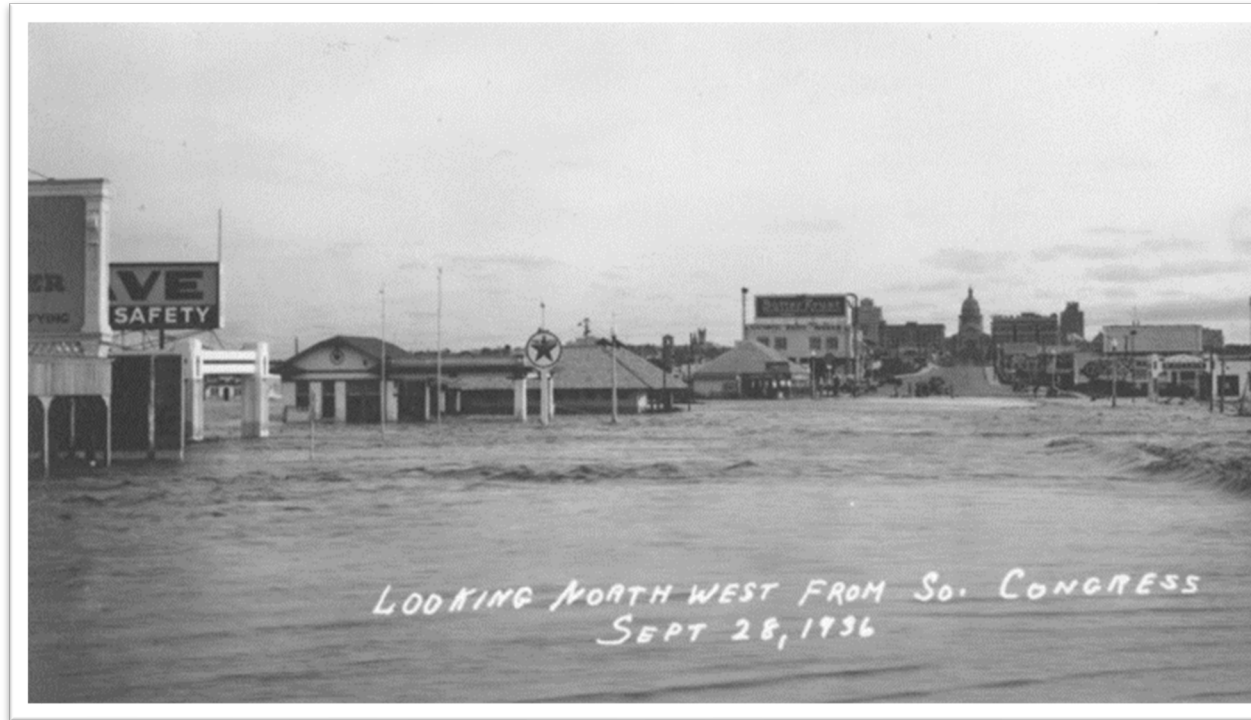


Webinar on Proposed Methods for Ranking Recommended Flood Projects in the 2024 State Flood Plan



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Purpose

- Provide an overview of TWDB's proposed ranking method
- Answer questions relevant to TWDB's proposed ranking method

Note: Please avoid mentioning business or projects related to specific regions

Background

Senate Bill 8 (2019) directs the creation of the first-ever state flood plan for Texas

Texas Water Code §16.061(b)(2), *“The state flood plan must include: ... a statewide, ranked list of ongoing and proposed flood control and mitigation projects and strategies necessary **to protect against the loss of life and property from flooding** and a discussion of how those projects and strategies might further water development, where applicable...”*

TWDB rules state that the state flood plan shall incorporate **“a statewide, ranked list of recommended FMEs, FMSs, and FMPs that have associated one-time capital costs derived from the Board-approved RFPs”** (31 TAC §362.4(c)(5)).

Planning Status

January 10, 2023: 15 final regional flood plans submitted

July 14, 2023: Deadline for amended regional flood plans

September 1, 2024: Deadline to deliver the state flood plan to the Legislature.



Recommended Flood Projects

Flood Management Evaluation (FME): A proposed study to identify flood risk or flood risk reduction solution (e.g., FMPs)

Flood Mitigation Projects (FMP): A proposed project, both structural and nonstructural, that has a non-zero capital costs or other non-recurring cost and that when implemented will reduce flood risk, mitigate flood hazards to life or property

Flood Management Strategies (FMS): Long term flood risk reduction solution ideas that still need to be formulated, for example, regulatory enhancements. All solutions and strategies that do not belong in FME or FMP belong to FMS

Key Points

1. Three separately ranked lists (FME, FMP, FMS)
2. Only data reported by RFPGs is used for ranking
(One criterion was calculated by using two reported data)
3. Ranking criteria focus on Flood Risk and/or Flood Risk Reduction

Proposed 2024 State Flood Plan Flood Management Evaluation (FME), Flood Mitigation Project (FMP) and Flood Management Strategy (FMS) Ranking Criteria and Weight

Texas Water Code Sec. 16.061, “(b) The state flood plan must include: ... (2) a statewide, ranked list of ongoing and proposed flood control and mitigation projects and strategies necessary to protect against the loss of life and property from flooding...” TWDB rules state that the state flood plan shall incorporate “a statewide, ranked list of recommended FMEs, FMSs, and FMPs that have associated one-time capital costs derived from the Board-approved RFPs (31 TAC §362.4 (c)(5)). * All flood risk and risk reduction information are for 1% annual chance storm.													
		Criteria Name	Criteria Type	Criteria Grouping	FME Ranking Criteria	FME Ranking Weight	FME Grouping Weight	FMP Ranking Criteria	FMP Ranking Percent Weight	FMP Grouping Weight	FMS Ranking Criteria	FMS Ranking Percent Weight	FMS Grouping Weight
REPORTED DATA FROM FME, FMP and FMS FEATURE CLASSES	1	Emergency Need (Y/N)	Other		No	0.0%		No	0.0%		No	0.0%	
	2	Estimated number of structures at 100yr flood risk	Flood Risk	Life, Safety and Structures	Yes	15.0%	80.0%	No	0.0%	0.0%	Yes	10.0%	45.0%
	3	Residential structures at 100-year flood risk	Flood Risk		Yes	10.0%		No	0.0%		Yes	5.0%	
	4	Estimated Population at 100-year flood risk	Flood Risk		Yes	15.0%		No	0.0%		Yes	10.0%	
	5	Critical facilities at 100-year flood risk (#)	Flood Risk		Yes	20.0%		No	0.0%		Yes	10.0%	
	6	Number of low water crossings at flood risk (#)	Flood Risk		Yes	20.0%		No	0.0%		Yes	10.0%	
	7	Estimated number of road closures (#)	Flood Risk	Mobility	Yes	5.0%	15.0%	No	0.0%	0.0%	Yes	5.0%	15.0%
	8	Estimated length of roads at 100-year flood risk (Miles)	Flood Risk		Yes	10.0%		No	0.0%		Yes	10.0%	
	9	Estimated farm & ranch land at 100-year flood risk (acres)	Flood Risk	Agriculture	Yes	5.0%	5.0%	No	0.0%	0.0%	Yes	5.0%	5.0%
	10	Number of structures with reduced 100yr (1% annual chance) Floodplain	Flood Risk Reduction	Life, Safety and Structures				Yes	5.0%	50.0%	No	0.0%	20.0%
	11	Number of structures removed from 100yr (1% annual chance) Floodplain	Flood Risk Reduction					Yes	5.0%		Yes	10.0%	
	12	Percent of structures removed from 100yr (1% annual chance) Floodplain (Calculated by TWDB from reported data)	Flood Risk Reduction					Yes	10.0%				
	13	Residential structures removed from 100yr (1% annual chance) Floodplain	Flood Risk Reduction					No	0.0%		No	0.0%	
	14	Estimated Population removed from 100yr (1% annual chance) Floodplain	Flood Risk Reduction					Yes	10.0%		Yes	10.0%	
	15	Critical facilities removed from 100yr (1% annual chance) Floodplain (#)	Flood Risk Reduction					Yes	10.0%		No	0.0%	
	16	Number of low water crossings removed from 100yr (1% annual chance) Floodplain (#)	Flood Risk Reduction					Yes	10.0%		No	0.0%	
	17	Estimated reduction in road closure occurrences	Flood Risk Reduction	Mobility				No	0.0%	5.0%	No	0.0%	0.0%
	18	Estimated length of roads removed from 100yr floodplain (Miles)	Flood Risk Reduction					Yes	5.0%		No	0.0%	
	19	Estimated farm & ranch land removed from 100yr floodplain (acres)	Flood Risk Reduction	Agriculture				Yes	5.0%	5.0%	No	0.0%	0.0%
	20	Cost per structure removed from 100-year floodplain	Other					No	0.0%		No	0.0%	
	21	Percent Nature-based Solution (by cost)	Other					Yes	2.5%		Yes	5.0%	
	22	Benefit-Cost Ratio	Other					Yes	2.5%				
	23	Water Supply Benefit (Y/N)	Other					Yes	5.0%		Yes	10.0%	
		Subtotal			100.0%			70.0%			100.0%		
FMP PROJECT DETAILS SCORING (COMPUTED BY RFPG, SOME DUPLICATION MAY EXIST)	24	Score 1: Severity - Pre-Project Average Depth of Flooding (100-year)	Flood Risk					Yes	5.0%				
	25	Score 2: Severity - Community Need (% Population)	Flood Risk					No	0.0%				
	26	Score 3: Flood Risk Reduction	Flood Risk Reduction					See above	0.0%				
	27	Score 4: Flood Damage Reduction	Flood Risk Reduction					Yes	2.5%				
	28	Score 5: Critical Facilities Damage Reduction	Flood Risk Reduction					No	0.0%				
	29	Score 6: Life and Safety	Flood Risk Reduction					Yes	5.0%				
	30	Score 7: Water Supply	Other Benefits					Yes	5.0%				
	31	Score 8: Social Vulnerability	Other					Yes	2.5%				
	32	Score 9: Nature-Based Solution	Other Benefits					See above	0.0%				
	33	Score 10: Multiple Benefits	Other Benefits					Yes	2.5%				
	34	Score 11: O&M	Other					Yes	2.5%				
	35	Score 12: Admin, Regulatory Obstacles	Other					No	0.0%				
	36	Score 13: Environmental Benefit	Other Benefits					Yes	2.5%				
	37	Score 14: Environmental Impact	Other Benefits					No	0.0%				
	38	Score 15: Mobility	Other Benefits					Yes	2.5%				
	39	Score 16: Regional (Geographic Distribution)	Other Benefits					No	0.0%				
		Subtotal			0.0%			30.0%			0.0%		
Total (Must add up to 100%)					100.0%			100.0%			100.0%		

Project Details Ranking Criteria		
1	Severity Ranking - Pre-Project Average Depth of Flooding (100-year):	Ranking of severity based on the baseline/pre-project average 100-year flood depth.
2	Severity Ranking - Community Need (% Population):	Ranking of severity based on a community’s need by percentage of project community affected by population.
3	Flood Risk Reduction:	Ranking of reduced flood risk by percentage of structures removed from the 100-year floodplain in post- project condition.
4	Flood Damage Reduction:	Ranking of flood risk reduction (property protection) by a percentage of 100-year damage reduction calculation.
5	Life and Safety Ranking (Injury/Loss of life):	Ranking project based on life/injury risk percentage using estimates of area hazard rating, area vulnerability rating, and historical loss of life injury data for project.
6	Water Supply Ranking:	Ranking project based on a project’s water supply benefits to direct or indirect water availability and/or supply.
7	Social Vulnerability Ranking:	Ranking project based on a project’s water supply benefits to direct or indirect water availability and/or supply.
8	Green/Nature-Based Solution Ranking:	Ranking by the percentage of project cost that qualifies as green/nature based as reported by RFPG.
9	Multiple Benefit Ranking:	Ranking a project based on the reporting of significant, measurable, expected benefits to: recreation, transportation, social and quality of life, local economic impacts, meeting sustainability goals, and/or project resilience goals.
10	Operations and Maintenance Ranking:	Project ranking by expected level of O&M needs and annual costs provided.
11	Administrative, Regulatory, and other implementation obstacles/difficulty ranking:	Ranking based on anticipated project limitations and/or requirements in terms of administrative, regulatory, and other implementation obstacles.
12	Environmental Benefit Ranking:	Ranking of expected level of environmental benefits to be delivered by project to water quality, cultural heritage, habitat, air quality, natural resources, agricultural resources, and soils/erosion and sedimentation.
13	Environmental Impact Ranking:	Ranking of expected level of adverse environmental impacts due to project affecting water quality, cultural heritage, habitat, air quality, natural resource protection, agricultural resources, and erosion and sedimentation.
14	Technical Complexity Ranking:	Ranking of estimated project design, modeling, and construction requirements.
15	Mobility Ranking:	Ranking project improvement and protection of mobility during flood events, with particular emphasis on emergency service access and major access routes.
16	Regional Ranking:	Ranking category reserved for scoring by the TWDB based upon Regional Response to the SFP . This score is intended to better

Example Score 1: Severity level: Pre-project Average Depth of Flooding (100-year)

3.9.C.1 Severity level: pre-project average depth of flooding (100-year)

Table 24: Criteria, specific data required and level guidelines

Criteria	Severity: Pre-Project Average Depth of Flooding (100-year)
Data Requirements	▪ Pre-project 100-year floodplain shapefile with elevations; ▪ Structure shapefile; ▪ first floor structure elevations; ▪ streambed elevations; ▪ Project shapefile in GIS; ▪ land elevations (LiDAR or DEM); ▪ Traffic Count (AADT) for low water crossings;
Proposed Scoring Guidelines:	Proposed score (out of 10):
baseline average flood depth > 3.5ft	10
baseline average flood depth > 2ft	8
baseline average flood depth > 1ft	6
baseline average flood depth > 0.5ft	4
baseline average flood depth < 0.5ft	2
not available (leave blank)	0

Example Score 15: Mobility

3.9.C.15 Mobility

Table 40: Mobility

Data Requirements	▪ Project Shapefile ▪ TxDOT Functional Classification Shapefile ▪ pre-project 100-year floodplain shapefile with elevations; ▪ post-project 100-year floodplain shapefile with elevations;	
Proposed Scoring Guidelines:		Proposed score (out of 10):
Project will protect major and minor access routes in floodplain and emergency service access to EMS, police stations, and fire stations. Allows emergency services access to their entire administrative area.		10
Project will protect all major access routes in floodplain and all emergency service access. Minor access routes are still flooded or have restricted access in local areas.		7
Project will protect some major access routes in floodplain and the majority (>50%) of emergency service access. Some major and many minor access routes will remain flooded, and emergency services access may be restricted in some areas (i.e. >50% of floodplain by area inaccessible).		4
Project provides no change to major, minor, or emergency access routes in the project area.		0
not available (leave blank)		0

Next Steps



March: TWDB solicitation of stakeholder feedback



April: Receive stakeholder feedback



May: Staff summarize feedback and modify proposed ranking methods



June - July 2023: Staff provide updated ranking methods to TWDB Executive Administrator



April – June 2024: Draft state flood plan will be posted for public feedback

Questions?



Reported Criteria Considered but Not Included

	Reported Data Name	Data Source	Flood Solution Type	Potential FIUP Criteria? (Internal Only)	Details
1	Emergency Need (Y/N)	Reported Data	FME; FMP; FMS	Yes	Inconsistency in interpretation of the definition of 'Emergency need' by various RFPs during this planning cycle.
2	Potential Funding (Y/N)	Reported Data	FME; FMP; FMS		Not relevant to efficacy of studies or flood risk mitigation projects
4	Estimated number of structures at 500yr flood risk	Reported Data	FME; FMP; FMS		Issues with data integrity and greater uncertainty around occurrence of this event
5	Number of structures removed from 500yr (0.2% annual chance) Floodplain	Reported Data	FMP; FMS		Issues with data integrity and greater uncertainty around occurrence of this event
6	Estimated reduction in road closure occurrences	Reported Data	FMP; FMS		Minimal data reported during this planning cycle
7	Cost per structure removed from 100-year floodplain	Reported Data	FMP		Data inconsistency and redundant with BCA
8	Social Vulnerability Index (SVI)	Reported Data	FMP		Using Project Details SVI