

CHAPTER 6

# INDIVIDUAL JURISDICTION CHAPTERS & RECOMMENDED SAFETY PROJECTS



# CHAPTER 6: INDIVIDUAL JURISDICTION CHAPTERS & RECOMMENDED SAFETY PROJECTS

This chapter provides an overview of individual agency portfolios and their recommended safety planning and design projects. The chapter also includes the necessary background to understand the planning, systemic, and design projects identified for each jurisdiction, and the methodology used to prioritize projects. The Policy and Strategy Recommendation section provides recommendations for additional planning projects for each jurisdiction.

Individual Jurisdiction Chapters (Chapters 6.1 to 6.8) form the core of the CSAP, containing jurisdiction-wide safety analysis and recommendations. Each chapter begins with a brief overview of the jurisdiction, including its population, location, and transportation network. This is followed by an analysis of the total number of collisions, persons injured, and the proportion of collisions by mode of transportation, age, and gender for both city-maintained roads and state-maintained roads (TxDOT facilities) within the city limits. The chapters also compare citywide collision statistics to countywide collision statistics. In-depth examination of the predominant collision types, contributing factors, and other key characteristics observed on city streets and TxDOT facilities are presented as collision profiles, highlighting the most prevalent trends and patterns unique to that jurisdiction. A visual representation of the locations with the highest injury severity, as determined by a collision severity index calculation, is provided in the form of a collision severity heat map to identify the most high-risk areas requiring safety improvements. The chapters then list the roadway segments and intersections with the highest collision severity scores, whose proposed infrastructure enhancements and other mitigation measures are prioritized.

In addition to identifying locations with a history of collisions, this plan also evaluated the systemic nature of crashes in the study area, focusing on trying to understand where crashes are likely to occur in the future rather than where they have occurred in the past. Blending the historic crash network with the systemic crash network, the CSAP identified safety projects for each of the individual jurisdiction chapters and identified them as systemic safety projects, planning safety projects, and design safety projects.

Details on specific safety improvement initiatives or plans the jurisdiction should pursue—such as Active Transportation Plans, Safe Routes to School programs, and neighborhood traffic calming projects—are included. Descriptions of citywide safety programs targeting common collision factors, such as sign and pavement marking upgrades or enhanced street lighting, are presented to address systematic safety issues across the jurisdiction. This consistent format and set of analyses for each city enables cross-jurisdictional comparisons and the identification of regional safety trends and needs, supporting the development of coordinated, data-driven strategies to improve roadway safety throughout the McLennan County.

## SAFETY PROJECTS

All the steps undertaken as part of the CSAP have culminated in the identification of safety projects. The CSAP presents three categories of projects, namely planning projects, systemic projects, and design projects. Collision trends along roadways are the primary factor in the selection of safety improvements. The safety projects have been further refined after careful consideration of characteristics of local roadways, safety risks, needs of communities, and the priorities of City, County, and MPO decision makers.

All safety projects listed in this CSAP indicate a priority need for the jurisdiction to improve roadway safety, regardless of their order of listing. The project selection done as part of the CSAP followed a 2-step process – 1) an initial list of projects was developed based on the safety benefits, benefit to vulnerable road users, school safety impact, equity impact, public inputs, and ease of implementation, and 2) the final list was developed after community input and extensive discussion and deliberations among staff from the respective cities, TJKM, and the Waco MPO. These deliberations included the status of multimodal infrastructure, future plans currently under consideration, and the availability of funding sources.

### Planning Projects

Planning projects are projects that require further planning and feasibility studies. While the CSAP relies on historic collision data to identify safety risks and engagement with stakeholders to understand their needs, certain changes require detailed assessments of existing conditions, collaborative engagement with stakeholder groups, and technical plans before they can be implemented. The planning process undertaken in the CSAP is comprehensive in its focus on safety but comes with limitations when parallel criteria need extensive inclusion. For instance, an Active Transportation Plan would require a detailed analysis of existing pedestrian and bicycle connectivity infrastructure, and a neighborhood traffic calming program needs community engagement to identify calming tools that enable all stakeholders, including residents and businesses, to meet their needs for safe mobility.

Planning projects identified within the individual agency chapters were developed with consideration of the analysis and stakeholder engagement undertaken in the CSAP. The Policy and Strategy Recommendation section within this chapter provides high level recommendations for changes which will supplement these projects.

### Systemic Projects

Systemic projects are improvements implemented across an entire city or county that focus on a single category of enhancements. These holistic initiatives aim to provide widespread safety benefits when implemented comprehensively.

Two common systemic projects that have been recommended for many jurisdictions as part of the CSAP are:

- **Streetlight Inventory:** This involves reviewing the existing street lighting within the jurisdiction, identifying the need for upgrades or new lighting, and implementation.
- **Sign Inventory:** This project entails reviewing the current signage to ensure compliance with the latest standards, and then determining if additional signs are required or if existing ones need to be upgraded.

These systemic safety projects have been prioritized over design projects for all jurisdictions.

### Design Projects

Design projects are location-specific safety initiatives that focus on enhancing the safety of specific corridors and/or intersections. These projects utilize countermeasures identified in Chapter 5 “Safe Streets Toolkit” and are selected to address the unique safety risks of each location, based on collision trends and stakeholder input. The design projects incorporate the recommendations from the FHWA Proven Safety Countermeasures, making them suitable for implementation on all types of roads.

The design project listings in Chapters 6.1 to 6.8 include the following information:

- 10-year collision history by severity, illustrated on a map
- Top collision trends
- Existing conditions photos (for illustration purposes)
- Types of recommended improvements
- Estimated costs of the improvements

While all projects identified in this CSAP address critical safety improvements for the Waco Metropolitan Area, the following prioritization criteria guides the implementation of the location-specific design projects to best meet the safety and related goals outlined in the CSAP.

The CSAP considers six key criteria to score and prioritize the design projects. These are:

- Safety Benefits
- Benefit to Vulnerable Road Users
- School Safety Impact
- Equity Impact
- Public Engagement
- Ease of Implementation

The weighted scores from these six criteria are used to prioritize projects. In cases where projects have the same weighted score, the normalized severity index is used to prioritize them further. The same priority is assigned for corridors with multiple sub-projects, with each sub-project identified using a suffix (A, B, etc.). For projects which include improvements which can be implemented in a staged manner, improvements that will be part of the initial stages and have better ease of implementation are considered. For example, for a street which has striping, sign upgrades, and complete street improvements in its recommendations, complete streets is considered to be a later stage project due to the level-of-effort will entails. The design project prioritization methodology is outlined in the section table that follows.

**Appendix G** contains the prioritized list of design projects along with a prioritization worksheet for each jurisdiction. The project listing does not impose limitations on any individual agency with respect to the order in which they implement the projects. Jurisdictions have the flexibility to implement projects based on their preferences, as informed by cost, funding availability, and other factors they determine to be critical. Jurisdictions also have the flexibility to implement selected improvements from a project that they deem feasible at a given time. The costs outlined in the CSAP are high-level engineering estimates based on 2024 rates. These costs may vary with time or the unique circumstances of a jurisdiction. **Appendix H** includes detailed cost estimates for each project.

**Prioritization Matrix**

CRITERIA	DESCRIPTION	WEIGHT (100%)
<b>Safety Benefits</b>	This evaluates the collision severity risk associated with the project location based on 10-year collision history. To calculate the safety benefit score, a severity index is first determined by weighting each collision - KSI collisions are assigned 3 points, minor injury collisions 2 points, and possible injury collisions 1 point. The severity index is then normalized by dividing it by the length of the project location corridor (intersections are assigned a length of 1). Projects are then grouped into three equal-range buckets based on the normalized severity indexes - the highest bucket receives a safety score of 10, the middle bucket receives a score of 5, and the lowest bucket receives a score of 2.	30%
<b>Benefit to Vulnerable Road Users</b>	Projects that include improvements benefiting pedestrians, bicyclists, transit users, or persons with disabilities receive a score of 10, while projects without such features receive a score of 0.	15%
<b>School Safety Impact</b>	Projects that improve safety on roadways and intersections within 0.25 mile of an existing school receive a score of 10. Projects without such proximity to schools receive a score of 0.	15%
<b>Equity Impact</b>	Projects located fully or partially in, or adjacent to, transportation-disadvantaged census tracts receive a score of 10. All other projects receive a score of 0 for this criteria.	10%
<b>Public Engagement</b>	Projects that have garnered community support through prior planning efforts or the CSAP outreach process receive a score of 10. Projects without documented public engagement receive a score of 0.	10%
<b>Ease of Implementation</b>	Projects are scored based on the complexity of their countermeasures - a score of 10 is given for high-ease improvements like signs, lights, striping, and crosswalks; a score of 5 is given for medium-ease improvements like sidewalks, medians, and new signals; and a score of 2 is given for low-ease improvements requiring lane/geometry changes, right-of-way acquisition, or utility or drainage work. For projects with multiple countermeasures, the lowest category score is applied.	20%

## POLICY & PROCESS RECOMMENDATIONS

This section provides high-level policy and process recommendations to update existing policies and processes within each jurisdiction, complementing the design projects to ensure comprehensive safety. These recommendations consider the current efforts detailed in Chapter 3. Each recommendation includes a brief description, followed by a matrix indicating the jurisdictions to which it applies. The City-specific sections provide justifications for the recommended policies.



### Corridor Planning

A collaborative process that looks at existing land use and transportation conditions along a roadway corridor and explores opportunities for improvements to meet long-term needs. The process includes discussions of existing and projected travel patterns and social, environmental, and economic issues within the corridor. It requires analysis of potential infrastructure improvements as well as land use and system-management actions. A corridor plan defines a comprehensive package of recommendations for managing and improving the transportation facilities and services within and along a specific corridor, typically based on a medium- to long-term planning horizon. Recommendations may include a mix of strategies and improvements and may relate to multiple travel modes.



### Uniform School Speed Limit

A school zone speed limit puts in place a lower speed limit on a street near a school to ensure the safety of children, who lack the capacity to adequately judge speeds and distances of fast-moving automobiles. This limit is operational during specific hours of the day, or when children are present. However, a higher school zone speed limit, such as 30 mph, or variability in school zone speed limits within a metropolitan area poses a safety risk. Adequately determined and uniform school zone speed limit within a metropolitan area brings uniformity and consistency in the expectations of drivers and thereby improves safety.



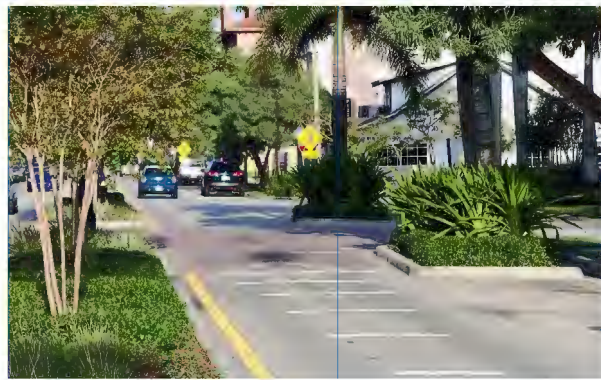
### Transit-Oriented Development

Transit-Oriented Development (TOD) promotes sustainable development that has the potential to reduce vehicle miles traveled by providing safe multimodal mobility access. Local jurisdictions, transit agencies, and MPOs lead planning processes and develop design guidelines focusing on existing or planned transit station areas. These processes often involve education and outreach on TOD principles, detailed or conceptual station area planning, market assessment, development and adoption of overlay districts or other zoning changes to facilitate transit-supportive development, and application of other tools and incentives.



**Access Management**

State and local agencies can improve traffic flow and safety by controlling access to properties along major roadways. Access management principles include restricting uncontrolled driveway access onto major arterials, restricting left turns, providing internal connectivity among properties, and providing adequate length on connecting streets to avoid traffic conflicts. Different levels of access management can be applied based on street classifications and/or area land use designations, to ensure that the principles applied are both consistent with the function of the transportation facility and respect the character of the land uses and neighborhood served.



**Complete Street and Context Sensitive Street Design**

Complete Streets is an approach to transportation planning and design that considers all transportation users (bicyclists, pedestrians, transit vehicles, motor vehicles, etc.) in every stage of project development. Rather than a design prescription, Complete Streets policies change practice. They direct planners and engineers to consider all anticipated users of the right-of-way during everyday decision-making. To date, more than 25 states (and Puerto Rico and the District of Columbia) and over 600 regional and local jurisdictions have adopted Complete Streets policies. In many cases, public health organizations and departments support these policies, which can improve the health and safety of a community by encouraging active transportation, reducing emissions from automobile traffic, and reducing injuries and fatalities from collisions.



**Transportation Demand Management**

Transportation Demand Management (TDM) is a term that encompasses a broad set of strategies intended to reduce or diffuse travel demand among modes, time, or routes within a regional or local transportation system. By providing choices and incentives for travelers to diversify their travel mode or behavior, TDM strategies relieve disproportionate pressures on segments of a transportation system. Land use patterns can serve as either a source of or a solution to transportation demand. Land use is often incorporated into TDM strategies through the consideration of infrastructure planning, management, and development. TDM strategies that influence land use decisions - such as development incentives, zoning regulations, and alternative transportation programs ranging from carpooling to transit access - are most effective when used in concert with other TDM strategies.



**Multimodal Street Planning**

State Departments of Transportation (DOT) and MPOs provide technical assistance to county and city governments to develop and implement pedestrian and bicycle facility improvement plans. This assistance can include guidelines, strategies, or primers on land use and site design to support pedestrian, bicycle, and transit access, especially in denser urban environments. In 2010, the USDOT signed a Policy Statement on Bicycle and Pedestrian Accommodation Regulations and Recommendations, which notes that all transportation agencies have the responsibility to improve conditions and opportunities for walking and bicycling and to integrate walking and bicycling into their transportation systems.

**POLICY & STRATEGIES RECOMMENDATION MATRIX**

POLICY	WACO MPO	BELLMEAD	HEWITT	LACY LAKEVIEW	MCGREGOR	ROBINSON	WACO	WOODWAY	MCLENNAN COUNTY
Corridor Planning	○		○			○			
Uniform School Speed Limit	○	○	○	○	○	○	○	○	○
Transit-Oriented Development	○						○		
Access Management Policy	○	○	○			○			
Complete Streets Policy	○	○		○	○				
Transportation Demand Management	○								
Multimodal Street Planning		○		○	○	○		○	○

**JURISDICTION SPECIFIC POLICIES & STRATEGIES**

**Bellmead**

Existing policies and plans in Bellmead, including the 2023 Comprehensive Plan, designate a high preference for a strong multimodal network that empowers pedestrians and bicyclists to access schools, parks, and businesses. The safety projects listed in the Bellmead chapter follow the direction of these plans and propose multimodal improvements within the central business district and around schools. In addition to undertaking these standalone projects, the City can put forward a commitment to implement these changes on neighboring streets with similar characteristics to maintain uniformity. The City should consider adopting context sensitive thoroughfare design standards that support multimodal uses which are also recommended in its comprehensive plan. A Complete Streets policy would support this action. Bellmead should systematically approach access management along major thoroughfares, including Bellmead Drive/US-84, through both safety projects identified in this CSAP and by adopting appropriate processes during project planning approval.

**Hewitt**

The City of Hewitt should adopt policies that will support a safe multimodal transportation network and expand the community’s vision for roadways beyond the existing auto-centric thoroughfare goals in the Hewitt Comprehensive Plan. The planning projects identified in this CSAP provide options for the City to consider a multimodal network as an integral part of its roadways. The City can also consider policies to identify characteristics and goals for segments of Hewitt Drive that better serve the needs and demands of businesses, residents

and roadway users. Currently classified as a major or minor arterial, there is potential for Hewitt Drive to serve as a business and pedestrian-friendly street, especially along the northern part of the corridor. The City would benefit from policies for shared driveway access onto Hewitt Drive with appropriate controls to ensure safety along the corridor. The CSAP presents the potential for Complete Streets along this corridor. The City should also consider a development management and urban design plan along the corridor to achieve these goals.

**Lacy Lakeview**

The City of Lacy Lakeview has yet to define policies and guidelines that support the development of a well-connected, high-quality multimodal streetway network. The City must strongly consider thoroughfare planning to define roadway classifications and supporting characteristics that support the present and future needs of its residents. Such a plan would provide the scope to define and develop multimodal infrastructure including sidewalks and bike lanes, which is lacking at present. In particular, the City can consider adoption of a complete streets policy along the US Business 77/New Dallas Road to ensure that the needs of all users of this roadway segment are met.

**McGregor**

The CSAP identifies specific planning and policy recommendations that can improve overall safety in the City of McGregor. The City’s current framework of Vision 2030, while comprehensive in its recommendation to improve sections of local roadways to meet the City’s anticipated needs, has limitations

regarding the upgrading of its street network to ensure safety for all users. The current lack of multimodal facilities requires that the City undertake systematic and focused planning efforts. The four planning projects listed in Chapter 6.4 would expand the City’s capacity to meet these needs by providing a conducive policy framework. A Complete Streets policy can provide a framework to improve and support safety throughout the City.

**Robinson**

Planning projects listed for the City of Robinson in this CSAP identify programs and policies that improve roadway safety. The City should consider policies to acquire right-of-way along Old Robinson Road, a key corridor connecting schools, and an access management standard that governs new developments along arterial roads such as Robinson Drive/US-77. Safety enhancing strategies such as shared driveways and driveway spacing work alongside projects identified in this CSAP to create safe roadways in Robinson. The City can consider strategies to encourage the development of a safe multimodal network after studying the potential for a pedestrian and bicycle network.

**Waco**

The City of Waco undertakes regular planning and corridor studies to identify improvement opportunities along major corridors and destinations. These studies, including the Downtown Implementation Plan, have been reviewed in Chapter 3. The City can enhance its roadway safety commitments by exploring policies, including those for TOD, with safe multimodal connectivity and a uniform school speed limit in coordination with the larger metropolitan region.

**Woodway**

The City of Woodway can improve safety on its roadways through planning centered on safety within neighborhoods for all users. This provides a chance for the City to review its thoroughfare plan with respect to the latest standards in roadway design, including context sensitive street design. Woodway should consider policies that improve internal connectivity on its residential roadways to promote modal shift to sustainable modes such as walking and biking.

**Unincorporated McLennan County**

McLennan County should consider adopting policies related to school zone speed limits in conjunction with the Waco MPO. This process can be supplemented by a Safe Routes to School program. The County should consider a multimodal policy that recommends adequate pedestrian infrastructure and connectivity within unincorporated towns and areas.



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