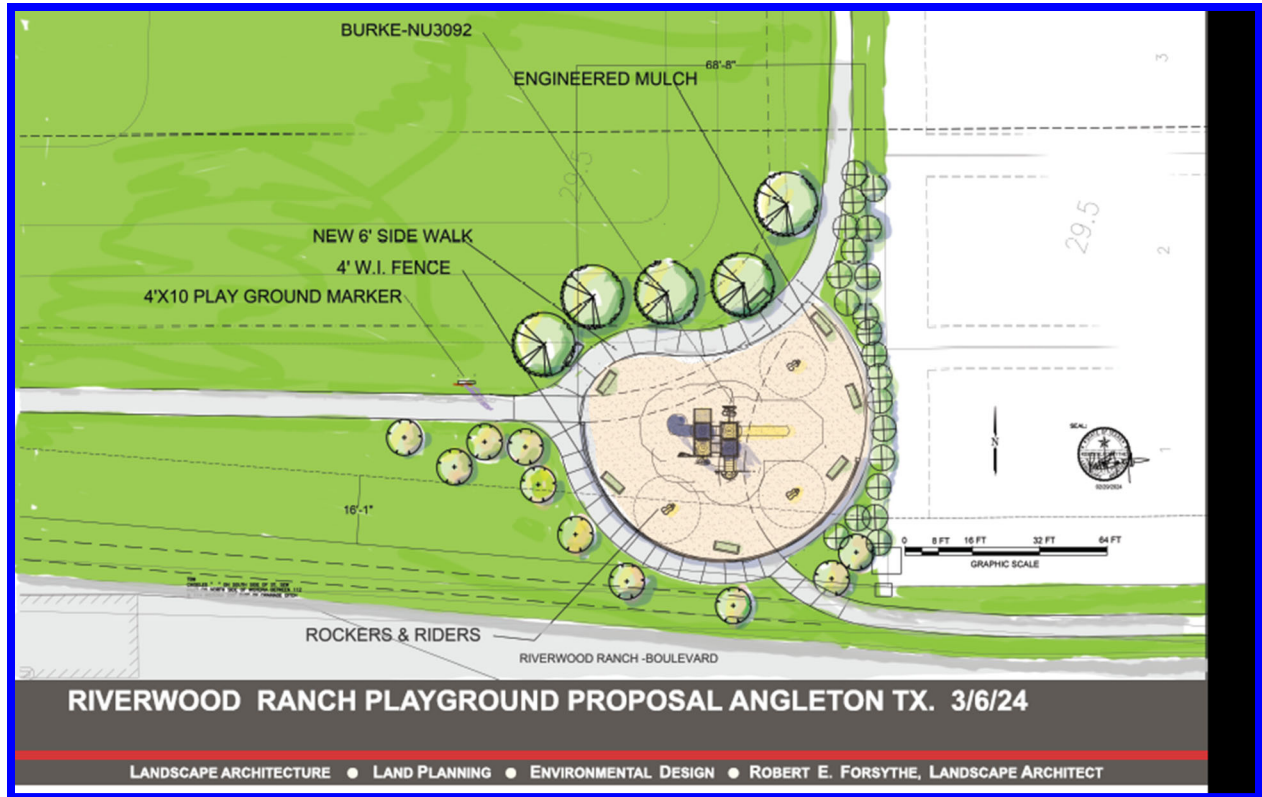
ATTEST:

**CITY OF ANGLETON**

\_\_\_\_\_  
City Secretary

\_\_\_\_\_  
Mayor

EXHIBIT "A"  
PLAYGROUND PROPOSAL





## EXHIBIT "B"


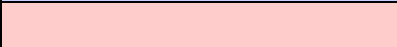
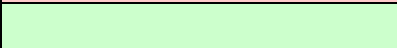
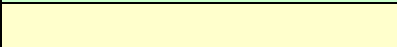

COST ESTIMATE OF PLAYGROUND PROPOSAL**RIVERWOOD RANCH PLAYGROUND**

<u>Item</u>	<u>QTY</u>	<u>Unit</u>	<u>Description of Item with Unit Price Written in Words</u>	<u>Unit Price</u>	<u>Amount</u>
<b>HARDSCAPE</b>					
<u>1</u>	<u>670</u>	<u>SF</u>	<u>Removal of existing sidewalk</u> <u>@</u>	<u>\$ 2.50</u>	<u>\$ 1,675.00</u>
<u>2</u>	<u>177</u>	<u>LF</u>	<u>Furnish and Install a new 6' sidewalk</u> <u>@</u>	<u>\$ 30.00</u>	<u>\$ 5,310.00</u>
<u>3</u>	<u>1</u>	<u>EA</u>	<u>Furnish and Install Burke MU3092 play structure</u> <u>@</u>	<u>\$ 65,000.00</u>	<u>\$ 65,000.00</u>
<u>4</u>	<u>3</u>	<u>EA</u>	<u>Furnish and Install Burke rockers</u> <u>@</u>		<u>\$ 13,000.00</u>
<u>5</u>	<u>7</u>	<u>EA</u>	<u>Furnish and Install 6' park benches (Kay Park)</u> <u>@</u>	<u>\$ 3,000.00</u>	<u>\$ 21,000.00</u>
<u>6</u>	<u>75</u>	<u>LF</u>	<u>Furnish and Install 2' wide concrete curb</u> <u>@</u>	<u>\$ 10.00</u>	<u>\$ 750.00</u>
<u>7</u>	<u>2,905</u>	<u>SF</u>	<u>Furnish and Install playground area, 12" deep with concrete edging and engineered mulch</u> <u>@</u>	<u>\$ 5.00</u>	<u>\$ 14,525.00</u>
<u>8</u>	<u>180</u>	<u>LF</u>	<u>Furnish and Install Drainage pipe, 6" perforated and covered with gravel</u> <u>@</u>	<u>\$ 35.00</u>	<u>\$ 6,300.00</u>
<u>9</u>	<u>5810</u>	<u>SF</u>	<u>Furnish and Install filter cloth, 2 layer (2905 each) for playground</u> <u>@</u>	<u>\$ 0.70</u>	<u>\$ 4,067.00</u>
<u>10</u>	<u>92</u>	<u>LF</u>	<u>Furnish and Install 4' high wrought iron protection barrier</u> <u>@</u>	<u>\$ 45.00</u>	<u>\$ 4,140.00</u>
<u>11</u>	<u>1</u>	<u>EA</u>	<u>Furnish and Install a 4' X 10' tall carten steel playground marker with stainless steel lettering and a "Rules" plaque</u> <u>@</u>	<u>\$ 7,500.00</u>	<u>\$ 7,500.00</u>
<b>PLANTING</b>					
<u>1</u>	<u>5</u>	<u>EA</u>	<u>Furnish and Install 30 gallon Bald Cypress</u> <u>@</u>	<u>\$ 350.00</u>	<u>\$ 1,750.00</u>
<u>2</u>	<u>10</u>	<u>EA</u>	<u>Furnish and Install 30 gallon Crepe Myrtles (white)</u> <u>@</u>	<u>\$ 350.00</u>	<u>\$ 3,500.00</u>
<u>3</u>	<u>20</u>	<u>EA</u>	<u>Furnish and Install 15 gallon Wax Myrtles</u> <u>@</u>	<u>\$ 150.00</u>	<u>\$ 3,000.00</u>
<u>4</u>	<u>130</u>	<u>SY</u>	<u>Furnish and Install solid sod</u> <u>@</u>	<u>\$ 4.00</u>	<u>\$ 520.00</u>
<b>IRRIGATION</b>					
<u>1</u>	<u>1</u>	<u>LS</u>	<u>Revise existing irrigation system to fit new development</u> <u>@</u>	<u>\$ 5,000.00</u>	<u>\$ 5,000.00</u>
<b>TOTAL PLANTING, IRRIGATION AND HARDSCAPE</b>					<b>\$ 157,557.00</b>

<u>Contingency</u>	<u>20%</u>	<u>\$ 31,511.40</u>
<u>Design - Engineer &amp; Architect</u>	<u>10%</u>	<u>\$ 15,755.70</u>
<u>Total</u>		<u>\$ 204,824.10</u>

Document comparison by Workshare 9.5 on Wednesday, March 20, 2024 1:05:40 PM

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Description	Reimbursement Agreement - Riverwood North PID
Document 2 ID	netdocuments://4870-8556-2799/2
Description	Reimbursement Agreement - Riverwood North PID
Rendering set	Standard

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<del>Deletion</del>	
<del>Moved from</del>	
<a href="#">Moved to</a>	
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Format change	
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Inserted cell	
Deleted cell	
Moved cell	
Split/Merged cell	
Padding cell	

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Deletions	29
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Moved to	0
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Format changed	0
Total changes	189

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<b>Changes:</b>	
Add	25
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<del>Table moves from</del>	0
Embedded Graphics (Visio, ChemDraw, Images etc.)	0
Embedded Excel	0
Format changes	0
<b>Total Changes:</b>	<b>42</b>



## AGENDA ITEM SUMMARY FORM

---

**MEETING DATE:** April 23, 2024  
**PREPARED BY:** Chris Whittaker  
**AGENDA CONTENT:** Henderson Roadway Amendment #1 – Task Force

**AGENDA ITEM SECTION:** Regular Agenda

---

**BUDGETED AMOUNT:** **FUNDS REQUESTED:**  
\$12,835.00

**FUND:**

### EXECUTIVE SUMMARY:

The City has requested HDR provide a fee for the creation of a ten (10) member task force, hold two (2) task force meetings to get input on the cross section of the roadway, document meeting and directions provided, incorporate the task forces direction into the design, and present findings to Council. HDR has provided a proposal to provide these requested services.

**RECOMMENDATION:** Council to approve HDR for an amount of \$12,835.00 to perform the Henderson Roadway Alignment – Amendment #1.



April 16, 2024

Mr. Chris Whittaker  
City Manager  
City of Angleton  
121 South Velasco Street  
Angleton, Texas 77515

Re: Amendment to Fee Proposal for Engineering Services for Henderson Road Roadway Alignment  
Amendment #1  
Street Task Force Services  
City of Angleton  
HDR Job No. 10393602

HDR Engineering, Inc. (HDR) is pleased to submit Amendment #1 for the above referenced project, which was executed on January 25, 2024, for professional engineering services associated with the Henderson Roadway Alignment Project.

The follow is the scope for this amendment:

1. HDR to assist the City in selecting up to ten (10) members for the Henderson Road Task Force to evaluate different roadway cross section and present their recommendations to the City Council.
2. It is estimated that there will be two task force meetings.
3. HDR will prepare agenda items, sign in sheets, document conversations, and provide meeting minutes.
4. HDR will incorporate the agreed upon cross sections into an exhibit for discussion at second task force meeting. At the completion of the meeting, HDR will finalize the recommended cross sections for the Henderson Road layout.
5. HDR will prepare an agenda item to present findings at a City Council meeting.

**Amended Fee Amount**

The fee totals with this amendment are as follows for the City:

**Lump Sum Fees (NOT TO EXCEED):**

	<b><u>Additional Fee</u></b>
Street Task Force Services	\$12,835.00
<b>TOTAL AMOUNTS</b>	<b>\$ 12,835.00</b>

Therefore, the total fee amendment is an increase of **\$12,835.00**. The total contract, including this amendment, is now as follows:

**BASIC SERVICES**

Study Fee (Lump Sum) \$225,000.00

---

**Basic Services Fees** **\$225,000.00**

**Amendment #1** **\$12,835.00**

---

**Total Project Fee (Basic & Amendment #1)** **\$237,835.00**

**Schedule**

It is estimated that it will take 45 days to complete these additional tasks.

We appreciate the opportunity to be of service on this project. If you have any questions, please do not hesitate to contact me at (713) 622-9264.

Sincerely,

HDR Engineering, Inc.



David C. Weston  
Vice President/Area Manager



## AGENDA ITEM SUMMARY FORM

**MEETING DATE:** April 23, 2024

**PREPARED BY:** Chris Whittaker

**AGENDA CONTENT:** Update to TA Grant on 288B

**AGENDA ITEM SECTION:** Regular Agenda

**BUDGETED AMOUNT:**

**FUNDS REQUESTED:**  
N/A

**FUND:**

### EXECUTIVE SUMMARY:

The City has met with TxDOT representatives last week to discuss the TA Grant award for the Downtown Sidewalk Improvement Project from Cedar to Orange. Currently, the City is in the process of reviewing the provided Advance Funding Agreement (AFA) for the Downtown Sidewalk Project. It is estimated that the City will have all requested information over to TxDOT in two weeks. TxDOT will review and provide comments back to the City (estimated 6 weeks). Once the AFA is agreed upon it will take approximately 4-6 months to execute. Once executed, TxDOT will meet with the City on the 30% design plans submitted and start the design process up again. It is estimated that it will be 6-7 month process to complete the design.

The existing sanitary sewer lines have been televised that cross 288B. The TV crews were able to clean majority of the line segments but were not able to TV some of the lines due to access issues (invert built around pipes openings are too small) and debris build up in the line segments (see exhibit). These lines are typically vitrified clay pipe. There are a significant number of open joints, cracked pipes, several holes, and grease build up in the collection system (see attached exhibit). Due to the existing conditions, Cured in Place Pipe is a viable option.

I have also attached the record drawings of the TxDOT storm sewer project that was performed in the late 1990's/early 2000's (See attachment). As Councilman Booth previously stated, there are conflict boxes along the TxDOT storm Sewer where the sanitary sewer crosses. These lines are cased through the TxDOT storm sewer system. Therefore, Pipe Bursting is not a viable option.

HDR recommend that the City proceed forward with replacing only the sections under 288B by open cut. This will allow the City to protect its investment with the Downtown Sidewalk Improvements and allow for future rehabilitation in the future.

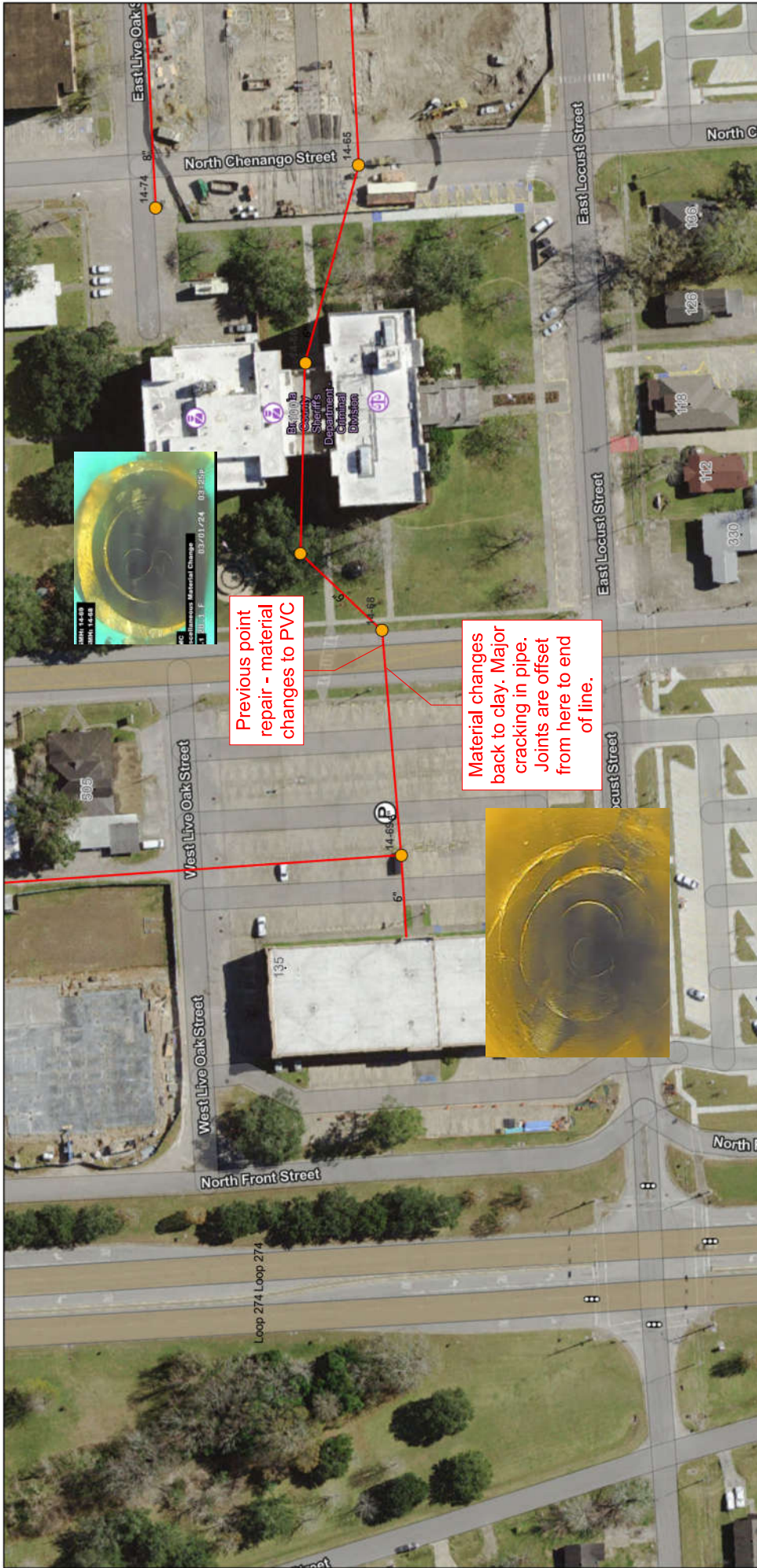
**RECOMMENDATION:** Request HDR to provide proposal for proposed utility improvements on 288B from Cedar to Orange..





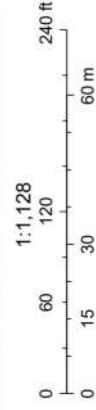
— Able to TV  
— Unable to TV

# Exhibit A



1/31/2024, 4:52:52 PM

- Streets
- Address Points
- Sanitary Sewer - Manholes
- Sanitary Sewer - Gravity Mains



Map data © OpenStreetMap contributors, Microsoft, Facebook, Inc. and its affiliates, Esri Community Maps contributors. Map layer by Esri. Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatasynelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user

ArcGIS Web AppBuilder

Esri Community Maps Contributors, Brazoria County, Texas Parks & Wildlife, © OpenStreetMap, Microsoft, CONANP, Esri, TomTom, Garmin, Foursquare, SafeGraph, GeoTechnologies, Inc, METINASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS | BCAD

Item 18.

# Exhibit B



2/1/2024, 8:26:53 AM

- Streets
- Address Points
- Sanitary Sewer - Manholes
- Sanitary Sewer - Gravity Mains
- Sanitary Sewer - Cleanouts



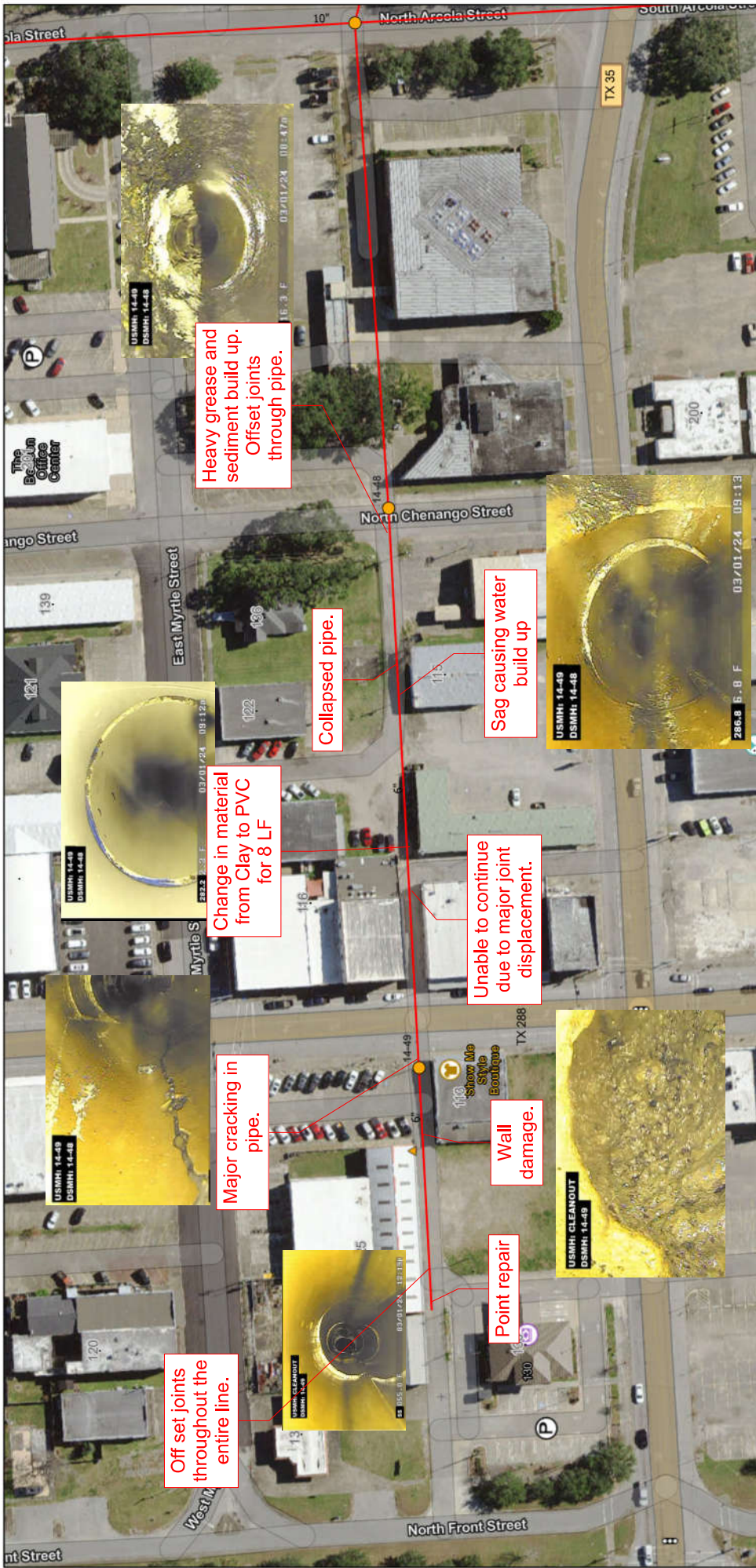
Map data © OpenStreetMap contributors, Microsoft, Facebook, Inc. and its affiliates, Esri Community Maps contributors. Map layer by Esri. Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodataslysen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user

ArcGIS Web AppBuilder

Esri Community Maps Contributors, Brazoria County, Texas Parks & Wildlife, © OpenStreetMap, Microsoft, CONANP, Esri, TomTom, Garmin, Foursquare, SafeGraph, GeoTechnologies, Inc., METINASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS | BCAD G

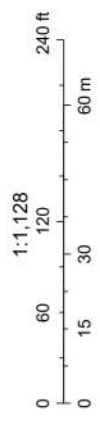
Item 18.

# Exhibit C



2/11/2024, 8:30:46 AM

- Streets
- Address Points
- Sanitary Sewer - Manholes
- Sanitary Sewer - Gravity Mains
- Sanitary Sewer - Cleanouts



Map data © OpenStreetMap contributors, Microsoft, Facebook, Inc. and its affiliates, Esri Community Maps contributors, Map layer by Esri, Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodataspyreisen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user

ArcGIS Web AppBuilder  
 Esri Community Maps Contributors, Brazoria County, Texas Parks & Wildlife, © OpenStreetMap, Microsoft, CONANP, Esri, TomTom, Garmin, Foursquare, SafeGraph, Inc, METINASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS | BCAD

Item 18.

STP 97(369)UM  
Brazoria

154316, DGN 3/27/97

COUNTY: \_\_\_\_\_ PROJ. NO. \_\_\_\_\_  
HWY. NO. \_\_\_\_\_ LETTING DATE \_\_\_\_\_  
DATE ACCEPTED \_\_\_\_\_

INDEX OF SHEETS  
SHEET NO. \_\_\_\_\_ DESCRIPTIONS  
SEE SHEET NO. 2 FOR INDEX OF SHEETS

WORK PERFORMED IN  
SUBSTANTIAL CONFORMANCE  
WITH FINAL PLANS AND  
CONTRACT:



**FINAL PLANS**

STATE OF TEXAS  
DEPARTMENT OF TRANSPORTATION

PLANS OF PROPOSED  
STATE HIGHWAY IMPROVEMENT

BRAZORIA COUNTY  
BS 288B

LIMITS: FROM DWYER STREET TO SH 35

NET LENGTH OF PROJECT-ROADWAY = 1.056m  
BRIDGE = 235m  
TOTAL = 1.291m

FOR THE CONSTRUCTION OF A NEW LOCATION  
NON-FREEMWAY FACILITY CONSISTING OF GRADING,  
STRUCTURES, CEM TREATED BASE, ASPH CONC PAVEMENT,  
SIGNING, SIGNALS ILLUMINATION AND PAVEMENT MARKINGS.

SUMMARY OF CHANGES  
ORDERS  
Page 1 B

SPECIFICATIONS ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION,  
MARCH 1, 1995 AND THE SPECIFICATION ITEM LISTED AND DATED AS FOLLOWS,  
SHALL GOVERN ON THIS PROJECT. REQUIRED CONTRACT PROVISIONS,  
FURNISH AND CONSTRUCTION CONTRACTS (FORM FHWA 1273), DECEMBER, 1993).

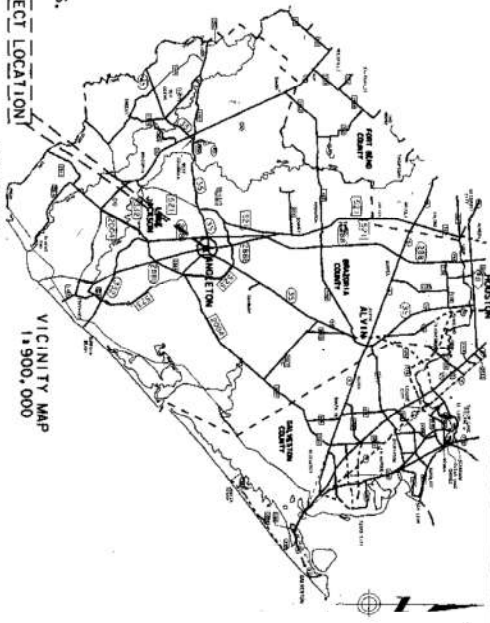
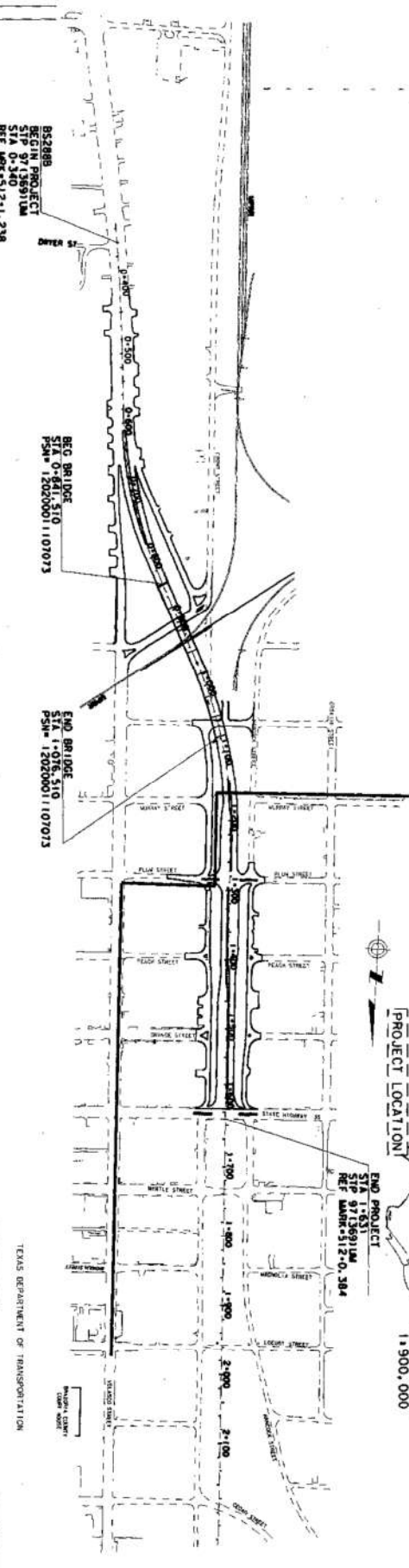
**PROJECT LOCATION MAP**

CONTRACTOR'S NAME: *Green & Root*  
LETTING DATE: *7-9-97*  
WORK BEGAN DATE: *11-17-97*  
WORK COMPLETION DATE: *6-4-99*  
ACTUALLY DATE: *6-4-99*

EXCEPTIONS: NONE  
EIGHT (8) SHEETS  
LAYOUT SCALE: 1" = 600'

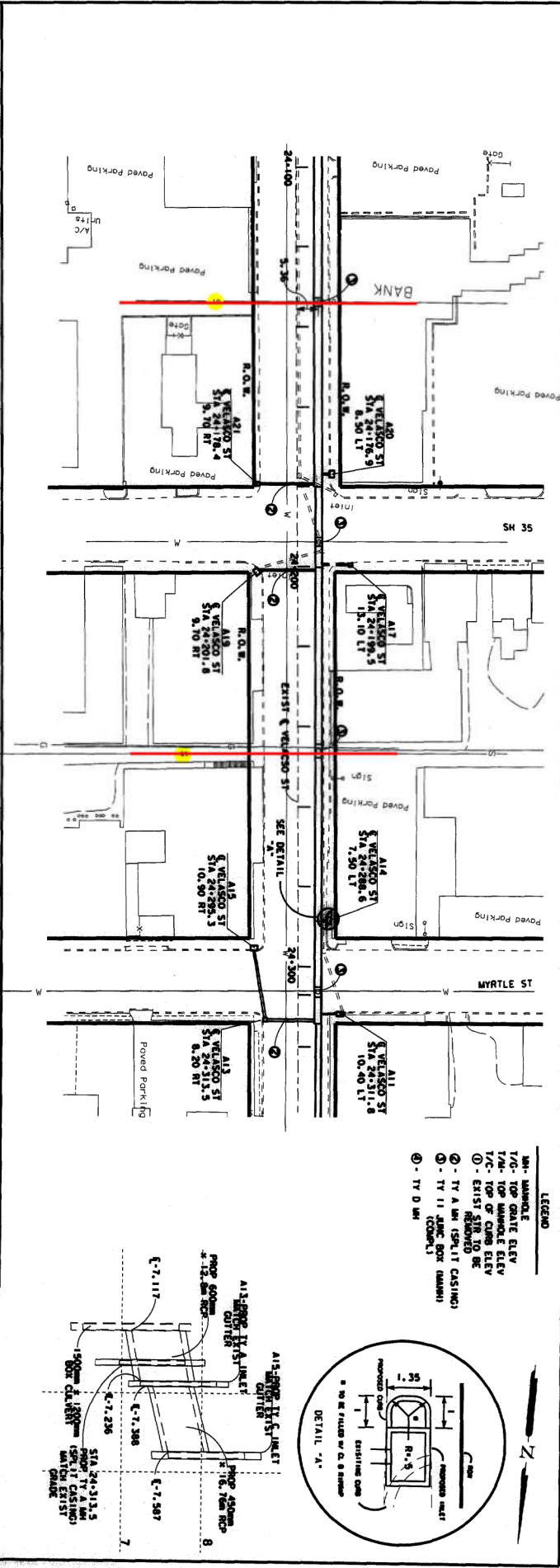
APPROVED FOR LETTING: *3/31/97*  
PER: *John J. Chapman, AS*

APPROVED FOR LETTING: *5/22/97*  
DIRECTOR: *Martha C. Spink, AS*

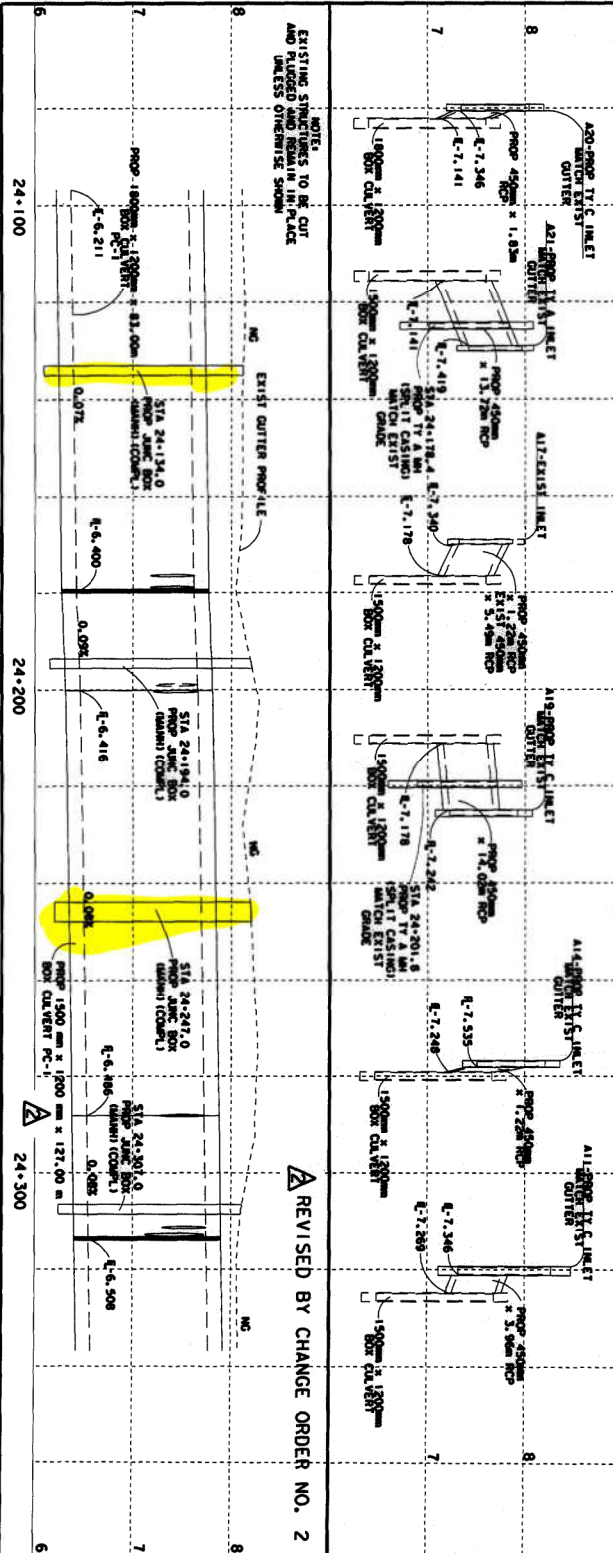
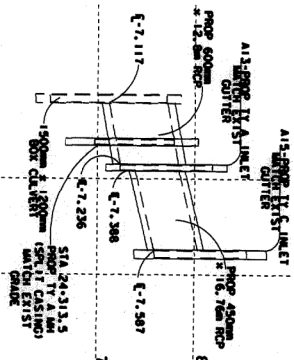
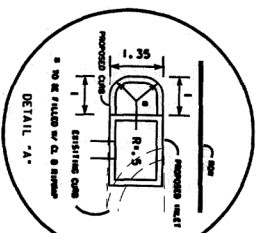


STATE	TX	PROJECT NO.	STP 97(369) UM
COUNTY	BR	SHEET NO.	1
CITY	BRAZORIA	DATE	07/03/97
CONTRACTOR	BS 288B	SCALE	AS SHOWN

1528pp.dgn 03-04-97



- LEGEND**
- MANHOLE
  - TOP MANHOLE ELEV
  - TOP OF CURB ELEV
  - EXIST. SLOPED DE
  - TY II JUNC BOX (CASHING)
  - TY D MH



**Storm Sewer Plan and Profile for Murray/Velasco St Trunkline A**

STA 24+097.32 TO STA 24+337.32

MURRAY/VELASCO ST TRUNKLINE A

FOR

STORM SEWER PLAN AND PROFILE

MURRAY/VELASCO ST TRUNKLINE A

Donnell R. Reed, P.E.  
2/6/98

The seal expires on this document on 2/6/1998, or 2/6/1998, on P.E. 41284, on 2/6/1998.

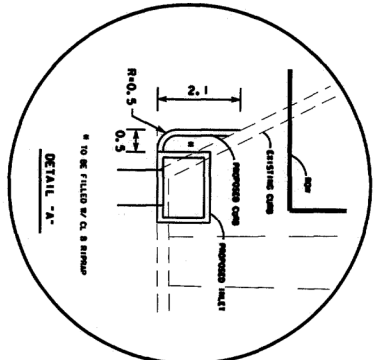
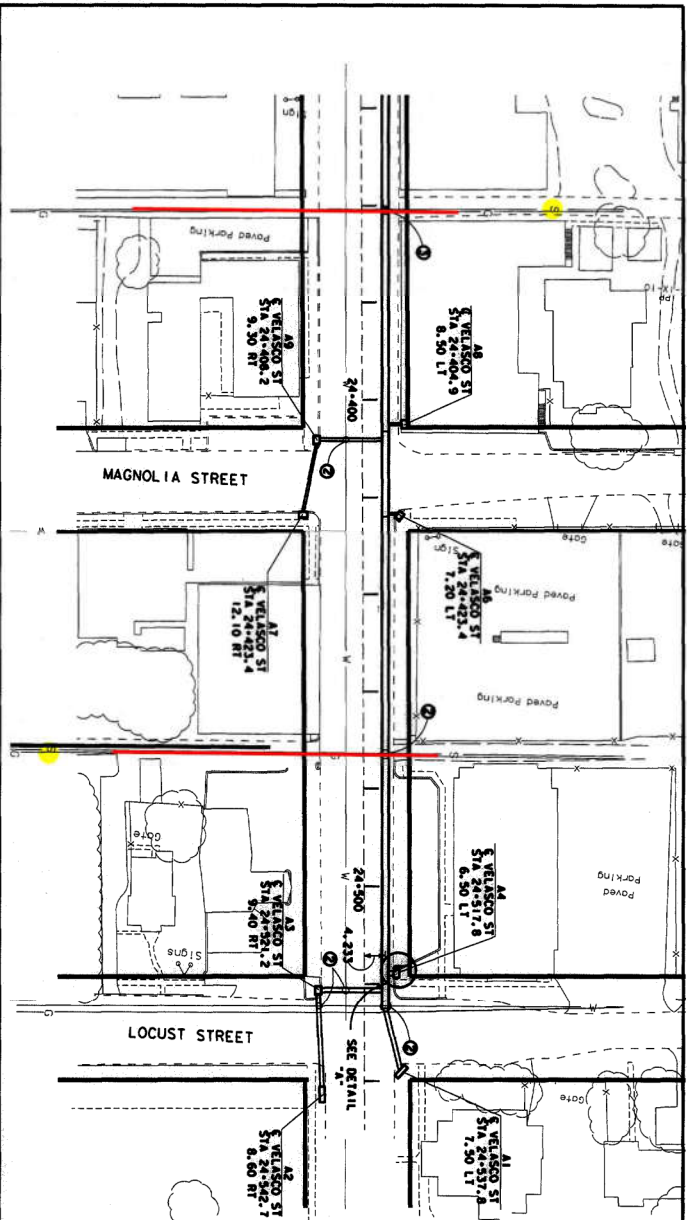
Texas Department of Transportation

SCALE 1"=1000' HORZ  
1"=50' VERT

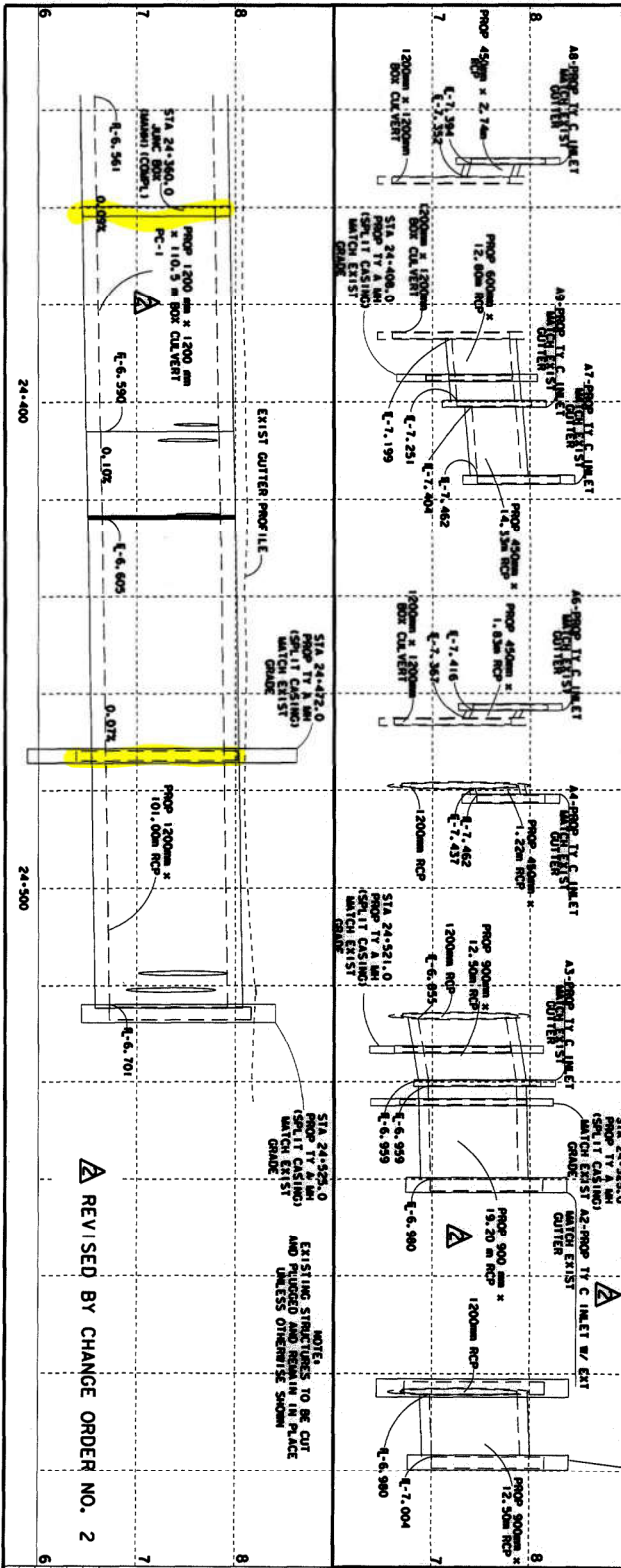
SHEET 5 OF 15

PROJECT NO.	STATE	DIST.	COUNTY
STP 97(369)1M	TEXAS	HOUSTON	BRAZORIA
FEDERAL AID PROJECT NO.	SHEET	DIST.	COUNTY
	149 A		
DATE	DESIGNER	DATE	DESIGNER
01/11	037	03/07	BS2898

1528PP.DGN 03-04-97



- LEGEND**
- ⊙ - MANHOLE
  - ⊙ - TOP GRADE ELEV
  - ⊙ - TOP MANHOLE ELEV
  - ⊙ - TOP OF CURB ELEV
  - ⊙ - EXIST SIB TO BE REMOVED
  - ⊙ - TV A MH (SPLIT CASING)
  - ⊙ - TV IJ JMC BOX (UMH)
  - ⊙ - TV O MH



**STORM SEWER PLAN AND PROFILE FOR MURRAY/VELASCO ST TRUNKLINE A**

SCALE 1:1000 HORIZ  
1:50 VERT SHEET 6 OF 15

STA 24+337.32 TO STA 24+525.00

2/11/98  
Donald R. Rowland, P.E.

The seal is operating on this document by order of the State Engineer, State of Texas, Commission 4125, Dated 03/04/97.

Texas Department of Transportation

PROJECT NO.	STP 971369JUM	SHEET	150 A
STATE	TEXAS	COUNTY	BRAZORIA
DIST.	HOU	JOB	037
CONTRACT NO.	0111	SECTION	037
DATE	07	DESIGNER	BS2888





OPINION OF PROBABLE CONSTRUCTION COST					
Water/Sewer Rehabilitation Project					
CITY OF ANGLETON, TX					
JANUARY 2023					
<b>Water Line</b>					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUAN.	UNIT PRICE	TOTAL AMOUNT
<b>A) GENERAL ITEMS</b>					
1	Traffic Control, including Flagmen, Signs, Barrels, Barricades, Arrow Boards, Maintaining All Weather Access to Traffic, Temporary Transitions from Proposed Pavement to Existing Pavement, Relocating Existing Mailboxes and Traffic Signs, and Temporary Mailboxes, complete in place, the sum of:	L.S.	1	75,000	75,000
2	Temporary Sediment Control including Inlet protection barriers, Stage I and II inlets and existing inlets, including filter fabric fence, gravel bags, repair and replacement, maintenance and removal of sediments and DPES requirements, complete in place, the sum of:	L.S.	1	25,000	25,000
<b>WATER ITEMS</b>					
3	Furnish and install 8-inch PVC C-900 DR18 CL 235 water line, all fittings, by augured construction as shown on plans, complete in place, the sum of:	LF	2595	\$ 85.00	\$ 220,575.00
4	1" wet connection, complete in place, the sum of:	EA	1	\$ 200.00	\$ 200.00
5	2" wet connection, complete in place, the sum of:	EA	3	\$ 300.00	\$ 900.00
6	4" wet connection, complete in place, the sum of:	EA	3	\$ 400.00	\$ 1,200.00
7	6" wet connection, complete in place, the sum of:	EA	1	\$ 1,100.00	\$ 1,100.00
8	8" wet connection, complete in place, the sum of:	EA	7	\$ 1,200.00	\$ 8,400.00
9	8"x8" TS&V, complete in place, the sum of:	EA	5	\$ 5,000.00	\$ 25,000.00
10	Cut, plug, and abandon existing 2"-8" water line, complete in place, the sum of:	EA	7	\$ 140.00	\$ 980.00
11	Short side water service connection replacement, complete in place, the sum of:	EA	9	\$ 1,000.00	\$ 9,000.00
12	Long side water service connection replacement, complete in place, the sum of:	EA	13	\$ 1,300.00	\$ 16,900.00
13	Remove and salvage existing fire hydrant, including gate valve and box, complete in place, the sum of:	EA	3	\$ 60.00	\$ 180.00
14	Furnish and install fire hydrant assembly, including 6-inch gate valve and box and hydrant lead, complete in place, the sum of:	EA	3	\$ 7,000.00	\$ 21,000.00
15	Furnish and Install 6" Gate Valve & Box, complete in place, the sum of:	EA	2	\$ 2,200.00	\$ 4,400.00
16	Furnish and Install 8" Gate Valve & Box, complete in place, the sum of:	EA	14	\$ 3,000.00	\$ 42,000.00
17	14" steel casing on 8" PVC SDR 26 water line with restrained joints throughout casing, complete in place, the sum of:	LF	180	\$ 105.00	\$ 18,900.00
18	Abandon valve	EA	3	\$ 200.00	\$ 600.00
19	Plug existing 2"-8" water line, complete in place, the sum of:	EA	4	\$ 800.00	\$ 3,200.00
<b>B) PAVING ITEMS</b>					
20	Concrete point repair including removal and disposal of existing concrete pavement and subgrade, and proposed reinforcing, joints, dowels, paving under cut, and replacement of 7" thick concrete and 12" thick cement stabilized sand subgrade, complete in place, the sum of:	SY	277.8	\$ 180.00	\$ 50,000.00
21	Remove existing sidewalk and replace with 4"-thick sidewalk, complete in place, the sum of:	SF	1265	\$ 8.00	\$ 10,120.00
22	Remove and replace existing concrete curb ramp, complete in place, the sum of:	EA	8	\$ 2,600.00	\$ 20,800.00
<b>C) SANITARY SEWER ITEMS</b>					
23	8" PVC SDR 26 sanitary sewer (by auger), including bedding and backfill, complete in place, the sum of:	LF	350	\$ 155.00	\$ 54,250.00
24	4' diameter sanitary sewer manhole, including bedding and backfill, complete in place, the sum of:	EA	4	\$ 4,500.00	\$ 18,000.00
25	Sanitary sewer service reconnection (by excavation), including fittings, all depths, complete in place, the sum of:	EA	3	\$ 1,200.00	\$ 3,600.00
26	Tie existing sanitary sewer into proposed manhole, complete in place, the sum of:	EA	3	\$ 2,500.00	\$ 7,500.00
27	14" steel casing on 8" PVC sanitary sewer, complete in place, the sum of:	LF	195	\$ 325.00	\$ 63,375.00
28	Plug existing 2"-8" sanitary line, complete in place, the sum of:	EA	1	\$ 500.00	\$ 500.00
GENERAL ITEMS TOTAL:					\$ 100,000.00
WATER ITEMS TOTAL:					\$ 374,535.00
PAVING ITEMS TOTAL:					\$ 80,920.00
SANITARY SEWER ITEMS TOTAL:					\$ 147,225.00
MISCELLANEOUS ITEM (30%):					\$ 182,740.00
<b>TOTAL AMOUNT</b>					<b>\$ 885,420.00</b>



## AGENDA ITEM SUMMARY FORM

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**MEETING DATE:** April 23, 2024  
**PREPARED BY:** Chris Whittaker  
**AGENDA CONTENT:** Update City's Water Conservation Plan

**AGENDA ITEM SECTION:** Regular Agenda

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**BUDGETED AMOUNT:** **FUNDS REQUESTED:**  
N/A

**FUND:**

**EXECUTIVE SUMMARY:**

The City's water conservation plan is due May 1<sup>st</sup>. HDR has worked with the City and updated the City's Water Conservation Plan. Please find the updated water conservation plan, attachments A&B, and the required associated ordinance.

**RECOMMENDATION:** Request the City to approve the new the Water Conservation Plan and adopt the associated ordinance.

**ORDINANCE NO. 20240423-019**

**AN ORDINANCE OF THE CITY OF ANGLETON ADOPTING A WATER CONSERVATION PLAN; PROVIDING FOR RESPONSIBLE USE OF WATER; PROVIDING TO ESTABLISH SPECIFIC GOALS AND TARGETS FOR WATER CONSUMPTION REDUCTION; PROVIDING FOR REPEAL AND PROVIDING FOR AN EFFECTIVE DATE.**

**WHEREAS**, the City desires to comply with Section 11.1271 of the Texas Water Code and applicable rules of the Texas Commission on Environmental Quality which require these plans for all public water supply systems; and

**WHEREAS**, the City desires to comply with the rules of the Texas Water Development Board due to having more than 3,300 connections as found in Title 31, Texas Administrative Code Chapter 363; and

**WHEREAS**, plans to ensure water conservation throughout the State of Texas are constantly being reviewed, updated, and modified to insure conservation for the benefit of the health, safety, and welfare of the residents of the City of Angleton; and

**WHEREAS**, based on such new or updated information, the City finds it appropriate to adopt a water conservation plan.

**NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF ANGLETON, TEXAS:**

**SECTION 1.** That all of the facts recited in the preamble to this Ordinance are hereby found by the City Council to be true and correct and are incorporated herein by this reference and expressly made a part hereof, as if copied herein verbatim.

**SECTION 2.** The City of Angleton, Texas, hereby adopts the “City of Angleton Water Conservation Plan 2024” attached hereto as Exhibit “A: and incorporated herein for all purposes.

**SECTION 3.** This “Plan” may be amended or updated as necessary or as mandated by the “Texas Water Development Board”.

**SECTION 4.** In the event any clause, phrase, provision, sentence or part of this Ordinance or the application of the same to any person or circumstances shall for any reason be adjudged invalid or held unconstitutional by a court of competent jurisdiction, it shall not affect, impair or invalidate this Ordinance as a whole or any part or provision hereof other than the part declared to be invalid or unconstitutional; and the City Council of the City of Angleton, Texas declares that it would have passed each and every part of the same notwithstanding the omission of any part thus declared to be invalid or unconstitutional, or whether there be one or more parts.

**SECTION 5.** All other ordinances or parts of ordinances inconsistent or in conflict herewith are, to the extent of such inconsistency or conflict, hereby repealed.

**SECTION 6.** This Ordinance shall be and become effective immediately upon its adoption.

**SECTION 7.** It is hereby officially found and determined that the meeting at which this Ordinance was passed was open to the public, and that public notice of the time, place and purpose of said meeting was given as required by the Open Meetings Act, Texas Government Code, Chapter 551.

**PASSED AND APPROVED THIS THE 23<sup>RD</sup> DAY OF APRIL 2024.**

CITY OF ANGLETON, TEXAS

\_\_\_\_\_  
John Wright  
Mayor

ATTEST:

\_\_\_\_\_  
Michelle Perez, TRMC  
City Secretary

## **CITY OF ANGLETON WATER CONSERVATION PLAN 2024**

### **Section I. Declaration of Policy, Purpose, and Intent**

In order to conserve the available water supply and protect the integrity of water supply facilities, with particular regard for domestic water use, sanitation, and fire protection, and to protect and preserve public health, welfare, and safety and minimize the adverse impacts of water supply shortage or other water supply emergency conditions, the City of Angleton (the "City") hereby adopts the following regulations and restrictions on the delivery and consumption of water.

This Plan shall be effective from and after the date of its adoption and all prior water conservation plans, including any such plan related to Customers, as herein defined, adopted by the City shall be revoked and no longer in force and effect as of said date.

The purpose of the Water Conservation Plan (the "Plan") is to set forth uniform requirements, guidelines and recommendations to minimize water use through implementation of efficient water use practices. The City has followed the requirements set forth by the Texas Water Development Board (the "TWDB") and Texas Administrative Code, Title 31, Chapter 363.15.

The objectives of this Plan are:

1. To inform and educate the public concerning water conservation aspects and methods;
2. To improve water use efficiency in existing buildings by recommending guidelines;
3. To maintain a water rate structure for the City that is non-promotional in order to encourage users to conserve water;
4. To require utility personnel to inspect, repair and replace water meters throughout the City for accurate water meter readings;
5. To encourage water conserving landscaping;
6. To require utility personnel to detect water leaks in the City's water pipes and find sources of water loss;
7. To encourage the City, commercial and industrial establishments to recycle and reuse water in aesthetic ponds, fountains and for irrigation when possible; and

### **Section II. Authorization**

The City Manager or his/her designee is hereby authorized and directed to implement the applicable provisions of this Plan upon determination that such implementation is necessary to protect public health, safety, and welfare. The City Manager or his/her designee shall have the authority to initiate or terminate water supply conservation measures as described in this Plan.

### **Section III. Rules Governing Water Conservation Plans**

Rules and requirements pertaining to water conservation plans are published by the Texas Commission on Environmental Quality (TCEQ) and the Texas Water Development Board (TWDB) under 30 TAC §288 and 31 TAC §363, respectively.

The TCEQ requires that a water conservation plan be prepared and submitted for entities holding a surface water right of 1,000 acre-feet or more for municipal, industrial, and other non-irrigation uses, or entities holding a surface water right of 10,000 acre-feet or more for irrigation uses.

The TWDB requires that each retail public utility that provides water service to 3,300 or more connections submit a water conservation plan to the TWDB.

The City of Angleton is not a surface water right holder, but does have more than 3,300 connections. As such, this plan is being submitted to satisfy the requirements by the TWDB as outlined in 31 TAC §363.

### **Section IV. Application**

To the extent that the City is a Retail Public Water Supplier, as that term is defined in 30 TAC §288.1(16), as amended from time to time, the applicable provisions of this Plan shall apply to all Retail Water Customers of the City.

### **Section V. Definitions**

For the purposes of this Plan, the following definitions shall apply:

The term "Aesthetic Water Use" shall mean water use for ornamental, decorative or recreational purposes such as fountains, amenity lakes, reflecting pools, swimming pools, hot tubs, and water gardens.

The term "Commercial and Institutional Water Use" shall mean water use which is integral to the operations of commercial and non-profit establishments and governmental entities such as retail establishments, non-emergency medical facilities, hotels and motels, restaurants, and office buildings, schools and homeowner's associations.

The term "Commission" shall mean the Texas Commission on Environmental Quality, or its successor.

The term "Conservation" shall mean those practices, techniques, and technologies that reduce the consumption of water, reduce the loss or waste of water, improve the efficiency in the use of water or increase the recycling and reuse of water so that a supply is conserved and made available for future or alternative uses.

The term "Critical Care Water Use" shall mean water use which is an absolute necessity for certain critical infrastructure or critical care facilities, including, but not limited to, fire stations, hospitals or other emergency medical facilities, police stations (as may be necessary), and similar uses.

The term "Customers" shall mean all Retail Water Customers, if any, and all Wholesale Water Customers, if any.

The term "Domestic Water Use" shall mean water use for personal needs or for household or sanitary purposes such as drinking, bathing, heating, cooking, sanitation, or for cleaning a residence, business, industry, or institution.

The term "Engineer" shall mean a qualified Firm or Person engaged from time to time by the City as its engineer.

The term "Household" shall mean the residential premises served by the Retail Water Customer's meter.

The term "Industrial Water Use" shall mean the use of water in processes designed to convert materials of lower value into forms having greater usability and value.

The term "Landscape Irrigation Use" shall mean potable water used for the irrigation and maintenance of landscaped areas, whether publicly or privately owned, including residential and commercial lawns, gardens, golf courses, parks, and rights-of-way and medians.

The term "Non-essential Water Use" shall mean water uses that are not essential nor required for the protection of public, health, safety, and welfare, including, but not limited to:

- (a) Landscape Irrigation Use, except as otherwise provided under this Plan;
- (b) use of water to wash any motor vehicle, motorbike, boat, trailer, airplane or other vehicle;
- (c) use of water to wash down any sidewalks, walkways, driveways, parking lots, tennis courts, or other hard-surfaced areas;
- (d) use of water to wash down buildings or structures for purposes other than immediate fire protection;
- (e) flushing gutters or permitting water to run or accumulate in any gutter, ditch, or street;
- (f) Aesthetic Water Use, including, without limitation, use of water to fill, refill, or add to any indoor or outdoor swimming pools or hot tubs and use of water in a fountain, lake or pond for aesthetic or scenic purposes except where necessary to sustain aquatic life;
- (g) failure to repair a controllable leak(s) within a reasonable period after having actual knowledge of or having been given notice by the City directing the repair of such leak(s);

- (h) use of water from hydrants for construction purposes or any other purposes other than firefighting.
- (i) The term "Person" shall include individuals, corporations, partnerships, associations, and all other legal entities.
- (j) The term "PSI" shall mean pounds per square inch.
- (k) The term "Rate Order" shall mean the City's Rate Ordinance as adopted and amended by the City Council from time to time.
- (l) The term "Retail Water Customers" shall mean any Person using water supplied by the City except for Wholesale Water Customers (if any).
- (m) The term "Wholesale Water Customers" shall mean any Person receiving water from the City for resale to the public, except said term shall not apply when the water is received through an emergency water interconnect between the City and another entity which normally remains closed.

#### **Section VI. Water Conservation Utility Profile, TWDB-1965**

The required Water Conservation Utility profile for the City is included as Attachment A to this Water Conservation Plan.

The City of Angleton is located 40 miles south of Houston, and 20 miles from the Gulf of Mexico. Known as the county seat of Brazoria County, the City has a population of 19,429 based on the most recent census data. Majority of these customers are residential but the City has many commercial customers as well.

#### **Section VII. Conservation Coordinator**

The City Manager or his/her designee will be the Conservation Coordinator. This person will be responsible for implementing the water conservation plan. The City will identify, in writing, the water conservation coordinator to the Executive Administrator of the TWDB.

#### **Section VIII. 5- and 10-Year Goals in GPCD**

The purpose of the Plan is to provide a framework to reduce long-term demand on limited water resources by encouraging more efficient water use practices in the City. TWDB rules require that the Plan contain specific, quantified 5-year and 10-year targets for water savings which are to include goals for water loss programs and goals for municipal use in total and residential gallons per capita per day (GPCD).

The baseline total GPCD and residential GPCD are based on the most recent five years of water use data and estimated population. Both the 5-year and 10-year goals for total GPCD and Residential GPCD



are based on a reduction of 0.5% per year. The City feels that this is a realistic goal given a GPCD that is already lower than most communities and the water conservation elements contained in this Plan.

The 5-year goal of the Plan is to keep the level of water loss in the system at or below thirteen percent (13%). The 10-year goal of the Plan is to keep the level of water loss in the system at or below ten percent (10%). In addition, a goal of the Plan is to raise public awareness of water conservation and encourage responsible public behavior by a public education and information program as discussed in Section XIII.

	<i>Historic 5-year Average</i>	<i>Baseline</i>	<i>5-year goal for Plan</i>	<i>10-year goal for Plan</i>
Total GPCD	102	102	99	97
Residential GPCD	50	50	49	48
Water Loss GPCD	15	15	13	10
Water Loss Percentage	15%	15%	13%	10%

**Notes:**

Total GPCD = (Total Gallons in System ÷ Permanent Population) ÷ 365

Residential GPCD = (Gallons Used for Residential Use ÷ Residential Population) ÷ 365

Water Loss GPCD = (Total Water Loss ÷ Permanent Population) ÷ 365

Water Loss Percentage = (Total Water Loss ÷ Total Gallons in System) x 100; or (Water Loss GPCD ÷ Total GPCD) x 100

**Section IX. Achieving Targets**

The planned implementation schedule for each water conservation practice contained in the Plan is shown below. It can be seen that the City has already implemented many of the water conservation practices contained in this Plan. Those practices will continue to be in place and possibly enhanced as conditions dictate. In addition, the City will implement new water conservation measures throughout the next 5-year and 10-year periods.

<b>BMP Description</b>	<b>Already Implemented</b>	<b>Planned Implementation in the next 5-years</b>	<b>Planned Implementation in Years 5 through 10</b>
Records Management System	<b>X</b>		
Production Meters	<b>X</b>		
City-Wide Automatic Meter Reading		<b>X</b>	
Water Loss Control Program	<b>X</b>		
Leak Detection Program	<b>X</b>		
Conservation Water Rate Structure	<b>X</b>		
Water Reuse / Recycling		<b>X</b>	
Water Conservation Plumbing Fixtures			<b>X</b>
Water Conservation Landscaping			<b>X</b>
Public Information and Education	<b>X</b>		

## Section X. Tracking Targets and Goals

The City will evaluate the efficiency and effectiveness of this Plan's 5-year and 10-year goals for water use reductions on an annual basis. As the City completes its annual Texas Water Development Board Use Survey and water loss audit, the data will be compared against the targets for total and residential GPCD and water losses.

## Section XI. Water Conservation Plan Elements

### 1. Records Management System

The City administers a comprehensive records management system which accounts for water use and use characteristics throughout the water system. It also allows for the separation of aggregate water sales and water usage characteristics into customer-specific categories.

### 2. Production Meters

The City meters all water supplied from the Brazosport Water Authority (BWA) to the City. Production meter calibrations are performed, at a minimum, on an annual basis, and more frequently if needed. Calibrations of these meters are performed by qualified personnel and copies of the calibrations log sheets are maintained by the City's utility department. All meters monitoring diversion and production flows are in accordance with American Water Works Association (AWWA) standards and calibrated to maintain a minimum accuracy of plus or minus 5%. This program will be continued by the City.

### 3. City-Wide Automatic Meter Reading (Universal Metering)

Metering the amount of water being used by customers is an essential part of any water utility. Metering helps measure the amount of water being used and also helps limit the use of water. This is further enhanced by the use of Automatic Meter Reading (AMR) or "smart meters" which provides for real-time readings that are accurate and not estimated. In addition, these smart meters can detect water leaks within twenty-four hours and provide for a much quicker repair response time and thus a reduction in water loss.

The City replaced eighty five percent (85%) of its meters with AMR smart meters in 2022. The remainder of these meters will be completed by 2025. All City water is metered, and it is unlawful to use water from the City's water supply without it being metered by a city-authorized water meter. The only water use allowed without metering would be for the use of fire-fighting and main flushing. This program will be continued by the city.

#### 4. Water Loss Control Program

Water loss is generally defined as the difference between water delivered to customers of the City and metered deliveries to customers plus authorized but unmetered uses. Authorized but unmetered uses would include use for fire fighting and releases for flushing of lines. Water loss can include several categories.

- Inaccuracies in customer meters.
- Accounts which are being used but have not yet been added to the billing system.
- Losses due to water main breaks and leaks in the water distribution system.
- Losses due to illegal connections and theft.

Measures to control water loss are part of the routine operations of the City. The first conversion to AMR smart meters in 2022 has provided for a quicker identification of potential leaks in the water distribution system and is also a tool to identify potential theft. City maintenance crews and personnel are tasked to identify, report and repair any discovered water leaks. In addition, the water department generates a monthly water loss report that compares metered production with metered consumption as well as other accounted-for water uses to help identify water loss. This report provides an effective tracking system of water loss. The City also completed a detailed water system audit conforming to TWDB guidelines each year. The water system audit determines the volume of actual water loss, the identification of water loss sources, the status and condition of the primary water meters, and an analysis of water line breaks.

With the measures described in this plan, the City intends to maintain water loss at or below thirteen percent (13%) for the next five years and then further reduce this water loss to at or below ten percent (10%) within ten years. If the water loss exceeds this goal, the City will implement a more intensive audit to determine the source(s) of and reduce the water loss.

#### 5. Leak Detection Program

A continuous leak detection, location and repair program is an important part of this Plan. City utility employees periodically check for leaks when performing other maintenance tasks on the water system and when driving around the City during regular maintenance. Major leaks are usually quickly detected by either City employees or customers and are repaired within 24 hours. The City maintains an inventory of equipment and materials needed to promptly repair all detected or reported leaks.

## **6. Conservation Water Rate Structure**

The City's current water rate structure is an increasing block type (increased cost with increased usage). This is a "non-promotional" rate structure which is cost-based and does not encourage the excessive use of water. The City's current rate ordinance is contained within this Plan as Attachment B.

## **7. Wholesale Water Supply Contracts**

Every contract for the wholesale provision of water by the City that is entered into, renewed, or extended after the adoption of this Plan, in conjunction with the City's adopted Drought Contingency Plan, will include a requirement that the wholesale customer develop and implement a water conservation plan meeting all TWDB requirements in effect at that time. This plan shall also be submitted to the TWDB.

## **8. Water Reuse / Recycling**

The City is planning on installing a water reuse system at the Wastewater Treatment Plant Facility for daily operations within the next five (5) years. This will eliminate the need to use potable water for daily operations.

## **9. Water Conservation Plumbing Fixtures**

The State of Texas has required water conserving fixtures in new construction and renovations since 1992. The state standards call for flows of no more than 2.5 gallons per minute (gpm) for faucets, 3.0 gpm for showerheads, and 1.6 gpm per flush for toilets. Similar standards are now required nationally under federal law. These state and federal laws assure that all new construction and renovations will use water conserving fixtures.

The City shall make information available through its Public Involvement Program (Section XIII) for plumbers and customers to utilize when purchasing and installing plumbing fixtures, lawn watering equipment or water using appliances. Information regarding retrofit devices, such as low-flow shower heads or toilet dams, that reduce water usage by replacing or modifying existing fixtures or appliances shall be provided.

The City shall also encourage the use of the following water conserving devices:

- Toilet displacement bottles
- Water closet dams
- Flow restrictors
- Reduced flow shower heads
- Shower cutoff valves
- Faucet aerators
- Pipe insulation

- Water hook-up pressure reducing valves

## **10. Water Conservation Landscaping**

In order to reduce demand on the City's water system by landscape watering, the City encourages:

1. Irrigation contractors to use drip irrigation systems when possible and to design all irrigation systems with water conservation features, such as sprinklers that emit large drops rather than a fine mist and a sprinkler layout that accommodates prevailing wind direction.
2. Commercial establishments to use drip irrigation for landscape watering when possible and to install only ornamental fountains that recycle and use the minimum amount of water.

## **Section XII. Regional Water Planning Group Notification and Coordination with the Texas Water Development Board**

The service area of the City is located within the Region H Regional Water Planning Group and the City will provide a copy of this Plan to such regional water planning group within ninety (90) days following its adoption. Further, the City will also submit the Plan to the TWDB, as required. To the extent applicable, the City may provide a copy of this Plan to the Brazosport Water Authority (the "BWA") or such other regional water authority with jurisdiction.

## **Section XIII. Public Participation**

### **1. Program**

- A. In recognition of public participation in water conservation, all City water users shall be informed regarding methods to save water in their daily use. The City shall display conservation literature and brochures at City Hall and on the City's website. Upon new service connections, new customers shall receive a water conservation package. Contents to include water conservation tips and description of retrofitted water conserving devices to house plumbing. In addition, the City shall provide public education programs using one or more of the following methods:
  1. Annual direct mailings of brochures or newsletters concerning the Plan to users (the first distribution shall describe the plan and provide in detail). Future mailouts shall discuss water conservation tips for outdoors and irrigation usage, indoor and retrofitting water conservation devices for all water fixtures;
  2. Public and civic organization meetings;
  3. Published newspaper articles concerning water conservation (published before the City's high usage season);

4. Posters and public displays; or
5. School programs, book cover distribution.

B. Suggested Tips for Consumers:

In all participation programs, customers will be encouraged to use the following water conservation techniques:

1. In the bathroom:

- a. Take a short shower instead of filling the tub and taking a bath. Showers usually use less water than tub baths. Long showers will use more water than tub baths.
- b. Install a low-flow showerhead, which restricts the quantity of flow at 60 PSI to no more than 2.5 GPM.
- c. Take short showers and install a cutoff valve or turn the water off while soaping and back on again only to rinse.
- d. Do not use hot water when cold will do. Washing hands with soap and cold water can save water and energy. Use hot water only when hands are especially dirty.
- e. Reduce the level of the water used in a bathtub by one or two inches if a shower is not available.
- f. Turn water off when brushing teeth until it is time to rinse.
- g. Do not let the water run when washing hands. Instead, hands should be wet, and water should be turned off while soaping and scrubbing and turned on again to rinse. A cutoff valve may also be installed on the faucet.
- h. Shampoo hair in the shower. Shampooing in the shower takes only little more water than is used to shampoo hair during a bath and much less than shampooing and bathing separately.
- i. Hold hot water in the basin when shaving instead of letting the faucet continue to run.
- j. Test toilets for leaks. To test for a leak, a few drops of food coloring can be added to the water in the tank the toilet should not be flushed. The customer can then watch to see if the coloring appears in the bowl within a few minutes. If it does, the fixture needs adjustment or repair.

- k. Use a tank displacement device. A half-gallon plastic milk bottle can be filled with stones or water, recapped, and placed in the toilet tank. This will reduce the amount of water in the tank but still provide enough for flushing.
  - l. Install faucet aerators to reduce water consumption.
  - m. Never use the toilet to dispose of cleaning tissues, cigarette butts or other trash. This can waste a great deal of water and places an unnecessary load on the sewage treatment plant or septic tank.
  - n. Install a new low-volume flush toilet that uses 1.6 gallons or less per flush when building a new home or remodeling a bathroom.
2. In the kitchen:
- a. Use a pan of water (or place a stopper in the sink) when rinsing pots and pans and cooking implements when cooking rather than turning on the water faucet each time a rinse is needed.
  - b. Never run the dishwasher without a full load. In addition to saving water, expensive detergent will last longer and significant energy savings will appear on the utility bill.
  - c. Use the sink disposal sparingly, and never use it for just a few scraps.
  - d. Keep a container of drinking water in the refrigerator. Running water from the tap until it is cool is wasteful. Keeping cold water in a picnic jug on a kitchen counter to avoid opening the refrigerator door frequently can save both water and energy.
  - e. Use a small pan for cleaning vegetables rather than letting the faucet run.
  - f. Use only a little water in the pot and put a lid on it for cooking most food.
  - g. Always keep water conservation in mind and think of other ways to save in the kitchen.
3. In the laundry:
- a. Wash only a full load when using an automatic washing machine (32 to 59 gallons are required per load).
  - b. Use the lowest water level setting on the washing machine for light loads whenever possible.

- c. Use cold water as often as possible to save energy and to conserve the hot water for uses which cold water cannot serve.
4. For appliances and plumbing:
    - a. Check water requirement of various models and brands when considering purchasing any new appliance that uses water. Some use less water than others do.
    - b. Check all water line connections and faucets for leaks if the water bill is unusually high.
    - c. Promptly replace faucet washers to stop drips. It can represent a substantial amount saved in plumbing and water bills.
    - d. Check for water leakage, such as a leak between the water meter and the house. To check meter, all indoor and outdoor faucets should be off. If the meter continues to run or turn, a leak probably exists and needs to be located.
    - e. Insulate all hot water pipes to avoid the delays (and wasted water) experienced while waiting for the water to “run hot.”
    - f. Be sure the hot water heater thermostat is not set too high. Extremely hot settings waste water and energy because the water has to be cooled with cold water before using.
    - g. Use a moisture meter to determine when houseplants need water. Most plants die from over watering than from being on the dry side.
  5. For outdoor use:
    - a. Water lawns early in the morning during the hotter summer months. During the day, much of the water used on the lawn evaporates between the sprinkler and the grass.
    - b. Use a sprinkler that produces large drops of water, rather than a fine mist, to avoid evaporation.
    - c. Turn soaker hoses so the holes are on the bottom to avoid evaporation.
    - d. Water slowly for better absorption, and never water on windy days.
    - e. Do not water the street, walks or driveways.
    - f. Condition the soil with compost before planting grass or flowerbeds so



that water will soak in rather than run off.

- g. Fertilize lawns at least twice a year for root stimulation. Grass with a good root system makes better use of less water.
- h. Learn to know when grass needs watering. If it has turned a dull gray- green or if footprints remain visible, it is time to water.
- i. Do not water lawns too frequently. Too much water can overload the soil so that air cannot get to the roots and can encourage plant diseases.
- j. Do not overwater. Soil can absorb only so much moisture and the rest simply runs off. A timer will help, or an alarm clock will do. An inch and one-half of water applied once a week will keep most Texas grasses alive and healthy.
- k. Operate automatic sprinkler systems only when the demand on the City's water supply is lowest: set the system to operate between four and six a.m.
- l. Do not scalp lawns when mowing during hot weather. Taller grass holds moisture better. Cut grass often, so that only  $\frac{1}{2}$  to  $\frac{3}{4}$  inch is trimmed.
- m. Use a watering can or hand water with the hose in small areas of the lawn that need more frequent watering (those near walks or driveways).
- n. Learn what types of grass, shrubbery and plants do best in the area arid in which parts of the lawn; and then plant accordingly.
- o. Consider decorating areas of the lawn with rocks, gravel, wood chips or other materials now available that require no water.
- p. Do not "sweep" walks and driveways with the water hose. Use a broom or rake.
- q. Use a bucket of soapy water and a cut off nozzle on the hose for rinsing when washing the car.

#### **Section XIV. Severability, Amendment**

It is hereby declared to be the intention of the City that the sections, paragraphs, sentences, clauses, and phrases of this Plan are severable and, if any phrase, clause, sentence, paragraph, or section of this Plan shall be declared invalid, unenforceable or unconstitutional by the valid judgment or decree of any court of competent jurisdiction, such invalidity, unenforceability, or unconstitutionality shall not affect any of the remaining phrases, clauses, sentences, paragraphs, and sections of this Plan, which shall be enforceable as if the same had been enacted by the City without the incorporation into this Plan of any such invalid, unenforceable or unconstitutional

phrase, clause, sentence, paragraph, or section.

The City has and specifically reserves the right to change, alter or amend any provision of this Plan at any time. The City shall renew and update, as appropriate, this Plan at least every five (5) years, based on new or updated information, such as adoption or revision of any applicable regional water plan, or as may otherwise be required by applicable statutes or rules of the TWDB.



## UTILITY PROFILE FOR RETAIL WATER SUPPLIER

### CONTACT INFORMATION

Name of Utility: City of Angleton

Public Water Supply Identification Number (PWS ID): TX0200002

Certificate of Convenience and Necessity (CCN) Number: \_\_\_\_\_

Surface Water Right ID Number: N/A

Wastewater ID Number: RN102179785, TPDES Permit WQ0010548004

Contact: First Name: Hector Last Name: Renteria

Title: Public Works Director

Address: 121 South Velasco City: Angleton State: TX

Zip Code: 77515 Email: hrenteria@angleton.tx.us

Telephone Number: 979-849-4364 Date: 4/17/24

Is this person the designated Conservation Coordinator?  Yes  No

Coordinator: First Name: Chris Last Name: Whittaker

Title: City Manager

Address: 121 South Velasco City: Angleton State: TX

Zip Code: 77515 Email: cwhittaker@angleton.tx.us

Telephone Number: 979-849-4364

Regional Water Planning Group: H

Groundwater Conservation District: \_\_\_\_\_

Our records indicate that you:

Received financial assistance of \$500,000 or more from TWDB

Have 3,300 or more retail connections

Have a surface water right with TCEQ

Utility Profile Year: 2024

#### A. Population and Service Area Data

1. Current service area size in square miles: 11.6



## UTILITY PROFILE FOR RETAIL WATER SUPPLIER

2. Historical service area population for the previous five years, starting with the most current year.

Year	Historical Population Served By Retail Water Service	Historical Population Served By Wholesale Water Service	Historical Population Served By Wastewater Water Service
2023	19,701	0	18,715
2022	19,610	0	18,630
2021	19,389	0	18,419
2020	19,427	0	18,455
2019	19,507	0	18,531

3. Projected service area population for the following decades.

Year	Projected Population Served By Retail Water Service	Projected Population Served By Wholesale Water Service	Projected Population Served By Wastewater Water Service
2030	20,157	0	19,149
2040	20,887	0	19,842
2050	21,617	0	20,536
2060	22,347	0	21,229
2070	23,017	0	21,866

4. Described source(s)/method(s) for estimating current and projected populations.

Current population is based on 2020 census counts adjusted for recent growth trends.

Future growth is based on average growth rates over the previous five year period.

Wastewater population is 95% of water population.



## UTILITY PROFILE FOR RETAIL WATER SUPPLIER

### B. System Input

System input data for the previous five years.

Total System Input = Self-supplied + Imported – Exported

Year	Water Produced in Gallons	Purchased/Imported Water in Gallons	Exported Water in Gallons	Total System Input	Total GPCD
2023	61,016,200	725,771,000	0	786,787,200	109
2022	36,462,000	679,946,000	0	716,408,000	100
2021	13,285,000	664,661,143	0	677,946,143	96
2020	63,200,000	647,533,000	0	710,733,000	100
2019	63,917,000	642,411,000	0	706,328,000	99
<b>Historic Average</b>	<b>47,576,040</b>	<b>672,064,429</b>	<b>0</b>	<b>719,640,469</b>	<b>101</b>

### C. Water Supply System

1. Designed daily capacity of system in gallons	10,440,000
2. Storage Capacity	
2a. Elevated storage in gallons:	1,250,000
2b. Ground storage in gallons:	2,430,000



## UTILITY PROFILE FOR RETAIL WATER SUPPLIER

### D. Projected Demands

1. The estimated water supply requirements for the next ten years using population trends, historical water use, economic growth, etc.

Year	Population	Water Demand (gallons)
2025	19,831	736,102,373
2026	19,896	738,520,361
2027	19,962	740,938,349
2028	20,027	743,356,337
2029	20,092	745,774,325
2030	20,157	748,192,313
2031	20,230	750,901,945
2032	20,303	753,611,576
2033	20,376	756,321,207
2034	20,449	759,303,839

2. Description of source data and how projected water demands were determined.

Population projections are interpolated based on the forecast values contained in Section 3. The water demands are projected based on a constant GPCD value.

### E. High Volume Customers

1. The annual water use for the five highest volume

**Retail customers.**

Customer	Water Use Category	Annual Water Use	Treated or Raw
Brazoria County Dent	Institutional	6,124,000	Treated
Angleton Manor Limited 1	Residential	775,000	Treated
Northside Manor	Residential	762,000	Treated
Angleton Danbury Hospital	Commercial	757,000	Treated
NDHC Lexington Square LLC	Commercial	661,000	Treated

2. The annual water use for the five highest volume

**WHOLESALE customers.**

Customer	Water Use Category	Annual Water Use	Treated or Raw
	Choose		Choose
	Choose		Choose
	Choose		Choose
	Choose		Choose
	Choose		Choose



## UTILITY PROFILE FOR RETAIL WATER SUPPLIER

### F. Utility Data Comment Section

Additional Information comments about utility data.

### Section II: System Data

#### A. Retail Water Supplier Connections

1. List of active retail connections by major water use category.

Water Use Category Type	Total Retail Connections (Active + Inactive)	Percent of Total Connections
Residential - Single Family	6,460	70.66%
Residential - Multi-Family	2,029	22.19%
Industrial	0	0.00%
Commercial	654	7.15%
Institutional	0	0.00%
Agricultural	0	0.00%
<b>Total</b>	<b>9,143</b>	

2. Net number of new retail connections by water use category for the previous five years.

Year	Net Number of New Retail Connections						Total
	Residential - Single Family	Residential - Multi-Family	Industrial	Commercial	Institutional	Agricultural	
2023	176	0	0	1	0	0	177
2022	136	0	0	0	0	0	136
2021	67	0	0	2	0	0	69
2020	57	0	0	2	0	0	59
2019	0	0	0	0	0	0	0



## UTILITY PROFILE FOR RETAIL WATER SUPPLIER

### B. Accounting Data

The previous five years' gallons of RETAIL water provided in each major water use category.

Year	Residential - Single Family	Residential - Multi-Family	Industrial	Commercial	Institutional	Agricultural	Total
2023	284,871,000	72,174,000	0	163,032,000	0	0	520,077,000
2022	208,003,000	132,928,000	0	118,087,000	0	0	459,018,000
2021	311,506,000	80,020,000	0	112,198,000	0	0	503,724,000
2020	321,603,000	12,111,000	0	235,061,000	0	0	568,775,000
2019	298,373,000	63,637,000	0	186,784,000	0	0	548,794,000

### C. Residential Water Use

The previous five years residential GPCD for single family and multi-family units.

Year	Total Residential GPCD
2023	50
2022	48
2021	55
2020	47
2019	51
<b>Historic Average</b>	50





## UTILITY PROFILE FOR RETAIL WATER SUPPLIER

### D. Annual and Seasonal Water Use

1. The previous five years' gallons of treated water provided to RETAIL customers.

Month	Total Gallons of Treated Water				
	2023	2022	2021	2020	2019
January	56,505,000	54,312,000	54,709,000	57,399,000	61,470,000
February	50,302,000	49,817,000	59,592,000	55,002,000	47,456,000
March	57,811,000	54,287,000	55,874,000	59,759,000	61,015,000
April	54,007,000	56,514,000	56,141,000	58,000,000	61,365,000
May	60,960,000	65,566,000	52,853,000	61,540,000	66,085,000
June	68,009,000	68,178,000	54,914,000	60,232,000	64,505,000
July	72,531,000	71,170,000	55,742,000	63,442,000	71,482,000
August	85,404,000	69,785,000	55,905,000	66,303,000	72,089,000
September	78,061,000	64,822,000	55,367,000	59,576,000	67,515,000
October	64,811,000	70,296,000	54,493,000	58,674,000	42,379,000
November	64,660,000	59,448,000	52,827,000	55,438,000	51,929,000
December	59,984,000	63,455,000	52,961,000	55,503,000	63,681,000
<b>Total</b>	<b>773,045,000</b>	<b>747,650,000</b>	<b>661,378,000</b>	<b>710,868,000</b>	<b>730,971,000</b>



## UTILITY PROFILE FOR RETAIL WATER SUPPLIER

2. The previous five years' gallons of raw water provided to RETAIL customers.

Month	Total Gallons of Raw Water				
	2023	2022	2021	2020	2019
January	0	0	0	0	0
February	0	0	0	0	0
March	0	0	0	0	0
April	0	0	0	0	0
May	0	0	0	0	0
June	0	0	0	0	0
July	0	0	0	0	0
August	0	0	0	0	0
September	0	0	0	0	0
October	0	0	0	0	0
November	0	0	0	0	0
December	0	0	0	0	0
<b>Total</b>	0	0	0	0	0

3. Summary of seasonal and annual water use.

	Summer RETAIL (Treated + Raw)	Total RETAIL (Treated + Raw)
2023	225,944,000	773,045,000
2022	209,133,000	747,650,000
2021	166,561,000	661,378,000
2020	189,977,000	710,868,000
2019	208,076,000	730,971,000
<b>Average in Gallons</b>	199,938,200	724,782,400



## UTILITY PROFILE FOR RETAIL WATER SUPPLIER

### E. Water Loss

Water Loss data for the previous five years.

Year	Total Water Loss in Gallons	Water Loss in GPCD	Water Loss in GCD*
2023	23,066,991	3	7
2022	260,341,194	37	83
2021	52,468,030	7	16
2020	128,936,298	18	47
2019	75,447,501	11	35
<b>Average</b>	<b>108,052,003</b>	<b>15</b>	<b>38</b>

\*GCD = gallons per service connection per day

### F. Peak Day Use

Average Daily Water Use and Peak Day Water Use for the previous five years.

Year	Average Daily Use (gal)	Peak Day Use (gal)	Ratio (peak/avg)
2023	2,117,932	2,455,913	1.16
2022	2,048,356	2,273,185	1.11
2021	1,811,995	1,810,446	1.00
2020	1,947,584	2,064,967	1.06
2019	2,002,660	2,261,696	1.13

### G. Summary of Historic Water Use

Water Use Category	Historic Average	Percent of Connections	Percent of Water Use
<b>Residential-Single Family</b>	284,871,200	70.66%	54.77%
<b>Residential-Multi-Family</b>	72,174,000	22.19%	13.88%
<b>Industrial</b>	0	0.00%	0.00%
<b>Commercial</b>	163,032,400	7.15%	31.35%
<b>Institutional</b>	0	0.00%	0.00%
<b>Agricultural</b>	0	0.00%	0.00%
<b>Total</b>	520077600		



## UTILITY PROFILE FOR RETAIL WATER SUPPLIER

### H. System Data Comment Section

### Section III: Wastewater System Data

#### A. Wastewater System Data

1. Design capacity of wastewater treatment plant(s) in gallons per day: 3,600,000
2. List of active wastewater connections by major water use category.

Water Use Category	Metered	Unmetered	Total Connections	Percent of Total Connections
<b>Municipal</b>	6,376	23	6,399	91.00%
<b>Industrial</b>	0	0	0	0.00%
<b>Commercial</b>	633	0	633	9.00%
<b>Institutional</b>	0	0	0	0.00%
<b>Agricultural</b>	0	0	0	0.00%
<b>Total</b>	7,009	23	7,032	100.00%

3. Percentage of water serviced by the wastewater system: 77.00%



### UTILITY PROFILE FOR RETAIL WATER SUPPLIER

4. Number of gallons of wastewater that was treated by the utility for the previous five years.

Month	Total Gallons of Treated Water				
	2023	2022	2021	2020	2019
January	58,654,500	47,623,090	52,751,000	86,125,000	72,805,000
February	41,510,290	57,339,420	37,735,000	51,645,700	55,319,000
March	40,842,200	42,323,560	43,487,000	44,682,300	44,402,000
April	45,841,230	37,351,180	38,209,730	43,270,000	43,957,000
May	70,455,730	38,418,530	95,038,000	42,002,000	60,698,000
June	39,948,760	31,701,460	<b>61,116,320</b>	51,978,000	67,930,000
July	35,208,930	36,070,860	73,195,000	47,752,000	50,753,000
August	33,549,360	44,498,890	42,527,062	42,749,000	49,311,000
September	34,075,380	36,224,220	61,895,600	45,211,000	75,794,000
October	60,480,260	33,137,430	84,905,130	33,980,800	69,766,000
November	42,859,530	59,139,480	48,755,270	37,145,700	63,345,000
December	68,606,000	50,876,760	54,032,680	60,230,000	47,272,700
<b>Total</b>	572,032,170	514,704,880	693,647,792	586,771,500	701,352,700

5. Could treated wastewater be substituted for potable water?

Yes
  No

**B. Reuse Data**

1. Data by type of recycling and reuse activities implemented during the current reporting period.

Type of Reuse	Total Annual Volume (in gallons)
On-site Irrigation	
Plant wash down	
Chlorination/de-chlorination	
Industrial	
Landscape irrigation (park,golf courses)	
Agricultural	
Discharge to surface water	
Evaporation Pond	
Other	
<b>Total</b>	0



## UTILITY PROFILE FOR RETAIL WATER SUPPLIER

### C. Wastewater System Data Comment

Additional comments and files to support or explain wastewater system data listed below.

**ORDINANCE NO. 20230912-016**

**AN ORDINANCE AMENDING THE UTILITY RATES IN THE CITY OF ANGLETON FEE SCHEDULE IN CHAPTER 2 ADMINISTRATION ARTICLE X SECTION 2-266 FEE SCHEDULE THE ANGLETON, TEXAS CODE OF ORDINANCES; PROVIDING FOR AN INCREASE IN THE RATES TO BE CHARGED FOR UTILITY SERVICES BY THE CITY OF ANGLETON; PROVIDING FOR REPEAL, PROVIDING FOR SEVERABILITY; PROVIDING FOR A PENALTY; AND PROVIDING AN EFFECTIVE DATE.**

**WHEREAS**, the City Council of the City of Angleton is legally empowered to regulate the utility rates charged to customers of its municipal systems and has the authority to regulate their utilities as set out in Section 552.001(b) of the Texas Local Government Code; and

**WHEREAS**, the City has operational, and maintenance needs necessary to provide utility services; and

**WHEREAS**, the rates charged to the City of Angleton by the Brazosport Water Authority (“BWA”) are increasing \$0.29 per thousand gallons due to increased operational and debt service costs; and

**WHEREAS**, the City Council of Angleton, Texas, deems it necessary and appropriate to continue charging a rate equal to one and one quarter times (1.25) the inside city rates for customers living outside the city of Angleton; and

**WHEREAS**, to ensure that customers paying an impact fee are not charged twice for the extension of utilities, the water and sewer Base Monthly Rate for utility accounts that are located in an active impact fee area shall be \$4.00 less; and

**WHEREAS**, the 2023-2024 City of Angleton Budget was prepared based on the increases cited above; and

**WHEREAS**, it is in the best interests of the public health, safety, and welfare that this amendment to the utility rates be made.

**NOW THEREFORE, BE IT ORDERED BY THE CITY COUNCIL OF THE CITY OF ANGLETON, TEXAS:**

**SECTION 1.** That the matters and facts recited in the preamble hereof are hereby found and determined to be true and correct.

**SECTION 2.** That utility rate tables contained in the City of Angleton Fee Schedule in

Chapter 2 Administration, Article X, Section 2-266 Fee Schedule in the Angleton Texas Code of Ordinances, are hereby amended and replaced as follows:

**Water/Sewer Rates- Inside City Service** -The charges for water and sewer service to customers living inside the city limits shall be as shown below:

Inside City Rates - Water	Base Mthly Rate* (per meter)	Base Allotment	Price per 1000 gallons usage above base allotment				Max Mthly Charge
			2Kto10K	10K- 25K	25K-50K	over SOK	
Table I-Residential (ind. meter)	\$29.74	2000 gals	\$10.91	\$11.42	\$11.92	\$12.81	n/a
Table II-Multi-family (master meter)	\$28.26	2000 gals	\$10.91	\$11.42	\$11.92	\$12.81	n/a
Table III-Commercial (ind. meter)	\$34.20	2000 gals	\$12.22	\$12.81	\$13.39	\$14.41	n/a
Table IV-Commercial (master meter)	\$28.26	2000 gals	\$10.91	\$11.42	\$11.92	\$12.81	n/a

\* Base Monthly Rate for utility accounts that are located in an active impact fee area shall be \$2.00 less than the amount stated.

Inside City Rates - Sewer	Base Mthly Rate* (per meter)	Base Allotment	Prices per 1000 Gallons Usage		Max Mthly Charge
Table I-Residential (ind. meter)	\$14.46	0 gals	\$3.97		\$66.07
Table II-Multi-family (master meter)	\$14.46	0 gals	\$3.97		n/a
Table III-Commercial (ind. meter)	\$16.63	0 gals	\$4.57		n/a
Table IV-Commercial (master meter)	\$14.46	0 gals	\$3.97		n/a
Table V-Sewer Only Customer	Same as appropriate table above based on metered well water usage. Residential customers with unmetered well to be charged monthly maximum (based on 13,000 gallons usage).				

\* Base Monthly Rate for utility accounts that are located in an active impact fee area shall be \$2.00 less than the amount stated.

**Water/Sewer Rates - Outside City Service** - Customers living outside of the City of Angleton shall be charged at a rate equal to one and one quarter (1.25) times the Inside City Rates. Inasmuch as the cost of providing utility service to customers living outside the City is higher and as the utility system is supported by tax dollars coming from the residents of the City of Angleton, this charge is necessary for the health, safety, and welfare of the residents of the City of Angleton and for the non-residents receiving utility services from the City.

Outside City Rates - Water	Base Mthly Rate* (per meter)	Base Allotment	Price per 1000 gallons usage above base allotment				Max. Mthly Charge
			2K to 10K	10K-25K	25K-50K	over SOK	
Table I – Residential (ind. Meter)	\$37.18	2000 gals	\$13.64	\$14.28	\$14.90	\$15.77	n/a
Table II-Multi-family (master meter)	\$35.33	2000 gals	\$13.64	\$14.28	\$14.90	\$15.77	n/a
Table III-Commercial (ind. meter)	\$42.75	2000 gals	\$15.29	\$16.02	\$16.74	\$18.02	n/a
Table IV-Commercial (master meter)	\$35.33	2000 gals	\$13.64	\$14.28	\$14.90	\$15.77	n/a
Table V - Wholesale Water Rates	The rate for the purchase of "Wholesale Water" through a fire hydrant meter provided by the City or from other locations established and metered by the City shall be the same as Table III - Commercial (individual meter) under the Outside City Rate table.						

\* Base Monthly Rate for utility accounts that are located in an active impact fee area shall be \$2.00 less than the amount stated.



<b>Outside City Rates - Sewer</b>	Base Mthly Rate* (per meter)	Base Allotment	Prices per 1000 Gallons Usage	Max. Mthly Charge
Table I-Residential (ind. meter)	\$18.07	0 gals	\$4.97	\$82.68
Table II-Multi-family (master meter)	\$18.07	0 gals	\$4.97	n/a
Table III-Commercial (ind. meter)	\$20.79	0 gals	\$5.71	n/a
Table IV-Commercial (master meter)	\$18.07	0 gals	\$4.97	n/a
Table V-Sewer Only Customer	Same as appropriate table above based on metered well water usage. Residential customers with unmetered well to be charged monthly maximum (based on 13,000 gallons usage).			

\* Base Monthly Rate for utility accounts that are located in an active impact fee area shall be \$2.00 less than the amount stated.

**SECTION 3. Severability.** In the event any clause, phrase, provision, sentence or part of this Ordinance or the application of the same to any person or circumstances shall for any reason be adjudged invalid or held unconstitutional by a court of competent jurisdiction, it shall not affect, impair or invalidate this Ordinance as a whole or any part or provision hereof other than the part declared to be invalid or unconstitutional; and the City Council of the City of Angleton, Texas declares that it would have passed each and every part of the same notwithstanding the omission of any part thus declared to be invalid or unconstitutional, or whether there be one or more parts.

**SECTION 4. Repeal.** That all ordinances or parts of ordinances in conflict herewith are hereby repealed to the extent of said conflict.

**SECTION 5.** That the City Council has found and determined that notice thereof was given in accordance with the provisions of the Texas Open Meetings Act, Texas Government Code, Chapter 551, as amended, and that a quorum of the City Council was present.

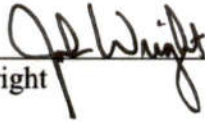
**SECTION 6. Penalty.** Any person, firm, corporation, or business entity violating or failing to comply with this Ordinance shall be deemed guilty of a misdemeanor and on conviction thereof, shall be fined in an amount not exceeding Two Thousand Dollars (\$2,000.00) if the violation relates to the public health, sanitation or dumping of refuse, otherwise the fine shall be in an amount not exceeding Five Hundred Dollars (\$500.00). A violation of any provision of this Ordinance shall constitute a separate violation for each calendar day in which it occurs.

**SECTION 7.** That this Ordinance shall become effective immediately upon its passage and approval, with new rates reflected in the utility bill due in October 2023.


SIGNATURE  
PAGE  
FOLLOWS

**PASSED AND APPROVED THIS THE 12TH DAY OF SEPTEMBER 2023.**

CITY OF ANGLETON, TEXAS

  
\_\_\_\_\_  
John Wright  
Mayor

ATTEST:

  
\_\_\_\_\_  
Michelle Perez, TRMC  
City Secretary

