



Economic Development Strategy & Diversification Study

May 2021

Prepared for Texas General Land Office
Contract No. 20-088-000-C015



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Prepared by:

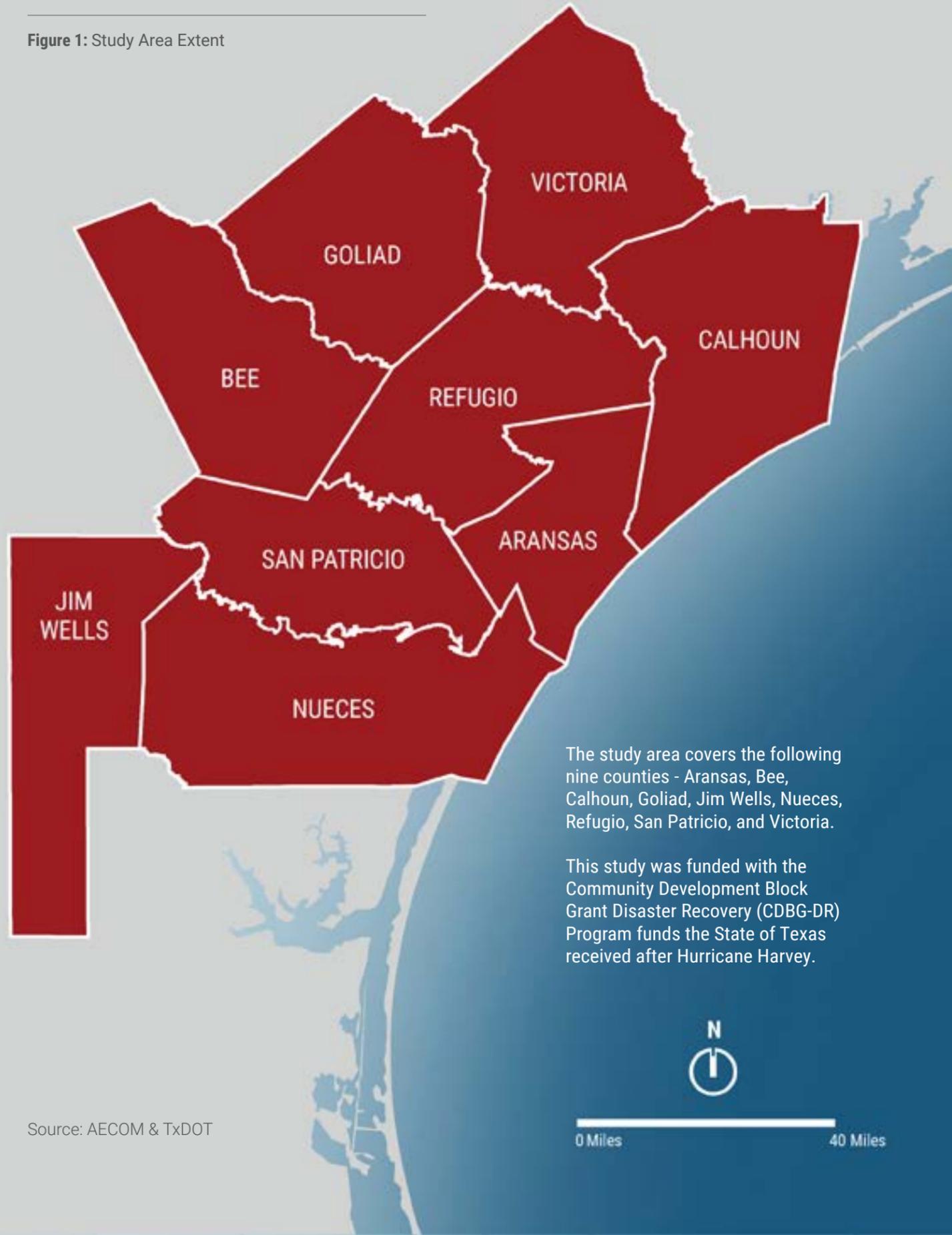


Acknowledgments

The Texas General Land Office (GLO) would like to thank the many members of the public who participated in the planning process by offering their time, ideas, concerns, suggestions and support.

A special thanks to the county judges, mayors, economic development corporation representatives, port representatives, representatives from the councils of government and staff members who participated in the steering committee and guided the development of this plan.

Figure 1: Study Area Extent



Source: AECOM & TxDOT

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Notes:

The content in this report is organized around five key themes. The following icons and colors are utilized to highlight these across the document.



Organization Capacity



Infrastructure



Housing and Building Stock



Economic Development and Diversification



Quality of Life

THIS DOCUMENT HAS BEEN DESIGNED TO FACILITATE ONLINE READING.

CLICK ON LINKS INDICATED BY Underlined Text

AND LOOK OUT FOR THESE ARROWS FOR GUIDANCE.

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EXECUTIVE SUMMARY

Project Background

The AECOM team was engaged by the Texas General Land Office (GLO) in early 2020 to complete an Economic Resilience and Diversification Study for the nine-county study area. This study was funded with Community Development Block Grant Disaster Recovery (CDBG-DR) funds the State of Texas received after Hurricane Harvey. The overall objective of this study was to build an inventory of the economic assets and deficiencies within the study area, provide economic resilience strategies and an action plan for creating a diversified and more resilient economic base. The goal of the study was to better withstand the potential impact of future major storms on this region's already compromised economy. Several themes were reiterated throughout the various stakeholder engagement efforts that highlighted the regional challenges and opportunities for both rural and urban communities. Based on these themes, the project team developed goals and objectives around five topic areas. With stakeholder input, strategies were developed to align with these goals and objectives.



Goal 1
Organization Capacity (OC)



Goal 2
Infrastructure (I)



Goal 3
Housing & Building Stock (HBS)



Goal 4
Economic Development & Diversification (EDD)



Goal 5
Quality of Life (QoL)

Report Content

What is in this report?

The **Economic Development Strategy and Diversification Study** presents the following information:

Chapter 1 Project Background

This chapter summarizes the project background, study objectives, technical approach, and stakeholder engagement efforts for this study.

Chapter 2 Stakeholder Engagement

This chapter delves into stakeholder engagement and outcomes for each phase of the study.

Chapter 3 Goals, Objectives and Strategies

This chapter presents the goals, objectives and strategies identified for the study area through an iterative stakeholder engagement process. For each strategy, a timeline and roadmap to implementation are provided. The strategies are also accompanied by examples of similar case studies and best practices. Potential funding sources and implementation partners are also suggested for each strategy.

Chapter 4 Implementation Pathways

This section shows the possible sequence for implementation of strategies based on the implementing organization's priorities.

The appendices contain additional information for each strategy on performance measures, implication on resilience, and case studies on magnitude of costing for proposed action items.

Select any icon to skip to that goal

Learn More

Watch the videos to learn more about the study!

Video #1 This video explains the need for the study as well as the process and stakeholders who were involved during the 15-month period.



Video #2 The region is increasingly vulnerable to hurricanes, rising sea levels, and other shocks and stresses. This video explains the vulnerabilities and presents solutions to strengthen the economy and become resilient.



Video #3 The nine-county study area is adjacent to one of the fastest-growing regions in the world, but it's not getting its share of economic growth. This video explains the importance of the region's assets and how, along with the right strategies and implementation, it can be primed to build capacity and attract industry.



Video #4 Texas is one of the fastest growing states in the country. The nine-county study area has the potential to attract its share of families and visitors. This video showcases how "quality of life" can be created through a variety of avenues.



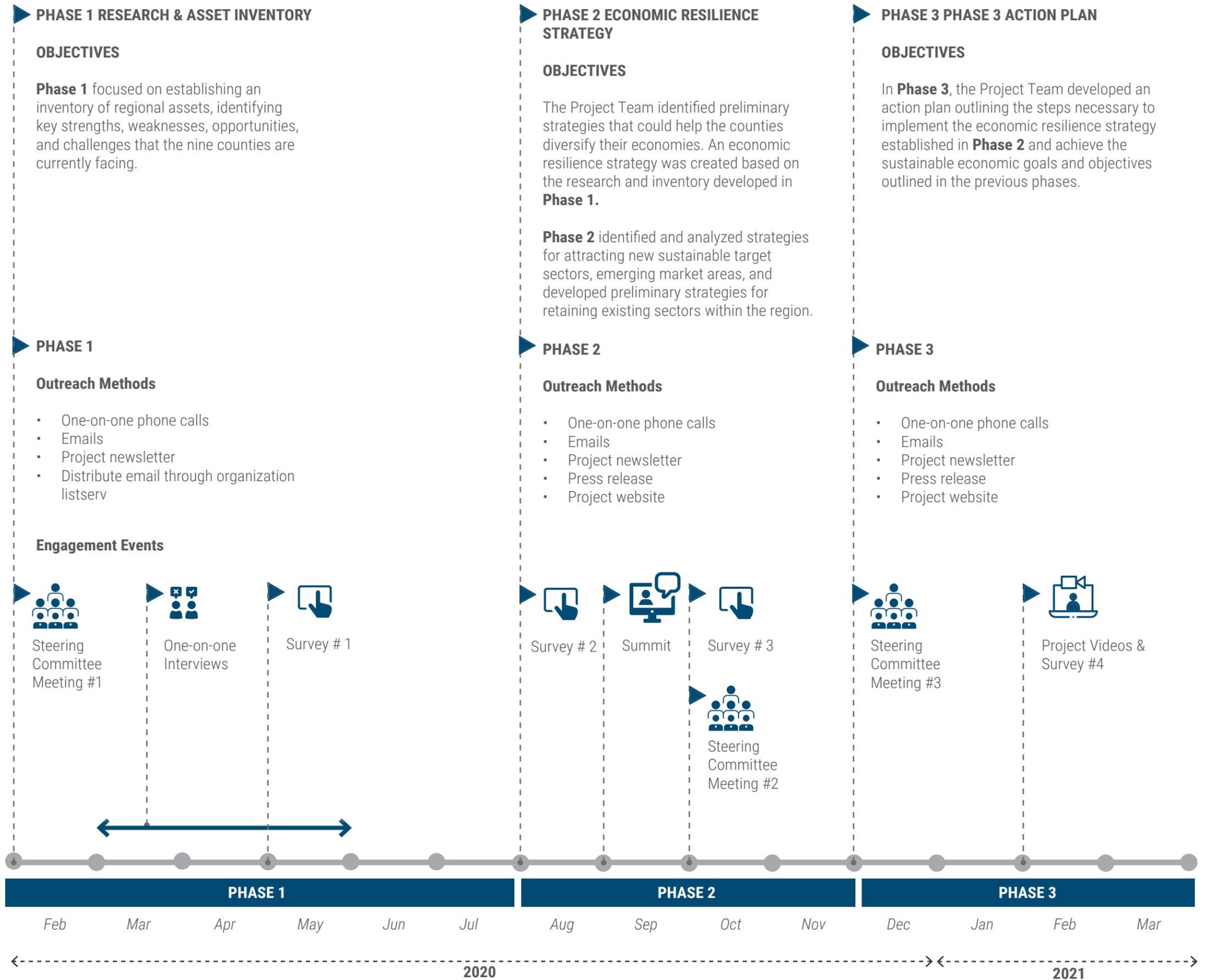
Project Timeline

The U.S. Economic Development Administration (EDA) notes that economic resilience includes three domains of resilience:

1. The ability to **anticipate** a shock or stress
2. The ability to **withstand** a shock or stress
3. The ability to **recover** quickly from a shock or stress

Establishing economic resilience in a local or regional economy requires a variety of public agencies and private sector stakeholders to anticipate risks, evaluate how those risks can impact key economic assets, and build a responsive and adaptive capacity.

The Project Team performed comprehensive research and data analysis on the economic resilience of the region. The action plan was developed through an iterative process with stakeholder input, shaping goals and objectives as well as proposed strategies.





Goal 1
Organization Capacity (OC)

Strengthen organizational capacity and regional partnerships that enhance resilience to climate hazards, reduce economic disruptions, and expand market access.

- **OC-1** Identify opportunities for shared staff resources and services. Expand funding to support shared staff capacity across rural counties in support of grant writing. Aid rural counties in pursuing state or federal programs to support development.
- **OC-2** Enhance regional cooperation for integrated regional infrastructure planning and disaster response.
- **OC-3** Develop a GIS inventory of regional data to support public and private decision making. Provide educational campaigns to train residents, government officials, and civic institutions on how to use applications. Identify resources and mechanisms to build, maintain, and update on a regular basis.



Goal 2
Infrastructure (I)

Promote regional growth through strategic infrastructure projects which build on unique regional assets and competitive strengths.

- **I-1** Leverage GIS assets to understand infrastructure capacity and identify “ready-to-go” sites in support of industry retention and expansion efforts.
- **I-2** Support deployment of high-speed broadband networks in urban and rural communities to bridge the digital divide.
- **I-3** Assist municipalities and water service providers to identify programs and technologies to manage water consumption. Encourage local innovation in developing water efficient technologies.
- **I-4** Work with local and state agencies to assess the vulnerability of utility systems, roads, ports and railway infrastructure to extreme weather conditions and identify appropriate adaptation strategies and partnerships to foster economic development, resilience, and reliability.

STRATEGY #	TIMELINE	STRATEGY TYPE	IMMEDIATE ACTION ITEMS	PARTNERS	FUNDING SOURCES	RELATIVE COST
OC-1 Pursue funding opportunities	SHORT TERM (1 - 3 YEARS)	Personnel	Expand capacity across rural counties in support of grant writing.	<ul style="list-style-type: none"> • County • Municipality • COG/MPO 	<ul style="list-style-type: none"> • County/Municipality • COG 	\$
OC-2 Enhance regional cooperation	SHORT TERM (1 - 3 YEARS)	Partnership	Enhance collaboration across formal and informal partnerships to build trust over time.	<ul style="list-style-type: none"> • County • Municipality • COG/MPO 	<ul style="list-style-type: none"> • County/Municipality • COG 	\$
OC-3 Develop GIS inventory of regional data	SHORT TERM (1 - 3 YEARS)	Program	Assess current staff capacity and ongoing GIS initiatives. Identify department(s) to expand efforts.	<ul style="list-style-type: none"> • County • Municipality • COG/MPO 	<ul style="list-style-type: none"> • County/Municipality • COG 	\$\$
I-1 Identify “ready-to-go” sites	SHORT TERM (1 - 3 YEARS)	Program	Identify and market suitable properties for attraction/expansion.	<ul style="list-style-type: none"> • EDC • AEP • BNSF/KCS 	<ul style="list-style-type: none"> • EDC • County • Municipality 	\$\$
I-2 Deployment of high-speed broadband networks	MEDIUM TERM (4 - 6 YEARS)	Assessment	Assess broadband access to identify unserved and underserved communities.	<ul style="list-style-type: none"> • Internet providers • County • Municipality 	<ul style="list-style-type: none"> • USDA • FCC • EDA 	\$\$
I-3 Manage long-term water supply	MEDIUM TERM (4 - 6 YEARS)	Partnership	Prioritize and accelerate investment in planned projects to diversify water supply portfolio and invest in water conservation.	<ul style="list-style-type: none"> • Water utilities • County • Municipality 	<ul style="list-style-type: none"> • Water utilities • TWDB • USDA 	\$\$\$\$\$
I-4 Adaptation strategies for vulnerable infrastructure	MEDIUM TERM (4 - 6 YEARS)	Assessment	Conduct vulnerability assessments of infrastructure and identify adaptation strategies.	<ul style="list-style-type: none"> • Ports • Railway • TxDOT • Utilities 	<ul style="list-style-type: none"> • Ports • Railway • TxDOT • Utilities 	\$\$\$\$\$



Goal 3
Housing & Building Stock
(HBS)

Sustain housing investment and support workforce growth by maintaining affordability, leveraging existing building stock, and mitigating climate risks and impacts.

- **HBS-1** Collaborate with local organizations and community foundations on a housing revitalization plan that expands development of affordable/workforce housing.
- **HBS-2** Evaluate building permitting and zoning codes to encourage innovations in housing, including provision of “missing middle” housing types.
- **HBS-3** Increase on-site housing options for seasonal workers in coastal tourism communities.
- **HBS-4** Encourage counties to adopt and enforce storm-resistant building codes and discourage development in high-risk zones where possible. Establish a post-disaster housing strategy and coordinate implementation when appropriate.
- **HBS-5** Assess options to reduce financial impacts on communities and low-to moderate-income residents who are impacted by increasing costs for flood and wind insurance.

STRATEGY #	TIMELINE	STRATEGY TYPE	IMMEDIATE ACTION ITEMS	PARTNERS	FUNDING SOURCES	RELATIVE COST
HBS-1 Expand affordable housing options	SHORT TERM (1 - 3 YEARS)	Partnership	Form a Affordable Housing Task Force to coordinate housing revitalization planning and leverage collective resources.	<ul style="list-style-type: none"> • Housing foundations • County • Municipality 	<ul style="list-style-type: none"> • County • Municipality 	\$
HBS-2 Provision of “missing middle” housing types	SHORT TERM (1 - 3 YEARS)	Assessment	Review codes to identify and document regulatory barriers to affordable housing development.	<ul style="list-style-type: none"> • County • Municipality 	<ul style="list-style-type: none"> • County • Municipality 	\$
HBS-3 On-site housing for seasonal workers	SHORT TERM (1 - 3 YEARS)	Assessment	Conduct outreach to tourism-based employers to understand emerging housing constraints.	<ul style="list-style-type: none"> • County • Municipality • Local employers 	<ul style="list-style-type: none"> • County/ Municipality • EDCs 	\$
HBS-4 Establish a post-disaster housing strategy	SHORT TERM (1 - 3 YEARS)	Plan	Establish a post-disaster housing strategy to retain population in the community.	<ul style="list-style-type: none"> • County • Municipality 	<ul style="list-style-type: none"> • County/ Municipality 	\$\$
HBS-4 Adopt storm-resistant building codes	MEDIUM TERM (4 - 6 YEARS)	Assessment	Evaluate current building code and consider adoption of more stringent standards.	<ul style="list-style-type: none"> • County • Municipality 	<ul style="list-style-type: none"> • County/ Municipality 	\$
HBS-4 Discourage development in high-risk zones	MEDIUM TERM (4 - 6 YEARS)	Plan	Review floodplain management practices and adopt stringent standards.	<ul style="list-style-type: none"> • County • Municipality 	<ul style="list-style-type: none"> • County/ Municipality 	\$\$
HBS-5 Reduce costs of flood and wind insurance	MEDIUM TERM (4 - 6 YEARS)	Assessment	Evaluate feasibility of participating in the Community Rating System program.	<ul style="list-style-type: none"> • County • Municipality 	<ul style="list-style-type: none"> • County • Municipality • GOMESA 	\$



Goal 4
Economic Development & Diversification (EDD)

Foster regional resilience through strategies which encourage economic inclusion and diversification to provide stability during downturns and in response to natural disasters.

- **EDD-1** Expand capacity of Economic Development Corporations (EDCs) across the region to coordinate and pursue economic resilience and development initiatives. Support local and regional economic development and diversification through focused business retention and expansion efforts.
- **EDD-2** Provide resources for branding and marketing locally produced goods to expand global market awareness and demand.
- **EDD-3** Develop a collaborative of workforce centers, workforce training programs, higher education institutions, and high schools to identify “in demand” occupations that cut across multiple industry clusters, aligned with transferable skills, abilities, and certifications.
- **EDD-4** Enhance collaboration across research entities, universities, municipalities, and workforce training programs to grow an innovation ecosystem. Start a business incubation program to encourage startup of local businesses in the retail, food, product manufacturing, and software/technology industries.
- **EDD-5** Promote strategic investments in the healthcare industry that will improve economic opportunity and provide greater access to quality care throughout the region.
- **EDD-6** Collaborate with Economic Development Corporations (EDCs), chambers of commerce and municipalities to establish a ‘Business Recovery One-Stop Center’ to provide resources for businesses impacted by climate shocks or stresses.
- **EDD-7** Improve access to job opportunities by collaborating with agencies that provide transit services and large employers to expand access to transit.

STRATEGY #	TIMELINE	STRATEGY TYPE	IMMEDIATE ACTION ITEMS	PARTNERS	FUNDING SOURCES	RELATIVE COST
EDD-1 Focused business retention and expansion	SHORT TERM (1 - 3 YEARS)	Program	Expand EDC capacity and coverage by forming new entities, or expanding existing EDCs.	• EDC • County • Municipality	• County/ Municipality	\$\$
EDD-2 Differentiate locally produced goods	LONG TERM (7 - 10+ YEARS)	Program	Evaluate organization capacity to undertake this effort and feasibility of products that can be differentiated.	• EDC • County • Municipality	• Texas Department of Agriculture	\$\$\$\$
EDD-3 Workforce training programs	MEDIUM TERM (4 - 6 YEARS)	Partnership	Identify employment growth across target industries and in-demand occupations.	• Universities & colleges • Training centers	• Texas Workforce Commission	\$\$
EDD-3 Building trades & construction training programs	LONG TERM (7 - 10+ YEARS)	Partnership	Communicate clear pathways for occupations that support recovery after hurricanes.	• Universities and colleges • Training centers	• Texas Workforce Commission	\$\$\$
EDD-3 Workforce disaster recovery	LONG TERM (7 - 10+ YEARS)	Program	Expand ongoing programs (such as mobile camps) that provide assistance for displaced employees after storm events.	• EDCs • Workforce boards	• Texas Workforce Commission	\$\$
EDD-4 Innovation ecosystem and business incubation	MEDIUM TERM (4 - 6 YEARS)	Partnership	Convene a network of partners to exchange information on ongoing research and startup efforts.	• Universities & colleges	• Higher education institutions R&D funds	\$
EDD-5 Invest in healthcare industry	LONG TERM (7 - 10+ YEARS)	Partnership	Evaluate creation of a healthcare foundation to bring local partners together.	• Healthcare providers • County • Municipality	• Tax incentives • Low interest loan programs	\$\$\$
EDD-6 Business Recovery One-Stop Center	SHORT TERM (1 - 3 YEARS)	Partnership	Identify services the Business Recovery Center can provide (ongoing and new services).	• EDCs • Chambers of Commerce	• EDC • FEMA/EDA/ SBA	\$\$
EDD-7 Transit services to job centers	MEDIUM TERM (4 - 6 YEARS)	Assessment	Engage with large employers and transit-dependent populations to identify challenges and solutions.	• COG/MPO • County • Municipality	• TxDOT • COG/MPO	\$\$



Goal 5
Quality of Life (QoL)

Encourage quality of life improvements through placemaking and environmental enhancements in order to attract families to visit and reside within the region.

- **QoL-1** Identify and invest in amenities that improve quality of life and quality of place to encourage local market workforce diversification.
- **QoL-2** Leverage regional strengths to market the area as a family-friendly vacation destination that draws families from within and beyond the Texas Triangle.
- **QoL-3** Manage conflict between industrial use, ecological functions, residential areas, and recreational opportunities.
- **QoL-4** Identify properties in flood-prone areas with repetitive losses and design a strategic voluntary buyout program that will reduce ongoing flood impacts.

STRATEGY #	TIMELINE	STRATEGY TYPE	IMMEDIATE ACTION ITEMS	PARTNERS	FUNDING SOURCES	RELATIVE COST
QoL-1 Invest in community amenities	MEDIUM TERM (4 - 6 YEARS)	Partnership	Unite selected portions of the region to create strategic plans for natural and heritage tourism and opportunities.	<ul style="list-style-type: none"> • County • Municipality • COG 	<ul style="list-style-type: none"> • USDA • TPWD • Main Street Program 	\$\$\$
QoL-2 Market region as a vacation destination	MEDIUM TERM (4 - 6 YEARS)	Partnership	Establish a regional affiliation of Convention and Visitors Bureaus.	<ul style="list-style-type: none"> • County • Municipality 	<ul style="list-style-type: none"> • Local Hotel Occupancy Taxes 	\$\$\$
QoL-2 Establish Regional Sports Commission	MEDIUM TERM (4 - 6 YEARS)	Partnership	Establish a Regional Sports Commission entity to focus on improving and building sports venues that attract visitors.	<ul style="list-style-type: none"> • County • Municipality 	<ul style="list-style-type: none"> • Local Hotel Occupancy Taxes 	\$\$\$
QoL-3 Manage landuse conflict	MEDIUM TERM (4 - 6 YEARS)	Assessment	Support local governments in identifying buffers between industrial sites and residential / sensitive ecological areas.	<ul style="list-style-type: none"> • Municipality • COG 	<ul style="list-style-type: none"> • FHWA/TxDOT • U.S. DoI • NFWF 	\$\$
QoL-4 Strategic voluntary buyout program	MEDIUM TERM (4 - 6 YEARS)	Program	Map repetitive loss properties to strategically choose areas for the voluntary buyout program.	<ul style="list-style-type: none"> • County • Municipality 	<ul style="list-style-type: none"> • FEMA • GLO 	\$\$\$
QoL-4 Strategic voluntary buyout program	LONG TERM (7 - 10+ YEARS)	Program	Create new developments that can house individuals who accept voluntary buyouts.	<ul style="list-style-type: none"> • County • Municipality 	<ul style="list-style-type: none"> • FEMA • GLO 	\$\$\$



01. PROJECT BACKGROUND



In our final survey, 84% of respondents agreed that making sure electrical grids, power lines, water supply, and business supply chains can bounce back quickly when a disaster strikes is very important to help a business succeed.

01 Context

Purpose of the Study

Hurricane Harvey made landfall on August 25, 2017 in Rockport, Texas as a Category 4 Hurricane. After impacting the study area counties of Aransas, Bee, Calhoun, Goliad, Jim Wells, Nueces, Refugio, San Patricio, and Victoria, Harvey returned to the Gulf of Mexico to later make landfall and eventually center over greater Houston.¹

Damage estimates point to Hurricane Harvey as the second costliest hurricane in American history with \$125 billion in damage, second only to Hurricane Katrina (2005) with \$160 billion in damage.²

The Texas Comptroller's office estimated that the storm's net economic impact decreased the Texas gross state product (GSP) by \$3.8 billion in the first year after landfall, although activity associated with reconstruction and recovery caused the economy to regain ground quickly, producing an expected \$800 million gain to GSP after three years. As of January 2019, nearly \$15.5 billion had been paid to address Harvey claims through the National Flood Insurance Program (NFIP), the Texas Windstorm Insurance Association (TWIA), the Small Business Administration (SBA) and the Federal Emergency Management Agency (FEMA) Individual Assistance program, which covers housing and other disaster-related expenses.

The region's variable weather conditions can cause billions of dollars in damage and climate change will likely add to both stress and costs. Between 1980 and 2020, the National Oceanic and Atmospheric Administration (NOAA), estimates that disaster events causing \$114 billion in damage have

impacted Texas. **Figure 2** shows a time series of these events for Texas. Of the \$114 billion disaster events:

- 65 of these were related to severe storm events
- 16 were related to drought
- 9 were related to tropical cyclones
- 8 were related to flood events

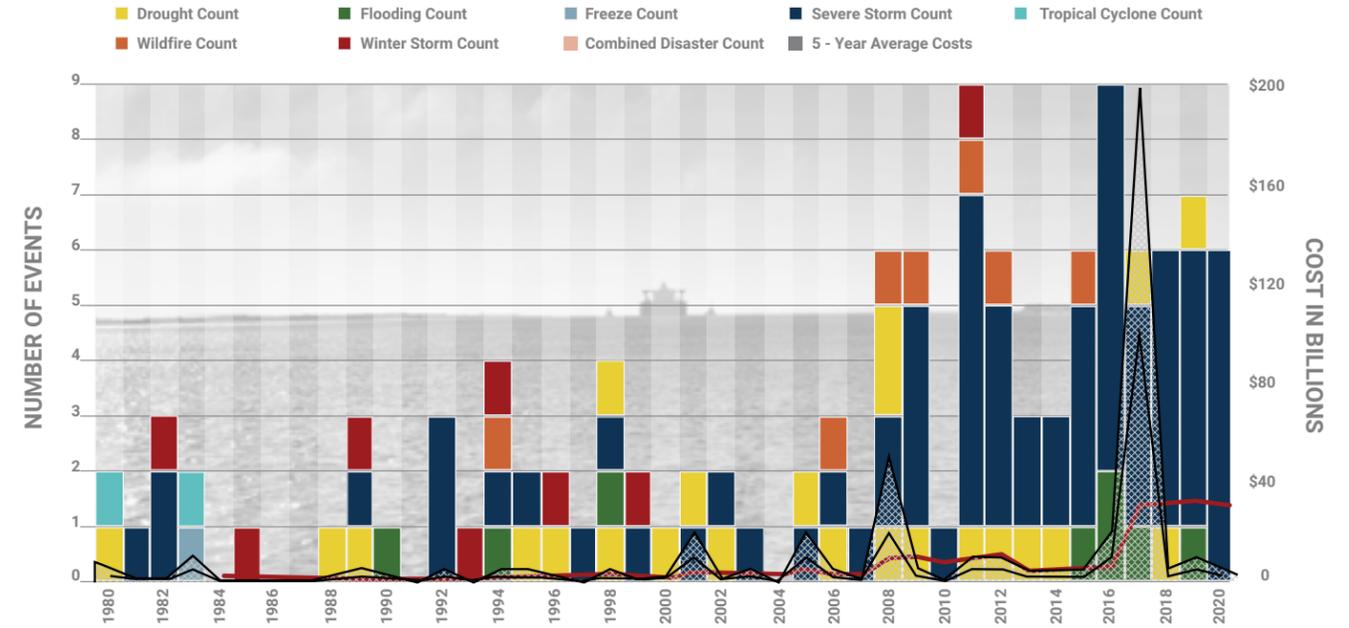
The number and cost of disasters are increasing over time. This is due to a combination of increased asset exposure, more development in hazard zones (i.e. cost estimate of assets at risk of possible loss), susceptibility (i.e., how much damage does the intensity [wind speed, flood depth] at a location cause). Additional concerns relate to the impact of climate change leading to an increasing frequency of extreme weather events that result in losses beyond a \$1 billion threshold.³

Beyond the glaring impact of Hurricane Harvey, it is equally clear that across the study area, the number of disaster declarations has only increased.

Figure 3 shows that in the past 15 years, every Texas coastal county received at least one hurricane disaster declaration and in the study region, Calhoun, Aransas, San Patricio and Nueces Counties have each received three hurricane disaster declarations.

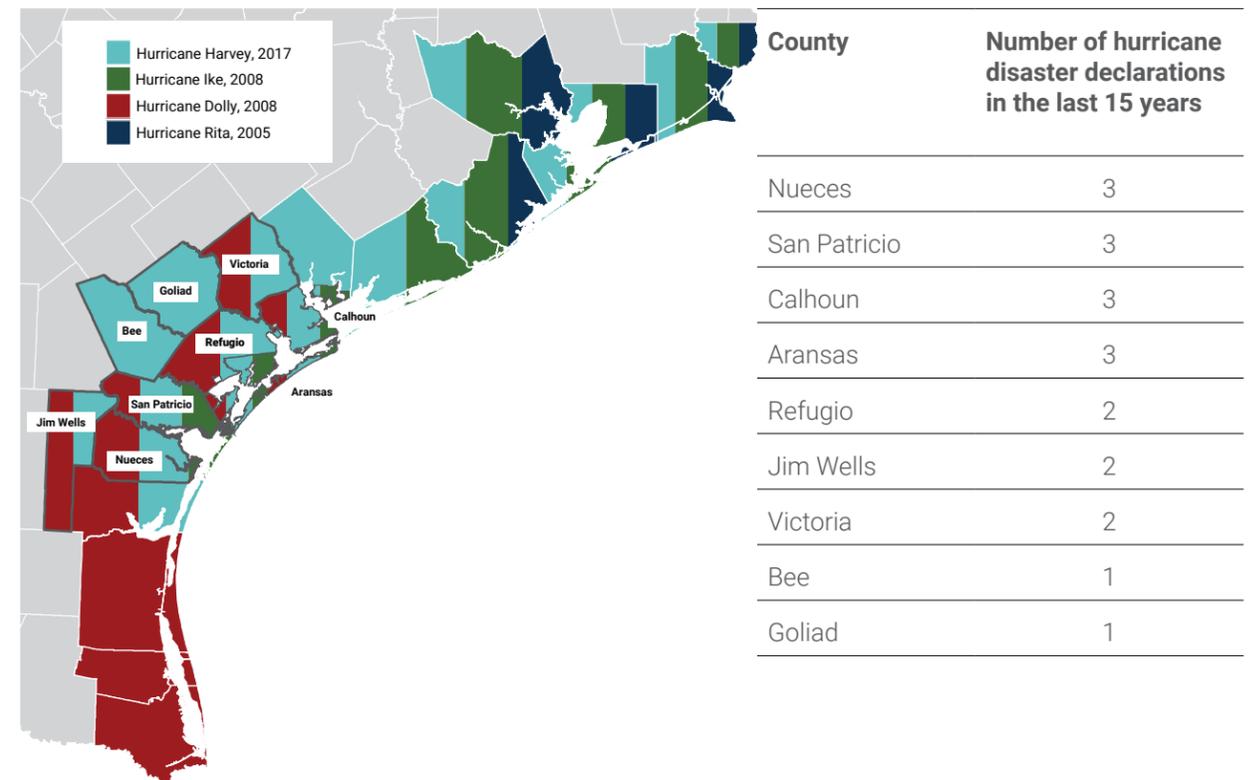
While short-term economic implications reflect obvious economic distress, long-term ramifications are also important.

Figure 2: Billion-Dollar Weather and Climate Disasters: Time Series for Texas



Source: NOAA

Figure 3: Hurricane Disasters Along the Texas Coast in the Last 15 Years



Source: FEMA

2020 Atlantic Hurricane Season

The extremely active 2020 Atlantic hurricane season drew to a close with a record-breaking 30 named storms and 12 landfalling storms. This is the most storms on record, surpassing the 28 from 2005, and the second-highest number of hurricanes on record. **Figure 4** shows key statistics from this season.

While Hurricane Hanna's landfall was many miles from Corpus Christi, the storm's winds and surge were still strong enough to cause millions of dollars in damage. The impact caused power outages for tens of thousands of people, put portions of North Beach underwater and damaged a portion of the iconic Bob Hall Pier, one of the most popular features of Nueces County's stretch of Padre Island Beach.

Figure 4: Key Statistics From the 2020 Atlantic Hurricane Season



COVID -19

Figure 5 shows unemployment rates between January 2020 and June 2020 in the study area. Unemployment rates in the study area were higher than the Texas average for most counties. While short-term economic implications reflect obvious economic distress, long-term ramifications are also important. With local tourism aligned with outdoor activities to Texas Triangle (by car rather than by aircraft), the study area seems positioned to weather the worst aspects of COVID-19. In the long term, the region will benefit from greater workforce diversity, to compete for a share of future workers who can work remotely.

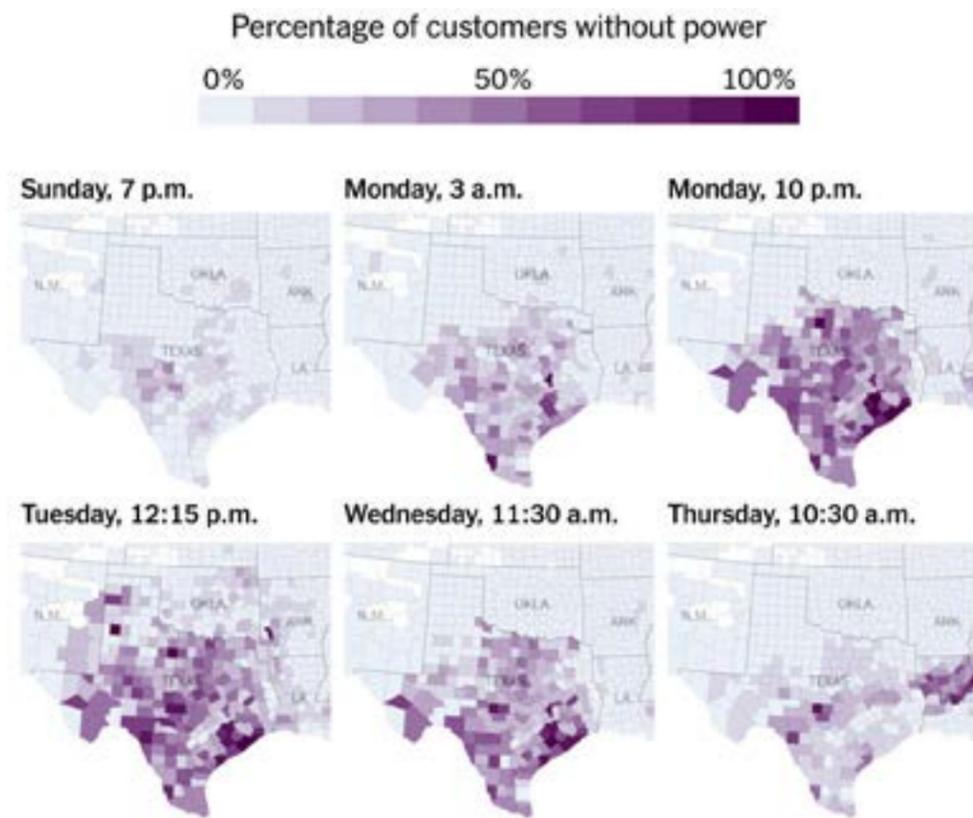
Figure 5: Unemployment Rate Between Jan 2020 to Feb 2021

	2020												2021	
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
Texas	3.7	3.5	5.1	12.7	11.8	10.3	9.6	6.9	8	6.9	6.9	6.7	7.3	7.5
Aransas	4.6	4.3	6.2	14	11.9	10.5	10.3	7.3	8.8	7.9	8.2	8.2	9	9.3
Bee	4.8	4.7	6.6	12.3	12.9	13.6	12.8	9.4	11.2	10.2	10.1	9.7	10.3	10.8
Calhoun	3.6	3.3	4.6	8.6	8	7.6	7.2	5.2	6	5.4	5.4	5.6	6.1	6.3
Goliad	3.9	3.8	5.4	10.3	10	10	10.3	7.7	8.5	7.7	7.9	7.6	8.8	9
Jim Wells	5.5	5.2	7.8	16.6	17.7	17.3	17.2	13.1	15.3	13.9	14	13.1	13.4	13.5
Nueces	4.5	4.1	5.8	14.9	13.2	11.4	11.5	8.2	9.4	8.3	8.4	8.2	8.9	9.1
Refugio	4	3.6	5.3	10.7	11.5	10.9	10.7	7.7	9.2	8.3	8.2	8.3	9	9.1
San Patricio	6.2	5.5	7.5	15.6	14.2	12.6	12.5	9.2	10.7	9.6	9.9	10	10.9	11.2
Victoria	3.9	3.8	5.4	14	11.9	10.5	11.2	7.5	8.6	7.7	7.8	7.5	8.3	8.6

Source: Bureau of Labor Statistics, 2021

Winter Storm Uri 2021

Winter Storm Uri moved across North America from Feb. 13–17, 2021, with impacts throughout the U.S., northern Mexico, and parts of Canada. The storm caused blackouts for over 9.7 million people in the U.S. and Mexico, most notably in Texas, where power supply and grid failures led to prolonged outages, culminating in an energy and water crises. At the peak, on Monday, more than 4.5 million Texas homes and businesses were without power, as utilities made staggered cuts to avoid longer-term disruption. Power has slowly come back online as the weather has warmed, but many Texans continue to experience rolling outages.



Source: New York Times



Source: AECOM

Study Objectives

The objective of this study is to build an inventory of the economic assets and deficiencies within the defined nine-county study area, formulate economic development strategies and an action plan for creating a diversified and more resilient economic base. This can help the nine-county study area better withstand the potential impact of future major storms on this region’s already compromised economy.

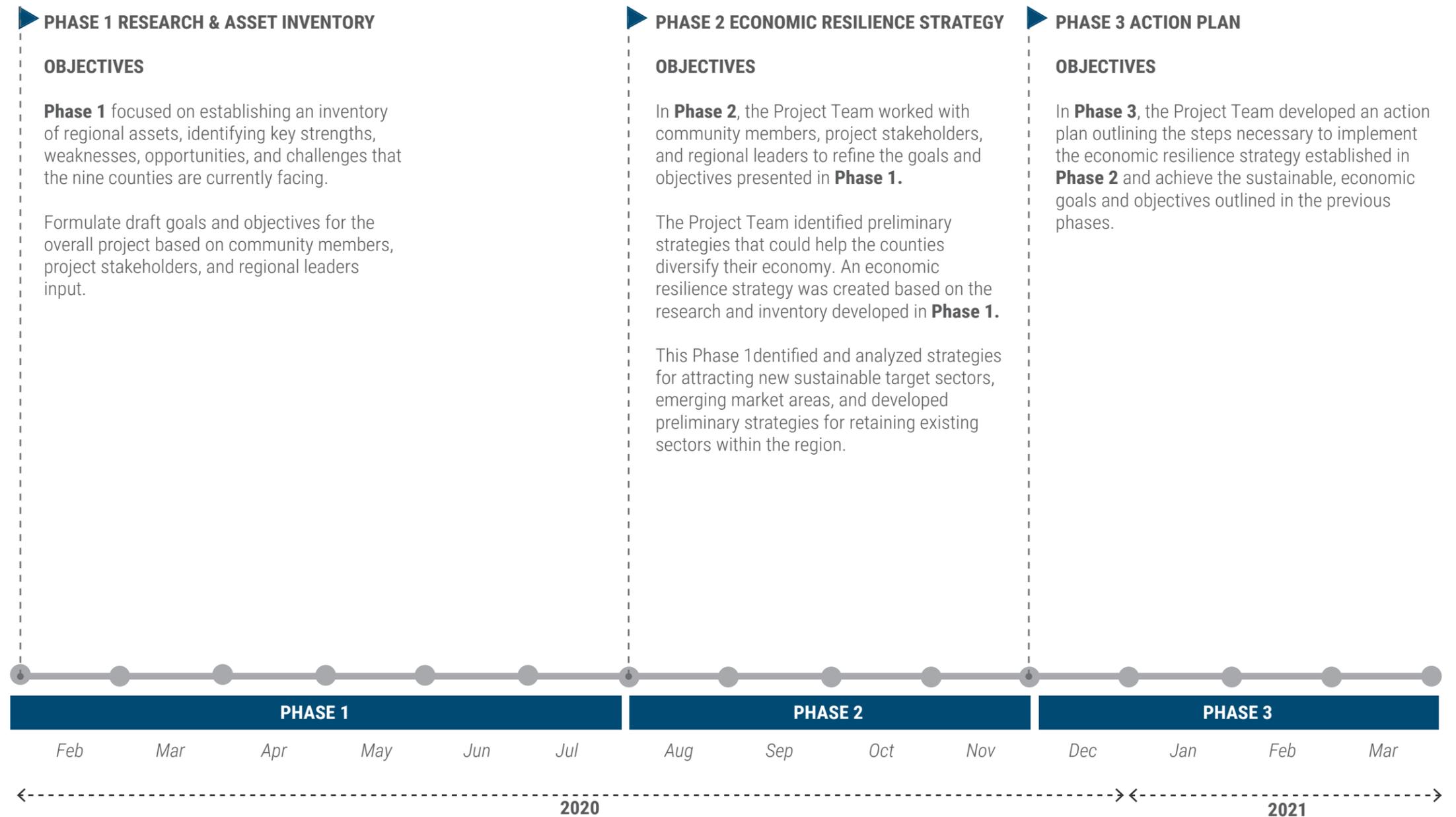
Study Area

This project effort is focused on a broad nine-county area (**Figure 1**), covering Aransas, Bee, Calhoun, Goliad, Jim Wells, Nueces, Refugio, San Patricio, and Victoria Counties. The geography roughly extends from Corpus Christi to Victoria, covering more than 600,000 residents, incorporating multiple municipalities, local economic development agencies, local convention and visitors’ bureaus, and local chambers of commerce. In this report, the terms nine-county region and study area have been used interchangeably.

The study area also incorporates portions of two workforce development agencies and two COGs (Coastal Bend and Golden Crescent), as well as a host of specialized organizations consisting of higher education, workforce training centers, port authorities, ground water district boards, floodplain authorities, military installations, and local economic development organizations that play a role in economic and workforce development.

Figure 6 shows the study objectives for each phase of this study.

Figure 6: Study Objectives



Source: AECOM

Technical Approach

The U.S. Economic Development Administration (EDA) notes that economic resilience includes three domains of resilience:

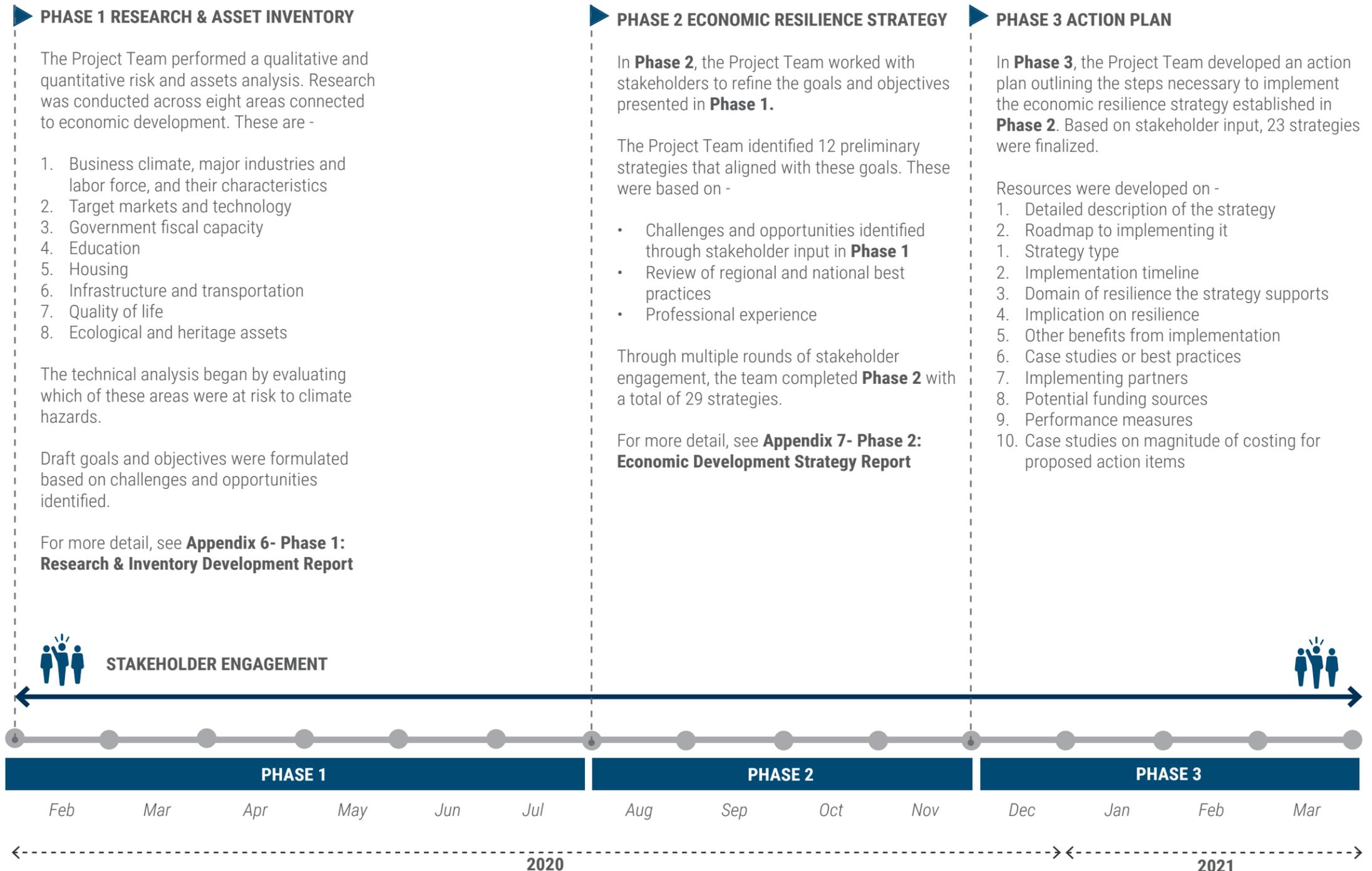
1. The ability to **anticipate** a shock or stress
2. The ability to **withstand** a shock or stress
3. The ability to **recover** quickly from a shock or stress

Establishing economic resilience in a local or regional economy requires a variety of public agencies and private sector stakeholders to anticipate risks, evaluate how those risks can impact key economic assets, and build a responsive and adaptive capacity.

The Project Team performed comprehensive research and data analysis to assess the economic resilience of the region. The action plan was developed through an iterative process with stakeholder input, shaping goals and objectives as well as proposed strategies.

Figure 7 shows the technical approach undertaken during each phase of this study.

Figure 7: Technical Approach



Source: AECOM

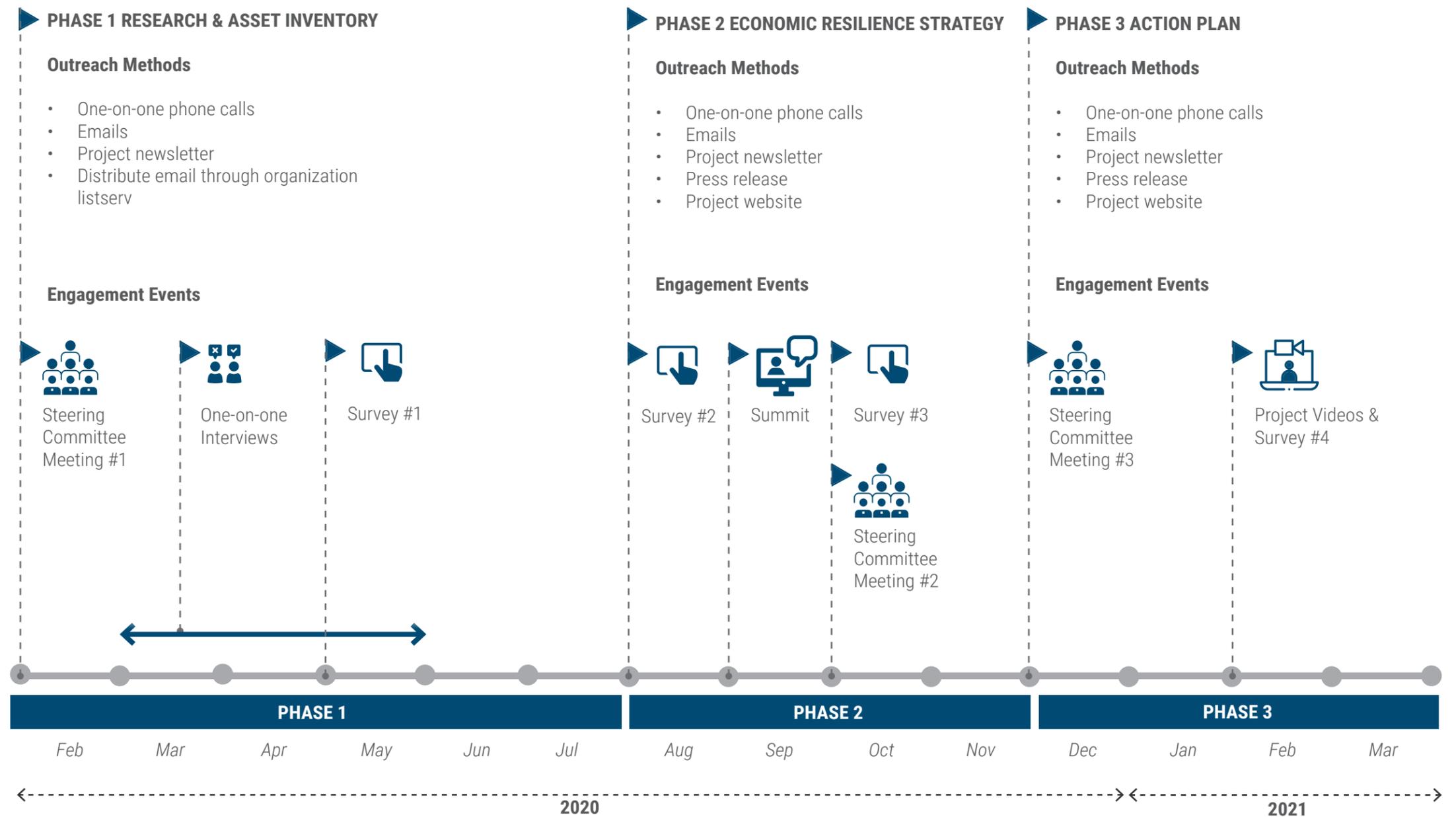
Stakeholder Engagement

The stakeholder engagement process was multi-pronged, with a wide variety of stakeholders engaged in each of the nine counties. While modifications needed to be made to the original stakeholder engagement plan due to the COVID-19 pandemic, the team was able to maintain a multi-faceted engagement approach, utilizing a number of in-person and virtual engagement methods throughout the study.

Chapter 2 – Stakeholder Engagement delves further into the stakeholder engagement process and outcomes for each phase of the study.

Figure 8 shows the stakeholder engagement events and outreach efforts undertaken during each phase of this study.

Figure 8: Stakeholder Engagement Events and Outreach Efforts



In our final survey, 83% of respondents agreed that creating systems that help overcome sudden shocks, like natural disasters or pandemics, will help the regional economy over the long term.

Source: AECOM

Report Content

The Economic Resilience Strategy & Diversification Study Phase 3: Economic Resilience Action Plan presents the following information -

 **Chapter 1 Project Background**

This chapter summarizes the project background, study objectives, technical approach, and stakeholder engagement efforts for this study.

 **Chapter 2 Stakeholder Engagement**

This chapter delves into the stakeholder engagement and outcomes for each phase of the study.

 **Chapter 3 Goals, Objectives and Strategies**

This chapter presents the goals, objectives and strategies identified for the study area through an iterative stakeholder engagement process. For each strategy, a timeline and roadmap to implementation are provided. The strategies are also accompanied by examples of similar case studies and best practices. Potential funding sources and implementation partners are also suggested for each strategy.

 **Chapter 4 Implementation Pathways**

This chapter shows possible sequence for implementation of strategies based on the implementing organization's priorities.

Appendices

The appendices contain additional information for each strategy on performance measures, implication on resilience, and case studies on magnitude of costing for proposed action items.

- Appendix 1- Goal 1: Organization Capacity
- Appendix 2- Goal 2: Infrastructure
- Appendix 3- Goal 3: Housing and Building Stock
- Appendix 4- Goal 4: Economic Development and Diversification
- Appendix 5- Goal 5: Quality of Life

Appendix 6- Phase 1: Research & Inventory Development Report

This appendix summarizes efforts undertaken during Phase 1 of the study.

Appendix 7- Phase 2: Economic Development Strategy Report

This appendix summarizes efforts undertaken during Phase 2 of the study.

Select icon to skip to that chapter



Source: AECOM



02. STAKEHOLDER ENGAGEMENT



Public Input:

"It is important for neighboring counties to work together, share information and resources. This study is a great start in that direction."

Source: AECOM

02 Stakeholder Engagement

Introduction

Stakeholder engagement was a central tenet of the Economic Development and Diversification Study and was ongoing throughout the study process, from early January 2020 through February 2021. The stakeholder engagement process was multi-pronged, with a wide variety of stakeholders engaged in each of the nine counties. While modifications needed to be made to the original stakeholder engagement plan due to the COVID-19 pandemic, the team was able to gather feedback, utilizing a number of in-person and virtual engagement methods throughout the study.

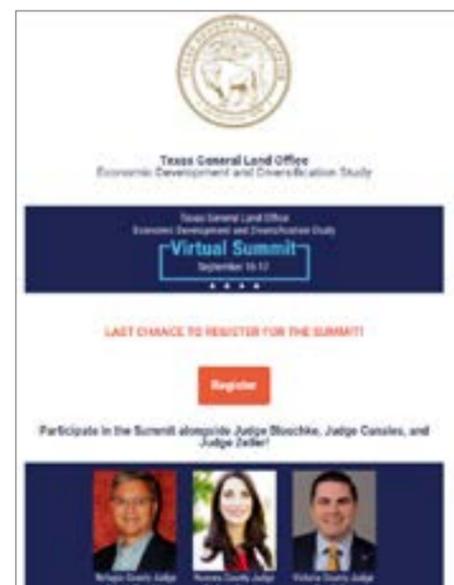
There were numerous layers to engagement for the study (Figure 10). The primary sounding board was the steering committee, which consisted of 35 individuals across the nine counties who were considered essential to the understanding of the landscape, as well as to the future implementation of the study. This list included county judges, mayors of large cities, and leaders of local economic development and regional planning agencies. With help from the steering committee, the team also identified individuals and organizations associated with economic development in the nine counties who provided insight on local trends, opportunities, and challenges for the region. Finally, the general public, which consisted of residents and employees of the nine-county study area, were also notified of the efforts of the study via press releases and social media engagement and were asked to provide their feedback from personal experience.

In addition to the detailed engagement methods

outlined below, stakeholders in the study area also received a study newsletter (Figure 9), and were able to access the public study webpage hosted on the GLO website that included updated information and access to documents and videos.

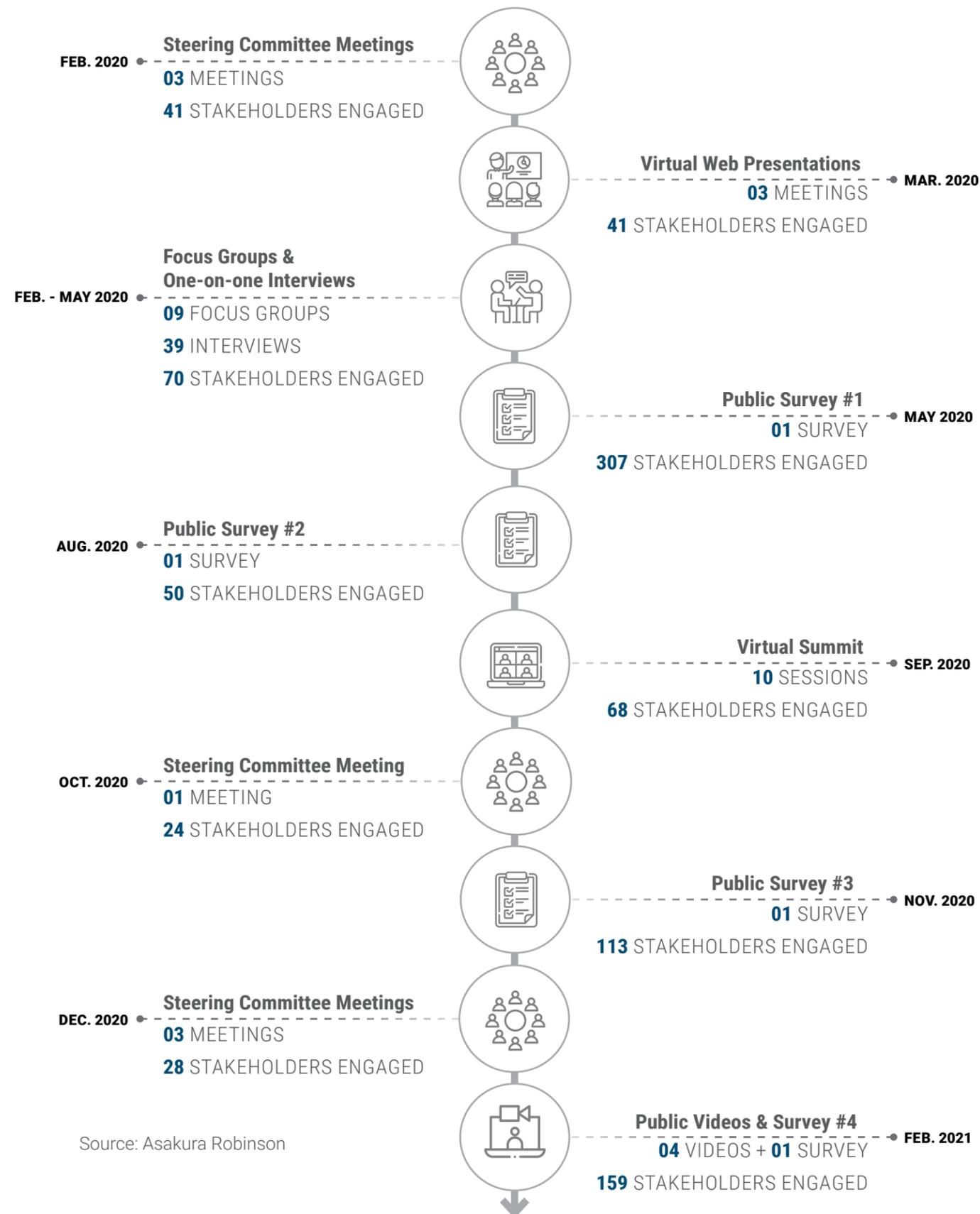
The themes, goals, and strategies outlined in this report have been heavily influenced and informed by feedback and ideas received from stakeholders throughout this study, whether obtained from conversations that occurred during the steering committee meetings, or through comments made in the numerous public surveys.

Figure 9: Study newsletter, September 2020



Source: Asakura Robinson

Figure 10: Timeline of Stakeholder Engagement Efforts



Source: Asakura Robinson

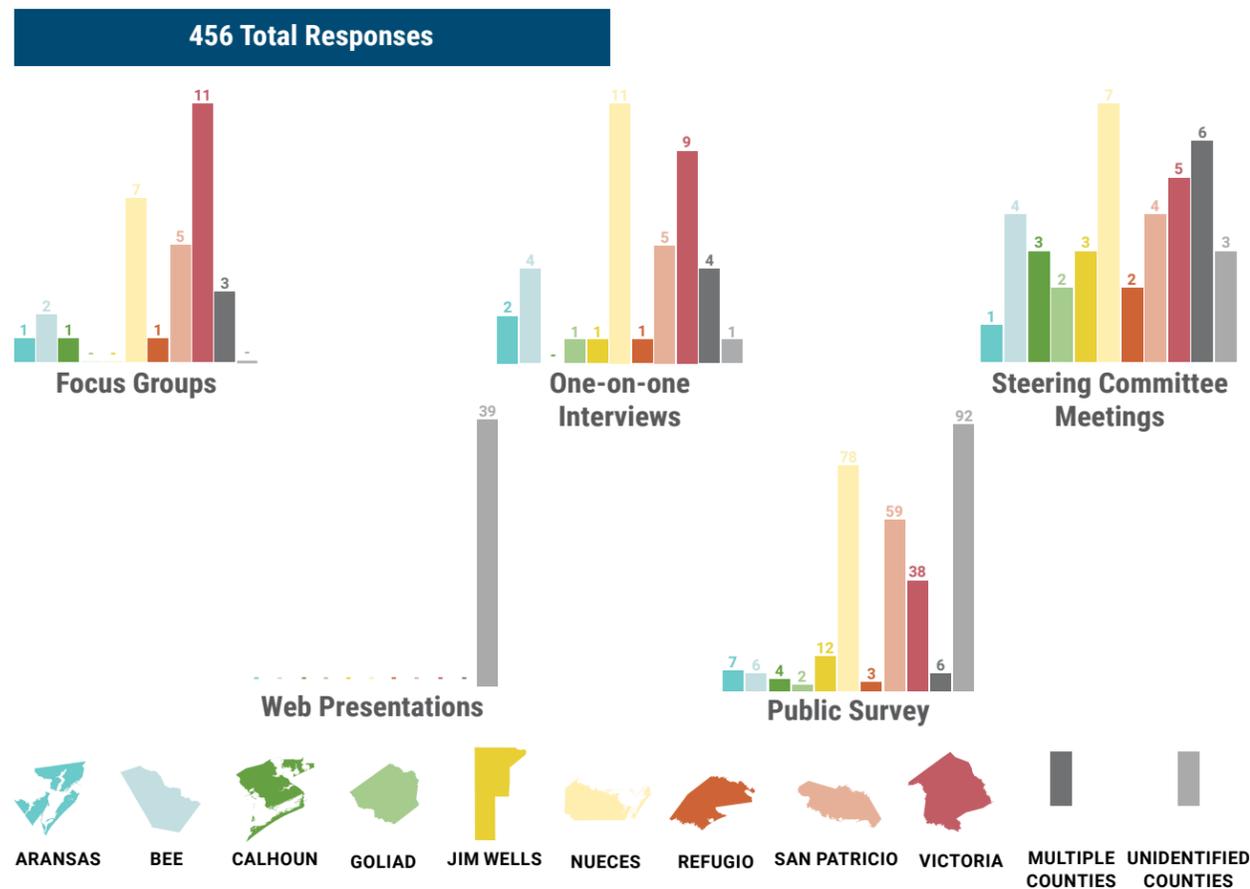
Phase 1 Engagement

During **Phase 1**, the goal of stakeholder engagement was to identify the different stakeholders that should be involved in the project, use their feedback to assess local outlook and experience on economic development, and identify assets and challenges.

Stakeholder engagement for the first phase of the study ran from February to June 2020. This Phase 1 included virtual workshops, focus groups, one-on-one interviews, stakeholder committee meetings, and a public survey.

In total, 111 stakeholders participated in the interviews, focus groups, and stakeholder committee meetings and 307 stakeholders responded to the public survey, bringing the total number of stakeholders engaged during Phase 1 to over 400 individual stakeholders. **Figure 11** summarizes the number of stakeholders engaged during **Phase 1** by county and engagement method.

Figure 11: Number of Stakeholders Engaged During Phase 1 by County



Source: Asakura Robinson

Steering Committee Meetings

In February 2020, the project team facilitated three in-person tri-county steering committee meetings in Portland, Beeville, and Victoria (**Figure 12, 14 & 15**). These meetings engaged officials and stakeholders from three groups of counties: Aransas, Nueces, and San Patricio; Bee, Jim Wells, and Refugio; and Calhoun, Goliad, and Victoria. The groups were chosen based on which counties shared the same councils of government and also geographic convenience. The first set of steering committee meetings introduced the study and the team to the stakeholders and then members were asked to fill out a worksheet brainstorming assets, challenges, and associated stakeholders involved in these assets and challenges. These worksheets were then codified and used to develop the Research and Inventory Development Report (**Appendix 6**).

Web Presentations

In late March, after the increase in COVID-19 cases, a series of web presentations were organized to provide information on the study and initial feedback on economic development for the region. Individuals and organizations associated with economic development in the nine counties were invited to this series of presentations. A short nine-question survey was made available to attendees of the web presentations that inquired as to the immediate impacts of COVID-19 on their region. The survey also asked for a preferred method of engagement moving forward. More than half of respondents preferred to move to a virtual form of engagement.

Public Survey

The first public survey was open between May 7 and May 29, 2020. Its goals were to reach a wider audience than those reached through focus groups and interviews. It included customized questions depending on whether the survey taker identified that they were taking the survey as a resident of the study area, a business owner, a nonprofit, or a government/education employee. The survey covered topics such as economic assets, challenges, and opportunities for economic diversification. **Figure 13** shows results from this survey.

One-on-one Interviews and Focus Groups

After analyzing information from the steering committee meetings and the web presentations, the team organized numerous one-on-one phone and web-based interviews to address any gaps - geographic or otherwise - in the information collected so far. Specifically, 39 interviews took place from a large number of different sectors alongside nine focus groups. Each provided in-depth understanding for the following sectors:

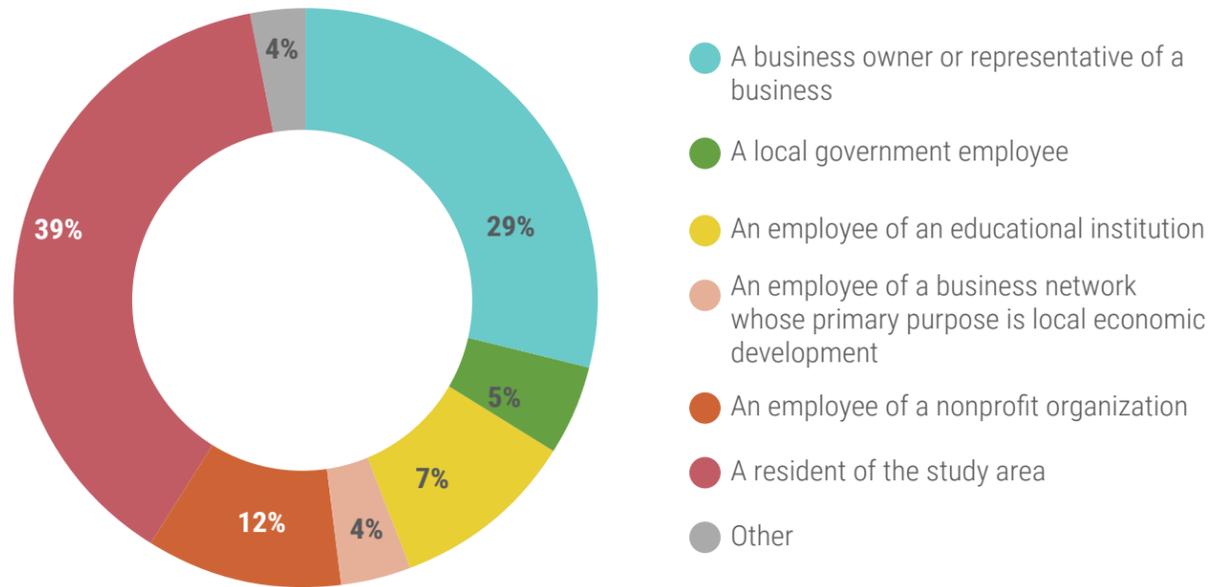
- Economic development corporations and chambers of commerce
- City leadership
- Housing and real estate
- Small businesses
- Major employers and industries
- Banking and finance
- Nonprofit and public entities
- Medical care
- Education and workforce
- Agriculture
- Tourism
- Ecotourism and coastal economies
- Transportation and infrastructure

Figure 12: Steering Committee Meeting at Portland, February 2020



Source: AECOM

Figure 13: Self-identification of Respondents for Public Survey #1



Source: Asakura Robinson

Figure 14: Steering Committee Meeting at Victoria, February 2020



Source: AECOM

Figure 15: Steering Committee Meeting at Beeville, February 2020



Source: AECOM

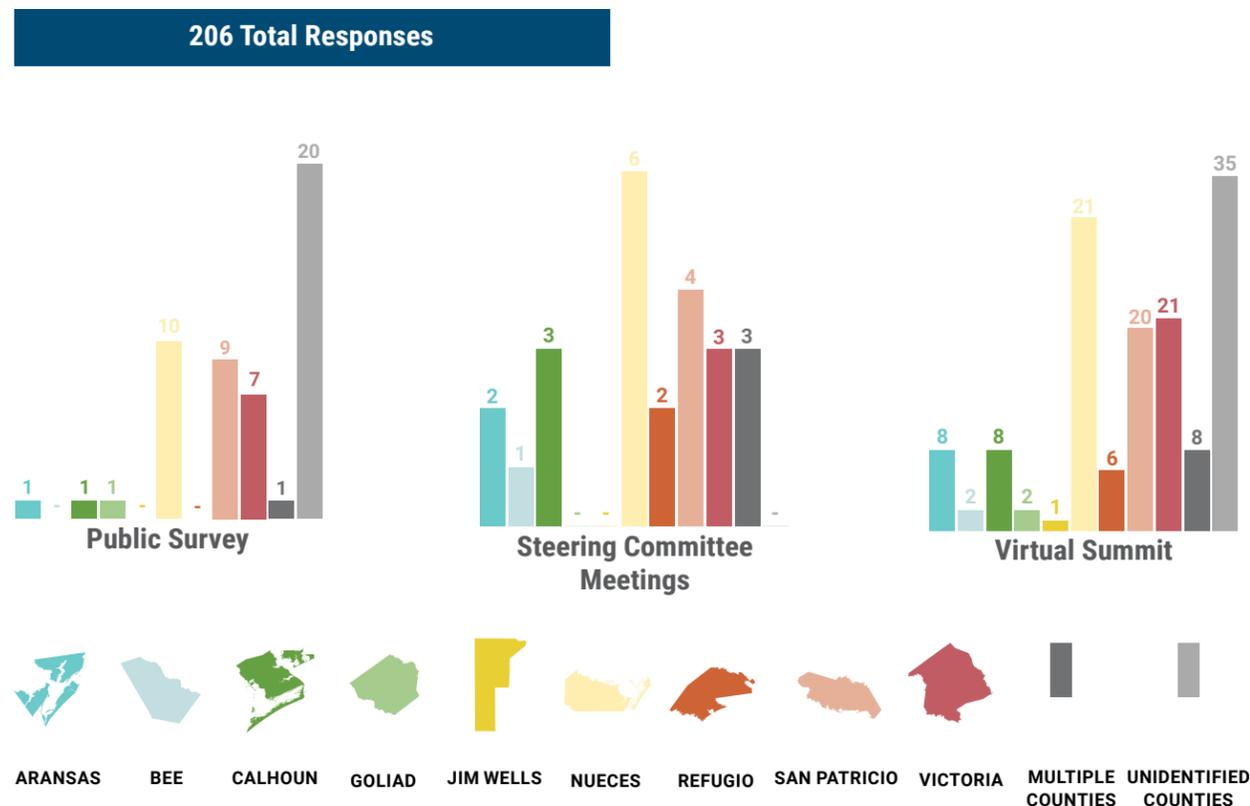
Phase 2 Engagement

During **Phase 2**, the goal of stakeholder engagement was to identify strengths, weaknesses, and priorities based on the recommendations from the findings in **Phase 1**. The team wanted to ensure that the findings were reflective of stakeholders' experiences. Stakeholder engagement also prioritized collecting information on the effects of COVID-19 on the study area and its stakeholders.

Stakeholder engagement for the second phase of the study ran from July to October 2020 and included a public survey, stakeholder committee meetings, and a virtual summit.

In total, 76 stakeholders participated in the virtual summit and steering committee meetings and 50 stakeholders responded to the public survey, bringing the total number of stakeholders engaged during **Phase 2** to over 125 individual stakeholders. **Figure 16** summarizes the number of stakeholders engaged during **Phase 2** by county and engagement method.

Figure 16: Number of Stakeholders Engaged During Phase 2 by County



Source: Asakura Robinson

Public Survey

The second public survey was open between August 26 and September 20, 2020. Its goals were to obtain feedback on the goals, objectives, and strategies developed during Phase 1 of the study. These goals, objectives, and strategies were developed with the aim of keeping the region's economy resilient against shocks such as Hurricane Harvey or the COVID-19 pandemic, as well as long-term stresses.

Virtual Summit

A two-day virtual summit was held on September 16 and 17, 2020. The summit included an overview of the planning process, a preview of the data, and trends that the team had examined to date. The virtual working group discussions were based on preliminary goals, objectives, and priorities to help inform the overall regional Economic Development Strategy's mission and vision.

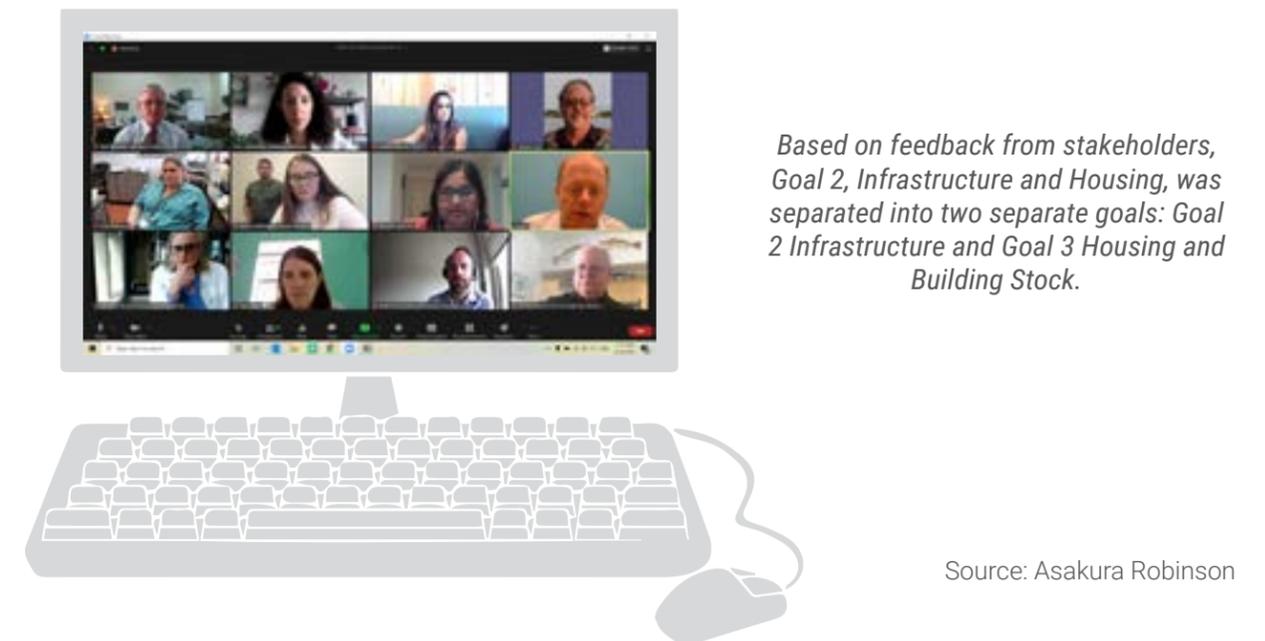
Five unique sessions were held over two days, for a total of 10 sessions. The first session of each day covered the study background and initial findings. The remaining four sessions covered the four goals and associated strategies: organization capacity, economic development and diversification,

infrastructure and housing, and quality of life. Participants discussed the preliminary strategies in break-out sessions (**Figure 17**). The sessions held over both days were identical to make it easier for attendees to pick and choose the sessions according to their schedules.

Steering Committee Meetings

Only one virtual steering committee was held during Phase 2 to enable steering committee members from across all nine counties to engage with each other. During this time, the team had taken feedback received from the public survey and the virtual summit and updated the associated goals and strategies. Thus, the purpose of this steering committee was to share feedback received from the public, obtain input on the updated strategies from the committee, and share details about the third and final phase of the project. During the steering committee meeting, a workbook detailing the draft goals and strategies was distributed electronically. Stakeholders were asked to fill out their workbooks during the course of the meeting and email them back to the study team.

Figure 17: Virtual Summit Workshop Session, September 2020



Based on feedback from stakeholders, Goal 2, Infrastructure and Housing, was separated into two separate goals: Goal 2 Infrastructure and Goal 3 Housing and Building Stock.

Source: Asakura Robinson

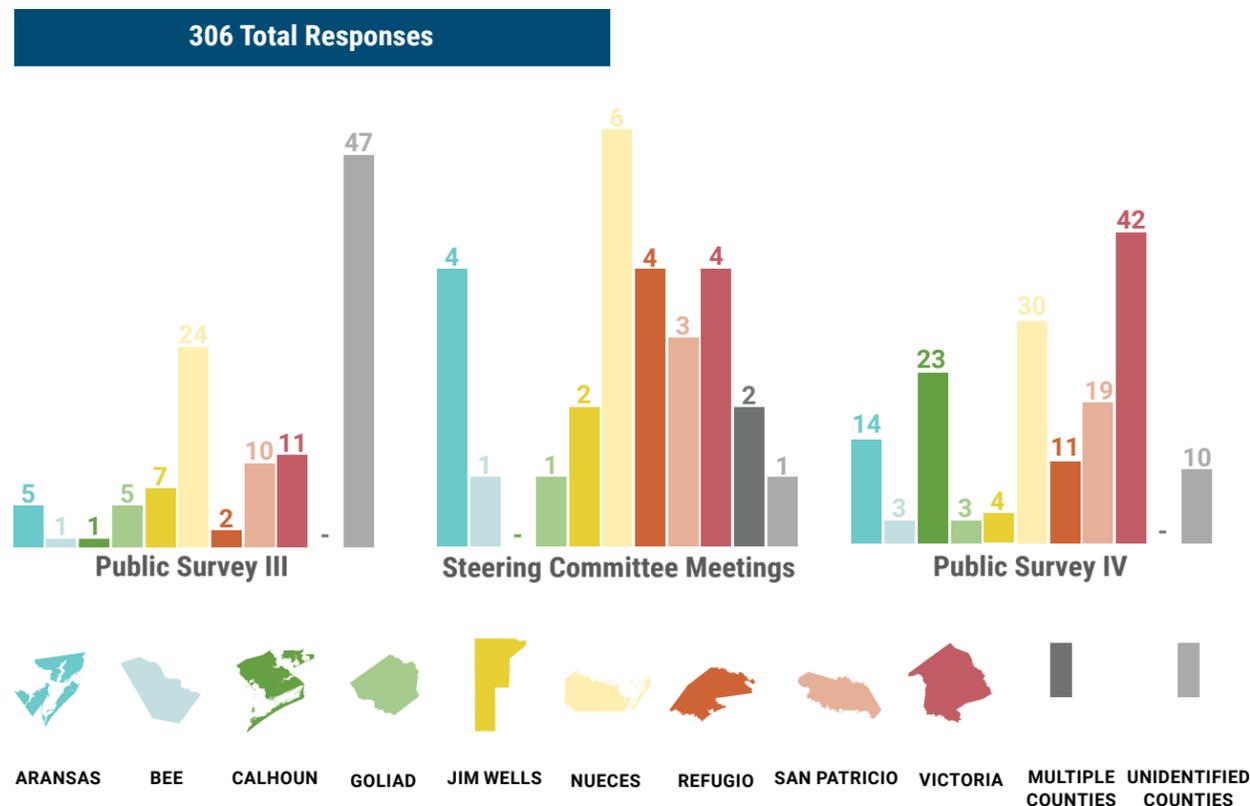
Phase 3 Engagement

During **Phase 3**, the goal of stakeholder engagement was to gather feedback on the draft action plan and full strategy before finalizing.

Stakeholder engagement for the third phase of the study ran from November 2020 to February 2021. It included a public survey, stakeholder committee meetings, and public feedback on a series of videos.

In total, 28 stakeholders participated in the in-person and virtual stakeholder committee meetings and 113 stakeholders responded to the public survey, bringing the total number of stakeholders engaged during **Phase 3** to over 100 individual stakeholders. **Figure 18** summarizes the number of stakeholders engaged during **Phase 3** by county and engagement method.

Figure 18: Number of Stakeholders Engaged During Phase 3 by County



Source: Asakura Robinson

Public Survey

The third public survey was open between October 28 and November 13, 2020. It was a final chance for members of the public to provide input on whether they felt that the goals and strategies developed would help the study area’s economic resilience to storms, economic downturns, and other challenges.

Steering Committee Meetings

Two in-person steering committee meetings and one virtual meeting were held on December 2, 3, and 6, respectively. The in-person meetings took place in Victoria and in Portland (**Figure 19**). The meeting in Victoria was for stakeholders from Calhoun, Goliad, and Victoria Counties, while the meeting in Portland was for stakeholders from Aransas, Nueces, San Patricio, Bee, Jim Wells Counties, and Refugio. The meetings presented the final Economic Development and Diversification Strategy for the steering committee’s review and feedback.

Videos

In place of the three public meetings originally proposed, the project team and the GLO communications staff created four videos designed to share information about key elements of the report with the public. Viewers were directed to provide any final input on the draft report via a short online survey. The survey allowed respondents to share how much they felt the various features of the report would affect the daily lives of residents and stakeholders. Videos were hosted on GLO’s YouTube channel, and a second version of each video was created to remain online after the project’s completion to serve as a public record of the report’s recommendations.

The fourth public survey was open between February 22 and March 18. Stakeholders were able to access the draft final report, the draft executive summary, and the four videos prior to answering the survey. There was participation across all nine counties, with 83% of respondents agreeing that creating systems that help overcome sudden shocks, like natural disasters or pandemics, will help the regional economy over the long term.

Figure 19: Steering Committee Meeting in Portland and Victoria Counties, December 2020



Source: Asakura Robinson



03. GOALS, OBJECTIVES & STRATEGIES



72% of respondents in our final survey agreed that creating systems that help overcome long-term stresses, like sea level rise or poverty, will help the regional economy over the long term.

03

Goals, Objectives & Strategies

Several themes were reiterated throughout the various stakeholder engagement efforts that highlighted the regional challenges and opportunities for both rural and urban communities. Based on these themes, the project team developed goals and objectives around five topic areas. With stakeholder input, strategies were developed to align with these goals and objectives.

This chapter presents the goals, objectives, and strategies identified for the study area through an iterative stakeholder engagement process. For each strategy, a timeline and roadmap to implementation are provided. The strategies are also accompanied by examples of similar case studies and best practices. Potential funding sources and implementation partners are also suggested for each strategy.

The appendices contain additional information for each strategy on performance measures, implication on resilience, and case studies on magnitude of costing for proposed action items.

- Appendix 1- Goal 1: Organization Capacity
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- Appendix 5- Goal 5: Quality of Life



Goal 1
Organization Capacity (OC)



Goal 2
Infrastructure (I)



Goal 3
Housing & Building Stock (HBS)



Goal 4
Economic Development & Diversification (EDD)



Goal 5
Quality of Life (QoL)

Select any icon to skip to that goal



Strengthen organizational capacity and regional partnerships that enhance resilience to climate hazards, reduce economic disruptions, and expand market access.



Promote regional growth through strategic infrastructure projects which build on unique regional assets and competitive strengths.

- **OC-1** Identify opportunities for shared staff resources and services. Expand funding to support shared staff capacity across rural counties in support of grant writing. Aid rural counties in pursuing state or federal programs to support development.
- **OC-2** Enhance regional cooperation for integrated regional infrastructure planning and disaster response.
- **OC-3** Develop a GIS inventory of regional data to support public and private decision making. Provide educational campaigns to train residents, government officials, and civic institutions on how to use applications. Identify resources and mechanisms to build, maintain, and update on a regular basis.

- **I-1** Leverage GIS assets to understand infrastructure capacity and identify “ready-to-go” sites in support of industry retention and expansion efforts.
- **I-2** Support deployment of high-speed broadband networks in urban and rural communities to bridge the digital divide.
- **I-3** Assist municipalities and water service providers to identify programs and technologies to manage water consumption. Encourage local innovation in developing water efficient technologies.
- **I-4** Work with local and state agencies to assess the vulnerability of utility systems, roads, ports, and railway infrastructure to extreme weather conditions and identify appropriate adaptation strategies and partnerships to foster economic development, resilience, and reliability.



Sustain housing investment and support workforce growth by maintaining affordability, leveraging existing building stock, and mitigating climate risks and impacts.

- **HBS-1** Collaborate with local organizations and community foundations on a housing revitalization plan that expands development of affordable/workforce housing.
- **HBS-2** Evaluate building permitting and zoning codes to encourage innovations in housing, including provision of “missing middle” housing types.
- **HBS-3** Increase on-site housing options for seasonal workers in coastal tourism communities.
- **HBS-4** Encourage counties to adopt and enforce storm-resistant building codes and discourage development in high-risk zones where possible. Establish a post-disaster housing strategy and coordinate implementation when appropriate.
- **HBS-5** Assess options to reduce financial impacts on communities and low- to moderate-income residents who are impacted by increasing costs for flood and wind insurance.



Foster regional resilience through strategies which encourage economic inclusion and diversification to provide stability during downturns and in response to natural disasters.

- **EDD-1** Expand capacity of EDCs across the region to coordinate and pursue economic resilience and development initiatives. Support local and regional economic development and diversification through focused business retention and expansion efforts.
- **EDD-2** Provide resources for branding and marketing locally produced goods to expand global market awareness and demand.
- **EDD-3** Develop a collaborative of workforce centers, workforce training programs, higher education institutions, and high schools to identify “in demand” occupations that cut across multiple industry clusters, aligned with transferable skills, abilities, and certifications.
- **EDD-4** Enhance collaboration across research entities, universities, municipalities, and workforce training programs to grow an innovation ecosystem. Start a business incubation program to encourage startup of local businesses.
- **EDD-5** Promote strategic investments in the healthcare industry that will improve economic opportunity and provide greater access to quality care throughout the region.
- **EDD-6** Collaborate with EDCs, chambers of commerce, and municipalities to establish a ‘Business Recovery One-Stop Center’ to provide resources for businesses impacted by climate shocks or stresses.
- **EDD-7** Improve access to job opportunities by collaborating with agencies that provide transit services and large employers to expand access to transit.



Encourage quality of life improvements through placemaking and environmental enhancements in order to attract families to visit and reside within the region.

- **QoL-1** Identify and invest in amenities that improve quality of life and quality of place to encourage local market workforce diversification.
- **QoL-2** Leverage regional strengths to market the area as a family-friendly vacation destination that draws families from within and beyond the Texas Triangle.
- **QoL-3** Manage conflict between industrial use, ecological functions, residential areas, and recreational opportunities.
- **QoL-4** Identify properties in flood-prone areas with repetitive losses and design a strategic voluntary buyout program that will reduce ongoing flood impacts.



Source: AECOM

Strategy Template

Information on each strategy is laid out in the following format:

GOAL AND STRATEGY NUMBER STRATEGY TITLE

STRATEGY TYPE

The strategy can be one or multiple types:

- Assessment/Plan
- Educational
- Personnel
- Partnership
- Program

IMPLEMENTATION TIMELINE

Timeline for initiating implementation steps:

- Short term (1 - 3 years)
- Medium term (4 - 6 years)
- or Long term (7 - 10 years)

DOMAIN OF RESILIENCE

The domains of resilience that successful implementation of this strategy will support:

- **Anticipate** - The ability to avoid a shock or stress
- **Withstand** - The ability to withstand a shock or stress
- **Recover** - The ability to recover quickly from a shock or stress

I-1

STRATEGY TYPE

Program; Education

Leverage GIS assets to understand infrastructure capacity and identify "ready-to-go" sites in support of industry retention and expansion efforts.

IMPLEMENTATION TIMELINE	DOMAIN OF RESILIENCE	
Short term (1-3 years)	Withstand	

Develop a Regional Inventory and Market Suitable Sites

Use GIS to develop an inventory of infrastructure assets (road/rail connections, water/wastewater, fire, electricity, and communications/fiber optics). Development of this inventory through GIS has been expanded upon in strategy OC -3. The identification process needs to consider site alignment with current zoning and future land use compatibility; as well as environmental studies, soils analysis, and public infrastructure engineering projects needed. Once suitable sites have been identified, market them through a qualified site certification program.

<p>Size</p> <p>Property control and ownership</p> <p>Price per acre</p> <p>Zoning/land use</p> <p>Flood plain</p> <p>Water supply</p>	<p>Sanitary sewer</p> <p>Road access</p> <p>Electricity</p> <p>Natural gas</p> <p>Environmental assessment</p> <p>Remediated sites</p>
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CO-BENEFITS

IMPLEMENTATION PARTNERS

POTENTIAL FUNDING SOURCES

RESILIENCE TOOLBOX - BEST PRACTICES

Lead Partners -

- Economic Development Organizations

Support Partners -

- County
- Municipality
- Utility Providers
- Port Authorities
- Property Owners

Local Budgets -

- County Budget
- Municipal Budget

Special Districts -

- Economic Development Organizations

Federal Funding Sources -

- EDA Grants
- USDA Grants

Private and Non-Profit Sources -

- AEP Grants
- BNSF Grants
- KCS Grants
- Union Pacific

Corpus Christi Regional EDC (CCREDC) Qualified Site Certification Program, Corpus Christi - Texas

The Corpus Christi Regional EDC (CCREDC) launched an Inventory and Qualified Site Program to identify and promote sites which have been vetted in partnership with property owners. Its strategic partner is the regional utility provider, AEP Texas. A CCREDC Qualified Site is a development-ready industrial site that has completed a review process by EDC staff and local engineering and environmental consultants. All relevant information is presented on the EDC's website.

Additional information

BNSF's Site Certification Program - Texas

BNSF's Site Certification Program identifies optimal rail-served sites and conducts reviews of economic development criteria to determine if the site meets BNSF's readiness standards, which are intended to minimize development risks customers may face. For an industry, selecting a certified site reduces development time, increases speed to market, and reduces upfront development risk of rail-served industrial sites. At present, Temple -Texas is the only location with certified sites in Texas.

Additional information

DESCRIPTION

A detailed description of the proposed strategy, the challenges it addresses, and partnerships it can leverage.

IMPLEMENTATION STEPS

The steps (roadmap) required to implement the strategy, assumptions for each step, and any equipment, technology, infrastructure, and resources necessary to execute the strategy.

IMPLEMENTATION PARTNERS

Lead partners and Support partners.

CO-BENEFITS

Benefits of implementing this strategy.

- Business attraction/retention expansion and job creation
- Cost savings
- Population retention
- Population attraction
- Build organization capacity
- Build regional collaboration
- Infrastructure development
- Increase affordable housing inventory
- Improve quality of life and quality of place
- Development of rural communities
- Mitigate storm impact
- Diversification of economic base
- Education, training or skill development

POTENTIAL FUNDING SOURCES

Potential private, nonprofit, local, state or federal funding streams.

RESILIENCE TOOLBOX - BEST PRACTICES

Case Study Title - Location

Local or national best practices or case studies that serve as examples for implementing partners.



GOAL 1 - ORGANIZATION CAPACITY



Public Input:

"The summary report is a great road map for the nine counties and region. The lack of capacity of rural counties and communities has been captured in the report and must be addressed."



01. ORGANIZATION CAPACITY

Strengthen organizational capacity and regional partnerships that enhance resilience to climate hazards, reduce economic disruptions, and expand market access.

Objectives



Enhance regional cooperation in support of integrated regional infrastructure planning to expand market access and build regional resilience.



Expand local economic development capacity, with emphasis on rural counties, minimizing duplication of services to maximize available resources.



Build technical analysis capabilities and compile relevant data repositories to monitor and support decision making to aid economic development and climate resilience.

Strategies



Identify opportunities for shared staff resources and services. Expand funding to support shared staff capacity across rural counties in support of grant writing. Aid rural counties in pursuing state or federal programs to support development.



Enhance regional cooperation for integrated regional infrastructure planning and disaster response.



Develop a GIS inventory of regional data to support public and private decision making. Provide educational campaigns to train residents, government officials, and civic institutions on how to use applications. Identify resources and mechanisms to build, maintain, and update on a regular basis.

Select any icon to skip to that strategy

OC-1

Identify opportunities for shared staff resources and services. Expand funding to support shared staff capacity across rural counties in support of grant writing. Aid rural counties in pursuing state or federal programs to support development.

STRATEGY TYPE	IMPLEMENTATION TIMELINE	DOMAIN OF RESILIENCE
Personnel; Partnership Assessment/Plan	Short term (1-3 years)	Anticipate; Withstand; Recover

Identify Opportunities for Shared Staff Resources and Services

Expand basic economic development capacity and inter-governmental cooperation across local units of government, with emphasis on rural counties to minimize duplication of services. For instance, developing common regulations and processes for code inspection, development review, and other functions could also facilitate the use of shared services or staff (e.g. coordinating to adopt the same building codes can create cost saving opportunities for shared code inspection staff). Leverage resources provided by the Texas Municipal League and National League of Cities.

A region-wide Coordinated Investment and Service Study can aid in identifying strategies for coordinated investment and service provision, considering constrained resources and rising costs. The study could identify coordination projects and their estimated cost savings through joint execution. The study could also explore opportunities for:

- Shared service delivery
- Joint procurement
- Joint contract bidding (opportunities can be identified within the study area, other counties/cities in the region, and the state)
- Consolidated services
- Coordinated investment in capital projects (described further in strategy OC – 2)

A regional shared service panel can be established to facilitate dialogue between various entities. Local governments need assistance to develop agreements for sharing or consolidating services.

Facilitation efforts could include relatively informal offerings, such as forums or meetings with other communities and vendors to discuss partnership opportunities. More formal programming such as direct matchmaking and brokering of collaborative agreements, or assistance in developing and sharing the data needed to create partnerships could also be provided.

A Regional Small Cities Coalition can be formed to share resources on improving the economic vitality and quality of life for residents living in small, rural areas.

Expand Capacity in Support of Grant Writing

Within the nine-county study area, there are varying levels of staff capacity to pursue funding opportunities. Local units of government are challenged to allot resources to identify, pursue, and submit grant opportunities. Pursuing competitive grant opportunities requires resources to research opportunities, develop effective application strategies, and submit successful applications.

Identify and expand funding to support shared staff capacity across rural counties for grant writing. Hiring a Grant Administrator is an eligible expense of CDBG-DR funds. Therefore, counties and communities can submit applications to hire one. Leverage the council of governments to support with grant writing. At present, economic development staff at CBCOG do not write applications, but provide information and guidance in the development of grant applications for government entities.

Pursue State or Federal Grants

Rural communities across the study area have fewer resources than urban communities to pursue grant writing, funds matching, infrastructure repairs etc. that support economic development. This strategy recommends providing aid to rural counties that would support them in pursuing state or federal programs to support development. The successful implementation of this strategy is dependent on expanding grant writing capacity.

Federal Sources for Funding Opportunities

U.S. Department of Agriculture (USDA) - USDA Rural Development forges partnerships with rural communities, funding projects that bring housing, community facilities, business guarantees, utilities, and other services to rural America. USDA provides technical assistance and financial backing for rural businesses and cooperatives to create quality jobs in rural areas. USDA offers grant and loan opportunities for both infrastructure and economic development.

Federal Emergency Management Agency (FEMA)

- FEMA grant funds are available for pre and post emergency or disaster-related projects. The purpose of these grants is to support communities through capability- and capacity-building; encouraging and enabling innovation, promoting partnerships, enabling large projects, maintaining flexibility, and providing consistency.

Economic Development Administration (EDA)

- EDA's mission is to support locally identified priorities for regional economic diversification, growth, and prosperity by increasing access to opportunity, facilitating enhanced collaboration, and reducing administrative burdens. Grants are available for economic development and disaster recovery.

U.S. Department of Transportation

- Better Utilizing Investments to Leverage Development (BUILD) Transportation Discretionary Grants are available for planning and capital investments in surface transportation infrastructure. The department is awarding 50% of BUILD Transportation grant funding to projects located in rural areas.

Federal Communications Commission (FCC)

- The Rural Digital Opportunity Fund will, in its first phase, target over six million homes and businesses in census blocks that are entirely unserved by voice and broadband. New service will provide download speeds of at least 25 megabits per second. In the second phase, it will cover locations in census blocks that are partially served, as well as locations not funded in Phase 1.

Other federal organizations with grant programs include U.S. Department of Energy (Rural Energy for America Program (REAP)), U.S. Department of Housing and Urban Development (HUD), and the Environmental Protection Agency (EPA).

State Sources for Funding Opportunities

Texas General Land Office (GLO) - GLO funds projects that address environmental concerns within the coastal zone and promote sustainable economic development.

Texas Department of Agriculture (TDA)

- The Texas Department of Agriculture offers grants and service assistance related to economic development opportunities, agriculture production, health and nutrition, and rural health grants. In 2001 the Texas Legislature enacted the process for creating agricultural development districts. The reason was to promote the development of agricultural facilities that would result in employment and economic activity. So far, no districts have been created.

Other state organizations such as Texas Department of Transportation (TxDOT), Texas Department of Emergency Management (TDEM), Texas Water Development Board (TWDB), Texas Workforce Commission (TWC) and Texas Commission of Environmental Quality (TCEQ) also facilitate grant programs.

Private or Non-Profit Funding Sources

In lieu of federal and state grant opportunities, philanthropic organizations, foundations, non-profits and other private entities also provide grants for community development. Examples of this include Michael and Susan Dell Foundation, the Rockefeller Foundation, etc.

IMPLEMENTATION STEPS

Identify opportunities for shared staff resources and services.

1. Initiate a region-wide Coordinated Investment Study to identify existing government services, assets, procurements, and recommend opportunities for service consolidation.
2. Establish a regional shared service panel to facilitate dialogue between various entities.

Expand capacity across rural counties in support of grant writing.

1. Leverage existing organizations such as the Golden Crescent Regional Planning Commission (GCRPC) or the Coastal Bend Council of Governments (CBCOG). GCRPC and CBCOG are designated as Economic Development Districts (EDD) by the U.S. EDA to coordinate regional economic development priorities. At present, economic development staff at CBCOG do not write applications, but provide information and guidance in the development of grant applications for government entities.

2. Consider inter-local agreements to provide shared grant-writing capacity across multiple units of government. With an inter-local agreement, specific services and salary arrangements can be agreed upon and provided.

Aid rural counties in pursuing state or federal programs.

Organizations that coordinate economic development can pursue funding opportunities by:

1. Creating an inventory of all proposed projects, prioritizing projects for investment, and identifying resources required.
2. Tracking grants and assessing suitable opportunities.
3. Leveraging technical expertise and strategic positioning.
4. Collaborating and coordinating with grant partner(s) to develop applications.

CO-BENEFITS



IMPLEMENTATION PARTNERS

Lead Partners

- County
- Municipality
- Council of Governments
- Metropolitan Planning Organizations

Support Partners

- County and Municipal Departments
- County Service Providers (fire service, water service etc.)
- Private Service Providers

POTENTIAL FUNDING SOURCES

Local Budgets

- County Budget
- Municipal Budget

Special Districts

- COG Grants
- EDC Grants

State Funding Sources

- TDA Grants
- TWC Grants

Federal Funding Sources

- EDA Grants
- FEMA Grants
- USDA Grants

RESILIENCE TOOLBOX - BEST PRACTICES

2018 County-Wide Shared Service Plan, Orange County – New York

Orange County Shared Services Panel was set up to investigate actions towards the elimination of duplicative services, better coordination of services, as well as shared services, such as joint purchasing, shared equipment, shared facilities, energy and insurance purchasing cooperatives, etc. The panel was convened with representatives from all cities and towns in the county. The plan identifies opportunities and resulting cost savings for GIS tools, grant writing capacity, zoning maps, etc.

[Additional information](#)

Fiscal Disparities: Tax-Base Sharing, Minneapolis – Minnesota

With the support of the Metropolitan Council, the Minnesota Legislature created the Metro Area Tax-Base Sharing Program in 1971 for the seven-county region. Tax-base sharing spreads the fiscal benefits of commercial-industrial growth no matter where the property exists within the metro area. It reduces large differences in property tax wealth between communities with a lot of commercial-industrial tax base and those with little.

[Additional information](#)

Click on link to learn more



Public Input:

"After the freeze of 2021, I quickly realized that Alice/Jim Wells County is in dire need of a Community Outreach Hub Station. It would serve as the place where people gather to assess the damage, to seek resources, to deploy people to areas where there's no water, pipes are busted, food is needed... I personally hope to see Alice become a better place to live, work, and play."

OC-2

Enhance regional cooperation for integrated regional infrastructure planning and disaster response.

STRATEGY TYPE	IMPLEMENTATION TIMELINE	DOMAIN OF RESILIENCE
Partnership; Education; Assessment/Plan	Short term (1-3 years)	Anticipate; Withstand; Recover

While the region benefits from economic development capacity across nine counties, multiple cities and towns, two COGs, port authorities, several EDCs etc., the majority of these organizations simply do not have a regional collaborative vision. Rural counties are particularly challenged with loss of institutional knowledge. As key personnel retire, community knowledge is lost. Regional organizations are well positioned to facilitate partnerships and coordinate investments in the region that can promote economic growth and expand opportunities for all residents. Across the study area, examples of regional organizations are:

- The region’s COG, Golden Crescent Regional Planning Commission (GCRPC) and Coastal Bend Council of Governments (CBCOG). These also serve as EDDs.
- Metropolitan Planning Organizations (MPO) such as Corpus Christi MPO and Victoria MPO.
- River authorities such as Guadalupe-Blanco River Authority, Nueces River Authority, and San Antonio River Authority.

Prioritize Regional Infrastructure Projects

Enhance regional cooperation between relevant departments, agencies, and branches of government in support of integrated regional infrastructure planning, including transportation, water, and electricity infrastructure. The region can prioritize strategies to accelerate completion of ongoing infrastructure projects including the planned extension of I-69 (Figure 20 & 21), Harbor Bridge reconstruction, and port improvements. Equally, regional efforts which support enhanced stormwater management and access to drinking water are also appropriate.

Integrated Disaster Response and Swift Recovery

The Disaster Mitigation Act of 2000 requires all counties to prepare a multi-hazard mitigation plan that assesses its vulnerability to several climate stressors (including hurricanes and storms) and proposes projects to mitigate these risks. Currently adopted plans that address climate resilience include:

- Nueces County Texas Multi-Jurisdictional Hazard Mitigation Action Plan (2017)
- Aransas County Multi-Jurisdictional Floodplain Management Plan (2017)
- San Patricio County Hazard Mitigation Action Plan (2018)
- Coastal Bend Mitigation Action Plan
- Guadalupe-Blanco River Authority Hazard Mitigation Action Plan (2018)
- Golden Crescent Regional Recovery Framework and Resilience Strategy (2019)

These plans were developed with extensive stakeholder involvement, with the intent of building collaboration to execute the projects identified. Partners can collaborate on funding opportunities, sharing resources, best practices, etc. to execute identified projects. The region can consolidate formal and informal partnerships built after Hurricane Harvey and in response to COVID-19, such as GCRPC’s Hurricane Harvey - Regional Recovery & Resilience Guidance Group and the Regional Resilience Partnership (RRP) formed by Texas A&M and CBCOG to further collaboration on resilience goals.

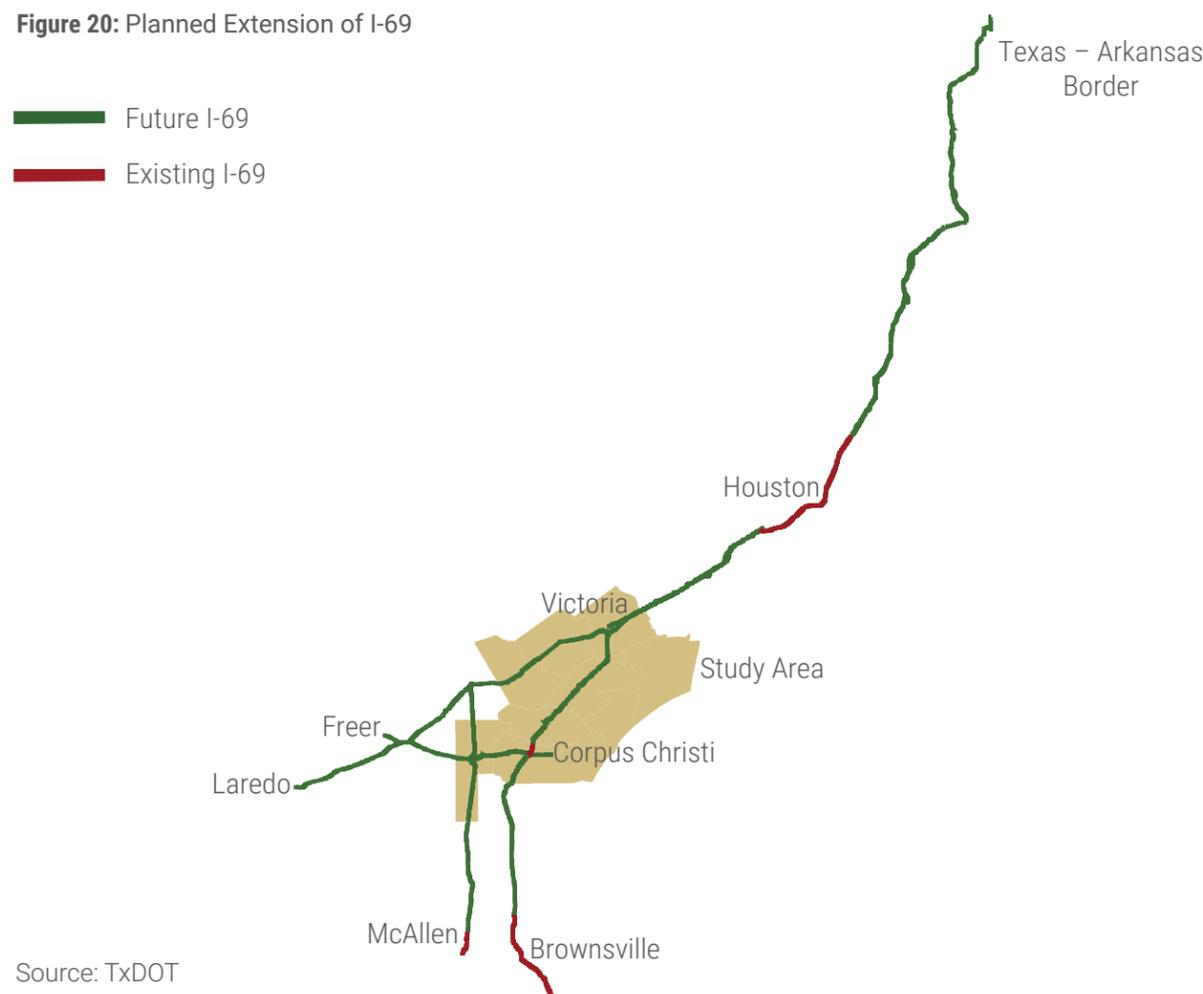
IMPLEMENTATION STEPS

Implementation is dependent on leveraging and growing pre-existing relationships. Enhanced collaboration across formal and informal partnerships can build trust and confidence over time. Some steps that regional organizations can partner on include:

1. Take a leadership role in coordinating federal and state investments.
2. Develop a process to develop, coordinate, and prioritize responses to federal funding opportunities such as BUILD.

3. Continue to convene regional stakeholders, provide research and data, and secure financial support, as appropriate.
4. Help county and municipal officials pursue shared goals across jurisdictional boundaries that complement their respective strengths and competitive advantages.
5. Continue to research and articulate the benefits of intergovernmental collaboration through responsive data and analysis on the regional economy’s performance.
6. Continue to share best practices, expertise, and knowledge of the region and its communities.

Figure 20: Planned Extension of I-69



Source: TxDOT



Figure 21: Ongoing Construction of Regional Transportation Infrastructure

Source: AECOM

CO-BENEFITS



IMPLEMENTATION PARTNERS

Lead Partners

- Counties and Municipalities
- Council of Governments
- Metropolitan Planning Organizations
- River Authority
- Economic Development Corporations

Support Partners

- County and Municipal Departments
- Emergency Services
- Universities/Colleges/Research Institutions
- Infrastructure Partners (TxDOT, water service providers, GIS software and service providers)

POTENTIAL FUNDING SOURCES

Local Budgets

- County and Municipal Budget

Special Districts

- River Authorities Grants
- MPO Grants
- Port and Airport Districts

State Funding Sources

- TxDOT Grant
- Texas Water Development Board (TWDB) Grant
- Texas GLO Grant
- TDEM Grant

Federal Funding Sources

- EDA, USDA and FCC Grants
- FEMA Grant

Private and Non-Profit Sources

- Railway Companies
- Electric Co-ops
- Kresge Foundation

RESILIENCE TOOLBOX - BEST PRACTICES

Southeast Florida Regional Climate Change Compact (RCAP) – Florida

In January 2010, three counties - Broward, Miami-Dade, Monroe, and Palm Beach – formed the RCAP to coordinate mitigation and adaptation activities across county lines. The RCAP website provides links to a status page for each of the participating municipalities that contains a snapshot of self-reported RCAP implementation activities. RCAP conducted surveys through which municipalities indicated which recommendations they had completed.

[Additional information](#)

Pontotoc County, Union County and Lee County (PUL) Alliance – Mississippi

PUL Alliance was formed in 2001. The goal was to build a large industrial site to attract major economically impactful businesses by sharing the expenses and generated tax revenues. The pooling of resources (staff time, technical expertise, networks and funding) produced results that would have been difficult to achieve by these rural counties acting individually. The PUL Alliance's joint development of the industrial site and collaborative marketing effort attracted an \$800 million Toyota manufacturing plant in 2011. Seven major suppliers have opened nearby, employing 1,500 people in the area.

[Additional information](#)

OC-3

Develop a GIS inventory of regional data to support public and private decision making. Provide educational campaigns to train residents, government officials, and civic institutions on how to use applications. Identify resources and mechanisms to build, maintain, and update on a regular basis.

STRATEGY TYPE	IMPLEMENTATION TIMELINE	DOMAIN OF RESILIENCE
Partnership; Education; Assessment/Plan	Short term (1-3 years)	Anticipate; Withstand; Recover

A GIS inventory provides a framework for gathering and organizing spatial data and related information so that it can be displayed, analyzed, and shared with the public. **Figure 22** shows the applications of a GIS inventory. This strategy recommends coordination between municipalities, COGs, TDEM, and local colleges to develop a GIS tool for a publicly available, regional data inventory. The aim of the tool would be to support public and private sector decision making.

Applications for Improving Climate Resilience

The data inventory could include spatial attributes such as infrastructure, zoning, land use, and housing location in relation to high-risk zones (areas susceptible to flooding, storm surge and windstorm). The inventory can document ongoing and funded resilience improvement projects. This effort can also tie into existing efforts such as the ongoing Harte Research Institute for Gulf of Mexico Studies (HRI) efforts in creating a GIS platform for Aransas, Bee, Refugio, and San Patricio Counties through an \$800,000 grant from EDA. This EDA grant was matched with \$204,790 in local investment.

Applications for Economic Development

Build capacity by providing resources (technical/financial/personnel) and training for county and local governments to build GIS databases that link information on the built and regulatory environment. Information on the regulatory environment can include tax incentives, opportunity zones, any development districts, municipal business licenses, business startup and closure rates, tax information,

and other business establishment databases to track local and regional trends. Information on the built environment can include transportation assets, parcel-level inventories covering parcel size and zoning, as well as ownership and data like historic status. Businesses interested in moving to the region can compare several sites based on their economic constraints and preferences.

Mechanisms to Build, Maintain, and Update

Assess current staff capacity and ongoing GIS initiatives for each county. Consider appropriate enhancements to expand GIS capacity, possibly relating to hardware and software updates, additional training, or database development. Counties can initiate county-specific GIS Strategic Plans. These plans can set standards that would assist in the development and sharing of information among county departments and units of government. The plans can also establish procedure for identifying and resolving technical barriers to successful GIS deployment, and to plan for technical, staffing, and organizational development necessary to support GIS effectively.

The efforts can identify key GIS needs (parcels, roadways, etc.) for the county and prioritize collection and digitization of data with the most benefit. Agencies do not necessarily need exhaustive data for every type of asset, so the selection can be strategic and purposeful. Foster widespread use of regional data standards and guidelines to be consistent across different political entities. Counties can identify partners such as local universities, COGs, and EDCs to support

in data collection and update efforts. Consider crowdsourcing as a tool for real-time data collection that also reduces update cost. The region can establish a centralized location for all regional GIS data and adopt a data maintenance plan and a system for managing updates, especially for public-facing tools.

Education Campaign

Once the databases have been developed, this strategy recommends a public education campaign to train government staff and institutions on its applications. For example, as shown in **Figure 23**, data may be visualized to help municipal departments assess their emergency management asset's proximity to the floodplain. Develop marketing strategies and outreach materials to create awareness of the tool and offer training programs.

IMPLEMENTATION STEPS

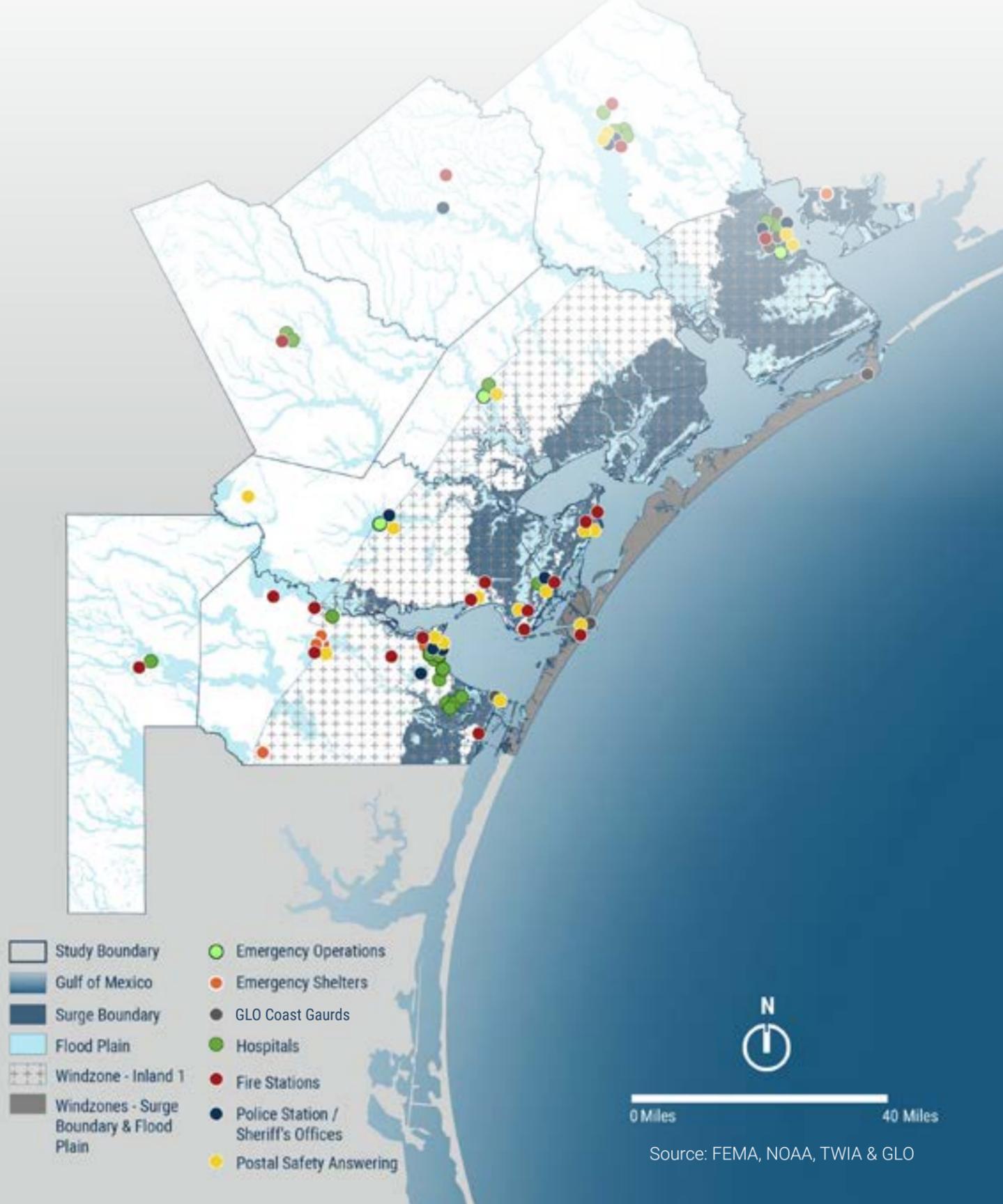
1. Assess current staff capacity and ongoing GIS initiatives for each county. Where there are low or no capacity at present, identify the appropriate organization or department to take on this effort.
2. Initiate a county-specific GIS Strategic Plan. The plan can address data and technology issues, look at future costs for the development of a GIS program and data, define goals of a county GIS program, and list some short and long-term implementation strategies.
3. Identify key GIS needs (parcels, roadways etc.) for the county and prioritize collection and digitization of data with most benefit.
4. Identify partners such as local universities, COGs, and EDCs to support in data collection and update efforts.
5. Establish a centralized location for all regional GIS data and metadata.

Figure 22: Applications for GIS Inventory



Source: AECOM

Figure 23: Emergency Response and Recovery Facilities Located in High-Risk Zones



CO-BENEFITS



IMPLEMENTATION PARTNERS

Lead Partners

- County
- Municipality
- Council of Governments
- Metropolitan Planning Organizations

Support Partners

- County and Municipal Departments
- Emergency Services
- Universities/Colleges/Research Institutions
- Economic Development Corporations
- GIS Software and Service Providers

POTENTIAL FUNDING SOURCES

Local Budgets

- County Budget
- Municipal Budget

Special Districts

- MPO Grants
- COG Grants

State Funding Sources

- Texas GLO Grant
- TDEM Grant

Federal Funding Sources

- EDA Grant
- FEMA Grant
- USDA Grant

Private and Non-Profit Sources

- Universities and Local Colleges

RESILIENCE TOOLBOX - BEST PRACTICES

Middlesex County Business Portal, Middlesex County – New Jersey

The Middlesex County Business Portal is an interactive GIS-based economic development tool that provides investors with resources to make site selection decisions for commercial and industrial sectors in Middlesex County. The portal is free and provides valuable resources such as commercial parcel reports (including site specific incentives) transportation proximity, traffic counts, market and demographic data, and commercial for sale/ lease information.

[Additional information](#)

Texas Disaster Information System (TDIS)

The GLO, University of Texas, and Texas A&M are working to create and oversee a system capable of securing the state's disaster data needs, which will ultimately serve as a critical tool assisting Texas communities develop better disaster recovery and mitigation plans. The goal of this project is to:

- Collect, create, and provide analytical tools, information and data that support disaster resilience efforts for the state of Texas.
- Consolidate data and information spread across a wide array of agencies and systems into one single disaster preparedness resource.
- Provide reliable and timely insights for a diverse group of stakeholders to make decisions during different stages of disasters.



GOAL 2 - INFRASTRUCTURE



Public Input:

"Having strong infrastructure in place is necessary for expanding and attracting businesses that support living wages and is key to resiliency of communities. Electricity, water, natural gas, and broadband must be strengthened."



02. INFRASTRUCTURE

Promote regional growth through strategic infrastructure projects which build on unique regional assets and competitive strengths.

Objectives



Align and integrate regional and local infrastructure planning to encourage regional economic development and enhanced resiliency.



Prepare regional infrastructural assets (roads, utilities, communications) to withstand and swiftly recover from climate shocks and stresses.



Identify and market “ready-to-go” sites to support rural county economic development efforts.

Strategies



Leverage GIS assets to understand infrastructure capacity and identify “ready-to-go” sites in support of industry retention and expansion efforts.



Support deployment of high-speed broadband networks in urban and rural communities to bridge the digital divide.



Assist municipalities and water service providers to identify programs and technologies to manage water consumption. Encourage local innovation in developing water efficient technologies.



Work with local and state agencies to assess the vulnerability of utility systems, roads, ports, and railway infrastructure to extreme weather conditions and identify appropriate adaptation strategies and partnerships to foster economic development, resilience, and reliability.

Select any icon to skip to that strategy

I-1

Leverage GIS assets to understand infrastructure capacity and identify "ready-to-go" sites in support of industry retention and expansion efforts.

STRATEGY TYPE	IMPLEMENTATION TIMELINE	DOMAIN OF RESILIENCE
Program; Education	Short term (1-3 years)	Withstand

Certified "ready-to-go" sites are parcels which have necessary infrastructure (road, water/wastewater, electricity, etc.) already in place to mitigate up-front pre-development risk and enhance speed to market. Nationally, it is common for sites to be certified as "ready-to-go", with companies such as BNSF authoring frameworks for sites to be "ready-to-go".

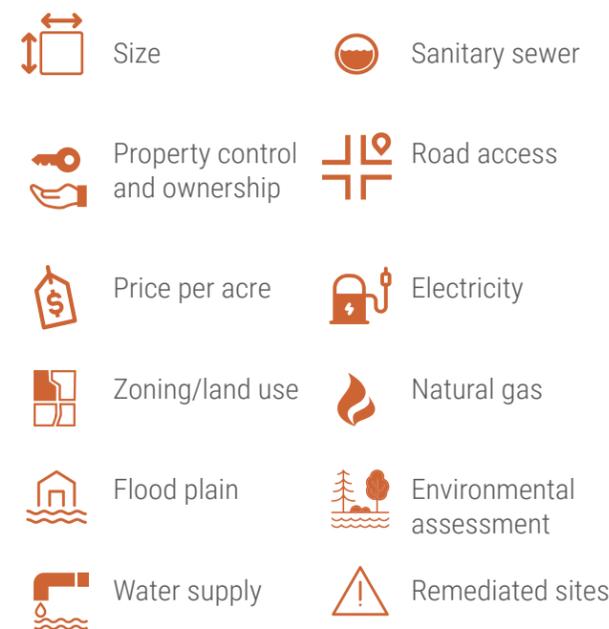
Develop a Regional Inventory and Market Suitable Sites

Use GIS to develop an inventory of infrastructure assets (road/rail connections, water/wastewater, fire, electricity, and communications/fiber optics). Development of this inventory through GIS has been expanded upon in strategy OC-3. The identification process needs to consider site alignment with current zoning and future land use compatibility; as well as environmental studies, soils analysis, and public infrastructure engineering projects needed. Potential criteria are summarized in **Figure 24**. Once suitable sites have been identified, market them through a qualified site certification program.

Target Investments for Improvements

'Last mile' infrastructure refers to gaps in infrastructure services to meet industrial needs. For example, this can be a lack of appropriate transformers, trunk water mains, or roadway connectivity. For parcels that lack 'last mile' infrastructure, prioritize investments to make necessary improvements to connect them with missing services. For instance, railroad infrastructure can be expanded to selected sites in rural areas by constructing transload facilities and spurs. Rural communities can engage with BNSF to support funding for these improvements.

Figure 24: Potential Criteria of a Certification Program



Source: AECOM

IMPLEMENTATION STEPS

1. Develop an inventory of regional transportation and infrastructure assets. Identify suitable properties or parcels for attraction or expansion of a diverse sector of industries.
2. Certify and market selected sites.
3. For parcels that lack 'last mile' infrastructure, target investments to make necessary improvements.

CO-BENEFITS



IMPLEMENTATION PARTNERS

Lead Partners

- Economic Development Organizations

Support Partners

- County
- Municipality
- Utility Providers
- Port Authorities
- Property Owners

POTENTIAL FUNDING SOURCES

Local Budgets

- County Budget
- Municipal Budget

Special Districts

- EDC Grants

Federal Funding Sources

- EDA Grants
- USDA Grants

Private and Non-Profit Sources

- AEP Grants
- BNSF Grants
- KCS Grants
- Union Pacific

RESILIENCE TOOLBOX - BEST PRACTICES

Corpus Christi Regional EDC (CCREDC) Qualified Site Certification Program, Corpus Christi - Texas

The Corpus Christi Regional EDC (CCREDC) launched an Inventory and Qualified Site Program to identify and promote sites which have been vetted in partnership with property owners. Its strategic partner is the regional utility provider, American Electric Power (AEP) Texas. A CCREDC Qualified Site is a development-ready industrial site that has completed a review process by EDC staff and local engineering and environmental consultants. All relevant information is presented on the EDC's website.

[Additional information](#)

BNSF's Site Certification Program - Texas

BNSF's Site Certification Program identifies optimal rail-served sites and conducts reviews of economic development criteria to determine if the site meets BNSF's readiness standards, which are intended to minimize development risks customers may face. For an industry, selecting a certified site reduces development time, increases speed to market, and reduces upfront development risk of rail-served industrial sites. At present, Temple, Texas is the only location with certified sites in Texas.

[Additional information](#)

Click on link to learn more

I-2

Support deployment of high-speed broadband networks in urban and rural communities to bridge the digital divide.

STRATEGY TYPE	IMPLEMENTATION TIMELINE	DOMAIN OF RESILIENCE
Assessment/Plan	Medium term (4-6 years)	Withstand; Recover

Broadband strengthens rural communities and sustains rural values and quality of life. Access to reliable and affordable broadband can connect rural communities with educational resources, well-paying jobs, economic opportunities in a global marketplace, healthcare services, social networks, and more. COVID-19 has reinforced the importance of internet access to continued economic activities and social connectedness.

According to Connected Nation Texas, the public-private state initiative working to expand broadband access, the nine counties have varying levels of broadband access. The Federal Communications Commission (FCC) defines broadband internet as having a minimum download speed of 25 megabits per second and a minimum upload speed of three megabits per second. **Figure 25** shows county-level broadband availability estimates. In Goliad County, about half of all households have access to broadband, and in Refugio County, about 80% have access.⁴ While broadband capacity is more available in urban areas, actual connections into homes in lower income areas can also be a challenge. This disparity is the reason why the “digital divide” is a material policy concern today.

Fiber infrastructure is often lacking in rural communities where demand for high-speed internet is low due to lower population densities. Without incentives or effective planning, many rural communities have no recourse to stimulate the infrastructure investment needed to bring broadband to their community. Similarly, being able to leverage enhanced broadband access in downtown areas in support of existing retailers is important, given COVID-19 linked growth in demand for e-commerce.

Identify Unserved and Underserved Communities

As a first step, conduct assessments of broadband access to identify unserved and underserved communities, and the extent to which homes have access to already existing capacity. An unserved area is an area in which households or businesses lack access to wire-line broadband service at speeds that meet the FCC threshold of 25 megabits per second download and three megabits per second upload. An underserved area is an area in which households or businesses do receive service at or above the FCC threshold, but lack access to wire-line broadband service at speeds 100 megabits per second download and 20 megabits per second upload.

Internet Service Deployment Models

Once communities have been identified, discuss potential internet service deployment models. These could include:

- Evaluate if electric cooperatives can become internet service providers. They often already have access to essential infrastructure and can use existing staff and billing/customer support. With these elements in place, they have lower risks and fewer entry costs. Examples of this model in Texas are Bandera Electric Co-op and Guadalupe Valley Electric Co-op.
- Develop a public-private partnership with a selected Internet Service Provider (ISP). Collaborate with local fixed wireless providers to identify publicly and privately-owned vertical structures for deployment of fixed wireless broadband networks.
- A regional or local agency could become an internet service provider. Such a model will give the municipality the ability to serve

neighborhoods and potentially to generate positive cash flow, if there is a business case.

- Municipalities can build and own a core network for municipal facilities. This will ensure affordable digital infrastructure is available as an essential service for connecting neighborhoods.
- Establish a Broadband Improvement District (BID). Such a model will have no net cost to municipalities because property owners self-finance last mile connectivity.

Evaluation of Appropriate Technology

Evaluate comparative capital cost and operation and management (O&M) costs for different technologies (5G wireless, cable, satellite, or broadband fiber). **Figure 26** shows various ways for rural communities to access the internet.

Implication on Resilience

Access to communication is key during and after major storm events. A resilient internet service network is vital in disseminating information on storm path, evacuation, etc. and coordinating recovery operations post storm events. Access to reliable and affordable broadband can connect rural communities with economic opportunities and

enhanced quality of life. It may also allow the region to attract and compete for a growing population that works remotely. These efforts will enhance regional economic resiliency in withstanding future economic downturns.

IMPLEMENTATION STEPS

1. Assess broadband access to identify unserved and underserved communities.
2. Assess various internet service deployment models and select one based on financial feasibility.
3. Evaluate comparative capital cost and O&M costs for different technologies.
4. Providers could update emergency plans/protocols to assess damage and deploy backup equipment to get customers back online as quickly as possible post storm events.

Figure 25: Texas County-Level Broadband Availability Estimates by Speed Tier

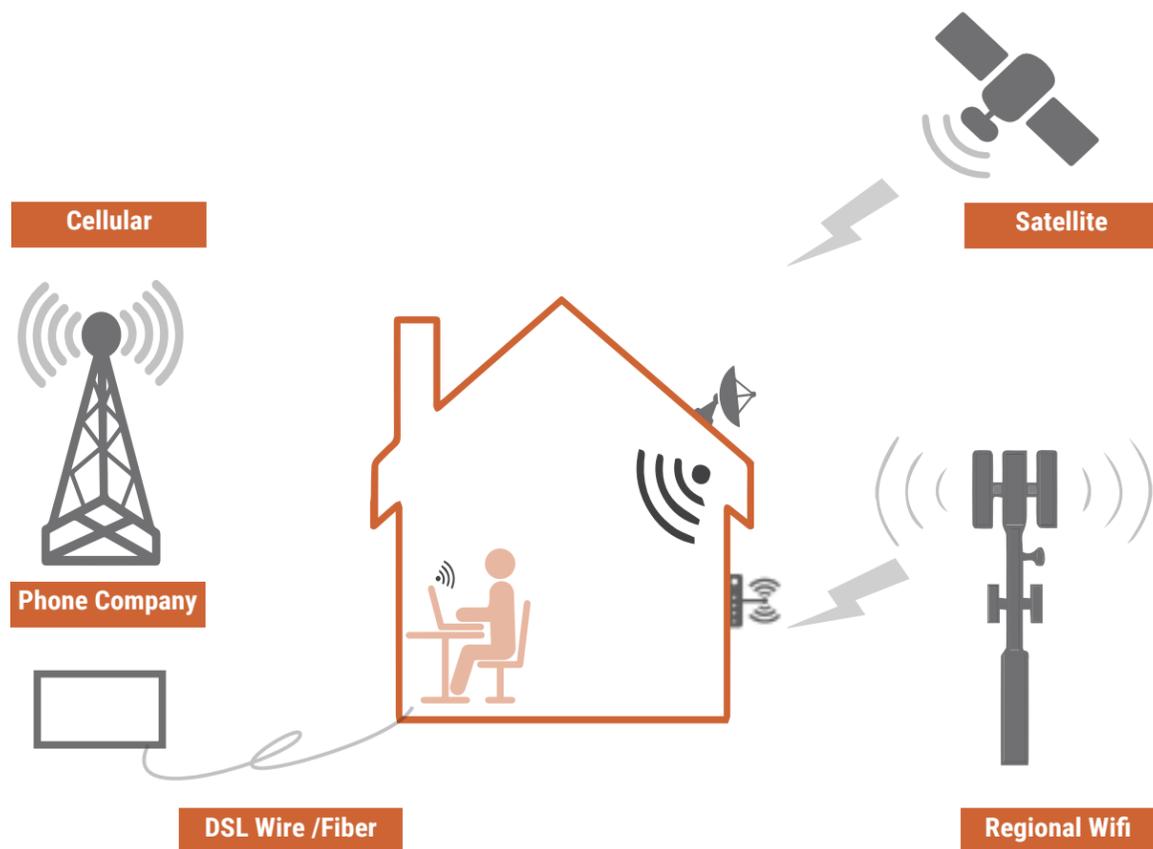
Texas County-Level Broadband Availability Estimates by Speed Tier Among Fixed Technologies: Cable, DSL, Fiber, Fixed Wireless

County	# of Households	Percent of Households Served			
		10x1 Mbps	25x3 Mbps	50x5 Mbps	100x10 Mbps
Aransas	9,795	96%	96%	96%	96%
Bee	9,042	99%	98%	75%	75%
Calhoun	7,766	97%	97%	85%	83%
Goliad	2,868	74%	52%	25%	25%
Jim Wells	13,961	100%	100%	77%	77%
Nueces	12,4587	99%	99%	97%	97%
Refugio	2,841	88%	81%	69%	69%
San Patricio	22,637	99%	99%	90%	90%
Victoria	32,187	97%	95%	81%	81%

Source: Connected Nation Texas

Figure 26: Rural Internet Options

Evaluate comparative capital cost, operation and management costs for different technologies (5G wireless, cable, satellite, or broadband fiber).



Source: AECOM

CO-BENEFITS



IMPLEMENTATION PARTNERS

Lead Partners

- Internet Service Providers
- Electric Co-ops
- County
- Municipality

Support Partners

- Council of Governments
- Metropolitan Planning Organizations
- County and Municipal Departments

POTENTIAL FUNDING SOURCES

Local Budgets –

- County Budget
- Municipal Budget

Financing Mechanisms

- Broadband Improvement District

Special Districts

- Electric co-op

Federal Funding Sources

- USDA Grants (e.g. Rural Utilities Service -Telecommunications Programs)
- FCC Grants (e.g. Rural Digital Opportunity Fund and E-rate Program for Libraries)
- GLO Grants
- EDA Grants

Private and Non-Profit Sources

- Internet Service Providers

RESILIENCE TOOLBOX - BEST PRACTICES

Rural Electric Cooperatives Deliver Broadband, Mansfield – Pennsylvania

The Tri-County Rural Electric Cooperative—based in Mansfield, PA —started to string a fiber-based broadband network after surveying its members to see if they wanted the co-op to offer broadband. Electric co-ops and publicly-owned municipal electric utilities have a number of natural advantages that allow them to deploy and provide fiber-based broadband service.

[Additional information](#)

Open-Access Networks: The Network as Virtual Marketplace, Ammon – Idaho

Ammon focused on being an infrastructure provider rather than a service provider. The city built an open-access network that lets multiple, private ISP's offer service to customers over city-owned fiber. Ammon doesn't compete with ISP's on its network; rather, it leases access to its fiber network, acting as a platform for multiple ISP's to compete against each other, including against facilities-based competitors like the local cable company. Open-access networks spur competition. Real choices facilitate economic opportunity, development, and enable innovation and new services.

[Additional information](#)

I-3

Assist municipalities and water service providers to identify programs and technologies to manage water consumption. Encourage local innovation in developing water-efficient technologies.

STRATEGY TYPE	IMPLEMENTATION TIMELINE	DOMAIN OF RESILIENCE
Advocacy; Assessment/Plan; Program	Medium term (4-6 years) Water conservation programs	Withstand; Recover
	Long term (7-10 years) Infrastructure projects	

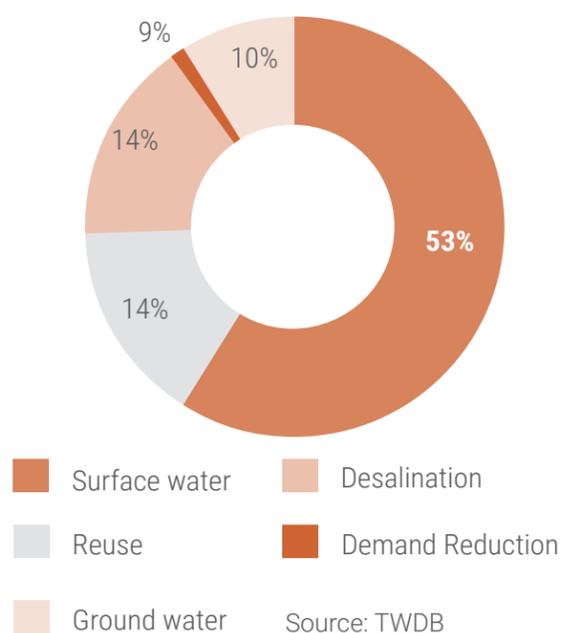
The study area faces a long-term imbalance between growing water demand and limited water supply. In addition, all communities, but particularly smaller and rural communities, face challenges in maintaining aging water distribution infrastructure. The nine counties have diverse water needs, with manufacturing activities commanding the greatest water demand (43%), followed by municipal demand (31%), and crop irrigation (14%) according to the TWDB.⁷ The coordination of industry types and their respective demands for water across the region could help manage this issue. On top of challenges related to demand and supply, the region is prone to drought. Over the past 50 years, the region has endured periods of significant flooding and rainfall events followed by periods of drought. Droughts are often accompanied by increased risk of wildfire, further exacerbating stresses. The 2011 drought had a significant impact on agriculture, specifically oyster culture and cattle industries in the planning area. In order to conserve water, different stages of water restrictions were imposed on businesses and residents alike across the study area.

Across the globe, emerging food challenges are linked to the growing global population, increasing pressure on food supplies. Parallel with these shifts, U.S. consumers have made dramatic changes in food choices, with nutrition and convenience driving a major shift toward organic produce. By encouraging innovation in water technologies that promote water efficiency, the study area can potentially grow and sell fresh produce in addition to sorghum and cotton.

Diversifying Supply

The region needs to plan for reliable, sustainable, long-term water supply. The Draft Regional Water Plans (2021) by the TWDB outline a variety of strategies to increase the future water supply. For the nine counties, the largest share of recommended water management strategy for 2030 (Figure 27) are for surface water resources (53%). Reuse and seawater desalination are expected to generate 14% each, followed by groundwater (10%) and demand reduction (9%).⁵ Municipalities can adopt water management strategies, invest in securing alternate sources of water, and encourage local innovation in water-efficient technologies.

Figure 27: 2030 Projected Water Supply Portfolio



Water Demand Management and Recycled Water Supply

Water use reductions can be achieved through combined regulatory actions and voluntary conservation programs. Municipalities across the study area will review their current water conservation measures and consider the addition of others. Some best practices adopted in the region include water conservation plans, a drought-tolerant landscape ordinance, rebates and incentive programs, water use audits, leak detection programs, and education campaigns. In addition, water utilities can coordinate with industries with non-potable water needs to provide supply through purple pipes.

A diverse water source portfolio will help regain resilience to droughts and support water-intensive industries. In addition to groundwater and surface water, seawater desalination can produce potable water or water for industrial use. Several other projects and ground water management plans have identified projects to increase water supply from groundwater and surface water sources. For example, the Evangeline Groundwater Project in Nueces County proposes to draw water from the Gulf Coast Aquifer. Completion of such projects are critical in maintaining a robust water supply in the future. Prioritize and accelerate investment in planned projects.

Local Innovation in Water-Efficient Technologies

The study area lies in close proximity to the Texas Triangle, which is anchored by Houston, Dallas-Fort Worth, San Antonio, and Austin. These major cities are connected by Interstate 45, Interstate 10, and Interstate 35. Projected growth in the Texas Triangle is expected to exceed state-wide averages into the future, with a 2030 estimate of 23 million residents, a 57% increase from 2000. The study area can capitalize on this market by potentially expanding from sorghum and cotton production to vegetables and fruit production. Encourage local innovation in water-efficient technologies through research and development led by local institutions such as University of Texas, Marine Science Institute, Texas A&M Agri Extension, Texas A&M – Corpus Christi, and Texas A&M University at Kingsville.

Organizations can fund innovative pilot projects that study the feasibility of emerging agri-tech practices such as hydroponics, controlled environment agriculture, etc.

Implication on Resilience

Diversifying the water supply portfolio, recycling greywater, and increasing conservation efforts will help to manage the increasing demand for water in the future. The region can continue to meet the water demand of heavy manufacturing plants locating in the region and expand its economic base. Drought contingency plans outline protocols and restriction during the different stages of drought. These, along with business continuity plans, can help the community withstand and recover from droughts.

IMPLEMENTATION STEPS

Water Demand Management

- Municipalities across the study area will review their water conservation measures and consider the addition of others.

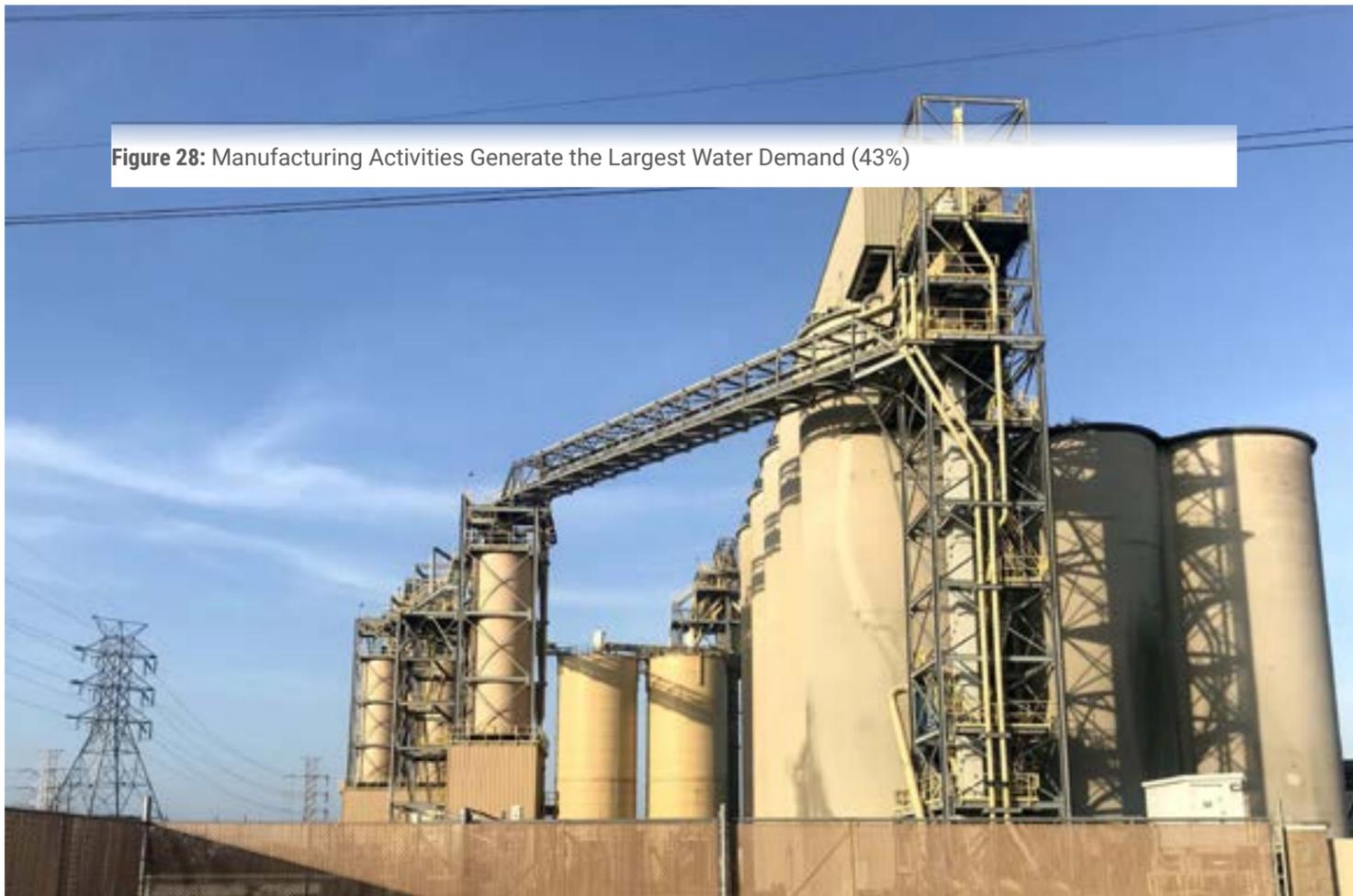
Alternate Sources of Water

- Prioritize and accelerate investment in planned desalination, groundwater/surface water projects.

Local Innovation in Water-Efficient Technologies

- Encourage local innovation in water-efficient technologies through R&D led by local institutions such as University of Texas, Marine Science Institute, Texas A&M Agri Extension, Texas A&M – Corpus Christi, and Texas A&M University at Kingsville.
- Fund innovative pilot projects that study the feasibility of emerging agri-tech practices such as hydroponics, controlled environment agriculture, etc.

Figure 28: Manufacturing Activities Generate the Largest Water Demand (43%)



Source: AECOM

CO-BENEFITS



IMPLEMENTATION PARTNERS

Lead Partners

- Water Utilities
- Industries
- County
- Municipality
- Council Of Governments

Support Partners

- County and Municipal Departments
- Universities, Colleges and Research Organizations

POTENTIAL FUNDING SOURCES

Local Budgets

- County Budget
- Municipal Budget

Financing Mechanisms

- Infrastructure Bond

Special Districts

- Water Utilities
- Ground Water Districts
- River Authorities

State Funding Sources

- TWDB Clean Water State Revolving Fund
- TWDB Drinking Water State Revolving Fund
- Texas State Research Grants

Federal Funding Sources

- USDA Grants (e.g. USDA Rural Utilities Service - Water & Environmental Programs)
- Small Business Innovation Research and Small Business Technology Transfer Programs

RESILIENCE TOOLBOX - BEST PRACTICES

Canyon Regional Water Authority – Texas

The Canyon Regional Water Authority (CRWA) is a Joint Powers Agency composed of 11 water systems in south-central Texas. The CRWA serves over 135,000 persons in an area covering 618 square miles. The partner systems are municipal and regional systems under both public and private ownership. The partnership has helped the systems limit unsustainable aquifer withdrawals by developing alternative water sources, purchasing water in bulk, and planning for long-term sustainability.

[Additional information](#)

The Possum Kingdom Water Supply Corporation (PKWSC) – Texas

The Possum Kingdom Water Supply Corporation (PKWSC) has consolidated more than 60 small, privately owned community and non-community water systems in north-central Texas. The PKWSC serves over 1,900 connections in this popular vacation area. This full consolidation, with ownership transfers and interconnection of all the partner systems, has helped address water quality issues in the area by pooling resources for a shared treatment plant and distribution system.

[Additional information](#)

I-4

Work with local and state agencies to assess the vulnerability of utility systems, roads, ports and railway infrastructure to extreme weather conditions and identify appropriate adaptation strategies and partnerships to foster economic development, resilience, and reliability.

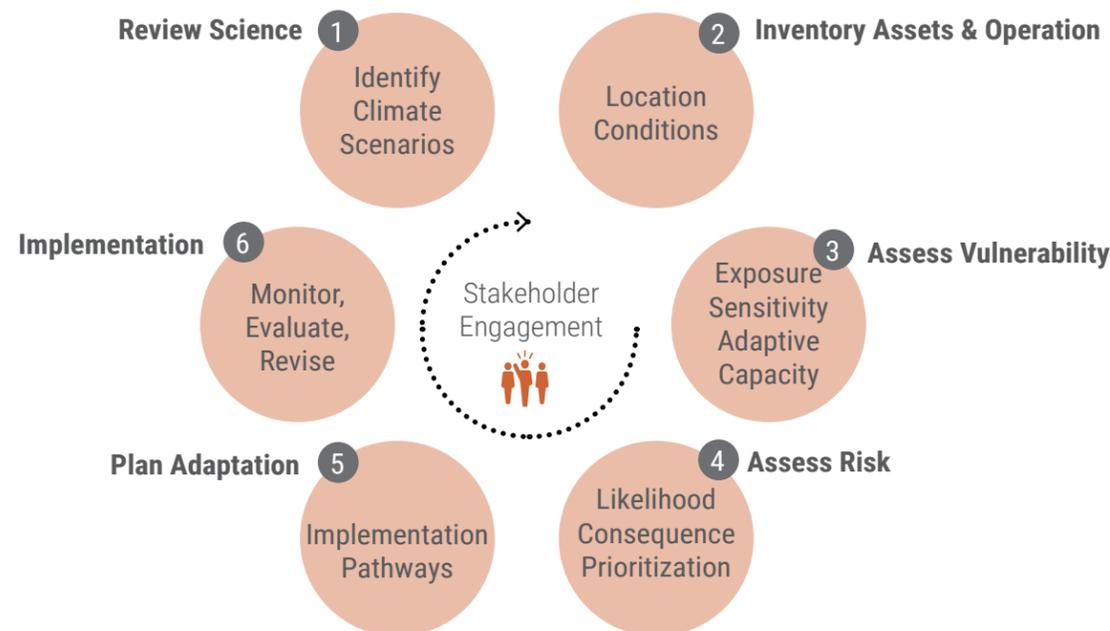
STRATEGY TYPE	IMPLEMENTATION TIMELINE	DOMAIN OF RESILIENCE
Partnership; Assessment/Plan; Program	Completion of assessment Short term (1-3 years) Implementation of adaptation strategies Long term (7-10 years)	Withstand; Recover

Transportation Assets

The region is characterized by having a robust network of transportation infrastructure which supports consequential volumes of freight moving by rail, ship, truck, and pipeline, leveraging the Port of Corpus Christi. Projects such as I-69 will further expand these opportunities. At the same time, increasing portions of the study area are becoming susceptible to flooding due to more frequent and severe storm events. In order to protect public

safety and sustain the movement of goods through the region, the impacts of storm events on transportation assets will need to be mitigated. Ports are critical economic engines which can otherwise face disruption from severe weather, storm surge, and sea level rise. Similarly, key interstates and rail lines which connect these ports to the broader region are projected to be impacted. **Figure 31 & 32** show regional infrastructure assets in high risk areas.

Figure 29: Adaptation Planning Process



Source: AECOM

Regional stakeholders can partner with transportation authorities to conduct a vulnerability assessment of regional transportation infrastructure including roadways, highways, ports, and airports to climate shocks and stresses. Through this assessment, an adaption plan can be laid out with strategies to mitigate their impacts. **Figure 29** outlines the adaptation planning process. This process can leverage ongoing work and previously completed assessments such as TxDOT Statewide Freight Resiliency Plan and Port of Corpus Christi’s emergency management protocols.

Alternatively, railroad entities (BNSF, KCS, and Union Pacific), port authorities, airport districts, and highways/roadway authorities (TxDOT, counties etc.) can undertake these efforts for their respective assets. **Figure 33** shows potential adaptation strategies for roadway along the coast.

Adaptation strategies can consider leveraging regional institutional assets such as the Texas A&M Corpus Christi Lone Star UAS (Unmanned Aerial System) program to minimize impact and hasten recovery. Post Hurricane Harvey, this program evaluated conditions in the Corpus Christi Ship Channel, assessed damage in Aransas County, and checked on dams and infrastructure in Fort Bend County.

Utility Services

Reliable utility services are critical for supporting local businesses and sustaining business expansion and attraction strategies. Energy costs and availability are significant factors for firms in site selection processes. A coordinated economic development approach will include incentives in the form of reduced rates or riders for two to five years. Utilities require businesses to create a targeted number of new, full-time jobs to qualify.

The largest electricity provider for this region is AEP Texas. They offer incentives to qualifying new and expanding businesses. They require new and existing customers to create at least 500 kW of new demand over base level to be considered for an incentive. Additional demand discounts are also available to companies that create and sustain new jobs or make substantial capital investments. EDCs and municipalities can coordinate with AEP Central

as part of their business retention, expansion, and attraction efforts.

The deregulated Texas market allows for separate entities to own and operate energy generation, transmission, and retail operations. Electric co-ops such as San Patricio Electric Co-op and Lower Colorado River Authority (LCRA) Co-op can provide better incentives to small and mid-sized operations in rural communities. EDCs and municipalities can coordinate with local electric co-ops to expand competitive services in rural areas.

Reliable Utility Service During Storm Events

Overhead power lines are particularly vulnerable to high winds that accompany hurricanes. Strategies that seek to ensure reliable and continuous electricity service to critical community facilities during storm events should be prioritized. There is a significant likelihood that utility power will not be available for an extended period during and after severe storm events. Therefore, it is necessary for critical facilities to have reliable sources of sustained electrical power to achieve continued operation.

The multi-hazard mitigation plans in the region have identified strategies for existing critical facilities to remain operational during storm events. For example, the Nueces County Texas Multi-Jurisdictional Hazard Mitigation Action Plan identified the need to install emergency generators at specific facilities at inland parks for emergency operations and logistics support. This action will provide back-up electricity to support the county’s Emergency Operations Center (EOC). Municipalities can evaluate retrofitting other community buildings to serve as resilience hubs during storm events. These are hubs that can provide an independent source of power to serve multiple community needs (**Figure 30**). Buildings identified as candidates can be fitted with solar photovoltaics and battery storage systems and/or connected to a microgrid or retrofitted with a backup generator to ensure reliable access to power during storm events.

IMPLEMENTATION STEPS

Transportation Assets

1. Conduct a regional vulnerability assessment of regional transportation infrastructure (including roadways, highways, ports and airports) to climate shocks and stresses and recommend strategies to mitigate impact.
2. Alternatively, railroad entities (BNSF, KCS and Union Pacific), port authorities, airport districts, and highways/roadway authorities (TxDOT, counties etc.) can undertake these efforts for their respective assets.

Utility Service Providers' Role in Fostering Economic Development

1. EDCs and municipalities can coordinate with AEP Central as part of business retention, expansion and attraction efforts. AEP Central can offer reduced rates or riders as part of retention, expansion, and attraction strategy.
2. EDCs and municipalities will coordinate with local electric co-ops to expand competitive services in rural areas.

Reliable Service During Storm Events

1. Identify and prioritize completion of actions in multi-hazard plans that upgrade existing critical facilities to remain operational during storm events.
2. Counties and municipalities can evaluate retrofitting other community buildings to serve as resilience hubs during storm events.

Swift Recovery of Utilities After Storm Events

1. AEP Central will continue to prepare for swift recovery after storm events. Current efforts include replacing aging infrastructure, vegetation management, leveraging drone technology, and plans to improve response times for restoring power after a hurricane through a partnership with Grid Assurance LLC.

Figure 30: Components of a Resilience Hub

Off-grid power generation: Designed to provide power during an emergency and reconnect to the grid once power is restored.



Communication hub: A single point for access to news and information during and after an emergency.

Clean water: Reinforcing existing water systems so communities have access to safe drinking water.

Source: AECOM

CO-BENEFITS



IMPLEMENTATION PARTNERS

Lead Partners

- Port Authorities
- Railway Companies
- TxDOT
- Electric Utility Providers
- Electric Co-op
- County
- TDEM

Support Partners

- Municipalities
- Relevant County and Municipal Departments

POTENTIAL FUNDING SOURCES

Local Budgets

- County and Municipal Budget

Special Districts

- Port Authorities

State Funding Sources

- TxDOT

Federal Funding Sources

- FEMA Hazard Mitigation Grant Program (HMGP)
- FEMA Flood Mitigation Assistance (FMA) Grant
- FEMA Pre-Disaster Mitigation (PDM) Grant
- FEMA Building Resilient Infrastructure & Communities (BRIC) Grant
- Emergency Management Performance Grant (EMPG)
- NOAA Grant
- USDA Rural Utilities Service - Electric Programs

Private and Non-Profit Sources

- Electric Utility Providers
- Railway Companies - BNSF, KCS and Union Pacific

RESILIENCE TOOLBOX - BEST PRACTICES

Climate Change/Extreme Weather Vulnerability and Risk Assessment for Transportation Infrastructure in Dallas and Tarrant Counties – Texas

North Central Texas Council of Governments (NCTCOG) conducted a vulnerability highway and road assessment as one of the FHWA pilot projects. The vulnerability assessment found that for the transportation sector, future temperature increases will accelerate pavement degradation, rutting, joint failures, and utility breaches. In addition, many critical roadway segments are in flood-prone or poorly drained areas. NCTCOG is starting to address these vulnerabilities through its Transportation Asset Management Program.

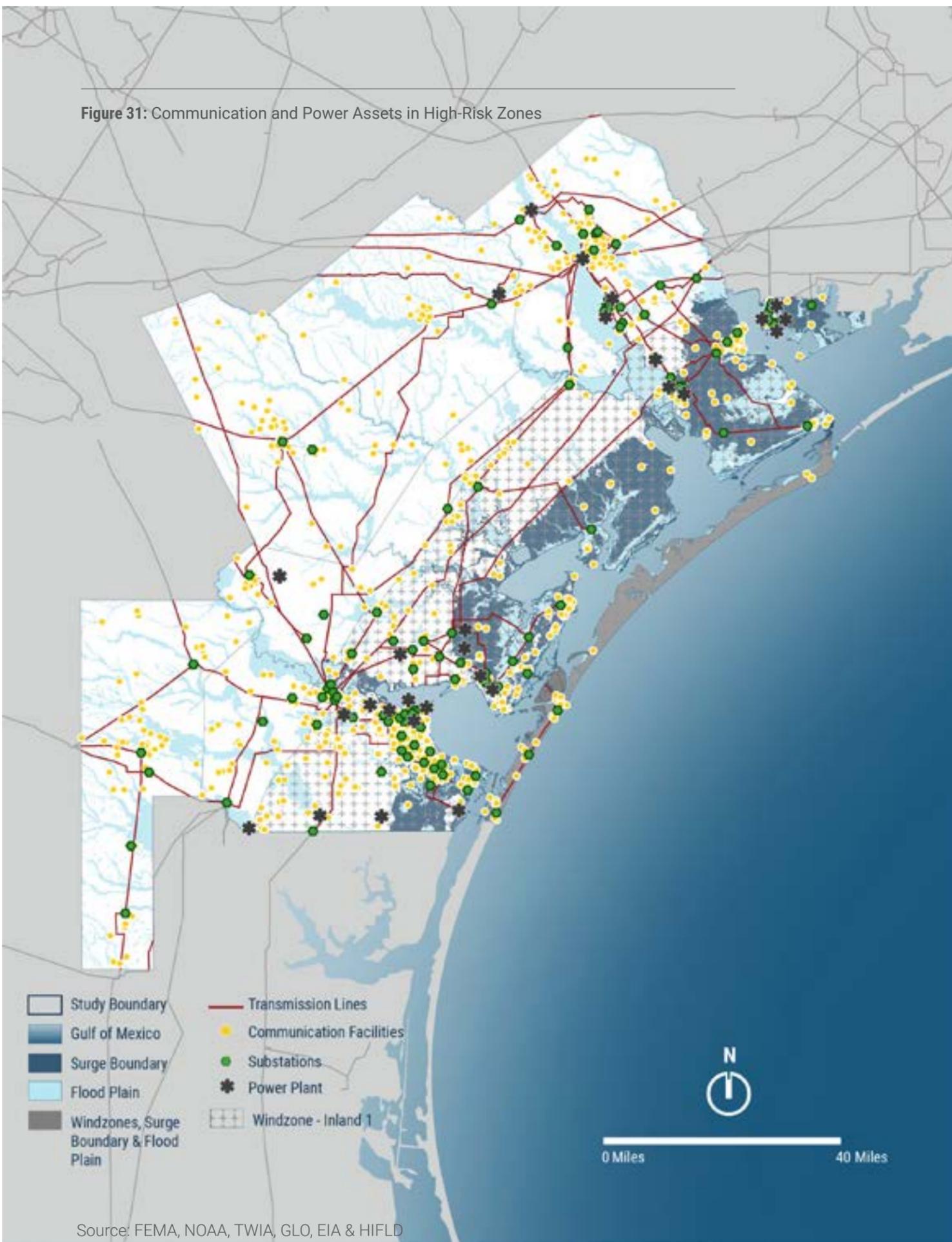
[Additional information](#)

Port of Los Angeles Sea Level Rise Adaptation Study, Los Angeles – California

The purpose of this sea level rise study is to identify the areas that are projected to be exposed to sea level rise by 2030, 2050, and 2100, provide an overview of the Port's asset vulnerabilities, and to present a suite of strategies to both adapt over time and become more resilient to it. Strategies for infrastructure improvements in the form of sea walls, temporary flood protection, relocation of critical utilities, etc. were recommended.

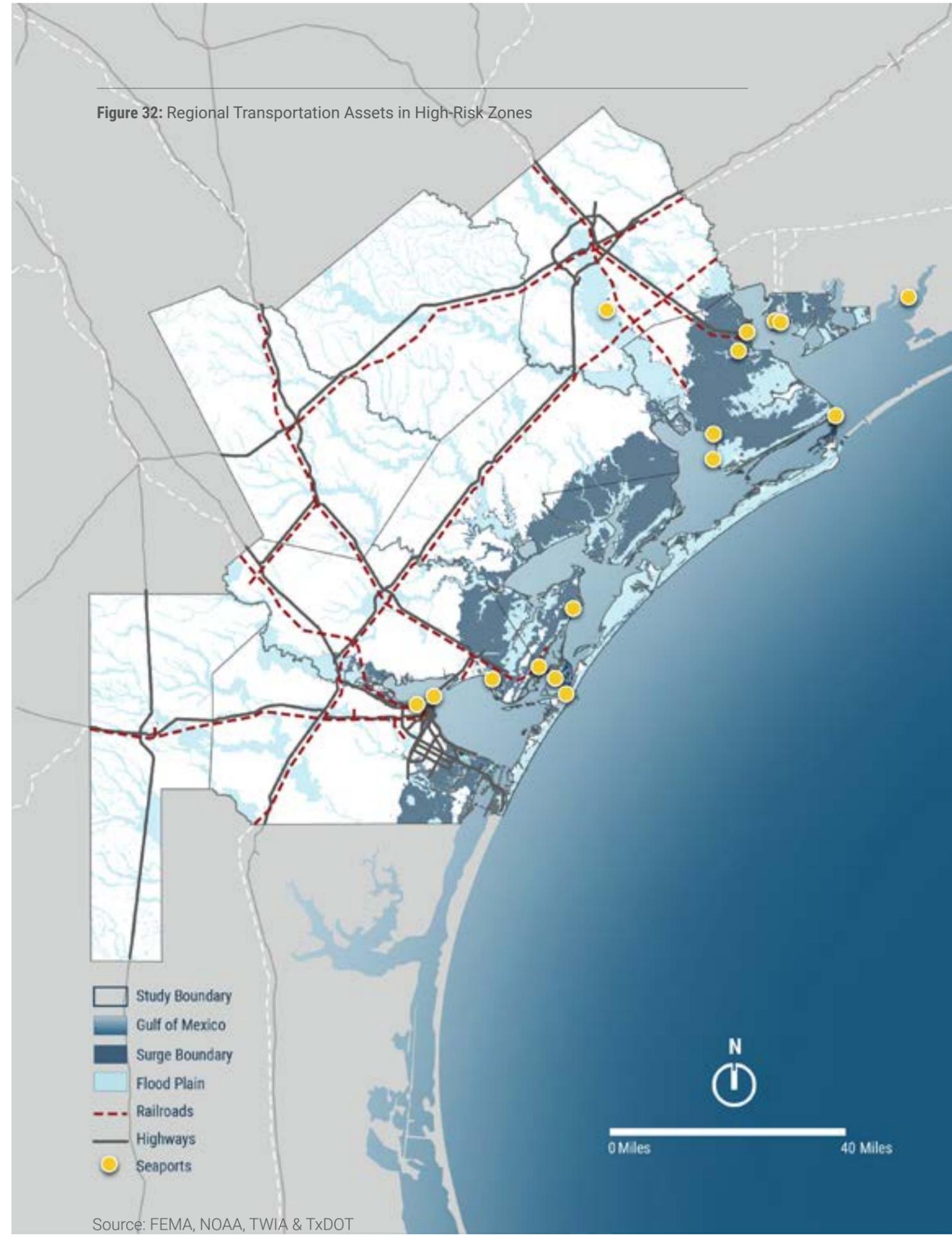
[Additional information](#)

Figure 31: Communication and Power Assets in High-Risk Zones



Source: FEMA, NOAA, TWIA, GLO, EIA & HIFLD

Figure 32: Regional Transportation Assets in High-Risk Zones



Source: FEMA, NOAA, TWIA & TxDOT

Figure 33: Pathway to Coastal Resilience and Seawall Replacement

Figure 33 shows risks, cobenefits, opportunities/constraints and potential adaptation strategies for roadway along the coast.



GOAL 3 - HOUSING & BUILDING STOCK

Source: AECOM



Public Input:

"Affordable housing is a big issue in this region."

"Section on housing affordability & resiliency was on point."



03. HOUSING & BUILDING STOCK

Sustain housing investment and support workforce growth by maintaining affordability, leveraging existing building stock, and mitigating climate risks and impacts.

Select any icon to skip to that strategy

Objectives

-  Encourage housing reinvestment and expand availability of housing options in support of labor force growth.
-  Encourage provision of employee housing for the tourism sector.
-  Incentivize investment in property development by focusing on vacant, abandoned, and otherwise blighted property, particularly in downtowns.
-  Ensure new construction is sited and built to withstand storm damage.
-  Develop strategies to support swift rebuilding efforts of damaged housing stock post-storm events while maintaining affordability for renters and owners alike.

Strategies

-  **HBS-1** Collaborate with local organizations and community foundations on a housing revitalization plan that expands development of affordable/workforce housing.
-  **HBS-2** Evaluate building permitting and zoning codes to encourage innovations in housing, including provision of “missing middle” housing types.
-  **HBS-3** Increase on-site housing options for seasonal workers in coastal tourism communities.
-  **HBS-4** Encourage counties to adopt and enforce storm-resistant building codes and discourage development in high-risk zones where possible. Establish a post-disaster housing strategy and coordinate implementation when appropriate.
-  **HBS-5** Assess options to reduce financial impacts on communities and low-to moderate-income residents who are impacted by increasing costs for flood and wind insurance.

HBS-1 Collaborate with local organizations and community foundations on a housing revitalization plan that expands development of affordable/workforce housing.

STRATEGY TYPE	IMPLEMENTATION TIMELINE	DOMAIN OF RESILIENCE
Assessment/Plan; Partnership; Program Incentives; Program	Short term (1-3 years) Assembling of partnerships and regional housing plan	Withstand
	Medium term (4-6 years) Land trust program pilot	
	Long term (7-10 years) Construction	

In part due to storm damage, the nine-county region remains challenged by a limited supply of affordable and workforce housing units. While average rents and home values are below statewide averages, almost 50% of area renters are housing cost burdened, paying 30% or more of their income on rent alone. Further, as federal agency programs which support affordable housing tend to be concentrated at urban and suburban levels, rural communities face additional challenges, linked with the need to compete for programs such as Section 515, mortgage interest tax deductions, housing tax credits, as well as loan and bond programs with urban locations. Smaller cities such as Victoria can also face unique barriers as they receive priority for neither urban nor rural funding sources for housing development.

From an economic development context, stakeholders noted that lack of access to attainable, well-preserved housing is a hindrance to attracting major employers and to retaining and attracting population. A plan that coordinates increased access to housing across urban and rural locations will help attract new jobs and new residents to the region in the future.

Developing a Regional Plan

Housing is a regional issue; employees don't always live in the same city or county as their jobs, and while larger cities may offer more jobs and housing than smaller rural communities, small communities often offer more affordable options or certain quality of life attractions. A regional housing plan can help establish sustainable, cross-regional organizational partnerships between local governments, non-profits, county governments, housing authorities, and other key stakeholders to meet the needs of the local workforce. The plan will work to coordinate policy, planning, and capital programming in affordable housing development.

Affordable housing revitalization plans should look to include specific targets for workforce, supportive, low-income, "missing middle," senior, and multi-family units. Communities within the nine-county study area should emphasize the expansion of housing funding at all levels, while looking at best practice programs adopted by other Texas communities. The plan should also engage local communities to provide better understanding about the term "affordable housing," including that the standard that a family should spend 30% of their income or less on housing applies to households at every income. It is critical to have housing options that people in every local profession can afford (as well as seniors and those on fixed incomes).

Encouraging Long-Term Affordability

Public dollars for affordable housing are scarce and providing housing solutions that remain affordable over the long term— without the expiration dates that come with traditional subsidy sources— can help maximize the value of public subsidy. Community Land Trusts (CLT) and shared-equity housing solutions promote permanent, quality, affordable housing supply. The most common model of a CLT focuses on single-family homeownership with resale restrictions recorded in a 99-year ground lease.

These resale and income eligibility restrictions preserve affordable homes in perpetuity for the community and land remains under the CLT governing organization's ownership (often a non-profit). CLTs provide a proven entry into homeownership for low- to moderate-income households who may not otherwise be able to afford a home. While CLT models are relatively new in Texas, both Austin and Houston have established CLT programs.

Using Public Land for Housing Development

Publicly owned land can serve as an alternate type of subsidy for housing development; when developers are able to acquire land at no cost or at a discount, it can help close the financing gap for an affordable housing deal. Communities in the region where tax-foreclosed or vacant properties are an issue may also consider participation in the Texas State Affordable Housing Corporation (TSAHC) Affordable Communities of Texas (ACT) program – a statewide land banking and land trust initiative which works with local nonprofit and governmental entities. The ACT Land Trust has more than 500 properties statewide, but none in the nine-county region.

Utilize Multiple Financing Sources

The regional plan should also examine the various financing streams that can help meet affordable housing needs in the region and the locations they can help serve, in order to identify and fill financing gaps. Some potential sources of financing include the following:

- Low-Income Housing Tax Credits (LIHTC) are the largest source of financing for new affordable housing development in the U.S. as of 2021. Investors purchase these tax credits to decrease their taxes owed, thereby providing equity to affordable development projects. Criteria for awarding competitive 9% LIHTC funding is determined by the statewide Qualified Action Plan (QAP) developed by the Texas Department of Housing and Community Affairs (TDHCA), which prioritizes certain locations or types of projects each year. The plan could result in a set of recommendations to TDHCA about QAP criteria to help spread LIHTC eligibility across the region.
- HOME and CDBG entitlement funds available to larger cities (Victoria and Corpus Christi).
- CDBG-DR funds available to the region after a disaster.
- Public Facility Corporations (PFC), or nonprofit corporations may be created by a sponsoring governmental entity – a city, county, school district, housing authority, or special district. They have broad powers over public facilities; including financing, acquisition, construction, rehabilitation, renovation, and repair. Because the primary benefit of PFCs to affordable housing deals is their ability to abate taxes long-term, care must be taken to ensure that the affordability benefit from the projects is significant enough to merit taxpayer investment.
- Infrastructure funding mechanisms such as Tax Increment Reinvestment Zones (TIRZs) or Section 380 agreements. These mechanisms can allow for upfront financing of infrastructure that can decrease the amount an affordable housing provider has to spend on development.
- U.S. Department of Agriculture (USDA) Housing Preservation Grants, Rural Housing Site Loans, Multifamily Housing Direct Loans, Section 504 Home Repair Loans and Grants, and Single-Family Direct Loans.

Investment in the Renovation/Redevelopment of Vacant, Abandoned, and Blighted Property

Much of the nine-county region's existing building stock was built before 1970 and was not built to modern standards. In terms of housing, replacement units tend to be more resilient, but less affordable. Across rural areas, a number of buildings now sit vacant, abandoned or in blighted condition, particularly along historic main streets. In rural areas, low property values can make it difficult to rehabilitate a property without triggering requirements to bring the structure up to code, but this investment is often hard to justify under prevailing rents. These trends sustain downward pressure on local housing conditions, are exacerbated by natural disasters such as hurricanes, and is one factor contributing to slow growth and declining population.

Strategies to renovate or replace currently underutilized housing and building stock can help meet the region's housing and economic development needs while improving the vibrancy, health, and resilience of rural towns. Allowing for redevelopment with a mixture of uses (including housing) is an important first step in revitalization. Local governments should market affordable housing and mixed-use development opportunities to non-profit and private developers by expanding on affordable housing incentive programs to encompass mixed housing and retail development opportunities, as well as incentivizing low-cost building repair programs.

IMPLEMENTATION STEPS

Housing Revitalization Plan

1. Establish specific cross-regional housing goals and investment priorities. Using data on existing affordability gaps, establish numerical targets for various housing types: affordable, workforce, senior, family, and others.
2. Expand housing funds within local government budgets to support development of affordable housing.
3. Engage city and state officials in identifying housing development opportunities on state-owned land.
4. Work to legally establish local CLT programs, creating boards, developing CLT policies, and marketing the program.
5. Create and introduce new regional regulatory and finance mechanisms, grants, and non-profit partnerships.

Revitalization and Preservation of Historic Properties

- Cities and counties can demonstrate a commitment to historic revitalization and preservation by:
1. Bringing local leaders together to create long-range vision and planning documents for downtown and main street revitalization.
 2. Taking inventory of all existing city-owned and privately-owned vacant and underutilized parcels within a set boundary of downtown, denoting city-owned properties, and recording in GIS.
 3. Creating an inventory of all historic parcels and community resources, including any buildings that meet requirements to be on the National Register of Historic Places.
 4. Acquiring abandoned buildings and vacant parcels at low cost via title transfer.
 5. Understanding existing building infrastructure, particularly the capacity of grease traps to support modern restaurant/café use.
 6. Providing incentives for business expansion and façade improvements (i.e., low-interest revolving loan funds).
 7. Seeking inclusion as an official Texas Main Street City.

CO-BENEFITS



IMPLEMENTATION PARTNERS

Lead Partners

- County
- Municipality
- Housing Foundations, Authorities
- Community Land Trust

Support Partners

- Council of Governments
- Metropolitan Planning Organizations
- Housing Developers

POTENTIAL FUNDING SOURCES

Local Budgets

- County/Municipal Budget

Financing Mechanisms

- Tax Increment Financing
- Low Income Housing Tax Credits
- Opportunity Zones
- Type A & B Sales Tax

State Funding Sources

- Texas Historical Commission Historic Preservation 25% Tax Credit Program
- Texas Historical Foundation Grants
- Texas Capital Fund Downtown Revitalization Program Grants

Federal Funding Sources

- HUD Grant
- Federal Historic Preservation Tax Credits
- USDA Rural Business Programs
- USDA Rural Development Utility Programs

Private and Non-Profit Sources

- Private Investment
- Philanthropic Grantmaking

RESILIENCE TOOLBOX - BEST PRACTICES

Corpus Christi Housing Authority (CCHA), Nueces County – Texas

The Corpus Christi Housing Authority's primary purpose is to provide economical housing to low-income residents of Corpus Christi. The organization is the developer and manager of low-rent housing. Its initiatives include planning, financing, constructing, purchasing, leasing, and managing the properties. At present, CCHA provides low-cost housing for more than 4,000 people and has more than 1,800 units available. In addition, CCHA also facilitates programs for youth and elderly.

[Additional information](#)

CLT Houston – Texas

CLT Houston is a city-wide and city-sponsored program that is utilizing federal funds allocated to the city for affordable housing development, tapping into land held by the local redevelopment authority following housing shortages caused by Hurricane Harvey. For-profit and non-profit developers bid on opportunities. The governing board is comprised of homeowners, public agency representatives, and members of the public.

[Additional information](#)

HBS-2

Evaluate building permitting and zoning codes to encourage innovations in housing, including provision of “missing middle” housing types.

STRATEGY TYPE	IMPLEMENTATION TIMELINE	DOMAIN OF RESILIENCE
Incentives; Policy	Short term (1-3 years)	Withstand

Promote development of a mixture of housing types attractive to residents across the income spectrum. Existing restrictions, particularly within urban centers with zoning codes, can be counter-productive to stimulating new development. Amending local housing policies, diversifying the region’s housing stock, and encouraging development of affordable and middle-income, single- and multi-family homes will better serve a variety of incomes and household sizes, now and in the future.

Incentivizing “missing middle” housing requires cities to remedy zoning challenges that may prevent these housing typologies. Missing middle housing includes duplexes, triplexes, bungalows, carriage or garage houses, townhomes, live-work spaces, housing cooperatives, and more (Figure 34). Because these types of housing typically have densities higher than single-family residential zoning, but smaller footprints and lower heights than typical multi-family developments, density-based zoning can be prohibitive. Local units of government should ensure that revised density and code designations encourage middle-income housing types.

Inclusionary Housing Policies and Density Bonuses

Providing incentives in designated areas can increase construction of undersupplied housing types. Although the state of Texas prohibits mandatory inclusionary zoning policies, voluntary inclusionary housing policies are permitted. These types of policies either require or incentivize the creation of affordable housing when new development occurs. Local governments can create/strengthen programs that incentivize developers (through public subsidies or land use incentives) to create affordable housing units on-site or pay fees that can be used to further local

housing development. Additionally, density bonuses written into codes can allow local governments to provide developers increased building height allowances, additional FAR, reduced setbacks, or other concessions in exchange for income-restricted units. Municipal governments should also seek to establish or strengthen – utilizing region-wide benchmarks – developer fee waivers within set areas (such as areas bordering historic downtown thoroughfares) for projects that include affordable or workforce housing.

Accessory Dwelling Units

Local governments should pursue code changes that allow homeowners to convert existing residential spaces, or build additional accessory (carriage, garage) dwellings that could be rented out to help families to afford to stay in local communities as well as promote aging-in-place for multi-generational families of an area (Figure 35).

IMPLEMENTATION STEPS

1. Review city and county zoning land use codes to identify and document regulatory barriers to affordable housing development.
2. Increase funding allocations for affordable housing development within city and county budgets.
3. Expand incentives for housing developers (fee waivers, reimbursements, abatements).
4. Create a formalized “Housing Incentives Menu” with transparent eligibility criteria and processes. Make these resources easily available online.
5. Increase zoning densities in designated sub-areas near commercial nodes.
6. Add flexible regulations that allow for the development of accessory units on parcels zoned as single-family.

Figure 34: “Missing Middle Housing” Typologies



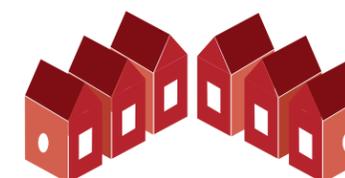
DUPLEX
Two side-by-side dwelling units facing the street.



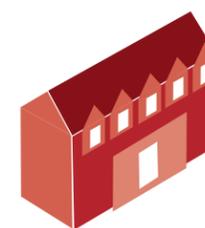
TOWNHOUSE
Two to eight attached and adjacent single-family homes.



TRIPLEX & FOURPLEX
Three to four units, typically with a shared entry.



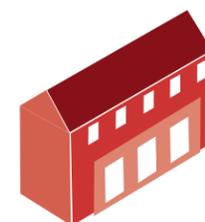
BUNGALOW COURT
A series of small units arranged to create a shared community court that is perpendicular to the street



MULTIPLEX
At least five to ten adjacent or stacked units that share one entry or have individual entries.



COURTYARD APARTMENT
A larger structure consisting of multiple adjacent or stacked units accessible from one or multiple courtyards.

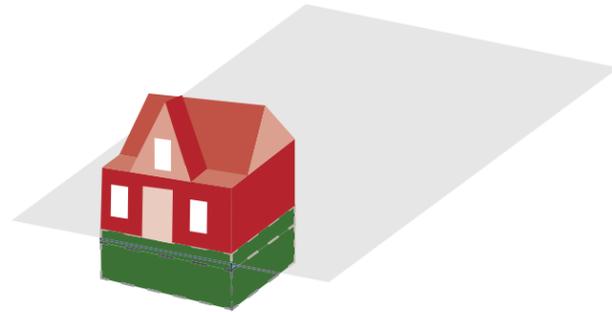


LIVE/WORK
One dwelling unit above or behind a residential or retail space.

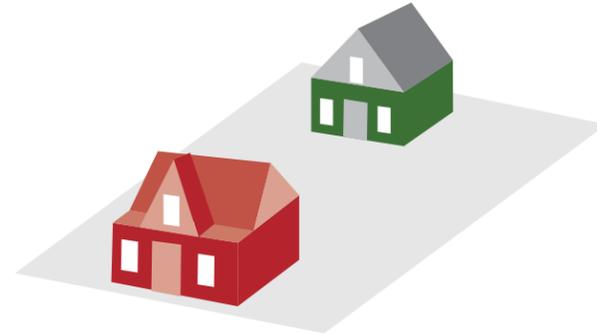
Source: AECOM

Figure 35: Accessory Dwelling Units

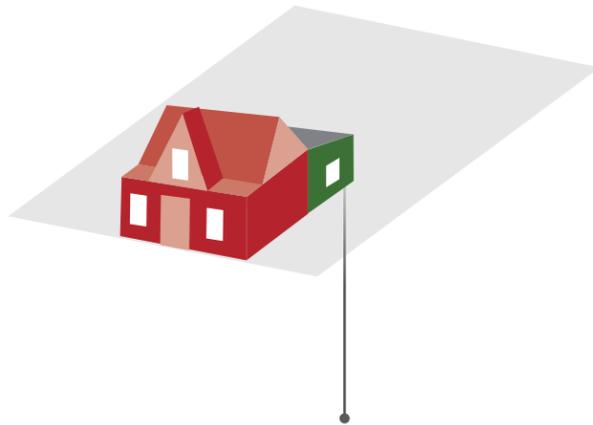
BASEMENT CONVERSION



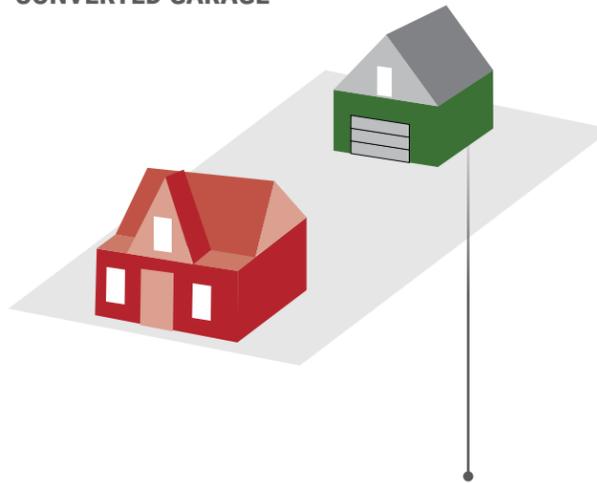
DETACHED ACCESSORY DWELLING UNITS



ATTACHED ACCESSORY DWELLING UNITS



CONVERTED GARAGE



Source: AECOM

CO-BENEFITS



IMPLEMENTATION PARTNERS

Lead Partners

- County
- Municipality
- Housing Foundations
- Community Land Trust

Support Partners

- Council of Governments
- Metropolitan Planning Organizations
- Housing Developers

POTENTIAL FUNDING SOURCES

Local Budgets

- County Budget
- Municipal Budget

Financing Mechanisms

- Tax Increment Financing
- General Obligation Bonds
- Low Income Housing Tax Credits
- Opportunity Zones

Private and Non-Profit Sources

- Private Investment

RESILIENCE TOOLBOX - BEST PRACTICES

Regulations for Mixed Use and Affordable Housing, Raleigh – North Carolina

In 2013, Raleigh revised its development code after recognizing that existing regulations were hindering mixed-use and affordable housing development. A new Unified Development Ordinance consolidated all development regulations (zoning, site development, planning, historic preservation, right-of-way, subdivisions) into a single document with revised, more flexible zoning and development standards.

[Additional information](#)

Villa Hermosa, Corpus Christi – Nueces County

The proposed Villa Hermosa planned unit development is a master planned single-family residential community that includes 277 single-family residential units, a community center, and a recreational area. According to the Planned Unit Development Guidelines and Master Site plan, the development of custom manufactured homes will provide affordable residential homeownership opportunities. The developer's request was approved by City Council for a change in zoning from the Light Industrial District (IL/SP) with a Special Permit to the Single-Family 4.5 District with a Planned Unit Development (RS-4.5/PUD) to allow for the new development.

[Additional information](#)

Click on link to learn more

HBS-3 Increase on-site housing options for seasonal workers in coastal tourism communities.

STRATEGY TYPE	IMPLEMENTATION TIMELINE	DOMAIN OF RESILIENCE
Incentives; Program	Medium term (4-6 years)	Withstand

Not only are the region's coastal seasonal homes susceptible to storm damage, but housing affordability for workers in the tourism industry (concentrated along the coast) is directly impacted when storm-damaged housing units are either reconstructed for a higher-cost market or never replaced. In general, seasonal workers in tourism often need temporary, on-site housing (Figure 36). The region should identify opportunities for seasonal worker housing on publicly owned land or convert older hotel and motel properties into temporary worker housing. This would also allow for partnerships between local businesses and developers to provide co-located workspace and housing in new developments.

A local/regional workforce housing partnership could work with local businesses to garner support for employer-assisted housing programs. These programs may include local business cash contributions to housing initiatives, donations of land, support for construction financing, and low-income housing tax credit investments. Direct support for employees in obtaining seasonal housing via local rent subsidies and gap financing could also be included.

Additionally, with an increase in short-term home rental sites like AirBnB, there is also an impetus for incentivizing year-round rentals among second homeowners. Strategies may include city-backed rental signing bonuses and property assistance programs. Local units of government should also investigate the ability to tax buildings in use as AirBnB's, leveraging proceeds to support construction of new year-around housing units.

Figure 36: Seasonal/Recreational/Occasional Housing in Study Area

	2010	2018	Change
Aransas County	25%	28%	2.6%
Bee County	3%	3%	-0.3%
Calhoun County	20%	22%	2.2%
Goliad County	12%	13%	0.7%
Jim Wells County	3%	5%	1.9%
Nueces County	3%	3%	0.5%
Refugio County	7%	7%	0.5%
San Patricio County	3%	4%	0.4%
Victoria County	1%	1%	0.2%
Study Area	5%	6%	0.7%

(Source: U.S. Census, American Community Survey)

IMPLEMENTATION STEPS

1. Identify publicly owned land assets around seasonal tourism centers.
2. Conduct outreach to tourism-based employers to understand emerging housing constraints.
3. Consider evaluation of older hotel and motel properties.
4. Evaluate impact of AirBnB on availability of 12-month rentals in tourism areas.
5. Grow local employer-assisted housing programs.
6. Identify potential options for employer contributions, such as down-payment assistance, development loans, and land donations.

CO-BENEFITS



IMPLEMENTATION PARTNERS

Lead Partners

- County
- Municipality
- Housing Foundations
- Local Employers

Support Partners

- Council of Governments
- Metropolitan Planning Organizations
- Housing Developers

POTENTIAL FUNDING SOURCES

Local Budgets

- County Budget
- Municipal Budget

Financing Mechanisms

- Tax credits

Private and Non-Profit Sources

- Employers

RESILIENCE TOOLBOX - BEST PRACTICES

Incentive Housing Zone Policy, Old Saybrook – Connecticut

The small coastal town of Old Saybrook, Connecticut had historic zoning and land-use regulations that discouraged affordable housing development near local employment areas, effectively barring mixed-use development growth. Since 2009, the city has implemented an Incentive Housing Zone policy to develop multi-family affordable housing in areas previously zoned for commercial use only. The new policy overlays existing zoning with new subareas where development exceptions allow local property owners to create workforce housing, 20% of which must be affordable.

[Additional information](#)

Local Employer Built Housing, Winnebago – Minnesota

The 1,600-person town of Winnebago has faced low supplies of affordable housing. One of the main local employers, a construction company called Weerts, invested \$175,000 to develop affordable rental housing in the community. The city waived hook-up and permitting fees, local utilities provided \$8,500 towards development costs, and the Greater Minnesota Housing Fund provided a no-interest deferred loan to fund the project.

[Additional information](#)

HBS-4

Encourage counties to adopt and enforce storm-resistant building codes and discourage development in high-risk zones where possible. Establish a post-disaster housing strategy and coordinate implementation when appropriate.

STRATEGY TYPE	IMPLEMENTATION TIMELINE	DOMAIN OF RESILIENCE
Assessment/Plan; Partnership; Program	Medium term (4-6 years)	Anticipate; Recover

Site New Construction in Low-Risk Areas

Local governments can limit or prohibit development in areas that are designated as vulnerable or hazardous to minimize impacts to property from flooding, storms, and sea level rise. Counties can evaluate current county-wide Flood Damage Prevention Ordinances and update, when feasible, to higher standards. While FEMA has minimum floodplain management standards for communities participating in the National Flood Insurance Program (NFIP), adopting higher standards will further minimize the threat to life and property resulting from flooding. Counties can review the current Floodplain Development Permit process to ensure structures on floodplains meet higher standards to withstand impact from future storm events.

Further, counties and local governments can discourage development in high-risk areas where possible by incorporating siting considerations in master plans such as the San Patricio Industrial Master Plan and through comprehensive plan updates. If development must occur in high-risk locations, these plans can prescribe strategies to minimize potential impact such as stringent freeboard requirements.

Update or Adopt Storm-Resistant Building Codes

The adoption of strong, modern building codes with good enforcement has proven to reduce damage and displacement, which often come with landfalling hurricanes. Building codes ensure that minimum acceptable standards are used in the design, construction, and maintenance of buildings where people live and work. Damage reduction helps to keep people in their homes and businesses

following a disaster, reduces the need for public and private disaster aid, and preserves the built environment.

Texas does not require mandatory adoption and enforcement of residential building codes throughout the state. However, municipalities may adopt and enforce the 2006 International Residential Code as a minimum residential construction code. The Texas Department of Insurance has adopted windstorm building code standards, but they are voluntary requirements that homeowners must meet for the purpose of obtaining windstorm and hail insurance from the Texas Windstorm Insurance Association (TWIA), the state wind catastrophe pool. Counties and local governments can evaluate current building code and consider adoption of more stringent standards. If the town or city has yet to adopt a building code, local governments should assess the feasibility of adoption.

Affordability

Adopting higher standard storm-resistant building codes may increase cost of construction and affordability. The region can encourage innovation in building construction and lower costs to maintain affordability. Counties can also consider assistance and grant programs for low- and moderate-income households to retrofit or make additions to be storm resistant. A few examples of this are:

- Build prototypes – Municipalities can partner with local colleges and non-profits to design and build prototypes of affordable storm-resistant homes that incorporate innovative practices. For example, Habitat Strong is a

program run through Habitat for Humanity that builds affordable storm-resistant homes. Building prototypes of such units in the region can encourage local innovation and adoption.

- University research – local colleges can conduct research on storm-resistant codes and building materials to inform local policies.
- Manufactured Home Tie-Down Enhancement Program – This program involves the enhancement of the tie-down and anchoring system manufactured homes. In Florida, this program has been managed by the Tallahassee Community College since 2001.
- Paint and Hurricane Shutter Program – This program can provide assistance to homeowners to have the exterior of their home painted and/or accordion hurricane shutters installed.
- Hurricane Mitigation Grant Program –The program can provide home retrofit grants to low- and moderate-income homeowners and help with the home retrofit process including identifying needed upgrades, developing workplans, and helping the owner to review proposals.⁶

Counties and local governments can review building codes to remove barriers for incorporating emerging storm-resistant construction practices or building materials.

Integration of Other Ordinances for Resilience

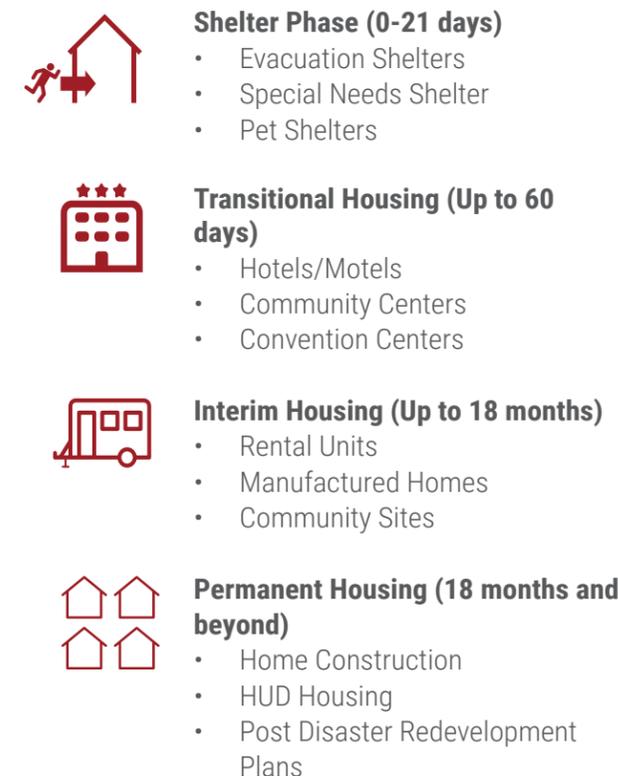
Consider adoption of other county or city/town-wide ordinances that can support resilience. This may include green street ordinances, freeboard ordinances, ordinances for stormwater retention on private land, and riparian buffer protection ordinances.

Establish a Post-Disaster Housing Strategy

In the aftermath of storm events, community members may be displaced due to damage or loss of residential structures and/or environmental contamination. A county-wide framework for providing temporary housing options for displaced residents can expedite long-term community recovery. Such measures will incentivize the local population to remain in the region after major storm events.

The goal of a disaster housing framework is to transition displaced survivors into permanent housing as quickly and efficiently as possible. The disaster housing process may progress through all four disaster housing phases. Each of these phases may overlap or may be excluded if they are not needed. The four phases are: Shelter Phase (0-21 days), Transitional Shelter Phase (up to 60 days), Interim Housing Phase (up to 18 months), and Permanent Housing Phase (18 months and beyond). **Figure 37** shows the phases of disaster housing and the overlap time between each phase.

Figure 37: Phases of Disaster Housing and Types of Housing Options for Each



Source: Palm Beach County Disaster Housing Strategy

Pre-Disaster Preparation

Engage in ongoing planning activities to maintain the operational readiness of the Disaster Housing Program. Preparedness efforts can include the maintenance of policies, inventories, and vital information needed in the immediate post-disaster environment including:

- A process for identification of vacant, habitable hotel and motel units.
- Coordination with real estate representatives/property managers for identification of vacant rental properties and property owners of vacant land.
- Identification of vacant lands for potential disaster housing community sites.
- A process for expedited permitting procedures, or temporary waiver of zoning restrictions which may inhibit the disaster housing efforts.

Shelter Phase (0-21 days)

Identify locations of primary risk shelters, special needs shelters, and secondary shelters, which serve as an emergency evacuation refuge prior to, during, and in the post-disaster environment. Local governments can work to ensure all evacuation shelters are constructed to meet storm-resistant standards.

Transitional Housing (Up to 60 days)

Transitional Housing fills the gap between emergency shelters (such as schools, tents, etc.), and permanent housing. When emergency shelters are no longer sufficient or available and traditional interim housing is not yet available, communities may use transitional housing. Transitional housing includes:

- Hotel and Motel Placement
- Rapid Temporary Roofing and Repairs
- Convention Centers, Community Centers and FEMA domes (Congregate Shelters)

Interim Housing (Up to 18 months)

Interim housing is provided during the intermediate period (generally up to 18 months or the maximum amount of financial assistance available) between emergency sheltering and the securing of a permanent housing solution by the disaster survivor. Options for interim housing vary greatly and may include:

- Private Rental Properties
- Existing Government-Owned Housing Projects
- Direct Housing (Factory Built Housing)

Disaster Recovery Alternative Housing Study

The Disaster Recovery Alternative Housing Study is an ongoing study funded by GLO that will analyze and evaluate alternative housing options. The study aims to determine if innovative solutions exist for accommodating disaster survivors; including those with low- to moderate-incomes. The first phase of this study recommended four vendors for prototype testing under the second phase. The second phase will include prototyping of recommended housing typologies that can be deployed as interim housing solutions.

Permanent Housing Phase (18 Months and Beyond)

Strategies HBS-1, HBS-2, and HBS-3 outline ways to increase housing stock in the region at various price points. Implementing these strategies are key in ensuring there is organization capacity and framework in replacing lost units after a disaster.

IMPLEMENTATION STEPS

Site New Construction in Low-Risk Areas

1. Evaluate current county-wide Flood Damage Prevention Ordinances and update, if feasible, to higher standards.
2. Discourage development in high-risk areas where possible by incorporating siting considerations in masterplans and comprehensive plans.

Update or Adopt Storm-Resistant Building Codes

1. Evaluate current building code and consider adoption of more stringent standards. If the town or city has yet to adopt a building code, assess feasibility of adoption.

Detail a county-wide framework for a post-disaster housing strategy

1. Support the implementation of the recommendations from 'Disaster Recovery Alternative Housing Study' where appropriate.

CO-BENEFITS



IMPLEMENTATION PARTNERS

Lead Partners

- County
- Municipality

Support Partners

- TDEM

POTENTIAL FUNDING SOURCES

Local Budgets

- County Budget
- Municipal Budget

State Funding Sources

- GLO Community Development Block Grant - Disaster Recovery (CDBG-DR)

Federal Funding Sources

- FEMA - HMGP Grant
- FEMA - EMPG Grant
- FEMA - PDM Grant
- FEMA - BRIC Grant
- HUD Community Development Block Grant (CDBG)
- U.S. Army Corps of Engineers (USACE) Blue Roof Program
- USACE Rapid Temporary Repair program
- EDA Grants

RESILIENCE TOOLBOX - BEST PRACTICES

Higher Floodplain Management Standards- Aransas Pass – Texas

Aransas Pass will initiate a comprehensive plan update for Aransas Pass, which incorporates higher floodplain management standards. Allocated budget includes staff time (operating funds) and Texas Department of Agriculture Community Development Block Grant funds (\$55,000 has been awarded and the city will provide \$21,745 in matching funds, for a total of \$76,754).

[Additional information](#)

Palm Beach County Disaster Housing Strategy, Palm Beach County – Florida

This strategy details the full array of interim housing options available to Palm Beach County leadership in the aftermath of the disaster. Based upon the severity and magnitude of the impact, decision-makers will have the flexibility to select the appropriate interim housing strategies including placement of displaced residents within local hotels, vacant rental units, or within FEMA-provided manufactured housing units. This strategy ensures that needs of special populations within the community are addressed.

[Additional information](#)

HBS-5 Assess options to reduce financial impacts on communities and low- to moderate-income residents who are impacted by increasing costs for flood and wind insurance.

STRATEGY TYPE	IMPLEMENTATION TIMELINE	DOMAIN OF RESILIENCE
Assessment/Plan; Program	Short term (1-3 years) Evaluate feasibility	Withstand; Recover
	Medium term (4-7 years) Make necessary investments	
	Long term (7-10 year) Consider other community-based insurance options	

Community Rating System (CRS) Program

A potential program to consider for achieving the aim of this strategy is the National Flood Insurance Program’s (NFIP) Community Rating System (CRS). This program provides economic incentives to improve community and individual property resilience to natural and human-induced hazards. This is a voluntary program for NFIP-participating communities. The goal of the rating system is to reduce flood damage to insurable property through a comprehensive approach to floodplain management. The program provides incentives in the form of premium discounts for communities based on the rating it achieves. The program rates communities from Class 1 to Class 10. For CRS-participating communities, flood insurance premium rates are discounted in increments of 5% (i.e., a Class 1 community would receive a 45% premium discount, while a Class 9 community would receive a 5% discount). Credit points are allotted based upon completion of 19 possible initiatives identified by the program.

Community Flood Insurance

Community Flood Insurance is a single policy purchased by a local governmental or quasi-governmental body which covers a group of designated properties that can be for low- to moderate-income households. The responsible entities can negotiate with insurance providers to offer better premiums.

Emerging Practice – Parametric Insurance

With a parametric policy, claims are based on the occurrence of a predefined triggering event, as well as some basic evidence of loss. The claims payment itself is a set amount for the triggering event instead of being based on an assessment of damage at each specific property. For example, in the case of a flood, the trigger for payment would be the flood stage as measured by water reaching a specific height on a flood gauge. Different gauge heights would trigger different payment amounts. This precludes the need for an assessor to visit each property. This policy introduces “basis risk,” the risk that the payment could be lower or higher than the actual damages. The premium paid for the policy is determined by modeling the expected loss when an event occurs and the payout it would trigger, weighted by the likelihood of its occurrence. Parametric insurance enables a more rapid payment than indemnity insurance because it requires no loss adjustments to assess the actual damage after an event. The region can evaluate adoption of parametric insurance programs.

IMPLEMENTATION STEPS

1. Counties will evaluate feasibility of participating in the Community Rating System (CRS) program.
2. Plan for and make necessary investments to meet program requirements.

CO-BENEFITS



IMPLEMENTATION PARTNERS

Lead Partners

- County
- Municipality

Support Partners

- TDEM

POTENTIAL FUNDING SOURCES

Local Budgets

- County Budget
- Municipal Budget

State Funding Sources

- GLO Community Development Block Grant - Disaster Recovery (CDBG-DR)

Federal Funding Sources

- FEMA - BRIC Grants

RESILIENCE TOOLBOX - BEST PRACTICES

County Wide CRS Program – Pinellas County, Florida

Pinellas County actively participates in the NFIP and the CRS on behalf of residents living in unincorporated areas. From October 2014 to September 2015, an audit was conducted on the CRS program by Insurance Services Office, Inc. (ISO), contractors for FEMA. Prior to this audit, Pinellas County was a Class 7, which provided residents and businesses in the unincorporated limits of the county’s Special Flood Hazard Area (SFHA) a 15% discount on their flood insurance premiums. The result of this audit was an increase in rating from a Class 7 to a Class 5. As of May 1, 2016, residents and businesses of the unincorporated limits of the county’s SFHA will receive a 25% discount on their flood insurance premiums, saving them over \$5,300,000 annually.

[Additional information](#)

Aransas County Multi-Jurisdictional Hazard Mitigation Action Plan – Texas

The Aransas County Multi-Jurisdictional Hazard Mitigation Action Plan (2017) proposes an objective to utilize the Community Rating System (CRS) to incentivize higher floodplain management standards for cities in the county. Adoption at the county level will benefit unincorporated areas in addition to cities and towns.

[Additional information](#)

GOAL 4 - ECONOMIC DEVELOPMENT & DIVERSIFICATION

Source: AECOM



Public Input:

"We must invest in rural communities long before natural disasters occur. For example, provide the resources to upgrade infrastructure, build SPEC Buildings, bring back rail service, train our workforce, build new housing."



04. ECONOMIC DEVELOPMENT & DIVERSIFICATION

Foster regional resilience through strategies which encourage economic inclusion and diversification to provide stability during downturns and in response to natural disasters.

Select any icon to skip to that strategy

Objectives



Support business retention and expansion efforts focused on existing industry clusters that are positioned for future growth. Expand site selection efforts to ensure that certified development sites are available throughout the entire nine-county area.



Enhance innovation ecosystems, or interconnected networks for knowledge sharing, to support workforce development and new business incubation.



Clarify career pathways for “in demand” occupations that allow for clear trajectories to promotions and higher wages based on skills, abilities, and certifications.



Promote business continuity and preparedness to withstand and recover from hurricanes, floods, and droughts.

Strategies



Expand capacity of EDCs across the region to coordinate and pursue economic resilience and development initiatives. Support local and regional economic development and diversification through focused business retention and expansion efforts.



Provide resources for branding and marketing locally produced goods to expand global market awareness and demand.



Develop a collaborative of workforce centers, workforce training programs, higher education institutions, and high schools to identify “in demand” occupations that cut across multiple industry clusters, aligned with transferable skills, abilities, and certifications.



Enhance collaboration across research entities, universities, municipalities, and workforce training programs to grow an innovation ecosystem. Start a business incubation program to encourage startup of local businesses.



Promote strategic investments in the healthcare industry that will improve economic opportunity and provide greater access to quality care throughout the region.



Collaborate with EDCs, chambers of commerce and municipalities to establish a ‘Business Recovery One-Stop Center’ to provide resources for businesses impacted by climate shocks or stresses.



Improve access to job opportunities by collaborating with agencies that provide transit services and large employers to expand access to transit.

EDD-1 **Expand capacity of EDCs across the region to coordinate and pursue economic resilience and development initiatives. Support local and regional economic development and diversification through focused business retention and expansion efforts.**

STRATEGY TYPE	IMPLEMENTATION TIMELINE	DOMAIN OF RESILIENCE
Program; Assessment/Plan; Personnel; Partnership	Short term (1-3 years)	Anticipate; Withstand; Recover

The Development Corporation Act of 1979 gives cities the ability to finance new and expanded business enterprises in their local communities through EDCs. EDCs can facilitate:

- Business Retention & Expansion (BR&E) programs
- Lead industry attraction efforts
- Provide assistance for grant writing
- Aid in business continuity post disasters (further expanded in strategy EDD-6)
- Workforce development
- Loans and grants
- Downtown revitalization
- Coordinated investment in capital projects (described further in strategy OC-2)
- Fund infrastructure improvements
- Purchase and consolidate properties for redevelopment

At present, there are several local and county-wide EDCs that support community and economic development. Capacity can be expanded by increasing coverage of existing entities or establishing new entities where this is not feasible.

Business Retention and Expansion (BR&E) Efforts
On average, roughly 75% of new jobs are created by existing companies rather than new companies, so strategies that encourage existing firms to grow at a faster rate tend to yield more jobs over time. While private sector companies across the study area have the potential to better access regional and global markets using assets such as the

Port of Corpus Christi, global markets are not defined by a “level playing field.” This suggests that strategies need to encourage more context-specific positioning for future opportunities. Local companies would benefit from more focused BR&E efforts.

One cornerstone of retention and expansion efforts is focused business outreach, where local companies are engaged on a consistent annual basis to provide input on market swings, new opportunities, and company needs. As part of this study’s engagement process, stakeholders verified that their primary focus has been on the retention and expansion of businesses, rather than attraction.

AECOM analyzed the local business climate through an industry cluster analysis that considered industry concentration, industry diversity, and markets with potential for growth in the future. The analysis leverages job creation data across the top 30 U.S. Metropolitan Statistical Areas (MSAs) based on job growth and industry concentration to examine trends for local industries that are best positioned for near-term growth. These are industry clusters with a location quotient (LQ) between 0.8 and 1.60. LQ is an analytical statistic that measures a region’s industrial specialization relative to a larger geographic unit. The expansion strategy can leverage this data to deliberately position for expanding industries positioned for growth.

Figure 38 shows the LQ of industry clusters across the entire region and the percentage of jobs in industry clusters with an LQ between 0.8 and 1.6 by county. It is apparent that rural counties have fewer clusters positioned for growth compared to urban counties. Supporting and increasing capacity at local EDCs can serve as a critical first step in expanding BR&E. This can be done by encouraging partnerships with Chambers of Commerce, Main Street organizations, and other business-oriented organizations that can extend the capacity of existing regional EDCs to provide support. Some counties have economic development entities at both the local and county levels, which could partner for increased capacity to serve existing businesses. Collaboration with a broad range of partners can provide the private sector with clarity on new initiatives (e.g. workforce training and apprenticeship programs, loan programs, incentives), and connect businesses with relevant public/private partners.

Business Attraction
When seeking to attract new industry, EDCs should focus on narrow industry clusters for targeted efforts. The information in **Figure 38** displays industries that are already positioned for growth and could be targets for attraction efforts along with expansion of existing local businesses. These efforts can be supported by:

- Identifying and marketing “ready-to-go” sites by identifying parcels that can be certified using GIS tools and the local institutional knowledge of partners such as AEP, BNSF, Pacific Union and KCS (further detailed in strategy I-1)
- Coordinating investment for infrastructure improvements such as water and sewer connections, or fiber optics to improve services.
- Coordinating with local governments regarding tax incentive packages.

Value Add Opportunities
EDCs can examine industry supply chains within the study area to evaluate potential expansion and value add opportunities based on regional and global trends. One example is locally-grown cotton and the opportunity to evaluate the potential for in-region processing of cotton into fabric.

Currently, locally-grown cotton is ginned, then sent overseas for processing. A second example might be the opportunity to produce personal protective equipment (PPE), which will continue to be in demand post COVID-19. Given local strength in cotton and plastics, the potential to establish local production of PPE and test swab manufacturing in the study area should be considered.

- Focus on Agri-tech**
EDCs, particularly in rural communities, can focus on promoting agri-tech solutions to diversify local agriculture businesses. Efforts can include:
- EDCs can coordinate with Texas A&M agriculture extension and Texas A&M University – Kingsville to promote local innovation and research in life science and agriculture practices. Facilitate university-industry partnerships to pilot projects.
 - EDCs can organize workshops/presentations/conventions so agriculture companies can present product opportunities including genetically modified crops and new approaches for irrigation. Evaluate financial feasibility and growing potential of produce.
 - EDCs can facilitate dialogues on the effective use of farmer cooperatives, contract farming, and formation of export cooperatives to access new markets.

Implication for Resilience
The region, and rural communities in particular, can benefit from expanding capacity of EDCs, as they play an integral role in local economic development through their programs and initiatives. Expanded capacity will support initiatives that help anticipate, withstand, and recover from both economic downturns and climate shocks/stresses.

A robust BR&E program will create a broader and diverse economic base, which will aid the region in withstanding economic and climate shocks and stresses. Retention efforts are particularly important after natural disasters to ensure businesses have resources to recover and remain in the study area. Attraction efforts in rural communities through marketing “ready-to-go” sites can potentially attract new industries to the community and increase its tax base.

IMPLEMENTATION STEPS

Expand EDC Capacity and Coverage

Expand EDC capacity and geographic coverage, particularly in rural counties. Increased capacity can support both BR&E and attraction efforts.

1. Create an inventory of county-wide and municipal EDCs in the region. Assess their staffing, technical capacity, and geographic coverage.
2. Expand geographic coverage of existing EDCs to rural communities that currently are not covered by a countywide or local EDC.
3. If existing EDCs do not have capacity to expand geographic coverage, initiate a process to establish new entities in unserved areas.

BR&E Program

1. Organize a database of available buildings and sites in the program. This dataset could include assessed value and taxes, last sale date and amount, availability for sale or rent, total square footage, building amenities, zoning class, historic status, and building condition. Businesses can use this data to compare possible properties. (This step can be implemented alongside the GIS inventory strategy described in strategy OC-3 and identification and marketing of “ready-to-go” sites described in strategy I-1)
2. Conduct regular outreach, surveys, and visitation. The purpose of this survey could be to identify immediate problems facing a business, perceptions of the community as a place to do business, training and technical assistance needs, or future plans.
3. Create informational resources and marketing material to promote existing local, regional, and national programs that could assist businesses. This should be organized in easy to use and readily distributable literature or put on a public web site.

CO-BENEFITS



IMPLEMENTATION PARTNERS

Lead Partners

- Economic Development Organizations
- County
- Municipality

Support Partners

- Council of Governments
- Metropolitan Planning Organizations
- Port Authorities
- Utility Providers
- Chambers of Commerce

POTENTIAL FUNDING SOURCES

Local Budgets

- County Budget
- Municipal Budget

Financing Mechanisms

- Local Sales Tax A and B
- Tax Increment Financing Districts
- Federal Opportunity Zones

Special Districts

- EDC Grants

Federal Funding Sources

- EDA Grants
- USDA Grants

RESILIENCE TOOLBOX - BEST PRACTICES

Rural BR&E: Swift County – Minnesota

Swift County is located in rural western Minnesota and has a small population of just 11,956 people. Local leaders decided to concentrate on improving the quality of life for rural farmers and diversifying agricultural enterprises as a means to focus on the agricultural economy. Programs initiated include encouraging greater involvement and leadership for rural women through a farmwoman forum, improved health care delivery for farmers by establishing an enrollment center in Swift County, promoting effective use of farmer cooperatives, and improved delivery of information on alternative agriculture enterprises.

[Additional information](#)

Chester County Economic Development Council (CCEDC), Chester County – Pennsylvania

CCEDC employs a proactive business-retention strategy that involves meeting with over 300 businesses each year to assess trends, challenges, and opportunities they and their respective industries face. Their website hosts resources on ways to start a business, financing options, and related workforce programs. It also provides resources on successful case studies, international business resources, and strategies for economic development of agricultural enterprises.

[Additional information](#)



Figure 38: Employment Growth by Industry Location Quotient

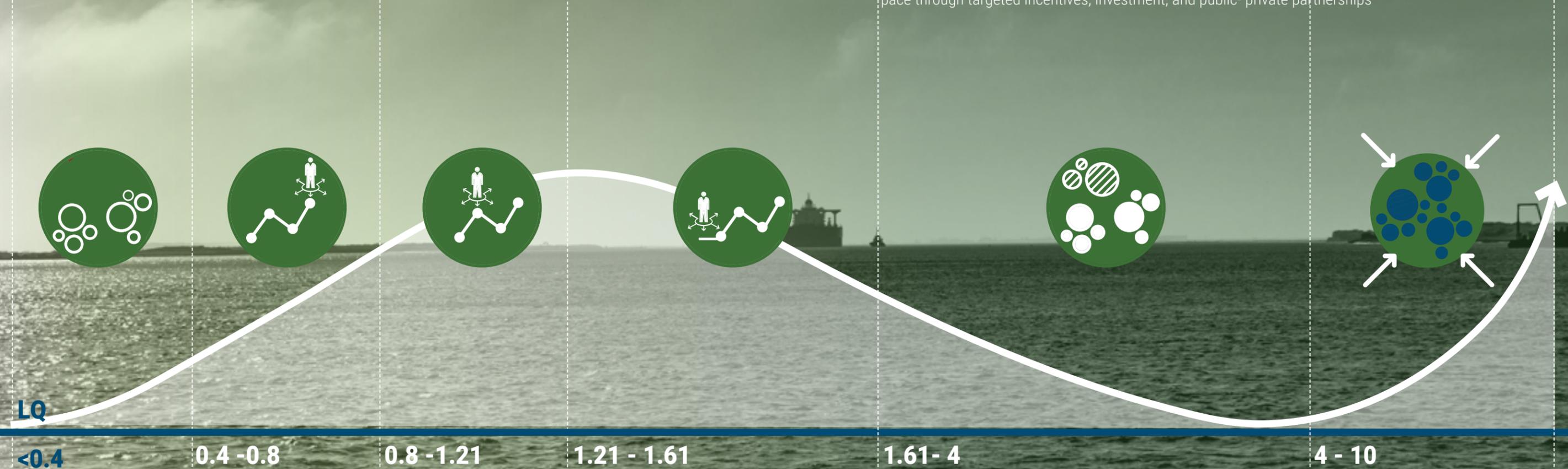
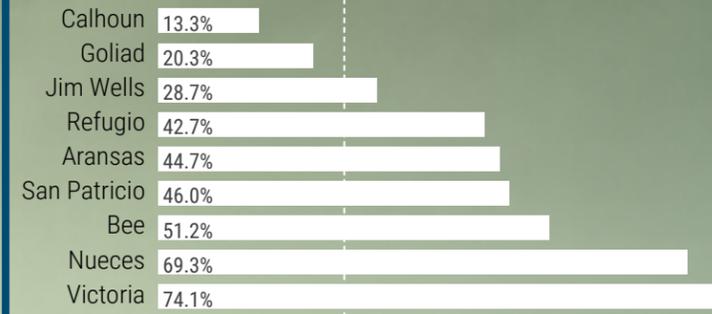


Figure 38 Indicates that the undeveloped and long-term clusters can be encouraged to grow at a faster pace through targeted incentives, investment, and public-private partnerships

LQ	<0.4	0.4 -0.8	0.8 -1.21	1.21 - 1.61	1.61- 4	4 - 10
	Undeveloped Clusters	Long-Term Growth Clusters	Medium-Term Clusters Clusters	Short-Term Growth Clusters	Mature or Developed Clusters	Supersectors
	Cluster job LQs below 0.4 are viewed as undeveloped, and have very low probability of large job increases.	Clusters with LQs between 0.4 and 0.8 are considered long-term growth clusters, meaning that the clusters have growth potential, but are currently under-developed, and organic job creation is less likely without policy intervention.	Job growth tends to be most consistent in LQs between 0.8 and 1.2 , which are considered intermediate-term growth (medium-term) clusters.	Cluster with LQs between 1.2 and 1.6 are considered short-term growth clusters, which tend to already be well concentrated locally relative to the U.S. average and can expect higher rates of development and job creation.	Clusters with job LQs between 1.6 and 4 are considered mature or developed in context with U.S. averages. While these clusters can continue to develop, in statistical terms, volatility in job creation is increasingly common (i.e., job losses as well as increases).	Unique to the study area are industry clusters with dramatically higher levels of industry concentration, as defined by LQs between 4 and 10 and called Supersectors. Locally, upstream oil and gas supports an LQ of 10, dramatically above the U.S. average. This is linked to a unique ability to access global markets, which in principal should support significantly higher growth rates. In context with this specialization, related industries could see benefits and grow at a faster pace (including rubber, chemicals, and manufacturing).

Percentage of Jobs Between LQ 0.8 to 1.6 (2019)



Location Quotient (LQ) is an analytical statistic that measures a region's industrial specialization relative to a larger geographic unit. AECOM's analysis leverages job creation data across the top 30 US Metropolitan Statistical Areas (MSA) based on job growth and industry concentration to reinforce clear trends for clusters locally that are best positioned for near-term growth.

LQ

<0.4

0.41 - 0.8

0.81 - 1.20

1.21 - 1.60

1.61 - 4

4.1 - 10

Undeveloped Clusters

Long-Term Growth Clusters

Medium-Term Growth Clusters

Short-Term Growth Clusters

Mature or Developed Clusters

Supersectors

- Wood Product Manufacturing
- Transportation Manufacturing
- Research
- Sensors and Instruments
- IT /Software

- Mineral Product Manufacturing
- Media
- Agriculture and Related
- Metal Manufacturing
- Administrative Services
- Recreation
- Residential Construction
- Finance /Insurance
- Professional Services
- Alternative Energy
- Wholesale and Distribution
- Civic

- Food
- Beverage
- Education
- State and Local Government
- Federal Civilian
- Utilities
- Tourism
- Transportation Services
- Support Services
- Retail

- Human Health
- Food Services
- Construction Contractors
- Federal Military

- Plastic /Rubber Manufacturing
- Mining - Other
- Manufacturing - Other

- Oil and Gas Upstream
- Heavy Construction

EDD-2 Provide resources for branding and marketing locally produced goods to expand global market awareness and demand.

STRATEGY TYPE	IMPLEMENTATION TIMELINE	DOMAIN OF RESILIENCE
Program	Medium term (4-7 years)	Withstand

The region produces products for global export, but its core products are not differentiated (e.g. commoditized bulk cotton or cattle (Figure 39)). The intent of this strategy is to differentiate regional products and move them upmarket through a deliberate branding effort.

The region has global access through its ports, but its core markets remain regional. Figure 40 presents the consequential geographic end markets. Future study area economic opportunities will correlate with the scale of market access into larger, and faster growing “mega-regions” and the supply chains that connect them, as defined in Figure 40. These areas, shaded in grey, account for about 70% of all jobs and population in the US. While the study area itself is a region of consequence (within excess of 650,000 residents), future market opportunities will increasingly link with connections to markets across the larger Texas Triangle.

Differentiating products manufactured/produced in the study area through branding and marketing will increase their value and profitability in the buyer-driven global market. Branding creates consumer demand, giving producers leverage in negotiations with large buyers. To distinguish one commodity product from another, branding efforts can combine marketing expertise, an efficient supply chain, financial resources, and effective organization. For example, the region grows high quality cotton which could then be branded and marketed as ‘Coastal Texas Cotton’. As a first step, encourage manufacturers to collaborate with the ongoing statewide branding campaign ‘GoTexan’ to establish their presence as a product produced or manufactured in Texas.

IMPLEMENTATION STEPS

1. Evaluate organization capacity to undertake this effort.
2. Evaluate feasibility of products that can be differentiated.

Figure 39: Ranching Operations



Source: AECOM

CO-BENEFITS



IMPLEMENTATION PARTNERS

Lead Partners

- Economic Development Organizations
- Chambers of Commerce
- Industry Partners
- Universities and Colleges

Support Partners

- Council of Governments
- County
- Municipality

POTENTIAL FUNDING SOURCES

Financing Mechanisms

- Local Sales Tax A and B

Special Districts

- EDC Grants

State Funding Sources

- TAD Funds

Federal Funding Sources

- FEMA - BRIC Grants

Federal Funding Sources

- University Research Funds

RESILIENCE TOOLBOX - BEST PRACTICES

Honeycrisp Apple – Minnesota

Honeycrisp is an apple cultivar (cultivated variety) developed at the Minnesota Agricultural Experiment Station's Horticultural Research Center at the University of Minnesota, Twin Cities. It was developed in 1974 and released in 1991. Honeycrisp apples are projected by the U.S. Apple Association to be the fifth most grown apple in America. This is an example of a product differentiated through university research.

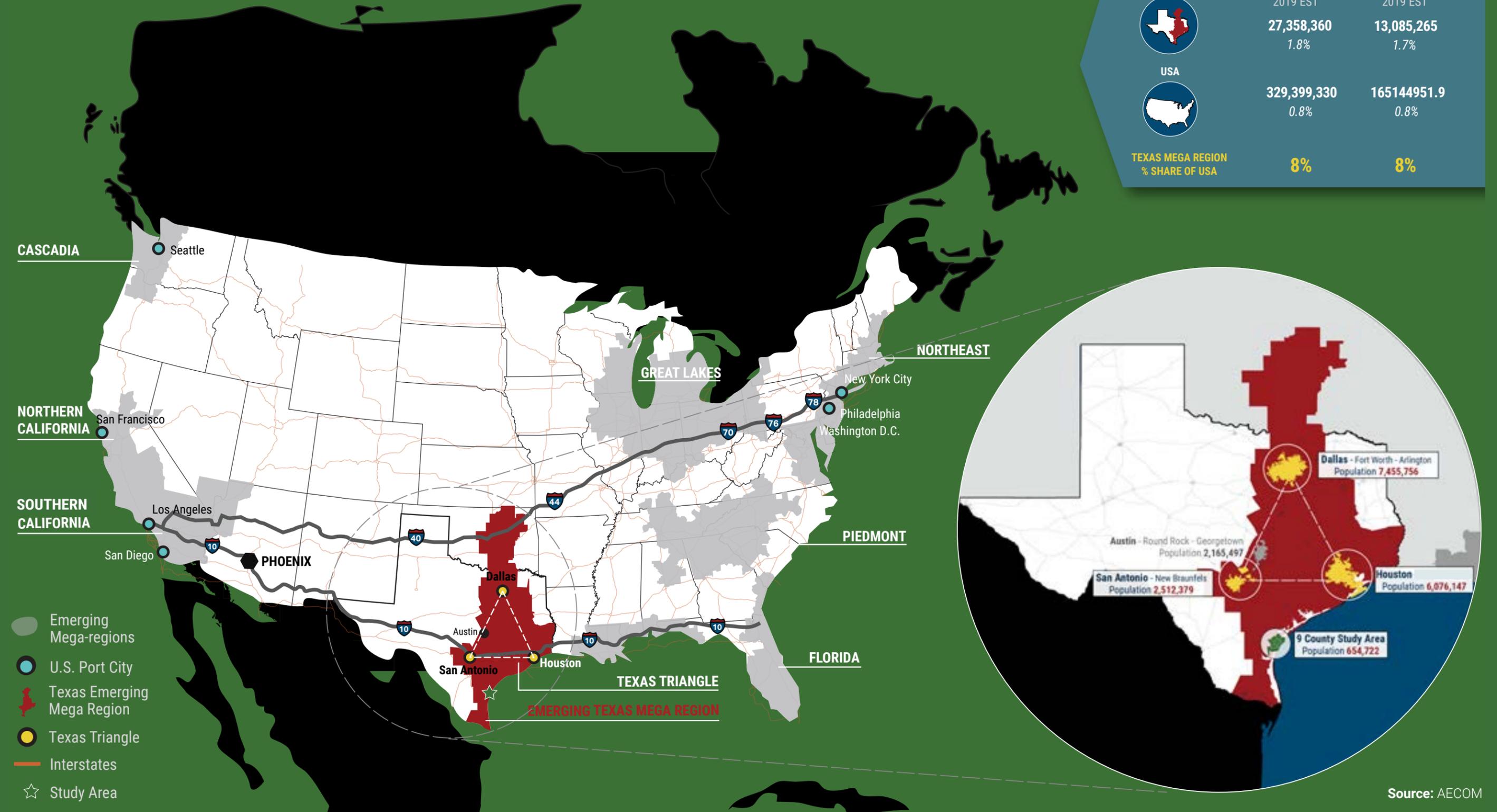
[Additional information](#)

Grown in Idaho – Idaho Potatoes

The Idaho Potato Commission created the Idaho Potatoes brand more than 74 years ago. The commission and the 'Grown In Idaho' brand represent a significant market for a single agricultural product. The Idaho Potato branding program hosts more than 28 varieties of potatoes, ranging from the popular Russet and Yukon to more exotic varieties like the Purple Peruvian and Russian Banana. Individual farms and producers can apply to be listed as an official Idaho Potato licensee. The Idaho Potato Commission licenses more than 190 shippers, processors, growers, organic suppliers, and exporters of Idaho Potatoes.

[Additional information](#)

Figure 40: Consequential Geographic End Markets



Source: AECOM

EDD-3

Develop a collaborative of workforce centers, workforce training programs, higher education institutions, and high schools to identify “in demand” occupations that cut across multiple industry clusters, aligned with transferable skills, abilities, and certifications.

STRATEGY TYPE	IMPLEMENTATION TIMELINE	DOMAIN OF RESILIENCE
Assessment/Plan; Program; Partnership; Educational	Short term (1-3 years) Evaluate feasibility	Withstand; Recover

The region’s higher education institutions, school districts, and workforce development partners have established programs and services in response to growing workforce demands. Stakeholder interviews reinforced the reality of tension caused by competition between industries to attract similar occupations. For example, within the construction field, heavy construction offers more lucrative wages and attracts more skilled workers compared to the residential construction sector. This results in a shortage of workers for housing construction and impacts housing affordability. These kinds of challenges reinforce the need for strategies which encourage formation of more deliberate pathways for career advancement after high school, whether into the trades, middle-skill occupations, or professional services. Career pathways allow workers to gain skills and move to higher wage jobs, possibly linked to continuing education, accreditations, industry recognized certification, apprenticeship, etc.

Expanding the qualified workforce and creating career pathways in the construction trades can be particularly beneficial in supporting recovery after hurricanes. This can include trades such as roofing, masonry, carpentry, concrete finishing, plumbing, HVAC, electricity, heavy equipment operations, carpet laying, window installation, plastering, and welding. At present, the region has at least three apprenticeship programs for masonry and HVAC.

Website to Communicate Pathways

A website can be developed to communicate pathways to upskill and move to higher wage jobs. The Colorado Career Actions Tool is an example of this. The website provides clear information on in-demand occupations, occupation pathways with incremental wages, necessary training or qualification needed to progress within the pathway, and local colleges or training centers that provide the courses. **Figure 41** shows a sample of information provided by this tool. Such a tool will provide clear direction for high school students and new graduates on navigating a career with or without a college education.

Other Programs

The region’s communities can create opportunities for paid internships and apprenticeship programs for high school students. Workforce partners can also provide training for high school career counselors on in-demand career opportunities in the region.

Employment Assistance Post Storm Events

Workforce centers and municipalities can expand ongoing programs (such as mobile camps) that provide assistance for displaced employees after storm events. These programs can offer assistance to file for unemployment claims and connect with other immediate job opportunities. This will help retain community members and support jobs aiding recovery efforts.

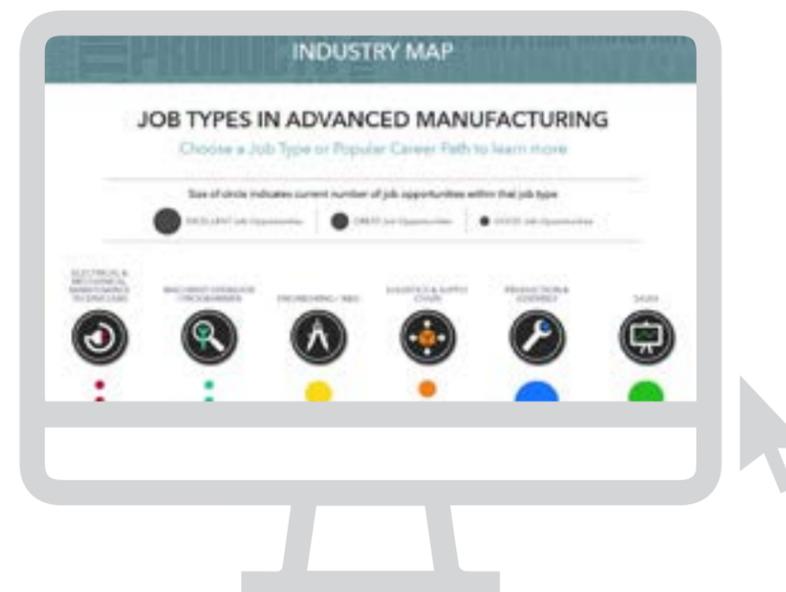
IMPLEMENTATION STEPS

The region’s higher education institutions, school districts, and workforce development partners can:

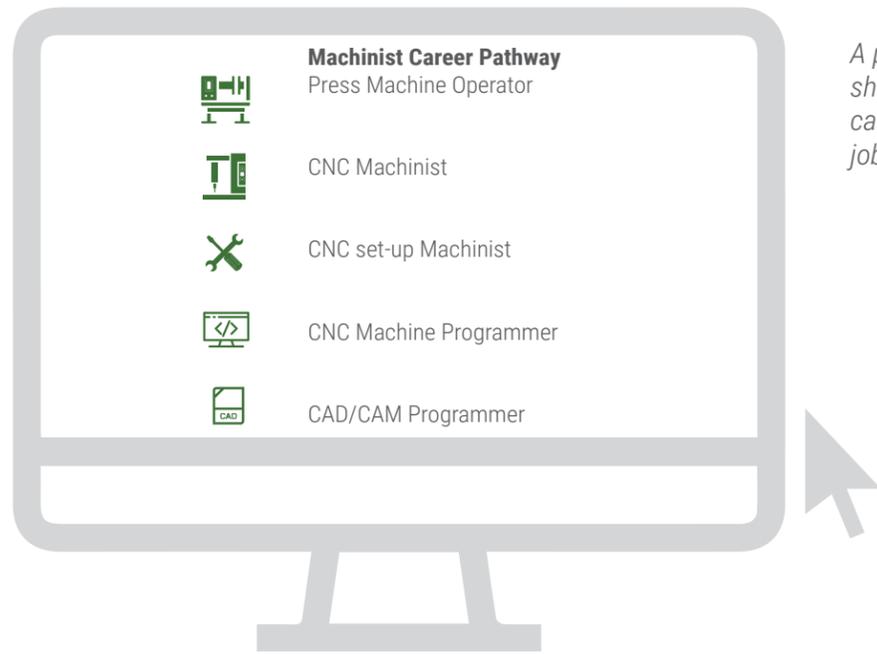
1. Continue to identify employment growth needs across target industries for in-demand occupations and assess regional labor supply to meet current and projected demand.
2. Conduct outreach to regional economic and workforce development partners to understand existing programs and services. Outreach can also yield useful information regarding relevant growth or expansion plans to address known workforce needs.
3. Identify career pathways to transition to higher wage occupations. The transition can be through continuing education, accreditations, industry-recognized certification, apprenticeship, or other means.

4. Communicate career pathways for in-demand occupations to the workforce and students (population that will enter the workforce). These can be communicated through an outreach website or marketing materials distributed through employers and other workforce development partners/events.
5. Along with career pathways, publicize information on training available in local and regional institutions or training centers, as well as scholarships or funding options to access this training.
6. Promote communication of resources and pathways to green jobs. Green jobs are jobs that contribute to preserve or restore the environment, whether in traditional sectors such as manufacturing and construction, or in new, emerging green sectors such as renewable energy and energy efficiency.

Figure 41: Colorado Career Actions Tool



Website shows information on job types and career pathways in advanced manufacturing.



A pathway within each job type shows incremental positions for career growth, a description of the job, and average pay per hour.



A page is dedicated to each job type. The page provides a description of the demand, average salary per hour, work environment, required education, and local qualified programs to acquire the necessary training. The page also shares links to job openings for the job type, top employers, and regions with largest demand.

Source: Colorado Career Actions Tool

CO-BENEFITS



IMPLEMENTATION PARTNERS

Lead Partners

- Universities and Colleges
- Skill Training Centers
- Non-Profits
- Workforce Boards
- Economic Development Organizations
- Chambers of Commerce
- Industry Partners

Support Partners

- Council of Governments
- Metropolitan Planning Organizations
- Port Authorities
- Utility Providers
- Chambers of Commerce

POTENTIAL FUNDING SOURCES

Special Districts

- EDC Funds

State Funding Sources

- TWC - Skills Development Fund

Federal Funding Sources

- U.S. Department of Labor - Strengthening Community Colleges Training Grants
- Youth Apprenticeship Readiness Grant Program
- Young Adult Reentry Partnership (YARP)
- Workforce Opportunity for Rural Communities (WORC)
- Fostering Opioid Recovery Through Workforce Development Grant

Private and Non-Profit sources

- Employer sponsored training programs

RESILIENCE TOOLBOX - BEST PRACTICES

Workforce Blueprint 2 – Southern Nevada

The Las Vegas Global Economic Alliance (LVGEA), Las Vegas Metro Chamber of Commerce (LVMCC), and Workforce Connections teamed up to unite the business community around a comprehensive workforce strategy known as Workforce Blueprint 2.0. Its goals are to: identify Southern Nevada's current and future workforce needs, identify education and training capacity to meet workforce needs along with corresponding gaps and/or surpluses, and advocate for fully aligned education and training systems.

[Additional information](#)

Ranken Community Development Corporation (RCDC) – Illinois

Ranken Technical College established the Ranken Community Development Corporation (RCDC) in April 1994. The program combines the technical skills of its students and faculty with the need for affordable housing. The organization has built more than 50 homes to date. For each house, students and faculty members from Architectural Technology, Carpentry and Building Construction Technology, Plumbing Technology, HVAC and Refrigeration Technology use their skills to build houses. Once the houses are completed, they are sold and proceeds are then used to build more homes and involve future students in home building projects.

[Additional information](#)

EDD-4 Enhance collaboration across research entities, universities, municipalities, and workforce training programs to grow an innovation ecosystem. Start a business incubation program to encourage startup of local businesses in the retail, food, product manufacturing, and software/technology industries.

STRATEGY TYPE	IMPLEMENTATION TIMELINE	DOMAIN OF RESILIENCE
Partnership; Program	Long term (7-10 years)	Withstand

An innovation ecosystem refers to interconnected networks of entities that collaborate around a shared set of technologies, knowledge, or skills. These entities work cooperatively and competitively to develop new products and services, with outcomes that encourage entrepreneurship and new company formation. Creating such opportunities in rural communities will help encourage economic diversification. **Figure 42** shows the generalized components of an innovation ecosystem. Internet connectivity is pertinent for communication, collaboration, and accessing global markets and trends, particularly in rural areas. Strategy I-2 expands on ways to improve internet connectivity in the region.

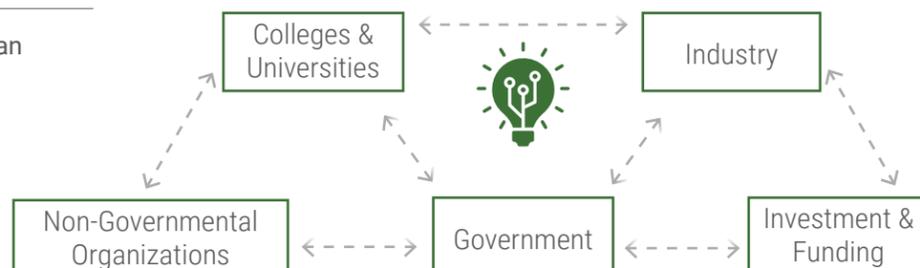
Formal Accelerator and Incubator Programs

Start a business incubation program to encourage startup of local businesses in the retail, food, product manufacturing, and software/information technology industries. These programs directly support entrepreneurs by providing information on the regulatory environment and guidance on ways to scale operations, introduction to potential investors and sources of capital, and additional skill development resources to help them start and scale their businesses.

IMPLEMENTATION STEPS

1. Convene a network of interested partners to exchange information on ongoing research and startup efforts. Identify ways to support these efforts.
2. Create physical places such as co-working spaces or dedicated innovation/research districts. These spaces enable intersections for collaboration and partnerships and help create a visible place for entrepreneurial culture to develop.
3. Enable local institutions of higher education to take the lead in connecting university R&D, students, and industry partners. They can become anchors and centers for local innovation.
4. Create a formal accelerator and incubator program to support businesses and startups. Identify loan programs, R&D incentives, and attract investors to the program.
5. Connect entrepreneurs with workforce training programs to supplement additional skills needed.

Figure 42: Components of an Innovation Ecosystem



Source: AECOM

CO-BENEFITS



IMPLEMENTATION PARTNERS

Lead Partners

- Universities and Colleges
- Economic Development Organizations
- Business Accelerator and Incubator Programs

Support Partners

- Private Investors
- Municipalities

POTENTIAL FUNDING SOURCES

Local Budgets

- Municipal Budget

Special Districts

- Economic Development Corporations

State Funding Sources

- Texas Product Development and Small Business Incubator Fund
- Texas R&D Credit

Federal Funding Sources

- USDA Rural Business Investment Program
- USDA Small Business Innovation Research Grants
- SBA Loan Programs
- Small Business Innovation Research
- Small Business Technology Transfer Programs

Private and Non-Profit sources

- Higher Education Institutions R&D Funds
- Private Investors

RESILIENCE TOOLBOX - BEST PRACTICES

Colby College Waterville – Maine

Colby launched DavisConnects, a hub that supports a culture of innovation and entrepreneurship. Students are connected with alumni entrepreneurs and participate in a pitch competition funded and judged by alumni. DavisConnects is also piloting a downtown incubation space where groups of 10-12 students work on small business startups—most of which are in the digital tech space. Many apply principles that have succeeded elsewhere, adapted to the rural Maine context. For regional and downtown investments, Colby worked closely with local colleges, as well as the Central Maine Growth Council. To connect students with technology opportunities, Colby has partnered with Maine’s three biggest research labs.

[Additional information](#)

Del Mar College Small Business Development Center - Del Mar College, Corpus Christi – Texas

The center promotes the growth, expansion, and improved management of local businesses by providing training programs and free business advising service. They also provide:

- Guidance with writing business plans
- Business loan information
- Resources for permit and licensing information
- Assistance with financial management
- Guidance on entering the global marketplace

[Additional information](#)

EDD-5 Promote strategic investments in the healthcare industry that will improve economic opportunity and provide greater access to quality care throughout the region.

STRATEGY TYPE	IMPLEMENTATION TIMELINE	DOMAIN OF RESILIENCE
Educational; Incentives; Partnership	Long term (7-10 years)	Withstand; Recover

Analysis reinforced basic concerns about the status and positioning of the existing health care constellation across the nine-county study area:

- Following recent hurricanes, the region lost some health care capacity, which has not yet been replaced, particularly in more rural areas.
- Within the region as a whole, total health care employment and industry concentration remain below average, suggesting that local health care providers are sending patients to hospitals outside of the region.

Local investments in health care are of crucial importance to cities and regions. Health care organizations have direct impacts on public health outcomes and quality of life through reinvestment in their communities and the promotion of economic development. Organizations like the National Healthcare Anchor Network (HAN) are working to ensure more health care systems remain as anchor institutions in the communities they serve. They can leverage this important role by investing in community programs such as affordable housing and education.

Access to health care increases quality of life, which is crucial for attracting and retaining families within the region. Health care jobs are also valuable sources of economic opportunity and mobility. The COVID-19 pandemic has highlighted the need for all communities to have health care access as a resilience measure; this especially applies to rural communities where access is often limited.

IMPLEMENTATION STEPS

1. Review specific geographic community parameters of all local hospitals (the Internal Revenue Service [IRS] requires hospitals to have clearly defined boundaries for the communities they serve) and overlay with areas that face the most significant health disparities.
2. Create partnerships with state organizations such as the Texas Health Resources Foundation, the Communities Foundation of Texas, and local Community Development Financial Institutions (CDFI) or Community Development Corporations.
3. Strengthen regional university and community college programs in health care-focused IT, healthcare administration, and direct healthcare service fields such as nursing and medical assistance services.
4. Evaluate creation of a health care foundation to bring local partners together.

CO-BENEFITS



IMPLEMENTATION PARTNERS

Lead Partners

- Economic Development Organizations
- Hospitals and Health Care Providers
- Health Care Related Non-profits
- Universities and Colleges

Support Partners

- Municipalities
- State partners (e.g. Texas Health Resources Foundation)
- National Healthcare Anchor Network

POTENTIAL FUNDING SOURCES

Financing Mechanisms

- Tax Incentives
- Low Interest Loan Programs

Private and Non-Profit Sources

- Philanthropic Donations
- Private Investors

RESILIENCE TOOLBOX - BEST PRACTICES

National Center for Rural Health Professions (NCRHP), Rockford – Illinois

NCRHP at the University of Illinois-Chicago Health Sciences Campus in Rockford not only has implemented a successful Rural Medical Education Program and Curriculum, but also launched a Rural Health Careers Camp. The camp is held each summer for high school students from rural Illinois communities to encourage them to pursue rural healthcare careers. Activities are facilitated by current rural healthcare professionals and offers rural healthcare professionals and offers student grant programs to address the rural healthcare shortage.

[Additional information](#)

K21 Health Foundation, Kosciusko County – Indiana

After a local non-profit hospital was sold, assets were channeled into the K21 Health Foundation, “a private foundation focused on improving health and wellness for the residents of Kosciusko County.” The Foundation works to identify local health needs across the county and provide grants and healthcare investments via a sustained endowment.

[Additional information](#)

EDD-6 Collaborate with EDCs, chambers of commerce and municipalities to establish a 'Business Recovery One-Stop Center' to provide resources for businesses impacted by climate shocks or stresses.

STRATEGY TYPE	IMPLEMENTATION TIMELINE	DOMAIN OF RESILIENCE
Program; Education; Partnership	Short term (1-3 years)	Anticipate; Withstand; Recover

EDCs can collaborate with local governments and economic development organizations to establish a 'Business Recovery One-Stop Center' that provides resources for businesses impacted by climate shocks or stresses. This center can:

- Integrate local, state, and federal resources available after an incident to help them recover.
- Engage and educate the business community in disaster preparedness and continuity plans.
- Provide programs for short-term/gap financing needs such as a bridge loan program, business grant program, and revolving loan fund.
- Bring local banks to the table to discuss how they can make business loans available to disaster-impacted businesses for recovery purposes. Although federal grants and disaster recovery loans are important resources, these resources take time to be distributed.
- Aid businesses in applying for funds distributed by FEMA, GLO and SBA post-disaster.

Strategy EDD-1 describes BR&E efforts EDCs can undertake.

It is critical to engage businesses right after a storm event, particularly for businesses with significant infrastructure damage. As part of an outreach strategy, EDCs and chambers can also conduct surveys to gauge level of impact on local businesses. EDCs can provide an inventory of vacant properties that may serve as temporary relocation for businesses that have experienced severe property damage. EDCs can also assist by helping residents file unemployment claims or search for their next job. This will help retain both residents and businesses within the community.

Aid Small Businesses in Developing Business Continuity Plans
 Large industries and chain establishments have the financial and personnel resources to assess damage and support businesses with recovery efforts after a storm. On the other hand, small businesses are less prepared and have fewer resources to recover from storm impacts. Business continuity planning is the process of considering how a business will stay in operation in the event of a disaster. It looks at the effects of interruptions in supply chains, production capacity, offsite records storage via cloud cords, cash flows, etc. and considers alternatives and strategies for protecting operations, assets, and personnel. EDCs can coordinate involvement and leverage resources from the business community after a disaster. They can take a leadership role in facilitating job recovery and stabilizing the community's economic base. EDCs can help small businesses by assisting in preparation of continuity plans. **Figure 43 and 44** show businesses, education and workforce assets located in high-risk zones. EDCs can prioritize outreach for assets in areas of high-risk.

- IMPLEMENTATION STEPS**
1. Identify organizations that can establish Business Recovery One-Stop Centers.
 2. Identify services the centers can provide, both ongoing efforts as well as additional that would benefit the region, based on the community's challenges.
 3. Identify and secure funding required for increasing staff capacity for outreach and training/workshop programs.

CO-BENEFITS



IMPLEMENTATION PARTNERS

Lead Partners

- Economic Development Organizations
- Chambers of Commerce

Support Partners

- Municipalities
- County
- Universities and Colleges
- Local Banks
- Local Businesses

POTENTIAL FUNDING SOURCES

Local Budgets

- County Budget

Financing Mechanisms

- Sales Tax A & B

Special Districts

- EDC Grants

State Funding Sources

- GLO - CDBG- DR Grants

Federal Funding Sources

- Philanthropic donations
- EDA Economic Adjustment Assistance
- SBA Small Business Development Centers Funds
- SBA Economic Injury Disaster Loans
- USDA Rural Development Disaster Assistance

RESILIENCE TOOLBOX - BEST PRACTICES

Galveston Economic Development Partnership (GEDP) and Financial Institution Partnership, Galveston – Texas

In Galveston, Texas, the lead economic development organization (GEDP) met with local banks shortly after Hurricane Katrina in 2005. The purpose was to discuss how these lenders could pool funds to assist local businesses if a hurricane were to strike the barrier island. The result was a multi-million dollar fund to provide local businesses with working capital (cleanup and emergency repairs) after a disaster. After Hurricane Ike struck Galveston in 2008, the fund was deployed immediately to assist small and midsized firms with urgent capital needs.

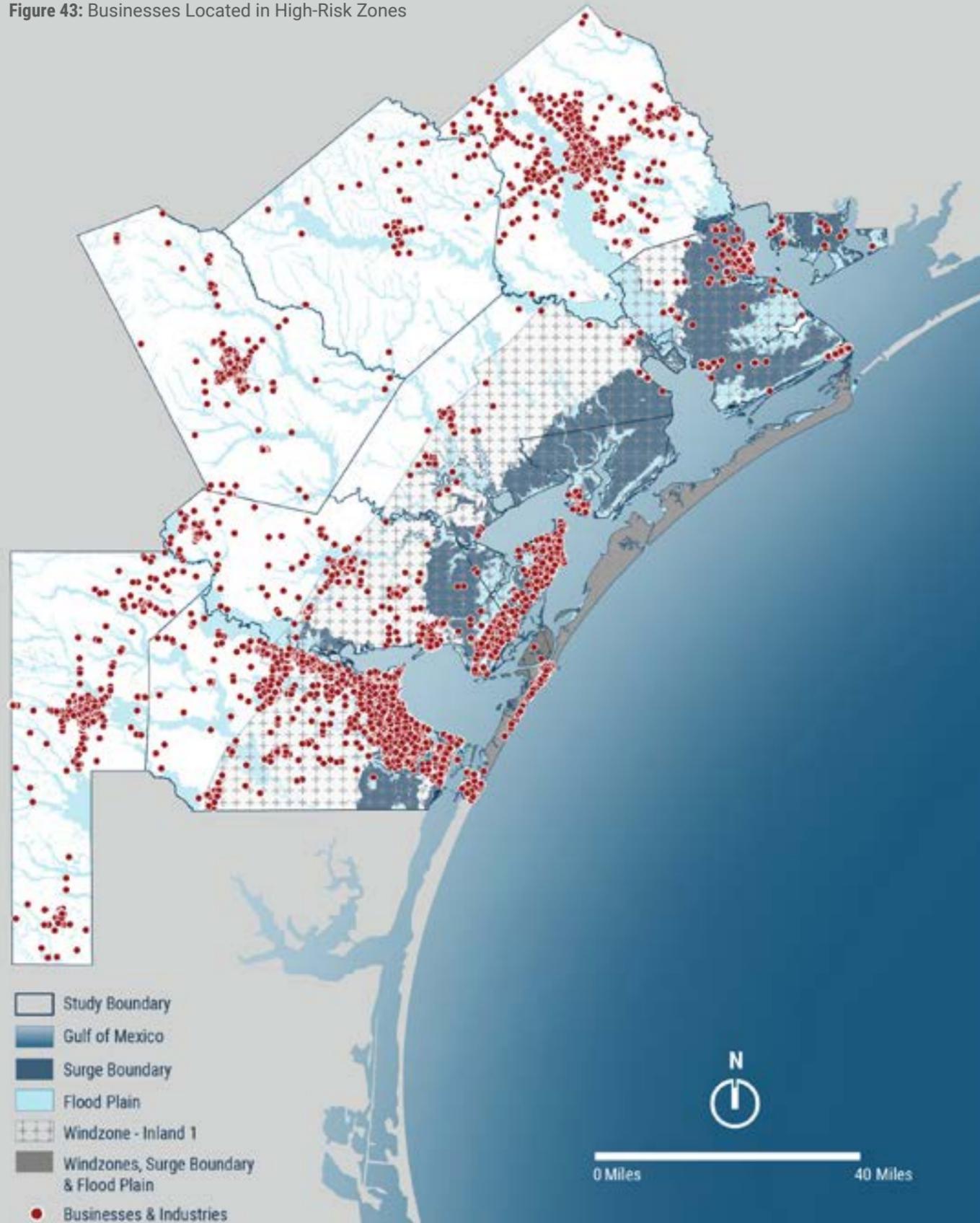
[Additional information](#)

Disaster Recovery Center, Greensburg – Kansas

Immediately after a tornado in 2007, a Business Recovery Center was established to provide support services to local businesses. These services included assistance with loan applications and consultation for businesses on marketing plans. A variety of speakers were invited to offer advisory services to businesses including representatives from the USDA, private sector contractors, and architects. After two months, the local business community took over many of these services through a newly formed Business Redevelopment Committee.

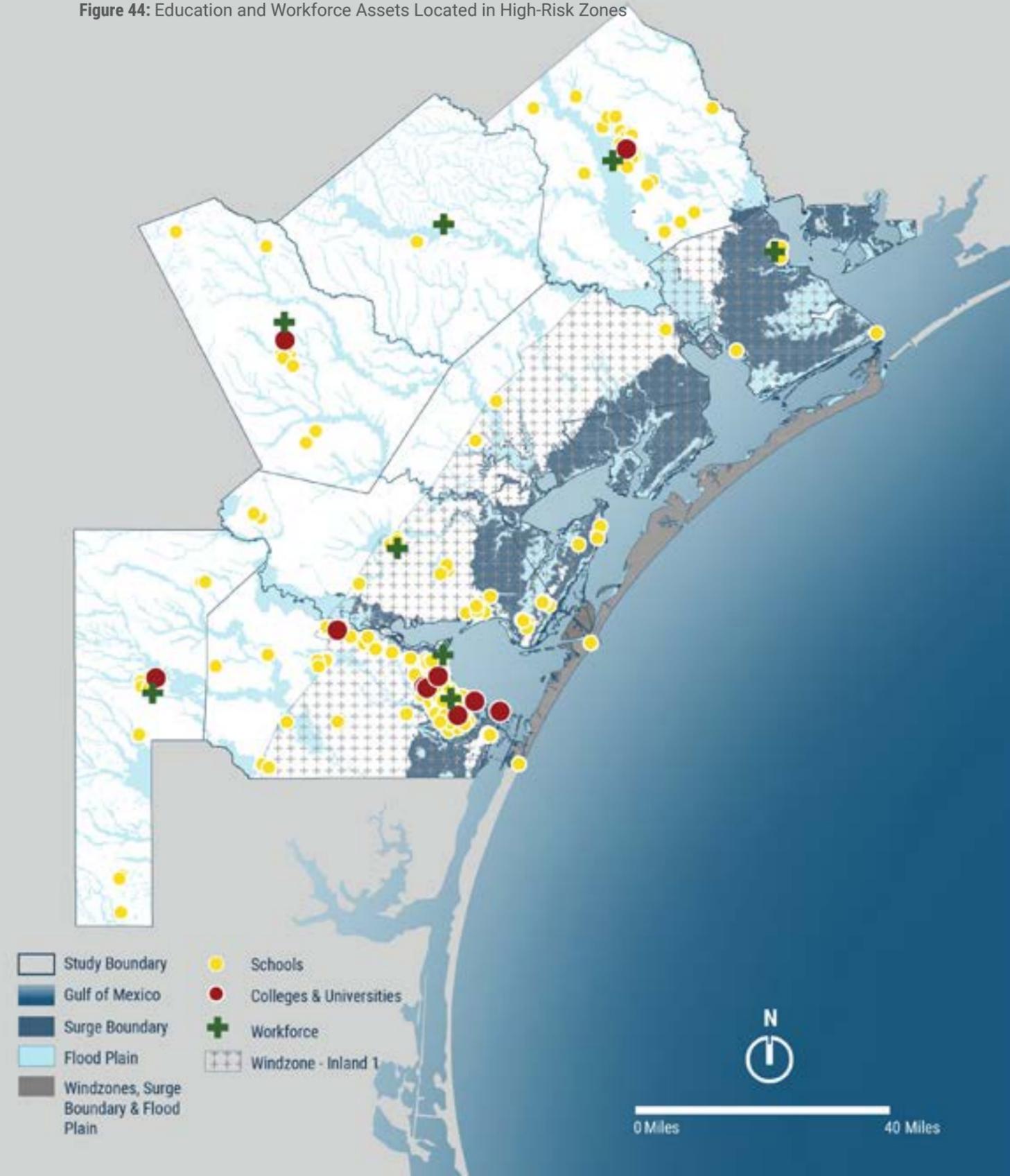
[Additional information](#)

Figure 43: Businesses Located in High-Risk Zones



Source: FEMA, NOAA, TWIA & ESRI

Figure 44: Education and Workforce Assets Located in High-Risk Zones



Source: FEMA, NOAA, TWIA, HIFLD, & TWC

EDD-7 **Improve access to job opportunities by collaborating with agencies that provide transit services and large employers to expand access to transit.**

STRATEGY TYPE	IMPLEMENTATION TIMELINE	DOMAIN OF RESILIENCE
Assessment/Plan; Partnership; Program	Short term (1-3 years)	Withstand

Transit connectivity is important for accessing jobs and workforce training, particularly with a decrease in affordable housing stock. In some parts of the region, there are concentrations of jobs located in areas with few residences or amenities, requiring long commutes. At present there are three transit providers:

- The City of Corpus Christi operates a fixed route bus service. In addition, Corpus Christi Regional Transportation Authority (CCRTA) provides commuter service to employees of the Naval Air Station and the Corpus Christi Army Depot. The CCRTA also assists the public and businesses in creating customized vanpools and rideshare programs.
- Within the City of Victoria, Golden Crescent Regional Planning Commission (GCRPC) operates a small urban system called Victoria Transit. GCRPC also operates a rural public transportation service called RTRANSIT in Calhoun, DeWitt, Goliad, Gonzales, Jackson, Lavaca, Matagorda, and Victoria Counties.
- Rural Economic Assistance League (REAL) transit provides on-demand service for employment, educational and quality of life purposes in Aransas, Bee, Brooks, Duval, Jim Hogg, Jim Wells, Live Oak, Refugio and San Patricio Counties.

The regional COGs, chambers of commerce, EDCs, transit agencies, workforce training institutions alongside large employers in the region, will collaborate to identify appropriate strategies. This may include opportunities to improve existing fixed route services, on-demand services, park and ride options, and employer-sponsored shuttle services to and from large industrial/tourism areas. Improved grant writing capacity (discussed in strategy OC-1) will help secure funds from state and federal programs.

Improving accessibility to regional job centers and workforce training opportunities supports equitable economic development by increasing job opportunities for small and rural communities. This will particularly benefit families with no access to personal vehicles or who are burdened by transportation costs. Industries can also retain and attract workers if alternate commute options or incentives are made available. The region will benefit from increased access to job opportunities for its residents and can better withstand economic downturns.

IMPLEMENTATION STEPS

1. Partners will collaborate to conduct a needs assessment to study regional growth and commuting trends, rural area demographics and transportation conditions, combined housing and transportation costs, etc. Through this assessment, transit-dependent communities can be identified.
2. Partners will engage with large employers in the region and transit-dependent populations to understand barriers and challenges as it relates to transportation needs.
3. The assessment should make recommendations on strategies. These can range from expanding fixed transit routes, micro-transit options, car sharing/ carpooling/van pool programs, employer-provided vanpool or carpool programs etc.
4. The study should identify pilot programs, costs and funding opportunities.

CO-BENEFITS



IMPLEMENTATION PARTNERS

Lead Partners

- Transit
- Economic Development Organizations
- Chambers of Commerce
- Large Employers

Support Partners

- County
- Municipality
- Workforce Training Organizations

POTENTIAL FUNDING SOURCES

Special Districts

- Transit Agencies
- COG Grants
- MPO Funds
- Chambers of Commerce

State funding sources

- TxDOT Grants

Federal funding sources

- USDA Grants

Private and Non-Profit Sources

- Large Employment Centers
- Non-Profit Service Providers

RESILIENCE TOOLBOX - BEST PRACTICES

Rural Transportation Options in Klickitat County – Washington

Transportation is a significant expense for employees working at several Klickitat County job sites. Anecdotally, distance and costs are contributing factors to challenges recruiting and retaining employees. Transportation solutions might be one strategy to help with retaining the employees who are well-suited to the jobs available. The study recommended area stakeholders try different combinations of mobility strategies depending on their locations and needs. The study also emphasized attention to rural transportation safety, which improves workers' commutes.

[Additional information](#)

Berkeley-Charleston-Dorchester Council of Governments (BCDCOG) Rural Workforce Transportation Study

The purpose of this Rural Workforce Transportation Study is to provide a regional strategy focused on improving access to job skills training and employment for the rural workforce in the BCDCOG region. The objectives of this study were (1) Developing an understanding of the BCDCOG regional rural workforce and skill sets; (2) Identifying existing and expanding industry training and employment gaps that could be filled by the rural workforce; and, (3) Developing and evaluating potential strategies and recommending ways to better connect the region's rural workforce to job skills training and employment opportunities.

[Additional information](#)



GOAL 5 - QUALITY OF LIFE



Public Input:

"Develop more neighborhoods where individuals can live, work and play."



05. QUALITY OF LIFE

Encourage quality of life improvements through placemaking and environmental enhancements in order to attract families to visit and reside within the region.

Objectives



Market and invest in promoting existing natural and heritage assets. Develop new recreational opportunities for residents and to serve as tourist attractions.



Maintain a high level of environmental (water, air, and ecosystem) quality alongside future economic development of heavy industries in the region.



Protect residents and businesses by leveraging the coastal ecosystem as assets to build resilience against future storm events.

Strategies

QOL-1

Identify and invest in amenities that improve quality of life and quality of place to encourage local market workforce diversification.

QOL-2

Leverage regional strengths to market the area as a family-friendly vacation destination that draws visitors from within and beyond the Texas Triangle.

QOL-3

Manage conflict between industrial use, ecological functions, residential areas, and recreational opportunities.

QOL-4

Identify properties in flood-prone areas with repetitive losses and design a strategic voluntary buyout program that will reduce ongoing flood impacts.

Select any icon to skip to that strategy

QoL-1 **Identify and invest in amenities that improve quality of life and quality of place to encourage local market workforce diversification.**

STRATEGY TYPE	IMPLEMENTATION TIMELINE	DOMAIN OF RESILIENCE
Program; Educational; Assessment/Plan	Short term (1-3 years)	Anticipate; Withstand; Recover

The region’s population is growing more slowly than statewide trends. Placemaking strategies can highlight the region’s existing assets and provide new experiences to help improve quality of life and quality of place. Highlighting these assets can attract visitors as well as an increasingly mobile white-collar workforce. Placemaking strategies can enhance and showcase the area’s natural systems including park systems, biking trails, fishing piers, and hunting opportunities. Enhancement of these resources creates appealing environments for businesses to locate adjacent to these assets. “Placemaking” involves creating places that are distinctive – meaning that they build on the assets that are already present – and offer multiple types of experiences. Great places can attract both visitors and permanent residents with a mix of interesting and unique sights, shopping, dining, outdoor activities, and other assets. Showcasing the region’s heritage by revitalizing historic downtowns and restoring/marketing historic assets can also provide the backbone for business development, residential growth, and visitation.

Stakeholders report that educated residents are leaving the area to access economic opportunity elsewhere in the Texas Triangle; rural communities are losing young residents specifically. This is not a unique phenomenon to this region, but a representation of a national trend toward greater urbanization. However, this national trend is not inevitable at the local level, and as the impacts of COVID-19 and housing price increases in larger cities take effect, each area of the region has a chance to provide amenities that improve

quality of life and attract or retain young families and educated residents within the region. These measures include building on strengths to create or enhance great places and destinations in the region, which can also help enhance tourism opportunities and bring new visitors who support local businesses. **Figure 45** shows historic and natural recreational assets in the study area.

The region already brings significant strength in family-friendly tourism; visitors from across the “Texas Triangle” of San Antonio, Houston, and Dallas come to the area to enjoy water-based recreation, beaches, and historic assets. Nature tourism such as birding, and hunting has also increased visitation. This strategy recommends building on these strengths by working to showcase an even more diverse set of assets. The types of placemaking that will be critical to attracting visitors and young professionals, as well as retaining educated young people in the region, include the following:

Placemaking around Natural Amenities

The region already has a wealth of beaches, bays, rivers, wetlands, and lakes that families and visitors enjoy, including protected lands such as Padre Island National Seashore, Aransas National Wildlife Refuge, Goliad State Park, and others. To attract long-term residents, ensuring that these amenities are easy to access and can serve multiple functions will be key. This may include enhancing park systems or building bicycle trails along the coast or around local lakes. Victoria is an example of a place that takes advantage of its frontage on the

Guadalupe River, with riverside restaurants, parks, and a zoo. For visitors, ecotourism lodging, full-service campgrounds, and nature centers can assist in bringing visitors to currently less-known natural destinations – including coastal areas and inland areas on the region’s rivers and lakes. For example, there are just two wetland-focused nature centers in the region: Oso Bay Wetlands Preserve and Learning Center in Corpus Christi, and the Visitor Contact Center at Aransas National Wildlife Refuge. While tours are available on Matagorda Island, creating another wetland-focused destination in the region could help boost visitation to the northern coastal area.

Downtown Placemaking

Smaller towns throughout the region have walkable downtown centers with historic architecture, including many notable historic courthouses in the county seats. Other smaller downtowns still have vacancy challenges in many of their historic buildings. Supporting small businesses and sourcing funds to revitalize these buildings would help attract new residents and visitors. Art and interactive installations such as splash pads and fountains can also help create vibrancy and downtown activity. Downtown Rockport is one example of a smaller urban area that creates a strong sense of place with a downtown main street, beach, arts center, and maritime museum. Victoria and Corpus Christi also have numerous destinations and attractions.

Placemaking through History and Heritage

Other historical and heritage assets include museums and historic ranches. The history of the Wild Horse Desert in the area could contribute to a more regional brand for ranching-oriented heritage tourism that could help drive business to the more rural inland counties. One example of a successful historic tourism complex is located in Goliad County, with major historical assets like the Presidio La Bahia and Mission Espiritu Santo, as well as the downtown restoration effort in the City of Goliad. Promoting these types of historical complexes and assets throughout the region, and adding trips to these assets from other destinations, can help grow visitation.

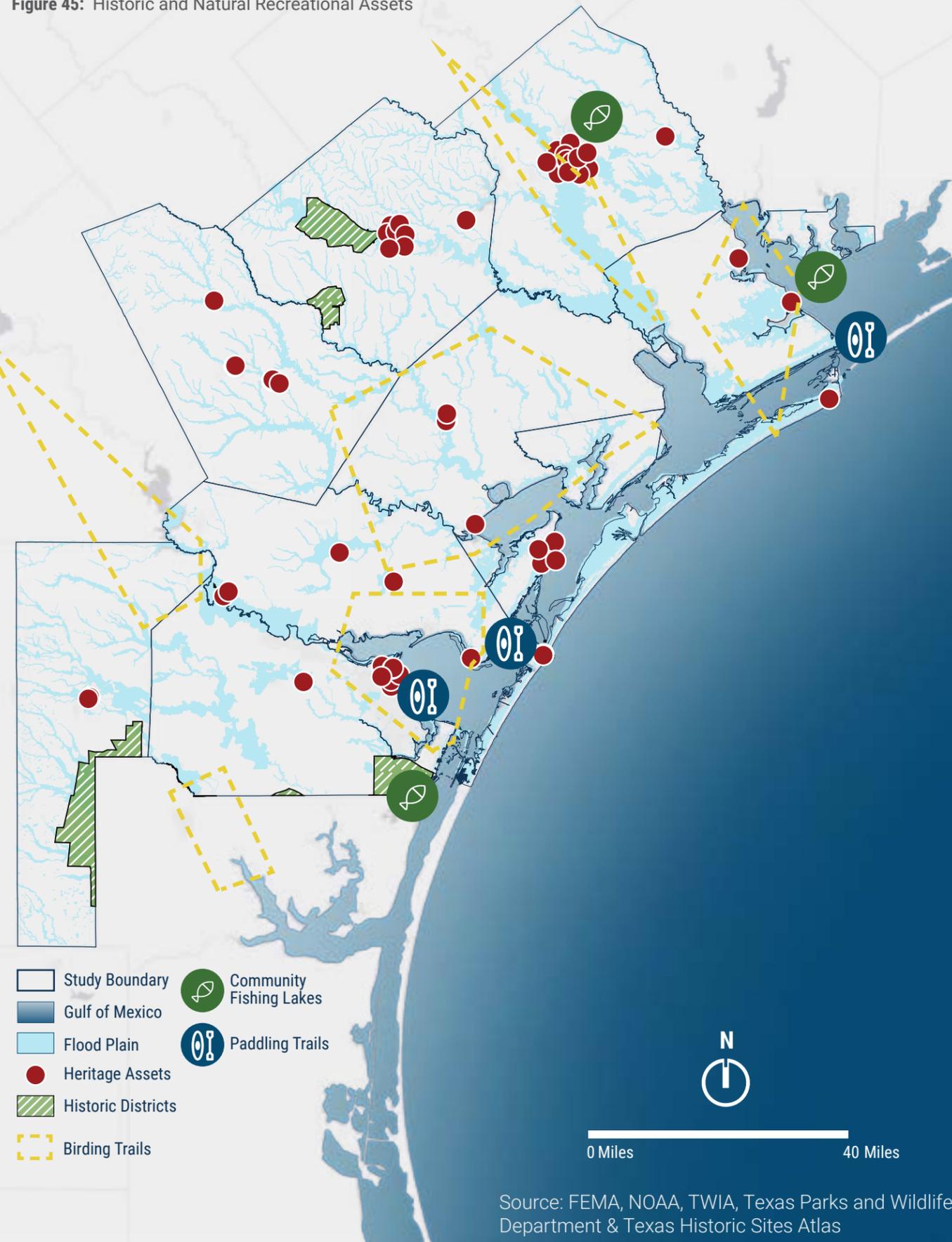
Placemaking with Trails and Connected Assets

One key strategy mentioned by various stakeholders is that the region becomes stronger when visitors and residents are able to take advantage of multiple assets across the region’s towns and cities. Historic trails that bring residents from one town to another; culinary trails, bus tours that go from coastal areas to inland resources and back again -- all of these opportunities will encourage visitors to stay longer, experience more of the region’s offerings, and spend more tourism dollars in the area.

IMPLEMENTATION STEPS

1. Unite selected portions of the region to create strategic plans for natural and heritage tourism and placemaking improvements. For example, if COGs are the unifying entity, plans may follow COG boundaries.
2. Secure funding to implement downtown improvements - including potential historic designations to secure historic tax credits.
3. Secure funding to implement natural resource improvements such as bicycle trails, hike-and-bike trails, and a nature center in the northern coastal area.
4. Identify sites for potential ecotourism and historic ranching activity attractions, considering infrastructure availability and natural resource accessibility.
5. Feature local ecotourism and historic tourism opportunities on the Texas Parks and Wildlife Department’s TPW Television Series on PBS.

Figure 45: Historic and Natural Recreational Assets



Source: FEMA, NOAA, TWIA, Texas Parks and Wildlife Department & Texas Historic Sites Atlas

CO-BENEFITS



IMPLEMENTATION PARTNERS

Lead Partners

- County
- Municipality
- Council of Governments
- Metropolitan Planning Organizations

Support Partners

- County and Municipal Departments
- Emergency Services
- Universities/Colleges/Research Institutions
- Economic Development Corporations
- GIS Software and Service Providers

POTENTIAL FUNDING SOURCES

Local Budgets

- County Budget
- Municipal Budget

Special Districts

- MPO Funds
- COG Funds

State Funding Sources

- Texas Parks and Wildlife Department (TPWD) National Recreational Trails Fund
- TPWD River Access and Conservation Areas Program
- State of Texas Historic Tax Credits
- Texas Main Street Program
- Texas Historical Commission Preservation Trust Fund

Federal Funding Sources

- EDA Local Technical Assistance
- USDA Downtown Revitalization Program
- U.S. National Park Service Historic Tax Credits

RESILIENCE TOOLBOX - BEST PRACTICES

Downtown Placemaking, Rockport – Texas

Despite being severely affected by Hurricane Harvey, Rockport has worked to restore and re-open its downtown main street. The area offers dining, shopping, and a concentration of art galleries. The Rockport Center for the Arts offers collections of works from local artists as well as regular exhibits and events. The Texas Maritime Museum serves as an additional attraction. Proximity to Rockport’s beach means that visitors can take advantage of both the downtown and natural environments in one trip.

[Additional information](#)

Trinity River National Wildlife Refuge - From Crosswalks to Boardwalks, Liberty County – Texas

Trinity River National Wildlife Refuge connected some of its most scenic views to the City of Liberty’s Main Street and Municipal Park using a boardwalk. Residents can now go directly from the municipal hike-and-bike path onto wilderness trails surrounding Palmer Bayou and the Trinity River.

[Additional information](#)

QoL-2

Leverage regional strengths to market the area as a family-friendly vacation destination that draws visitors from within and beyond the Texas Triangle.

STRATEGY TYPE	IMPLEMENTATION TIMELINE	DOMAIN OF RESILIENCE
Personnel; Partnership; Program	Short term (1-3 years)	Withstand

The region already brings significant strength in family-friendly tourism; visitors from across the “Texas Triangle” of San Antonio, Houston, and Dallas come to the area to enjoy water-based recreation, beaches, and historic assets. Nature tourism such as birding and hunting has also increased visitation. This strategy recommends building on these strengths by working to showcase an even more diverse set of assets. Marketing is a critical component of the region’s potential tourism success. While the first recommendation in this section focuses on developing and enhancing local assets through placemaking, this strategy includes specific marketing recommendations for existing and new resources that can drive visitorship.

Build Brands around the Region’s Ecology and Heritage

The region’s status as the home for endangered whooping cranes in the winter, and its two major birding festivals, allow for potential region-wide birding-focused branding. Ecotourism lodging, full-service campgrounds, and nature centers can assist in bringing visitors to currently less-known natural destinations – including coastal areas and inland areas on the region’s rivers and lakes. While tours are available on Matagorda Island, creating another wetland-focused destination in the region could help boost visitation to the northern coastal area.

Bring Regional Visitation Leaders Together to Package Tours and Experiences

This strategy recommends the creation of a regional affiliation of Convention and Visitors Bureaus (CVB)

that can promote packages of experiences such as regional tours of heritage buildings, regional nature tours, and regional conventions/business meetings. Currently, larger cities like Corpus Christi and Victoria have significant CVB resources and staffing. Smaller towns and lower-population counties have fewer resources to promote tourism, though they have willing partners in their local EDCs and city governments. Package tours could encourage visitors to stay longer and spend more dollars overall on hotel nights in their original destination, as well as in the additional areas throughout the region that they visit. **Figure 47** shows a sample of tourism assets in the study area.

Create a Regional Sports Commission to Attract Additional Sports-Focused Visitation

Regional Sports Commissions focus on promoting local venues (often multiple venues) to national sporting associations for all ages, including amateur and youth events. A Regional Sports Commission could also help to leverage recent university investments in sporting venues and events. For example, Texas A&M University – Corpus Christi has held a D-1 basketball tournament and has invested in a beach volleyball court. Waco and Round Rock are two Texas communities that have started sports commissions and used athletics as a means to attract more economic activity.

Publicize Potential Locations for Film Production

Using regional collaborations, compile a website that contains a list and images of potential areas in the region that could attract film productions, as well as a listing of local hotels and resources that can support film crews. On the website, note that the area is eligible for the Underutilized Areas Incentive that adds to the base cash grant and sales tax incentives offered by the Texas Film Commission, and link to the Texas Film Commission’s website. **Figure 46** shows an example of a website. Assist productions that express interest with the Texas Film Commission and with site/location owners as needed.

- IMPLEMENTATION STEPS**
1. Establish a regional affiliation of Convention and Visitors Bureaus.
 2. Establish a Regional Sports Commission.
 3. Create a film website that publicizes potential film locations and incentives.
 4. Create regional branding strategies, including at least one focused on ecological and heritage resources, through the regional affiliation of CVBs. Package tours for visitors and convention-goers that are consistent with the regional brand.
 5. Market sporting venues to national amateur, youth, and professional sports associations using Regional Sports Commission resources, including a website with clear descriptions and photos of all available venues.

Figure 46: Precedent: Charlotte Regional Film Commission

Website shows information on locations, grants and incentives, and application process.



Source: Charlotte Regional Film Commission

Figure 47: Tourism Assets in the Study Area



Aransas County
Aransas National Wildlife Refuge

Image Source: Larry D. Moore CC BY-SA 3.0



Nueces County
Mustang Island

Image Source: Shawn Hinsey CC-BY-2.0



Bee County
Beeville Main Street

Image Source: Billy Hathorn (CC-BY-SA 3.0)



Refugio County
Copano Bay

Image Source: Larry D. Moore CC-BY-SA 3.0



Calhoun County
Matagorda Island

Image Source: Pixabay



San Patricio County
Lake Corpus Christi State Park

Image Source: Larry D. Moore, CC BY-SA 3.0



Goliad County
Goliad State Park

Image Source: Larry D. Moore CC BY-SA 4.0



Victoria County
DeLeon Plaza, Downtown Victoria

Image Source: Leah Olivarri



Jim Wells County
Historic Jim Wells County Courthouse

Image Source: 25or6to4, CC BY-SA 4.0

CO-BENEFITS



IMPLEMENTATION PARTNERS

Lead Partners

- Municipal governments
- County governments
- Council of Governments
- Convention/visitors' bureaus and boards

Support Partners

- Downtown districts
- Texas Film Commission
- Local sports venues
- Wildlife and ecotourism visitation centers
- Historical visitation centers

POTENTIAL FUNDING SOURCES

Local Budgets

- Local Hotel Occupancy Taxes

State Funding Sources

- Sales Taxes
- State Hotel Occupancy Taxes
- Texas Film Commission

RESILIENCE TOOLBOX - BEST PRACTICES

Hill Country – Texas

The Texas Hill Country region has established a successful brand related to the natural landscape. This has fueled economic activity in tourism and visitation and supported a diversifying set of industries that both cater to visitors and create export potential for the region (e.g. wineries, breweries).

[Additional information](#)

Round Rock Regional Sports Commission – Texas

Round Rock has branded itself as the “sports capital of Texas” and has invested in a Sports Center and Multipurpose Complex to help attract events. Success at attracting sports events has helped garner additional investment in the form of a new resort that will generate additional sales tax revenue.

[Additional information](#)

Click on link to learn more

QoL-3

Manage conflict between industrial uses, ecological functions, residential areas, and recreational opportunities.

STRATEGY TYPE	IMPLEMENTATION TIMELINE	DOMAIN OF RESILIENCE
Program; Educational; Assessment/Plan	Short term (1-3 years)	Anticipate; Withstand; Recover

Industry is a critical source of economic activity in this region's present and future. Port operations in Nueces, San Patricio, Victoria, and Calhoun Counties support a growing and diversifying industrial sector, particularly in upstream oil and gas industries, plastics, and rubber manufacturing. Inland wind farms are also growing as a source of energy and economic activity. **Figures 48 & 49** show the different uses along the water.

Four key issues have emerged as areas of concentration to help ensure that this industrial growth can continue to produce economic gains, while also preserving environmental quality for coastal and inland regions, and preserving quality of life.

Protect Critical Habitat in Coastal Areas and Working Agricultural Lands

Current areas of protection include Padre Island National Seashore, Aransas National Wildlife Refuge, Mustang Island State Park, Goose Island State Park, and Matagorda Island. The Coastal Bend Bays and Estuaries program also maintains a conservation effort that has created the Nueces Delta Preserve. Inland, the Texas Agricultural Land Trust enables the preservation of working agricultural lands where development pressure exists. Continuing to strategically preserve coastal habitats and agricultural land, while still encouraging directed industrial growth, will keep the economy diversified by promoting visitation and retaining agricultural jobs. A Port of Corpus Christi environmental policy already evaluates new developments based on their impact on "air quality, water quality, soils and sediments, wildlife habitat, and environmental sustainability."⁷

Buffer Residential Uses from Industrial Uses

Residents in neighborhoods adjacent to industrial areas have reported issues with noise and light pollution. As industry continues to grow and seeks to locate in areas with established infrastructure, this issue may recur in more places. While counties in Texas do not have zoning powers to regulate land use, creating a database of preferred locations for industrial development and attempting to direct development toward sites that are separated from residential areas may help to preserve quality of life and prevent long-term conflicts. The San Patricio EDC already maintains a list of Qualified Sites that take this issue into consideration.

Monitor Air Quality Impacts of Industrial Growth

Air pollution has created health issues in other Texas communities with high concentrations of industry. Many communities have associated economic costs generated from Clean Air Act enforcement in areas that do not attain the federal standard for air quality. One local example of a successful partnership that addresses this issue is the Coastal Bend Air Quality Partnership. This partnership helps to monitor and address air quality issues in Nueces and San Patricio Counties in order to prevent the area from reaching non-attainment status, which would inhibit economic growth. The partnership works with industry partners and offers educational opportunities for the public. Continuing this partnership and considering similar partnerships in other areas with industrial growth can help ensure that the currently good air quality in the region is preserved.

Buffer Coastal Communities from the Impacts of Sea Level Rise with Natural Barriers

Rising tides and sea levels amplify the impacts of storms on coastal communities. It also makes these areas more vulnerable to storm impacts. Subsidence of land amplifies these impacts in some areas. Creating buffers using natural materials such as the "Living Shoreline" projects funded across the country by NOAA, may help reduce the impacts of both storms and ship wakes while creating additional space for wildlife and sightseeing. **(Figure 50)**

IMPLEMENTATION STEPS

1. Support partnerships and institutions that manage potential conflicts and support balanced growth as part of their mission: local EDCs, air quality partnerships, the Coastal Bend Bays and Estuaries Program, among others.
2. In conjunction with the regional GIS platform envisioned in Goal 1, support local units of government in identifying buffers between industrial sites and residential/sensitive ecological areas.

Figure 48: Conflict Between Industrial, Residential and Recreational Uses.



Source: AECOM

Figure 49: Critical Habitat Along the Waterfront.



Source: Debbie Noble

CO-BENEFITS



IMPLEMENTATION PARTNERS

Lead Partners

- County governments
- Economic Development Corporations
- Regional ports
- Council of Governments

Support Partners

- Coastal Bend Bays and Estuaries Program
- Coastal Bend Air Quality Partnership
- Texas General Land Office
- Texas Agricultural Land Trust
- National Fish and Wildlife Foundation
- National Oceanic and Atmospheric Administration

POTENTIAL FUNDING SOURCES

State Funding Sources

- FHWA/TxDOT: Congestion Mitigation and Air Quality (CMAQ) Program - available for areas covered by MPOs

Federal Funding Sources

- U.S. Department of the Interior: Land and Water Conservation Fund
- National Fish and Wildlife Foundation: Conservation Partners Program
- Farm Bill conservation dollars
- North American Wetlands
- Conservation Act Grants

RESILIENCE TOOLBOX - BEST PRACTICES

Coastal Bend Air Quality Partnership – Texas

The Coastal Bend Air Quality Partnership is a coalition of local governments and industry in the Coastal Bend region (Nueces and San Patricio Counties) that helps ensure the area does not fall into non-attainment status for air quality. Two EPA monitors in the area measure the region’s ozone concentration to ensure that it does not rise above 70 parts per billion (ppb). Measures have included industry participation in reducing emissions at industrial plants, vehicle emissions testing, and public education. Recently, the coalition undertook a study highlighting the potential costs of non-attainment to better show the advantages of continuing to comply with federal guidelines.

[Additional information](#)

Coastal Bend Bays and Estuaries Program – Texas

The Coastal Bend Bays and Estuaries Program includes a local non-profit land trust that focuses on preserving area bays and estuaries. The local non-profit land trust undertakes an active land acquisition and stewardship program in coastal areas that serve as habitat for numerous species. They have acquired over 12,000 acres, much of which (10,500 acres) is concentrated in the Nueces Delta Preserve near Odem, Texas.

[Additional information](#)

Figure 50: Living Shoreline Strategies



Living Shoreline Strategies

Living shoreline strategies to stabilize shorelines and prevent erosion include "soft" stabilization techniques, "hard" stabilization techniques, and "hybrid" stabilization work that combines soft and hard techniques. Soft retrofits involve the installation of marsh grass planting, oyster shell beds, or other soft stabilization methods adjacent to pre-existing hard shoreline structures. They provide an additional layer of protection in addition to the pre-existing hard shoreline, and can increase the lifespan of the hard shoreline. Hard stabilization techniques are appropriate in moderate to high energy environments where existing "hard" structures such as seawalls or breakwaters need additional protection. Living shoreline retrofits in these cases may take the form of an oyster reef, articulated blocks or mats, breakwaters, or riprap. Retrofits can potentially increase a hard shoreline's life span by reducing wave energy and cutting down on scouring at the base of the bulkhead or seawall.

- 1 COIR LOGS: Soft Stabilization** Natural fiber products designed to provide temporary stabilization that allows vegetation to establish landward of the log.
- 2 MARSH GRASS PLANTINGS: Soft Stabilization** Native coastal grass beds hold soil in place, reducing erosion and wave energy. Grasses also slow the flow of overland water runoff, thereby increasing sediment deposition.
- 3 RIPRAP: Hybrid Stabilization** Riprap consists of stone or concrete of various shapes and sizes placed along the shoreline to break waves and reduce erosion. It is usually part of a larger living shoreline project.
- 4 PRECAST-CONCRETE BREAKWATERS: Hybrid Stabilization** Constructed parallel to the shoreline, and function to break waves, reduce erosion, and promote sand and sediment accumulation landward of the structure.
- 5 REEF BALLS: Hybrid Stabilization** Nearshore structures designed to create oyster and fish habitat while reducing wave energy.
- 6 OYSTER SHELL BEDS: Hybrid Stabilization** Created by placing a hard substrate, often recycled oyster shells or crushed concrete, limestone, or river rock on the seafloor and "seeding" them with oyster larvae. The larvae attach to the shells or rocks and begin to grow. Mature oyster beds improve water quality through sediment filtration and reduce wave energy.

QoL-4

Identify properties in flood-prone areas with repetitive losses and design a strategic voluntary buyout program that will reduce ongoing flood impacts.

STRATEGY TYPE

Assessment/Plan; Incentives; Partnership; Program

IMPLEMENTATION TIMELINE

Long term (7-10 years)

DOMAIN OF RESILIENCE

Anticipate; Withstand; Recover

Hurricane Harvey destroyed over 900 homes and substantially damaged nearly 18,000 more within the study area. Impacts were particularly focused in the northern portion of the study area where the winds and flooding were more severe, but coastal communities across the region also suffered (**Figure 51**). Future storms that impact different parts of the coast may reveal additional vulnerabilities for residential and commercial properties. Sea level rise is also putting more communities at risk of storm surge flooding.

Buy At-Risk Residents Out and Develop Green Spaces as Natural Buffers

Strategic relocation is becoming common practice across the country as severe wind, flood, and storm surge impacts affect more coastal communities. Residents located in areas that are especially vulnerable to flooding can often have trouble selling their homes in order to relocate elsewhere. A voluntary buyout program that serves the most vulnerable communities in the area can help reduce both trauma for residents and the long-term economic impact of storm destruction of property. Creating green spaces in the buyout areas adds to the natural buffers between the coasts or rivers and the settled areas at higher elevations.

Promote Housing Development that Allows Residents to Relocate in their Communities

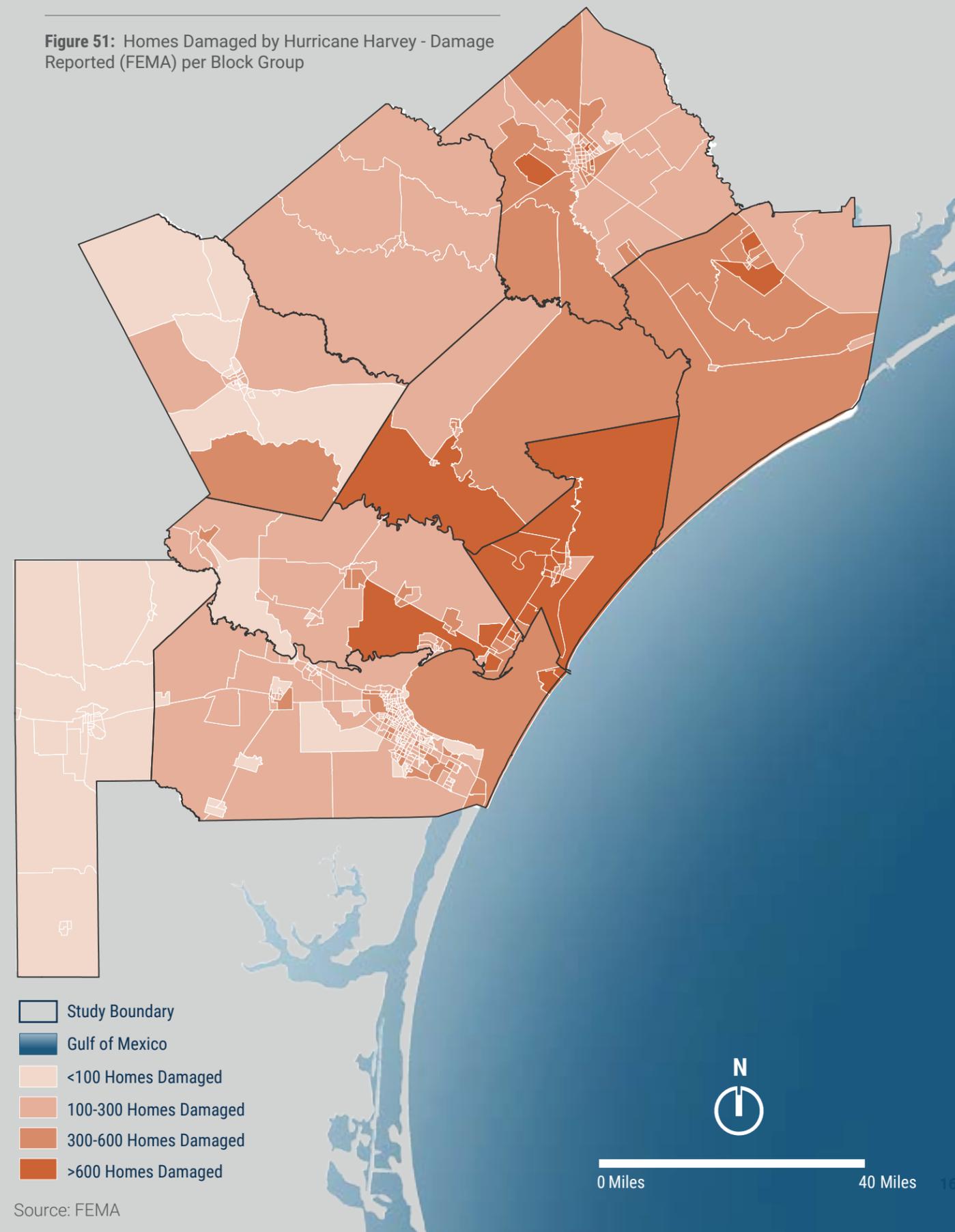
This strategy should be linked to the housing strategies in Goal 3 in order to ensure that residents who accept a buyout payment can still relocate in areas with access to the schools, jobs, and services they rely on, if desired. Buyout payments are usually linked to the fair market value of residents' homes, which can create a gap between what residents are paid and the cost of housing elsewhere in their

community or region. In general, it is clear that regional housing markets are already tight, and there may not be sufficient existing options for residents who accept buyouts to relocate without further housing development. Understanding more about the housing characteristics and residents' characteristics in buyout areas can help determine the potential demand and needs for replacement housing options. For example, in Aransas County where damage from Hurricane Harvey was most concentrated, the median age is nearly 50. Accounting for the needs of an aging population in replacement housing in that county is therefore critical if a buyout program intends to serve existing communities. New construction can be built to more stringent standards (**Figure 52**).

IMPLEMENTATION STEPS

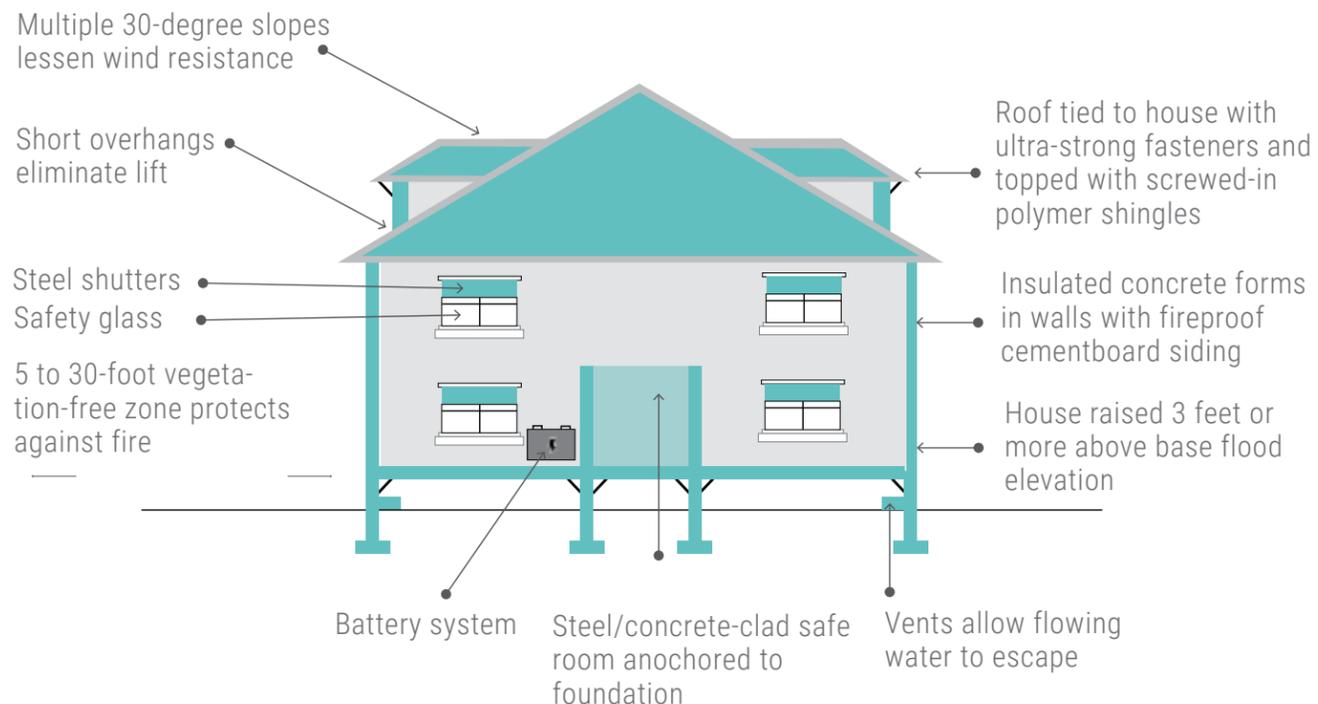
1. Map repetitive loss properties to strategically choose areas for the voluntary buyout program.
2. Analyze the household composition and likely future housing needs of the population within the voluntary buyout areas to determine characteristics of replacement housing options.
3. Identify potential sites for acquisition and development for replacement housing and assemble partnerships for development.
4. Secure funding for voluntary buyouts and for acquisition and development of replacement housing; coordinate timelines.

Figure 51: Homes Damaged by Hurricane Harvey - Damage Reported (FEMA) per Block Group



Source: FEMA

Figure 52: Design Guidelines for Stormproof Homes.



Source: FEMA



Public Input:

"I think the idea of buyouts of low lying areas is particularly important and would benefit from state resources. Areas like North Beach that have been consistently destroyed over the last 100 years are even more susceptible with climate change. However the low lying areas that are undeveloped currently over there could be a wonderful natural resource if bought out and converted back into a nature area that would fit well with the attractions, recreation, and hotel uses currently built over there."

CO-BENEFITS



IMPLEMENTATION PARTNERS

Lead Partners

- Local governments
- County governments
- Council of Governments

Support Partners

- Texas General Land Office
- Texas Department of Housing and Community Affairs
- Federal Emergency Management Agency
- U.S. Department of Housing and Urban Development
- U.S. Department of Agriculture

POTENTIAL FUNDING SOURCES

Local Budgets

- Low-Income Housing Tax Credits - with potential QAP revision needed to focus on areas affected by disaster and coastal flooding

Federal Funding Sources

- FEMA - HMGP Grants
- FEMA - FMA Program
- FEMA - BRIC Grants
- USDA Emergency Watershed Protection-Floodplain Easement Program (EWP-FEP)
- HUD - CDBG Grants
- GLO - CDBG-DR Fund

RESILIENCE TOOLBOX - BEST PRACTICES

Post Disaster Relocation and Buyout Program – Harris County CSD

The Project Recovery Program offers additional incentives to specific residents in pre-identified geographic areas in addition to a buyout. Eligible homeowners are offered a price for the home at its most recent pre-Harvey value with the added incentives of moving expenses, equity incentives, rehab incentives (on replacement home, if needed).

[Additional information](#)

Isle de Jean Charles Resettlement Project-Louisiana

Isle De Jean Charles is an island in Louisiana that is highly vulnerable to flooding and storm surge impacts. Many residents are Native Americans and have lived on the island for generations. The State of Louisiana Office of Community Development has used part of its CDBG funding from the National Disaster Resilience Competition to create resettlement plans that incorporate the ability for all residents of the island to relocate as a community to a new site nearby but in a more secure location, if they so desire.

[Additional information](#)



04. IMPLEMENTATION PATHWAYS

05. Implementation Pathways

This study recommends **23 strategies** under five goal areas. The implementation of these strategies require collaboration across multiple organizations and jurisdictions. The project team recognizes that different counties, communities, and organizations have different priorities and capacity for implementation.

The project team identified four regional priorities and a potential sequence for implementation of strategies for each, based on stakeholder input.

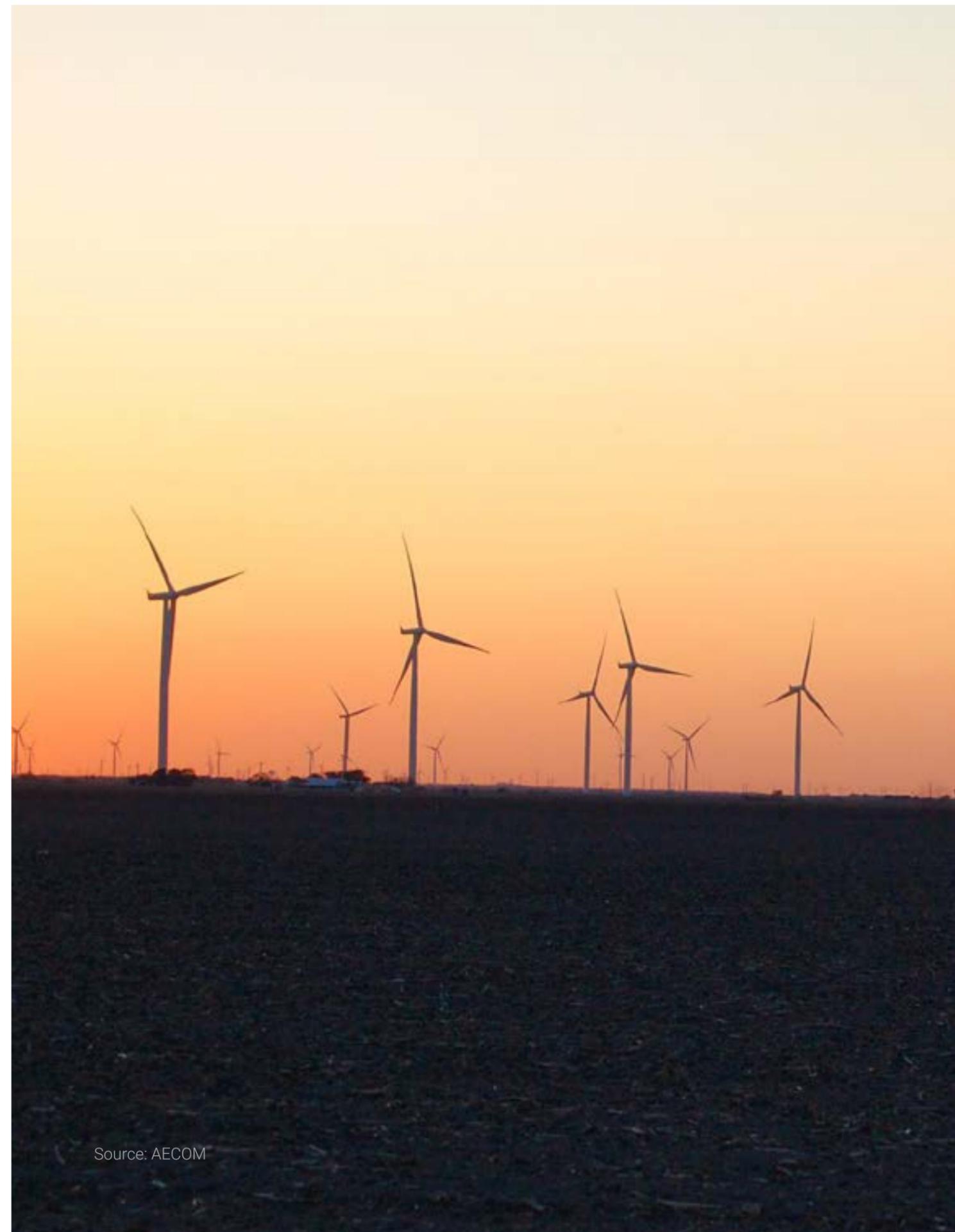
This section suggests sequence for implementation of strategies, based on the implementing organization's priorities.

1. Improve resilience to storm, flood, and drought events.
2. Support economic development and diversify local economic base.
3. Retain local population and attract families to move into the community.
4. Protect and improve quality of the environment (air, water, and ecosystems).



Public Input:

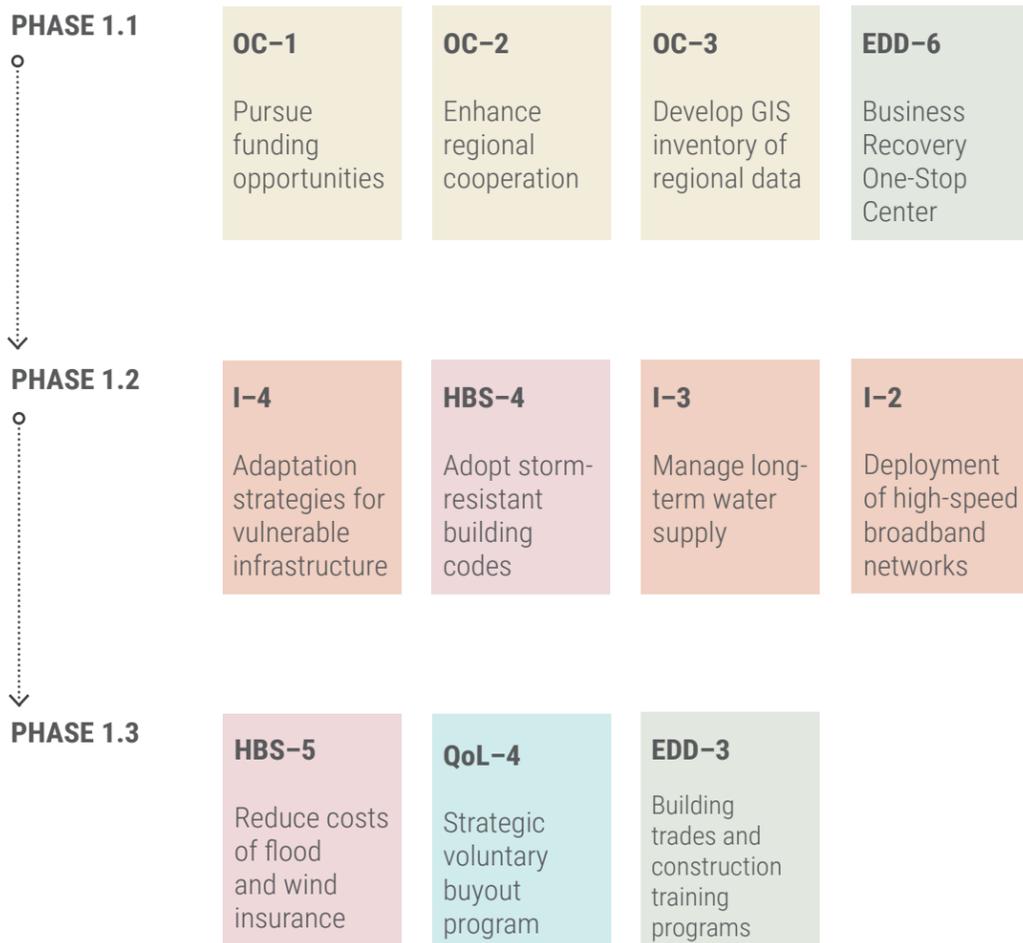
"I like how everything is prioritized such as achieving one goal at a time or the phases. Communication is key on the progress of the projected timeline."



Source: AECOM

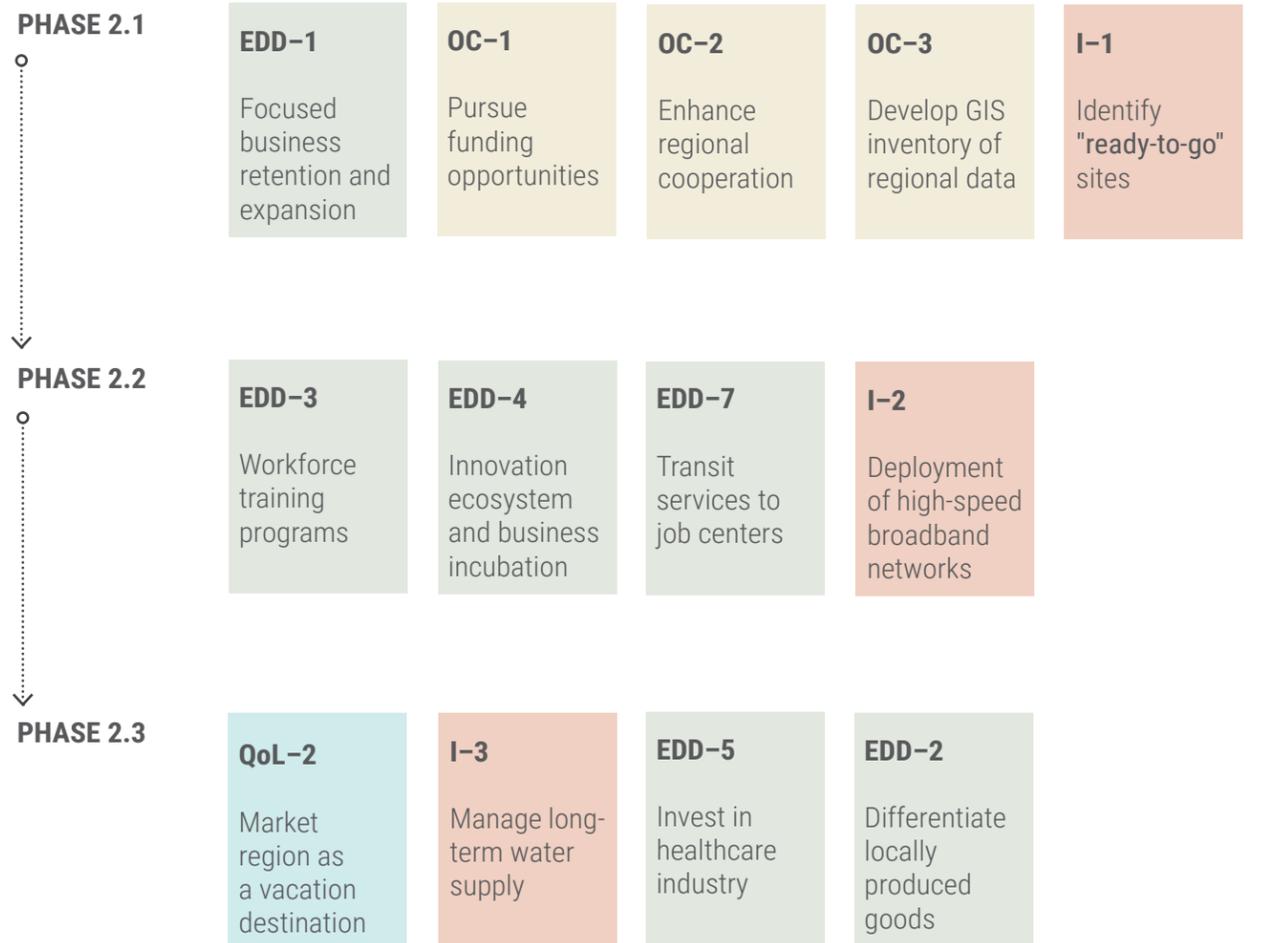
Priority 1:

Improve resilience to storm, flood and drought events.



Priority 2:

Support economic development and diversify local economic base.

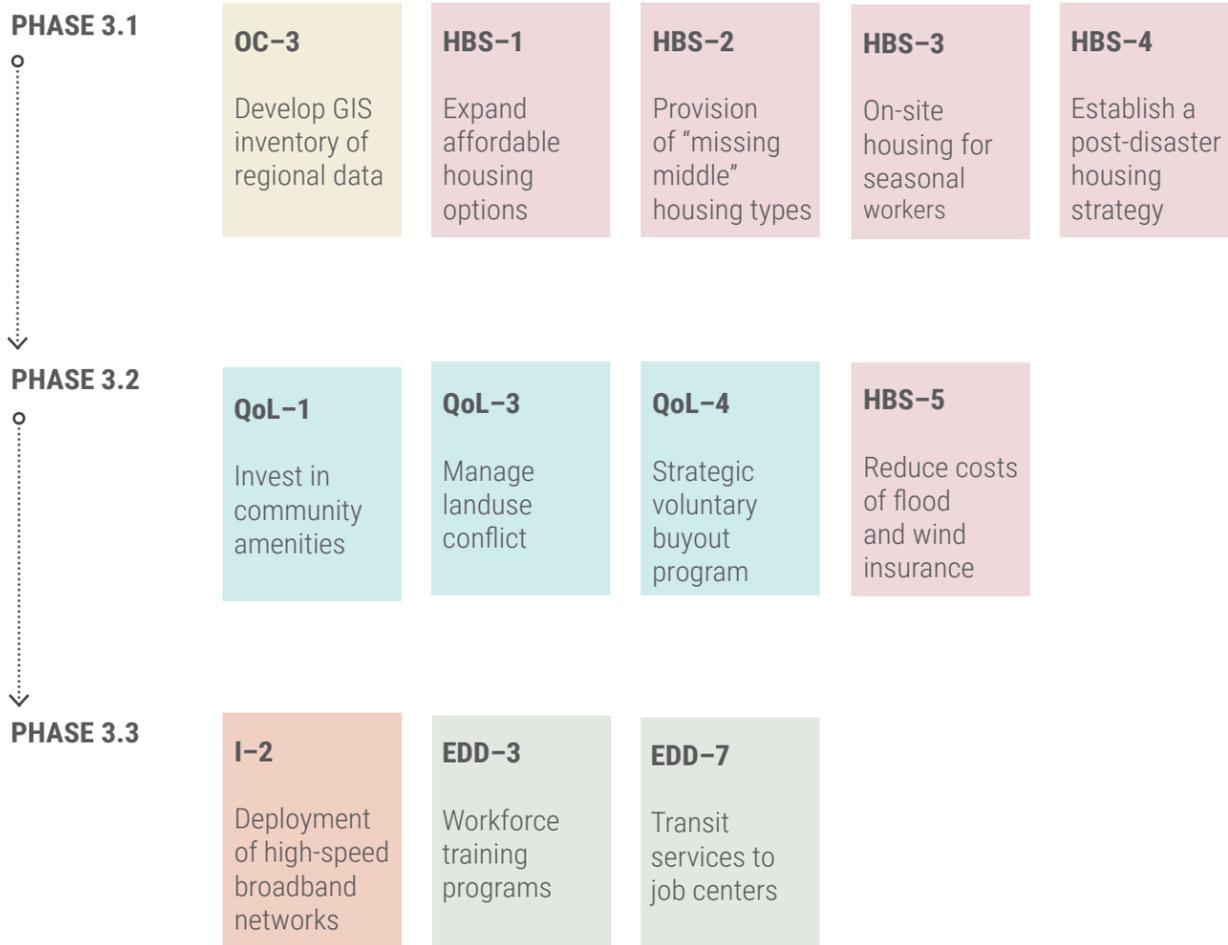


Goal 1 - Organization Capacity
 Goal 2 - Infrastructure
 Goal 3 - Housing & Building Stock

Goal 4 - Economic Development & Diversification
 Goal 5 - Quality of Life

Priority 3:

Retain local population and attract families to move into the community.



Goal 1 - Organization Capacity
 Goal 2 - Infrastructure
 Goal 3 - Housing & Building Stock

Priority 4:

Protect and improve quality of the environment (air, water and ecosystems).



Goal 4 - Economic Development & Diversification
 Goal 5 - Quality of Life

Looking Ahead

This study emerged from the need expressed by local leaders after Hurricane Harvey in 2017 to strengthen economic resilience for the region. The additional economic impacts faced by local communities due to the COVID-19 pandemic, Hurricane Hannah in 2020, and the winter storm in 2021 further demonstrates the need to strengthen regional resilience.

The study area is also susceptible to influence of other national or international trends and events that can influence its economy. For example, the recently announced acquisition of Kansas City Southern (KSC) by Canadian Pacific Railroad can have significant impact for the region. If approved the study area is likely to see additional rail infrastructure investment and growth in freight movement.

The Economic Development Strategy & Diversification Study outlines five goals, 18 objectives, and 23 strategies that sets a vision for the region. The strategies break down the goals into achievable tasks, recommended time frames, partnerships, cost estimates, and potential funding sources are identified for each. Implementation of a vision of this scale can be accomplished incrementally over the years through the collective effort of the counties, cities, residents, business owners, and other partners. Implementation partners are encouraged to take advantage of this resource to help them become better prepared for the future.

For additional information on this project, please contact: shonda.mace.glo@recovery.texas.gov



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Acronyms

ACT	Affordable Communities of Texas
AEP Texas	American Electric Power
BCDCOG	Berkeley-Charleston-Dorchester Council of Governments
BID	Broadband Improvement District
BNSF	Burlington Northern Santa Fe Corp.
BR&E	Business Retention and Expansion Program
BUILD (also TIGER/BUILD)	Better Utilizing Investments to Leverage Development
CAD	Computer Aided Design
CAM	Computer Aided Manufacturing
CBCOG	Coastal Bend Council of Governments
CCEDC	Chester County Economic Development Council
CCHA	Corpus Christi Housing Authority
CCRTA	Corpus Christi Regional Transportation Authority
CDBG	Community Development Block Grant
CDFI	Community Development Financial Institutions
CLT	Community Land Trust
CMAQ	Congestion Mitigation and Air Quality
CNC	Computer Numerical Control
COG	Council of Governments
CRS	Community Rating System
CRWA	Canyon Regional Water Authority
EDA	Economic Development Administration
EDC	Economic Development Corporation
EOC	Emergency Operations Center
EPA	Environmental Protection Agency
FCC	Federal Communications Commission
FEMA	Federal Emergency Management Agency
FEMA - BRIC	Building Resilient Infrastructure & Communities
FEMA - FMA	Flood Mitigation Assistance
FEMA - HMGP	Hazard Mitigation Grant Program
FEMA - PDM	Pre-Disaster Mitigation
GCRPC	Golden Crescent Regional Planning Commission
GEDP	Galveston Economic Development Partnership
GIS	Geographic Information System
GLO	General Land Office
HAN	National Healthcare Anchor Network
HIFLD	Homeland Infrastructure Foundation-Level Data
HRI	Harte Research Institute for Gulf of Mexico Studies
HUD	U.S. Housing and Urban Development
IRS	Internal Revenue Service
ISO	Insurance Services Office, Inc.
ISP	Internet Service Provider

IT	Information Technology
KCS	Kansas City Southern Company
LCRA	Lower Colorado River Authority
LIHTC	Low-Income Housing Tax Credits
LQ	Location Quotient
LVGEA	Las Vegas Global Economic Alliance
LVMCC	Las Vegas Metro Chamber of Commerce
MPO	Metropolitan Planning Organizations
MSA	Metropolitan Statistical Areas
NCRHP	National Center for Rural Health Professions
NCTCOG	North Central Texas Council of Governments
NFIP	National Flood Insurance Program
NOAA	National Oceanic and Atmospheric Administration
PFC	Public Facility Corporations
PKWSC	Possum King Water Supply Corporation
PPE	Personal Protective Equipment
PUL	Pontotoc County, Union County and Lee County Alliance
QAP	Qualified Action Plan
RCAP	Southeast Florida Regional Climate Change Compact
REAP	Rural Energy for America Program
RCDC	Ranken Community Development Corporation
SBA	Small Business Administration
SFHA	Special Flood Hazard Area
TCEQ	Texas Commission of Environmental Quality
TDA	Texas Department of Agriculture
TDEM	Texas Department of Emergency Management
TDHCA	Texas Department of Housing and Community Affairs
TIRZ	Tax Increment Reinvestment Zones
 TSAHC	State Affordable Housing Corporation
TWC	Texas Workforce Commission
TWDB	Texas Water Development Board
 TWIA	Texas Windstorm Insurance Association
TxDOT	Texas Department of Transportation
UAS	Unmanned Aerial System
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USDA - EWP-FEP	Emergency Watershed Protection-Floodplain Easement Program
WORC	Workforce Opportunity for Rural Communities
YARP	Young Adult Reentry Partnership

Glossary

Shocks	Shocks are sudden events that can impact the economy of a given region and include natural disasters such as hurricanes, tropical storms, and pandemics, but also human-made disruptions such as recessions, decline of major industries, or the loss of a major employer.
Stressors	Stressors are long-term trends that undermine the potential of the economy and exacerbate shocks when they occur. Examples of stressors include a declining population, aging infrastructure or housing stock, drought, sea-level rise, etc.
Domains of Resilience	The U.S. Economic Development Administration (EDA) notes that economic resilience includes three primary attributes: Anticipate - The ability to avoid a shock or stress, Withstand - The ability to withstand a shock or stress, Recover - The ability to recover quickly from a shock or stress.
Location Quotient	Location Quotient (LQ) is an analytical statistic that measures a region’s industrial specialization relative to a larger geographic unit.
High Risk Areas	Combination of spatial datasets that include FEMA floodplains (areas FEMA classified as high-risk areas [A, AE, AO and AH]), areas inundated by Category 5 storm surges as modeled by NOAA, and windstorm susceptible areas designated as Seaward and Inland I areas by the TWIA.
GIS System	A Geographic Information System (GIS) can be defined as an integrated collection of computer software and data used to view and manage information about geographic places, analyze spatial relationships, and model spatial processes.
Economic Development Districts	These are multi-jurisdictional entities, commonly composed of multiple counties and in certain cases, even cross state borders. They help lead the locally based, regionally driven economic development planning process that leverages the involvement of the public, private and non-profit sectors to establish a strategic blueprint (i.e., an economic development roadmap) for regional collaboration.
Inter-local Agreement	It is a written contract between local government agencies such as a city, a county, a school board, or a constitutional office.
Councils of Governments	These are voluntary associations that represent member local governments (mainly cities and counties) that seek to provide cooperative planning, coordination, and technical assistance on issues of mutual concern that cross jurisdictional lines.
Metropolitan Planning Organization	A regional organization created and designated to carry out the metropolitan transportation planning process. MPO’s are required to represent localities in all urbanized areas with populations over 50,000, as determined by the U.S. Census.

Drought Contingency Plan	A drought contingency plan is a strategy, or combination of strategies, for monitoring the progression of a drought and preparing a response to potential water supply shortages resulting from it or other water supply emergencies.
Contract Farming	Contract farming is an agreement between farmers and processing and/or marketing firms for the production and supply of agricultural products under forward agreements, frequently at predetermined prices.
Farming Co-op	An agricultural cooperative, also known as a farmers' co-op, is a cooperative where farmers pool their resources in certain areas of activity. A broad typology of agricultural cooperatives distinguishes between 'agricultural service cooperatives', which provide various services to their individually farming members, and 'agricultural production cooperatives', where production resources (land, machinery) are pooled and members farm jointly.
Business Grant Program	A business grant program targets particularly devastated businesses that are not interested in applying for a conventional loan because of debt concerns. A grant or forgivable loan can help speed recovery when a business is uncertain about rebuilding and incurring more debt. Funding for this program typically comes from local, state, or federal sources such as HUD’s CDBG-DR program.
Revolving Loan Fund	A revolving loan fund is a gap financing measure primarily used for development and expansion of small businesses. It is a self-replenishing pool of money, utilizing interest and principal payments on old loans to issue new ones.
Green Street Ordinance	Green Streets Ordinance can provide standards and guidance to developing green streets that manage stormwater runoff.
Freeboard Ordinance	Freeboard Ordinances work by establishing a minimum and maximum freeboard above base flood elevation for all properties. It requires the ground floor of new buildings to be located a minimum of one foot and up to five feet above the FEMA base flood elevation, or have enough headroom to raise the floor in the future without affecting the maximum permissible height of the building.
Riparian Buffer Protection Ordinance	This ordinance establishes buffer zones for land development near streams. It requires maintaining a 50-foot undisturbed buffer on both banks of the stream and an additional setback for 25 feet beyond the undisturbed buffer in which all impervious cover shall be prohibited.
Direct Housing on Private Lots	The preferred method of providing direct housing assistance is to install factory-built housing units (e.g. modular homes, manufactured homes, etc.) on an applicant’s private lot and temporarily connect it to existing utilities. This allows homeowners to remain within close proximity to their home during the repair and rebuilding process and allows children to remain within their existing schools and daycare centers.
Direct Housing on RV Parks or Pre-existing Commercial Parks	These commercial sites have existing utilities (water, electric, sewer/septic) for pre-developed pads or lots and available community services. In parks where there are vacancies, FEMA may lease the pad or lot and install the housing unit. Considering that all of these cited parks are single owner, rather than subdivisions with multiple owners, these parks may become an important immediate housing alternative. Create an inventory of RV parks or commercial parks in the county.

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