North Central Texas Council of Governments

Integrating Transportation and Stormwater Infrastructure

Review of Local Flood Prevention Policy Documents

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integrating Transportation & Stormwater Infrastructure

Integrating Transportation and Stormwater Infrastructure (TSI)

Review of Local Flood Prevention Policy Documents Memo

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1 Discussion

This memo is a summary of the review of planning and development documents into which flood prevention strategies could be incorporated within the TSI study area. The purpose of the review was to determine where municipalities can incorporate flood prevention strategies and the extent to which local planning and regulatory documents adopted by municipalities in the study area and support TSI-related outcomes, including flood risk reduction, green infrastructure, stormwater management, open space preservation, and other nature-based solutions.

In addition to the review of planning and development documents, this study conducted a survey of local governments within the TSI study area to understand how widely planning, policy and development documents are adopted and how they are used to implement TSI-related strategies. 29 jurisdictions responded to the survey representing a range of municipalities and counties. Summary survey results are shown in **Attachment 1**. The survey results reinforced the findings of the previous regional development document review conducted for Task 3.5.4 in support of identifying model code ordinances, while also identifying a broader set of implementation tools that may not have been captured through the initial review. **Attachment 2** contains a total list of municipal planning and development documents into which flood prevention standards could be incorporated.

While many jurisdictions have adopted policies and regulations that support these outcomes, the effectiveness of these documents is inherently limited by jurisdictional boundaries and the scope of local authority. Natural systems and watershed processes extend beyond municipal boundaries, yet planning and regulatory documents are typically designed to address conditions within a single jurisdiction. For example, a stormwater ordinance that requires green infrastructure throughout the development review process may provide substantial local benefits, but its influence generally does not extend beyond the city's jurisdiction and may not apply to all public infrastructure projects. Because watersheds function as interconnected systems, inconsistent levels of environmental protection and stormwater management among neighboring jurisdictions can reduce the effectiveness of local efforts and potentially transfer impacts downstream.

The review identified a clear relationship between community size and the adoption of planning and regulatory tools that support TSI-related outcomes. Larger municipalities generally demonstrate more comprehensive integration of flood mitigation, open space preservation, green infrastructure, and stormwater management practices across multiple planning and regulatory

documents. Cities such as Frisco, Denton, Flower Mound, Arlington, Dallas, and Cedar Hill have incorporated these practices into a variety of development regulations, design standards, and long-range planning documents.

In contrast, smaller jurisdictions are more likely to rely on basic subdivision, drainage, and floodplain regulations and are less likely to have adopted documents specifically addressing green infrastructure, open space preservation, landscaping standards, or low-impact development practices. Limited staffing, financial resources, and technical capacity may constrain the ability of smaller communities to develop and maintain more comprehensive planning and regulatory frameworks.

Table 1-1 summarizes the prevalence of TSI-supportive planning and regulatory document categories by jurisdiction population size. Percentages reflect how many of the identified flood prevention and mitigation strategies are represented in each document type and population bracket.

Table 1-1. TSI-Supportive Planning and Regulatory Documents by Jurisdiction Population Size

	Under 5,000	5,000-20,000	20,000-50,000	50,000-140,000	140,000-400,000	400,000+	County
Development Regulations	22.2%	38.1%	80.0%	60.0%	66.7%	0.0%	37.5%
Stormwater Ordinance	4.4%	19.0%	20.0%	20.0%	66.7%	0.0%	0.0%
Design Manual	13.3%	33.3%	50.0%	60.0%	0.0%	0.0%	25.0%
Landscaping Ordinance	24.4%	47.6%	60.0%	80.0%	66.7%	50.0%	25.0%
Zoning Ordinance	11.1%	14.3%	40.0%	60.0%	33.3%	0.0%	12.5%
Comprehensive Plan	0.0%	0.0%	0.0%	0.0%	66.7%	100.0%	12.5%
Total	45	21	10	5	3	2	8

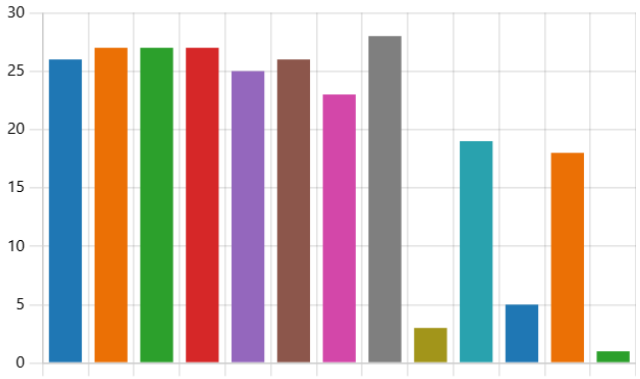
The results indicate that the prevalence of TSI-supportive documents generally increases with community size. Development regulations, landscaping ordinances, and design manuals are most found among mid-sized and larger municipalities, while comprehensive plans that explicitly address TSI-related outcomes are concentrated in the largest cities. Stormwater ordinances also become more common as population size increases, reflecting the additional technical and administrative capacity needed to develop and implement these programs.

Overall, the review suggests that organizational capacity is one of the strongest factors influencing implementation of TSI-related practices. Municipalities with larger planning and engineering departments, greater financial resources, and more established regulatory programs are generally better positioned to incorporate TSI outcomes into local development processes. The broader trend across both study areas is that communities with greater institutional capacity are more likely to adopt comprehensive policies and regulations that support watershed protection, flood resilience, and nature-based solutions.

Attachment 1

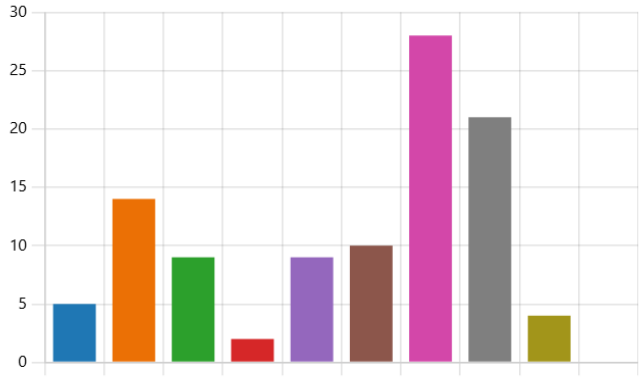
1. **Which of the following planning, policy, and/or development documents does your jurisdiction currently use or maintain?** *(Select all that apply)*

Subdivision Code	26
Development Design Standards	27
Stormwater Management Ordi...	27
Street Design / Engineering D...	27
Comprehensive Plan (Long Ra...	25
Transportation or Thoroughfar...	26
Capital Improvement Program	23
Development Review Process (...	28
Open Space Plan	3
Parks Plan	19
Watershed Plan	5
Stormwater Plan	18
Other	1



2. **Which of the following strategies does your jurisdiction currently implement using its planning, policy, and/or development documents?** *(Select all that apply)*

Green stormwater infrastructu...	5
Street design that incorporate...	14
Impervious cover limits or par...	9
Conservation development / c...	2
Open space preservation / gro...	9
Sensitive resource / habitat pr...	10
Floodplain / flood hazard area...	28
Higher standards within flood...	21
Incentive programs (e.g., stor...	4
Other	0



Attachment 2. List of municipal planning and development documents into which flood prevention standards could be incorporated

- Capital improvement programs
- Comprehensive/long-range plans
- Development design standards
- Development review process documents

- Open space plans
- Parks plans
- Stormwater management ordinances
- Stormwater plans
- Street design/engineering design standards
- Subdivision code
- Transportation/thoroughfare plans
- Watershed plans
- Zoning ordinance