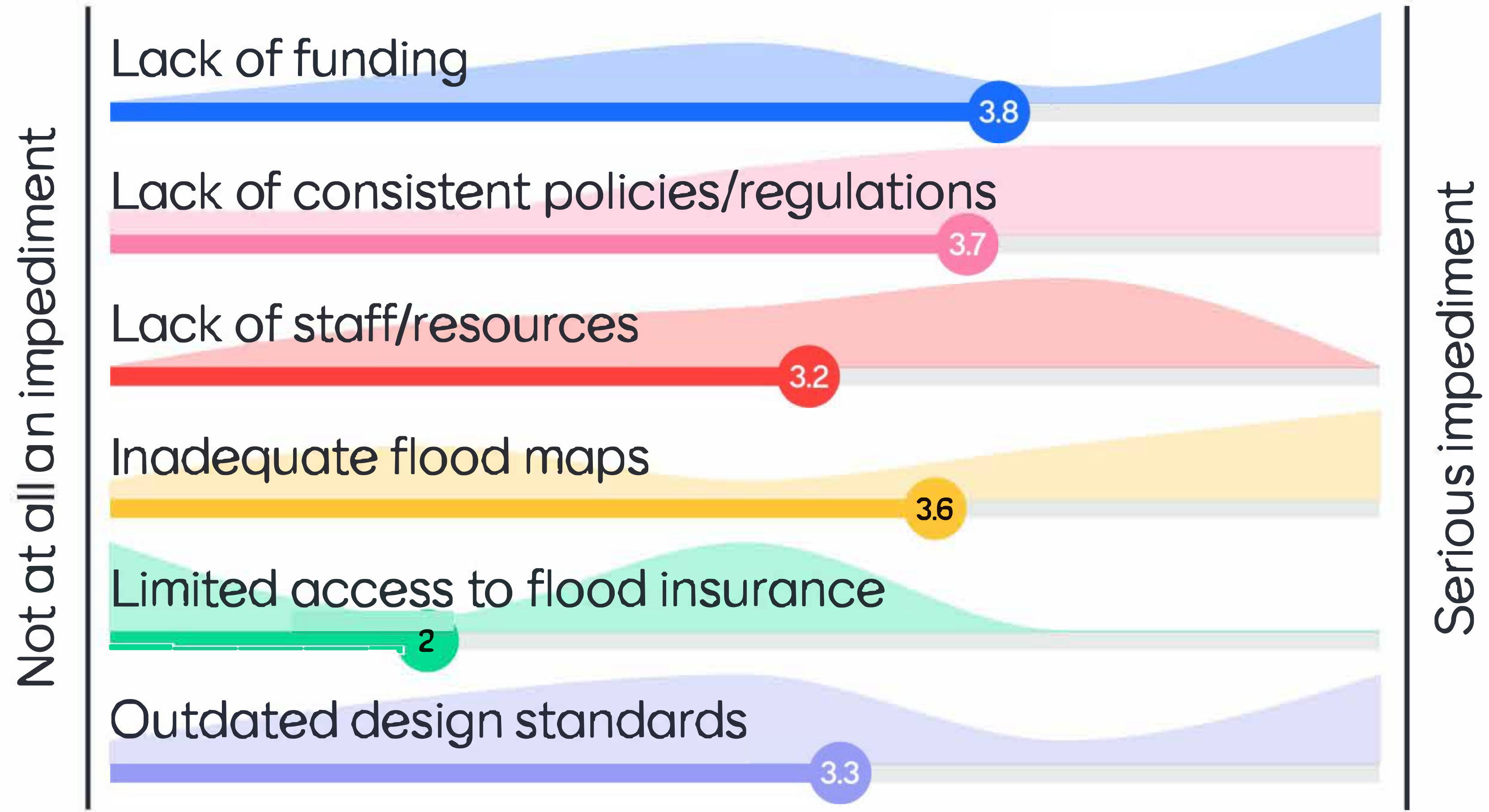


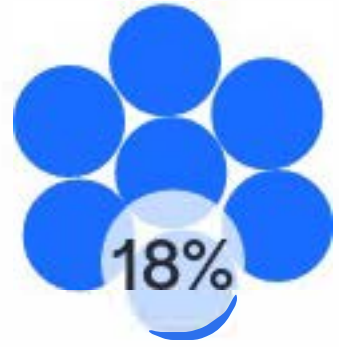
Express with one word your top priority for the Regional Flood Planning effort



Do you consider these issues an impediment to effective floodplain management?



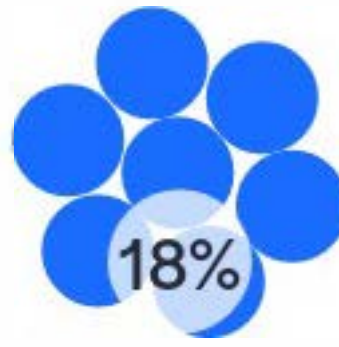
Select your top 3 flooding concerns for Region 2?



Flooded roadways



Flooding of critical facilities



Impacts to economic & agricultural production



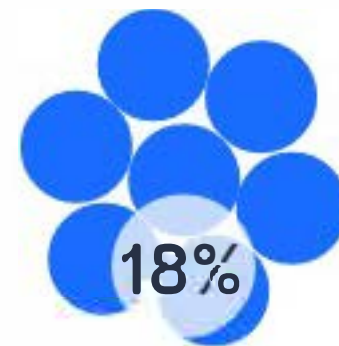
Damages to private property



Potential for loss of human lives

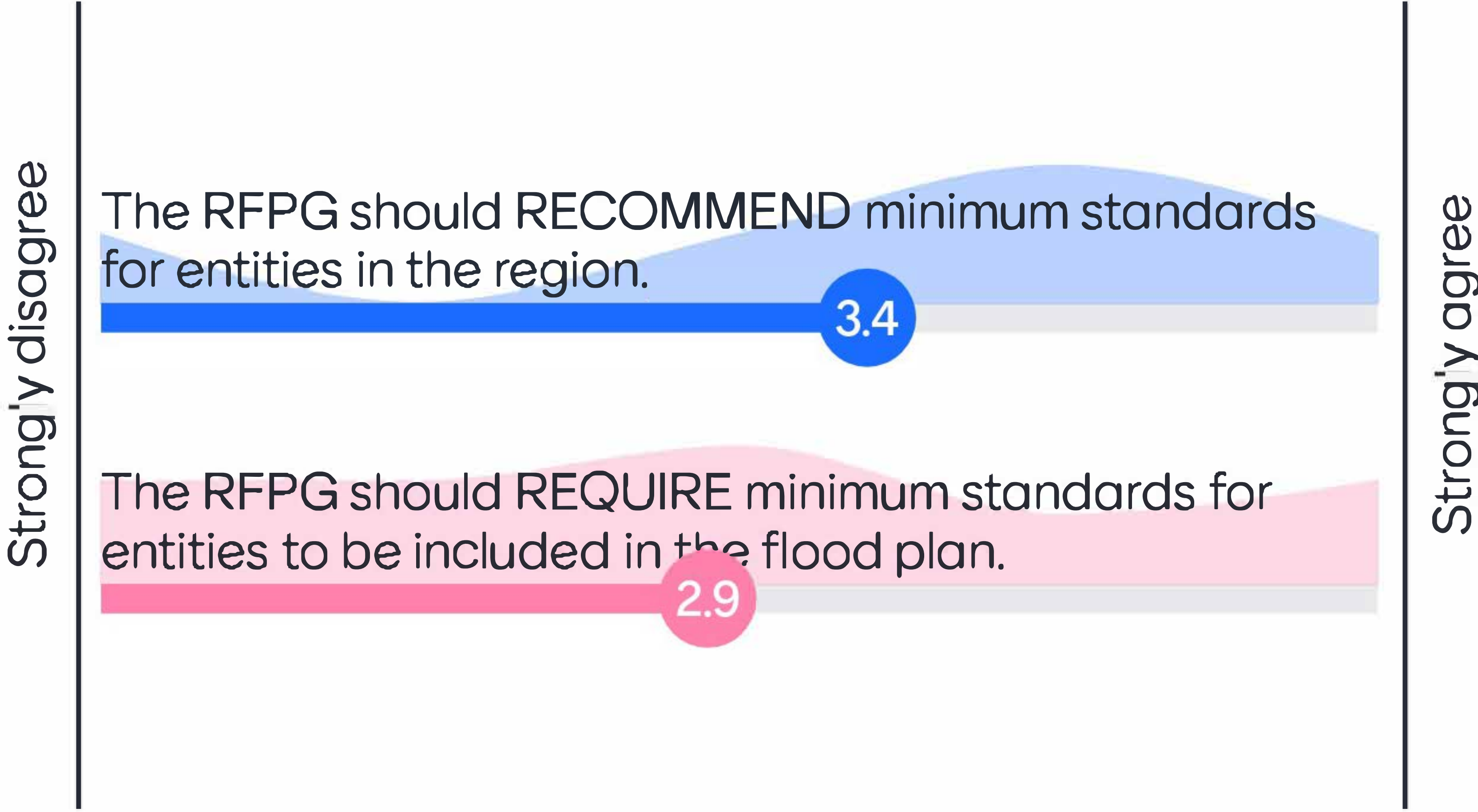


Unregulated development

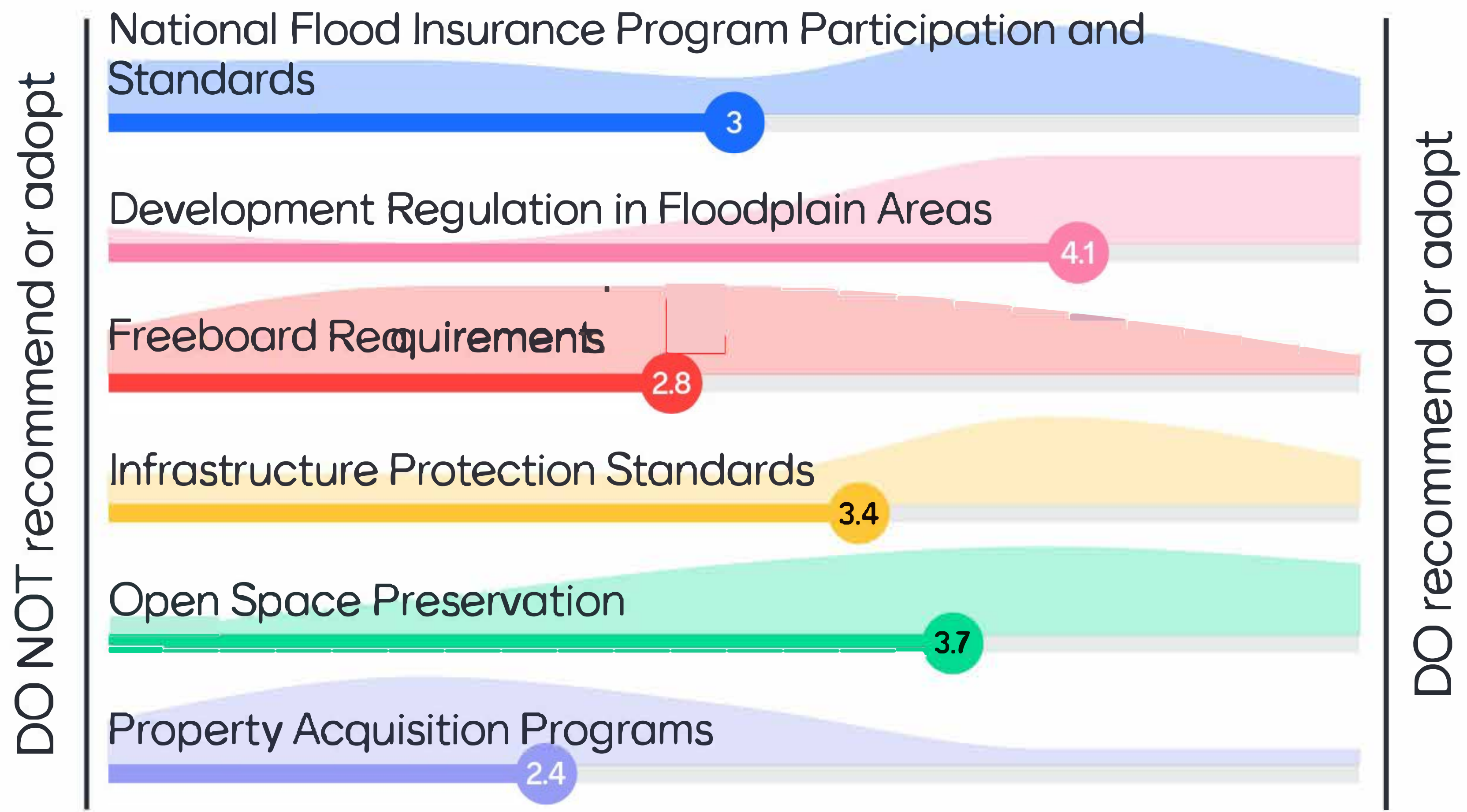


Inadequate Infrastructure

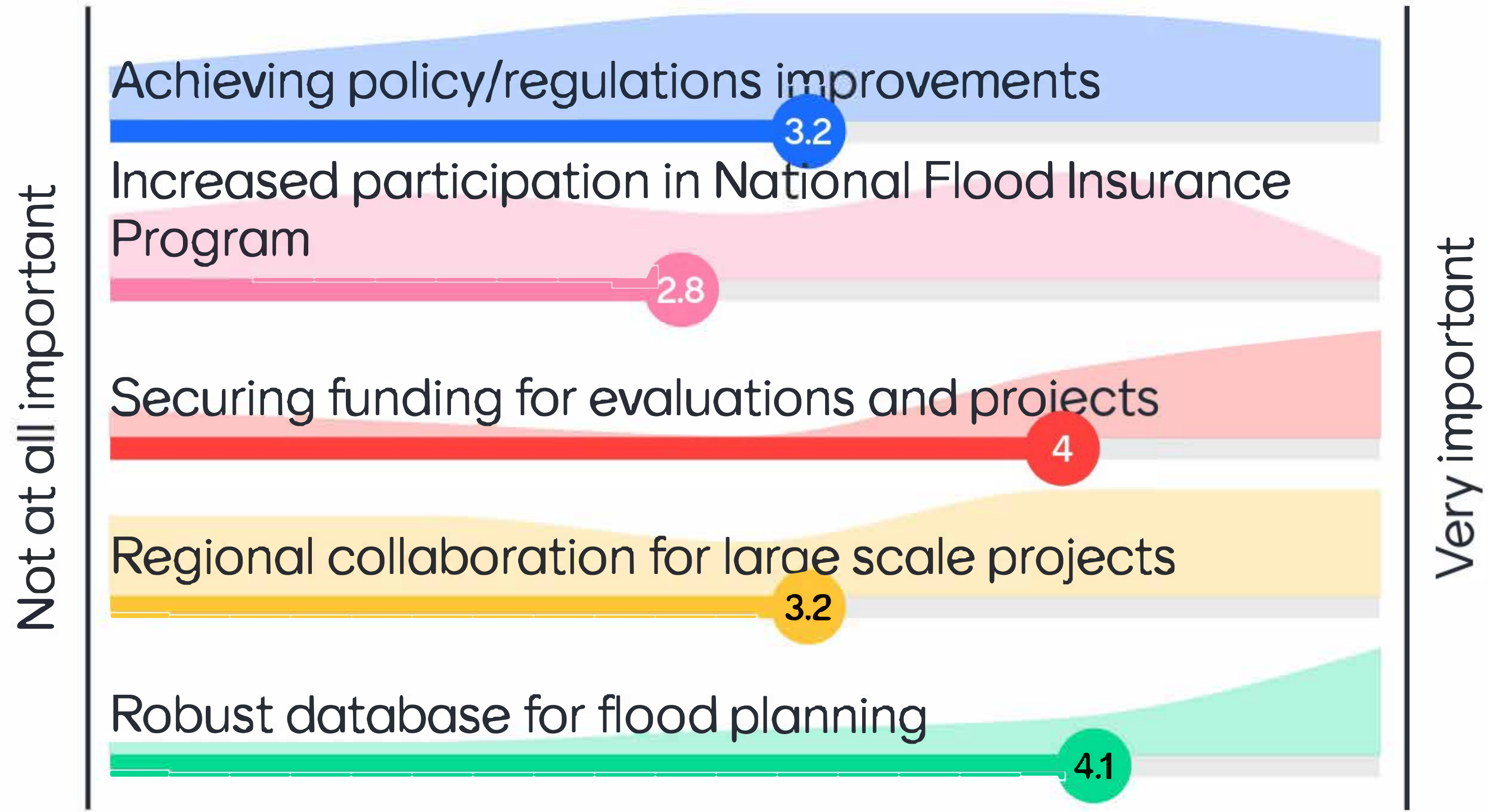
Indicate your initial preference with regard to regional floodplain management standards:



Which minimum standards and programs, if any, should be considered by the RFPG?

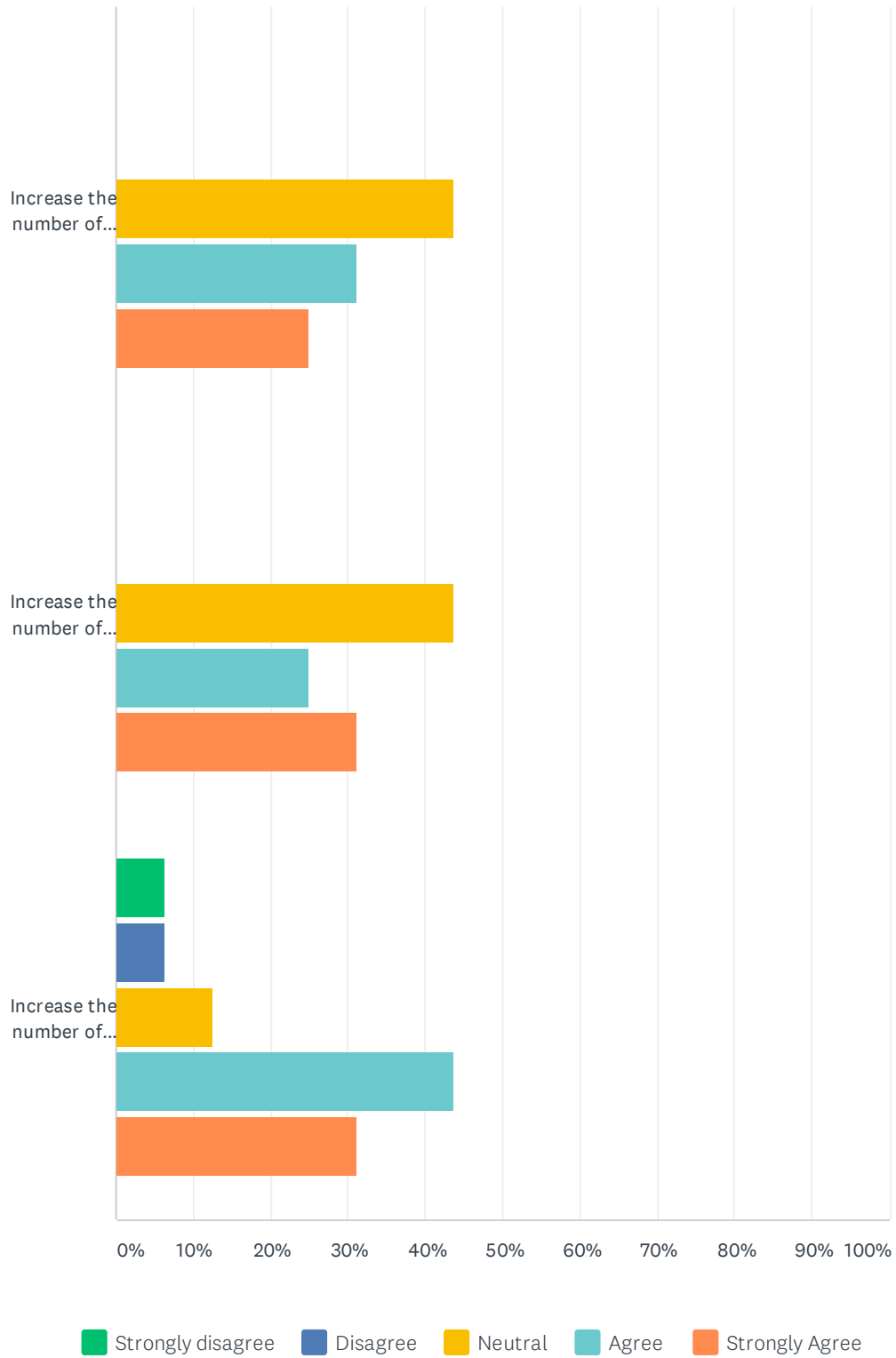


How important are the following outcomes for a successful Regional Flood Plan?



Q1 Education and Outreach

Answered: 16 Skipped: 0



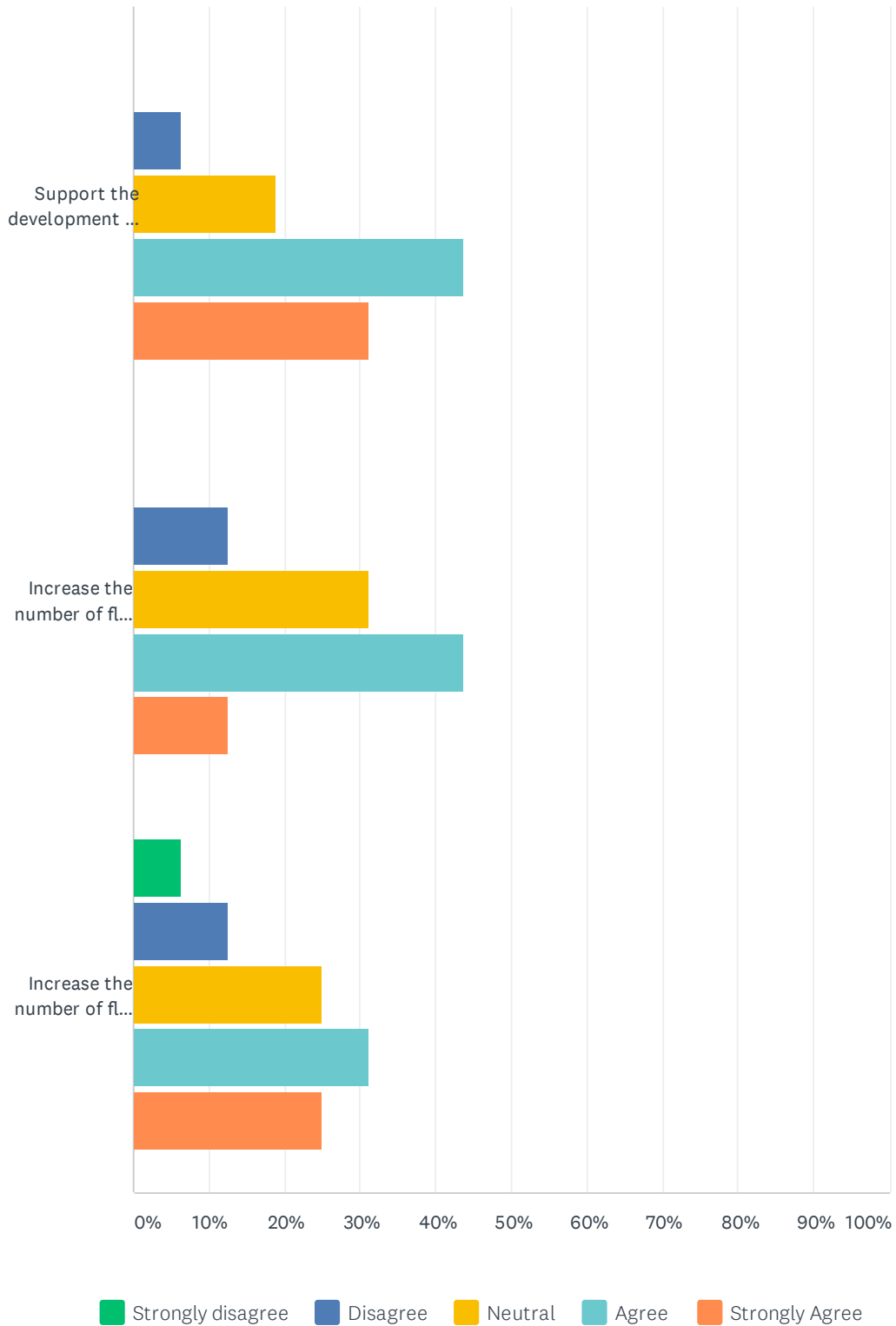
Goals for Lower Red Sulphur Cypress

	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
Increase the number of public stakeholder participants in the regional flood planning data collection (survey) process by X percent per each cycle.	0.00% 0	0.00% 0	43.75% 7	31.25% 5	25.00% 4	16	3.81
Increase the number of entities participating in the regional flood planning process by X percent per each cycle.	0.00% 0	0.00% 0	43.75% 7	25.00% 4	31.25% 5	16	3.88
Increase the number of public outreach and education activities to improve awareness of flood hazards and benefits of flood planning in the FPR by X occurrences.	6.25% 1	6.25% 1	12.50% 2	43.75% 7	31.25% 5	16	3.88

#	COMMENTS	DATE
1	Post offices and libraries are places engaged citizens often find information. Having a flyer there might help. Marshall News messenger is the newspaper I hear most about in my area.	8/23/2021 6:33 PM
2	I agree with the need to get the public involved but unless there is a major event, am skeptical that it will occur.	8/23/2021 9:07 AM
3	Be sure to have outreach sessions in multiple locations in the Region to ensure there is an opportunity for everyone to understand the process.	8/18/2021 8:52 AM

Q2 Flood Warning and Readiness

Answered: 16 Skipped: 0



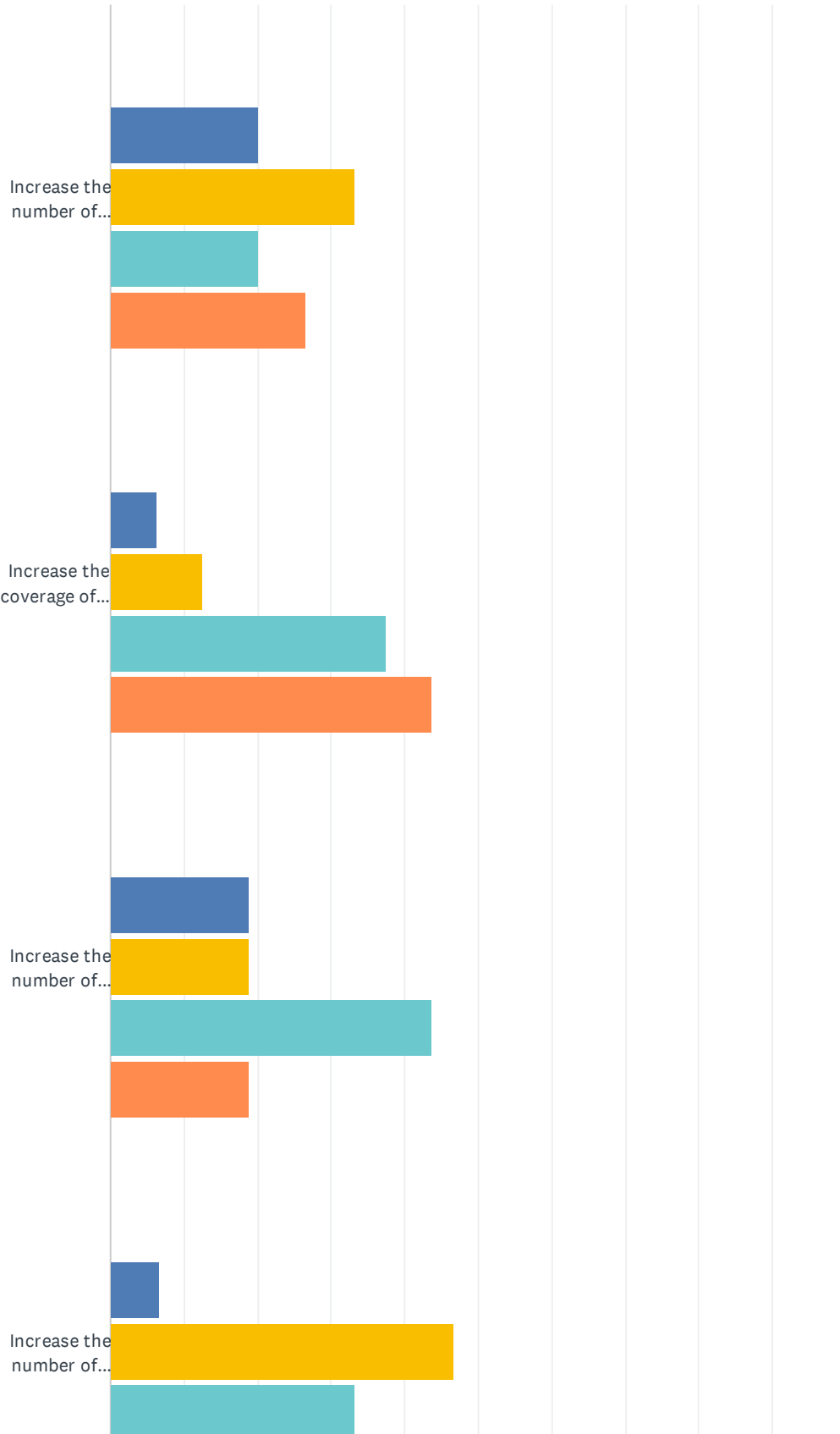
Goals for Lower Red Sulphur Cypress

	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
Support the development of a regionally coordinated warning and emergency response program that can detect the flood threat and provide timely warning of impending flood danger.	0.00% 0	6.25% 1	18.75% 3	43.75% 7	31.25% 5	16	4.00
Increase the number of flood response measures utilized by regional entities by X percent per each cycle.	0.00% 0	12.50% 2	31.25% 5	43.75% 7	12.50% 2	16	3.56
Increase the number of flood gauges (rainfall, stream, reservoir, etc.) in the region by X gauges.	6.25% 1	12.50% 2	25.00% 4	31.25% 5	25.00% 4	16	3.56

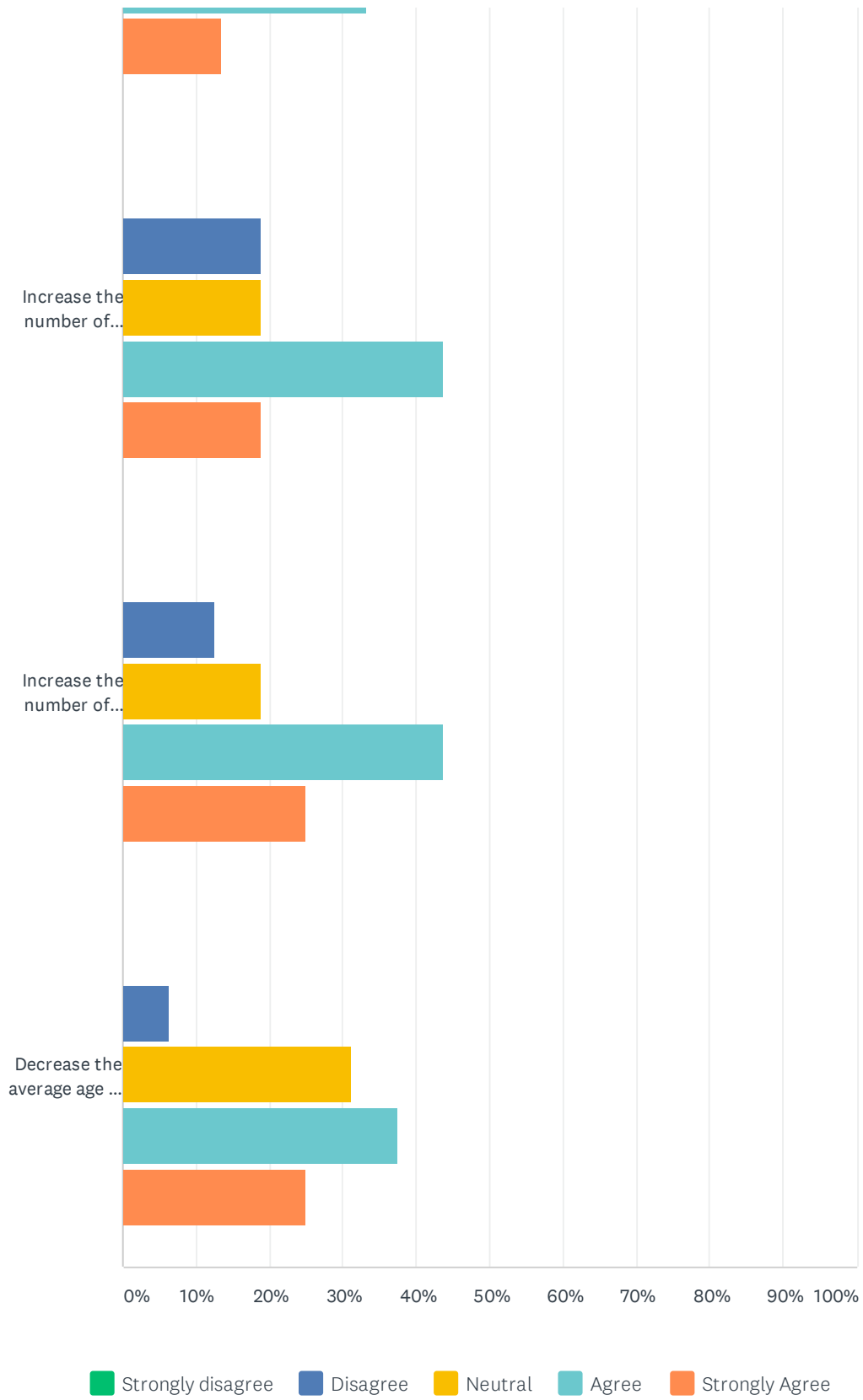
#	COMMENTS	DATE
1	I'm not sure if more gauges are needed. Regional coordination on flood danger messaging is important, but I don't want us to spend money to duplicate other services.	8/23/2021 6:33 PM
2	In the recent past USGS has had reduced funding and resorted to soliciting local sponsors to pay for stream gauges. So in reality unless we have an event and get a local sponsor, the third item will not occur.	8/23/2021 9:07 AM
3	Develop a map with the existing flood gages and coordinate with USGS and NWS on where additional locations make sense. Also, who will pay for them and what is the cost for each gage; install and annual O&M.	8/18/2021 8:52 AM

Q3 Flood Studies and Analysis

Answered: 16 Skipped: 0



Goals for Lower Red Sulphur Cypress



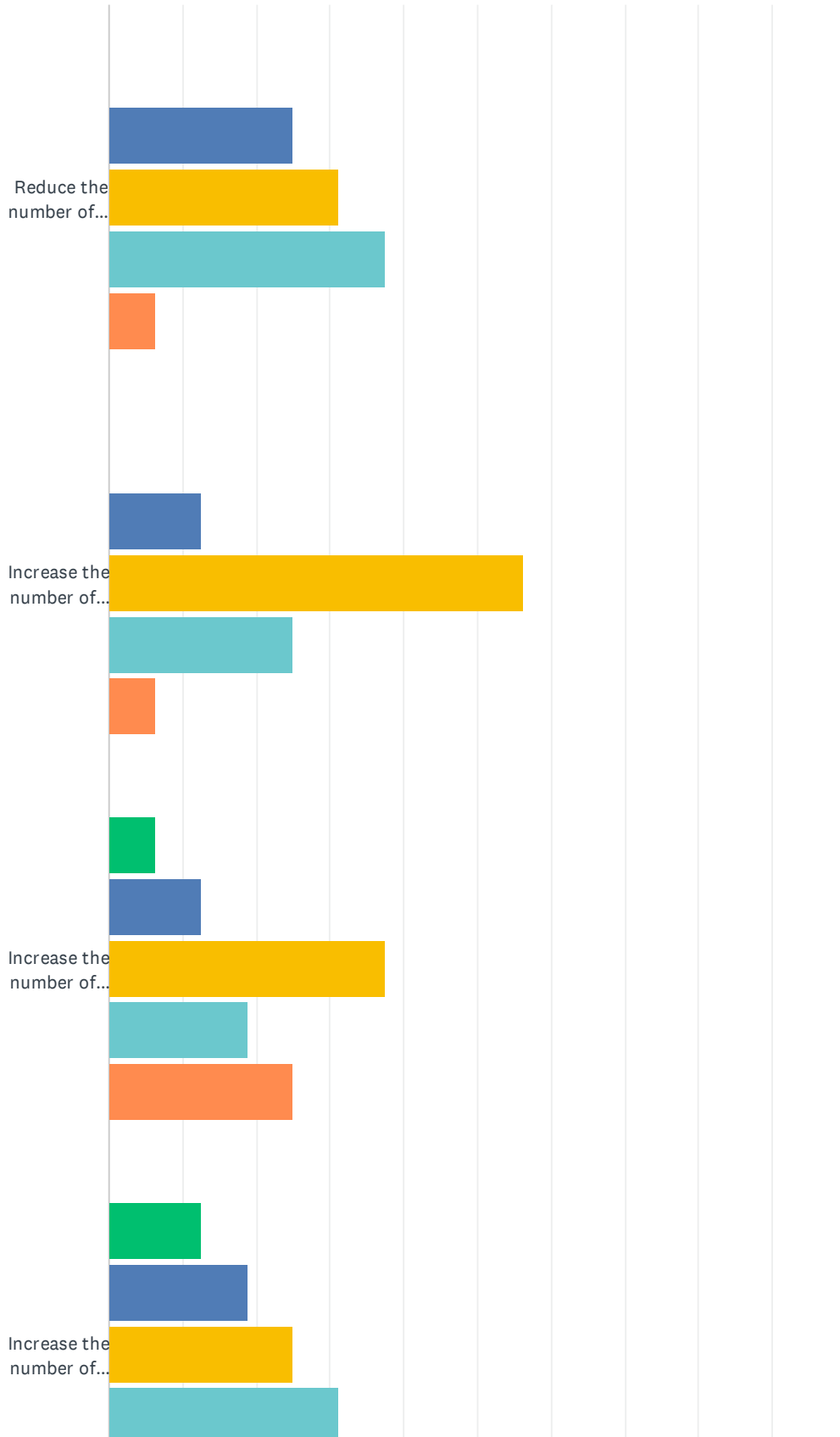
Goals for Lower Red Sulphur Cypress

	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
Increase the number of entities which utilize/adopt Atlas 14 (Volume 11) revised rainfall data as part of revisions to design criteria and flood prevention regulations by X percent. (region specific)	0.00% 0	20.00% 3	33.33% 5	20.00% 3	26.67% 4	15	3.53
Increase the coverage of flood hazard data in the FPR by completing studies to reduce areas identified as having current gaps in flood mapping by X percent.	0.00% 0	6.25% 1	12.50% 2	37.50% 6	43.75% 7	16	4.19
Increase the number of entities that conduct detailed studies to update their FEMA Flood Insurance Rate Maps (NFHL/FIRMs/FIS) by X.	0.00% 0	18.75% 3	18.75% 3	43.75% 7	18.75% 3	16	3.63
Increase the number of completed FMEs by X percent per each cycle.	0.00% 0	6.67% 1	46.67% 7	33.33% 5	13.33% 2	15	3.53
Increase the number of entities that study localized/urban flooding impacts by X.	0.00% 0	18.75% 3	18.75% 3	43.75% 7	18.75% 3	16	3.63
Increase the number of entities which have digital flood insurance rate maps (DFIRMs) by X.	0.00% 0	12.50% 2	18.75% 3	43.75% 7	25.00% 4	16	3.81
Decrease the average age of FEMA Flood Insurance Rate Maps (NFHL/FIRMs/FIS) by X years.	0.00% 0	6.25% 1	31.25% 5	37.50% 6	25.00% 4	16	3.81

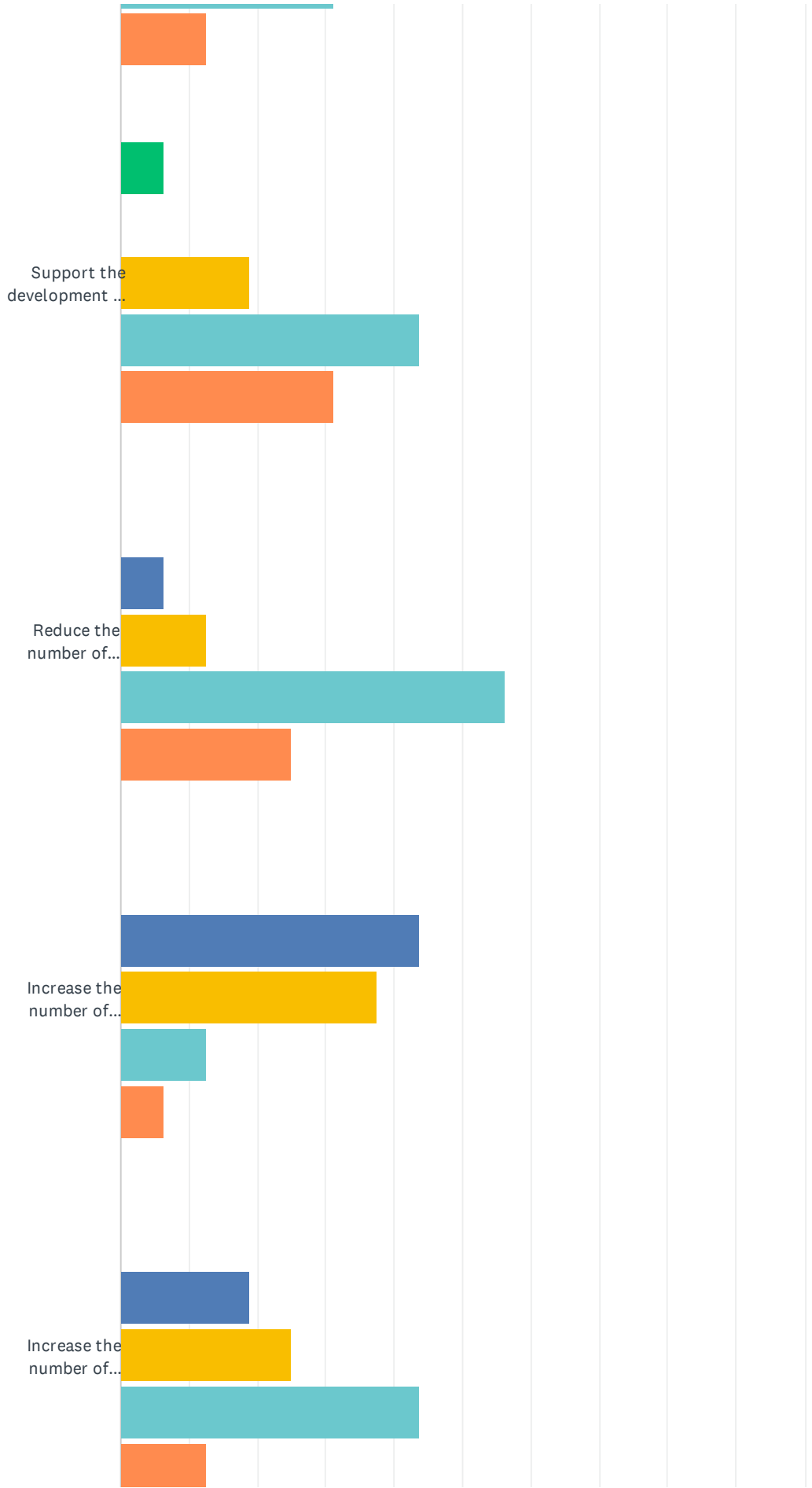
#	COMMENTS	DATE
1	Good data helps.	8/23/2021 6:33 PM
2	Local or regional entities will need to fund these unless the TWDB can provide money.	8/23/2021 9:07 AM

Q4 Flood Prevention

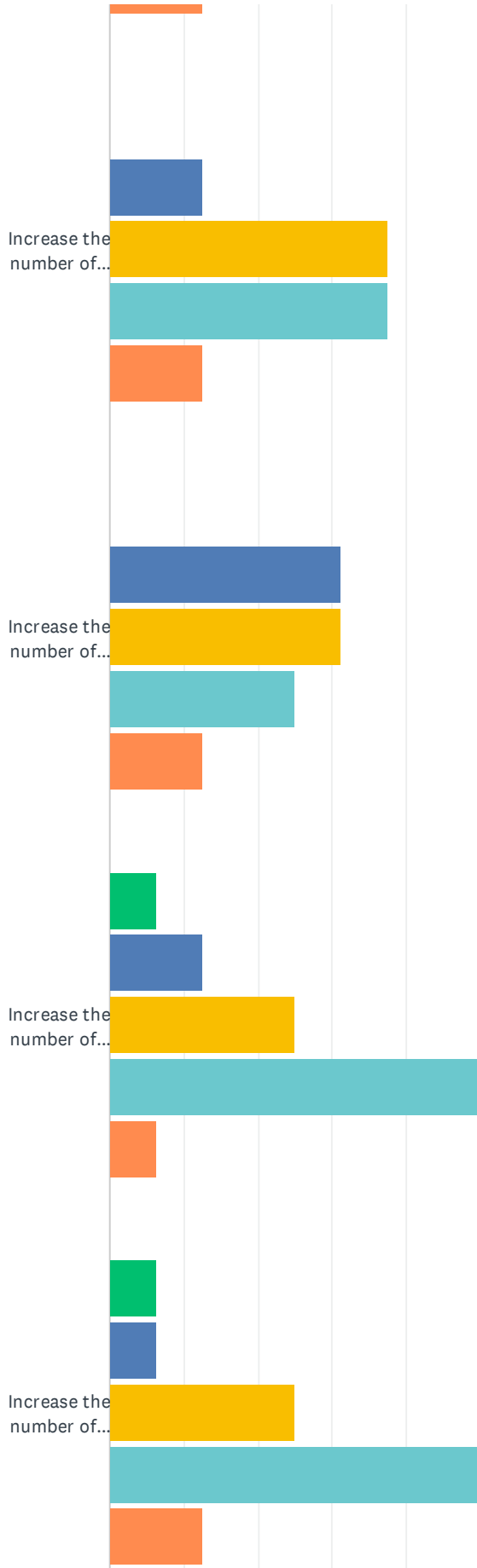
Answered: 16 Skipped: 0



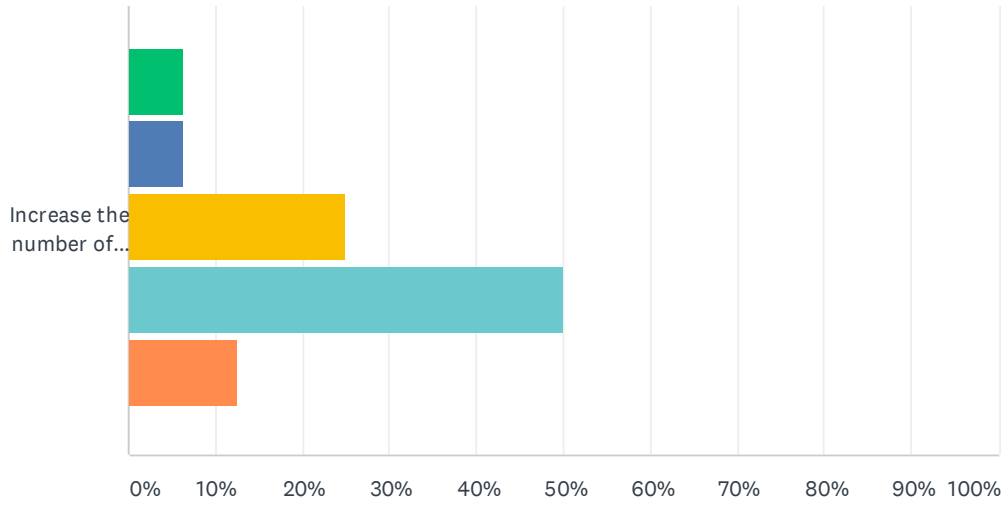
Goals for Lower Red Sulphur Cypress



Goals for Lower Red Sulphur Cypress



Goals for Lower Red Sulphur Cypress



Strongly disagree Disagree Neutral Agree Strongly Agree

Goals for Lower Red Sulphur Cypress

	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
Reduce the number of non-participating entities in the National Flood Insurance Program (NFIP) in the FPR by X.	0.00% 0	25.00% 4	31.25% 5	37.50% 6	6.25% 1	16	3.25
Increase the number of participating Community Rating System (CRS) entities in the FPR by X.	0.00% 0	12.50% 2	56.25% 9	25.00% 4	6.25% 1	16	3.25
Increase the number of entities which regulate to the future conditions floodplains as part of new development and redevelopment by X.	6.25% 1	12.50% 2	37.50% 6	18.75% 3	25.00% 4	16	3.44
Increase the number of entities that have a dedicated municipal drainage charge, drainage district fee, or other continuous funding mechanism by X, to implement future FMEs and FMPs	12.50% 2	18.75% 3	25.00% 4	31.25% 5	12.50% 2	16	3.13
Support the development of minimum stormwater infrastructure design standards applicable across the FPR.	6.25% 1	0.00% 0	18.75% 3	43.75% 7	31.25% 5	16	3.94
Reduce the number of communities that do not have floodplain standards that meet or exceed the NFIP minimum standards by X.	0.00% 0	6.25% 1	12.50% 2	56.25% 9	25.00% 4	16	4.00
Increase the number of entities that have adopted higher standards (more stringent than NFIP minimum standards) by X.	0.00% 0	43.75% 7	37.50% 6	12.50% 2	6.25% 1	16	2.81
Increase the number of entities that have adopted regulations to reduce the risk from localized flooding by X.	0.00% 0	18.75% 3	25.00% 4	43.75% 7	12.50% 2	16	3.50
Increase the number of entities which designate their floodplain management practices as "strong" in the regional flood planning process by X percent per each cycle.	0.00% 0	12.50% 2	37.50% 6	37.50% 6	12.50% 2	16	3.50
Increase the number of entities which designate their level of enforcement of floodplain management as "high activity" by X percent per each cycle.	0.00% 0	31.25% 5	31.25% 5	25.00% 4	12.50% 2	16	3.19
Increase the number of entities which regulate to one or more feet above the BFE for existing 1% annual chance event (100-year) conditions by X per each cycle.	6.25% 1	12.50% 2	25.00% 4	50.00% 8	6.25% 1	16	3.38
Increase the number of entities which provide alternate compliance options that allow or incentivize nature-based solutions to reduce future flood risk by X.	6.25% 1	6.25% 1	25.00% 4	50.00% 8	12.50% 2	16	3.56
Increase the number of entities in the FPR that designate the 1% annual	6.25% 1	6.25% 1	25.00% 4	50.00% 8	12.50% 2	16	3.56

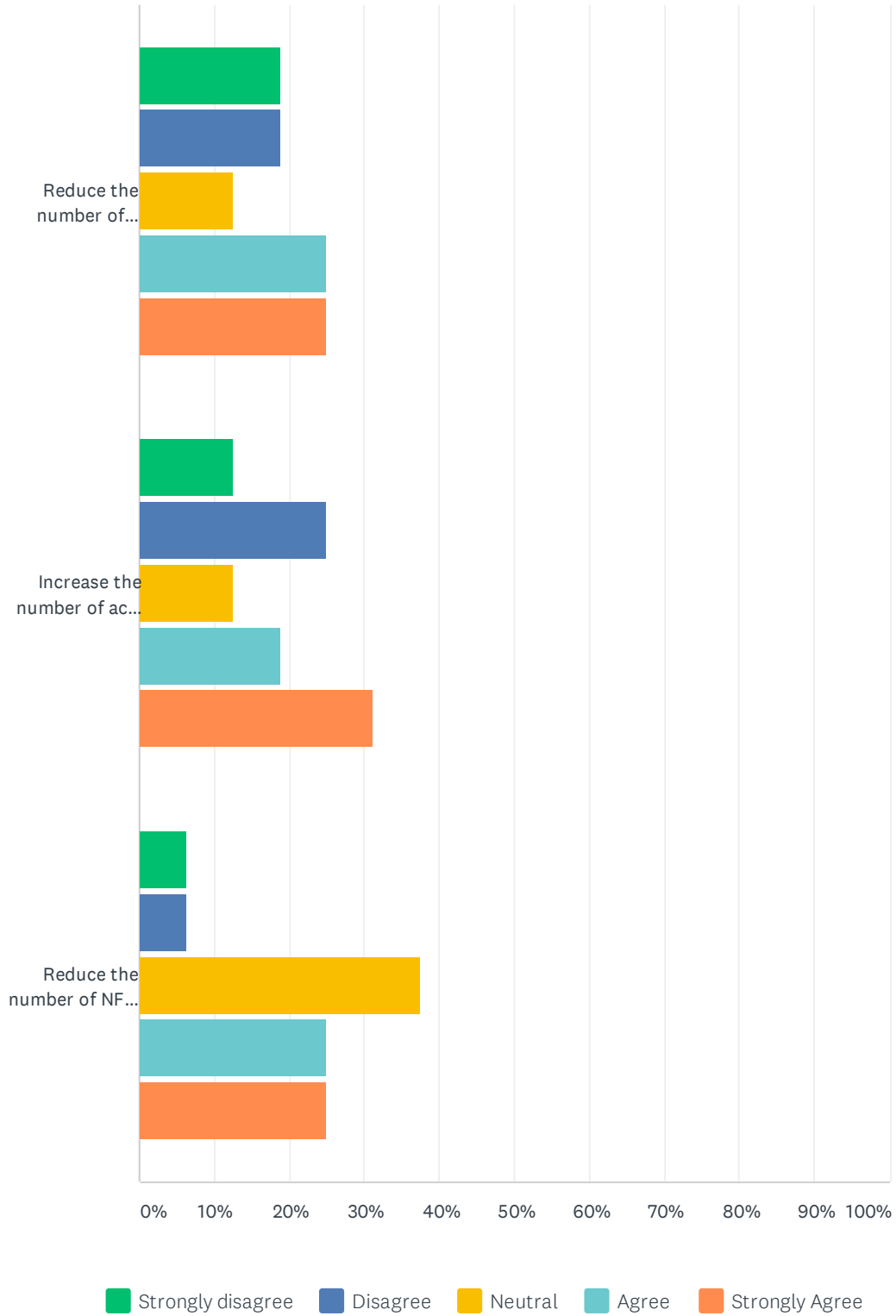
Goals for Lower Red Sulphur Cypress

chance (100-year) floodplain on the entity's future land use plan by X.

#	COMMENTS	DATE
1	Reducing flooding is the goal and unregulated development is a major cause of flooding so storm water plans are imperative. Natural solutions reduce flooding and provide other benefits while costing less than other built projects.	8/23/2021 6:33 PM
2	Obviously the funding must come first to provide for mapping.	8/23/2021 9:07 AM
3	I believe entities are counties, cities, towns - state governmental organizations.	8/18/2021 8:52 AM

Q5 Non-Structural Flood Infrastructure Projects

Answered: 16 Skipped: 0



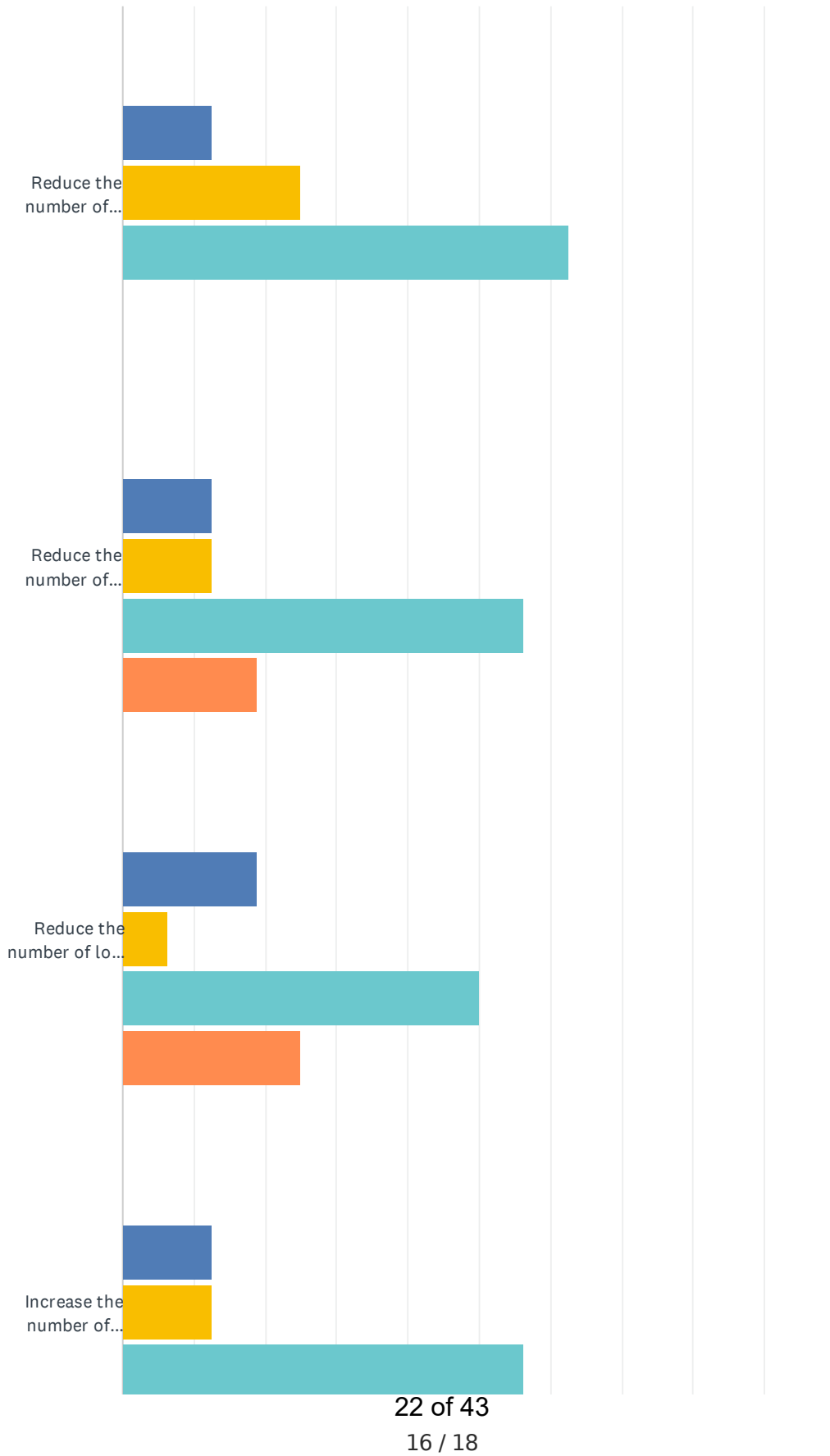
Goals for Lower Red Sulphur Cypress

	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
Reduce the number of vulnerable properties (i.e. through property/easement buyouts, acquisitions, relocations, and/or structural elevation), with a special emphasis on those that have been repeatedly damaged by floods, in the FPR by X percent.	18.75% 3	18.75% 3	12.50% 2	25.00% 4	25.00% 4	16	3.19
Increase the number of acres of publicly protected open space by X as part of property buyouts, land conservation, and acquisitions to reduce future impacts of flooding.	12.50% 2	25.00% 4	12.50% 2	18.75% 3	31.25% 5	16	3.31
Reduce the number of NFIP repetitive-loss properties in the FPR by X.	6.25% 1	6.25% 1	37.50% 6	25.00% 4	25.00% 4	16	3.56

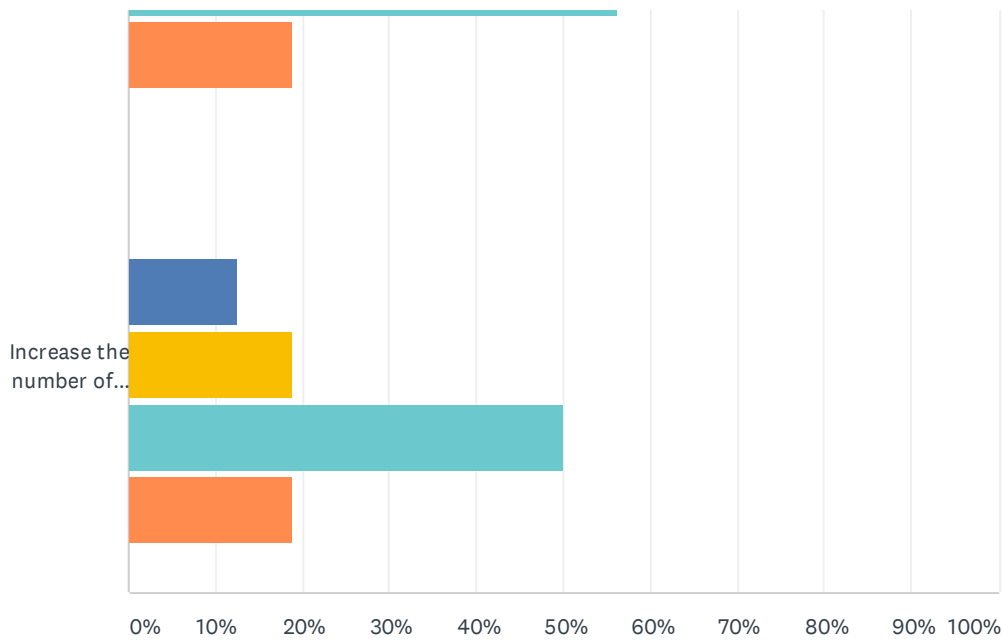
#	COMMENTS	DATE
1	This is a struggle between private property rights and government intervention.	8/23/2021 9:07 AM
2	Increasing flood plain storage, should open better use lands for development.	8/18/2021 8:52 AM
3	Natural resources (unless damaged) have significant water retention capabilities that mitigate against damaging floodwaters. Sadly, in the Sulphur River Basin, this capability has been seriously damaged by prior flood control projects described as "channelization". It is important to restore functionality to the riverine system. Easements and additional interests in land that enable restoration of rural areas to functionality are significant projects that should be pursued. Some of the restoration is need on land that causes downstream areas to flood or suffer harm due to channels that were constructed in the early part of the 20th Century.	8/16/2021 2:43 PM

Q6 Structural Flood Infrastructure Projects

Answered: 16 Skipped: 0



Goals for Lower Red Sulphur Cypress



■ Strongly disagree
 ■ Disagree
 ■ Neutral
 ■ Agree
 ■ Strongly Agree

	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
Reduce the number of vulnerable critical facilities located within the existing and future 1% annual chance (100-year) floodplain by X.	0.00% 0	12.50% 2	25.00% 4	62.50% 10	0.00% 0	16	3.50
Reduce the number of vulnerable roadway segments located within the existing and future 1% annual chance (100-year) floodplain by X.	0.00% 0	12.50% 2	12.50% 2	56.25% 9	18.75% 3	16	3.81
Reduce the number of low water crossings located within the existing and future 1% annual chance floodplain by X.	0.00% 0	18.75% 3	6.25% 1	50.00% 8	25.00% 4	16	3.81
Increase the number of nature-based practices as part of flood risk reduction projects by X.	0.00% 0	12.50% 2	12.50% 2	56.25% 9	18.75% 3	16	3.81
Increase the number of entities in the FPR that provide regional detention as part of an overall floodplain management program by X.	0.00% 0	12.50% 2	18.75% 3	50.00% 8	18.75% 3	16	3.75

#	COMMENTS	DATE
1	We should implement cost effective engineering solutions like elevated roads and bridges. I presume most of TxDOT structures would meet the 100 year flood, although I am sure there are exceptions due to cost.	8/23/2021 9:07 AM
2	Richard Brontoli Red River Valley Association	8/18/2021 8:52 AM
3	In the early 20th part of the 20th Century, large portions of the Sulphur River segments were replaced by man-made ditches (channels) that more quickly passed water. These ditches were constructed as an aid to crop production but cause significant long-term problems for downstream areas. The ditches cause excessive erosion and ongoing excessive maintenance	8/16/2021 2:43 PM

Goals for Lower Red Sulphur Cypress

costs for roads and bridges near or over the altered river segment. The largest amount of flooding damage to property in this planning zone is not attributable to floodwaters reaching residences or facilities. The largest damage is in the harm caused to previously functioning wetlands and agricultural lands downstream of the man-made ditches. For the region that includes the Sulphur River, every regional plan should describe these previous flood control actions and should encourage the implementation of strategies that lessen the damage.

Task 3: Floodplain Management Practices and Flood Protection Goals

The Lower Red-Sulphur-Cypress RFPG is tasked with evaluating and recommending floodplain management practices (Task 3A) and flood mitigation goals (Task 3B) within the region. This chapter describes the processes undertaken by the RFPG to achieve these tasks and summarizes the outcomes of this endeavor.

Task 3A – Evaluation and Recommendations on Floodplain Management Practices (361.35)

The initial effort under Task 3A was to collect and perform a qualitative assessment of current floodplain management regulations within the Region (i.e., floodplain ordinances, court orders, drainage design standards, and other related policies). Floodplain management regulations that were readily available on the regulatory entity’s websites were first collected. Parallel to this effort, a web-based survey was sent out to each regulatory entity in the Region to gather additional information. Based on the data collected in this effort, a total of 18 out of 20 Counties (90%) and 63 out of 85 Cities/Towns (74%) within the Region have some form of floodplain management regulation (see **Table 6**). The remaining regulatory entities were classified as “Unknown” as data was not provided through the survey or data could not be found online.

3A.1 Extent to which Current Floodplain Management and Land Use Practices Impact Flood Risks

Floodplain management and land use practices look at regulations, policies, and trends in the region. From a flood risk perspective, these management practices improve protection of life and property. Floodplain management and land use practices may vary widely from one entity to another. The Federal Emergency Management Agency (FEMA) manages the National Flood Insurance Program (NFIP), which requires minimum standards for development in and around the floodplain for communities that participate in the NFIP. FEMA has no authority to require floodplain development regulations in communities that do not participate.

In 1968, Congress established the NFIP through the National Flood Insurance Act of 1968 to provide federally subsidized flood insurance protection. The program has been updated multiple times since then to strengthen the program, provide fiscal soundness and inform the public of flood risk through insurance rate maps. Title 44 of the Code of Federal Regulations (44 CFR) includes the rules and regulations of the program. 44 CFR Part 60 establishes the minimum criteria that FEMA requires for NFIP participation, which includes identifying special flood hazard areas within the community.

Cities and counties work with FEMA to establish Base Flood Elevations (BFEs) and Special Flood Hazard Areas (SFHAs) along rivers, creeks and large tributaries that are shown on Flood Insurance Rate Maps (FIRMs). Communities use the FIRM, BFE, and SFHA data in their floodplain permitting processes as a

requirement for participating in the NFIP. Insurance agents use FIRMs to determine flood risk, which determines the flood insurance rate for individual properties.

Cities and counties have the authority to establish their own policies, standards, and practices to manage land use in and around areas of flood risk. Participating communities have the responsibility and authority to permit development that is reasonably safe from flooding. They can adopt and enforce higher standards than the FEMA NFIP minimum standards to better protect people and property from flooding, but are not allowed to adopt lower standards. FEMA supports entities who choose to establish higher standards to better protect life and property.

Cities and counties who participate in the NFIP program provide their residents and businesses the opportunity to purchase flood insurance to reduce the socio-economic impacts of floods, as well as making the community eligible for disaster assistance following a flood event.

3A.1.a. Existing Population and Property

Multiple resources were considered in determining the extent to which current floodplain management and land use practices impact flood risk to existing population and property. Cities and counties have the ability to approve floodplain ordinances or court orders, respectively. Therefore, the NFIP participants are limited to these entities, and the results included in this section of the report are limited to cities and counties.

Communities that participate in the NFIP are required to have a floodplain ordinance or court order that meets or exceeds the NFIP minimum standards. As of October 2021, 16 counties (80%) and 59 cities (70%) in the Lower Red-Sulphur-Cypress region participate in the NFIP and have floodplain ordinances that meet or exceed the NFIP minimum standards.

44 CFR Part 60 establishes minimum standards that a city or county must meet to be eligible to participate in the NFIP. The minimum standards require buildings to be constructed at or above the BFE, provide for floodproofing options for nonresidential buildings, and mandate provisions specific to the elevation and anchoring of manufactured houses. The minimum standards are based on maps that represent “current” conditions, which may in reality be based on outdated topography, rainfall and runoff data. Therefore, the minimum standards may offer limited protection from flood damages.

According to the TWDB Exhibit C guidance document, the term “higher” standard is defined as freeboard, detention requirements or fill restrictions. FEMA defines freeboard as additional height above the BFE that serves as a factor of safety when determining the elevation of the lowest floor. The BFE is the elevation of surface water resulting from a flood that has a 1 percent chance of occurring in any given year. The BFE is typically based on FEMA FIRMs (maps) and associated Flood Insurance Studies (models). However, the BFE can be based on localized data developed by the community that may not be incorporated into a FEMA mapping product.

According to the data collected as part of Task 3A, 95% of Cities with floodplain management regulations within the Region include a freeboard requirement. In the case of Counties, only 40% of those with floodplain management regulations include a freeboard requirement. **Figures 3X1 and 3X2** summarize freeboard requirements for Cities and Counties, respectively.

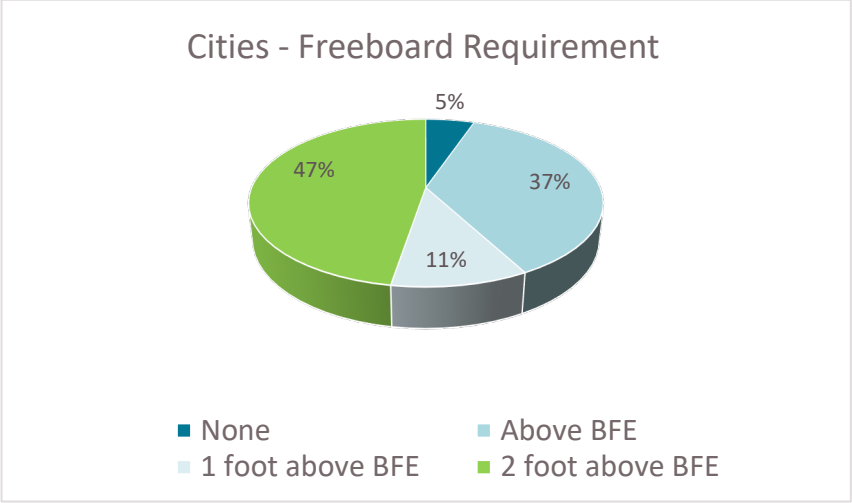


Figure 3X1 – Percentage of Cities with freeboard requirements.

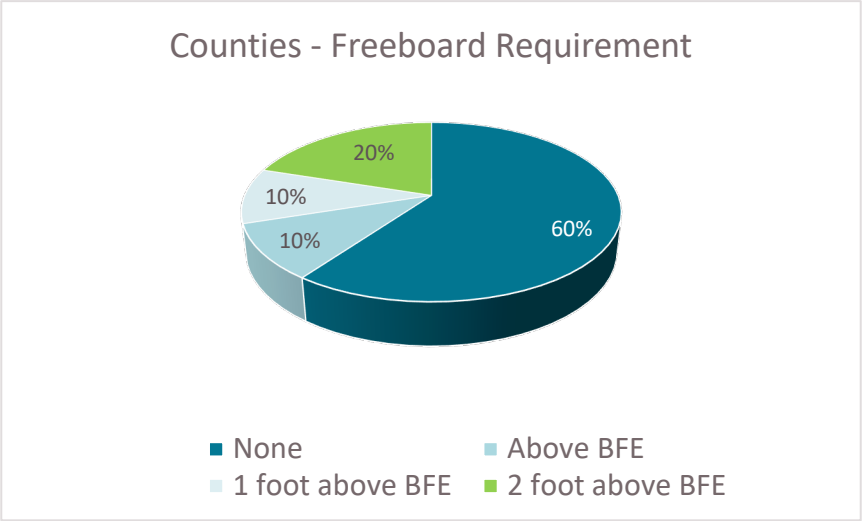


Figure 3X2 – Percentage of Counties with freeboard requirements.

Other key floodplain management practices that were generally observed across the Region are as follows:

1. Requiring new developments to perform detailed studies to establish BFE data when not available.
2. Stormwater detention requirements.
3. Limitations to criteria variance within designated floodways.

The most common threshold for requiring BFE data to be developed was for subdivisions proposing 50 lots or more, or with an area greater than 5 acres. A total of 16 Cities (19%) and 6 Counties (30%) include this requirement in their floodplain regulations. With respect to detention facilities, only 7 Cities (8%) and 2 Counties (10%) include a stormwater detention requirement in their floodplain regulations. In terms of criteria variances, it was found that 14 Cities (17%) and 6 Counties (30%) include some form of

limitation when there are impacts in the designated floodway. The most common language found is that variances shall not be issued within any designated floodway if any increase in flood levels during the base flood discharge would result.

Although the Region has a relatively high NFIP participation, the RFPG considers that there is still a significant gap with respect to key floodplain management practices and that communities could enhance their policies to prevent the creation of additional flooding risks in the future.

3A.1.b. Future Population and Property

The Lower Red-Sulphur-Cypress Region is projected to experience a population increase of about 24% from 2020 to 2050. Some of the existing floodplain ordinances and court orders with higher standards may continue to protect future population and property as long as they are enforced. However, the gap in key floodplain management practices across the Region poses an increasing level of flood risk as population continues to increase. Local floodplain regulations with higher standards need to be adopted and enforced to better protect future population and property. **The RFPG encourages those cities and counties without floodplain ordinances or court orders to develop, adopt, implement and enforce floodplain regulations that at least meet the NFIP minimum standard.**

Future floodplains are uncertain. However, it is anticipated that the future floodplains will look different from existing floodplains in some areas within the region. The hydrologic and hydraulic models used to generate floodplain maps are regularly being updated with new topography, survey, precipitation, runoff, and other data as development occurs in and around floodplains. The future BFE will likely increase, expanding floodplain areas, due to several conditions that are presented in **Section 2B**. Cities and counties typically develop their future land use plans considering areas of anticipated population growth and development within their communities. However, the existing and future floodplains are not necessarily a component of the future land use plan. Incorporating the existing and future floodplains will provide cities and counties with additional direction as to where population and development should be directed to protect people and property. Some of the Region's cities and counties have already incorporated requirements where hydrologic and hydraulic analyses should be based on fully developed land use conditions. Entities who currently use future flood conditions as part of their design criteria provide a factor of safety that reduces future flood hazard exposure for new and existing developments.

Another factor of safety that can be implemented to reduce future flood hazard exposure is freeboard. Freeboard provides additional height above the BFE as discussed in **Section 3A.1.a**. While the BFE is likely to change in the future, the freeboard is intended to allow the structure to remain above the anticipated future water surface elevation but possibly with less height above the water surface.

Detention and retention ponds are often required to mitigate the impacts that impervious surfaces and more efficient drainage infrastructure have on the runoff from a developed property. As discussed in **Section 3A.1.a**, a handful of entities within the Region currently incorporate stormwater detention requirements in their design criteria. The standard engineering design requirement is to manage runoff so that it discharges from the developed property at the existing rate that it leaves the property in its natural state. Incorporating this requirement mitigates increased runoff in the future, which in turn can reduce future flood hazard exposure.

Areas without maps and models or with outdated maps and models are at greater risk in terms of future population and property development within the floodplain. Entities need comprehensive and updated maps to direct development away from flood-prone areas. Future floodplain maps and models are anticipated to be updated with higher resolution data, best available data, and advanced modeling techniques in the years to come. Reducing floodplain mapping gaps within the Region and increasing mapping accuracy should reduce flood risk uncertainty and translate into life and property savings in the future.

3A.3 Consideration of Recommendation or Adoption of Minimum Floodplain Management and Land Use Practices

The Lower Red-Sulphur-Cypress RFPG is required to consider the possibility of recommending or adopting consistent minimum floodplain management standards and land use practices for the entire Region. Recommended practices encourage entities with flood control responsibilities to establish minimum floodplain management standards over the next several years, whereas the adoption of minimum standards requires entities to have adopted the minimum standards before their FMEs, FMSs and FMPs could be considered for potential inclusion in the regional flood plan.

The Lower Red-Sulphur-Cypress RFPG considered all the information gathered and analyzed as part of Task 3A to deliberate on whether to recommend or adopt minimum floodplain management standards. This topic was first introduced during the July 8, 2021 RFPG meeting. During this public meeting, an interactive web-based polling session was conducted to start gathering feedback from the RFPG and members of the community with regards to the following topics:

- Main flooding concerns
- Issues that were considered the main impediments to effective floodplain management
- Recommending or adopting minimum standards for all entities within the Region
- Types of minimum standards to be considered
- Most important outcomes of the Regional Flood Planning effort

The qualitative assessment of current floodplain management regulations described previously and the results of this initial survey (see **Appendix 3A.3-1**) served as a guide to compile a preliminary set of minimum standards, which were presented and debated during the September 2, 2021 RFPG meeting. One of the main outcomes from this meeting was that **the RFPG only intends to recommend, not adopt, minimum standards for the Region.**

The preliminary minimum standards were then updated based on the discussion and feedback obtained from the September 2, 2021 meeting. These updated standards were summarized in a memorandum that was submitted to the RFPG on September 22, 2021 to provide a final opportunity for reviewing and providing comments prior to taking an official vote on the next RFPG meeting. Some additional updates were incorporated in the standards language in response to this review and the final recommended minimum standards were presented for the RFPG's consideration and final approval at the October 7, 2021 RFPG meeting. Some final adjustments were requested to the recommended standards during this meeting prior to voting, but the RFPG voted in favor of the recommended minimum standards as amended during the meeting.

In general, the final RFPG recommended minimum standards can be grouped into 6 general categories:

- 1) Freeboard
- 2) Roadways
- 3) Culverts/bridges
- 4) Storm drainage systems
- 5) Detention
- 6) Mapping coverage

Table 3X-1 presents the final recommended minimum standards as approved by the RFPG for consideration by local entities within the Region. These recommended minimum standards were compiled in parallel with the flood mitigation and floodplain management goals developed as part of Task 3B. Therefore, the recommended minimum standards also reflect the vision and objectives that were captured in the goals for the Region.

The recommended freeboard for residential, commercial and critical facilities (i.e. hospitals, fire stations, and police stations) exceeds the minimum NFIP requirement, but it is fairly consistent with current requirements within the Region's Cities and Counties.

When considering roadways, culverts/bridges, and storm drainage systems, the RFPG determined that recommending minimum standards based on the Texas Department of Transportation (TxDOT) hydraulic design manual would provide a consistent and well-known set of standards. The design frequencies (or level of service) established by these standards vary as a function of roadway classification, which was considered a desirable component of the recommended standards. In addition, the RFPG considered that TxDOT standards would not pose an excessive burden on small communities which currently do not have any floodplain management standards in place.

The recommended multi-stage detention standard is intended to provide a basic design requirement in which multiple storms frequencies are considered in the design of the detention facility and its outlet structures. The objective is that the detention facility should be effective across a range of storm events and provide proper peak discharge attenuation for the low frequency/large magnitude events as well as for the more frequent, smaller-magnitude storms.

Finally, the RFPG recognizes the importance of increasing and improving floodplain mapping coverage across the Region as a means to reduce flood risk uncertainty and improve the tools for regulating development within the floodplain. As development continues within the Region, it is important to leverage best available data and modeling tools to establish BFEs, update approximate floodplain boundaries (FEMA Zone A), and create new floodplain maps where they are nonexistent. Furthermore, the RFPG also recommends using modeling tools to demonstrate that a proposed development will result in no adverse impacts to downstream properties.

Table 3X-1: Recommended Minimum Floodplain Management Standards

Type/Condition	Infrastructure	Recommended Standard*
New Construction or Redevelopment	Residential Properties	Finished floor elevation (FFE) 1-ft above BFE (BFE = Base Flood Elevation, 100-yr flood)
	Commercial Properties	
	Critical Facilities	FFE above 500-yr or 2-ft above 100-yr whichever is lowest
	Roadways	TxDOT Hydraulic Design Manual (Sep/2019) Chapter 10 http://onlinemanuals.txdot.gov/txdotmanuals/hyd/hyd.pdf
	Culverts Bridges	TxDOT Hydraulic Design Manual (Sep/2019) Chapter 4, Section 6 - Table 4.2: Recommended Design Standards for Various Drainage Facilities. http://onlinemanuals.txdot.gov/txdotmanuals/hyd/hyd.pdf
	Private Storm Drainage Systems (New Site Development)	TxDOT Hydraulic Design Manual (Sep/2019) Chapter 10 http://onlinemanuals.txdot.gov/txdotmanuals/hyd/hyd.pdf
	Detention Facilities	Multi-stage Detention - detain to existing conditions peak discharge for 2-, 25- and 100-yr storm events
	Mapping Coverage	Developers building in a Zone A or unmapped areas must provide a hydrologic and hydraulic study establishing BFE and demonstrate no adverse impacts downstream.

* Standards do not apply to existing structures.

Task 3B – Flood Mitigation and Floodplain Management Goals (361.36)

One of the critical components of the inaugural State Flood Plan process was the development of flood mitigation and floodplain management goals. The objective of Task 3B is to define and select a series of goals that will serve as the drivers of the regional flood planning effort. As such, the Lower Red-Sulphur-Cypress Regional Flood Planning Group (RFPG) spent a significant amount of time and resources exploring values and discussing what they felt were the best goals for the region.

The overarching goal of all regional flood plans must be “to protect against the loss of life and property” as set forth in the Guidance Principles (31 TAC §362.3). This is further defined to:

1. Identify and reduce the risk and impact to life and property that already exists, and
2. Avoid increasing or creating new flood risk by addressing future development within the areas known to have existing or future flood risk.

The RFPG must identify goals that are specific and achievable, and that when implemented, will demonstrate progress towards the overarching goal set by the state. Per Texas Water Development Board (TWDB) requirements and guidelines, the goals selected by the RFPG must include the information listed below:

- Description of the goal
- Term of the goal set at 10 years (short-term) and 30 years (long-term)
- Extent or geographic area to which the goal applies
- Residual risk that remains after the goal is met
- Measurement method that will be used to measure goal attainment
- Association with overarching goal categories

The RFPG utilized the existing and future condition flood risk analyses from Task 2, and the assessment of current floodplain management and land use practices from Task 3A, as guides for developing and defining the goals for the region. After careful consideration of these factors, the Lower Red-Sulphur-Cypress RFPG adopted the flood mitigation and floodplain management goals listed in **Table 3B-1**. These specific goals were reviewed and approved by the Lower Red-Sulphur-Cypress RFPG on October 7, 2021 during the RFPG public meeting. The adopted goals apply to the entire flood planning region; no sub-regional goals were identified. The information requirements listed above are presented for each goal in **Table 11**.

The selected specific goals will guide the development of the Flood Management Strategies (FMSs), Flood Management Evaluations (FMEs), and Flood Mitigation Projects (FMPs) for the Lower Red-Sulphur-Cypress Flood Planning Region. They build upon TWDB regional flood planning guidance and provide a comprehensive framework for future strategy development focused on reducing flood risk to people and property, while not negatively affecting neighboring areas. The process for defining, refining, and selecting these goals is described in the following sub-sections.

Table 3B-1: Adopted Flood Mitigation and Floodplain Management Goals

<p align="center">Short Term (10 year)</p>	<p align="center">Long Term (30 year)</p>
<p>For each planning cycle, hold 3 public outreach and education activities (in multiple locations within the region) to improve awareness of flood hazards and benefits of flood planning.</p>	<p>For each planning cycle, hold 3 public outreach and education activities (in multiple locations within the region) to improve awareness of flood hazards and benefits of flood planning.</p>
<p>Support the development of a community coordinated warning and emergency response program (including flood gauges) that can detect the flood threat and provide timely warning of impending flood danger - Identify potential areas where flood warning systems would be beneficial.</p>	<p>Support the development of a community coordinated warning and emergency response program (including flood gauges) that can detect the flood threat and provide timely warning of impending flood danger - Implement a minimum of 1 flood warning system.</p>
<p>Increase the coverage of flood hazard data by completing studies to reduce areas identified as having current gaps in flood mapping by 25%.</p>	<p>Increase the coverage of flood hazard data by completing studies to reduce areas identified as having current gaps in flood mapping by 90%.</p>
<p>Reduce the percentage of communities that do not have floodplain standards that meet or exceed the NFIP minimum standards by 25%.</p>	<p>Reduce the percentage of communities that do not have floodplain standards that meet or exceed the NFIP minimum standards by 90%.</p>
<p>Support the development of minimum stormwater infrastructure design standards applicable across the FPR by the creation of an integrated stormwater management manual to serve as a guide/foundation for local governments.</p>	<p>Support the development of minimum stormwater infrastructure design standards applicable across the FPR by helping local governments to adopt and implement the stormwater management manual.</p>
<p>Reduce the number of NFIP repetitive-loss properties by 10%.</p>	<p>Reduce the number of NFIP repetitive-loss properties by 50%.</p>
<p>Identify at least one (1) non-structural flood mitigation project in the Region.</p>	<p>Identify at least three (3) non-structural flood mitigation projects in the Region.</p>
<p>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.</p>	<p>Improve the level of service for 50% of vulnerable roadway segments and low water crossings located within the existing and future 1% annual chance floodplain.</p>
<p>Repair, rehabilitate, or replace 10% of aged stormwater infrastructure that is at high risk of failure and where failure would increase flood risks.</p>	<p>Repair, rehabilitate, or replace 50% of aged stormwater infrastructure that is at high risk of failure and where failure would increase flood risks.</p>

3B.1 Flood Mitigation and Floodplain Management Goal Selection Process

The RFPG initiated the process for developing flood mitigation and floodplain management goals during the July 8, 2021 RFPG public meeting. This topic was introduced during this meeting, including legislative and TWDB Guidance for developing goals. Based on the initial feedback collected from the RFPG and members of the community, the RFPG carried out a process in which 26 preliminary goals were defined and grouped into seven categories. The intent of the preliminary list of goals was to provide a wide variety of possible goals to select from. The goal categories and the general objective of the preliminary goals developed under each category are described below:

1. Education & Outreach - Increase the amount of flood education and outreach opportunities to improve awareness of flood hazards and future participation throughout the flood planning region.
2. Flood Warning & Readiness - Improve the dissemination of information regarding early flood recognition and danger, emergency response procedures, and post-flood recovery actions.
3. Flood Studies and Analyses - Increase the number and extent of regional flood planning studies (FMEs) and analyses to better prepare communities for implementing flood mitigation projects.
4. Flood Prevention - Increase the number and extent of protective regulatory measures and programs to limit future risk and reduce flood damage in the flood planning region.
5. Flood Property Acquisition - Reduce the amount of existing and future vulnerable properties within the region.
6. Flood Elevation and Proofing - Reduce future vulnerability to existing structures through improved elevation and other flood proofing programs and initiatives.
7. Flood Infrastructure Projects - Reduce flood risk and mitigate flood hazards to life and property through the implementation of flood infrastructure projects.

The preliminary set of goals was presented and considered during the August 5, 2021 RFPG public meeting. After presenting each category and associated goals, a live web-survey was conducted to help determine if there was general agreement with the goal categories. Both the RFPG and members of the community were allowed to participate. The web-based survey also asked the participants to rank the goal categories in order of importance (see **Figure 3B-1**). After reviewing and discussing survey results, the RFPG decided to eliminate the Flood Property Acquisition and Flood Elevation and Proofing categories. In addition, it was decided that the top ranked category, "Flood Infrastructure Projects", could be split into Structural and Non-Structural flood infrastructure projects.

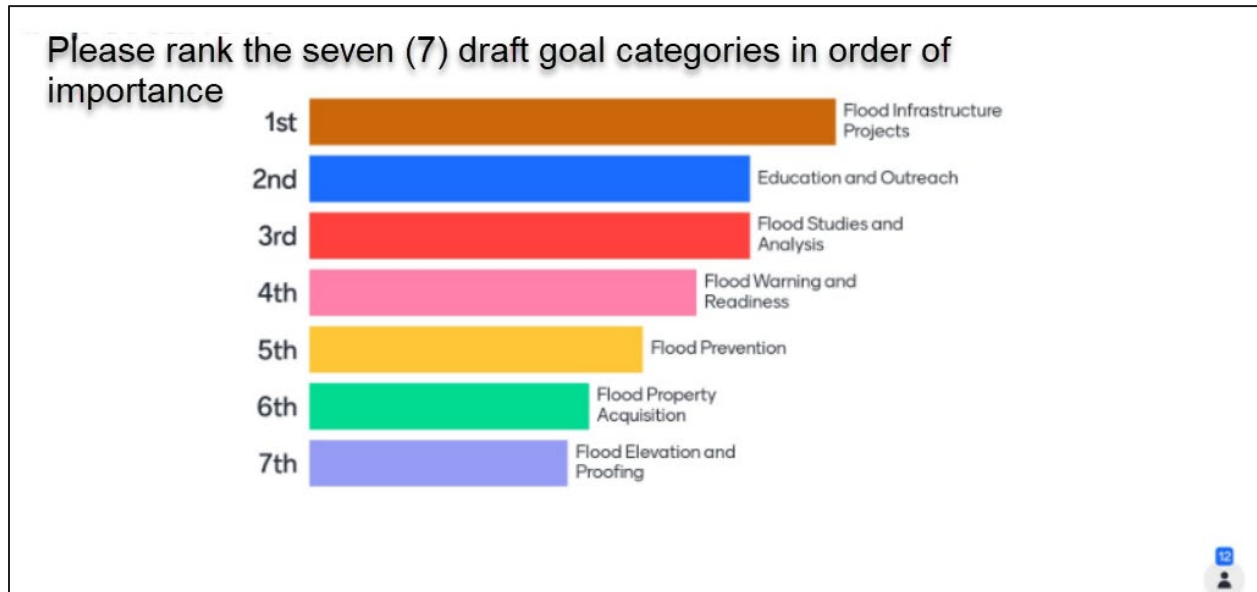


Figure 3B-1: Goal Category Ranking Results

A follow up web-based survey was then provided to the RFPG members requesting their feedback on the specific preliminary goals under each of the selected categories. The survey was designed to gauge the RFPG’s level of support for each specific goal, not to compare them or rank them against each other. The intent of the survey was to provide a quantitative assessment of the level of support for each preliminary goal that would aid in the selection of final goals. Note that at this point the goals did not include the specific target by which each would be measured, only the description of the goal. For each preliminary goal, the participants expressed their level of support by choosing one of the following options: Strongly Agree – Agree – Neutral – Disagree – Strongly Disagree. Survey results are presented in full as **Appendix 3B-1**.

The results of the web-based survey were analyzed and the preliminary goals with the highest level of support were selected from each category. This list was presented and considered during the September 2, 2021 RFPG public meeting. Short-Term and Long-Term targets were recommended as a starting point to create measurable goals. Based on the feedback received during this meeting, the preliminary goals and targets were refined (**Table 3B-2**) and presented for a vote and formal adoption during the October 7, 2021 RFPG public meeting. Some final modifications were requested by the RFPG and the goals were adopted unanimously (as amended).

Table 3B-2: Refined Preliminary Goals (as presented in Oct/7/2021 RFPG public meeting)

Goal Category	Goal	Short Term Goal (2033)	Long Term Goal (2053)
Education and Outreach	For each planning cycle, hold public outreach and education activities (in multiple locations within the region) to improve awareness of flood hazards and benefits of flood planning.	3	3
Flood Warning and Readiness	Support the development of a community coordinated warning and emergency response program (including flood gauges) that can detect the flood threat and provide timely warning of impending flood danger.	Identify potential areas where flood warning systems would be beneficial	Implement a minimum of 1 flood warning system
Flood Studies and Analysis	Increase the coverage of flood hazard data by completing studies to reduce areas identified as having current gaps in flood mapping by X percent.	25%	90%
Flood Prevention	Reduce the percentage of communities that do not have floodplain standards that meet or exceed the NFIP minimum standards by X.	25%	100%
	Support the development of minimum stormwater infrastructure design standards applicable across the FPR.	Creation of an integrated stormwater management manual to serve as a guide/foundation for local governments	Help local governments to adopt and implement the stormwater management manual
Non-Structural Flood Infrastructure	Reduce the number of NFIP repetitive-loss properties by X percent.	10%	50%
Structural Flood Infrastructure	Improve the level of service of vulnerable roadway segments and low water crossing located within the existing and future 1% annual chance floodplain by X percent.	25%	90%
	Repair, rehabilitate, or replace X percent of aged stormwater infrastructure that is at high risk of failure and where failure would increase flood risks.	10%	50%

3B.2 Benefits and Residual Risk after Goals are Met

The adopted goals were developed in a manner to set the stage for specific actions that can be quantified and measured in future regional and state flood planning cycles. Future data collection efforts or implementation of evaluations, strategies, and/or projects may be used to establish baseline data for future measurements to determine progress towards achieving the goals. Implementation efforts will also demonstrate progress towards the overall purpose and intent of the regional flood planning process and will provide various benefits to individuals, communities, and the region as a whole. Achieving the adopted goals will certainly reduce current and future levels of flood risk in the region.

However, it is recognized that it is not possible to protect against all potential flood risks. In selecting the flood risk reduction goals, the RFPG is inherently determining the accepted residual risk for the region. In general, residual risks for flood risk reduction goals could be characterized as follows:

- 1) While a new development may be constructed outside the 1% annual chance floodplain, flood events of greater magnitude will inundate areas beyond those preserved as a floodplain.
- 2) Flood events may exceed the level of service for which infrastructure is designed.
- 3) Communities depend on future funding and program priorities to maintain, repair, and replace flood protection assets. Routine maintenance of infrastructure is required to maintain its design capacity. Maintenance is sometimes overlooked due to budget, staff, and time constraints.
- 4) Policies, Regulations, and Standards reduce adverse impacts associated with development activity but does not eliminate it.
- 5) The lack of local enforcement of floodplain regulations also creates risk.
- 6) In our representative government, policy changes that adversely impact budgets, prior plans, assets, and standards is always a possibility.
- 7) Practical (time and money) limits of understanding and precision associated with studies, models, and plans.
- 8) Human behavior is unpredictable, people may choose to ignore flood warning systems or cross over flooded roadways for a variety of reasons.

The residual risk for each of the specific goals adopted for the Lower Red-Sulphur-Cypress region are presented in **Table 11**.

Table 6: Existing Floodplain Management Practices

Entity ^A	Floodplain management regulations (Yes/No/Unknown) ^A	Adopted minimum regulations pursuant to Texas Water Code Section 16.3145? (Yes/No) ^A	NFIP Participant (Yes/ No) ^A	Higher Standards Adopted (Yes/ No) ^B	Floodplain Management Practices (Strong/Moderate/Low/None) ^B	Level of enforcement of practices (High/ Moderate/ Low/ None) ^{B,C}	Existing Stormwater or Drainage Fee (Yes/No) ^B	Web Link to entity regulations ^B
Counties								
Bowie	Yes	Yes	Yes		None			HMP
Camp	Unknown	Unknown	No		None			
Cass	Yes	Yes	Yes		None			HMP
Cooke*	Yes	Yes	Yes		Low			FDP
Delta	Yes	Unknown	No		None			HMP
Fannin*	Yes	Yes	Yes	Yes	Strong		No	FDP
Franklin*	Yes	Yes	Yes		None			HMP
Grayson*	Yes	Yes	Yes	Yes	Strong		No	FDP
Gregg*	Yes	Yes	Yes		None			HMP
Harrison*	Yes	Yes	Yes		Low			FDP
Hopkins*	Yes	Yes	Yes	Yes	Moderate		No	FDP
Hunt*	Yes	Yes	Yes	Yes	Moderate		No	https://www.huntcounty.net/page/hunt.countydev
Lamar	Unknown	Unknown	No		None			
Marion	Yes	Yes	Yes		None			HMP
Morris	Yes	Yes	Yes		None			HMP
Panola*	Yes	Yes	Yes		None			
Red River	Yes	Unknown	No	Yes	Strong		No	HMP
Titus	Yes	Yes	Yes		None			
Upshur*	Yes	Yes	Yes	Yes	Strong			FDP
Wood*	Yes	Yes	Yes		None			Wood County Texas (mywoodcounty.com)
Cities/Towns								
Annona	Unknown	Unknown	No					
Atlanta	Yes	Yes	Yes	Yes	Moderate		No	CO (Art. 3.6)
Avery	Yes	Yes	Yes					
Avinger	Unknown	Unknown	No	Yes	Moderate		No	
Bailey	Yes	Yes	Yes					
Bells	Yes	Unknown	No					CO
Bloomburg	Yes	Yes	Yes					
Blossom	Yes	Yes	Yes					
Bogota	Yes	Yes	Yes					
Bonham	Yes	Yes	Yes		Strong			CO (Art. 3.12)
Callisburg*	Yes	Yes	Yes	Yes	Strong		No	
Campbell	Unknown	Unknown	No					
Clarksville	Yes	Yes	Yes		Strong			SM
Commerce	Yes	Yes	Yes		None			SM
Como	Yes	Yes	Yes	Yes			No	
Cooper	Unknown	Unknown	No	Yes			No	
Daingerfield	Yes	Yes	Yes					CO (Ch. 18)
De Kalb	Yes	Unknown	No	Yes			No	https://dekalbtx.org/code-enforcement
Denison	Yes	Yes	Yes		Strong			CO (Ch. 8)
Deport	Yes	Yes	Yes					
Detroit	Yes	Yes	Yes	Yes			No	
Dodd City	Unknown	Unknown	No					
Domino	Yes	Yes	Yes					

Table 6: Existing Floodplain Management Practices

Entity ^A	Floodplain management regulations (Yes/No/ Unknown) ^A	Adopted minimum regulations pursuant to Texas Water Code Section 16.3145? (Yes/No) ^A	NFIP Participant (Yes/ No) ^A	Higher Standards Adopted (Yes/ No) ^B	Floodplain Management Practices (Strong/Moderate/Low/None) ^B	Level of enforcement of practices (High/ Moderate/ Low/ None) ^{B,C}	Existing Stormwater or Drainage Fee (Yes/No) ^B	Web Link to entity regulations ^B
Dorchester	Unknown	Unknown	No					
Douglasville	Unknown	Unknown	No					
East Mountain	Unknown	Unknown	No					
Ector	Yes	Yes	Yes					
Gilmer	Yes	Yes	Yes		Low			CO (Ch. 42)
Honey Grove	Yes	Yes	Yes					
Hooks	Yes	Yes	Yes	Yes			No	
Howe	Yes	Yes	Yes					
Hughes Springs	Yes	Yes	Yes					
Jefferson	Yes	Yes	Yes		Low			CO (Ch. 46)
Knollwood	Unknown	Unknown	No					
Ladonia	Yes	Yes	Yes					
Leary	Yes	Yes	Yes					
Leonard	Yes	Yes	Yes					
Linden	Yes	Yes	Yes		Low			CO (Ch. 11)
Lone Star	Yes	Yes	Yes					
Longview	Yes	Yes	Yes					Floodplain Administrator Longview, TX (longviewtexas.gov)
Marietta	Unknown	Unknown	No	Yes			No	
Marshall	Yes	Yes	Yes	Yes			No	CO (Ch. 7.4)
Maud	Yes	Yes	Yes					
Miller's Cove	Yes	Yes	Yes					
Mount Pleasant	Yes	Yes	Yes	Yes	Low		No	CO (Ch. 152)
Mount Vernon	Yes	Yes	Yes	Yes	Low		Yes	CO (Ch. 5.3)
Naples	Yes	Yes	Yes	Yes			No	
Nash	Yes	Yes	Yes					
New Boston	Yes	Yes	Yes		Low			CO (Ch. 8)
Neylandville	Unknown	Unknown	No					
Omaha	Yes	Yes	Yes					
Ore City	Yes	Yes	Yes		Strong			CO (Ch. 10)
Paris	Yes	Yes	Yes	Yes	Strong		No	CO (Art. 4.0.7)
Pecan Gap	Unknown	Unknown	No					
Pittsburg	Yes	Yes	Yes		Low			CO (Art. 3.0.5)
Pottsboro	Yes	Yes	Yes					
Queen City	Yes	Yes	Yes	Yes			No	
Ravenna	Unknown	Unknown	No					
Red Lick	Unknown	Unknown	No				No	
Redwater	Yes	Yes	Yes					
Reno (Lamar)	Yes	Yes	Yes					
Rocky Mound	Unknown	Unknown	No					
Roxton	Yes	Yes	Yes	Yes			No	
Sadler	Unknown	Unknown	No					
Savoy	Yes	Yes	Yes					
Scottsville	Unknown	Unknown	No					
Sherman	Yes	Yes	Yes		Strong		Yes	CO (Art. 3.12)
Southmayd	Yes	Yes	Yes					
Sulphur Springs	Yes	Yes	Yes	Yes	Strong		No	Engineering (sulphurspringstx.org)

Table 6: Existing Floodplain Management Practices

Entity ^A	Floodplain management regulations (Yes/No/Unknown) ^A	Adopted minimum regulations pursuant to Texas Water Code Section 16.3145? (Yes/No) ^A	NFIP Participant (Yes/ No) ^A	Higher Standards Adopted (Yes/ No) ^B	Floodplain Management Practices (Strong/Moderate/Low/None) ^B	Level of enforcement of practices (High/ Moderate/ Low/ None) ^{B,C}	Existing Stormwater or Drainage Fee (Yes/No) ^B	Web Link to entity regulations ^B
Sun Valley	Unknown	Unknown	No					
Talco	Unknown	Unknown	No					
Texarkana	Yes	Yes	Yes	Yes	Moderate		No	CO (Ch. 110)
Tira	Yes	Yes	Yes					
Toco	Unknown	Unknown	No					
Tom Bean	Yes	Unknown	No					CO (Zoning Sec. 21)
Trenton	Yes	Yes	Yes					
Uncertain	Yes	Yes	Yes					
Wake Village	Yes	Yes	Yes	Yes	Strong		No	CO (Ch. 153)
Waskom	Yes	Yes	Yes					
Whitesboro	Yes	Unknown	No					CO (Ch. 151)
Whitewright	Yes	Yes	Yes		Strong			CO (Ch. 14.2)
Windom	Yes	Yes	Yes					
Winfield	Unknown	Unknown	No					
Winnsboro	Yes	Yes	Yes					
Wolfe City	Unknown	Unknown	No					

^A At a minimum, the RFPGs must list all counties, cities and communities in the region with flood related authority in the region and identify whether entity they have any established floodplain management practices.

^B This field may be left blank during the 1st planning cycle. However, RFPGs are strongly encouraged to provide this information when applicable and available.

^C The following may serve as a guide for evaluating enforcement:

high- actively enforces the entire ordinance, performs many inspections throughout construction process, issues fines, violations, and Section 1316s where appropriate, and enforces substantial damage and substantial improvement;

moderate- enforces much of the ordinance, performs limited inspections and is limited in issuance of fines and violations;

low- provides permitting of development in the floodplain, may not perform inspections, may not issue fines or violations;

none- does not enforce floodplain management regulations.

* Indicates this county is partially within this RFPG and is also represented by at least one other RFPG

Table 11: Regional flood plan flood mitigation and floodplain management goals

Goal ID	Goal	Term of Goal	Target Year	Applicable To	Residual Risk	How will the Goal be Measured	Overarching Goal(s)	Associated Goal IDs
1001	For each planning cycle, hold 3 public outreach and education activities (in multiple locations within the region) to improve awareness of flood hazards and benefits of flood planning.	Short Term (10 year)	2033	Entire RFPG	Awareness alone does not reduce flood risk	Document number of meetings per planning cycle. Keep records of sign in sheets and meeting minutes.	Educate public on risk	1002
1002	For each planning cycle, hold 3 public outreach and education activities (in multiple locations within the region) to improve awareness of flood hazards and benefits of flood planning.	Long Term (30 year)	2053	Entire RFPG	Awareness alone does not reduce flood risk	Document number of meetings per planning cycle. Keep records of sign in sheets and meeting minutes.	Educate public on risk	1001
2001	Support the development of a community coordinated warning and emergency response program (including flood gauges) that can detect the flood threat and provide timely warning of impending flood danger - Identify potential areas where flood warning systems would be beneficial.	Short Term (10 year)	2033	Entire RFPG	Areas without flood warning systems would still be at risk of inadequate warning until implemented. Warning is effective only to the extent that people take effective action. Uncertainties associated with human behavior remain as residual risk.	Complete study and provide report with identified areas.	Protect against loss of life and property.	2002
2002	Support the development of a community coordinated warning and emergency response program (including flood gauges) that can detect the flood threat and provide timely warning of impending flood danger - Implement a minimum of 1 flood warning system.	Long Term (30 year)	2053	Entire RFPG	Areas without flood warning systems would still be at risk of inadequate warning until implemented. Warning is effective only to the extent that people take effective action. Uncertainties associated with human behavior remain as residual risk.	Number of implemented flood warning system.	Protect against loss of life and property.	2001
3001	Increase the coverage of flood hazard data by completing studies to reduce areas identified as having current gaps in flood mapping by 25%.	Short Term (10 year)	2033	Entire RFPG	Flood risk uncertainty remains for 75% of current areas with gaps in flood mapping.	Updates to flood mapping and compare to mapping coverage per HUC-8 shown on 2023 Regional Flood Plan.	Protect against loss of life and property.	3002
3002	Increase the coverage of flood hazard data by completing studies to reduce areas identified as having current gaps in flood mapping by 90%.	Long Term (30 year)	2053	Entire RFPG	Flood risk uncertainty remains for 10% of current areas with gaps in flood mapping.	Updates to flood mapping and compare to mapping coverage per HUC-8 shown on 2023 Regional Flood Plan.	Protect against loss of life and property.	3001
4001	Reduce the percentage of communities that do not have floodplain standards that meet or exceed the NFIP minimum standards by 25%.	Short Term (10 year)	2033	Entire RFPG	Risk to existing structures is not reduced; Risk to new construction in non-participants is not reduced.	Number of entities participating in NFIP; number of entities with equivalent standards.	Protect against loss of life and property.	4002

Goal ID	Goal	Term of Goal	Target Year	Applicable To	Residual Risk	How will the Goal be Measured	Overarching Goal(s)	Associated Goal IDs
4002	Reduce the percentage of communities that do not have floodplain standards that meet or exceed the NFIP minimum standards by 90%.	Long Term (30 year)	2053	Entire RFPG	Risk to existing structures is not reduced; Risk to new construction in non-participants is not reduced.	Number of entities participating in NFIP; number of entities with equivalent standards.	Protect against loss of life and property.	4001
4003	Support the development of minimum stormwater infrastructure design standards applicable across the FPR by the creation of an integrated stormwater management manual to serve as a guide/foundation for local governments.	Short Term (10 year)	2033	Entire RFPG	Risk to existing structures is not reduced; Risk to new construction in non-participants is not reduced.	Completion of stormwater infrastructure design standards document.	Protect against loss of life and property.	4004
4004	Support the development of minimum stormwater infrastructure design standards applicable across the FPR by helping local governments to adopt and implement the stormwater management manual.	Long Term (30 year)	2053	Entire RFPG	Risk to existing structures is not reduced; Risk to new construction in non-participants is not reduced.	Document efforts and the number of communities assisted by RFPG.	Protect against loss of life and property.	4003
5001	Reduce the number of NFIP repetitive-loss properties by 10%.	Short Term (10 year)	2033	Entire RFPG	90% of repetitive loss structures would remain at risk	Number of NFIP repetitive loss properties.	Protect against loss of life and property.	5002
5002	Reduce the number of NFIP repetitive-loss properties by 50%.	Long Term (30 year)	2053	Entire RFPG	50% of repetitive loss structures would remain at risk	Number of NFIP repetitive loss properties.	Protect against loss of life and property.	5001
5003	Identify at least one (1) non-structural flood mitigation project in the Region.	Short Term (10 year)	2033	Entire RFPG	No change in flood risk until a project is implemented	Number of non-structural flood mitigation projects identified in the Regional Flood Plan.	Protect against loss of life and property.	5004
5004	Identify at least three (3) non-structural flood mitigation projects in the Region.	Long Term (30 year)	2053	Entire RFPG	No change in flood risk until a project is implemented	Number of non-structural flood mitigation projects identified in the Regional Flood Plan.	Protect against loss of life and property.	5003
6001	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.	Short Term (10 year)	2033	Entire RFPG	Flood risk will remain unchanged for 90% of vulnerable roadway segments.	Take inventory of existing structures and report number of improved structures.	Protect against loss of life and property.	6002
6002	Improve the level of service for 50% of vulnerable roadway segments and low water crossings located within the existing and future 1% annual chance floodplain.	Long Term (30 year)	2053	Entire RFPG	Flood risk will remain unchanged for 50% of vulnerable roadway segments.	Take inventory of existing structures and report number of improved structures.	Protect against loss of life and property.	6001
6003	Repair, rehabilitate, or replace 10% of aged stormwater infrastructure that is at high risk of failure and where failure would increase flood risks.	Short Term (10 year)	2033	Entire RFPG	Flood risk will remain unchanged for 90% of stormwater infrastructure at high risk of failure.	Take inventory of existing structures and report number of improved structures.	Protect against loss of life and property.	6004
6004	Repair, rehabilitate, or replace 50% of aged stormwater infrastructure that is at high risk of failure and where failure would increase flood risks.	Long Term (30 year)	2053	Entire RFPG	Flood risk will remain unchanged for 50% of stormwater infrastructure at high risk of failure.	Take inventory of existing structures and report number of improved structures.	Protect against loss of life and property.	6003