

A large, semi-transparent blue number '5' is positioned on the left side of the slide, partially overlapping a landscape photograph. The photograph shows a wide river or bayou with a marshy bank in the foreground and a line of trees in the distance under a clear sky.

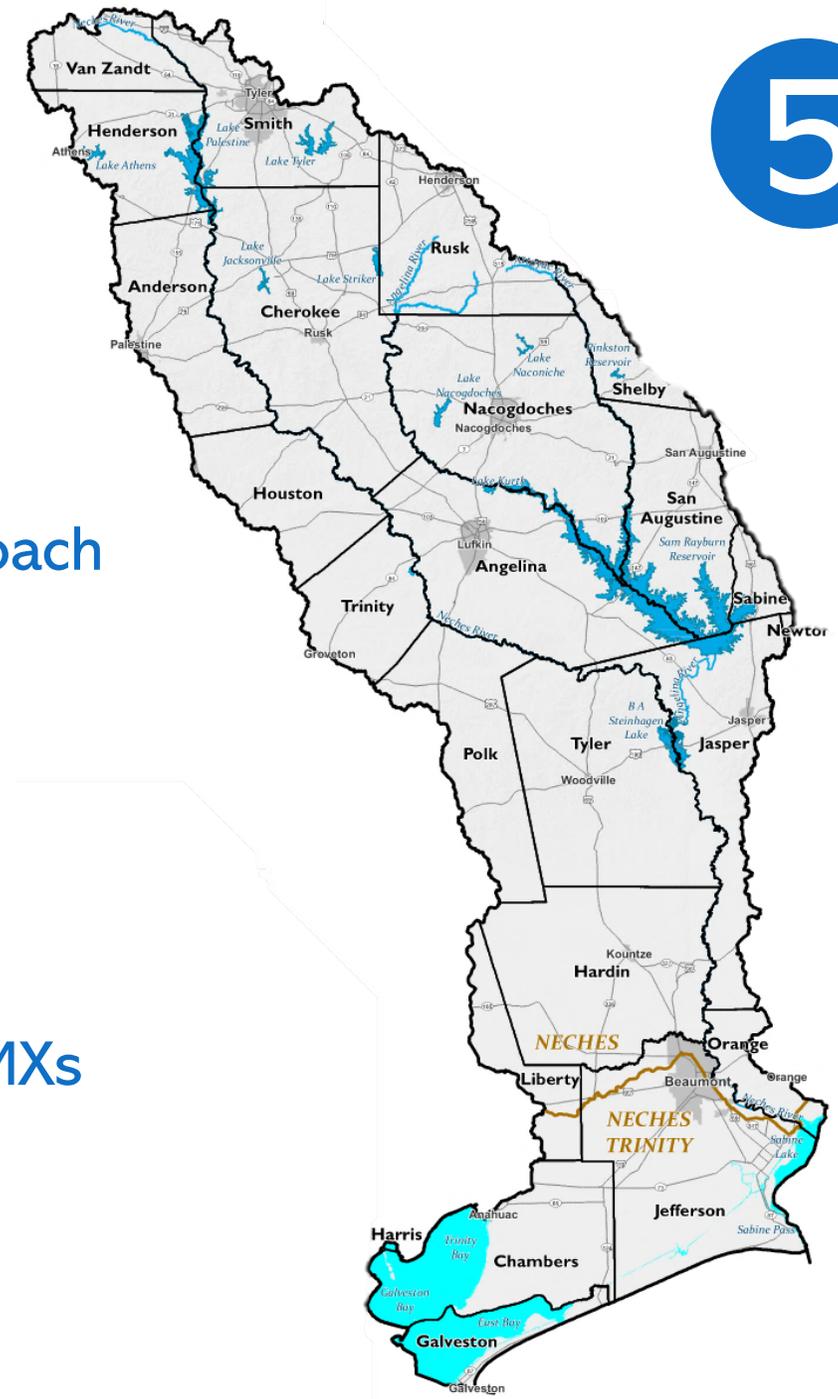
# Update from Consultant Team

## Neches Regional Flood Planning Group

September 18, 2025

# Agenda

- Task 2A
  - Existing Conditions Flood Hazard
- Task 2B
  - Working Future Conditions Flood Hazard Approach
- Task 3A
  - Updates to Floodplain Management Practices
- Task 3C
  - Goals Progress + Updates
- Task 4A
  - Process to Identify and Evaluation Potentials FMXs
- Task 10
  - Public Outreach Plan



# Task 2A – Existing Condition Flood Risk Analyses

# Task 2A – Existing Condition Flood Risk Analysis

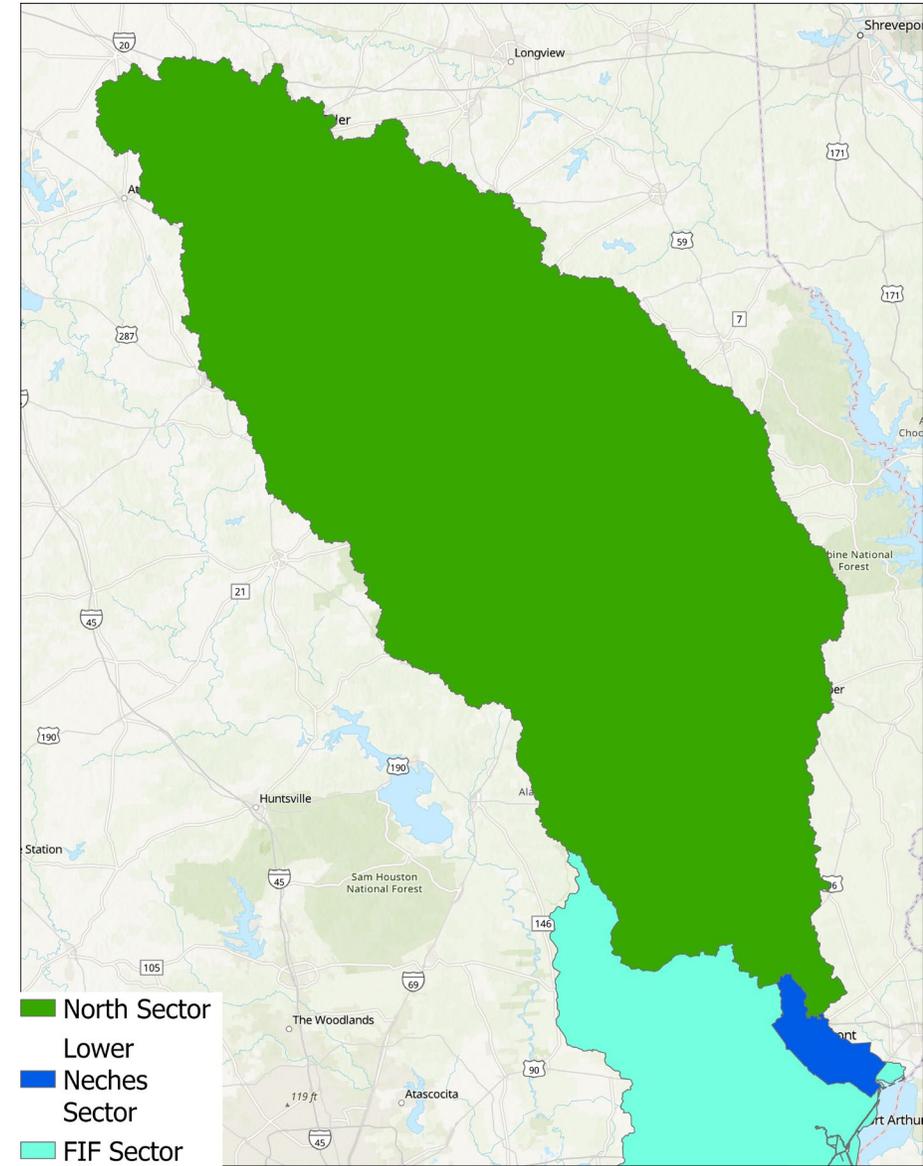
- Existing Condition Flood Hazard Floodplain
  - Finalizing extents and publishing for RFPG review
- Existing Condition Flood Hazard used for variety of tasks in the RFP:
  - Task 2B – Future Condition Flood Hazard
  - Task 3B – Flood Mitigation Needs Analysis
  - Task 4A – Identification and Evaluation of Potential FMXs

# Task 2B – Future Condition Flood Risk Analyses

# Task 2B - Approach

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- North Sector
  - Vertical Buffer
    - Vertical difference between Cursory Floodplain existing (Scenario 5) and future (Scenario 3)
    - 10-year assumed to be equal to the future (Scenario 3) cursory data floodplain.
- Lower Sector
  - Vertical Buffer
- FIF Sector
  - Update Models
    - Future conditions rainfall, Scenario 3
    - Sea level rise
    - No adjustment to land cover or land subsidence



# Task 3A – Standards Updates

# Updates to Recommended Standards – 2<sup>nd</sup> Cycle

Category	Theme	Type	Recommended Standards
Floodplain Management Practices	Land Use Regulations	Minimum Regulations	<p>CYCLE 1: All municipalities should adopt minimum requirements outlined by FEMA for NFIP participation. Where appropriate, consider adopting higher standards to provide higher levels of protection against loss of life and property due to flooding.</p> <p>CYCLE 2: <b>Recommended Standard to be deleted.</b></p>
Detention	Detention or Compensatory Storage	Detention	<p>CYCLE 1: Communities should require compensatory storage for all fill in the 100-year floodplain.</p> <p>CYCLE 2: <b>Any reduction in floodplain storage or conveyance capacity within the 1.0% or 0.2% ACE regulatory floodplain must be offset with a hydraulically equivalent (one-to-one) volume of mitigation sufficient to offset the reduction, except in areas identified as coastal flood zones. A full hydrologic and hydraulic analysis should be performed to demonstrate that floodplain fill mitigation provided is sufficient and is demonstrated to cause no negative impact.</b></p> <p>CYCLE 1: Communities should require all new development in Zone A or unmapped areas provide a hydrologic and hydraulic study and demonstrate no adverse impacts downstream.</p> <p>CYCLE 2: <b>RFPG recommends that all communities require impact analysis for all new development for the 5-year, 25-year, and 100-year storms for discharge and water surface elevation.</b></p>

# Updates to Recommended Standards – 2<sup>nd</sup> Cycle

Category	Theme	Type	Recommended Standards
Emergency Preparedness	Flood Warning	Flood Awareness	<p><b>CYCLE 1:</b> All communities should create and maintain a website or webinars on public flood risk awareness.</p> <p><b>CYCLE 2:</b> All communities should share and maintain links to existing flood risk awareness resources, including the TWDB Regional Flood Planning website.</p>
		Flood Response	<p><b>CYCLE 1:</b> All communities should have a warning system to contact citizens before and during storm events.</p> <p><b>CYCLE 2:</b> All communities should consider appropriate warning systems to notify citizens before and during storm events.</p>
New Development	Design Standards	Roadways	<p><b>CYCLE 1:</b> Roadways designated as major thoroughfares should be designed such that the 100-year inundation extent is contained within the right-of-way and at least one navigable lane is maintained in each direction.</p> <p><b>CYCLE 2:</b> For major thoroughfares, the 100-year inundation extent shall be contained within the unpaved areas of the right-of-way, with no conveyance permitted on the paved roadway surface, and a minimum of one navigable lane maintained in each direction.</p>

# New Standards – 2<sup>nd</sup> Cycle

Category	Theme	Type	Recommended Standards
Floodplain Management Practices	CRS Participation	Minimum Regulations	Communities are encouraged to participate in the Community Rating System (CRS) program to reduce flood insurance rate premiums across the region
Emergency Preparedness	Public Outreach	Flood Risk Information	Work with local municipalities to make more widely available flood risk information for the public. Additionally, conduct public outreach to identify ongoing flood needs such as gaps in floodplain mapping and identification of flood-prone areas.

# RFPG Action Recommend Standards

# Recommended Standards Update Summary

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Category	Type	Recommended Standard
Floodplain Management Practices	Minimum Regulations	<p>All communities should enforce floodplain regulations.</p> <p>Communities are encouraged to participate in the Community Rating System (CRS) program to reduce flood insurance rate premiums across the region*</p>
	Property Acquisition	All communities should adopt a property acquisition program for repetitive loss structures which can be used as beneficial use area (i.e. pocket park) for the local community.
	Operations & Maintenance	Entities should create a maintenance plan for drainage infrastructure in order to prevent more expensive replacement costs.
		Communities should create a drainage infrastructure maintenance strategy following complaints or damages after a storm.
Emergency Preparedness	Flood Awareness	All communities should share and maintain links to existing flood risk awareness resources, including the TWDB Regional Flood Planning website.
	Flood Risk Information	<p>All communities should use the best available precipitation data for regulatory and design criteria/standards.</p> <p>Work with local municipalities to make more widely available flood risk information for the public. Additionally, conduct public outreach to identify ongoing flood needs such as gaps in floodplain mapping and identification of flood-prone areas.*</p>
	Flood Response	<p>All communities should have a Hazard Mitigation Plan for significant storm events.</p> <p>All communities should consider appropriate warning systems to contact citizens before and during storm events.</p>

\* - new Standard for Cycle 2

# Recommended Standards Update Summary

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Category	Type	Recommended Standard
New Development	Roadways	Roadways designed as major thoroughfares should be designed such that the 100-year inundation extent is contained within the unpaved right-of-way.
		Roadways should be designed to cause no adverse impacts up to and including the 100-year storm event.
	Culverts and Bridge Crossings	Culverts should demonstrate no adverse impact for 100-year storm event.
	Detention	Any reduction in floodplain storage or conveyance capacity within the 1.0% or 0.2% ACE regulatory floodplain must be offset with a hydraulically equivalent (one-to-one) volume of mitigation sufficient to offset the reduction, except in areas identified as coastal flood zones. A full hydrologic and hydraulic analysis should be performed to demonstrate that floodplain fill mitigation provided is sufficient and is demonstrated to cause no negative impact.
		RFPG recommends that all communities require impact analysis for all new development for the 5-year, 25-year, and 100-year storms for discharge and water surface elevation.
	Habitable Structures	All habitable structures in coastal communities should be designed such that finished floor elevations are 3 feet above the BFE including the combined riverine and coastal effects.
		All habitable structures in non-coastal communities are designed such that finished floor elevations are 2 feet above the riverine 100-year WSE, EXCEPT where stricter local standards apply.
Critical Facilities	All critical facilities in coastal communities should be designed such that finished floor elevations are 2 feet above the highest elevation of either the riverine 500-year or coastal 100-year WSE including the combined riverine and coastal effects.	
	All critical facilities in non-coastal communities should be designed such that finished floor elevations are 2 feet above the riverine 100-year WSE.	
Nature-Based Solution	All new construction should consider nature-based solutions, low impact development, or green stormwater infrastructure.	

# Task 3C – Flood Mitigation and Floodplain Management Goals Updates

# Task 3C – Cycle 2 Updates

Table 11 Regional flood plan flood mitigation and floodplain management goals<sup>A</sup>

Goal ID	Goal	Goal Theme <sup>B</sup>	Term of Goal	Target Year	Applicable To	Residual Risk	How will the Goal be Measured	Overarching Goal(s)	Associated Goal IDs
01000001	Improve the level of service for 10% of vulnerable roadway segments and low water crossings located within the existing and future 1% annual chance floodplain. .	Roadway safety and early warning systems, Infrastructure assessment, maintenance, and rehabilitation;	Short Term (10 year)	2038	HUC 8 Watershed #			Protect against the loss of life	01000002
01000002	Increase the acreage of publicly protected natural areas by 20% for flood and ecosystem purposes to reduce future impacts of flooding.	Nature-based solutions, green infrastructure, and preservation	Long Term (30 year)	2058	Entire RFPG			Protect against the loss of life	01000001
01000003									
01000004									
01000005									
01000006									

Flood Planning Cycle	Y	FP_CYCLE	Text	Flood Planning Cycle the Goal was introduced. 2023: 2020-2023, 2028: 2023-2028	2023, 2028
Status of goal	Y	STATUS	Text	Progress made to the goal from previous cycle; Conditionally required if FP_CYCLE = '2023'	Yes, No
Percent of goal	N	PROGRESS	Short	Percent of goal achieved (whole number); Conditionally required if FP_CYCLE = '2023'	
Status description	N	STATUS_DES	Text		

# Category 1 – Improve Flood Infrastructure



- RFPG Input
  - Reduce existing flood risk and mitigate future flood hazard to life and property by constructing new infrastructure projects.

Goal ID	Goal	Short-Term Goal	Long-Term Goal
1A	An average of XX% of the new regional infrastructure projects between 2023 – 2038 will utilize larger storm events (>100-year) as the basis of their design.	Cycle 1: 10% Cycle 2: 15%	Cycle 1: 25% Cycle 2: 25%

# Category 1 – Improve Flood Infrastructure



- RFPG Input
  - The preservation and restoration of the natural and beneficial resources within existing floodplains should be considered in the development of flood risk reduction projects.

Goal ID	Goal	Short-Term Goal	Long-Term Goal
1B	RFPG must consider in all projects and should incorporate nature-based practices and floodplain preservation in an average of XX% of their new flood risk reduction projects between 2023 - 2038.	Cycle 1: 10% Cycle 2: 15%	Cycle 1: 25% Cycle 2: 35%

# Category 1 – Improve Flood Infrastructure

- RFPG Input
  - Impacts to critical facilities can impact a community’s ability to respond to and recover from flood related events
- 479 Critical Structures located within 100yr (Cycle 1)
- Critical Facilities
  - Emergency Facilities
  - Medical Facilities
  - Public Infrastructure
  - Energy Producing Facilities
  - Schools

Goal ID	Goal	Short-Term Goal	Long-Term Goal
1C	Reduce the number of critical facilities in the 100-year flood risk inundation extents by XX%.	Cycle 1: 15% Cycle 2: 15%	Cycle 1: 25% Cycle 2: 25%

# Category 1 – Improve Flood Infrastructure

- RFPG Input
  - Flood Exposure can alternatively be reduced by implementing structure elevations, buyouts, and other forms of flood protection
- 34,728 Structures located within 100yr (Cycle 1)

Goal ID	Goal	Short-Term Goal	Long-Term Goal
1D	Reduce exposure of existing and future structures in the 100-year flood risk inundation extents by elevating, acquiring, relocating, or otherwise providing flood protection to XX% of structures.	Cycle 1: 10% Cycle 2: 15%	Cycle 1: 30% Cycle 2: 30%

# Category 1 – Improve Flood Infrastructure



- RFPG Input
  - Installing warning devices can not only prevent deaths during a flooding event but also help emergency management personnel coordinate evacuation and emergency response
- 186 LWCs (Cycle 1)

Goal ID	Goal	Short-Term Goal	Long-Term Goal
1E	Give notice to 100% of affected units of local government and improve XX% of Low Water Crossings, identified in the latest Regional Flood Plan, by installing warning devices.	Cycle 1: 50% Cycle 2: 50%	Cycle 1: 100% Cycle 2: 100%

# Category 1 – Improve Flood Infrastructure



- RFPG Input
  - Improving Low Water Crossings can not only resolve flood risk for communities but also aid in transportation and emergency response post-disaster
- 186 LWCs identified in Cycle 1

Goal ID	Goal	Short-Term Goal	Long-Term Goal
1F	Give notice to 100% of affected units of local government and solicit funding applications for improvement or removal of XX% of Low Water Crossings identified in the latest Regional Flood Plan.	Cycle 1: 25% Cycle 2: 35%	Cycle 1: 80% Cycle 2: 90%

# Category 2 – Expand Funding

- RFPG Input
  - Entities within the region can implement more capital improvement/flood mitigation projects if more grant funding from State and/or Federal sources can be secured.

Goal ID	Goal	Short-Term Goal	Long-Term Goal
2A	Increase the amount of State/Federal funding for flood mitigation projects and strategies awarded within the Neches Region by XX%.	Cycle 1: 25% Cycle 2: 30%	Cycle 1: 75% Cycle 2: 80%

# Category 2 – Expand Funding

- RFPG Input
  - By establishing a dedicated funding source for the operation and maintenance of existing storm drainage systems, communities and entities within the region can expect to see an increase in the sustainability and resiliency of their flood infrastructure.
- 11 out of 79 communities in the region within areas that levy stormwater fees (Cycle 1)

Goal ID	Goal	Short-Term Goal	Long-Term Goal
2B	Increase percentage of areas with dedicated funding sources for operations & maintenance for storm drainage systems to XX% of communities.	Cycle 1: 50% Cycle 2: 50%	Cycle 1: 75% Cycle 2: 75%

# Category 2 – Expand Funding

- RFPG Input
  - The implementation of a stormwater utility charge can provide a source of funding and/or capital for communities and districts to execute significant maintenance items and capital improvement projects.
- ~658,000 people out of region population of 1,479,155 within areas that levy stormwater fees (Cycle 1)

Goal ID	Goal	Short-Term Goal	Long-Term Goal
2C	XX% of the region’s population is part of an entity that has a dedicated drainage charge, fee, or other continuous funding mechanism for the maintenance and/or restoration of flood infrastructure.	Cycle 1: 50% Cycle 2: 60%	Cycle 1: 75% Cycle 2: 75%

# Category 3 – Improve Data

- RFPG Input
  - Updated flood hazard data impacts a community's ability to better understand flood risk and prevent future flood risk.
- Studies at HUC 12 level (Cycle 1)
  - 82.5% Approximate Information
  - 14.8% Detailed > 10 years
  - 1.5% Detailed ≤ 10 years
  - 1.2% No data



Goal ID	Goal	Short-Term Goal	Long-Term Goal
3A	Increase the coverage of flood hazard data across the region by completing detailed studies that utilize consistent methodology in XX% of the areas identified as having current gaps in flood mapping.	Cycle 1: 75% Cycle 2: 80%	Cycle 1: 100% Cycle 2: 100%

Cycle 1 Map Gaps

# Category 3 – Improve Data

- RFPG Input
  - Stream gages can help predict flood events, which allow communities to better safeguard lives and protect property.
- 13 USGS Active Gages
- 6 additional SE Texas R.A.I.N. Gages
  - 4 Rain Accumulation gages
  - 2 Tidal stream gages

Goal ID	Goal	Short-Term Goal	Long-Term Goal
3B	Increase the number of gauges across the Neches basin to cover XX% of the region's HUC10s.	Cycle 1: 50% Cycle 2: 60%	Cycle 1: 100% Cycle 2: 100%



# Category 3 – Improve Data

- Critical Infrastructure Database will contain information on:
  - Spatial Location
  - Type of Critical Infrastructure (Hospital, School, Fire Station, etc.)
  - Level of Flood Exposure (10-YR, 100-YR, 500-YR)

Goal ID	Goal	Short-Term Goal	Long-Term Goal
3C	Develop and maintain critical infrastructure database.	Cycle 1: Initiated Cycle 2: Initiated	Cycle 1: Maintained Cycle 2: Maintained

# Category 3 – Improve Data

- RFPG Input
  - Educating the public on flood-related risks can help to mitigate loss of life during flooding events

Goal ID	Goal	Short-Term Goal	Long-Term Goal
3D	100% of counties to perform public education and awareness campaigns to better inform the public of flood-related risks on an annual basis.	Cycle 1: Initiated Cycle 2: Initiated	Cycle 1: Maintained Cycle 2: Maintained

# RFPG Action Adopt Goals

# Recommended Goals Update Summary

Short Term (10 year)	Long Term (30 year)
An average of <b>15%</b> of the new regional infrastructure projects between 2023 – <b>2038</b> will utilize larger storm events (>100-year) as the basis of their design.	An average of 25% of the new regional infrastructure projects between 2033 – <b>2058</b> will utilize larger storm events (>100-year) as the basis of their design.
RFPG must consider in all projects and should incorporate nature-based practices and floodplain preservation in an average of <b>15%</b> of their new flood risk reduction projects between 2023 - <b>2038</b> .	RFPG must consider in all projects and should incorporate nature-based practices and floodplain preservation in an average of <b>35%</b> of their new flood risk reduction projects between 2033 - <b>2058</b> .
Reduce the number of critical facilities in the 100-year flood risk inundation extents by 15%.	Reduce the number of critical facilities in the 100-year flood risk inundation extents by 25%.
Reduce exposure of existing and future structures in the 100-year flood risk inundation extents by elevating, acquiring, relocating, or otherwise providing flood protection to <b>15%</b> of structures.	Reduce exposure of existing and future structures in the 100-year flood risk inundation extents by elevating, acquiring, relocating, or otherwise providing flood protection to 30% of structures.
Increase the amount of State/Federal funding for flood mitigation projects and strategies awarded within the Neches Region by <b>30%</b> .	Increase the amount of State/Federal funding for flood mitigation projects and strategies awarded within the Neches Region by <b>80%</b> .
Increase percentage of areas with dedicated funding sources for operations and maintenance for storm drainage system to 50% of communities.	Increase percentage of areas with dedicated funding sources for operations and maintenance for storm drainage system to 75% of communities.

Short Term (10 year)	Long Term (30 year)
<p>60% of the region’s population is part of an entity that has a dedicated drainage charge, fee, or other continuous funding mechanism for the maintenance and/or restoration of flood infrastructure.</p>	<p>75% of the region’s population is part of an entity that has a dedicated drainage charge, fee, or other continuous funding mechanism for the maintenance and/or restoration of flood infrastructure.</p>
<p>Increase the coverage of flood hazard data across the region by completing detailed studies that utilize consistent methodology in 80% of areas identified as having current gaps in flood mapping.</p>	<p>Increase the coverage of flood hazard data across the region by completing detailed studies that utilize consistent methodology in 100% of areas identified as having current gaps in flood mapping.</p>
<p>Increase the number of gauges across the Neches basin to cover 60% of the region’s HUC10s.</p>	<p>Increase the number of gauges across the Neches basin to cover 100% of the region’s HUC10s.</p>
<p>Develop and maintain critical infrastructure database</p>	<p>N/A</p>
<p>Give notice to 100% of affected units of local government and improve 50% of Low Water Crossings, identified in the latest Regional Flood Plan, by installing warning devices.</p>	<p>Give notice to 100% of affected units of local government and improve 100% of Low Water Crossings, identified in the latest Regional Flood Plan, by installing warning devices.</p>
<p>Give notice to 100% of affected units of local government and solicit funding applications for improvement or removal of 35% of Low Water Crossings identified in the latest Regional Flood Plan.</p>	<p>Give notice to 100% of affected units of local government and solicit funding applications for improvement or removal of 90% of Low Water Crossings identified in the latest Regional Flood Plan.</p>
<p>100% of counties to perform public education and awareness campaigns to better inform the public of flood-related risks on an annual basis.</p>	<p>Maintain 100% participation of counties performing public education and awareness campaigns to better inform the public of flood-related risks on an annual basis.</p>

# Task 4A – Identification and Evaluation of Potential FMXs

# Task 4A – Identification and Evaluation

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## FME

A proposed flood study of a specific, flood-prone area that is needed in order to assess flood risk and/or determine whether there are potentially feasible FMSs or FMPs

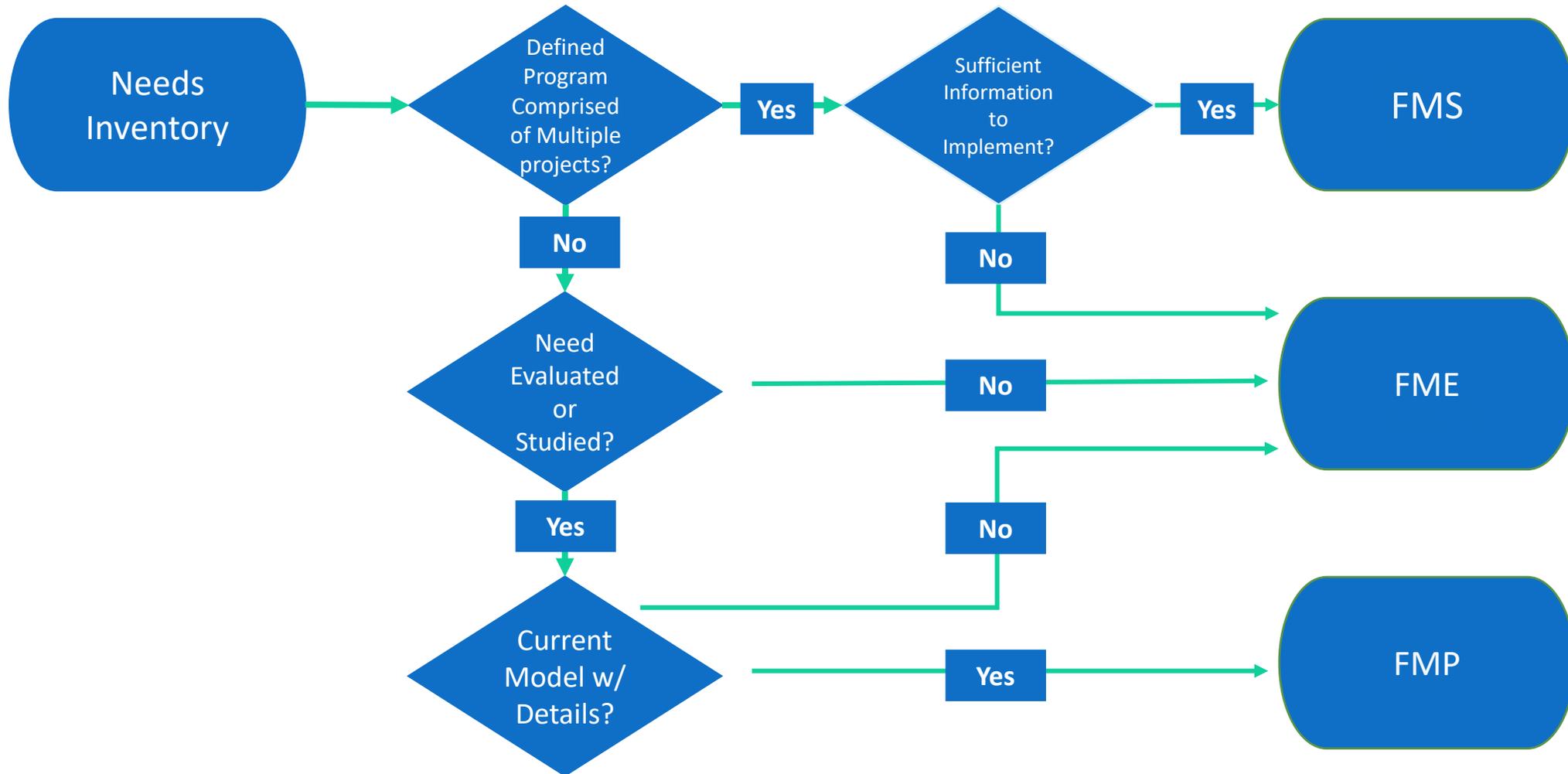
## FMP

A proposed project, either structural or non-structural, that has non-zero capital costs or other non-recurring cost and when implemented will reduce flood risk, mitigate flood hazards to life or property

## FMS

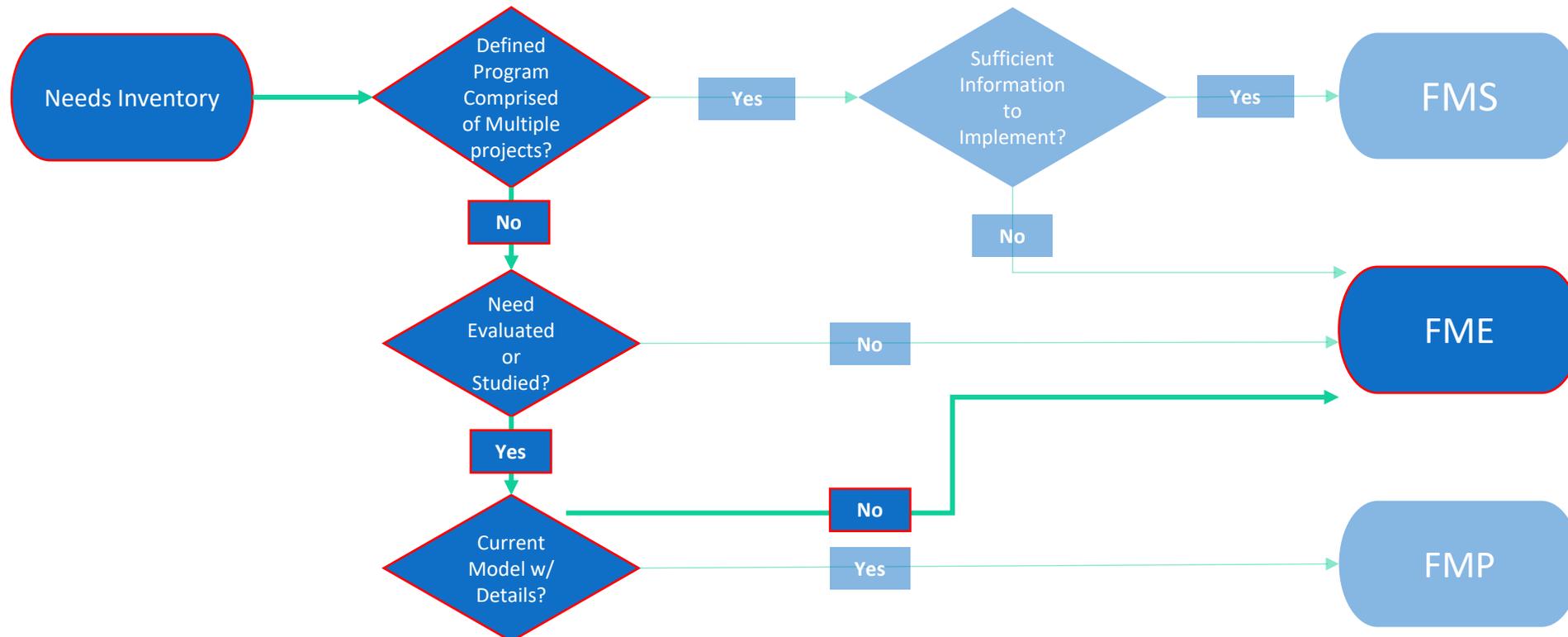
A proposed plan to reduce flood risk or mitigate flood hazards to life or property

# Process for Identifying FME, FMS, FMP



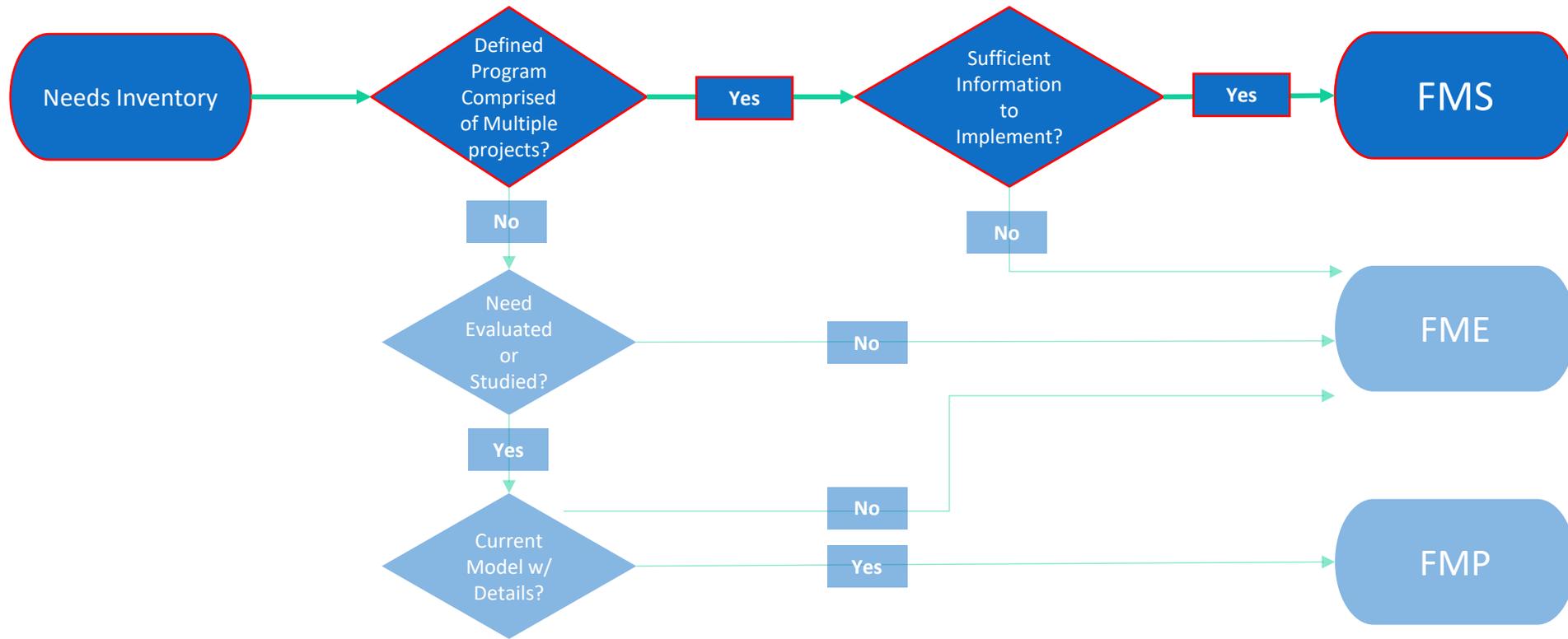
# Flood Management Evaluations Examples

- Watershed Planning
  - H&H Modeling
  - Flood Mapping Updates
  - Regional Watershed Studies
- Engineering Project Planning
  - Feasibility Assessments
  - Preliminary Engineering (30% design)



# Flood Management Strategy Examples

- Property Acquisition and Structural Elevation
- Education and Outreach
- Flood Measurement & Warning
- Regulatory and Guidance



# Flood Management Project Examples

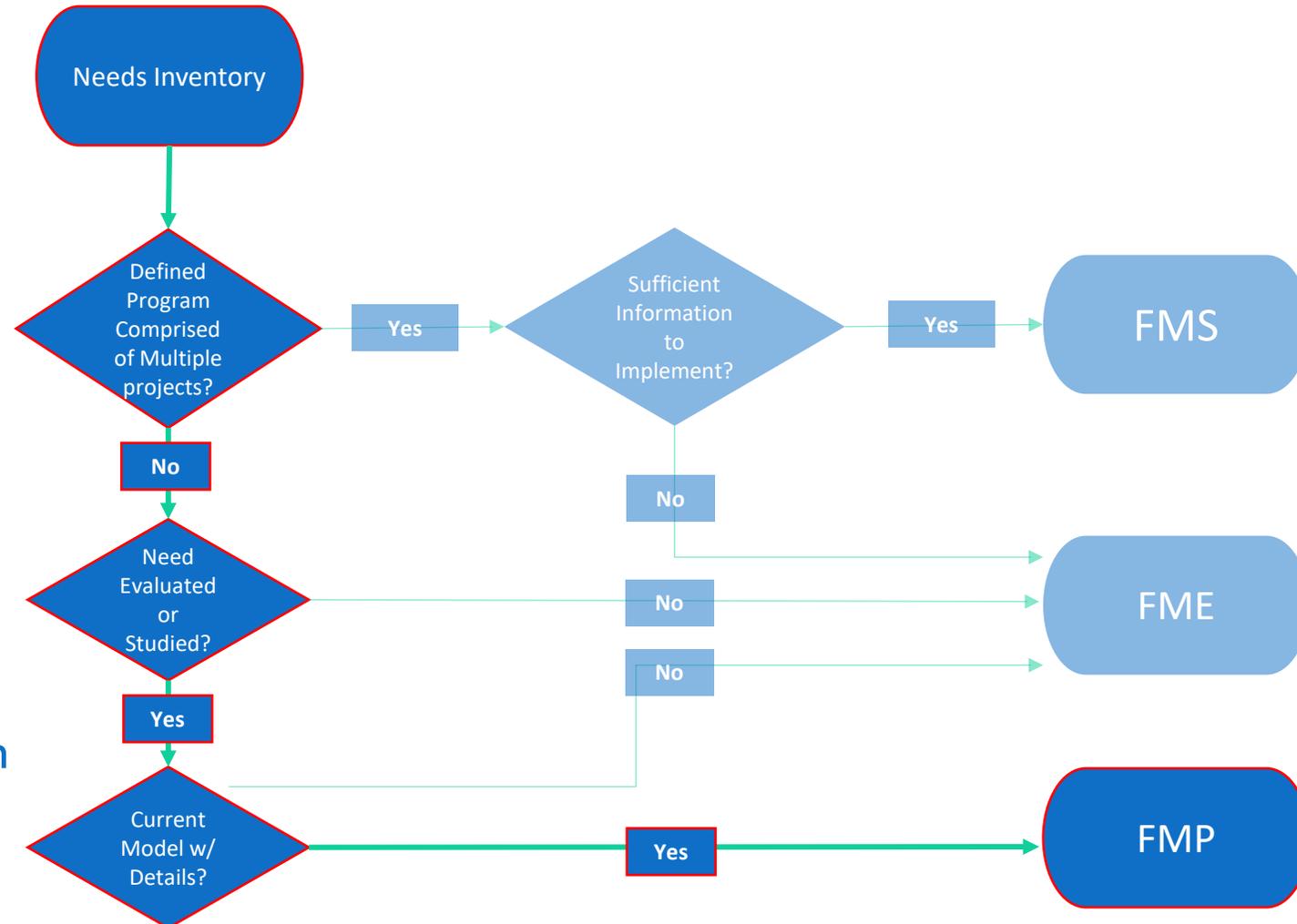
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- Structural Flood Mitigation Projects

- Regional Detention
- Storm Drain Improvements
- Flood Walls/Levees
- Nature-based Solutions
  - Wetland Restoration
  - Green Infrastructure
  - Riparian Restoration

- Non-Structural Flood Mitigation Projects

- Flood Readiness/Resilience
- Elevation of Individual Structures
- Stream gage and Monitoring Station Installation



# Task 10 – Public Participation

# Planning Schedule

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## October

- Technical Consultant to work on:
  - Task 2 –Future Conditions Flood Risk Analysis
  - Task 3B – Flood Mitigation Needs Analysis
  - Task 4A – Identification and evaluation of potential FMXs
  - Task 4B – Preparation of Tech Memo

## November

- Technical Consultant to work on:
  - Task 3B – Flood Mitigation Needs Analysis
  - Task 4A – Identification and evaluation of potential FMXs
  - Task 4B – Preparation of Tech Memo

## December

- Technical Consultant to work on:
  - Task 4B – Preparation of Tech Memo
  - **RFPG to vote on Submission of Technical Memorandum to TWDB**