GLO River Basin Flood Studies (RBFS)

West Region 25% Alternatives Analysis
Stakeholder Check-in | Aransas Bay Study

Commissioner Dawn Buckingham, M.D.

Agenda

- Introductions
- RBFS Overview
- Project Area Overview
- Concepts – 25% Update
- Other RBFS Support
- Next Steps

Introductions

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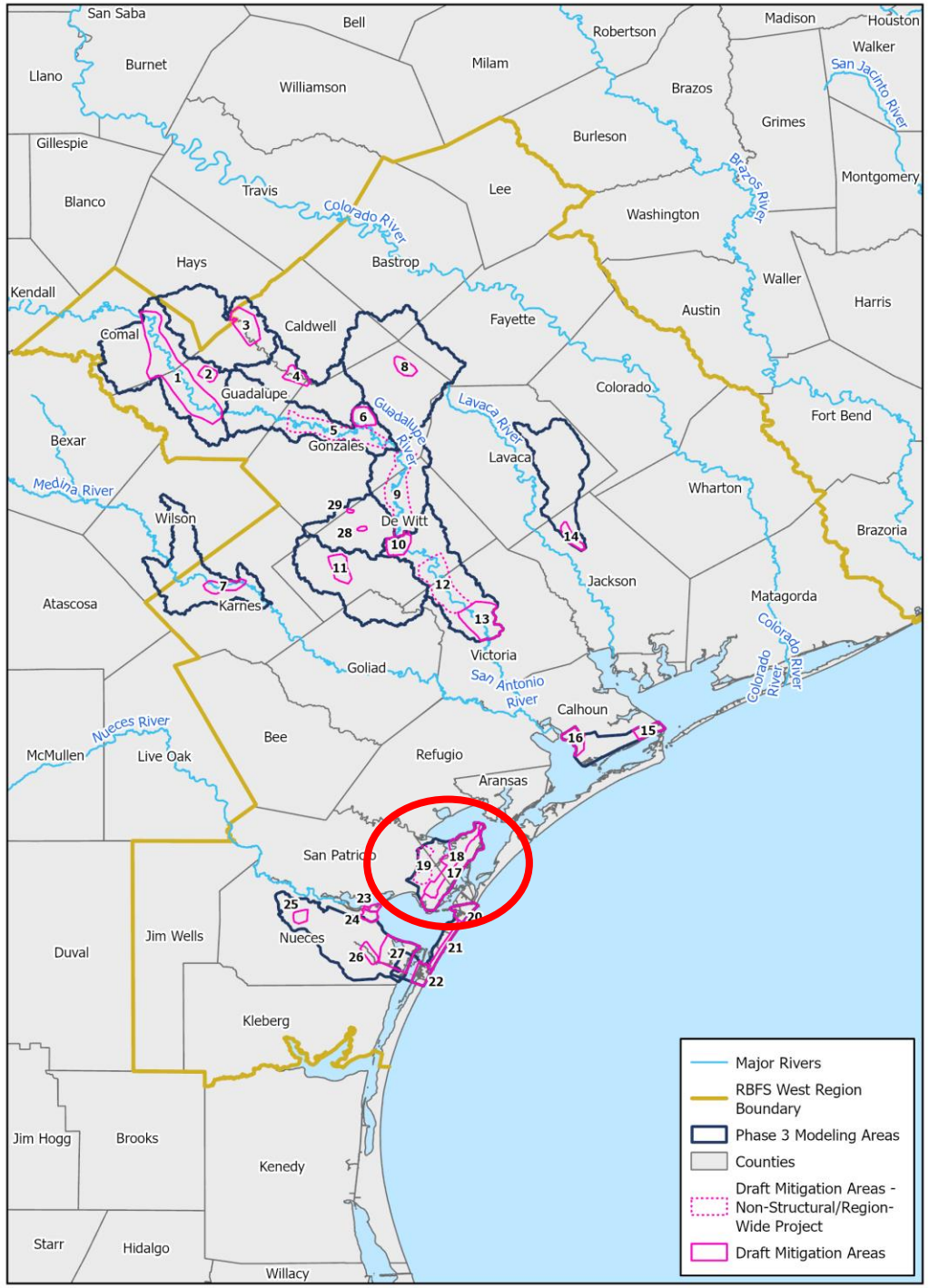
GLO River Basin Flood Study Overview

Goals

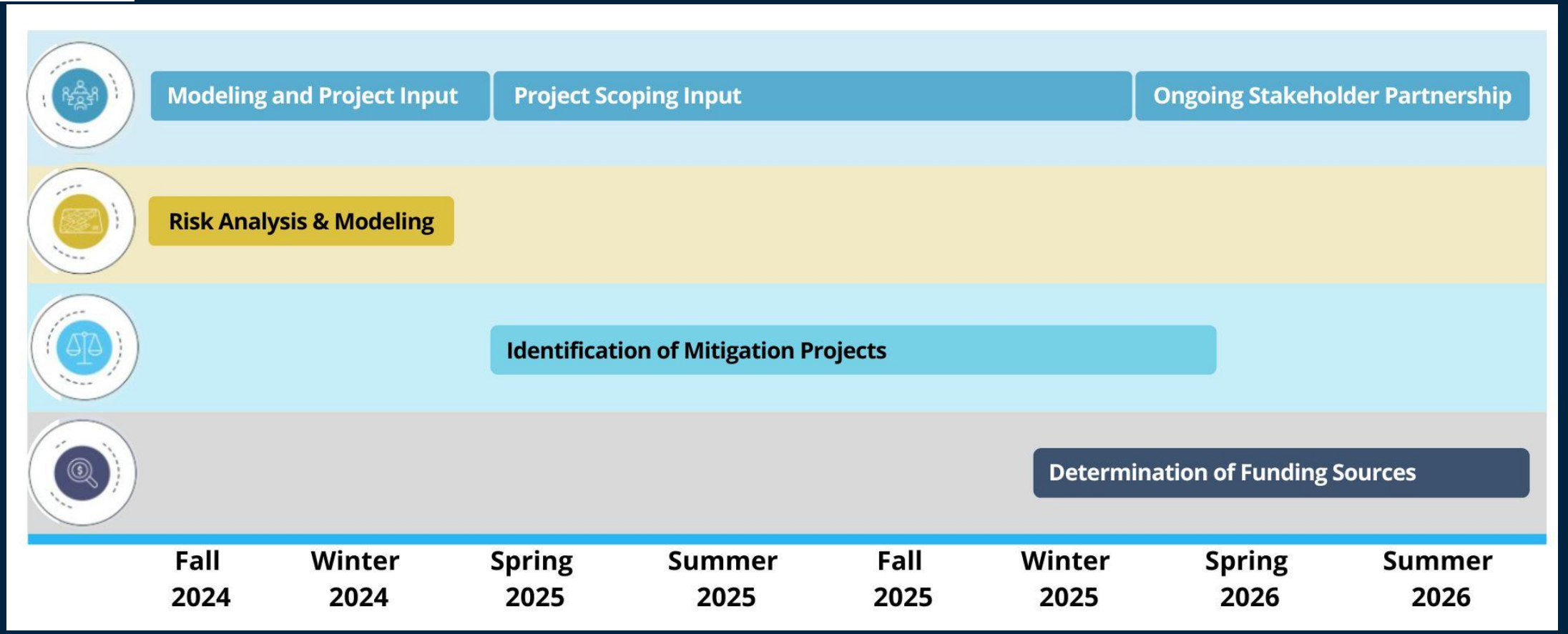
- Evaluate flood risks
- Develop cost-effective flood mitigation strategies
- Identify funding sources for mitigation projects

Benefits

- Collect local data and detailed flood risk information, building on projects that communities may have already identified
- Support planning and feasibility studies for local and regional risk reduction projects
- Increase community disaster resilience



West Region Study Timeline



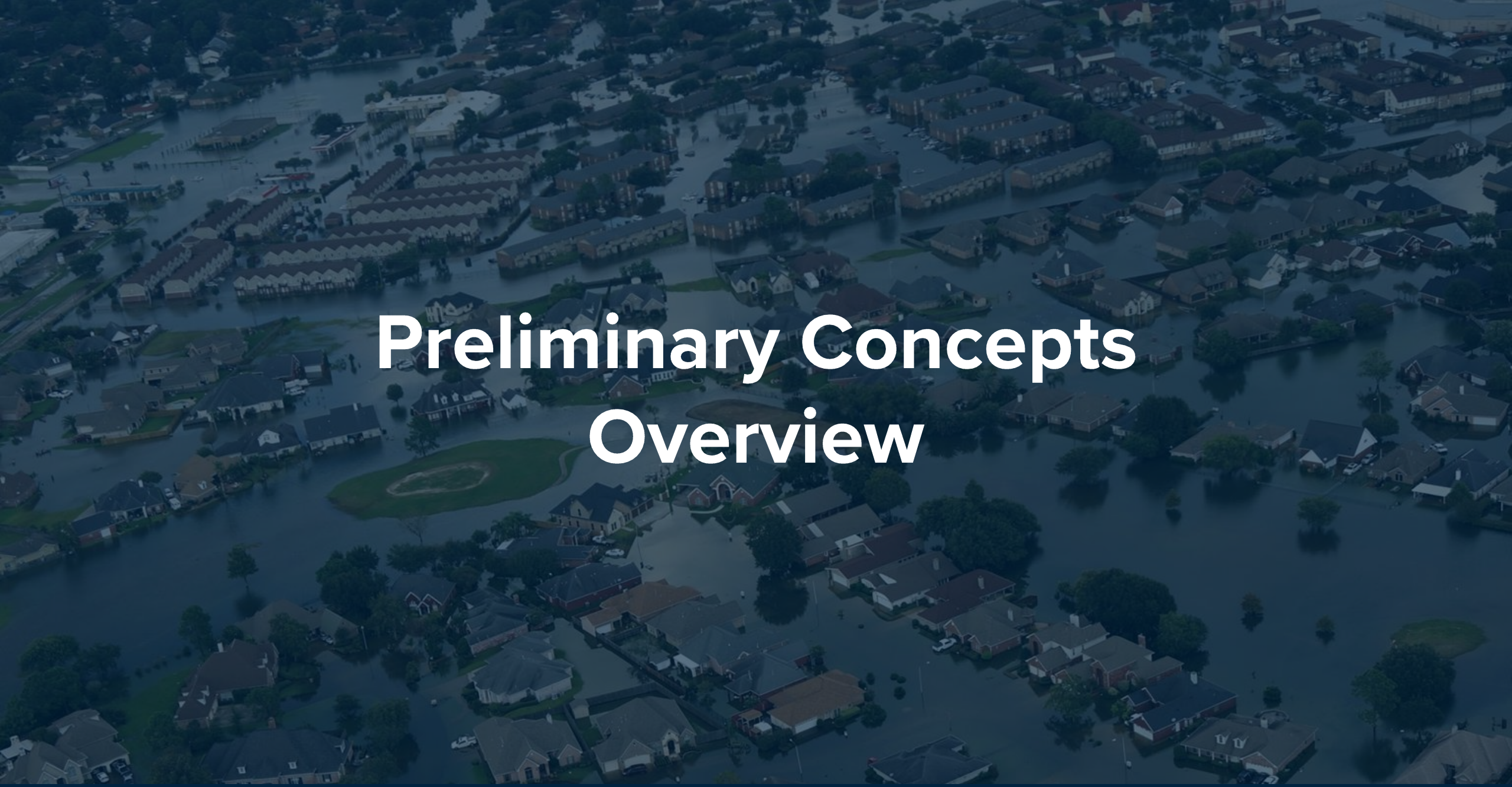
Watershed Overview

- 2 Mitigation Areas (#17, #18)
- Aransas Bay study area population: ~53,000
  - Counties: Aransas, San Patricio, small portion of Nueces (along bay)
  - Cities & Population Centers: Aransas Pass, Rockport, Ingleside, Ingleside on the Bay
- Coastally influenced
- Main channels within the study area: Kinney Bayou (Ingleside), Tule Creek (Rockport)

Flood Risk Findings from Modeling

- FEMA maps under predict riverine and rainfall flood risk.
- Sea level rise and future storm surge risk is significant throughout the study area.
- Aransas Pass Levee is holding back water during heavy rainfall events, exacerbating flooding challenges.
- Model predicts more **widespread flooding during rainfall events** (more structures flooding overall) but more **severe flooding during surge events** (more structures experiencing 2+ feet of flood depth).

Aransas Pass Eighth Street and Yoakum flooding (May 2021)
Source: Kris 6 News



Preliminary Concepts Overview

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Mitigation Area 17 Initial Project Concepts

#	Project Type	Project Scale	Name
1	Drainage	Local (medium)	Drainage Improvements to Ingleside Cove
2	Coastal (surge)	Sub-regional	Aransas Pass Levee Rebuild & Expansion
3	Coastal & Rainfall	Local (large)	Aransas Pass Levee Buyouts
4	Drainage	Local (large)	Rockport Drainage Improvements
5	Drainage	Local (medium)	Tule Creek Upstream Detention / Redirection of Inflow
6	Coastal (SLR)	Regional	Fulton & Rockport Coastline Regional Project
7	Coastal (future surge)	Regional	Rockport Floodwall
8	Coastal (SLR)	Sub-regional	Rockport Bulkhead & Sill

Mitigation Area 18 Initial Project Concepts

#	Project Type	Project Scale	Name
1	Riverine	Local (medium)	Kinney Bayou Improvements
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3	Coastal (SLR)	Sub-regional	Salt Lake Levee
4	Coastal (SLR)	Sub-regional	Salt Lake Wetlands
5	Coastal (SLR)	Sub-regional	Loop 1781 Roadway Elevation

Mitigation Area 17

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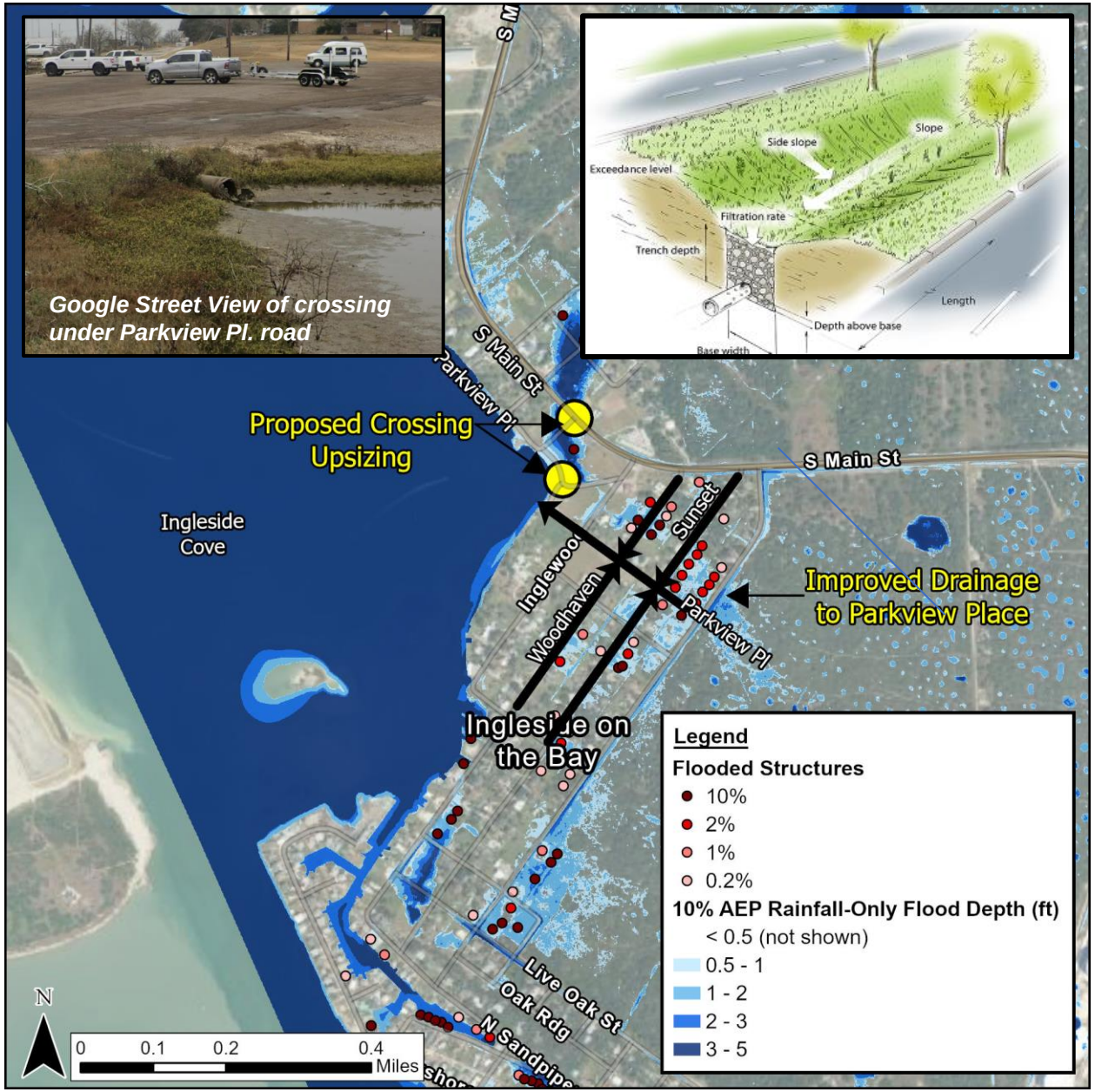
Concept #1: Drainage Improvements to Ingleside Cove



County: San Patricio
Community: Ingleside / Ingleside on the Bay

Flooding Challenge/ Project Need: Model predicts flooding for 10-year rainfall/riverine events for this area. Strong documentation of stakeholder concern for Ingleside on the Bay & multiple unfunded Flood Mitigation Evaluations (FMEs) from TWDB State Flood Plan.

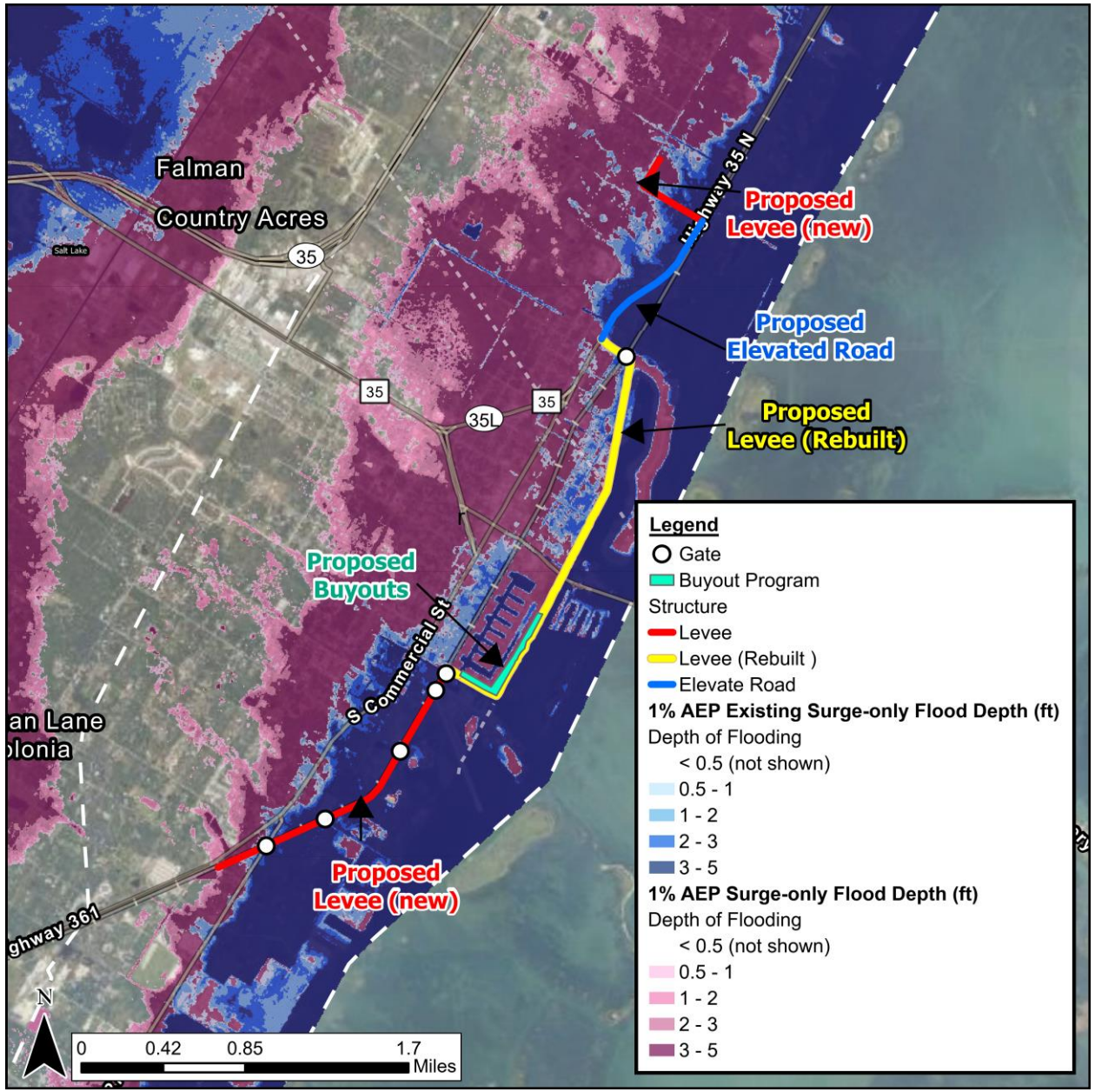
Proposed Crossing Upsizing:

- Upsize culverts under S Main St. and Parkview Pl.
- Flap gates should be installed to prevent reverse flow from the bay into the drainage channel during surge events

Ingleside on the Bay Drainage Improvements:

- **More information is needed on the existing drainage system** here to better capture existing conditions (appears to be a combination of storm sewer and swales
- Proposed improvements could include **bioswales** or combination of **storm sewer and swales**
- **ROW limits** would help inform which type of system is most suitable

Concept #2- Aransas Pass Levee Rebuild & Expansion



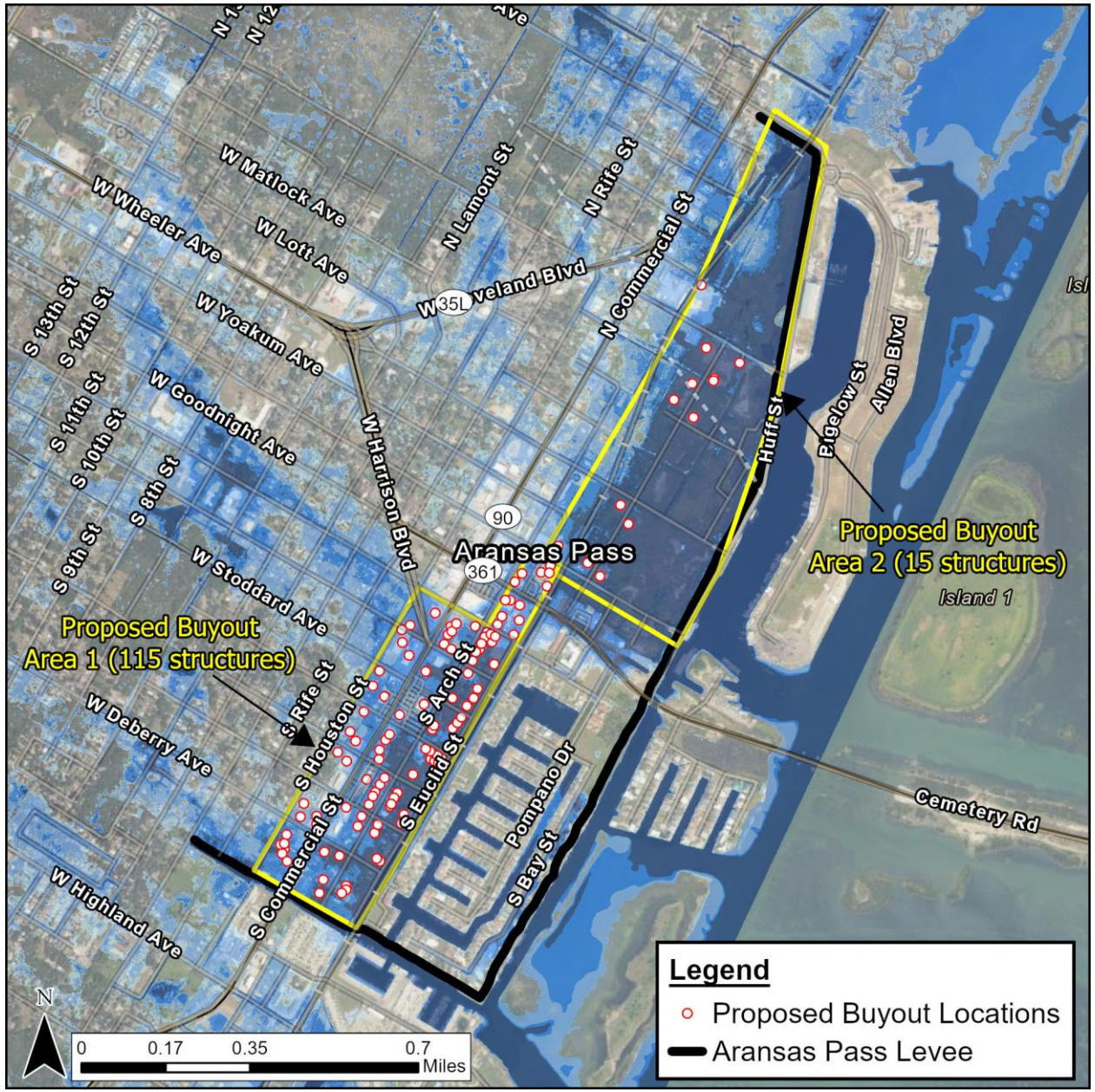
County: San Patricio / Aransas
Community: Rockport

Flooding Challenge: Model predicts significant sea level rise and risk of surge flooding in future conditions (2085)

Proposed Project:

- Proposed buyout program for structures built on the current levee
- Proposed rebuilding existing levee using FEMA standards
- Expanding the levee with new sections and adding tidal gates
- Proposed Elevated Road to connect between the different levee sections
- Adding new pump stations for drainage and evaluating current ones
  - Details needed on existing pumps

Concept #3: Aransas Pass Levee Buyouts



County: San Patricio / Aransas
Community: Aransas Pass

Flooding Challenge: Aransas Pass levee holds back water behind the levee, exacerbating flooding during rain events. Challenges with levee operations during Harvey

Proposed Project:

- Proposed Buyout Area 1: Continuous section of highest risk structures within the leveed area (***115 structures***).

- Proposed Buyout Area 2: Refinement of TWDB State Plan FME " *Purchase Land Behind Aransas Pass Levees*"
  TWDB Plan Description: Purchase land behind levees to prevent people from building in a floodplain area. This will allow the City to use this land for preventing further flooding.
  (*approx.* ***15 structures***)
- Reclaimed land could be used as recreational park space w/ flood mitigation features (urban wetlands, etc.)
- ~50% of buyout structures flood in both surge 100-year and rainfall 100-year events

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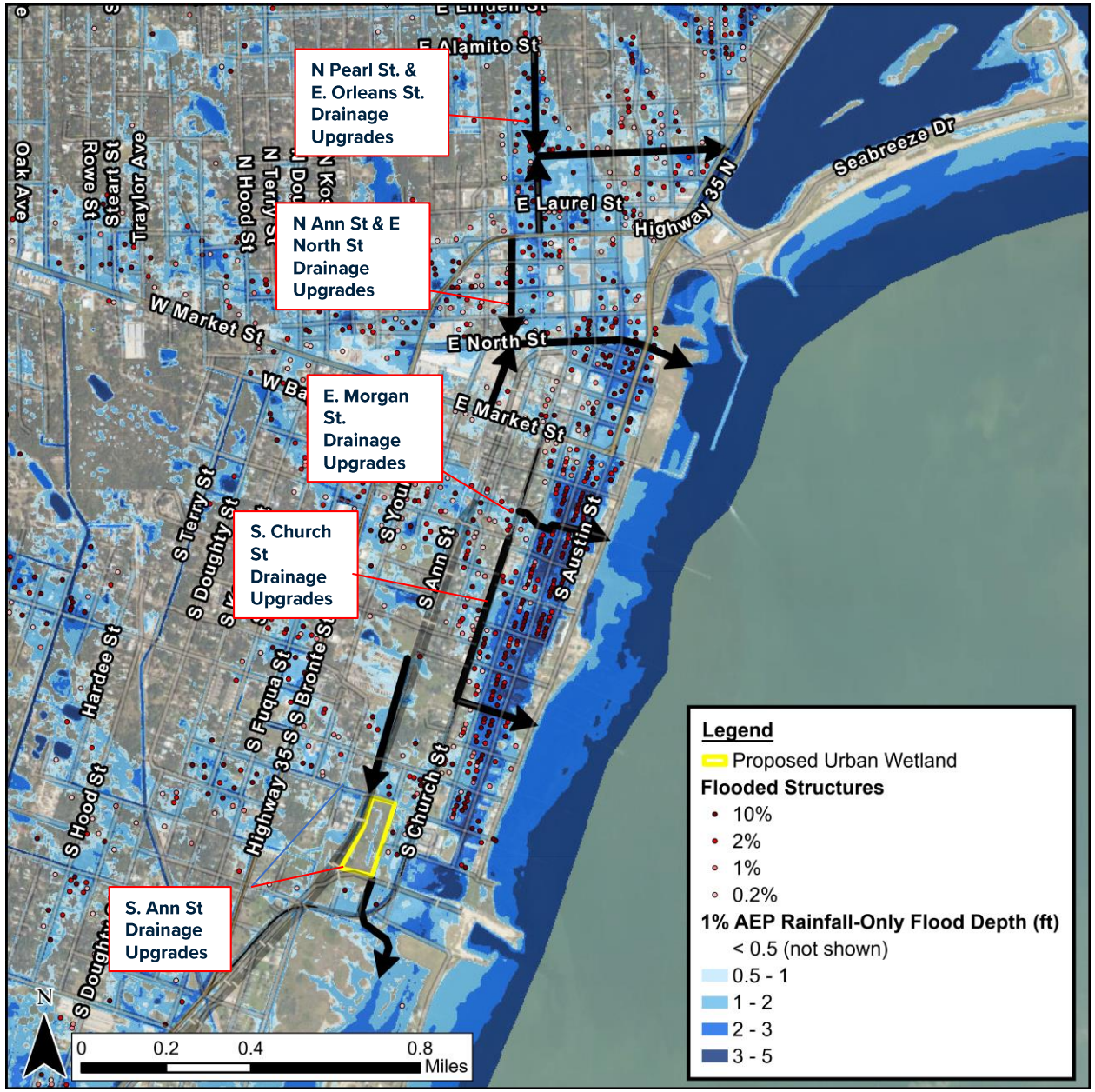
Concept #4: Rockport Drainage Upgrades



County: Aransas
Community: Rockport

Flooding Challenge: Significant structural flooding predicted in the model during rainfall events. Locations for upgrades selected based on flow patterns and potential feasibility.

Proposed Project Components:

- **S. Ann St Drainage Upgrades:**
  - Better capture flow coming from the west by widening roadside ditch
  - Bioretention or a shallow urban wetland can be added south of 2nd Street (shallow due to limited depth)
- **S. Church St Drainage Upgrades**
  - S. Church Street: Upsizing storm sewer (or adding storm sewer)- ***more information needed on existing system***
  - Add roadside ditch along E. Lamar to outfall into bay
- **E. Morgan St. Drainage Upgrades**
  - Add swale or roadside ditch along E. Morgan St.
- **N Ann St & E North St Drainage Upgrades**
  - Upsize/regrade existing storm drainage system along E North St. OR add roadside ditch here- ***more information needed on existing system***
  - Upsize roadside ditch / swale along S Ann
- **N Pearl St. & E. Orleans St. Drainage Upgrades**
  - Roadside ditch improvements

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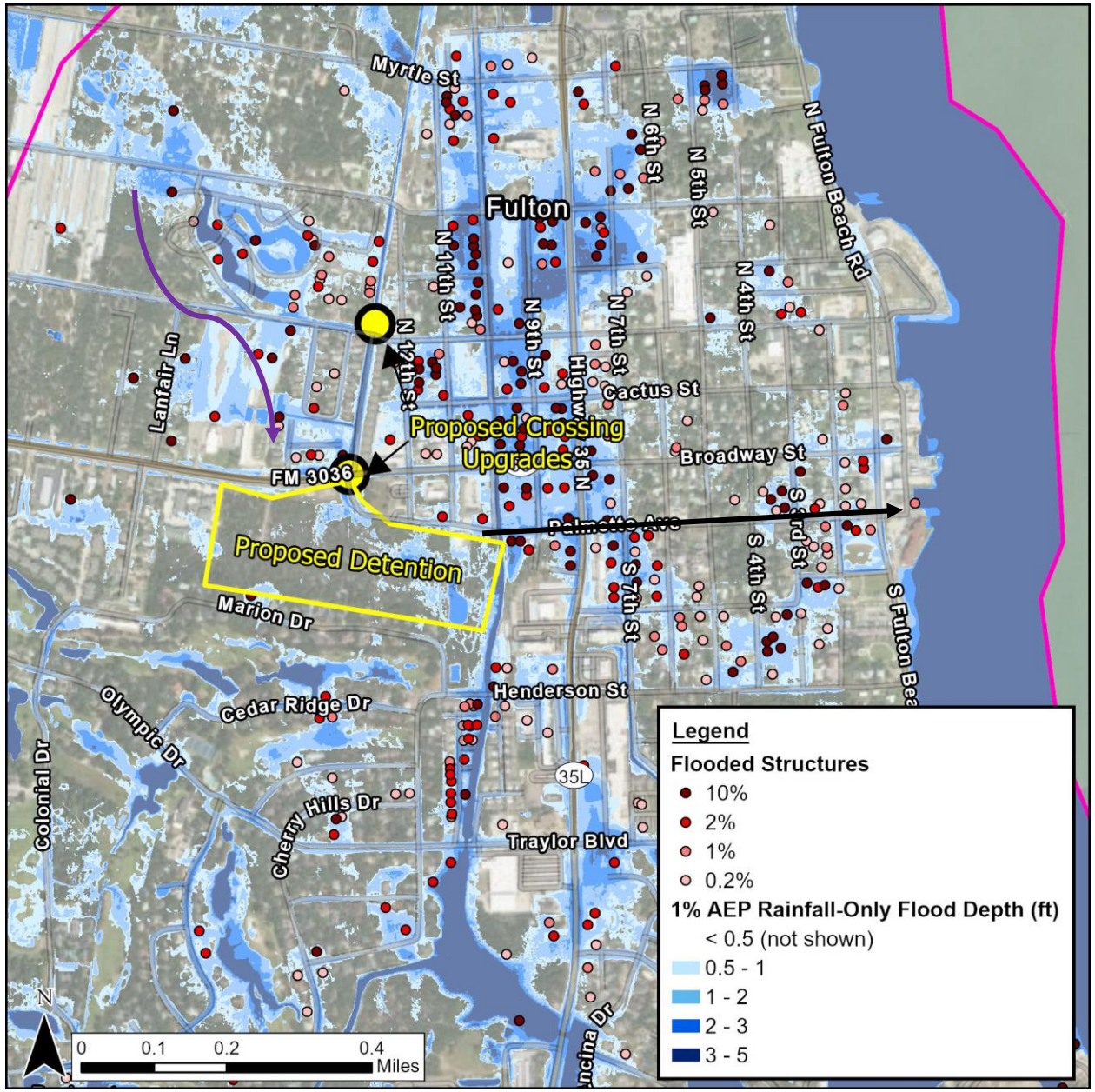
Concept #5: Tule Creek Upstream Detention / Redirection of Inflow



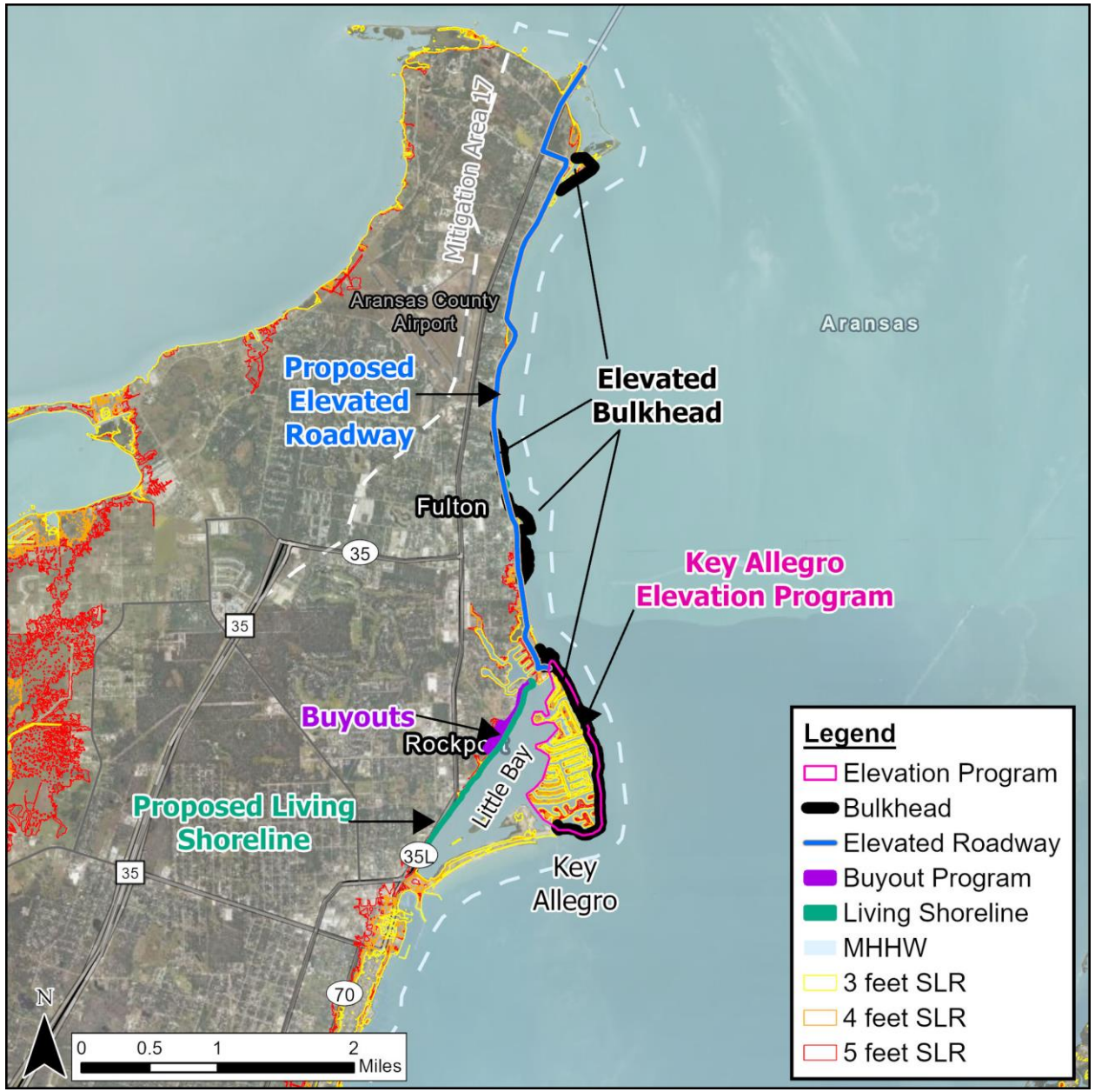
County: Aransas
Community: Fulton

Flooding Challenge: Significant runoff into Tule Creek; flooding throughout the Fulton area

Proposed Project:

- Divert flow through widened and regraded ditches along Palmetto Ave (components of proposed State Plan FME "*Town of Fulton Palmetto Outfall Improvements*")
- Proposed detention pond to capture upstream inflow
- Upsizing culverts at FM 3036 and Chaparral St.
- Goal of project: flow reduction into Tule Creek / Little Bay

Concept #6: Fulton & Rockport Coastline Regional Project



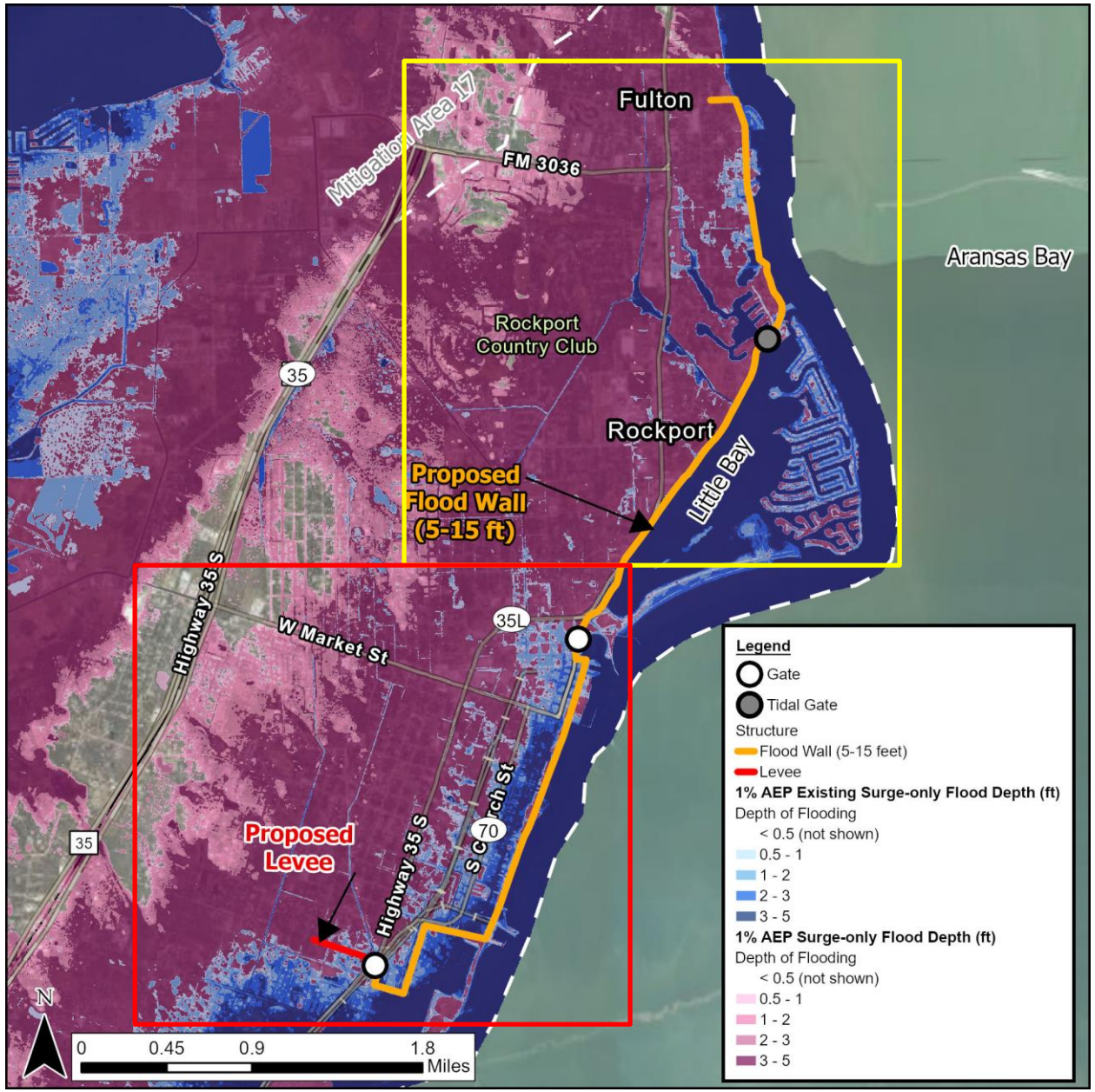
County: Aransas
Community: Fulton

Flooding Challenge: Model predicts significant sea level rise and risk of surge flooding in future conditions (2085)

Proposed Project:

- Elevated Road and Elevated Revetments across the full stretch of N Fulton and Fulton Beach Road
- Bulkheads proposed to be elevated around residential and public properties
- Roadway improvements by elevation and storm sewers across all road networks in Key Allegro
- Elevating all homes by at least 5 feet in Key Allegro
- Protecting the entire waterfront side of Key Allegro with elevated bulkheads
- Proposed living shoreline along Little Bay and buyout of structures to allow its migration inland
- Drainage improvements for Fulton Road will be considered in the 50% deliverable
- **~900** structures are expected to benefit from this concept

Concept #7: Rockport Floodwall



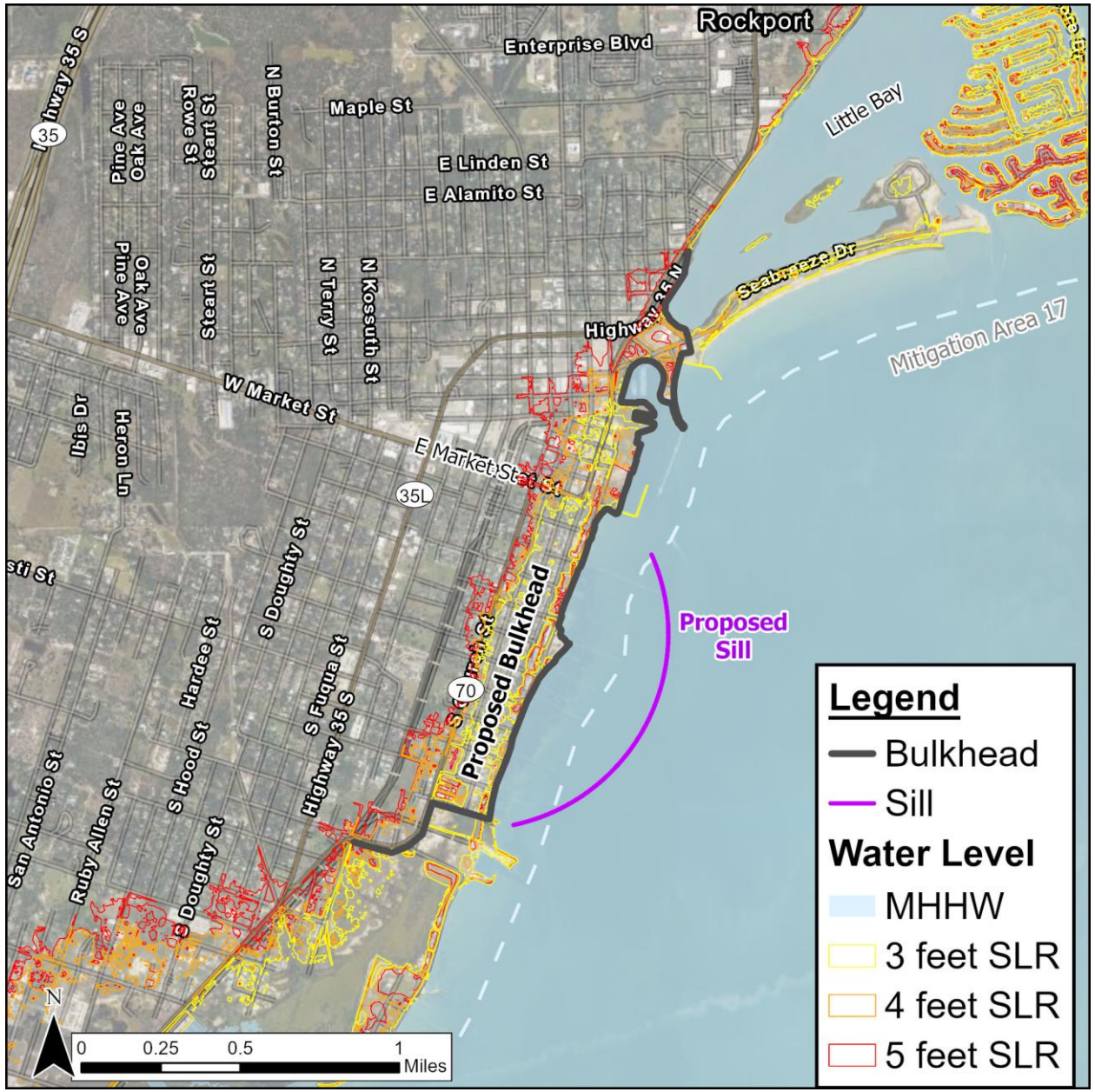
County: Aransas
Community: Rockport

Flooding Challenge: Model predicts significant sea level rise and risk of surge flooding in future conditions (2085)

Proposed Project:

- Proposed Floodwall around Rockport City Boundary
- Proposed Levee alongside the south side of the Flood Wall to further protect inland communities.
- Proposed Tidal Gates to prevent flooding from the Canoe Lake
- Proposed Gate to connect the access to Highway 35 S and the Rockport Marina.
- Pump stations would be needed for interior drainage
- Project can be divided into Phase 1 (in red) and Phase 2 (in yellow)

Concept #8: Rockport Bulkhead & Sill



County: Aransas
Community: Rockport

Flooding Challenge: Model predicts significant sea level rise and risk of surge flooding in future conditions (2085)

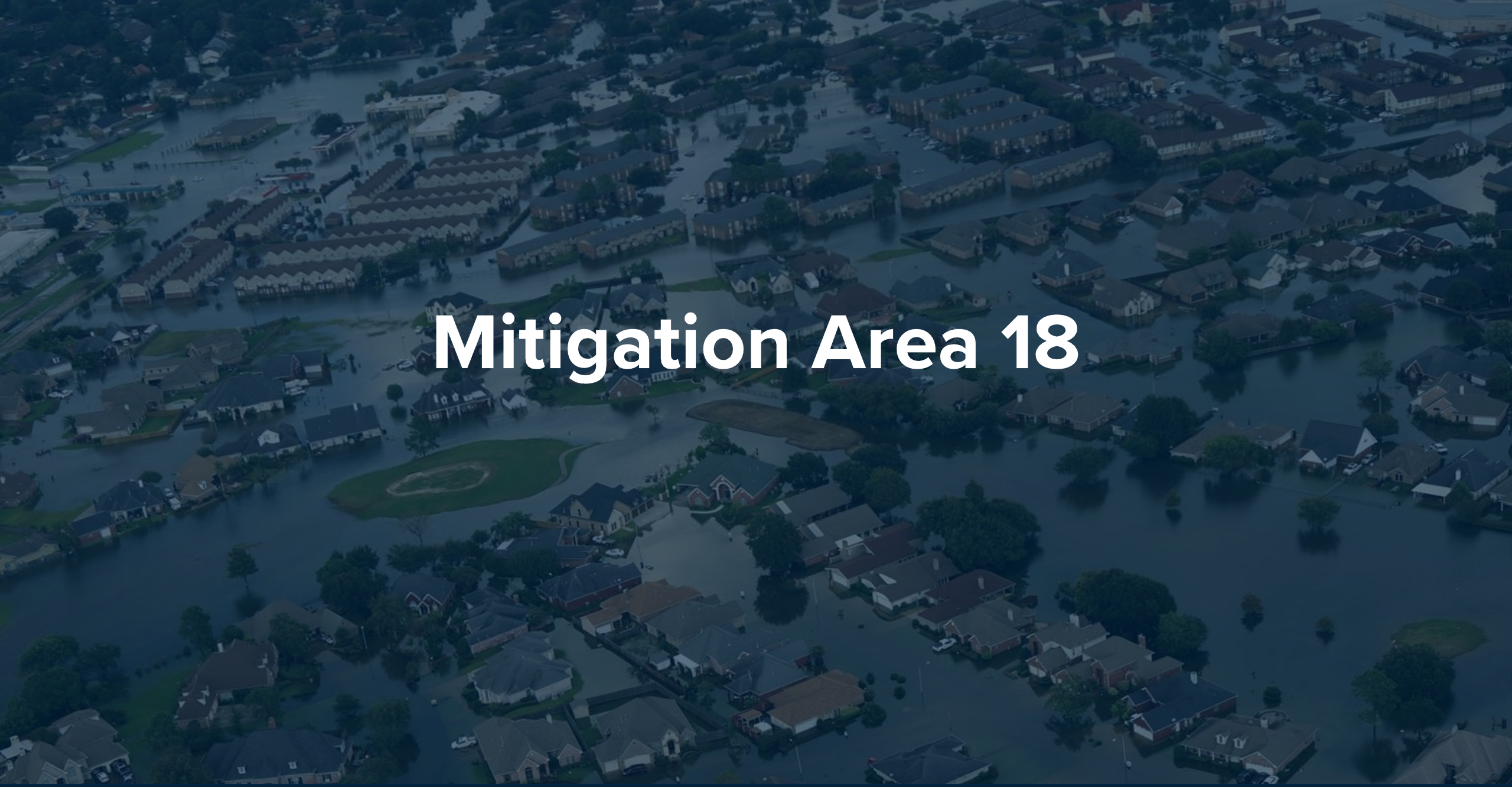
Proposed Project:

- Proposed Bulkhead along Highway 35 N and S Water St and to protect the Rockport Marina
- Proposed Sill to protect the bulkhead from wave action
- Proposed project protects ~**700 structures** from SLR 3-5ft
- Proposed pump stations for interior drainage
- Buyout program to be considered in further analysis

Project Screening Table - MA17

	Feasibility/ Duplication of Efforts Screening					Other Qualitative Considerations (*Projects not screened based on these criteria*)				High Level Benefit/ Cost Considerations		
ID	Concept	Community Support	Constructability Challenges	Potentially Conflicts with Ongoing Study/ies?	*Is project technically feasible?*	SoVI Designation for Area of Benefit	LMI Designation for Area of Benefit	Opportunities for Co-Benefits	Opportunities for Nature-Based Solutions	Preliminary Cost (Range)	Preliminary Benefit-Cost Ratio*	Progress Alternative to 50%?
1	Drainage Improvements to Ingleside Cove	TBD	Low	Low	Y	Medium Low	Low	Low	High	$0.5M - $1M	> 1	Y
2	Aransas Pass Levee Rebuild & Expansion	TBD	High	Medium	Y	Medium High	Medium	Medium	Low	$10M - $125M	> 1	TBD
3	Aransas Pass Buyouts	TBD	Medium	Low	Y	Medium High	Medium	High	Medium	$75M - $90M	< 0.5	TBD
4	Rockport Drainage Improvements	TBD	Low	Low	Y	Medium High	Medium	High	High	$1M - $2.5M	> 1	TBD
5	Tule Creek Upstream Detention / Redirection of Inflow	TBD	Low	Medium	Y	High	Medium	Medium	Low	< 0.5 M	> 1	Y
6	Fulton & Rockport Coastline Regional Project	TBD	Medium	Low	Y	High	Medium	High	High	$250M - $350M	> 1	Y
7	Rockport Floodwall	TBD	Medium	Low	Y	High	Medium	Medium	Medium	> $950M	< 1	N
8	Rockport Bulkhead & Sill	TBD	Medium	Low	Y	Medium	Medium	High	High	$35M - $100M	> 1	Y

**** assumed maximum possible benefits and unit costs ranges. BCRs will change after project modeling has been performed and benefits & costs are refined.***



Mitigation Area 18

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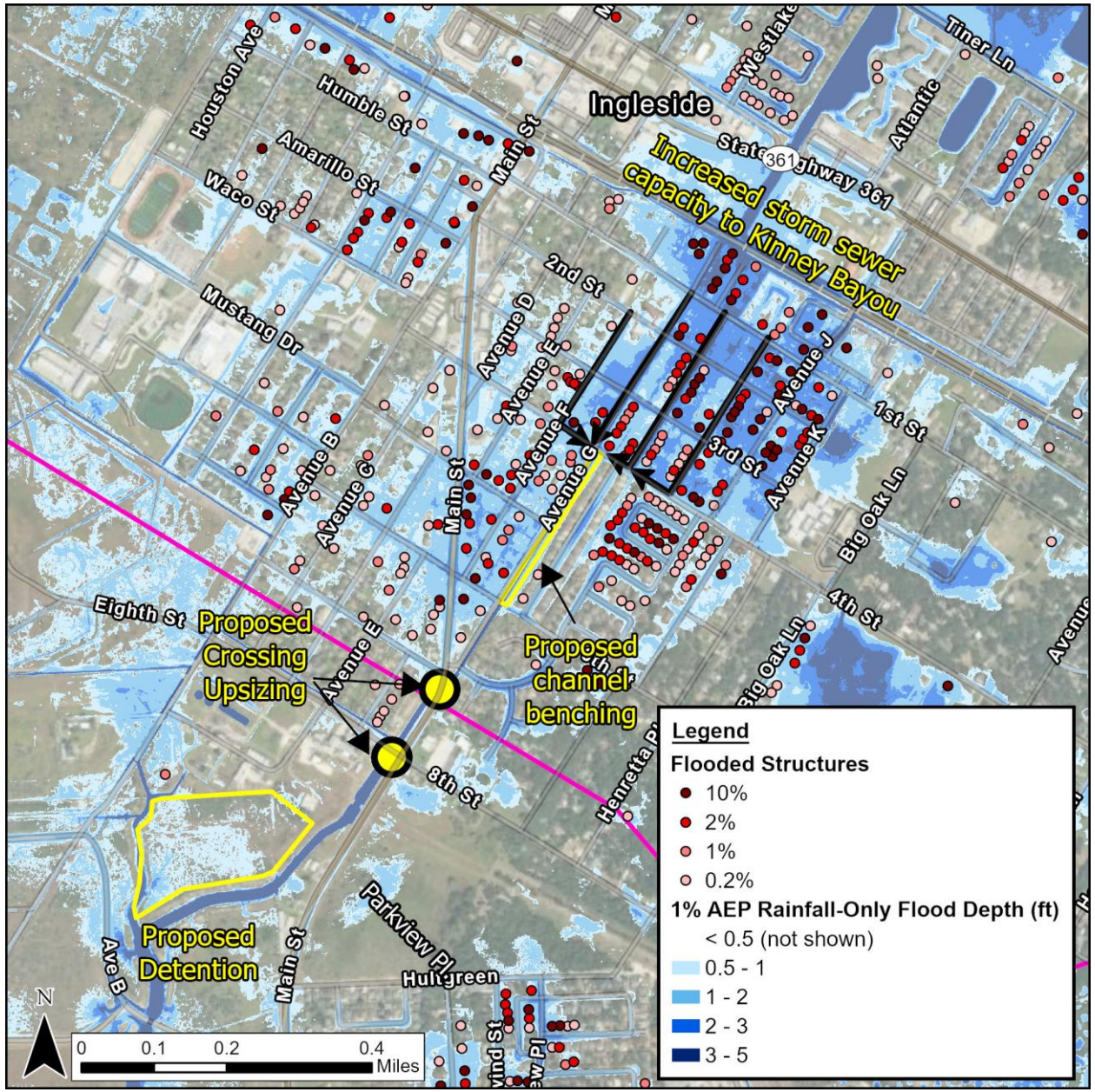
Concept #1 (MA18): Kinney Bayou Improvements



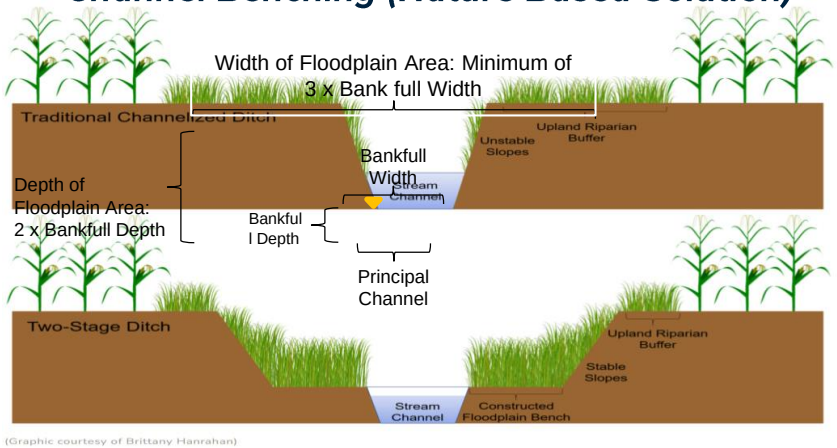
County: San Patricio
Community: Ingleside

Flooding Challenge: Model predicts extensive flooding during rainfall/riverine events for this area

Proposed Project:

- Increasing drainage capacity to Kinney Bayou upstream
  - Additional information needed on existing system for Ave. F, G, H & I
- Channel benching along Kinney Bayou from 6th St. to 4th St.
- Proposed crossing upgrades at Main St. & 8th St.
- If needed for impact mitigation, detention at downstream end

Channel Benching (Nature Based Solution)



(Graphic courtesy of Brittany Hanrahan)

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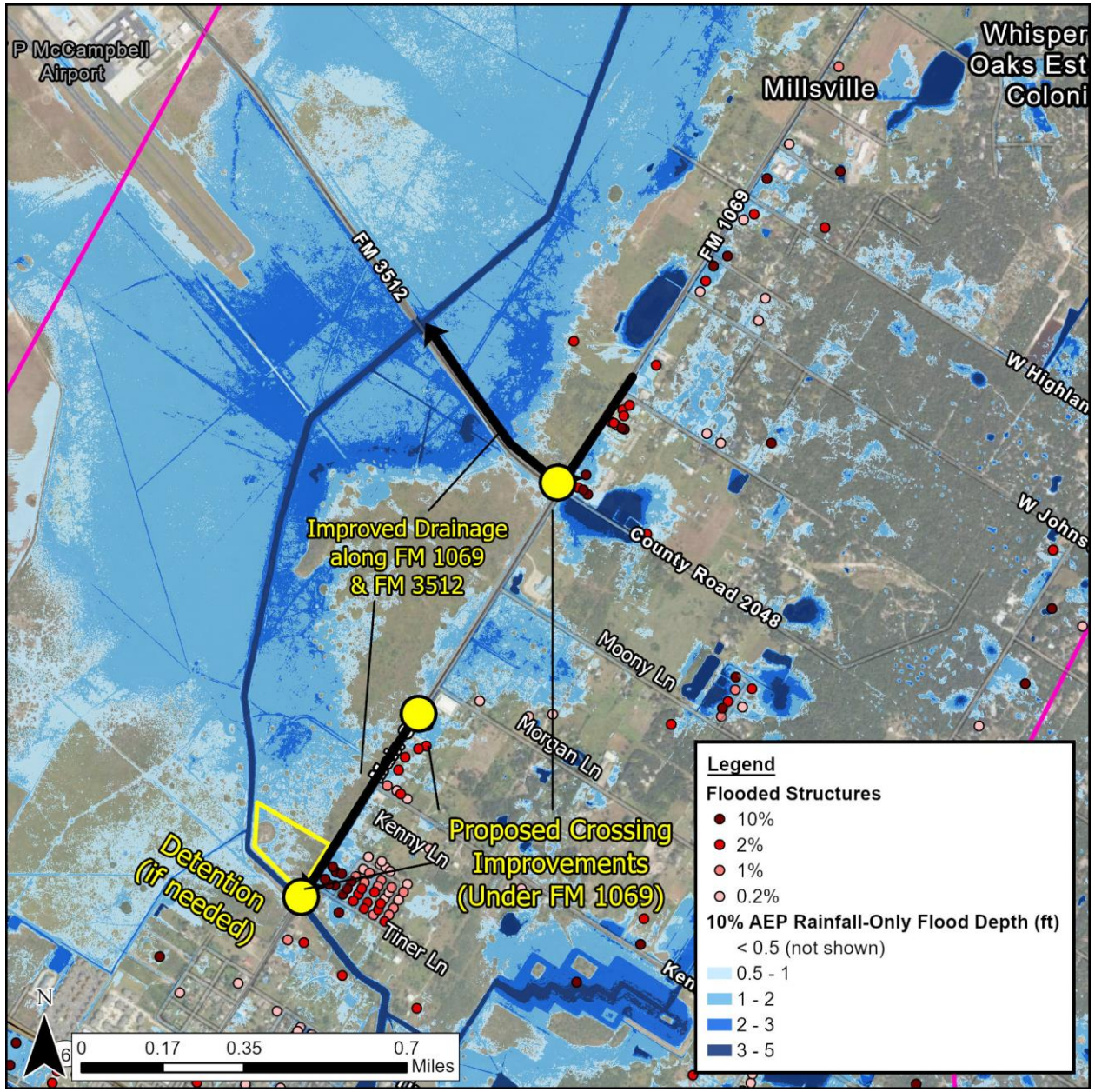
Concept #2 (MA18): Drainage Upgrades to FM 1069 to McCampbell Slough



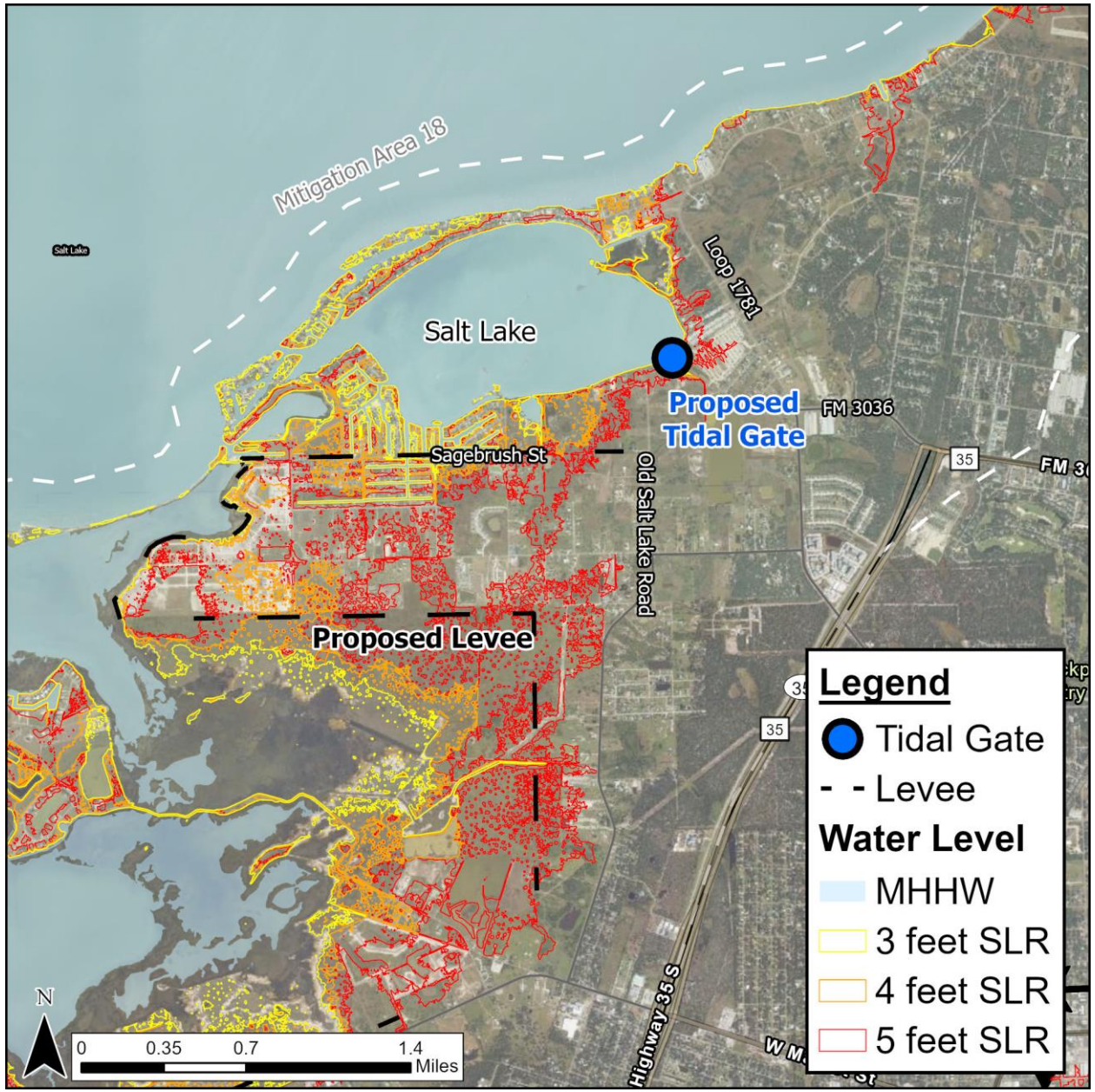
County: San Patricio
Community: Ingleside

Project Need: Model predicts flooding for 10-year rainfall/riverine events for this area; undersized crossings & roadside ditch capacity for Morgan & Mooney Lane Colonias Water needs more efficient way to drain from neighborhoods to McCampbell Slough. TWDB unfunded FME in this area.

Proposed Project:

- Widening and regrading roadside ditch along FM 1069 (south side closest to the neighborhood)
- Improved drainage along McCullough Ln (area of significant predicted structural flooding)
- Detention can be added near McCullough Ln if needed to mitigate impacts.

Concept #3 (MA18)- Salt Lake Levee



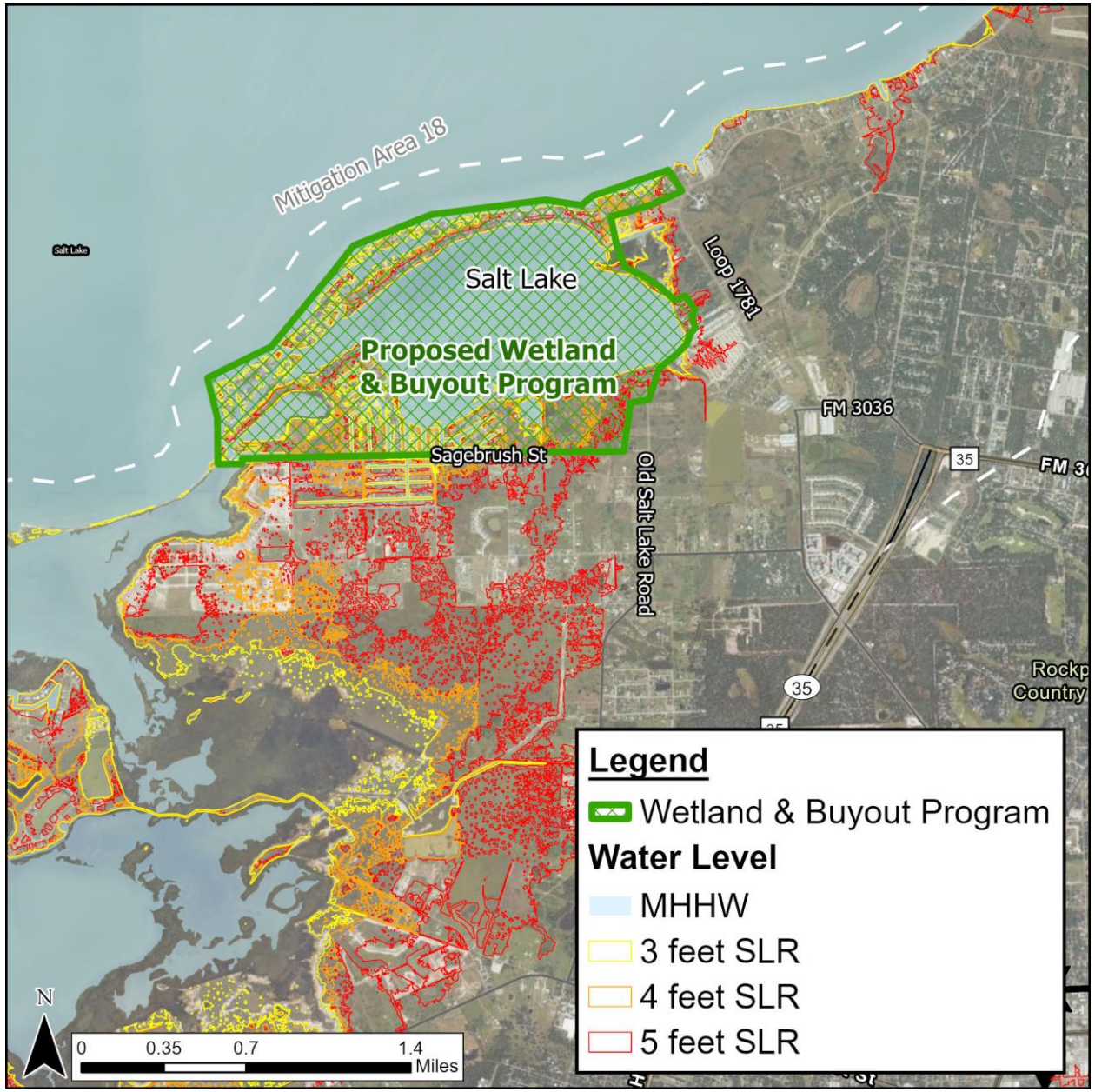
County: Aransas
Community: Rockport

Flooding Challenge: Model predicts significant sea level rise and risk of surge flooding in future conditions (2085)

Proposed Project:

- Proposed Levee to prevent flooding from 3-5 feet of SLR that impacts coastal communities south of Salt Lake
- Proposed levee is also crucial to protect the evacuation routes for residents
- Proposed Tidal Gate to provide protection from flooding for the local properties around
- Proposed project benefits about ~340 structures

Concept #4 (MA18)- Salt Lake Wetland



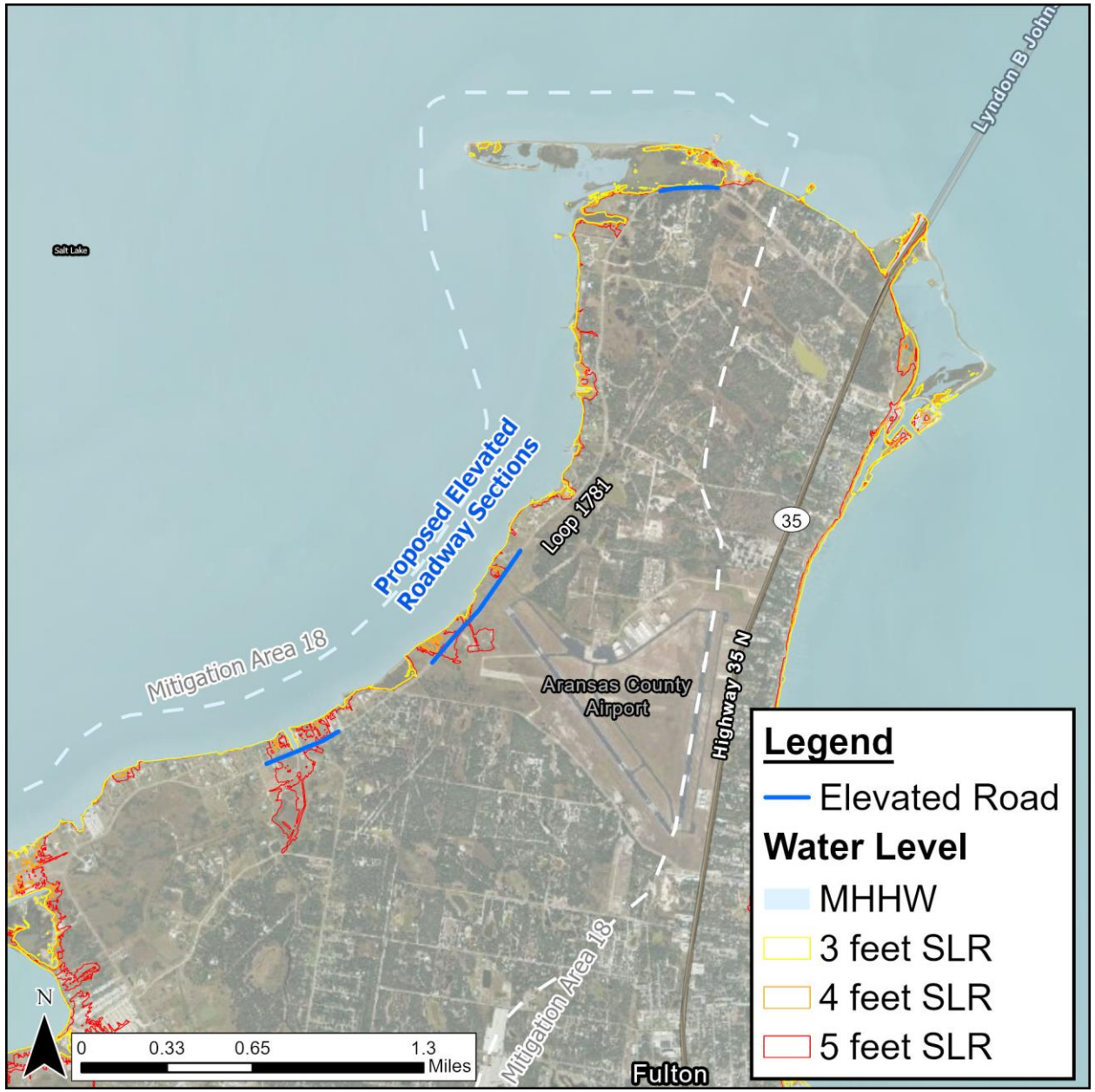
County: Aransas
Community: Rockport

Flooding Challenge: Model predicts significant sea level rise and risk of surge flooding in future conditions (2085)

Proposed Project:

- Nature Based Solution to mitigation 3-4 feet of sea level rise
- Proposed buyout program for ~700 properties within Salt Lake area due to their high vulnerability to tidal flooding driven by SLR
- The buyout program will allow the restoration of the wetland habitat, which can protect against sediment erosion and high energy wave

Concept #5 (MA18)- Loop 1781 Elevation



County: Aransas
Community: Rockport

Flooding Challenge: Model predicts significant sea level rise and risk of surge flooding in future conditions (2085)

Proposed Project:

- Proposed road elevations along segments of the Loop 1781 Route
- Protects 11 structures from flooding of the Loop 1781 route
- Preserves a major road that can become an escape route for residents

Project Screening Table - MA18

Feasibility/ Duplication of Efforts Screening						Other Qualitative Considerations (*Projects not screened based on these criteria*)				High Level Benefit/ Cost Considerations			
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1	Kinney Bayou Project	TBD	Low	Medium	Y	Medium High	Medium	High	High	115 M	10 - 30 M	>1	Y
2	FM 1069 to McCampbell Slough Drainage Upgrades	TBD	Low	Low	Y	Medium High	Medium	Low	Low	52.6 M	0.5 - 1 M	>1	Y
3	Salt Lake Levee	TBD	Medium	Low	Y	Medium	Medium	Low	Low	394 M	2- 15 M	>1	Y
4	Salt Lake Wetland	TBD	Medium	Low	Y	Medium	Medium	High	High	9.5 M	400-500 M	<0.5	N
5	Loop 1781 Elevation	TBD	Low	Low	Y	High	Medium	Low	Low	9.5 M	5 – 20 M	0.5-1	N

**** At this stage, "benefits" refer to maximum assumed structure losses from the 1% AEP flood event. BCRs provided in this table are preliminary & high-level, based on assumed maximum possible benefits and unit costs ranges. BCRs will change after project modeling has been performed and benefits & costs are refined.***

Next Steps

Current Meeting:

Aug 2025

- At the 25% submittal
- Discuss mitigation projects with local stakeholders to help screen out alternatives

Next Meeting:

Jan 2026

- At the 75% milestone submittal
- Discuss initial project recommendations and eventual project hand-off

+ ongoing coordination throughout the phase

GLO RBFS Support

Commissioner Dawn Buckingham, M.D.

Available Resources

- Tips to Improve Grant Applications
- Funding Resources Guide
- Training on Nature-Based Solutions (NbS)
- Fund MATCH Tool

Funding flood resilience is a community effort. This document, while not exhaustive, is a compilation of potential funding sources sorted by project type.

PROJECT CATEGORIES	FUNDING SOURCES
Flood Mitigation	Building Resilient Infrastructure and Communities (BRIC) Coastal Management Program (CMP) Community Development Block Grant – Mitigation (CDBG-MIT) Continuing Authorities Program (CAP) Clean Water State Revolving Fund (CWSRF) Flood Infrastructure Fund (FIF) Flood Mitigation Assistance Program (FMA) National Coastal Resilience Fund (NCRF) Grants Watershed Protection and Flood Prevention Program (WFPO)
Flood Infrastructure	Building Resilient Infrastructure and Communities (BRIC) Coastal Management Program (CMP) Community Development Block Grant – Mitigation (CDBG-MIT) Flood Infrastructure Fund (FIF) Flood Mitigation Assistance Program (FMA) National Coastal Resilience Fund (NCRF) Grants
Resilient Infrastructure	Building Resilient Infrastructure and Communities (BRIC) Coastal Management Program (CMP) Community Development Block Grant – Mitigation (CDBG-MIT) Continuing Authorities Program (CAP) Clean Water State Revolving Fund (CWSRF) Flood Infrastructure Fund (FIF) Flood Mitigation Assistance Program (FMA) National Coastal Resilience Fund (NCRF) Grants Watershed Protection and Flood Prevention Program (WFPO)
Coastal Management & Resilience	Building Resilient Infrastructure and Communities (BRIC) Coastal Management Program (CMP) Community Development Block Grant – Mitigation (CDBG-MIT) Continuing Authorities Program (CAP) Clean Water State Revolving Fund (CWSRF) Flood Infrastructure Fund (FIF) Flood Mitigation Assistance Program (FMA) National Coastal Resilience Fund (NCRF) Grants Watershed Protection and Flood Prevention Program (WFPO)

Technical & Grant Support in Phase 4

Technical Assistance

- Identify and prioritize flood-mitigation needs within any West Region community/city/county (*Available now **upon request***)
- Region-wide Flood Warning System investigation (*ongoing*)
- Other non-structural flood mitigation alternatives investigation

Grant Assistance- *Expected Fall 2025 – Summer 2026*

- Grant training workshops
- Grant support “office hours”
- Grant newsletters

QUESTIONS?

Contact the GLO RBFS West Region team at:

GLOfloodstudies.west@recovery.texas.gov