



2015 COMPREHENSIVE PLAN



08-04-2015

“ We will never bring disgrace on this our City by an act of dishonesty or cowardice.

We will fight for the ideals and Sacred Things of the City both alone and with many.

*We will revere and obey the City’s laws, and will do our best
to incite a like reverence and respect in those above us
who are prone to annul them or set them at naught.*

We will strive unceasingly to quicken the public’s sense of civic duty.

*Thus, in all these ways, we will transmit this City not only, not less,
but greater and more beautiful than it was transmitted to us.”*

Source: The Athenian Oath - National League of Cities

Numerous individuals including City of Frisco elected and appointed officials, City Staff, members of the Comprehensive Plan Advisory Committee (CPAC), key stakeholders and citizens provided knowledge, assistance and insight throughout the process of developing the vision and strategy for the Frisco Comprehensive Update.

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1 EXECUTIVE SUMMARY

"... The plan shall be made with the general purpose of guiding and accomplishing a coordinated, adjusted, and harmonious development of the municipality and its environs which will, in accordance with present and future needs, best promote health, safety, morals, order, convenience, prosperity, and general welfare, as well as efficiency and economy in the process of development."

- Jay M. Stein, Classic Readings in Urban Planning

Importance of Comprehensive Planning

The City of Frisco has a strong tradition of planning. Comprehensive Plans were completed or updated in 1982, 1991, 2000 (the Millennium Plan) and 2006, and City leaders have stated openly that the Comprehensive Plan may be the most important tool the City has for guiding the future of Frisco. This awareness of the importance of a plan and a well-thought-out implementation strategy has helped Frisco become one of the most noted and notable places in the Dallas-Fort Worth Metroplex, in Texas and even in the nation.

City officials have been true to many of the guidelines and recommendations in these plans over the years and have also recognized the need to update related plans and programs, such as the Park Master Plan and the Downtown Revitalization Plan. The responsibility for implementing the Comprehensive Plan involves a number of departments and crosses departmental boundaries within the City organization.

It is also important for the City to be able to respond to unique opportunities that the Comprehensive Plan has not anticipated. When these opportunities—specifically, development proposals or special projects—present themselves, this document will be an important reference for the Planning & Zoning Commission and City Council as they consider the impacts of these proposals based on the approved Future Land Use Plan for the property in question as well as the vision for surrounding properties.

The latest update, the 2015 Comprehensive Plan, continues the City's planning tradition and sets the stage for the City of Frisco as a great place to live, work, play and visit. Growth within Frisco is inevitable, but the reasoned and thoughtful planning that form the basis for this Plan will allow the City to manage this growth, maximize benefit for the citizens of Frisco and fulfill the destiny the community envisions.

The Comprehensive Plan is intended to be a dynamic, adaptable guide.

The 2015 Comprehensive Plan Process

As was the case in previous comprehensive planning efforts, the update process was predicated on the involvement of Frisco officials, staff and the cornerstone of any comprehensive planning process—public participation. Frisco has a highly-involved citizenry, and many individuals took part in the 2015 update of the Comprehensive Plan, partly because previous planning efforts have been so successful and partly because they wanted to be certain that the Frisco of the future is a desirable, resilient place.

The City Council appointed a representative group of 23 interested and motivated citizens to serve as the Comprehensive Plan Advisory Committee (CPAC). The committee was integral to the planning process:

- Serving as the primary public interface with the consultant team,
- Serving as a sounding board for key concepts and strategies,
- Providing input in terms of visioning and updating recommendations, and
- Reviewing drafts of the Plan components prior to their submittal to the general public, the Planning & Zoning Commission, and the City Council for consideration.

As a result of this process, portions of the (2006) Comprehensive Plan document were validated, others were updated, and still others appear in this planning document for the first time.

The 2015 Comprehensive Plan is the official planning document of the City, but finalizing the Plan does not represent the end of the process. Planning is not a single event; it is an ongoing endeavor. **The Comprehensive Plan is intended to be a dynamic, adaptable guide** for citizens and officials as they work to shape Frisco's future on a continual, proactive basis. The City has recognized this, and planning will continue in

Frisco as it has in the past, long after any update to the 2015 Comprehensive Plan is adopted.

The Importance of Public Participation

This community-based planning process was carried out in six phases from initial meetings in January 2014 to the City Council's adoption of the Plan in March 2015.

The six planning phases include:

- Phase 1: Project Initiation
- Phase 2: State of the City (Analysis)
- Phase 3: Community-Wide Vision
- Phase 4: Vision Framework
- Phase 5: Implementation
- Phase 6: Adoption

Each of these elements built upon the previous phases and was important to keep the process integrated and on schedule. Public participation is integral to any comprehensive plan. In large part, the citizens have made Frisco what it is today. They have elected leaders with foresight, voted for the financing necessary for special developments and public improvements and been highly engaged in planning for the City's future.

The ultimate success of the 2015 Comprehensive Plan will depend upon whether it truly reflects the needs and desires of these citizens and whether there are appropriate mechanisms for implementing the goals and policies outlined in the Plan.

"The strength of our democracy lies in the sharing of knowledge and in the sharing of our decisions as to how to use it...In the long run, if we do not advance together, we are likely to find that we have not advanced at all."

*Source: Frederick H. Bair, Jr.;
Planning Cities, pg. 40*

Input collected via public involvement is a key aspect of plan development. There are numerous ways in which public participation was sought during this process:

- Neighborhood workshops
- Key stakeholder interviews
- Open house meetings in locations throughout the city
- Online surveys
- Meeting-in-a-Box workshops
- Discussions with key City staff and partner agencies such as the school districts
- Public hearings

These public participation activities provided multiple and frequent opportunities for the citizens and stakeholders of Frisco to provide input throughout the process and City officials, City staff and the general public were able to review and comment on the draft Plan on a number of occasions prior to its adoption by City Council.

The plan is intended to be used as a strategic policy guide for staff and City for the long term fiscal and built environment of the City. It is intended to be iterative in nature and should be reviewed and updated periodically so that it remains a valid policy document.

The Vision

The vision statement is the overall declaration of what Frisco desires to be in the long-term. Policy and decision-making should be compatible with this statement, (*see also Chapter 2, Principles & Actions*).

Vision Statement

Frisco is vital, desirable and resilient because its strong sense of community is based on:

- High-quality, people-oriented design;
- Celebration of distinctive natural and cultural assets and a unique Frisco identity;
- Effective and sustainable use of limited resources, including public funds; and
- Provision of public facilities, services and amenities that residents and businesses need for their own continuing success.

Guiding Principles













Twelve overarching ideals have been identified as key concepts for promoting Frisco as a desirable place in the future. These Guiding Principles represent the direction received by the planning team from Frisco stakeholders during the planning process, *(see also Chapter 2, Principles & Actions)*. The City should work to achieve these Guiding Principles as it implements the 2015 Comprehensive Plan, *(see also Chapter 10, Implementation)*.

- PRINCIPLE 1:** Frisco is sustainable — desirable and resilient over time — in terms of its residential areas, infrastructure, economy and resource use and contains walkable places that remain distinctive and appealing over time.
- PRINCIPLE 2:** Frisco’s natural assets and open spaces are retained and are valued focal points for the community.
- PRINCIPLE 3:** Frisco invests in infrastructure and facilities to keep pace with its growth in residents and jobs.
- PRINCIPLE 4:** The Frisco community offers quality education and training for children (K-12), college age students and adults.
- PRINCIPLE 5:** Frisco is a high-quality community in terms of its design, amenities and quality of life.
- PRINCIPLE 6:** Frisco is a healthy and safe community.
- PRINCIPLE 7:** Frisco is diverse, with a variety of housing, shopping, arts/culture and entertainment choices.
- PRINCIPLE 8:** Frisco has a strong sense of community.
- PRINCIPLE 9:** Frisco’s neighborhoods—of all types—remain vital and desirable, even as they mature, and provide a variety of housing choices that meet the needs of people at all stages of their lives.
- PRINCIPLE 10:** Frisco has a diverse economy and is recognized as a major DFW employment center and a regional event, sports and cultural destination.
- PRINCIPLE 11:** Frisco is a walkable city where most residents have ready access from their homes to schools, jobs, open spaces, shopping, entertainment, a variety of mixed-use places and other destinations using travel modes in addition to the auto (such as walking, biking and public transportation).
- PRINCIPLE 12:** Frisco coordinates its land use patterns with the City’s mobility network to minimize traffic congestion.

Future Land Use Plan

One of the most important elements of the 2015 Comprehensive Plan is the Future Land Use plan, which serves as the foundation for guiding future land use in the City. The Future Land Use plan identifies 12 unique development styles for the city, branded as Place Types, (*see also Chapter 4, Land Use, pp. 42-47*).

Two of the Place Types are residential in nature, and seven are activity centers of varying intensity envisioned as locations for jobs, entertainment, mixed-use and a live-work-play environment. The remaining three focus on public/semi-public uses, park/open space and the floodplain areas. For each Place Type, there is a corresponding description of intent, character and appropriate land uses. It is important to note that the Future Land Use Plan must be seen as advisory in nature; the City's zoning ordinance is the official legal guide for development controls.

	Suburban Neighborhood
	Town Center
	Mixed-Use Neighborhood
	Transit Oriented Development (TOD)
	Urban Center
	Suburban Regional Activity Center
	Commercial Node
	Business Park
	Industrial Park
	Public / Semi-Public
	Park
	Floodplain

Implementation

The implementation of any Comprehensive Plan requires the identification of key steps and actions required to further the City of Frisco's priorities for the future. It prioritizes implementation strategies according to the substantive elements within the plan and identifies a time frame for undertaking the strategy and the parties and partners responsible for moving the plan ahead, (*see also Chapter 10, Implementation*).

Implementation Strategy Development Process

Implementation strategies for this Comprehensive Plan were identified, vetted and approved through a combination of methods aimed at achieving the highest level of public input possible.

These methods included:

- Input and brainstorming with the public via public meetings, online surveys and individual discussions
- Stakeholder interviews
- Planning team technical analysis and review of best practices from other communities
- Coordination with concurrent planning efforts involving the City and other agencies and direction from staff
- Review, prioritization and consensus agreement with the Comprehensive Plan Advisory Committee (CPAC)

The Implementation Strategies matrix provides a list of action items organized by category. Time frames are established to better schedule particular actions since not all strategies can be implemented at once, or because the actions need to occur in a certain order to achieve efficiency and success. Time frames in the matrix have been generalized into three groups subject to workload and budget:

- Short-Term – 0 – 2 Years
- Mid-Term – 2 – 5 Years
- Long-Term – 5+ years

Partnerships

The partners identified below will play an important role in implementing the Comprehensive Plan.

City of Frisco

- For all items in the Implementation Strategy matrix, the City of Frisco will have a role. If a strategy was viewed as a priority by the community but not seen as within the City's purview, the City would be expected to be a key participant in working with the lead entity to accomplish that task.

Community Members

- Community members are an important and integral piece of Comprehensive Plan implementation. The City Vision and Guiding Principles should be championed by community members, including property owners, businesses, residents, homeowners associations and other organizations investing in the community in order for the Plan to be achieved.

Local Agencies

- Coordination with local agencies will assist with the provision of the quality community services and facilities necessary for the prosperity of the City.

County-level Agencies

- Partnerships with Collin County and Denton County will assist Frisco in the coordination of City, County and regional implementation efforts.

Regional and State Agencies

- Coordinating with regional and State-level agencies will also be part of the implementation plan.

Public-Private Partnerships

- Public-private partnerships provide the opportunity for the City and its partner agencies to work with the private and non-profit sectors to meet public and private needs, jointly participate in the implementation measures.

Key Implementation Strategies

The implementation strategy is a means of linking the priority needs and opportunities, identified through the public engagement process, to specific actions, programs and policies that the City should undertake to address them. This section highlights key implementation strategies being recommended as a part of the Comprehensive Plan's 10-year (2015-2025) work program. These Implementation Strategies are provided from a community-wide standpoint. The key action themes for the next 10 years include:

1. Guidelines

- Update or enhance design guidelines to support Place Making in key Place Type areas and the use of natural areas and resources in the design of Frisco neighborhoods and amenities.

2. Regulations

- Review and update landscape regulations for private developments and City infrastructure projects to ensure wise water use.

3. Financial Incentives

- Review and refine FEDC incentive programs to maximize their support for Comprehensive Plan implementation.

4. Capital Investments

- Review and revise City street design standards as necessary to follow Place Making principles.

5. Education and Communication

- Establish a process for regular review of progress on plan implementation.

6. Partnerships

- In collaboration with educational entities, conduct a study to determine potential locations for higher education facilities in Frisco.



2 | PRINCIPLES & ACTIONS

2015 Comprehensive Plan Vision Statement

A vision statement is an overall declaration of what a community desires to be in the long-term. The Comprehensive Plan Advisory Committee (CPAC) created this vision statement and a set of supporting guiding principles to provide overall direction to help guide City policy and decision-making thus shaping this community's future over many years.

Frisco is vital, desirable and resilient because its strong sense of community is based on:

- High-quality, people-oriented design;
- Celebration of distinctive natural and cultural assets and a unique Frisco identity;
- Effective and sustainable use of limited resources, including public funds; and
- Provision of public facilities, services and amenities that residents and businesses need for their own continuing success.

The City Council prepares Council Goals at its Strategic Work Session each year. Council's priorities for 2014 were reviewed by CPAC during the development of the Comprehensive Plan vision and guiding principles. These Goals and the Council's *Strategic Focus Areas* played an important role in the construction of this Comprehensive Plan. The relationships between the City Council's Goals and *Strategic Focus Areas* is shown in *Appendix A1, Strategic Focus Areas*.

Guiding Principles

- PRINCIPLE 1: Frisco is sustainable — desirable and resilient over time — in terms of its residential areas, infrastructure, economy and resource use and contains walkable places that remain distinctive and appealing over time.
- PRINCIPLE 2: Frisco's natural assets and open spaces are retained and are valued focal points for the community.
- PRINCIPLE 3: Frisco invests in infrastructure and facilities to keep pace with its growth in residents and jobs.
- PRINCIPLE 4: The Frisco community offers quality education and training for children (K-12), college age students and adults.

- PRINCIPLE 5: Frisco is a high-quality community in terms of its design, amenities and quality of life.
- PRINCIPLE 6: Frisco is a healthy and safe community.
- PRINCIPLE 7: Frisco is diverse, with a variety of housing, shopping, arts/culture and entertainment choices.
- PRINCIPLE 8: Frisco has a strong sense of community.
- PRINCIPLE 9: Frisco's neighborhoods—of all types—remain vital and desirable, even as they mature, and provide a variety of housing choices that meet the needs of people at all stages of their lives.
- PRINCIPLE 10: Frisco has a diverse economy and is recognized as a major DFW employment center and a regional event, sports and cultural destination.
- PRINCIPLE 11: Frisco is a walkable city where most residents have ready access from their homes to schools, jobs, open spaces, shopping, entertainment, a variety of mixed-use places and other destinations using travel modes in addition to the auto (such as walking, biking and public transportation).
- PRINCIPLE 12: Frisco coordinates its land use patterns with the City's mobility network to minimize traffic congestion.

Principles by Strategic Category

The Vision Statement and 12 Guiding Principles presented provide the overall policy direction for this Comprehensive Plan. More specific guidance is provided by a set of strategies that focus on seven important substantive categories. These seven categories are:

- *Placemaking & Resiliency*
- *Land Use*
- *Economic Policies*
- *Public Health & Safety*
- *Ecology & Natural Resources*
- *Infrastructure*
- *Transportation & Mobility*

Principles that address particular aspects of these categories are cited below, as well as in the seven strategy chapters that follow. The strategies provide detail and direction for the implementation plan, which is the pathway to achieving the community's vision for the future of Frisco, (*see also Chapter 10, Implementation*).

Placemaking & Resiliency

(See also Chapter 3, Place Making & Resiliency)

- PRINCIPLE 1: Create distinctive destinations that attract people and encourage social interaction.
- PRINCIPLE 2: Create great streets with human-scaled architecture, walkability, attractive amenities and an engaging street wall.
- PRINCIPLE 3: Build for the long term value of both the development and the community with safe streets and neighborhoods, high-quality buildings that can adapt easily to the changing demands of the marketplace, a range of housing options and a variety of gathering spaces.
- PRINCIPLE 4: Encourage a mixture of land uses in an active pedestrian environment and a network of sidewalks and trails that links people that link people of all ages and physical abilities to their destinations.
- PRINCIPLE 5: Encourage environmental responsiveness, preserving and enhancing natural areas for the health, aesthetic, infrastructure and economic benefits the community will receive.

Land Use

(See also Chapter 4, Land Use)

- PRINCIPLE 1: Encourage the most desirable, efficient use of land while maintaining and enhancing local aesthetics.
- PRINCIPLE 2: Encourage a balance of land uses to serve the needs of citizens and to ensure a diverse economic base.
- PRINCIPLE 3: Ensure that land use recommendations for development and redevelopment respect environmental factors and support innovative design.
- PRINCIPLE 4: Create dedicated land use and infrastructure policies that focus on Center City.

Economic Policies

(See also Chapter 5, Economic Policies)

- PRINCIPLE 1: Continue to diversify the local economic base and strengthen and stabilize the tax base.
- PRINCIPLE 2: Create quality working environments that foster an attractive sense of place.
- PRINCIPLE 3: Encourage a full-service array of retail and service opportunities.
- PRINCIPLE 4: Ensure that a broad range of housing alternatives are available for employees, employers and residents transitioning to various lifestyle stages.
- PRINCIPLE 5: Encourage dialogue between local colleges and universities, private sector businesses and the City's partner agencies to create programs that will develop a high-quality workforce by making opportunities for life-long learning accessible.

Public Health & Safety

(See also Chapter 6, *Public Health & Safety*)

- PRINCIPLE 1: Promote community well-being by designing Frisco's neighborhoods, thoroughfares and public facilities so that residents can choose an active, healthy lifestyle.
- PRINCIPLE 2: Provide access to walking and biking trails for people of all ages and physical abilities within and close to Frisco neighborhoods
- PRINCIPLE 3: Use Code Enforcement and the Housing Rehabilitation Program, which provide assistance to those with special needs—elderly, disabled and economically disadvantaged persons—as part of the strategy for helping Frisco neighborhoods remain desirable over time.
- PRINCIPLE 4: Use Code Enforcement and the Affordable Housing Division as tools to implement the City's *Neighborhood Partnership Plan (NPP)*, including a focus on older neighborhoods, and evaluate the NPP every five years for its effectiveness and any needed updates.
- PRINCIPLE 5: Continue to use the City's annual inspection of multi-family units to ensure that apartments and urban living units are code compliant.
- PRINCIPLE 6: Address the desire of all people in Frisco, including those with special needs, such as the elderly, disabled and economically disadvantaged, to live active lives and find the resources necessary to meet their daily needs.
- PRINCIPLE 7: Identify services and programs that can help Frisco residents who are struggling meet their most pressing needs—transportation, affordable housing and mental health services—in an efficient and economical way.
- PRINCIPLE 8: Train staff to work with applicants in the design of Frisco's neighborhoods and business areas for safety using the principles of *Crime Prevention through Environmental Design (CPTED)*—a technique that uses design features such as fencing, lighting, open views and access control to deter crime and enhance the police department's efforts to maintain a secure community.

Ecology & Natural Resources

(See also Chapter 7, *Ecology & Natural Resources*)

- PRINCIPLE 1: Utilize the 1999 Environmental Attributes Analysis in the review of zoning applications and the design of capital infrastructure as a resource for identifying and preserving limited natural resources and unique natural assets and creating amenities for the community.
- PRINCIPLE 2: Adopt and implement planning and development practices that encourage public and private property owners to maintain, or even enhance, the quality of the region's air, aquifers, streams and lakes, to conserve water and to retain important natural assets as focal points and amenities.

- PRINCIPLE 3: Continue Frisco’s leadership in green design planning and engineering for residential and commercial buildings and encourage the design of City facilities, development sites and neighborhoods based on low life-cycle cost and green engineering principles.
- PRINCIPLE 4: Develop and use Frisco’s floodplain areas to maximize stormwater management, protect surrounding properties from extreme weather events, preserve natural areas as amenities and minimize future costs and liabilities for the community.
- PRINCIPLE 5: Protect, enhance and increase healthy tree cover throughout Frisco to maximize the many benefits that trees bring to the community—lower energy costs, reduced heat island effect, shaded walkways, improved air quality, increased livability and enhanced quality of life.
- PRINCIPLE 6: Use non-renewable energy resources efficiently, take advantage of opportunities to conserve energy, use renewable energy resources when feasible and cost-effective and encourage Frisco businesses and residents to do the same.
- PRINCIPLE 7: Evaluate methods for monitoring the community’s environmental footprint and look for ways to reduce this footprint when doing so is consistent with other quality-of-life objectives.
- PRINCIPLE 8: Continue to play a leadership role in the region’s efforts to maintain and enhance North Texas’ air and water quality and natural assets, particularly among the growing suburban cities in the area.
- PRINCIPLE 9: Take advantage of Frisco’s natural areas and features to create focal points, connect City and regional network of trails and contribute to the identity of Frisco’s neighborhoods and the daily life of Frisco’s residents.
- PRINCIPLE 10: Partner with residents and businesses, schools and outside organizations to offer programs that educate and engage Frisco citizens in the benefits of sharing nature and using resources responsibly.

Infrastructure

(See also Chapter 8, Infrastructure)

- PRINCIPLE 1: Identify, prioritize and adopt a funding strategy, based on preliminary cost estimates, for the infrastructure projects necessary to support new construction so that the improvements are in place when they are needed.
- PRINCIPLE 2: Give the same level of importance and attention to the maintenance of infrastructure as to the construction of new facilities.
- PRINCIPLE 3: Prioritize infrastructure improvements and maintenance projects to provide the best economic return to the City.

Transportation/Mobility

(See also Chapter 9, Transportation/Mobility)

- PRINCIPLE 1: Maximize the capacity of the current mobility network by making improvements within the existing right-of-way where possible.
- PRINCIPLE 2: Upgrade existing roadways and create new streets with aesthetically pleasing features appropriate to the adjacent land use and the roadway type.
- PRINCIPLE 3: Construct new roadways so that they respect the natural environment.
- PRINCIPLE 4: Make future multi-modal mobility choices—walking, biking, transit—available to Frisco citizens to help reduce vehicular trips on city streets.
- PRINCIPLE 5: Integrate planned land uses with the City’s multi-modal mobility network.
- PRINCIPLE 6: Increase the interconnection of roads and trails as feasible.
- PRINCIPLE 7: Design local neighborhood streets to discourage speeding and maximize safety.
- PRINCIPLE 8: Continue to employ Transportation System Management (TSM) strategies to maintain and/or improve mobility.
- PRINCIPLE 9: Employ Transportation Demand Management (TDM) techniques to reduce traffic demand.
- PRINCIPLE 10: Continue to work with outside agencies to promote mobility improvements.



3 | PLACEMAKING & RESILIENCY

“...Streets and their sidewalks, the main public places of a city, are its most vital organs. If a city’s streets and sidewalks look interesting, the city looks interesting; if they look dull, the city looks dull.”

—Jane Jacobs

Placemaking and Resiliency Principles

- PRINCIPLE 1:** Create distinctive destinations that attract people and encourage social interaction.
- PRINCIPLE 2:** Create great streets with human-scaled architecture, walkability, attractive amenities and an engaging street wall.
- PRINCIPLE 3:** Build for the long term value of both the development and the community with safe streets and neighborhoods, high-quality buildings that can adapt easily to the changing demands of the marketplace, a range of housing options and a variety of gathering spaces.
- PRINCIPLE 4:** Encourage a mixture of land uses in an active pedestrian environment and a network of sidewalks and trails that links people of all ages and physical abilities to their destinations.
- PRINCIPLE 5:** Encourage environmental responsiveness, preserving and enhancing natural areas for the health, aesthetic, infrastructure and economic benefits the community will receive.

Introduction

Placemaking is the foundation for creating a desirable city, and adherence to the principles of Placemaking will be critical in determining Frisco’s future.

Placemaking is about putting people first.

When people have a choice about where to live, they seek out the places that offer community, connection and a higher quality of life. Three elements crucial to a successful city—good schools, a variety of services, and strong aesthetics—combine to create strong and resilient places that attract people, shore up property values and help maintain a healthy revenue stream for the city.

Successful “Placemaking” is creating memorable places that engage people. These places tend to emerge where a city and/or a developer takes advantage of the attributes of the surrounding area—topography, vegetation, land uses, building form—and utilizes those attributes to create a place that is distinctly different from any other place in the region. They have a sense of authenticity rather than a Disneyland feel, (*see also Appendix A2, Placemaking & Resiliency*).

Street rights-of-way are one of the most overlooked opportunities for shaping a community’s image, (*see also Appendix A2, Placemaking & Resiliency and Appendix A8, Transportation/Mobility*). Street rights-of-way

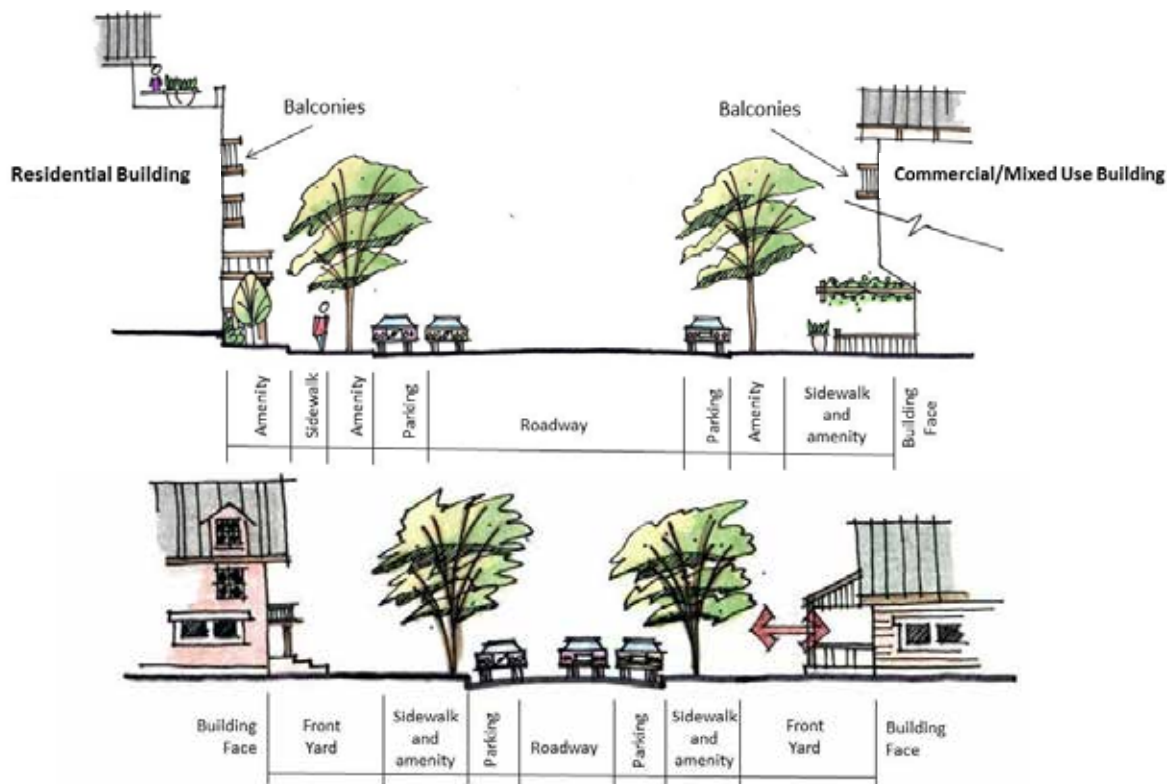


Figure 3-1: Street Right-Of-Way Design

are generally the single largest land use within a city. Everyone who lives, visits or travels through a city develops a perception of the community and decides what kind of place it is and how desirable it would be to live or work there based on the impression they get as they travel on city streets.

When people drive, use transit, walk or cycle into Frisco, they should be struck by the fact that they are in a special community. The best way to achieve this feeling is not just with signage, banners or entry monuments, but with the design of streets and trails, the siting and design of

buildings and the use of streetscaping and strategically located open space.

“Resiliency” is ensuring that a place will continue to be desirable in comparison with other areas, maintaining and even increasing its value over time and through economic cycles. Resilient places like Highland Park, University Park, and the “M Streets” in Dallas embody many of the guiding principles listed above, and their residents tend to display a strong sense of pride and community cohesion.

Maturing suburban cities begin facing the challenge of aging properties, sagging property values and declining sales tax revenues at about the same time as the need for major maintenance occurs on crumbling infrastructure, (*see also Appendix A2, Placemaking & Resiliency*).

Placemaking techniques can help create and maintain higher property values and attract reinvestment. The application of placemaking principles, however, will not occur without City leadership.



The Value of Placemaking

There are two types of value - **initial value** and **long-term value**. Initial value benefits meeting an immediate market demand and converting vacant land into a new use by improving it with buildings and utilities. Over time, however, the value of the investment often tends to decline, and this can be challenging for communities.

The city has a fiscal obligation to its citizens to ensure that there is a diversity of commercial and residential projects, firmly based on quality Placemaking principles, so that businesses and residents are committed to the city and their neighborhoods for the long term and will invest and reinvest in their properties.

Proven techniques for enhancing property values and attracting reinvestment include, but are not limited to:

- The provision and integration of open space can significantly enhance property values.
- Expressing natural features like topography, vegetation, creeks and drainage can provide a community with personality and beauty, distinguishing it from neighboring cities and helping to define the community's unique DNA.
- Trees provide relief from the harshness of roads and buildings and have a significant effect on making both the indoor and outdoor environment more comfortable.

An astute developer recognizes the added value that trees, water and unique land formations can bring to a project; i.e. designing with the natural environment rather than trying to minimize it.

- Natural areas should be encouraged to be, or perhaps required to be, preserved for the betterment of the community and the people in it, even in the heart of the urban environment, (see also Appendix A2, *Placemaking & Resiliency*).



Placemaking and Resiliency

Developments that incorporate sound Placemaking principles as a fundamental part of the design process will stand out as unique, identifiable places that attract businesses and residents and create higher property values in both the short term and the long term.

These key consideration can combine to create a place that is much greater in total than the sum of its parts—a truly great place.

Great Streets



Great streets comfortably accommodate multiple users—cars, pedestrians and bicycles—and are defined by buildings and streetscaping.

- When streets are designed so that traffic moves at speeds of 20 to 25 mph, all users can share the street. Drivers are moving slowly enough to watch for pedestrians and to see signs and signals; pedestrians

feel safe crossing the roadway; cyclists can blend in with vehicular movement.

- Streetscapes should not be dominated by parking lots. Parking should generally be maximized on non-arterial streets to provide visitors and customers easy access to adjacent properties.

Additional parking, including garages and loading bays, should be relegated to secondary streets and alleys and the center of blocks which are largely lined with buildings and landscaping.

- Parking should also be shared among the non-residential uses in mixed-use districts to minimize the amount of parking that is reserved for individual users. This technique improves the efficiency of parking and reduces the total number of spaces that must be built to accommodate development.

One way to accomplish this objective in larger development parcels is to establish a parking district that would consolidate employee and visitor parking in locations meeting the criteria outlined above. This approach could also accommodate changes in uses without triggering the requirement for the construction of new parking facilities. A district of this sort could be managed by a parking authority or district association.

Great Places

Creating great destinations involves the development of places that people are attracted to—compact places that feel comfortable and provide opportunities for pedestrian activity and social interaction. This principle has great implications for those considering how to arrange land uses and how to design streets and buildings, especially at street level. These key consideration can combine to create a place that is much greater in total than the sum of its parts—a truly great place.

The concept of building for the long term promotes the construction of a high-quality infrastructure of buildings that do not have to be



demolished once the original tenant has vacated.

- Great cities contain buildings that are well-sited, constructed for pedestrian access and provide a feeling of enclosure for the adjoining public space, including streets, open space and plazas.
- A combination of flexible building types, a flexible site layout and focusing retail and mixed-use into compact pedestrian-oriented centers can help expedite the reuse, reinvestment and re-purposing of buildings; and in encouraging people to stay, socialize and reinvest in the development.
- A range of neighborhoods and housing choices should also be encouraged in order to fill a variety of needs and markets. These choices could include:
 - Lofts with or without retail/flex space at grade;
 - Urban living units;
 - Live/Work units;

- Townhomes;
- Detached single-family residences; and
- Estate homes.
- Integrating a variety of uses within a development supports the concept of creating engaging places by mixing land uses—retail, personal service, residential and office—to help animate the area by encouraging activity during the day, in the evening and on weekends.
- Linking mixed-use and retail centers to their surroundings and other districts in the city is an important aspect of Placemaking. These great places should have clear edges, human-scaled architecture, walkable streets, public gathering spaces, attractive amenities and eye-catching detail.
- Flex space that can accommodate either retail or restaurant uses should be constructed along primary pedestrian corridors and should incorporate windows and entrances that open directly to the sidewalk. These spaces can be populated with stores, restaurants and “third places”—places that are neither home nor work, but where people meet, visit and exchange ideas. They also help create an engaging walking environment.
 - Flex space at-grade can be defined as building space which has at least a 14-foot clear ceiling height and a façade that has the structural capability to accommodate changes in the amount of glazing and the number of entries.
- Compact centers should also have pockets of green space, connectivity to neighborhoods, ADA-compliant trails and cultural and recreational activities. Green spaces, parks and plazas will provide focus for the center and surrounding neighborhoods, and the trail connections will help link users to their destinations.

Image

A city has a number of opportunities to create a positive community image, (*see also Chapter 10, Implementation*). Most important among them are:

- The design and framing of streets (including streetscaping);
- The location and design of public and private open space;
- The design of civic buildings;
- The interaction of buildings with the street and their surroundings; and
- The ability to regulate building form in certain situations.

In terms of image and placemaking, Frisco has successfully incorporated these concepts into projects such as:

- Frisco Square, which includes City Hall, Frisco Bridges, Dr. Pepper Ballpark, Dr. Pepper Arena, Toyota Stadium, Newman Village, Griffin Parc (Phase 2) and mixed-use buildings with urban living units, retail and restaurants;
- Stonebriar Commons, which features employment, shopping areas, hotels and urban living units; and
- The proposed Grand Park, which will include commercial and residential uses and a major open space area.

Building on these and other positive examples will help to further distinguish Frisco as a premier city for living, doing business and visiting.

Placemaking Examples

The examples labeled “Not Preferred” on the following pages might meet minimum zoning and engineering standards, but would not convey a sense of a desirable place. Some of the images represent streets and places that fall short of the target, either aesthetically or functionally.



Frisco Square serves as the heart of the community and is an investment in the City's future. As each building is constructed in this civic mixed-use center, it enhances the sense of place and becomes increasingly more active with pedestrians and events. The layout and buildings are based on timeless principles and will serve future generations of Frisco residents well.



Newman Village is a good example of a walkable neighborhood that includes homes facing open space, public art and generous landscaping and streetscape, all of which will increase the value of properties not only now, but also in the long term.



Open space will be a major visual and recreational amenity for the City and will attract a broad range of development activity. Its regional identity will enhance Frisco's image and result in increased value for projects located near it.

Pedestrian Environment: Commercial Streets

(See also Appendix A8, Transportation/Mobility).

Not Preferred



- A poor pedestrian environment results from the lack of interaction between the building and the sidewalk
- Few windows and entrances interacting with the street reduces pedestrian activity and safety
- A lack of shade, because of greater spacing between trees, also deters pedestrians



- Narrow sidewalks make walking difficult for pedestrians, especially movement-impaired individuals and for socialization

Preferred



- Windows and doors provide articulation and detail of buildings
- Wide sidewalk allows for various users
- Active ground floor uses
- Shading for pedestrians provided by tighter spacing of trees



- Outdoor dining creates an active and inviting public realm
- Street trees provide shaded sidewalks
- Sufficient sidewalk width for pedestrians to navigate

Pedestrian Environment: Residential Streets

Site layout and design can have a large impact on the creation of long-term value and is important in supporting community image.

Not Preferred



- Straight treeless streets
- Wider than necessary street encourages speeding and discourages pedestrian and social interaction



- Large amounts of paving absorb and radiate heat during the summer months for the pedestrian environment when there are no trees to provide shade
- Front-loaded garages on narrow lots present an unattractive face, create more pedestrian conflicts, and severely restrict visitor parking



- Unattractive streetscape
- Fencing homes and neighborhoods from local streets reduces pedestrian safety, encourages speeding traffic and is not pedestrian-friendly

Preferred



- Street trees provide shade canopy and value



- Street trees and on-street parking tend to slow traffic naturally, providing shade for pedestrians and a physical barrier to active traffic



- Clear demarcation of the building entrance to landscaped street encourage pedestrian and social interaction

Building Form

A building's form determines how it will interact with the environment. This form also dictates the potential uses and reuses that are possible on the site

Not Preferred



- Large blank buildings are less flexible for redevelopment and adaptive reuse
- Lost opportunity for a landmark building



- Buildings with large expanses of blank wall do not interact with the surrounding environment, are devoid of activity, and inappropriate in a pedestrian oriented district

Preferred



- Buildings scaled to the pedestrian interact more with the environment and allow for a greater variety of uses and activities



- A mixture of scales and uses are more visually stimulating and have greater appeal to attract pedestrians

Site Layout

Site layout and design can have a large impact on the creation of long-term value and is important in supporting community image.

Not Preferred



- Large building setbacks and parking in front of the buildings reduce the vibrancy of both the corridor and the city as a whole



- Large Parking areas located in front of the building inhibit pedestrian accessibility and options for commercial reuse

Preferred



- Buildings that are pulled up to the street create a more varied and cohesive streetscape, resulting in a more active corridor and higher values over time



- Retail that includes shaded walkways and places to sit encourages socialization and tends to be more successful at attracting shoppers and reinvestment

Townhomes

Not Preferred



- Public face dominated by garage doors



- Visitor parking is almost nonexistent because of front-entry garages on narrow lots



- Large volumes of paving and roadways create heat sinks in summer that contribute to the urban heat island effect

Preferred



- Buildings with trees and lots of windows are more inviting and desirable, resulting in higher property values



- These townhomes relate to the sidewalk and encourage social interaction



- Townhomes should have architecturally appealing end caps that create an interesting façade to the street and an inviting presence to the sidewalk

Public and Private Open Space

The integration of open space into both residential and commercial development provides focus and helps create a sense of community and a place where people can meet and engage with other users.

Not Preferred



- This open space provides no benefit for the homeowners, and could be a potential safety liability



- Large open spaces that are unplanned and unshaded add little aesthetic or functional value to the neighborhood
- Unnecessary wide street

Preferred



- Homes that face public open space benefit with a premium of up to 23% in value and improved safety
- *Valuing Open Space: Land Economic and Neighborhood Parks. MIT, 2001.*



- Sidewalks and shade trees create pleasant spaces for community interaction and exercise

Public and Private Open Space

Not Preferred



- Lack of a plan or amenities results in little value for the surrounding residents
- Little visual interest
- Minimal tree planting provides little to no shade for users



- A barren, uninviting space becomes a negative influence on the surrounding area
- No shade
- Lacks character

Preferred



- A variety of programming elements makes the open space more inclusive and useful for a variety of activities
- Numerous trees for shading and strategically planted to provide an area for active use



- Trees in public spaces create shade and a sense of enclosure that makes the space feel comfortable and facilitates community interaction
- Movable chairs for people to use

Public and Private Open Space

Not Preferred



- Open space that does not integrate with the surrounding urban environment creates dead, vacant space
- Barrier around the space
- Lack amenities to attract people



- Urban open space is often a left over rather than planned, providing little benefit to the businesses that surround it, such as restaurants, bakeries, and coffee shops

Preferred



- Interjecting open space into the urban fabric creates communal space and a sense of identity for the surrounding neighborhood
- Open to the street at the ends
- Units front open space on the other two sides



- Shade and visibility create a sense of protection and are an important elements of urban open space



- Successful urban open space can be active, offering opportunities to socialize and people watch

Response to Site Conditions

Several of these examples demonstrate the use of site conditions to create value for surrounding properties.

Not Preferred



- A concrete-lined channel creates an ugly wound on the landscape and lowers neighboring property values. Stormwater volume and velocity can also be dangerous during storm events



- On-site storm detention is often maximized by using steep slopes which must be fenced for safety

V Preferred



- This detention area is little more than an open pit in the ground, with no amenities for the area
- Stark concrete structures eyesores



- A fence is necessary to prevent people from falling into the detention area, but the fence prevents any interaction with the space
- A ramp is provided for maintenance, but does not allow access for other uses

Response to Site Conditions

Appropriately handled, existing site conditions can give an area a sense of uniqueness and “place”, (see also Chapter 7, Ecology & Natural Resources).

Not Preferred



- While the wide open space is highly accessible, it can be improved with shade, trees and diversity of amenities



- Plain concrete culverts are eyesores that detract from the local environment

Preferred



- Building an attractive bridge is much more appealing than an industrial concrete culvert



- The simple act of facing a culvert bridge with masonry can turn an eyesore into an amenity

Response to Site Conditions

Preferred



- This space provides seating areas and plantings as amenities
- The site is designed to facilitate interaction with pedestrians



- As in other examples, a walking path makes the space interactive
- A local restaurant is oriented towards the space, using it as an asset for business

Preferred



- Terracing creates both ample seating, while a pathway and benches allow pedestrians to interact with the space
- The drainage pond functions as an attractive focal point for the area



- A walkway winding through various levels and native plantings invites pedestrians into the space
- An amphitheater transforms the area into a destination in its own right, while the terracing acts as biofiltration for storm runoff

Response to Site Conditions

Preferred



- Pergolas along a walkway create a destination for neighborhood residents, inviting pedestrians onto an overlook



- An attractive stone veneer retaining wall and benches create an overlook for pedestrians to enjoy
- Fountains create a focal point for the drainage areax

Preferred



- A naturalized stream bank and pedestrian bridge, along with shade trees and benches, turn this drainage area into an active open space area



- Retaining walls and shade trees create a neighborhood park
- A stone bridge creates an attractive focal point



4 | LAND USE

Land Use Principles

- PRINCIPLE 1:** Encourage the most desirable, efficient use of land while maintaining and enhancing local aesthetics.
- PRINCIPLE 2:** Encourage a balance of land uses to serve the needs of citizens and to ensure a diverse economic base.
- PRINCIPLE 3:** Ensure that land use recommendations for development and redevelopment respect environmental factors and support innovative design.
- PRINCIPLE 4:** Create dedicated land use and infrastructure policies that focus on Center City.

Introduction

This Chapter summarizes a formal Land Use Strategy for the City of Frisco, considering and building upon the Land Use Strategy in the City's 2006 Comprehensive Plan. This Land Use Strategy is one of many important tools for identifying a prosperous path forward for the City. This direction is established through a series of implementation strategies that will help City leaders make important decisions regarding the land use pattern of the community. These decisions will impact the City's infrastructure, municipal services and economic resiliency. The Strategy establishes an overall framework for the preferred pattern of development within Frisco by designating various geographical areas within the City for particular land uses based principally on the specific policies outlined in this chapter. The Land Use Strategy is depicted in graphic form as the Future Land Use Plan (*Figure 4-2*). This Future Land Use Plan will be an important guiding document in the review of zoning and development plan applications.

It is important to remember that, as Chapter 212 of the Texas Local Government Code states, **"A Comprehensive Plan shall not constitute zoning regulations or establish zoning boundaries."** The Future Land Use Plan is not a zoning map, which deals with specific development requirements on individual parcels. Rather, it is a high-level policy document designed to help guide decision-making related to rezoning proposals and for assessing the appropriateness of a particular land use at a specific location within the community. A property owner may choose to develop under the existing zoning regulations regardless of the Future Land Use Plan; however, if a property owner makes an application for rezoning, the 2015 Comprehensive Plan should be an important consideration in the City's approval or disapproval of the proposal.

This chapter generally addresses only the Land Use Principles, Land Use Policies and Future Land Use Plan. The following elements are fully addressed in the *appendices* of this 2015 Comprehensive Plan:

- Population and Demographics
- Existing Land Use
- Land Use Policies
- Guiding Principles
- Future Land Use Plan

In terms of the relationship between this section and the City Council's *Strategic Focus Areas*, the Plan establishes a strategy that promotes, (see also, *Appendix A1, Strategic Focus Areas*):

- High-quality development in a compact urban environment (where possible) and seeks to ensure that the necessary infrastructure and open space can be provided and maintained to support a superior quality of life for residents and businesses, (see also *Chapter 3, Place Making & Resiliency*);
- A sustainable future for the community, helping to ensure that Frisco is not oversaturated with respect to certain land uses, that goods, services and opportunities are available to Frisco residents and that the City has a diverse, sustainable land use pattern which preserves Frisco's solid economic position, (see also *Chapter 5, Economic Policies*);
- The proper location and placement of land uses with respect to the natural environment and in relation to potentially incompatible land uses to create a more resilient city, (see also *Chapter 7, Ecology & Natural Resources* and *Chapter 3, Place Making & Resiliency*); and
- A strong downtown core for the city and acknowledges that this core is the heart of Frisco.

Land Use Policies

- The Land Use Policies below are derived from the Guiding Principles and the Council's *Strategic Focus Areas* and are intended to work in conjunction with the Future Land Use Plan to create a successful future for the City of Frisco. These policies, which include some of the strategies from the 2006 Comprehensive Plan, were used to help guide the development of the *Place Types* and determine the appropriate locations for each type within the Future Land Use Plan. The 2006 principles and policies were vetted as part of the market for traditional garden apartments (**MF**) and was continued in the 2015 update. The ones that remain in this document were deemed to be valid and to

support the direction of the updated plan, (see also *Appendix A3, Land Use*).

1. Encourage sustainable, unique and accessible retail development

The design of retail areas has continued to evolve over time. Today, this category typically includes both single-use and mixed-use retail centers that compete for high-visibility intersections and roadway corridors. In many cases, they are only accessible by automobile. Future retail and commercial development in Frisco should embrace the mixed-use development pattern.

2. Provide urban residential units as one component of a mixed-use environment.

The market for traditional garden apartments continues to wane as mixed-use concepts that have a multi-family component are capturing an increased share of the market. The density that is provided by urban residential development is necessary to support the commercial uses identified in the Future Land Use Plan, and urban residential development (**UL**) with a variety of unit types, such as condominiums and large lofts, is not only ideal in terms of supporting surrounding uses, but also in providing housing choices for young professionals, young married couples and seniors. New garden apartments (**MF**) are not included in the Future Land Use Plan and are only expected to occur in the future where the corresponding zoning exists today.

3. Respect significant local destinations.

The City's many unique sports venues—Toyota Stadium, Dr. Pepper Ballpark, the Superdome, Central Park, Frisco Commons—have helped to make Frisco a recognized destination City. Other significant local destinations include the old downtown area, Frisco Square and Stonebriar Center. These areas are important to the City for a variety of reasons. They provide uniqueness, allow for spectator recreation and preserve local history. They are also important as economic and activity generators that are patronized by citizens and visitors alike. The Future Land Use Plan respects these destinations. Future land use decisions regarding the areas surrounding them should be considered with the goal of ensuring their continued success and sustainability.

4. Encourage mixed-use developments in selected areas.

The Future Land Use Plan has been designed to support this policy with several land use categories intended to encourage a mix of uses—specifically, the Mixed-Use Neighborhood, Transit-Oriented and Urban Center development categories. The Mixed-Use category has been retained, with some modifications. In each of these, the integration of a variety of uses should be supported. These mixed-use categories should not be fully developed with high-density residential uses such as apartments, which are intended to be only one component of this type of development.

5. Provide for a variety of residential development.

Frisco has largely been developed over the last 10 to 20 years, and traditional suburban subdivisions continue to be the norm. As was noted in the 2006 Plan, high-quality housing is in good supply in Frisco, unlike in many cities in the region; however, the lack of diverse housing continues to be an issue, and this has likely affected Frisco's demographics. Specifically, the City continues to attract only small percentages of young, single adults and seniors. This lack of diverse housing types has economic implications as it impacts the ability to attract a variety of employers, (see also *Appendix A5, Market Context*).

Establish specific policies for residential development. New policies should be developed to encourage or require other desired elements of development. This includes, but is not limited to, addressing estate/executive subdivisions, front- and rear-entry standards, curvilinear streets, cul-de-sac standards, and open space, (see also *Chapter 3, Place Making & Resiliency* and *Implementation Strategy G08*).

- Council and CPAC felt strongly that Frisco must focus on creating estate residential housing (1-acre lots and greater) in the community in order to accommodate the needs of the senior executives of the corporations that the community desires to attract. Criteria that should be considered

when evaluating which sites within the *Suburban Neighborhood Category* are best suited for estate residential include:

- sites that currently have agricultural zoning or that are being rezoned,
- sites with significant topographic change,
- sites containing or adjacent to creeks and/or ponds and sites with significant tree stands.

These elements policies and guidelines for residential subdivisions will be established through the creation of a *Neighborhood Design Strategy*.

6. Support downtown Frisco (the original town).

The old downtown area is an interesting and unique part of Frisco. The goal is to encourage preservation of its unique character and to permit a mixed-used development pattern with a distinctive atmosphere and special qualities.

7. Encourage development in infill areas and adjacent to existing developed areas.

The term “urban sprawl” can be defined and assessed as follows: “Land development predominantly on the urban or suburban fringe that is characterized by low-density, separated and dispersed uses dependent on automobiles and economically segregated residential areas. This (type of development) has contributed to environmental degradation, increased traffic congestion, lessened community values and reduced quality of life.”¹ One of the goals of this plan is to avoid creating environments with the characteristics of urban sprawl, (see also *Chapter 3, Place Making & Resiliency*).

8. Establish specific policies for major transportation corridors.

In general, single-family residential neighborhoods should not be located or accessed along major regional transportation corridors, i.e. Dallas North Tollway (DNT), SH

¹ Corrigan, Mary Beth, et al. *Ten Principles for Smart Growth on the Suburban Fringe*. Washington, D.C.: ULI – the Urban Land Institute, 2004. (Catalog Number T24.)

121 and US 380, which are more appropriate for either higher-density residential or non-residential development, (*see also Chapter 9, Transportation/Mobility*).

9. Support existing development.

The City should allocate resources on an annual basis to maintain the developed parts of Frisco to a level of quality consistent with the community in general. Non-residential and residential infill development should be encouraged, and wherever possible, this development should take advantage of existing infrastructure and be designed so that homes are oriented toward parks and open spaces.

10. Integrate land uses with the transportation system.

Transportation is inherently linked to land use. The type of roadway dictates the most appropriate use of adjacent land, and conversely, the type of land use dictates the size, capacity and flow of the roadway. Nonetheless, roadways are often developed and improved only on the basis on the amount of traffic they are carrying or are expected to carry, without much consideration for the existing or expected land use. It is recommended that the City adopt policies that relate the type and intensity of land uses with the transportation system that serves them, (*see also Chapter 9, Transportation/Mobility*).

11. Provide positive land use relationships for public/semi-public uses.

Land uses should be appropriately sited to ensure compatibility of operating hours, traffic impacts and function. Mixed-use or multi-use development patterns are encouraged.

12. Provide for proper transitions between land uses.

On occasion, the owner of land designated and/or developed for residential purposes may have a desire to develop the property for non-residential uses. In that case, the City should require an appropriate transition between the incompatible uses, such as physical separation,

a transitional land use or another measure or combination of measures appropriate to the specific situation.

Future Land Use Plan

The Future Land Use Plan (FLUP) is based on numerous meetings with the public, the City Council, the Planning & Zoning Commission, the Comprehensive Plan Advisory Committee (CPAC), and City staff.

The Future Land Use Plan is not a zoning map, and it does not, by itself, directly affect the regulation of land within Frisco or the Extra Territorial Jurisdiction (ETJ). The Future Land Use Plan is a graphic depiction of Frisco's ideal land use pattern. It should be used by the City to guide future decisions on proposed zoning and development applications and development standards.

While the Future Land Use Plan is an integral part of the overall strategy of the 2015 Comprehensive Plan, the land use policies that support it are also important. These policies are contained in the previous section of this chapter, (*see also Appendix A3, Land Use pp. 115-124*). The descriptions, corresponding map colors and pictures below are provided to clarify the various Place Types shown on the Future Land Use Plan.

Place Types

Place Types represent the various categories of land use permitted in the city. Place types are assigned to general areas of the city that are expected to exhibit characteristics similar to those outlined below and consistent with the overarching policies and land planning policies which have been developed. The Future Land use Plan builds upon 12 different Place Types which are identified and described on the following pages.

Suburban Neighborhood (SN)

Local Examples – Stonebriar, Newman Village, Plantation, Chapel Creek, Hunter's Creek

Character & Intent

100% Residential

Suburban neighborhoods will continue to be the dominate place type in Frisco, supporting multiple generations with residential products ranging from estate residential to townhomes. These neighborhoods would generally be formed as subdivisions with residential densities ranging from 0.5 to 8 dwelling units per acre. This place type includes single-family homes in both detached and attached designs.

Land Use Considerations

Primary Land Uses

Single-family detached homes, duplexes, townhomes

Secondary Land Uses

Civic & institutional uses, parks

Precedent Photos



Town Center (TC)

Local Examples – Frisco Square, Southlake Town Center

Character & Intent

80% Residential, 20% Non-Residential

Frisco's Town Center(s) will be locally-serving areas of economic, entertainment and community activity. They will be employment centers and shopping destinations for surrounding mixed-use or urban neighborhoods, and will provide a civic component where the community can "come together." Buildings will typically be two or more stories with urban residential units over storefronts. The development will encourage active living, with a network of walkable streets.

Land Use Considerations

Primary Land Uses

Single-family detached homes, duplexes, townhomes, urban residential, senior housing, restaurants, community-serving commercial, professional office, live/ work/shop units

Secondary Land Uses

Civic & institutional uses, parks, community buildings

Precedent Photos





Mixed-Use Neighborhood (MXD)

Local Examples – The Canals at Grand Park, Stonebriar Commons, Addison Circle, West Village, West 7th

Character & Intent

80% Residential, 20% Non-Residential

Mixed-use neighborhoods will offer Frisco residents the ability to live, shop, work and play, all within their own neighborhood. These neighborhoods will offer a mix of housing types and residential densities ranging from small lot single-family detached units to urban residential structures within walking distance of the goods and services required for daily living. They will include both vertically and horizontally-integrated mixed-use buildings.

Land Use Considerations

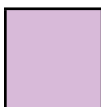
Primary Land Uses

Mixed-uses, retail, restaurants, townhomes, urban residential, senior housing, professional office, live/work/shop units

Secondary Land Uses

Civic & institutional uses, parks, community buildings, single-family detached.

Precedent Photos



Transit Oriented Development (TOD)

Local Examples – Mockingbird Station, East Side Transit Village

Character & Intent

50% Residential, 50% Non-Residential

Transit-oriented development will create a higher –density mix of residential and commercial development within walking distance of transit, (rail and bus rapid transit). In Frisco, this development is expected to be more focused on housing, with higher-density residential development within one-quarter mile of a future transit stop and excellent pedestrian facilities to encourage public transit use.

Land Use Considerations

Primary Land Uses

Townhomes, urban residential, senior housing, restaurants, regional commercial/retail, professional office, live/work/ship units

Secondary Land Uses

Civic & institutional uses, parks, community buildings

Precedent Photos



Urban Center (UC)

Local Examples – Legacy Town Center, Preston Center, State Farm Complex

Character & Intent

30% Residential, 70% Non-Residential

Urban Centers will contain the highest intensity of development in Frisco. These centers will provide locations for both major corporations and their supplier and smaller locally-based entities that desire a more urban environment. While these centers will focus primarily on employment, they also offer a mix of higher density housing, retail and entertainment choices in a scale that is walkable and encourage urban style living. This is a place type desired by millennial residents and emerging businesses.

Land Use Considerations

Primary Land Uses

Professional office, corporate office, townhomes, urban residential, senior housing, restaurants, retail

Secondary Land Uses

Civic & institutional uses, parks

Precedent Photos



Suburban Regional Activity Center (SRAC)

Local Examples – Stonebriar Centre, Dr. Pepper Park, Toyota Stadium, Multi-Purpose Event Center

Character & Intent

25% Residential, 75% Non-Residential

Frisco's suburban regional activity centers will continue to evolve as Mixed-Use centers developed around regional attractions such as entertainment venues, shopping malls or lifestyle centers. While the primary use will continue to be the major draw, a mix of supporting uses including retail, restaurants and residential uses, ranging from urban residential to townhome units.

Land Use Considerations

Primary Land Uses

Regional attractions/venues, urban residential, senior housing, hotels, professional office, corporate office, restaurants, multi-tenant commercial, big box commercial, live/work/shop units

Secondary Land Uses

Civic & institutional uses, parks

Precedent Photos





Commercial Node (CN)

Local Examples – Multiple Nodes at Major Intersections in Frisco

Character & Intent

0% Residential, 100% Non-Residential

Frisco's commercial nodes are characterized by single- or multi-tenant commercial centers located at major intersections. They are typically adjacent to Suburban Neighborhoods and provide for the everyday goods and service needed by the residents in these neighborhoods.

Land Use Considerations

Primary Land Uses

Retail, restaurants, multi-tenant commercial, junior anchor commercial.

Secondary Land Uses

Civic & institutional uses, parks

Precedent Photos



Business Park (BP)

Local Examples – Hall Office Park, Galatyn Park

Character & Intent

0% Residential, 100% Non-Residential

Business parks will provide a major employment base for Frisco and the region, and a higher level of in-town employment options for Frisco residents. Typical uses will include professional offices and limited supporting retail and restaurant uses to support a range of professional activities.

Land Use Considerations

Primary Land Uses

Professional office, corporate office, supporting retail, restaurants

Secondary Land Uses

Retail, restaurants, civic & institutional uses, commercial, parks

Precedent Photos



Industrial Park (IP)

Local Examples – Alliance Center

Character & Intent

0% Residential, 100% Non-Residential

Industrial parks will round out the employment-oriented place types in Frisco. These developments will focus on light industrial uses, including clean manufacturing centers, technology/data centers and other uses that would typically occupy flex space in commercial buildings.

Land Use Considerations

Primary Land Uses

Manufacturing centers, technology/data centers and flex office

Secondary Land Uses

Civic & institutional uses, commercial (serving primarily industrial buildings), parks

Precedent Photos



Other Land Use Categories:

- **Public / Semi-Public:** Uses include civic and institutional uses such as schools, police and fire stations, libraries, etc.
- **Park:** Public open space and park sites.
- **Floodplain:** Creek corridor and floodplain.

Revisions to FLUP

The Future Land Use Plan is identical to the 2006 Future Land Use Plan in most parts of the City, *(see also Appendix A3, Land Use)*. The major updates to the land use pattern in the 2015 Future Land Use Plan occur along the DNT and on the Brinkmann Ranch property. Updates to the Future Land Use Plan include:

- The predominant place type in the city is Suburban Neighborhood, and employment-related Place Types are focused along the DNT, SH 121 and US 380.
- Within the Suburban Neighborhood Place Type, a variety of housing types ranging from estate residential to townhome units are envisioned.
- The DNT corridor includes nodal type development with Urban Center and Business Park Place Types.
- The Future Land Use Plan also provides an opportunity for a focal point/identity feature at the intersection of the DNT and US 380 and continues the emphasis on transit-oriented patterns at the locations designated as potential future transit stations, *(see also Chapter 9, Transportation/Mobility)*.
- An Urban Center place type is shown on part of the Brinkmann Ranch site to indicate the level of development currently entitled on the property under resolution 02-04-78R development agreement established for the property, refer to PD-3 & PD-43.
- An emphasis on creek corridors provides natural open space and locations for trail connections throughout the city, *(see also Chapter 7, Ecology & Natural Resources and Appendix A7, Ecology & Natural Resources)*.

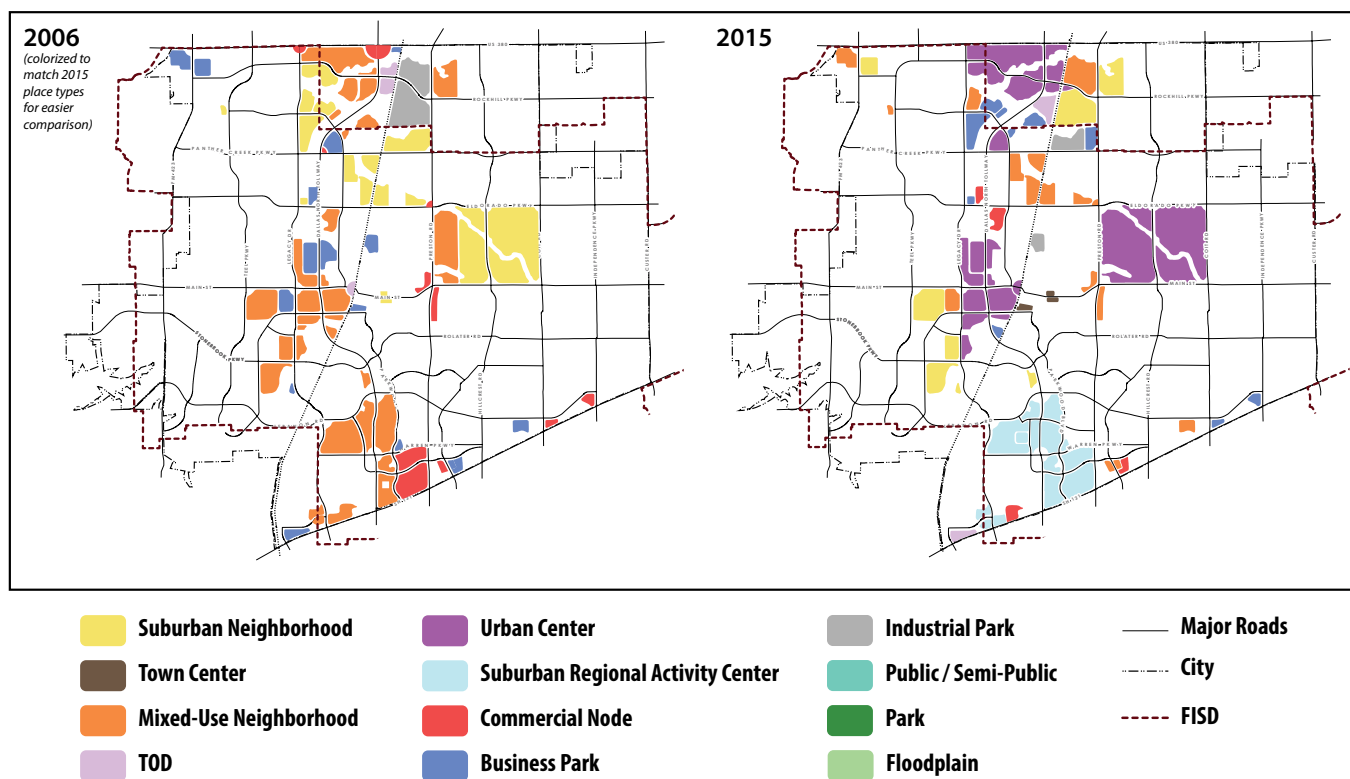


Figure 4-1: Comparison of 2006 Plan to FLUP



2015 Future Land Use Plan

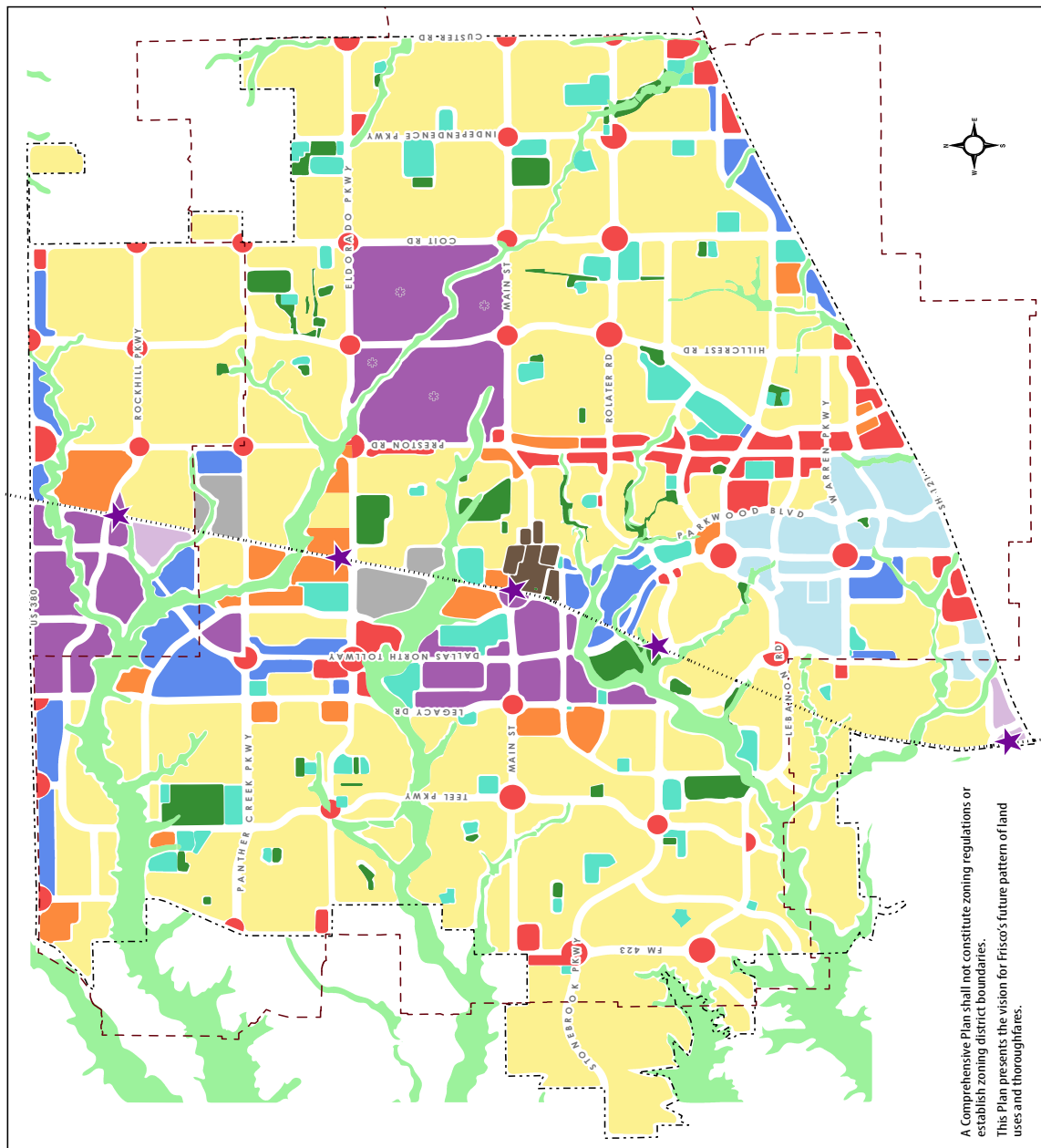


Figure 4-2: Future Land Use Plan

Place Type Calculations

Table 4.1 lists the categories of land use by acreage and percentage of land area, excluding major rights-of-way. This information was calculated based on the recommended pattern of land use depicted graphically on the Preferred Land Use Scenario. Since the 2006 Plan, Frisco has annexed almost all of the available ETJ land. For this reason, the table below consolidates the calculations for the land within the City limits and within the ETJ, (see also Appendix A3, Land Use).

Land Use Category	Acres	Percent
Suburban Neighborhood	4,423	32%
Mixed-Use Neighborhood	1,051	8%
Transit Oriented Development	165	1%
Urban Center	3,314	24%
Suburban Regional Activity Center	592	4%
Commercial Node	1,222	9%
Business Park	1,598	12%
Industrial Park	330	2%
Public/Semi-Public	633	5%
Parks	512	3%
Total by Place Type	13,840	100%
Remaining City Acreage	30,978	
Total City Acreage	44,818	
Total Square Miles	70	

Table 4.1: Future Development Areas, Vacant Land

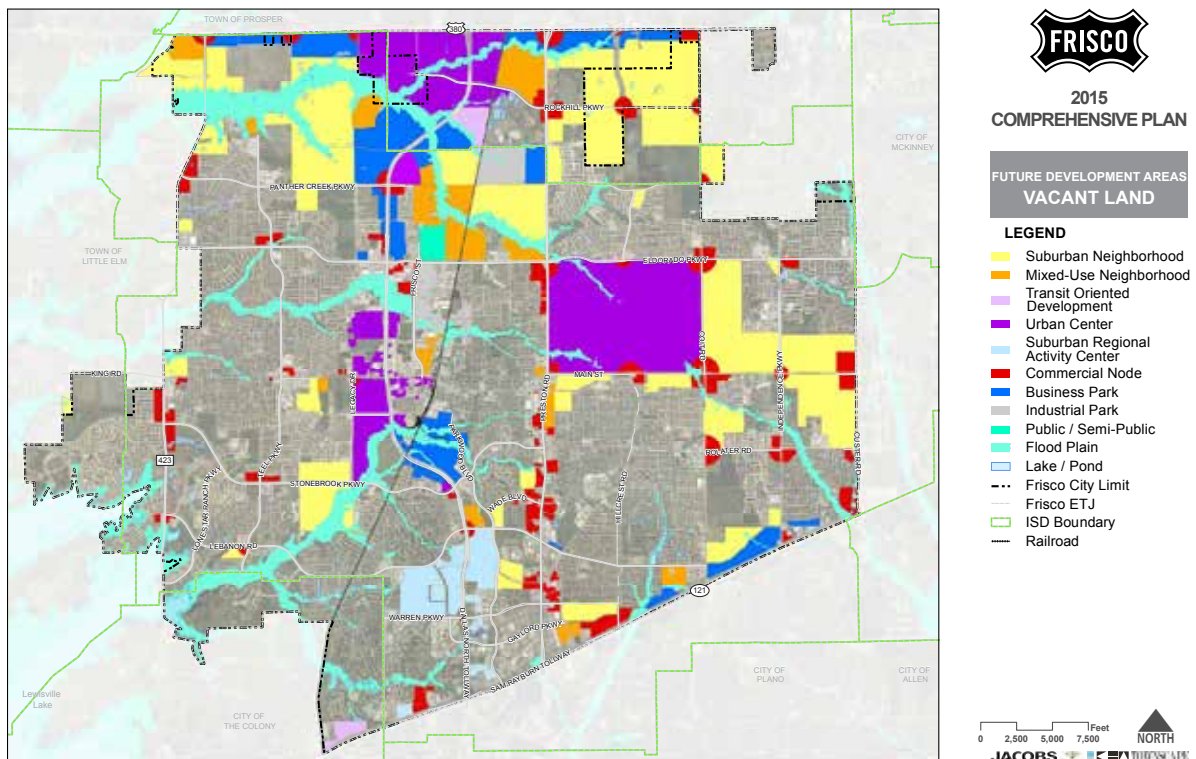


Figure 4-3: Future Development Areas, Vacant Land (See p. 173 for enlargement.)



5 | ECONOMIC POLICIES

Economic Strategy Principles

- PRINCIPLE 1:** Continue to diversify the local economic base and strengthen and stabilize the tax base.
- PRINCIPLE 2:** Create quality working environments that foster an attractive sense of place.
- PRINCIPLE 3:** Encourage a full-service array of retail and service opportunities.
- PRINCIPLE 4:** Ensure that a broad range of housing alternatives are available for employees, employers, and residents transitioning to various lifestyle stages.
- PRINCIPLE 5:** Encourage dialogue between local colleges and universities, private sector businesses and the City's partner agencies to create programs that will develop a high-quality workforce by making opportunities for life-long learning accessible.

Economic Strategy

The Economic Strategy, a new component not included in the 2006 Comprehensive Plan, is one of many important tools for identifying a prosperous path forward for the City. The City of Frisco is at a pivotal point in growing and diversifying its economic development infrastructure.² Frisco has long benefited from its geographic location along the Dallas North Tollway (DNT), maintaining an impressive rate of growth within the Dallas-Fort Worth Metroplex (DFW) and emerging as a regional hub for commerce and industry. This success has allowed the City to be discerning in its approach to economic development and to set the highest quality standards for new growth and development, *(see also Appendix A5, Market Context).*

As the Metroplex continues to be among the fastest growing regions in the U.S., Frisco will face increased competition from other DFW communities. Regional transportation improvements such as the President George Bush and Sam Rayburn Tollways (SH 190 and SH 121) are already shaping future employment growth, and the DNT and U.S. 75 will continue to provide attractive environments for business and commerce. Frisco's strategic location along two of these major transportation corridors should continue to give it a strong locational advantage for economic growth. The City's foremost economic challenge over the next 20 years will be to continue to diversify its employment base to maintain a balanced community, from both a market and a fiscal perspective.

² Corrigan, Mary Beth, et al. Ten Principles for Smart Growth on the Suburban Fringe. Washington, D.C.: ULI – the Urban Land Institute, 2004. (Catalog Number T24.)

The strategy described in this plan addresses the City Council's *Strategic Focus Areas* related to Long-Term Financial Health and Sustainable City and builds upon Frisco's established position as an economic development leader in North Texas. It advocates that the City keep a close eye on the opportunities for expansion and diversification of the local economy that will present themselves in the future. This diversification will help Frisco maintain economic viability during fluctuating economic cycles and allow the City the luxury of being selective as to the type and quality of future development opportunities, (*see also, Appendix A1, Strategic Focus Areas*).

Providing a variety of housing choices will promote the concept of "aging in place" and offer housing opportunities to a wide variety of socioeconomic groups. These housing types can range from workforce housing for Frisco's expanding service employment base to executive housing for professional and management employees, (*see also Chapter 3, Place Making & Resiliency and Chapter 4, Land Use*).

In association with aging in place, creating interesting and appealing workplace environments will promote a strong connection between residents and employees, for example high school graduates who might leave the community to seek employment elsewhere or retirees embarking on encore careers. These are the types of environments required to attract highly-skilled, high-income workers and jobs and will likely involve:

- The beautification of major transportation corridors;
- The provision of trails, open space and public gathering spaces;
- The use of innovative architecture and site design; and
- The availability of alternative transportation choices.

Finally, by offering a broad array of retail and service activities within the community, the

need for residents, employees and visitors to leave Frisco to purchase goods and services elsewhere will be reduced, and the City's revenue base will be enhanced, (*see also Appendix A5, Market Context*).

Detailed Market Analysis

An analysis of current and future market trends for various land uses was completed to provide both a baseline for the planning process and a roadmap for identifying future opportunities. The purpose of the market context analysis was to:

- Assess current and future market conditions in the DFW Metroplex;
- Evaluate the City of Frisco's current and future attractiveness for various land use types within the DFW Metroplex;
- Ensure planning and investment decisions for the City are grounded in market and economic reality; and
- Provide an independent, third-party story to tell potential developer and investor audiences.

The findings of this detailed analysis are contained in *Appendix A5, Market Context*, pp. 136-141.

Economic Policies

These policies are derived from the Economic Strategy Principles and are designed to help guide the development/redevelopment of land uses in a market-supportive and fiscally responsible manner, *(see also Chapter 10, Implementation)*.

1. Promote higher density mixed-use development in order to create vibrant live-work-play activity centers in targeted areas as depicted on the Future Land Use Plan.
2. Ensure that economic development objectives are included in the evaluation of all future City infrastructure and amenity projects.
3. Foster the creation and growth of small businesses.
4. Identify and develop collaborations to fill gaps in the capital market that fund business start-ups, retention and expansions.
5. Tailor retail economic development efforts to meet the needs of those retailers who can complement, rather than compete with, Frisco's existing retail base.
6. Encourage the development of housing product types which help to diversify Frisco's existing housing stock.
7. Establish policies for potential redevelopment areas.
8. Prepare detailed marketing materials which describe and quantify opportunities for new development and redevelopment within targeted areas.
9. Ensure that new development/redevelopment submittals are evaluated from a fiscal impact perspective, quantifying City operating revenues and expenditures as well as capital impacts.
10. Expand the pool of quality workers within Frisco that will support strategic targeted businesses.
11. Benchmark Frisco's economic success on a periodic basis (e.g., annually) using a range of market and economic variables that could be compared to other cities of similar size (either locally or regionally).

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6 | PUBLIC HEALTH & SAFETY

Public Health & Safety Principles

- PRINCIPLE 1:** Promote community well-being by designing Frisco's neighborhoods, thoroughfares and public facilities so that residents can choose an active, healthy lifestyle.
- PRINCIPLE 2:** Provide access to walking and biking trails for people of all ages and physical abilities within and close to Frisco neighborhoods.
- PRINCIPLE 3:** Use Code Enforcement and the Housing Rehabilitation Program, which provide assistance to those with special needs—elderly, disabled and economically disadvantaged persons—as part of the strategy for helping Frisco neighborhoods remain desirable over time.
- PRINCIPLE 4:** Use Code Enforcement and the Affordable Housing Division as tools to implement the City's *Neighborhood Partnership Plan (NPP)*, including a focus on older neighborhoods, and evaluate the NPP every five years for its effectiveness and any needed updates.
- PRINCIPLE 5:** Continue to use the City's annual inspection of multi-family units to ensure that apartments and urban living units are code compliant.
- PRINCIPLE 6:** Address the desire of all people in Frisco, including those with special needs, such as the elderly, disabled and economically disadvantaged, to live active lives and find the resources necessary to meet their daily needs.
- PRINCIPLE 7:** Identify services and programs that can help Frisco residents who are struggling meet their most pressing needs—transportation, affordable housing and mental health services—in an efficient and economical way.
- PRINCIPLE 8:** Train staff to work with applicants in the design of Frisco's neighborhoods and business areas for safety using the principles of *Crime Prevention through Environmental Design (CPTED)*—a technique that uses design features such as fencing, lighting, open views and access control to deter crime and enhance the police department's efforts to maintain a secure community.



Community Well-Being

For more than a decade, one of the Frisco City Council's *Strategic Focus Areas* has been to "... provide quality programs and services which promote community well-being," (see also, *Appendix A1, Strategic Focus Areas*). The concept of well-being is multi-faceted. It encompasses aspects such as health, happiness, safety, comfort and prosperity and focuses not only on the health of the body, but on the health of the mind and the fulfillment of the individual. The influence of a city on some of these factors is limited, but a municipality can directly affect others, (see also *Appendix A6, Public Health & Safety Services*).

The goal of public health should be not only to improve the physical condition of the people in a community—increasing activity levels, reducing the incidence of disease such as obesity and diabetes, encouraging smoking cessation—but also to create an environment for better economic and social conditions in a community— attracting employment and providing environments that encourage connections between people. The approach should be to focus on health rather than health care and to include strategies that not only make healthy options available, but make it easier for people to choose those options.

Since 2008, the Gallup polling organization and Healthways, a business that focuses on defining, assessing and improving health and well-being, have collaborated to create the *Gallup-Healthways Well-Being 5* and the *Well-being Index*, measuring factors that contribute to how an individual perceives their daily life.³ In the *Well-Being 5*, well-being is defined to include:

Sense of Purpose

- Liking what you do each day and being motivated to achieve your goals

Social Connection

- Having supportive relationships and love in your life

Financial Security

- Managing your economic life to reduce stress and increase security

Physical Health

- Having good health and enough energy to get things done daily

Community

- Liking where you live, feeling safe and having pride in your community

The Well-being Index for the United States for 2013 is based on 178,000 surveys conducted on landline and cellular telephones, with interviews in both Spanish and English. According to the 2013 *State of Texas Well-being* report, also an initiative of Gallup-Healthways, Texas ranks 21 out of the 50 states in a composite scoring of factors related to well-being:

Life Evaluation

- Current life situation compared to the life situation anticipated 5 years in the future

Work Environment

- Factors related to a worker's feelings and perceptions of their work environment

Physical Health

- Related to Body Mass Index, disease burden, sick days, physical pain, daily energy, history of disease, and daily health experiences

Healthy Behaviors

- Lifestyle habits with established relations to health outcomes

Basic Access

- Access to food, shelter, health care and a safe and satisfying place to live

The Dallas-Fort Worth-Arlington area received its highest score in the well-being measures related to Physical Health (top 20%) and in the Life Evaluation, Work Environment, and Physical Health categories (top 21-40% range). The lowest scores were achieved in the Healthy Behaviors and Basic Access categories, (see also *Appendix A2, Placemaking & Resiliency*).

3 <http://www.well-beingindex.com/>

Healthy Places

Deliberate, thoughtful community design and development can contribute greatly to the health and well-being of individuals and families. In 2013, the Urban Land Institute (ULI) published a report called *Ten Principles for Building Healthy Places*.⁴ This report includes a set of strategies for development aimed at improving the health of communities, their economies and the people who live and work within them. The 10 principles referenced in the title, and a brief explanation of each, are;

1. Put People First

- Individuals are more likely to be active in a community designed around their needs, *(see also Chapter 3, Place Making & Resiliency)*.

2. Recognize the Economic Value

- Healthy places can create enhanced economic value for both the private and public sectors, *(see also Chapter 5, Economic Policies)*.

3. Empower Champions for Health

- Every movement needs its champions

4. Energize Shared Spaces

- Public gathering spaces have a direct, positive impact on human health, *(see also Chapter 3, Place Making & Resiliency)*.

5. Make Healthy Choices Easy

- Communities should make the healthy choice the one that is SAFE—safe, accessible, fun and easy

⁴ <http://uli.org/wp-content/uploads/ULI-Documents/10-Principles-for-Building-Healthy-Places.pdf>



6. Ensure Equitable Access

- Many segments of the population would benefit from better access to services, amenities and opportunities, *(see also Chapter 9, Transportation/Mobility)*.

7. Mix It Up

- A variety of land uses, building types and public spaces can be used to improve physical and social activity, *(see also Chapter 3, Place Making & Resiliency and Chapter 4, Land Use)*.

8. Embrace Unique Character

- Places that are different, unusual or unique can be helpful in promoting physical activity, *(see also Chapter 3, Place Making & Resiliency)*.

9. Promote Access to Healthy Food

- Because diet affects human health, access to healthy food should be considered as part of a development proposal

10. Make it Active

- Good urban design can help create an active community, *(see also Chapter 3, Place Making & Resiliency)*.

Not every city can be true to all of these principles with every development, but watching for opportunities to encourage physical activity can make a big difference to people seeking a healthier lifestyle.

On its website, Smart Growth America states that “Many of the techniques that make communities more attractive and affordable places to live also make them healthier places. Streets that are safe and comfortable for walkers and bikers encourage people to get



more exercise as part of their daily routines. Having transportation options helps reduce traffic and air pollution, and preserving green spaces helps protect water quality while making communities more attractive...”⁵

- Reduce high blood pressure;
- Lessen the risk of osteoporosis and reduce arthritis pain, the risk of falls, and associated disability; and
- Reduce the symptoms of depression and anxiety.

Healthy Lifestyle

Active Living

Lack of physical activity and poor eating habits are leading causes of death and disease in the American population. According to the Centers for Disease Control and Prevention, the *Journal of the American Medicine Association*, the publication *Health Affairs*, and Smart Growth America, more than one-third of US adults and 17% of children aged 2-19 are obese. The estimated annual medical cost of obesity in 2008 was \$147 billion in total, \$1,429 per individual for people who were obese and in 2008, \$83 billion was spent caring for diabetes patients.⁶

Obesity can contribute to a variety of serious but preventable health-related conditions including heart disease, stroke, type 2 diabetes and certain types of cancer. Physical activity can help minimize these conditions, and cities play an important role in encouraging physical activity among their residents by applying healthy community design techniques. Besides improving the chances for avoiding the diseases listed above, more activity can help people:

- Maintain a healthy weight;

⁵ Corrigan, Mary Beth, et al. Ten Principles for Smart Growth on the Suburban Fringe. Washington, D.C.: ULI – the Urban Land Institute, 2004. (Catalog Number T24.)

⁶ Centers for Disease Control and Prevention, the Journal of the American Medical Association and the healthcare journal Health Affairs <http://www.cdc.gov/obesity/data/prevalence-maps.html> (Obesity Prevalence Map by State) http://www.cdc.gov/obesity/downloads/obesity_trends_2010.ppt (Obesity Trends)



Proper community design can help promote physical activity and well-being by:

- Accommodating active (human-powered) modes of transportation, such as walking, biking and skating;
- Presenting a variety of recreational opportunities for groups and individuals—active and passive; indoor and outdoor; urban parks and suburban open spaces; and
- Connecting people and their destinations with facilities such as bike lanes and American Disability Act (ADA)-compliant sidewalks and trails that encourage movement.

In Frisco, indoor and outdoor recreational options abound, and many of these activities create opportunities for league play or group participation so that they involve an element of social engagement as well. Examples of these activities include:

- | | |
|-------------------|-----------------|
| • Walking | • Rock climbing |
| • Aerobics | • Ice hockey |
| • Basketball | • Skating |
| • Jogging/Running | • Football |
| • Weight-lifting | • Golf |
| • Soccer | • Swimming |
| • Bicycling | • Baseball |

Healthy Food

Obesity and diabetes are major health problems in the United States and Texas is no exception. Many Americans, rushing to fit in all the activities of daily life, find themselves consuming more fast and processed foods and not getting the nutrition they need based on recommendations from the Centers for Disease Control and Prevention. Farmers markets and backyard or community gardens can help supplement a household's food buying patterns, not only providing access to healthy, locally-grown food, but also creating opportunities for people who like to engage in these activities to make connections with others with similar interests.



Social Connection

Social connections (human interactions) are associated with both physical and mental health benefits—happiness, better health and a longer life. By contrast, isolation can contribute to depression, cognitive decline and even premature death. These characteristics can be particularly prevalent in the elderly and the disabled. A 2010 report on stress management from the Harvard Medical School states that social connections can help reduce stress, a major factor in heart disease, digestive disorders, insulin regulation and immune system response. It also notes that providing care for other people can result in the release of stress-reducing hormones in the caregiver.

Companionship, emotional bonding, and human connection can be experienced in a variety of settings:

- At home

- In the workplace
- In a café
- In the neighborhood
- At the playground
- At the community center
- At school
- At a church, synagogue, temple, or mosque
- At a concert or festival

The possibilities are nearly endless, but most of them have one thing in common: the connections occur in places, so to facilitate these interactions, the City should design these important spaces carefully. They should be people-oriented and for some pet-friendly. They should be safe and welcoming and accommodate persons of all ages and abilities. They should include greenery and seating and be walkable and connected to users.



Green Building

Since July 2007, all commercial and multi-family structures have been required to meet the City of Frisco's Green Building Code, a set of regulations aimed at reducing water and energy consumption and protecting ecosystems. The Green Building Code was adopted for residential construction in 2001, and with the adoption of the commercial Green Building Code, Frisco became the first city in the United States to have a Green Building requirement for all types of construction. Among the objectives of the residential Green Building requirements are improving indoor air quality, increasing energy efficiency, encouraging the use of sustainable building materials and conserving water.

As of late 2012, more than 7.7 million square feet of commercial space had been constructed using these standards, resulting in an estimated savings of more than 240 million gallons of water, the establishment of more than 230,000 square feet of bioretention area, and the planting of thousands of trees in Frisco. Since the adoption of the Green Building Code, permits have been issued for 20,793 single-family residential units, or 50% of the total single-family units in Frisco, and 6,020 multi-family and/or mixed-use residential units, approximately 56% as of September 1, 2014.

Code Enforcement

Code enforcement is an important part of the formula for creating successful, sustainable communities. The Code Enforcement Division is responsible for identifying and responding to violations on residential and commercial properties related to:

- Substandard or abandoned structures, which can become unsafe and attract vagrants and criminal activity;
- High weeds and vegetation, which detract from property appearance and compromise the integrity of neighborhoods;



- Unsecured fences around swimming pools, which pose a particular threat to children;
- Accumulated debris, which is unsightly and can harbor rodents and vermin;
- Fences in need of repair, which can become dangerous and unattractive as well as ineffective as a barrier to unauthorized persons and activities; and
- Problems such as noise, traffic or the storage of hazardous materials which detract from the neighborhood environment and potentially endanger residents.

In addition to improving neighborhood appearance, and therefore property values, property pride and maintenance deter criminal activity. As buildings grow older and the population ages, maintenance will become more challenging, and Code Enforcement will play an even greater role in pre-empting deterioration and preserving the viability of Frisco's neighborhoods. Residents should be advised of the City's standards and Homeowners Associations (HOAs) can assist staff in its efforts to keep neighborhoods strong and stable. Reinvestment in infrastructure in the older parts of the community should be a priority so that these areas continue to remain viable. The City's *Neighborhood Partnership Plan (NPP)* can be used as a tool for identifying infrastructure deficiencies so that plans can be made to address these situations.

Healthy Natural Environment

A healthy natural environment is an important component of a healthy community. Preserving, and even improving, the natural environment is a fundamental part of creating a sustainable place. Air, water and natural areas are all elements of the natural environment that impact human health and the quality of life for individuals and the community as a whole, (*see also Chapter 7, Ecology & Natural Resources*).

Air

Collin and Denton Counties are both classified as moderate non-attainment zones for 8-hour ozone levels by the Environmental Protection Agency (EPA). Sunlight and high temperatures combine with nitrogen oxide (NOx) and volatile organic compounds (VOC) to affect the ozone in the atmosphere, and much of these greenhouse gases are attributable to automobiles and traffic congestion. Reducing NOx by making slight changes to driving behavior and cutting down on the miles traveled by gasoline- and diesel-powered vehicles can be effective in the fight to reduce air pollution, and traffic improvements such as intersection widenings, free-moving right-turn lanes and proper signal timing can help move traffic more efficiently, reducing the emissions that cause health problems, particularly for people with respiratory problems. Ride sharing, using transit and modes of travel other than the automobile and choosing alternative fuels can also have a positive effect on air quality.

Walking and bicycling also have the side benefits of reducing commuting costs and increasing activity levels, which may reduce the risk of heart disease and stroke, and preserving and planting desirable healthy trees reduces temperatures and removes airborne particles and gaseous pollutants from the atmosphere.

Water Supply and Quality

Water concerns fall into two categories: water quality and water supply. Clean drinking water is a basic requirement for human life. Both surface water and ground water are subject to contamination from pollutants in the air; pesticides and chemicals used in lawn maintenance, swimming pools and industrial processes; animal waste; and multiple other sources. Bioretention areas can be established to collect stormwater in ponds and use soils and plants to help filter out pollutants and sediment to improve water quality.

Frisco is one of 13 member cities in the North Texas Municipal Water District (NTMWD), which provides water to more than 1.6 million people in 61 cities, towns, utility districts and water supply corporations in the North Texas area. All of Frisco's drinking water is supplied by NTMWD. In recent years, the District has asked its member cities to implement restrictions on outdoor watering and continue to emphasize water conservation measures. As a result of the City's commitment to water conservation, between October 2013 and September 2014, when the District's Stage 3 drought restrictions were in effect, water usage in Frisco was reduced by 33.6%, significantly more than the goal of a 10% reduction.

Other water conservation initiatives sponsored by the City include educational programs and a weekly *WaterWise newsletter*, a rain barrel pilot program and free sprinkler checkups, (*see also Chapter 7, Ecology & Natural Resources*).

Natural Areas

Natural areas within Frisco, such as creek corridors and groves of trees, if properly preserved and sensitively improved, can provide benefits to the population by filtering pollutants from the air and providing recreational opportunities and access to nature. Swales and bioretention areas can help by removing some of the impurities in the runoff from streets and parking lots and the chemicals used in lawn and pool maintenance.

Human Services

The City of Frisco Social Service and Housing Board, which administers the CDBG program and the Social Services Fund, conducted a series of focus groups in 2013-2014 that identified three major challenges facing the Frisco population:

- Transportation;
- Affordable housing; and
- Mental health services.

The first two issues—transportation and affordable housing—pose particular problems for the elderly, the disabled and economically disadvantaged households and may affect a person's ability to enroll in school, hold a job and meet life's most basic needs. The third—the need for mental health services—creates problems across all age groups and social and economic classes.

Transportation

Presently, there is not a full-service, fixed-route public transit system in Frisco, but the City is discussing options for alternative modes of travel as part of this planning process, (*see also*

Chapter 9, Transportation/Mobility). TAPS Public Transit currently provides limited service in Frisco including on-demand service, transportation to and from McKinney to the DART station at Parker Road in Plano and to and from Dallas-Fort Worth International Airport and Love Field in Dallas from a Park & Ride lot in McKinney. TAPS is also the provider of approved non-emergency medical transportation for Medicaid, Children with Special Health Care Needs (CSHCN) and Transportation for Indigent Cancer Patients Program (TICP) members. Fares vary by destination and monthly passes are available at a reduced rate with additional discounts for seniors (age 60+) and disabled persons.

The western portion of the City is in Denton County. Frisco is a member city in the Denton County Transit Authority, but DCTA does not currently provide service to Frisco, (*see also Chapter 9, Transportation/Mobility*).

Housing

There is an ample supply of quality housing in Frisco, but it may be difficult for some individuals and families to find an affordable home, (*see also Appendix A6, Public Health & Safety Services pp.*



148-149). The median sales price of a home in Frisco is more than \$300,000,⁷ and median rents are approximately \$1,200 per month.⁸ One of the programs explored by the City offered first-time home-buyer assistance for employees of the City of Frisco and Frisco ISD; however, home prices in Frisco have made it difficult for some to qualify, even with down payment assistance, and no applications have been approved. In 2015, the City Council adopted the Social Services Board's recommended changes in the eligibility guidelines for the Frisco ISD/City Employee Homebuyer Incentive Program, making them consistent with the new FHA loan guidelines. This may make the program more effective for people wishing to live in the City.

The *Housing Rehabilitation Program* is another part of the formula for creating and maintaining a successful, sustainable community (see before and after photos below). As Code Enforcement identifies substandard properties, the Housing Rehabilitation Program is notified and responds by contacting the homeowner. If the property is owned by an income eligible individual, the Housing Rehabilitation Program will address the residential property violations.

Mental Health Services

Mental disorders can include a variety of illnesses, and once these conditions become chronic, they may interfere with a person's ability to function on the job and at home. Better access to mental health facilities in Frisco could improve the quality of life for the individuals and the families affected.

⁷ City of Frisco, Housing and Grants program
⁸ US Census Bureau, American Community Survey



Other Services

Besides the three issues identified as most critical by the focus groups, other needs include:

- Child care for working families;
- Job training for the unemployed or those with obsolete skills or a plan to reorient their careers;
- Senior services, which can range from nutrition programs to housing rehabilitation or social services;
- Health care resources (preventive, routine, and emergency); and
- Shelters for emergency situations (domestic violence, homelessness, natural or man-made disasters).

These needs have been noted by Frisco officials and their partner agencies, who will continue to explore solutions to address them in an efficient and economical way. City officials, staff and their local partners have unique insight into the challenges faced by the people in their communities and the resources available to assist them.

Public Safety

The perception of safety is important to current and future residents, businesses and visitors to a community. The portfolio of public safety services provided by the City of Frisco includes:

- Crime deterrence, response and investigation;
- Fire prevention, suppression, investigation, rescue and medical transport; and
- Emergency management, disaster planning and emergency response training.

Police, Fire and Emergency Services

In terms of criminal activity, Frisco, like many suburban cities in the Dallas-Fort Worth metroplex, experiences mostly property-related crime. Frisco Police officers work with neighborhoods, apartment managers and business security officers, all of whom assist the Department by observing and reporting suspicious behavior.

As the population continues to grow and vacant properties develop, more officers will be needed and more space will be required to house them. The desire of the Police administration is to maintain most departmental functions at the headquarters location in central Frisco, which may need to be expanded as the force grows. There may be an opportunity in the future, however, to locate a “police storefront” in certain mixed-use areas in the city. The Fire Department will continue to build new fire stations as development occurs, and Fire officials would like to design new stations so that they blend in with the character of the surrounding area.

Both Police and Fire plan to continue working to build bridges with the community and to partner with schools, faith-based organizations, cultural organizations, homeowner associations and other institutions and organizations to learn how to respond more effectively to the differences in language and cultures represented in the increasingly diverse Frisco community. The Departments are also beginning to anticipate changes in the number and type of service calls that may occur due to the aging of the population.

Community Design

Police officials and Development Services personnel agree that they want to be more proactive in implementing *Crime Prevention through Environmental Design (CPTED)* in the future. CPTED is a set of community design principles aimed at deterring criminal activity. Certain design features or combinations of features play a role in reducing the opportunity for crime, including:

- Fencing
- Landscaping
- Lighting
- Signage
- Open views
- Access control
- Surveillance equipment
- Activity centers

CPTED: Crime Prevention through Environmental Design

Use of design techniques to reduce the opportunity for crime



Figure 6-1: CPTED

Source: Omaha by Design, Omaha, NE

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7 | ECOLOGY & NATURAL RESOURCES

Ecology and Natural Resources Principles

- PRINCIPLE 1:** Utilize a “greenprint” map (showing areas within the city and its ETJ that contain important limited resources and unique natural assets) to review zoning applications, design capital infrastructure and create natural amenities for the community.
- PRINCIPLE 2:** Adopt and implement planning and development practices that encourage public and private property owners to maintain, or even enhance, the quality of the region’s air, aquifers, streams and lakes and to retain important natural assets as focal points and amenities.
- PRINCIPLE 3:** Continue Frisco’s leadership in green design and engineering for residential and commercial buildings and encourage design of City facilities, development sites and neighborhoods based on low life-cycle cost and green engineering principles.
- PRINCIPLE 4:** Develop and use Frisco’s floodplain areas to maximize stormwater management, protect surrounding properties from extreme weather events, preserve natural areas as amenities and minimize future costs and liabilities for the community.
- PRINCIPLE 5:** Protect, enhance and increase healthy tree cover as new development occurs throughout Frisco to maximize the many benefits that trees bring to the community—lower energy costs, reduced heat island effect, improved air quality, increased livability and enhanced quality of life.
- PRINCIPLE 6:** Use non-renewable energy resources efficiently, take advantage of opportunities to conserve energy, use renewable energy resources when feasible and cost-effective and encourage Frisco businesses and residents to do the same.
- PRINCIPLE 7:** Evaluate methods for monitoring the community’s environmental footprint and look for ways to reduce this footprint when doing so is consistent with other quality-of-life objectives.
- PRINCIPLE 8:** Continue to play a leadership role in the region’s efforts to maintain and enhance North Texas’ air and water quality and natural assets, particularly among the growing suburban cities in the area.
- PRINCIPLE 9:** Take advantage of Frisco’s natural areas and features to create focal points, connect City and regional network of trails and contribute to the identity of Frisco’s neighborhoods and the daily life of Frisco’s residents.
- PRINCIPLE 10:** Partner with residents and businesses, school districts and outside organizations to offer programs that educate and engage Frisco citizens in the benefits of sharing nature and using resources responsibly.

Introduction

Frisco is a city that has undergone rapid growth and development over the past two decades. As it looks to the future, the community plans to focus on growth that will create a place that is vital, desirable and resilient over the long term. A community such as this takes advantage of its natural assets and uses its limited resources in ways that are responsible and effective. This Ecology and Natural Resources Strategy provides the framework for this aspect of Frisco's continuing growth.

This Strategy will help the City of Frisco carry out the City Council's objectives for seven *Strategic Focus Areas*, (see also, *Appendix A1, Strategic Focus Areas*). It directly supports the Sustainable City Strategic Focus Area—"Promote the continued development of a diverse, unique and enduring city." It will also assist the City in achieving the Council's vision for Long-Term Financial Health, Public Health and Safety and Infrastructure.

The issues addressed here are also important to Frisco residents and stakeholders. When participants in the 2015 Comprehensive Plan update process were asked, "How important is this issue or approach to the best possible future for the Frisco community?", 91% of them said that it was very important or somewhat important that Frisco be "sustainable (desirable or resilient) over the long term."

Finally, the efficient use of resources and design that is based on local ecology are important to Frisco's economic vitality. Private sector investors are looking for offices and commercial areas that cost less to operate because tenants have come to expect this. Millennials, potential future residents of Frisco, place a high value on natural amenities and green lifestyles. This Strategy will help Frisco remain competitive in the marketplace of the future.

Focus on Ecology

Ecology is the "branch of science dealing with the relationship of living things to their

environments."⁹ Instead of studying one particular species or aspect of the environment, it considers the interactions between natural systems and looks at the impact of human beings on those interactions.

Many ecological impacts, both positive and negative, seem to occur on a scale that is bigger than a single local government or community. Even though one city cannot, by itself, change the quality of the air or the salinity of the oceans, it can have an effect. Each community, its residents and businesses, can make choices about the consequences of their actions on the local ecology and help reduce the negative impacts of poor choices on regional, national and global systems.

This *Ecology and Natural Resources Strategy* addresses some, though not all, of the concepts usually considered under the heading of "sustainability." Definitions of sustainability vary, but all of them generally include the idea of using resources to satisfy today's needs without jeopardizing the ability of future generations to meet their own needs. This concept is often expressed in terms of the three E's--Environment, Equity and Economy. This *Ecology and Natural Resources Strategy Planning for Sustaining Places* is an initiative of the American Planning Association (APA) focused on the role of comprehensive plans in creating sustainable communities. This initiative has identified characteristics of plans that support sustainable communities and the processes that are most likely to create those plans. For this APA initiative, "Planning for 'sustaining places' is a dynamic, democratic process through which communities plan to meet the needs of current and future generations without compromising the ecosystems upon which they depend by balancing social, economic and environmental resources, incorporating resilience and linking local actions to regional and global concerns."¹⁰ The relevant best practices recommended by this initiative are reflected in this strategy.

9 www.dictionary.com. Accessed 10/12/2014.

10 Godschalk and Anderson, 2012, *Sustaining Places: The Role of the Comprehensive Plan*, APA PAS Report 567.

Vision North Texas

Vision North Texas is a public-private-academic partnership that seeks to make the North Texas region successful and sustainable, even as it is expected to absorb a significant amount of new growth in the coming years. *North Texas 2050*, a report released by this partnership in 2010, focuses on the entire 16-county North Texas region. As the report states, “If current trends continue, the 16-county North Texas region will have over 75% more people in 2030 than in 2000, and the population will more than double by 2050.”¹¹ The goal of this effort was to establish a vision for a preferred future for the region and to identify a set of policies and actions to achieve that goal. Frisco is one of the Outer Tier Communities defined in *North Texas 2050*. The recommendations contained in the report were considered in drafting this strategy, and the ones appropriate to Frisco are included.

Stewardship of Limited Resources

Whenever the supply of a resource is limited, a prudent user or investor seeks to achieve the greatest benefit from that asset. Natural resources—air, land, water, natural systems, unique land features—are among the most precious and limited of assets; therefore, the best approach for a growing community like Frisco is to manage these existing resources to provide the greatest benefit to property owners and the community as a whole.

To demonstrate responsible stewardship of limited resources, decisions made by the City should help the community act mindfully in its consumption of non-renewable resources and in the management and use of renewable, but limited, assets. The City should use its capacity to educate, influence and persuade other decision-makers—businesses, households, schools, community groups—to practice responsible stewardship as well, (see also *Chapter 10, Implementation*, pp. 91-93 and *Strategy P09*, p. 97).

¹¹ Page 2, *North Texas 2050*, Vision North Texas, 2010.

Resource Inventory

The first step in responsible stewardship is to develop an understanding of the resources that exist. Maps of important natural areas depict the geographic distribution of these natural assets. Data on current resource consumption provides a baseline for the evaluation of future resource needs, and the knowledge of existing programs and management tools enhances the community’s capacity to manage limited resources.

See also *Appendix A7, Ecology & Natural Resources* contains an evaluation of the Frisco’s existing natural resources, assets and programs. This information forms the foundation for both future community development and for investment that manages these resources wisely. Key findings include:

- The Northern Blackland Prairie ecosystem in which Frisco is located is characterized by clay soils that shrink when dry and swell when wet. These soils create challenges for the construction of buildings, roads and other infrastructure.
- Ranching, farming and urban development have altered most of the prairie habitat that once covered this area. Riparian habitat along streams and creeks features stands of trees that provide shade, beauty and opportunities to walk and enjoy nature. Frisco’s remaining prairie and riparian areas can create unique amenities for the community.
- Development has increased Frisco’s tree cover. Trees provide significant economic and health benefits, (see also *Appendix A7, Ecology & Natural Resources*, 152-154). Trees that are appropriate to this climate can provide additional value to the Frisco community when planted and irrigated properly. Healthy tree cover is a natural asset that can be expanded as Frisco continues to grow.

A coordinated inventory of natural resources is an important tool for managing and enhancing these assets. In 2010, the North Central Texas Council of Governments contracted with the Trust for Public Land to conduct a “greenprint” study of the Lewisville Lake East sub-watershed, which includes

much of Frisco. An individual watershed may consist of thousands of acres; a sub-watershed is a portion of one of these larger geographical areas. The greenprint methodology analyzes both mapped data and stakeholder decisions about values and priorities. The end product is a map showing the areas that are most important to support the values of a specific community.

For this particular sub-watershed, the most important stakeholder priority was the protection of the quality of the water supply, specifically, the water in the supply reservoir. approximately 18% were identified as priority Figure 7-1 shows the results of this greenprint study.¹² Of the 51,746 acres in the study area, lands for the protection of

water quality. As the exhibit shows, most of these priority lands are located along the creeks and streams in the sub-watershed. Completion of a greenprint analysis for all of Frisco, and for issue priorities specific to this community, will provide:

- A stronger basis for the design of parks and open space within new developments;
- The location of natural corridors throughout the community; and
- The information needed for the creation of initiatives designed to protect these important natural assets.

(See also Chapter 10, Implementation).

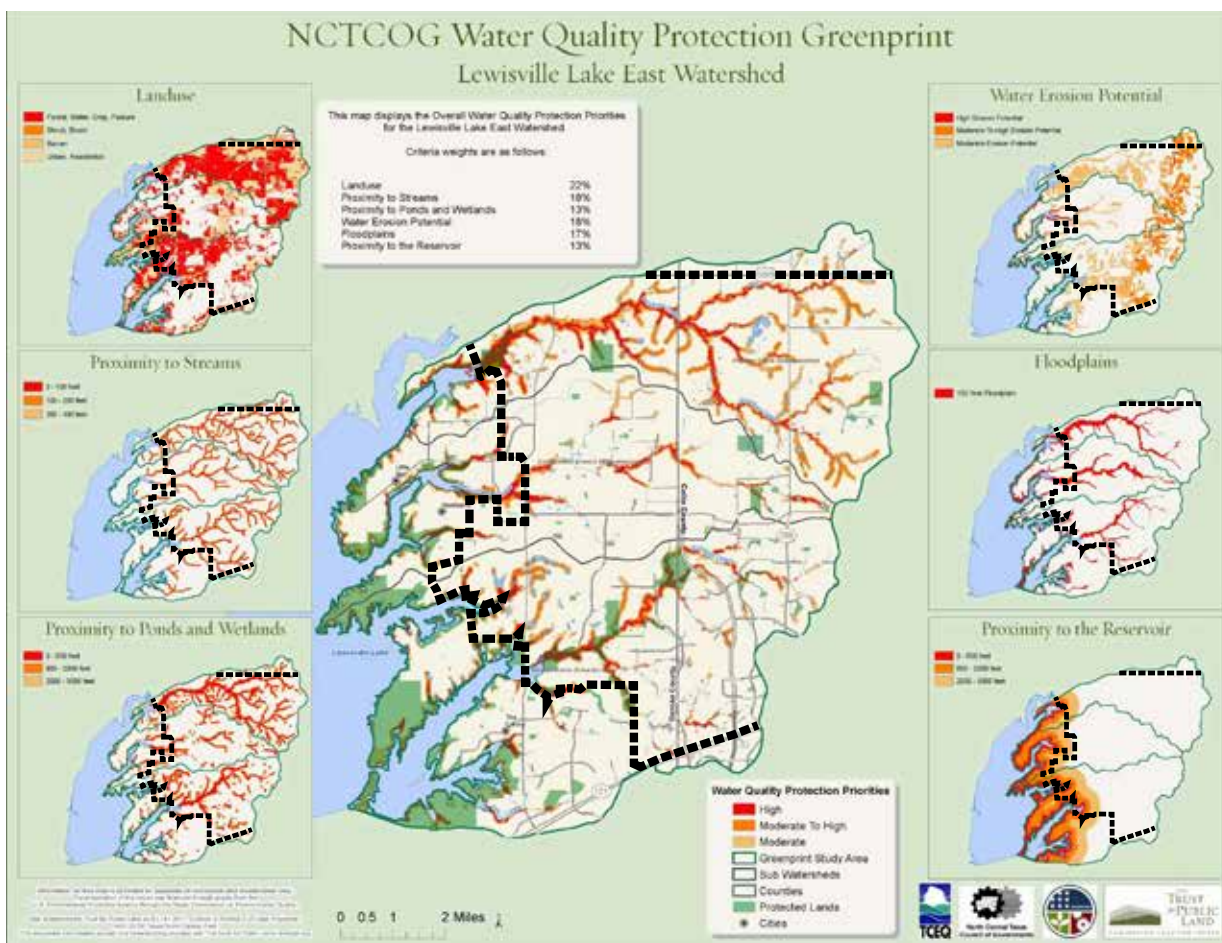


Figure 7-1: Lewisville Lake East¹³

¹² "NCTCOG Water Quality Protection Greenprint: Lake Arlington Watershed and Lewisville Lake East Watershed", Project Report, 2011.

¹³ "NCTCOG Water Quality Protection Greenprint", 2011.

Natural Asset Amenities

The City of Frisco supports practices that recognize natural features as development amenities, (see also *Chapter 3, Place Making & Resiliency* and *Chapter 4, Land Use*). As much as possible, these natural systems and amenities should be protected so they continue to add value to the community. Developers are encouraged to work with existing topography rather than alter it and to incorporate streams, creeks, wetlands, tree groves and other natural amenities into water features and open space. The City also promotes the use of native or drought-tolerant plants in landscape areas.

Cluster development—configuring a neighborhood so that residential lots are located close together and large areas of natural open space are preserved around them—is possible under current Frisco regulations. The natural areas in these cluster or conservation subdivisions create amenities for the neighborhood’s residents and retain the benefits of the natural systems. These areas are typically placed in a conservation easement so they provide tax advantages to the property owner. *Appendix A7, Ecology & Natural Resources* describes the role the Connemara Conservancy Foundation could play in helping property owners and the Frisco community benefit from these amenities.

The natural topography provides additional opportunities for the creation of distinctive places and amenities within Frisco. Whenever possible, ridge lines and high points should be used to create locations for viewing the community and its key features, such as major open spaces and Frisco’s Center City. Development design should retain the viewsheds to notable landmarks and features.

Human and Economic Value of Natural Areas

Local and national research documents the value of natural places to the residents and property owners in a community. In “Last Child in the Woods,” Richard Louv summarizes a range of studies showing that simply viewing nature, even from a hospital room, can measurably reduce a person’s stress level.¹⁴ Louv states that “nature in or around the home appears to be a significant factor in protecting the psychological well-being of children in rural areas.”¹⁵ He documents a positive relationship between time in nature, including close-to-home nature, and a variety of health and behavioral improvements:

- Reduced anxiety;
- Lower ADHD;
- Better focus on studying and tasks;
- Increased creativity; and
- Lower stress.

The effects of the “nature-deficit disorder” described in his book argue for the preservation or revitalization of natural areas close to urban and suburban neighborhoods so that residents have the opportunity to connect with nature as part of their daily lives.

There is economic value in natural areas as well. A 2009 study by the Trust for Public Land, “Measuring the Economic Value of a City Park System,” defined seven different ways parks provide value. It documented an average increase of 5% in the value of properties near parks,¹⁶ and estimated an annual health benefit of \$250 for significant park users and \$500 per year for seniors. This study and others demonstrate that parks, open spaces and natural areas provide both public health benefits to park users and economic benefits to property owners near the parks, (see also *Appendix A2, Placemaking & Resiliency*, p. 107).

¹⁴ “Last Child in the Woods: Saving Our Children from Nature-Deficit Disorder”, Richard Louv, 2006.

¹⁵ Ibid., page 49.

¹⁶ “Measuring the Economic Value of a City Park System”, the Trust for Public Land, 2009.

The Quality of Frisco's Natural Assets

Frisco is located within a large metropolitan area and within natural regions that extend beyond its city limits. For these reasons, the actions of the City alone will not determine the quality of the natural assets available to its residents, but actions by the City of Frisco and the Frisco community can make a difference. The community can use its plans, investments and other initiatives to help maintain or improve the quality of the region's natural assets, and it can play a leadership role in regional efforts.

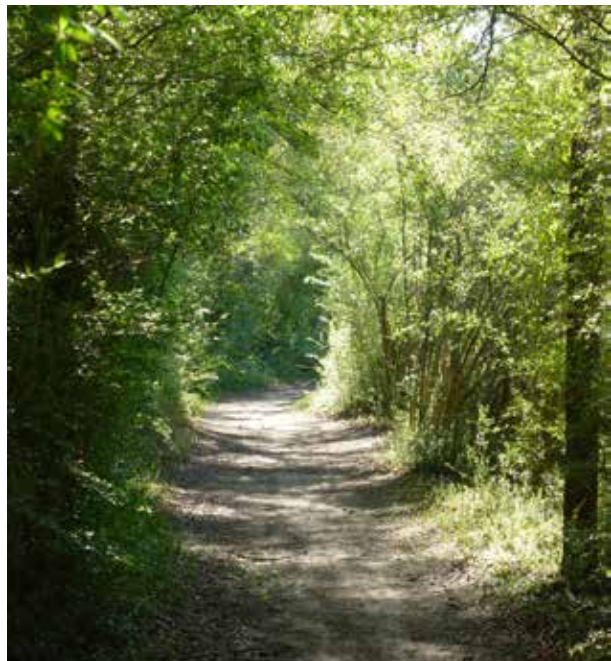
Regional Watersheds

The City of Frisco includes parts of five different regional watersheds within the Trinity Basin.¹⁷ Two of these watersheds, the Elm Fork below Lewisville Lake and the Trinity River Headwaters, drain to the Upper Trinity River, (*see also Appendix A7, Ecology & Natural Resources*).

For the areas within these watersheds, key issues include:

- The quality of the water for recreational use of rivers and streams;
- The erosion of stream banks and the resulting damage to adjacent property; and
- Public safety and the impact of flooding on property.

Frisco's other three watersheds drain to the region's water supply reservoirs—Lewisville Lake, Lavon Lake and Lake Ray Hubbard. Recreational water quality, erosion and public safety are concerns in these watersheds as well. In addition, runoff, pollution and sedimentation from development in the water supply watersheds affects the quality of the water in the reservoirs, impacting the drinking water supplies and increasing the cost of water treatment for local communities.



The streams and creeks that define watersheds also provide a framework for other natural systems at a regional scale. Water and wastewater systems are typically structured to follow watersheds because this design takes advantage of gravity flows to reduce the cost of pumping water and wastewater across topographic boundaries. Open space networks tend to follow stream courses as well because in these areas, the intrusion of urban development is more limited and the native habitats are the healthiest. All of these networks relate to watersheds and subwatersheds,

¹⁷ "Valuing Our Watersheds: A User's Guide to the North Central Texas Regional Ecosystem Framework", First Draft, North Central Texas Council of Governments, 2010.

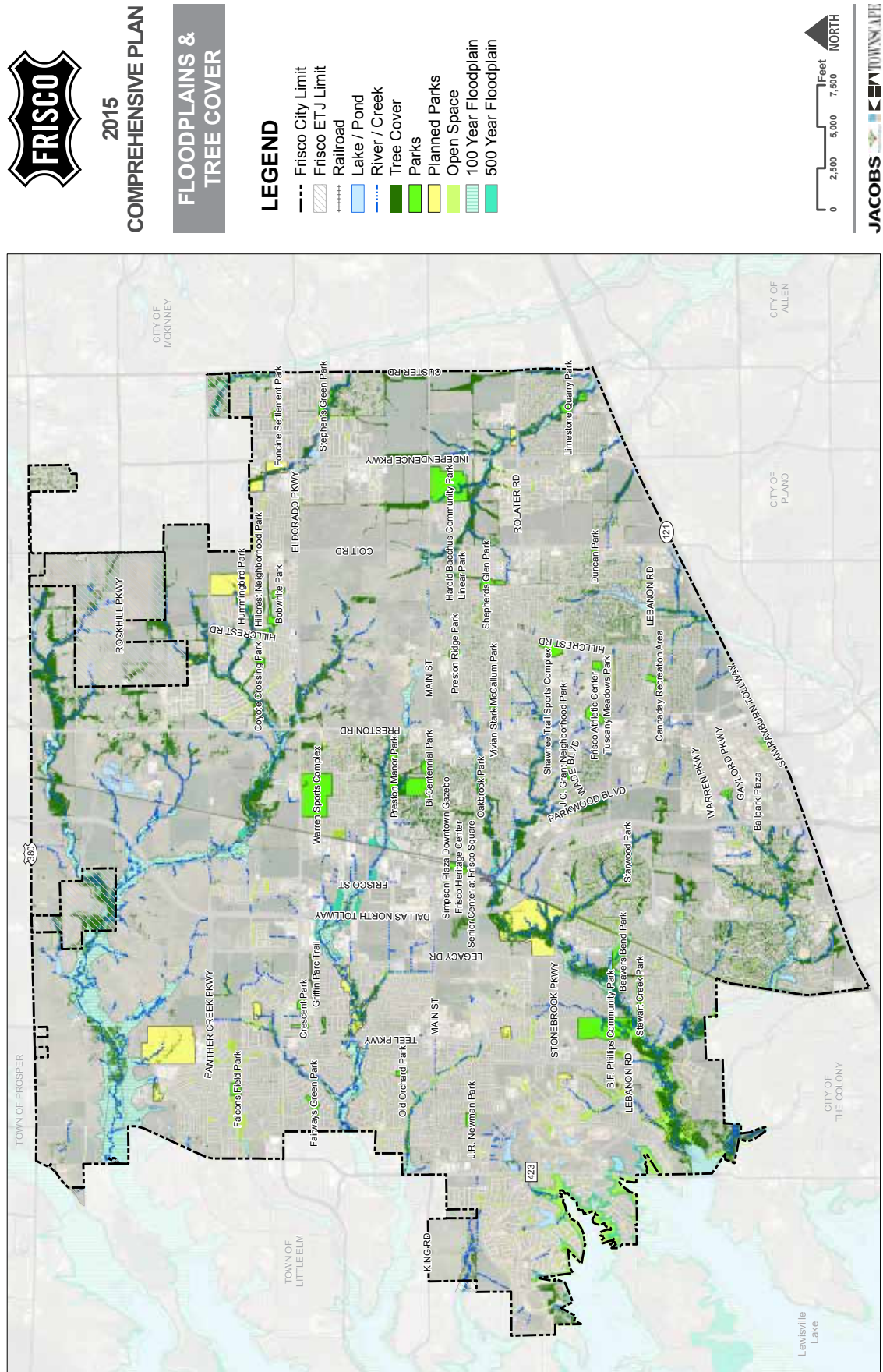


Figure 7-2: Floodplains and Tree Cover

not city boundaries; therefore, collaboration across communities is the most effective way to maximize the benefits of the natural systems in the region. As Frisco plans for its own future, it can also look for opportunities to support regional systems.

Since these stream and creek networks define connected corridors, they are often desirable locations for trail systems. The open spaces along streams and creeks must be designed so they can provide trails appropriate for future users (pedestrians, cyclists, equestrians, etc.) while still maintaining the benefits of the natural watersheds and drainage systems. In open space areas along creeks, trails must be designed so that they are ADA-compliant and do not reduce drainage capacity necessary to accommodate the level of anticipated storm runoff. Changes to the natural topography as part of trail design must not contribute to streambank erosion or increased sedimentation.

Figure 7-2 shows the 100-year floodplains in Frisco.¹⁸ These corridors create linked areas of open space, opportunities to connect with nature, valuable locations for trails and options for residents who want to experience the North Texas environment as they walk or bike between destinations in Frisco.

Air Quality

As noted in the Public Health and Public Safety and Transportation Strategies, the Environmental Protection Agency (EPA) has classified Collin and Denton Counties as moderate non-attainment zones for 8-hour ozone levels. While one community within this region cannot change regional air quality by itself, each community can do its part to reduce the health and environmental impacts of air pollution. The North Central Texas Council of Governments manages *Air North Texas*, a regional clean air partnership and campaign to:

- Provide a comprehensive air quality resource;

- Promote a consistent, regional air quality message;
- Leverage existing resources and program strengths in a collaborative effort;
- Increase public awareness of specific opportunities for residents to reduce emissions; and
- Motivate residents to make clean air choices.

Partners in this campaign include business organizations, local/state/federal governments, universities and non-profit organizations. The City of Frisco should consider joining this partnership to support air quality awareness and action. It can review and act on the many recommendations this campaign has made to local governments. For private sector interests, the North Texas Commission's *Clean Air Texas* program offers assistance to businesses trying to reduce their air quality impact. The City can encourage Frisco-based businesses to participate in these programs as part of their contribution to the air quality improvement initiative.

Regional Leadership

Addressing regional assets and systems requires leadership that looks beyond the boundaries of individual jurisdictions. Frisco has been one of the fastest-growing cities in the region for many years and is among the largest of these growing communities. As a result, Frisco's choices about development design help to shape the development underway in other, smaller communities. Frisco has been actively involved in regional decision-making as part of the Regional Transportation Council, *Vision North Texas* and other initiatives. The City can expand its role as a leader in the region as it focuses on a future where natural assets play a more important role in shaping community character and identity and where wise use of resources is the goal, (*see also Chapter 10, Implementation*).

¹⁸ A 100-year floodplain is the area that has a 1% chance of flooding in any given year.



The Design of the Built Environment

Since World War II, American metropolitan areas have enjoyed tremendous growth and success. Beginning in the 1940's, the techniques of mass production that had successfully supported the war effort were applied to other industries to meet the needs of American GI's returning home and looking for places to live and work. More recently, private development has been considered successful if subdivisions, shopping centers and office buildings were largely occupied and the initial developers realized a profit on their investments. Today, however, the measures of success have changed. The residents, property owners and leaders of a community understand that their long-term viability rests on the community's ability to be desirable and cost-effective over a long period of time. This view considers the life-cycle costs of a development and the long-term benefits it brings to the community. Frisco's development and investment policies should support this life-cycle view of lasting success.

Energy Efficiency and Green Building

Decisions about construction, site design and the operation and maintenance of City facilities all translate into a use of natural resources. Research on best practices of "green building" demonstrate that these techniques reduce the use of water, energy and materials, attract buyers and save money. The National Association of

Realtors', *2012 Profile of Home Buyers and Sellers* reports that "86 percent of those surveyed said that heating and cooling costs were somewhat or very important when considering their home purchase."¹⁹ The Green Resource Council, a National Association of Realtors subsidiary, advises its members that "going green makes sense" in terms of the environment, financial savings and health.²⁰ The Urban Land Institute (ULI) reported in 2010 that "effective rents are 2.8 percent higher in buildings with the Energy Star rating than in conventional buildings" and that "energy efficiency seems to drive up the resale value of buildings".²¹ ULI members who develop non-residential buildings indicate that the market has shifted to the point that energy efficiency is now expected by buyers, investors and tenants. Lastly, CBRE Research reports that as of the end of 2013, green, LEED-certified space now makes up 19.4% of the U.S. commercial office market.²² This increase in green building is due, in part, to a "recognition that many Fortune 500 firms, the most desired tenants, are now demanding sustainable buildings to meet their own environmental policies."²³

The City of Frisco was an early leader in green building. A green building code for residential construction has been in effect since 2001 (the first mandatory residential green building program in the nation), and green building requirements for commercial and multi-family

¹⁹ National Association of Realtors, website www.realtor.org, accessed December 7, 2014.

²⁰ Green Resource Council, website www.greenresourcecouncil.org, accessed December 7, 2014.

²¹ "Green Market Value", Urban Land magazine, 2010.

²² "National Green Building Adoption Index 2014", CBRE Research, 2014.

²³ Ibid., page 5.

construction were put in place in 2007. Today, Frisco has over 60 buildings that are recognized by LEED, EnergyStar or similar programs for their efficiency and sustainability features.²⁵ The LEED projects in Frisco save an estimated 14% on energy costs compared to an energy code baseline.

Energy Use

In a metropolitan area, energy is consumed in transportation, industry and at the household scale. Since energy sources and pricing are largely determined at a state, national or international level, the residents and businesses in an individual community cannot set the unit prices of energy resources. They can, however, manage their use of these resources by carefully considering several key factors:

- Decisions about where to live and work affect the amount of travel someone does on a daily or weekly basis. Since most of that travel involves the use of private vehicles, these choices affect gasoline consumption.
- Choices about how and where to build a home, office or commercial building affect the costs of the transmission lines required to provide electric and gas services from a regional provider.
- The details of building design, site layout and landscaping have an important impact on energy consumption.
- Alternatives related to the sources used to produce energy have generally been left to the energy providers. In recent years, interest in distributed energy (energy produced at a smaller scale and closer to the customer) and renewable or alternative energy sources has given consumers more choice about the sources of the energy they use.
- Energy conservation—energy-efficient design, smart building operations and other techniques—lowers the demand for energy and reduces or postpones the need to construct major new power plants to provide service to consumers.

The American Council for an Energy-Efficient Economy (ACEEE) has identified a range of design techniques that can reduce the urban heat island effect, lowering energy bills and reducing health impacts.²⁴ These techniques relate to local government operations, buildings, energy and water utilities, transportation and the community as a whole.²⁵ Developers should be encouraged to implement these techniques, particularly in non-residential developments and master-planned communities.

Water Use

Over the past several years, Frisco has implemented the outdoor watering restrictions established by the North Texas Municipal Water District (NTMWD). It also encourages water conservation through its green building initiatives. Water conservation will continue to be important in the future because of the number of new households and businesses anticipated in Frisco and since the climate of Texas and the Southwestern U.S. is expected to be drier in the future. Frisco's land use patterns and its buildings, infrastructure and landscapes should be designed for conservation and the efficient use of water. Over time, Frisco can take advantage of emerging systems and technologies to monitor actual water usage and reduce unnecessary consumption, (*see also Chapter 10, Implementation*).

State Goal

- The annual water use goal as established by the Texas Legislature in the State Water Plan is 140 gallons per person (per capita) per day (gpcd).

NTMWD Conservation Goal

- During Stage 3 drought restrictions, a 10% water use reduction goal was set by the North Texas Municipal Water District (NTMWD) for district customers based on individual annual usage. During the most recently completed reporting period

24 "Cool Policies for Cool Cities: Best Practices for Mitigating Urban Heat Islands in North American Cities", American Council for an Energy-Efficient Economy, 2014.

25 "2013 City Energy Efficiency Scorecard", American Council for an Energy-efficient Economy, www.aceee.org, 2013.



(October 2013 through September 2014), the City of Frisco reduced water usage by 23.6% in addition to the reduction goal of 10% set by the water district for a total reduction of 33.6%.

Conservation Results

- During calendar year 2013, the City of Frisco used about 180 gpcd. During calendar year 2014, the city further reduced usage to 148 gpcd only eight (8) gpcd above the state goal of 140 gpcd.
- Since the year 2000, the City has reduced usage from about 300 gpcd for a 15 year reduction close to 50%.

Landscape Ordinance

Frisco has been a regional leader in implementing sustainable landscape practices; it was the first to require Evapo Transpiration (ET) adjustments, water reductions, and other measures to reduce and/or conserve water. In Frisco, non-residential developments are required to set aside an area equal to 5% of the parking surface as low impact development Water Resource Zones in the form of bioretention or pervious pavers. The City's landscape requirements set an annual



Landscape Water Allowance that is 50% less than conventional landscape practices and historical Potential Evapo Transpiration (PET). Developers are encouraged to meet the landscape water allowance through design of Natural Landscape Zones, Water Resource Zones, and efficient irrigation.

WaterWise Education Programs

Water Resources focused on key outreach programs for residential and non-residential water customers in Frisco. In 2014, the *WaterWise Workshop Series* was expanded to include both spring and fall workshops. More than 600 residents attended a free workshop such as Converting to Drip Irrigation, Healthy Lawns 101, Rainwater Harvesting or, Fix-a-Leak.

The weekly *WaterWise newsletter* base grew to more than 10,800 subscribers. The weekly watering recommendation, based on Frisco's own weather station, is highlighted in the newsletter. In addition, lake level monitoring, updates on water restrictions, informational articles pertaining to reducing water usage, and upcoming workshops are key elements in each newsletter.



Other educational programs that contributed to the awareness campaign include the Block Captain program, Smart Controller program, and outreach to HOA's. A watering line was also established in 2014 that allows residents to call in and check Frisco's weekly watering recommendation.

Rain Barrel Program

The City of Frisco partners with Rain Water Solutions, Inc., to offer discounted rain barrels to Frisco residents. Residents purchased the rain barrels online and picked them up during a distribution event located at the Public Works offices. A total of 621 rain barrels were sold as a result of the 2014 pilot program. The program was offered again in 2015.

Free Sprinkler System Checkups

As part of an ongoing conservation effort to reduce outdoor water usage, the City of Frisco offers free sprinkler system checkups to residents. A total of 3,653 checkups were performed in 2014. During a free sprinkler checkup, a City of Frisco licensed Irrigation Specialist guides residents through their irrigation system, checks for inefficiencies, and sets the controller in compliance with the current water restrictions.

Green Infrastructure

The concept of green infrastructure design recognizes that natural systems can often do a better job of serving communities than the "grey infrastructure" of pipes and concrete that has been the focus of systems designed over the past several decades. Investment in grey infrastructure has had unintended consequences—paving and other impervious surfaces cause increased runoff, reduced groundwater recharge and higher urban temperatures, for example. The costs required to operate, maintain and rehabilitate this infrastructure have increased the total cost of these improvements over their life cycle. Cities and their constituencies have begun to recognize that retaining natural areas and systems can not only counteract some of the negative

impacts of the grey infrastructure, but also provide aesthetic amenities to the community. Green infrastructure includes natural swales, healthy tree canopy, pervious pavement, green roofs, infiltration planting in medians, curbless streets, bioretention areas that double as open space and/or landscaping and a number of other techniques, (see also *Chapter 10, Implementation*). These features yield aesthetic and health benefits and provide infrastructure service to the community.²⁶

Green infrastructure design, or low impact development, uses nature to detain storm water, recharge groundwater and reduce runoff. In North Texas, the Council of Governments has convened a group of local governments to develop the *integrated Storm Water Management (iSWM)* program. This program is "a cooperative initiative that assists cities and counties to achieve their goals of water quality protection, streambank protection and flood mitigation, while also helping communities meet their construction and post-construction obligations under state stormwater permits."²⁷ This program provides technical tools that can be used by cities and developers to design



²⁶ "Green Infrastructure: A Landscape Approach", American Planning Association PAS Report 571, 2013.

²⁷ integrated Storm Water Management, website iswm.nctcog.org, accessed December 7, 2014.

neighborhoods and business areas that use natural systems as part of a safe, cost-effective infrastructure.

give residents even more choices about how to engage with and support a green community. Frisco can use these tools to support responsible resource consumption in City operations and can educate residents and business about these tools and encourage their use.

Community Engagement, Education and Involvement

The City of Frisco can make responsible choices about its own use of resources and use its planning tools to create a land development pattern that reduces the use of resources. Many of the choices about the use of natural resources in Frisco, however, are made by individuals, families and business, not by the City. Even so, the City can play an important role in educating these decision-makers as to the wisdom and value of the mindful use of resources, *(see also Appendix A7, Ecology & Natural Resources)*.

The City can and should work in partnership with other organizations to educate residents and property owners so that their choices lead to a more sustainable use of natural resources, *(see also Chapter 10, Implementation)*. These partners include the Frisco, Little Elm, Lewisville and Prosper school districts; business and development organizations such as the Chamber of Commerce and the Frisco Developer's Council; and neighborhood groups, civic organizations and others who can inform and educate the community.

As individuals, neighborhoods and businesses change their behaviors to reduce the use of resources, it is important to monitor the results and to share the lessons learned with others in the community. There are numerous programs for tracking, certifying and recognizing achievement in these areas. In a recent online article, Eliot Allen provides a summary of fifteen current programs that can be used to monitor and track improvements at a neighborhood level.²⁸ Many of these are web-based; increasingly, smart phone apps are likely to

²⁸ "How Green is My Neighborhood? Let Me Count the Ways", Planetizen article dated May 29, 2014. Accessed at www.planetizen.com on December 7, 2014.

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8 | INFRASTRUCTURE

Infrastructure Principles

- PRINCIPLE 1:** Identify, prioritize and adopt a funding strategy, based on preliminary cost estimates, for the infrastructure projects necessary to support new construction so that the improvements are in place when they are needed.
- PRINCIPLE 2:** Give the same level of importance and attention to the maintenance of infrastructure as to the construction of new facilities.
- PRINCIPLE 3:** Prioritize infrastructure improvements and maintenance projects to provide the best economic return to the City.

Components of the City's Infrastructure

The basic infrastructure necessary to support the existing and future development in Frisco is largely in place, including streets (which are addressed in more detail in *Chapter 9 Transportation/Mobility*), trails, utilities and other municipal services. The adequacy of the services and facilities required to accommodate new development in the vacant portions of the city and in the ETJ—the Extraterritorial Jurisdiction; unincorporated area adjacent to Frisco that is not part of any city, but which may be annexed at some point in the future—should be assessed periodically on the basis of the type, intensity and location of various land uses as expressed in this plan. Projects of this nature tend not to be as exciting to citizens as watching the construction of new buildings, but they are just as critical to the community's success and long-term resiliency.

Public buildings and open space should also be considered essential infrastructure for a fully functioning city. These components, which may not immediately come to mind in the context of a discussion on infrastructure, would include buildings like the municipal center and library, police and fire stations, the senior center and other recreation facilities as well as parks, plazas and trails and the parking that supports these facilities and operations.

The City of Frisco has learned from the experience of some of the more mature communities in the Metroplex. City officials have demonstrated that they recognize the importance of having a reliable infrastructure system as it pertains to their success in attract new development to Frisco. They also recognize that maintenance of the infrastructure already in place is critical to the City's ability to retain existing residents and businesses and to capitalize on the capacity that is already available. Together, the two strategies—providing the infrastructure required for new development and maintaining the existing infrastructure—form the basis for the attraction and retention of retail, residential and employment development.



Existing Infrastructure

It is important for the City to evaluate existing infrastructure on a regular basis, not only to determine its current state of repair and functionality, but also to assess whether there is capacity to support new growth. In 2011, a Micropaver Implementation and Pavement Condition Index Survey project was undertaken to rate the condition of the City's streets as part of the capital improvements planning process. This type of assessment should be updated every three to five years so that the City can plan and budget for the necessary repairs or replacements, (*see also Chapter 10, Implementation, Strategy C05, p. 96, and Strategy E06, p.98*).

The use of the existing infrastructure should be optimized by planning for new development of the type and intensity that will utilize the capacity already available and by encouraging development in infill locations—vacant properties surrounded by developed sites.

Reinvestment in infrastructure in the older parts of the community should be a priority so that the viability of these areas, and thereby the overall community, is ensured. As part of the City's *Neighborhood Partnership Plan*, infrastructure deficiencies, particularly in these older areas of Frisco, can be identified so that plans can be made to address these situations.

Infrastructure maintenance projects vary in scope and complexity, but even relatively minor rehabilitation or reconstruction projects are essential to addressing existing situations today and to supporting new development in the future. Projects of this type could include:

- Performing repairs on sewer pipes that aren't operating at optimum levels due to breaches in the lines or the infiltration of tree roots;
- Repairing water lines and making drainage improvements;
- Rehabilitating or reconstructing failing pavement sections or adding alley pavement, curb and gutter or sidewalks where they don't currently exist;
- Enhancing or replacing aging bridge structures;
- Upgrading play equipment or adding new facilities in existing parks;
- Rebuilding or rehabilitating soccer and baseball fields;
- Adding turn lanes or widening intersections to improve traffic flow and minimize congestion; and
- Expanding or repairing public buildings.

The City should seek out opportunities to partner with outside agencies to fund repairs, upgrades and extensions to the infrastructure system currently in place and work closely with other basic service providers to ensure that the existing systems are fully functional or that the required improvements are made (see discussion below about cost-sharing).

New Infrastructure

In terms of the infrastructure necessary for the future, the City has been strategic about when and where it is constructed. Projects have included new and upsized utility lines, new parks and fire stations. These projects are very costly, and depending on their scope

and scale, may have been funded through the sale of bonds. These bonds may be subject to voter approval, and since elections can only be scheduled at certain times of the year under State law—in May and November—it is even more critical to have a strategy in place. Over the years, the City has been very effective in its efforts to anticipate the need for new infrastructure, *(see also Chapter 10, Implementation, Capital Investments, p. 96.)*

New improvements should be anticipated based on population and land use projections and development discussions, and these improvements should be included in the City's Capital Improvements Plan, *(see also Chapter 3, Place Making & Resiliency and Appendix A2, Placemaking & Resiliency)*. In general, in order to maintain a fiscally sound community, improvements should be planned and constructed where new development is likely to occur first and where the City will reap the most economic and community benefit for the costs incurred. The City has taken this approach in the past and has been successful with this strategy.

Cost-sharing opportunities should be explored for some of these projects, particularly transportation improvements like street extensions or widenings, sidewalk installations along school walking routes, ADA-compliance retrofits and trail extensions or connections where there are gaps. The City should seek out opportunities to partner with outside agencies for the funding and construction of new infrastructure and work closely with the providers of other basic utilities to ensure that all of the services required are available throughout the community, *(see also Chapter*

10, Implementation, Partnerships, p.97).

Entities that often participate in the costs for these types of projects include:

- The federal government, particularly in the distribution of funds by the North Central Council of Governments, which serves as the North Texas region's Metropolitan Planning Organization;
- The Texas Department of Transportation (TxDOT);
- The county in which the improvement will be located;
- The transit agency serving the community; and
- The North Texas Municipal Water District, which bears the responsibility for extending, replacing and upgrading major water system trunk lines.

New development should be encouraged in areas where the use of existing infrastructure can be optimized. New infrastructure is typically constructed to address deficiencies or the lack of facilities necessary to accommodate new development when it occurs. These improvements could include:

- Constructing or extending hike-and-bike trails;
- Building fire stations as new neighborhoods develop;
- Building new roadways to support or attract commercial development;
- Constructing new city gateway features; and
- Constructing new public buildings or replacing old buildings that don't meet current user demands or operational requirements



These projects tend to be less cost-intensive than new construction because they are often of a smaller scale, but as retrofits, they may be more challenging due to existing conditions, adjacent land uses and the likelihood of service interruptions. Nonetheless, a city cannot afford to let these facilities decline or the entire community will pay the price.

It should also be noted in this discussion that the services and facilities discussed above are typically the responsibility of the local government except as indicated. There are, however, other types of infrastructure that are provided by outside agencies and organizations, most notably electrical power, natural gas and the communications infrastructure. While the City does not construct or maintain these improvements, it should work closely with the providers to ensure that the necessary easements and franchise agreements are secured and that businesses and residents have the services they need to maintain a high quality of life and to support successful business operations, (see also Chapter 10, *Implementation, Partnerships*, p.97).

Conclusions

The majority of the growth in Frisco has occurred in the last 15 years, and the City has been proactive in upgrading its infrastructure to support this development. Much of the infrastructure in place today is relatively new, but as with any other asset, it will age and deteriorate over time. Even now, there are certain parts of town where the streets and

utilities have been in place for decades and where parks and other public facilities may not meet modern planning and design standards.

The City should continue to make decisions regarding infrastructure improvements in a strategic manner by:

- Assessing the status of existing improvements;
- Making the best use of the infrastructure already in place;
- Reinvesting in existing infrastructure, where necessary; and
- Planning infrastructure for new construction based on anticipated population, land use types and intensities and discussions with landowners and prospective developers.

This approach addresses at least three of the Council's *Strategic Focus Areas*—Infrastructure, Long-Term Financial Health and Sustainability, (see also, *Appendix A1, Strategic Focus Areas*).

The City should evaluate its infrastructure policy and Capital Improvements Plan regularly and make refinements, if necessary. The City should also consider which of these improvements will yield the most community benefit and the best short-term economic return for the costs incurred, (see also Chapter 10, *Implementation, Strategy CO3*, p.96).





9 | TRANSPORTATION/MOBILITY

Transportation Principles

- PRINCIPLE 1:** Maximize the capacity of the current transportation system by making improvements within the existing right-of-way where possible.
- PRINCIPLE 2:** Create aesthetically pleasing roadways with features appropriate to the adjacent land use and the roadway type.
- PRINCIPLE 3:** Construct new roadways so that they respect the natural environment.
- PRINCIPLE 4:** Make transportation mode choices, including a viable transit system, available to Frisco citizens to help reduce vehicular trips on city streets where it is economically feasible.
- PRINCIPLE 5:** Integrate land uses with the transportation system where possible.
- PRINCIPLE 6:** Increase the interconnection of roads and trails as feasible.
- PRINCIPLE 7:** Design local neighborhood streets for safe, low speeds.
- PRINCIPLE 8:** Continue to employ Transportation System Management (TSM) strategies to maintain and/or improve mobility.
- PRINCIPLE 9:** Employ Transportation Demand Management (TDM) techniques to reduce traffic demand.
- PRINCIPLE 10:** Continue to work with outside agencies to promote transportation improvements.

Introduction

The purpose of a city's transportation system is to provide the safe and efficient movement of people and goods within a comprehensive network of streets that complement the surrounding land uses. In addition to handling current and future congestion, a city's transportation systems should be both livable and sustainable. Creating a livable transportation environment means providing an area that is more people-centric than automobile-centric, (*see also Chapter 3, Place Making & Resiliency and Appendix A8, Transportation/Mobility*). Creating a sustainable transportation environment refers to ensuring that the system remains effective over time and minimizes adverse environmental impacts, (*see also Appendix A7, Ecology & Natural Resources*).

To ensure that Frisco's transportation system meets these livability and sustainability ideals as the system is expanded, a number of challenges must be addressed. The City will continue to attract residents and businesses and the cities in the surrounding cities will continue to grow as well, particularly those to the north, which will increase the volume of traffic that regularly travels to and through Frisco.

- The transportation needs of residents, commuters and visitors must be served at the same time that increasing numbers of commercial, industrial and residential developments must be accommodated.
- Fossil fuel depletion and the energy crisis must be considered not only as they affect transportation choices, but also for their impacts on personal finances and the City's economic bottom line. Energy costs will become increasingly important in determining the design of transportation systems.
- The Dallas-Fort Worth region failed the Environmental Protection Agency's National Ambient Air Quality Standards (NAAQS), resulting in the region being classified as a "non-attainment" zone. As an incentive to reach NAAQS, the federal government mandated that the Dallas-Fort Worth region comply by the year 2010 in order to be eligible to receive federal funding for transportation improvements. The area was threatened with severe sanctions for non-compliance, including the potential loss of hundreds of millions in federal transportation dollars. In response, the City of Frisco is partnering with other municipalities in the region, Denton and Collin Counties and the North Central Texas Council of Government to develop strategies for improving air quality.

All of these challenges point to the need for a system that is less focused on the automobile and more attuned to developing and promoting alternative modes of transportation as viable options for mobility, (*see also Chapter 10, Implementation and Appendix A8, Transportation/Mobility*).

The Future Land Use Plan and the growth it is expected to create establish the foundation for the Transportation Strategy, (*see also Chapter 4, Land Use*). This section evaluates existing mobility conditions and projected traffic congestion, establishing the basis for re-evaluating the City's transportation investments. These principles promote the City Council's adopted Infrastructure, Public Health and Safety and Sustainable City Strategic Focus Area goals. Discussions with the Council, the CPAC and the community have provided additional insight into the issues that should be at the forefront of the Transportation Strategy from their perspectives, (*see also, Appendix A1, Strategic Focus Areas*).

Existing Transportation/ Mobility System

Street Hierarchy and Functional Classification

Frisco has an extensive roadway network serving a variety of land uses. The network is laid out so that the major thoroughfares form a conventional grid pattern. In many instances, trips between residences and local stores require passing through one or more major intersections.

The total system is made up of a variety of roadway classifications ranging from major thoroughfares, which serve high-volume, higher-speed traffic, to local and collector streets that provide access to neighborhoods and commercial areas. Frisco has several major regional roadways and/or highways that pass through the City or along its boundaries. The Dallas North Tollway and Preston Road pass through the central part of the City and extend beyond the city limits to the north and south. US Highway 380 forms the City's northern border and State Highway 121/Sam Rayburn Tollway forms the southern border, both providing regional connections to the east and west.

The hierarchy of streets, based on the function of the roadways, is described below.

- **Highway and Tollway.** Limited access roadway designed for high-speed, long-distance travel and large traffic volumes; tollways and highways are typically the jurisdiction of regional, state and federal agencies rather than municipalities.
- **Major thoroughfare.** Relatively high-speed, long-distance surface street designed to move large volumes of traffic across an urbanized area and to provide access to a highway and/or tollway.
- **Minor thoroughfare.** Medium-speed, moderate-capacity surface street designed primarily for the movement of traffic to and from residential areas, places of employment, retail centers and entertainment venues.
- **Collector (Residential and Commercial).** Relatively low-speed, low-volume street used for neighborhood and commercial circulation and access to private property; collects traffic from local streets for distribution to the thoroughfare system.
- **Local.** Low-speed, low-volume roadway primarily providing access directly to residences; often characterized by multiple driveways and on-street parking.

Roadway sections for each of the roadway classifications above are included in Section 2 of the City of Frisco's *Engineering Standards*, (see also Appendix A8, *Transportation/Mobility*).

Existing Mobility Network

Presently, the only transit services available to Frisco residents are provided by TAPS Public Transit. TAPS is an on-demand, curb-to-curb service provider serving both the Collin County and the Denton County portions of Frisco; however, TAPS is not a full-service, fixed-route public transit system. Service is generally available between 6:00 a.m. to 5:30 p.m. on weekdays and advance reservations are required. Fares vary by destination and monthly passes

are available at a reduced rate with additional discounts for disabled persons and seniors.

TAPS offers limited service for Frisco residents between certain locations in McKinney and the Parker Road DART station in Plano (eight departures each weekday) and to and from Dallas Fort Worth International Airport and Love Field in Dallas from a Park & Ride lot in McKinney. Airport service is available four times each day and requires 72 hours' notice.

TAPS is also the contract provider for approved non-emergency medical transport for Medicaid recipients, Children with Special Health Care Needs (CSHCN) and Transportation for Indigent Cancer Patients Program (TICP) members. Service is available Monday through Friday from 8:00 a.m. to 5:00 p.m.; rides must be booked the day before.

The western portion of the City is in Denton County. Frisco is a member city of the Denton County Transit Authority, but DCTA does not currently provide service in Frisco.

Existing Mobility

The City of Frisco has experienced tremendous growth over the past 15 years. Developing and maintaining a transportation system that can accommodate growth of this magnitude in a relatively short period of time is a major challenge. In order to stay on top of the situation, the City must remain vigilant in financing and building new roads, (see also Chapter 8, *Infrastructure*).

This section examines the current roadway system and the mobility implications of the 2015 Comprehensive Plan. To evaluate the effectiveness of the City's current policies, it is necessary to understand how the existing transportation system is functioning. The information below compares the current roadway transportation system with the mobility that would be provided with the completion of the improvements recommended in the

2015 Comprehensive Plan. The comparison provides a benchmark for evaluating the proposed 2015 Comprehensive Plan and redirecting transportation policies and planning efforts as necessary to ensure that an efficient transportation system is built and maintained.

Three primary indicators measure the mobility of the transportation network:

- Vehicle Miles Traveled (VMT);
- Vehicle Hours of Delay (VHD); and
- Vehicle Hours Traveled (VHT).

These measures are developed with the use of TransCAD modeling. TransCAD utilizes a specially designed Geographic Information System (GIS) to analyze transportation systems under a variety of different scenarios, including an evaluation of the current demand on the transportation network in the year 2014 and the projected demand in the year 2035, assuming the transportation improvements called for in the 2006 Comprehensive Plan are completed. The following table presents the latest modeling:

Indicators	2015 FLUP
Total VMT	6,119,600
Total VHT	120,350
Total Delay	22,700

Observations about Mobility in the City

The transportation indicators above reveal that the existing transportation system is experiencing high amounts of delay and subsequent congestion. With additional people and jobs, the roadway network will be challenged to meet the future transportation needs of the City. Currently, Frisco is heavily dependent upon automobiles as the primary mode of transportation. The results of the traffic model showed that additional travel lanes alone will not

correct the anticipated challenge of congestion. The widening of the roadways is necessary to avoid gridlock, but other techniques such as mixing uses to shorten trip lengths, incorporating regional rail and adding more hike and bike facilities will be necessary.

Several of the policies from the 2006 plan have been carried forward in this 2015 update to help guide the development of the City's future transportation vision and to meet the Council's *Strategic Focus Area* goals.

- The concepts of maximizing the capacity of the current street system, partnering with outside agencies to fund and construct transportation improvements and designing transportation improvements to correspond to the adjacent land use support the Council's Infrastructure, Sustainable City and Long-Term Financial Health goals.
- Reducing the number of vehicle trips by interconnecting City streets as opportunities arise and encouraging the use of various mode of travel will minimizing vehicle trips which will help to reduce traffic congestion and vehicle emissions and responding to the Infrastructure and Sustainable City Strategic Focus Areas.
- Creating aesthetically pleasing transportation facilities and taking advantage of the natural environment in the design of streets and trails will make Frisco a healthier, more livable place, consistent with the Council's Public Health and Public Safety, Infrastructure, Leisure and Culture and Sustainable City goals.

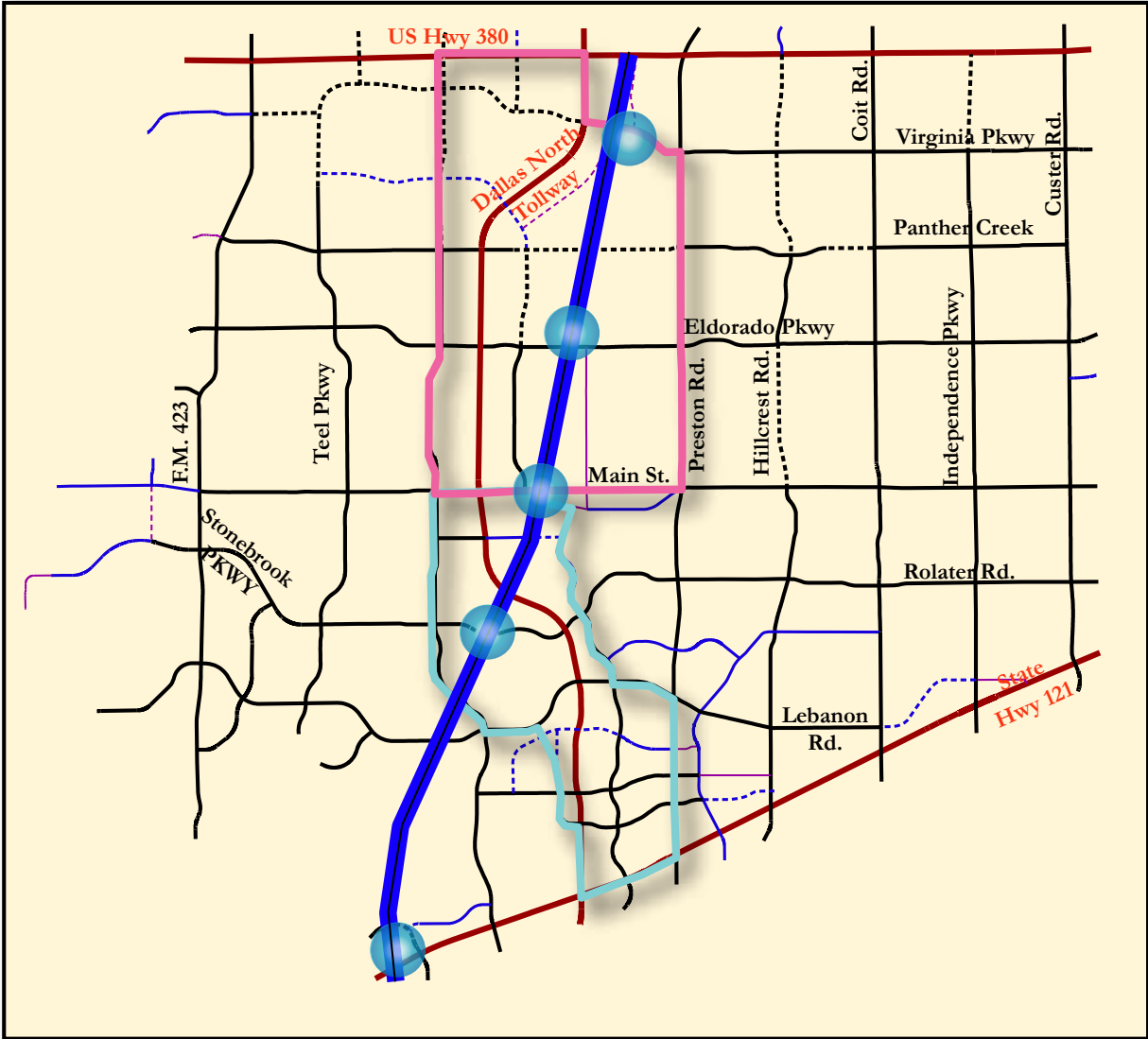
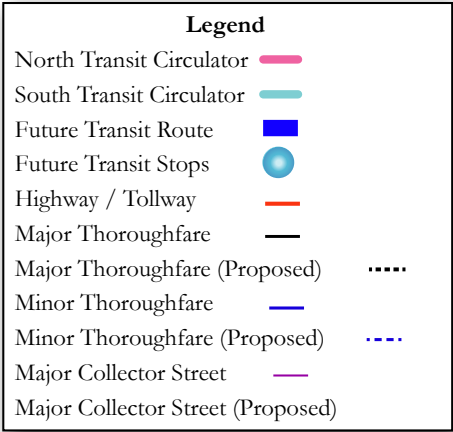


Figure 9-1: Transit Circulator Plan 2015



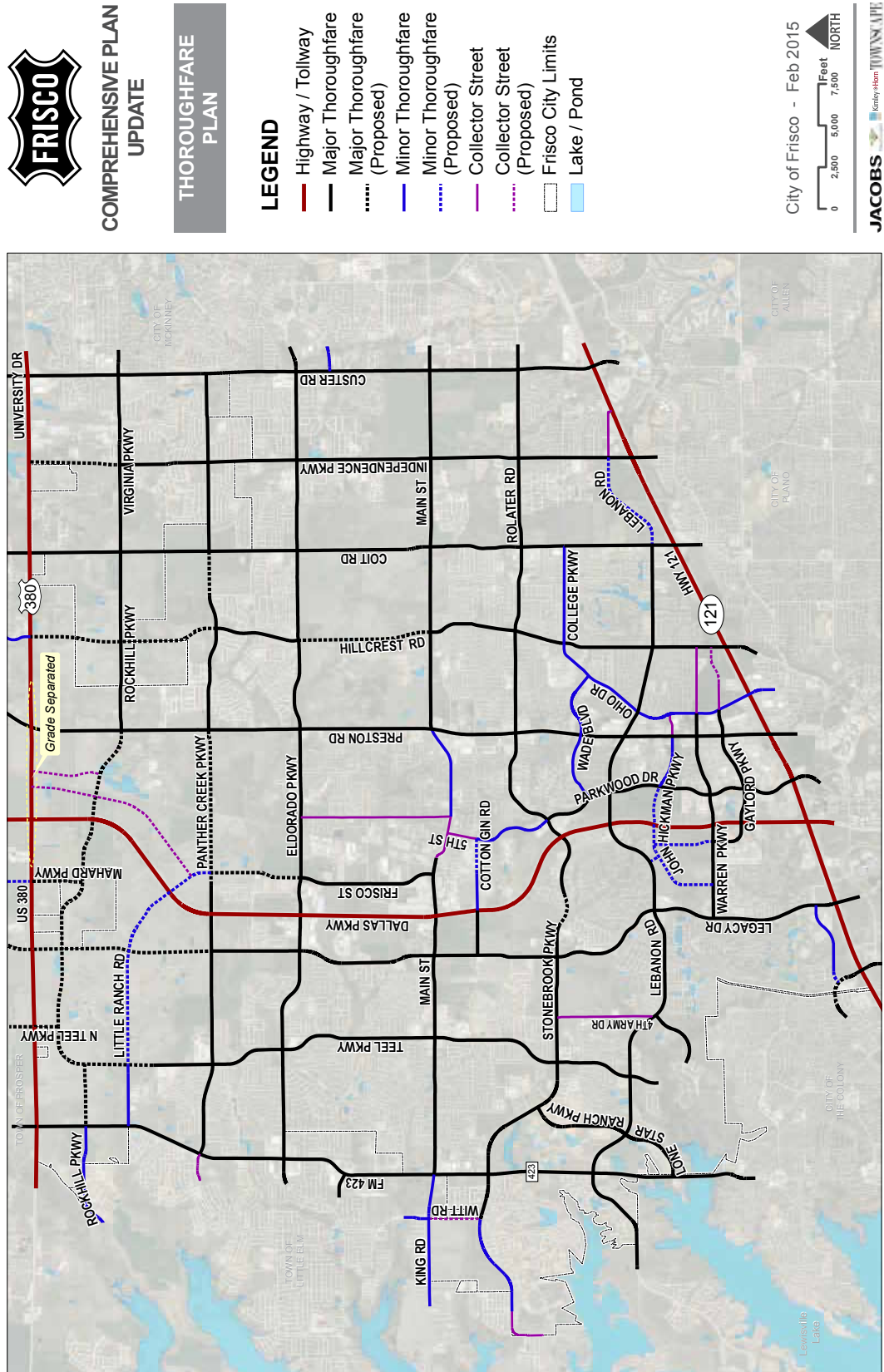


Figure 9-2: Frisco Thoroughfare Plan



10 | IMPLEMENTATION

Introduction

A crucial part of any Comprehensive Plan is the Implementation Strategy. This chapter identifies key steps and actions to be taken to further the City of Frisco's priorities for the future. It discusses priority implementation strategies by each substantive element of the Plan and identifies the time frames for undertaking/ completing the strategy and the parties and partners that will—or could potentially—play an important role in moving the plan forward.

It is important to note that the communities that are most successful at achieving their long-term vision are the ones that establish a tradition and reputation for collaboration, partnership and accountability. In Frisco, supportive, long-term relationships must stem from City Hall and involve Frisco residents, businesses, non-profits, property owners and other local, regional, state and federal government agencies. Strong relationships leads to collaboration, which, in turn creates political will, opens funding opportunities and creates a buzz in local, regional and state discussions. In pursuit of Frisco's goal of preserving a high quality of life as it continues to evolve as a model urbanized community, these partnerships will be vital for success.

Implementation Strategy Development Process

Implementation strategies for this Plan were identified, vetted and approved through a combination of methods aimed at gaining the highest possible level of public input and support. These methods included:

- Input and brainstorming with the public via public meetings, online surveys and individual discussions
- Stakeholder interviews
- Planning team technical analysis and review of best practices from other communities
- Coordination with concurrent planning efforts involving the City and other agencies and direction from staff
- Review, prioritization and consensus agreement with the Comprehensive Plan Advisory Committee (CPAC)

The Implementation Strategies matrix provides a complete list of action items, organized according to category and priority/opportunity, with corresponding details regarding a time frame for action and the party or parties that will be responsible. Time frames are established to better schedule a particular implementation strategy since not all strategies can be implemented at once, or because the actions need to occur in a certain order to achieve efficiency and success. Time frames in the matrix have been generalized into three groups:

- Short-Term – 0 – 2 Years
- Mid-Term – 2 – 5 Years
- Long-Term – 5+ years

Partnerships

The responsible partners identified below will play an important role in the implementation process.

City of Frisco

The City of Frisco is the key implementer of this plan. For all items in the Implementation Strategy matrix, the City of Frisco will have a role. If a strategy was viewed as a priority by the community but not seen as within the City's purview, the City would be expected to be a key participant in working with the lead entity to accomplish that task. For example, the City does not control the school system; in the majority of the community, educational resources are provided by the Independent School Districts serving Frisco. In those areas, the City should work closely with the Independent School Districts to accomplish any strategy related to public schools and the Comprehensive Plan.

Below are entities at the City of Frisco that are expected to have a lead role in the plan implementation.

- Mayor and City Council
- City Manager
- City Attorney
- Communications and Media Relations Department
- Development Services
- Engineering Services
- Environmental Services
- Finance Department
- Fire Department
- Frisco Economic Development Corporation
- Frisco Social Services and Housing Board
- Health and Food Safety
- Parks and Recreation
- Police
- Public Works

Community Members

Community members are an important and integral piece of Comprehensive Plan implementation. The Plan's Vision and Guiding Principles should be championed by community members, including property owners, businesses, residents, homeowners associations and other organizations investing in the community.

Local Agencies

Coordination with local agencies will assist with the provision of the quality community services and facilities necessary for the prosperity of the City. Such local agencies include:

- Frisco Chamber of Commerce
- Frisco Social Services and Housing Board
- Frisco Independent School District
- Lewisville Independent School District
- Prosper Independent School District
- Heritage Association of Frisco, Inc.
- Adjacent municipalities—Little Elm, McKinney, Plano and Prosper
- Little Elm Independent School District
- The Colony

County-level Agencies

Partnerships with Collin County and Denton County will assist Frisco in the coordination of City, County and regional implementation efforts.

Regional and State Agencies

Coordinating with regional and State-level agencies will be part of the implementation plan. These agencies include, but are not limited to:

- North Central Texas Council of Governments
- North Texas Municipal Water District
- TAPS Public Transit and other transit agencies
- The Texas Department of Transportation
- The Regional Transportation Council
- Texas Economic Development and Tourism Office

Public-Private Partnerships

Public-private partnerships provide an opportunity for the City and its sister agencies to partner with the private and non-profit sectors to jointly participate in the implementation of improvements and programs necessary to meet public and private needs.

with individuals, groups and businesses to advance the Principles of this Comprehensive Plan.

Key Implementation Strategies

The implementation strategy is a means of linking the priority needs and opportunities, identified through the public engagement process, to specific actions, programs and policies that the City should undertake to address them. This section highlights key implementation strategies being recommended as a part of the Comprehensive Plan's 10-year (2015-2025) work program. These Implementation Strategies are provided from a community-wide standpoint. The key action themes for the next 10 years include:

1. **Guidelines** – Strengthen the visual and functional environment through improvements to City design guidelines.
2. **Regulations** – Strengthen the development pattern in the City through targeted amendments to City standards, particularly the zoning and subdivision ordinances.
3. **Financial Incentives** – Develop programs that provide incentives for developers to build superior projects that comply with the Principles of this Plan and the regulations of the City.
4. **Capital Investments** – Define criteria and establish processes that promote the expenditure of City funds in a fiscally responsible manner.
5. **Education and Communication** – Ensure processes and procedures that communicate the results of the implementation effort and provide a framework for tracking the success of the strategies.
6. **Partnerships** – Identify and forge partnerships

#	Implementation Strategy	Timing
Guidelines		
G01.	Update or enhance design guidelines that support Place Making in key Place Type areas and the use of natural areas and resources in the design of Frisco neighborhoods and amenities.	Mid-Term
G02.	Review and update guidelines for developments at major intersections, particularly to encourage connections with adjacent neighborhoods.	Mid-Term
G03.	Conduct a Gateway Design Study to determine the appropriate characteristics of the development, signage and amenities at the major entrances to Frisco.	Short-Term
G04.	Evaluate design guidelines to ensure that employment centers are developed with the character that attracts highly-skilled, high-income workers.	Short-Term
G05.	Include fiscal impact assessment in the criteria for evaluating development proposals.	Mid-Term
G06.	Develop a Comprehensive Plan checklist for use in evaluating development proposals and zoning applications for consistency with the plan's principles and direction.	Short-Term
G07.	Consider a Transportation System Management (TSM) plan as part of new development and City infrastructure operations.	Long-Term
G08.	Create a Neighborhood Design Strategy to establish policies, standards, and/or guidelines for residential developments.	Short - Term

#	Implementation Strategy	Timing
Regulations		
R01.	Review and update landscape regulations for private developments and City infrastructure projects to ensure wise water use.	Short-Term
R02.	Determine necessary revisions to the zoning ordinance to facilitate development according to this Comprehensive Plan.	Short-Term
R03.	Determine necessary revisions to subdivision regulations to facilitate development according to this Comprehensive Plan.	Mid-Term
R04.	Establish policies to guide the appropriate mix, intensity and design of projects that redevelop properties in key areas of Frisco (i.e., downtown and commercial along major arterials).	Mid-Term
R05.	Review design requirements and modify them as necessary to incorporate CPTED principles.	Mid-Term
R06.	Complete a 'greenprint' map and use this mapped information in the development review process.	Long-Term
R07.	Review and update the City's Thoroughfare and street design standards to incorporate this Comprehensive Plan's direction in the development process.	Mid-Term
R08.	Update the Preston Road Overlay District to respond to land use changes envisioned by the 2015 Comprehensive Plan with a focus on the areas north of Main Street in the Rural Corridor Zone	Short-Term
R09.	Prepare an Overlay Zoning Ordinance and District Standards for the US 380 Corridor	Mid-Term
R10.	Prepare an Overlay Zoning Ordinance and District Standards for the SH 121 Corridor	Mid-Term

#	Implementation Strategy	Timing
Financial Incentives		
F01.	Review and refine EDC incentive programs to maximize their support for Comprehensive Plan implementation.	Short-Term
F02.	Create programs that encourage developers to incorporate natural assets, green infrastructure, xeriscape, and enhanced green building design in projects.	Mid-Term
F03.	Consider creating programs to encourage developments that diversify the housing stock and incorporate subdivision features and elements that respond to City Council goals.	Short-Term

#	Implementation Strategy	Timing
Capital Investments		
C01.	Review and revise City's street design standards as necessary to follow Place Making principles.	Mid-Term
C02.	Invest in facilities that support alternative means of travel as part of the multi-modal network within Frisco.	Long-Term
C03.	Establish criteria for City capital investments that consider: the economic return on the investment, important resources identified on the Frisco 'greenprint' map, and the life-cycle costs of the facilities.	Mid-Term
C04.	Invest in completion of pedestrian and bicycle routes connecting Frisco neighborhoods with destinations in the City.	Long-Term
C05.	Establish a process for regular review of the City's infrastructure policy and Capital Improvements Program.	Short-Term

#	Implementation Strategy	Timing
Partnerships		
P01.	In collaboration with educational entities, conduct a study to determine potential locations for higher education facility in Frisco.	Mid-Term
P02.	Partner with ISD's and the Frisco Chamber of Commerce to ensure that Frisco residents have the skills employers need.	Mid-Term
P03.	Assist FEDC in developing collaborations to supplement the capital markets in funding business start-ups, retention and expansion.	Long-Term
P04.	Work with public and private transportation providers to evaluate methods to provide public transportation in Frisco.	Long-Term
P05.	Use partnerships with neighborhood organizations to encourage and achieve code compliance.	Short-Term
P06.	Implement the development-related aspects of the Social Service and Housing Board's action plan in partnership with health and social service providers.	Long-Term
P07.	Continue Frisco's leadership role in regional air and water quality and natural resources.	Short-Term
P08.	Partner with other organizations to educate and engage residents about using resources responsibly.	Mid-Term
P09.	Work with NTMWD to continue or enhance programs that support water conservation.	Mid-Term
P10.	Evaluate opportunities to partner with non-profits such as the Connemara Conservancy to provide property owners with options to retain natural areas.	Long-Term
P11.	Expand and enhance cost-sharing programs with other public entities that fund needed Frisco infrastructure.	Long-Term
P12.	Continue partnerships with apartment managers using the City's annual inspection program to ensure code compliance in all apartments & urban living units.	Short-Term

#	Implementation Strategy	Timing
Education & Communication		
E01.	Establish a process for regular review of progress on plan implementation.	Short-Term
E02.	Communicate regularly with the Frisco community about the results of plan implementation.	Short-Term
E03.	Use City programs to help Frisco residents improve well-being and health.	Mid-Term
E04.	Develop appropriate measures to measure and track Frisco's environmental footprint.	Long-Term
E05.	Monitor and communicate the energy savings and other benefits of the City's green building and green infrastructure policies.	Long-Term
E06.	Monitor and communicate the condition of City infrastructure and facilities.	Mid-Term
E07.	Encourage partnerships between Homeowner Associations to investigate the replacement of high-flow irrigation heads with low-flow heads.	Short-Term

APPENDICES

Eight appendices add informational context, substance and detail to some of the concepts referenced in the text of the 2015 Comprehensive Plan. These appendices are:

A1. Strategic Focus Areas

A2. Placemaking & Resiliency

A3. Land Use

A4. School District Impacts

A5. Market Context

A6. Public Health & Safety Services

A7. Ecology & Natural Resources

A8. Transportation/Mobility

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A1 | STRATEGIC FOCUS AREAS

Council Strategic Focus Areas

The Frisco Council's Strategic Focus Areas (adopted in 2003), as published in the 2014 budget, are:

1. **Long-Term Financial Health** - Responsible stewardship of financial resources balancing short and long term needs of the community.
2. **Public Health & Safety** - Provide quality programs and services which promote community well- being.
3. **Infrastructure** - Develop and maintain transportation systems, utilities and facilities to meet the needs of the community.
4. **Excellence in City Government** - Provide effective and efficient services with integrity in a responsive and fair manner.
5. **Sustainable City** - Promote the continued development of a diverse, unique and enduring city.
6. **Civic Involvement** - Encourage civic pride, community participation and a sense of ownership in our community.
7. **Leisure and Culture** - Provide quality entertainment, recreation and cultural development to promote and maintain a strong sense of community.

Council Goals, 2014

The City Council conducted its Strategic Work Session on January 30 – February 1, 2014. At the Work Session, Council agreed upon twelve priorities for 2014:

- Attract a major employer (Fortune 500)
- Bond Committee
- Destination Dining/Walkable Entertainment
- Destination Hotel
- Develop Policy & begin to Fund Capital Reserve
- Focus on Completion of Exide Closure and Clean Up
- Get Multi Use Facility under Construction
- Grand Park
- Identify mix of retail, parks, commercial, population goals at build out in conjunction with Master Plans
- Master Plans- Comprehensive Plan/Library/Parks—include integrated hike and bike trail
- Skate Park
- Strategy for Value Office and More Class A Office

2015 COMP PLAN PRINCIPLE	Council Strategic Focus Areas						
	Long-Term Financial Health	Health & Safety	Infrastructure	Excellence in Government	Sustainable	Civic Involvement/Pride	Leisure & Culture
Ch. 2, Guiding Principles							
GP1	X	X	X		X	X	
GP2	X	X			X	X	X
GP3			X				
GP4						X	
GP5		X			X	X	
GP6		X		X		X	X
GP7	X				X	X	X
GP8		X			X	X	X
GP9	X	X			X	X	
GP10	X						X
GP11		X	X		X	X	X
GP12			X	X	X		
Ch. 3, Place-Making & Resiliency							
PR1		X			X	X	X
PR2		X	X		X	X	X
PR3	X		X		X		X
PR4	X	X	X		X	X	X
PR5	X	X	X		X	X	X
Ch. 4, Land Use							
LU1	X				X		X
LU2	X				X		X
LU3	X				X		
LU4	X		X		X		
Ch. 5, Economic Policies							
E1	X			X	X		
E2		X			X	X	X
E3	X						X
E4					X		
E5	X						

2015 COMP PLAN PRINCIPLE	Council Strategic Focus Areas						
	Long-Term Financial Health	Health & Safety	Infrastructure	Excellence in Government	Sustainable	Civic Involvement/Pride	Leisure & Culture
Ch. 6, Public Health & Safety							
HS1		X	X		X	X	X
HS2		X	X				X
HS3					X	X	
HS4					X	X	
HS5	X	X		X	X	X	
HS6		X					
HS7		X		X			
HS8	X	X		X	X	X	
Ch. 7, Ecology & Natural Resources							
NR1			X		X		
NR2	X				X	X	
NR3			X		X		
NR4	X		X		X	X	
NR5		X			X		
NR6					X		
NR7					X		
NR8					X		
NR9		X	X		X		X
NR10						X	X
Ch. 8, Infrastructure							
I1	X		X	X			
I2	X		X	X			
I3	X		X	X	X		
Ch. 9, Transportation/Mobility							
T1			X	X			
T2			X			X	X
T3			X		X		
T4		X	X	X	X	X	X
T5			X		X		X
T6		X	X				X
T7		X	X				
T8			X				
T9			X	X			
T10			X	X			

A2 | PLACEMAKING & RESILIENCY

Introduction

Numerous cities in the Metroplex and across the country that are facing a similar dilemma: continuing to grow and attract reinvestment as it ages and begins to require additional revenue to maintain municipal services and infrastructure. A city that was once an attractive suburb in the path of growth, with raw land and high levels of investment, is passed by over time as development moves further out. The suburb and its neighborhoods and commercial areas begin to show the signs of aging due to decreasing levels of reinvestment just as the infrastructure starts to require maintenance and replacement. In the early years, these cities tend to focus more on growth as a means of expanding the tax base, paying little attention to Placemaking (aesthetic) principles that could help distinguish them from other cities in the surrounding area. As a result, as new growth moves further out, these cities begin to decline and become less competitive, leading to higher taxes and lower levels of investment.

Trends – Past and Present

After World War II, most residential subdivisions were mass produced and generally indistinguishable from one another. Placemaking principles, including the need to mix uses and to preserve a site's natural features and provide amenities, were left off the drawing board in the rush to meet the growing demand for housing.

One of the most basic economic principles, often described in terms of the production of widgets, says that the cost per unit decreases as more widgets are produced, and this leads to a corresponding increase in profits. Subdivisions became the widgets of the development industry.

Three key elements to a successful city:

- *A good school district;*
- *An array of services such as retail, entertainment, recreation, jobs, excellent public safety and infrastructure;*
- *Aesthetics that bring a strong sense of identity and place.*

These elements are critical to a city's ability to continue to grow and attract reinvestment as it ages and begins to require additional revenue to maintain municipal services and infrastructure.

They looked essentially the same, and when the newness wore off, people tended to move on to the next new neighborhood. Lower levels of reinvestment by subsequent owners led to decreasing property values, which had a negative effect on the city's ability to generate the revenue necessary to fund basic maintenance on the infrastructure and provide city services.

When people vacation in other cities, they are attracted to places that are exciting, places that have character. They do not seek out the sterile, everyday city.

Richard Florida, an American economist and social scientist, has written several books on the "Creative Class."²⁹ The Creative Class includes the "knowledge workers" who have become the drivers of economic development. These workers are employed in the fields of science, engineering, education, computer programming, the arts, healthcare, business, finance and law.

Creative Class workers are not tied to a location by their jobs. They have multiple options about where to live, and more are choosing to live in places that offer the best quality of life. Both

29 Richard Florida

Millennials and Baby Boomers are seeking places that offer a more interesting and engaging lifestyle, (see also Chapter 3, *Place Making & Resiliency* and Chapter 4, *Land Use*).

A developing trend in the employment sector is that jobs are starting to follow the labor force.

No longer is the decision to locate a business simply a factor of where the CEO wants to live. It is more a function of where the workforce wants to live. This is especially true of the Creative Class. These highly-skilled individuals are seeking places that offer a certain quality of life.

The Urban Land Institute's *Emerging Trends in Real Estate 2015* notes the resurgence of cities, but also cautions against giving up on the suburbs. The ULI report describes "the good," "the bad" and the "ugly" of suburban cities:

- **The good**

Many of the "edge city" locations that combine office, retail and residential areas effectively—especially those that have two characteristics. Those attributes are sufficient density to support live/work/play interactions and a combination of transit and walkability.

- **The bad**

Anything "garden variety." Over the short haul, anyway, there is not much demand from either users or investors for plain-vanilla, highway-dependent office parks or other real estate that falls into the "commodity" bucket. They are cheap, but you get what you pay for.

- **The ugly**

Anything that smacks of "sprawl" or of "yesterday's hot concept." If a property is dependent upon an inflated parking ratio, take a pass. If a property is operationally tied to demand that presumes the growth of tract housing at the perimeter of a metro area, run the other way. If you find a property without a cogent appeal to either Millennials or Baby Boomers, time is not on your side.

Placemaking is about putting people first.

When people have a choice about where to live, they seek out the places that offer community, connection and a higher quality of life. Three elements crucial to a successful city—good schools, a variety of services, and strong aesthetics—combine to create strong and resilient places that attract people, shore up property values and help maintain a healthy revenue stream for the city.

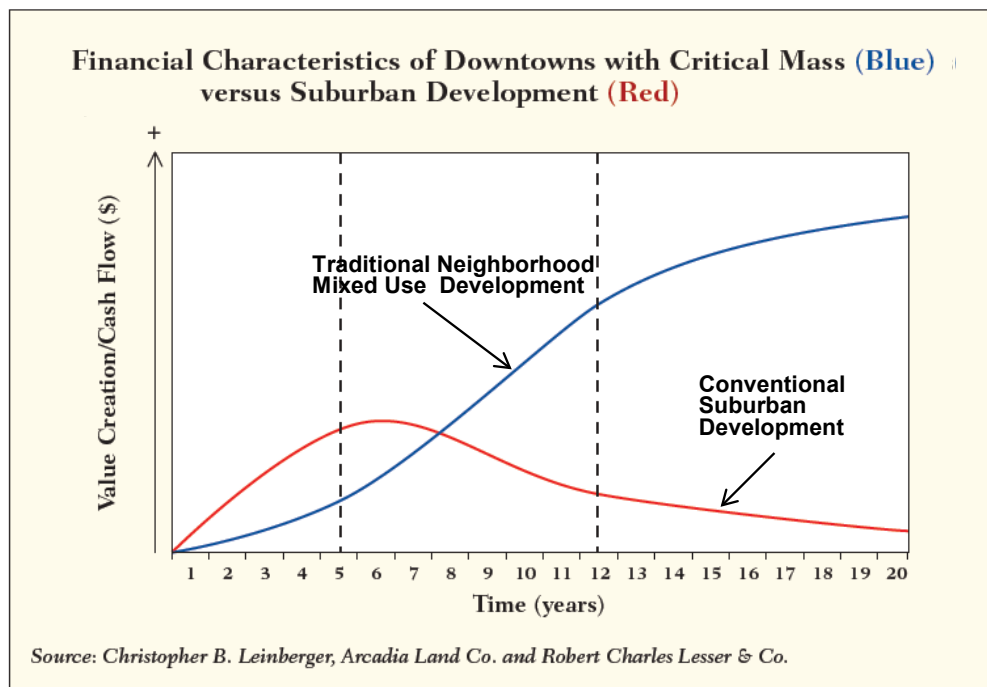


Figure A2-1: Financial Characteristics of Different Types of Developments

The Importance of Creating Long-Term Value

Maturing suburban cities begin facing the challenge of aging properties, sagging property values and declining sales tax revenues at about the same time as the need for major maintenance occurs on crumbling infrastructure.

Placemaking techniques can help create and maintain higher property values and attract reinvestment. The application of placemaking principles, however, will not occur without City leadership.

Value of Well-Designed Streets

Street rights-of-way are one of the most overlooked opportunities for shaping a community's image, (see also Appendix A8, *Transportation/Mobility*). Everyone who lives, visits or travels through a city develops a perception of the community and decides what kind of place it is and how desirable it would be to live or work there based on the impression they get as they travel on city streets. This effect is comparable to the experience of buying a house. Realtors say that the decision to purchase a home is often due in large part to the curb appeal the buyer perceives within a few moments of seeing the house.

Street rights-of-way are generally the single largest land use within a city. This land use has served one primary purpose for the last 70 years—to move vehicles. Often, a token sidewalk will be provided should someone have to walk. Over time, rights-of-way have evolved into a sterile environment, inhospitable to forms of transportation other than the automobile, especially to walking. The aesthetics of the roadway and the area surrounding it, intentionally or unintentionally, convey a message about the community to residents, workers and visitors.

Urbanist Jane Jacobs summarized the potential of a well-designed roadway, stating that

***“...Streets and their sidewalks,
the main public places of a city,
are its most vital organs.
If a city's streets and sidewalks look interesting,
the city looks interesting;
if they look dull,
the city looks dull.”***

Creating Value and Attracting Reinvestment Over Time

There are two types of value—**initial value** and **long-term value**. Initial value benefits from meeting an immediate market demand and converting vacant land into a new use by improving it with buildings and utilities. Over time, however, the value of the investment often tends to decline, (see the *Leinberger graphic, Figure A2-1*), and this can be challenging for communities.

The graph shows that the value of the pedestrian-oriented mixed-use development rises more slowly in the early years but continues on an upward trajectory, while the value of single-lot strip development tends to peak at about seven years and then begins to decline. This is because in a mixed-use development, each building contributes to the attractiveness of the entire district, adding people and new uses and extending the pedestrian environment. As a result, the district as a whole becomes more attractive than the individual buildings.

People are drawn to areas that reflect timeless Placemaking principles. Cities know what will work but need to implement the measures that will ensure that a quality environment is achieved. The challenge is that the development community may have different objectives. Many, though not all, developers subscribe to a particular business plan: acquire land in an area that has a good marketing image; build a simple (low-risk) product as fast as possible and at minimal cost; sell it quickly; then move on to the next project. This is somewhat understandable as a business model, but it does not support a city's revenue-generating capacity.

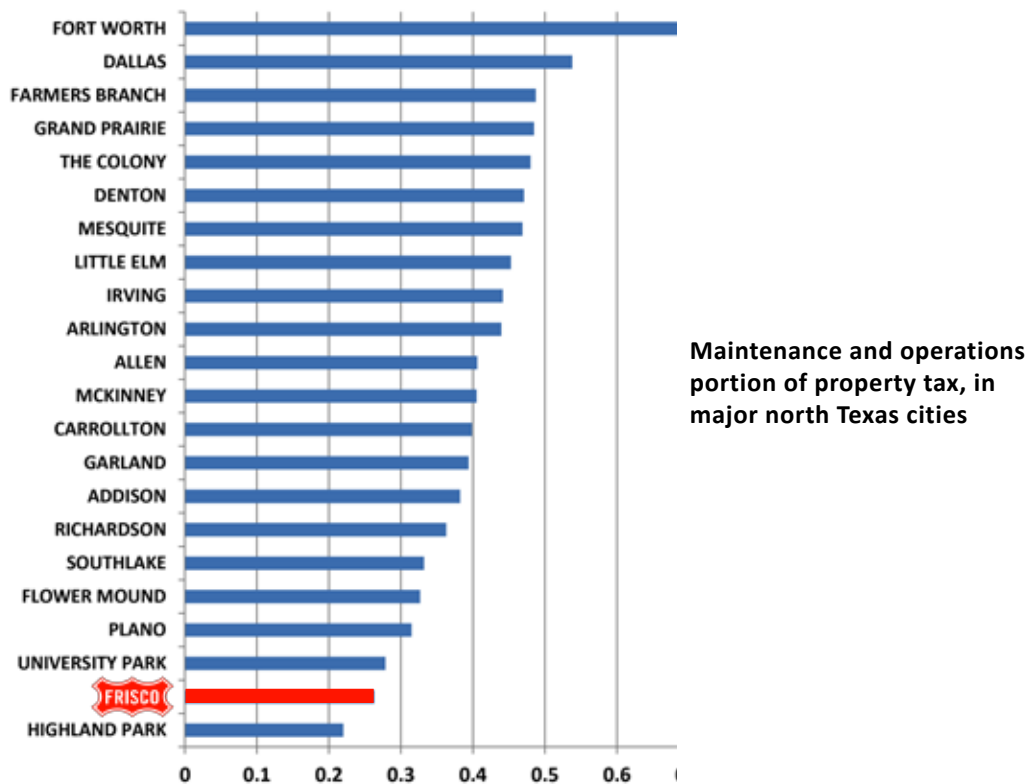
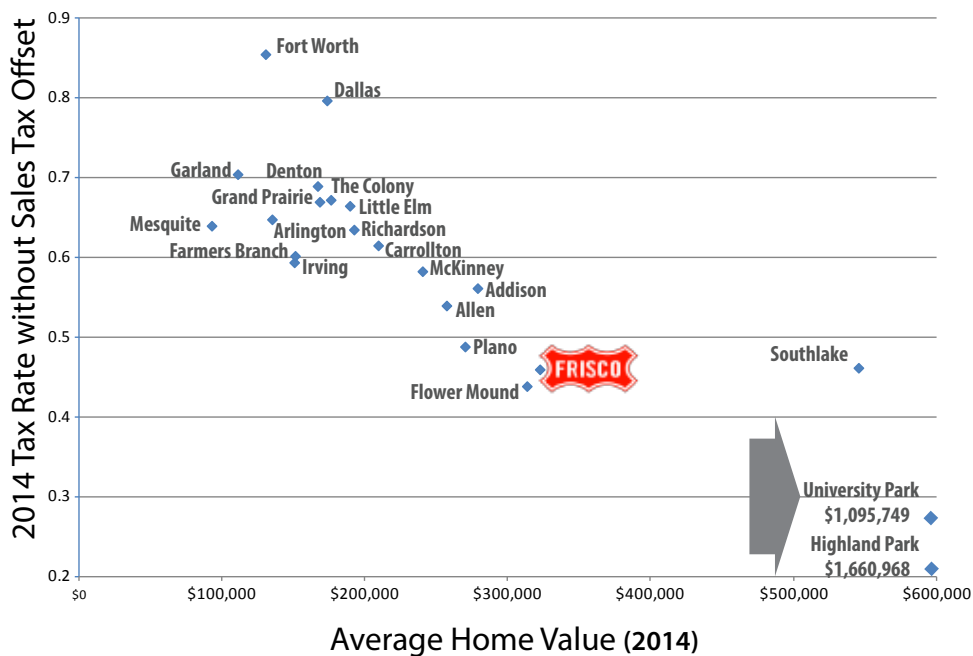


Figure A2-2: Maintenance & Operations (2014)



Over time, if a high level of reinvestment does not occur, tax rates will have to rise to meet the city's obligation to provide the minimum basic services.

Figure A2-3: City Tax Rate vs. Property Values

The city has a fiscal obligation to its citizens to ensure that there is a diversity of commercial and residential projects, firmly based on quality Placemaking principles, so that businesses and residents are committed to the city and their neighborhoods for the long term and will invest and reinvest in their properties.

The figures on the previous page show the difference between cities that have created “great communities” and attracted high levels of reinvestment and those that have not.

Value of Open Space

There are at least two proven techniques for enhancing property values and attracting reinvestment—the inclusion of open space and the planting of trees.

The provision and integration of open space, excluding active parks that are typically the responsibility of a city’s Parks Department, can significantly enhance property values.

For residential neighborhoods, properties within 100 feet of a publicly accessible open space have a 23% value premium compared to the adjacent property, and there is actually a measurable premium for properties up to a quarter-mile away. In order to achieve this value bonus, however,



Example Of Value-Creating Open Space: Adjacent Roadways, Easy Neighborhood Access And Homes Facing The Open Space

homes must face the open space, not back up to it. Value is created where there are views to the open space from homes, where streets abut the open space and where pedestrian access is easy. There are many examples of well-designed open spaces in the region, including Bosque Park in Addison Circle and Flippin Park in Highland Park.

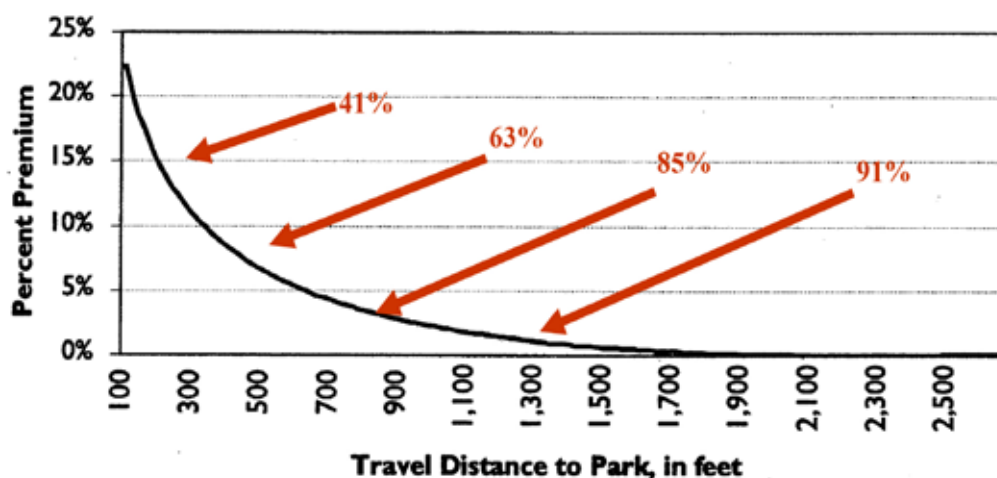


Figure A2-4: Impact of Proximity to Park

30

30 Valuing Open Space: Land Economics and Neighborhood Parks. Massachusetts Institute of Technology Center For Real Estate, and School Of Architecture. Based on MLS Data for 3,400 Home Re-sales

Near 15 Neighborhood Parks



Example Of Value-Creating Open Space In A Commercial Setting: Utilizing Retention And Detention As An Amenity And Creating Public Gathering Spaces (Fronting To And Activating The Space).

Natural Features

Expressing natural features like topography, vegetation, creeks and drainage can provide a community with personality and beauty, distinguishing it from neighboring cities and helping to define the community's unique DNA. Because natural features are generally limited, it is in the city's best interest to cherish these amenities in the development of property to maximize land values and create uniqueness in the surrounding neighborhoods. Preserving a natural area as part of a development is simpler than trying to retrofit such an area, but reconstituting a concrete-lined drainage channel as a stream corridor is an example of a technique that can be used to return an area to its natural state as redevelopment occurs over time.

The preservation of Turtle Creek in Dallas and Highland Park has created a major amenity, a sense of identity and extraordinary value for the area. Working with the topography of Westover Hills in Fort Worth provided one-of-a-kind lots and legacy-caliber development. Acknowledging the existing topography and drainage pattern helped create a unique mixed-use retail and urban residential community at Southlake Town Square.



The Value of Trees

Trees provide relief from the harshness of roads and buildings and have a significant effect on making both the indoor and outdoor environment more comfortable. For example, they can lower the ambient temperature by 7 to 11 degrees and reduce air conditioning needs by 25-30% and heating demand by 20-50%³¹. The impact of a single tree on the value of the surrounding property can range from \$1,000 to \$10,000³², and landscaping with trees can boost property value by up to 20%³³, (see also Appendix A7, Ecology & Natural Resources).



31 (U.S. Department of Agriculture Forest Service, www.arborday.org)
 32 Council of Tree and Landscape Appraisers)
 33 Management Information Services/ICMA, www.arborday.org

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A3 | LAND USE

Introduction

This appendix provides background and supplementary information for Frisco's Land Use Strategy. It contains information on the existing land use pattern and statistics, population, and detailed land use policy information.

Existing Land Use

Existing land use can be defined as the primary activity on a parcel of land at a specific moment in time. The existing land use map was created by using Frisco's GIS (Geographic Information System) data as a base. The GIS assigns each parcel of land in the City with a specific land use. The final existing land use map was reviewed and confirmed by the CPAC and City officials.

It is imperative to note that existing land use is a broad categorization of current uses. These land use designations do not indicate existing zoning or planned future land use. Existing land use designations are simply a snapshot categorization of the land uses that existed at the time of the analysis.

Frisco is comprised of many different and unique areas which serve the residential, retail, service and civic needs of residents and businesses in the City and in the region. The following ten land use types are found within Frisco:

- **Single Family Detached Residential** – A building containing one dwelling unit on a single lot.
- **Multi-Family Residential** – A building containing three or more dwelling units on a single lot, each with direct access to the outside or to a common hall.
- **Parks and Open Space** – A tract of land designated and used by the public for active or passive recreation or land which has been left in its natural state and will not be developed.

- **Public** – Any building, facility or land used by the general public or a governmental unit.
- **Utilities** – Any agency, franchise or business which provides the public with electricity, natural gas, heat, communications, transportation, water, sewage collection or other similar service.
- **Office** – A building used for conducting the administrative affairs of a business, profession, service, industry or government.
- **Retail/Commercial** – An establishment providing services, entertainment or products to the general public for personal, business or household use.
- **Industrial** – Any business engaged in the mechanical or chemical transformation of materials into new products including warehouses, showrooms and assembly processes.
- **Agricultural** – The production, keeping or maintenance of plants and/or animals for consumption.
- **Right-of-Way** – Land acquired by reservation, dedication, prescription or condemnation and intended for use as a road, sidewalk, crosswalk, railroad, utility or other similar use.

Prior to establishing the preferred land use pattern for future growth and development in Frisco, the existing land use pattern must be considered (the City ETJ area is discussed in the following section). *Table 4.1*, on page 50, contains information on the various types of land uses and how they are currently developed in Frisco by number of acres, percentage of acres (developed and total), and acres per 100 persons. For comparison purposes, both the 2006 and the 2014 land use data is provided.

The following list identifies significant characteristics of Frisco's developed land use pattern as of March 2014. These characteristics are supported by *Table A3.1* and the *Existing Land Use map, Figure A3-1*.

- The City has increased in overall land area by 6,095 acres since 2006—a 15% increase.
- Approximately 55% of the land within Frisco is developed in 2014 compared to 46% in 2006. The build-out calculation for Frisco was 62% as of January 2015, based on recorded plats.
- As was the case with the 2006 existing land use patterns, most of the undeveloped/vacant/agricultural land remains in the northern and eastern portions of the city. Most of this land remains in large parcels which have not been subdivided.
- While the amount of land devoted to single-family residential uses has increased by over 1,300 acres since 2006, the percent of land developed for single-family residential purposes decreased from 44% in 2006 to 37% in 2014, largely due to an increase in non-residential land uses. In the future, additional single-family residential development will occur, but at a slower rate; therefore, it will become a smaller percentage of the overall land use.
- While the amount of agricultural land has remained relatively consistent at just over 20,000 acres (due to annexations since 2006), the percentage of agricultural land has dropped by 9% as other land uses have increased.
- The largest increases in land use acreage on a percentage basis were in the Parks and Open Space category (+4.4%), the Retail/Commercial land use category (+4.4%) and the Right-of Way category (+4.1%).
- The largest decreases in land use acreage, based on percentages, were in the Public (-7.2%) and Single-Family (-6.7 %) categories.
- The amount of parks and open space land per 100 persons in Frisco has increased from 1.27 acres to 1.81 acres, at the high end of nationally-recognized standards for open space allocation for residents.
- There are 2.56 acres of land used for retail/commercial development for every 100 persons in Frisco. This is an extremely high ratio with an average retail ratio of 0.5 acres per 100 persons.

Under Chapter 42 of the Texas Local Government Code, cities like Frisco have limited ETJ rights. This provides these cities the right to exercise governmental authority beyond their jurisdictional boundaries into unincorporated areas. These rights are limited for Frisco due to the fact that the City is surrounded on all sides by other municipalities; but however limited, the ETJ area does provide some opportunities for geographic growth in the future. The City can expand its boundaries by annexing any adjacent land within its ETJ. Since the 2006 plan, Frisco has annexed most of the remaining ETJ land to the north of the City, increasing the City acreage by 15% — over 6,000 acres of land—most of it undeveloped or agricultural land in large parcel format. Today, there is little ETJ land left to annex, most of it in the northern half of the City and in the west.

Land Use Category		Acreage		Percent of Developed Acreage		Percent of Total Acreage		Acres per 100 Persons	
		2006	2014	2006	2014	2006	2014	2006	2014
Residential	Single Family	7,919	9,785	44.0%	38.8%	20.5%	22.5%	9.94	7.12
	Multi-Family	292	434	n/a	1.7%	n/a	1.0%	n/a	0.32
	Urban Living	2	77	n/a	0.3%	n/a	0.2%	n/a	0.06
Public/ Semi-Public	Parks and Open Space	1,012	3,663	5.6%	14.5%	2.6%	8.4%	1.27	2.67
	Public	2,806	2,332	15.6%	9.2%	7.2%	5.4%	3.52	1.70
	Utilities	43	148	0.2%	0.6%	0.1%	0.3%	0.05	0.11
Non-Residential	Office	194	323	1.1%	1.3%	0.5%	0.7%	0.24	0.24
	Retail/Commercial	1,756	1,840	9.8%	7.3%	4.5%	4.2%	2.20	1.34
	Industrial	191	277	1.1%	1.3%	0.5%	0.6%	0.24	0.20
Agricultural/Vacant		20,718	18,297	-	-	53.5%	42.0%	25.99	13.32
Right-of-Way		3,785	6,347	21.0%	25.2%	9.8%	14.6%	4.75	4.62
Total Acreage Developed		18,000	25,226	98.4%	100.0%	46.5%	58.0%	22.58	18.36
Total Acreage Within the City		38,718	43,523	-	-	100.0%	100.0%	48.58	31.68

Table A3.1: Frisco Existing Land Use – Acreages and Percentages, 2006 and 2014

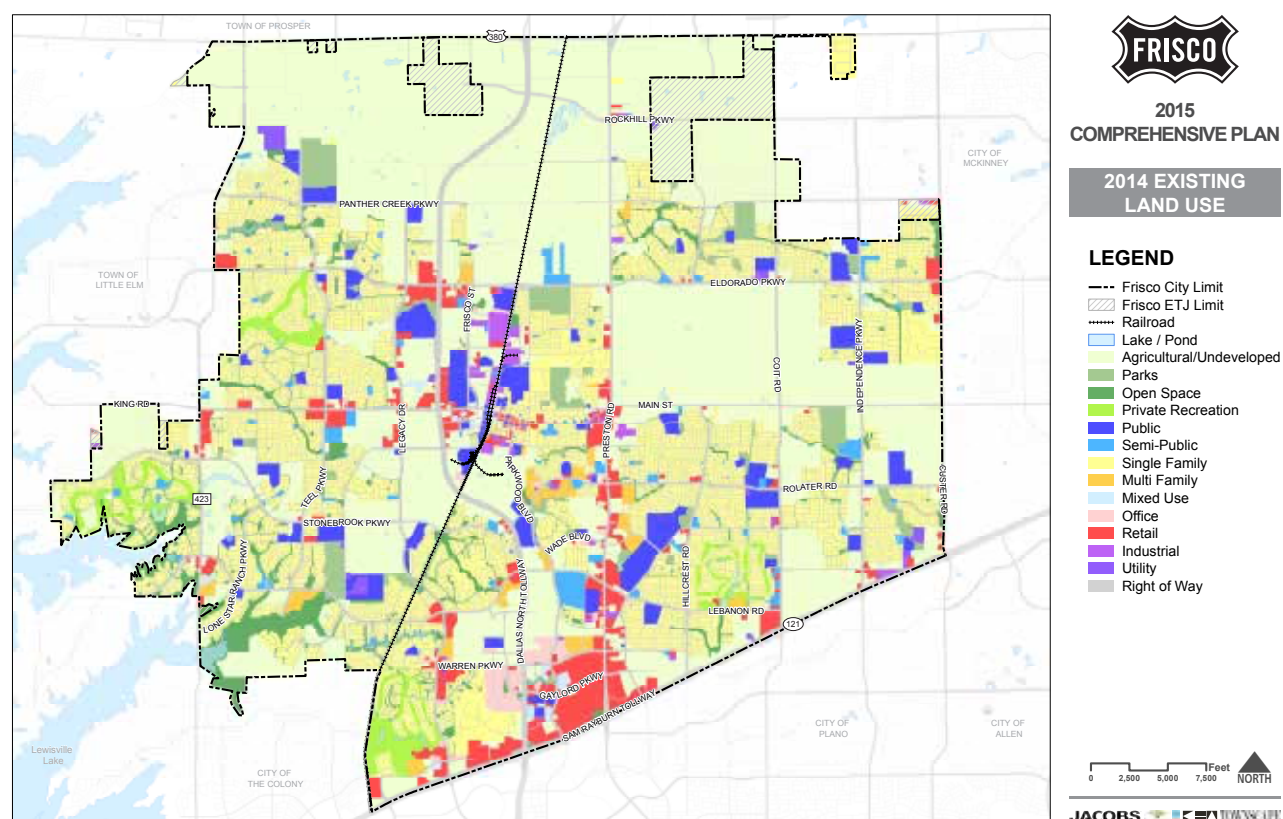


Figure A3-1: Existing Land Use, 2014

Population

The City of Frisco has grown dramatically over the last 15 years—from a population of 33,714 in the year 2000 to 145,500 persons in January 2015, a threefold increase in population. Historically, the city has exhibited double-digit growth impacting housing needs, employment opportunities, schools, municipal services and retail needs.

Year	Population
1980	3,420
1990	6,138
2000	33,714
2005	79,702
2010	116,989
2015	145,520

Table A3.2: Decennial Census Population (April) and January Estimates

Population Projections

The City develops monthly population estimates based on the number of certificates of occupancy issued and uses this information to develop annual population projections. Likewise, the North Central Texas Council of Governments makes projections regarding the growth of cities within its 16-county region. This process serves as a basis from which to project the likely population in future years.

- A 15-year market study analysis shows the potential to reach a population of 231,500 by the year 2030.

Population Capacity

In order to guide the City in planning for the population that will ultimately have to be supported, an assessment of Frisco's future population is provided.

A Comprehensive Plan shall not constitute zoning regulations or establish zoning district boundaries. For projection purposes, calculations are based on the Future Land Use

Plan (FLUP) place type designations, but property owners may or may not rezone to match the Comprehensive Plan. Existing zoning may allow for fewer or greater than what is assumed in the FLUP place type assumptions.

A preliminary assessment of the impact of the 2015 FLUP is estimated to be:

- A build-out population capacity of $\pm 374,800$
- A maximum capacity of $\pm 176,900$ housing units at build-out

These estimates are preliminary, and reflect the **highest density assumptions** used in the place type categories and are **maximum capacity** figures. Additional research is being conducted to estimate the acreage need for public/semi-public uses, which will decrease the maximum capacity as that land become non-residential.

Population Capacity			
Product Type	Baseline Base*	Future (High)	Build-Out (High)
Residents	176,830	198,010	374,840

Table A3.3: Population Capacity at Build-Out Highest Density Scenario

Housing Units				
Product Type	Baseline Base	Future (High)	Build-Out (High)	
Single Family	54,530	56,710	111,240	63%
Multi-Family	7,150		7,150	4%
Urban Living	7,400	51,100	58,500	33%
Total			176,890	

Table A3.4: Housing Unit Capacity at Build-Out Highest Density Scenario

**Baseline Base = Current development + projects under construction or in the pipeline.*

Land Use Policies

These Land Use Policies are derived from the Guiding Principles and the Council's *Strategic Focus Areas*, particularly the focus on Sustainability, and are intended to work in conjunction with the FLUP, (see also, *Appendix A1, Strategic Focus Areas*). The following policies include some of the strategies from the 2006 Comprehensive Plan to help guide the development of uses under the future land use scenario. They were vetted as part of the 2015 Plan and remain valid to help support the sustainability of the plan.

1. Encourage sustainable, unique and accessible retail development.

The design of retail areas has continued to evolve over time. Today, this category typically includes single-use and mixed-use retail centers that compete for high-visibility intersections and roadway corridors. In many cases, they are only accessible by automobile.

Future retail and commercial development in Frisco should embrace the mixed-use development pattern, incorporating the following elements:

- A mix of uses, including residential and/or office to create more activity in a cohesive area;
- Pedestrian-friendly connectivity to adjacent neighborhood areas, which includes tree-lined sidewalks, roundabouts and/or landscaped areas where connectivity occurs, to reduce reliance on automobiles;
- Internalized parking with buildings out front (as opposed to large parking lots located adjacent to the street) to provide a more visually appealing development;
- Separation rather than concentration of parking to minimize wide expanses of concrete;
- Minimized spacing between buildings to maximize lot development;
- Reduced setbacks to increase the visibility of the buildings; and

- Consolidated open space, where feasible, into an amenity area with buildings oriented to this area.

Other guidelines for the location of retail centers of various types include:

- Retail should be limited to no more than 30 acres at key major intersections. This retail space, including the locations indicated as retail nodes (circles) on the FLUP, should occupy no more than two corners and could be allotted either entirely to one corner or divided between two corners (a minimum of 15 acres on each corner). The exception to this general rule should be to allow retail on all corners when it is integrated into a mixed-use development.
- Strip retail, other than at major intersections, should be avoided except when developed in a vertical mixed-use concept.

The size and type of retail development should be evaluated based on the proposed location. The FLUP does not differentiate the various types of retail; however, they are described as follows by type and location:

- **Neighborhood Retail**, located at intersections of collector or larger streets, should be easily accessible to pedestrians and bicyclists and should be integrated throughout the City. It generally serves up to a two-mile radius. Examples include convenience stores, beauty salons, dry cleaners, coffee shops, day care centers, small grocery/pharmacy stores and cafés.
- **Community Retail**, located at major intersections and along major roadways, should be easily accessible to pedestrians, bicyclists and automobiles. It generally serves a two- to five-mile radius. Examples include large grocery stores, restaurants (including drive-through) and shopping centers.
- **Regional Retail**, located along major roadways, should be easily accessible to pedestrians, bicyclists and automobiles. It will generally serve a five- to ten-mile radius. Examples of regional retail include

Stonebriar Centre, movie theaters and big-box retailers and this category also includes what is often referred to as “niche retail,” which is a specialized retail use that people travel to from further distances. Examples of this type of retail include an indoor amusement use or a unique movie-and-dinner theater.

- **Super-Regional Retail**, located along major transportation facilities such as U.S. Highway 380, State Highway 121 and the Dallas North Tollway (DNT) should be mainly accessible to automobiles, but ideally, depending on location, would be accessible to pedestrians and bicyclists. This type of retail generally serves more than a 10-mile radius. Examples of super-regional retail include the new IKEA store and the many sports venues within Frisco.
- **Unique Retail** areas are more sustainable over time because they are not easily replaceable. The concept of uniqueness is not necessarily in the type of retail itself, but in the feeling that a unique retailing experience evokes. This includes architectural style, wider sidewalks, open space and being people-centric.
- **Neighborhood-Accessible Retail** areas are sustained by adjacent residents, who often feel a sense of ownership in such areas. Highland Park Village is a good example of a retail area that was designed to be accessible to adjacent residents and that has stood the test of time. Frisco’s retail development will also be able to stand the test of time if it is designed with quality and accessible to area residents.
- **Regional Retail** draw within Frisco is not likely to change for a long period of time. Even regional centers such as Stonebriar and the retail uses along Preston Road will probably need to be redeveloped in the future; however, their prime locations will mean that their market value as retail opportunities will not likely diminish.
- **Mixed-Use Retail** areas have a built-in consumer/patron market, much as neighborhood-accessible retail areas do. They have something that other single-use retail sites lack—an on-site patronage that is drawn from the other use types in the

development (offices, residential, civic, etc.). Mixed-use developments also retain the types of market support that single-use retail areas have, such as the nearby neighborhoods, the regional market and the drive-by market. This leads to an increased level of sustainability for the retail component of such developments.

2. Provide urban residential development within mixed-use developments.

The market for traditional garden apartments (MF) continues to wane as mixed-use concepts that have a multiple-family component are increasing in market share. The density that is provided by urban residential (UL) development is necessary to support the commercial uses identified in the FLUP. Further, vertical urban residential (UL) development in a variety of types, such as condominiums and large lofts, is not only ideal in terms of supporting surrounding uses, but also in providing housing choices for young professionals, young married couples and seniors. New garden apartments (MF) are not included in the FLUP and will only occur in the future where that type of zoning exists today.

3. Respect significant local destinations.

The City’s many unique sports venues—Toyota Stadium, Dr. Pepper Ballpark, the Superdome, Central Park, Frisco Commons—have helped to make Frisco a recognized destination City. Other significant local destinations include old downtown Frisco, Frisco Square and Stonebriar Center. These areas are important to the City for a variety of reasons. They provide uniqueness, allow for spectator recreation and preserve local history. They are also important as economic and activity generators, used by citizens and visitors alike. The FLUP has been drafted in a manner that respects these destinations. Future land use decisions regarding the areas surrounding them should be considered on the basis of ensuring their continued success and sustainability.

4. Encourage mixed-use developments in selected areas.

Autonomously developed (i.e., single or separated) land uses have become the norm since the 1950s with the increase in suburban development and the focus on the automobile. Many of these types of development have not been sustainable with changes in driving habits, aging of commercial structures and a change in attitude towards a preference for live/work/play environments.

The FLUP has been designed to support this policy with several land use categories intended to encourage mixed uses—specifically, the Mixed-Use Neighborhood, Transit-Oriented Development, and Urban Center categories. In each of these, the integrated development of various types of uses should be supported. It should be noted, however, that the mixed-use categories are not intended to be fully developed with high density residential uses (i.e. urban living)—this type of use should only be a small component of any proposed development.

In areas that are not designated on the FLUP for mixed-use types of development, the City should consider the following questions if a mixed-use development is proposed:

- Is the mixed-use development compatible with adjacent properties?
- Is the mix of uses compatible with the development itself?
- What is the traffic impact on adjacent properties?
- What is the traffic impact on other City thoroughfares?
- Do the architectural features of the mixed-use project tie the development together and are they compatible with surrounding development?

5. Provide for a variety of residential development.

Frisco has largely been developed over the last 20 years, and traditional suburban subdivisions continue to be the norm. As was

identified in the 2006 Plan, quality housing is not a challenge in Frisco as it is in many cities; however, the lack of diverse housing continues to be an issue, and this has likely affected Frisco’s demographics—that is, the City continues to attract only small percentages of young, single adults and seniors.

- The City should encourage the development of neighborhoods other than detached single-family. The FLUP is designed to support this policy, which is intended to provide for a variety of housing types and densities.
- Encourage a mixture of housing unit types, including adding townhomes and two-family residential, in the pockets of vacant land around developed subdivisions.
- The residential choices that are available should give Frisco residents the option to “age in place”. These residential choices could include a variety of walkable neighborhoods.
- Consider criteria for evaluating which sites are best suited for estate residential.

6. Support downtown Frisco (the original town).

Old downtown Frisco is an interesting and special area of the City. The goal of this Plan would be to preserve its character by permitting a mixed-used concept full of unique atmosphere and characteristics.

- Connectivity to nearby sports venues, the City Hall and Library, the proposed commuter rail station (in the vicinity) and other significant locales is an important aspect of maintaining the viability of this area;
- Architectural compatibility, including the identification of façades in the downtown area worthy of preserving as future development and redevelopment occur;
- A possible pedestrian area (i.e. convert 4th Street into a pedestrian area at Main Street, from Oak Street to Elm Street);
- On-street parking along Main Street; and
- Two-way circulation throughout downtown (consistent with today’s pattern).

7. Encourage development in infill areas and adjacent to existing development.

The term “urban sprawl” can be defined and assessed as follows: “Land development predominantly on the urban or suburban fringe that is characterized by low-density, separated and dispersed uses dependent on automobiles and economically segregated residential areas. This has contributed to environmental degradation, increased traffic congestion, lessened community values, and reduced quality of life.”³⁴

The City should employ the following policies to combat sprawl:

- Encourage mixed-use development in appropriate locations;
- Provide incentives for clustering development so that environmentally significant areas are protected and open space is preserved;
- Encourage a mixture of housing types; and
- Require connectivity in new areas and improve connectivity in developed areas for pedestrians, motor vehicles and bicycles.

8. Establish specific policies for major transportation corridors.

In general, single-family residential developments should not be permitted or accessed along major transportation corridors.

- The City currently has a policy of not allowing single-family residential uses to locate within 300 feet of the DNT. This Land Use Strategy supports continuing that policy.
- The City currently has a policy of not allowing single-family residential uses to locate within 1,000 feet of State Highway 121 and U.S. Highway 380. This Land Use Strategy supports continuing that policy.
- Much in the way that State Highway 121 has developed, U.S. Hwy 380 should

generally be non-residential as shown on the FLUP.

- Any residential development that is proposed in the vicinity of U.S. Highway 380 or State Highway 121 that does not adhere to these policies should be considered on the basis of economic impact (lack of non-residential tax revenue), development size, remaining land availability for nonresidential development and the exposure of the proposed development to the US Highway 380 frontage. Residential development must take place in a mixed-use environment and should be built concurrently or after the development of the non-residential uses.
- Preston Road should not be saturated with single-use retail development. This is a challenge for the City because the market is currently driving retail strip center development along corridors like Preston, which is evident by the type of uses that are there now.
 - Development should primarily be retail, but should be integrated with other types of uses, such as offices and residential development. Connections to nearby residential development will be key to providing uniqueness to the Preston Road corridor.
 - Adjacent developments should continue to be required to provide for cross- and/or shared access between the developments so that people in automobiles will not have to utilize Preston Road to get from one development to another, thereby helping to minimize congestion.
- Shared parking should be encouraged. There are many uses, such as offices, that may need parking but not at night. Other uses, such as a dinner-only restaurant or movie theaters, may need parking at night. Reducing the total number of required spaces would minimize the visual blight of wide, expansive parking lots.
- Residential development should generally not occur along the railroad right-of-way. When residential development is

³⁴ CorrigMary Beth, et al. Ten Principles for Smart Growth on the Suburban Fringe. Washington, D.C.: ULI – the Urban Land Institute, 2004. (Catalog Number T24.)

permitted to occur, adequate buffering should be incorporated to minimize any land use conflicts. Landscape berms, trees that lessen noise, greenways and trails are examples of buffering types that should be used. Refer to the Zoning Ordinance for buffer requirements.

9. Support existing development.

- The City should allocate resources on an annual basis to maintain developed areas to a level of quality consistent with Frisco in general.
- Non-residential and residential infill development should be encouraged. Wherever possible, this development should take advantage of the location of the parks and open spaces by orienting homes and businesses so that they face the parks/open spaces, not back to them.

10. Integrate land uses with the transportation system.

Transportation is inherently linked to land use, (*see also Chapter 3, Place Making & Resiliency and Chapter 4, Land Use*). The type of roadway serving a property dictates the use of adjacent land, and conversely, the type of land use dictates the size, capacity and flow of the roadway. Nonetheless, roadways are often developed and improved only on the basis of the amount of traffic they are carrying or are expected to carry, without much consideration for the type of land use that is present or expected to develop adjacent to them. It is recommended that the City adopt the following general land use policies in relation to transportation.

- Mixed-use areas should have unique street standards that enhance the pedestrian environment.
- Areas designated as Transit-Oriented Development on the FLUP should be designed to facilitate transit vehicle circulation and should have pedestrian-oriented amenities.
- High-volume, non-residential corridors, such as Preston Road, should have established access management policies that are implemented as development

occurs, not only to facilitate optimal mobility, but also to provide accessibility.

11. Provide positive land use relationships for public/semi-public uses.

- Land uses should be appropriately sited to ensure compatibility of hours, traffic impacts, and function. Mixed-use or multi-use land use patterns are encouraged.
- Elementary schools should be centrally located within a residential neighborhood to prevent the need for students to cross major roadways to access the school. Elementary schools should be accessible from at least one collector street (not from a major or minor thoroughfare), which would ideally connect to the neighborhood's peripheral thoroughfare (within approximately 1,200 feet of the elementary school).
- Middle schools and high schools have a larger student population and need to be located along major and minor thoroughfares.
- Whenever possible, schools should be co-developed adjacent to City parks.
- Large religious places of worship and "campuses" (multiple buildings with different uses) should be located where traffic and needed circulation will be accommodated. Other suggested parameters include:
 - Churches should be located along major and minor thoroughfares;
 - Churches should have direct access from a median opening (if located on a divided thoroughfare);
 - Parking areas should be screened with landscaping, berms, low walls, or a combination thereof; and
 - Churches should not be located at residential subdivision entrances.

12. Day care centers present a unique combination of benefits and challenges.

Day care centers may be located within corporate business parks (i.e., privately-run day care centers targeted to employees). Day care centers may be included in retail

developments, mixed-use developments and in neighborhood-oriented retail areas. Other suggested locational parameters for day care centers include:

- Day care centers should be located along major and minor thoroughfares or as part of a mixed-use development (on a collector street or higher);
- Day care centers should have direct access from a median opening (if located on a divided thoroughfare);
- The architectural character of day care centers should be compatible with surrounding residential uses;
- Parking areas should be screened with landscaping or berms;
- Day care centers should not be located at residential subdivision entrances;
- Day care center sites located in residential zoning districts may be replatted for single-family residential development if the day care use is discontinued; and
- Outdoor play areas should be located away from residential areas.

13. Assisted living developments are not specifically located on the FLUP. They should be developed in accordance with the following guidelines:

- Assisted living developments may be built as part of a religious complex;
- If possible, assisted living developments should be located next to or near public parks or private open space areas;
- Assisted living developments may be adjacent to day care centers;
- Assisted living developments should be served by a collector street; and
- Assisted living developments should be integrated with the surrounding neighborhood.

14. Retirement communities are not specifically located on the FLUP. They should be developed in accordance with the following guidelines:

- Retirement communities should be located adjacent to parks, open space, and ADA-compliant trails;

- The architectural character of retirement communities should be complementary to the adjacent residential areas; and
- Design of the community should emphasize walkability and connectivity for public health benefits.

15. Provide for proper transitions between land uses.

While it does not occur very frequently, there may be some cases where an area that is designated and/or developed as residential may desire to transition to a non-residential use. If this is the case, the City should require an appropriate transition which may include, but not be limited to physical separation or a transitional land use between two incompatible land uses the following:

- The area should be physically appropriate for non-residential uses;
- The area should be an extension of other non-residential zoning and is not separated from other non-residential zoning by a major thoroughfare (or larger);
- The proposed non-residential development should not be located in an area that encourages or requires access into or through an existing or proposed residential area;
- The rezoning will not create a situation where non-residential traffic will negatively impact established and proposed future neighborhoods, schools, and/or parks;
- The rezoning will not leave any residual tracts of residentially-zoned property or an area designated for residential use on the FLUP; and
- The rezoning should provide for an appropriate transition between non-residential and residential uses through separation by distance, screening, or land use, if positive integration of residential and non-residential land uses is not possible.

Occasionally, the owners of land designated and/or developed for non-residential purposes may desire to transition to a

residential use. If this is the case, the City should require the following:

- The area should be physically appropriate for residential uses;
- The area should be an extension of a residential neighborhood shown on the FLUP and not be separated from the neighborhood by a major thoroughfare (or larger roadway);
- The rezoning will not create a situation where non-residential traffic will negatively impact established and proposed neighborhoods;
- The rezoning should not result in a shortage of land designated for non-residential development;
- The rezoning should not diminish the land base considered prime for future economic expansion;
- The rezoning should not leave a residual tract of property with non-residential zoning which would not conform to the FLUP or which would negatively affect the proposed residential use; and
- If it is not possible to integrate the residential and non-residential uses in a positive way, the rezoning should provide for an appropriate transition between residential and non-residential uses through separation by distance, screening or land use (i.e., creek, four-lane roadway, etc.).

Land Use Scenarios

In order to capture a FLUP, a series of public workshops was conducted to discuss future land use options with residents, property owners, business owners and City leaders. Three potential Future Land Use Scenarios were developed from the input received at these events and considered by the public for the purpose of establishing a preferred land use pattern and an understanding of the functional relationships between uses. The adopted land use plan, which incorporates aspects from the three scenarios, can be referenced to at *Figure 4-2*.

The first scenario reflected a future land use pattern similar to the one that currently exists and assumes the community builds out under existing zoning. The second reflects a primary pattern of intense, linear development along the DNT spine, with decreasing intensity to the east and west of DNT and adjacent mixed-use and urban neighborhood place types running parallel to DNT. The third shows a development pattern of mixed-use centers at various scales and intensities throughout Frisco with primary nodes at the intersections of DNT/380 and DNT/Main St.

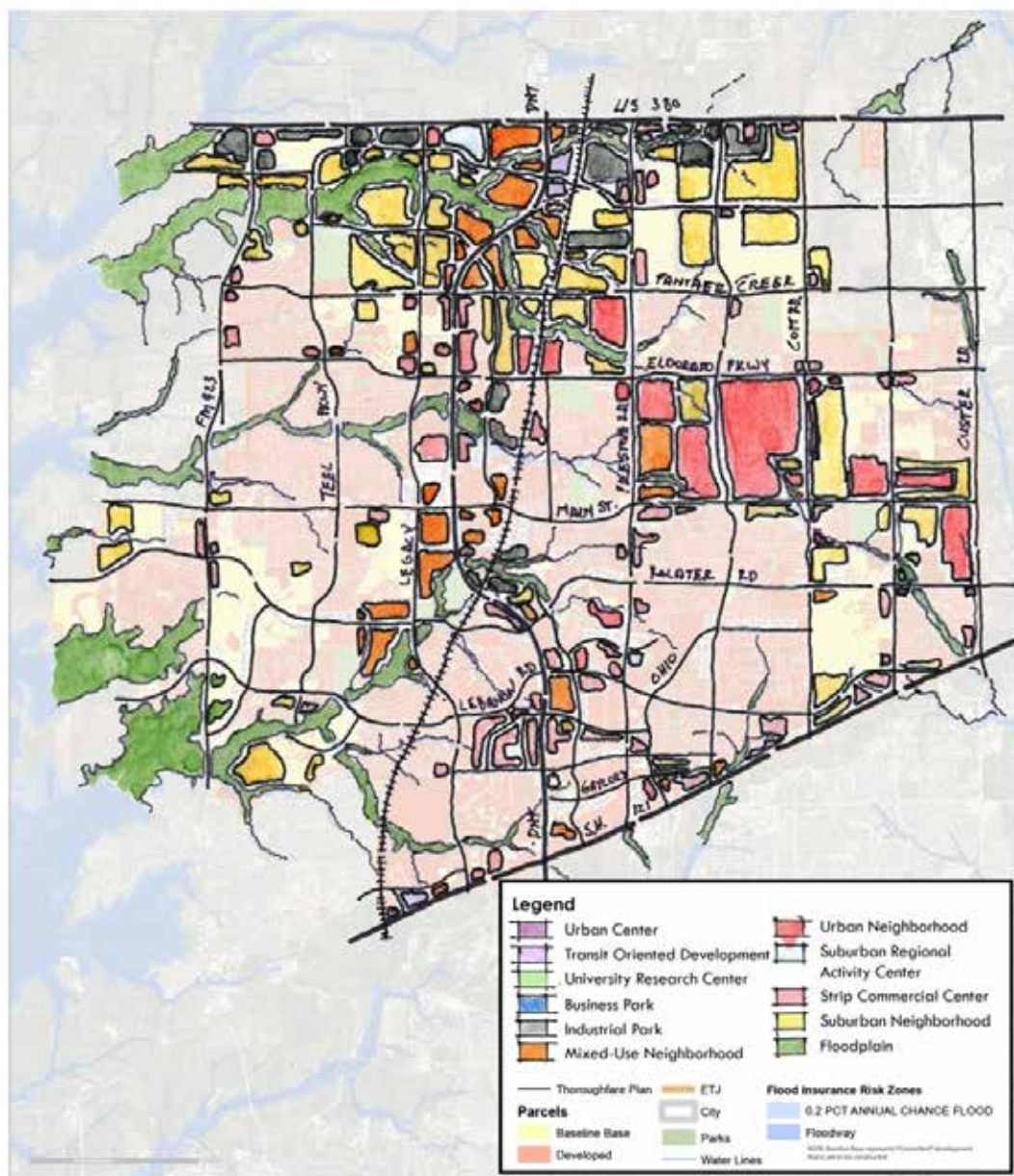
Public input was received throughout the process via on-line and off-line methods, including:

- 12 CPAC meetings (as of 1/28/15)
- 4 Joint CC, P&Z, CPAC meetings
- 22 Stakeholder Interviews
- 1 Day Long Community Workshop, ±100 attendees
- 5 Community Open Houses, over 200 attendees
- Multiple Community Surveys via Survey Monkey, MindMixer Online Discussion Board Topics and Surveys, and Meeting in a Box input opportunities

Over 13,000 input contacts (survey responses, emails, online topics posted or commented on, etc.).

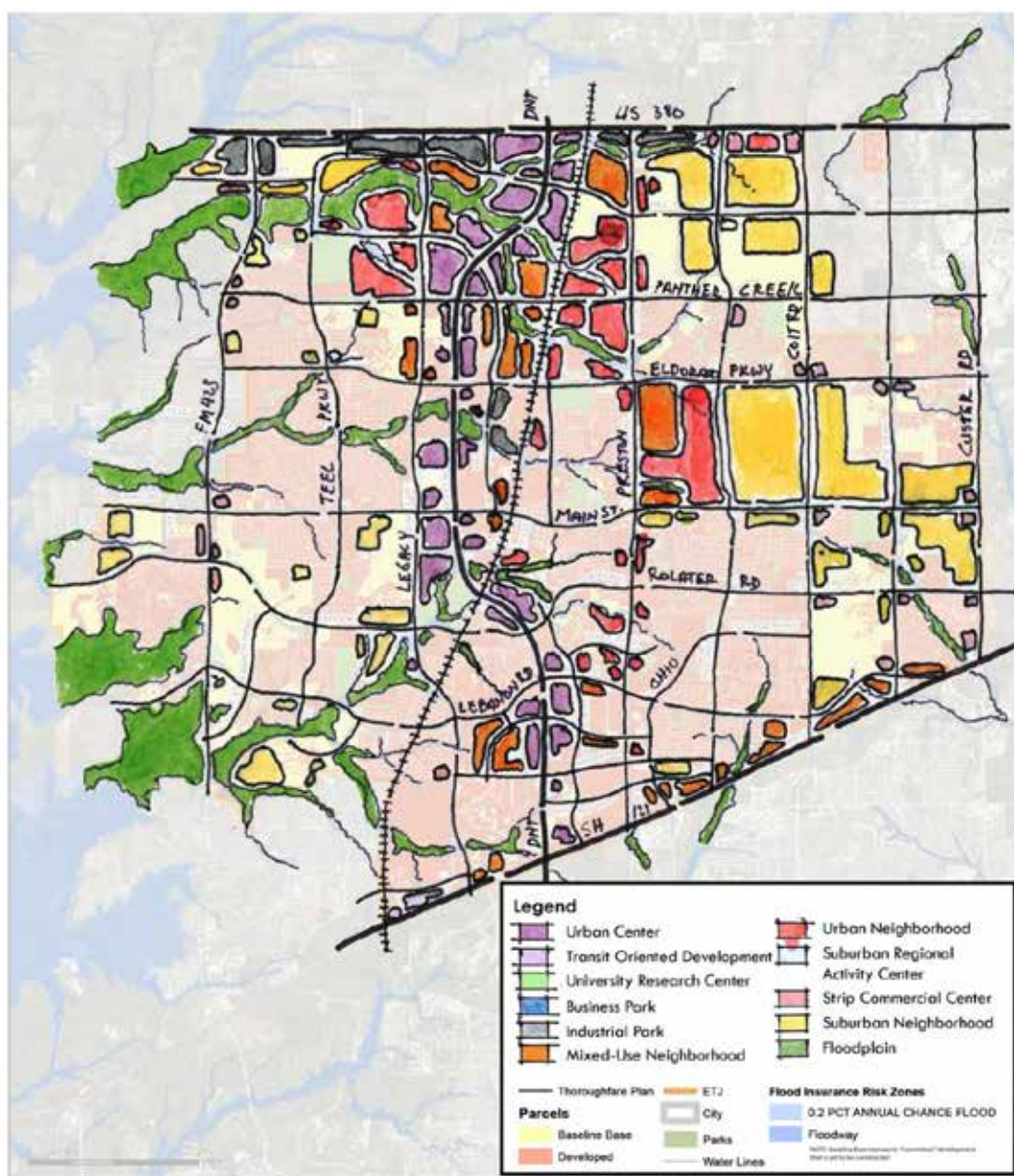
Scenario A – Base Line

Scenario A reflects the future development pattern if current trends and existing policies are perpetuated. It reflects uses indicated under current zoning and in the 2006 Future Land Use Plan. The DNT would develop as strip commercial with mixed-use neighborhoods, small pockets of TOD and mixed-use along 121. The 380 corridor would be primarily light industrial with some strip commercial and a major retail development to support the potential station at DNT/380. Major urban nodes would focus on mixed-use and urban neighborhood development.



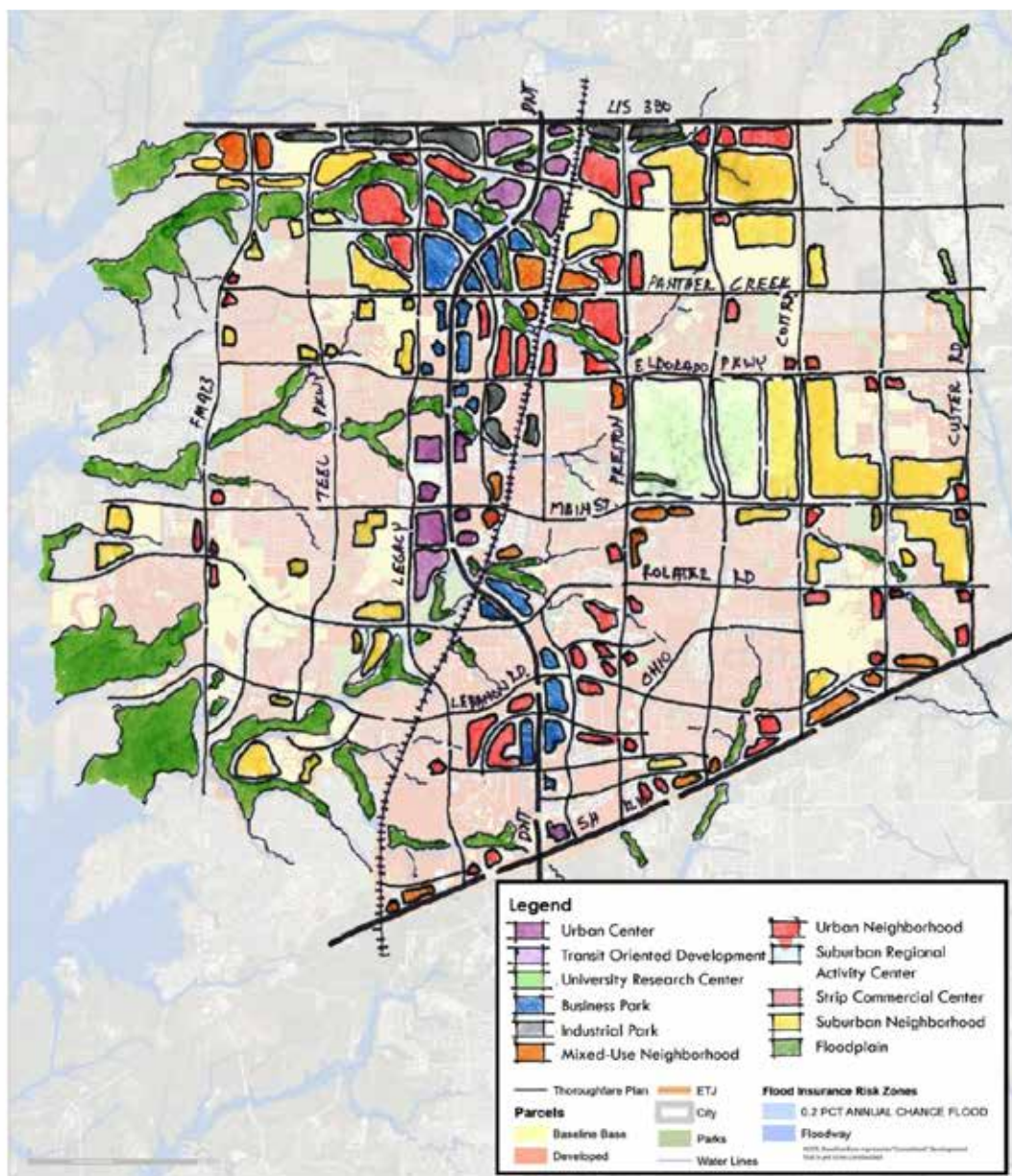
Scenario B - Urban Spine

This scenario reflects a primary pattern of intense, linear development along the DNT spine, with decreasing intensity to the east and west of DNT and adjacent mixed-use and urban neighborhood place types running parallel to DNT. Along the 121 corridor the primary place types are mixed-use and urban neighborhood. The 380 corridor would be developed primarily with the industrial place type. Mixed-use and mixed residential development is shown in the area bounded by Preston Road, Main Street, Eldorado Parkway and Coit Road.



Scenario C – Distributed Centers

Scenario C reflects a development pattern of mixed-use centers at various scales and intensities throughout Frisco with primary nodes at the intersections of DNT/380 and DNT/Main St. Nodes will develop at urban core densities and could include a mixed-use higher education/tech campus node in the area bounded by Preston Road, Main Street, Eldorado Parkway and Coit Road. Secondary nodes would develop as business parks along the DNT, and along 380, secondary nodes would include mixed-use neighborhoods, urban neighborhoods and industrial developments.



A4 | SCHOOL DISTRICT IMPACTS

Implications of Changes to Future Land Use Plan

The Future Land Use Map (FLUP) has changed from the prior version (Refer to Figure 4-1: Comparison of 2006 Plan to FLUP). An analysis was conducted of the potential impacts to the school districts should the vacant properties impacted develop at their maximum capacity.

By analyzing the vacant land areas, we can determine the impacts of the changes. (A place type designation change to an existing building, or one currently in the development process, will have no net impact, so the analysis focused on future development areas.)

Four school districts serve Frisco residents: the Frisco, Prosper, Lewisville, and Little Elm Independent School Districts (ISD). FLUP changes only occur in three of the four; no changes are proposed for the area within the Little Elm district.

School District Review

- Frisco ISD (FISD) staff, Board members, and consultant participated in the process through several venues and methods throughout the entire process. This included attendance and participation and public meetings, Board completion of the Meeting-in-a-Box, meetings and phone interviews with City staff, providing input on indicators and assumptions and future school site needs, exchange of GIS files and tables, review of the Future Land Use Map and impacts, etc. *The net impacts of the changes is a decrease in student enrollment.*
- Prosper ISD (PISD) staff met with City staff to review the Plan map and impacts. Prosper ISD (PISD) provided specific information on future school site needs and expressed positive feedback regarding the plan, particularly regarding the high value urban center and TOD within their district boundaries. *The net impacts of the changes is a slight decrease in student enrollment.*

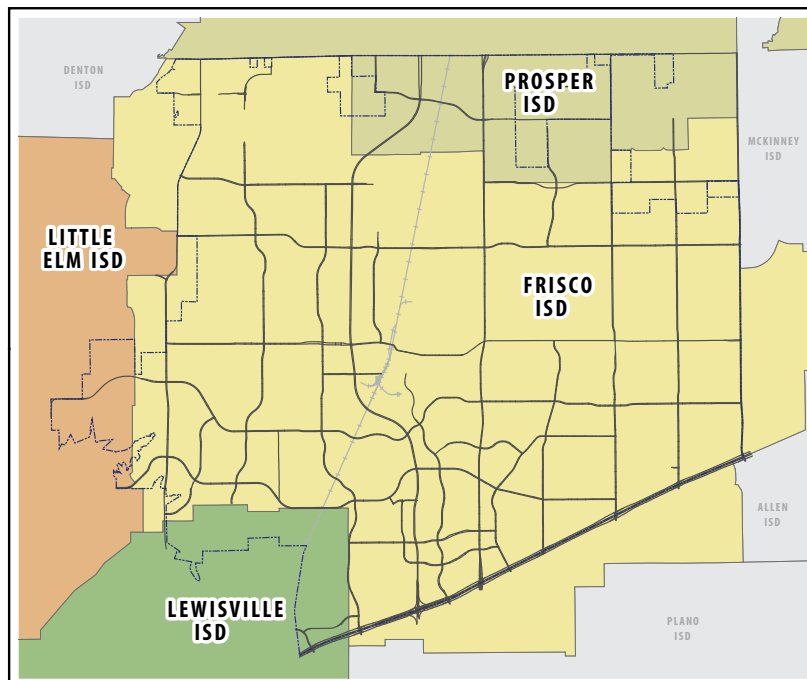


Figure A4-1: School Districts Serving Frisco Residents

- *Lewisville Independent School District net impact was negligible. City staff spoke with the consultant working with the school district and they had no comment (they have been planning for urban style residential in that area for many years).*
- *No changes were made to the area of Frisco within the Little Elm school district.*

Summary of Research Findings

Many factors impact population and school enrollment (up or down) for all housing unit types:

- Demographics / Target Market
- Design & Amenities - for both the individual building and the neighborhood
- Size - Number of Bedrooms, square feet
- Unit Churn - turnover / aging in place
- Quality of Construction & Maintenance
- Age of Project for MF apartments and single-family neighborhoods
- Price Points

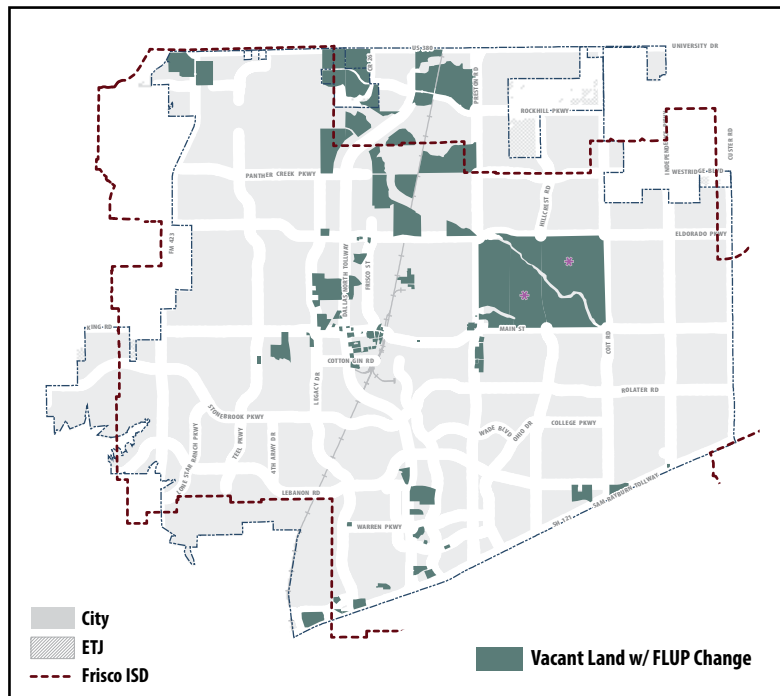


Figure A4-2: Vacant Land Per Place Type Changes by School District

Acres By ISD	Built	Construction/Pipeline	Future	Vacant	Grand Total
Frisco	1,033	839	507	3,487	5,866
Prosper	47	256	510	757	1,569
Lewisville	18	12	4	54	89
Little Elm	n/a	n/a	n/a	n/a	n/a
Grand Total	1,098	1,107	1,021	4,297	7,524

Table A4.1: Areas with FLUP Place Type Changes by School District

School Enrollment Projections

Implications to Frisco ISD (FISD)

Of the proposed FLUP changes to acreage within the FISD boundary, 59.5% is vacant land and the remaining is built, under construction, in the pipeline or planned. Of the $\pm 3,487$ vacant acres in this study, not all were residential areas. The analysis shows the net impact of the changes results in a decrease in projected FISD school enrollment of $\pm 3,464$ students from the FLUP changes (including the analysis of the public/semi-public estimated land needs such as schools and parks). These estimates reflect the highest density assumptions used in the place type categories, with the Brinkmann Ranch Urban Center parcels capped per current entitlements.

Frisco ISD - Future Development on Vacant Land, by Place Type	Changes to FLUP	Estimated Public / Semi-Public Land Needs	Percent Residential	Net Change in Residential Acres †	Net Change in School Enrollment ‡
Suburban Neighborhood	-2,144	-638	100%	-1,947	-8,097
Town Center	1		0% *		
Mixed-Use	-228	-224	80%	-235	-3,111
Transit-Oriented Development	-13		50%	-4	-12
Urban Center	2,233		30%	435	7,397
Suburban Regional Activity Center	167		25%	27	359
Commercial Node (Retail)	-84		0%		
Business Park	-92		0%		
Industrial	160		0%		
				-1,724	-3,464

Table A4.2: Frisco ISD, Net School Enrollment from changes to FLUP

† Net Residential Acres is calculated by the total acreage multiplied by a site efficiency factor for streets, open space, etc. (varies by place type) and the percent residential with that place type.

‡ School Enrollment is the population that is aged 5 - 17. Housing Unit types, persons-per-household, and age group estimates vary by place types.

* The Town Center vacant acreage is on Main Street (non-residential).

Implications to Little Elm ISD

No changes are proposed for the area within the Little Elm district (no impact).

Implications to Prosper ISD

Changes are proposed to ± 757 acres that fall within the Prosper ISD, with a net impact of a decrease in ± 209 students.

Prosper ISD - Future Development on Vacant Land, by Place Type	Changes to FLUP	Estimated Public / Semi-Public Land Needs	Percent Residential	Net Change in Residential Acres †	Net Change in School Enrollment ‡
Suburban Neighborhood	-133	-319.1	100%	-319	-1,316
Mixed-Use	-12		80%	-6	-83
Transit-Oriented Development	-112		50%	-36	-106
Urban Center	391		30%	76	1,295
Commercial Node (Retail)	-34		0%		
Business Park	126		0%		
Industrial	-226		0%		
				-283	-209

Table A4.3: Prosper ISD, Net School Enrollment from changes to FLUP

Implications to Lewisville ISD

There is negligible impact to the Lewisville school district as a result of the change to the Future Land Use Plan.

Lewisville ISD - Future Development on Vacant Land, by Place Type	Changes to FLUP	Estimated Public / Semi-Public Land Needs	Percent Residential	Net Change in Residential Acres †	Net Change in School Enrollment ‡
Mixed-Use	-10		80%	-7	-29
Transit-Oriented Development	44		50%	14	42
Suburban Regional Activity Center	10		25%	2	22
Business Park	-44		0%		
				9	35

Table A4.4: Lewisville ISD, Net School Enrollment from changes to FLUP

School Enrollment - Multi-Family vs Urban Living

Research was conducted into the implications of different housing unit types, particularly regarding the differences between garden-style apartments (MF) and urban residential (UL). Data was gathered from a number of different projects in various school districts in the region, as well as informational interviews conducted with a local demographic consultant that works with several of the local school districts.

In addition to gathering the tax implications of different types of development, the focus of much of this research was:

- Typical apartment complexes (MF) have a 10-yr “tipping point” where they start to show an increase in school enrollment.

Q1: Does the same thing happen to mixed-use (MXD) and urban multi-family (uMF) projects, collectively referred to as Urban Living (UL) or do they maintain a more consistent demographic over time?

Q2: Does the type of units (distribution of studio, 1 bed, 2 bed, 3 bed) and neighborhood type (location characteristics) impact demographic stability over time?

School Enrollment Ratio by Product Type

In 2014, the MF and UL products in Frisco illustrate a distinct difference by product type. The difference between product types is also clear, and consistent across the region. Number of bedrooms, price points, amenities, all have an influence on population. Other school districts typically use a different classification for projections to show the difference in enrollment by product type.

Units Type	Avg Units Per Acre	School Enrollment Ratio
MF	18	0.40
UL	44	0.07
Combined Avg	26	0.3

By Age of Product	Avg Units Per Acre	School Enrollment Ratio
10< Yrs old		
MF	16	0.35
UL	43	0.07
10+ Yrs old		
MF	19	0.42
UL	56	0.07

Table A4.5: School Enrollment Ratio by Unit Type

Units by Type	Studio Units	One Bed	Two Bed	Three Bed
MF		48.7%	41.7%	9.6%
UL	4.1%	70.8%	24.6%	0.5%
Percent	1.5%	56.7%	35.5%	6.3%

Table A4.6: Proportion of Studio, 1 Bed, 2 Bed, 3 Bed Units

Tax Implications

Analysis of the County Assessors data show a distinct difference in Frisco ISD tax receipts per child per acre for each housing unit product type.

Urban Living (UL) project types have a higher property value and fewer students, resulting in a higher value per student per student than any other housing unit product type.

Multi-Family (MF)		Urban Living (UL)	
Garden-Style Apartments		Urban Multi-Family (uMF)	Mixed-Use Residential (MXD)
			
15 – 19 units per acre		Average 48 units per acre (in Frisco, range from 13 - 75.5 du/a)	
Typically gated, multiple buildings set randomly		Typically placed in a street grid, with the buildings pulled up near the sidewalk	
2 or 3 stories		Typically 4 stories	
Surface parking		Parking garages	
Residential only		1st Floor may include flex space for future non-residential uses	
1 Bedroom = 48% 2 Bedroom = 43% 3 Bedroom = 10%		Studio = 4% 1 Bedroom = 70% 2 Bedroom = 25% 3 Bedroom = 0.5%	
Student Enrollment typically 0.22 – 0.47 per unit (Outliers as low as 0.11 and as high as 1.1)		Student Population ±0.1 per unit	
5-yr avg of 6.650 students per acre		5-yr avg of 3.309 students per acre	
Population Typically Increases after 10 years		Minimal Fluctuations in Population over Time	
Avg. Assessed Value Per Acre = \$1,450,442		Avg. Assessed Value Per Acre = \$5,363,386	
Avg. Taxes Per Student per Acre = \$3,243		Avg. Taxes Per Student per Acre = \$21,699.16	

Table A4.7: Comparison of Residential Product Type (2014)

Analysis of the County Assessors data show a distinct difference in FISD tax* receipts per child per acre for each housing unit product type. The tables below include minimum and maximum to illustrate that individual properties can vary widely from the average.

Valuation Per Acre	Minimum	Maximum	Average	Median
SF	\$ 174,033	\$ 1,866,178	\$ 905,831	\$ 828,488
MF	\$ 449,249	\$ 2,431,899	\$ 1,450,442	\$ 1,440,320
UL	\$ 3,817,809	\$ 9,736,326	\$ 5,363,386	\$ 4,586,940

Table A4.8: 2015 Tax Assessors Value per Acre, by Residential Product Type

* Random Sample used for Single-Family statistics

Based on the 2015 FISD tax rate of 1.46 per \$100 valuation, Urban Living products typically result in more tax dollars assessed than the district spends on a per child basis.

FISD Tax Receipts Per Student Per Acre	Average	Median
SF	\$4,330.43	\$4,943.17
MF	\$3,242.78	\$4,056.00
UL	\$21,699.16	\$21,275.94
FISD EXPENDITURE PER STUDENT (2014)		\$7,700

Table A4.9: School District Tax Implications, by Residential Product Type

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A5 | MARKET CONTEXT

Market Context

An analysis of current and future market trends for various land uses was completed to provide both a baseline for the planning process and a roadmap for identifying future opportunities. The purpose of the market context analysis was to:

- Assess current and future market conditions in the DFW Metroplex;
- Evaluate the City of Frisco's current and future attractiveness for various land use types within the DFW Metroplex;
- Ensure planning and investment decisions for the City are grounded in market and economic reality; and
- Provide an independent, third-party story to tell potential developer and investor audiences.

The following sections include a discussion of:

- Current and future industry trends that may affect growth in Frisco;
- Demographic and psychographic trends in Frisco and its surrounding Trade Area; and
- Market supply and demand dynamics that will determine Frisco's share of future growth.

Industry Trends

The Urban Land Institute (ULI), the lead membership organization representing real estate professionals nationally and internationally, issues an annual report based on input from its member developers, lenders and investors regarding prospects and product changes in the coming year. Much of the information presented here is based on the Urban Land Institute's *Emerging Trends in Real Estate 2014* publication will have impacts on new development, not only nationwide, but in North Texas specifically.

Employment Space

- Warehousing stands out as the strongest prospect in both investment and development reflecting the expanding influence of e-commerce distribution networks, e.g., fulfillment centers.
- Industrial space is being designed and located where it can meet the needs of online retailers with ever faster delivery times, increasingly in flex-office space.
- Retailers and manufacturers have made the shortening of the supply chain their top priority.
- Investment and development prospects for research and development (R&D) are expected to improve, fueled by growth in the medical and technology industries.
- Telecom and computer innovations have made going to an office superfluous for many workers.

Retail

- More on-line stores are reducing the number and size of their brick-and-mortar locations, modifying distribution models and reducing on-site warehouse needs.
- While demand for commercial space going forward will be at a lower space per capita ratio, the growth of the U.S. population will increase overall demand for commercial and non-commercial units.
- The U.S. population will increase by 100 million over the next 30 years (3 million annually).
- Growth in real estate will be a product of demographic and socioeconomic shifts and changes in development economics.
- Multi-branding and cross-branding will be essential, and health and wellness connections will be emphasized.
- Big box retailers will continue to rethink store sizes.
- Outlet malls will be well-positioned to capitalize on the new value-proposition.

- Malls will continue to solicit increasingly non-retail uses such as artist studios, theaters, junior colleges, medical facilities, museums and training facilities.
- High-end retail will hold up since it is less susceptible to internet competition.

Residential

- Urbanity in the suburbs (not just walkable new urbanist designs, but programming of space to encourage active lifestyles) will continue to be in demand as many consumers continue to be priced out of inner-city locations.
- Shared amenities including parks, trails and open space trails and open spaced designed to accommodate people of all ages and physical abilities will continue to be seen as an increasingly palatable alternative to large yards.
- Smaller household sizes, former homeowners (who lost homes), the high mobility rate among younger generations and an expanding population base will continue to drive demand for market-rate rental housing units, both attached and detached.
- Garden-style apartment development prospects will begin to decline with supply peaking this year and next as units that are incomplete but in the system are delivered to the market.
- The demand for senior housing will see sustained growth as the population ages.
- Student housing will attract a larger development and investment audience given the fact that fewer institutions are building it themselves.

Green Development

- Sustainable building concepts will become standard in next-generation projects and existing buildings will increase efficiencies and retrofit new systems in order to compete.
- “Green” is considered a right of entry into the market since many corporations and governments have established policies and regulations making it mandatory.
- Greener speculative buildings and proximity to transport options will continue to command higher rents.

Demographics and Psychographics

Economic and demographic characteristics in the market are indicators of overall trends and economic health that may affect future development and redevelopment efforts. Future development and redevelopment in Frisco will likely serve and attract individuals from a broader geography. Economic and demographic indicators were, therefore, analyzed for both the City and Metroplex as a whole.

Key demographic and psychographic indicators that will likely inform future growth in the City include:

- Over the last 5 years, the City of Frisco has grown at a rate over twice that of the DFW Metroplex overall.
- The City’s average household size is larger than in the DFW Metroplex overall. Not surprisingly, the City has a lower share of one- and two-person households and a significantly lower share of renter-occupied households, but this will change over time.
- The City’s age profile skews significantly younger than the DFW Metroplex overall, with a higher degree of school-age children and a lower share of persons age 65 and over. Despite these characteristics, the City still has a median age similar to the Metroplex overall.
- The percentage of college-educated residents in Frisco is twice that of the Metroplex overall.
- Household incomes in the City are also more than twice that of the Metroplex.
- The City’s ethnic profile shows a higher degree of Asian-American residents and a lower degree of both Hispanic and African-American residents compared to the DFW Metroplex overall.
- The City of Frisco is dominated by upper class, family-centric psychographic segments, indicating high retail/entertainment spending and preferences (and resources) for higher-priced housing.

Market Supply and Demand

The supply and demand analysis summarized herein focused on identifying market opportunities within project trade areas representative of various land uses. A trade area is the area from which a project(s) or area will draw the majority of its residents (housing), patrons (retail) and employees (office)—the area that will likely be a source of competition and demand. The boundaries of the trade area are often irregular as they are influenced by the following conditions:

Physical Barriers

The presence of certain physical barriers including highways, arterials and significant structures which influence driving and shopping patterns.

Location of Possible Competition

The inventory of potentially competitive developments which could diminish the market share available to the project.

Proximity to Population and/or Employment Concentrations

Concentrations in an area which could translate into more population and households to support the project (density and “rooftops”).

Zoning

A restrictive or favorable regulatory environment which will influence a developer’s interest in delivering projects in one location vs. another.

Market Factors

Conditions which will set sale and lease prices, influence a developer’s interest or impact the project’s revenue potential (value).

Drive Times, Spending and Commuting Patterns

Habits and patterns that have been established which could impact the project’s ability to capture market share (or require re-education).

Residential Supply

- Among the larger communities in the Trade Area, Frisco and McKinney accounted for over 58% of the single-family detached building permits issued over the last 7 years.
- Single-family attached units comprised only 1% of total Trade Area permits, with Denton and Lewisville accounting for the majority of these.
- As with building permits, Frisco and McKinney dominated single-family home closings in the Trade Area last year, accounting for over 63% of Trade Area closings.
- Southlake, Allen and Frisco had the highest average sale prices among Trade Area communities, both in total price and on a per square foot basis.
- Of the nearly 800 active subdivisions in the Trade Area in 2013, only 30 were single-family attached projects, accounting for only 438 closings.
- Plano, Frisco and McKinney accounted for the highest shares of mixed-use and/or multi-family building permits, together comprising 78% of the Trade Area activity.

Demand

- The Frisco Residential Trade Area has the opportunity to realize significant growth in residential development activity over the next 20 years, potentially reaching 342,000 new housing units in the Trade Area, approximately 28% of which could be rentals (primarily market rate apartments and/or mixed-use residential, but also some single-family units).
- The City of Frisco could capture a significant share of these new residential units, both ownership and rental products.



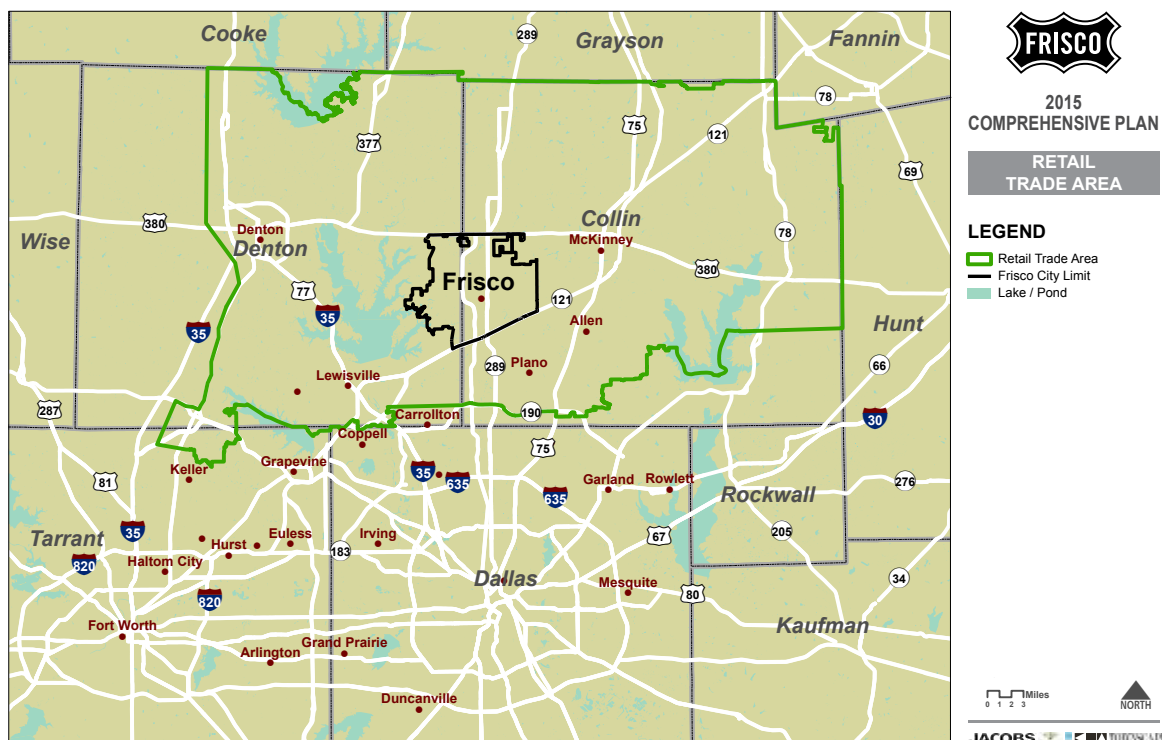
Figure A5-1: Residential Trade Area

Retail Supply

- The Frisco/North Central Dallas Retail Submarket maintains approximately 13% of the total retail space in the Trade Area.
- Properties in this submarket are currently outperforming those in both the Trade Area and overall DFW Metroplex in terms of vacancy and rental rates, and they accounted for nearly 60% of total Trade Area net absorption year-to-date.
- The health of the submarket is likely attributable to its concentration of higher-end retail space.
- With the exception of the new Nebraska Furniture Mart in The Colony, there has been limited retail construction in the Metroplex during the last 24 months.
-

Demand

- Support for retail space is derived from two sources—the recapture of expenditures by residents of the Trade Area that occur outside the Trade Area (referred to as “leakage”) and expenditures by new residents of the Trade Area resulting from household growth.
- As shown here, there is a significant level of leakage among several retail categories, potentially supporting an additional 6.6 million square feet of space.
- Collectively, the recapture of lost dollars and the capture of new dollars could result in the addition of over 30 million square feet of retail space in the Trade Area over the next 20 years.
- The City of Frisco could capture a significant share of this new space, particularly among higher-end retailers.



Office

Supply

- Properties in the Frisco/The Colony Office Submarket continue to outperform properties in other submarkets as well as those in the Metroplex as a whole, particularly Class A projects.
- Within the Trade Area, these submarkets, which are located along the DNT (Quorum/Bent Tree, Upper Tollway/West Plano), continue to have the highest rents and lowest vacancy rates, conditions indicative of an established higher-end market.

Demand

- Support for office space is derived from two sources—growth/expansion among existing users in the Trade Area and the relocation of new companies into the market. Based on annual employment growth of 2.37%, the Trade Area could support an additional 22.9 million square feet of new office space over the next 20 years.
- The City of Frisco could capture a significant share of new office space in the Trade Area, particularly among products that command a higher price point (rental rate), as well as those designed in line with evolving workforce trends (green construction, smaller work spaces, larger community spaces).



Figure A5-3: Office Trade Area

Industrial

Supply

- Frisco competes in the Plano Industrial Submarket, one of the largest submarkets in the Trade Area for both flex and warehouse space.
- While this submarket is outperforming the Metroplex as a whole in terms of rental rates, it is currently experiencing higher vacancies.
- New construction in the Trade Area is dominated by the Lewisville submarket, with development of the Valley Parkway Distribution Center and Majestic Airport Center.

Demand

- Support for industrial space is derived from two sources—growth/expansion among existing users in the Trade Area; and the relocation of new companies into the market. Based on annual employment growth of 2.37%, the Trade Area could support an additional 29.2 million square feet of new office space over the next 20 years.
- The City of Frisco could capture a significant share of new industrial space in the Trade Area, but given land prices, only among products at the high-end of the product spectrum including R&D and high-end flex space.

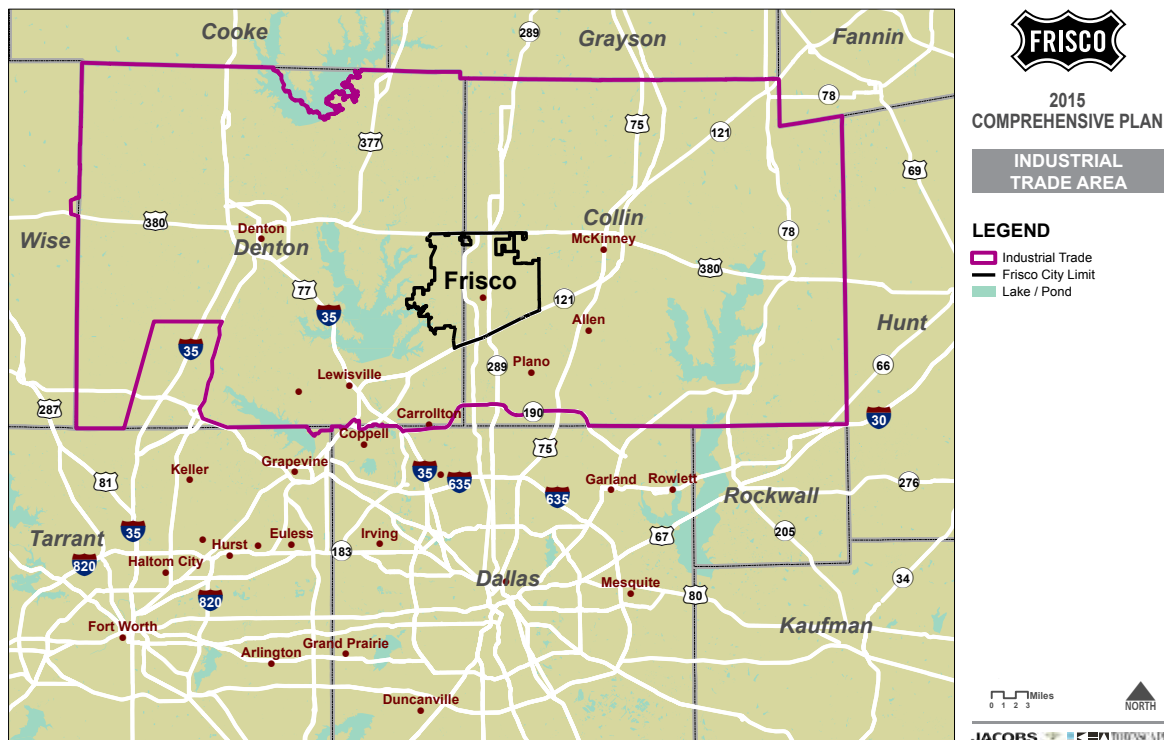


Figure A5-4: Industrial Trade Area

Market Share

A number of factors influence a community's ability to capture investment and reinvestment dollars. These factors can be categorized as top down considerations; bottom up considerations; external considerations; and others. Some of these can be controlled by the City (or stakeholder entities) and others cannot.

Top Down Considerations

- Demand for certain land uses
- Demographic and psychographic conditions which support certain product types
- Untapped market niches (product voids)
- Competitive projects (proposed, planned and under construction)

Bottom Up Considerations

- Physical capacity of the community or individual parcels to accommodate market-supported product types—in general, fewer physical constraints
- Vision and desire for certain uses and product types
- Size of parcels, parcel ownership (public and private), owner investment objectives
- Zoning and other regulations and the presence of easements

External Considerations

- Delivery system—the builders/developers in the area and what they are willing and able to offer
- Financing markets—the availability of capital with reasonable funding terms for certain product types
- Market forces beyond those currently operating in the market (e.g., migration to the Metroplex by an estimated 78,000 persons annually over the next decade who do not reflect the existing profile of residents and consumers)

Other Considerations

- Available resources to position and promote investment in the community
- Public support for a long-term vision

Frisco Market Capture

Within all of the product Trade Areas serving the Frisco market, there is expected to be significant growth over the next 20 years among all of the primary land uses and many of the product types within them. Further, the City of Frisco is well-positioned to compete for a share of the market with potential capture rates ranging from 10% to 25% depending on the use and product type. Actual levels of development and absorption will ultimately be dictated by numerous factors, not the least of which include:

- The physical capacity of select locations within the city to accommodate development;
- The desires of individual property owners;
- The community's vision; and
- Available resources (financial, policy and regulatory) and City's ability to position itself for investment.

Land Use Type	Trade Area Demand (15-yr)	Market Share (High)	Absorption (High)
Residential (Units):			
Single Family*	163,400	17%	27,800
Urban Living	49,700	25%	12,400
Non-Residential (Sq. Ft.):			
Retail	20,475,000	28%	5,700,000
Office	14,885,000	30%	4,500,000
Industrial	18,980,000	20%	3,800,000

**Table A5.1: Market Demand Summary
Frisco Comprehensive Plan Update (15-Year)
January 2015**

Attainable Frisco Market Share

**includes detached and attached products.*

Source: Ricker, Cunningham

Frisco Market Implications

The findings of the market analysis suggest several strategies for Frisco's future.

Residential

- There is an opportunity to diversify the City's housing stock—higher-density, low maintenance products appeal to more demographic segments.
- A high-quality image should be maintained while addressing new market niches.
- Market pressure from expanding high-mobility groups can be accommodated in more urbanized mixed-use, live/work areas and held to a higher standard of quality and uniqueness.

Retail

- DNT, SH 121 and US 380 frontages will attract attention from larger retailers, but caution should be used when considering requests by users of large format spaces.
- The challenge will be to concentrate retail near existing and new neighborhoods while still accommodating regional retail at key intersections (e.g., DNT and US 380).
- There is an opportunity to “prune” under utilized retail in select areas where the market has moved on (e.g., Preston Road).
- High levels of community character should be preserved in order to maintain higher-end retail product types.

Office

- There is an opportunity to further concentrate products commanding higher rents along DNT and US 380—high-rise office with supporting uses (retail, restaurant, lodging, residential), mixed-use and multi-use campuses.
- There are opportunities for sustainable product types designed with evolving workforce trends and user values in mind (green construction, smaller work spaces,

larger community spaces) along SH 121 (again, with supporting uses).

- Higher-end and more sustainable office products can help protect against value deterioration.

Industrial

- SH 121 frontage will attract attention from large-scale industrial users (transportation, warehousing) despite land prices and because of pent-up and emerging demand, but could provide long-term opportunities for higher-end alternative and flexible product types.
- Frisco's demographics can support a unique environment for the “creative class” or knowledge-based workers within hybrid mixed-use and multi-use employment centers.

Land Use Mix

- While Frisco's demographics, psychographics and established higher-end real estate market offer the community a range of choices, the City should be encouraged to protect existing environments and pursue new ones that maintain quality levels and diversify product offerings, thereby appealing to a wide range of user groups (e.g., Gen X, Baby Boomers, Gen Y).
- Future land use decisions should carefully consider placemaking elements that ensure these environments support ever-changing market desires while holding their value.
- Flexibility in the development and design of live/work/shop/play/learn areas will foster uniqueness, spread risk and maintain property values.

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A6 | PUBLIC HEALTH & SAFETY SERVICES

Introduction

For more than 10 years, one of the Frisco City Council's *Strategic Focus Areas* has been to "...provide quality programs and services which promote community well-being," (see also, *Appendix A1, Strategic Focus Areas*). Community well-being involves a number of attributes, but one of the most important ones, and a key factor in the location/relocation decisions of both individuals and industry, is public safety—protecting people and property from danger, injury, harm, or damage. The government typically assumes much of the responsibility for public safety by preparing for, responding to, and mitigating the damage to a community from unsafe events and conditions, whether they are caused by natural or human-made forces. Forty-six percent of Frisco's General Fund budget for 2014-2015—approximately \$27 million for Police and nearly \$26.5 million for Fire—is allocated to public safety expenditures, a clear indication of the city's commitment to maintaining a safe and secure environment for the entire Frisco community.

But the concept of well-being involves much more than safety. It also refers to a sense of health, happiness, and financial and other security, and while the city's role in helping an individual or an entity achieve some of these goals may be limited, it is clear that all of them will be easier to achieve if the context of the community is supportive.

Public Safety

Police Services

Frisco's Police Department consists of more than 200 employees spread across several divisions, all of which work side-by-side to keep Frisco safe.

Those divisions include:

- Administration
- Personnel/ Training;
- Community Services;
- School Resource Officers;
- Evidence and Property;
- Records;
- Investigations;
- Communications;
- Traffic;
- Special Operations;
- Detention; and
- Patrol (95 officers; nearly half of the force).



The Department was first accredited in 2008 and was reaccredited in 2011 and 2014 by CALEA (Commission on Law Enforcement Accreditation).

The mission of the Frisco Police Department is to resolve problems, to reduce crime and the fear of crime, to provide a safe environment for all of Frisco, and to promote the responsibility of each individual in maintaining their own safety. The Department also emphasizes the role that community involvement can play in creating a safe environment.

As with many suburban cities in the Dallas-Fort Worth area, Frisco experiences mostly property-related crime—burglary, theft, arson, vandalism. Crimes against persons—murder, rape, robbery, aggravated assault—represent less than 5% of all offenses reported. An officer spends about 40% of his or her time responding to calls and the remainder in community outreach activities. The goal of the Department is to achieve a response time of six minutes in emergency situations and

seven to eight minutes for non-emergency calls.

There is currently one police station in Frisco, centrally located on Stonebrook Parkway at Parkwood Boulevard. The station is the headquarters for all police operations except the School Resource Officer (SRO) division; SRO personnel work from the schools to which they are assigned. The police station also hosts the city jail, a crime laboratory, and training facilities. Plans are to maintain all police operations except SRO in a single facility, but an assessment may need to be performed to determine how the station can be expanded to accommodate additional officers, more training space, and other functions as the population of Frisco continues to grow. The existing building includes 85,000 square feet of occupied space and 10,000 square feet of area for future finish-out. The site should be able to accommodate up to 125,000 square feet of building area.

The Frisco Police Department has been particularly quick to adopt new technology to help deter and respond to criminal incidents. Examples include the application of license plate recognition technology to help identify stolen vehicles and the use of social media to inform and connect with citizens and the business community.

The Department has been focusing on developing partnerships with neighborhoods, businesses, schools, and other government agencies to improve their effectiveness. A variety of outreach programs help connect officers with the people they serve, including:

- Presentations to civic and leadership groups;
- City Hall 101, a program designed to acquaint citizens with the workings of their local government;
- Frisco Community Awareness Night (C.A.N.), a local program comparable to National Night Out;
- Safety Palooza, a community event held in conjunction with Baylor Medical Center's health fair;
- Citizen Police Academy;
- Citizens on Patrol, a neighborhood crime watch program;
- The Junior Police Academy and High School Police Academy;
- Presentations to civic and leadership training groups; and
- Attendance at special events.

They have also established crime watch groups oriented towards workplace and apartment complex crime.

Fire and Emergency Management Services

The mission statement of the Fire Department is to "...protect lives, property and the environment from the adverse effects of fires, illness, accidents, natural disasters, other hazards by promoting public safety education and maintaining a well-equipped and highly trained and motivated workforce of professional firefighters and rescue personnel." With the addition of personnel to staff the city's newest facility, which opened in January 2015, the



Department consists of approximately 200 persons in:

- Administration;
- Community Education;
- Training;
- Fire Prevention;
- Emergency Management; and
- Fire Operations, the largest division, which makes up nearly 90% of the force.



There are currently eight fire stations in Frisco, the newest having opened in January 2015. All have been strategically located to provide coverage to neighborhoods and commercial properties as they have developed over the years. With new construction and an increasing population, the Department envisions potentially 12 to 13 stations, depending on the type and density of future development. The time required to design and build a fire station is approximately two years, assuming the land is already owned by the City. If not, land acquisition could add another year to the overall process, and since fire stations are typically funded through bond sales, it is important to plan ahead.

In addition to fire control and fire suppression, the Department provides fire inspection services and Fire-based Advanced Life Support (ALS) pre-hospital medical care and transport. In addition to the ALS Transport Medics, each fire engine is staffed with paramedics and approximately 90% of the fire-fighting force has paramedic certification. In addition, there is a CareFlite helicopter and crew in place at Fire Station 4 (Legacy Drive at Cotton Gin Road) in the event of a need to transport an individual to a Specific Trauma Center or in cases where ground transport is restricted.

Emergency Medical Services (EMS) calls represent about 60% of the Fire Department's total call volume, a figure that is likely to increase

as the population ages. The Department currently meets the goal of a Total Response Time of six minutes, including call processing, turnout and travel time. Maintaining this response time will require that appropriate equipment and personnel will be available when the need arises. Taller buildings may require special apparatus designed to reach higher floors, and response times may increase in the future if it takes longer to make contact with occupants in the upper portions of a building.

Specialized equipment currently owned by the City includes an AMBUS (ambulance bus), which can accommodate up to 26 patients on stretchers and/or wheelchairs in the event of a mass casualty, and a C-COM mobile command vehicle, which is outfitted to serve as a back-up or alternative dispatch/Emergency Operations Center. The City plans to purchase a Mass Casualty Vehicle (MCV) with grant funding. This MCV will be available to transport materials and equipment to the site of a large public gathering for triaging patients in the event of an emergency.

The Frisco Fire Department was recertified in 2013 as a Class 1 (best; exemplary) department. This is a rating from the Insurance Services Office which indicates the highest level of readiness by the local fire protection service on the basis of personnel, facilities/equipment, water systems, and communications. This rating has been given to only 56 cities in the U.S. and only 14 in Texas. The Frisco Fire Department has been rated Class 1 since 2001.

The Department plans to continue its emphasis on training and developing relationships with other cities and partner agencies in the region. In 2009, the Frisco Fire and Emergency Services Departments, Frisco Police Department, Frisco Independent School District, and the Frisco Information Technology Department instituted a cooperative program called SAFER (*Situational Awareness for Emergency Response*). This program gives Frisco emergency responders instantaneous access via mobile computers in their vehicles to:

- Live video of school hallways and common areas;
- Interior, exterior and aerial photographs of school facilities;
- Building plans;
- Information on the location of hazardous chemicals stored in the building; and
- Contact information for school officials.

Additional connections to the community are being made through outreach efforts including:

- Presentations to civic and leadership groups;
- City Hall 101, a program designed to acquaint citizens with the workings of their local government;
- Citizen Fire Academy;
- Community Emergency Response Team (CERT), which trains individuals to be better prepared in the event of an emergency in their neighborhood;
- Frisco Fire Clowns, who visit schools and attend community events;
- Attendance at block parties and other neighborhood gatherings;
- Station tours and special events; and
- Fire Safety Town.

Fire Safety Town is a fire and hazard safety training facility designed especially for pre-kindergarten through fifth grade children. More than a quarter-million people visited Fire Safety Town in its first seven years of operation. The center is located at the Central Fire Station.

A city's Emergency Management Plan describes the role of various individuals, departments, and outside agencies in responding to a crisis. A good Emergency Management Plan will address not only incident response and disaster recovery, but also include a strategy for emergency preparedness and disaster mitigation. An emergency can be caused by severe weather or a hazardous incident and can involve limited groups of people or large gatherings. In any of these circumstances, the Emergency Management Plan will be the City's guide in

times of a disaster. Frisco's plan was developed with input from all City departments and is reviewed annually and updated as necessary.

The City's Emergency Operations Center (EOC) is located at the Central Fire Station and includes a video wall and an array of information and communications systems—telephone, television, radio, email, video conferencing—to monitor National Weather Service bulletins, roadway conditions, local media, radio frequencies, and images from cameras in the field. The City also utilizes the CityWatch Community Notification system to send out alerts in the event of a hazard other than a weather-related incident, such as a serious traffic incident, major interruption of water or electrical service, an Amber Alert for a missing child, or a similar crisis. At present, the system is available to all residential and commercial telephones with land lines; the Department is evaluating the possibility of extending the service to cell phones as well.

A separate system of 35 outdoor warning sirens is activated when there is a threat of severe weather. The weekly testing of system performance includes a daily internal silent test, an audible test once a week, and full activation once a month. This testing confirms that the sirens are operational and audible to people who might be outdoors when severe weather approaches. As the community continues to build out, the system will be expanded to include more sirens.

Public Health

The City Council's goal of promoting community well-being, a priority for more than a decade, will involve more than maintaining a safe environment. Improving public health is a relatively new priority as a stated goal for most communities, but it is clearly a part of well-being. While individuals and families are still primarily responsible for maintaining their own health, local governments can contribute by adopting an overall approach to community planning that promotes a healthy lifestyle. This approach

can address a variety of issues ranging from working for cleaner air and water for current and future residents and businesses to creating and accommodating activities that encourage physical movement and social interaction among the people who live, work, and play in Frisco, (see also Chapter 6, *Public Health & Safety*).

There are a number of development techniques that can contribute to a healthy lifestyle. These relate mostly to providing opportunities for people to be more physically active and to use forms of transportation other than the automobile. Reducing automobile trips can affect not only the physical health of an individual who decides to walk or bike to a destination, but can also have less impact on the natural environment. By burning less fossil fuel, the air can become cleaner, and the pollutants in the atmosphere that are transferred to the earth as a component of rain do not reach the ground and flow into the rivers, lakes, and ground water that are a source of drinking water for Frisco residents.

There are other important ways that a city can encourage physical activity. The Frisco Athletic Center (FAC), just east of Preston Road between Lebanon Road and Wade Boulevard, is a tremendous asset for residents interested in healthy living and social connection. The facility provides 160,000 square feet of space, including:

- Gymnasiums and racquetball courts;
- Classrooms, a dance/aerobic studio and fitness areas;
- An area catering to children up to age 7 and a separate room for children 8-12 years of age;
- Indoor and outdoor aquatic centers and a water park; and
- Men's and women's locker rooms and a family changing suite.

The City has made a significant investment, not only in the construction of the FAC, but also in staffing, maintaining and updating the building and its furnishings and fitness equipment since its opening in 2007. Approximately 800,000 people of all ages visit the FAC annually to

participate in individual and group activities.

Providing recreational facilities and programs and requiring parkland and open space to support new development are not new ideas, but including specific requirements in development codes, particularly those that integrate uses and apply certain design techniques to create pedestrian-oriented places such as Frisco Square, can yield both physical and social benefits. These may include providing wide sidewalks, attracting uses that draw patrons and visitors, creating outdoor gathering spaces, and connecting people with the places they want to be via bike lanes and ADA-compliant sidewalks and trails.

Another technique that can help build healthy places is *Crime Prevention through Environmental Design (CPTED)*, which applies certain principles to site design to help reduce the opportunity for criminal activity, (see also Chapter 6, *Public Health & Safety*). These principles include, but are not limited to, the use of building and site features such as fencing, lighting, access control, and other means to help discourage crime. Developing neighborhoods that focus on people rather than automobiles increases social interaction, and as people get to know their neighbors and build connections there are more “eyes on the street” and increased vigilance improves security. Personnel in both the Development Services and Police Departments have been trained in CPTED and can evaluate designs for their conformance with these principles with the goal of creating safer—and healthier—neighborhoods, workplaces and recreational areas.

Code enforcement is another part of the formula. Properties that are well-maintained and code-compliant are likely to hold their value and be more sustainable and safer in the long-run.

The availability of adequate health care services in, or within reasonable distance of, a community can be a selling point to new residents and businesses and is clearly one of the attributes of public health. In Frisco, there are three hospitals. One—Centennial Medical Center—offers the full array of services most hospitals

are assumed to provide, including emergency, in-patient, out-patient and surgical services. Baylor Frisco provides maternity services, but neither it nor Forest Park Medical Center has the ability to accept trauma patients that arrive by ambulance. Approximately half of those patients are transferred to a hospital in McKinney or Plano. Current Medicare regulations do not permit a patient to be transferred by ambulance to a minor emergency center.

Nonetheless, being located within a large metropolitan area, the citizens of Frisco do have better access to health care than people in many parts of the state and, indeed, many parts of the country. These services may simply not be located as conveniently as many would like at this time.

Housing and Social Services

The City of Frisco's Social Services and Housing Board, established in 2002 and assigned greater responsibilities over the years, is appointed by the City Council. The Board administers funding from two sources for the benefit of low- and moderate-income families and individuals in Frisco—the federal Community Development Block Grant (CDBG) program and the City's own Social Services Fund.



CDBG funds are targeted towards low- and moderate-income households (below \$54,000 in annual income for a family of four) for purposes of:

- Revitalizing housing and neighborhoods;
- Improving community facilities and services; and
- Expanding economic opportunities.

Specific projects funded under the CDBG program include:

- Rehabilitation of owner-occupied homes, particularly repairs and accessibility improvements for the elderly or disabled;
- Homeless prevention and transitional living programs;
- Programs for abused children;
- First-time homebuyer programs for City of Frisco and Frisco ISD employees; and
- Food/Nutrition programs.

The City's Social Services Fund, which is derived from the General Fund on the basis of a \$1 per capita formula (approximately \$143,000 for 2015), is allocated to a variety of non-profit agencies providing support to low- and moderate-income individuals and households in Frisco with services such as:

- Health care and counseling;
- Child care;
- Nutrition programs for the elderly;
- Housing and homeless assistance; and
- Other support programs.



Grants are awarded by the Board based on proposals from the agencies seeking funding. In order to better identify the type and scope of the issues facing Frisco, the Social Services and Housing Board conducted a series of focus groups involving numerous non-profit, educational, government, religious, and social service agencies over the course of nine months in 2013-2014. The goal of this effort was to determine the needs, trends, and obstacles to meeting the basic requirements of Frisco's low- and moderate-income households. Three major issues emerged from the focus group discussions:

- There is a need for transportation services to connect people with their destinations in Frisco and nearby cities, particularly the elderly and disabled, but also individuals who need transportation to work in order to remain self-supporting. More options for transportation to and from jobs, medical and other appointments and to access basic services was the number one need identified in the focus group process.
- It has been a challenge for many individuals and families to find affordable housing in Frisco.
 - According to the American Communities Survey, 39% of the renters in Frisco are housing-cost burdened, paying in excess of 30% of their monthly household income for housing and utilities.
 - In the 2013-2014 school year, 204 students in the Frisco Independent School District (FISD) were classified as homeless.
 - A local Frisco agency was able to assist 37 people (13 families) with housing during the first nine months of Fiscal Year 2013-2014.
- There is a need for mental health resources to serve the Frisco population. Mental illness can affect households of all types and descriptions and can further complicate other existing and underlying problems. Local facilities often operate at full capacity, making it difficult at times

to find assistance for individuals who have immediate needs.

In the first three quarters of Fiscal Year 2013-2014, Frisco Family Services (FFS) assisted 995 individuals with food. FFS relies largely on donations for their supply of fresh and packaged food, but through a partnership with the City of Frisco, they also have access to fruit and vegetables from the FFS Community Garden. This garden, which is tended by volunteers, sits on a quarter of an acre of land at First Street and Ash Street owned by the City. FFS distributes the fruits and vegetables produced in the garden to Frisco residents in need.

City staff has recently begun partnering with other area agencies—Denton County Homeless Coalition, Collin County Homeless Coalition, Metro Dallas Homeless Alliance Board—on programs aimed at addressing homelessness and continues its association with a variety of other non-profits and organizations to tackle the issues facing the most vulnerable citizens of Frisco.

The changing demographics in Frisco will continue to affect the community and its resources. The number of elderly persons is growing, and these individuals often need specialized housing and services. The diversity of ethnic and cultural groups is broadening as well. Persons of Asian descent, for example, currently constitute the fastest-growing minority in Frisco. The multitude of different customs, traditions and languages brings new dimension and richness to the fabric of the City and presents new and interesting challenges.

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A7 | ECOLOGY & NATURAL RESOURCES

Introduction

The term “ecology” was first used in the 1870’s, but became more commonly understood a century later when the nation became about serious air and water quality problems and the first Earth Day popularized the concept of action to improve environmental quality. Ecology is the “branch of science dealing with the relationship of living things to their environments”.³⁵ Instead of studying one particular species or aspect of the environment, it considers the interactions between natural systems and looks at the impact of human beings on those interactions, (*see also Chapter 7, Ecology & Natural Resources*).

Assessment of Natural Assets

Natural assets shape a community’s initial development. A sheltered landing or a low-water river crossing often explain the location where the first businesses located. As a community grows, natural assets can help create a unique identity. This section of the Appendix describes Frisco’s natural assets.

Natural Systems

Figure A7-1 shows that Frisco is located in the Northern Blackland Prairie ecoregion of Texas.³⁶ “The distinctive element of the Northern Blackland Prairie was the vast expanse of tallgrass prairie vegetation. Frequent fire and the grazing of bison were important factors in shaping the tallgrass vegetation in the Blackland Prairie landscape.”³⁷ Settlement transformed much of this land, which was used first for

ranching, then for farming and most recently for urban development. The clay soils of this ecoregion continue to challenge construction because of their tendency to shrink when dry and swell when wet.

The Woodbine aquifer underlies Collin County and the Frisco portion of Denton County. Groundwater stored in this aquifer is used for agricultural irrigation and for municipal water supply purposes.³⁸ The region is part of the Trinity River Basin, which contains a system of smaller streams and rivers that drain to the Trinity. According to the Texas Water Development Board, “the Trinity Basin is the largest river basin whose watershed area is entirely within the State of Texas and the third largest river in Texas by average flow volume.”

Figure A7-2 shows that Frisco includes parts of five different regional watersheds within the Trinity Basin³⁹ :

- Watersheds draining to the Upper Trinity River:
 - Elm Fork below Lewisville Lake
 - Trinity River Headwaters
- Watersheds draining to the reservoirs of the Upper Trinity River Basin, which are important supply sources for the North Texas region:
 - Lewisville Lake
 - Lavon Lake
 - Lake Ray Hubbard

For the areas within the Upper Trinity River watersheds, key issues include:

- The quality of the water for recreational use of rivers and streams;

³⁵ Online Etymology Dictionary

³⁶ Environmental Protection Agency, Western Ecology Division. Website www.epa.gov/wed/pages/ecoregions/tx_eco.htm, accessed December 6, 2014.

³⁷ Griffith, et al, “Ecoregions of Texas”, Project Report to the Texas Commission on Environmental Quality, 2007.

³⁸ Texas Water Development Board Summary, <http://www.twdb.state.tx.us/groundwater/aquifer/minors/woodbine.asp>, accessed December 6, 2014.

³⁹ “Valuing Our Watersheds: A User’s Guide to the North Central Texas Regional Ecosystem Framework”, First Draft, North Central Texas Council of Governments, 2010.

- The erosion of stream banks and the resulting damage to adjacent property; and
- Public safety and the impact of flooding on property.

Land along the rivers and streams in the water supply reservoir watersheds face these same issues. In addition, runoff, pollution and sedimentation from development and erosion in the water supply watersheds affects the quality and supply of the water in the reservoirs, impacting the quality of the drinking water supplies and increasing the cost of water treatment for local communities.

Native Plant and Animal Populations

Today, most of the vegetation in Collin and Denton counties is characterized as cropland, areas of natural or introduced grasses and urban development. As the North Texas metropolitan area expanded outward, development replaced the cropland and grassland that had been in Frisco and other fast-growing regional communities prior to that time. *Figure A7-3* shows the major vegetation areas of this region.

The Blackland Prairie ecoregion once extended from the Red River south nearly to San Antonio.⁴⁰ Today, less than 1% of the original Blackland Prairie is left, and the remaining habitat is highly fragmented. Protected areas in Collin and Denton counties include the 435-acre Parkhill Prairie preserve near Blue Ridge (part of the Collin County Parks and Open Space system) and a privately-owned tract of land in Denton County that is protected voluntarily. Since so little of the prairie that once defined North Texas remains, any opportunities to retain it give the City the potential to preserve unique natural areas for the enjoyment of Frisco residents and create distinctive amenities for the community.

The areas adjacent to the creeks, streams and rivers in Frisco are particularly important for native plants, animals and birds. Often, these

areas remain undeveloped because they are located in floodplains or on steep slopes, and they function as travel corridors for various species of wildlife, allowing them to move freely in search of food and shelter and helping native species survive as development occurs around them. These corridors are also valuable for Frisco's human residents. They create linked areas of open space, opportunities to connect with nature, valuable locations for trails and options for residents of all ages and physical abilities who want to experience the North Texas environment as they walk or bike between destinations in Frisco. The 100-year floodplains in Frisco are shown in *Figure 7-2*.⁴¹

The Texas Parks and Wildlife Department identifies 25 rare species of plants and animals that potentially occur in Collin or Denton counties. These species are listed in *Table A7.1* below. The list includes birds, crustaceans, mammals, mollusks, reptiles and plants. Many of these species seek food, nesting sites or habitat along streams and rivers, so they will rely on efforts to retain floodplain areas as open space.

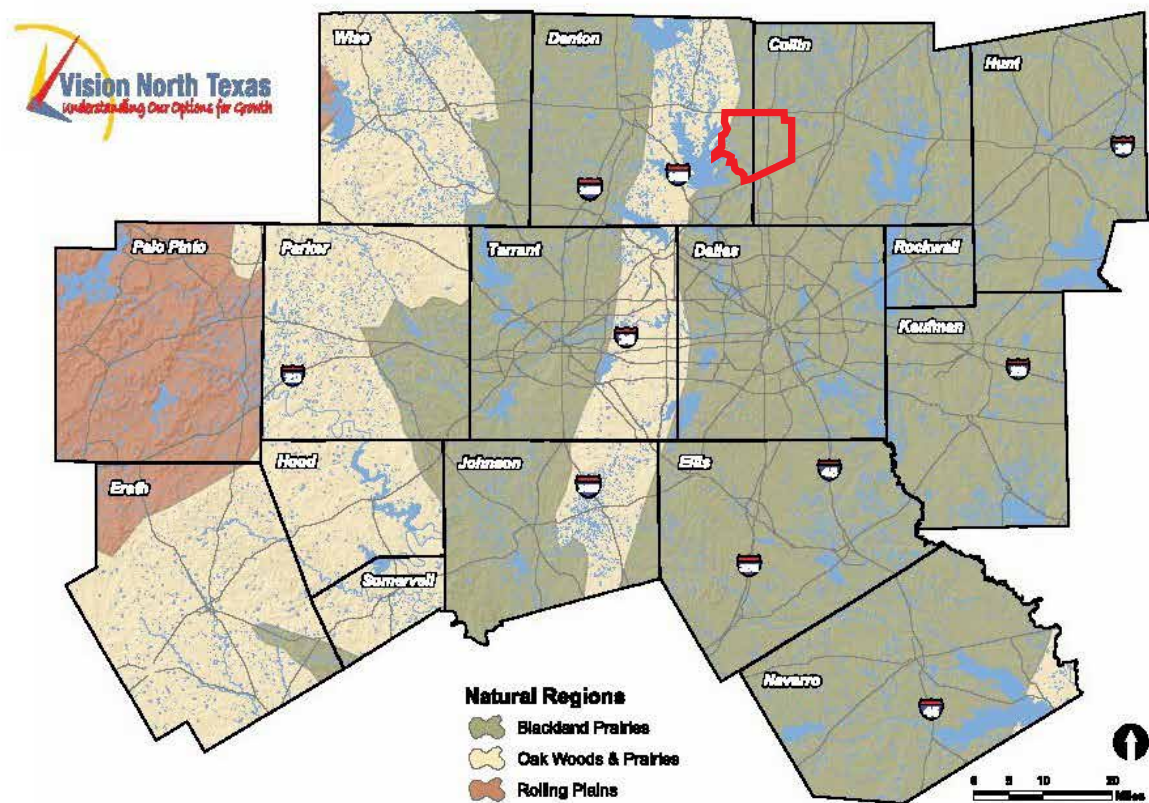
Healthy Tree Cover

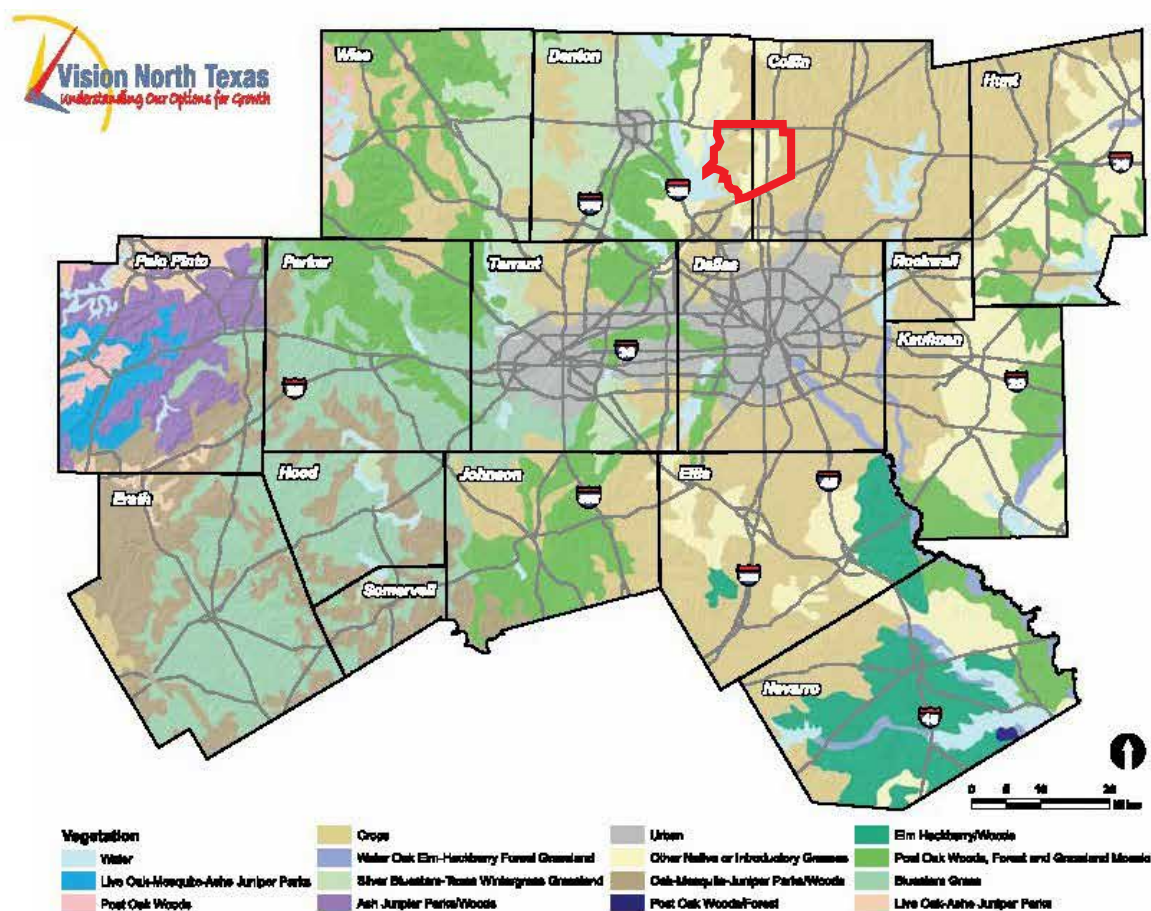
The prairie ecosystem is characterized by large stretches of grassland. Most of the trees were found close to streams and rivers, where there was adequate water and they were less affected by the fires that swept through the expanses of dry grassland. Today, the tree cover that lines the rivers and streams provides shade for walkers and habitat for animals and birds and is supplemented by the trees that have been planted as part of the land development process in the urban and suburban environment—

- Street trees;
- Trees in the landscaping of large development projects;
- commercial projects and on multi-family properties; and
- Trees in the lawns, landscape beds and gardens on single-family residential lots.

⁴⁰ Texas Blackland Prairies Ecosystem, World Wildlife Fund. Website www.worldwildlife.org/ecoregions/na0814, accessed December 7, 2014.

⁴¹ A 100-year floodplain is the area that has a 1% chance of flooding in any given year.



Figure A7-3: Regional Vegetation⁴³

Trees provide additional community benefits as well, (see also Appendix A2, *Placemaking & Resiliency*). A study of the Houston Regional Forest found that the trees in that region generate \$456 million of environmental benefits annually, save \$131 million each year in residential energy costs and help reduce power plant emissions.⁴⁴ Tree shade and the process of transpiration—the absorption of water from the soil and the release of water vapor into the atmosphere through the tree’s leaf structure—help offset the urban heat island effect. Finally, trees contribute to reductions in emissions and can be included as one aspect of the State Implementation Plan for air quality non-attainment areas.

Agricultural Heritage

Over the years, working agricultural lands have been converted to urban and suburban development as the North Texas metropolitan region has continued to expand outward. The 2014 Texas Land Trends report, prepared by the Texas A&M Institute of Renewable Natural Resources, found that Texas led the nation in the loss of working agricultural lands between 1982 and 2010.⁴⁵ In Collin and Denton counties, 13% of the land that was devoted to agricultural uses in 1997 was no longer being used for agricultural purposes in 2007. Agricultural holdings became more fragmented during this time as well. In 2007, over 80% of the farms or agricultural holdings in these two counties were 100 acres or less in size. An analysis in 2002 by the American Farmland Trust identified Collin County as one

⁴³ “Regional Choices for North Texas”, 2008.

⁴⁴ “Houston’s Regional Forest”, Texas Forest Service, 2005.

⁴⁵ “Texas Land Trends”, Texas A&M Institute of Renewable Natural Resources, 2014.

SPECIES CONSIDERED TO BE AT RISK		Federal Status	State Status	Collin	Denton
BIRDS					
American Peregrine Falcon	Falco peregrinus anatum	DL	T	x	x
Arctic Peregrine Falcon	Falco peregrinus tundrius	DL		x	x
Bald Eagle	Haliaeetus leucocephalus	DL	T	x	x
Henslow's Sparrow	Ammodramus henslowii			x	x
Interior Least Tern	Sterna antillarum athalassos	LE	E	x	
Peregrine Falcon	Falco peregrinus	DL	T	x	x
Piping Plover	Charadrius melodus	LT	T	x	
Sprague's Pipit	Anthus spragueii	C		x	x
Western Burrowing Owl	Athene cunicularia hypugaea			x	x
White-faced Ibis	Plegadis chihi		T	x	x
Whooping Crane	Grus americana	LE	E	x	x
Wood Stork	Mycteria americana		T	x	x
CRUSTACEANS					
A crayfish	Procambarus steigmani			x	
MAMMALS					
Plains spotted skunk	Spilogale putorius interrupta			x	x
Red wolf	Canis rufus	LE	E	x	x
MOLLUSKS					
Fawnsfoot	Truncilla donaciformis			x	x
Little spectaclecase	Villosa lienosa			x	x
Louisiana pigtoe	Pleurobema riddellii		T	x	x
Texas heelsplitter	Potamilus amphichaenus		T	x	
Wabash pigtoe	Fusconaia flava			x	x
REPTILES					
Alligator snapping turtle	Macrochelys temminckii		T	x	
Texas garter snake	Thamnophis sirtalis annectens			x	x
Texas horned lizard	Phrynosoma cornutum		T	x	x
Timber rattlesnake	Crotalus horridus		T	x	x
PLANTS					
Glen Rose yucca	Yucca necopina				x

Federal

LE = Federally Listed, Endangered

LT = Federally Listed, Threatened

C = Federal Candidate for Listing

DL = Federally Delisted

Texas

E = Endangered

T = Threatened

x = Applies

Table A7.1: Species at Risk, Collin and Denton Counties

of the locations in Texas where America's best farmland was being threatened by sprawling development.⁴⁶

Although it is difficult for agricultural uses to compete economically with suburban and urban development, they can still bring value to a community by providing opportunities for urban agriculture in close proximity to the large market of consumers in North Texas. City residents are increasingly seeking fresh, locally-grown food, which can be purchased at grocery stores, farmers markets or through community-supported agriculture (CSA) organizations, (*see also Chapter 6, Public Health & Safety, p. 59*). Community gardens are also becoming popular with urban and suburban residents. These gardens take advantage of the high-quality agricultural soils still available within the expanding urban region and provide social benefits, giving participants an opportunity for outdoor exercise and providing neighborhoods with a community gathering place. Though the days of large-scale farming and ranching are past for Frisco, the agricultural heritage of Texas can be acknowledged with community-scale gardens and local support for agriculture in or near Frisco.

Natural Asset Programs

Cluster and Conservation Developments

The City of Frisco supports practices that recognize natural features as development amenities, (*see also Chapter 3, Place Making & Resiliency and Chapter 4, Land Use*). Cluster development—configuring a neighborhood so that residential lots are located close together and large areas of natural open space are preserved around them—is possible under current Frisco regulations. The natural areas in these cluster or conservation subdivisions create amenities for neighborhood residents and retain the benefits of the natural systems. These natural areas are typically placed in a conservation easement so

they provide tax advantages to the property owner.

The Connemara Conservancy Foundation is a non-profit organization with a mission to “help farmers, ranchers and other landowners as well as developers and local governments protect and conserve important tracts of remaining open space. In addition, Connemara is committed to educating current and future generations on the important role that open space plays in improving our quality of life.”⁴⁷ The Foundation's service area covers 33 counties in North Texas, including Collin and Denton counties. Connemara owns 72 acres of open space—the Connemara Meadows Preserve in Plano. It also accepts conservation easements as a means of preserving natural areas. The Foundation currently manages 4,845 acres of land in easements. Connemara also manages 397 acres of land dedicated by developers and private landowners as part of conservation developments have set aside part of their property for the purpose of retaining the natural character of these areas. Connemara is presently in negotiations regarding new projects including over 3,900 acres of land in North Texas. To date, none of Connemara's easements or conservation developments cover land within the City of Frisco, but they or a similar organization could be a partner with Frisco property owners as development occurs on the large remaining vacant tracts of land in the City and its ETJ.

Current Energy Conservation Programs

Frisco homeowners and property owners are served by two different electricity providers, CoServe Electric and Oncor. Both companies offer programs to encourage energy conservation and address customer interest in the use of alternative energy sources. The descriptions below summarize these existing programs.

CoServe Electric, the electric service retailer for part of Frisco, operates several programs aimed at energy conservation and alternative energy use.

46 “Farming on the Edge”, American Farmland Trust, 2002.

47 Connemara Conservancy Foundation website, www.connemaraconservancy.org, accessed December 6, 2014.

- Free energy audits for homes and small-to medium-sized businesses;
- A Residential Rebate Program that provides incentives for the use of energy-efficient heating and cooling systems;
- Net metering that allows customers to interconnect their own energy sources (such as roof-mounted solar panels) to the electric grid and receive credit for the net energy they generate;
- Programs that support the use of distributed and alternative energy sources.

CoServe is also investigating the use of solar photovoltaics as a future energy supply source.

Outside the CoServe service area, Oncor operates the electricity grid. The Oncor area is defined as “open for competition,” so customers in this part of Frisco select from a variety of electricity retailers. Oncor has several programs that provide incentives for energy conservation. For example, customers can interconnect their energy sources to the grid. Oncor is also investing in transmission lines that will allow customers to take advantage of the wind-generated electricity from West Texas more easily. Customers can select their electricity provider based on that retailer’s mix of renewable and non-renewable energy supply sources.

Some operational and maintenance issues have been noted for the inter-connectivity from customers to the electricity grid. Property owners in Frisco interested in this approach to energy supply should work with their providers to understand the economics of these installations. Owners must also maintain the systems so they do not become community eyesores.

Energy Efficiency Scorecard

The American Council for an Energy-Efficient Economy (ACEEE) has studied strategies that local governments can employ to use energy efficiently and to encourage their residents and businesses to follow suit. Their “2013 City Energy Efficiency Scorecard” examines 34 of the most populous cities in the U.S. and rates them in terms of:

- Local government operations;
- Buildings;
- Energy and water utilities;
- Transportation; and
- The community as a whole.⁴⁸

The report outlines a series of steps that cities can take to use energy more efficiently in each of these five areas. An online Self-Scoring Tool allows individual communities to compare their own policies and programs against this scorecard to achieve up to 100 points. In the 2013 report, scores ranged from 76.75 (Boston, MA) to 17.25 (Jacksonville, FL). Dallas ranked 14th among the cities reviewed (44.5 points) and Fort Worth ranked 26th (33.0 points).

⁴⁸ “2013 City Energy Efficiency Scorecard”, American Council for an Energy-efficient Economy, www.aceee.org, 2013.

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A8 | TRANSPORTATION/MOBILITY

Urban Design

Creating a connection between the street and the adjacent land uses is an element of street design that is often overlooked, (*see also Appendix A2, Placemaking & Resiliency*). Neighborhood workshops conducted during the early phase of this comprehensive planning process confirmed that the look and feel of streets is important to the citizens of Frisco. This attention to the environment created by the roadway is one of the most effective ways to reinforce the desired image of the City and attract new residents, businesses and investment.

Frisco is doing an excellent job of streetscaping in the newer areas of the community; however, the enhancements and urban design elements used in a streetscape must be carefully selected. The principle is that the characteristics of the street must complement the adjacent development.

The Concept of Realms

It is critical to understand how urban design elements can work together to accommodate the needs of automobiles, pedestrians and land uses alike. The anatomy of a street can be divided into four major realms:

- Travelway Realm;
- Pedestrian Realm;
- Land Use Realm; and
- Intersection Realm.

The Intersection Realm is not illustrated in the graphic above, but it is a portion of the roadway that deserves special attention because it can function as a community, neighborhood or special district gateway and it typically accommodates the greatest volume of pedestrian activity.

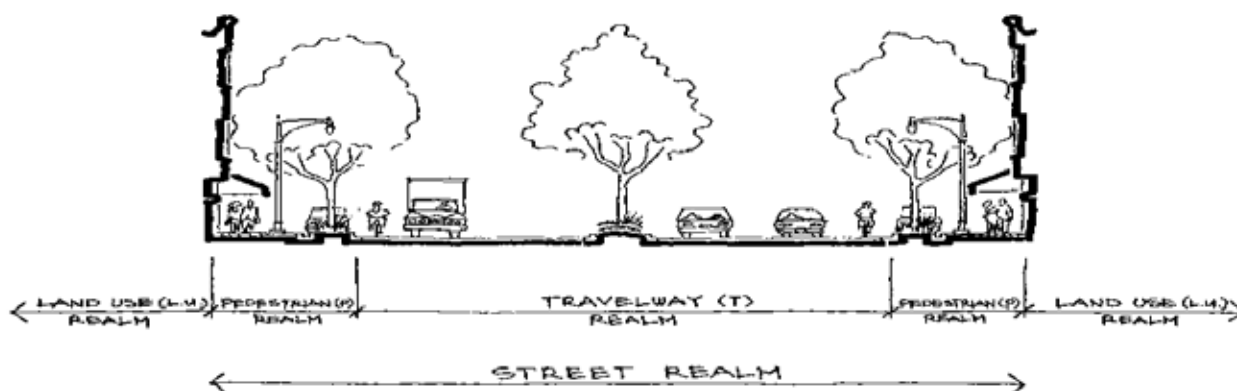


Figure A8-1: The Street Realm

Travelway Realm



The Travelway Realm

The Travelway Realm is the area between the curb lines reserved for automobile traffic.

Depending on the functional classification of the street, it may be shared with bicyclists.

The dimensions required for the

Travelway Realm are spelled out clearly in Section 2 of the City's *Engineering Standards*. One of the most important principles of placemaking is that there should be a strong relationship between the street edge and the adjacent land use, (see also Chapter 3, *Place Making & Resiliency*). For instance, in mixed-use areas adjacent to collector streets or minor thoroughfares, on-street parking or alternative travel lane widths may be appropriate, whereas in other contexts, such as along a major thoroughfare, they generally would not be.

Pedestrian Realm

The Pedestrian Realm is the area on either side of the street between the curb line and the right-of-way line. Most of the time, this area provides the best opportunity for incorporating urban design



The Pedestrian Realm

elements. These elements should vary based on the adjacent land use and roadway types. For instance, the Pedestrian Realm for mixed-use or transit-oriented developments will be quite different than the Pedestrian Realm for single-use areas or along a collector or major or minor thoroughfare, where the uses tend not to be mixed.

In mixed-use or transit-oriented areas, *Figure A8-1*, a number of amenities may be provided to draw people out and encourage strolling and relaxation. These could include:

- Wider sidewalks;
- Tree wells;
- Street furnishings such as benches and trash receptacles;
- Lamp posts;
- Bollards;
- Drinking fountains;
- Planters for flowers and shrubs;
- Street trees; and
- Mounted maps and Informational kiosks.

Benches or planters are especially beneficial for senior citizens and disabled persons, who can use them as needed to stop and rest. These and other amenities also reward other pedestrians by increasing the attractiveness and comfort of the street environment and making walking a natural and pleasurable part of the day, giving residents a reason to come out of their homes and cars to engage with their neighbors and their community.



The Pedestrian Realm In A Mixed-Use Or Transit-Oriented Area

In single-use areas (retail, commercial or residential), the Pedestrian Realm should be configured differently. Sidewalks and other paved areas should be shaded to create a comfortable walking environment for pedestrians and to reduce surface and ambient temperatures. Trees can be combined with other devices—canopies, awnings, sometimes building shadows—to provide even more shade. Retail areas along collector streets or minor thoroughfares should include a sidewalk out to the curb with tree wells for landscaping. These amenities would also accommodate parking or drop-off areas where allowed.

Low-density residential and office uses should have a different Pedestrian Realm. In these locations, a landscape buffer can be integrated into the parkway area between the sidewalk and the curb. Major thoroughfares, where on-street parking and drop-off is prohibited, should feature a distinct landscape buffer with trees between the sidewalk and the curb to beautify the area and provide pedestrians with a sense of safety.

Land Use Realm

The Land Use Realm is the area adjacent to the roadway, located entirely within private property. It is important to discuss because it contributes, either negatively or positively, to the overall look and feel of the area. Dictated almost entirely by zoning, this realm can differ radically between rural, residential, retail and mixed-use areas. The Land Use Realm is the interface between the character and activities

associated with the adjacent land uses and those of the Travelway and Pedestrian Realms. A key concept in this environment is compatibility between the thoroughfare and its surroundings, both physically and operationally. The Land Use Realm acknowledges the contexts of community, environment and transportation needs and knits them together to improve mobility and livability.

As with the Pedestrian Realm, the characteristics of future development, whether mixed-use, transit-oriented or single-use, should be suited to the context of the surroundings. For example, the elements in a mixed-use area along a non-thoroughfare roadway should include build-to lines with well-defined pedestrian signage, buildings with transparent windows, parking behind the buildings (or on the street) and a pedestrian-friendly environment. Conversely, in areas that are conventionally developed with single uses (such as commercial, retail or residential development along a thoroughfare), required minimum setback lines will typically locate the buildings away from the street so that they don't relate as well to the roadway.

Intersection Realm

The Intersection Realm, located within the public right-of-way and involving the abutting private property, creates a frame for the roadway with the intersection at its center. The Intersection Realm is characterized by a high level of activity and shared use, the potential for multi-modal conflicts (mainly between vehicles and pedestrians or cyclists) and complex travel



The Land Use Realm In A Mixed-Use Or Transit-Oriented Area



The Intersection Realm

movements. An area such as this will often serve as an entrance into a special district or development and, as such, the use of special urban design treatment may help establish a landmark or an identity node. Within Frisco, there are tremendous opportunities to incorporate specific amenities to create this sense of identity.

Intersection areas should include clearly marked pedestrian crosswalks and curb ramps, decorative lighting, landscaping and even special art or monuments. Other intersection treatments, such as the use of modern roundabouts, may be appropriate in special cases, such as along local or collector streets, but should be used only with the approval of the City's Engineering Department.

Mixed-Use and Multi-Modal Streets

With an increased emphasis on a multi-modal system, it is important to create a roadway environment that will accommodate the necessary features of mixed-use and transit-oriented developments. Roadways serving these development types need to include more pedestrian-friendly amenities and on-street parking, but must still provide for efficient automobile movement and adequate emergency access.

Sidewalks

The sidewalk along a mixed-use street is the primary physical environment in the Pedestrian Realm. It is where most of the activity occurs. In fact, sidewalks in mixed-use areas may be wider than the travel lanes. For mixed-use streets to be successful, the design of the adjacent building facades, especially at the ground floor level, must relate well to the street. Transit amenities, when located on sidewalks, are part of a range of street furniture that is essential to designing a successful transit street, and shade trees, wide sidewalks, benches and other amenities make streets more active and appealing.

On-Street Parking



On-Street Parking Provides A Buffer In A Mixed-Use Area

Beyond urban design features and sidewalks, on-street parking is the most important element in the design of a mixed-use street. The presence of parked cars reduces travel speeds, separates pedestrians from moving vehicles

and adds to the vitality of retail establishments. The image below uses on-street parking as a buffer for pedestrian activity.

New Roadway Sections for Mixed-Use and Transit-Oriented Development

The roadway cross-sections already adopted in the City's *Engineering Standards* will be carried forward with the addition of three new roadway types, (see also Chapter 9, *Transportation/Mobility*). These new cross-sections include narrower lanes to encourage slower vehicle speeds and more space for pedestrians and on-street parking, a concept approved in the 2006 Comprehensive Plan update. These roadway types should be used primarily in mixed-use and transit-oriented areas where they will blend easily with the adjacent development. The exact dimensions and geometrics will be resolved by the City's Engineering Department once the general parameters are approved.

Figures A8-2 through A8-4 are cross-sections of the recommended roadway types. Two of the new cross-sections accommodate on-street parking. Two will be classified as alternative minor thoroughfares, the third as a collector street. The Minor Thoroughfare 2 (Figure A8-2) shows a section with a reduced median width and narrower travelway and an increased parkway width for pedestrians. The 90-foot right-of-way dimension is the same as the existing Minor Thoroughfare roadway type.



Figure A8-2: Minor Thoroughfare 2 (Mixed-Use or Transit-Oriented Development)

The Minor Thoroughfare 3 cross-section below proposes a right-of-way width of 110 feet, 20 feet wider than for a Minor Thoroughfare 2. This roadway type provides the same travelway and median width as Thoroughfare 2, but includes additional area for on-street parking and a slightly wider parkway. The third new roadway type is a Collector 2 (Figure A8-4). The typical 60-foot section includes two travel lanes plus a lane of parallel parking and a parkway on each side of the roadway.

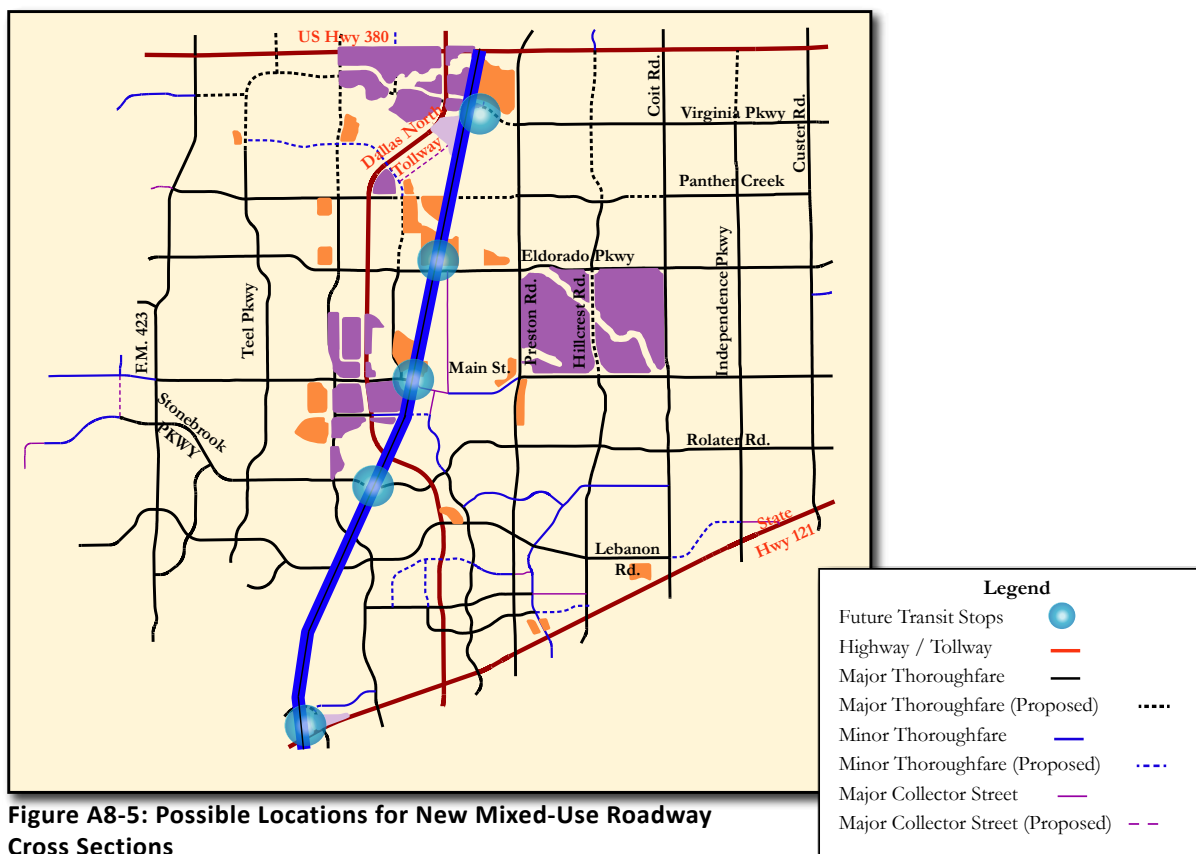


Figure A8-3: Minor Thoroughfare 3

The purpose of these new standards is to help integrate the type of street with the character of the development adjacent to it. The decision to apply these new standards to future roadways within the Mixed-Use and Transit-Oriented Development areas on the Land Use Plan will be left to the discretion of the City. Figure A8-5, highlights the Mixed-Use and Transit-Oriented Development areas where these street types might be successfully applied.



Figure A8-4: Collector 2 (Mixed-Use or Transit-Oriented Development)



Street System Continuity

The location of median openings on Frisco streets must comply with the Access Management standards outlined in the City's *Engineering Standards*. The following subsections outline options that can be applied to achieve better connectivity throughout Frisco as development occurs. Better connectivity will help improve both mobility and access within the City.



Where residential streets are long and have limited access to adjacent developments, every trip is a long one, especially to simple services.

Interconnected Street System

A city's roadway system should be designed to provide improved connections between neighborhoods and other land uses and to complement the goals in the areas of urban design, livability and sustainability. To improve the livability in residential areas, it is important to enhance the flexibility of not only modes of transportation, but also routes. An interconnected street pattern that provides flexible routes and a number of access points for private and emergency vehicles lessens automobile congestion and reduces dependence on major thoroughfares.

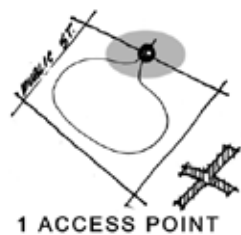
This type of system accommodates continuous sidewalks, short blocks which slow traffic to the desired speed and provides other benefits such as improved pedestrian safety, better local circulation, shorter walking distances and a logical structure to the physical development pattern of the community. Shorter blocks that encourage lower vehicle speeds are especially appropriate

in high-density and mixed-use developments. It is also important to try to incorporate well-lit, grade-separated, ADA-compliant pedestrian and bike trails into bridge structures that cross creeks and floodplains.

MULTIPLE ACCESS POINTS



ONE ACCESS POINT



As the image above shows, encouraging multiple access points between developments can provide relief to the major thoroughfare intersections throughout the city. Essentially, this concept:

- spreads traffic out,
- allows greater flexibility of travel routes,
- reduces miles traveled,
- lessens the burden on the intersections, and
- allows multiple routes for emergency responders.

Frisco's previous thoroughfare planning efforts have resulted in a robust network of thoroughfares, essentially on a one-mile grid system, (see also Chapter 9, *Transportation/Mobility*). This facilitates the efficient movement of large volumes of traffic, but the use of interconnected collectors and local streets is important to serve the land uses between the major thoroughfares.

Street Intersections

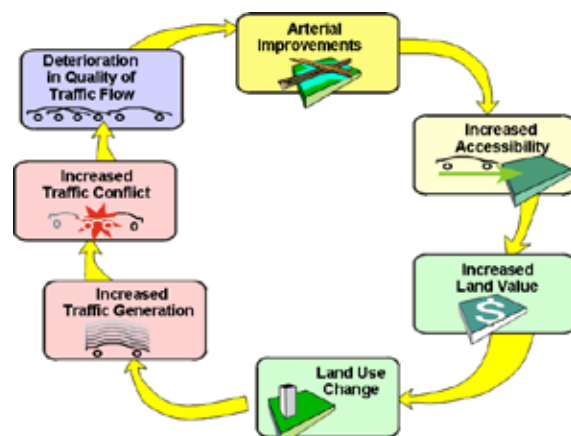
The City should ensure that street intersections are properly aligned to promote better street continuity. When collectors and local streets are planned to connect to major thoroughfares, careful thought must be given to the location where the connection occurs. Median openings are needed for left-turn, in-and-out access along

divided roadways, and these openings need to comply with the City's access management policies and spacing standard requirements described in the City's *Engineering Standards*. Adequate distance needs to be provided between median openings to allow for proper deceleration and sufficient vehicle storage area (where vehicles stack up behind each other, usually waiting to make a turn). Also, along divided roadways, streets and driveways should be aligned with one another to minimize the number of openings and facilitate the installation and coordination of traffic signals, if they are necessary.

Access Management

Access management is another important aspect of street continuity. The purpose of access management is to improve safety, reduce congestion and protect the City's transportation investment. Many of the concerns related to access management are the same as those discussed above in relation to street intersections—median openings, access and space for deceleration and vehicle storage.

The graphic above depicts the typical life cycle of a roadway without access management. As thoroughfare improvements are made, access to development increases. Over time, land uses change, traffic and the potential for crashes increases; eventually, the road may cease to operate effectively. Access management is designed to break this cycle. This Transportation



Typical Life-Cycle of a Roadway with No Access Management

Strategy endorses the City's access management standards and proposes policies on access management elsewhere in this chapter, *(see also Chapter 9, Transportation/Mobility)*.

Traffic Systems Management

Efficient operation of the roadway network is of the utmost importance to the traveling public. The City is already employing many of the available technologies and techniques to help maintain an acceptable level of service on the local transportation system. Plans that coordinate signal timing and programs that update these plans in response to changes in traffic volumes and traffic patterns are vitally important to the everyday operation of the City's roadway network.

Reliable, up-to-date traffic signal control equipment is extremely important to the overall mobility in Frisco and to coordinated signal timing plans. This equipment includes not only the hardware and controller in the signal cabinet, but also the following components, which are necessary for efficient control of the overall system:

- Reliable vehicle detection on the street (video or radar);
- Communications equipment that provides a link to equipment in the field; and
- Central control equipment (computers, radios, video monitors, software).

The ability to communicate reliably from a centralized location to devices in the field is critical to maintaining operations on a network the size of Frisco's because it is more efficient and economical to manage field equipment from one location than to visit each intersection individually. Even if an incident requires someone to be dispatched to the field, a reliable system often makes it possible to know beforehand what the situation entails, who should respond and what equipment the responder will need when they get to the

incident. Some of the devices commonly used to improve and maintain efficient roadway operations include variable message signs, dynamic lane assignment signs and video surveillance cameras placed at strategic locations along thoroughfare roadways.

The City should prepare incident and special event management plans in anticipation of a variety of incidents and events. The management of these events could involve the use of the following technologies for the purposes described below:

- Video surveillance cameras to verify the location or details of an incident or event;
- Variable message signs to help divert traffic;
- Modified signal timing plans to better handle the diverted traffic; and
- Dynamic lane assignment signs to more efficiently manage available lane capacity.

These plans could be implemented to address:

- Incidents blocking lanes on certain stretches of major roadways;
- Planned roadway construction;
- Pre-game traffic heading to a ballpark, arena or stadium;
- Post-game traffic leaving the venue; or
- Increased traffic volumes associated with tax-free shopping days or the day after Thanksgiving.

The use of video surveillance cameras has also been shown not only to improve traffic safety, but also to reduce the number of incidents at intersections caused by red light running. These crashes tend to cause more severe injuries and more property damage due to the higher speeds typically associated with this particular offense. It has been shown that the use of this technology can reduce the number of red light running offenses, thereby reducing the potential for accidents leading to injuries and significant intersection delays.

The modeling information presented in the Transportation Chapter demonstrates that

congestion on the thoroughfare street system will increase as Frisco and the region grows, (see also Chapter 9, *Transportation/Mobility*). This will likely have a negative impact on the neighborhood collector and local street system as drivers attempt to find ways to avoid delays on the major roadways by speeding and cutting through residential areas. Traffic management is a means of addressing these impacts and improving neighborhood livability.

Traffic management is a City-wide issue. Many problems and solutions need to be looked at from a broad perspective to ensure that the solution for one street or neighborhood does not create problems for another. A traffic management program is an effective, systematic and fair approach to ensuring an acceptable level of service as Frisco's population, and therefore its roadway traffic, continues to increase.

Traffic Calming

Frisco's traffic calming guidelines provide a consistent, City-wide approach to addressing neighborhood traffic and transportation issues related to safety, speed and traffic volume on local streets. The methods, devices and purposes of traffic calming are not new to Frisco. The City's approach to traffic calming recognizes that a street is a highly complex environment hosting multiple competing interests. These interests include:

- Controlled versus unlimited land access;
- Livability versus mobility;
- Vehicular accommodations versus pedestrian and bicycle accommodations; and
- Consistency of function versus flexibility of form.

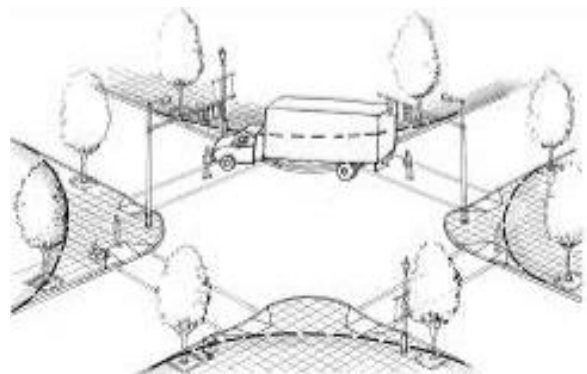
The following descriptions of potential traffic calming devices are directly linked to the City-wide street designations and are intended to enhance both the form and function of current and planned roadways.

Traffic Calming Devices

Curb Return Radii

Curb return radii are the curved sections of curb at the intersection of two streets. Their purpose is to guide vehicles as they make turning movements and to separate vehicular traffic from pedestrian areas at street corners. The current City of Frisco *Engineering Standards* document defines specific curb radii by street type. This subsection outlines a general strategy for selecting the curb return radii design criteria and discusses situations requiring larger radii. Factors that should be considered to determine the appropriate curb return radii include:

- The width of the receiving lane;
- The degree of tolerance at locations where vehicles may encroach into opposing lanes in the course of the turning movement;
- The number and frequency of large vehicles on the street;
- Vehicle speeds;
- The angle of the turn;
- Vehicle and pedestrian volumes; and
- The presence of bike and/or parking lanes.



Smaller curb return radii shorten the distance that pedestrians must cross at intersections. The occasional turn made by large trucks can be accommodated with slower speeds and some encroachment into the opposing traffic lanes.

Curb Return Radii Strategy

Curb return radii should be designed to accommodate the largest vehicle (especially emergency response vehicles) that will regularly and frequently turn the corner. This principle assumes that occasionally a large vehicle can safely encroach into the opposing travel lane during the turning movement.

In urban centers, transit-oriented developments and mixed-use areas, where pedestrian activity is intensive, curb return radii should be as small as possible.

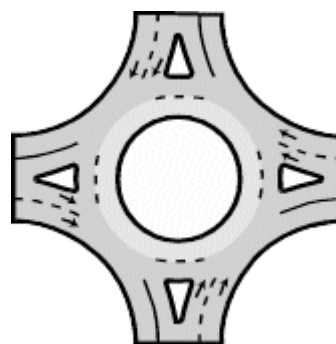
- The design vehicle should be selected by determining the frequency of large truck and bus turns at the intersection in question. Bus routes should be identified to determine whether buses are required turn at the intersection and in which direction. Existing and potential land uses along both streets should be reviewed to evaluate the potential for truck turning movements at the intersection.
- Curb return radii of different lengths can be used on different corners of the same intersection to match the requirements of the design vehicle turning at each corner. Variable curves can be used to better match the wheel track of the design vehicle.

If the occasional encroachment of a large vehicle into oncoming lanes during a turning movement is not acceptable, a larger curb return radius should be used as the standard. In addition, pavers, colored stamped concrete, stone or other contrasting material can be incorporated into the street surface to help direct the driver. This could create an area within the intersection where pedestrians could wait to cross the street. It would also make the street appear narrower while still accommodating vehicles of all types.

Modern Roundabouts

Modern roundabouts are an alternative form of intersection control that is becoming more common in the United States. In the appropriate circumstances, significant benefits can occur with the conversion of an intersection controlled by a

four-way stop sign or a traffic signal into a modern roundabout. It should be noted, however, that additional right-of-way may be needed to accommodate an intersection of this type, and any such conversion would be subject to the approval of the City's Engineering Department. The benefits of a roundabout could include improved safety, speed reduction, enhanced aesthetics or better functionality. Until recently, many state and local agencies throughout the United States have been hesitant to install roundabouts due to the lack of objective, nation-wide planning, performance and design guidelines. With the creation of the Federal Highway Administration's guidebook entitled *Roundabouts: An Informational Guide*, state and local agencies now have a firm set of design guidelines, and roundabouts must conform to these standard practices to ensure safe, optimal operation. Modern roundabouts should be considered along local streets, collectors and on minor thoroughfares, but in general, they should not be installed along six-lane major thoroughfares.



General Roundabout Diagram



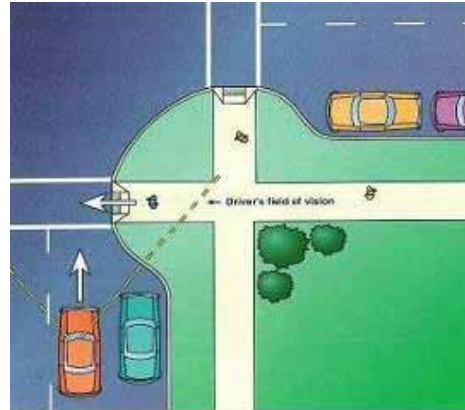
A Roundabout Creates a Special Element within the Intersection Realm

Curb Extensions

Curb extensions (also called bulb-outs or neck-downs) extend the raised curb into the roadway, effectively reducing the width of the street and providing an additional measure of traffic control. Curb extensions, which typically occur at intersections, can provide several benefits, among them:

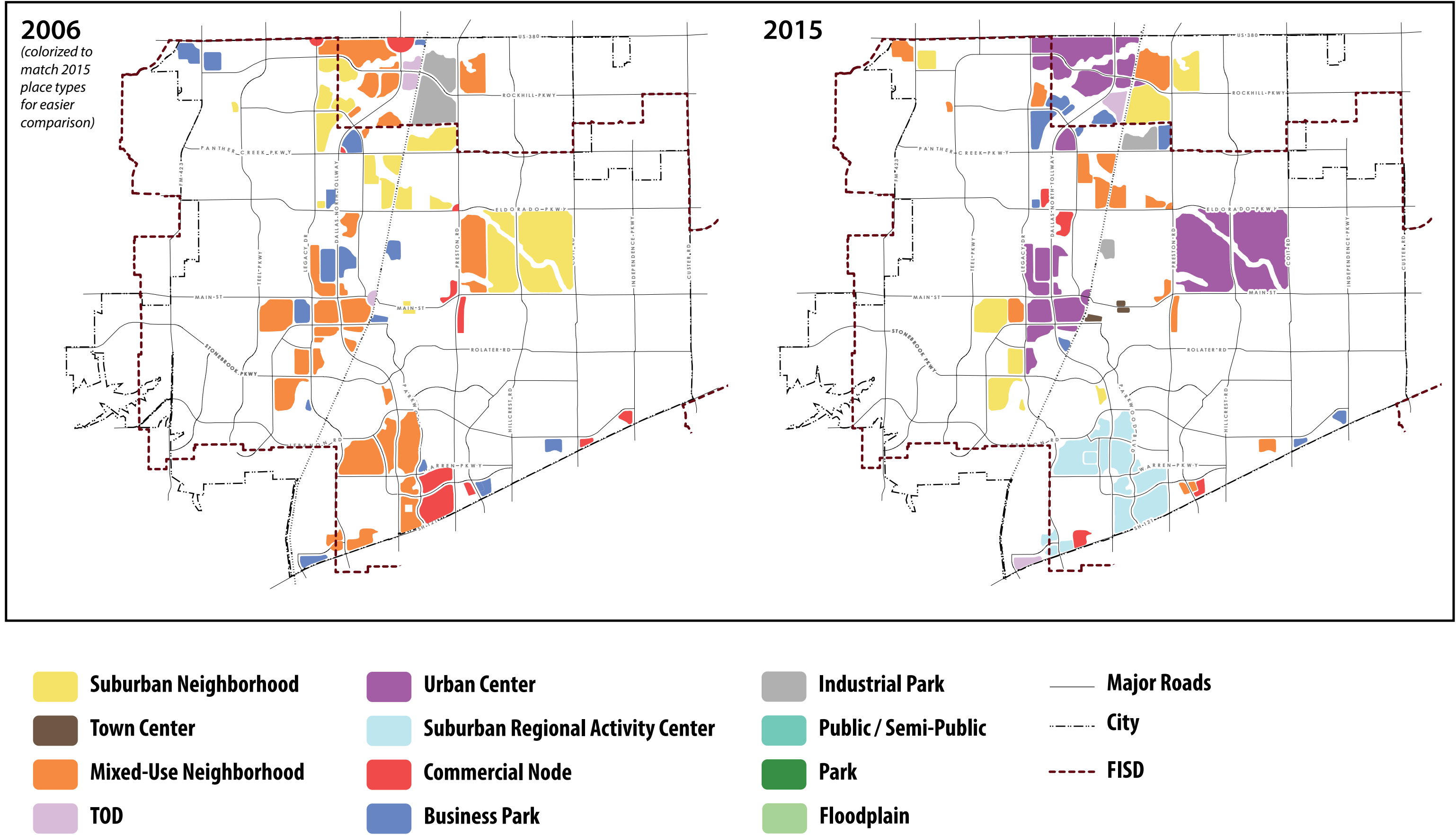
- Reduce pedestrian crossing distance and exposure to traffic;
- Improve driver and pedestrian sight distance and visibility;
- Narrow the traveled portion of the roadway, both visually and physically, creating a traffic calming effect;
- Direct pedestrian crossings to preferred locations;
- Keep vehicles from parking too close to corners and blocking crosswalks;
- Provide wider pedestrian waiting areas at crosswalks and intersection bus stops;
- Reduce the curb return radius and slow turning traffic; and
- Facilitate compliance with the ADA requirements by providing space for level landings.

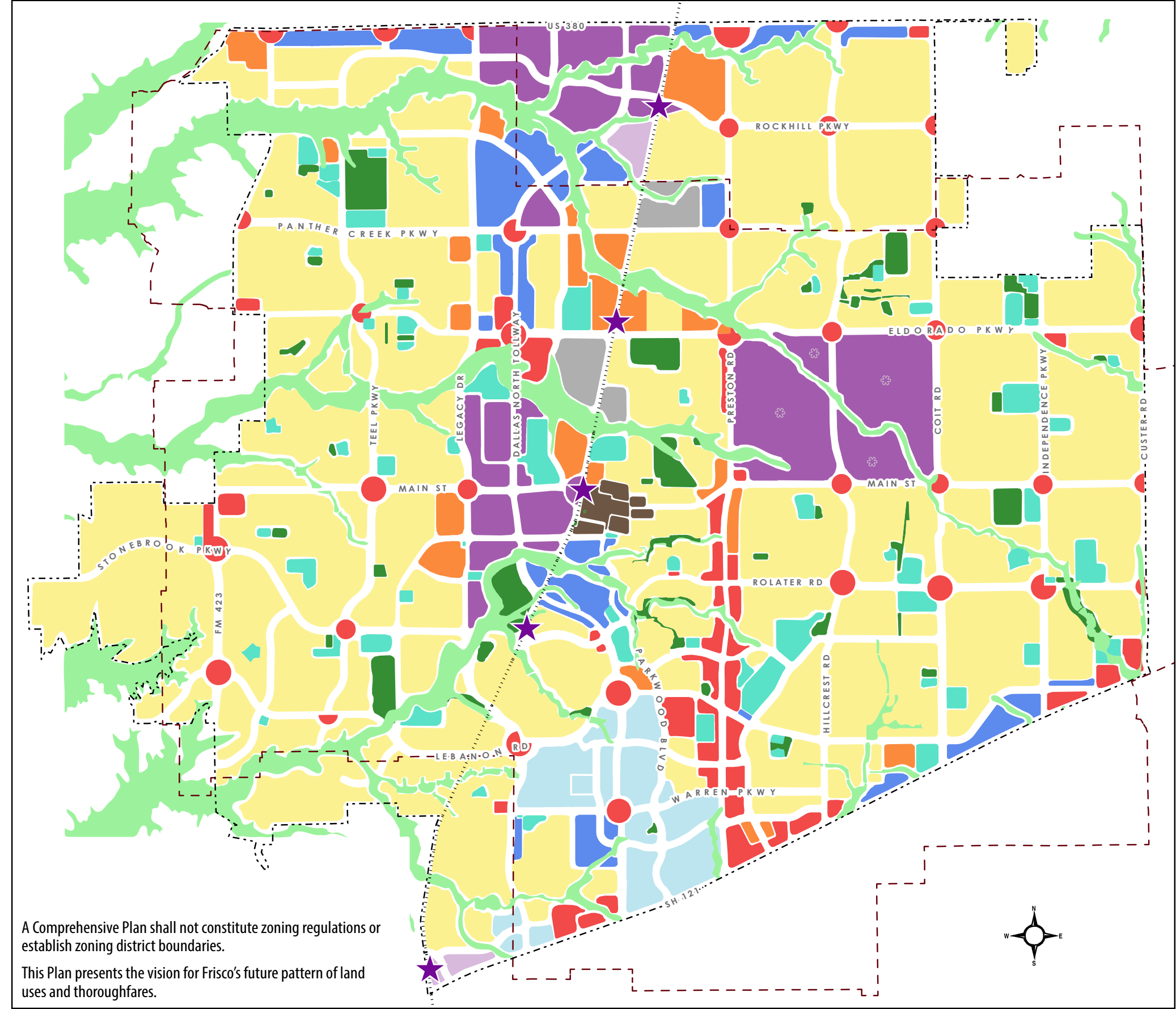
Curb extensions serve to better define and delineate the travel portion of the roadway, separating it from the parking lane and the roadside. This technique can be used where vehicles regularly exceed the speed limit, where on-street parking would typically be delineated only by pavement markings and where the distance between the outside curb lines is greater than what is required for the travel portion of the street. In the design of a curb extension, the turning radii for large vehicles must be accommodated.



Curb Extensions can Shorten the Distance a Pedestrian Needs to Travel

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2015 Future Land Use Plan

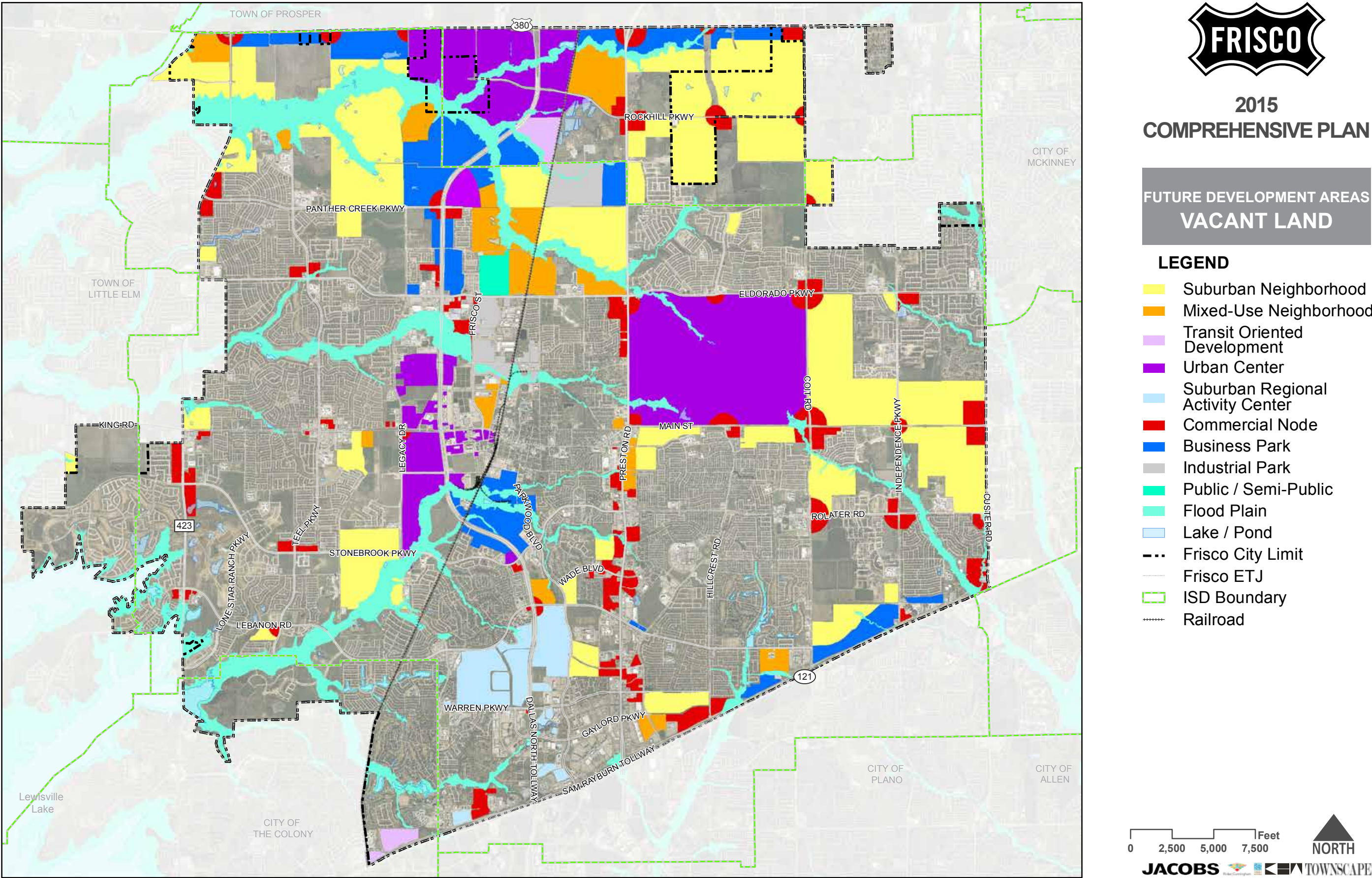
Legend:

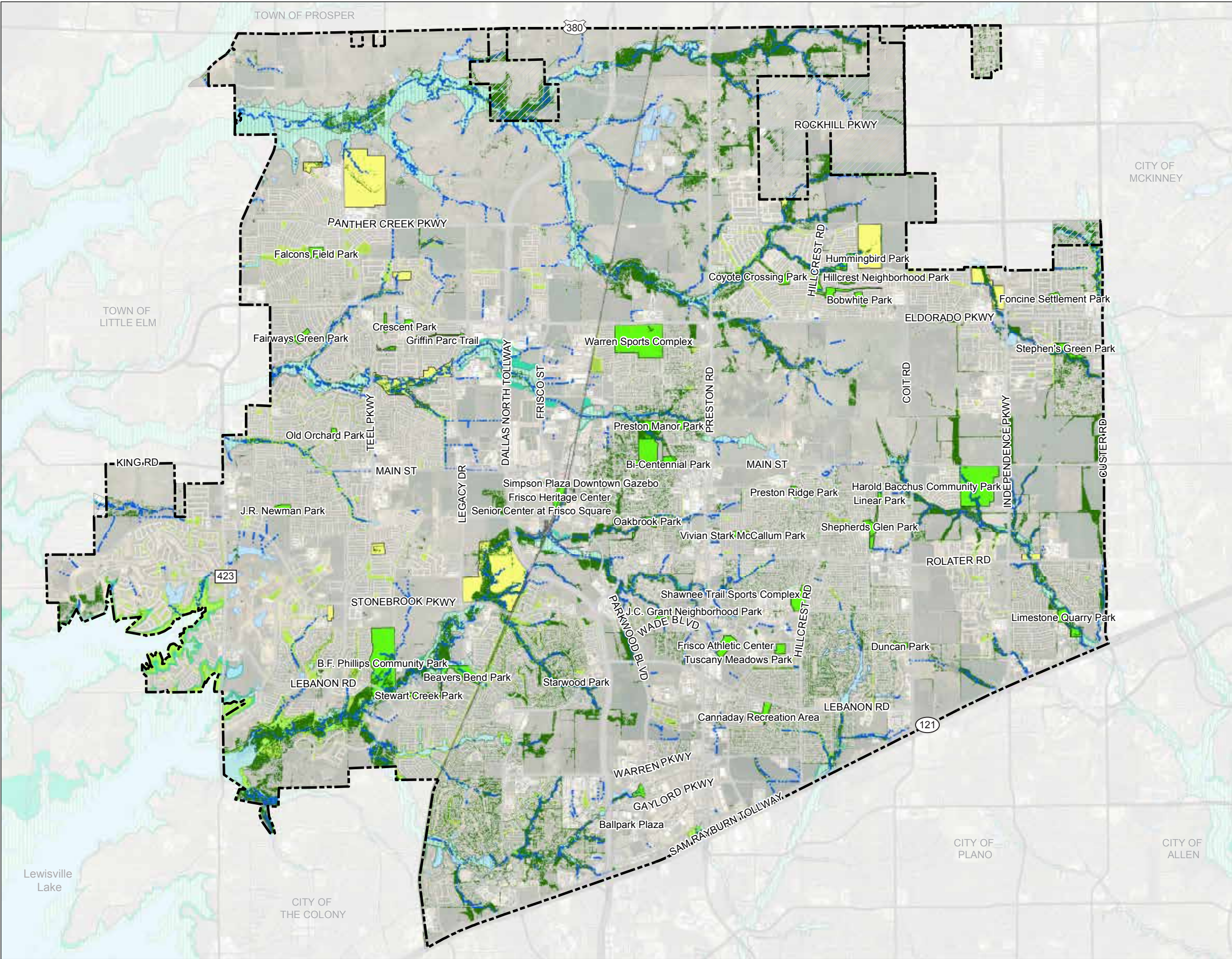
- Suburban Neighborhood
- Town Center
- Mixed-Use Neighborhood
- TOD
- Urban Center
- Suburban Regional Activity Center
- Commercial Node
- Business Park
- Industrial Park
- Public / Semi-Public
- Park
- Floodplain
- Future Rail Station
- Capped per Development Agreement
- Major Roads
- City
- FISD

NOTE: Public and Semi-Public uses include civic and institutional uses, such as schools, police and fire stations, libraries, etc. Areas shown are those known at the time of analysis for this update.

NOTE: Parks and open spaces are intended to be developed throughout the city, and may be part of any land use. Areas shown are those known at the time of analysis for this update.

A Comprehensive Plan shall not constitute zoning regulations or establish zoning district boundaries.
This Plan presents the vision for Frisco's future pattern of land uses and thoroughfares.



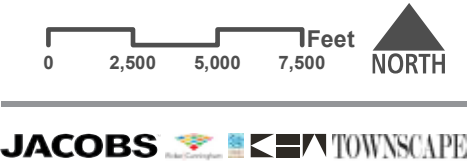


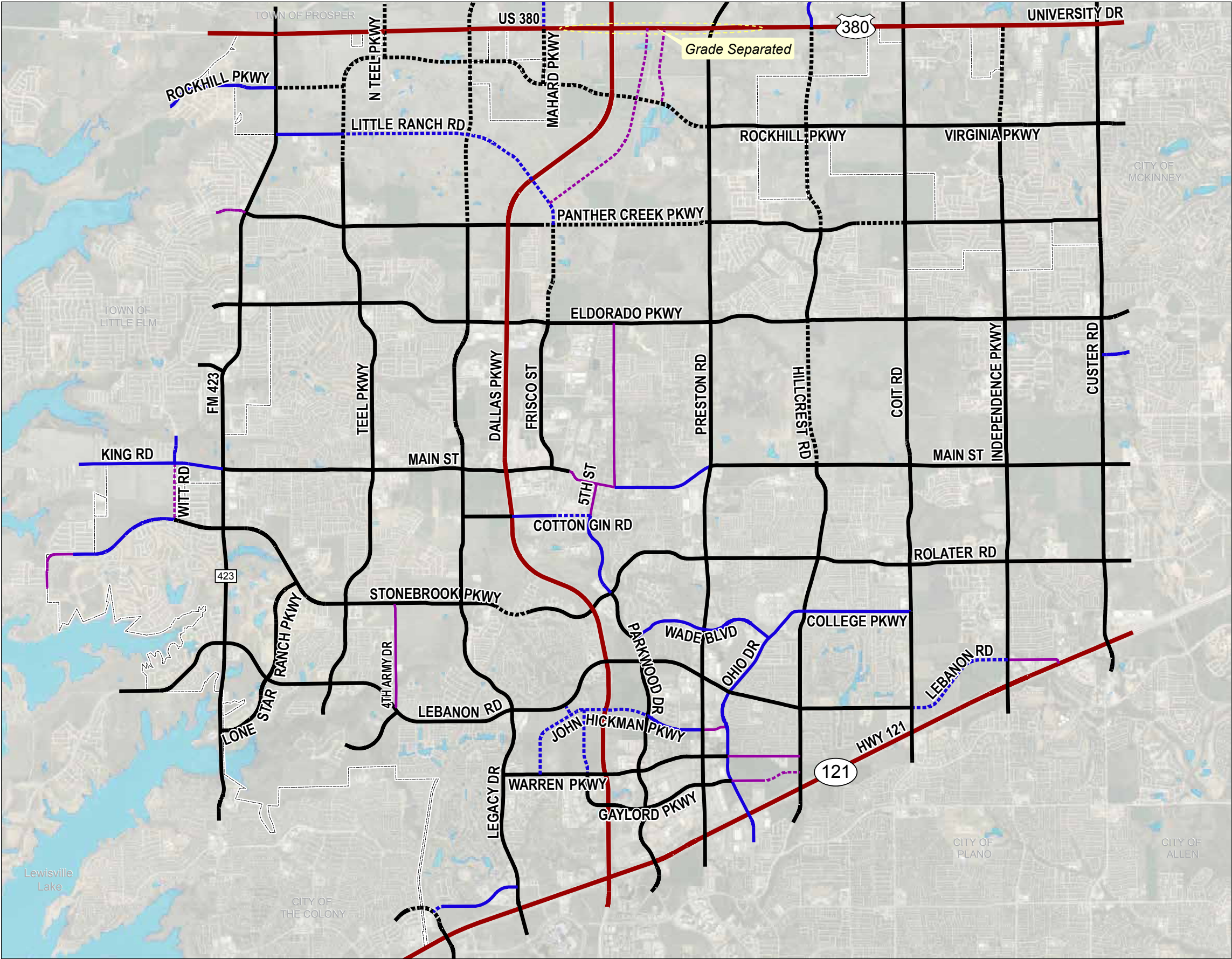
FRISCO

2015
COMPREHENSIVE PLAN

**FLOODPLAINS &
TREE COVER**

- LEGEND**
- Frisco City Limit
 - ▨ Frisco ETJ Limit
 - ++++ Railroad
 - Lake / Pond
 - River / Creek
 - Tree Cover
 - Parks
 - Planned Parks
 - Open Space
 - 100 Year Floodplain
 - 500 Year Floodplain





FRISCO

**COMPREHENSIVE PLAN
UPDATE**

**THOROUGHFARE
PLAN**

LEGEND

- Highway / Tollway
- Major Thoroughfare
- Major Thoroughfare (Proposed)
- Minor Thoroughfare
- Minor Thoroughfare (Proposed)
- Collector Street
- Collector Street (Proposed)
- Frisco City Limits
- Lake / Pond

City of Frisco - Feb 2015

0 2,500 5,000 7,500 Feet

NORTH

JACOBS Kimley-Horn TOWNSCAPE

Figure A3-1: Existing Land Use Plan

