Comprehensive Plan 2008

Little Elm, Texas

Chapter 5:
Transportation Strategy

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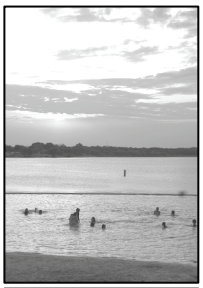

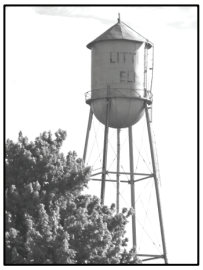

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INTRODUCTION

A community's transportation system is vital to its ability to grow in a positive manner. Transportation is inherently linked to land use. The type of roadway dictates the use of adjacent land, and conversely, the type of land use dictates the size, capacity and flow of the roadway. Many of the decisions regarding land uses and roadways within Little Elm have already been made; three major roadways (U.S. Highway 380, F.M. 720, and F.M. 423) run through the Town, and local rights-of-way in almost all the Town have been constructed or planned. A major challenge for Little Elm now lies in the accommodation of population growth within the existing transportation system.

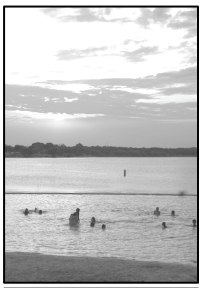
More specifically, the transportation system should:

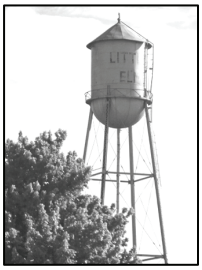
- Provide mobility and accessibility at appropriate levels according to the type of roadway;
- Focus on multi-modal transportation options, including pedestrian/bicycle access;
- Expand as needed to meet the needs of the Town's growing population and additional development;
- Be economically feasible for the citizenry and the Town; and
- Be correlated with regional considerations, such as new/expanded highway systems and transit availability.

It is important to note that the references made herein regarding the transportation system should not be viewed as references solely to roadways. Communities across Texas and the nation are becoming increasingly aware of the problems inherent in constructing a system for the automobile alone. Pedestrian and bicycle accommodation is important to creating a community that will be sustainable for decades to come. Therefore, another challenge for the Town lies in the integration of pedestrian and bicycle facilities such that these facilities actually create alternative modes of transportation.

Purpose of this Chapter

This chapter, *Transportation Strategy*, supplements the Master Thoroughfare Plan, which is currently being developed. It is intended that this chapter will provide additional concepts to enhance the Town's transportation infrastructure beyond the general scope of Master Thoroughfare Plan. These concepts or policies will provide for an improved quality of life and are designed to improve traffic flow and safety. Additionally, alternative modes of transportation, such as bike lanes, and image enhancements are recommended.





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TRANSPORTATION POLICIES

The *Goals & Objectives* in Chapter 2 and the concepts outlined previously within this chapter provide a basis for these transportation policies. The *Implementation Strategy* (Chapter 7) will outline specific ways in which the Town can implement these policies, along with other recommended policies from other chapters of the *Comprehensive Plan 2008*. It should be noted that the policies are in no specific order of importance.

Local Roadway

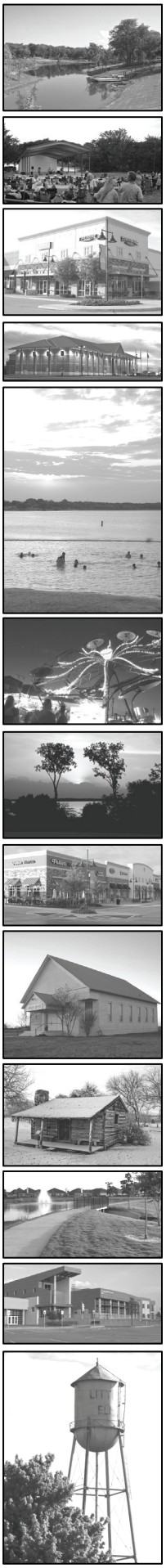
Improve Traffic Flow

The flow of traffic is typically a major concern for most communities. Communities desire to provide a transportation infrastructure that moves traffic efficiently and ensures public safety. The ability to move traffic efficiently along a corridor with minimal interference from traffic turning off and onto intersecting driveways / streets is a major benefit to motorist. Ideally, traffic should be able to avoid unnecessary "stop-and-go" traffic due to the abundance of intersecting driveways / streets.

Currently, cities across Texas limit the number of intersections and driveway openings (curb cuts) that are permitted along major roadways in order to protect the integrity of the traffic flow. The concept of "shared-driveways" has been promoted as a method to limit the over abundance of driveways along major roadways. The general concept of shared-driveways allows existing driveways to remain in place, but requires new development to incorporate the use of shared driveways and provide cross-access between developments.

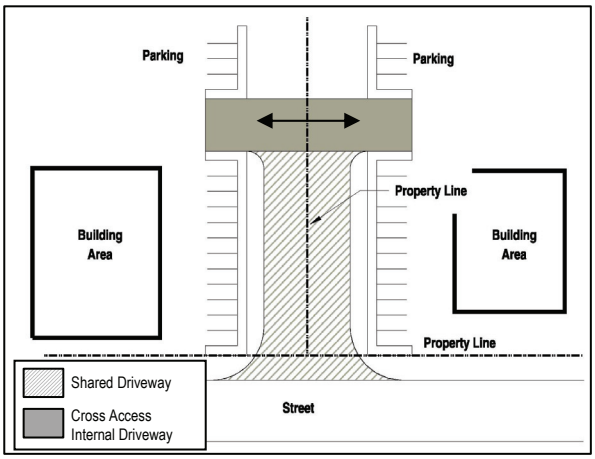
Eldorado Sign

Cross-access is a simple urban design concept that ensures neighboring developments have access to one another without the need to return to a roadway. For example, a retail development at a major intersection is anchored by major retailer, such as a Lowes, Target, Best Buy, etc. with smaller restaurant pad sites near the public roadway. If a cross-access design were used in the construction, then someone would be able to drive from one of the restaurant pad sites to the retail anchor without accessing the public roadway and thus reducing the amount of traffic on the road.

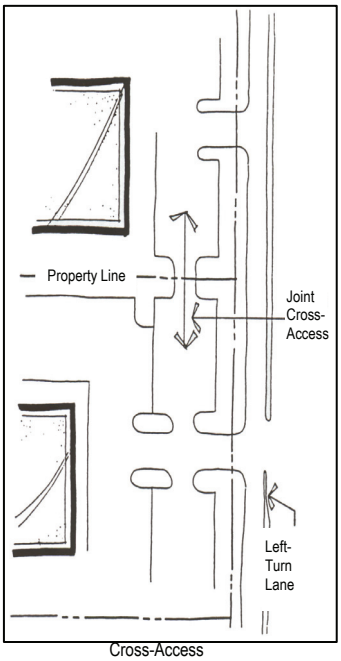


Policy TP.1: Continually investigate and implement methods to improve the flow of traffic throughout the Town. (Reference: Goal T.13)

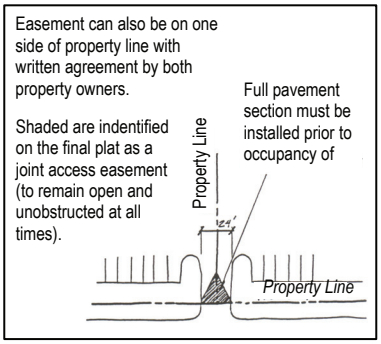
Sub-Policy TP.1.1: Limit access (i.e., driveways) along major thoroughfares and require shared driveways and cross-access agreements for new development.



Shared Access Driveway & Cross Access Internal Driveway



Cross-Access



Shared Access - Joint Property Openings for Non-Residential Sites

Example of a Shared Driveway between Two Non-residential Uses

Sub-Policy TP.1.2: Develop access management standards for TXDOT roadways (i.e., FM 720, FM 423, and Highway 380) to predetermine the location of median openings and improve traffic flow.

Sub-Policy TP.1.3: Coordinate with the TXDOT, the North Central Texas Council of Governments (NCTCOG), and surrounding communities to implement traffic light timing strategies to minimize vehicle stops and improve traffic flow.

Landscaping in Medians and Rights-of-way

The images that travelers experience along major roadways often create a lasting impression of the local quality of life. It is apparent that Little Elm has recognized that major roadways offer a tremendous opportunity to enhance its image. The Town has already made efforts at improving Little Elm's image by revising its landscaping, screening, and sign ordinances. Additionally, several roadway medians have been landscaped and gateway entry treatments have been constructed (e.g., Eldorado Parkway).

Roadway medians and other rights-of-way can serve to beautify the Town, foster civic pride, and promote the community identity. Notably, a clear zone is typically established for safety reasons to prohibit landscaping in areas close to the edge of the curb or near fire hydrants. Additionally, the location of landscaping may be limited due to the location of underground or aboveground utilities.

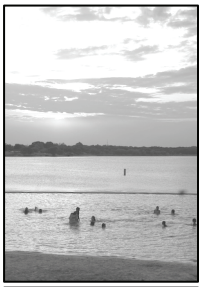
Policy TP.2: Install quality landscaping within medians and other rights-of-way. (Reference: Goal T.13.B)

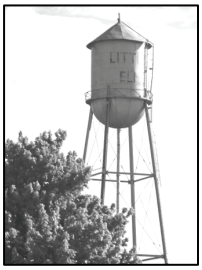
Sub-Policy TP.2.1: Develop a landscaping plan for medians and rights-of-way. Encourage the use of native vegetation, large trees, and trees that produce seasonal color.

Sub-Policy TP.2.2: Encourage the use of low water intensive landscaping techniques, such as xeriscaping, rain and freeze irrigation sensors, and evapotranspiration (ET)-based irrigation.

Sub-Policy TP.2.3: If feasible, avoid the removal of large and/or historic trees in roadway layout and construction.

Sub-Policy TP.2.4: Ensure that FM 720, FM 423, and Highway 380 are appropriately landscaped as per their significant influence on the image of the Town.





Alternative Modes of Transportation

Another method of reducing the number of automobiles on the roadways in Little Elm is to provide pedestrian and bicycle connections through the integration of on- and off-street trails; on-street trails are synonymous with “sidewalks” or bike lanes.

Pedestrian and bike access between neighborhoods can enhance citizens’ sense of community. This type of access can also provide a means for residents to move through the community, meet their neighbors and can provide a safe way to increase children’s mobility. A functional network that allows pedestrian and bike access will help Little Elm develop a unique, community atmosphere as the Town’s population grows. A system of trails and bike lanes can be integrated along rights-of-way and floodplains to provide a comprehensive alternative transportation system.

Although some trails within Little Elm should be more recreation-based, to provide an alternative to the automobile some trails need to be located in such a way as to provide connections between residential and non-residential land uses. Areas such as residential neighborhoods, schools, retail areas, public areas, and future transit stations should be pedestrian- and bicycle-friendly, and should feature on- and/or off-street trails for connectivity purposes.

The Town is currently experiencing a high level of development and related population growth. The time to consider the integration of a trail system throughout Little Elm is now—when the Town still has ample land to make trails a viable transportation alternative as development occurs. Retroactive integration of trails is much more challenging and costly than if such trails are completed at the time the initial development occurs.

Existing Trail

Policy TP.3: Encourage and/or require designs for alternative modes of transportation. (Reference: Goal T.13 & T.13.C)

Sub-Policy TP.3.1: Using bike routes identified on the *Recreational Transit Plan Map*, **Plate 5-1**, implement the use of bike lanes to provide an alternative mode of transportation.

Sub-Policy TP.3.2: Using bike routes identified on the *Recreational Transit Plan Map*, **Plate 5-1**, stripe or otherwise clearly identify bike lanes on existing roads to promote use and safety.

Example of Striped or Clearly Identified Bike Lanes

Sub-Policy TP.3.3: Using recreational hike and bike trails identified on the *Recreational Transit Plan Map*, **Plate 5-1**, implement the use of recreational hike and bike trails to provide an alternative mode of transportation.

Sub-Policy TP.3.4: Collaborate with the Denton County Transportation Authority (DCTA) for public transportation needs.

Sub-Policy TP.3.5: Promote ridesharing / carpooling and other alternative modes of transportation.

Sub-Policy TP.3.6: Promote partnerships between the Town and area regional transit providers to expand alternative transportation options.

Sub-Policy TP.3.7: Work with federal, state, and local agencies to procure funding for alternative modes of transportation.

Sub-Policy TP.3.8: Investigate the feasibility of a water taxi to connect key points around the lake. (Recreational nodes are shown in association with the water taxi concept. Recreation nodes are considered to be parks and open space, as well as specific points of interests, such as the Town Center. These areas are thought to be where a water taxi would be most desirable.)

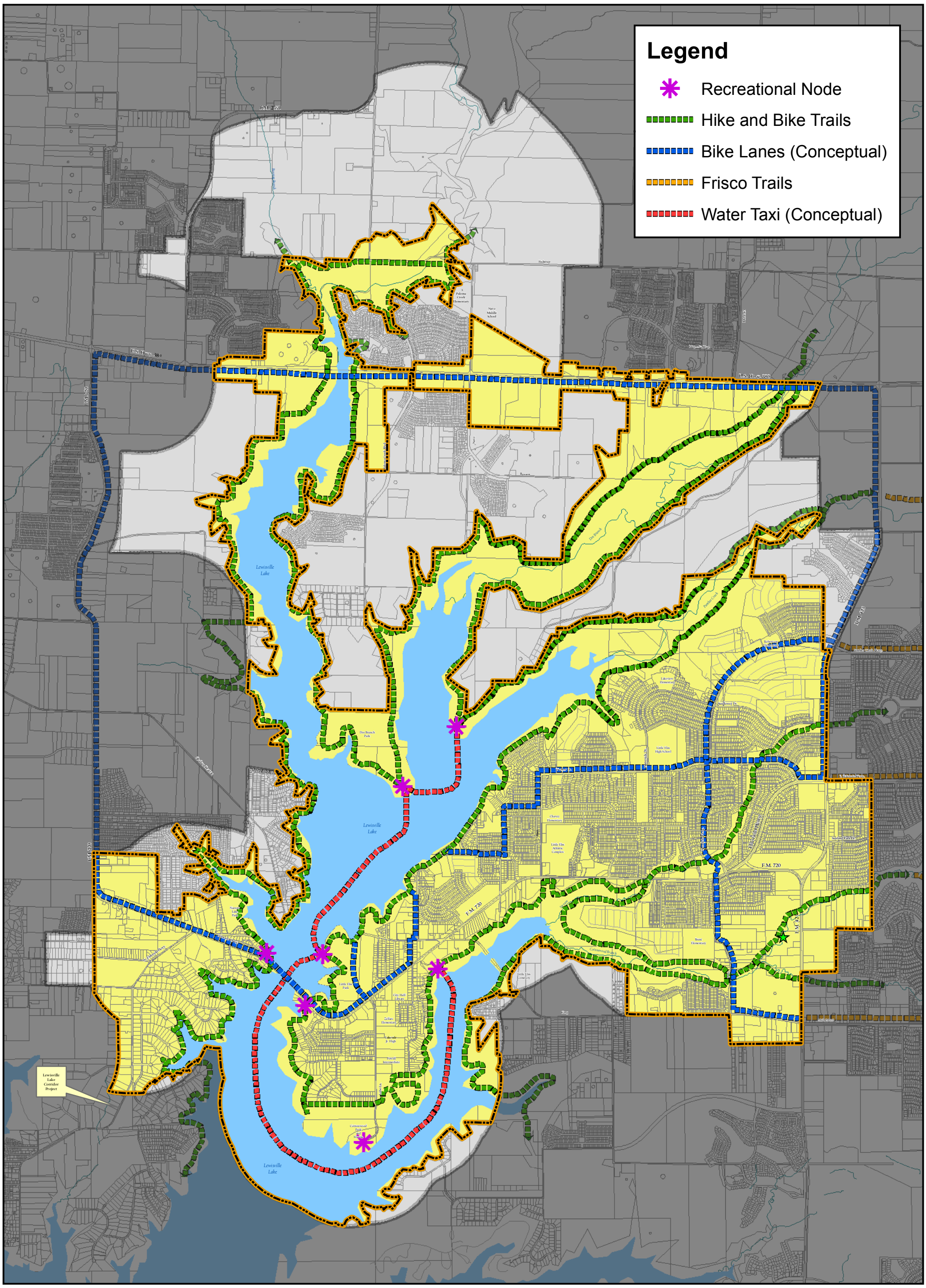


Plate 5-1

LITTLE ELM

Recreational Transit Plan

Freese and Nichols

Sefko Planning Group
Urban Planning Consultants - Dallas, Texas

N
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S

1 0.5 0 1 Miles

Balanced & Cost-Effective Transportation Infrastructure

Building and maintaining an efficient transportation infrastructure requires a significant investment of local resources. Careful planning is needed to ensure that Little Elm makes the most cost-effective investments in its transportation infrastructure. Additionally, alternative modes of transportation (e.g., trails and bike lanes) will require an investment from the Town to ensure their development.

A number of issues must be considered in the process of developing the transportation infrastructure. First, the transportation infrastructure must be compatible with the Town's *Future Land Use Plan* (Chapter 4) and related growth and development considerations. Second, transportation infrastructure must address the integrity of existing residential and non-residential areas. The infrastructure must balance the function of an efficient traffic flow with the facilitation of access requirements. The transportation infrastructure must consider alignments and right-of-way issues. Finally, the transportation infrastructure must also incorporate realistic recommendations within the context of budgeting constraints.

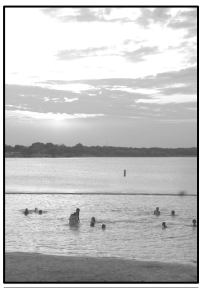
Policy TP.4: Develop and maintain a cost-effective transportation infrastructure that balances auto-oriented transportation options with quality bike and pedestrian options. (Reference: Goal T.14)

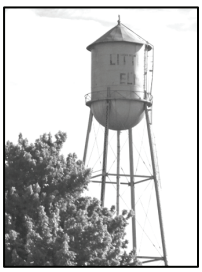
Sub-Policy TP.4.1: Develop and maintain a Capital Improvement Program (CIP) priority listing of projects.

Sub-Policy TP.4.2: Ensure that pedestrians and bicyclists have safe and convenient access to new and existing developments by requiring new developments to provide proper access and by retrofitting existing developments with sidewalks and crosswalks.

Sub-Policy TP.4.3: Work collaboratively with the Little Elm Economic Development Corporation to develop methods and projects where public and private funding can be used for transportation improvements.

Sub-Policy TP.4.4: Work with federal, state, and local agencies to procure funding for the rebuilding of the Twin Bridges and the expansion/improvement of Witt Road Bridge.





Context Sensitive Design

The following discussion is about a somewhat different approach to thoroughfare planning than the approach that has generally been taken by communities in the past. Traditional thoroughfare planning mainly focuses on providing optimal mobility and access for automobiles. Context-sensitive thoroughfare planning and design considers automobiles, but also considers broader aspects related to roadways such as slowing down traffic in special areas, providing for better pedestrian access, and reflecting the character of the area being traveled through. The key concept behind context-sensitive design (CSD) is that the elements of the street should complement the adjacent development; for instance, a roadway may need to be designed as a six-lane boulevard as it travels through a major retail area, but may need to be altered to a minor street configuration as it travels through a residential neighborhood.

> Beyond functional purposes of permitting people to get from one place to another and to gain access to property, streets – most assuredly the best streets – can and should help to do other things: bring people together, help build community, cause people to act and interact, to achieve together what they might not alone. As such, streets should encourage socialization and participation of people in the community…The best streets create and leave strong, lasting, positive impressions; they catch the eyes and the imagination.
>
> *Jacobs, Allan B. – Great Streets, page 312, Massachusetts Institute of Technology, 1995*

The process of designing CSD roadways is similar to the process of designing traditional thoroughfares in that automobile traffic is considered with traffic counts, traffic demand, and level of service information-gathering efforts. However, the difference is that automobile traffic is only one element considered, among numerous others, in the design of CSD roadways. The Institute of Transportation Engineers (ITE) has recently released a publication entitled *An ITE Recommended Practice: Context Sensitive Solutions in Designing Major Urban Thoroughfares for Walkable Communities*. This publication outlines various principles that should be considered during the design process to arrive at a solution for a context sensitive roadway project. These principles[1] are as follows:

1. The project satisfies the purpose and needs as agreed to by a full range of stakeholders. This agreement is forged in the earliest phase of the project and amended as warranted as the project develops.
2. The project is a safe facility for both the user and the community.
3. The project is in harmony with the community, and it preserves environmental, scenic, aesthetic, historic and natural resource values of the area; in other words, exhibits context sensitive design.

[1] Outlined on page 9 of *An ITE Recommended Practice: Context Sensitive Solutions in Designing Major Urban Thoroughfares for Walkable Communities* (2006).

4. The project exceeds the expectations of both designers and stakeholders and achieves a level of excellence in people's minds.
5. The project involves efficient and effective use of the resources (time, budget, and community) of all involved parties.
6. The project is designed and built with minimal disruption to the community.
7. The project is seen as having added lasting value to the community.

Policy TP.5: Implement context sensitive design (CSD) standards for roadways to ensure that they enhance rather than detract from the character of the surrounding / adjacent development. (Reference: Goal T.15)

Sub-Policy TP.5.1: Design roadways for the desired automobile speed. Common roadway aspects that can achieve desired speeds include lane widths, overall street width, on-street parking, and the radii of intersection turns.

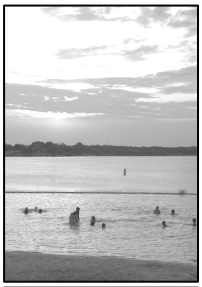
Sub-Policy TP.5.2: Enhance the environment of roadways where walking and biking is desired. Such enhancements could include benches, trees (for shading), lighting, and elements that create interest such as public art and small gathering spaces.

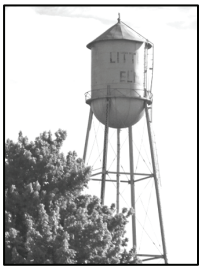
Sub-Policy TP.5.3: Coordinate the design of the Town Center with Eldorado Parkway.

Traffic Reducing Development

Land use and roadway planning are closely linked; just as inappropriate land uses can reduce the effectiveness of adjacent roadways, poorly planned roadways and lack of access control standards (discussed earlier in this chapter) can reduce the viability of adjacent land uses. Inappropriate zoning, various types of development activity, the existence of older roadways that now carry higher traffic volumes than originally intended and continually changing traffic patterns can all have impacts on the Town's thoroughfare system.

Nationally and regionally, there has been a recent resurgence and interest in combining various land uses, resulting in a mixed land use pattern. This concept reflects the old ideal of people being able to live in close proximity to necessities such as employment and retail areas. Also, this concept reflects a new ideal of developments providing additional benefits to the people of the community. For example, these mixed land use





developments allow people to live and work in the same area. As a result, people who decide to live close to their work have little or no commute and have little or no impact on the roadway network. This benefit combined with other benefits such as decreased infrastructure costs, lower energy costs for residents, lower environmental pollution, and the reduction of land consumed by urban sprawl make a mixed land use pattern a desirable development option for both developers and the Town.

Mixed-Use areas will most likely be only a small fraction of the total land use within Little Elm. Therefore, consideration needs to be given to regular single-use developments, such as a typical retail development. How can a typically retail development help reduce auto trips? New retail and other non-residential development should be coordinated and designed with the surrounding community in mind. For example, a typical retail development is built so that it is walled off from the surrounding community and is design to appeal to a person driving on the roadway. This design is a common practice in most new suburbs. A wall separates the residential and non-residential land uses. The reason for constructing a screening wall is to provide a physical barrier and buffer the view from the residential area. However, as a result the likelihood anyone would walk to a store from his or her home is reduced. Retail areas can now be designed so that screening walls do not have to run the entire border between the residential and non-residential areas. Furthermore, the non-residential uses can be designed in an attractive manner so that adjacent residential neighborhoods benefit from the access between the two areas. It is concepts such as these that can help reduce traffic trips from the traditional single-use development sites.

Policy TP.6: Promote development that reduces auto trips and roadway congestion. (Reference: Goal T.15)

Sub-Policy TP.6.1: Encourage mixed-Use development to minimize the number of auto trips and roadway congestion.

Sub-Policy TP.6.2: Ensure streets, sidewalks, hike & bike paths, and bike lanes within developments are interconnected to other streets, sidewalks, hike & bike paths, and bike lanes.

Sub-Policy TP.6.3: Require new developments to provide pedestrian and bicycle mobility.

Sub-Policy TP.6.4: Acquire funding to retrofit existing developments in order to provide pedestrian and bicycle mobility.

Involved Planning Efforts

Community planning is not developed in a vacuum. When planning a community, the context of the surrounding communities and region should be considered. Opportunities for developing joint projects exist when local, regional, and state organization and governments work collaboratively and share common goals.

FM 423

The Town should coordinate efforts with regional transportation-related agencies, such as the North Central Texas Council of Governments (NCTCOG), Denton County, and with the Texas Department of Transportation (TxDOT) in order to maximize the potential for shared financing. Consistent participation in NCTCOG planning efforts may also help Little Elm foster relationships that would ultimately help with funding improvements. Notably, the Town should also consider the actions that its neighboring cities are taking in regards to their transportation infrastructures.

Policy TP.7: Promote and maintain the Town's involvement with planning efforts of federal, state, and local governments. (Reference: Goal T.16)

Sub-Policy TP.7.1: Ensure Little Elm's *Thoroughfare Plan* and *Recreational Transit Plan* (e.g., roads and trails) are coordinated with surrounding cities and within regional plans.

Sub-Policy TP.7.2: Research funding for joint projects with other communities and agencies, such as park-and-ride facilities.

Sub-Policy TP.7.3: Work collaboratively with the Regional Transportation Council to address local transportation issues.

Transportation Safety

Ensuring the safety of citizens is one of the most important goals of any community. Almost every citizen utilizes the transportation infrastructure. It is perhaps the most commonly used community asset. Therefore, the degree of transportation safety, for vehicles, bicyclists, and pedestrians, should always be an issue considered in planning efforts.

Transportation safety is both an urban design and law enforcement issue. The design of roadways and sidewalks can unintentionally increase or decrease the chances of having an accident. However, even the best planned road can be misused by people. For instance, long, straight stretches of roadway often experience increased speed violations. In which case, traffic enforcement measures may be needed to address some safety issues.

Policy TP.8: Promote traffic safety and attempt to reduce roadway accidents. (Reference: Goal T.17)

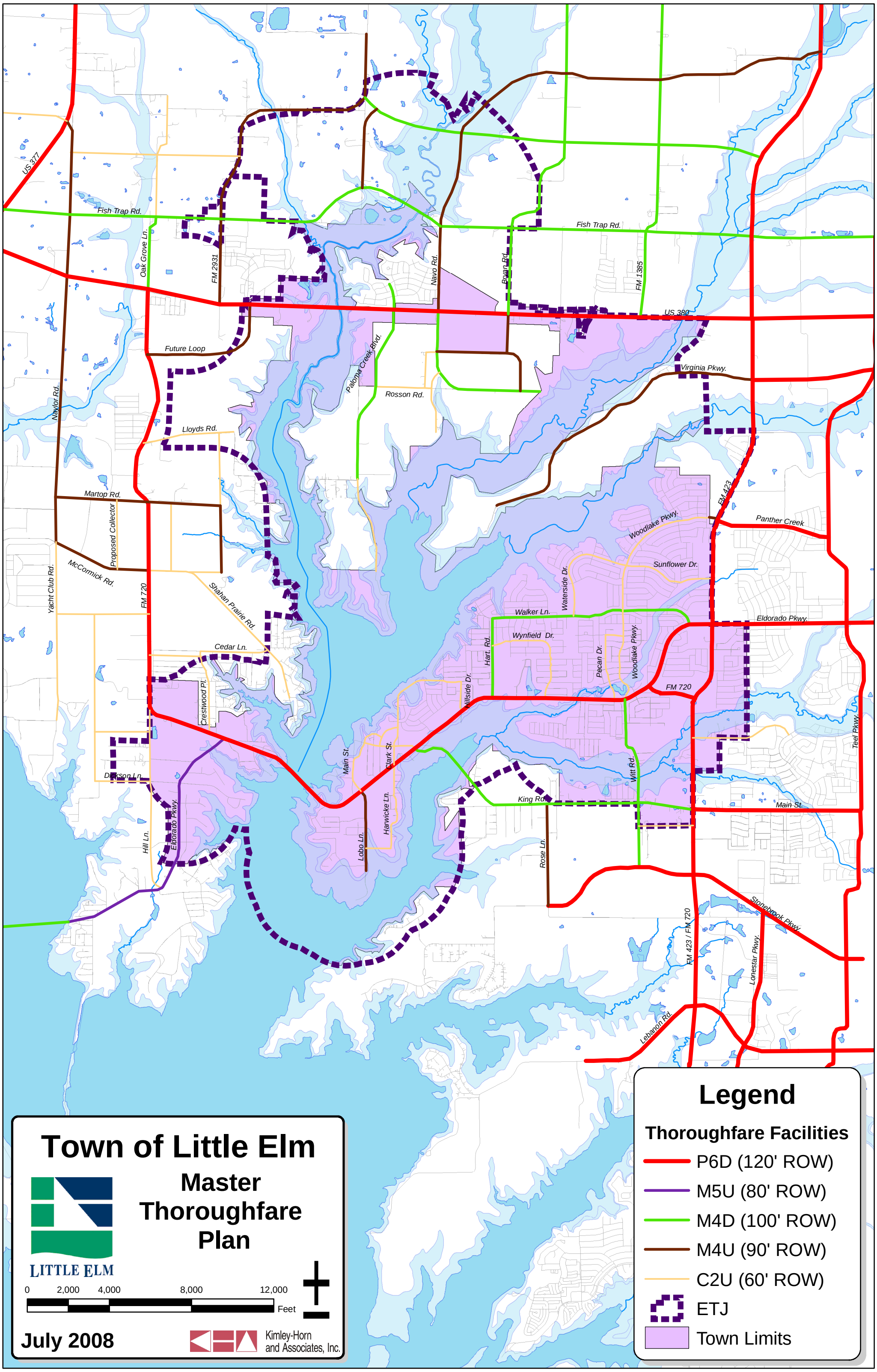
Sub-Policy TP.8.1: Investigate the need for a "Traffic Safety and Flow Analysis."

Sub-Policy TP.8.2: Ensure that sidewalks along Eldorado Parkway are safe for pedestrians.

Sub-Policy TP.8.3: Support the Police Department in their efforts to lower the number of traffic accidents.

Sub-Policy TP.8.4: Promote traffic education programs to the general public and school-aged children.

Reference Material: On the following page is the Town's current Master Thoroughfare Plan.


Town of Little Elm
Master Thoroughfare Plan
LITTLE ELM
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Feet
July 2008
Kimley-Horn and Associates, Inc.
Legend
Thoroughfare Facilities
P6D (120' ROW)
M5U (80' ROW)
M4D (100' ROW)
M4U (90' ROW)
C2U (60' ROW)
ETJ
Town Limits
US 377
Fish Trap Rd.
Oak Grove Ln.
FM 2931
Navo Rd.
Bryan Rd.
FM 1385
US 380
Future Loop
Paloma Creek Blvd.
Rosson Rd.
Virginia Pkwy.
Naylor Rd.
Lloyds Rd.
Martop Rd.
Proposed Collector
McCormick Rd.
Yacht Club Rd.
FM 720
Shahan Prairie Rd.
Cedar Ln.
Crestwood Pl.
Dickson Ln.
Hill Ln.
Eldorado Pkwy.
Main St.
Clark St.
Harwicke Ln.
Lobo Ln.
Hillside Dr.
Hart. Rd.
Walker Ln.
Wynfield Dr.
Waterside Dr.
Pecan Dr.
Woodlake Pkwy.
Sunflower Dr.
Witt Rd.
King Rd.
Rose Ln.
FM 423
Panther Creek
Eldorado Pkwy.
Teel Pkwy.
Main St.
Stonebrook Pkwy.
FM 423 / FM 720
Lonestar Pkwy.
Lebanon Rd.