PART THREE: THE PLAN ELEMENTS
SECTION TWO: THE THOROUGHFARE PLAN

INTRODUCTION

The Thoroughfare Plan Element of the 2015 Comprehensive Plan Update is intended to lay out a clear long-term plan for the safe, efficient movement of people and goods in and around Westlake while providing the underlying framework for growth and development. The Thoroughfare Plan addresses the proposed Thoroughfare Plan Network, roadway typology, development of finer grain networks and access management, alternative modes and regional coordination.

Driving Forces

The Assessment portion of this Comprehensive Plan Update (Part One) presents a number of existing conditions including key issues and emerging challenges with respect to Westlake's transportation system. These conditions represent the driving forces behind the development of the Thoroughfare Plan as it both guides and supports the Comprehensive Plan as a whole. Driving forces include:

- **Street Network Capacity** -Discontinuities

within, and the limited extent of, the existing street network clearly lacks sufficient capacity to accommodate the increase in travel demand associated with entitled development currently in place. In addition to improvements to existing streets such as Dove Road, several new facilities will need to be added between the present and build-out. Approaches to Thoroughfare planning, generally pursued to date, view Westlake as shifting away from the type of internal connectivity recommended in this Plan and rely, instead, on external perimeter roadways such as SH 144 and SH 170 to move locally-oriented traffic. However, Highway 114 is already functioning at its capacity, and there are no planned capacity improvements in the works by NCTCOG or TxDOT. Therefore, continued dependence upon Highway 114 and Highway 170 to carry the traffic that current entitlements could generate will lead to considerable congestion and an inconvenience for the people of Westlake.

- **Freeway/Interchange Capacity** - A majority of trip attractions generated by new non-residential development (yet to be built) will emanate from outside of the Town. Many of these trips will access the Town via SH 114. Additionally, the Town will continue to experience pass-through activity from trips originating in communities to the south that are destined for SH 114. This has direct implications for SH 114 and associated interchanges and their ability to handle significant increases in traffic volume, which is already operating at or very close to capacity. As stated above, continued reliance on SH 114 will have unintended consequences for Westlake.

- **Connectivity** – Transportation networks in which all development connects directly to a few arterials is a very inefficient system. As Westlake develops and expands its transportation network, the Town must establish a robust, well-connected street network that integrates arterials, collectors and local streets. As Westlake moves toward build-out, it must shift from a system that serves individual developments (the result of dependence upon private development plans to address town-wide traffic issues) to one that considers the Town System as a whole, including a hierarchy of functional elements that are well-integrated/connected.

- **Opportunity to Shape Growth** – Given that a majority of the Town is yet to be built, there exists a golden opportunity to shape Westlake's growth in the desired pattern from the outset, rather than simply trying to "fix" in-place problems (like other more developed cities). This opportunity to shape future growth includes the design of the future transportation system. The public sector is in a unique position to initiate necessary coordination between private property owners for the better of the system as a whole. With up to 25 million square feet of private development entitled and planned for land owned by just a handful of entities, Westlake is in a unique position to facilitate a high degree of coordination.

- **Transit** – Serious consideration should be given to transit service as the Town grows. This includes regional transit service for commuters who desire alternatives to driving as well as local service for mobility within the Town. Transit needs will become greater as traffic congestion increases. Regional

transit service has the tendency to develop along major highway corridors, which is where most nodal development tends to locate. Given its location on SH 114, Westlake will more than likely see regional transit service at some point and must give consideration to how this will impact the Town as a regional destination.

- **Bicycles and Pedestrians** – As new transportation networks are planned, designed and built, consideration should be given to how bicycles and pedestrians are accommodated. Communities across the nation are experiencing an increase in the demand for walking and cycling, not only for transportation but as an essential element of an active lifestyle. Continued success as a center for corporate headquarters and upscale commercial development will, in part, be determined by its lifestyle offerings. Westlake has the opportunity to become one of the more bicycle and pedestrian friendly cities in the region by planning and designing streets that accommodate a range of users.

- **External Coordination** – The issues and opportunities considered in this assessment have implications for entities outside of the Town, whether it be adjacent communities (such as Keller and Southlake) or regional transportation providers (such as NCTCOG). Westlake's entitled development and market potential make it a regional shopping, entertainment and employment destination, generating significant regional travel patterns. As the Comprehensive Plan moves forward, some degree of regional coordination will be necessary.

THOROUGHFARE FRAMEWORK PLAN

Analysis performed for the Comprehensive Plan Update shows that the entitlement currently granted to properties in Westlake is approximately 25 million square feet of non-residential use equating to more than 460,000 new daily trip productions and attractions. However, recent development constructed within the Town has not made full use of entitlement allowances for a particular property. Therefore, the Thoroughfare Plan is based upon the assumption that approximately 72 percent of entitled development will ultimately be built (hereinafter refer to as the "Planning Build-out").

Even under this conservative estimate of future growth, over 315,000 new trip productions and attractions will be generated at Planning Build-out, most of which will originate from outside of Westlake. Clearly this represents a fundamental change in travel demand over what exists today.

The Thoroughfare Framework Plan lays the ground work for new roads, the transformation of some existing streets and the preservation of others.

To accommodate the significant amount of traffic associated with the Town's growth, a robust and interconnected street network is necessary. To that end, the Thoroughfare Framework Plan includes several key components, including:

North-South Street Network

A system of parallel north-south streets are intended to to accommodate up to 200,000 new trips per day from Keller,

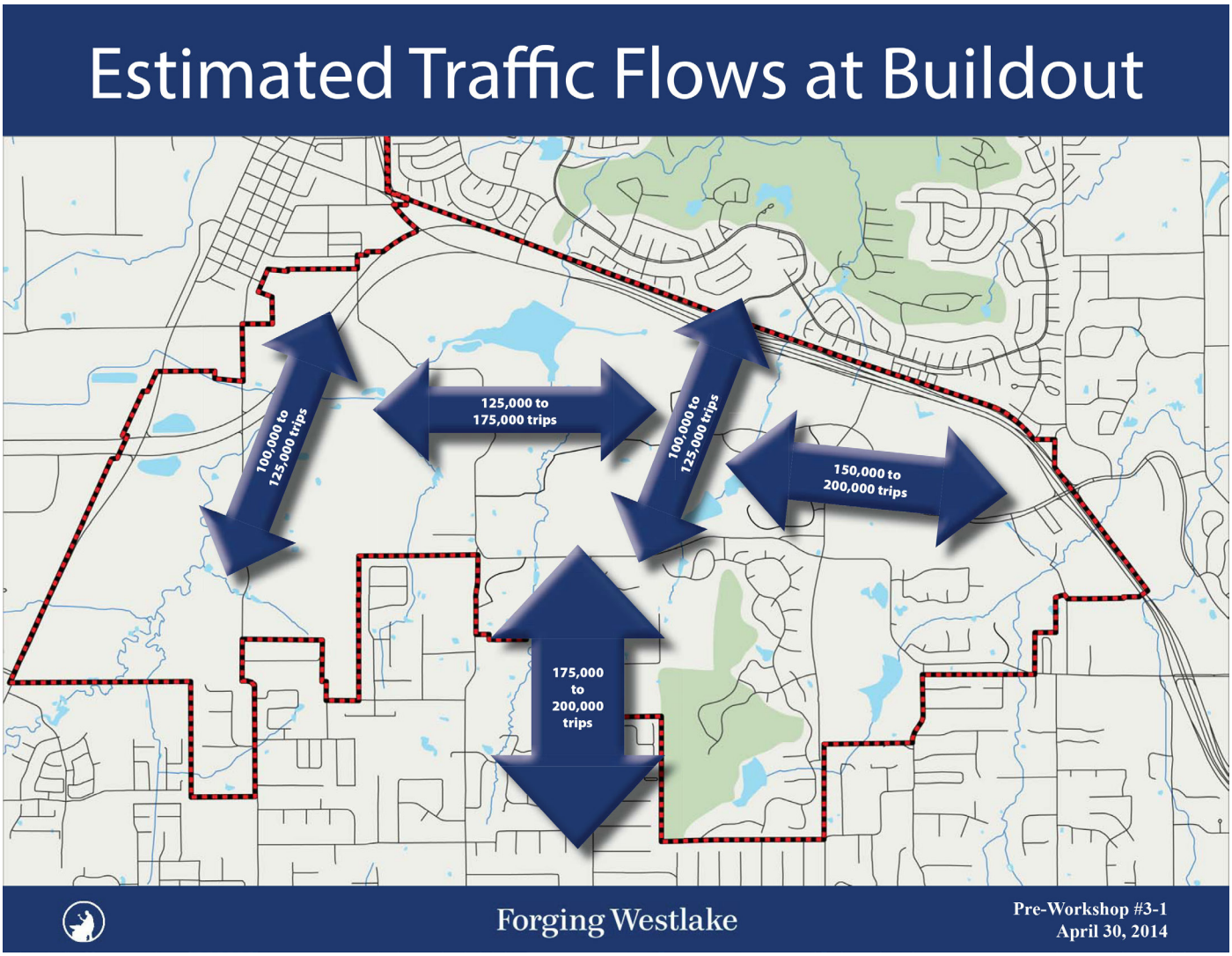


Figure 112: With so many more trip attractions than productions, a majority of Westlake's traffic will originate from outside of the Town.

Southlake and other communities to the south and SH 114, Trophy Club and other communities to the north. Davis Boulevard/ Precinct Line Road will carry much of this traffic, but northward extensions of Pearson Lane and Ottinger Road are necessary to accommodate projected volumes and to provide a well-balanced and well-connected transportation network. An additional north-south connection is made through a new street that begins at SH 144, parallels SH 170 and connects to US 377. Actual north/ south capacity will be dependent upon the extent to which north/ south continuity is ultimately achieved. Due to the constraints of existing zoning and Planned Developments, specially designed roadway segments may be necessary to enhance the function of an unavoidable offset intersections. The places where special design focus is required are indicated on the Thoroughfare Plan recommended in this Plan Element chapter.

East-West Street Network

A system of east-west streets originally intended to accommodate from 125,000 to 200,000 trips per day to and from SH 114, SH 170 and US 370. This is achieved through a continuous east-west street

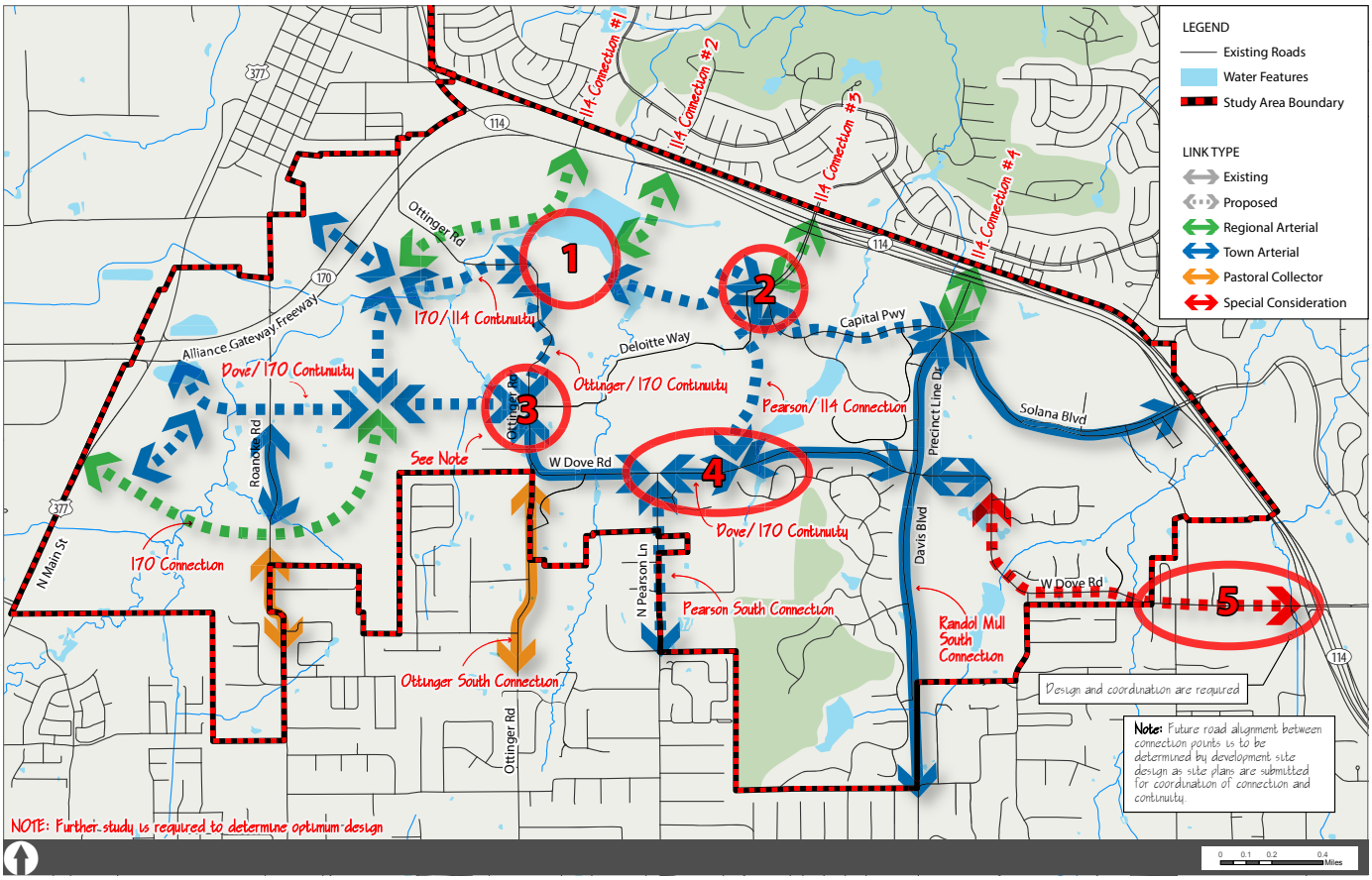


Figure 113: Thoroughfare Plan

Disclaimer: Future road alignment between connection points is intended to serve the projected use of Westlake entitlements and is to be determined by development site design as site plans are submitted for coordination of connection and continuity. Therefore, final road alignments may differ from this Plan. Should road and intersection service thresholds defined in the Plan not be attained, the whole system as shown may not be built. See Policy Section B in the Implementation Document for roadway thresholds, trigger points, and other implementation language.

that begins at Solana Boulevard at SH 114 and continues westward through Capital Parkway. Beyond Capital Parkway, a new alignment would extend further westward to SH 170. A second, parallel street is formed through the westward extension of Dove Road (beginning at the west end of the currently improved Dove Road), crossing Ottinger Road and connecting to SH 170. Actual east/ west capacity will be dependent upon the extent to which east/ west continuity is ultimately achieved. Due to the constraints of existing zoning, Planned Developments, or neighborhood concerns, specially designed roadway segments may be necessary to enhance the function of an unavoidable offset intersections or visual character of improvements to existing streets. The places where special design focus is required are indicated on the Thoroughfare Plan recommended in this Plan Element chapter.

THE THOROUGHFARE PLAN

The above Plan shows the Thoroughfare Plan as a Framework of North-South and East-West connections (with indication of areas where special design focus is required), which create a system of movement for Westlake is intended to

addresse the anticipated trip demand and the other issues described above. The converging arrow heads indicate key connection points and the dash lines indicate key connections.

Green connections are Regional Links, **Blue** connections comprise the Town System, and **Tan** connections show the Pastoral Roadways. **Solid lines** indicate the portions of the proposed Thoroughfare Network already built. **The circle** just north of the Dove Road/ Ottinger convergence indicates a need for special design treatment that will allow this offset intersection configuration (the eastward extension of Dove offset from the western extension of Dove) to accommodate the potential trip volumes it may experience.

Diversion of Traffic from Dove Road

One of the overwhelming desires expressed by the community during the course of public outreach for the Plan is for the easternmost portion of Dove Road, beginning at the GlenWyck neighborhood, to remain pastoral in character. Because of its connection to SH 114, Dove Road is a natural draw for traffic, a condition that will only become exacerbated over time as Westlake grows. Therefore, the road segment extending east from Davis to the eastern town limits of Westlake is identified as a Roadway of "Special Consideration". A "Special Consideration" designation identifies roadway sections within the 2015 Thoroughfare Plan that meet the following conditions:

- Presents potential to be perceived as having an adverse effect on adjacent properties;
- Provides street capacity likely needed to accommodate projected traffic volumes generated by non-residential entitlements currently in place;
- Provides needed access for citizens of Westlake to development within their Town as well as access to major traffic routes; and
- Provides needed relief from projected traffic congestion.

Due to property owner concerns (as specified above), roadway sections designated as "Special Consideration" merit serious consideration regarding design, along with public hearings that should be held prior to final approval. It is the intent that "Special Consideration" Roadways will only be brought forward in the event that such sections are needed to alleviate road congestion on the existing roadways of Westlake as non-residential entitlements are developed over time and other means of such alleviation are not feasible. The definition of "road congestion" necessitating consideration of improvements to a "Special Consideration" roadway is defined in the Policy Section of this Comprehensive Plan (more specifically Policy B.2).

A Type Of Grid

The Thoroughfare connections proposed in this Thoroughfare Plan create a curvilinear grid like network (when combined with existing Davis, currently improved portions of Dove, existing Solana Boulevard, and existing Westlake Parkway).

Not Alignment-Specific

By design, the streets identified in the Thoroughfare Framework Plan do not depict a specific alignment. Much of Westlake is currently undeveloped, and specific alignments will need to be determined in conjunction with development plans for individual sites. Therefore, the Thoroughfare Framework

depicts connections that are needed to create a system potentially capable of accommodating the trip volumes anticipated by the Plan (depending on final design and alignment).

There are five points of "Design Focus" and "Special Consideration" indicated on the Plan by a circle or oval numbered 1 through 5. More specifically, these points of focus and consideration are:

1. The intersection of Ottinger Road and the westerly extension of Capital Parkway: The extension of Ottinger Road to the north will be as indicated on the map with an alignment that goes west of the hill and connects with Capital Parkway, as shown.
2. The intersection of Capital Parkway and Pearson Lane: At a point in time when development occurs and the Capital Parkway and Ottinger Road thoroughfares are required, the T.I.A. will recommend the appropriate traffic handling requirements at this intersection.
3. The intersection of Ottinger Road and a westerly extension of Dove Road: Further study is required to determine optimum operational design.
4. The northerly extension of Pearson Lane from Dove Road to Capital Parkway: The intersection of the northerly extension of Pearson Lane and Dove Road will be made as an offset intersection at Dove Road, as shown on the Thoroughfare Plan. The design of the two intersections of Pearson Lane and Dove Road will be completed utilizing a design that produces the most efficient traffic movement, which may likely include the installation of roundabouts at these two intersections.
5. Dove Road from a point immediately east of Davis Boulevard to the east town limits of Westlake (as shown on the Thoroughfare Plan) is shown on the Thoroughfare Plan as a Roadway of "Special Consideration" and continues to be shown (as it is shown in the Town's 1992 Comprehensive Plan) with a 106 ft. right-of-way with median divided for four lanes of traffic (two lanes in each direction) or two vehicle lanes with bike lanes. A Roadway of "Special Consideration" means that the road segment has potential to be perceived as having an adverse effect on adjacent properties. Therefore, serious consideration regarding design, along with public hearings, should be held prior to final approval.

While the individual alignments are not specific, the roadway connections represented by the lines on the map are. This Plan should guide individual developments as they come online, serving as a framework for the identification of specific alignments and roadway connections.

STREET TYPOLOGY

Streets identified in the Thoroughfare Framework Plan serve two primary functions: one, move people and goods, consistent with travel demand and purpose, and two, convey a sense of character and place, consistent with the adjacent community as identified in the Land Use Plan and Town Design Structure Plan. To that end, the Thoroughfare Plan identifies three different types of streets:

- **Regional Arterials:** Streets that serve regionally-oriented trips and the Regional Community as defined in the Land Use Plan. Regional Arterials are Westlake's primary connection to regional roadways approaching

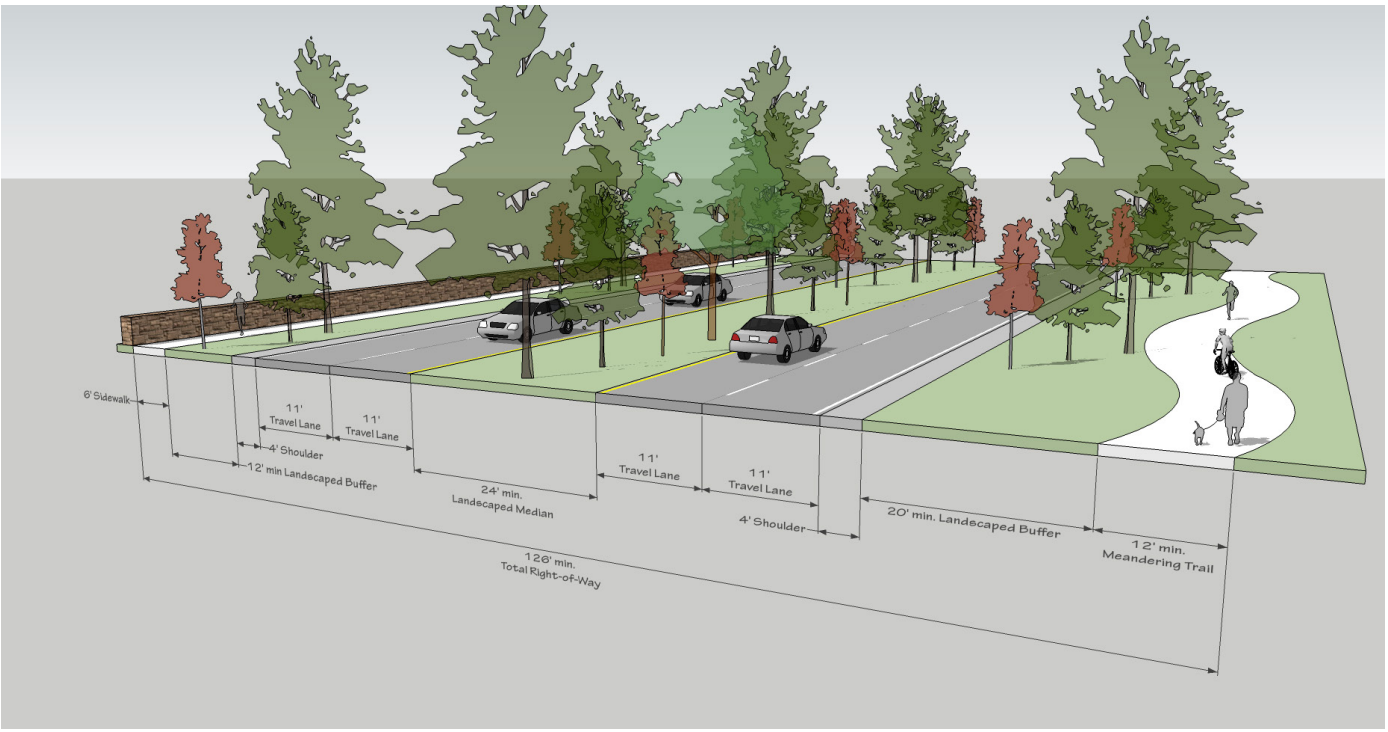


Figure 114: Regional Arterial Typical Section (Four Lane)

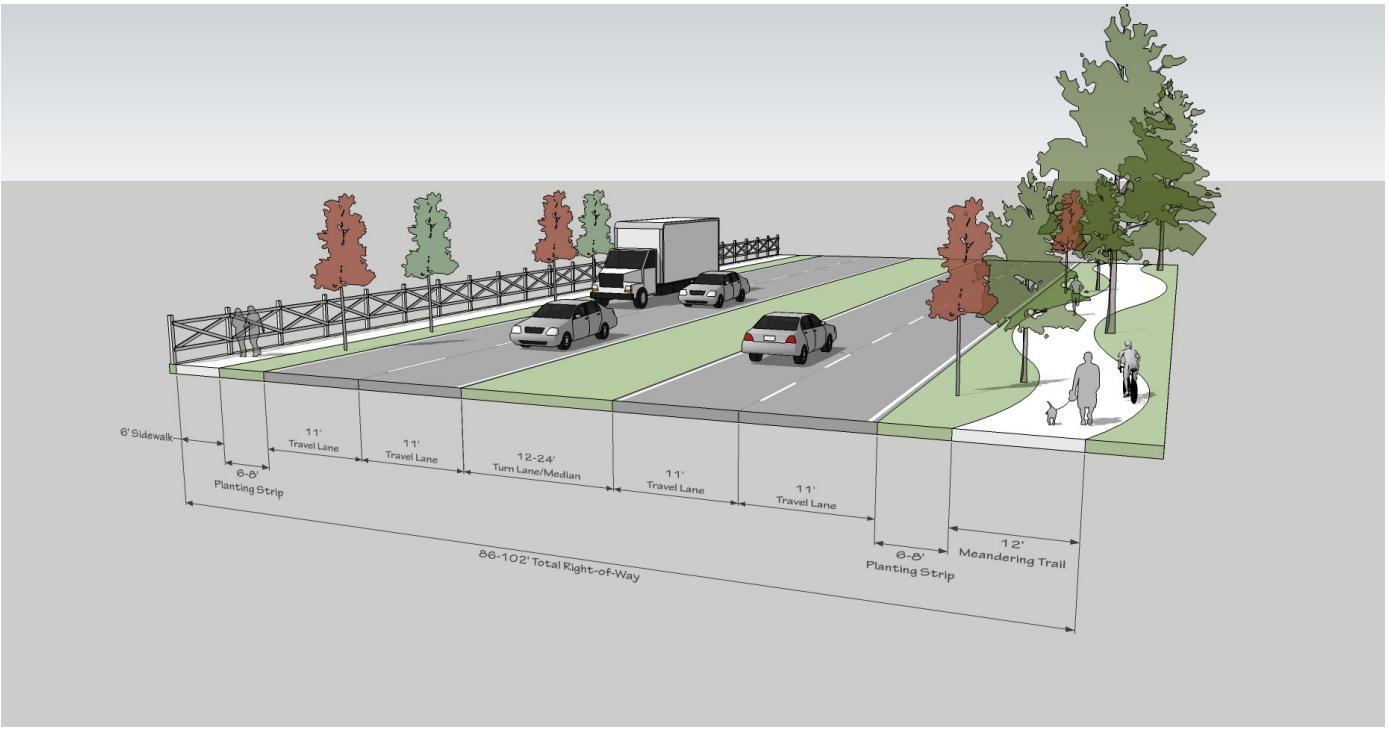


Figure 115: Town Arterial Typical Section (Four Lane)

and bordering Westlake and provide continuity with the Town's Street Network. While certain shopping, entertainment, and employment uses will front Highway 114 and/or Highway 170, millions of square feet of such use will located deeper into the fabric of Westlake and be served by the Town System component. Therefore, a linkage between the Town System component and the external regional roads is needed. These links are known as the Regional Arterials.

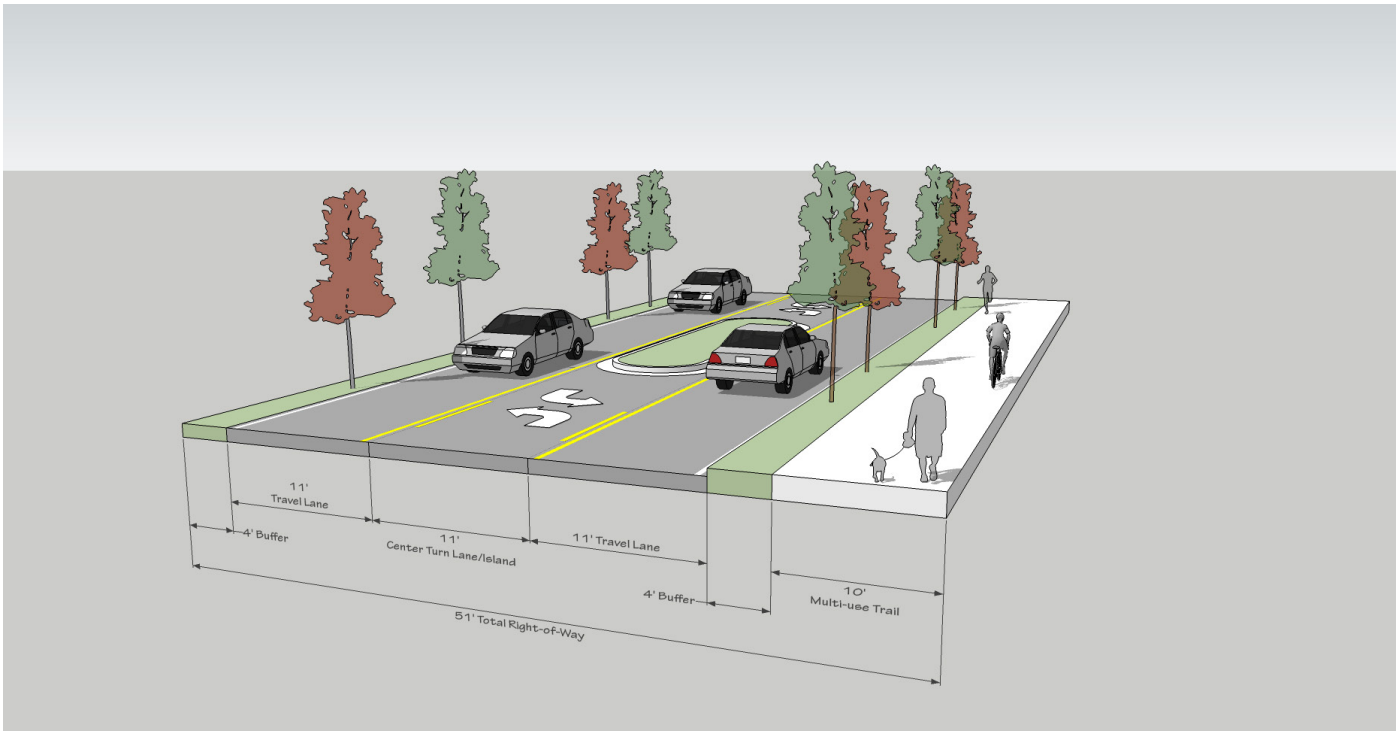


Figure 116: Town Arterial Typical Section (Three Lane)

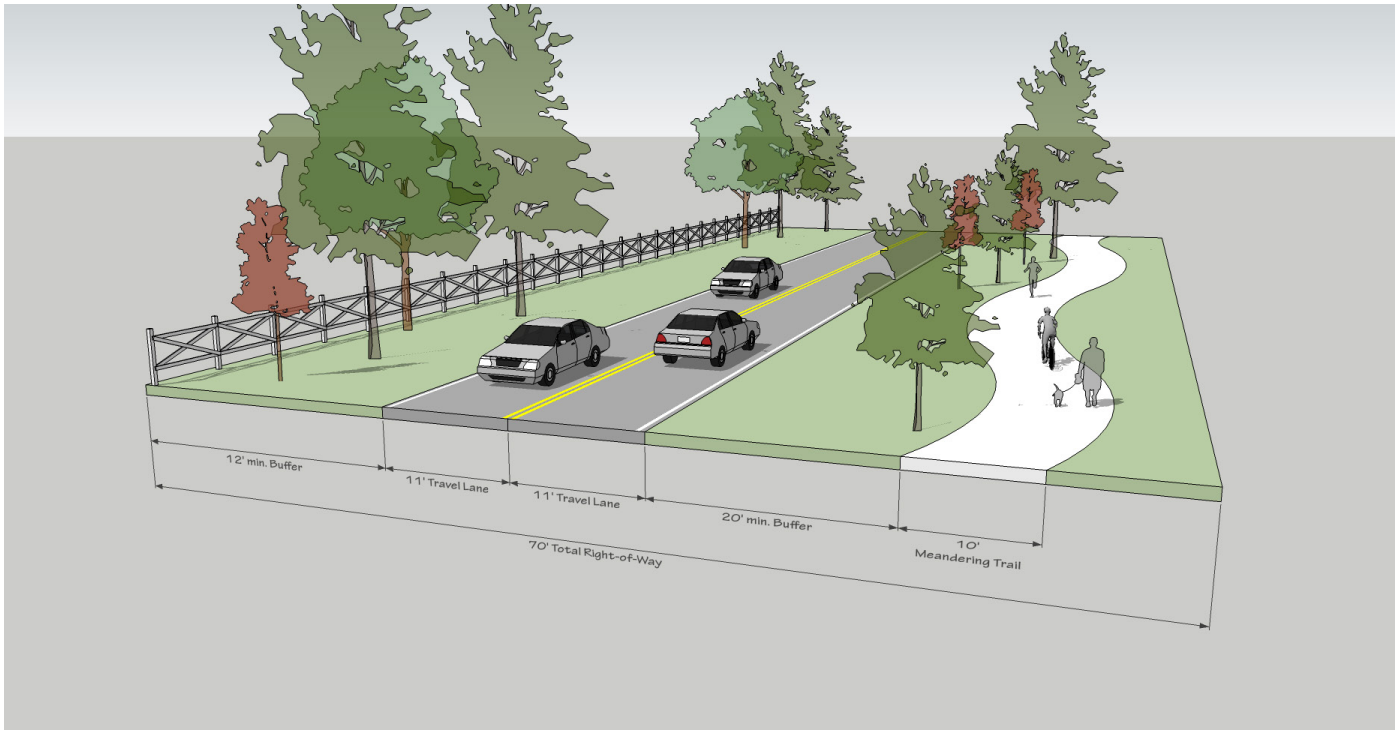


Figure 117: Pastoral Collector Typical Section (Road Buffer includes barrow ditches)

- **Town Arterials:** Streets that serve destinations within in the Town and provide continuity with the Regional System. Town Arterials are located in places where locally originated and imported traffic comingle in the kind of robust flow to and from desired local destinations that is typical of a vibrant township. It is an important aspect of "town" that the presence of place is expressed as a network of roadways serving destinations within

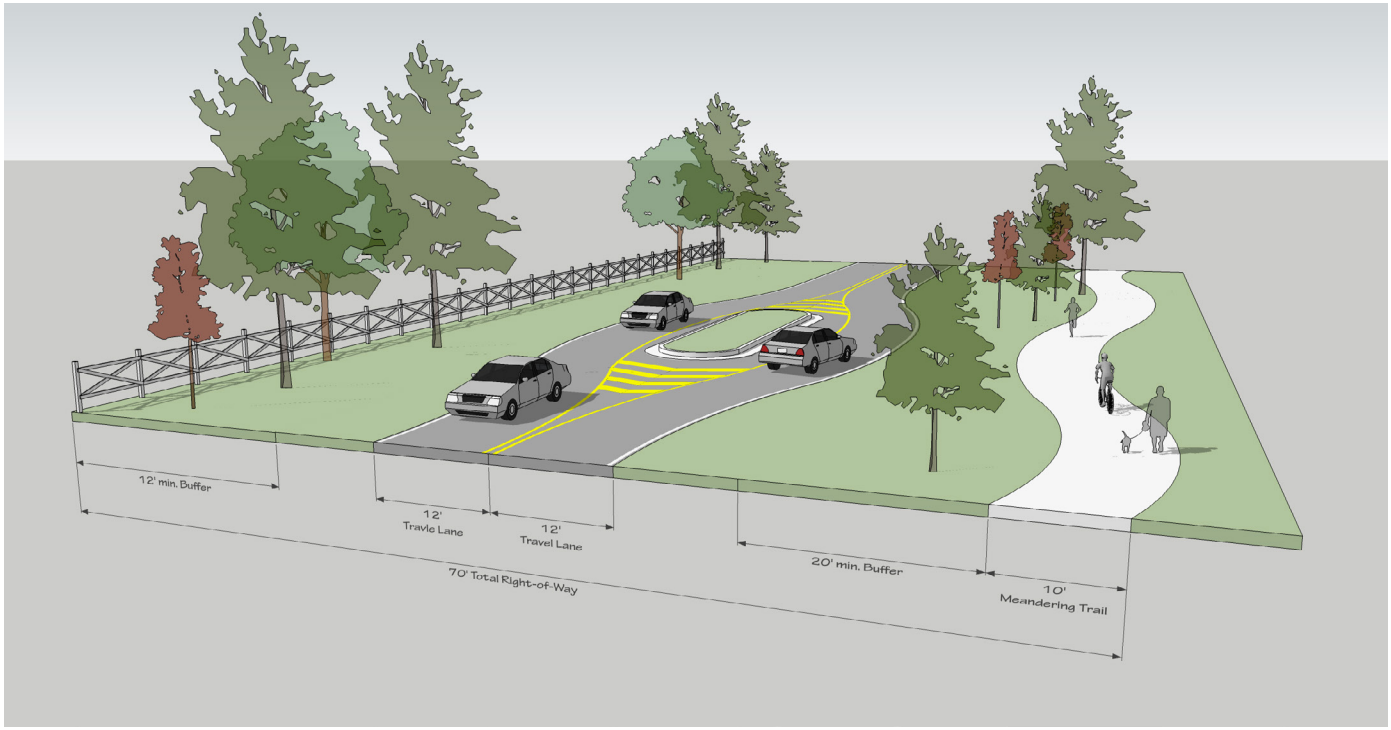


Figure 118: Pastoral Collector Typical Section (with Traffic Calming)

the town fabric. Therefore, one moves from Regional Arterial to Town Arterial as they come into the Town and seek the destination offerings of the Township. In many historic towns along hub and spoke systems, the regionally connected road enters and becomes part of the local network as one moves from a rural environment to a more urbanized environment. Similarly, the Regional connections give way to local movement patterns structured by the Town System element. In addition, Town residents moving from the quieter setting of neighborhood roadways (Pastoral Collectors) will encounter the Town System element before they transition to the Regional System element and make their commute; or they will stay within the Town to shop, etc.

- **Pastoral Collectors:** Streets gathering residential traffic as it moves to and from residential neighborhoods. The Pastoral Collectors and the Regional Arterials are transitional levels of connectivity ascending and descending from the Town Arterial. This transition is what protects the Pastoral Collectors (residential streets) from commercial traffic encroachment and it is what keeps town-based movement from being channeled through Regional Roadways (conditions afflicting many corridor related townships like Allen, Texas). The Pastoral Collector expresses the essence of residential life in Westlake and is the place where Westlake's rural identity is most visible. With the Town System element to provide much of the connection function needed, the Pastoral Collectors can be just roadways that gather local residential traffic as it moves toward the larger town and/or region.

The Town Design Structure Plan provides more discussion on the visual character, streetscape, and landscaping of each street type described above. These street

Connectivity Guidelines – Example

Block size	200 to 800 feet.
Cul-de-sacs	Limited to 10% of all street links.
Intersection density	Minimum 0.8 to 1.2 intersections per 10 acres.
External connections	Minimum of three sides.

Figure 119: Street Networks and Connectivity

sections serve to identify dimensional standards and lane widths.

NETWORKS AND ACCESS

The Thoroughfare Framework Plan lays out the locations of major streets – arterials and collectors – and provides guidance on what those streets should look like. Beyond this foundational framework, however, there are other elements that should be taken into consideration.

Networks and Connectivity

The proposed street network for Westlake places an emphasis on connectivity. Well-connected street networks result in more direct routes and shorter travel times, as opposed to a few large, multi-lane arterials, which create congested intersections and longer, more circuitous routes. Robust street networks also mean smaller streets with less traffic, which is more conducive for walking and cycling.

At a maximum, streets within fully developed areas should be spaced no

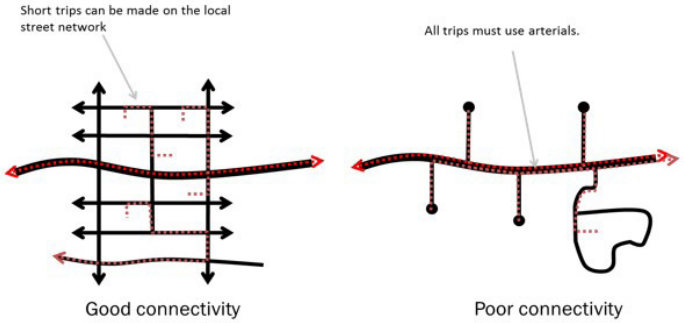


Figure 120: Connectivity Examples

more than one eighth of a mile apart. Arterials, which form the backbone of the transportation network and carry most of the regional traffic, should be spaced at approximately one to two miles. Collectors should be spaced at ¼ mile to one mile intervals. Local streets should fill in the rest of the network.

It is important to note that this network does not necessarily have to be provided by the public sector. This network could easily be built as part of private development, as long as it provides connectivity to the external network.

The Thoroughfare Framework Plan identifies how most arterials should connect. At a finer grain, network connectivity standards should be prescribed as part of the Town's land development regulations.

Access Management

Having good street connectivity is important to a well-functioning transportation network. At the same time, street systems with too many access points can create problems. The Thoroughfare Framework Plan calls for a network of four lane arterials divided by landscaped medians. Median openings must be closely coordinated with adjacent businesses to achieve an optimal balance between safe and efficient vehicular movement and economic benefit.

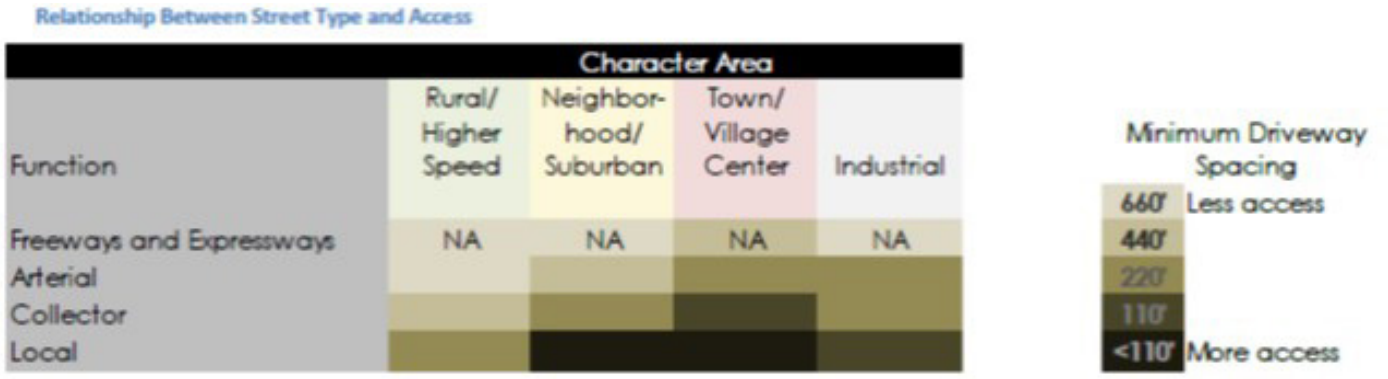


Figure 121: Street Type and Access

Access points include driveways, cross-streets, median openings, signalized intersections, and potential traffic circles. Each additional access point increases the potential for conflict, which degrades roadway capacity and increases the chances for collisions. Therefore, coordination of development zones defined by the Thoroughfare Plan should take place so that internal private streets are interconnected whereever possible.

More intense development, where emphasis is on adjacent land use activity, should have greater access than in other locations where vehicular mobility takes precedence. Freeways, by definition, should have very little access. The Regional Arterial Connectors and Town Arterial System should provide next level of access with coordination of private roadways within that arterial network providing even more access. Limiting access is less of a concern on local streets.

Access management standards can provide specific guidance for the placement of access points. For State roads, they should be consistent with the Texas Department of Transportation's (TxDOT) Access Management Manual.

BICYCLES AND PEDESTRIANS

The proposed street framework is designed for all users, including bicycles and pedestrians in addition to motor vehicles. This could mean a mix of on-street and off-street facilities, depending on the context.

On-street Facilities

On-street facilities are essentially sidewalks and street side trails. Sidewalks are appropriate for lower-speed environments and are generally wider in locations where the emphasis on people and places is the greatest. In locations where vehicles move at higher speeds and/or a greater volumes, it is desirable to have some degree of separation between the sidewalk and the street, such as on-street parking or street trees and a planting strip.

On-street facilities for bicycles include bicycle lanes and wide shoulders. Bicycle lanes are typically found in more compact urban and suburban locations while wide shoulders are in rural locations. On low speed, low volume streets, cyclists can ride in mixed traffic with motor vehicles. Less experienced users (children) may ride on sidewalks. On-street facilities will be found on local neighborhood streets within Westlake as the capacity of the

Thoroughfare network must be preserved to accommodate anticipated traffic volumes. Therefore, bike and pedestrian facilities along Regional Arterials and Town Arterials will be trails and/or sidewalks within the street Right-of-Way (as presented in the Open Space, Parks and Trails Plans).

Off-street Facilities

Off-street facilities accommodate a range of users – bicycles and pedestrians – simultaneously. Off-street facilities can run parallel to a street, but must include a minimum amount of separation, including a grass buffer and trees and other landscaping elements.

Given the nature of Westlake's higher speed, higher volume arterial system, The Thoroughfare Framework Plan calls for a series of parallel off-road facilities that also form the Town Trail System. This trail system is intended to provide connectivity to the Veloweb – a 1,700 mile network of existing and planned trails spanning the Metroplex – meaning that Westlake can serve as a destination for regional bicycle and pedestrian travel.

Additionally, Westlake seeks to distinguish itself as a pedestrian friendly Town. Part of the "slow moving" lifestyle that residents cherish comes from the fact that all movement is not required to confront the congestion of the 114 corridor. To the extent that there can be a non-street option that is viable, is the extent to which Westlake can offer relief from the congestion that neighboring communities are experiencing. This Plan aspires to provide a trail network as robust as the arterial system.

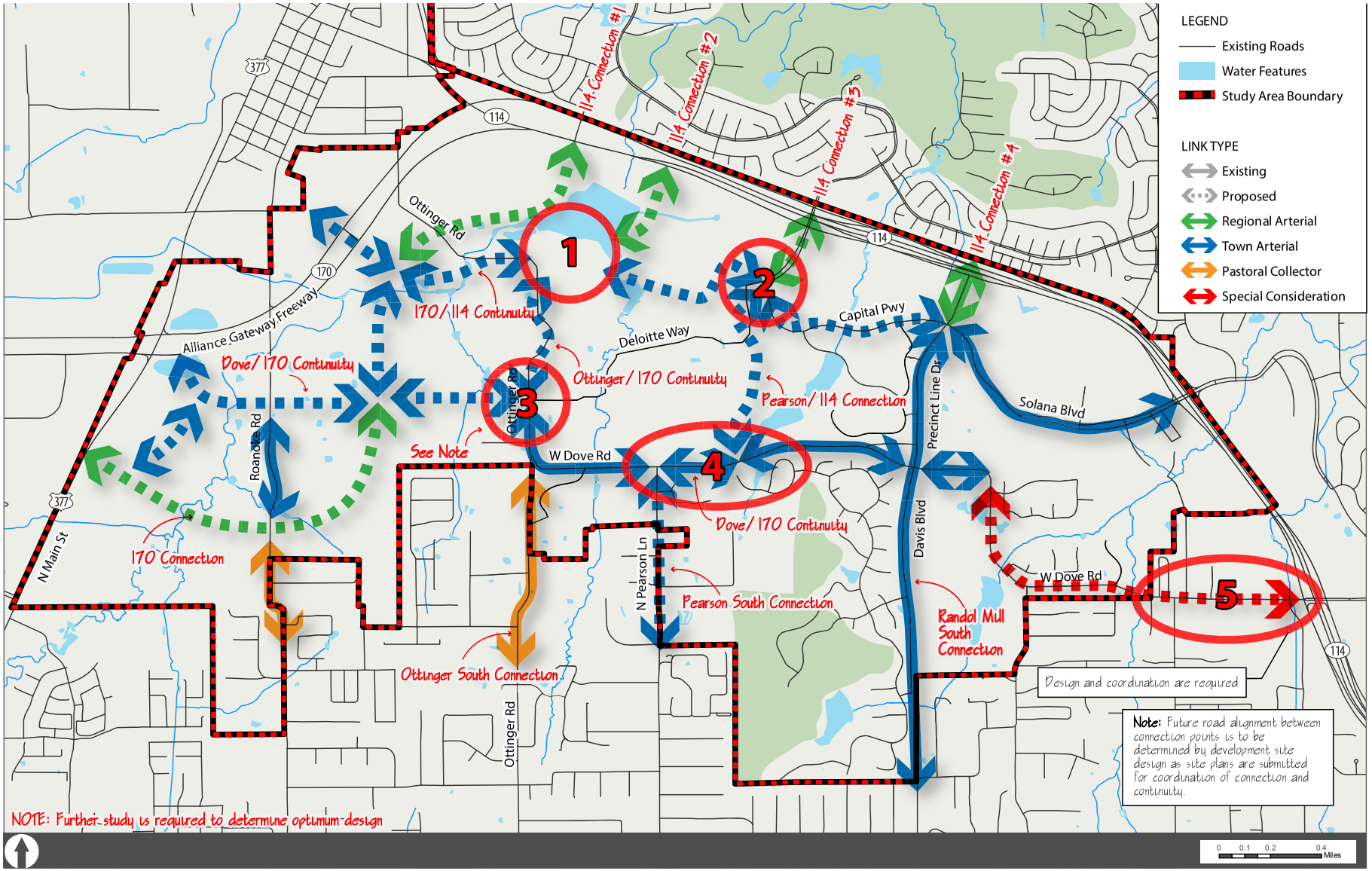
TRANSIT

As Westlake grows into a center for employment and commerce, it should explore ways to add transit to the mix of transportation options. Specifically, transit should be given consideration as an option for the thousands of travelers that will commute to Westlake on a daily basis. This does not necessarily have to be a service provided by the Town, but rather a function of coordination with one of the regional transit providers.

Additionally, the high number of planned employers and retail activities make a locally-oriented transit service a distinct possibility. Such a service would shuttle riders between their place of work and dining, shopping and service destinations within the Town. Such a system would be particularly supportive of a regional transit system by providing mobility options for commuters during the course of the work day.

Both within the Metroplex and elsewhere across the nation, an increasing number of regions are looking to transit solutions as major road building initiatives reach their conclusions and communities become denser. Regional transit service has come to Dallas-Fort Worth International Airport and the SH 114 corridor is a logical extension of that corridor. Thus, regional transit service coming to Westlake is a distinct possibility over the long term. The Town should give careful consideration to how regional transit service might optimally serve Westlake, including the character and scale of development around potential station areas and how other places throughout the Town may connect.

The Thoroughfare Plan



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