

## 7.1 INTRODUCTION

### WATER QUALITY MANAGEMENT, GREEN INFRASTRUCTURE & FLOOD MANAGEMENT

Water quality protection and floodplain management work hand-in-hand to manage stormwater drainage in communities across Texas. By using smart development design techniques, low impact development practices, limited impervious cover, open channel drainage systems, rainwater harvesting, and water quality treatment measures, frequent storm runoff rates and volumes can be reduced to background conditions. Measures, labeled as green infrastructure, that maximize the use of natural systems, vegetation, and soils can require less maintenance than conventional stormwater drainage systems and improve appearance. At the same time, these systems can be more resilient than conventional methods using structural approaches.

By reducing stormwater runoff and protecting floodplains, green infrastructure can help manage both localized and riverine floods. In areas impacted by localized flooding, green infrastructure practices absorb rainfall, preventing water from overwhelming pipe networks and pooling in streets or low-lying areas. Green infrastructure practices that enhance infiltration include rain gardens, bioswales, and permeable pavements. In areas impacted by riverine flooding, green infrastructure, open space preservation, and floodplain management can all complement gray infrastructure approaches. These practices reduce the volume of stormwater that flows into streams and rivers, protect the natural function of floodplains, and reduce damage to infrastructure and property.

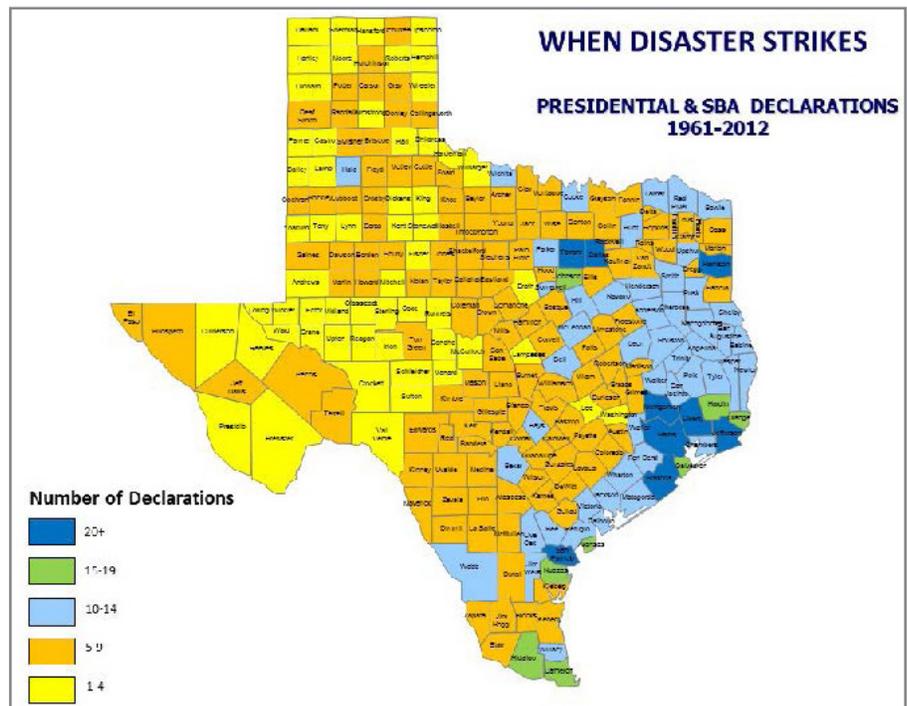
### FLOODPLAIN PROGRAMS

The Texas Floodplain Management Association (TFMA) and Texas Water Development Board (TWDB) provide information and guidance to help citizens and communities understand what floodplain management is and why floodplain development is regulated.

Communities regulate the floodplain to:

- Protect people and property
- Save tax dollars
- Ensure that Federal flood insurance and disaster assistance is available
- Reduce future flood losses
- Reduce liability

Floods have been, and continue to be, the most destructive natural disaster in terms of economic loss to the citizens of Texas with a total coverage of about \$156 billion. More than 12% of the State's land area is subject to flooding. Since 1978, Texas flood insurance policy holders have filed over 251,569 flood loss claims totaling \$5.8 billion in claim payments (as of 2015). Even though that represents many insurance payments, most flood-prone Texans do not have flood insurance.



**Figure 7-1:** Presidential Disaster Area Declarations (1961-2012)  
source: TWDB.