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# Task 3: Floodplain Management Practices and Flood Protection Goals

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The Guadalupe RFPG is tasked with evaluating and recommending floodplain management practices (Task 3.1) and flood mitigation goals (Task 3.2) within the region. The intent of regional flood planning is twofold:

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 areas known to have existing or future flood risk.

Floodplain management, land use, infrastructure design and implementation, and other practices play a key role in accomplishing these intents, specifically in preventing future additional flood risk.

## Task 3.1 – Evaluation and Recommendations on Floodplain Management Practices (361.35)

### *3.1.1 NFIP and CRS Participation*

The initial effort under Task 3.1 was to collect and perform a qualitative assessment of current floodplain management regulations within the Region. Floodplain management regulations that were readily available on the regulatory entity’s websites were first collected. Parallel to this effort requests for ordinances and court orders were made as well as a survey that was sent out to each regulatory entity in the Region to gather additional information. Based on the data collected:

- All 22 counties and 45 out of 46 cities/towns (98%) within the Region are participants in the National Flood Insurance Program (NFIP), and
- The cities of New Braunfels, Niederwald, and San Marcos along with Guadalupe and Bastrop counties are participants in the FEMA Community Rating System (CRS) program.

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 enhance protection of life and property from flooding.

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.

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

The Community Rating System (CRS) program provides local governments the opportunity to perform additional floodplain management practices and programs above NFIP levels to enhance public safety

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1 while reducing flood insurance premiums within their jurisdiction. The CRS program includes multiple  
 2 alternatives and the more practices employed by the local jurisdiction the more points that are scored,  
 3 further reducing flood insurance premiums.

4 **3.1.2 Future Population and Flood Protection Practices**

5 The Guadalupe Region population is projected to increase from about 880,000 in 2021 to 1,945,901 in  
 6 2070, an increase of about 122%. Some of the existing floodplain ordinances and standards may continue  
 7 to protect future population and property as long as they are enforced. However, the diversity in key  
 8 floodplain management practices across the Region poses an increasing level of flood risk as the  
 9 population continues to increase.

10 Future floodplain boundaries are uncertain as exemplified by the recent Atlas 14 study that increased  
 11 rainfall depths based on historical data, thus, generating larger floodplain limits and depths. In addition,  
 12 the hydrologic and hydraulic models are regularly being updated with new topography, survey,  
 13 precipitation, runoff, and other data as development occurs in and around floodplains. The future Base  
 14 Flood Elevation (BFE) will likely increase, expanding floodplain areas in the region. A need for portions of  
 15 the Region is having detailed models and maps to depict the floodplain boundaries to guide future  
 16 development decision making. See Chapter 2 for more details.

17 Some flood protection practices that local governments can implement to prevent the creation of  
 18 additional flood risk are:

- 19 • Produce and provide updated floodplain maps to the community to minimize the potential of new  
 20 development within the floodplain. In absence of detailed adopt base level engineering as best  
 21 available information and use to regulate development;
- 22 • When developing detailed floodplain models and maps - Use future land use conditions when  
 23 conducting hydrologic and hydraulic analyses to establish floodplain limits to provide a factor of  
 24 safety above floodplain maps based on existing conditions;
- 25 • Adopt higher standards (above NFIP Minimum) - Increase freeboard requirements for new  
 26 structures so if the BFE were to increase in the future the structure will remain above the  
 27 anticipated future water surface elevation;
- 28 • Require detention basins (ponds) – Adopt regulations for new development so that the post  
 29 development peak flow rate is less than or equal to the existing peak flow rate (undeveloped  
 30 condition) to protect downstream landowners. This includes managing a full range of storm  
 31 events from the 2-year to 100-year storm event. To protect natural habitat and minimize creek  
 32 erosion impacts to existing and future infrastructure within the riparian area, it is advisable to  
 33 include stream protection volume within the detention basin to manage frequent rainfall events.
- 34 • Require that new roadway crossings are elevated above the 100-year flood level to minimize the  
 35 potential loss of life that can result in low water crossings. Where this standard is not practical  
 36 due to physical or fiscal constraints include enhanced safety features such as barricades, flashers,  
 37 or other flood warning systems based on risk.

38

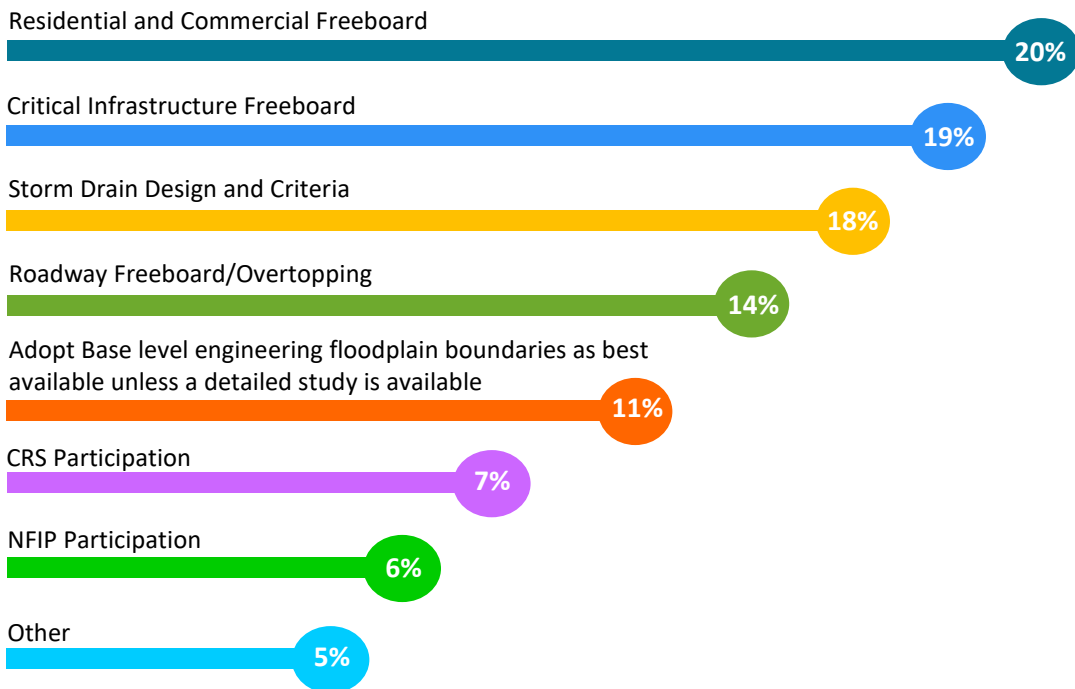
1 **3.1.3 Consideration of Recommendation or Adoption of Minimum**  
 2 **Floodplain Management Practices**

3 The Guadalupe RFPG may recommend or adopt consistent minimum floodplain management standards  
 4 and land use practices for the entire Region. Recommended practices encourage entities with flood  
 5 control responsibilities to establish minimum floodplain management standards over the next several  
 6 years, whereas the adoption of minimum standards requires entities to have adopted the minimum  
 7 standards before their FMEs, FMSs and FMPs could be considered for potential inclusion in the regional  
 8 flood plan. **The RFPG chose to recommend and not adopt minimum standards for this planning cycle.**

9 This topic was introduced at the August 4, 2021 RFPG meeting. During the public meeting, an interactive  
 10 web-based polling session was conducted to start gathering feedback from the RFPG and members of the  
 11 community with regards to the following topics:

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

17 In general, the RFPG and public attendees recommended the following **potential management practices**:



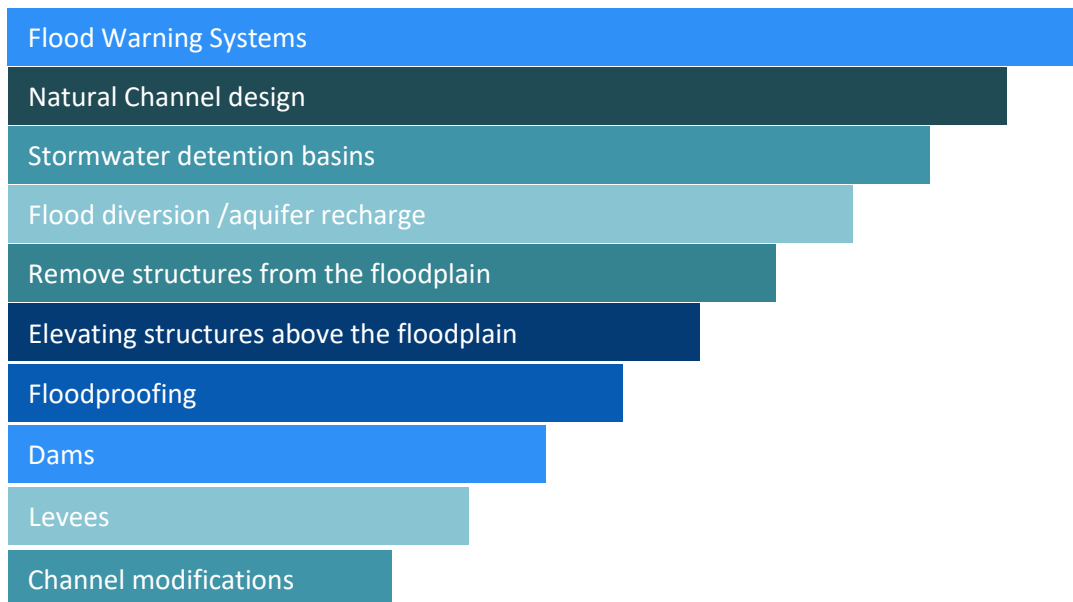
18  
 19  
 20

**TASK 3: FLOODPLAIN MANAGEMENT PRACTICES AND FLOOD PROTECTION GOALS**

1 The attendees also provided input on the **desired outcomes for a successful regional flood plan** and noted  
2 below:



3  
4 In subsequent RFPG meetings on September 8, 2021 and October 5, 2021, the RFPG further discussed and  
5 evaluated floodplain management recommendations and goals. Through this process, the RFPG refined  
6 their **flood mitigation practices** and they are noted below in priority order:



7

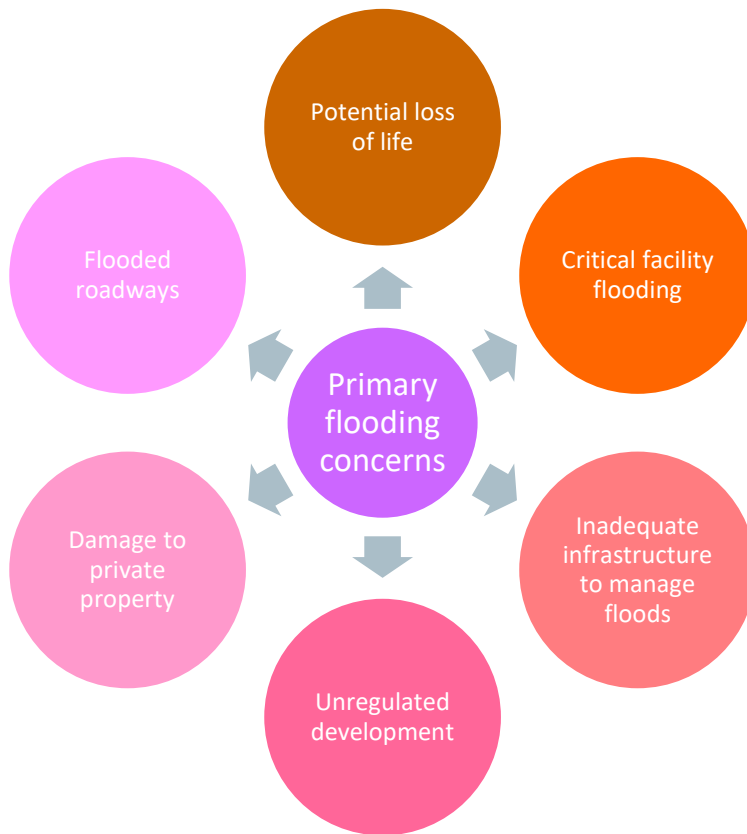
**TASK 3: FLOODPLAIN MANAGEMENT PRACTICES AND FLOOD PROTECTION GOALS**

1 The RFPG recommended **flood prevention practices** in priority order are:



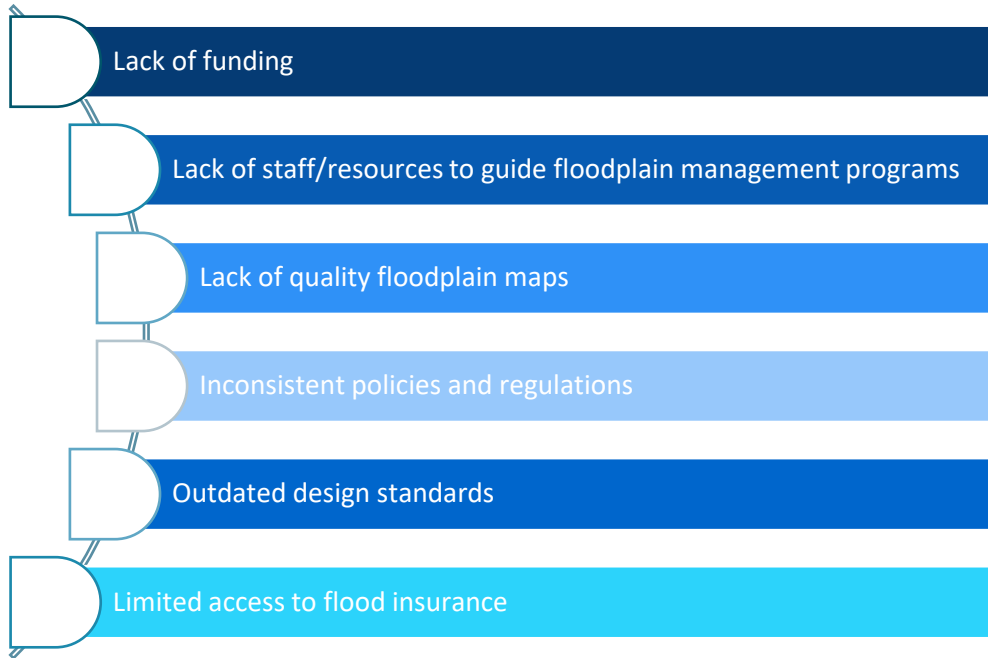
2

3 **Primary flooding concerns** were noted as:



4

1 **Primary impediments to effective floodplain management** were described as:



2

3 Another aspect of RFPG planning process included considering whether to recommend varying standards  
4 across the Region due to significant differences in topography, soils, land use, and storm events. For  
5 example, it is understood that while flash flooding is more prevalent in the western (Hill Country) portion  
6 of the watershed the lower basin experiences longer duration flooding at a lower velocity. At this time,  
7 the RFPG did not recommend different floodplain management practices for the varying regions yet  
8 encourages local governments to adopt higher standards and consider CRS participation including  
9 measures that are appropriate for their ecoregion.

10 The above recommended practices are encouraged by the RFPG for this planning cycle for consideration  
11 by local entities within the Region. It is understood that modifying floodplain management practices takes  
12 time through the local government political processes and this item can be updated during the next  
13 planning cycle. These recommendations were compiled in parallel with the flood mitigation and floodplain  
14 management goals developed as part of Task 3.2. Therefore, the recommendations also reflect the vision  
15 and objectives that were captured in the goals for the Region. Finally, to address the diversity in floodplain  
16 management and protection and link with the above practices, the RFPG prepared a list of legislative,  
17 administrative, and regulatory recommendations that are included in Chapter 8.

18 Table 6 below summarizes existing floodplain management regulations for the cities and counties in  
19 Region 11.

Table 6: Existing Floodplain Management Practices

Entity A	Floodplain management regulations (Yes/ No/ Unknown) <sup>A</sup>	Adopted minimum regulations pursuant to Texas Water Code Section 16.3145? (Yes/ No) <sup>A</sup>	NFIP Participant (Yes/ No) <sup>A</sup>	Community Rating System Participant (Yes/No) If Yes, CRS Level is indicated	Higher Standards adopted (Yes/ No) <sup>B</sup>	Floodplain Management Practices (Strong/Moderate/Low/None) <sup>B</sup>	Level of enforcement of practices (High/Moderate/Low/ None) <sup>B,C</sup>	Existing Stormwater or Drainage Fee (Yes/ No) <sup>B</sup>	Web Link to entity regulations <sup>B</sup>	Contact	Notes
County:											
Bandera	Yes	Yes	Yes	No	UK				<a href="https://www.banderacounty.org/documents/Bandera%20County%20Flood%20Order.pdf">https://www.banderacounty.org/documents/Bandera%20County%20Flood%20Order.pdf</a>		
Bastrop	Yes	Yes	Yes	Yes - 8	Yes				<a href="https://www.co.bastrop.tx.us/page/dsen.floodplain">https://www.co.bastrop.tx.us/page/dsen.floodplain</a>	Abram Barker Bastrop County Floodplain Administrator, 512-581-7159	
Blanco	Yes	Yes	Yes	No	UK				<a href="http://www.co.blanco.tx.us/upload/page/3972/docs/5-28-19%20Blanco%20Subdivision%20%20Regulations.pdf">http://www.co.blanco.tx.us/upload/page/3972/docs/5-28-19%20Blanco%20Subdivision%20%20Regulations.pdf</a>		
Caldwell	Yes	Yes	Yes	No	UK				<a href="https://www.capcog.org/wp-content/uploads/2019/10/2012-Flood-Damage-Prevention-Ordinance.pdf">https://www.capcog.org/wp-content/uploads/2019/10/2012-Flood-Damage-Prevention-Ordinance.pdf</a>		
Calhoun	Yes	Yes	Yes	No	Yes				<a href="http://www.calhouncotx.org/Floodplain%20Order%209-25-14%20Original%20with%20signatures.pdf">http://www.calhouncotx.org/Floodplain%20Order%209-25-14%20Original%20with%20signatures.pdf</a>		
Comal	Yes	Yes	Yes	No	Yes				<a href="https://cceo.org/flood/documents/Flood_Damage_Prevention_Order.pdf">https://cceo.org/flood/documents/Flood_Damage_Prevention_Order.pdf</a>		
DeWitt	Yes	Yes	Yes	No	UK				<a href="http://www.co.dewitt.tx.us/upload/page/1604/docs/DeWitt_Co_Flood_Damage_Court_Order_60.3xdx[1].pdf">http://www.co.dewitt.tx.us/upload/page/1604/docs/DeWitt_Co_Flood_Damage_Court_Order_60.3xdx[1].pdf</a>		
Fayette	Yes	Yes	Yes	No	New ordinances being proposed				<a href="https://www.capcog.org/wp-content/uploads/2019/10/Flood-Damage-Prevention-Regulations.pdf">https://www.capcog.org/wp-content/uploads/2019/10/Flood-Damage-Prevention-Regulations.pdf</a>	Floodplain Manager: Amber Hielscher, Address: 151 N Washington St., Rm 307, La Grange, TX 78945, Office Phone: (979) 968-6469, Email: amber.hielscher@co.fayette.tx.us	
Gillespie	Yes	No	Yes	No	No				<a href="https://www.twdb.texas.gov/publications/reports/contracted_reports/doc/93483369a.pdf">https://www.twdb.texas.gov/publications/reports/contracted_reports/doc/93483369a.pdf</a>		
Goliad	Yes	No	Yes	No	UK				<a href="http://www.co.goliad.tx.us/upload/page/2538/docs/Subdivision_Regulations_04-08_10-11[1].pdf">http://www.co.goliad.tx.us/upload/page/2538/docs/Subdivision_Regulations_04-08_10-11[1].pdf</a>		
Gonzales	Yes	Yes	Yes	No	UK				<a href="http://www.co.gonzales.tx.us/upload/page/2427/docs/Permits/Floodplain%20Order.pdf">http://www.co.gonzales.tx.us/upload/page/2427/docs/Permits/Floodplain%20Order.pdf</a>		
Guadalupe	Yes	Yes	Yes	Yes - 8	Yes				<a href="http://www.co.guadalupe.tx.us/eh/pdfs/floodplain_order.pdf">http://www.co.guadalupe.tx.us/eh/pdfs/floodplain_order.pdf</a>		



Entity A	Floodplain management regulations (Yes/ No/ Unknown) <sup>A</sup>	Adopted minimum regulations pursuant to Texas Water Code Section 16.3145? (Yes/ No) <sup>A</sup>	NFIP Participant (Yes/ No) <sup>A</sup>	Community Rating System Participant (Yes/No) If Yes, CRS Level is indicated	Higher Standards adopted (Yes/ No) <sup>B</sup>	Floodplain Management Practices (Strong/Moderate/Low/None) <sup>B</sup>	Level of enforcement of practices (High/Moderate/Low/ None) <sup>B,C</sup>	Existing Stormwater or Drainage Fee (Yes/ No) <sup>B</sup>	Web Link to entity regulations <sup>B</sup>	Contact	Notes
Hays	Yes	Yes	Yes	No	Yes				<a href="https://hayscountytexas.com/download/departments/development_services/regulations/2017-Hays-County-Development-Regulations.pdf">https://hayscountytexas.com/download/departments/development_services/regulations/2017-Hays-County-Development-Regulations.pdf</a>		
Karnes	Yes	Yes	Yes	No	UK				<a href="http://www.co.karnes.tx.us/upload/page/1027/docs/Financials/Karnes%20County%20Subdivision.pdf">http://www.co.karnes.tx.us/upload/page/1027/docs/Financials/Karnes%20County%20Subdivision.pdf</a>	-	
Kendall	Yes	Yes	Yes	No	Yes				<a href="https://www.co.kendall.tx.us/upload/page/0069/docs/Kendall%20County%20Engineering%20and%20Development%20Fee%20Schedule.pdf">https://www.co.kendall.tx.us/upload/page/0069/docs/Kendall%20County%20Engineering%20and%20Development%20Fee%20Schedule.pdf</a>		
Kerr	Yes	Yes	Yes	No	UK				<a href="http://www.co.kerr.tx.us/engineer/Flood_Damage_Prevention_Order_37967_02.24.2020.pdf">http://www.co.kerr.tx.us/engineer/Flood_Damage_Prevention_Order_37967_02.24.2020.pdf</a>		
Lavaca	Yes	Yes	Yes	No	UK				<a href="https://www.co.lavaca.tx.us/upload/page/2457/Check%20List%20Subdivision%20PDF.pdf">https://www.co.lavaca.tx.us/upload/page/2457/Check%20List%20Subdivision%20PDF.pdf</a>		
Real	Yes	Yes	Yes	No	UK				<a href="https://library.municode.com/tx/sugar_land/codes/land_development_code?nodeId=CH8FLDARERE">https://library.municode.com/tx/sugar_land/codes/land_development_code?nodeId=CH8FLDARERE</a>		
Refugio	Yes	Yes	Yes	No	Yes				<a href="http://www.co.refugio.tx.us/upload/page/8757/2019/Subdivision%20Regulations.pdf">http://www.co.refugio.tx.us/upload/page/8757/2019/Subdivision%20Regulations.pdf</a>		
Travis	Yes	No	Yes	No	Yes				<a href="https://library.municode.com/tx/austin/codes/code_of_ordinances?nodeId=TIT30AUTRCOSURE_CH30-4DR">https://library.municode.com/tx/austin/codes/code_of_ordinances?nodeId=TIT30AUTRCOSURE_CH30-4DR</a>		
Victoria	Yes	Yes	Yes	No	Yes				<a href="https://library.municode.com/tx/victoria/codes/code_of_ordinances?nodeId=CICO_CH9.5FLDAPR">https://library.municode.com/tx/victoria/codes/code_of_ordinances?nodeId=CICO_CH9.5FLDAPR</a>		
Wilson	Yes	Yes	Yes	No	Yes				<a href="http://www.co.wilson.tx.us/upload/page/2300/docs/Dawn/Ordinances/WC_Flood_Order_Final_10272010.pdf">http://www.co.wilson.tx.us/upload/page/2300/docs/Dawn/Ordinances/WC_Flood_Order_Final_10272010.pdf</a>		
Community:											
Blanco	Yes	Yes	Yes	No	UK				<a href="https://www.cityofblanco.com/masterplan/summary">https://www.cityofblanco.com/masterplan/summary</a>		
Boerne	Yes	Yes	Yes	No	UK				<a href="https://www.ci.boerne.tx.us/DocumentCenter/View/14583/FloodDamagePreventionOrd2020-20">https://www.ci.boerne.tx.us/DocumentCenter/View/14583/FloodDamagePreventionOrd2020-20</a>		
Buda	Yes	Yes	Yes	No	Yes				<a href="https://www.ci.buda.tx.us/DocumentCenter/View/5745/Unified-Development-Code---Oct-2017?bidId=">https://www.ci.buda.tx.us/DocumentCenter/View/5745/Unified-Development-Code---Oct-2017?bidId=</a>		
Bulverde	Yes	No	Yes	No	Yes				<a href="http://www.bulverdetx.gov/documentcenter/view/2697">http://www.bulverdetx.gov/documentcenter/view/2697</a>		
Cibolo	Yes	Yes	Yes	No	UK				<a href="https://library.municode.com/tx/cibolo/codes/code_of_ordinances?nodeId=PTIICOOR_CH30FL">https://library.municode.com/tx/cibolo/codes/code_of_ordinances?nodeId=PTIICOOR_CH30FL</a>		
Creedmoor	No	No	Yes	No	UK				N/A		Small town
Cuero	Yes	Yes	Yes	No	Yes				<a href="https://z2.franklinlegal.net/franklin/Z2Browser2.html?showset=cueroset">https://z2.franklinlegal.net/franklin/Z2Browser2.html?showset=cueroset</a>		
Flatonia	Yes	No	Yes	No	UK				<a href="https://z2.franklinlegal.net/franklin/Z2Browser2.html?showset=flatoniaset">https://z2.franklinlegal.net/franklin/Z2Browser2.html?showset=flatoniaset</a>		

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Garden Ridge	Yes	Yes	Yes	No	UK				<a href="https://www.ci.garden-ridge.tx.us/313/List-of-Ordinances">https://www.ci.garden-ridge.tx.us/313/List-of-Ordinances</a>		
Gonzales	Yes	Yes	Yes	No	UK				<a href="https://z2.franklinlegal.net/franklin/Z2Browser2.html?showset=gonzalesset">https://z2.franklinlegal.net/franklin/Z2Browser2.html?showset=gonzalesset</a>		
Ingram	Yes	Yes	Yes	No	UK				<a href="https://z2.franklinlegal.net/franklin/Z2Browser2.html?showset=ingramset">https://z2.franklinlegal.net/franklin/Z2Browser2.html?showset=ingramset</a>		
Kerrville	Yes	Yes	Yes	No	Yes				<a href="https://library.municode.com/tx/kerrville/codes/code_of_ordinances">https://library.municode.com/tx/kerrville/codes/code_of_ordinances</a>		
Kyle	Yes	No	Yes	No	UK				<a href="https://library.municode.com/tx/kyle/codes/code_of_ordinances">https://library.municode.com/tx/kyle/codes/code_of_ordinances</a>		
Lockhart	Yes	Yes	Yes	No	UK				<a href="https://library.municode.com/tx/lockhart/codes/code_of_ordinances?nodeId=PTIICOOR_CH22FL">https://library.municode.com/tx/lockhart/codes/code_of_ordinances?nodeId=PTIICOOR_CH22FL</a>		
Luling	Yes	Yes	Yes	No	UK				<a href="https://library.municode.com/tx/luling/codes/code_of_ordinances">https://library.municode.com/tx/luling/codes/code_of_ordinances</a>		
Marion	Yes	Yes	Yes	No	UK				<a href="https://www.cityofmariontx.org/government/forms__documents.php#outer-13">https://www.cityofmariontx.org/government/forms__documents.php#outer-13</a>		
Martindale	Yes	Yes	Yes	No	Yes				<a href="https://codelibrary.amlegal.com/codes/martindale/latest/martindale_tx/0-0-0-2122">https://codelibrary.amlegal.com/codes/martindale/latest/martindale_tx/0-0-0-2122</a>		
Mountain City	No	No	Yes	No	UK				<a href="https://mountaincitytx.com/mountain-city-water-utility-2020-ccr/">https://mountaincitytx.com/mountain-city-water-utility-2020-ccr/</a>		Small town
Mustang Ridge	No	No	Yes	No	UK				N/A	Alfredo Vallejo 512-243-1775	Small town
New Braunfels	Yes	Yes	Yes	Yes - 8	Yes				<a href="https://www.nbtexas.org/DocumentView.aspx?DID=1848">https://www.nbtexas.org/DocumentView.aspx?DID=1848</a>		
Niederwald	Yes	No	Yes	Yes - 8	UK				<a href="http://cityofniederwald.org/sites/default/files/SITE-DEVELOPMENT-ORDINANCE.pdf">http://cityofniederwald.org/sites/default/files/SITE-DEVELOPMENT-ORDINANCE.pdf</a>		
Nixon	Yes	No	Yes	No	UK				<a href="https://nixon.texas.gov/notice-category/ordinances/">https://nixon.texas.gov/notice-category/ordinances/</a>		
Nordheim	No	No	No	No	UK				N/A		Small town
San Marcos	Yes	Yes	Yes	Yes - 7	Yes				<a href="https://library.municode.com/tx/san_marcos/codes/code_of_ordinances?nodeId=SPAGEOR_CH39FLDAPR">https://library.municode.com/tx/san_marcos/codes/code_of_ordinances?nodeId=SPAGEOR_CH39FLDAPR</a>		
Schertz	Yes	Yes	Yes	No	Yes				<a href="https://library.municode.com/tx/schertz/codes/unified_development_code?nodeId=SCUNDECO_ART13LADIACDR_S21.13.3FLDAPR">https://library.municode.com/tx/schertz/codes/unified_development_code?nodeId=SCUNDECO_ART13LADIACDR_S21.13.3FLDAPR</a>		
Seguin	Yes	Yes	Yes	No	Yes				<a href="https://library.municode.com/tx/seguin/codes/code_of_ordinances?nodeId=PTIICOOR_CH54FL">https://library.municode.com/tx/seguin/codes/code_of_ordinances?nodeId=PTIICOOR_CH54FL</a>		
Smiley	No	No	Yes	No	UK				N/A		Small town
Spring Branch	Yes	Yes	Yes	No	UK				<a href="https://ceo.org/flood/documents/Spring_Branch_Flood_Damage_Prevention_Ordinance_Interlocal.pdf">https://ceo.org/flood/documents/Spring_Branch_Flood_Damage_Prevention_Ordinance_Interlocal.pdf</a>		
Staples	No	No	Yes	No	UK				N/A		Small town

Entity A	Floodplain management regulations (Yes/ No/ Unknown) <sup>A</sup>	Adopted minimum regulations pursuant to Texas Water Code Section 16.3145? (Yes/ No) <sup>A</sup>	NFIP Participant (Yes/ No) <sup>A</sup>	Community Rating System Participant (Yes/No) If Yes, CRS Level is indicated	Higher Standards adopted (Yes/ No) <sup>B</sup>	Floodplain Management Practices (Strong/Moderate/Low/None) <sup>B</sup>	Level of enforcement of practices (High/Moderate/Low/ None) <sup>B,C</sup>	Existing Stormwater or Drainage Fee (Yes/ No) <sup>B</sup>	Web Link to entity regulations <sup>B</sup>	Contact	Notes
Uhland	Yes	Yes	Yes	No	UK				<a href="https://www.cityofuhland.com/wp-content/uploads/2015/12/126-Flood-Damage-Prevention-Ordinance.pdf">https://www.cityofuhland.com/wp-content/uploads/2015/12/126-Flood-Damage-Prevention-Ordinance.pdf</a>		
Victoria	Yes	Yes	Yes	No	Yes				<a href="https://library.municode.com/tx/victoria/codes/code_of_ordinances">https://library.municode.com/tx/victoria/codes/code_of_ordinances</a>		
Waelder	No	No	Yes	No	UK				N/A		
Wimberley	Yes	Yes	Yes	No	UK				<a href="https://z2codes.franklinlegal.net/franklin/Z2Browser2.html?showset=wimberleyset&amp;collection=wimberley&amp;docode=z2Code_z20000702">https://z2codes.franklinlegal.net/franklin/Z2Browser2.html?showset=wimberleyset&amp;collection=wimberley&amp;docode=z2Code_z20000702</a>		
Woodcreek	Yes	Yes	Yes	No	UK				<a href="https://library.municode.com/tx/woodcreek/codes/code_of_ordinances">https://library.municode.com/tx/woodcreek/codes/code_of_ordinances</a>		
Yorktown	Yes	Yes	Yes	No	UK				N/A		Small town
District:											
Bastrop County Water Control and Improvement District (1,2,3)	Yes	Yes	Yes		UK				<a href="https://www14.tceq.texas.gov/iwud/dist/index.cfm?fuseaction=ListDistricts&amp;COMMAND=LIST">https://www14.tceq.texas.gov/iwud/dist/index.cfm?fuseaction=ListDistricts&amp;COMMAND=LIST</a>		Drainage, flood control, irrigation, navigation, supply treated or retail water, supply raw (untreated) or wholesale water
Blanco Pedernales Groundwater Conservation District									<a href="https://www14.tceq.texas.gov/iwud/dist/index.cfm?fuseaction=ListDistricts&amp;COMMAND=LIST">https://www14.tceq.texas.gov/iwud/dist/index.cfm?fuseaction=ListDistricts&amp;COMMAND=LIST</a>		Groundwater
Comal County Water Improvement District (1, 1A)	Yes								<a href="https://www14.tceq.texas.gov/iwud/dist/index.cfm?fuseaction=ListDistricts&amp;COMMAND=LIST">https://www14.tceq.texas.gov/iwud/dist/index.cfm?fuseaction=ListDistricts&amp;COMMAND=LIST</a>		Drainage, flood control, hydroelectric, irrigation, navigation, supply treated or retail wastewater, supply raw (untreated) or wholesale water, wholesale wastewater
Dewitt Country Drainage District 1	Yes								<a href="https://www14.tceq.texas.gov/iwud/dist/index.cfm?fuseaction=ListDistricts&amp;COMMAND=LIST">https://www14.tceq.texas.gov/iwud/dist/index.cfm?fuseaction=ListDistricts&amp;COMMAND=LIST</a>		Drainage, flood control
Edwards Aquifer Authority									<a href="https://www14.tceq.texas.gov/iwud/dist/index.cfm?fuseaction=ListDistricts&amp;COMMAND=LIST">https://www14.tceq.texas.gov/iwud/dist/index.cfm?fuseaction=ListDistricts&amp;COMMAND=LIST</a>		

Entity A	Floodplain management regulations (Yes/ No/ Unknown) <sup>A</sup>	Adopted minimum regulations pursuant to Texas Water Code Section 16.3145? (Yes/ No) <sup>A</sup>	NFIP Participant (Yes/ No) <sup>A</sup>	Community Rating System Participant (Yes/No) If Yes, CRS Level is indicated	Higher Standards adopted (Yes/ No) <sup>B</sup>	Floodplain Management Practices (Strong/Moderate/Low/None) <sup>B</sup>	Level of enforcement of practices (High/Moderate/Low/ None) <sup>B,C</sup>	Existing Stormwater or Drainage Fee (Yes/ No) <sup>B</sup>	Web Link to entity regulations <sup>B</sup>	Contact	Notes
Fayette County Flood Control District	Yes								<a href="https://www14.tceq.texas.gov/iwud/dist/index.cfm?fuseaction=ListDistricts&amp;COMMAND=LIST">https://www14.tceq.texas.gov/iwud/dist/index.cfm?fuseaction=ListDistricts&amp;COMMAND=LIST</a>		Drainage, flood control, irrigation, navigation, retail wastewater, supply raw (untreated) retail or wholesale water
Gillespie County Water Control and Improvement District	Yes								<a href="https://www14.tceq.texas.gov/iwud/dist/index.cfm?fuseaction=ListDistricts&amp;COMMAND=LIST">https://www14.tceq.texas.gov/iwud/dist/index.cfm?fuseaction=ListDistricts&amp;COMMAND=LIST</a>		Drainage, flood control, irrigation, navigation, supply raw (untreated) or wholesale water
Goliad County Groundwater Conservation District	Yes								<a href="https://www14.tceq.texas.gov/iwud/dist/index.cfm?fuseaction=ListDistricts&amp;COMMAND=LIST">https://www14.tceq.texas.gov/iwud/dist/index.cfm?fuseaction=ListDistricts&amp;COMMAND=LIST</a>		Groundwater
Gonzales UWCD	Yes								<a href="https://www14.tceq.texas.gov/iwud/dist/index.cfm?fuseaction=ListDistricts&amp;COMMAND=LIST">https://www14.tceq.texas.gov/iwud/dist/index.cfm?fuseaction=ListDistricts&amp;COMMAND=LIST</a>		Drainage, flood control, irrigation, navigation, retail wastewater, supply raw (untreated) retail or wholesale water
Guadalupe Blanco River Authority	Yes								<a href="https://www14.tceq.texas.gov/iwud/dist/index.cfm?fuseaction=ListDistricts&amp;COMMAND=LIST">https://www14.tceq.texas.gov/iwud/dist/index.cfm?fuseaction=ListDistricts&amp;COMMAND=LIST</a>		
Guadalupe Blanco River Trust									<a href="https://www14.tceq.texas.gov/iwud/dist/index.cfm?fuseaction=ListDistricts&amp;COMMAND=LIST">https://www14.tceq.texas.gov/iwud/dist/index.cfm?fuseaction=ListDistricts&amp;COMMAND=LIST</a>		
Guadalupe County Development Management District	Yes								<a href="https://www14.tceq.texas.gov/iwud/dist/index.cfm?fuseaction=ListDistricts&amp;COMMAND=LIST">https://www14.tceq.texas.gov/iwud/dist/index.cfm?fuseaction=ListDistricts&amp;COMMAND=LIST</a>		Drainage, flood control, irrigation, navigation, retail wastewater, supply raw (untreated) retail or wholesale water
Hays Water Control and Improvement District (1 and 2)	Yes								<a href="https://www14.tceq.texas.gov/iwud/dist/index.cfm?fuseaction=ListDistricts&amp;COMMAND=LIST">https://www14.tceq.texas.gov/iwud/dist/index.cfm?fuseaction=ListDistricts&amp;COMMAND=LIST</a>		Flood Control, irrigation, supply raw or wholesaw water

Entity A	Floodplain management regulations (Yes/ No/ Unknown) <sup>A</sup>	Adopted minimum regulations pursuant to Texas Water Code Section 16.3145? (Yes/ No) <sup>A</sup>	NFIP Participant (Yes/ No) <sup>A</sup>	Community Rating System Participant (Yes/No) If Yes, CRS Level is indicated	Higher Standards adopted (Yes/ No) <sup>B</sup>	Floodplain Management Practices (Strong/Moderate/Low/None) <sup>B</sup>	Level of enforcement of practices (High/Moderate/Low/ None) <sup>B,C</sup>	Existing Stormwater or Drainage Fee (Yes/ No) <sup>B</sup>	Web Link to entity regulations <sup>B</sup>	Contact	Notes
Kendall County Water Control and Improvement District (1, 2, 3, 4)	Yes								<a href="https://www14.tceq.texas.gov/iwud/dist/index.cfm?fuseaction=ListDistricts&amp;COMMAND=LIST">https://www14.tceq.texas.gov/iwud/dist/index.cfm?fuseaction=ListDistricts&amp;COMMAND=LIST</a>		Drainage, flood control, irrigation, navigation, supply treated or retail water, supply raw (untreated) or wholesale water
U.S. Army Corps of Engineers											
Victoria County Water Control and Improvement District (1,2)	Yes								<a href="https://www14.tceq.texas.gov/iwud/dist/index.cfm?fuseaction=ListDistricts&amp;COMMAND=LIST">https://www14.tceq.texas.gov/iwud/dist/index.cfm?fuseaction=ListDistricts&amp;COMMAND=LIST</a>		Drainage, flood control, irrigation, navigation, supply treated or retail water, supply raw (untreated) or wholesale water
Wimberley Watershed Association											

## Task 3.2 – Flood Mitigation and Floodplain Management Goals (361.36)

This task defines the overarching flood mitigation and floodplain management goals for the RFP. The primary goal of all regional flood plans is to protect against the loss of life and property.

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

### 3.2.1 Goal Development Process

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 3.1 as guides for developing and defining the goals for the region. The proposed goals considered input from the RFPG provided at the regular RFPG meetings, as well as input from other regional stakeholders provided through the data collection survey. Pre-planning meetings were hosted in advance of each RFPG meeting and public input opportunities were provided at each meeting. The input process is outlined below:

- **June 30, 2021** – Introduction to floodplain management strategies and goals
- **August 4, 2021** – Interactive goal discussion and public meeting input on goals/strategies.
- **August/September 2021**- Continued public input on goals, strategies, concerns, potential projects via survey monkey, interactive map, and interaction with the project team.
- **September 8, 2021** – Presentation and discussion of draft floodplain management goals based upon previous RFPG input and responses to the RFPG survey
- **October 6, 2021** – Discussion of draft goals and input from the planning group.

After careful consideration of these factors, the RFPG adopted the flood mitigation and floodplain management goals listed in **Table 11**. These specific goals were amended and approved by the Guadalupe RFPG on May 10, 2022. The adopted goals apply to the entire flood planning region; no sub-regional goals were identified.

During the RFPG meetings there was considerable goal discussion and the nuances of each based on RFPG member experiences and their observations of changing conditions in the watershed. Below, examples of the conversation are presented for improving safety at low water crossings and considering nature-based practices in flood mitigation and management.

1 Regarding goals 1001 and 1002, “Improve safety beyond minimal signage at xx% of low water crossings  
 2 through automatic flood warning gates and/or flood level passed”, the RFPG noted that low water  
 3 crossing definition and priorities should be established based on flood depth over road, highway traffic  
 4 count, and type of roadway crossing. It was understood that not all low water crossings may need  
 5 structural improvements as safety can be enhanced by flood warning systems and additional signage.

6 Goals 2001 and 2002, considering nature-based practices in flood mitigation projects and flood  
 7 management strategies, generated significant discussion amongst the RFPG members at several  
 8 meetings. The members agreed that information and education on nature-based solutions is necessary  
 9 and should be available to planners, engineers, and local and state government staff. The nature-based  
 10 practices cover a broad range from conservation and low impact development strategies to natural  
 11 channel design that can provide water and environmental benefits in addition to flood management and  
 12 mitigation. General project data required as noted in 3.9B of the TWDB Exhibit C, *Technical Guidelines for*  
 13 *Regional Flood Planning* includes nature-based solutions as a data point by noting the percentage of the  
 14 project cost using nature-based solutions techniques (i.e., using vegetation rather than concrete to  
 15 stabilize creek/riverbanks).

16 The selected specific goals will guide the development of the Flood Management Strategies (FMSs), Flood  
 17 Management Evaluations (FMEs), and Flood Mitigation Projects (FMPs) for the planning region. They build  
 18 upon TWDB regional flood planning guidance and provide a comprehensive framework for future strategy  
 19 development focused on reducing flood risk to people and property.

### 20 **3.2.2 Benefits and Residual Risk after Goals are Met**

21 The adopted goals were developed so that they can be quantified and measured in future regional and  
 22 state flood planning cycles. Future data collection efforts or implementation of evaluations, strategies,  
 23 and/or projects may be used to measure progress towards achieving the goals. These data may also be  
 24 used to adjust the goals and/or generate new goals in upcoming planning cycles. Achieving the adopted  
 25 goals will help reduce current and future levels of flood risk in the region.

26 It is recognized that it is not possible to protect against all potential flood risks. In selecting the goals, the  
 27 RFPG defined the accepted residual risk for the region. Potential residual risks for the flood risk reduction  
 28 goals could be characterized as follows:

- 29 1) While a new development may be constructed outside the 1% annual chance floodplain, flood  
 30 events of greater magnitude will inundate areas beyond those preserved as a floodplain.
- 31 2) Flood events may exceed the level of service for which infrastructure is designed.
- 32 3) Communities depend on future funding and program priorities to maintain, repair, and replace  
 33 flood protection assets. Routine maintenance of infrastructure is required to maintain its design  
 34 capacity. Maintenance is sometimes overlooked due to budget, staff, and time constraints.
- 35 4) Policies, Regulations, and Standards reduce adverse impacts associated with development activity  
 36 but does not eliminate it.
- 37 5) The lack of local enforcement of floodplain regulations creates risk.
- 38 6) Limits of understanding and precision associated with studies, models, and plans.

**TASK 3: FLOODPLAIN MANAGEMENT PRACTICES AND FLOOD PROTECTION GOALS**

- 1        7) Human behavior is unpredictable, people may choose to ignore flood warning systems and/or
- 2            cross flooded roadways.
- 3    The residual risks for each of the specific goals are presented in **Table 11**.

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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	Improve safety beyond minimal signage at 35% of low water crossings through automatic flood warning gates and/or flood level passed	Short Term (10-year)	2033	Flood planning region	65% of low water crossings have no change in flood risk	Number of low water crossings with safety improvements	Protect against loss of life and property (362.3.b.13-14)	1002
1002	Improve safety beyond minimal signage at 90% of low water crossings through automatic flood warning gates and/or flood level passed	Long Term (30-year)	2053	Flood planning region	10% of low water crossings have no change in flood risk	Number of low water crossings with safety improvements	Protect against loss of life and property (362.3.b.13-14)	1001
2001	Consider incorporating nature-based practices when acreage exceeds one acre (LID, green infrastructure, natural channel design) in 30% of Flood Mitigation Projects and Flood Management Strategies recommended in the Regional Flood Plan.	Short Term (10-year)	2033	Flood planning region	No change in flood risk; reduces impacts on the environment	Number of FMPs and FMSs evaluating and implementing nature-based practices	Include strategies and projects that use nature-based features (362.3.b.17)	2002
2002	Consider incorporating nature-based practices when acreage exceeds one acre (LID, green infrastructure, natural channel design) in 100% of Flood Mitigation Projects and Flood Management Strategies recommended in the Regional Flood Plan.	Long Term (30-year)	2053	Flood planning region	No change in flood risk; reduces impacts on the environment	Number of FMPs and FMSs evaluating and implementing nature-based practices	Include strategies and projects that use nature-based features (362.3.b.17)	2001
3001	Increase adoption of higher standards to 30% of communities in high growth counties. <i>Communities = cities and counties</i> <i>High growth county &gt; 50% population growth over 30 years</i>	Short Term (10-year)	2033	Flood planning region	Risk to existing structures does not increase due to better floodplain management practices; Annual flood risk to new construction in participating communities will be <1%	Number of communities adopting higher standards	Protect against loss of life and property (362.3.b.13-14)	3002
3002	Increase adoption of higher standards to 70% of communities in high growth counties. <i>Communities = cities and counties</i> <i>High growth county &gt; 50% population growth over 30 years</i>	Long Term (30-year)	2053	Flood planning region	Risk to existing structures does not increase due to better floodplain management practices; Annual flood risk to new construction across the region will be <1%	Number of entities participating in NFIP; number of entities with equivalent standards	Protect against loss of life and property (362.3.b.13-14)	3001
4001	Increase high growth community CRS participation to 50% of all high growth communities. <i>High growth communities – cities with a population greater than 10,000 people in 2030</i>	Short Term (10-year)	2033	Flood planning region	Risk to existing structures does not increase due to better floodplain management practices; Annual flood risk to new construction in participating communities will be <1%	Number of entities participating in CRS.	Protect against loss of life and property (362.3.b.13-14)	4002
4002	Increase high growth community CRS participation to 75% of all high growth communities. <i>High growth communities – cities with a population greater than 10,000 people in 2030</i>	Long Term (30-year)	2053	Flood planning region	Risk to existing structures does not increase due to better floodplain management practices; Annual flood risk to new construction in participating communities will be <1%	Number of entities participating in CRS.	Protect against loss of life and property (362.3.b.13-14)	4001
5001	Reduce number of vulnerable buildings/structures/critical facilities within the 1% existing flood hazard layer by 20%.	Short Term (10-year)	2033	Flood planning region	80% of identified structures will have an annual risk of flooding of >1%;	Number of structures removed from existing flood hazard layer	Protect against loss of life and property (362.3.b.13-14)	5002
5002	Reduce number of vulnerable buildings/structures/critical facilities within the 1% existing flood hazard layer by 50%.	Long Term (30-year)	2053	Flood planning region	50% of identified structures will have an annual risk of flooding of >1%;	Number of structures removed from existing flood hazard layer	Protect against loss of life and property (362.3.b.13-14)	5001
6001	Increase percentage of communities with dedicated funding sources for operations & maintenance and implementation of storm drainage systems to 35% of communities.	Short Term (10-year)	2033	Flood planning region	Entities without dedicated funding have no change in flood risk; entities with new funding sources have reduced risk as stormwater O&M and capital projects are implemented	Number of entities with dedicated funding sources for stormwater operations and maintenance	Protect against loss of life and property (362.3.b.13-14)	6002
6002	Increase percentage of communities with dedicated funding sources for operations & maintenance and implementation of storm drainage system to 60% of communities	Long Term (30-year)	2053	Flood planning region	Entities without dedicated funding have no change in flood risk; entities with new funding sources have reduced risk as stormwater O&M and capital projects are implemented	Number of entities with dedicated funding sources for stormwater operations and maintenance	Protect against loss of life and property (362.3.b.13-14)	6001