

LOWER RIO GRANDE REGIONAL FLOOD PLANNING GROUP MEETING

*Agenda Item 9 – Discussion and update by
Technical Consultant*

November 17, 2021



AGENDA

Discussion and possible adoption/approval of:

- Flood mitigation and floodplain management goals for the Region 15 RFP per §361.36**
- Process for the RFPG to identify and evaluate potential FME, and potentially feasible FMPs and FMSs per §361.38**

Discussion of:

- Floodplain Management Standards.**



**DISCUSSION & POTENTIAL
ADOPTION OF
FLOOD MITIGATION
AND FLOODPLAIN
MANAGEMENT
GOALS**

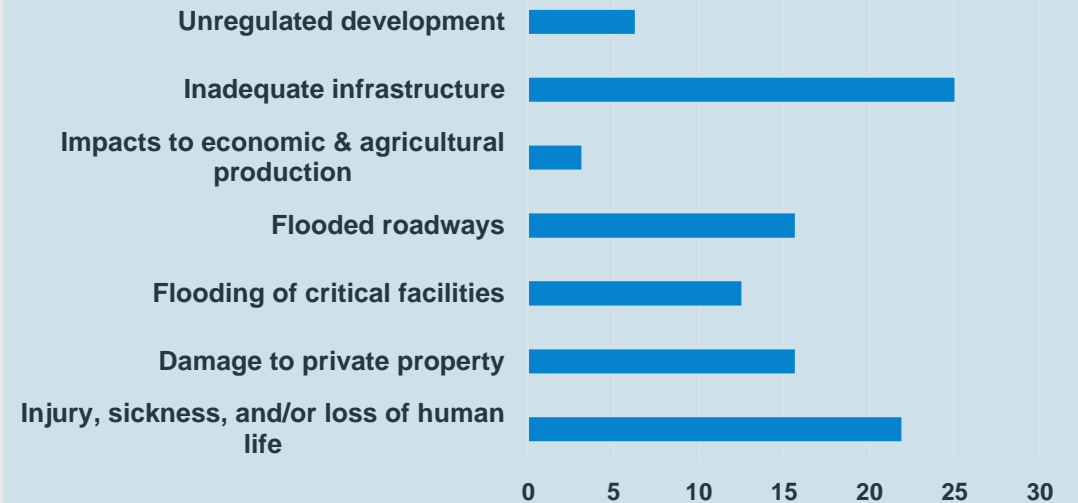


GOAL SETTING PROCESS

Items to Consider

- Currently there are 37 goal statements for your consideration
- We proposed 6 Overarching Goal Categories
 - 2 more proposed
- Consider the following:
 - No maximum or minimum number
 - Availability of existing data
 - Ease of collecting and tracking additional data
 - Time/Resources required to track selected goals

Biggest Flooding Concerns (% Responses)

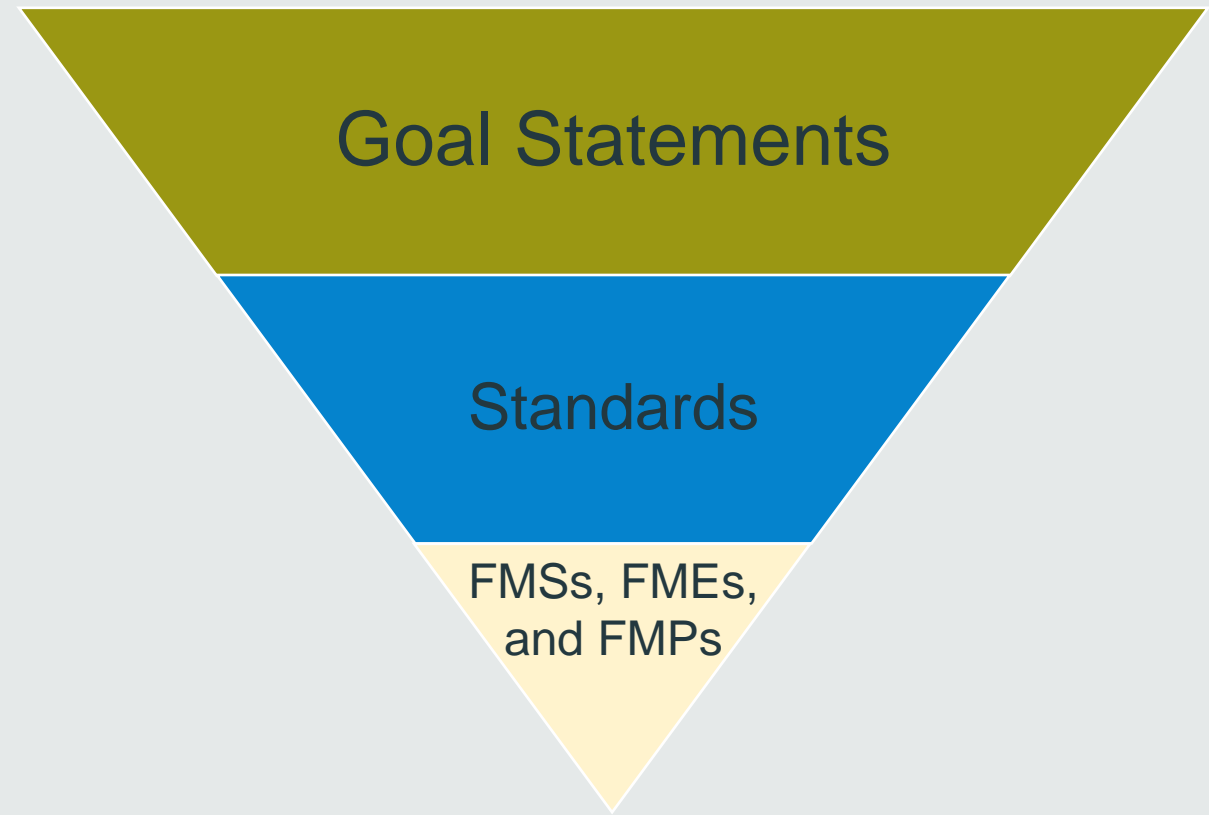




TASK 3B – FLOOD MITIGATION AND FLOODPLAIN MANAGEMENT GOALS

Proposed Overarching Goal Categories

1. Education and Outreach
2. Flood Warning and Readiness
3. Flood Studies and Analysis
4. Guidance
5. Property Acquisition, Structure Elevation, and Floodproofing
6. Flood Infrastructure Projects





PROPOSED GOAL STATEMENTS

1. Education and Outreach Goal Category

Specific Goal Statements	Short Term (2033)	Long Term (2053)	Measurement
Increase the number of outreach and education activities, specifically targeting municipal floodplain managers throughout Region 15, hosted by Region 15 RFPG and available on the website.	20% - 30%	>60%	% increase in the number of outreach activities
Increase the number of entities and public stakeholders participating in the regional flood planning process	30% - 40%	>70%	% of entities and stakeholders annually performing outreach activities.
Increase the proficiency of floodplain managers by increasing the number of them that are certified as Certified Floodplain Managers (CFM) with the Texas Floodplain Management Association.	>25%	>70%	% of Region 15 floodplain managers who have CFM certifications



PROPOSED GOAL STATEMENTS

2. Flood Warning and Readiness Goal Category

Specific Goal Statements	Short Term (2033)	Long Term (2053)	Measurement
Develop a regionally coordinated warning and emergency response program that can detect the flood threat and provide timely warning of impending flood danger to the most populated areas of the region.	40% - 50%	> 70%	% of Region 15 population covered by a warning and emergency response program
Increase the number of flood gauges (rainfall/stream) in the region	30% - 40%	> 70%	% of watershed and streams with active gauges
Increase the number of entities that use reverse 911, TV, radio, social media, and billboards to communicate flood warnings, evacuation routes, and shelter locations	> 40%	> 70%	% of entities using real-time media services and/or Reverse 911 to warn of flood risks, evacuation routes and shelter locations
Increase the number of entities that integrate National Weather Service and USGS Texas Water Science Center (TXWSC) flood warning system information into their local capabilities to disseminate warnings	> 30%	> 50%	% of entities integrating NWS and TXWSC flood warning system information into their own systems





PROPOSED GOAL STATEMENTS

3. Flood Studies and Analysis Goal Category

Specific Goal Statements	Short Term (2033)	Long Term (2053)	Measurement
Decrease the average age of FEMA Flood Insurance Rate Maps used to define SFHAs in the region	30% - 40%	> 70%	% of entities that have FIRM maps that are less than 20 years old
Increase the coverage of available flood hazard data in the region, including at ports of entry, airports, and seaports, by completing studies with identified construction projects to address flooding hazards, in areas identified as having gaps in flood mapping data	30% - 40%	> 70%	% of entities that have completed studies (less than 10 years old) identifying flood hazards as described
Develop and maintain an operational stormwater asset management plan	40% - 50%	> 70%	% of entities that utilize a stormwater asset management plan



PROPOSED GOAL STATEMENTS

4. Guidance Goal Category

Specific Goal Statements	Short Term (2033)	Long Term (2053)	Measurement
Increase the number of Region 15 communities participating in the National Flood Insurance Program	100%	Maintain	% of entities in Region 15 enrolled in NFIP
Increase the number of entities that adopt higher than NFIP-minimum standards	40% - 50%	60% - 70%	% of entities that adopt higher than NFIP minimum standards
Increase participation in the Community Rating System by encouraging Region 15 floodplain management programs to incorporate dedicated drainage fees to implement future FMEs and FMPs; incorporate noncompliance penalties; and who regulate development in the future conditions floodplain	30% - 40%	> 50%	% of entities in Region 15 actively participating in the Community Rating System
Increase the number of entities that have multi-year drainage CIP list	> 40%	> 70%	% of entities in Region 15 with 20-yr drainage CIPs



PROPOSED GOAL STATEMENTS

2. Flood Warning and Readiness Goal Category

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Increase the number of entities that integrate National Weather Service and USGS Texas Water Science Center (TXWSC) flood warning system information into their local capabilities to disseminate warnings	> 30%	> 50%	% of entities integrating NWS and TXWSC flood warning system information into their own systems





PROPOSED GOAL STATEMENTS

5. Property Acquisition, Structure Elevation and Flood proofing Goal Category

Specific Goal Statements	Short Term (2033)	Long Term (2053)	Measurement
Reduce the number of structures that have been subject to repeated flooding events through property buyouts	< \$10M	\$20M - \$50M	Estimated \$ value of benefits incurred through property buyout programs annually
Increase the acreage of publicly protected open space in critical flood risk areas that is reused for a beneficial public use	< 300,000 acres	600,000 – 800,000 acres	Number of acres of publicly protected open space in critical flood risk areas that is reused for a beneficial public use
Increase the amount of county-owned land in the region that can be utilized for future regional stormwater infrastructure	> 30%	> 50%	% increase in county-owned land in region



PROPOSED GOAL STATEMENTS

6. Flood Infrastructure Projects Goal Category

Specific Goal Statements	Short Term (2033)	Long Term (2053)	Measurement
Increase the number of nature-based flood risk reduction projects	20% - 30%	>50%	% of nature-based flood risk reduction projects relative to projects that are not nature based
Reduce the number of newly constructed vulnerable critical facilities within the existing and future 1% annual chance floodplain event	> 70%	100%	% of critical facilities in the region within the existing or future 1% annual chance floodplain
Increase community access routes to critical facilities, evacuation routes, during and after a flooding event	Perform Study to Establish Baseline	2 x the baseline %	% of residential areas with safe access routes during and after flooding events
Increase the number of entities that provide regional detention that could be used for water reuse applications or as part of their floodplain management program	> 30%	>60%	% of entities that provide regional detention as part of their floodplain management program



**DISCUSSION AND POTENTIAL
APPROVAL OF
PROCESS USED BY
THE RFPG TO
IDENTIFY & EVALUATE
POTENTIAL
FME & POTENTIALLY
FEASIBLE FMP & FMS**



TASK 4B – POTENTIAL FMEs, FMSs & FMPs

Review of FMEs, FMPs, and FMSs

FLOOD MANAGEMENT STRATEGIES (FMSs)

(proposed plans)

- Infrastructure Projects
- Property/Easement Acquisition
- Elevation of Structures
- Education and Outreach
- Flood Warning and Measurement
- Regulatory and Guidance

FLOOD MANAGEMENT EVALUATIONS (FMEs)

(proposed studies)

Studies		Risk Reduction Analysis	
Flood Preparedness Study	Modeling and Mapping / Risk Identification	Alternatives Analysis / Feasibility Assessment	Preliminary Engineering (30% design)

FLOOD MITIGATION PROJECTS (FMPs)

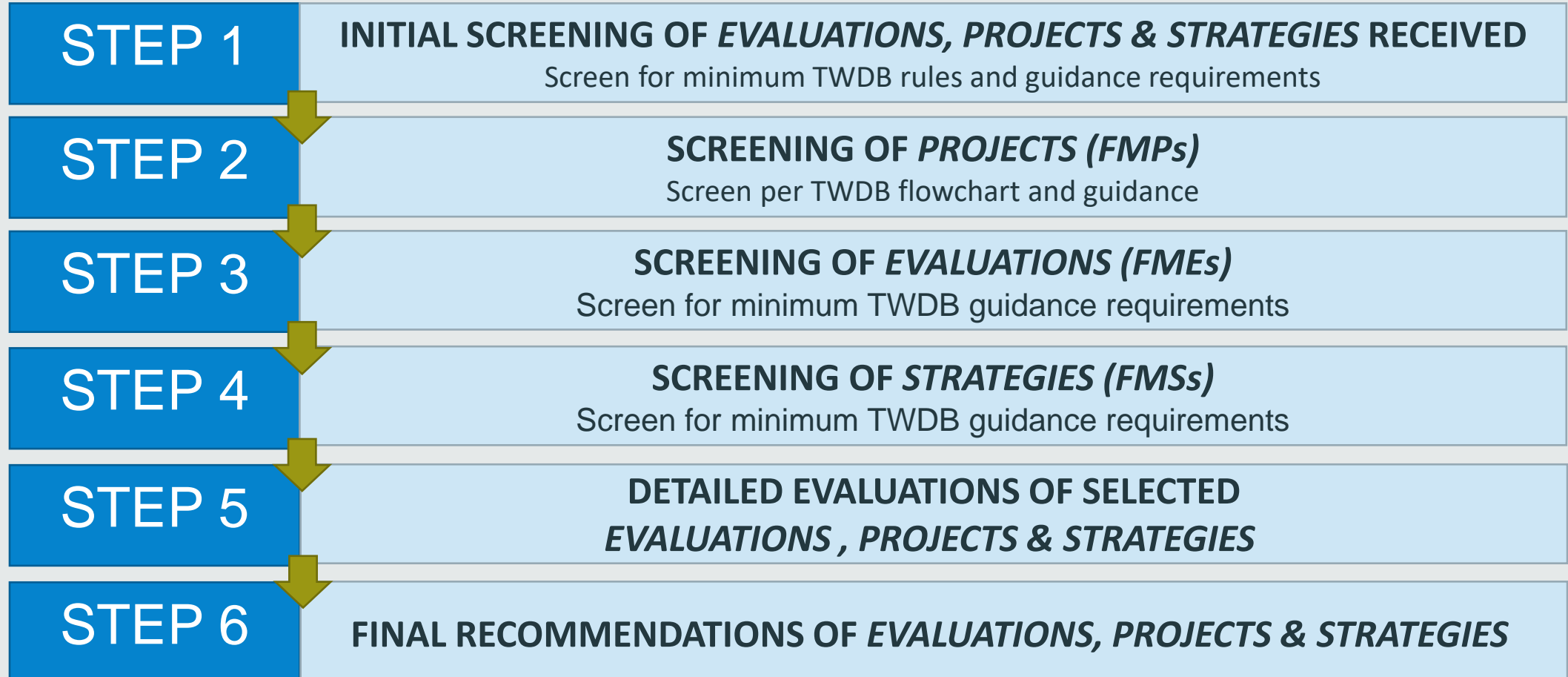
(proposed projects)

Structural Infrastructure	Non-Structural
Advanced Analysis / Design / Construction (30 - 100% design)	Project Implementation <ul style="list-style-type: none"> • Property/Easement Acquisition • Elevation of Structures • Floodproofing • Flood Readiness and Resilience • Flood Warning, Gauges • Regulatory Requirements



TASK 4B – Proposed Selection Process

5 General Steps





TASK 4B – Proposed Selection Process

STEP 1

INITIAL SCREENING OF *EVALUATIONS, PROJECTS & STRATEGIES* RECEIVED

Screen for minimum TWDB rules and guidance requirements

Does it address the following?

- 1.1 Flood mitigation or floodplain management goal (Task 3B)
- 1.2 Meet an emergency need
- 1.3 Flood problem with drainage area of 1 square mile or greater*
- 1.4 Reduce flood risk for 100-year (1% annual chance) flood

*except in instances of flooding of critical facilities or transportation routes or for other reasons, including levels of risk or project size, determined by the RFPG

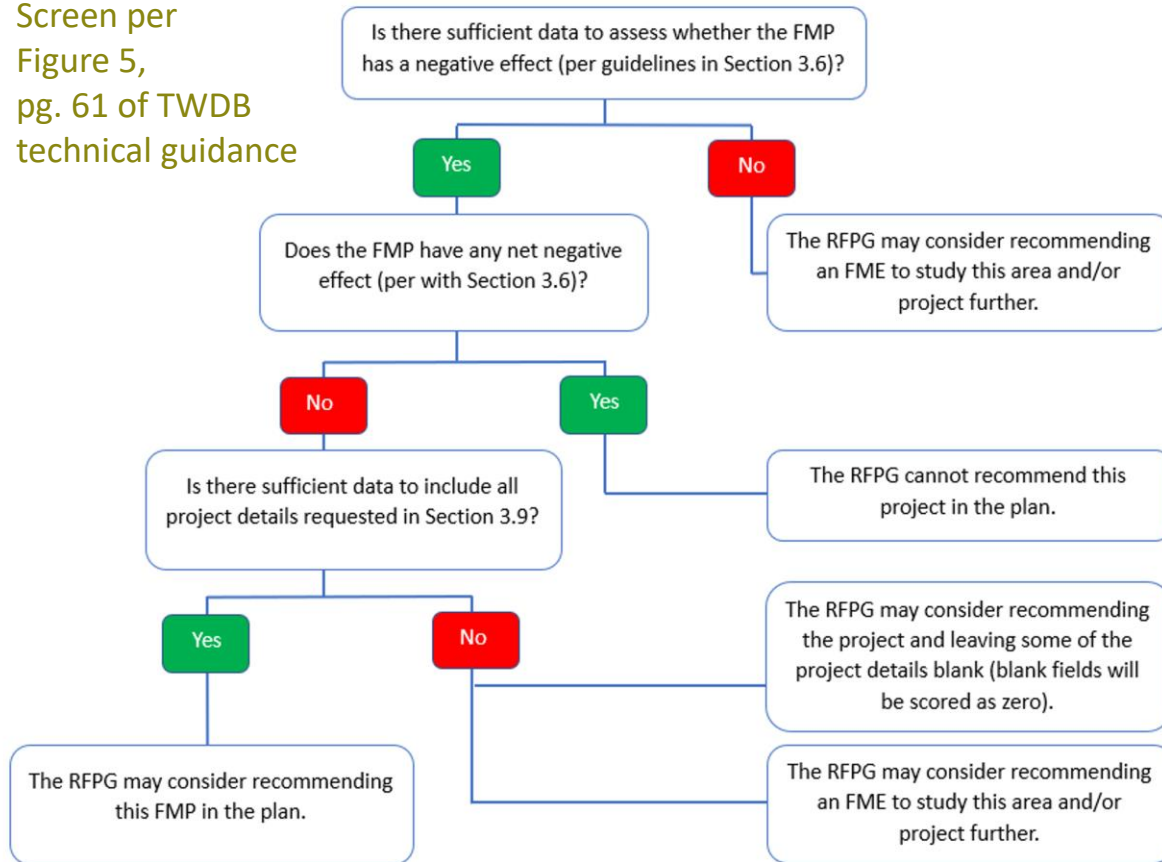


TASK 4B – Proposed Selection Process

STEP 2

SCREENING OF PROJECTS

Screen per
Figure 5,
pg. 61 of TWDB
technical guidance



“Sufficient data”

- H&H modeling, mapping, and basis for mitigation project analysis generally meets Section 3.5 of TWDB technical guidelines
 - Reliable
 - Minimal uncertainty

“Negative effect”

- For the 100-year (1% annual chance) flood event, no rise in flood elevation or discharge should be permissible. Projects should not:
 - Increase inundation on homes or commercial buildings
 - Increase inundation beyond ROW or easements
 - Increase inundation beyond existing drainage infrastructure capacity



TASK 4B – Proposed Selection Process

STEP 2

SCREENING OF *PROJECTS* - *CONTINUED*

Section 3.9 “Project Details”

- Flood severity level metrics
- Flood risk/damage reduction metrics
- Life and safety
- Social vulnerability
- Nature-based solutions
- Cultural/ social/ local benefits
- Mobility impacts
- Estimated capital and O&M cost
- Environmental benefits/impacts
- Implementation constraints
- Water supply benefits
- Others...



TASK 4B – Proposed Selection Process

STEP 3

SCREENING OF *EVALUATIONS*

Three General Categories of Evaluations:

1. Projects (FMPs) that didn't make the cut in Step 2
2. Planned flood studies or flood risk reduction alternatives analyses provided by communities
3. Flood study or flood risk reduction alternatives analysis needs identified in Task 4A

Screen for minimum TWDB rules and guidance requirements

- 3.1 If detailed H&H and mitigation alternatives analysis → *Project or Strategy*
- 3.2 Sensible
- 3.3 Reasonable planning-level cost estimate
- 3.4 Identified sponsor(s)
- 3.5 Structures, population and critical facilities at risk
- 3.6 Roadways at risk
- 3.7 Area of farm and ranch land at risk



TASK 4B – Proposed Selection Process

STEP 4

SCREENING OF *STRATEGIES*

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

- Any proposed action that doesn't qualify as an FME or FMP
- RFPG has flexibility with Strategies
- Flood study or flood risk reduction alternatives analysis needs identified in Task 4A

Screen for minimum TWDB rules and guidance requirements

Does it have the following?

4.1 Planning-level cost estimate

4.2 Identified sponsor(s)

4.3 Estimated flood risk and flood risk reduction



TASK 4B – Proposed Selection Process

STEP 5

DETAILED EVALUATIONS OF SELECTED *EVALUATIONS, PROJECTS & STRATEGIES*

Does it have the following?

- 5.1 Project benefit-cost ratios > 1.0
- 5.2 A *willing* sponsor(s)
- 5.3 No known challenging implementation constraints or hurdles
(ROW, utility conflicts, permitting, etc.)
- 5.4 Met RFPG specific requirements to incorporate a project or strategy into the RFP?



TASK 4B – Proposed Selection Process

STEP 6

FINAL RECOMMENDATIONS OF *EVALUATIONS, PROJECTS & STRATEGIES*

Final required steps

- 6.1 Public comment of Recommended FMEs, FMSs and FMPs
- 6.2 Initial/Final adoption by RFPG



TASK 3A RECOMMENDATIONS ON FLOODPLAIN MANAGEMENT STANDARDS



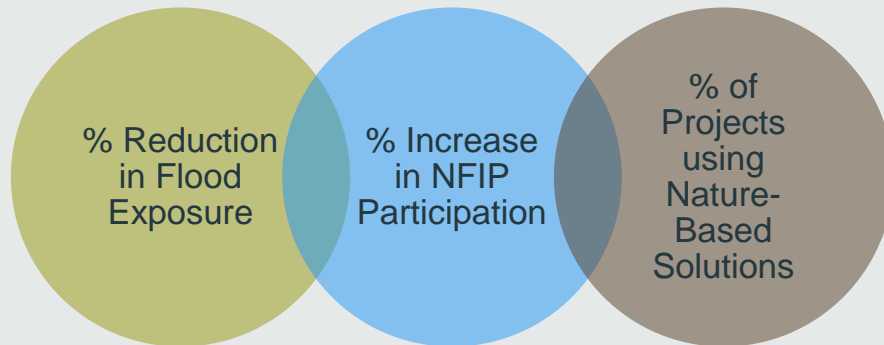
TASK 3B – FLOOD MITIGATION AND FLOODPLAIN MANAGEMENT GOALS

Goals versus Standards

Goals

Set specific timelines and goalposts to implement proven flood mitigation measures, reducing future risk for people and property.

Examples:

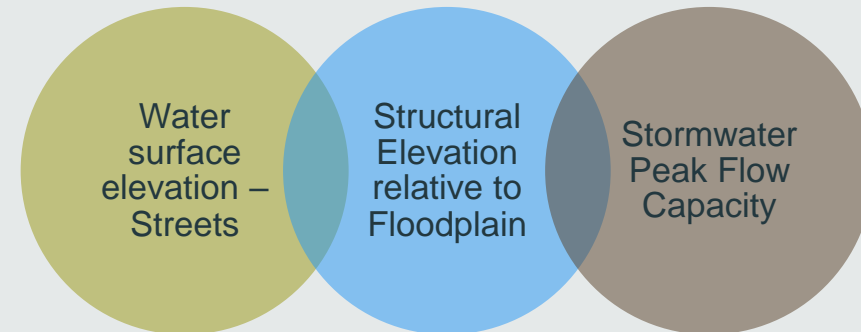


Must be measurable and have a timeframe!

Standards

Establish consistent protocols for floodplain management that can be universally applied

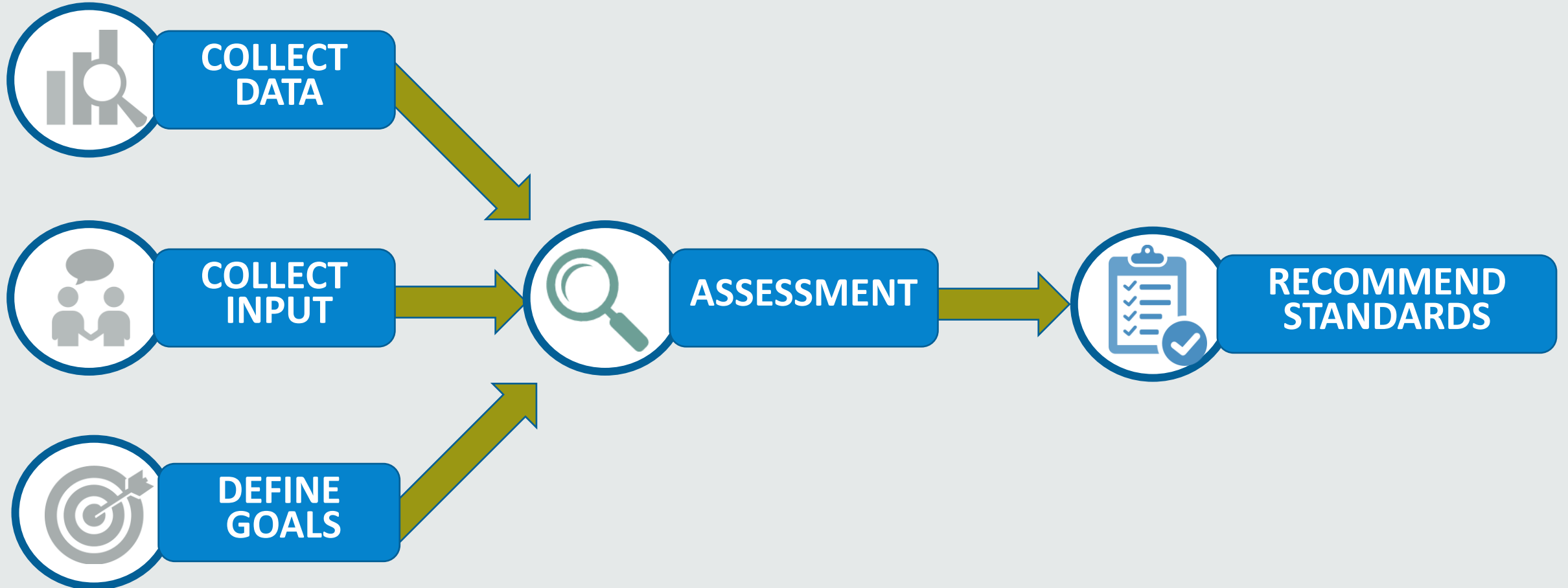
Examples:





TASK 3 INTRODUCTION

Process

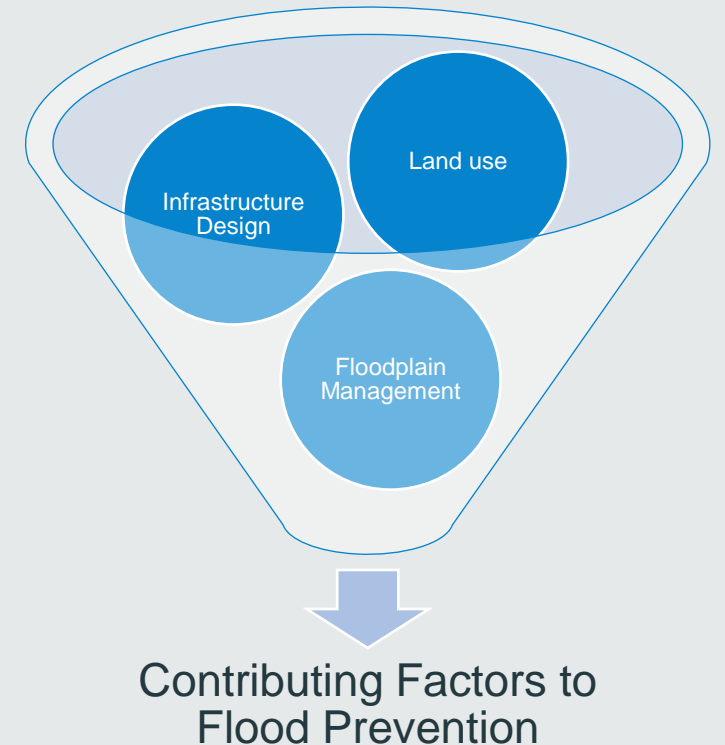




FLOODPLAIN MANAGEMENT STANDARDS

❑ Current Floodplain Management Standards entities are adopting:

- ❑ Establish a Flood Damage Prevention Ordinance.
- ❑ Establish the minimum requirements to comply with the National Flood Insurance Program (NFIP).
- ❑ Adopt higher than NFIP minimum standards.
 - ❑ Freeboard
 - ❑ Detention Requirements
 - ❑ Fill restrictions





FLOODPLAIN MANAGEMENT STANDARDS

Current Status – Based on Data Reviewed To Date

93%

% of Counties Participating in the NFIP

94%

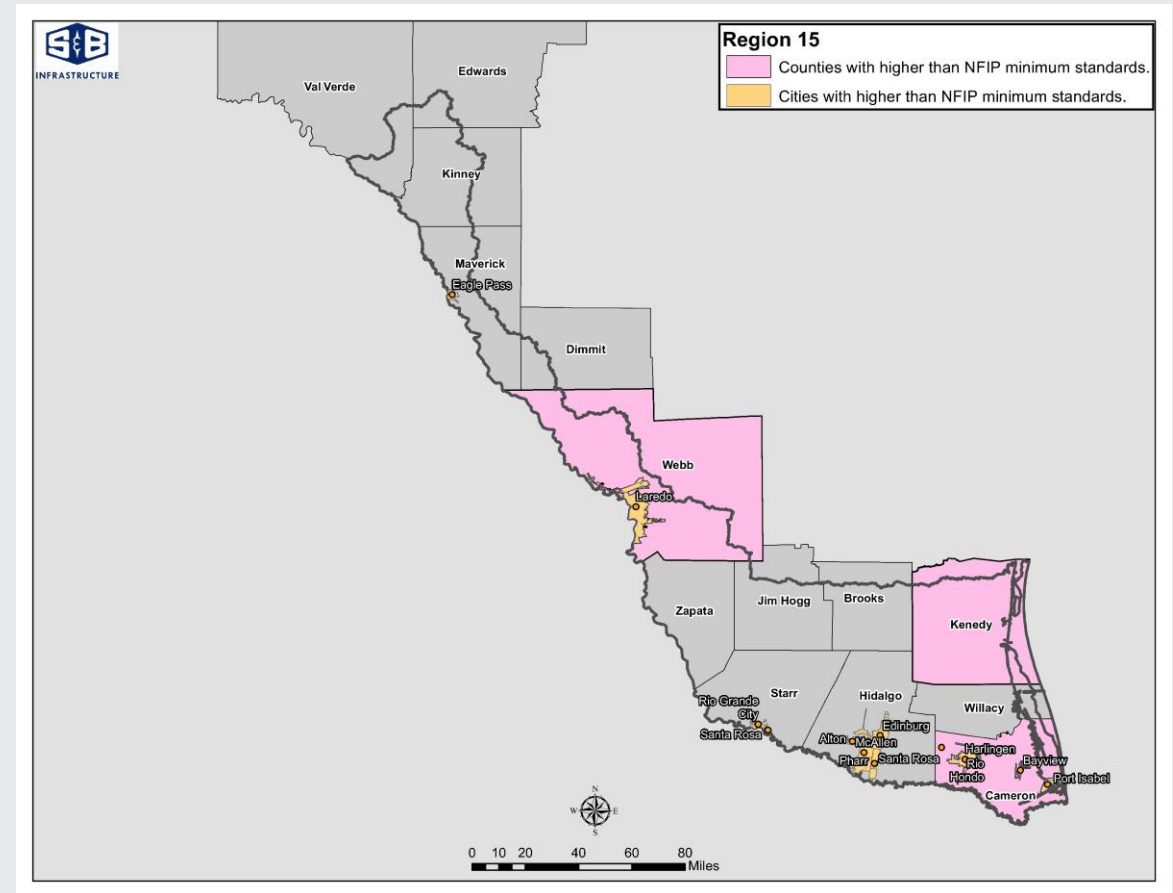
% of Cities Participating in the NFIP

21%

% of Counties with higher than NFIP min. standards

21%

% of Cities with higher than NFIP min. standards





FLOODPLAIN MANAGEMENT STANDARDS

Standard Categories

RESIDENTIAL /
COMMERCIAL

CULVERT/BRIDGES

DAMS

CRITICAL
FACILITIES

STORM DRAINAGE
SYSTEMS

LEVEES /
FLOODWALLS

ROADWAYS

DETENTION
FACILITIES

PROPERTY
ACQUISITION

RESIDENTIAL / COMMERCIAL STANDARD

Minimum

- Equal to BFE

TWDB

- 100-yr WSE plus 1-ft
- 1-ft above highest elevation of either the riverine or coastal BFE including combined riverine and coastal effects

Most Stringent

- 500-yr plus 2-ft
- 500-yr plus 3-ft

*Minimum Standard
Construction at BFE*

*Most Stringent
Construction 2 feet
above BFE*



CRITICAL FACILITIES STANDARD

Minimum

- Equal to BFE

TWDB

- >500-yr WSE
- 1-ft above highest elevation of either the riverine 500-yr or coastal 100-yr WSE including combined riverine and coastal effects

Most Stringent

- 500-yr plus 3-ft

*Minimum Standard
Construction at BFE*

*Most Stringent
Construction 3 feet
above BFE*



ROADWAY STANDARD

Minimum

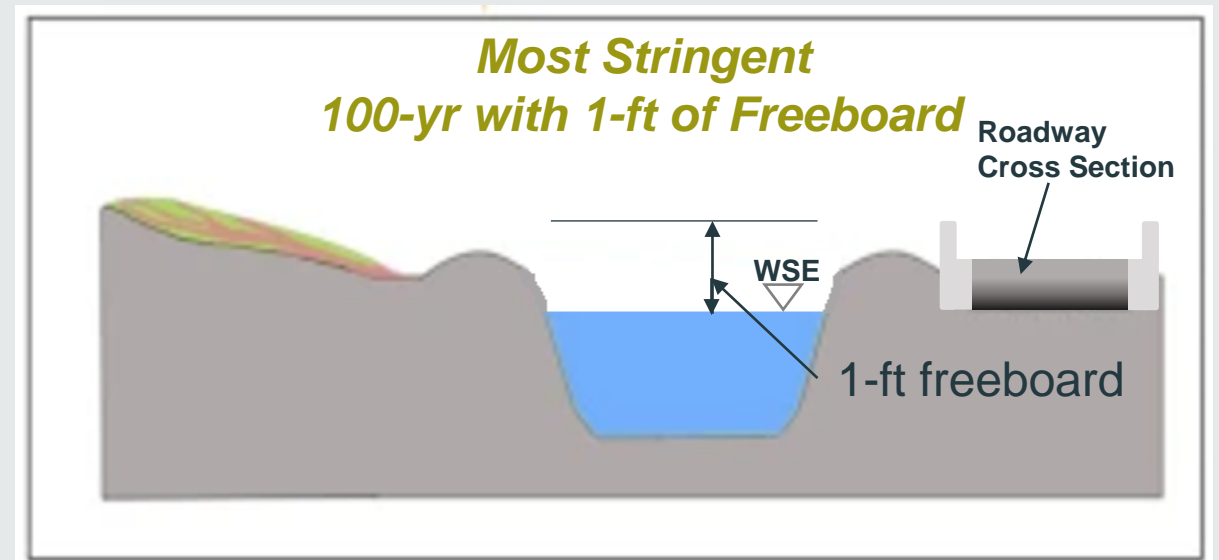
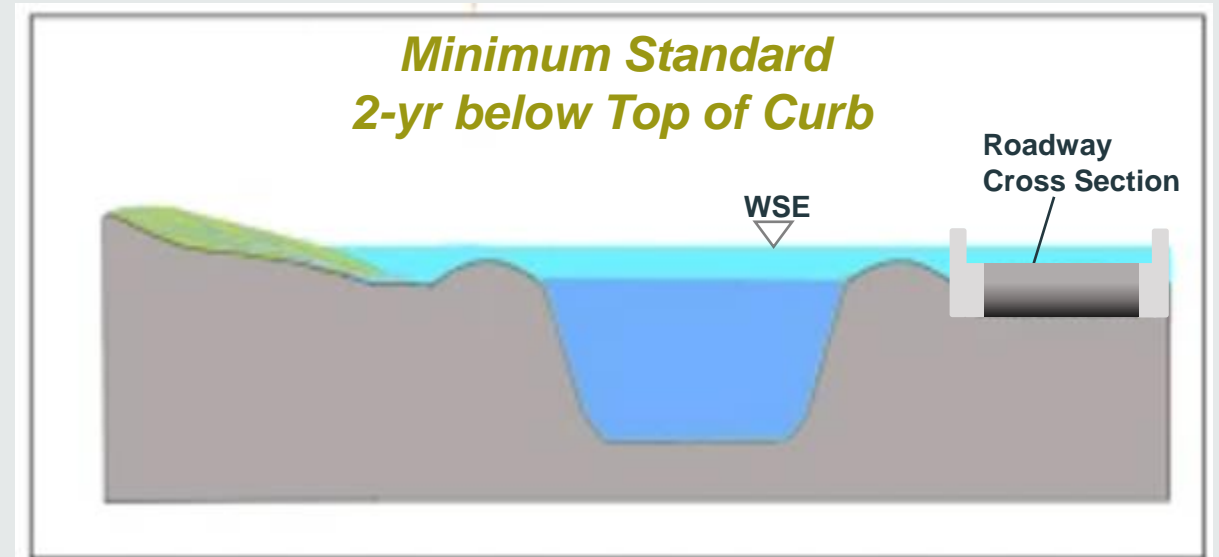
- 2-yr below top of curb

TWDB

- 5-yr WSE below top of curb and 100-year no more than 1-ft above top of curb and contained within the ROW

Most Stringent

- Ultimate condition 100-yr with 1-ft of freeboard



CULVERT / BRIDGES

Minor Roadways

TWDB

- Minor Roadways: pass the 25-yr and 100-yr with no more than 1-ft of overtopping; Major Roadways: pass the 100-yr



Major Roadways



STORM DRAINAGE SYSTEMS

Minimum

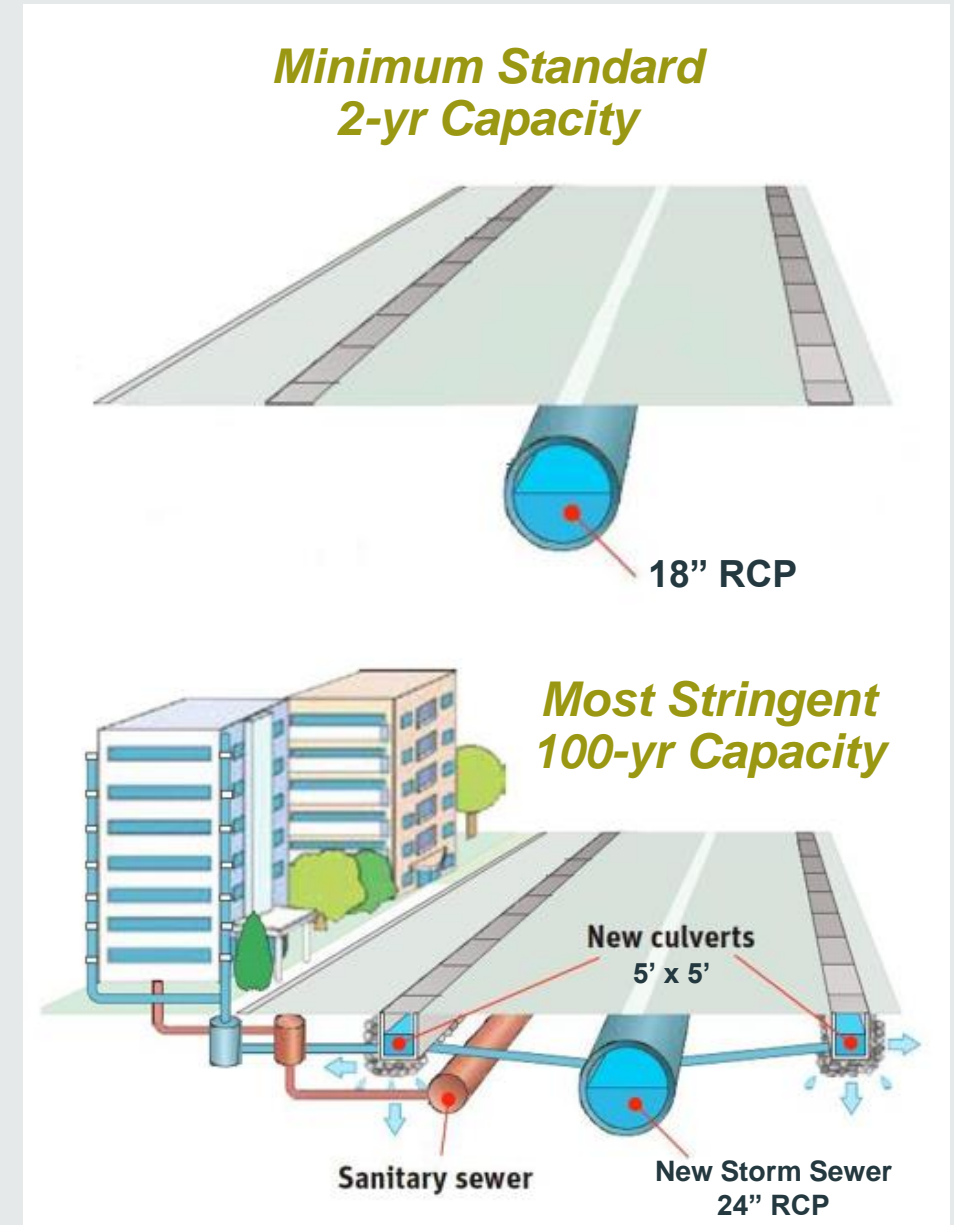
- ❑ 2-yr capacity

TWDB

- ❑ Convey 15-yr flow underground and 100-yr in the ROW

Most Stringent

- ❑ Ultimate condition 100-yr capacity



DAMS

Minimum

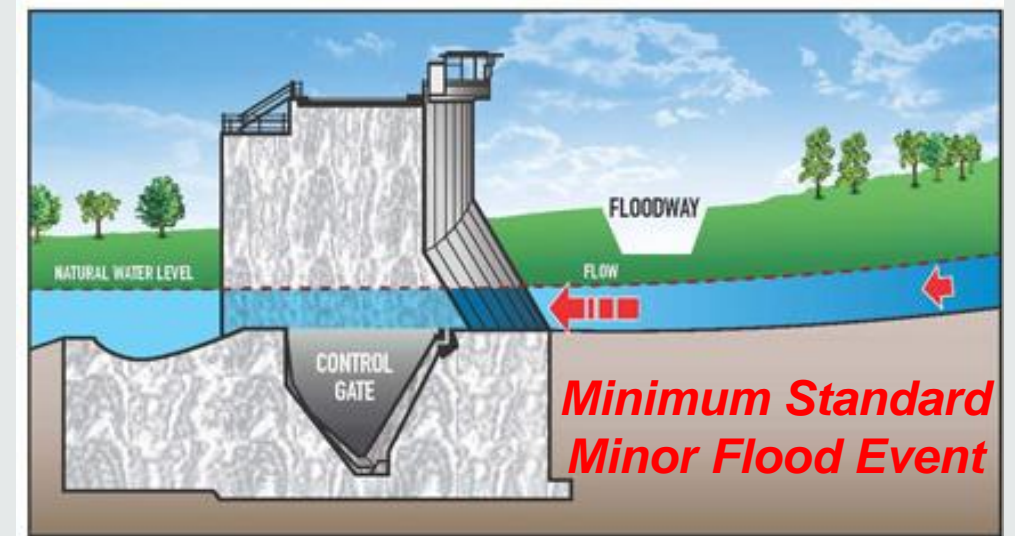
- ☐ TCEQ Requirements

TWDB

- ☐ TCEQ Requirements

Most Stringent

- ☐ Designed to convey 100% of the Probable Maximum Flood



DETENTION FACILITIES

Minimum

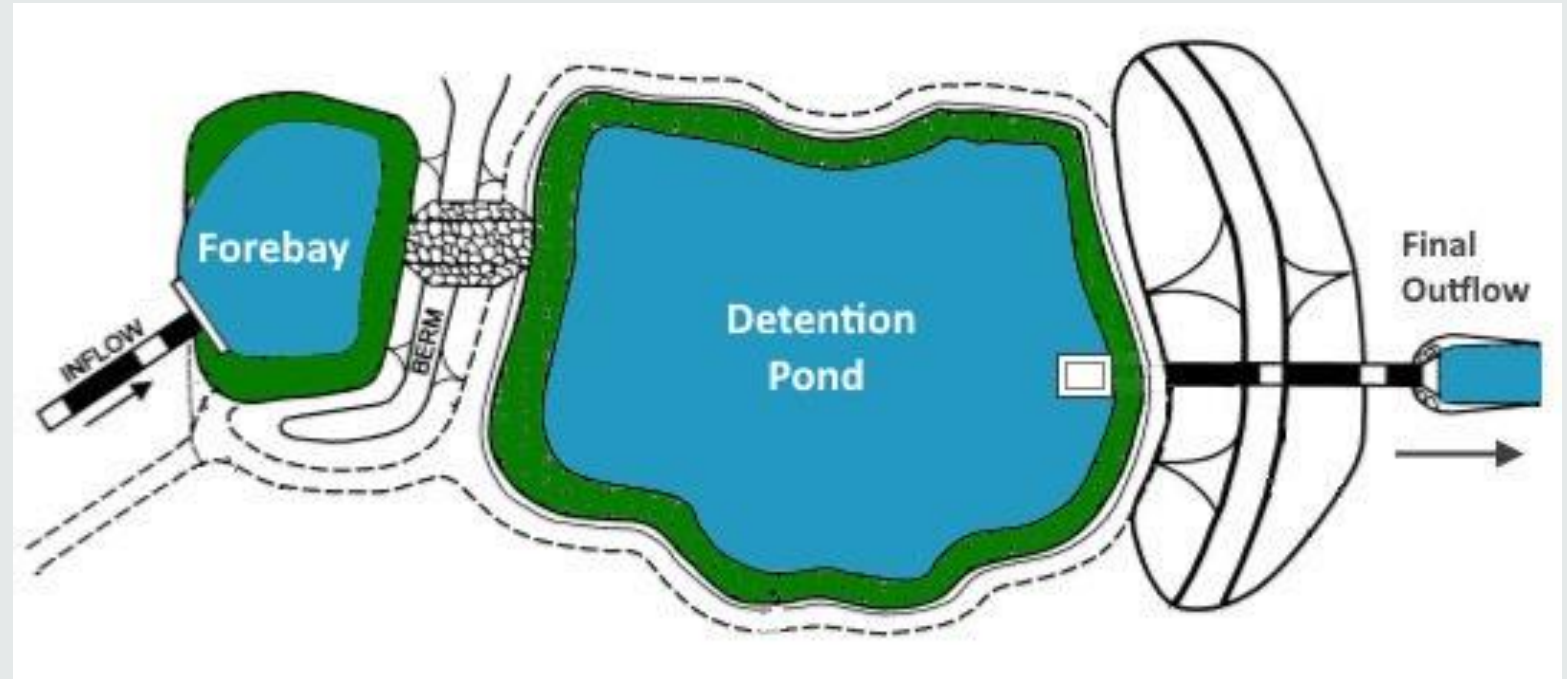
- ❑ No increase in 25-yr peak flow

TWDB

- ❑ Detain proposed condition peak discharge for the 25-year and 100-year below or equal to existing condition peak discharge

Most Stringent

- ❑ No increase in peak flow for the 1-, 5-, 10-, 25-, 50-, and 100-yr



LEVEES/FLOODWALLS

Minimum

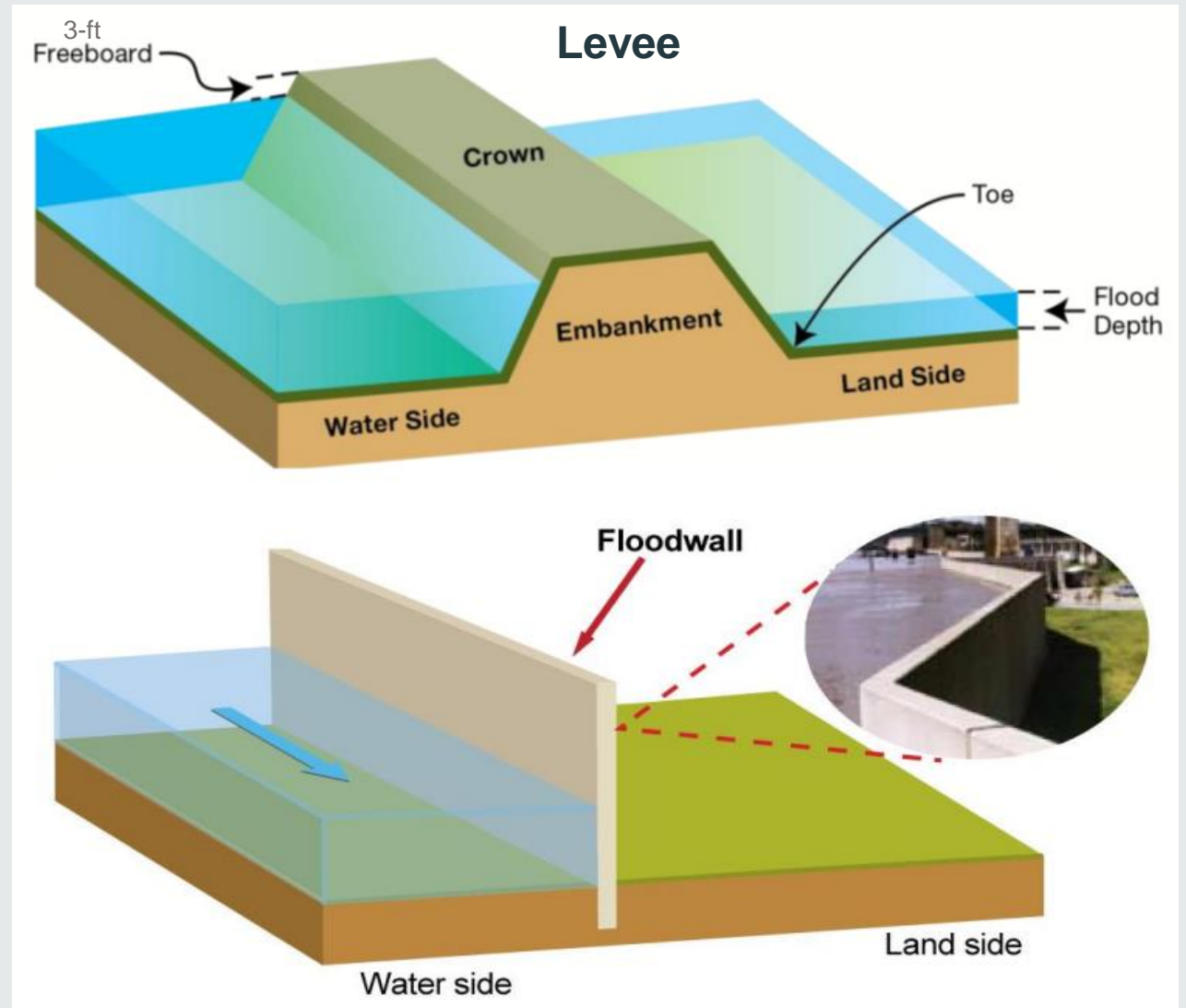
- ☐ FEMA Requirements

TWDB

- ☐ FEMA Requirements

Most Stringent

- ☐ FEMA requirements plus 3-ft of freeboard



PROPERTY ACQUISITION

TWDB

- Must conform with property acquisition and relocation for open space (44 C.F.R Part 80) requirements

Land Use and Oversight Requirements

- Open Space Requirements
- Subsequent Transfer
- Inspection
- Monitoring and Reporting
- Enforcement





REAL-TIME POLLING

Tell us what you think!

We will be requesting your input at multiple points throughout the presentation. You can participate via text messaging OR via web browser.

To participate via text messaging:

- Text HALFF to 22333

To participate via web browser:

- Go to PollEV.com/Halff

Once connected through either text messaging or web browser, remain connected (do not leave) until the conclusion of the presentation.

Based on the presented standards, are you interested in recommending any higher than NFIP minimum standards?

1. I am interested in recommending higher than NFIP minimum standards.
2. I am not interested in recommending any standards.
3. I am interested in recommending NFIP minimum standards only.

Based on the presented standards, are you interested in recommending any higher than NFIP minimum standards in any of the following categories (you may cast 5 votes)?

1. Residential/Commercial Standards
2. Critical Facility Standards
3. Roadway Standards
4. Culvert/Bridge Standard
5. Storm Drainage System Standards
6. Dam Standards
7. Detention Facility Standards
8. Levee/Floodwall Standards
9. Property Acquisition Standards
10. All Categories

11. I am not interested in recommending any standards



**WRITTEN
COMMENTS
WELCOMED.**