City of **Benbrook** | City of **Fort Worth** | City of **Lake Worth** | City of **River Oaks** | City of **Sansom Park** | City of **Westworth Village** | City of **White Settlement** | **Tarrant County**



# Planning Livable Military Communities Regional Vision Report | 2013

PLANNING
LIVABLE MILITARY COMMUNITIES

The work that provided the basis for this publication was supported by funding under an award with the U.S. Department of Housing and Urban Development. The substance and findings of the work are dedicated to the public. The author and publisher are solely responsible for the accuracy of the statements and interpretations contained in this publication. Such interpretations do not necessarily reflect the view of the Government.


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# WHAT IS NCTCOG?

The North Central Texas Council of Governments is a voluntary association of cities, counties, school districts, and special districts which was established in January 1966 to assist local governments in **planning** for common needs, **cooperating** for mutual benefit, and **coordinating** for sound regional development.

It serves a 16-county metropolitan region centered around the two urban centers of Dallas and Fort Worth. Currently the Council has **237 members**, including 16 counties, 169 cities, 21 independent school districts, and 31 special districts. The area of the region is approximately **12,800 square miles**, which is larger than nine states, and the population of the region is over **6.5 million**, which is larger than 38 states.

**NCTCOG's** structure is relatively simple; each member government appoints a voting representative from the governing body. These voting representatives make up the **General Assembly** which annually elects a 15-member Executive Board. The **Executive Board** is supported by policy development, technical advisory, and study committees, as well as a professional staff of 306.

NCTCOG's offices are located in Arlington in the Centerpoint Two Building at 616 Six Flags Drive (approximately one-half mile south of the main entrance to Six Flags Over Texas).

North Central Texas Council of Governments
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Arlington, Texas 76005-5888
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NCTCOG's Department of Transportation

Since 1974 NCTCOG has served as the Metropolitan Planning Organization (MPO) for transportation for the Dallas-Fort Worth area. NCTCOG's Department of Transportation is responsible for the regional planning process for all modes of transportation. The department provides technical support and staff assistance to the Regional Transportation Council and its technical committees, which compose the MPO policy-making structure. In addition, the department provides technical assistance to the local governments of North Central Texas in planning, coordinating, and implementing transportation decisions.

Prepared in cooperation with the U.S. Department of Housing and Urban Development.

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# SECTION 01 | EXECUTIVE SUMMARY

The Cities of Benbrook, Lake Worth, River Oaks, Sansom Park, Westworth Village, and White Settlement are in the northwest portion of Tarrant County in the Dallas/ Fort Worth Metroplex, surrounding Naval Air Station Fort Worth Joint Reserve Base (NAS Fort Worth, JRB). (See **Figure 1.1**). Each of the communities has a distinct character, but the presence of such a large economic and land use influence highlights many common interests and has led to a history of coordinated planning beginning with the 2008 Joint Land Use Study (JLUS). To build on the cooperative spirit of the region, the JLUS participating cities joined the North Central Texas Council of Governments (NCTCOG), transportation and housing agencies, Independent School Districts and other stakeholders in applying for a Department of Housing and Urban Development (HUD) Community Challenge Grant. The purpose of the HUD grant is to promote economically vital and sustainable communities.

The partners received the grant in October of 2010 and launched the Planning for Livable Military Communities (PLMC) effort in January of 2012. The PLMC study conducted five major planning activities, including four analyses of the regional real estate and economic market, housing and retail sectors, transportation system and local ordinances, as well as Comprehensive Plan Visions for the Cities of Lake Worth, River Oaks, Sansom Park, Westworth Village, and White Settlement.

This document is the result of the Comprehensive Plan update component of the PLMC study. The Planning Livable Military Communities Regional Vision Report consists of two main parts:

- The Regional Vision Report highlights opportunities for collaboration among the jurisdictions of the PLMC study area, including the Cities of Benbrook, Fort Worth, Lake Worth, River Oaks, Sansom Park, Westworth Village and White Settlement, as well as Tarrant County. All of these partners will play key roles in supporting and implementing broader transportation, housing, and economic development strategies that address challenges across individual boundaries and seek to strengthen the overall quality of life and economic competitiveness of the region. The regional element also summarizes key findings from the background studies on market, housing, transportation, and ordinance compatibility issues.

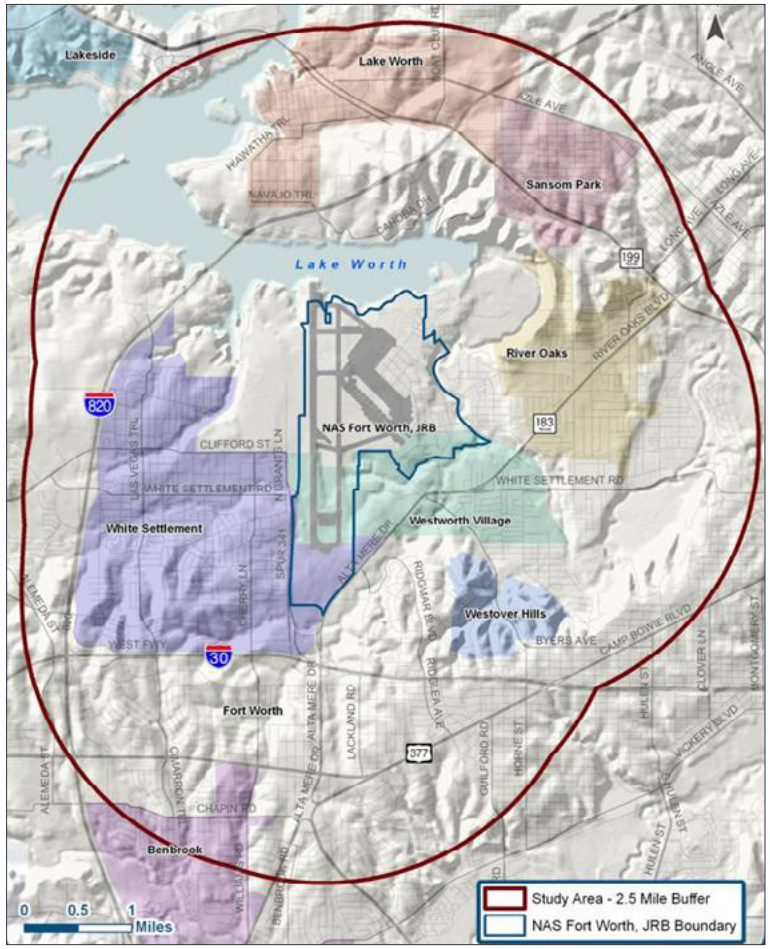



**Figure 1.1** – Planning for Livable Military Communities Study Area

- The City Comprehensive Plan Visions feature more specific goals, policies and actions in the core areas of land use, economic development, transportation and housing. These sections are intended as policy guides to assist the Cities of Lake Worth, River Oaks, Sansom Park, Westworth Village, and White Settlement in updating their full comprehensive plans and to complement the overarching strategies identified in the Regional Vision Report.

A Comprehensive Plan serves as an ongoing blueprint for shaping the natural, economic, social and built environment of a community. Through the comprehensive planning process, residents, business owners, and other stakeholders express their desires and visions about what an attractive, prosperous, and healthy place to live and work will look like in the years ahead. The vision that emerges then becomes a long-term guide for critical decisions on infrastructure investment, land use and development actions, and public service delivery.

One of the major themes of the PLMC planning process is exploring opportunities for coordinated, inter-jurisdictional planning. The communities of the PLMC region enjoy many shared assets, including beautiful open space and natural and recreational features such as parks, lakes, scenic vistas and trails; a robust economic core formed around NAS Fort Worth, JRB and defense-related industries; affordability; excellent regional accessibility; and an opportunity to create complete and integrated neighborhoods that combine housing choices near jobs and lifestyle amenities. They also confront the common and persistent challenges of aging commercial development, a lack of diversity in housing and retail options, and a weak identity within the Metroplex region.

A regional perspective enables the communities to examine their opportunities and challenges in this broad context. Coordinated efforts also enable local decision-makers to understand overlapping goals, balance competing interests, and maximize cost-effectiveness and efficiency by bringing joint resources to bear on complex planning issues.

Ultimately, the goal of the coordinated comprehensive planning process is to ensure that all of the communities continue to provide excellent quality of life for current and future residents. Each city's individual Comprehensive Plan Vision is based on a community-generated vision and draws from analysis of existing conditions, previous plans and land use studies, and anticipated growth and development opportunities.

Community input, a review of previous studies and plans and additional technical analyses identified a variety of opportunities and challenges across the PLMC communities.

## Section 1.1 | Challenges

1. **Quality of Life**
   - Modest population growth in most parts of the study area
   - Impact of school district performance and perception on location decisions by potential residents
   - Need for stronger regional identity
2. **Economic Development**
   - Aging retail corridors and outdated strip commercial development patterns
   - Limited undeveloped land for new development
   - Competition with areas in and around Fort Worth that pull mixed use project investments away from the PLMC communities
   - Increasing regional market competitiveness over the past decade has made it difficult to attract significant growth in the industrial, office, and retail sectors
3. **Mobility Options**
   - Need for improved storm water infrastructure
   - Automobile dominated transportation system
   - Increasing traffic congestion
   - Influx of daily commuters to major employment centers within the study area
   - Aging road infrastructure
4. **Housing Choice**
   - Need for additional adequate affordable and quality housing options near major employers
   - Substandard aging single-family and multi-family family housing stock in some areas
   - Need for additional housing options for seniors
5. **Intergovernmental Coordination**
6. **Compatibility with Military Operations**
   - Land use compatibility issues due to proximity to NAS Fort Worth, JRB and light industrial uses

## Section 1.2 | Opportunities

1. **Quality of Life**
   - Build a regional identity
   - Complement and strengthen the visual identity and character of existing community cores
   - Promote complete neighborhoods and communities that integrate land uses, amenities, services, and transportation
   - Ensure that neighborhoods are designed with quality housing choices, amenities and services to maintain quality of life for new and existing residents

2. **Economic Development**
   - Use mixed use development patterns to revitalize aging corridors and commercial centers, particularly along State Highways 183 and 199
   - Explore regional marketing and economic development opportunities
   - Build on core economic strengths
   - Expand access to educational and workforce training opportunities
3. **Mobility Options**
   - Promote consistency in land use and design principles along major corridors to support a more unified visual environment
   - Coordinate transportation investments and land use decision-making to ensure sustainable and livable development patterns
   - Foster local identity and sense of place through strategic investments in transportation infrastructure and quality roadway design
   - Increase transportation choice with the development of mobility options, including bicycle and pedestrian facilities and future transit options
   - Balance capacity and traffic-flow demands with roadway network improvements that foster safe, walkable communities
   - Leverage future private investment and redevelopment to meet transportation improvement goals
4. **Housing Choice**
   - Diversify housing choices to attract population growth
5. **Intergovernmental Coordination**
   - Enhance intergovernmental collaboration
   - Form partnerships between local governments and other stakeholders to develop innovative funding mechanisms to implement catalyst and economic development projects
   - Pursue opportunities for coordination among PLMC cities and communities to achieve shared transportation goals
6. **Compatibility with Military Operations**
   - Ensure the safety and quality of life of city residents and protect the mission of Naval Air Station Fort Worth, Joint Reserve Base (NAS Fort Worth, JRB) through the adoption of land use compatibility strategies as identified in the 2008 Joint Land Use Study

## Section 1.3 | Guiding Principles

Based on the emerging strengths and weaknesses as well as technical analysis, the project team developed a set of principles intended to guide the strategies and recommendations set forth in the Regional Vision Report and city Comprehensive Plan Visions. These overarching principles represent a synthesis of community input and the themes identified through the project team's existing conditions research, market analysis, and corridor studies.

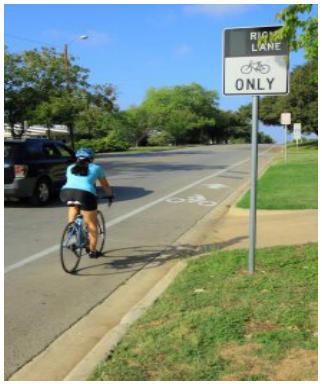
1. Strengthen the overall identity of the area and improve quality of life for existing residents and attract new families
2. Revitalize prominent roadways and create mixed use centers to spark new investment and enhance the physical image of the area
3. Refine and modernize the area's network of roads, paths, trails, and sidewalks to encourage more connectivity and expand mobility choices
4. Provide a range of housing options to attract and retain base employees, young families, and aging residents
5. Pursue opportunities for cooperation among the cities to achieve mutual goals
6. Continue to encourage land use compatibility and coordination with NAS Fort Worth, JRB

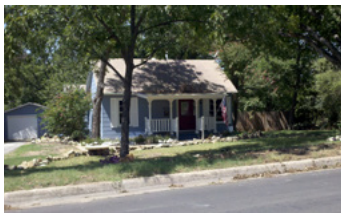
# SECTION 02 | BACKGROUND AND PURPOSE

The Cities of Benbrook, Lake Worth, River Oaks, Sansom Park, Westworth Village, and White Settlement are in the northwest portion of Tarrant County in the Dallas/Fort Worth Metroplex, surrounding Naval Air Station Fort Worth Joint Reserve Base (NAS Fort Worth, JRB). See **Figure 2.1**. Each of the communities has a distinct character, but the presence of such a large economic and land use influence highlights many common interests and has led to coordinated planning as part of the 2008 Joint Land Use Study (JLUS). The JLUS identified a series of actions steps to improve compatibility and communication between NAS Fort Worth, JRB and nearby jurisdictions. The study also resulted in formation of a Regional Coordination Committee (RCC) to facilitate continued cooperation on land use planning issues and education and outreach initiatives.

To build on the cooperative spirit of the region, the RCC joined the North Central Texas Council of Governments (NCTCOG), transportation and housing agencies, Independent School Districts and other stakeholders in applying for a Department of Housing and Urban Development (HUD) Community Challenge Grant. The purpose of the grant is to promote economically vital and sustainable communities based on six livability principles:

- Provide More Transportation Choices
- Provide Equitable, Affordable Housing
- Enhance Economic Competitiveness
- Support Existing Communities
- Coordinate Policies and Leverage Investment
- Value Communities and Neighborhoods



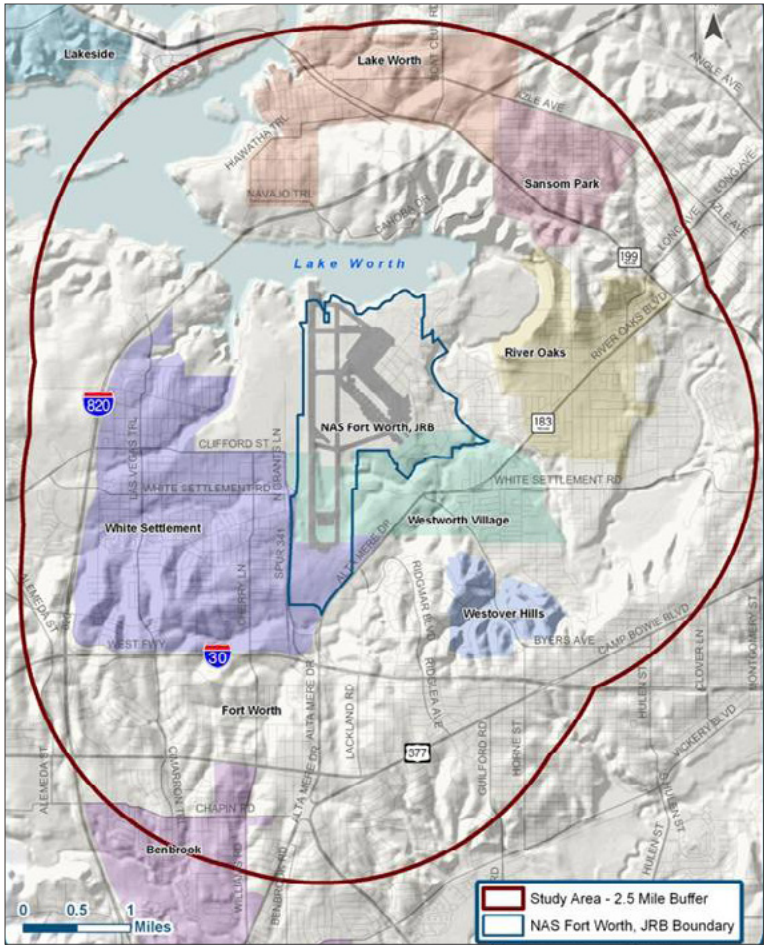



**Figure 2.1** – Planning for Livable Military Communities Study Area

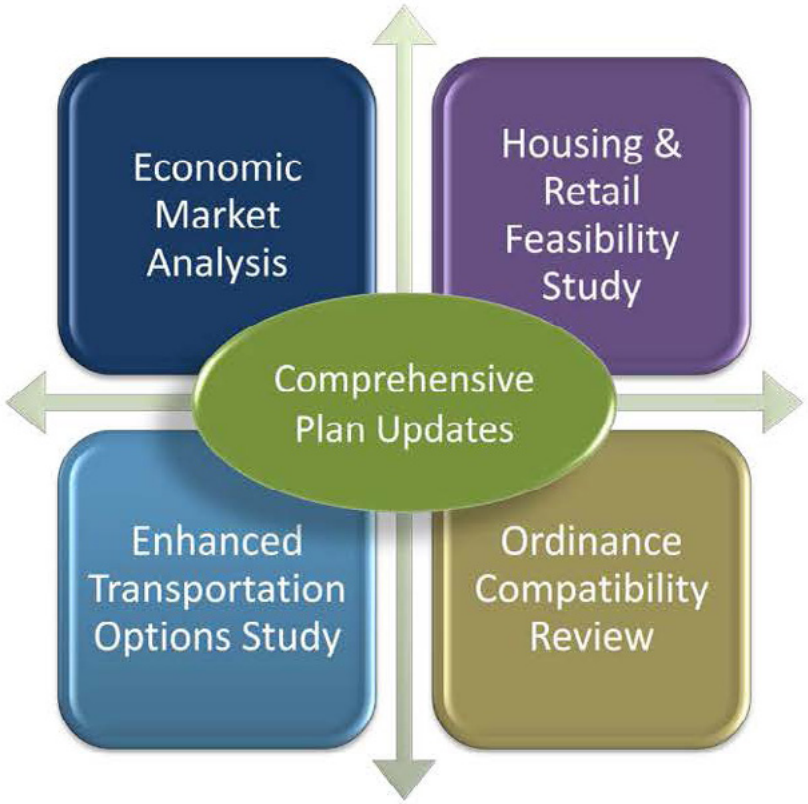



**Figure 2.2** – PLMC Planning Activities

The partners received the grant in October of 2010 and launched the Planning for Livable Military Communities (PLMC) effort in January of 2012. The PLMC study conducted five major planning activities, including four analyses of the regional real estate and economic market, housing and retail sectors, transportation system and local ordinances, as well as Comprehensive Plan Visions for the Cities of Lake Worth, River Oaks, Sansom Park, Westworth Village, and White Settlement (See **Figure 2.2**). A Project Advisory Committee (PAC) consisting of staff from the participating cities, transportation agencies, and Tarrant County planning and housing authorities has advised the project team throughout the study.

This document is the result of the Comprehensive Plan update component of the PLMC study. The Planning Livable Military Communities Regional Vision Report consists of two main parts:

- The Regional Vision Report highlights opportunities for collaboration among the jurisdictions of the PLMC study area, including the Cities of Benbrook, Fort Worth, Lake Worth, River Oaks, Sansom Park, Westworth Village and White Settlement, as well as Tarrant County. All of these partners will play key roles in supporting and implementing broader transportation, housing, and economic development strategies that address challenges across individual boundaries and seek to strengthen the overall quality of life and economic competitiveness of the region. The regional element also summarizes key findings from the background studies on market, housing, transportation, and ordinance compatibility issues.

- The City Comprehensive Plan Visions feature more specific goals, policies and actions in the core areas of land use, economic development, transportation and housing. These sections are intended as policy guides to assist the Cities of Lake Worth, River Oaks, Sansom Park, Westworth Village, and White Settlement in updating their full comprehensive plans and to complement the overarching strategies identified in the Regional Vision Report.

# SECTION 03 | REGIONAL PLAN

## Section 3.1 | Purpose and Benefits of a Regional Comprehensive Planning Approach

### What is a Comprehensive Plan?

A Comprehensive Plan serves as an ongoing blueprint for shaping the natural, economic, social and built environment of a community. Through the comprehensive planning process, residents, business owners, and other stakeholders express their ideas about what an attractive, prosperous, and healthy place to live and work will look like in the years ahead. The vision that emerges then becomes a long-term guide for critical decisions on infrastructure investment, land use and development actions, and public service delivery. In addition to reflecting a community's priorities and values, the Comprehensive Plan acts as the policy basis for more detailed implementation tools, such as zoning and subdivision regulations.

### Why Coordinate Comprehensive Planning Among Multiple Jurisdictions?

Many of the major physical and natural elements that make up communities–transportation thoroughfares, open space networks, trails, and utilities–transcend the boundaries of any individual municipality. Cities may, however, lack the authority or the resources to develop and manage such large-scale systems. Similarly, cities function as part of a larger economy. Residents may commute to business and employment centers or access retail and entertainment options throughout the metropolitan area. The economic advantages that accrue at the regional level, including the concentration of particular industries or the availability of land, infrastructure or workforce skills, also strongly shape local growth opportunities.

The communities of the PLMC region enjoy many shared assets, including beautiful open space and natural and recreational features such as parks, lakes, scenic vistas and trails; a robust economic core formed around NAS Fort Worth, JRB and defense-related industries; affordability; excellent regional accessibility; and an opportunity to create complete and integrated neighborhoods that combine housing choices near jobs and lifestyle amenities. They also confront the common and persistent challenges of aging commercial development, a lack of diversity in housing and retail options, and a weak identity within the Metroplex region.

A regional perspective enables the communities to examine their opportunities and challenges in this broad context. Coordinated efforts also enable local decision-makers to understand overlapping goals, balance competing interests, and maximize cost-effectiveness and efficiency by bringing joint resources to bear on complex planning issues. The NCTCOG serves as a voluntary vehicle to address the mutual interests of communities by offering technical assistance to its members in areas such as services for seniors, transportation, emergency preparedness, law enforcement, workforce development and the environment.

Ultimately, the goal of the coordinated comprehensive planning process is to ensure that all of the communities continue to provide excellent quality of life for current and future residents. Each city's individual Comprehensive Plan Vision is based on a community-generated vision and draws from analysis of existing conditions, previous plans and land use studies, and anticipated growth and development opportunities. While the details and context of each plan varies, the primary objectives for the overall planning process are as follows:

- To coordinate land use compatibility efforts with NAS Fort Worth, JRB and other cities in the region;
- To strengthen and clarify each city's existing policy framework for future planning that supports a balance between open space, character preservation, and development;
- To establish strategies for enhancing quality of life, building on key local assets, and attracting growth and economic development;
- To create plans that are easy for elected officials, city staff, developers, businesses, neighborhood groups, and other community stakeholders to use; and
- To outline clear action steps for implementation, as well as a process for plan reviews and updates.

## Section 3.2 | Summary of Other Planning Initiatives and Regional Studies

The Regional Plan seeks to build upon the findings of existing plans, policies, and studies undertaken throughout the study area. Previous recommendations can help shape and strengthen future strategies and aid in identifying any apparent gaps in policies or the provision of public services or amenities. Highlights from these previous plans are summarized below.

### Regional Coordination Committee Transportation Assessment (2012)

The Regional Coordination Committee Transportation Assessment evaluates existing and future transportation demands and challenges for the communities surrounding NAS Forth Worth, JRB. The transportation assessment provides short-term local government strategies for improving transportation mobility and accessibility. The strategies emphasize coordination among the cities surrounding NAS Fort Worth, JRB, NCTCOG, and the Texas Department of Transportation (TxDOT).

The major existing conditions and issues are as follows:

**High population growth**

- Between 1960 to 2010, the combined population of Benbrook, Fort Worth, Lake Worth, River Oaks, Sansom Park, Westworth Village, and White Settlement has grown by 104 %
- This growth has resulted in land use changes and changes in local and regional travel patterns and has exacerbated congestion issues

**Aging and overburdened infrastructure**

- Current roadway infrastructure is aging and overburdened
- Travel demand modeling completed as part of the Regional Coordination Committee Transportation Study shows that 20% of the study area's roadway network functions at a level of service (LOS) of D, E, or F throughout the day
- Roadway network has not evolved to meet needs of growing population and economic base
    - And transportation demand modeling shows that not much change is expected by 2035, with only a 1% increase in number of lane miles anticipated
    - Meaning congestion will continue to escalate if the study area does improve network and facilities to meet growing demand

**High influx into study area for major employers**

- Two of the region's largest employers are in the center of the study area – Lockheed Martin (14,000 employees) and NAS Fort Worth, JRB (10,500 employees), which creates greater demand on the study area's road facilities

**Future Conditions**

- Level of service projected to continue to decline
- Travel demand modeling projects that 43% of the roadway network will function at LOS D, E, or F by 2035

### Housing Requirement Market Analysis Update (2009)

The Housing Requirement Market Analysis (HRMA) Update analyzes housing availability for military families and personnel stationed at NAS Fort Worth, JRB according to the standards set forth by the Navy and Department of Defense (DoD) regarding "affordability, location, quality, and number of bedrooms." According to the HRMA assessment, in 2009 there was a housing shortfall of 196 units for accompanied personnel, including a shortfall of 92 four or more bedroom units, 75 three bedroom units, and 29 two bedroom units. Housing shortfall estimates for 2014 anticipate a shortfall totaling 172 and indicates an opportunity for additional housing in the PLMC communities to accommodate military personnel.

### Joint Land Use Study (JLUS) (2008)

NAS Fort Worth, JRB employs approximately 10,500 personnel and contributes an annual economic impact of around $2.3 billion throughout the Fort Worth region. The JLUS sought to protect the mission of NAS Fort Worth, JRB and ensure land use compatibility and coordination for areas surrounding the base. The document outlines findings for the following four elements:

- **Safety Zones** – the areas beyond the base runway have varying degrees of accident potential: The Clear Zone (CZ), Accident Potential Zone I (APZ I), and Accident Potential Zone II (APZ II)

- **Height Hazards** –critical zones, including the Federal Regulation Title 14 Federal Aviation Regulations Part 77 and Terminal Instruments Procedures, that must be kept clear of natural and manmade objects penetrating air space

- **Noise** – the measurable sound generated by aircraft and/or ground operations can disturb populations in surrounding areas and can potentially have detrimental health impacts

- **Communications** – the JLUS recommends communication methods to aid the base and surrounding communities in supporting mutually beneficial outcomes

The JLUS recommended the following steps for immediate implementation:

- Establish an Oversight Committee to monitor changes and to work closely with the base on land use and compatible development issues
- Revise and continue to enforce current regulatory requirements such as zoning and building codes to encourage compatible development and minimize noise issues
- Institute noise level reduction measures and a sound attenuation program for those incompatible structures in the 65 dB DNL (denotes average day/night noise levels) noise contour or higher
- Establish a real estate advisory service for the noise affected area
- Initiate land protection and/or voluntary acquisition in the CZ

The JLUS partners have made significant strides in implementing the regional recommendations set forth under the JLUS. The creation of the RCC is one of the most significant outcomes of the initial JLUS implementation steps. The RCC was established in 2008 and is comprised of seven cities, including all six of the PLMC jurisdictions, Tarrant County, the NCTCOG, and 11 regional partners.

The RCC is responsible for encouraging compatible land use planning in the communities surrounding NAS Fort Worth, JRB and guiding the coordinated implementation of the JLUS recommendations. The entity also serves as a liaison between the base and the surrounding communities and residents, setting a precedent for continued collaborative strategies. The RCC Development Review Subcommittee also developed a web-based tracking tool to assist local governments in meeting state law consultation requirements around military installations, while also facilitating the goal of providing a voluntary peer review process to enhance communication. The RCC Development Review Web Tool serves as a clearinghouse to discuss various project types, including parcel-specific zoning changes, height obstructions, site plan applications, and special exceptions. It also provides a forum for discussion on broader long-term project review, such as comprehensive plan updates, zoning ordinance language, and capital improvement plans for public buildings. System users include voting members of the RCC and their designated staff, NAS Fort Worth, JRB staff, NCTCOG staff, and other special districts as needed.

The JLUS also identified additional action steps for consideration by local governments. The Planning for Livable Military Communities Regional Vision outlines strategies to build on recommendations for updated comprehensive plan language, sound attenuation requirements and ongoing consultation through the RCC Development Review Web Tool.

- Investigate use of a comprehensive regulatory body structured similar to the Meacham Zoning Board to modify land use plans and existing comprehensive plans through the use of zoning ordinances, building codes, capital improvement plans, and subdivision requirements to ensure compatibility with NAS, JRB and its operations.
- Work with local realtors and builders to follow state law regarding disclosure of noise levels and safety issues, if any, prior to the sale of buildings in the area and development and/or incompatible structures.

- Adopt noise attenuation requirements and recommendations in the 65 dB DNL noise contour or higher around NAS, JRB in conjunction with the cities and the county and urge full cooperation and coordination among all cities, the county and the base related to new development around the base.
- Produce and distribute (through websites) maps showing the CZ, the Accident Potential Zones and the noise contours surrounding the base for distribution to the public.
- Establish an on-going committee for the cooperation between the cities, the county, and the base. Coordinate with the various municipalities, school districts, and the public surrounding the base on an on-going basis to keep the public informed of base operations.
- Encourage NAS, JRB to appoint a full-time Community Planning Liaison Officer that can work with the municipalities around the base to discuss and inform each other of compatible development issues related to new and future development.
- Develop a sound mitigation program for the cities and structures affected by the 65 dB DNL or higher noise contour which will allow homeowners to sound insulate their house on a voluntary basis and at that time designate these homes as sound attenuated, certified by the respective city building inspection department.
- Set up a program for homebuilders in the area to comply with building codes, sound attenuation on new construction and to certify new construction as being "certified sound attenuated." This will encourage the builders to use materials to attenuate sound. It will also make the houses more marketable in the area and will inform the public at the same time that there are noise and aircraft issues on the property.
- Pursue voluntary acquisition of incompatible structures in the CZ. Possible secondary acquisition in the APZ I or purchase of avigation easement and sound attenuation.
- Pursue funding for DOD Conservation Land purchase in the ACUIZ footprint surrounding NAS, JRB.
- Review and adopt new regulations regarding the installation and use of outdoor lighting within a five-mile radius of NAS, JRB.
- Marker buoys should be placed in Lake Worth to demarcate the CZ area, in addition to the existing buoys marking the Explosive Safety Quantity Distance (ESQD).
- A resolution was adopted on September 24, 2007 in support of the overall goals of this study.

In addition to the recommendations listed above, the JLUS also includes tailored recommendations for individual municipalities surrounding NAS Fort Worth, JRB, emphasizing planning tools to ensure compatibility, ensure safety, and limit encroachment. A review of these recommendations is included in each City's Comprehensive Plan.

### NAS Fort Worth, JRB Master Plan (2010)

Based on a vision and guiding principles reflecting stakeholder collaboration, NAS Fort Worth, JRB developed its 2010 Master Plan with the purpose of guiding future decision-making and providing a long-term framework for future physical development. An updated Master Plan is anticipated in 2014, which will emphasize sustainability, anti-terrorism force protection, and the recapitalization of the base's existing assets.

## Section 3.3 | Regional Profile

### Demographics, Growth Trends, and Background Data

**Growth Rates by Jurisdiction**

While the PLMC area is within a dynamic and quickly growing state and regional context, the communities have not consistently captured a proportionate share of recent population increases. In the past two decades, Texas experienced a strong state-wide growth rate, expanding its population base by approximately 19% between the years of 1990 – 2000 and 17% from 2000 to 2010. Similarly, the NCTCOG 12-county region saw significant population increases, with a total growth rate of 23% between 1990 and 2000 and 19% between 2000 and 2010.

While growth rates in both the state and NCTCOG region fell slightly between decades, Tarrant County's total population growth rate remained strong with a 19% increase between 1990 and 2000 and a 20% increase between 2000 and 2010. Growth was also more robust in the City of Fort Worth, with a population rate of increase of 19% between 1990 and 2000 to 28% in the previous decade.

As outlined in **Table 3.1**, the PLMC communities did not experience such dramatic growth rates between 2000 and 2010, ranging from a slight decrease of -0.74% in Lake Worth to a 16% increase in Westworth Village. Westworth Village's increase highlights growth following a sharp population decline when Carswell Air Force Base was re-commissioned as NAS Fort Worth, JRB in 1994.

Table 3.1 – State, County and City Population Change, 1990 to 2010

| | 1990 Pop | 2000 Pop | % Pop Change 1990 to 2000 | 2010 Pop | % Pop Change 2000 to 2010 |
|---|---|---|---|---|---|
| State of Texas | 16,986,510 | 20,851,820 | 22.8% | 25,145,561 | 20.6% |
| Tarrant County | 1,170,103 | 1,446,219 | 23.6% | 1,809,034 | 25.1% |
| Benbrook | 19,564 | 20,208 | 3.3% | 21,234 | 5.1% |
| Lake Worth | 4,591 | 4,618 | 0.6% | 4,584 | -0.7% |
| River Oaks | 6,580 | 6,985 | 6.2% | 7,427 | 6.3% |
| Sansom Park | 3,928 | 4,181 | 6.4% | 4,686 | 12.1% |
| Westworth Village | 2,350 | 2,124 | -9.6% | 2,472 | 16.4% |
| White Settlement | 15,472 | 14,831 | -4.1% | 16,116 | 8.7% |

Source: US Census Bureau
Note 1: The population total by category and category percentages in table do not add to 100%. US Census statistics treat race and ethnicity as separate categories. The Hispanic category includes individuals that self-identify with one or more race categories.

Table 3.2 – State, County and City Median Age, 1990 to 2010

| Median Age | 1990 | 2000 | 2010 |
|---|---|---|---|
| State of Texas | 30.7 | 32.3 | 33.6 |
| Tarrant County | 30.5 | 32.3 | 33.4 |
| Fort Worth | 30.3 | 30.9 | 31.2 |
| Benbrook | 34.1 | 39.2 | 42.7 |
| Lake Worth | 34.8 | 38.1 | 40.1 |
| River Oaks | 35.1 | 35.5 | 34.4 |
| Sansom Park | 32.6 | 33.9 | 30.3 |
| Westworth Village | 29.8 | 33.8 | 33.6 |
| White Settlement | 33.8 | 30.6 | 34.7 |

Source: US Census Bureau

## Regional Demographics

The PLMC study area age distribution is generally comparable to that of Texas and Tarrant County and also reflects the increasing diversity of the state and region. Following a pronounced national trend, the state, county and cities experienced an aging population across the previous two decades (See **Table 3.2**). Since 1990, the age profile of Benbrook and Lake Worth has shifted sharply with a median age over 40. White Settlement also experienced a significant increase in median age between 2000 and 2010.

In contrast, the median age in Sansom Park and River Oaks during this decade fell, which is likely attributable to the increase in young Hispanic families. The Hispanic population grew in almost all of the PLMC communities in the past decade, with about half of residents in River Oaks and Sansom Park identifying as Hispanic in the 2010 Census (See **Table 3.3**).

Table 3.3 – State, County and City Racial and Ethnic Distribution, 2000 to 2010

| State of Texas | 2000 Pop | % of Total 2000 Pop | 2010 Pop | % of Total 2010 Pop |
|---|---|---|---|---|
| White | 14,799,505 | 71.0% | 17,701,552 | 70.4% |
| Black | 2,404,566 | 11.5% | 2,979,598 | 11.8% |
| Asian | 562,319 | 2.7% | 964,596 | 3.8% |
| Hispanic | 6,669,666 | 32.0% | 9,460,921 | 37.6% |
| Total Population | 20,851,820[1] | See Note 1 | 25,145,561[1] | See Note 1 |
| **Tarrant County** | **2000 Pop** | **% of Total 2000 Pop** | **2010 Pop** | **% of Total 2010 Pop** |
| White | 1,030,208 | 71.2% | 1,205,530 | 66.6% |
| Black | 185,143 | 12.8% | 268,983 | 14.9% |
| Asian | 52,594 | 3.6% | 84,561 | 4.7% |
| Hispanic | 285,290 | 19.70% | 482,977 | 26.7% |
| Total Population | 1,446,2191[1] | See Note 1 | 1,809,034 | See Note 1 |
| **Benbrook** | **2000 Pop** | **% of Total 2000 Pop** | **2010 Pop** | **% of Total 2010 Pop** |
| White | 17,844 | 88.3% | 18,423 | 86.8% |
| Black | 894 | 4.4% | 1,130 | 5.3% |
| Asian | 433 | 2.1% | 409 | 1.9% |
| Hispanic | 1,406 | 7.0% | 2,373 | 11.2% |
| Total Population | 20,208 | See Note 1 | 21,234[1] | See Note 1 |

Table 3.3 – State, County and City Racial and Ethnic Distribution, 2000 to 2010 (continued)

| Lake Worth | 2000 Pop | % of Total 2000 Pop | 2010 Pop | % of Total 2010 Pop |
|---|---|---|---|---|
| White | 4,073 | 71.0% | 3,853 | 84.1% |
| Black | 40 | 11.5% | 68 | 1.5% |
| Asian | 44 | 2.7% | 34 | 0.7% |
| Hispanic | 670 | 32.0% | 1,192 | 26.0% |
| Total Population | 4,618[1] | See Note 1 | 4,584[1] | See Note 1 |
| **River Oaks** | **2000 Pop** | **% of Total 2000 Pop** | **2010 Pop** | **% of Total 2010 Pop** |
| White | 5,926 | 84.8% | 3,853 | 51.9% |
| Black | 28 | 0.4% | 68 | 0.9% |
| Asian | 54 | 2.7% | 34 | 0.7% |
| Hispanic | 1,902 | 27.2% | 3,610 | 48.6% |
| Total Population | 6,985[1] | See Note 1 | 7,427[1] | See Note 1 |
| **Sansom Park** | **2000 Pop** | **% of Total 2000 Pop** | **2010 Pop** | **% of Total 2010 Pop** |
| White | 3,397 | 81.2% | 1,967 | 42.0% |
| Black | 18 | 0.4% | 58 | 1.2% |
| Asian | 24 | 0.6% | 27 | 0.7% |
| Hispanic | 1,180 | 28.2% | 2,563 | 54.7% |
| Total Population | 4,181[1] | See Note 1 | 4,686[1] | See Note 1 |
| **Westworth Village** | **2000 Pop** | **% of Total 2000 Pop** | **2010 Pop** | **% of Total 2010 Pop** |
| White | 1,738 | 81.8% | 2,012 | 81.4% |
| Black | 90 | 4.2% | 142 | 5.7% |
| Asian | 28 | 1.3% | 33 | 0.7% |
| Hispanic | 396 | 18.6% | 645 | 26.1% |
| Total Population | 2,124[1] | See Note 1 | 4,686[1] | See Note 1 |
| **White Settlement** | **2000 Pop** | **% of Total 2000 Pop** | **2010 Pop** | **% of Total 2010 Pop** |
| White | 12,730 | 82.3% | 12,949 | 803% |
| Black | 600 | 3.9% | 548 | 3.4% |
| Asian | 217 | 1.4% | 262 | 1.6% |
| Hispanic | 2,017 | 13.0% | 4,030 | 25.0% |
| Total Population | 15,472[1] | See Note 1 | 16,116 | See Note 1 |

Source: US Census Bureau
Notes: [1] The population total by category and category percentages in table do not add to 100%. US Census statistics treat race and ethnicity as separate categories. The Hispanic category includes individuals that self-identify with one or more race categories.

## Housing Trends

Indicative of population growth over the previous decade, the state, region and county experienced an increase of about 20% in the formation of new households between 2000 and 2010 (see **Table 3.4**). The PLMC communities formed new households at a more modest average rate of approximately 7.8%. River Oaks experienced a slight decline in the number of households, with a rate of -2.8%. The number of Westworth Village households increased by 34.5% in the last 10 years due to new housing and apartment development.

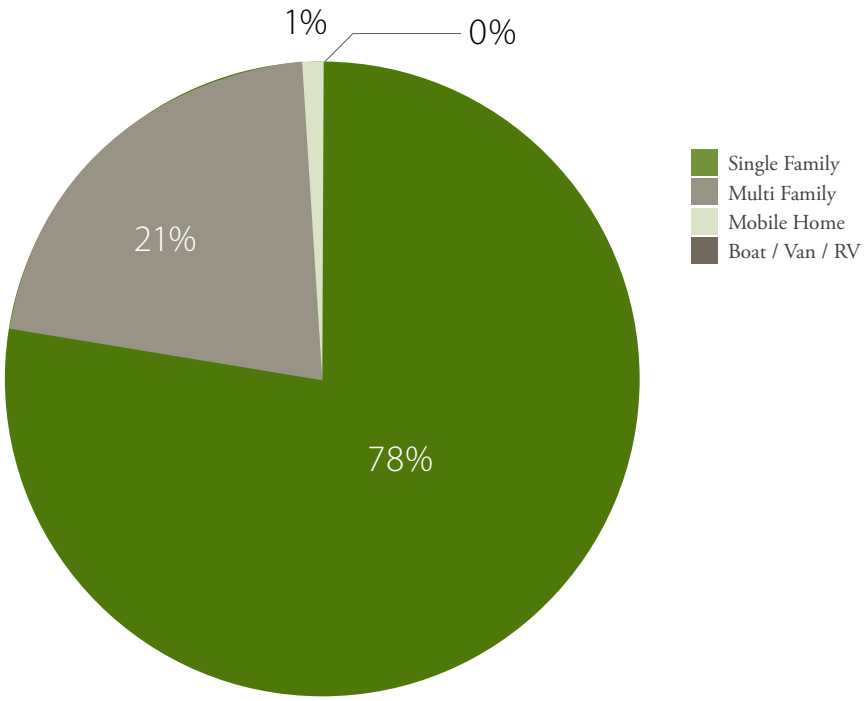
Table 3.4 – State, Region, County and City Total Household Change, 1990 to 2010

| Total Households | US Census 1990 | US Census 2000 | % Change 90-00 | US Census 2010 | % Change 00-10 |
|---|---|---|---|---|---|
| Texas | 6,070,937 | 7,393,354 | 21.8% | 8,922,933 | 20.7% |
| Dallas-Fort Worth-Arlington MPA | 1,497,259 | 1,895,138 | 26.6% | 2,298,498 | 21.3% |
| Tarrant County | 438,634 | 533,864 | 21.7% | 657,134 | 23.1% |
| Benbrook | 7,863 | 8,599 | 9.4% | 9,408 | 9.4% |
| Fort Worth | 168,274 | 195,078 | 15.9% | 262,652 | 34.6% |
| Lake Worth | 1,638 | 1,660 | 1.3% | 1,662 | 0.1% |
| River Oaks | 2,682 | 2,713 | 1.2% | 2,636 | -2.8% |
| Sansom Park | 1,348 | 14,831 | 5.5% | 1,428 | 0.4% |
| Westworth Village | 814 | 783 | -3.8% | 1,044 | 33.3% |
| White Settlement | 5,611 | 5,614 | 0.1% | 5,987 | 6.6% |

Source: US Census Bureau

The mix of available housing in the PLMC study area is less diverse than the state, region, and county overall. As shown in **Figure 3.1**, more than three in four housing units in the six communities are single-family. Westworth Village and White Settlement have the highest share of multi-family units, consisting of about one-quarter of the total housing supply. **Table 3.5** outlines the breakdown of housing types in further details, showing housing type totals and change for the years 1990 to 2000.

**Figure 3.1** – State, County and City Racial and Ethnic Distribution, 2000 to 2010




Source: US Census Bureau

**Table 3.5** – Housing Types by State, Region, County, and City – 2000 to 2010

| Texas | 1990 | % of Total | 2000 | 90-00 Change | % of Total | 2010 | 00-10 Change | % of Total |
|---|---|---|---|---|---|---|---|---|
| Total Housing Units | 7,008,999 | | 8,157,575 | 16.4% | | 9,996,209 | 22.5% | |
| Single Family | 4,604,014 | 65.7% | 5,420,910 | 17.7% | 66.5% | 6,775,831 | 25.0% | 67.8% |
| Multi Family | 1,774,324 | 25.3% | 1,970,700 | 11.1% | 24.2% | 2,444,680 | 24.1% | 24.5% |
| Mobile Home | 547,911 | 7.8% | 731,652 | 33.5% | 9.0% | 758,960 | 3.7% | 7.6% |
| Boat/Van/ RV | 82,750 | 1.2% | 34,313 | -58.5% | 0.4% | 16,738 | -51.2% | 0.2% |
| **Dallas-Fort Worth-Arlington** | **1990** | **% of Total** | **2000** | **90-00 Change** | **% of Total** | **2010** | **00-10 Change** | **% of Total** |
| Total Housing Units | 1,685,191 | | 2,014,755 | 19.6% | | 2,507,538 | 24.5% | |
| Single Family | 1,037,620 | 61.6% | 1,282,775 | 23.6% | 63.7% | 1,662,181 | 29.6% | 66.3% |
| Multi Family | 555,138 | 32.9% | 629,505 | 13.4% | 31.2% | 749,314 | 19.0% | 29.9% |
| Mobile Home | 92,333 | 5.5% | 98,515 | 6.7% | 4.9% | 94,294 | -4.3% | 3.8% |
| Boat/Van/ RV | | | 3,559 | | 0.2% | 1,749 | -50.9% | 0.1% |

*Note 1990 MblHms & Boats Combined

| Tarrant County | 1990 | % of Total | 2000 | 90-00 Change | % of Total | 2010 | 00-10 Change | % of Total |
|---|---|---|---|---|---|---|---|---|
| Total Housing Units | 491,152 | | 565,830 | 15.2% | | 716,099 | 26.6% | |
| Single Family | 317,891 | 64.7% | 381,553 | 20.0% | 67.4% | 493,146 | 29.2% | 68.9% |
| Multi Family | 156,319 | 31.8% | 169,632 | 8.5% | 30.0% | 206,089 | 21.5% | 28.8% |
| Mobile Home | 16,942 | 3.4% | 14,065 | -17.0% | 2.5% | 16,016 | 113.9% | 2.2% |
| Boat/Van/ RV | | | 580 | 0.0% | 0.1% | 642 | 0.2% | 0.1% |

*Note 1990 MblHms & Boats Combined

Table 3.5 – Housing Types by State, Region, County, and City – 2000 to 2010 (continued)

| Benbrook | 1990 | % of Total | 2000 | 90-00 Change | % of Total | 2010 | 00-10 Change | % of Total |
|---|---|---|---|---|---|---|---|---|
| Total Housing Units | 8,377 | | 8,885 | 6.1% | | 9,858 | 11.0% | |
| Single Family | 5,794 | 69.2% | 6,339 | 9.4% | 71.3% | 7,089 | 0.0% | 71.9% |
| Multi Family | 2,549 | 30.4% | 2,533 | -0.6% | 28.5% | 2,769 | 9.3% | 28.1% |
| Mobile Home | 34 | 0.4% | 13 | -100.0% | 0.1% | | | |
| Boat/Van/ RV | | | | | | | | |

*Note 1990 MblHms & Boats Combined

| Fort Worth | 1990 | % of Total | 2000 | 90-00 Change | % of Total | 2010 | 00-10 Change | % of Total |
|---|---|---|---|---|---|---|---|---|
| Total Housing Units | 194,429 | | 211,035 | 8.5% | | 291,676 | 38.2% | |
| Single Family | 124,107 | 63.8% | 139,160 | 12.1% | 65.9% | 199,692 | 43.5% | 68.5% |
| Multi Family | 65,349 | 33.6% | 68,029 | 4.1% | 32.2% | 86,780 | 27.6% | 29.8% |
| Mobile Home | 4,973 | 2.6% | 3,786 | -23.9% | 1.8% | 4,828 | 27.5% | 1.7% |
| Boat/Van/ RV | | | 190 | 0.0% | 0.1% | 376 | 97.9% | 0.1% |

*Note 1990 MblHms & Boats Combined

Table 3.5 – Housing Types by State, Region, County, and City – 2000 to 2010 (continued)

| Lake Worth | 1990 | % of Total | 2000 | 90-00 Change | % of Total | 2010 | 00-10 Change | % of Total |
|---|---|---|---|---|---|---|---|---|
| Total Housing Units | 1,778 | | 1,750 | -1.6% | | 1,742 | -0.5% | |
| Single Family | 1,678 | 94.4% | 1,656 | -1.3% | 94.6% | 1,685 | 1.8% | 96.7% |
| Multi Family | 50 | 2.8% | 57 | 14.0% | 3.3% | 46 | -19.3% | 2.6% |
| Mobile Home | 50 | 2.8% | 37 | -26.0% | 2.1% | 11 | -70.3% | 0.6% |
| Boat/Van/ RV | | | | 0.0% | 0.0% | 0 | 0.0% | 0.0% |

*Note 1990 MblHms & Boats Combined

| River Oaks | 1990 | % of Total | 2000 | 90-00 Change | % of Total | 2010 | 00-10 Change | % of Total |
|---|---|---|---|---|---|---|---|---|
| Total Housing Units | 2,877 | | 2,851 | -0.9% | | 2,916 | 2.3% | |
| Single Family | 2,664 | 92.6% | 2,665 | 0.0% | 93.5% | 2,710 | 1.7% | 92.9% |
| Multi Family | 148 | 5.1% | 164 | 10.8% | 5.8% | 206 | 25.6% | 7.1% |
| Mobile Home | 65 | 2.3% | 75 | 15.4% | 2.6% | 0 | -100.0% | 0.0% |
| Boat/Van/ RV | | | 0 | 0.0% | 0.0% | 0 | 0.0% | 0.0% |

*Note 1990 MblHms & Boats Combined

| Sansom Park | 1990 | % of Total | 2000 | 90-00 Change | % of Total | 2010 | 00-10 Change | % of Total |
|---|---|---|---|---|---|---|---|---|
| Total Housing Units | 1,482 | | 1,493 | 0.7% | | 1,450 | -2.9% | |
| Single Family | 1,364 | 92.0% | 1,387 | 1.7% | 92.9% | 1,337 | -3.6% | 92.2% |
| Multi Family | 62 | 4.2% | 6 | -90.3% | 0.4% | 57 | 850.0% | 3.9% |
| Mobile Home | 56 | 3.8% | 76 | 35.7% | 5.1% | 56 | -26.3% | 3.9% |
| Boat/Van/ RV | | | 0 | 0.0% | 0.0% | 0 | 0.0% | 0.0% |

*Note 1990 MblHms & Boats Combined

Table 3.5 – Housing Types by State, Region, County, and City – 2000 to 2010 (continued)

| Westworth Village | 1990 | % of Total | 2000 | 90-00 Change | % of Total | 2010 | 00-10 Change | % of Total |
|---|---|---|---|---|---|---|---|---|
| Total Housing Units | 1,133 | | 855 | -24.5% | | 1,150 | 34.5% | |
| Single Family | 1,119 | 98.8% | 846 | -24.4% | 98.9% | 865 | 2.2% | 75.2% |
| Multi Family | 10 | 0.9% | 9 | -10.0% | 1.1% | 268 | 2877.8% | 23.3% |
| Mobile Home | 4 | 0.4% | 0 | -100.0% | 0.0% | 17 | 0.0% | 1.5% |
| Boat/Van/ RV | | | 0 | 0.0% | 0.0% | 0 | 0.0% | 0.0% |

*Note 1990 MblHms & Boats Combined

| White Settlement | 1990 | % of Total | 2000 | 90-00 Change | % of Total | 2010 | 00-10 Change | % of Total |
|---|---|---|---|---|---|---|---|---|
| Total Housing Units | 6,167 | | 6,029 | -2.2% | | 6,377 | 5.8% | |
| Single Family | 4,367 | 70.8% | 4,223 | -3.3% | 70.0% | 4,640 | 9.9% | 72.8% |
| Multi Family | 1,598 | 25.9% | 1,554 | -2.8% | 25.8% | 1,599 | 2.9% | 25.1% |
| Mobile Home | 202 | 3.3% | 188 | -6.9% | 3.1% | 125 | -33.5% | 2.0% |
| Boat/Van/ RV | | | 64 | 0.0% | 1.1% | 13 | -79.7% | 0.2% |

*Note 1990 MblHms & Boats Combined

## Section 3.4 | Vision and Regional Priorities

### 3.4.1 | Community Involvement

The priority of the public engagement process was to ensure that the Regional Plan reflects the desires and vision of the PLMC area's residents and to identify the needs and goals shared among jurisdictions. Community involvement activities included open houses, public visioning workshops, city council and advisory board workshops, an on-line survey, and stakeholder interviews. Engaging citizens, stakeholders, and organizations produces a broader understanding of priorities and values, strengthens regional relationships to ensure future coordination, and builds support for plan implementation. Feedback shared through the robust public involvement process informed the strategies captured in the Regional Plan and individual Comprehensive Plan Visions. **Table 3.6** outlines the dates and locations of each of the public meetings and workshops held as part of the PLMC planning process.

Table 3.6 – PLMC Open Houses and Workshops

| | Location | Date |
|---|---|---|
| **Open House** | | |
| | River Oaks | June 5, 2012 |
| | Lake Worth | June 7, 2012 |
| **Corridor Improvement Workshop** | | |
| **Introductory Presentation** | River Oaks | September 10, 2012 |
| **Public Workshop** | River Oaks | September 11, 2012 |
| **Public Workshop** | River Oaks | September 12, 2012 |
| **Public Meeting** | River Oaks | September 13, 2012 |
| **Bike/Ped Workshop** | | |
| | Benbrook | November 7, 2012 |
| | Sansom Park | November 8, 2012 |
| **Comprehensive Plan Visioning Workshops** | | |
| **Council** | Sansom Park | December 6, 2012 |
| | Benbrook | December 6, 2012 |
| | Westworth Village | December 11, 2012 |
| | White Settlement | December 11, 2012 |
| **Ordinance Review Discussion** | Lake Worth | March 8, 2013 |

**Table 3.6** – PLMC Open Houses and Workshops (continued)

| | Location | Date |
|---|---|---|
| **Community** | Lake Worth | December 11, 2012 |
| | River Oaks | December 11, 2012 |
| | Benbrook | December 10, 2012 |
| | Sansom Park | December 10, 2012 |
| | Lake Worth | December 12, 2012 |
| | White Settlement | December 12, 2012 |
| | River Oaks | December 13, 2012 |
| | Westworth Village | December 13, 2012 |
| **Open House** | | |
| | River Oaks | May 9,2013 |
| **Elected Officials Briefing and Community Forum** | | |
| | Lake Worth | August 21, 2013 |

## Stakeholder Interviews

In addition to public meetings, open houses, and workshops, the planning team conducted over 20 stakeholder interviews. The stakeholder interviews focused on plan priorities and regional challenges and opportunities, economic development strengths and weaknesses, and corridor improvement needs and opportunities along State Highways 183 and 199. The feedback received from these interviews helped shape both regional and city strategies. See **Appendix A** for a list of stakeholder interview participants.

The following challenges emerged from a synthesis of feedback gathered in the interview process:

- Need for stronger regional identity
- Small communities lack independent resources
- Aging retail corridors and infrastructure and lack of private-sector investment
- Limited vacant land for development
- Lack of walkable neighborhoods
- Land use compatibility with NAS Fort Worth, JRB

Interviewees identified the following opportunities as significant regional assets:

- Support for regional coordination
  - JLUS Regional Coordination Committee serves as working example and resource
- Proximity to Fort Worth
- Proximity to NAS Fort Worth, JRB and major employment centers
- Opportunities to attract new commercial development/redevelopment along aging commercial corridors
- Diverse workforce
- Abundant recreational opportunities
- Resource sharing among municipalities

## Stakeholder Meetings

In addition to interviews, NCTCOG and the PLMC project team held a series of stakeholder meetings throughout the planning process. These meetings provided project updates to the PAC, as well as local elected officials and city staff, NAS Fort Worth, JRB representatives, transportation agencies, chambers of commerce, and neighborhood associations, and offered opportunities for feedback at key project milestones.

## Bicycle and Pedestrian Workshops

On November 7th and 8th, 2012, the PLMC project team facilitated two public workshops focusing on regional bicycle and pedestrian facilities. The purpose of the bicycle and pedestrian workshops was to gather feedback from residents regarding bicycle and pedestrian needs and preferred routes. Residents attending the workshops participated in a mapping exercise to indicate streets with the greatest demand for enhanced bicycle and pedestrian facilities.

Additionally, participants prioritized facility types based on need. **Figure 3.2** illustrates the prioritization results. **Section 3.8** provides more detail on recommendations emerging from the bicycle and pedestrian workshops.

**Figure 3.2** – Priority Bicycle Facilities Results

## Corridor Workshop

The corridor workshops included a kick-off presentation to familiarize residents with the workshop process and goals, two days of collaborative planning and design informed by a series of stakeholder interviews, and a closing presentation on the concepts that emerged during the interactive session. The corridor workshop was held at the River Oaks Community Center but generated participation from residents, officials, community leaders, property owners, and stakeholders throughout the PLMC study area.

The purpose of the corridor workshop was to outline long-term, phasable transportation solutions and corresponding revitalization strategies to build a sense of place, provide gateways for individual communities, foster economic revitalization, and maximize the safe, comfortable accommodation of multiple transportation user types, including cars, transit, pedestrians and bicyclists.

The corridor workshop focused on two primary corridors--State Highway 199 (Jacksboro Highway) from Interstate 820 to State Highway 183; and State Highway 183 (River Oaks Boulevard) from Interstate 30 to State Highway 199. The resulting corridor concepts are intended to serve as case studies, providing strategies and techniques that can be readily replicated in other corridors in the study area.

Participants were asked to write down the things they liked and want to preserve about the corridors; the things they did not like and wanted to change; and their vision of how the corridors should look, feel and function. Through this word exercise, the project team developed guiding themes for corridor improvements, as illustrated in **Figure 3.3**. **Appendix B** contains the full corridor workshop results. **Section 3.8** provides a detailed summary of regional concepts proposed for the corridors and critical intersections.

**Figure 3.3** – Corridor Vision


## Comprehensive Plan Visioning Workshops

The Comprehensive Plan workshops included 12 sessions across the PLMC communities: six workshops open to the public and six held with city councils and/or advisory boards. The purpose of these workshops was to present an overview of the planning process completed to date as it relates to each city and prioritize local comprehensive planning goals.

At each meeting, the project team facilitated a visioning exercise, in which participants prioritized initial plan goals using TurningPoint voter-response software. The results from each city helped shape the strategies and recommendations developed at the local level. Similarly, a synthesis of these results contributed to development of regional priorities and goals. **Table 3.7** illustrates the combined prioritization results. 'Redevelopment of existing commercial areas' and 'Improve appearance of roadways' received the highest number of 'Very Important' and 'Important' votes, followed by 'Improve function of roadways.' These results reinforce the feedback received during stakeholder interviews and previous public meetings and workshops. **Appendix C** provides the complete visioning exercise questions and results by city.

**Table 3.7** – Comprehensive Plan Prioritization, Regional Workshop Results

| | Voted 'Important' or 'Very Important' |
|---|---|
| Redevelopment of existing commercial | 87.41% |
| Improve appearance of roadways | 87.28% |
| Improve function of roadways | 82.42% |
| Increase mix and quality of local business | 80.43% |
| Redevelopment of existing residential | 79.25% |
| Strengthen intergovernmental coordination | 78.14% |
| Expand walking, biking, & transit | 66.43% |
| Increase open space and recreation | 52.31% |
| Increase multi-family housing | 25% |

The project team also created an on-line survey allowing residents to participate in the prioritization process. The combined results of both meeting and web-based feedback are shown in **Table 3.8**.

**Table 3.8** – Comprehensive Plan Prioritization, Combined Regional Workshop and Survey Results

| | Voted 'Important' or 'Very Important' |
|---|---|
| Redevelopment of existing commercial | 79.78% |
| Improve function of roadways | 76.10% |
| Strengthen intergovernmental coordination | 74.86% |
| Redevelopment of existing residential | 72.35% |
| Increase mix and quality of local businesses | 72.00% |
| Improve appearance of roadways | 70.92% |
| Expand walking, biking, and transit | 70.29% |
| Increase open space and recreation | 61.43% |
| Increase multi-family housing | 22.18% |

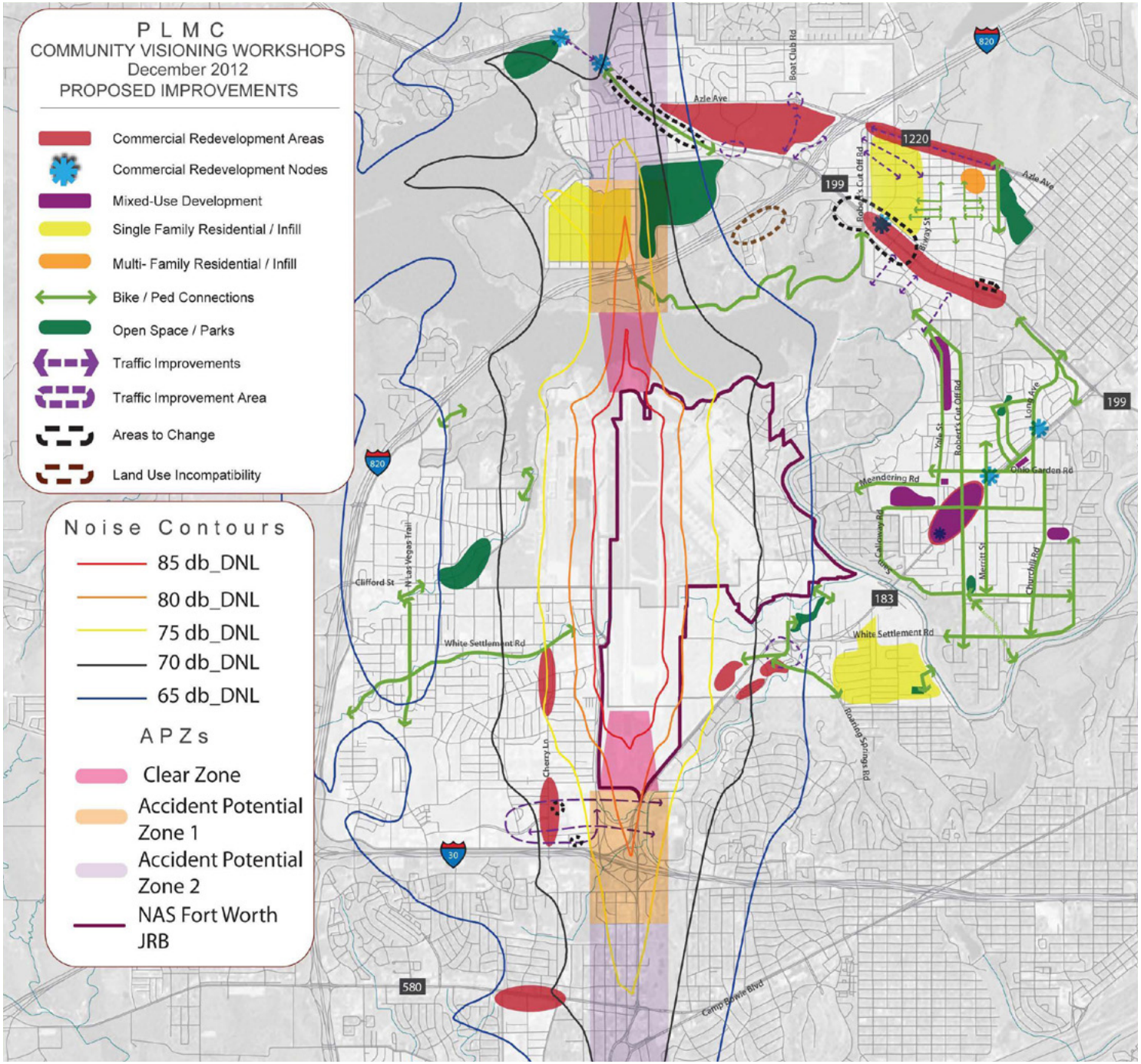
Workshop attendees also participated in a table-top mapping exercise, in which participants highlighted areas for commercial redevelopment, mixed use development, residential infill and redevelopment, new bicycle and pedestrian connections, open space opportunities and traffic improvements. **Figure 3.4** illustrates the improvements proposed region-wide, including:

- Commercial Redevelopment Areas emphasizing reinvestment in aging retail corridors, particularly along State Highways 183 and 199, Azle Avenue, and Cherry Lane
- Commercial Redevelopment Nodes at major intersections along State Highways 183 and 199
- New bicycle and pedestrian connections to the region's many existing parks and trail systems, plus additional neighborhood parks

Sansom Park Workshop

Corridor Workshop

**Figure 3.4** – Comprehensive Plan Workshop Input



### 3.4.2 | Regional Priorities and Guiding Principles

Input gathered through all phases of the planning process assisted in highlighting common goals, interests and priorities across the six communities:

- Economic development
- Coordinated planning along corridors
- Enhance roadway design and functionality for all users and emphasis on transportation infrastructure investments
- Bicycle and pedestrian connectivity
- Housing options emphasizing base needs
- Mixed uses
- Aging in place
- Land use compatibility around NAS Fort Worth, JRB

In conjunction with these emerging issues and priorities, the project team developed a set of principles intended to guide the strategies and recommendations set forth in the Regional Vision and city Comprehensive Plan Visions. These overarching principles represent a synthesis of community input and the themes identified through the project team's existing conditions research, market analysis, and corridor studies.

1. Strengthen the overall identity of the area and improve quality of life for existing residents and attract new families
2. Revitalize prominent roadways and create mixed use centers to spark new investment and enhance the physical image of the area
3. Refine and modernize the area's network of roads, paths, trails, and sidewalks to encourage more connectivity and expand mobility choices
4. Provide a range of housing options to attract and retain base employees, young families, and aging residents
5. Pursue opportunities for cooperation among the cities to achieve mutual goals
6. Continue to encourage land use compatibility and coordination with NAS Fort Worth, JRB

## Section 3.5 | Economic Development

This section provides a summary of key findings from the Real Estate Market Analysis and the Economic Base Analysis (See **Appendix D** for the full report), opportunities and challenges, guiding themes, and regional economic development strategies. The individual Comprehensive Plan Visions feature more detailed goals, policies, and actions that build on and complement these regional strategies. This section also contains a tax base impact analysis for six proposed redevelopment sites in the PLMC study area. See **Appendix G** for the full Economic Development Tax Base Impacts analysis.

### 3.5.1 | Real Estate Market Analysis

The market and economy of the Dallas-Fort Worth region is currently rebounding after contracting slightly in 2009, with growing inventories, declining vacancies, and increasing absorption rates. Additionally, total employee payroll increased by 69,000 jobs in the Metroplex during 2011-2012 and the Dallas/Fort Worth Metropolitan Statistical Area (MSA) unemployment rate dropped to 7.1% in December 2011, down from 8.0% in 2010. New development is primarily occurring near highway interchanges and along major transportation corridors, such as Interstate 35W and Loop 820.

Located within the PLMC study area, NAS Fort Worth, JRB is a significant presence in the regional economic profile. According to the State Comptroller of Texas, the installation contributes approximately $2.3 billion to the Dallas/Fort Worth MSA economy each year. The total personnel employed at the base makes NAS Fort Worth, JRB the third largest employer in North Texas. In addition, the base serves a population of roughly 195,000 military personnel and their dependents, including a population of over 170,000 in retired military households.[1] In conjunction with the military operations occurring at the installation, defense contractor, Lockheed Martin Corp. is located along the western edge of the air base and is Fort Worth's largest private employer.

Annual defense spending in the Greater Dallas/Fort Worth Region equaled roughly $15.1 billion in 2010, and included money spent on procurement contracts (90.9%), salaries and wages (5.3%), retirement and disability payments (3.6%), and federal grants (0.2%). **Figure 3.5** illustrates that roughly $9.9 billion or 66% of all annual military spending in the region occurred in Tarrant County. The PLMC study area is one of the region's largest and most important employment centers.[2]

[1] Presentation of Commanding Officer, Capt. R.A. Bennett, March 2012.
[2] "Military Money Boosts Texas," DallasNews.com, Brendan Case and Mike Setzer, March 11, 2012.

### 3.5.2 | Regional Economic Development Challenges and Opportunities

The economic development and market analysis conducted as part of the PLMC planning process revealed a series of opportunities and challenges shared among PLMC jurisdictions.

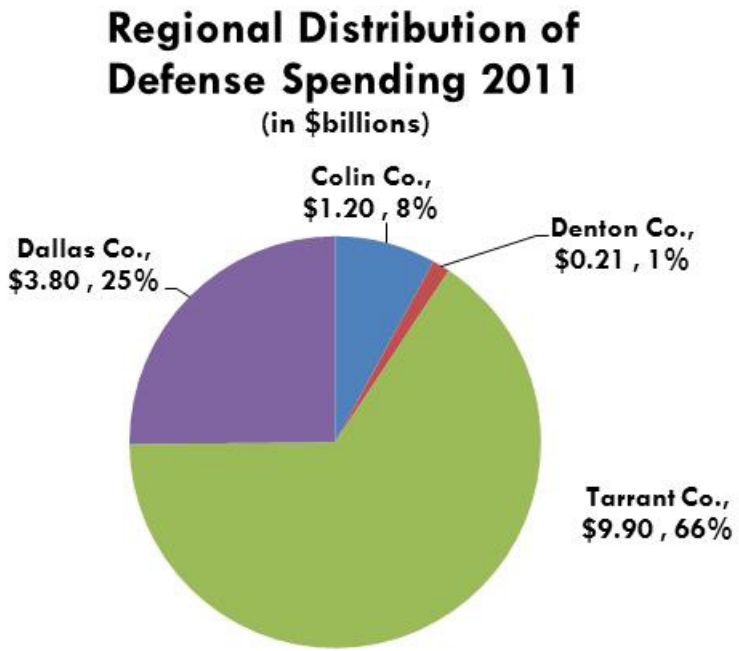
These challenges included aging retail corridors, lack of undeveloped land for new development, competition with areas in and around Fort Worth that pull mixed -use investments away from the PLMC communities, and lack of regional market competitiveness over the past decade to attract significant growth in sectors such as industrial, office, and retail. As discussed further below, with strategic repositioning these challenges also serve as the PLMC area's most significant opportunities for quality growth and development. The overall challenges associated with economic development in the study area include:

- Aging retail corridors
- Modest population growth in most parts of the study area
- Limited undeveloped land for new development
- Competition with areas in and around Fort Worth that pull mixed use investments away from the PLMC communities
- Increasing regional market competitiveness over the past decade has made it difficult to attract significant growth in the industrial, office, and retail sectors

**Aging Retail**

Building values within the PLMC study area show evidence of poor building conditions, which contribute to an erosion of the tax base in some communities, discourage private investment and weaken the region's identity. Results of an analysis of assessed property values for all residential, commercial (i.e., office and retail), and industrial/warehousing/ distribution properties in Tarrant County demonstrate concentrated areas of lower relative property values within the PLMC study area.

**Figure 3.5** – Dallas/Fort Worth Region Military Spending 2010




Source: US Census Bureau

However, as illustrated in **Figure 3.6**, pockets of comparatively low values (less than 50% of the average) exist at several locations. Some of the areas of greatest concern include:

- **Sansom Park** – An area along the western side of Jacksboro Highway from IH 820 to Sansom Park's southern boundary shows signs of disinvestment. Much of this area is characterized as older, lower value commercial properties, many of them poorly suited for today's retail and service environment. Jacksboro Highway is an important commuting and commercial corridor leading into downtown Fort Worth. The traffic counts are in excess of 34,000 (both directions) at the intersection of IH 820 and Jacksboro Highway. Heading south on SH 199, traffic counts drop to roughly 17,000 vehicles per day (vpd) at the intersection with N. University Drive. Traffic volumes increase again heading into downtown Fort Worth. After crossing the Trinity River on N. Henderson vehicle counts exceed 33,000 vpd.[3]

- **Lake Worth** – On the southwestern side of Lake Worth, a similarly situated group of residential neighborhoods exists. The homes are older and smaller and perhaps only need exterior repairs. The most sizeable concentration of lower property values occurs in the area bounded by Navajo Trail (south), Hiawatha Trail (west), Comanche Trail (north) and Dakota Trail (east).

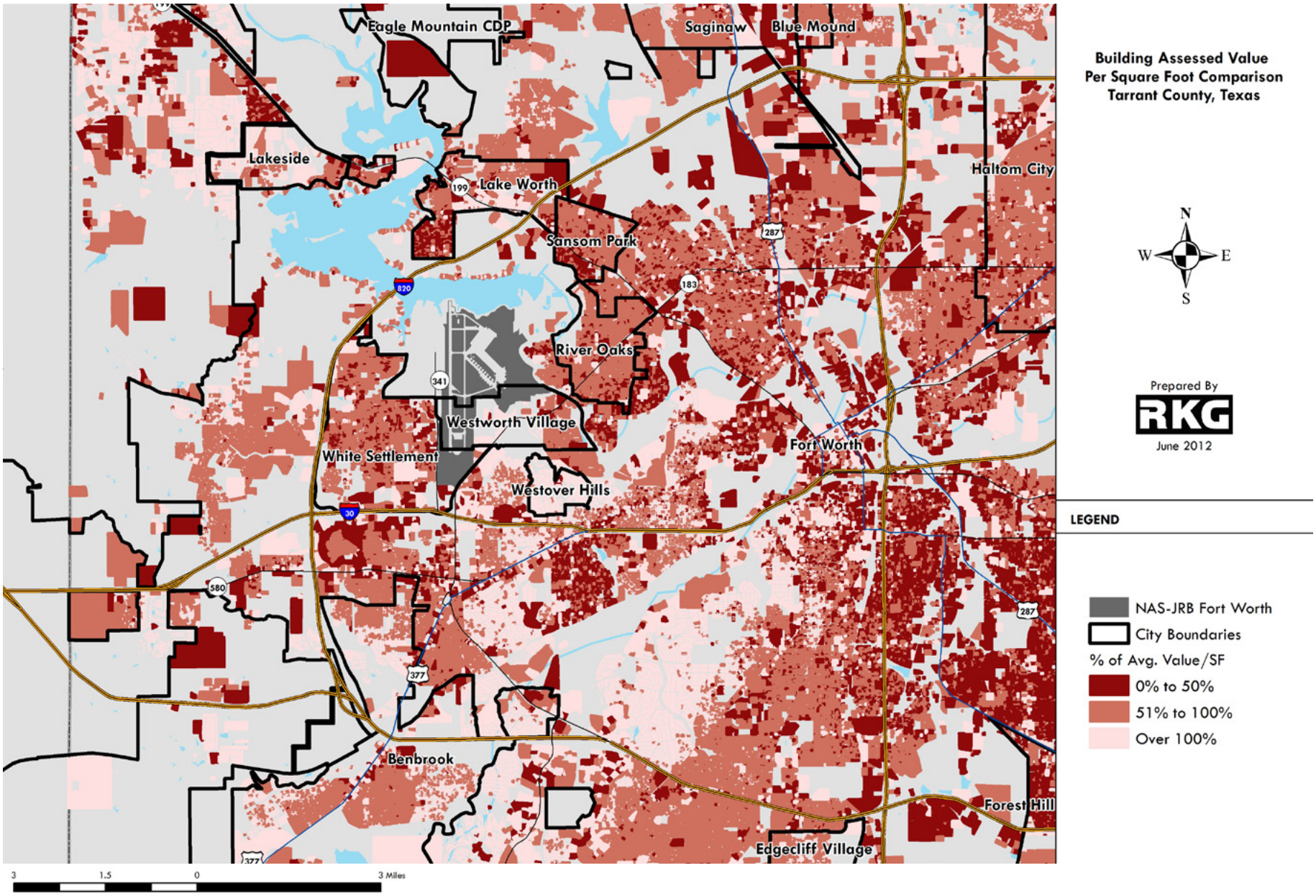
- **River Oaks** – A cluster of lower property values exist just outside the southeastern border of the River Oaks community. This area is bounded by Brookside Drive (south and east), Ester Drive (north), and Churchill Road.

- **Fort Worth** – A large, higher density apartment complex located on the southeast quadrants of the Interstates 820 and 30 intersection appears to be valued at less than 50% of the average assessed value of other apartment complexes in the county.

In the future, these lower value areas may become prime revitalization and redevelopment areas. The future of retail development in the PLMC study area will depend on the type, quality and accessibility of retail centers to the local population and the availability of developable sites or existing buildings that are suitable for renovation or adaptive reuse. PLMC communities could establish public-private partnerships and strategies to encourage commercial redevelopment.

[3] Historical Traffic Counts, NCTCOG (http://www.nctcog.org/trans/data/trafficcounts/)

**Figure 3.6** – Building Assessed Value in Tarrant County




Source: Tarrant County Appraisal District, 2012

**Lack of Undeveloped Land**
In order to examine future development potential, the project team conducted a parcel vacancy analysis for the PLMC study area. **Figure 3.7** illustrates parcels within the study area with no buildings and classified as (1) farmland, (2) timberland, (3) commercial, (4) industrial, or (5) undeveloped based on their land use codes. (Utilities, federally owned properties, Fort Worth Refuge, and institutional uses were sorted out of the analysis.)

A particularly large cluster of undeveloped land exists within the PLMC study area near Fort Worth, just south of River Oaks. It is categorized as farmland and is centrally located. An additional large cluster of undeveloped land exists near the northeastern border of Benbrook, categorized as ranchland. Some of the largest vacant land parcels are located outside the study area communities along IH 820. Due to the limited availability of undeveloped parcels, the PLMC communities should maximize opportunities for redevelopment and reinvestment in strategic areas.

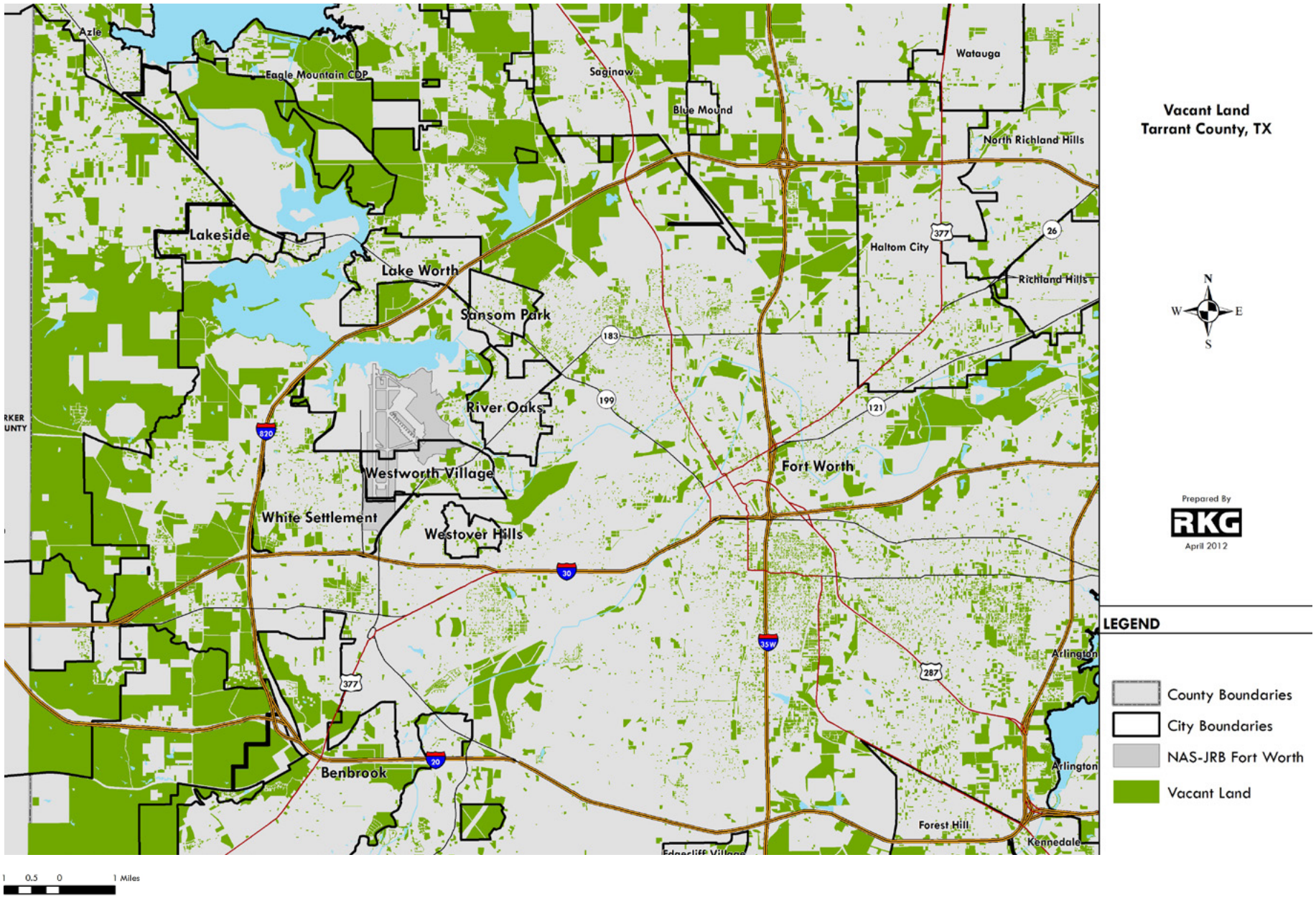
**Regional Competition**
Between 2002 and 2012, approximately 37.4 million square feet of industrial development occurred in Tarrant County. The majority of industrial, warehouse/distribution, and flex space was constructed or proposed in close proximity to DFW International Airport along SH 360, just south of the airport. Another cluster of industrial development occurred in the Blue Mound area at the intersection of IH 820 and IH 35W, as well as the Saginaw area at IH 820/SH 486. For the most part, the PLMC study area has not attracted these types of uses in the past 10 years.

Additionally, more than 47.8 million SF of new office and retail building space was constructed or proposed between 2002 and 2012. Much of this new development has clustered around the IH 35W corridor. The largest clusters appear at the intersection of IH 35W and IH 30 (office), downtown Fort Worth (office and strip retail) and in the Alliance Texas area, where large scale office, industrial, distribution, residential and retail development is occurring. The only area within the PLMC Study Area that has experienced significant industrial and commercial development is in the City of Lake Worth, where between 500,000 and 1 million square feet of big box retail was developed at the junction of Loop 820 and SH 199 (Jacksboro Highway) within the past decade.

**Mixed Use Investment Competition and 'Development Gravity'**
In recent years, mixed use residential and retail development has become active in the Fort Worth region, particularly in and around the Alliance Texas development area. Phase I of the Alliance development includes a 300-acre retail center and lifestyle mixed use development, which opened in 2008. Additionally, three major mixed use developments are developing in downtown Fort Worth, including West 7th, SoSeven, and Museum Place. Each of these projects takes advantage of abandoned infill sites that were once industrial zones. Other large-scale mixed use developments are proposed at the Edwards Ranch and Walsh Ranch developments west of downtown Fort Worth.

The mix of residential units, retail, shopping, office, and entertainment and cultural facilities is attractive to consumers and residents seeking shorter commutes and access to amenities. The level of development occurring in the Fort Worth area is creating a "gravity effect" and is pulling development away from the PLMC Study Area. This is not an indication that the study area is not suitable for development, but rather the market and the City of Fort Worth are making strategic investments to attract development interests 5 to 10 miles north of the study area. The "leap-frogging" nature of this development is creating a hyper-competitive market environment north of downtown. In order to capture a fair share of future growth, the PLMC communities must reposition themselves as an attractive and proximate alternative to other rapidly growing areas.

**Figure 3.7** – Vacant Land in Tarrant County




Source: Tarrant County Appraisal District, 2012

Despite the area's economic development challenges, the PLMC communities can capitalize on several unique opportunities to enhance economic development. The regional economic development strategies are informed by the unique opportunities of the PLMC communities, including the following:

- Fast growing Hispanic demographic
- Large military and aerospace presence
- PLMC study area is one of the region's largest and most important employment centers
- Demand for quality public education, particularly high school
- Proximity to Fort Worth Cultural District
- West Fork of the Trinity River
- Strong oil and natural gas industry presence
- In future path of growth
- Excellent regional transportation access
- Strong regional workforce

**Mixed Use**

As previously discussed, the Fort Worth region is experiencing an influx of mixed use infill development projects. The areas developing these projects attract mixed use developers through regulatory policies and economic strategies incentivizing such development. The PLMC communities have the potential to capitalize on mixed use development opportunities, particularly along targeted aging retail corridors within the study area. Mixed use developments can serve as a neighborhood anchor, providing shopping and entertainment amenities, allowing residents to eliminate longer driving distances for such services and amenities. Residents participating in the community engagement process expressed interest in mixed use developments, particularly as a tool to provide neighborhood amenities and housing options for young families and seniors.

**Reinvestment and Redevelopment Areas**

Areas within the PLMC study area with lower relative property values and a declining tax base serve as potential sites for future redevelopment. Several of these concentrated areas of lower relative values are sited along the State Highway 183 and 199 corridors.

**Retail Gap Analysis**

The project team conducted a retail gap analysis of all properties along the State Highway 183 and Highway 199 corridors, dividing the corridors into four trade areas. **Figure 3.8** illustrates the trade areas within the PLMC study area. All four trade areas are over-served with retail ranging from neighborhood strip center to regional shopping malls. The study area is home to clusters of automobile dealers, which accounts for the large amounts of surplus in the IH 30 and SH 183, SH 199 and SH 183, and IH 20 and US 377 trade areas. In addition the Ridgmar Mall contributes to the large amount of surplus within the IH 30 and SH 183 Trade Area.

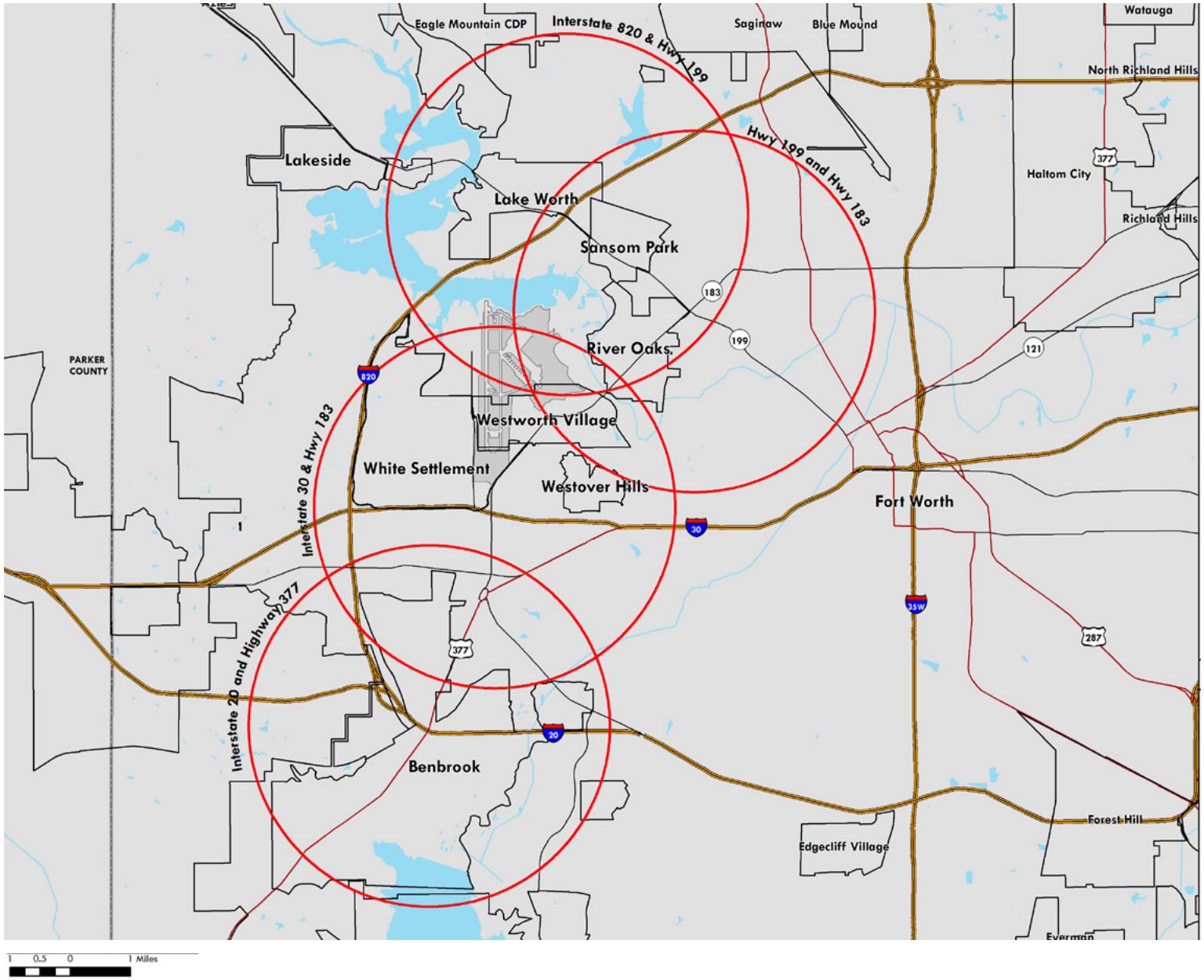
However, despite the surplus in each trade area, results of the analysis demonstrated a gap in grocery and clothing stores in the IH 820 and SH 199 trade area (encompassing portions of Sansom Park, River Oaks, and Lake Worth). Additionally, retailers throughout the study area capture some of the retail sales lost to other shopping centers outside of the PLMC area through expanded product lines in existing establishments.

### 3.5.3 | Regional Economic Development Guiding Themes

Based on the challenges and opportunities identified in the PLMC area, the project team developed the following regional themes to guide development of economic development strategies:

1. Diversify housing choices to attract population growth
2. Use mixed use development patterns to revitalize aging corridors and commercial centers
3. Explore regional marketing and economic development opportunities
4. Build on core economic strengths
5. Expand access to educational and workforce training opportunities

**Figure 3.8** – Retail Trade Area Identification



### 3.5.4 | Regional Economic Development Strategies & Policies

The following strategies seek to develop job opportunities, strengthen local economic diversity and resilience, and also increase quality of life for existing and future residents.

**Regional Economic Development & Marketing Partnership**

- Develop marketing strategies to brand communities as Northwest Fort Worth Area and create a distinct identity.
- Build on any existing efforts such as "Thunder Road" marketing and branding campaign for Jacksboro Highway.
- Establish a regional marketing cooperative in the near term to facilitate collaboration among the communities on common economic interests and lay the foundation for more substantive joint development efforts.
- As a long-term strategy that evolves from cooperative efforts, create a regional economic development corporation with the powers and authorities necessary to undertake economic development initiatives of regional significance, such as business park development. This corporation could be governed by a board of directors representing each community and a professional staff funded by the participating members.

**Regional Export Plan**

- Develop a Regional Export Plan to connect local businesses and employers with expanding global markets. The initiative should involve the six PLMC communities along with Tarrant County and the City of Fort Worth. Potential federal and private-sector participants include NAS Fort Worth, JRB, Lockheed Martin, Oil and Gas companies, and Hispanic import companies. Some federal grant programs to support metropolitan export initiatives are available. (See **Appendix E** for Brookings-Rockefeller Project 10 Steps to Delivering a Successful Metropolitan Export Plan)

**Regional Education & Entrepreneur Development**

- Education - Leverage the proximity of engineers and technical experts from the military, defense, and oil and gas sectors to develop a science, technology, engineering, and mathematics (STEM) mentoring program for middle and high school age students as part of after-school programs in the local Independent School Districts (ISDs).
- Creativity Center Incubator - Develop a "Creativity Center" (incubator space) for teaching entrepreneurship, start up, research and manufacturing and the arts in each of the communities. Identify a committee consisting of city, military and Lockheed Martin representatives to assist in finding space (approximately 2,500 square feet to start) within walking distance of the high schools or in the downtown retail areas. The space would enable adults who like to invent things and tinker with electronics to explore problem-solving and technology with high schools students interested in STEM or the arts. The local Economic Development Corporation (EDCs), Tarrant County College, Fort Worth Nature Center, Museums and Arts from the Cultural District, Texas Christian University and ISDs could assist to manage and develop programs for these creativity centers.
- Regional Workforce Training Center – Incorporate workforce training into "Creativity Centers" focused on preparing workers for regional technology jobs and growth industries.
- Hispanic Business Development - Assist in establishing the Northwest Fort Worth Hispanic Business Association to organize the Hispanic business community, support existing businesses, mentor small business startups, develop new entrepreneurs, and diversify the job base.

**Joint Economic Development Initiative**

- Industrial/Business Park Development - Consider joint development and a revenue sharing agreement among the communities to facilitate creation of one or two new industrial/business parks in the North 820 loop area near Lake Worth. A possible second location could be near Benbrook off Interstate 20.
- Technology Centers – While White Settlement and Benbrook have industrial parks, Westworth Village, River Oaks, Sansom Park and Lake Worth lack non-retail activity. To encourage economic activity beyond the current retail base, develop and grow 25,000 to 50,000 square feet regional technology center(s) that can diversify the economy and expand jobs.

**Housing Diversification and Improvement**

- Diverse Housing Choices – Expand housing choices and business activity to increase the tax base. Develop a more innovative and flexible zoning and land use framework to promote mixed use projects, allow for businesses other than retail, and broaden the range of housing styles (e.g. townhouses and assisted living facilities) to attract young professionals and new families, accommodate base personnel and enable aging in place. Address ongoing community concern over the perceived quality of development and adverse impacts on adjoin property through the use of form-based codes and town center style development that combines housing, retail and/or office uses.

**Urban Redevelopment Opportunities**

- Create a framework for development that is flexible to current market conditions and applicable to the six potential redevelopment areas along with other areas of redevelopment.
- Redevelopment should be designed to:
  - Encourage buildings to be built to the street
  - Allow a variety of land uses and building typologies within a walkable framework
  - Promote a multi-modal approach that allows for bicycle, pedestrian and vehicular movement.
  - Consolidate parking in central location or with shared parking

**Economic Development Incentives**

- Attract interest from developers by designating a basic land use framework for redevelopment and increasing awareness of available economic incentives in advance of establishing any formal financing districts prior to project commitment. Customize incentives as appropriate to interested developers. Task the regional cooperative with marketing the selected redevelopment sites. (See Economic Development Incentives & Financing Tools in **Appendix F**)

### 3.5.5 | Economic Development Tax Base Impacts

Development and redevelopment are two ways of facilitating economic growth. Through the expansion of the tax base and retail sales associated with new development, each of the PLMC communities has the potential to expand employment, increase payroll and grow its tax base. Based on community feedback and an analysis of the region's real estate markets, the project team identified six sites as possible areas for future development or redevelopment to increase local economic development opportunities. In order to understand the economic development impact of the proposed development programs, the team also developed an impact analysis model to measure the tax revenue and employment impacts associated with various proposed economic development initiatives in different locations within the PLMC study area. See **Appendix G** for the full Economic Development Tax Base Impacts analysis.

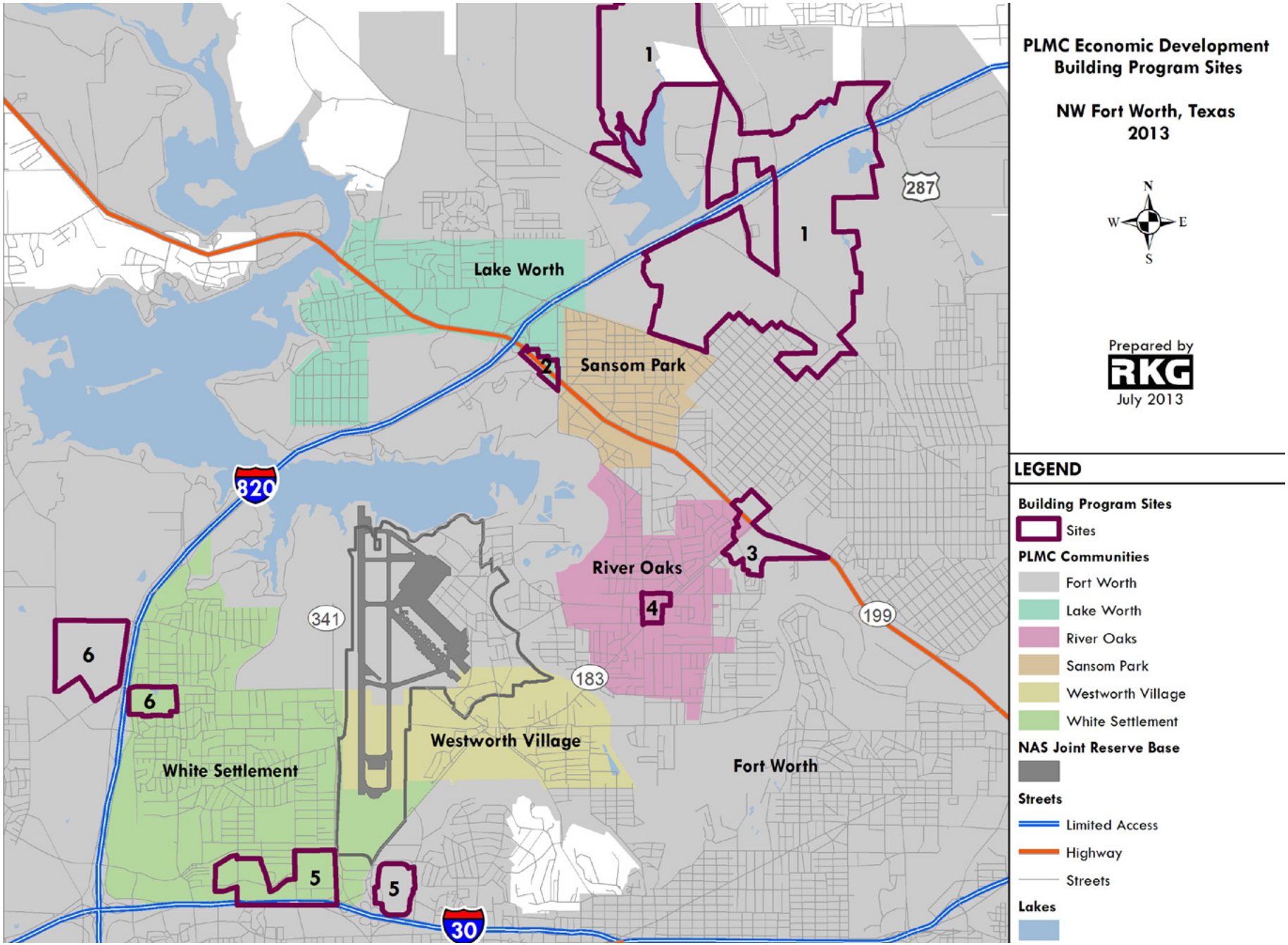
Using input from the PLMC municipalities, a conceptual building program was created to illustrate the possible economic development impacts development efforts at six different sites might produce. The locations for the sites are shown in **Figure 3.9**. All building program square footage referenced in this section can be found in **Table 3.9**. All square footage of removed uses referred to in this section can be found in **Appendix G. Sections 4-8** contain additional detail and the site planning and design principles associated with the individual sites.

**Table 3.9** – PLMC Catalyst Redevelopment Site Building Program

| Land Use Category | Square Feet | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Site | Site 2 | Site 3 | Site 4 | Site 5 WS | Site 5 FW | Site 6 WS | Site 6 FW |
| Single Family High Value | | | | | | | | 700,000 |
| Single Family Mid Value | | | | | 400,000 | | | |
| Townhouse | | | 80,000 | | | | | |
| Apartments | | | 270,000 | | | | | 990,000 |
| Industrial/Assembly | | | | | | | | |
| Industrial Flex Space | 500,000 | 33.6% | 68,029 | 4.1% | 32.2% | 86,780 | | 29.8% |
| Retail - Stand Alone | | 80,000 | 300,000 | 10,000 | | | 100,000 | |
| Retail - Regional Shopping | | | | | | 1,500,000 | | |
| Entertainment | | | 10,000 | | | | 25,000 | |
| Restaurant | | 15,000 | 15,000 | 5,000 | | | 20,000 | |
| Office | 2,000,000 | 80,000 | | | 250,000 | | | |
| Education/Training | 250,000 | | 0 | 0.0% | 0.0% | 0 | 0.0% | 0.0% |
| **Total** | **2,750,000** | **175,000** | **660,000** | **15,000** | **650,000** | **1,500,000** | **145,000** | **1,690,000** |

Source: RKG Associates, Inc., 2013

Figure 3.9 – Catalyst Redevelopment Sites



**Site 1 – NW Loop 820 Regional Tradeport**
Site 1 is located along the Northwestern loop of 820 in the City of Fort Worth. It is north of the City of Sansom Park and east of the City of Lake Worth. The Economic Development Building Program for this site is described as follows:

- Higher profile corporate office park
- Joint industrial/flex park (Tarrant County, City of Fort Worth, NW Fort Worth Communities)
- 250,000 SF workforce training center and college campus

To develop a regional tradeport in this location, 2,000,000 SF of business park space, 250,000 SF of education or training space and 500,000 SF of industrial flex space are proposed additions to Site 1. In order to do so, an anticipated 2,790 SF of existing residential buildings would need to be removed. Overall, there will be a net gain of 2,747,210 SF of development from this program.

**Site 2 – State Highway 199/Interstate 820 to Sansom Park**
Site 2 is located along State Highway 199 near the interchange for Interstate 820 in the City of Lake Worth. The site is directly west of the city limits of Sansom Park. For Site 2, the Economic Development Building Program is described as follows:

- Remake existing retail environment into mixed retail, service and employment center
- Mostly highway serving retail
- Make gateway statement for Sansom Park
- Incorporate small business park location instead of larger scale retail uses

The development program for Site 2 proposes an additional 80,000 SF of retail and service uses in a neighborhood shopping center format, 15,000 SF of limited service restaurant use and 80,000 SF of professional office space. This development would take the place of 32,573 SF of existing retail and office space. Overall, the development program creates a net gain of 142,427 SF of development.

**Site 3 – Intersection of State Highway 199/183**
Site 3 is primarily located in the City of Fort Worth on land surrounding the intersection of State Highway 199 and State Highway 183. A small portion of the site is also located in the City of River Oaks. The proposed Economic Development Building Program is described as follows:

- Fort Worth and River Oaks community focus
- Big box anchored
- Mixed-Use where possible to improve image of the area and to attract young people and young families looking for easy access to Downtown Fort Worth
- Possible townhomes and apartments in a town center concept
- Other Uses: restaurants, services, family entertainment and recreation

The building program for Site 3 includes 50 townhouse units (80,000 SF), 300 apartment units (270,000 SF), 300,000 SF of retail and service space and 10,000 SF of restaurant space to the Fort Worth portion of the site. To accommodate this development, 444,755 SF of existing residential, warehouse, retail, entertainment and restaurant space on the site would need to be removed. In River Oaks, the building program adds 5,000 SF of restaurant space and 10,000 SF of family entertainment space while removing no existing structures. Overall, the building program for Site 3 creates a net gain of 215,245 SF of development in Fort Worth and 15,000 SF of development in River Oaks.

**Site 4 – State Highway 183/Robert's Cut Off Intersection**
Site 4 is located in the heart of River Oaks near the intersection of Robert's Cut Off and State Highway 183. The proposed Economic Development Building Program is described as follows:

- Development plan on this site as much for beautification as for economic development
- Upgrade retail offerings but mostly small serving commuter traffic and nearby neighborhoods and military (dry cleaners, gas station, car wash, convenience store, restaurants)
- Gateway landscaping and roadway definition

For Site 4, the proposed building program includes 10,000 SF of retail and service uses and 5,000 of restaurant space. In order to pursue this development, 16,539 SF of existing retail would need to be removed. Overall, there would be a net loss of 1,539 SF for the building program associated with Site 4.

**Site 5 – Interstate 30 & State Highway 183 & Ridgmar Mall**
The location of Site 5 is just south of NAS Fort Worth, JRB, to the east and west of SH 183 and north of IH 30. The western part of Site 5 is in the City of White Settlement. The eastern part, which includes Ridgmar Mall, is in the City of Fort Worth. The proposed building program for this site is described as follows:

- Reposition existing retail at Ridgmar Mall into a town center concept as part of a flexible approach to keep the mall viable and minimize land use incompatibilities with Accident Potential Zone I
- Introduce a grid network and create new street-fronting businesses
- Create a high amenity, pedestrian-scale environment
- Increase total retail square footage on the eastern side of the mall and near newly designed exit ramp areas.

The proposed building program for Site 5 adds 1,500,000 SF of town center-oriented retail space to replace the existing 1,124,196 SF that make up the Ridgmar Mall and associated retail buildings in Fort Worth. This is an overall net gain of 375,804 SF of development in the Fort Worth portion of the site. The other portion of Site 5 is in White Settlement, where the program consists of developing 500,000 SF of professional office space as well as replacing 330,378 SF of existing residential, industrial, retail and restaurant space to incorporate the new office space. In addition, 150,000 SF of standalone retail/service and restaurant uses have been proposed in this location. **Figure 3.10** illustrates a potential redevelopment concept for the Ridgmar Mall site. **Section 3.7** describes the potential redevelopment concept for the site in more detail.

An alternative development consideration for the City of White Settlement would be to introduce mid-value single family homes since there is currently a lack of these types of homes in the study area. Site 5 could incorporate new residential uses, but since the area falls within the noise contours of the base, any proposed residential development in White Settlement should document the need through a housing needs assessment and the builder should coordinate with NAS Fort Worth, JRB to incorporate sound mitigation techniques to improve the indoor sound environment.

**Site 6 – Interstate 820 & Clifford Road**
The location of Site 6 is on the west and east side of IH 820 in the City of Fort Worth and the northwest portion of the City of White Settlement. The proposed building program consists of the following:

- Increase presence of townhomes and apartment living in signature new development in the Fort Worth portion of the site. Target young families, young professionals, military families and people looking for other housing options, and
- Introduce a mix of family entertainment, restaurants, and retail, including a new water park in the City of White Settlement.

The Site 6 building program includes an additional 150,000 SF of family entertainment, retail, and restaurant space, including a water park, to the White Settlement portion of the site. This development program will replace 31,387 SF of existing residential, retail and restaurant uses but lead to a net gain of 118,613 SF of development. It will also result in the loss of the existing ball field complex in this location, but there are several alternative recreational areas within the city. For the portion of the site located in Fort Worth, the building program consists of adding 200 high-value single family homes (700,000 SF) and 1,100 apartment units (990,000 SF). Sound mitigation techniques should be incorporated into the proposed residential areas that fall within the noise contours of the base. Due to the large amount of undeveloped agricultural land at this location, no existing uses will be removed to accommodate the new development. Therefore, the building program on the Fort Worth portion of Site 6 will create a net gain of 1,690,000 SF of residential development.

**Tax Base Impacts**
In addition to adding new uses to the six identified sites, the economic development program is targeted to impact the tax base of the municipalities. It should be noted that the analysis examines the change in tax ratables and municipal revenues without the offsetting cost of providing services. This analysis is intended to illustrate how local tax base and employment can be expanded through proactive economic development efforts. As development or redevelopment occurs in these areas, local communities should study the potential fiscal impacts associated with providing services for safety, education, roads, and other services.

Tax revenues generated by new uses that encourage demand for services, provide services that generate sales, or create value through real estate all can impact the economy of a community. Even though most of the building programs would necessitate the removal of some existing buildings, in most cases the balance of these efforts leads to a net positive in municipal revenue and employment. In all cases, the projected revenue and employment figures reflect developments that are completed and occupied. Therefore, the revenues are at a level that may be several years after the start of a development project and reflect what is possible if all proposed uses are developed and occupied.

Below is a summary of the anticipated net change in tax revenue for each site and the associated municipality. A full version of the tax base impacts analysis can be found in **Appendix G**.

**Figure 3.10** – Ridgmar Mall Redevelopment Concept

**Existing**

**Redevelopment Concept**

*Site 1 (Fort Worth)*
The proposed economic development building program in Site 1 calls for industrial, office education and education/training space. The site has the potential to generate $18.5 million annually in additional tax revenue at build-out, over existing levels for the City of Fort Worth. This amount includes minor revenues lost by removing a small number of existing buildings to provide space for new development. For the most part this area of Fort Worth is undeveloped. It should also be noted that the education component of the building program is assumed to be a tax exempt entity, which may not generate tax revenues from real and personal property.

*Site 2 (Lake Worth)*
For the proposed retail, restaurant, and office space developments, the City of Lake Worth might anticipate an annual increase of $849,308 in property tax revenue and $492,922 in sales tax revenue for a total of $1,342,230 of generated revenue above the current level. This amount reflects the loss of revenue associated with the retail and restaurant spaces that were removed to accommodate the new development.

*Site 3 (Fort Worth and River Oaks)*
Site 3 exists in two municipalities, therefore the tax base impact of the economic development building program in Fort Worth and River Oaks were analyzed separately. The townhomes, apartments, retail, and restaurants outlined in the development program for the Fort Worth portion have the potential to generate $1,678,677 in property taxes and $280,675 in sales tax for a total of $1,959,353 of additional annual revenue. This gain in tax revenue is net the amount of revenue associated with removed residential, warehouse, retail, entertainment and restaurant uses to provide space as part of the redevelopment process.

In River Oaks, existing uses would remain in place. Proposed development of restaurants and family entertainment uses could generate $77,664 in property tax revenue and $51,492 in sales tax revenue creating an additional $129,156 in annual tax revenue for River Oaks over existing levels. For a small community like River Oaks, this additional tax revenue would represent a 3% change over current revenue levels.

*Site 4 (River Oaks)*
The Economic Development Building Program for Site 4 adds retail and restaurants to the commercial corridor in River Oaks. An additional $49,331 in property tax revenue and $19,053 in sales tax revenue has the potential to be produced from this development. A total of $68,384 in additional annual tax revenue could be generated for River Oaks above existing revenues, even after the loss of revenue from removed retail uses to provide space for redevelopment.

*Site 5 (Fort Worth and White Settlement)*
Site 5 has elements of its proposed building program in both the City of White Settlement and the City of Fort Worth; therefore, future redevelopment will affect the tax base for each of these municipalities differently. In White Settlement, the proposed office and retail are projected to produce a postive net change of $3.1 million in new tax revenue over current levels. To accommodate these new uses, a number of residential, industrial, retail and restaurant uses would need to be removed, leading to an overall loss of $1.7 million in annual sale tax revenue. However, the new development program could potentially generate more than $4.8 million for a net change of $3.1 million. This is due in larage part to the creation of considerable real estate value related to the construction of 500,000 SF of new office space at this location, which accounts for roughly 79% of the new tax revenues.

The Fort Worth element of Site 5 is primarily focused on retail uses associated with repositioning the existing regional mall. This alternate approach to retail on this portion of the site is anticipated to add $7,928,182 in property tax revenue and $1,975,613 in sales tax revenue, or a total of $9,903,795 in additional annual revenue for the City of Fort Worth. This amount is net revenue deductions associated with redevelopment of the existing regional mall.

*Site 6 (Fort Worth and White Settlement)*
Site 6, similar to Site 5 and Site 3 exists in more than one municipality. Therefore, the tax base impacts of Site 6 on the City of White Settlement and the City of Fort Worth will be discussed separately. The entertainment, retail and restaurant uses proposed for Site 6 in White Settlement are anticipated to generate a net change of $1.4 million annually over existing tax revenues. However, removal of a small amount of residential, retail and restaurant uses to provide space for this development will decrease sales tax revenue by $98,236 annually.

In Fort Worth, the Site 6 building program adds a large number of single family homes and apartments. No removal of existing structures associated with this part of the Site 6 building plan is anticipated. Therefore, the City of Fort Worth can anticipate an increase in annual tax revenues by $5,069,665 from revenues generated through property taxes.

At a municipal level, there is anticipated to be an overall net gain of tax revenue from development and redevelopment.

- **Fort Worth Impacts** - The City of Fort Worth adds $35,475,340 annually from revenues generated from Site 1, Site 5 and Site 6.
- **Lake Worth Impacts** - The City of Lake Worth revenues will increase by $1,342,230 annually from taxes associated with development on Site 2.
- **River Oaks Impacts** - The City of River Oaks will increase its annual revenues by $197,539 from development on Site 3 and Site 4.
- **White Settlement Impacts** - White Settlement will add $4,486,953 to its annual revenues based on development efforts on Sites 5 and 6.

Based on the unaudited governmental fund revenue totals for 2011, provided by each municipality, the above revenue gains represents 4.7% of the 2011 tax revenues for the City of Fort Worth; 13.3% of total tax revenues of Lake Worth; 4.6% of the total tax revenue of River Oaks and 43.4% of the total tax revenues of White Settlement. As stated previously in this analysis, a portion of these additional tax revenues would be off-set by the increased cost of providing municipal services such as police, fire, public works, education and other government services. The net difference between municipal revenues and expenses would represent the actual financial benefit to each community.

**Employment Impacts**

Investment in economic development will ultimately result in the formation of new businesses that create jobs. Job creation will in turn create a round of secondary impacts such as increased demand for local goods and services and an increase in demand for housing due to job relocation. When employment generation is substantial, it has the potential to lead to additional employment gains and new businesses related to meeting the demand for goods that cannot be met by existing local businesses. Based on an estimation of the number of employees currently working in uses removed and those anticipated from new development, a new net number of employees were determined for each site.

The projected change in employment was based on the type and quantity of new development added or removed.

- **Site 1** - Site 1 is anticipated to produce a net change of 7,008 employees in the City of Fort Worth. This would constitute a new major employment center on the IH 820 corridor in between Fort Worth and Dallas/Fort Worth Airport.
- **Site 2** - Site 2 has the potential to lead to a net gain of 376 employees in the City of Lake Worth.
- **Site 3** - Site 3 has the potential to add 34 employees in the City of River Oaks, but the development program will lead to a net loss of 214 employees in the City of Fort Worth.
- **Site 4** - The development program for Site 4 is also anticipated to result in a small net loss of 7 employees in the City of River Oaks. This is because slightly less building square footage is being proposed then what is there today.
- **Site 5** - Site 5 is anticipated to produce a net gain of 1,005 employees in the City of White Settlement and a net gain of 940 employees in Fort Worth.
- **Site 6** - For Site 6, proposed development in White Settlement is anticipated to produce a net gain of 304 employees while none are anticipated to be the direct results of development for Site 6 in Fort Worth.

A complete illustration of the employment impacts associated with the building programs can be found in **Appendix G**.

When aggregated by municipality, the development programs resulted in an overall net gain in employment at a local level. Fort Worth has the greatest potential net gain of 7,734 employees from Sites 1, 3 and 5. White Settlement has the second highest potential net gain of 1,309 jobs from Sites 5 and 6. A net gain of 376 employees is anticipated for Lake Worth from Site 2. The model also shows a net gain of 27 employees for River Oaks from Site 3 and Site 4. In total, the PLMC study area would gain roughly 9,446 new jobs at build-out, which might take 10 to 20 years to achieve.

**Implications**

New development or redevelopment, as described in this analysis that adds value and building square footage has the potential to produce positive tax base impacts. New development that does not require removal of existing uses is an example of this type of tax base gain, as observed in the Fort Worth portion of Site 6 and the River Oaks portion of Site 3. Similarly, redevelopment that includes the elimination of some existing uses shows a relatively notable gain in the tax base when the removed uses are of lower value than those proposed and the amount of total square footage is greater as seen in Site 1, Site 2, the Fort Worth portion of Site 3, Site 5 and the White Settlement portion of Site 6.

An overall increase in real estate value can compensate for retail sales lost from necessary demolition or repurposing in terms of total revenue, as seen in the White Settlement portion of Site 5 and Site 6. A combination of both an increase in sales, real estate value and square footage can have a relatively greater impact on revenues as seen in the Ridgmar Mall transformation from a traditional enclosed regional mall to an open air town center concept in the Fort Worth portion of Site 6. Alternatively, increased levels of residential development not only have an impact on property tax revenue, but also generate demand for area businesses by adding to the consumer base.

If not all of a proposed building program is possible, creating a balance in revenue generation between the uses that are removed and those that are added is important. Fostering a similar balance between the demand for goods and services that residential uses and employment generate with the retail and service uses that can meet that demand is also necessary. The Economic Development Building Program integrates these elements while also proposing uses that are attractive to the local community and ultimately lead to economic development through tax base expansion.

## Section 3.6 | Housing

### 3.6.1 | Housing Market Analysis

**General Housing Market and Community Characteristics**

In addition to its beneficial location proximate to major employment centers and convenient interstate access, the study area has many quality housing options and quality neighborhoods. Many residents have resided in the area for a significant period of time, bringing stability and a sense of community to neighborhoods in the sub-region. While total housing numbers in the sub-region grew in pace with the regional population growth of the past decade, demographic projections forecast additional growth in the study area in the coming years. In anticipation of future growth, PLMC communities will require additional housing infrastructure to meet increasing demand. Located just west of downtown Fort Worth within Interstate Loop 820, PLMC communities benefit from their proximity to downtown Fort Worth. PLMC communities are also conveniently located near two major employers, Lockheed Martin and NAS Fort Worth, JRB. These two attributes make the PLMC sub-region an attractive residential and recreational destination.

Additionally, new planning initiatives and development projects, such as Walsh Ranch, the City of Fort Worth Urban Villages and the Lake Worth Vision Plan, will likely spur further economic and real estate development opportunities in the area. The growth associated with these projects, in addition to forecasted population increases, will place demands on the study area to remain competitive in the regional real estate market and will also serve as critical economic development opportunities. Through collaboration among local governments, private stakeholders, and other entities, the PLMC communities have the opportunity to position themselves to benefit from these regional-scale developments. Public private-partnerships can be utilized to maximize the area's capacity to benefit from these and other projects and to aid in attracting new housing developments and reinvestment, infrastructure construction, and housing education and outreach initiatives.

While there are many positive attributes and growth opportunities within the study area, the PLMC communities also share several critical housing challenges. A significant portion of housing in the study area communities is single-family residential with very few other available housing options. While the single family majority is not uncommon relative to other regional communities, a significant portion of the housing stock in the study area is over 50 years old. This factor contributes to increased maintenance needs, lower housing values and rents, increased vacancy rates, declining housing sales, an increase in single-family rental units, and a lack of reinvestment by the private development sector.

Additionally, the PLMC study area has experienced significant demographic shifts in recent years. While almost all communities have become more diverse in recent years, some are seeing concentrations of aging residents, while others are experiencing a trend towards younger families and residents, with declining median ages. The changing demographics, economics, and family structures within the study area increase the demand for a variety of additional housing options to accommodate growth and changing lifestyles. Additionally, aging in place is becoming increasingly popular for seniors who desire to remain in their communities as they age. Providing the necessary amenities and housing options is an important component of this population cohort.

**Community Involvement and Planning Process**

The results of the housing market analysis are informed by input gathered during the public involvement process and an analysis of available demographic and housing data. Throughout the study, community residents and stakeholders shared various challenges and possible solutions through public meetings, open houses, and interviews. Several surveys were conducted, including a Visual Preference Survey and Questionnaire. Additionally, public meetings emphasizing housing issues also gave residents the opportunity to understand the planning process and share key housing challenges and opportunities. The Visual Preference Survey was conducted at two open house meetings to gauge residents' preferences for different types of housing. **Appendix H** contains more detail on survey results.

The Visual Preference Survey results indicate that a large percentage (40%) of respondents supported "Urban Mixed Use" and "Main Street Mixed Use" housing options for the study area. A large percentage (43%) also supported the traditional single-family dwelling. Interest in alternative housing options such as apartments, urban row housing, and urban single family dwellings consisted of 17% of responses. Support for mixed-use town centers and walkable neighborhood housing options in relation to the study area were supported by an additional on-line and paper Housing Options survey.

In choosing where to live, respondents to the survey demonstrated a preference for easy access to work, quality schools, and affordable housing price points. The top two most preferred housing types included suburban (single-family in small cities) (with 65%) and town center mixed-use and walkable neighborhoods (with 30%). According to survey results, the top three reasons for not living in the area were lack of access to retail, access to work, and access to quality schools.

Mixed-Use Examples: From Top – Downtown Grapevine, Texas; Southlake, Texas Town Square; Garland, Texas 5th

Examples of Cottage Housing
Left Photo Source: www.pocket-neighborhoods.net
Right Photo Source: Tyler, Texas http://www.easttexasseniorliving.com/tyler/cottage

**Demographic and Housing Data Analysis**
An analysis of data was completed to establish the housing and demographic trends in the study area. A comparison of the study area to several geographic housing market areas and a summary of several of the statistics and findings from this analysis are included below. **Appendix H** provides additional housing statistics and details about the primary and secondary market areas.

Several key statistics and findings from the analysis of 2010 Census and 2006 – 2010 American Community Survey data are provided to give context to the overall housing and demographic characteristics of the study area.

**Study Area General Demographic Changes**
- In 2010, the total population was 121,381, an increase of 2.4% growth from 2000
- In 2010, 34% of the population was of Hispanic ethnicity, an increase from 24% in 2000
- Residents aged 60 years and over constituted 17% of the population, higher than Tarrant County
- 2010 average median household income was $43,013, $10,000 lower than the county average
- 29% of households had incomes less than $25,000 compared to 20% in Tarrant County
- In 2010, 19% of the total population fell below the poverty level compared to 13% in Tarrant County
- NCTCOG's Demographic forecasts project growth of over 14,000 households between 2012 and 2035

**Study Area Household Structure**
- In 2010, 40% of households consisted of married couples compared to approximately 50% in the Secondary Market Area and the County
- In 2010, 40% of households were considered non-family, compared to approximately 30% in the Secondary Market Area and the County
- In 2010, of the non-family households, 20% were headed by Male householders and 21% by Female householders compared to the Secondary Market Area and the County at 15% Male householders and 16% Female householders
- In 2010, 32% of households consisted of one or more people under 18 years old while 68% of households had no people under 18 years old, compared to Secondary Market Area and the County both at 40% and 60% respectively

**Study Area Homeownership Trends**
- Homeownership rates among Hispanics was lower than the study area average
- Homeownership rates for Hispanics was 26% compared to 46% for the overall population in the study area

**Study Area Housing Availability, Type, Age, and Value**
- In 2010, 55,037 housing units existed in the study area
- About 60% of the housing is single-family and 28% multifamily housing
- Of the total housing units, 46% were owner-occupied, 43% were renter-occupied, 11% were vacant
- 43% of housing units were greater than 50 years old, compared to 26% in the Secondary Market Area and 17% in the county
- Over 40% of apartment complexes were built prior to 1970 and have high vacancy rates
- 22% of single-family housing was renter-occupied which is consistent with the Secondary Market Area
- With the exception of Benbrook and White Settlement other cities in the study area issued very few building permits
- 27% of owner-occupied housing was valued between $100,000 - $199,999 compared to 42% in the Secondary Market Area and 47% in Tarrant County
- 2% of owner-occupied housing was valued at $1,000,000 or more compared to less than 1% in the Secondary Market Area and Tarrant County

### 3.6.2 | Regional Housing Challenges and Opportunities

Based on public input and the housing market analysis, several housing challenges and opportunities were established. The challenges include the following:

- Need for affordable and quality housing options near major employers
- Substandard aging single-family and multifamily family housing stock
- Land use compatibility due to proximity to NAS Fort Worth, JRB and light industrial uses
- Need for additional storm water infrastructure
- Need for additional housing options for seniors
- Impact of school district performance and perception on location decisions by potential residents

The following section outlines two major themes of housing challenges and needs in the study area in greater detail: 1) Real Estate Challenges and, 2) Housing Choice Challenges.

**Real Estate Challenges**

- A lack of vacant land for new development is a major constraint in most of the study area communities
- The study area has a variety of land use compatibility issues which include: 1) Commercial land uses being adjacent to and encroaching into neighborhoods; 2) presence of residential development on highways without adequate buffers; 3) isolation of smaller neighborhood areas; and, 4) vacant residential structures along highways or major arterials.
- Another type of land use compatibility includes consideration for the Air Installation Compatible Use Zones (AICUZ), including noise and safety contours, associated with NAS Fort Worth, JRB. Land use compatibility in AICUZ noise contours and safety zones was documented in the 2008 Joint Land Use Study, discussed further in the Land Use section.
- Forty-three percent of all housing units in the study area are over 50 years old, compared to 15% county-wide.
- Open house participants and interviewees stated that the attractiveness of some multifamily housing developments in the area is a challenge. The age, aesthetics, design, maintenance, and rents were all factors provided by stakeholders to account for degraded multifamily housing in the area and for a high lack of acceptance of new multifamily housing.

**Housing Choice Challenges**

- The housing options in the study area communities primarily consist of single-family detached and multi-family units
- Various interviewees pointed out the need to attract younger populations in their communities to provide a workforce for service employment, including emphasizing mixed use housing as an attractive option to this age cohort
- Residents aged 60 years and over constituted over 17% of the total population in the study area. The area's housing stock will need to change to meet their demands or lose them to other areas that have adequate housing options and amenities for seniors.
- The Naval Air Station Fort Worth, Joint Reserve Base (NAS Fort Worth, JRB) has limited on-base housing options. A 2010 Housing Study conducted by NAS Fort Worth, JRB projected a housing deficit of 172 units by 2014. Because of this projected deficit, in 2011, the base initiated implementation of a Rental Partnership Program (RPP). While the RPP has alleviated a substantial portion of the military housing shortage, it is still important to consider and assess the need for quality, affordable housing options and amenities closer to the base due to a variety of reasons such as military readiness and reduction of commute times for the existing employees.
- Another issue discussed in the interviews was the perceived lack of high-valued housing and the need for new high-end housing development to attract Executives and officers from the Base and Lockheed Martin, the two largest employers in the study area.
- Various interviewees mentioned the rapid growth of Hispanic populations in their communities and the need to educate minority groups on the housing options and Fair Housing rights.

Despite the area's housing challenges, PLMC communities enjoy several advantages that can serve as the foundation for new housing opportunities. The strategies in **Section 3.6.4** build on these strengths to address the area's most pressing housing needs:

- Strategic location just west of downtown Fort Worth within Interstate Loop 820 and conveniently near two major employers, Lockheed Martin and NAS Fort Worth, JRB
- NCTCOG's demographic projections forecast growth in the study area meaning additional housing needs will be necessary to accommodate future growth
- New planning initiatives and development projects and additional mixed use opportunities
- Stable, sustainable neighborhoods
- Affordability
- Opportunity to improve perception of local schools

### 3.6.3 | Regional Housing Guiding Themes

The housing strategies identified in the next section emphasize the following themes:

1. Enhancing intergovernmental collaboration
2. Emphasizing and incentivizing infill redevelopment along State Highways 183 and 199 corridors
3. Construction, repair, and replacement of infrastructure and amenities to improve attractiveness of the area to new development
4. Collaborative partnering between local governments and other stakeholders to develop innovative funding mechanisms to implement catalyst and economic development projects

### 3.6.4 | Regional Housing Strategies & Policies

**Appendix H** contains a more detailed discussion of proposed approaches to expand, enhance and revitalize housing options in the PLMC communities. Major recommended actions for housing include:

**Intergovernmental Coordination and Leveraging Efforts**

A number of regional planning and implementation efforts for real estate development and infrastructure construction are underway that will have an impact on the study area. Some of those projects include IH 35W expansion in North Fort Worth; the Chisholm Trail Parkway between Fort Worth and Cleburne; the City of Fort Worth Lake Worth Vision Plan, Trinity Uptown Project, and Walsh Ranch Development. Local governments in the study area should work in collaboration to strategically gain benefits from these regional projects.

A consortium of agencies could be developed to implement the regional strategies outlined in the study. Technical assistance and experiences can be shared among local governments to improve development activity and economic vitality of the region. The City of Fort Worth's experiences with establishing Tax Increment Finance Districts and planning for and revitalizing Urban Villages can be shared with other communities in the area. An example of such intergovernmental collaboration in the area is a consortium of cities for the Tarrant County Consolidated Planning process. The Cities of Benbrook, Lake Worth, River Oaks, Sansom Park, Westworth Village, and White Settlement are currently part of this consortium.

**Public-Private Partnerships**

Tarrant County, as the lead agency for the US Department of Housing and Urban Development's (HUD) Consolidated Planning process, administers the Community Development Block Grant (CDBG), Home Investment Partnership (HOME), and Emergency Solutions Grant (ESG). Through these grant programs, the county administers funds to both local governments and non-profit organizations in the implementation of housing development, infrastructure construction, housing education, and outreach activities. The funded projects include but are not limited to: housing development, redevelopment, housing repair, homebuyer education, fair housing education, and, infrastructure improvements that meet HUD Program guidelines. Local governments in the study area should work with non-profit organizations to identify project opportunities and collaborate with Tarrant County to seek funding for redevelopment projects.

Various active non-profit organizations provide housing and community development services throughout the study area. Trinity Habitat for Humanity is an example of a non-profit housing organization that partners with various local governments in the area to redevelop housing. Other examples of such organizations include the Tarrant County Housing Partnership, Neighborhood Housing Services of Fort Worth and Tarrant County, Accessible Homes, Neighborhood Housing Services of North Texas, and the United Way.

A summary of housing challenges, recommendations, immediate action steps, and timelines, and funding sources is provided in **Table 3.10**. The timeline of Short-Term, Mid-Term, and Long-Term refer to 0-5 years, 5-10 years, and 10 years or more, respectively. The table also provides a range of cost estimates rated as Low, Medium, or High for each recommendation. Examples of financing tools and programs to implement the recommended strategies are available in **Appendix H**.

Table 3.10 – Recommended Housing Actions

| Project/Initiative | Time | Cost | Responsible Entity | Participants |
|---|---|---|---|---|
| **Policy: Increase land availibility for new development** | | | | |
| **Infill development on vacant lots or redevelopment**<br>• Cities can partner with area non-profit agencies or developers to develop housing.<br>• Research requirements/seek housing funding sources from Tarrant County and HUD | Long-Term | High | Cities | Tarrant County and developers |
| **Generate developer interest**<br>• Create development incentives<br>• Prepare list of available infill sites<br>• Event to showcase City incentives and developments/ marketing | Mid-Term | Medium | Cities | Developers |
| **Land acquisition and land assembly**<br>• Prepare list of available infill sites<br>• Purchase land and work with developers | Mid-Term | High | Cities | Developers |
| **Infill development for Base housing or other major employers**<br>• Register developments in Rental Partnership Program or market to major employers | Long-Term | Low | Cities | Developers and Base |
| **Intergovernmental Coordination**<br>• Explore options to create a consortium of governments | Short-Term | Low | Tarrant County | Cities |
| **Policy: Enhance land use compatibility by land use type** | | | | |
| **Set standards for adequate buffering and screening**<br>• Collect examples of comparable community ordinances and best practices<br>• Evaluate city standards for buffering between incompatible land uses<br>• Amend zoning ordinance | Short-Term | Low | Cities | None |
| **Conduct specific area studies**<br>• Identify neighborhoods in need of a study<br>• Conduct specific area studies to alleviate land use incompatibility | Mid-Term | Medium | Cities | Neighborhood organizations |
| **Establish future land uses in long-term vision plan**<br>• Update Future Land Use Map | Mid-Term | Low | Cities | None |
| **Make zoning changes to match long-term vision**<br>• Update Zoning Ordinance | Mid-Term | Low | Cities | None |
| **Policy: Maintain, enhance, or improve land use compatibility by proximity** | | | | |
| **Encourage land use compatibility**<br>• Utilize RCC's Development Review Tool<br>• Follow DOD, AICUZ, and JLUS guidelines related to housing location and sound mitigation measures | Short-Term | Low | Cities | None |
| **Establish future land uses in long-term vision plan**<br>• Update Future Land Use Map | Mid-Term | Low | Cities | None |
| **Make zoning changes to match long-term vision**<br>• Update Zoning Ordinance | Mid-Term | Low | Cities | None |
| **Make building improvements for noise attenuation**<br>• Identify noise attenuation measures<br>• Incorporate in building codes<br>• Code enforcement | Long-Term | Medium | Cities | Building owners and developers |

Table 3.10 – Recommended Housing Actions (continued)

| Project/Initiative | Time | Cost | Responsible Entity | Participants |
|---|---|---|---|---|
| **Policy: Enhance single-family housing conditions** | | | | |
| **Create Neighborhood Plans**<br>• Identify areas with housing in need of repairs<br>• Work with community organizations to create neighborhood plans | Mid-Term | Medium | Cities | Neighborhood organizations |
| **Housing rehabilitation**<br>• Research requirements/seek housing funding sources from Tarrant County and HUD<br>• Proactive code enforcement<br>• Provide financial assistance to homeowners for repairs<br>• Fund non-profit agencies for housing rehabilitation | Long-Term | High | Cities | Tarrant County and developers |
| **Create neighborhood identity**<br>• Create plans for consistent signage and landscape improvements<br>• Provide technical assistance to neighborhoods to make improvements | Mid-Term | High | Cities | Developers and neighborhood organizations |
| **Create rental registration program**<br>• Create inventory of rental housing<br>• Document housing conditions<br>• Proactive code enforcement | Short-Term | Low | Cities | None |
| **Policy: Enhance multi-family housing conditions** | | | | |
| **Enhance multifamily site development requirements**<br>• Identify improvements to multifamily site development requirements<br>• Update development regulations | Mid-Term | Low | Cities | Tarrant County Apartment Association |
| **Proactive code enforcement**<br>• Evaluate housing conditions | Short-Term | Low | Cities | None |
| **Infrastructure improvements to attract development**<br>• Identify infrastructure improvement needs<br>• Seek CDBG or other funding sources to create amenities to attract development | Short-Term | Low | Cities | None |
| **Policy: Expand housing options for young families** | | | | |
| **Develop downtown mixed use housing**<br>• Identify sites for mixed use housing<br>• Zoning updates to remove barriers for mixed use development<br>• Incentivize mixed use development | Long-Term | High | Cities | Developers |
| **Policy: Expand supply of mid and high-value housing** | | | | |
| **Land assembly**<br>• Identify land appropriate for mid-range and high-value housing development | Mid-Term | High | Cities | Developers |
| **Improve development climate**<br>• Identify impediments for the creation of mid-range and high-value housing | Short-Term | Low | Cities | None |
| **Construct amenities**<br>• Identify infrastructure improvements | Long-Term | High | Cities | None |
| **Create employer incentives**<br>• Work with the Base, Lockheed Martin, and other major employers on employee incentives | Mid-Term | Medium | Cities | Major employers |

**Table 3.10** – Recommended Housing Actions (continued)

| Project/Initiative | Time | Cost | Responsible Entity | Participants |
|---|---|---|---|---|
| **Policy: Improve and expand housing options for aging populations** | | | | |
| **Promote universal design through incentives**<br>• Review local plans and zoning requirements<br>• Explore options to create incentive programs for the development of housing options for aging populations | Mid-Term | Low | Cities | Housing developers for seniors |
| **Provide information for accessibility improvements**<br>• Collect information on area agencies related to aging and accessibility improvements<br>• Develop a clearinghouse | Short-Term | Low | Cities | Housing agencies related to aging |
| **Update ordinances to make them suitable for senior housing**<br>• Review local plans and zoning requirements to remove barriers to housing for senior population | Mid-Term | Medium | Cities | None |
| **Policy: Enhance fair housing education for disadvantaged populations** | | | | |
| **Promote fair housing outreach**<br>• Coordinate with Tarrant County and non-profit fair housing education providers<br>• Create publications - Newsletter articles and posters | Short-Term | Low | Cities | Tarrant County and non-profit housing education providers |
| **Training programs may be conducted at schools and through various community organizations**<br>• Identify schools with higher minority populations<br>• Conduct credit classes, finance management, and fair housing education for minorities | Mid-Term | Medium | Cities | Tarrant County and non-profit housing education providers |

## Section 3.7 | Land Use

This section provides a summary of key findings from the 2008 JLUS and Ordinance Compatibility Review (See **Appendix I** for the full Ordinance Review report), opportunities and challenges, guiding themes, and regional land use strategies. The individual Comprehensive Plan Visions feature more detailed goals, policies, and actions that build on and complement these regional strategies.

### 3.7.1 | Land Use Compatibility with NAS Fort Worth, JRB

Land use compatibility with NAS Fort Worth, JRB is the most significant regional land use issue in the PLMC study area. The 2008 JLUS conducted an analysis of compatibility between the base and surrounding communities. In this context, compatibility challenges can arise when certain types of nearby community development interfere with the ability of the military to perform its mission safely or effectively; conversely military training can generate impacts, such as noise or the risk of an aircraft accident that affect quality of life and safety in the surrounding areas. As summarized below various portions of the PLMC communities experience military related noise and air safety impacts (See **Figure 3.11**).

Acreage falling within noise contours

- 65-dB DNL Contour: 15,048 acres
- 70-dB DNL Contour: 6,698 acres
- 75-dB DNL Contour: 3,083 acres
- 80-dB DNL Contour: 1,484 acres
- 85-dB DNL Contour: 774 acres
- Total Acreage 27,087 Acres (*Includes base and bodies of water*)

Accident Potential Zones (APZ) and Clear Zones (CZ)

- Acreage
  - APZ I – 688 acres
  - APZ II – 964 acres
  - CZ – 157 acres

Presently, development within the CZ/APZ areas is regulated by several different zoning districts under the local governments of Fort Worth, Lake Worth, or White Settlement. The northern APZ I and II zones are primarily controlled by the Lake Worth and Fort Worth zoning codes. Lake Worth regulates the use of properties in these areas, including some undeveloped land and two schools. Howry Junior High and Effie Morris Elementary are located within the APZ II zone on the north end of the runway. The remainder of the APZ II is primarily residential and commercial, with some industrial uses.

The JLUS also recommended a series of action steps for consideration by local governments, listed below. The JLUS partners have implemented a number of study recommendations to date, including forming the Regional Coordination Committee, incorporating local zoning changes, and establishing a development review process. The JLUS recommendations include the following:

- Investigate use of a comprehensive regulatory body structured similar to the Meacham Zoning Board to modify land use plans and existing comprehensive plans through the use of zoning ordinances, building codes, capital improvement plans, and subdivision requirements to ensure compatibility with NAS Fort Worth, JRB and its operations.
- Work with local realtors and builders to follow state law regarding disclosure of noise levels and safety issues, if any, prior to the sale of buildings in the area and development and/or incompatible structures.
- Adopt noise attenuation requirements and recommendations in the 65 dB DNL noise contour or higher around NAS Fort Worth, JRB in conjunction with the cities and the county and urge full cooperation and coordination among all cities, the county and the base related to new development around the base.
- Produce and distribute (through websites) maps showing the CZ, the Accident Potential Zones and the noise contours surrounding the base for distribution to the public.
- Establish an on-going committee for the cooperation between the cities, the county, and the base. Coordinate with the various municipalities, school districts, and the public surrounding the base on an on-going basis to keep the public informed of base operations.
- Encourage NAS Fort Worth, JRB to appoint a full-time Community Planning Liaison Officer that can work with the municipalities around the base to discuss and inform each other of compatible development issues related to new and future development.
- Develop a sound mitigation program for the cities and structures affected by the 65 dB DNL or higher noise contour which will allow homeowners to sound insulate their house on a voluntary basis and at that time designate these homes as sound attenuated, certified by the respective city building inspection department.
- Set up a program for homebuilders in the area to comply with building codes, sound attenuation on new construction and to certify new construction as being "certified sound attenuated." This will encourage the builders to use the materials to sound attenuate. It will also make the houses more marketable in the area and will inform the public at the same time that there are noise and aircraft issues on the property.
- Pursue voluntary acquisition of incompatible structures in the CZ. Possible secondary acquisition in the APZ I or purchase of avigation easement and sound attenuation.
- Pursue funding for DOD Conservation Land purchase in the AICUZ footprint surrounding NAS Fort Worth, JRB.
- Review and adopt new regulations regarding the installation and use of outdoor lighting within a five-mile radius of NAS Fort Worth, JRB.
- Marker buoys should be placed in Lake Worth to demarcate the CZ area, in addition to the existing buoys marking the Explosive Safety Quantity Distance (ESQD).
- A resolution was adopted on September 24, 2007 in support of the overall goals of the JLUS
- Individual communities have adopted resolutions supporting specific goals as a result of the study.

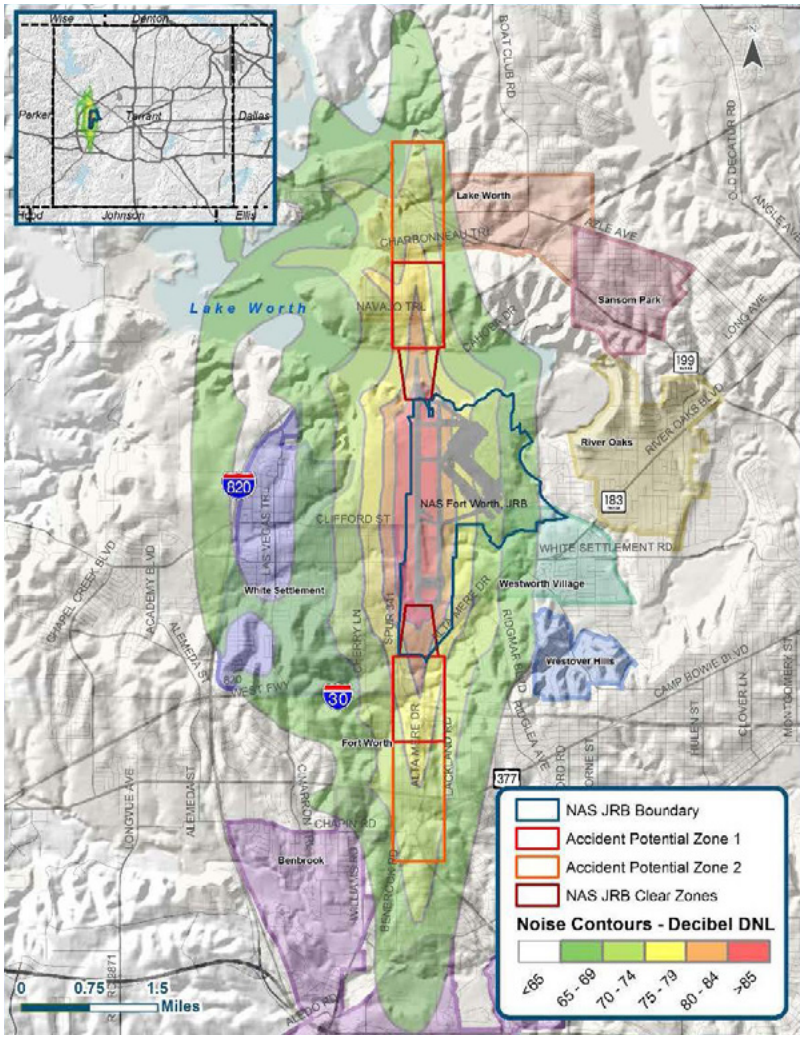



**Figure 3.11** – NAS Fort Worth, JRB Noise Contours and Accident Potential Zones

## 3.7.2 | Ordinance Review

### Background

The NAS Fort Worth, JRB is in an urban area and while many residences were built prior to the installation forming, development near the base continues. Residences in close proximity to military air installations may experience adverse effects to noise exposure, such as interrupted daily activities like sleeping, watching television, and talking on the phone. In order to mitigate these effects, there are certain construction techniques that insulate building interiors from noise associated with military flight. Many techniques to mitigate noise overlap with measures that increase the energy efficiency of a building, which can reduce electricity costs and increase the value of one's home. The purpose of this ordinance review is to compile measures from existing codes that increase sound attenuation and energy efficiency that the local governments surrounding NAS Fort Worth, JRB can adopt to amend and or/update their existing residential codes.

### Building Codes

Every three years the International Code Council releases building standards for commercial buildings and residences, as well as codes for energy efficiency, plumbing, and many other standards. The International Residential Code (IRC) establishes minimum regulations for one and two-family dwellings, as well as townhouses. The International Energy Conservation Code (IECC) establishes minimum regulations for energy efficient performance-related provisions for residential buildings three stories or less in height. The most recent code versions for both the IRC and the IECC are from 2012.

Many of the PLMC study area local governments have outdated versions of both the residential and energy conservation codes. Formally updating and following these codes would be the first step to enhance noise mitigation and increase energy efficiency in new residences. Although the focus of this review is on new residential uses, there are resources for mitigating noise in existing residences as well.

Within the study area, the cities of Benbrook and Fort Worth have existing ordinances to mitigate aircraft noise. These ordinances are summarized in **Table 3.11** and the full ordinance text is included in **Appendix I**.

**Table 3.11** – Existing Local Ordinances to Mitigate Noise

| City | Ordinance | Adoption Date | Description |
|---|---|---|---|
| **Benbrook** | Ch. 17.78 of Zoning Code | 2008 | Created a NAS Overlay District which places restrictions on structures built in noise contours. Minimum 30 decibel Noise Level Reduction (NLR) for single-family residences and minimum 25 decibel NLR for multi-family dwellings, schools, religious institutions, and cultural uses. |
| **Fort Worth** | 17680 and 17681 | 2007 | Noise mitigation construction techniques by noise contour for residential and certain noise-sensitive non-residential buildings. In the future, an updated ordinance will cover transient lodgings, libraries, religious facilities, auditoriums/amphitheaters, concert halls, offices, and commercial uses. |

### Building Code Review Process

According to the JLUS recommendations, permanent residential uses are incompatible in any area that falls within the 65-69 DNL noise contour or higher. However, if local governments determine that there is a demonstrated community need for residential uses in the 65-69 DNL and 70-74 DNL noise contours, then sound attenuation should be incorporated into the residential development. Additionally, Air Installation Compatible Use Zones (AICUZ) guidelines state that a housing needs evaluation should be conducted and viable alternative development options should be considered before approving residential development in areas of high noise. Generally, 20-35 decibels of noise mitigation techniques are feasible for residences. This building code review process focuses on noise level reduction strategies to meet a target indoor noise level of 45 decibels for areas falling within the 55-64, 65-69, and 70-74 DNL noise contours. The noise mitigation strategies reviewed do not include techniques for the 75+ DNL noise contours because JLUS guidelines discourages residential uses in these zones without exception. The recommended noise level reduction for each noise contour is depicted in **Table 3.12**.

**Table 3.12** – Recommended Noise Level Reduction by Noise Contour

| Noise Contour | JLUS Recommended Residential Compatibility | Recommended Noise Level Reduction (NLR) | Target decibel (dB) level |
|---|---|---|---|
| **55-64 DNL** | **Compatible with appropriate sound attenuation** | 20 dB | 45 dB |
| **65-69 DNL** | **Incompatible, but should have sound attenuation if built** | 25 dB | 45 dB |
| **70-74 DNL** | **Incompatible, but should have sound attenuation if built** | 30 dB | 45 dB |
| **75+ DNL** | **Incompatible** | 35 dB* | 45 dB |

*Sound attenuation techniques for 35 dB of noise level reduction are not included in the building code review but can be viewed in the *Guidelines for Sound Insulation of Residences Exposed to Aircraft Operations* report.

### Building Elements

The residential code comparison is focused on the following building elements:

- Exterior Walls
- Windows
- Doors
- Roof-Ceiling Assembly
- Floor, Foundation, and Basements
- Ventilation and Wall Penetrations

### Code Comparison

In order to establish recommendations that both mitigate noise and increase energy efficiency, existing standards were compared. The ordinances and codes described below are already in effect. A description of relevant terms is included in **Appendix I**.

*Navy Model Ordinance*: In 2005, the Department of the Navy published guidelines for incorporating sound insulation techniques for new and existing residences located near military air installations. These guidelines include a model building code that incorporates noise level reduction design requirements. Many of the sound insulation construction techniques also improve energy efficiency.[1]

*Fort Worth Ordinance 17681*: In 2007, the city of Fort Worth adopted an ordinance amending the then current residential building code. The standards outlined in the ordinance are mandatory for new residential construction in areas of the city that fall within the 65-69 DNL noise contour or higher. Many of the design standards overlap with the recommendations provided in the Navy Model Ordinance.

*International Energy Conservation Code*: The International Code Council produces building standards to increase energy efficiency. The standards outlined in the IECC meet the requirements of the International Residential Code and the International Building Code (IBC). As of this report publication, the State Energy Conservation Office (SECO) has not adopted the 2012 IECC, so Texas local governments are required to adopt the 2009 IECC.

*NCTCOG Regional Amendments*: The Regional Codes Coordinating Committee of the North Central Texas Council of Governments (NCTCOG) develops regional amendments to the International Code Council's code versions in an effort to simplify the construction process, reduce training costs, and enhance the safety of building systems in the region. This ordinance review focuses on the NCTCOG regional amendments for the 2012 IRC and IECC. The 2012 regional amendments were officially adopted in April 2012.

Selected building element techniques from the code comparison are summarized in **Table 3.13**. These measures represent only the most basic requirements that would increase sound attenuation.

[1] The full *Guidelines for Sound Insulation of Residences Exposed to Aircraft Operations* report can be located here: http://www.nctcog.org/trans/aviation/jlus/Sound%20Insulation%20Report.pdf.

Table 3.13 – Priority Building Element Measures to Increase Sound Attenuation

| Building Element | 20 decibel NLR | 25 decibel NLR | 30 decibel NLR |
|---|---|---|---|
| **Exterior Walls** | Interior walls should be at least 1/2″ thick.<br>Insulation batts should be totally secured by an enclosure on all sides. | Interior walls should be at least 5/8″ thick. | |
| **Windows** | All openable windows in exterior walls should be at least STC *30 dB. | All openable windows in exterior walls should be at least STC 35 dB. | All openable windows in exterior walls should be at least STC 40 dB. |
| **Doors** | Exterior, sliding glass, or doors to the garage should have a rating of at least STC 30 dB. | Exterior and sliding glass doors should have a rating of at least STC 35 dB, while access doors to the garage should have a rating of at least STC 30 dB. | Exterior and sliding glass doors should have a rating of at least STC 40 dB, while access doors to the garage should have a rating of at least STC 30 dB. |
| **Roof-Ceiling Assembly** | Ceilings should be finished with gypsum board at least 5/8″ thick.<br>Attic insulation should be batt or blown-in glass fiber or mineral wool with a minimum R-30 rating applied between the ceiling joints. | | |
| **Floors and Foundations** | Air barrier should be installed at any exposed edge of the insulation. | | |
| **Ventilation and Wall and Roof Penetrations** | Window and/or through-the-wall ventilation or AC units should not be used. | | |

*STC = Sound Transmission Class rating

### Stakeholder Feedback

In order to determine the feasibility of the residential building code review process, a discussion was held with local government building code officials and city managers. During this discussion, the stakeholders discussed the feasibility of requiring additional noise mitigation measures in areas of high noise like the cities of Fort Worth and Benbrook have done. The general consensus among the local governments is that a more feasible option would be to adopt the 2012 IRC and 2012 IECC at a minimum. In addition to the more recent code versions, local governments could adopt additional measures to attenuate sound that are not outlined in the 2012 IRC and IECC or the NCTCOG Regional Amendments. At a minimum, the cities could compare their current building standards to the priority building elements to increase sound attenuation outlined in **Table 3.13**.

### Noise Mitigation Best Practices

There are several local, regional, and state examples of addressing sound attenuation at the city level, including the Cities of Benbrook, Fort Worth and San Antonio. The local governments in these examples have adopted ordinances to amend their existing building codes or to create a new zoning district. These actions may become political in nature and should be considered before local governments commit to making similar changes. The ordinance language of the three examples is included in **Appendix I** for reference.

### Energy Efficiency Resources

In addition to the building codes reviewed for sound insulation, the 2012 International Energy Conservation Code was also included in the code comparison. The major similarities between the measures to mitigate noise and the IECC are listed below. These measures can simultaneously increase sound attenuation and increase energy efficiency.

- Wall insulation should be installed continuously throughout the stud space
- HVAC components should not penetrate building thermal envelope
- Insulation should be included in crawlspace walls

### Sound Attenuation Recommendations

Implementing sound attenuation measures requires coordination between elected officials, city staff, local government building officials, and the development community. The cities of Benbrook and Fort Worth have already adopted sound attenuation measures that could serve as examples for other cities located within the noise contours of the base, including the cities of Lake Worth, Westworth Village, and White Settlement. **Table 3.14** includes recommendations that all of the study area local governments can participate in, as well as recommendations specific to the cities that fall within the noise and safety contours of the base. The recommendations are listed in order from anticipated timeframe for implementation and then by expected general cost.

Table 3.14 – Recommendations for Increased Residential Sound Attenuation and Energy Efficiency

| Recommended Actions: Energy Efficiency/Noise Mitigation Ordinance Review | | | | |
|---|---|---|---|---|
| **Project/Initiative** | **Time** | **Cost** | **Responsible Entity** | **Participants** |
| **Policy: Promote future compatible development to avoid high noise impacts** | | | | |
| Continue entering proposed development projects onto the RCC Development Review Tool for city staff to review and consider land use compatibility for proposed development projects. | Short Term | Low | Cities | RCC Members |
| Coordinate with the Community Plans and Liaison Officer at NAS Fort Worth, JRB on new development projects that are within the noise contours. | Short Term | Low | Developers | Cities; NAS Fort Worth, JRB |
| Work with the real estate community to disclose aircraft noise to potential commercial/ residential buyers. | Long Term | Medium | Real Estate Agents; Texas Legislators | Cities |
| **Policy: Modify local level building codes to increase sound attenuation** | | | | |
| Adopt and follow the 2012 International Residential Code and the 2012 International Energy Efficiency Code, as well as the accompanying NCTCOG Regional Amendments. | Mid Term | Medium | Cities | Local Government Code Officials; Development Community |
| Consider incorporating sound attenuation elements beyond the 2012 residential code from the code comparison matrix for new residential units. | Mid Term | High | Development Community; Local Government Code Officials; Texas Legislators | Cities; NAS Fort Worth, JRB |
| Adopt measures to increase sound attenuation in new construction non-residential buildings. | Mid Term | High | Cities | |
| Determine the feasibility of adopting a noise mitigation overlay for areas that fall within the noise contours of the base. | Mid Term | High | Cities | Development Community |
| Update noise mitigation requirements if and when noise contours are modified. | Long Term | High | Cities | NAS Fort Worth, JRB |
| Consider adopting the Green Construction Code for additional energy efficiency measures in residential development. | Long Term | High | Cities | |
| **Policy: Encourage energy efficient construction and practices** | | | | |
| Provide resources to residential, commercial, and industrial developers and builders on residential energy efficiency. | Mid Term | Low | Cities | Homeowners |
| Apply for weatherization program grants to insulate existing residences from aircraft noise. | Mid Term | Medium | Homeowners | Cities |
| Encourage new commercial development to adopt Leadership in Energy and Environmental Design (LEED) standards. | Long Term | High | Development Community | |
| **Policy: Collaborate with other local governments to share best practices on sound attenuation and energy efficiency** | | | | |
| Create a subcommittee from the Regional Coordination Committee comprised of area building officials to meet periodically on noise mitigation and energy efficiency issues. | Short Term | Low | RCC Members | Local Government Code Officials |

*Generally, Short Term = 0 -2 years; Mid Term = 2-5 years; Long Term = 5+ years
**Costs are relative to other recommendations on the list.

### 3.7.3 | Regional Land Use Challenges and Opportunities

Strategies are designed to address the overall challenges associated with the study area, including:

- Aging, strip commercial development patterns along corridors
- Lack of diversity in housing choices
- Limited vacant land for new development
- Ongoing compatibility challenges around NAS Fort Worth, JRB related to noise and aviation safety

The regional land use strategies are also informed by the unique opportunities of the PLMC communities, including the following:

- Proximity of NAS Fort Worth, JRB
- Prominent corridors and intersections to support mixed use revitalization
- Jobs and commercial amenities near residential neighborhoods, creating a strong framework for jobs-housing balance
- Excellent open space and recreational amenities

### 3.7.4 | Regional Land Use Guiding Themes

Based on the challenges and opportunities identified in the PLMC area, the project team developed the following regional themes to guide development of land use strategies:

1. Complement and strengthen the visual identity and character of existing community cores
2. Promote complete neighborhoods and communities that integrate land uses, amenities, services, and transportation
3. Ensure that neighborhoods are designed with quality housing choices, amenities and services to maintain quality of life for existing residents and attract new residents
4. Ensure the safety and quality of life of city residents and protect the mission of NAS Fort Worth, JRB through the adoption of land use compatibility strategies as identified in the 2008 Joint Land Use Study
5. Promote consistency in land use and design principles along major corridors to support a more unified visual environment

### 3.7.5 | Regional Land Use Strategies & Policies

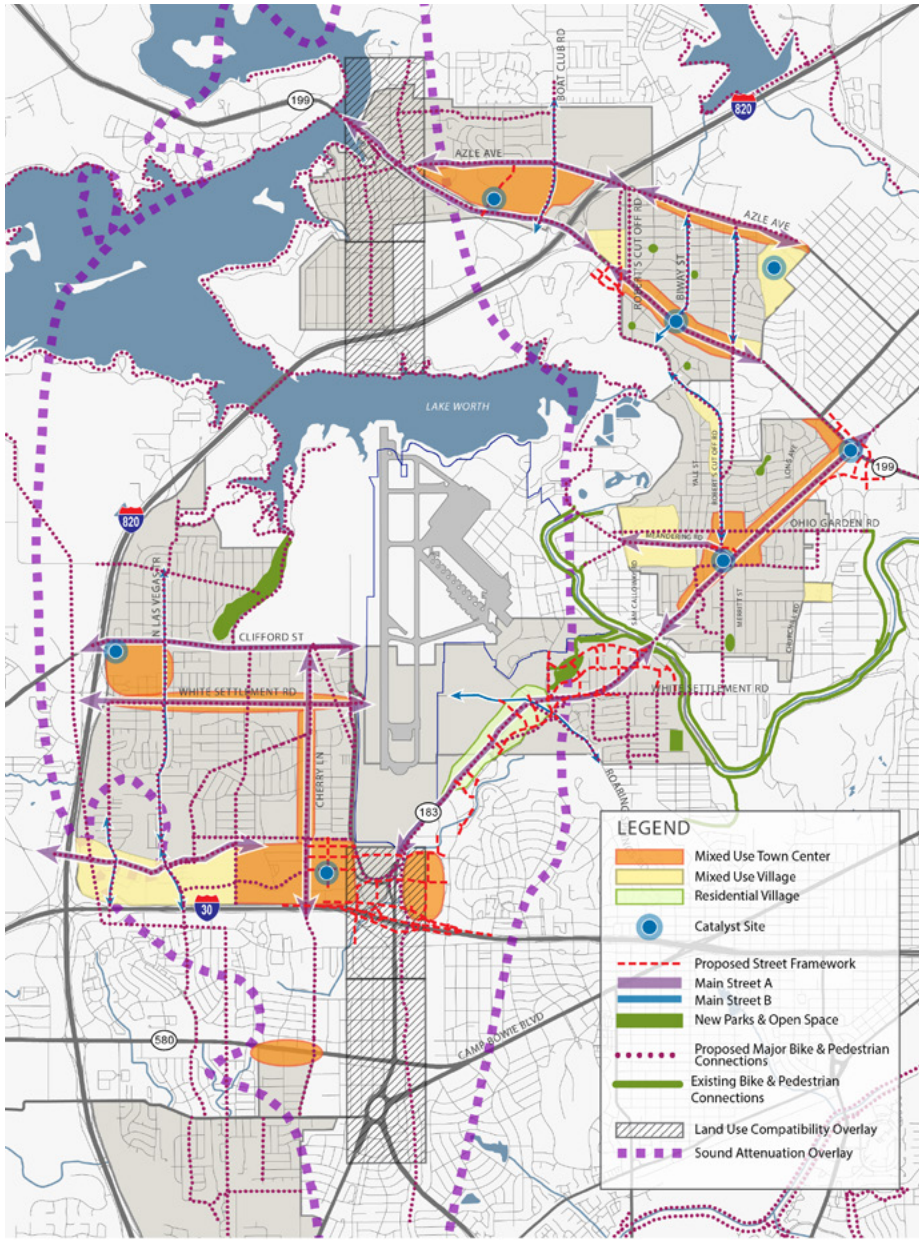
Since land use regulation occurs primarily in a local rather than regional context, the individual city Comprehensive Plan Visions feature more detailed goals, policies and actions related to zoning and site redevelopment. This section, however, emphasizes the following major land use and urban design concepts that can assist in shaping a consistent and high quality visual environment throughout the PLMC communities.

- Focus public realm improvements to reinforce sense of place within city cores, community gateways, and identified village nodes
- Concentrate new institutional and civic uses, such as schools, library branches, recreation centers, and common gathering spaces within the city cores and identified village nodes
- Encourage new development inside town cores, along identified mixed-use corridors, and identified village nodes to incorporate site planning principles and design elements consistent with existing community character and encouraging livable and walkable neighborhood centers
- Improve the visual character of highway corridors
- Encourage large-scale uses in village nodes and mixed-use corridors to incorporate design and site planning principles
- Align land use, zoning, and subdivision regulations to guide quality growth, emphasizing walkable communities with a range of housing options, attractive commercial and mixed-use corridors, and town centers

### 3.7.6 | Regional Vision Framework

**Figure 3.12** shows the Regional Vision Framework for the PLMC communities. The framework articulates an overarching vision to guide development of more detailed zoning at the local level and coordinate transportation and infrastructure policies across the region. The graphic illustrates a series of conceptual areas, each with an overall character based on existing land uses, market potential, current development patterns, growth opportunities, and public input. The framework also shows key physical connections, including bicycle and pedestrian links and refinements to the existing street network, which can frame future development in the cities. The individual city Comprehensive Plan Visions describe the specific land use, redevelopment, and connectivity concepts associated with each city.

**Figure 3.12** – Regional Vision Framework




## Vision Map Character Area Descriptions

### Mixed Use Town Center

- Accommodate mixed-use buildings with regional and neighborhood-serving retail & services
- Pedestrian-oriented, storefront-style shopping streets with shared parking and coordinated ingress/egress, with parking in back unless on-street parking
- Buildings oriented and built to the street
- Provide incentives to develop larger parcels at higher densities and in a coordinated, planned environment

### Mixed Use Village

- Smaller and more compact in scale than Mixed Use Town Center
- Oriented around connected street network and intersections
- Accommodate mixed-use buildings with neighborhood-serving retail, office, service, and other uses
- Build upon the historic development patterns in existing village centers to create attractive and walkable places
- Encourage adaptive reuse of abandoned, vacant or underutilized buildings or parcels
- Maintain a consistently high level of design quality throughout the district
- Outline open space requirements and encourage civic uses

### Residential Village

Predominantly residential, pedestrian-oriented development, including a range of housing styles and small scale neighborhood-serving retail

### Catalyst Sites

Priority areas offering opportunity for economic redevelopment and reinvestment, selected based upon short- and long-term analysis of the regional market and redevelopment potential, existing infrastructure, land use, and growth opportunities Catalyst sites provide opportunities for targeted public and private reinvestment in critical areas throughout the PLMC study area

**Main Street A** - Street design elements and land use and urban design guidelines to promote livability, access/mobility, and safety

*Livability*
- Mix of land uses, buildings oriented and built to the street
- Sidewalks and landscaping/Streetscaping

*Access/mobility*
- On street parking or rear and side parking
- Access points for structured/shared parking as much as possible
- Turn lanes where driveway consolidation/access management lanes have not been implemented

*Safety*
- Clearly marked crosswalks and traffic control markings
- Clearly marked and oriented bike facilities as appropriate

**Main Street B** - Street design elements and land use and urban design guidelines to promote livability, access/mobility, and safety

*Livability*
- Residential and lower density mixed uses
- Ample sidewalks and landscaping/Streetscaping to provide both leisure and utilitarian travel areas

*Access/mobility*
- Driveways can access the street directly if necessary

*Safety*
- Slower travel speeds
- Clearly marked and oriented bike facilities as appropriate

**Land Use Compatibility Overlay** - Local governments could adopt an overlay district to guide or restrict development falling in noise and safety zones of NAS Fort Worth, JRB to increase land use compatibility

- Areas falling within Accident Potential Zones 1 and 2 as determined by the 2004 Air Installation Compatible Use Study. These areas have the greatest potential for accidents near military air installations.
- Areas falling with 65 dB DNL noise contours or greater. These areas are exposed to high noise levels so new development should be limited or incorporate sound mitigation strategies.
- Land use policies and redevelopment activities should promote uses such as light industrial, small-scale commercial and open space that are compatible with military operations at NAS Fort Worth, JRB
- Consider implementing additional compatibility measures, such as sound attenuation guidelines for existing and future residential uses

**Town Center and Mixed Use Concepts**

The primary emphasis of the Vision Framework is on the transformation of aging, strip commercial development patterns into mixed use settings that combine housing, retail, and work space with an attractive public realm. **Figure 3.13** illustrates the town center concept characterized by compact development and adjoining green spaces organized around an interconnected street grid. Buildings are brought to the streets, parking is placed behind buildings to minimize its visual impact and the streets are connected for easy pedestrian access. The design and planning concepts illustrated in **Figure 3.14** translate into an appealing human-scale environment that invites pedestrian activity and creates a vibrant street level experience.

**Figure 3.13** – Town Center Concept

**Figure 3.14** – Mixed Use Street Concept

**Interstate 30 & State Highway 183 & Ridgmar Mall Concept**

As described in **Section 3.5**, the project team developed conceptual building programs to illustrate the possible economic redevelopment opportunities at six different sites in the PLMC area. One of the six sites is the proposed redevelopment of the existing Ridgmar Mall area.

The Ridgmar Mall redevelopment concept proposes an incremental redevelopment program that allows the mall to evolve into an updated, open air, town center style shopping center, while preserving the mall's existing major tenants. The redevelopment concept reorganizes retail around a central civic space. This open space has the flexibility to host a variety of outdoor events and community activities.

The concept emphasizes the development of a landscaped, pedestrian-friendly street grid that connects the site to the community's broader street network, while providing safer access and movement for pedestrians. The concept also establishes a new north-south 'Main Street' for commercial and retail activity and envisions buildings oriented to the street, with streetscapes, including pedestrian scaled amenities and furnishings. The Ridgmar Mall concept creates a flexible framework that can expand to accommodate continued redevelopment.

The land use configuration as shown in **Figure 3.10** is designed to meet the land compatibility guidelines associated with NAS Fort Worth, JRB operations and the City of Fort Worth Airport Overlay Zone by shifting existing development away from the Accident Potential Zone and establishing building footprints in areas of lower safety risk. The concept is also a retail-only program, thereby eliminating compatibility issues associated with denser residential in high noise areas. **Figure 3.15** illustrates the main street concept around which new retail buildings would be organized.


An updated town center concept could feature gathering spaces and active pedestrian friendly streets.

**Figure 3.15** – Retail Main Street Section

## Section 3.8 | Transportation

### 3.8.1 | Regional Transportation Study Background

Mobility has a significant impact on quality of life. It allows people to live where they want; to access jobs, education, and healthcare; and provides a means to cultural and recreational activities. In addition to quality of life impacts, mobility also influences economic vitality and appeal. The ability to move goods easily from producers to consumers is a major factor in growing a local economy. The mobility needs of residents and businesses vary across the study area and what works for one area or group may not for another. It is important to create a transportation system that not only satisfies mobility needs, but also provides transportation choices. The Transportation section seeks to examine mobility conditions in the study area and to offer strategies for future improvements.

Within the study area, like much of the larger Dallas-Fort Worth region, the roadway system provides the primary means of travel. Because the roadway system overwhelmingly serves large portions of the population and is vital to the movement of goods, it is important that this network be well developed and adequately maintained.

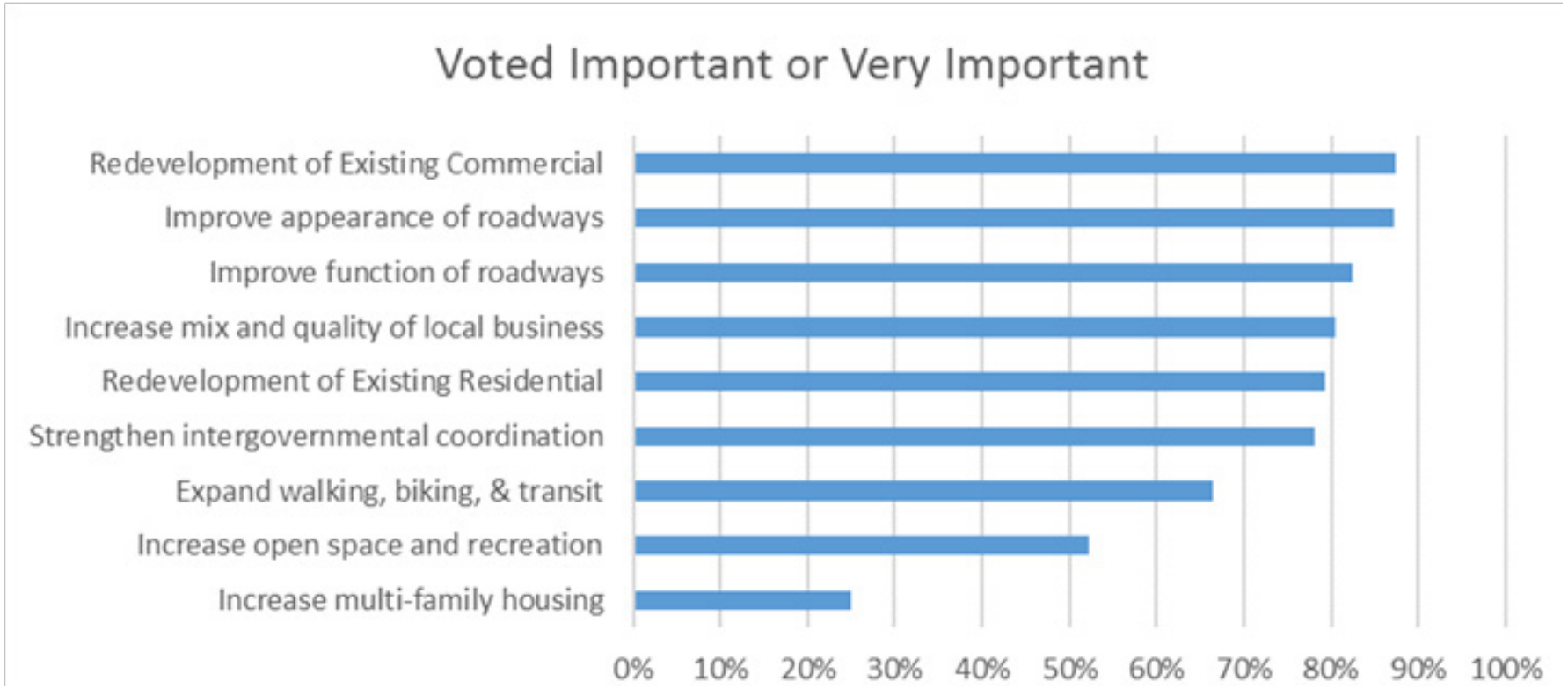
In general, there are multiple transportation needs in the study area that range from improved maintenance, design, safety, and reduction of congestion. With forecasted population growth for the communities in the study area, these transportation needs will only become more important to the overall interests of the communities, the base, and are critical to providing a high quality of life for all residents now and in the future.

**Public Input and Planning Process**

During development of the 2012 Regional Coordination Committee Transportation Assessment, several surveys were conducted to solicit input on the current transportation needs in the study area communities. These surveys, in addition to individual local government input, served as the foundation for establishing the broad transportation needs in the study area. An on-base transportation survey was conducted to solicit input from base personnel on their needs associated with travel to and from the base and on base. The results of these two surveys provided a broad overview of the transportation needs in the study area from the perspective of local government staff and on-base personnel.

Throughout development of the PLMC Regional Comprehensive Plan, many public meetings were held to solicit input and feedback on the state of transportation in the area and the desired transportation vision and needs in the communities. While the outcomes of the PLMC planning process were focused on providing improved transportation choices such as bicycle and pedestrian and public transportation, the comments and survey results received through the public involvement process further substantiated those documented in the Regional Coordination Committee Transportation Assessment. As indicated in **Figure 3.16**, transportation infrastructure and options should be priorities in the communities around NAS Fort Worth, JRB.

**Figure 3.16** – 2012 Planning Livable Military Communities Regional Survey Results



Several key transportation elements associated with this planning study focus on multi-modal, non-roadway elements such as public transportation and bicycle and pedestrian elements. The following Transportation Options are expanded upon in the following section:

- Roadway Infrastructure
- Regional Bicycle and Pedestrian Facilities
- Localized Pedestrian Access and Safety Considerations
- Public Transportation

See **Appendices J-M** for the full Transportation Options studies and reports.

### 3.8.2 | Regional Transportation Challenges and Opportunities

The transportation strategies indentified in this section are intended to address the key transportation challenges in the PLMC study area:

- Automobile dominated transportation system
- Increasing traffic congestion
- Influx of daily commuters to major employment centers within the study area
- Aging road infrastructure

Transportation recommendations also build on the strengths of the PLMC communities, including:

- Opportunities to fill-in roadway network with parallel and alternative routes
- Key corridors with ample right of way for streetscaping and transportation enhancements
- Opportunities for the development of multi-modal transportation options
- Opportunities to provide bicycle and pedestrian linkages between employment centers, activity centers, parks, and neighborhoods

### 3.8.3 | Regional Transportation Guiding Themes

The project team developed the following themes based on community and stakeholder input, review of existing plans and studies and technical analysis of existing and future transportation challenges and opportunities. These themes inform the specific recommendations identified in the following sections on roadway infrastructure, corridors, bicycle and pedestrian facilities and public transportation.

1. Coordinate transportation investments and land use decision-making to ensure sustainable and livable development patterns
2. Foster local identity and sense of place through strategic investments in transportation infrastructure and quality roadway design
3. Increase transportation choice with the development of transportation options, including bicycle and pedestrian facilities and future transit options
4. Balance capacity and traffic-flow demands with roadway network improvements that foster safe, walkable communities
5. Leverage future private investment and redevelopment to meet transportation improvement goals
6. Pursue opportunities for coordination among PLMC communities to achieve shared transportation goals

### 3.8.4 | Roadway Infrastructure

**Appendix J** contains the full analysis on roadway infrastructure. The study area is served by a variety of roadways ranging from facilities that are part of the National Highway System to neighborhood streets. This hierarchy of roadway facilities accommodates necessary travel for people and goods within the study area.

Large portions of travel in the study area are accommodated by a few major facilities. An underlying and important basis of understanding existing and future transportation needs is the availability and use of data and models. In the Dallas-Fort Worth Metropolitan Area, the transportation planning process is facilitated by data generated from the regional travel demand model. This model data allows for a better understanding of the impacts that such things as population changes or new roadway facilities may have on travel in a given area.

**Sub-Regional/Study Area Travel Patterns**

In order to provide a constructive response to this congestion, it is important to understand more about the general movements of traffic in the study area. Within the study area, the major travel corridors include State Highway 199, State Highway 183, and IH 820. IH 820 and State Highway 183 provide an outer and inner loop respectively around central Fort Worth, while State Highway 199 provides a connection from downtown Fort Worth to communities in northwest Tarrant County and beyond. While only IH 820 is a limited-access freeway, the other two roads are still major traffic arteries, featuring four or more travel lanes, dual carriageways, and limited traffic lights. Some portions of State Highway 183 include frontage roads. Both State Highway 183 and State Highway 199 experience congestion during normal operation.

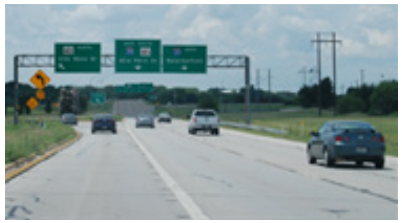
Analysis indicates that roughly 75% of the vehicle trips using State Highway 199 between Roberts Cut-Off Road and Northside Drive are passing through, rather than stopping or turning onto a different road. This statistic highlights State Highway 199's importance as a regional arterial, carrying traffic from Lake Worth and beyond into central Fort Worth. In contrast, only 21% of trips using State Highway 183 between Green Oaks Boulevard and Long Avenue travel the entire length of the corridor. This suggests that most of the traffic on State Highway 183 is not using it as a through route, but rather using the highway to gain access to some point within the corridor—in many cases, the Joint Reserve Base or shopping destinations. This leaves IH 820 as the main route serving orbital traffic in the area.

The high percentage of through traffic along State Highway 199 presents a particular difficulty. Traffic growth is likely to be driven by development along the State Highway 199 corridor northwest of the study area. Moreover, few adequate alternative routes exist that could act as relievers for this corridor.

**Existing and Future Levels of Service**

A key concept in the analysis of model data is Level of Service (LOS). This performance measure, expressed as a letter ranging from A to F, indicates how well a roadway is performing with respect to the number of vehicles using it. Roadways showing LOS A have relatively low volumes of traffic compared to their design capacity, allowing traffic to flow freely. Roadways at LOS E have volumes that are approaching their capacity, leading to crowded conditions and lower speeds. Roadways reaching LOS F have, in effect, more traffic than they can handle, leading to heavy congestion. Inputs to this measure include the average daily volume of the defined roadway segment, its average capacity (based on the functional class of the roadway and the type of land uses on either side), and the average number of travel lanes within the segment.

**Figure 3.17** illustrates the LOS during the peak period in 2012 on selected corridors within the study area. State Highway 199 from Roberts Cut Off Road to Northside Drive shows up immediately as a trouble spot, as do Spur 341, Roberts Cut Off Road between Skyline Drive and State Highway 183, Azle Avenue in Lake Worth, and Roaring Springs Drive in Westover Hills. Likewise, State Highway 183 also warrants closer attention from Spur 580 to White Settlement Road.



LOS ABC
A LOS of A, B, or C represents a relatively uncongested facility. Vehicles can move freely with little interference.

LOS DE
A LOS of D or E represents a relatively congested facility. Vehicles can move with some interference.

LOS F
A LOS of F represents the worst level of congestion. Vehicles are unable to move freely without interference.

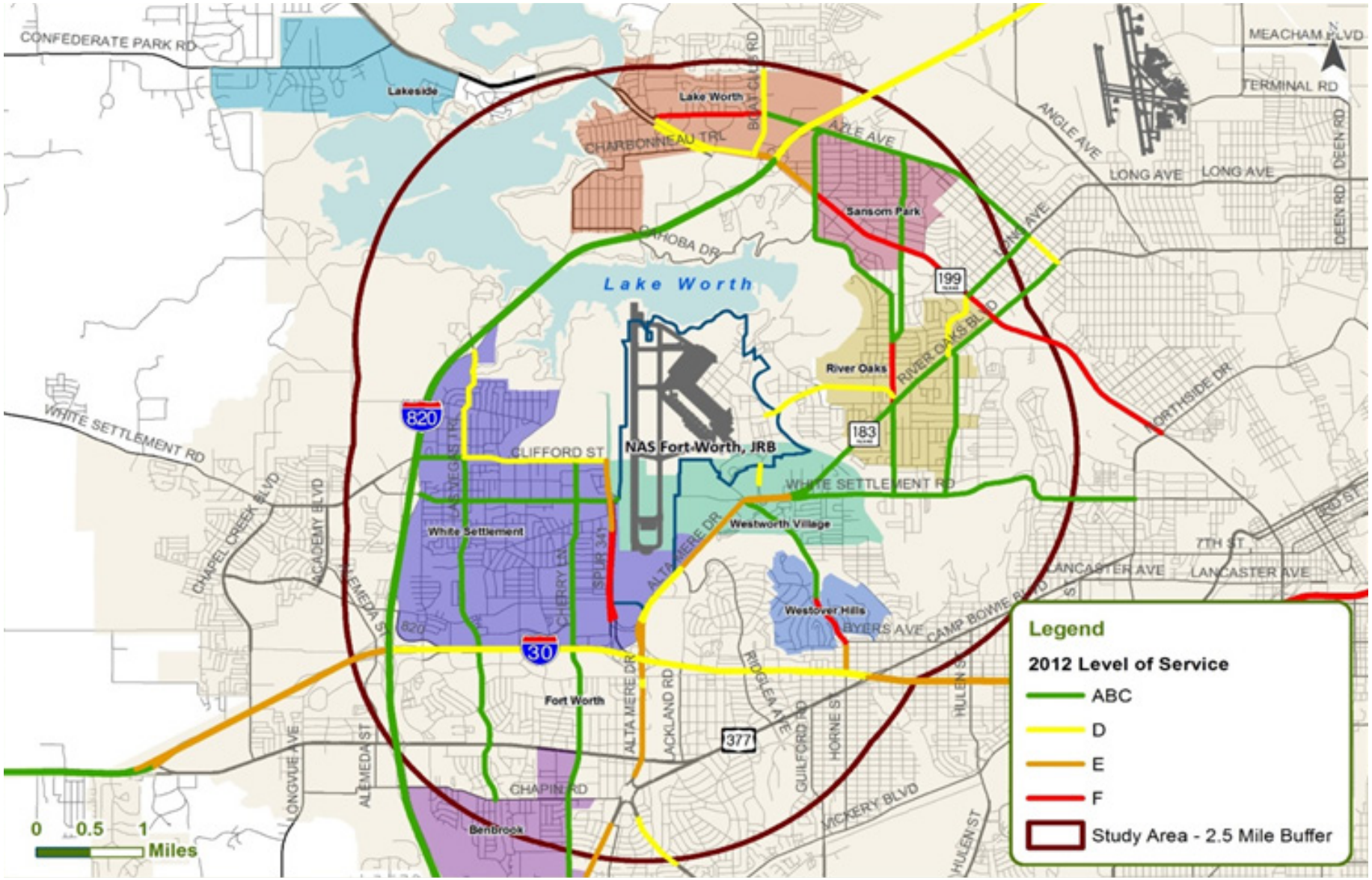
It is worth noting that the actual peak in traffic volume may occur at different times on different roadways, or even different directions on the same roadway. For example, during the morning peak period, drivers driving southeast on State Highway 199 may experience heavy congestion while northwest-bound drivers experience lighter conditions. This map offers a summary view of where congestion occurs during the course of the average weekday.

**Figure 3.18** shows the projected LOS for 2035. In addition to the congested segments from 2012, this map also projects congestion on US 377 south of the Weatherford Traffic Circle, for more sections of Azle Avenue and State Highway 199, on the Meandering Road/Carswell Access Road entrance to the Joint Reserve Base, and on Horne Street south of Westover Hills. Traffic conditions on State Highway 183 have deteriorated notably from IH 30 to White Settlement Road.

In order to evaluate roadways based on the volume of traffic they carry with respect to their capacity for accommodating that volume, a capacity analysis can be used to evaluate the performance of a selected segment of roadway. The inputs to this analysis include the average volume of the defined roadway segment, its average capacity (based on the functional class of the roadway, its speed limit, and the type of land uses on either side), and the average number of travel lanes within the segment.

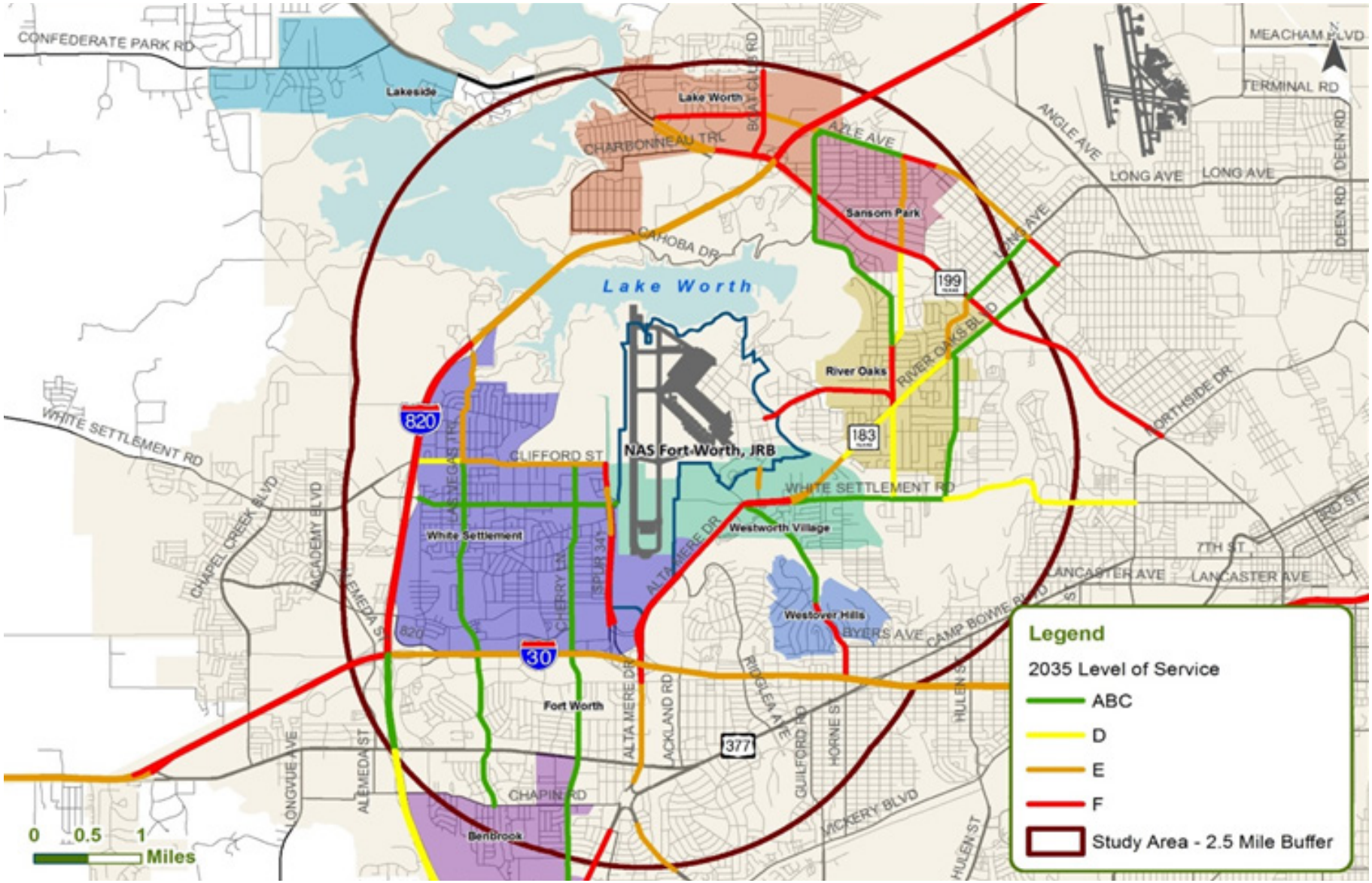
Based on these inputs, it is possible to project congestion levels during the busiest travel period of the day. Congestion levels are expressed in terms of Level of Service (LOS) on a scale between C+ (free-flow to steady traffic) and F (heavy congestion). Projected volumes and LOS are also used to estimate which roadway segments may warrant additional lanes. The lane warrants are expressed in terms of how many lanes are required in order to achieve a LOS of D, a level between C+ and F. This information is helpful when considering or prioritizing potential roadway expansion or redesign. The transportation section of each city's comprehensive plan provides the detailed description of the corridors of interest by city and a comparison of the lane warrant analysis to the local government thoroughfare plans. While some capacity improvements may need to be evaluated in some areas, improving accessibility and reducing congestion through development of an integrated, multi-modal transportation systems is a key consideration in community transportation planning.

**Figure 3.17** – 2012 Peak Hour Level of Service




Source: NCTCOG

**Figure 3.18** – 2035 Peak Hour Level of Service

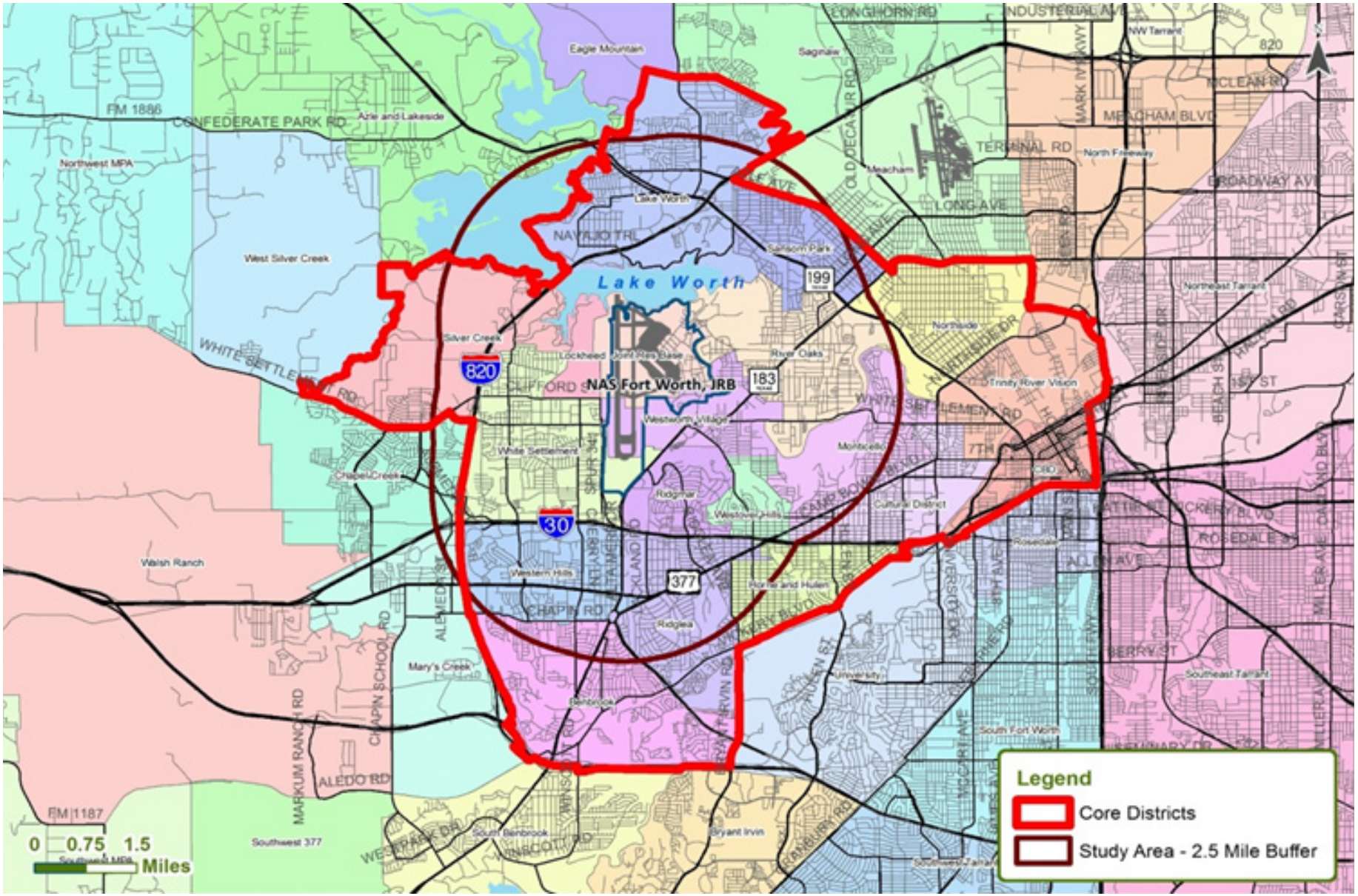



Source: NCTCOG

**Local Travel**

In addition to looking at broad movements through the study area/sub-region, movements in smaller districts were considered. These local travel and demographic measures provide additional insight into local conditions that will impact congestion levels at a finer scale. Nineteen districts were defined that roughly corresponded to city boundaries or other logical boundaries. **Figure 3.19** shows the location of the different districts. By defining these districts, it was possible to analyze demographic and roadway characteristics and compare changes from 2012 to 2035 to other districts, the Sub-region, and the DFW Regional totals.

**Figure 3.19** – Sub-Region Districts




Source: NCTCOG

The forecasted population, employment, and household growth will contribute to significant changes in the vehicle miles traveled and growth in congestion levels on all roadway facilities in the 19 districts and region-wide. **Table 3.15** shows the percent change in lane miles and vehicle miles traveled for all roads (i.e. thoroughfares, freeways, ramps, and frontage roads), as well as the change in the percentage of lane-miles that represent LOS D, E, or F. The percent of lane miles that represent LOS D, E, or F indicates the spread of congestion rather than its intensity; meaning rather than demonstrating the increase in hours people are spending in congestion in each district, it shows how many more roads are suddenly congested. **Table 3.15** demonstrates the sub-region is forecasted to have 108% increase in lane miles at LOS D, E, or F by 2035. The sub-region is expected to have growth of 5% in lane miles by 2035 yet 35% growth in vehicle miles traveled.

The small percent of increased capacity (5% growth in lane miles) on all roadways in the sub-region coupled with population, employment, and vehicle miles of traveled growth will result in a significant decline in the ability of the roadway system to meet demand in 2035 as evidenced by triple digit increases in lane miles that are highly congested in many of the 19 Districts.

One anomaly present in the Horne and Hulen District can be explained through further analysis. Vehicle miles traveled in this district will increase at a rate greater than the lane miles available yet no additional lane miles are forecast to be congested. Additional analysis reveals that while no, or almost no, additional miles are congested, congestion on the lane miles that are already congested worsens, moving from LOS D, E to LOS F.

**Table 3.15** – Percent Change in Lane Miles, Vehicle Miles Traveled, and Lane Miles at LOS D, E, or F for All Roads in the 19 Districts, Sub-Region, and DFW Region from 2012 to 2035[1]

| | Lane Miles[3] | | | Vehicle Miles Traveled | | | Percent of Lane Miles at LOS D, E, or F | | |
|---|---|---|---|---|---|---|---|---|---|
| **District[2]** | 2012 | 2035 | Growth | 2012 | 2035 | Growth | 2012 | 2035 | Growth |
| **Benbrook** | 70 | 72 | 3% | 285,849 | 493,624 | 73% | 12% | 43% | 258% |
| **Fort Worth CBD** | 108 | 121 | 12% | 578,706 | 763,030 | 32% | 34% | 44% | 28% |
| **Cultural District** | 72 | 75 | 4% | 377,276 | 481,919 | 28% | 21% | 42% | 98% |
| **Horne and Hulen** | 21 | 21 | 0% | 87,063 | 106,663 | 23% | 42% | 42% | 0% |
| **Joint Reserve Base** | N/A[4] | N/A[4] | N/A[4] | N/A[4] | N/A[4] | N/A[4] | N/A[4] | N/A[4] | N/A[4] |
| **Lake Worth** | 104 | 109 | 5% | 513,590 | 861,151 | 68% | 18% | 45% | 148% |
| **Lockheed** | N/A[4] | N/A[4] | N/A[4] | N/A[4] | N/A[4] | N/A[4] | N/A[4] | N/A[4] | N/A[4] |
| **Monticello** | 11 | 11 | 0% | 24,243 | 32,301 | 33% | 12% | 47% | 284% |
| **Northside** | 52 | 50 | -4%[5] | 173,446 | 234,466 | 35% | 27% | 60% | 117% |
| **Ridglea** | 70 | 70 | 0% | 293,049 | 379,751 | 30% | 14% | 41% | 204% |
| **Ridgmar** | 25 | 25 | 0% | 140,216 | 174,474 | 24% | 35% | 51% | 43% |
| **River Oaks** | 28 | 28 | 0% | 71,369 | 109,482 | 53% | 21% | 30% | 44% |
| **Sansom Park** | 25 | 25 | 0% | 140,216 | 174,474 | 24% | 35% | 51% | 43% |
| **Silver Creek** | 33 | 46 | 39% | 131,318 | 264,701 | 102% | 17% | 35% | 104% |
| **Trinity River Vision** | 35 | 41 | 17% | 187,023 | 278,143 | 49% | 33% | 63% | 90% |
| **Western Hills** | 80 | 80 | 0% | 310,227 | 477,338 | 54% | 4% | 30% | 592% |
| **Westover Hills** | 26 | 26 | 0 | 171,881 | 232,778 | 35% | 31% | 51% | 67% |
| **Westworth Village** | 18 | 18 | 0% | 64,656 | 92,122 | 42% | 6% | 53% | 775% |
| **White Settlement** | 97 | 97 | 0% | 410,600 | 662,130 | 61% | 21% | 50% | 144% |
| **Sub-region Total** | 876 | 916 | 5% | 3,911,240 | 5,281,789 | 35% | 21% | 44% | 108% |
| **DFW Regional Total** | 47,675 | 53,794 | 13% | 181,274,462 | 287,336,463 | 59% | 17% | 33% | 91% |

[1] Source: NCTCOG [2] District boundaries do not exactly align with city boundaries. [3] Lane Miles are the number of lanes in each roadway segment, multiplied by the length of that segment, summed up within that district.
[4] Results not reported due to insufficient roadway network within the District. [5] Reduction in Lane Miles in Northside district comes from narrowing of Ellis Avenue from 4 lanes in 2012 to 2 lanes in 2035.

**Table 3.16** shows the growth in lane miles, vehicle miles traveled, and growth in congestion delay on thoroughfares (Principal arterials, minor arterials, and collectors) for the 19 districts, the sub-region, and DFW regional totals. **Table 3.16** demonstrates that 15 of the 19 Districts will experience triple-digit increases in the vehicle hours spent in congestion (Congestion Delay). Of the PLMC communities, the Benbrook, Lake Worth, River Oaks, Sansom Park, and Westworth Village Districts will have greater increases in congestion than the entire sub-region (182%).

Sansom Park and River Oaks are forecasted to experience the greatest increase in congestion delay in the entire sub-region at 360% and 347% respectively. In many of these Districts forecasted to experience significant increases in congestion delay, the major contributing factors include no increased capacity (0% growth in lane miles) on thoroughfares and growth in population and vehicle miles of traveled.

Based on the evaluation of local travel and lane warrants for thoroughfare facilities in each District and by roadway segment, public input, and known transportation challenges, several roadway segments are recommended for future studies to evaluate improving mobility and safety and provide economic development opportunities.

**Table 3.16** – Percent Change in 19 District Lane Miles, Vehicle Miles Traveled, Congestion Delay for Thoroughfares Only from 2012 to 2035[1]

| | Lane Miles[3] | | | Vehicle Miles Traveled | | | Congestion Delay (hours) | | |
|---|---|---|---|---|---|---|---|---|---|
| **District[2]** | 2012 | 2035 | Growth | 2012 | 2035 | Growth | 2012 | 2035 | Growth |
| **Benbrook** | 34 | 35 | 3% | 102,657 | 151,710 | 48% | 188 | 715 | 280% |
| **Fort Worth CBD** | 85 | 86 | 1% | 238,665 | 311,215 | 30% | 1,130 | 2,164 | 92% |
| **Cultural District** | 49 | 52 | 6% | 131,903 | 170,545 | 29% | 228 | 491 | 115% |
| **Horne and Hulen** | 16 | 17 | 6% | 80,955 | 99,409 | 23% | 327 | 789 | 141% |
| **Joint Reserve Base** | N/A[4] | N/A[4] | N/A[4] | N/A[4] | N/A[4] | N/A[4] | N/A[4] | N/A[4] | N/A[4] |
| **Lake Worth** | 56 | 60 | 7% | 209,457 | 307,999 | 47% | 828 | 3,700 | 347% |
| **Lockheed** | N/A[4] | N/A[4] | N/A[4] | N/A[4] | N/A[4] | N/A[4] | N/A[4] | N/A[4] | N/A[4] |
| **Monticello** | 11 | 11 | 0% | 24,243 | 32,301 | 33% | 59 | 170 | 188% |
| **Northside** | 52 | 50 | -4%[5] | 173,446 | 234,466 | 35% | 691 | 1,847 | 167% |
| **Ridglea** | 59 | 59 | 0% | 191,766 | 253,205 | 32% | 449 | 1,155 | 157% |
| **Ridgmar** | 16 | 16 | 0% | 49,096 | 59,468 | 21% | 203 | 349 | 72% |
| **River Oaks** | 28 | 28 | 0% | 71,369 | 109,482 | 53% | 163 | 728 | 347% |
| **Sansom Park** | 19 | 19 | 0% | 90,855 | 124,747 | 37% | 261 | 1,200 | 360% |
| **Silver Creek** | 17 | 30 | 76% | 40,311 | 95,941 | 138% | 285 | 581 | 104% |
| **Trinity River Vision** | 30 | 30 | 0% | 136,290 | 183,367 | 35% | 323 | 1,112 | 244% |
| **Western Hills** | 48 | 48 | 0% | 88,584 | 129,204 | 46% | 109 | 309 | 183% |
| **Westover Hills** | 12 | 12 | 0% | 32,863 | 43,908 | 34% | 80 | 255 | 219% |
| **Westworth Village** | 17 | 17 | 0% | 62,183 | 88,800 | 43% | 104 | 413 | 297% |
| **White Settlement** | 64 | 64 | 0% | 156,233 | 212,860 | 36% | 405 | 1,017 | 151% |
| **Sub-region Total** | 620 | 638 | 3% | 1,883,864 | 2,615,218 | 39% | 5,634 | 15,865 | 182% |
| **DFW Regional Total** | 38,227 | 41,174 | 8% | 83,800,836 | 135,844,459 | 62% | 217,198 | 770,288 | 255% |

[1] Source: NCTCOG [2] District boundaries do not exactly align with city boundaries. [3] Lane Miles are the number of lanes in each roadway segment, multiplied by the length of that segment, summed up within that district.
[4] Results not reported due to insufficient roadway network within the District. [5] Reduction in Lane Miles in Northside district comes from narrowing of Ellis Avenue from 4 lanes in 2012 to 2 lanes in 2035.

**Roadway Implementation Strategies**
Roadway congestion presents a long-term challenge to the study area. Many options exist to improve roadway congestion depending on the root cause of the problem, the roadway type, existing and future traffic volumes, access and land use types along the corridor, and funding availability. A variety of strategies exists to improve roadway conditions in the study area; however, due to the nature of roadway planning and project development, it may take many years to implement. Some concerns can be mitigated in the short term with management and operational strategies.

**Transportation Management and Operation Options**
The 2012 Regional Coordination Committee Transportation Assessment identified several transportation management and operation strategies that local governments and partners in the study area could implement to improve the functionality of the existing transportation system now and into the future. Transportation demand and operational management strategies are often low-cost with relatively large returns in transportation system benefit when compared to constructing or re-constructing major transportation facilities. These strategies are summarized here and are recommended for implementation in the study area:

*Transportation Demand Management*
- Increase marketing and participation of major employers in Employee Trip Reduction programs
- Implement carpooling, vanpooling, telecommuting, flexible work schedules, bicycle facilities, transit passes

*Signage and Wayfinding*
- Improve highway and wayfinding signage
- Consider supplementary wayfinding signage to the base and other areas of interest

*Traffic Signalization*
- Evaluate existing signal timing plans and make improvements
- Install new signals and synchronize with existing signals
- Develop a systematic and multi-jurisdictional plan for retiming and maintenance of signals in the area

*Bottlenecks*
- Maintain improved operations and monitor conditions at NAS Fort Worth, JRB Main Gate (ex. staggering report times, designating lanes for different users, increase access points to base, etc.)
- Consider traffic calming strategies to address cut-through traffic

*Safety*
- Improve signing, lighting, education, and traffic control measures
- Engineering solutions or redesign of existing facilities
- Improve visibility in school zones through on-street pavement markings and signage
- Inventory crosswalks and provide crosswalks and signage at high-volume intersections and school zones

**Roadway Infrastructure Improvement Options**
It is envisioned that the roadway network within the study area will have adequate capacity to accommodate travel demand and be sufficiently maintained to ensure unimpeded travel throughout the area. It is preferred that the existing network be modernized and contain improvements that are contextually appropriate and accommodate a variety of corridor users. Longer-term, higher cost options for accommodating increased demand may include the provision of additional lanes, providing public transportation options, and ultimately re-constructing major interchanges and roadways. Likewise, a well-connected network of thoroughfares should exist to provide several route choices for people moving in and around the area. It should be a priority to ensure that any changes to, or future investment in, infrastructure in the NAS Fort Worth, JRB Accident Potential Zones be consistent with acceptable land uses for those zones.

While capacity improvements may need to be evaluated in some areas, improving accessibility and reducing congestion through development of an integrated, multi-modal transportation system is a key consideration in community transportation planning. Implementing land use strategies, improving the existing transportation network, improving access to public transportation options, and implementing management and operations strategies should be considered and are recommended to improve traffic conditions when evaluating potential additional capacity.

**Roadways Recommended for Economic Development Emphasis**
Several roadway corridors are recommended to serve as major economic development/re-development catalyst areas for the local governments. These corridors are regional facilities that primarily serve major commercial development. However, they represent significant opportunities to evaluate the addition of capacity while also promoting economic development along the corridor. Assessing alternative mode choices such as public transportation and bicycle and pedestrian options while facilitating increased traffic in the future is encouraged on these corridors.

It is recommended that five economic development corridors undergo further study to determine which potential mobility solutions may be appropriate in each context; assess

future economic development needs; existing and forecasted traffic conditions; and, incorporate Context Sensitive Solutions principles. **Figure 3.20** is a map depicting each Economic Development Corridor and descriptions of the proposed studies are included in **Appendix J**. Even where technical justification may exist for increasing the number of travel lanes, factors such as community preferences, cost, and the availability of funds may dictate the use of an alternative strategy. Two of the roadways recommended for economic development emphasis are identified as regional mobility corridors. These corridors primarily serve high volumes of commuting traffic and forecasts show that volumes are expected to continue to grow. Ensuring that mobility is addressed while also promoting economic development along these corridors is crucial.

Roadways Recommended for Economic Development Emphasis:
- Thunder Road Corridor Plan
- River Oaks Boulevard Corridor Plan
- IH 820 Access Enhancement

Roadways Identified as Regional Mobility Corridors with Emphasis on Access and Economic Development:
- SH 199 Corridor Assessment Study
- IH 30 Access Enhancement

**Roadways Recommended for Critical Mobility Linkages**
In addition to follow-up studies for corridors that are key Economic Development Corridors, a recommended list of roadways that provide Critical Mobility Linkages is provided for future study consideration. Definition of these corridors is based on future traffic forecasts, need to reduce future congestion, access to residential areas and other key interest points in the study area.

Additionally, the identification of needed access management improvements, roadway design challenges, and public input are considered. These corridors are shown in **Figure 3.21**. **Table 3.17** lists these corridors and identifies the key emphasis area identified through this planning process.

**Figure 3.20** – Economic Development Corridors

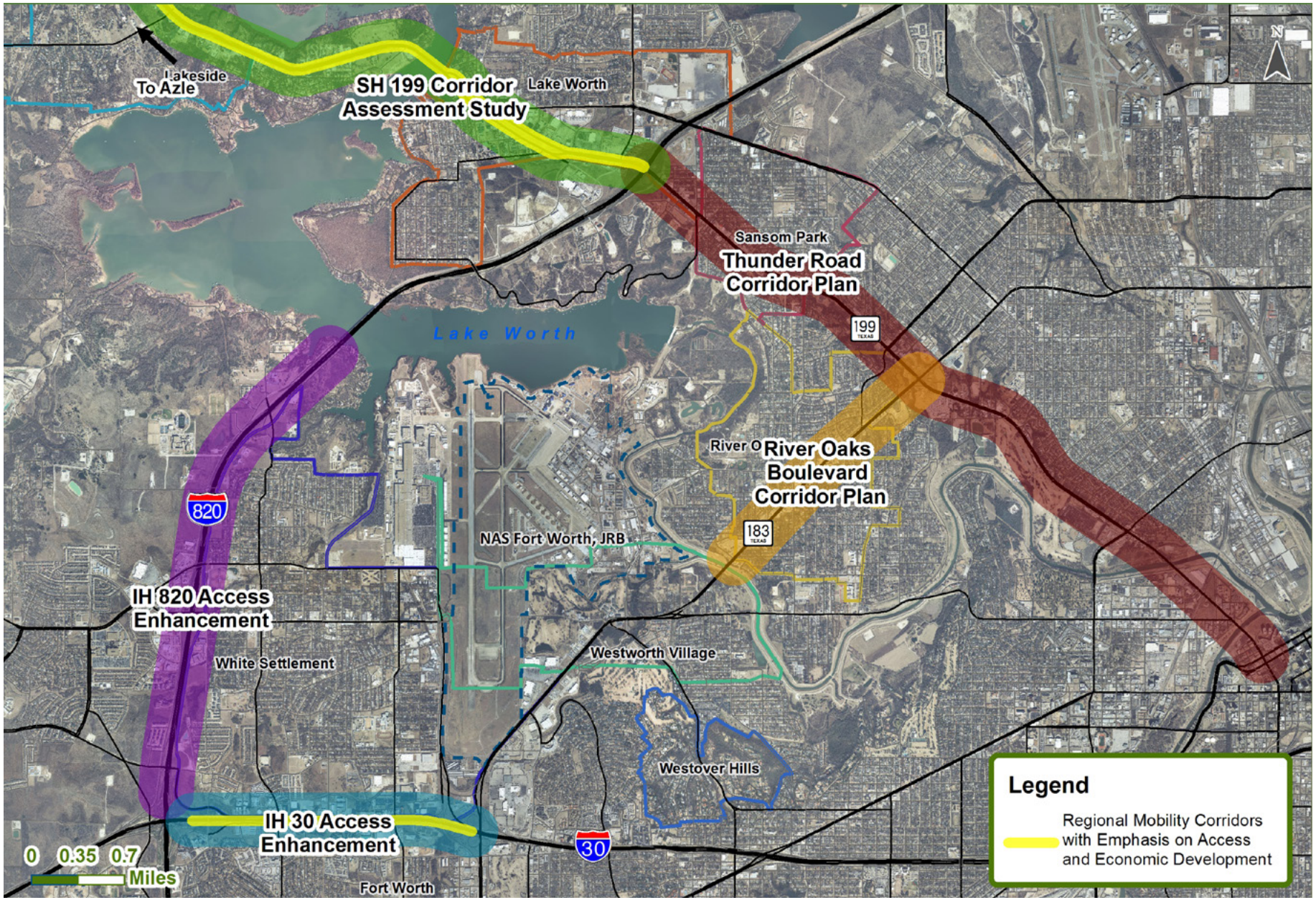


**Figure 3.21**– Critical Mobility Linkages

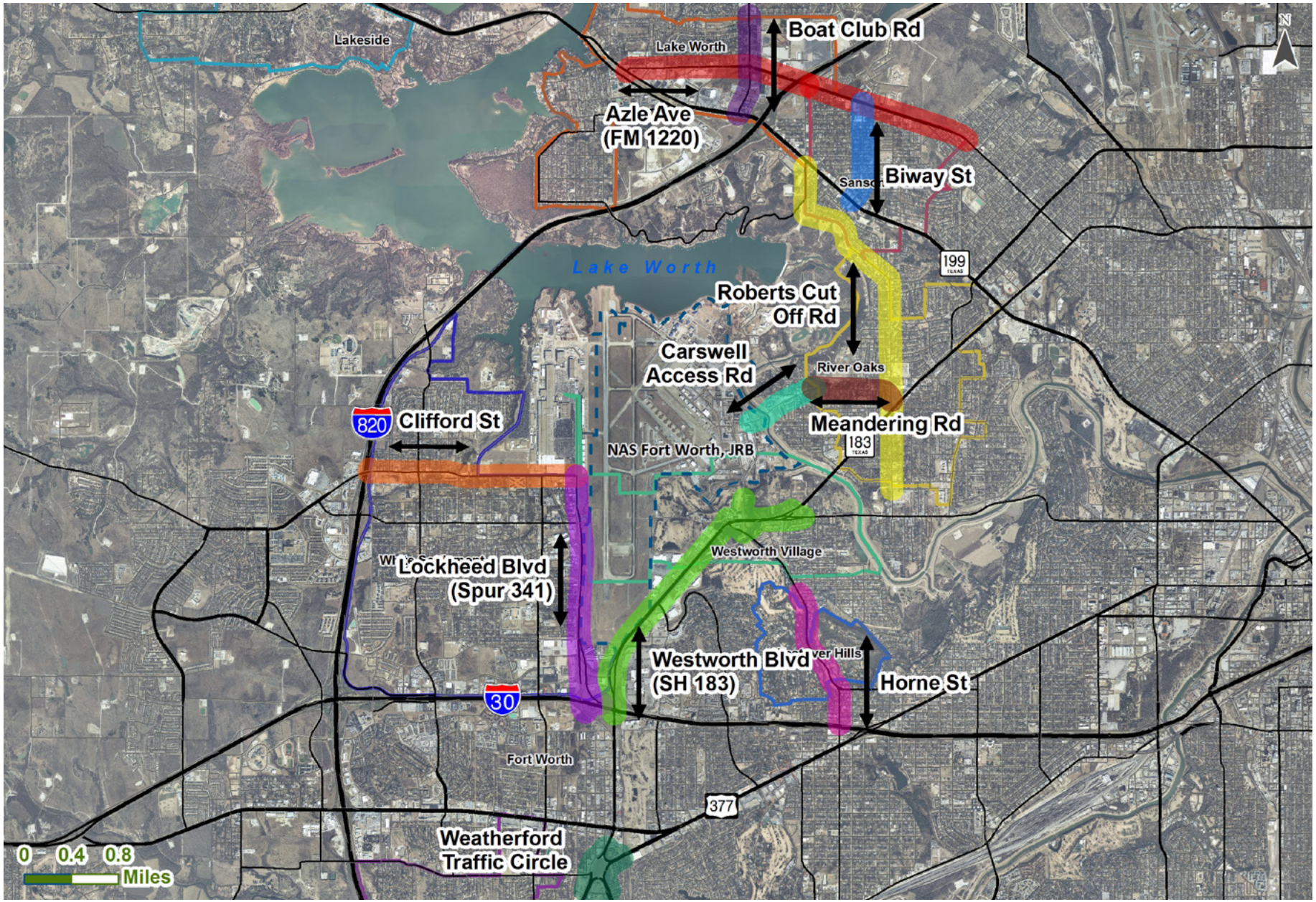


Table 3.17 – Corridors Providing Critical Mobility Linkages for Future Study Consideration

| Roadway | City | Focus Area | Key Challenges | Potential Solutions |
|---|---|---|---|---|
| Azle Avenue (FM 1220) | Lake Worth | Sansom Park City Limit to Fort Worth City Limit | • Existing and future traffic congestion<br>• Parallel facility to SH 199<br>• Future development impact on traffic<br>• No sidewalks or bike paths | • Context Sensitive Solutions<br>• Emphasize commercial center access<br>• Long-term evaluation of additional lane capacity<br>• Active transportation improvements |
| Boat Club Road | Lake Worth | Shadydell Dr. to SH 199 | • Existing and future traffic congestion<br>• Further reduction in peak hour Level of Service<br>• Safety concerns<br>• Signal synchronization<br>• No sidewalks or bike paths | • Context Sensitive Solutions<br>• Signal re-timing (currently underway)<br>• Long-term evaluation of additional lane capacity<br>• Active transportation improvements |
| Carswell Access Road | Fort Worth | River Oaks City Limit to NAS Fort Worth, JRB East Gate | • Episodic traffic back up associated with base training weekends<br>• No sidewalks or bike paths but is a critical linkage to Trinity Trails<br>• Commercial node enhancment<br>• Access to NAS Fort Worth, JRB East Gate | • Neighborhood scale commercial development<br>• Active transportation improvements<br>• Coordination with base on training weekends to mitigate local traffic impacts |
| Horne Street/ Roaring Springs Road | Fort Worth | IH 30 to Volder Drive | • Forecasted traffic congestion<br>• No sidewalks or bike paths<br>• Maintaining residential character | • Long-term evaluation of additional lane capacity<br>• Context Sensitive Solutions<br>• Active transportation improvements |

**Table 3.17** – Corridors Providing Critical Mobility Linkages for Future Study Consideration (continued)

| Roadway | City | Focus Area | Key Challenges | Potential Solutions |
|---|---|---|---|---|
| Benbrook Traffic Circle | Fort Worth | SH 377 intersection with H 183 near Benbrook | • Safety<br>• AICUZ compatibility considerations<br>• Outdated design<br>• Does not accommodate bike or pedestrian traffic well | • Long-term evaluation of re-designing to modern intersection<br>• Future development opportunities with re-design although land use compatibility is key concern<br>• Active transportation improvements |
| Meandering Road | River Oaks | Roberts Cut Off Road to Fort Worth City Limit | • Maintenance capabilities of city<br>• Access to NAS Fort Worth, JRB East Gate<br>• Future reduction in peak hour Level of Service<br>• No sidewalks or bike paths but opportunity to serve as critical connections between Trinity Trails trailheads | • Evaluate opportunities for maintenance partnership with County or other local governments or base<br>• Long-term evaluation of additional lane capacity<br>• Active transportation improvements |
| Roberts Cut Off Road | River Oaks/ Fort Worth/ Sansom Park | Jacksboro Highway (SH 199) to White Settlement Road | • School zone on heavily traveled portion of Roberts Cut Off<br>• Safety concerns<br>• Existing LOS F and future reduced LOS on some segments<br>• No sidewalks or bike paths | • Context Sensitive Solutions<br>• Long-term evaluation of additional lane capacity<br>• Traffic calming strategies<br>• Active transportation improvements, especially around school |
| Azle Avenue (FM 1220) | Sansom Park | Lake Worth City Limit to Fort Worth City Limit | • Forecasted traffic congestion and LOS reduction on some segments<br>• Rural thoroughfare design<br>• Future housing and development impacts on traffic<br>• Access management<br>• Middle school on major thoroughfare<br>• No sidewalks or bike paths | • Improve access to businesses and encourage economic development<br>• Active transportation improvements, especially around school<br>• Context Sensitive Solutions |

**Table 3.17** – Corridors Providing Critical Mobility Linkages for Future Study Consideration (continued)

| Roadway | City | Focus Area | Key Challenges | Potential Solutions |
|---|---|---|---|---|
| Biway St. | Sansom Park | SH 199 to Azle Avenue | • Safety concerns<br>• Major North/South cut-through from SH 199 to Azle Ave.<br>• No sidewalks or bike paths | • Traffic calming strategies<br>• Long-term evaluation of additional lane capacity<br>• Context Sensitive Solutions<br>• Active transportation improvements |
| Alta Mere/ Westworth Blvd. (SH 183) | Westworth Village/Fort Worth/ White Settlement | IH 30 to North of White Settlement Road | • Declining level of service due to increasing traffic volumes<br>• Access to NAS Fort Worth, JRB<br>• Access to Ridgmar Mall<br>• Signal synchronization<br>• New NAS Fort Worth, JRB Commercial Gate installation and traffic signal<br>• No sidewalks or bike paths<br>• Infrastructure design | • Signal re-timing (completed 2011 but should be re-evaluated periodically)<br>• Long-term evaluation of additional lane capacity and intersection design<br>• Improved access management near Ridgmar Mall and other major commercial development<br>• Active transportation improvements<br>• Context Sensitive Solutions |
| Lockheed Blvd. (Spur 341) | White Settlement | IH 30 to Clifford Road | • Outdated design features<br>• Safety concerns due to slip ramps and intersections<br>• Access to key industrial development and major employers in the study area<br>• Key access point to Lockheed Martin and western border of NAS Fort Worth, JRB airfield | • Modern design enhancements<br>• Long-term evaluation of appropriate lane capacity<br>• Support additional industrial/ light industrial business growth along this corridor<br>• Access management and commercial business access improvements |
| Clifford Road | White Settlement | Grants Lane to IH 820 | • Key access point to Lockheed Martin<br>• Declining level of service due to increasing traffic volumes and growth Northwest of White Settlement<br>• Major artery to access industrial development area | • Consideration for alternative intersection designs such as local roundabouts<br>• Long-term evaluation of additional lane capacity<br>• Economic and commercial development<br>• Context Sensitive Solutions |

### 3.8.5 | Roadway Design Features for Future Consideration in Community Thoroughfare Planning

**Context Sensitive Solutions/Context Sensitive Design**

Context Sensitive Solutions (CSS) is an approach that considers the total context within which a transportation improvement project will exist. CSS is a collaborative, interdisciplinary approach that involves all stakeholders to develop a transportation facility that fits its physical setting and preserves scenic, aesthetic, historic and environmental resources, while maintaining safety and mobility.

**Complete Streets**

According to the National Complete Streets Coalition "Complete Streets are streets for everyone." They are designed and operated to enable safe access for all users. Pedestrians, bicyclists, motorists and transit riders of all ages and abilities must be able to safely move along and across a complete street. Complete Streets make it easy to cross the street, walk to shops, bicycle to work, and safe for people to walk to and from train stations.

Creating complete streets means transportation agencies must change their approach to community roads. By adopting a Complete Streets or similar policy, communities direct their transportation planners and engineers to routinely design and operate the entire right of way to enable safe access for all users, regardless of age, ability, or mode of transportation. Regionally, NCTCOG has begun development of a policy to encourage support for and inclusion of Complete Streets principles into local community transportation planning and projects. As of date of this publication, this policy is not finalized. Local governments such as the City of Dallas, Texas have adopted policies that support the use of Complete Streets principles in the design and re-design of their local thoroughfares. Similar to CSS, there are many resources locally and nationally for communities interested in fostering Complete Streets principles in transportation projects. For regional updates and resources visit http://www.nctcog.org/completestreets/.

**Green Streets**

An additional concept for roadway and local street design includes Green Streets principles. Green Streets are urban transportation right-of-ways that integrate stormwater treatment techniques such as natural processes and landscaping to reduce impervious surfaces; improve water quality; and, reduce stormwater runoff. Green Streets are designed to mimic local hydrology prior to development and provide multiple benefits along the street right-of-way such as an integrated system of stormwater management; volume reductions in stormwater runoff; and aesthetic enhancement of right-of-ways.

**Modern Roundabouts**

Additional design features considered during portions of this study and that could be considered by cities in future street design and re-construction projects included modern roundabouts. The Federal Highway Administration defines a modern roundabout as a type of circular intersection with yield control of entering traffic, islands on the approaches, and appropriate roadway curvature to reduce vehicle speeds. Modern roundabouts are different from rotaries and other traffic circles; they are typically smaller than traditional high-speed traffic circles but usually larger than neighborhood traffic circles used to calm traffic. There are many demonstrated safety benefits to roundabouts due to lower speeds such as decreased delay and thus congestion; fewer stops thus reduced pollution and fuel use; and, reduced costs associated with no required signal equipment and often less pavement. Many technical resources exist for local governments and communities that are considering modern roundabouts as part of a community transportation system. One such site is http://safety.fhwa.dot.gov/intersection/roundabouts/.

**Table 3.18** summarizes major roadway recommendations for the PLMC study area.

**Table 3.18** – Roadway Recommendations in the PLMC Study Area

| Recommended Actions: Roadway | | | | | |
|---|---|---|---|---|---|
| **Project/Initiative** | **Timeframe** | **Responsible Entities** | **Partners** | **Funding Sources** | **Order of Magnitude Cost** |
| Policy: Implement PLMC Economic Development Corridor Studies | | | | | |
| • Form a coalition between neighboring cities to assist and coordinate for common needs and mutual benefit along facilities that cross jurisdictional boundaries<br>• Participate in studies for the following corridors recommended for economic development emphasis:<br>  • SH 199 Corridor Assessment Study (Lake Worth/Fort Worth/ TxDOT/NCTCOG)<br>  • Thunder Road Corridor Plan (Sansom Park/Fort Worth/ TxDOT/NCTCOG)<br>  • River Oaks Boulevard Corridor Plan (River Oaks/Fort Worth/ TxDOT/NCTCOG)<br>  • IH 30 Access Enhancement Study (White Settlement/ TxDOT/NCTCOG)<br>  • IH 820 Access Enhancement Study (White Settlement/ TxDOT/NCTCOG)<br>• Integrate multi-modal considerations, context sensitive design, access management, land-use evaluations, safety, stormwater management, streetscape improvements, and other engineering, planning, and economic development strategies into corridor studies. | Short to Mid-Term | City, TxDOT, and NCTCOG | Neighboring cities, Economic Development Corporations, NCTCOG, TxDOT, The T, Tarrant County, Major employers, Landowners, Public | City, State, Federal, Other sources | Low |
| Policy: Implement PLMC Mobility Linkages Corridor Improvement Studies | | | | | |
| • Form a coalition between neighboring cities to assist and coordinate for common needs and mutual benefit along facilities that cross jurisdictional boundaries<br>• Identify and define specific needs and goals of transportation corridor<br>• Engage with Tarrant County and NCTCOG for planning assistance and other technical/ policy needs<br>• Engage other transportation implementers such as TxDOT and Tarrant Regional Water District and non-profit agencies such as Streams and Valleys<br>• Integrate multi-modal considerations, context sensitive design, access management, land-use evaluations, safety, stormwater management, streetscape improvements, and other engineering, planning, and economic development strategies into studies.<br>• Seek out and utilize non-traditional funding such as grants from non-profits, philanthropies, non-transportation and transportation federal and state agencies (e.g. National Park Service, FHWA safety technical resources, etc.) | Mid to Long-Term | City and/or TxDOT | Neighboring cities, Tarrant County, NCTCOG, TxDOT, The T, Economic Development Corporations, TRWD, Major employers, Landowners, Public (Depending on the project may include other stakeholders) | City, State, Federal, Philanthropic, Non-Profit, Special Technical Assistance Grants | Low |
| Policy: Implement Local Priority Improvements to Provide a Well-Connected Network of Thoroughfares | | | | | |
| • Identify and prioritize improvements of importance to individual cities, the study area, and the larger Dallas-Fort Worth region.<br>• Integrate multi-modal considerations, context sensitive design, access management, land-use evaluations, safety, stormwater management, streetscape improvements, and other engineering, planning, and economic development strategies into local roadway planning, design, construction, operations, and maintenance.<br>• Update local thoroughfare plans to reflect priorities and implementation actions | Mid to Long-Term | City, Tarrant County | TxDOT, NCTCOG, Tarrant County, Neighboring cities | City, Federal | Low |

**Table 3.18** – Roadway Recommendations in the PLMC Study Area (continued)

| Recommended Actions: Roadway | | | | | |
|---|---|---|---|---|---|
| **Project/Initiative** | **Timeframe** | **Responsible Entities** | **Partners** | **Funding Sources** | **Order of Magnitude Cost** |
| • Establish local bond programs to implement or improve local facilities.<br>• Pursue Tarrant County Bond program funds for identified priority projects.<br>• Pursue all applicable traditional and non-traditional funding opportunities and leverage partnership opportunities. | Mid to Long-Term | City, Tarrant County | TxDOT, NCTCOG, Tarrant County, | City, Tarrant County, State, Federal, Private/ Public partnerships | High |
| • Submit formal requests for projects of regional significance to be considered for further evaluation during the development of the Metropolitan Transportation Plan. | Ongoing | City, TxDOT | TxDOT, Tarrant County, NCTCOG | N/A | N/A |
| Policy: Enhance Roadway Design, Improve Safety, and Support the Provision of Mobility Options on Local Roadways | | | | | |
| • Integrate Context Sensitive Design principles, including consideration for Green Streets principles, into future local roadway planning, design, construction, operations, and maintenance.<br>• Consider alternative roadway and intersection design features such as modern roundabouts, neighborhood traffic circles, traffic calming measures, or other features to improve safety, improve air quality, and enhance roadway attractiveness.<br>• Include bicycle and pedestrian modes in roadway corridor studies.<br>• Evaluate existing roadway right-of-ways for public transportation service options. | Short to Long-Term | City | Tarrant County, TxDOT, NCTCOG | City | Low to High Depending on Project |
| • Prioritize, fund, and implement sidewalks and other pedestrian facilities such as crosswalks, median islands, signage, and pedestrian signals as part of new roadway construction or reconstruction projects, new developments, and re-developments, and in high pedestrian traffic locations.<br>• Provide accessibility to bicyclists through preservation of bicycle and pedestrian access within appropriate roadway rights-of-way, as well as the development of innovative, safety-enhanced on-street bicycle facilities as routine accommodations for new roadway construction or reconstruction. | Short to Long-Term | City | Tarrant County, TxDOT, NCTCOG, Neighboring cities | City, Tarrant County, TxDOT, NCTCOG | High |
| • Coordinate with transit providers to ensure accessibility through on-street bicycle facilities and sidewalks. | Long-Term | City | The T, NCTCOG | N/A | Medium |
| Policy: Evaluate the Local Transportation System Management and Operational Characteristics | | | | | |
| • Continue coordination with NAS Fort Worth, JRB, Lockheed and other major employers in the area on supporting their transportation needs | Ongoing | City, Tarrant County | Major employers, NCTCOG, Tarrant County, Neighboring cities | N/A | N/A |
| • Prioritize maintenance in local budgets to ensure that local roadway facilities remain in optimal condition. | Ongoing | City | Tarrant County, TxDOT | City, Tarrant County, TxDOT | High |
| • Coordinate with NCTCOG, major employers, commercial districts, and other agencies to encourage the use of travel demand management programs such as telecommuting, carpooling, employer trip reduction (ETR) programs and vanpooling. Increase the marketing and participation of major employers in the study area in ETR programs. | Short-Term | City | Major employers, Commercial centers | City | Low |

**Table 3.18** – Roadway Recommendations in the PLMC Study Area (continued)

| Recommended Actions: Roadway | | | | | |
|---|---|---|---|---|---|
| **Project/Initiative** | **Timeframe** | **Responsible Entities** | **Partners** | **Funding Sources** | **Order of Magnitude Cost** |
| • Conduct regular interval traffic counts<br>• Conduct crash analysis and identify top safety needs and contributing factors | Short-Term, Ongoing | City | Tarrant County, TxDOT, NCTCOG | City | Low |
| • Coordinate to improve traffic signal synchronization by evaluating existing timing plans, installing new signals, and having repairs and maintenance performed promptly. Develop an interagency plan for signal timing to address future conditions.<br>• Coordinate to provide well-signed routes | Short to Long-term | City and/or TxDOT | Tarrant County, TxDOT, NCTCOG | City, TxDOT, NCTCOG | Medium |
| Policy: Update and Establish Review Process for Local Transportation Planning Documents | | | | | |
| • Establish a review and update schedule for local thoroughfare plans and include considerations for future land uses, economic development needs, neighboring jurisdiction plans, and alternative roadway design and operation strategies such as context sensitive design.<br>• Identify and prioritize improvements of importance to individual cities, the study area, and the larger Dallas-Fort Worth region as part of thoroughfare planning process<br>• Submit requests for transportation technical planning assistance to NCTCOG through the biannual Unified Planning Work Program process | Short-Term and Ongoing | City | Tarrant County, Economic Development Corporations, NCTCOG | Local, Federal, Private, Non-Profit | Low |
| • Consider land use compatibility associated with NAS Fort Worth, JRB Accident Potential Zones and noise contours to ensure compatibility of future infrastructure improvements. | Ongoing | City | NCTCOG, Other Jurisdictions, NAS Fort Worth, JRB | N/A | Low |
| • Integrate multi-modal considerations, context sensitive design, access management, parking, land-use evaluations, safety, stormwater management, streetscape improvements, and other engineering, planning, and economic development strategies into local roadway planning, design, construction, operations, and maintenance.<br>• Update local regulations to reflect desired access management, design features, landscaping, maintenance, parking regulations and other requirements associated with streets and thoroughfares<br>• Consider Corridor Overlays or other land use planning tools (e.g. Form Based Codes) to encourage desired future commercial development | Short to Long-Term | City | TxDOT, NCTCOG, Economic Development Corporation, Public | City, State and Federal Grants, NCTCOG | Low to Medium Depending on Project Scope |
| • Submit formal requests for projects of regional significance to be considered during development of the Metropolitan Transportation Plan. | Ongoing | City, TxDOT | TxDOT, Tarrant County, NCTCOG | N/A | N/A |

**Table 3.18** – Roadway Recommendations in the PLMC Study Area (continued)

| Recommended Actions: Roadway | | | | | |
|---|---|---|---|---|---|
| **Project/Initiative** | **Timeframe** | **Responsible Entities** | **Partners** | **Funding Sources** | **Order of Magnitude Cost** |
| Policy: Coordinate with Regional Transportation Partners to Evaluate Transportation Needs, Define Priorities, Secure Funding, and Implement Improvements | | | | | |
| • Form a coalition between neighboring cities to assist and coordinate for common needs and mutual benefit along facilities that cross jurisdictional boundaries<br>• Engage with your Regional Transportation Council representative<br>• Engage with Tarrant County and NCTCOG for planning assistance and other technical/ policy needs<br>• Engage other transportation implementers such as TxDOT and Tarrant Regional Water District and non-profit agencies | Short to Long-Term | City | Tarrant County, NCTCOG, Regional Transportation Council, Other Transportation implementers | N/A | Low |
| • Adopt Regional Transportation Council (RTC) Clean Fleet Vehicle Policy and Model Ordinance www.nctcog.org/fleetpolicy | Short | City | NCTCOG | N/A | Low |

## 3.8.6 | Regional Bicycle and Pedestrian Network

### Introduction

Bicycle facilities are important to any community as they can result in high payoffs such as decreased motor vehicle traffic, improved air quality, and scenic beautification. In addition, increasing bicyclist and pedestrian activity in a community benefits the surrounding areas by stimulating economic growth, increasing the demand for housing, and supporting future development. Many cities and counties in the Dallas-Fort Worth region have developed bicycle master plans, trail master plans, or a combination of both resulting in a hiking and biking plan. In addition, many cities have adopted policies at the local level to enforce and encourage bicycling as a legitimate form of transportation. The focus of this study is to enhance quality of life in the communities around the base, which includes making the area more accessible for all transportation users including regional connections to bicycle facilities.

### Study Area Bicycle Plans and Existing Facilities

There are a few existing bicycle facilities in the study area and several planned facilities including:

- *The Regional Veloweb* - An extensive 12-county network of off-street shared use paths or trails designed for use by bicyclists, pedestrians, and other non-motorized forms of transportation. NCTCOG works with local governments in the region to update the Veloweb recommendations. The only existing Veloweb trail in the study area is the West Fork West Trinity Trail, which is located in the Cities of Fort Worth and Westworth Village.

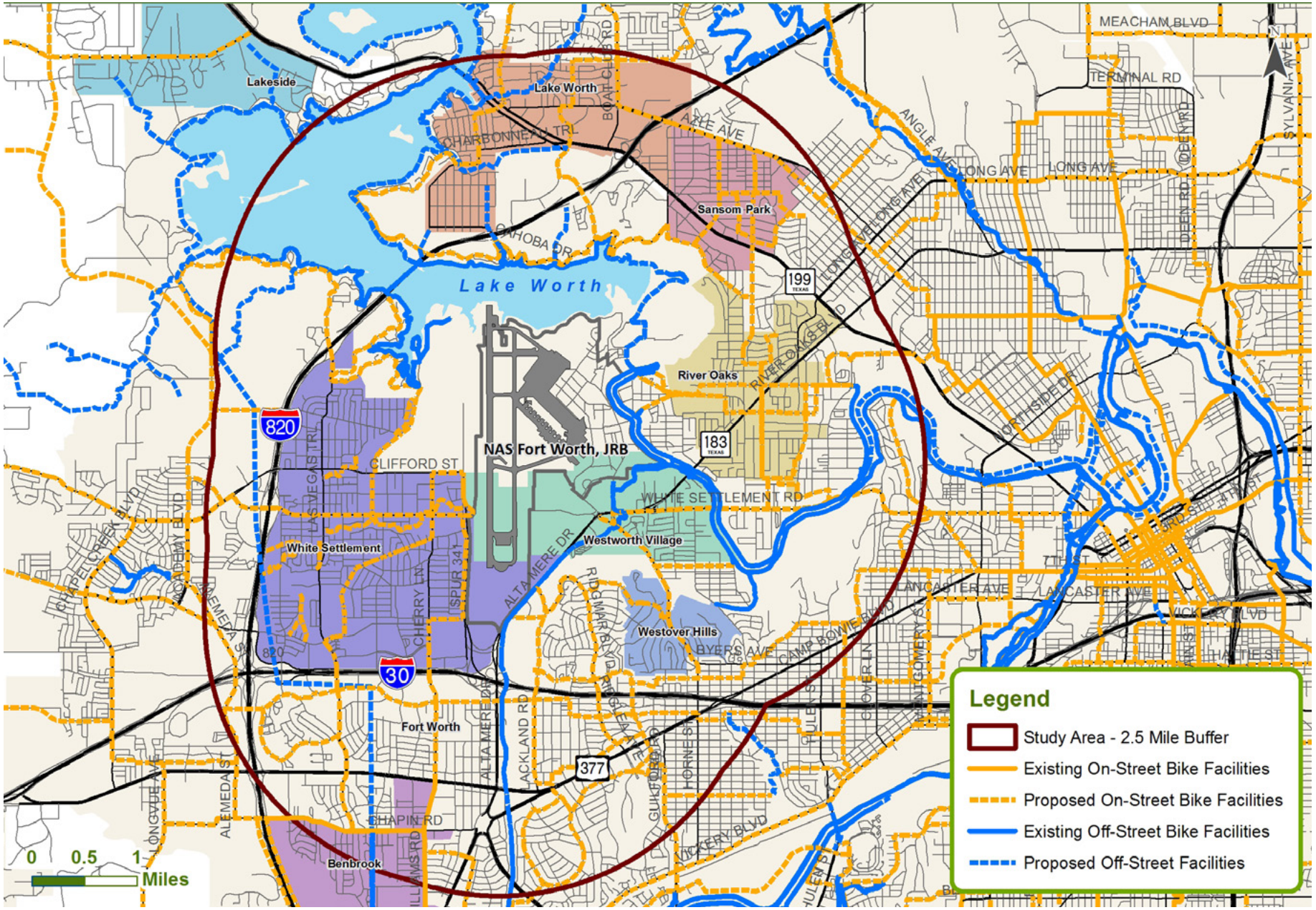
- *Bike Fort Worth* - The City of Fort Worth's existing and planned network of on and off-street bicycle facilities. All planned Bike Fort Worth trails in the study area align with the Veloweb except for the White Settlement-West Fort Worth Connector. Bike Fort Worth also includes the trail recommendations made from the Lake Worth Vision Plan.

- *City of Benbrook* – Has existing on-street bike lanes along portions of Chapin Road and Williams Road, as well as several proposed on and off-street facilities.

- *Cities of Benbrook, River Oaks, Sansom Park, Westworth Village, and White Settlement* - Have planned bicycle facilities documented in their Comprehensive Plans.

**Figure 3.22** depicts the existing and currently proposed on and off-street designated bicycle facilities from the Regional Veloweb, Bike Fort Worth, and city planning efforts. Additional bicycle and pedestrian facilities are needed to serve the local communities as well as strategic regional connections to major employers, recreational areas, and education uses.

**Figure 3.22** – Existing and Currently Proposed Bike Facilities in PLMC Study Area




SOURCE: NCTCOG Regional Veloweb, BikeFW, and local government comprhensive plans

**Regional Bicycle Connections Planning Process**

Various data and public input was considered in determining the needs for regional bicycle connections in the study area. For this analysis, bicycle route needs were identified that could improve connectivity in the study area based on three levels of scale:

- Regional Veloweb
- Study Area/Sub-Regional (Documented as part of the Corridor Visioning Workshops)
- Local City (Documented in the Individual City Comprehensive Plans)

The cities' existing bicycle infrastructure and planned routes were coupled with the Regional Veloweb planned and existing routes to identify connectivity gaps in the study area. An evaluation of major study area interest points such as schools, parks, and major employers was also used to assess the connections between the city plans and the Regional Veloweb to the identified interest points.

Additionally, bicycle connectivity needs were documented through stakeholder and public involvement initiatives. A variety of public involvement techniques were used to elicit feedback such as a bicycle and pedestrian survey that collected public and stakeholder perception of bicycle and pedestrian access to facilities in the study area. The majority of respondents strongly agreed with supporting additional bicycle and pedestrian facilities and using public funds to build bicycle and pedestrian facilities. Many indicated they would consider commuting by alternative modes if access to better bicycle and pedestrian facilities existed in the study area. Furthermore, the top three priority needs associated with improving bicycle and pedestrian facilities in the study area were identified through public input and include: 1) linking existing trails; 2) addressing safety concerns; and, 3) providing access to schools. **Appendix K** (Regional Bicycle and Pedestrian Facilities) provides additional information on the public feedback.

**Regional Bicycle Route Recommendations and Priorities**

Based on public input and analysis of existing and planned bicycle routes, several regional bicycle facilities are recommended to improve connectivity and support a regional network of bicycle infrastructure in the study area. **Table 3.19** provides a prioritized list of the recommended regional bicycle/pedestrian facilities, a description of access provided to major study area interest points, and the estimated population served. The recommendations include both on and off-street facilities and are prioritized based on the added benefits to the communities, such as increased access to employers, schools, parks, and community areas, as well as public feedback.

**Table 3.19** – Prioritized Regional Bicycle/Pedestrian Facilities and Access to Study Area Points of Interest

| Order of Priority | Bicycle Facility | Facility Type | Safety Concerns | Access to Employers | School Access | Connections to Parks/ Open Space | Connections to Existing/ Planned Trails/Bike Lanes | Connections to Community Areas | Population (within 0.25 mile of trail) | Cities | Public Input |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Bomber Spur (Southern Access to Lockheed Martin) | Off-Street Path (Where feasible) | X | X | X | X | X | X | 13,280 | 3 | X |
| 2 | Lake Worth Trail | Off-Street Path (Where feasible) | | X | X | X | X | | 8,629 | 1 | X |
| 3 | State Highway 183 and State Highway 199 | To be determined through additional planning and engineering studies | X | X | X | X | X | X | 26,500 | 6 | X |
| 4 | River Oaks Trinity Trails Connection (Meandering Road and Roberts Cut Off Road) | On-Street Bike Lane Alternative Route: Signed Route and Off-Street Path | X | X | X | X | X | | 4,780 | 2 | X |
| 5 | Southeast Connection to Base Entrance (Roaring Springs Road & Horne Street) | Off-Street Sidepath | | X | X | X | | X | 7,750 | 3 | |

Additional information of the bicycle facility type recommended is discussed in **Appendix K**. **Figure 3.23** is a map depicting this study's recommended priority regional bicycle facilities in addition to all the current planned facilities from existing comprehensive plans, Bike Fort Worth, and the Regional Veloweb. If each of the recommended regional facilities was implemented over time, a bicyclist could circle the base and Lockheed Martin (on different route types) and connect to many other planned facilities, providing regional mobility and access to local community facilities.

For context, **Figure 3.24** depicts this study's recommended regional bicycle facilities in addition to this study's proposed local routes. The recommended local routes are further discussed in the individual PLMC Comprehensive Plan Visions for each city. Figures **3.25** and **3.26** illustrate the local bicycle and pedestrian routes proposed for each PLMC city.

**Figure 3.23** – Prioritized PLMC Regional Bicycle and Pedestrian Route Recommendations

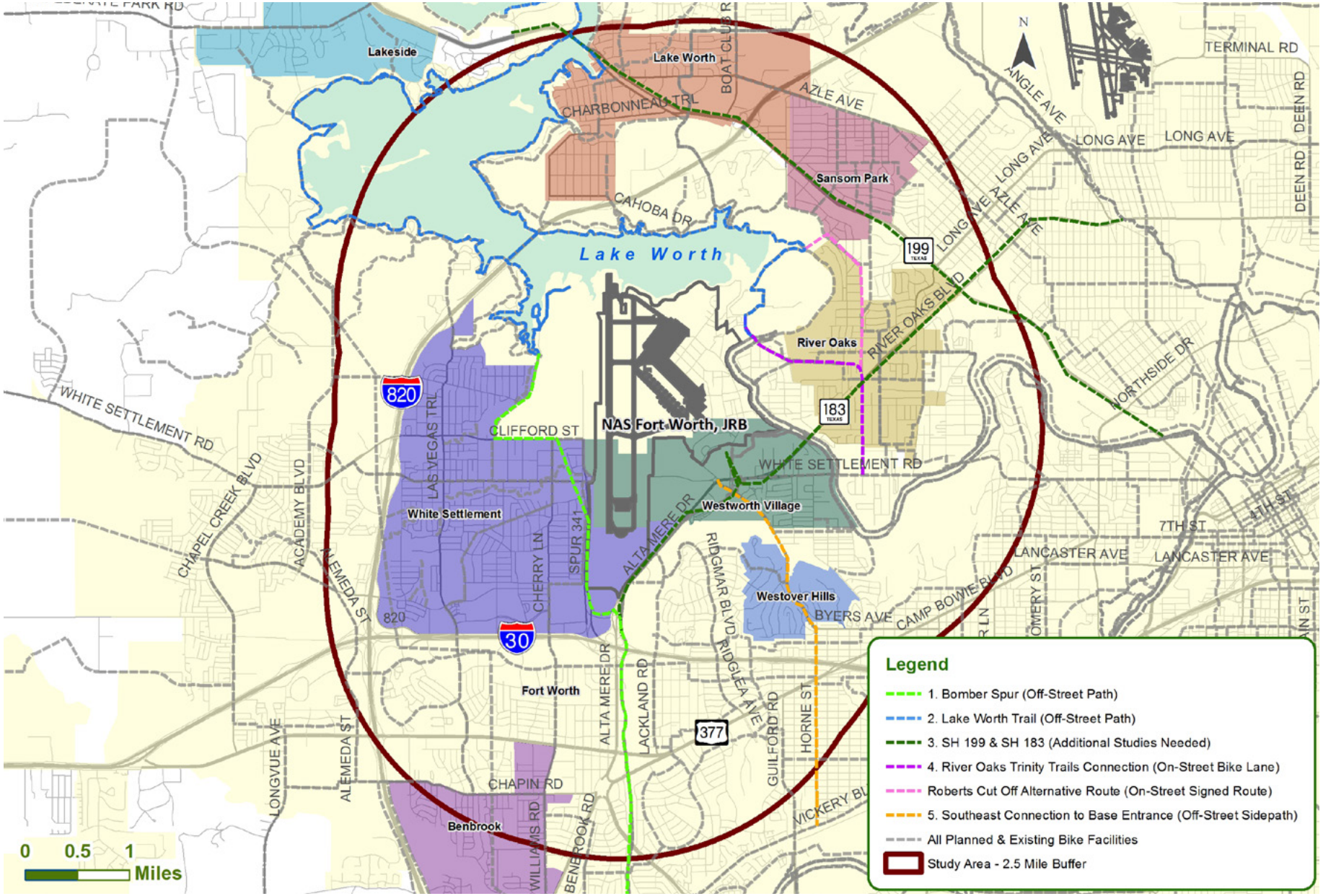


**Figure 3.24** – Prioritized PLMC Regional and Local Bicycle Route Recommendations

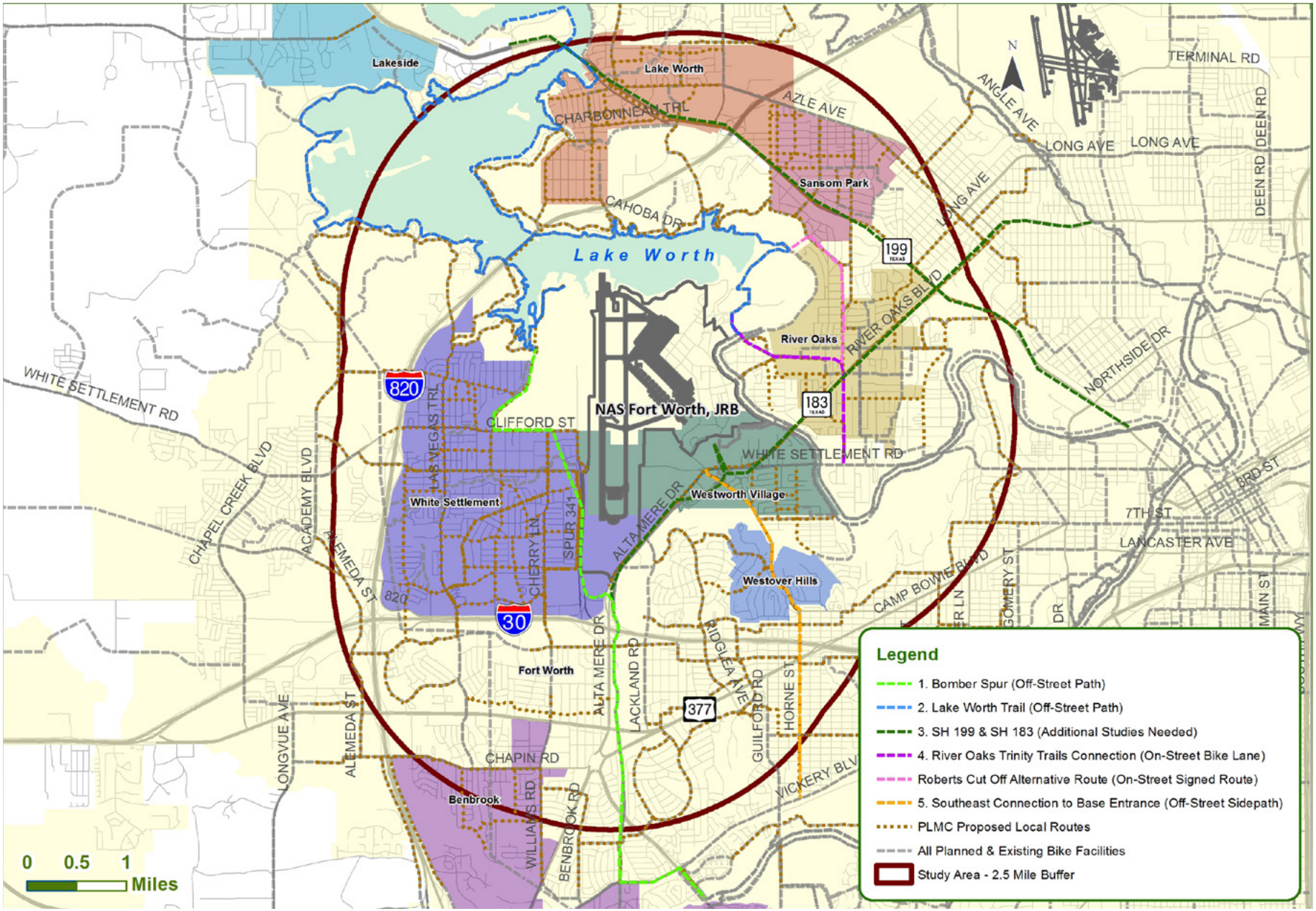
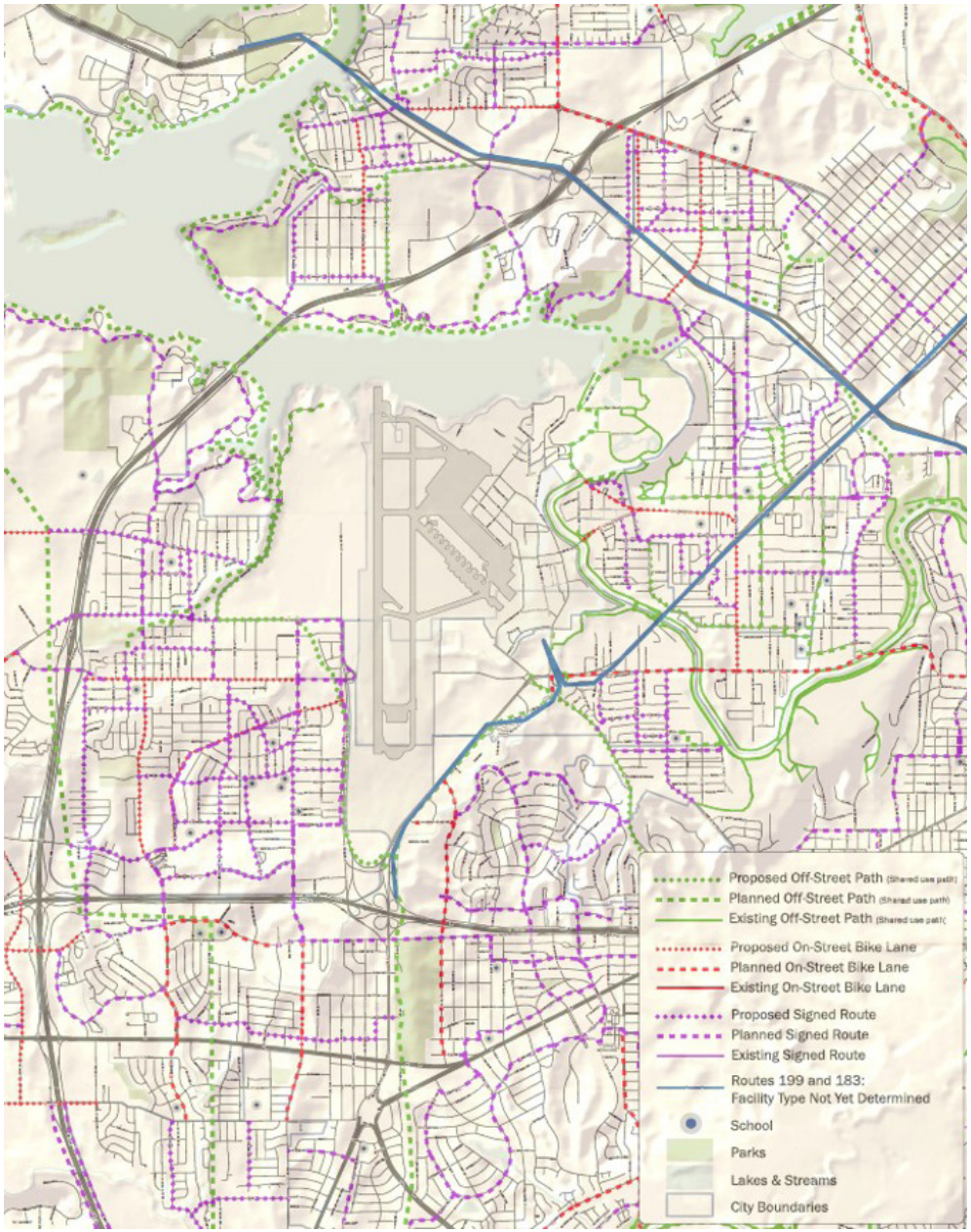


**Figure 3.25** – PLMC Local City Bicycle Route Recommendations




*Proposed routes are recommended as part of this study.

Planned routes are those recommended in previous plans and studies.

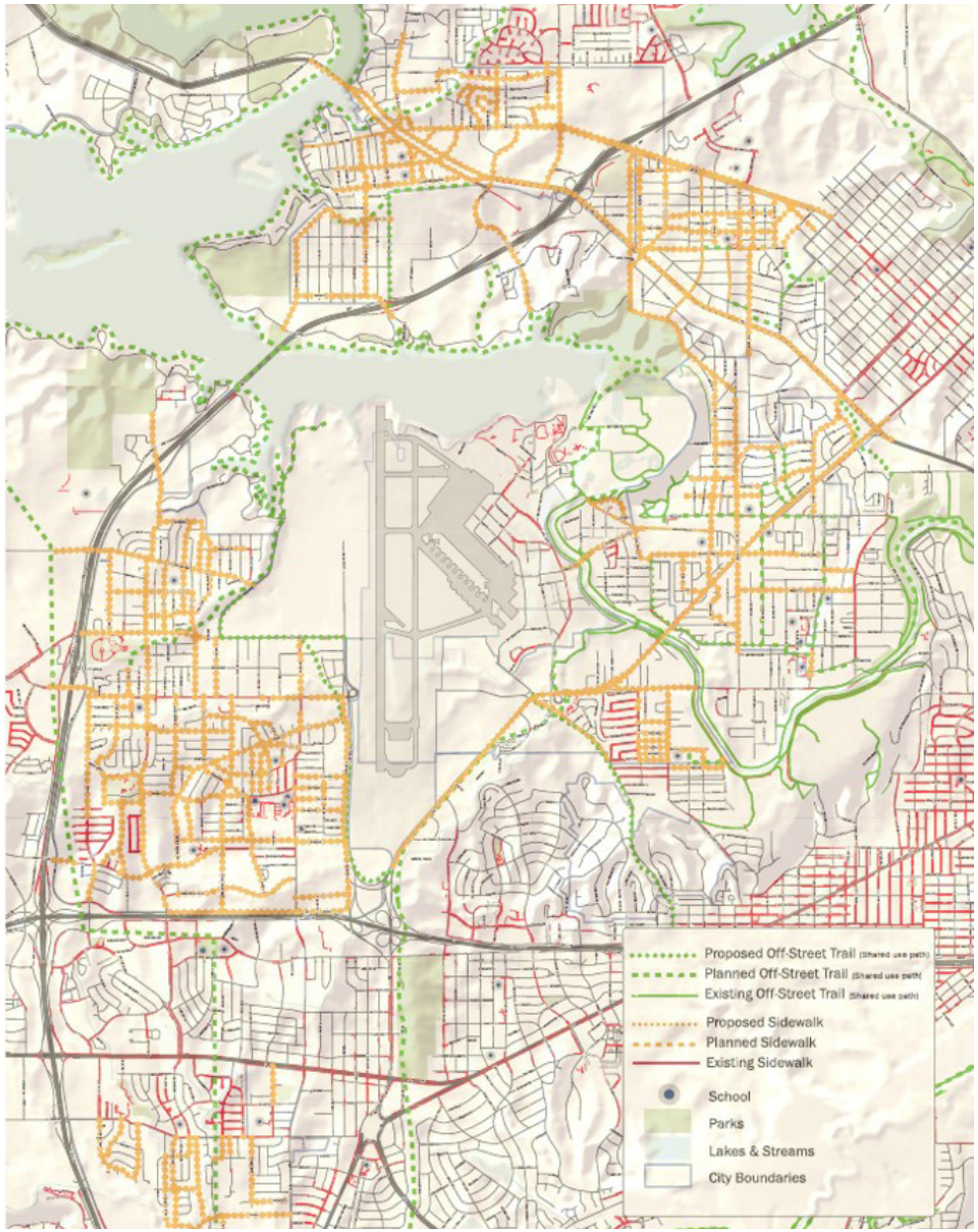
**Strategic Regional Bicycle and Pedestrian Priorities for Further Study**

As **Figures 3.25** and **3.26** demonstrate, if all the PLMC study recommended regional and local routes in addition to the existing planned bike facilities were implemented, a significant system of bike facilities would serve the communities and larger sub-region. Bicycle and walking access to major employment centers; local and regional recreation and entertainment venues; and, local community services would be greatly improved if these facilities were coordinated and implemented over time. This system of intra-jurisdictional bicycle and pedestrian connections would provide residents a safer, non-automobile option to travel between sub-regional destinations.

Implementing all of these bicycle recommendations would take several years and dedicated funding. Because of the costs associated with implementing a system of this size, several strategic regional bicycle and pedestrian routes are recommended for further study and emphasized as priorities in the study area. These priority studies and projects are recommended to improve strategic regional connections and serve as catalyst bicycle and pedestrian projects. A description of these recommendations is provided in **Appendix K**.

- Lockheed Martin/Bomber Spur Connection
- Airfield Falls and Westworth Village Connection
- Trinity Trails/Marian Sansom Park Connection

**Figure 3.26** – PLMC Local City Pedestrian Recommendations




*Proposed routes are recommended as part of this study.

Planned routes are those recommended in previous plans and studies.

**Table 3.20** provides recommendations for local governments to aid in implementing the recommended regional bicycle/pedestrian facilities in addition to enhancing integration of bicycle/pedestrian facilities into their local planning initiatives and transportation projects. The table is divided between actions related to education, enforcement, and engineering and includes estimated timeframes for implementation, relative costs, implementing entities, and possible funding sources.

**Table 3.20** – Recommended Regional Bicycle/Pedestrian Facilities

| Recommended Actions: Regional Bicycle Facilities | | | | | |
|---|---|---|---|---|---|
| **Project/Initiative** | **Timeframe** | **Responsible Entities** | **Partners** | **Funding Sources** | **Order of Magnitude Cost** |
| Policy: Encourage Bicycle and Pedestrian Education and Additional Planning Studies | | | | | |
| • Include consistent language to describe the existing or planned bike facilities in the general descriptions and in maps as bike plans, thoroughfare plans, and comprehensive plans are being updated. | Short Term | City Staff<br>County Staff | Private/<br>Non-profit | Local | Low |
| • Continue with regional partnerships to pursue all eligible federal and state funds for bicycle and pedestrian planning and development through grant programs/applications. | Short | Cities<br>County | Private/Non-profit<br>NCTCOG | Federal/State | Low |
| • Provide bike education regarding existing and planned facilities and safety via website, social media, paper publications/brochures. | Short | Cities<br>Schools | Police Department<br>NCTCOG | Federal/State | Low/Medium |
| • Support and encourage regular and continuing bicycle and pedestrian training and safety programs in conjunction with local institutions, organizations, and bicycle and pedestrian interest groups. | Short | Cities<br>Schools | Police Department<br>County<br>Private /Non-profit | Federal | Low/Medium |
| • Conduct an in depth safety analysis to get additional information on the reason(s) for bicycle/pedestrian accidents. | Medium | Cities<br>County | Hospitals<br>Police Department<br>NCTCOG | Federal | Medium/High |
| Policy: Enforce Bicycle and Pedestrian Priorities through Planning Updates | | | | | |
| • Include/adopt Trail Recommendations in this study, Regional Veloweb and Bike Fort Worth plan into city thoroughfare plan to ensure that future roadway and development accommodates the appropriate bike facility. | Short | Cities | N/A | Local Funds | Low |
| • Coordinate with NCTCOG to consider bicycle route planning updates and funded projects during development and updates to the Regional Veloweb and Metropolitan Transportation Plan | Ongoing | City Staff | City/NCTCOG | N/A | Low |
| • Coordinate with neighboring cities to ensure a continued and consistent bicycle network for all future planned routes. | Ongoing | Cities | Private (if applicable) | N/A | Low |
| • Move forward with trail engineering plans to continue planning efforts to take opportunity of federal funding. | Medium | Cities | N/A | Federal/State | Medium |
| • Explore establishing a staff position to act as a technical resource for zoning, land use, and roadway design changes to promote bicycle and pedestrian friendly development, as well as for grant writing. | Medium | Cities<br>County | N/A | Local Funds | Medium/High |

**Table 3.20** – Recommended Regional Bicycle/Pedestrian Facilities (continued)

| Recommended Actions: Regional Bicycle Facilities | | | | | |
|---|---|---|---|---|---|
| **Project/Initiative** | **Timeframe** | **Responsible Entities** | **Partners** | **Funding Sources** | **Order of Magnitude Cost** |
| Policy: Prioritize Bicycle and Pedestrian Facilities in Engineering Phases | | | | | |
| • Provide amenities and end-of-trip facilities such as bicycle parking and storage, lighting, landscaping, signing, pavement marking, and signalization to enhance the value and increase the utility and safety of the bicycle facilities. | Long | Cities | Private /Non-profit | Local Funds & Federal/State | Medium |
| • Include bicycle and pedestrian planning infrastructure in all transportation improvements (resurfacing, paving, new construction, intersection improvements, reconstruction, and maintenance) | Long | Cities | N/A | Local Funds | Medium |
| • Establish a maintenance program and maintenance standards that ensure sage and usable bicycle and pedestrian facilities. | Long | Cities | N/A | Local Funds & Federal/State | Medium/High |
| • Move recommended trails to implementation. When evaluating engineering solutions, each community should continue to vet each recommendation through the planning process to ensure the largest representation possible of public feedback and buy-in. Cost will also need to be considered and the physical viability through initial engineering. | Long | Cities | Private/Non-profit | Local Funds & Federal/State | High |

## 3.8.7 | Pedestrian Access and Safety

### Introduction

Active transportation inherently relies on the availability of facilities like sidewalks and other on- and off-street facilities like bike lanes or trails. Investing in active transportation facilities can encourage community members to be more active and reduce pollution and other health concerns. This section outlines some of the existing conditions and current barriers for pedestrians in the communities surrounding NAS Fort Worth, JRB and provides recommendations based on an analysis of existing facilities inventory, safety data, and community feedback regarding areas of particular concern. **Appendix L** provides additional detail for Localized Pedestrian Access and Safety.

Two specific groups that can benefit the most from promoting active transportation in the communities surrounding NAS Fort Worth, JRB are school aged children and seniors. Residents aged 60 and over accounted for over 17 percent of the total population, while children under the age of 15 years old represented over 21 percent of the population.

### Accessibility for Children

Children walking and biking to and from school represent a specific group among whom active transportation can be effectively promoted. Portions of four independent school districts (ISDs) serve the area surrounding NAS Fort Worth, JRB, including Castleberry ISD, Fort Worth ISD, Lake Worth ISD, and White Settlement ISD.

There are currently 30 schools within the study area. In addition to these schools, portions of attendance zones – the areas from which a school draws its enrollment – from 14 additional schools are located within or partially within the study area. Among these schools are 22 elementary schools, 11 middle schools, 8 high schools, and 3 private schools. 26 of these schools are currently located within 1,000 feet (approximately 0.2 miles) of a highway or major arterial.

### Accessibility for Seniors and Persons with Disabilities

Seniors represent another population group in the study area that can benefit from safety interventions and other projects promoting active transportation and mobility. Access to civic life by people with disabilities is a fundamental goal of the Americans with Disabilities Act (ADA). To ensure that this goal is met, Title II of the ADA requires State and local governments to make their programs and services accessible to persons with disabilities.

The Americans with Disabilities Act of 1990 mandates guidelines for public buildings and facilities for users with disabilities and required all city governments to complete a self-evaluation of their facilities, programs, policies, and practices in the early 1990s. Additionally, public agencies with more than 50 employees should have an ADA Transition Plan. The Transition Plan identifies needed structural changes and sets a schedule for implementing them. There are several resources available to local governments that are required to have a Transition Plan. One such resource is ADA Transition Plans: A Guide to Best Management Practices that provides seven steps for meeting the requirements of ADA.

City governments and public agencies that do not meet the 50 employee threshold requirement for Transition Plans should still consider steps to improve access for persons with disabilities in their communities. Accessibility via sidewalks, ramps, and other key transportation elements help support a safe transportation system, promote mobility amongst seniors and those with disabilities, and improve the overall quality of life and accessibility to all community residents.

**Localized Pedestrian Access and Safety Considerations Planning Process**

Throughout the planning process, a variety of outreach tools such as surveys, presentations, and open houses, were employed to solicit input from residents, business owners, public officials, and other stakeholders. Generally speaking, the communities involved in the planning process exhibited strong support for improving safety and accessibility for pedestrians in the study area. More specifically, the following items represent some of the most common concerns and ideas voiced during the public participation process:

- Access to schools for children walking or biking
- Sidewalks needed to accommodate pedestrian traffic on the main thoroughfares/ corridors in the area, particularly along US 377, State Highway 183, and State Highway 199
- Connectivity to key destinations such as grocery stores, pharmacies, post offices, parks, schools, libraries, and places of employment
- Sidewalk access to local parks and trails

In addition to public input, an inventory of existing sidewalks and crash data for the study area were used to produce two key data sets that inform the study area's need for enhanced sidewalks and safety improvements.

**Existing Sidewalk Density**

Several of the cities in the study area do not have many sidewalks along residential or arterial streets. An analysis was performed to determine the "sidewalk density" of an elementary school attendance zone by measuring the total linear length of sidewalks in each elementary school attendance zone as a ratio of the linear length of the roadway network in each zone. By measuring the availability of sidewalks against the existing road network, the sidewalk density enables entities to more accurately compare the existing pedestrian conditions in the attendance zones based on the level of development within each area.

The average sidewalk density in all of the study area elementary school zones is 0.27. That means that for every foot of roadway (excluding interstate highways or highway access ramps), there is 0.27 feet of sidewalk. The elementary school attendance zone with the highest sidewalk density is South Hi Mount Elementary (Forth Worth ISD) with 0.75 feet of sidewalk for every foot of roadway, while the elementary school attendance zone with the lowest sidewalk density is Joy James Elementary (Castleberry ISD) with a sidewalk density of 0.02.

**Safety Analysis and Crash Density**

In addition to the existing facilities analysis, crash data provided by the Texas Department of Transportation (TxDOT) Crash Records Information System (CRIS) was analyzed to assess safety near elementary school sites. In order to better compare the frequency of crashes among the different attendance zones studies, an analysis was performed to assign a crash density to each attendance zone.

The crash density measures the number of crashes per roadway mile for each attendance zone. The average crash density involving bicyclists and pedestrians for the aggregated elementary school attendance zones was 0.16. The crash densities ranged from 0.03 in the Effie Morris Elementary attendance zone to 0.71 in the Dolores Huerta Elementary attendance zone. The total number of crashes among all of the combined attendance zones was 10,970. The total number of crashes involving bicyclists or pedestrians among all of the combined attendance zones was 186 (1.7 percent). Twenty-two percent of all bicyclist/pedestrian crashes in the study area occurred within ¼ mile of a school.

### Localized Pedestrian Access and Safety Recommendations and Priorities

Based on public input and sidewalk and crash density analyses for each attendance zone in the study area, several pedestrian access and safety recommendations are identified for future consideration by the study area communities. Because safe access to schools by children was one of the most common priorities established as a result of this study, a focus on improving sidewalk and safety features around schools should be priorities of both the Independent School Districts and the communities the schools reside in. Several recommendations of this study focus on improving access to schools and are further described in **Appendix L**. **Table 3.22** outlines recommended actions to improve pedestrian access and safety in the PLMC communities.

### Sidewalk and Safety Catalyst Improvement Sites

Based on the existing pedestrian facilities inventory and the analysis of crash data, as well as community feedback gathered, **Table 3.21** provides specific schools where safety interventions and other best practices might positively impact safety and active transportation.

**Table 3.21** – Recommended School Safety Catalyst Sites

| School | District | Jurisdiction | Existing Sidewalk Density | Number of Bicycle/ Pedestrian Crashes | Additional Comments |
|---|---|---|---|---|---|
| **Burton Hill Elementary** | FWISD | Westworth Village | 0.40 | 3 | High rate of motorized traffic crashes along SH183. |
| **Castleberry Elementary** | CISD | River Oaks | 0.08 | 3 | Roberts Cut-Off Road represents a significant barrier to safely access the school. |
| **Effie Morris Elementary** | LWISD | Lake Worth | 0.08 | 1 | Lack of pedestrian infrastructure connecting school site to nearby residential areas. |
| **Joy James Elementary** | CISD | Sansom Park | 0.02 | 7 | Bicycle and pedestrian crash rate more than double the study area average. |
| **Waverly Park Elementary** | FWISD | Benbrook | 0.19 | 17 | Attendance zone is drawn in a noncontiguous manner, making non-motorized access difficult. |
| **West Elementary** | WSISD | White Settlement | 0.32 | 4 | Proximity to White Settlement Road and Las Vegas Trail creates safety concerns. |
| **W.J. Turner Elementary** | FWISD | Fort Worth | 0.18 | 2 | High rate of motorized traffic crashes along Azle Avenue. |

**Safe Routes to School Program**

One proven program for promoting safety and encouraging active transportation among students traveling to and from school is the Safe Routes to School program. Safe Routes to School (SRTS) is a movement aimed at creating safe, convenient, and fun ways for children to walk and bike to school. SRTS programs do more than simply encourage daily physical activity; successful programs integrate operational and physical improvements with education and encouragement to cultivate a culture of healthy initiatives among children of all ages.

A key component of a successful SRTS program requires cities and ISDs to form a plan of action that addresses specific barriers to accessibility for children bicycling or walking to and from school. Implementing a successful SRTS program requires a network of people and agencies working together. The following process could be used to implement a successful SRTS program:

1. Create a Safe Routes to School team comprised of staff members from ISDs and cities, as well as members of the community like parents, teachers, and students
2. Document safety problems around the school and parental concerns
3. Make needed short-term safety improvements
4. Map "safer walking routes" or create "walking school buses"
5. Hold pedestrian and bicycle safety education workshops
6. Step up traffic safety enforcement
7. Build excitement through small promotional contests and activities
8. Apply for funding for longer-term, more costly improvements

Table 3.22 – Pedestrian Access and Safety Recommendations for Local Governments

| Recommended Actions: Localized Pedestrian Access and Safety Facilities | | | | | |
|---|---|---|---|---|---|
| **Project/Initiative** | **Timeframe** | **Responsible Entities** | **Partners** | **Funding Sources** | **Order of Magnitude Cost** |
| Policy: Develop Plans and Build Partnerships | | | | | |
| Develop a Pedestrian Safety Action Plan (PSAP). At a minimum, the PSAP should:<br>• Include data that identifies safety issues and challenges<br>• Analyze and prioritize concerns<br>• Identify funding opportunities for implementation of safety solutions<br>• Evaluate the effectiveness of proposed implementation solutions | Short Term | City | ISD, School, Community Stakeholders | City, ISD's, Non-profits | Medium |
| Create a Safe Routes to School team to identify needs and work towards applying for funding opportunities. | Short Term | City, ISD | Community Stakeholders | | Medium |
| Work with school districts to site future school sites to capitalize on existing pedestrian facilities. | Long Term | City | ISD | | High |
| Develop ADA Transition Plans for local governments and public agencies with 50 or more employees | Short Term | Cities/ISDs/Tarrant County/Tarrant Regional Water District/Other Public Agencies in Study Area | Community Stakeholders/ Health and Human Services Agencies/Seniors and Persons with Disabilities Stakeholders | Public Agencies, Local Governments | Medium |
| Coordinate with NCTCOG and other transportation partners for training, technical assistance, planning updates, data, and funding opportunities | Short Term | City and ISDs | TxDOT, other public agencies | | Low |
| Policy: Promote Safe Walking and Biking Options through Engineering | | | | | |
| Partner with local governments on a comprehensive assessment of infrastructure and safety issues around schools to help prioritize investments. | Mid Term | City | ISD, School | | Medium |
| Develop school transportation safety policies at the district or campus level that included considerations specific to safety for students walking and biking. | Mid Term | ISD | City, School, Law Enforcement | ISD | Medium |
| Develop a sidewalk maintenance program to ensure facilities are safe and operational for all users including individuals with mobility impairments. | Mid Term | City | | City | Medium |
| Require proposed developments to include pedestrian facilities on their property to promote pedestrian connectivity among major origin/destination land uses. | Long Term | City | | Developers | Medium |
| Preserve right-of-way for proposed sidewalks and other off-street facilities, particularly near school sites, parks, and residential areas. | Long Term | City | TxDOT | Federal, State, Local | Medium |
| Develop a connected system of pedestrian facilities that can serve major origin and destination points, linking compatible land uses like residential areas, commercial zones, civic centers, schools, parks, and other recreational facilities. | Long Term | City | NCTCOG, TxDOT, Community Stakeholders | Federal, State, Local, Philanthropic | High |
| Include pedestrian planning considerations in all transportation improvements (i.e. new construction, intersection improvements, and maintenance). | Long Term | City | TxDOT | | High |

Table 3.22 – Pedestrian Access and Safety Recommendations for Local Governments (continued)

| Recommended Actions: Localized Pedestrian Access and Safety Facilities | | | | | |
|---|---|---|---|---|---|
| **Project/Initiative** | **Timeframe** | **Responsible Entities** | **Partners** | **Funding Sources** | **Order of Magnitude Cost** |
| Policy: Enhance Education Initiatives at Schools | | | | | |
| Create after-school clubs or programs that reinforce walking and bicycling safety through fun excursions that are both educational and recreational. | Short Term | School | ISD | ISD | Low |
| Incorporate lessons and messages about bicycling and walking into health curricula, physical education, lessons, school announcements, and other events at school. | Short Term | ISD | School | ISD | Low |
| Engage students (and families) in activities to assess traffic safety issues and needed infrastructure improvements near schools. | Mid Term | ISD | School, Community Stakeholders, Law Enforcement | ISD | Low |
| Create safe walking route maps for every school with input from city officials, school personnel, parents, and students. | Mid Term | ISD | City, School, Community Stakeholders | ISD | Low |
| Policy: Encourage Walking and Biking through School and Community Events | | | | | |
| Promote walk and bike to school days combined with health and safety messaging to students and parents. (Schools and ISDs can participate in International Walk and Bike to School Day, or hold campus/district level events like "walking Wednesdays" to encourage more active transportation. | Short Term | ISD | School, Law Enforcement, Community Stakeholders, NCTCOG | ISD | Low |
| Encourage walking and biking through school-based events. Encourage parents and staff members to model active transportation behaviors whenever possible. | Short Term | ISD | School, Community Stakeholders | ISD | Low |
| Coordinate community-based events like walking school buses to encourage students to walk to school. | Short Term | School | ISD, Community Stakeholders | ISD | Low |
| Engage students and community members in the process of assessing their environment through traffic counts, hazard assessments, photo documentation, air quality sampling, and community surveys. | Mid Term | School | City, ISD, Community Stakeholders | ISD | Medium |
| Policy: Enforce Safety and School Zone Policies | | | | | |
| Work with local governments and law enforcement to patrol areas around schools during arrival and dismissal and place crossing guards and key intersections. | Short Term | City | ISD, School, Law Enforcement | | Medium/High |
| Coordinate with local governments and law enforcement personnel to expand the radius protected by school zones into the neighborhoods adjacent to schools. | Mid Term | City | ISD, School, Law Enforcement | | Low/Medium |
| Advocate for policies that reduce speed limits in designated school zones, increase fines/ sanctions against drivers who disobey school zone laws, and dedicate additional fines to fund safety programs and/or infrastructure improvements near schools. | Mid Term | State/County Agencies | TxDOT, City, ISD, School, Law Enforcement | | Low/Medium |

**Table 3.22** – Pedestrian Access and Safety Recommendations for Local Governments (continued)

| Recommended Actions: Localized Pedestrian Access and Safety Facilities | | | | | |
|---|---|---|---|---|---|
| **Project/Initiative** | **Timeframe** | **Responsible Entities** | **Partners** | **Funding Sources** | **Order of Magnitude Cost** |
| Policy: Continue Evaluation of Needs and Update Plans | | | | | |
| Begin collection counts of pedestrians and bicyclists in target areas that can provide a baseline of data regarding active transportation and serve as an objective analysis to support investment in active transportation facilities for the future. This data is important for evaluation of changes made and projects constructed. | Short Term | City | NCTCOG, ISD, School | City, ISD, Grants, Technical Assistance Grants | Low |
| Conduct surveys among students and parents to determine current commuting habits and identify barriers to active transportation. | Short Term | School | ISD, Community Stakeholders | ISD | Low |
| Create and maintain a comprehensive inventory of sidewalks and other local pedestrian facilities to aid in future planning and assessment. | Mid Term | City | NCTCOG | City, Grants, Technical Assistance Grants | Low/ Medium |
| Create safe walking route maps for every school with input from city officials, school personnel, parents, and students. | Mid Term | ISD | City, School, Community Stakeholders | ISD | Low |
| Advocate for policies that reduce speed limits in designated school zones, increase fines/ sanctions against drivers who disobey school zone laws, and dedicate additional fines to fund safety programs and/or infrastructure improvements near schools. | Mid Term | State/County Agencies | TxDOT, City, ISD, School, Law Enforcement | | Low/Medium |

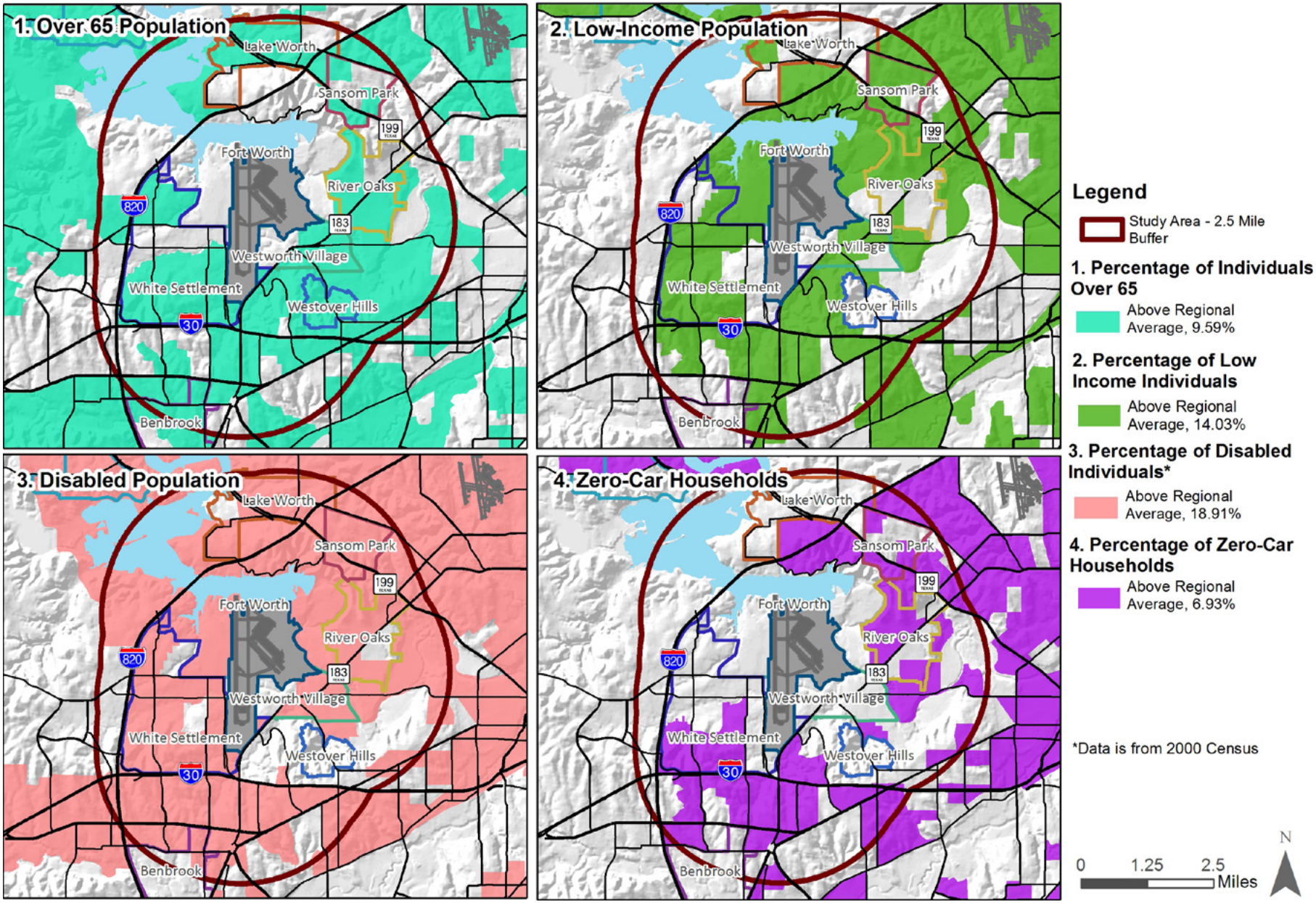
## 3.8.8 | Public Transportation Options

Multi-modal transportation planning is becoming the new paradigm in evaluating different modes and options to get people where they need to go. In the Dallas-Fort Worth area, public transit options are becoming an increasing priority among elected officials and community residents. With fuel prices and congestion rising, ridership numbers are increasing with more discretionary riders. The study area has an aging population that will need a mobility option other than a personal automobile. The equity benefit of having improved transit service in the area is justified, the cities needs coupled with a high concentration of jobs (approximately 25,000 between Lockheed and NAS Fort Worth, JRB) prompts improved transit access to the area. For added transit in the study area to be effective, new routes must provide access to goods and services along SH 183 and SH 199, provide access to downtown Fort Worth, major employers, and other key destinations.

Public transportation also provides a valuable lifeline for some specific groups. **Figure 3.27** demonstrates four key demographic groups that often rely on public transportation to meet their mobility needs including seniors (over 65), low-income individuals, individuals with disabilities, and zero-car households. As shown, the study area has many areas in the partner communities that exceed the regional averages for each of these demographic groups. Considering the mobility needs of these special populations is important and should inform the process of planning for and implementing services that meet the needs of these specific groups in addition to the general population.

Currently, the majority of the communities in the study area are not served by any fixed-route (bus) public transportation, however, parts of Fort Worth in the study area are served by the Fort Worth Transportation Authority (FWTA or the T) bus routes. Several communities in the study area do take part in specialized services as referenced in this study. This study evaluated the potential of implementing additional transit to major employment and commercial centers in the area and provides strategies for the local governments and other regional transit partners to work towards providing future public transportation services to the area. See **Appendix M** for the full analysis of public transportation options.

**Figure 3.27** – Title VI/Environmental Justice Considerations for Public Transportation Analysis



**Potential Enhancements for Public Transportation Service in the Study Area**
The needs and strategies were reviewed against evaluation criteria to determine potential enhancements to implement in the next three to five years that could meet needs identified in the study area. The criteria took into account community support and meeting the greatest need, the number of transportation benefits reaped, the overall cost, implementation time-frame, staging and coordination. To meet the transportation needs identified in the study area, the following potential strategies may be implemented in the near term. Strategies are listed below in order of most fitting for the geographic and demographic make-up, resources, and interest within the communities in the study area.

## Near-Term Public Transportation Enhancements

**Community Shuttle Service**
Community shuttle service in the study area is provided by Tarrant County Transportation Services (TCTS) to residents age 65 and older and to people with disabilities that reside in Benbrook, Sansom Park and Westworth Village. This type of service is common in small or rural communities and may take the form of fixed-route or demand-response services. Services provide residents with limited transportation options (seniors, individuals with disabilities, general public) access to shopping and medical services on designated days. Since service is limited and scaled based on its funding, other cities within the study area should consider utilizing the existing service by providing local matching dollars. This low cost alternative may help cities provide additional service on specified days of the week to transit dependent residents. Service hours of such a service are dependent on funding and ridership demand within given communities. Ridership is highly dependent on the service design, and can range from one round-trip per day to dozens of trips per day. Since the study area is made up of several small communities where coverage is needed in significantly lower-density environments, a community shuttle may address the needs of residents fairly well. A community shuttle is low cost, can be very flexible, and meets multiple needs in the study area.

**Site Specific Shuttle Service**
An example of a site specific shuttle service operating in the study area is Senior Citizen Services of Tarrant County (SCSTC). This nonprofit organization provides a variety of services which include door-to-door rides to seniors who have signed up as meal participants at one of the eleven senior centers SCSTC contracts with. This service is jointly funded by grants, donations and a nonprofit agency to secure trips for this population group. Citizens in White Settlement would likely utilize a shuttle service to their active Senior Center near city hall. Within the study area, there are similar opportunities to provide site specific shuttle service to transit dependent groups. Potential sponsors that may be able to assist with funding may include several of the large employers, senior centers, nonprofit and human service agencies that exist in the study area. Sites that may be accessed with these funds can include employment sites, human service facilities, senior centers and the like.

**Americans with Disabilities Act (ADA)/Eligibility Based Dial-a-Ride**
This type of service can be described as a demand-response service that is generally provided for seniors and people with disabilities. In areas where fixed-route service exists, the Federal Transit Administration (FTA) requires that ADA complementary paratransit service must exist. In Tarrant County, this is provided through MITS, the T's paratransit service. Fares are generally comparable to a fixed-route service and reservations must be made at least the day before the trip. The service is well understood within the study area and has been identified as a key need among seniors. Through outreach efforts, much of the comments and questions have centered around why a similar service like MITS cannot be provided in the communities in the study area. Since this type of service is costly to implement and may only serve a relatively small number of residents, it may be beneficial for cities to buy service from an existing provider such as the T.

**General Public Dial-a-Ride**
General public dial-a-ride service is similar to ADA/eligibility based dial-a-ride service, except that this service is provisioned for the general public (which may also include seniors and individuals with disabilities). This type of service is common in low-density environments with dispersed destinations, as the demand-response component of the service provides the ability to serve a large geographic area. Daily trip limits per passenger are commonly included in the program guidelines and the requirement to book travel in advance is essential. Hours of operation are based on demand and funding available. For a successful general public dial-a-ride service, it is imperative to have well-defined boundaries to ensure reasonable trip distances and travel times. The dispersed communities and need within the study area provide a potential opportunity to provision a service such as general public dial-a-ride. Service is costly and opportunities to contract with public or private providers of similar service exist. Further, partnerships with other communities in the study area to pool funding together may be beneficial to cover the costs of this type of service.

**Volunteer Driver Program/Reimbursement Program**

In a volunteer driver program, volunteer drivers generally use their own vehicles or can sometimes be provided a vehicle by an agency to offer transportation to targeted individuals. Volunteer programs generally serve people with disabilities, seniors, and individuals with temporary situations such as job hunting or going for a routine medical checkup. For a volunteer driver program to be successful, it requires a well-established network for volunteer recruitment as well as a strong volunteer base. An agency that is able and willing to take on labor-intensive administrative functions is also necessary. In the study area, a volunteer driver program/reimbursement program would assist in serving individuals with the greatest needs since a dedicated and regularly scheduled transportation service is unavailable. Service in the study area as well as some service for long distance trips outside of Tarrant County to serve specialized destinations (such as the Dallas VA Medical Center) would also prove beneficial. Implementing such a program in the study area will be low cost since the majority of funding will be needed mainly for potential mileage/driver reimbursement and administrative costs for the lead agency. Cities may look to private and public sponsorships, as well as in-kind offers to help defray costs. One example of a small scale volunteer driver program close to the study area communities that is operated by non-profit organizations such as churches, is the Good News Program in Azle. This, coupled with the several other Tarrant County volunteer driver programs such as Mid-Cities Care Corps, SeniorMovers, and Social Transportation for Seniors, presents an opportunity for coordination and collaboration to advance a similar program within the study area.

## Other Service Enhancements

**Raising Public Awareness of Transportation Programs**

Raising public awareness refers to outreach, marketing and educational efforts that should be conducted to educate the public about transportation options in their community, in order to increase the likelihood that they will try these alternatives instead of remaining isolated, driving solo, missing necessary medical appointments, or not participating in life enriching activities. While there are only two primary transportation service options in some cities in the study area (Social Transportation for Seniors – White Settlement, Tarrant County Transportation Services – Benbrook, Sansom Park, Westworth Village), it is important to have a resource to educate and promote services that exist in and outside of the study area. Promotion of services that currently exist in the study area will ensure that programs are operating at optimal levels while promotion of services that currently exist outside the study area will allow individuals to make connections to other parts of Tarrant County and throughout the region.

**Travel Navigation/Information and Referral**

Travel navigation, or information and referral (I&R), is the practice of providing comprehensive information about a variety of services to ensure that people who are in need of assistance, whether they seek it or not, can access the array of services available to them. This includes assistance with navigating the eligibility process for select transportation programs. I&R is a key element of the coordination of care for many human services organizations and nonprofit providers, and can also offer direct links to the available transportation providers. 2-1-1 and MYRIDE Tarrant (www.myridetarrant.org) provide some travel navigation/I&R services currently that residents in the study area can utilize. Since the study area has particularly large populations of seniors, people with disabilities, and low-income individuals, education on these types of services would prove beneficial. Further, educating human service agencies and other similar organizations that deal with assisting residents in the study area will also serve as a venue to assist residents navigate their transportation options.

## Long-Term Public Transportation Enhancements

**Fixed-Route (Bus) Service Assessment**

In addition to the near-term public transportation enhancements suggested for consideration by the study area communities, longer-term solution such as fixed-route or local bus services should be evaluated. Because the study area communities are currently not members of the T and do not have local bus service serving their communities, an evaluation of potential bus and bus rapid transit service options was conducted as part of this study.

To assess the efficacy of providing future fixed route service in the study area communities, NCTCOG used the regional travel demand model to estimate existing and forecasted ridership estimates. Utilizing the travel demand model to forecast ridership in the study area, along with a qualitative assessment of area needs, a better evaluation can be completed to assess the impacts of additional routes and modifications to the existing T network that support the long-term feasibility of expanding fixed route service to the study area. Future travel in the study area should consist of multi-modal options so that non-drivers and the aging population can have access to employment centers, government centers, medical facilities, recreational and commercial centers, and other needs previously discussed and documented through on-going regional and county studies. Additional benefits such as decreased congestion and emission reductions are a byproduct of providing non-auto oriented transportation options.

**Types of Fixed-Route Services Evaluated**

The evaluation of fixed-route services included consideration for services that would be most appropriate for the study area communities. Several types of fixed-route bus service options are typically considered and vary based on right-of-way needs, number of stops, route lengths, bus stop amenities, vehicle types, and cost. Additionally, the needs of the community, traffic volumes, density, destinations, and projected ridership are other key considerations when evaluating route options and the appropriate bus service.

Because the T already operates local fixed-route bus services near the study area, this study included evaluation of potential local bus routes and several Bus Rapid Transit (BRT) routes that could serve the communities and tie into the T's existing route and transfer center system.

**Service Types Not Evaluated**

While public transportation services such as light-rail, commuter rail, and streetcar do exist elsewhere in the Dallas-Fort Worth region, there are currently no plans for any type of rail service to be implemented in the study area within the next 25 years. Public input throughout this study indicated a strong interest in providing some form of rail service in the area to move people from Northwest Tarrant County to downtown Fort Worth. Another consideration is the tremendous population growth that will occur over the next 30 years in counties to the Northwest, such as Wise County, and to the West, Parker County. Due to the lack of rail recommendations for the study area in the current metropolitan transportation plan: Mobility 2035-2013 Update, this study focused on bus and Bus Rapid Transit services as nearer-term options for fixed-route services in the study area. Light-rail and regional commuter rail are long-term options that should be evaluated for longer-term implementation based on public input and projected demographic growth. Streetcar service, in some cases, may be an option to local bus service and could also be evaluated in the future in association with certain uses in the study area.

**Potential Route Options for Study Area**

This transit feasibility study evaluated several fixed route options in the study area to establish relative magnitudes of potential ridership. The planning process for evaluating transit in the study area included site visits along the commercial corridors, feedback received from public meetings, and coordination with the cities and NAS Fort Worth, JRB. This information aided in sketching potential transit routes along designated areas and adding stops that would best serve the transit-supportive land uses identified. The potential routes were modeled using the NCTCOG travel demand model. Ridership numbers were compared with current ridership numbers from the T to evaluate relative demand of future routes.

Route options were modeled from the transfer center located at Ridgmar Mall, the origins of these routes begin at the transfer center and radiate out to the surrounding communities. The transfer center was chosen as a point of origin to attract the most riders already utilizing the system and to offer greater connectivity options to other routes. General considerations for choosing routes were based on extending bus service into the study area and accommodate travel patterns that incorporated the commercial corridors within the study area. Based on the modeling efforts performed by NCTCOG, a number of the proposed routes have potential of serving both the community and major employers such as Lockheed Martin and NAS Fort Worth, JRB and are summarized below:

*Route A*: Connects busy commercial areas through the heavily traveled Robert's Cut Off Road. This route attempts to reduce congestion in the corridor while also providing access to residents to their choice of commercial development areas and connecting routes to the T bus system at the edge of the study area.

*Route B*: Provides residents in the city of Benbrook with access to the Ridgmar Mall Transfer Center and the T bus system.

*Route C*: This route connects the Ridgmar Mall Transfer Center to downtown Fort Worth by way of White Settlement Road. This would be an alternative route to the established routes the T already has within their current service area. More residents within the study area would have access to Fort Worth and the T services.

*Route D*: This route is forecasted to receive the largest amount of riders and would serve State Highway 183 and State Highway 199 and continues into the residential area of Lake Worth. A small part of the route overlaps the T's Route 46. The route also features a park and ride located at the Walmart in Lake Worth.

*Route E*: A BRT option from NAS Fort Worth, JRB to downtown Fort Worth (Intermodal Transit Center (ITC) Station). This route would provide an efficient way to move military personnel reporting for duty to and from the base. Additionally, the connection from the base to downtown provides an efficient transit option to aid in alleviating congestion during peak reporting times. The estimated 2012 daily ridership of 55 does not account for the number of personal reporting for duty on the weekends or personnel reporting from other states.

*Route F*: This route would link the large industrial employment center in White Settlement, including Lockheed Marin and Weir Industries, to White Settlement neighborhoods and Ridgmar Mall Transfer Center, providing access to the remaining T network and Trinity Railway Express.

*Route G*: This route would connect two existing transfer centers to expand the bus options within the study area and provide enhanced connectivity

*Route H*: Similar to Route A, this route would provide additional access to a busy commercial development area at State Highway 183 and State Highway 199. It would also provide needed transit system access to residents in Sansom Park.

*Route I*: Extending bus service further outside the study area to Azle, Texas was evaluated as a BRT route to support reduced traffic congestion along the SH 199 corridor specifically in Lake Worth to Downtown Fort Worth. This option would provide an alternative transportation option in this corridor for high levels of commuting traffic coming from directions Northwest of Lake Worth.

*Route J*: This route would extend the existing T Route #46 from Downtown Fort Worth to Lake Worth to a more western terminus in Lake Worth that would capture additional commercial and residential riders.

**Table 3.23** provides a summary of the 2012 and 2035 daily ridership forecasts for selected potential routes in addition to providing an indication of each routes provision of accessibility to major area points of interest. **Figure 3.28** provides a map of the Bus Route Options and **Figure 3.29** provides a map of the Bus Rapid Transit Options.

**Table 3.23** – Potential Routes 2012 and 2035 Daily Ridership Forecasts and Access to Points of Interest

| Route Name | 2012 Daily Ridership | 2035 Daily Ridership | From | To | Access the T System | Major Employer Access | City/ Government Facilities Access | Commercial Center Access | Dwtn. Fort Worth Access | Residential Access |
|---|---|---|---|---|---|---|---|---|---|---|
| Route A | 545 | N/A | Ridgmar Transfer Center | Lake Worth via Roberts Cut Off Road | X | | X | X | | X |
| Route B | 200 | N/A | Ridgmar Transfer Center | Benbrook | X | X | | X | | X |
| Route C | 330 | N/A | Ridgmar Transfer Center | Fort Worth | X | X | | X | | X |
| Route D | 640 | 560 | Ridgmar Transfer Center | Lake Worth Residential | X | | X | X | | X |
| Route E (BRT) | 55 | 80 | Meandering Road | ITC Fort Worth | X | X | | X | X | |
| Route F | 620 | 1160 | Ridgmar Transfer Center | White Settlement | X | X | | | | X |
| Route G | 275 | N/A | Ridgmar Transfer Center | Fort Worth Stockyards Transfer Center | X | X | | X | | X |
| Route F | 620 | 1160 | Ridgmar Transfer Center | White Settlement | X | X | | | | X |

**Table 3.23** – Potential Routes 2012 and 2035 Daily Ridership Forecasts and Access to Points of Interest (continued)

| Route Name | 2012 Daily Ridership | 2035 Daily Ridership | From | To | Access the T System | Major Employer Access | City/ Government Facilities Access | Commercial Center Access | Dwtn. Fort Worth Access | Residential Access |
|---|---|---|---|---|---|---|---|---|---|---|
| Route G | 275 | N/A | Ridgmar Transfer Center | Fort Worth Stockyards Transfer Center | X | X | | X | | X |
| Route H | 510 | 725 | Ridgmar Transfer Center | Lake Worth via SH 183 and SH 199 | X | X | X | X | | |
| Route I (BRT) | N/A | 1200 | Azle | ITC Fort Worth | X | X | X | X | X | |
| Route J | 650 | 1260 | Downtown Fort Worth | Lake Worth | X | X | X | X | X | X |

Daily Ridership was not forecasted for 2035 for several routes (Route A, B, C, and G) and are denoted by N/A. Only the routes with the highest ridership, except Route A, were modeled. Route H was chosen over Route A because it provided access to NAS Fort Worth, JRB.

**Figure 3.28** – Transit Feasibility: Fixed Route (Bus) Options

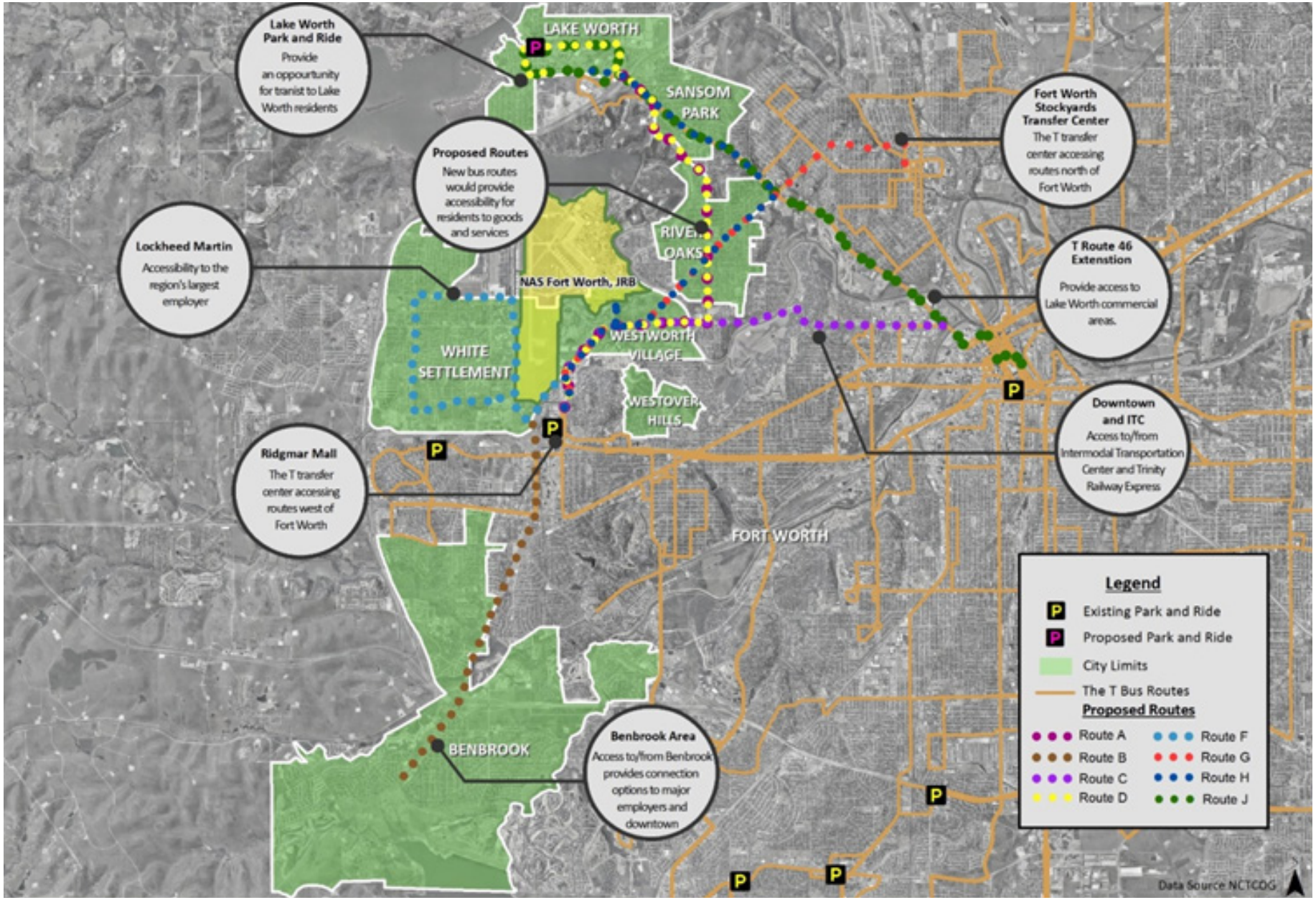
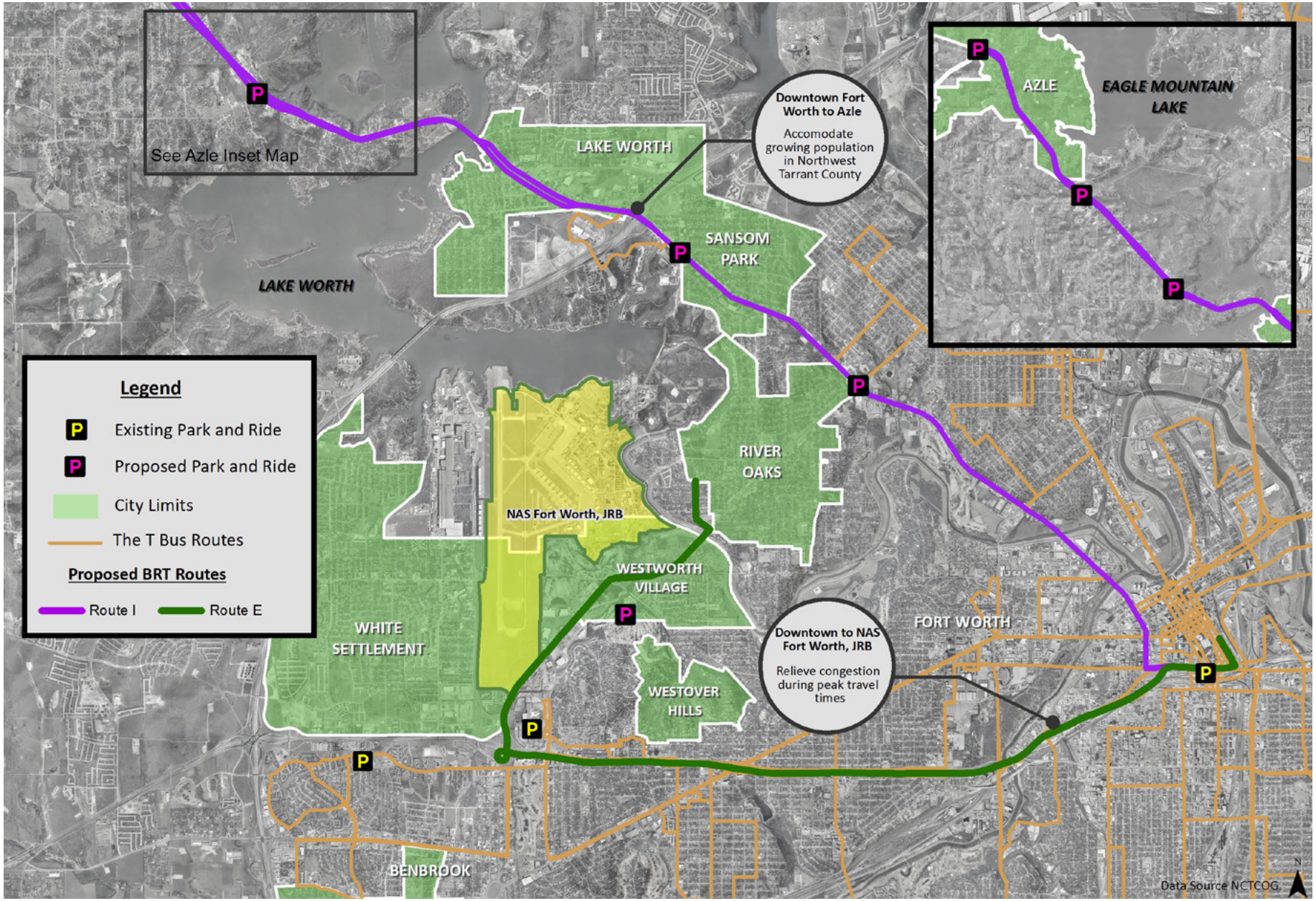


**Figure 3.29** – Transit Feasibility: Bus Rapid Transit Options




**Additional Options for Providing Public Transportation in Study Area**

As described previously, there are a series of near-term strategies that the study area communities could consider to meet the transportation needs identified in the study area. Furthermore, the Fixed-Route (Bus) Service Assessment, demonstrated that potential routes in the study area communities may support limited bus service as a result of the ridership forecasts and should be considered for further assessment through partnerships with the T, NCTCOG, and other area transit providers. As stated previously, there are multiple options available to the communities to provide services to their residents that could be low-cost, highly-beneficial interim services to offer in-lieu of fixed-route bus service.

Based on transportation partner agency and public input, several additional ideas for potential services that could be established in-lieu of fixed-route bus service are described below. These ideas would require additional coordination amongst communities, transportation partners, and other stakeholders such as non-profits and private industry.

- Enhancing Park and Ride System
- Neighborhood Circulator Routes
- Service Demonstrations

**Table 3.24** summarizes public transportation strategies for the PLMC area.

Table 3.24 – Regional Public Transportation Recommendations

| Recommended Actions: Public Transportation | | | | | |
|---|---|---|---|---|---|
| **Project/Initiative** | **Timeframe** | **Responsible Entities** | **Partners** | **Funding Sources** | **Order of Magnitude Cost** |
| Policy: Raise Public Awareness of Existing Public Transportation Options | | | | | |
| • Increase education and marketing of existing services provided by cities and throughout Tarrant County<br>• Target outreach to particular groups who are more likely to be transit-dependent, such as low-income, older adults, individuals with disabilities and residents who may not have access to a car<br>• Institute a travel navigation service that serves as a one-stop-shop to assist in evaluating user needs and eligibility for available services | Short-Term | Cities | TCTS, Other existing service providers, Tarrant County, Neighboring jurisdictions, NCTCOG | Cities | Low |
| Policy: Improve Public Transportation Options for Special Populations and Major Employers | | | | | |
| • Evaluate opportunities to implement a Site Specific Shuttle Service to serve major employers, institutions, or retail/commercial centers | Mid-Term | Cities | Neighboring jurisdictions, Tarrant County, major employers, institutions, retail/commercial centers, The T, NCTCOG | Large employers, Commercial centers, Cities, Economic Development Corporations, Federal, State, and Local funds aimed at job access | Mid |
| • Establish a lifeline service such as ADA/Eligibility Based Dial-A-Ride demand-response service for sensitive population groups<br>• Coordinate with existing providers and/or other jurisdictions to consider cost-sharing options | Mid-Term | Cities | Neighboring jurisdictions, Tarrant County, Senior Centers, Human Service Agencies, Non-profit, Existing providers | Cities, Federal and State grants, Donations, Non-profit and Health and human service agencies, Senior Centers | High |
| • Evaluate demand and need for Volunteer Driver/Driver Reimbursement Program<br>• Establish a network of volunteer drivers and an entity to manage the program<br>• Review and coordinate with services already offered in the area by non-profit organizations such as SeniorMovers, Social Transportation for Seniors, and Mid-Cities Care Corps | Short to Long-Term depending on need | Cities | Neighboring jurisdictions, Existing service providers, Non-profit organizations, volunteers, Tarrant County | Cities, non-profits, donations and sponsorships, private industry, | Low |

**Table 3.24** – Regional Public Transportation Recommendations (continued)

| Recommended Actions: Public Transportation | | | | | |
|---|---|---|---|---|---|
| **Project/Initiative** | **Timeframe** | **Responsible Entities** | **Partners** | **Funding Sources** | **Order of Magnitude Cost** |
| Policy: Improve Public Transportation Options for the General Population | | | | | |
| • Evaluate needs and potential demand for a more frequent and expanded Community Shuttle Service<br>• Evaluate potential service design and frequency<br>• Evaluate financing such as cost-sharing options with other jurisdictions, grant funding, private industry, and social service agency contributions and sponsorships<br>• Conduct planning of Community Shuttle routes and services | Long-Term | Cities | Neighboring jurisdictions, Tarrant County, The T, Other existing providers, Private, Non-profits, NCTCOG | Cities, Federal and State grants, private and non-profit contributions and sponsorships | High |
| • Evaluate needs and demand for a general Public Dial-A-Ride Service<br>• Coordinate with existing providers and/or other jurisdictions to consider cost-sharing options | Long-Term | Cities | Neighboring jurisdictions, Tarrant County, Existing providers | Cities, Federal and State grants, Private industry, Health and Social Service agencies, Senior centers, donations | High |
| • Evaluate demand for a Transportation Voucher/Fare Reimbursement Program<br>• Consider a voucher program for very low-income individuals | Short to Long-Term depending on need | Cities | Neighboring jurisdictions, Employment centers, Private Industry, Health and Social Service agencies, Tarrant County | Cities, employers, non-profit contributions and sponsorships | Low to Mid depending on program and participation |
| • Conduct further modification and assessments of potential fixed-route (shuttle, bus and Bus Rapid Transit) service options at the community and sub-regional level | Medium to Long-Term | Cities | The T and NCTCOG | Cities, The T, NCTCOG, Federal and State grants | Low |
| • Consider pilot programs or service demonstrations to build support for public transportation | Medium to Long-Term | Cities | The T, NCTCOG, neighboring jurisdictions | Cities, the T, NCTCOG, Federal and State grants, Economic Development Corporations, businesses, major employers, institutions, health and social service agencies, non-profits, etc. | High |

**Table 3.24** – Regional Public Transportation Recommendations (continued)

| Recommended Actions: Public Transportation | | | | | |
|---|---|---|---|---|---|
| **Project/Initiative** | **Timeframe** | **Responsible Entities** | **Partners** | **Funding Sources** | **Order of Magnitude Cost** |
| Policy: Enhance, Market, and Monitor Park and Ride System | | | | | |
| • Market the two existing park-and-ride lots in the study area<br>• Identify and evaluate informal park-and-ride lots to determine if they should be formal park-and-ride lots or alternative options for improving park-and-ride facilities<br>• Implement candidate park-and-rides currently identified by the Fort Worth Transportation Authority Park-and-Ride Study and the Metropolitan Transportation Plan, Mobility 2035 – 2013 Update as deemed appropriate<br>• Monitor the need for additional park-and-ride facilities in the area | Short to Mid-Term | Cities, The T, NCTCOG | Neighboring jurisdictions, Employment, entertainment, and retail centers | Cities, The T, Federal funds | Mid to High |
| Policy: Update and Establish Review Process for Local Transportation Planning Documents | | | | | |
| • Review and update comprehensive plans to reflect public transportation service needs, priorities, and implementation actions<br>• Identify and prioritize public transportation needs for individual city, the study area, and the larger Dallas-Fort Worth region<br>• Submit requests for transportation technical planning assistance to NCTCOG through the biannual Unified Planning Work Program process | Short-Term and Ongoing | City | The T, NCTCOG, Tarrant County, Transportation providers, Public | City | Low |
| • Submit formal requests for public transportation projects of regional significance to be considered during development of the Metropolitan Transportation Plan. | Ongoing | City | The T, Tarrant County, NCTCOG | N/A | N/A |
| Policy: Coordinate with Transportation Partners and Leverage Resources to Improve Transportation Options | | | | | |
| • Form a coalition between neighboring cities to assist and coordinate for common needs and mutual benefit along facilities that cross jurisdictional boundaries<br>• Collectively prioritize needs<br>• Engage with your Regional Transportation Council representative<br>• Engage with Tarrant County and NCTCOG for planning assistance and other technical/ policy needs<br>• Engage others interested or already providing public transportation services such as non-profit agencies, health and social services, volunteer groups, etc. | Short to Long-Term | Cities | Neighboring jurisdictions, The T, Tarrant County, NCTCOG, Regional Transportation Council, Other transportation implementers | Cities | Low |
| • Adopt Regional Transportation Council (RTC) Clean Fleet Vehicle Policy and Model Ordinance www.nctcog.org/fleetpolicy | Short | Cities | NCTCOG | N/A | Low |
| • Continue coordination with NAS Fort Worth, JRB, Lockheed and other major employers in the area on supporting their public transportation needs | Ongoing | Cities, The T | The T, Major employers, NCTCOG, Tarrant County, Neighboring cities | N/A | N/A |

**Table 3.24** – Regional Public Transportation Recommendations (continued)

| Recommended Actions: Public Transportation | | | | | |
|---|---|---|---|---|---|
| **Project/Initiative** | **Timeframe** | **Responsible Entities** | **Partners** | **Funding Sources** | **Order of Magnitude Cost** |
| Policy: Identify and Secure Sustainable Funding to Implement Public Transportation Options | | | | | |
| • Create partnerships to pool funding amongst multiple communities or other partners<br>• Look beyond study participants to local agencies such as businesses, nonprofits, and health-care facilities that have an interest in their clients' mobility<br>• Evaluate collective contracting for specific services with the T and leverage existing resources, such as through contracts or other agreements with the T, nonprofits, or taxi companies<br>• Strategically seek grant funding such as start-up costs or capital expenditures<br>• Seek out and utilize non-traditional funding such as grants from non-profits, philanthropies, non-transportation and transportation federal and state agencies | Ongoing | Cities | The T, NCTCOG, Tarrant County, Neighboring jurisdictions | Cities, The T, NCTCOG, Federal and State grants, Economic Development Corporations, Employment centers, Private industry, Health and social service agencies, Tarrant County, Non-profits | N/A |

### 3.8.9 | Integrated Corridor Recommendations

Creating an integrated and robust transportation system that improves mobility and accessibility while accommodating non-auto oriented users is important in supporting a livable community that provides options and a high quality of life for its residents. Improving the connections between existing and planned transportation modes to provide seamless transitions for users is important to establishing a high quality transportation system.

The PLMC Regional Vision assessed several transportation elements including roadway, regional bicycle facilities, localized pedestrian access, and public transportation. A key component of this study was to assess the transportation system in an all-inclusive manner, thus providing a set of recommendations that encourage development of an integrated transportation system in the future.

**Table 3.25** provides a summary of the Economic Development Corridors and recommended treatments for further study and/or implementation based on findings from this and other study efforts. This table is intended to summarize the major findings of this study effort and the integrated, multi-modal, operational, and design elements to be considered in these corridors.

**Table 3.26** provides a summary of Corridors with Critical Mobility Linkages and recommended treatments for further study and/or implementation based on findings from this and other study efforts. This table is intended to summarize the major findings of this study effort and the integrated, multi-modal, operational, and design elements to be considered in these corridors.

**Table 3.25** – Economic Development Corridors

| | | | Recommended Treatments | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Additional Capacity (Lanes Warranted) | Improve Roadway Conditions | Access Management (Frontage Roads, Ramps, Access to Development, etc.) | Intersection Improvements | Signage Improvements | Signal Retiming | Drainage Improvements | Traffic Calming Measures | Alternative Road Design Features | Add or Improve Sidewalks | Add Crosswalks | On-Street Bike Lane | Signed Bike Route | Adjacent Off-Street Path | Public Transit Facilities |
| **Corridor** | **Focus Area** | **Jurisdictions** | | | | | | | | | | | | | | | | |
| State Highway 199 | IH 820 to Azle | Lake Worth, Fort Worth | X | X | X | X | | | | | X | X | X | | | X | X |
| State Highway 199 (Thunder Road) | IH 820 to SH 183 | Lake Worth, Sansom Park | | X | X | X | X | X | X | | X | X | X | | | X | X |
| State Highway 183 (River Oaks Boulevard) | SH 199 to Trinity River | River Oaks, Westworth Village | | X | X | X | X | X | X | X | X | X | X | | | X | X |
| Interstate 820 | IH 30 to Lake Worth Water Boundary | White Settlement | X | X | X | X | | | | | | | | | | | |
| Interstate 30 | IH 30/SH 183 Interchange to IH 30/IH 820 Interchange | White Settlement, Fort Worth | X | X | X | X | X | | | | X | X | X | | | X | |

**Table 3.26** – Corridors with Critical Mobility Linkages

| | | | Recommended Treatments | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Corridor** | **Focus Area** | **Jurisdictions** | Additional Capacity (Lanes Warranted) | Improve Roadway Conditions | Access Management (Frontage Roads, Ramps, Access to Development, etc.) | Intersection Improvements | Signage Improvements | Signal Retiming | Drainage Improvements | Traffic Calming Measures | Alternative Road Design Features | Add or Improve Sidewalks | Add Crosswalks | On-Street Bike Lane | Signed Bike Route | Adjacent Off-Street Path | Public Transit Facilities |
| Carswell Access Road & Meandering Road | NAS Fort Worth, JRB East Gate to SH 183 | River Oaks, Fort Worth | | X | | X | | | | | X | X | X | X | | | X |
| Roberts Cut Off Road | SH 199 to SH 183 | River Oaks, Sansom Park | X | X | | X | | | | X | X | X | X | | X | | X |
| Spur 341 | IH 30 to Clifford Street | White Settlement | X | | X | | | | | | X | | | | X | X | X |
| SH 183 | IH 30 to White Settlement Rd | Westworth Village, White Settlement, Fort Worth | X | X | X | X | | X | | | | X | X | X | | X | X |
| Azle Ave | Skyline Drive to SH 199 | Sansom Park, Lake Worth | | X | X | | | | | | | | | X | | | |
| Biway Street | SH 199 to Azle Ave | Sansom Park | X | X | | | | | | X | X | X | X | X | | | |
| Benbrook Traffic Circle | Intersection of SH183 and US 377 | Fort Worth | | X | X | X | | | | X | X | X | X | | | | |
| Boat Club Road | Shadydell Drive to SH 199 | Lake Worth | X | X | | X | | X | | | | X | X | X | | | |
| Clifford Road | Spur 341 to IH 820 | White Settlement | | | | X | | | | | X | X | X | | X | | X |
| Horne Street/Roaring Springs Road | IH 30 to Volder Drive | Fort Worth | X | | | X | | | | X | | X | X | X | | X | |

## 3.8.10 | Regional Corridor Improvement Plans

**Corridor Plan Overview and Purpose**

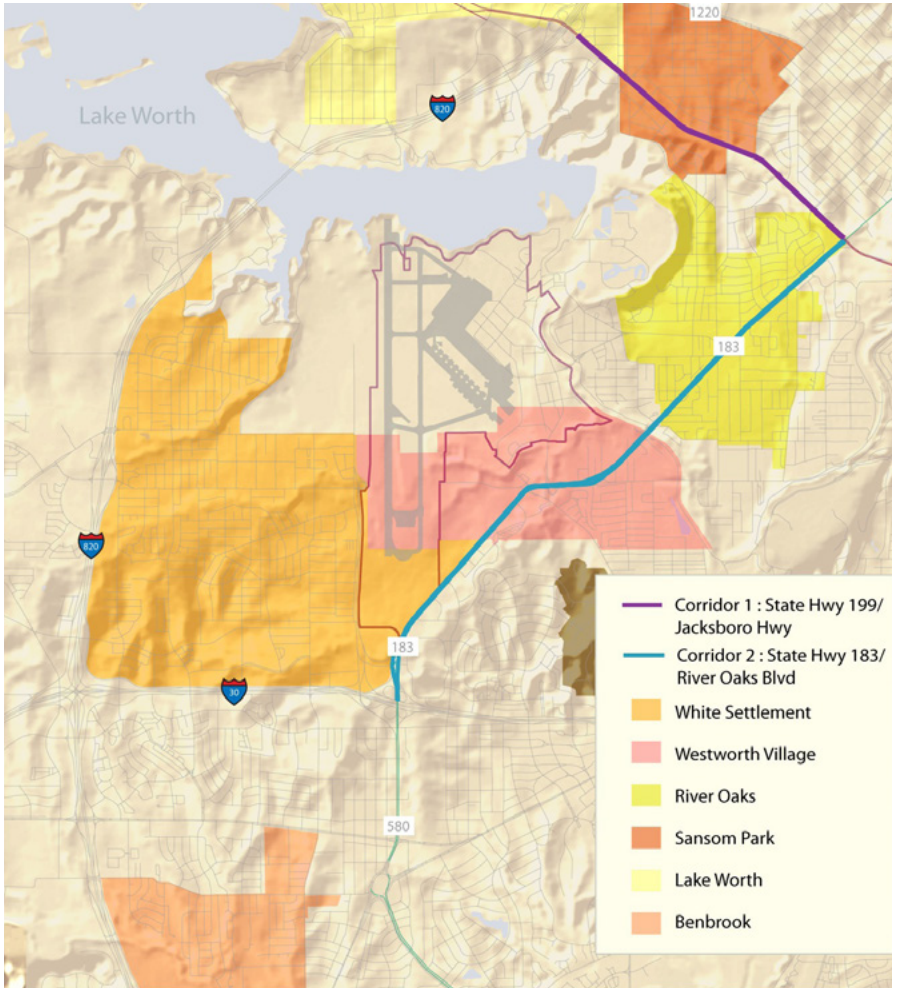
The regional plan includes Corridor Improvement Plans for two significant roadways in the PLMC study area–State Highway 183/River Oaks Boulevard and State Highway 199/Jacksboro Highway (See **Appendix B** for the full Corridor Workshop results). The two corridors were chosen through a corridor selection process that evaluated level of service, redevelopment potential, regional mobility/connectivity opportunities, streetscape design opportunity, and consistency with existing transportation planning initiatives. **Figure 3.30** illustrates the two improvement corridors.

The State Highway 199 study corridor extends from Interstate 820 to State Highway 183. The study emphasis for this corridor included economic development, traffic management, gateway development, character enhancements, and mobility and design improvements. The State Highway 183 corridor extends from Interstate 30 to State Highway 199. The study emphasis for this corridor included mobility, with aesthetic/design improvements and strategic economic development consideration.

The Corridor Improvement Plans seek to create an economic development strategy that enhances existing businesses, anchors new commercial and residential activity, improves the safe, efficient flow of multiple transportation user types, including cars, transit, pedestrians and bicyclists, and serves as model corridor improvement framework for other significant roadways in the region. The corridor improvement planning process also incorporated land use revitalization strategies in support of the goals of building sense of place, providing gateways for individual communities, and serving local and regional needs. The proposed site plans illustrate a general block arrangement and street framework that provides a phaseable approach to development, while defining public amenities for residents and businesses. Communities can use these prototypical plans to guide public investments into more compact, contiguous areas and create a critical mass of activity and infrastructure to attract private investment.

As discussed in **Section 3.4**, the corridor planning process included a 4-day interactive workshop held in River Oaks. The corridor workshops included a kick-off presentation to familiarize residents with the process and goals, two days of collaborative planning and design informed by stakeholder interviews, and a closing presentation of the concepts that emerged from the process. Feedback received in the workshop informed the resulting transportation design interventions and revitalization strategies. The Corridor Improvement Plans include multiple regional street design and redevelopment concepts addressing the two corridors and critical intersections.

**Figure 3.30** – PLMC Corridors



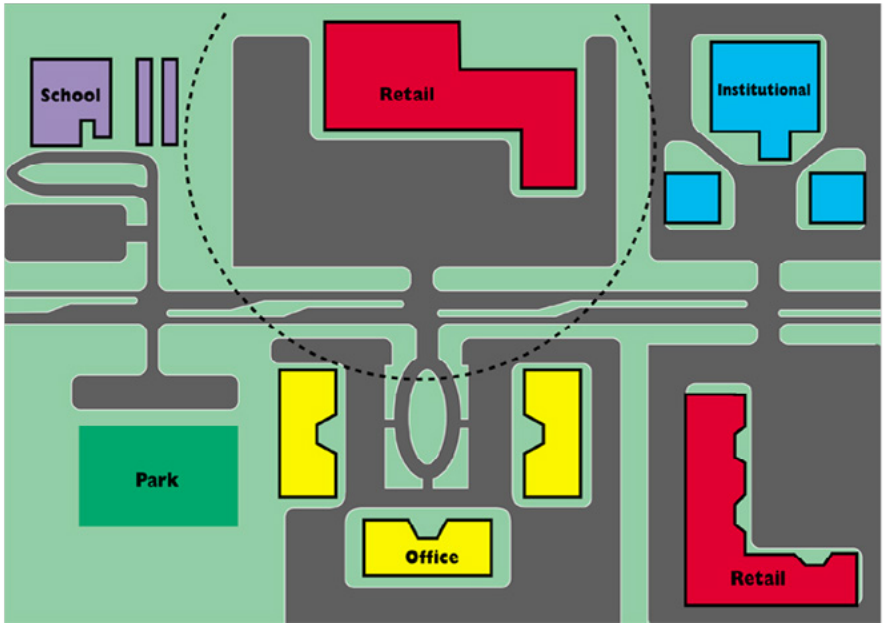
**Corridor Design Principles**

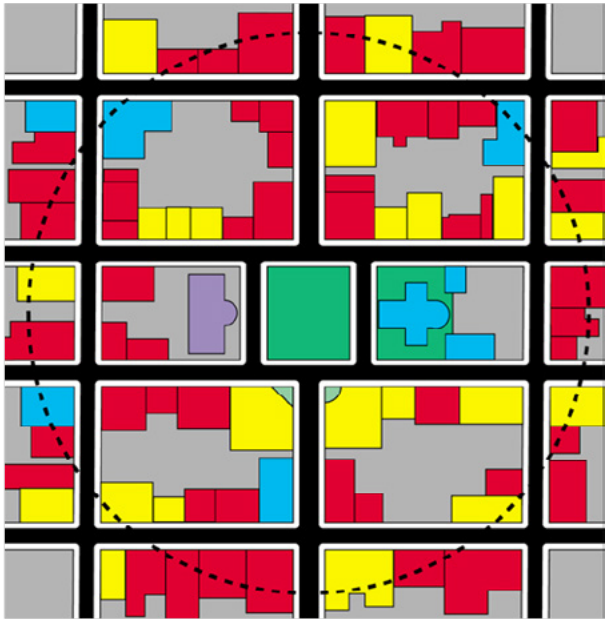
The corridor plans were informed by several principles and guidelines intended to foster transportation choice, healthy and connected neighborhoods, and increased access to employment and recreation destinations. The corridor planning process emphasized a coordinated approach focused on land use, transportation, urban design, economic development and community visioning. A major emphasis of the plans is to transition from a more conventional suburban development pattern typified by wide roads, high speeds, and strip commercial development to a more connected and refined network of streets that can support mixed use nodes and multiple modes of transportation (See **Figure 3.31**).

GUIDING PRINCIPLES:

- Slower Design Speeds
- Connected Street Network
- Address Buildings to the Street
- Mix Land Uses
- Foster Local Identity and a Sense of Place
- Accommodates All Users, Not Just Automobiles
- Walkable
- Supportive Policy

**Figure 3.31** – Conventional Development Style vs. Connected Development Style

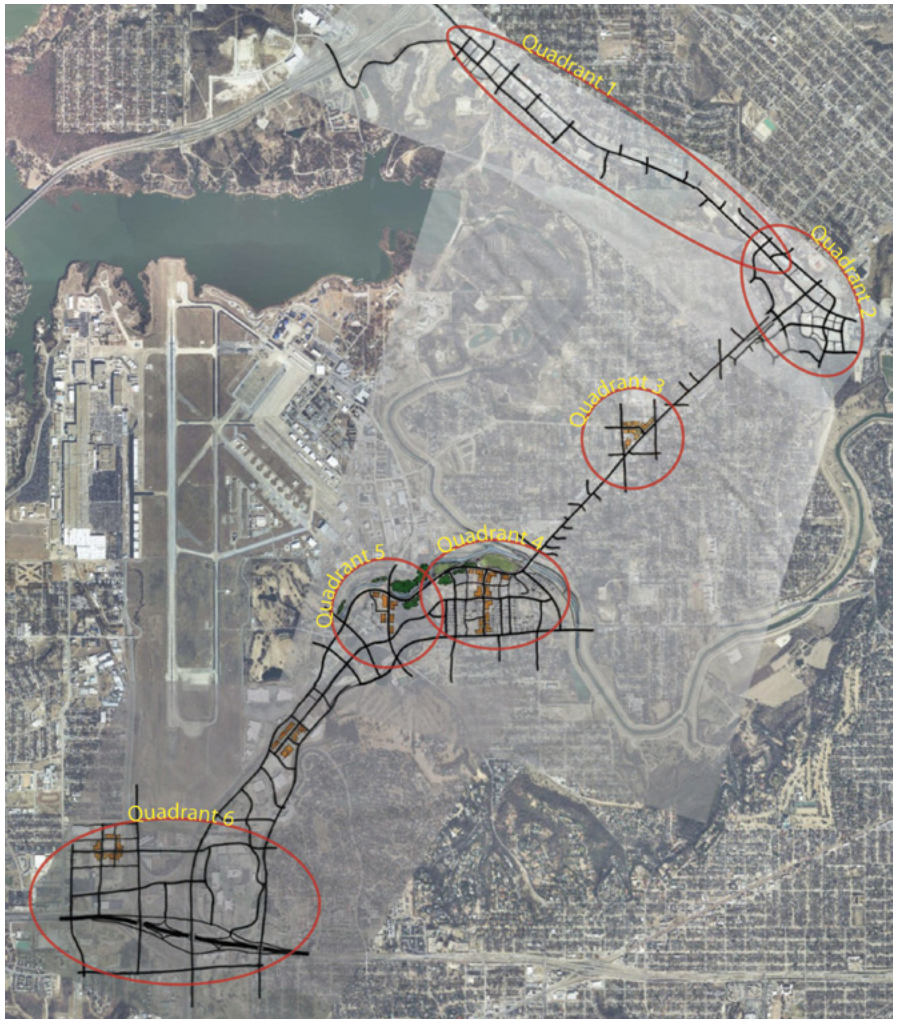


**Concepts Overview**

The design concepts resulting from the corridor planning workshop are overlaid on a study area aerial, as illustrated in **Figure 3.32**. The concept designs are divided into five redevelopment areas.

**Figure 3.32** – PLMC Corridor Improvement Concepts




**Redevelopment Area 1: Roberts Cut Off and State Highway 199**

State Highway 199 is a major regional east-west connection with the long-term potential of supporting premium transit such as bus rapid transit or light rail transit. The Roberts Cut Off and State Highway 199 intersection illustrate how redevelopment along the corridor can contribute to a parallel network that supports local trips and sets the framework for transit oriented development.

*Opportunities:*

- Connect Shady Oaks Manor Drive to Ridge Lane to provide parallel local-serving route to State Highway 199
- Eliminate free-flow right turn lanes along Roberts Cut Off Road to improve vehicular and pedestrian safety
- Create a new street fronting the proposed open space and vistas to the south
- Encourage redevelopment to include a mix of housing and neighborhood supporting retail

**Redevelopment Area 2: State Highway 183 and State Highway 199**

The intersection of State Highway 183 and State Highway 199 has both short-term and long-term development potential that can contribute to a more robust parallel connective network. Two quadrants, the northeast and southwest, have recently developed making the short-term redevelopment constrained. The southeast corner of State Highway 183 and State Highway 199 provides a more realistic short-term opportunity to increase the overall connectivity within the area while providing new development.

*Opportunities:*

- Extend Isbell Road to State Highway 199 and create new roundabout at intersection
- Create a street grid that is flexible for both short-term big box development and long-term mixed use development
- Provide stub-outs that can be extended to State Highway 183 and parcels to the east as property redevelops
- Create a roundabout at the intersection of Isbell Road and Ohio Garden Road to slow traffic and provide an entry feature into new development

**Redevelopment Area 3: Roberts Cut Off and State Highway 183**
The node at the intersection of State Highway 183 and Meandering Road has the potential to redevelop and create a new access route that alleviates vehicular pressure on Roberts Cut-Off Road (See **Figure 3.33**).

*Opportunities:*
- Extend Meandering Road to State Highway 183 as redevelopment occurs.
- Define and improve the legibility of pedestrian, bicycle and vehicular pathways.
- Simplify and tighten intersection of Meandering Road and Roberts Cut Off to improve pedestrian and vehicular safety between neighborhoods and State Highway 183.
- Remove free-flow right turn lanes along State Highway 183.

**Redevelopment Area 4: White Settlement Road and State Highway 183**
The design intervention at the conjunction of White Settlement Road and State Highway 183 creates parallel networks to alleviate traffic congestion. This concept intends to establish a network of streets including several two or three lane streets to distribute traffic loads, rather than directing all traffic through a single road. The concept also creates a new park system and network along the river. The new street network creates a block structure that can support walkable redevelopment and reinvestment.

*Opportunities:*
- Provide a new street connection along the river as redevelopment occurs
- Extend existing street grid to river
- Extend Roaring Springs Road to Pumphrey Drive
- Separate White Settlement Road and State Highway 183 as redevelopment occurs

**Redevelopment Area 5: NAS Fort Worth, JRB**
The concept in the area surrounding the main entrance to NAS Fort Worth, JRB includes a "village" development node. This node could include a small downtown area. The corridor also provides more opportunity for infill redevelopment further south on State Highway 183.

*Opportunities:*
- Provide new street network and block grid that is walkable in scale and flexible for a range of land uses
- Establish a street hierarchy

**Figure 3.33** – Roberts Cut Off and Highway 183 Redevelopment Concept

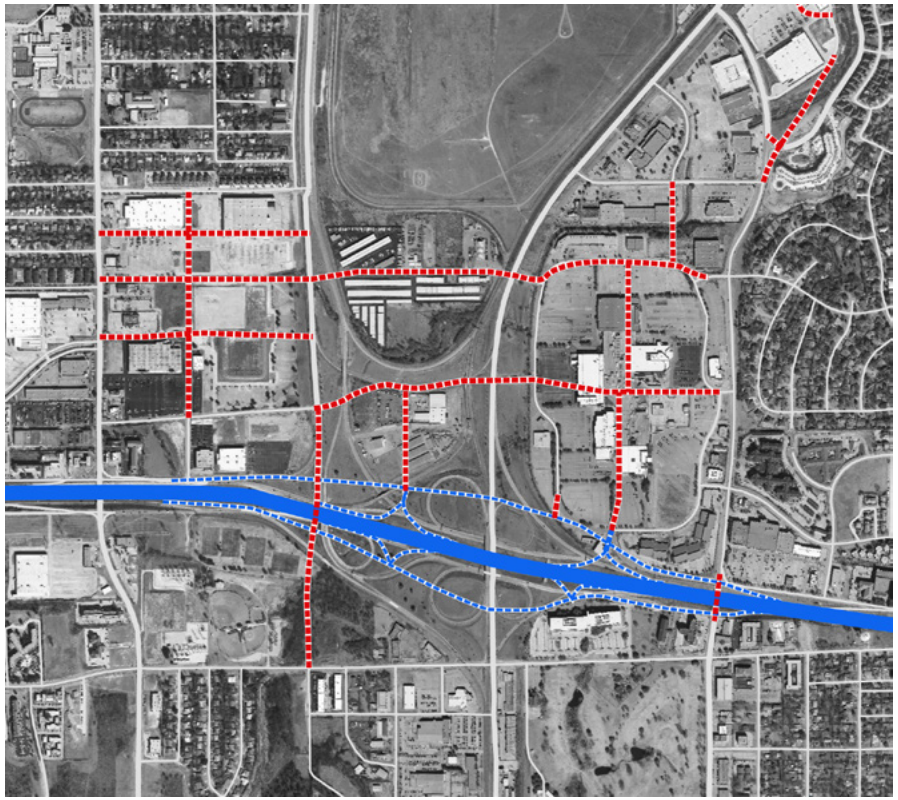
**Redevelopment Area 6: Interstate 30 and State Highway 183**

The communities north of Interstate 30 and State Highway 183 have the potential to redevelop in a manner that supports the adjacent neighborhoods and businesses. Unlocking this potential will be heavily influenced by reworking the IH 30 and State Highway 183 intersection to allow for additional east west connections and two new north south connections. Noise and safety compatibility issues associated with NAS Fort Worth, JRB create some development constraints in this area. The development concept envisions non-residential uses, particularly on the western side of the Ridgmar Mall property and south of the NAS Fort Worth, JRB runway (See **Figure 3.34**).

*Opportunities:*

- Redesign the ramps to IH 30 to position adjacent parcels for development
- Create two new north-south connections across IH 30
- Create three new connections across State Highway 183
- Position mall for redevelopment with new access to IH 30
- Build on existing framework west of State Highway 183 to create a walkable environment

**Figure 3.34** – Interstate 30 and State Highway 183 Redevelopment Concept



## Street Sections

### State Highway 183 Corridor Street Section

State Highway 183's existing right-of-way allows for a median, as well as bicycle and pedestrian facilities. **Figure 3.35** illustrates what the corridor might look like if redesigned into a boulevard with a median, bicycle lanes, and sidewalks. In addition to streetscape improvements, **Figure 3.35** also illustrates future redevelopment built to the street with a row of angled parking. This boulevard street section could be applied as appropriate to other roadways containing ample right of way.

**Figures 3.36** and **3.37** illustrate 'before and after' shots of the same State Highway 183 street section depicted in **Figure 3.36** with the street design concept applied. As shown, this boulevard safely accommodates automobiles, bicyclists, and pedestrians, while also inviting reinvestment in adjacent commercial properties.

**Figure 3.35** – State Highway 183 Corridor Proposed Street Section

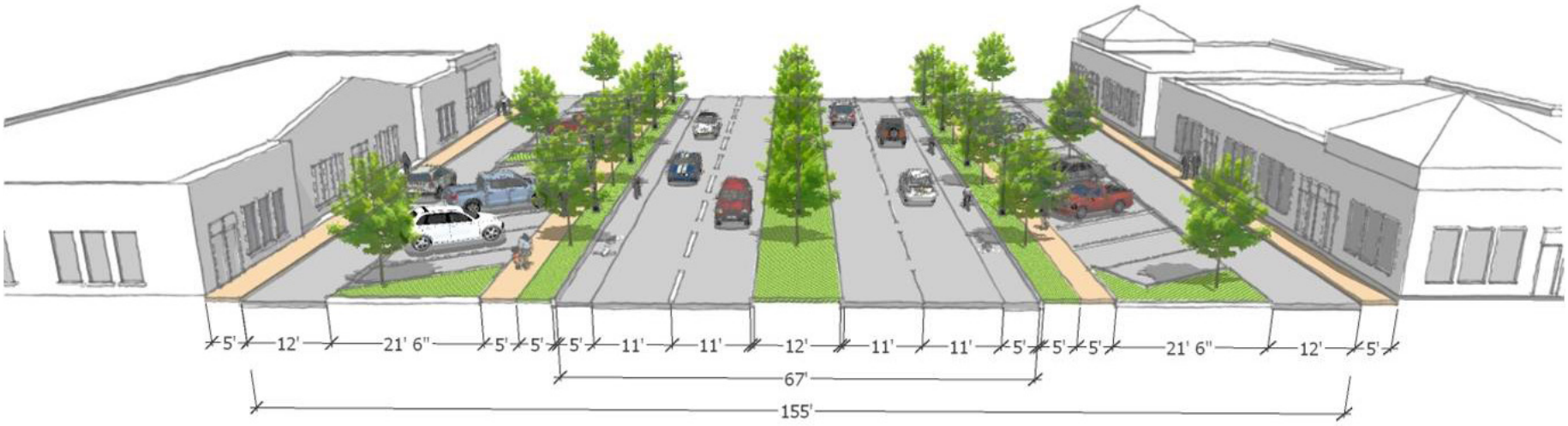


**Figure 3.36** – State Highway 183 Existing Conditions

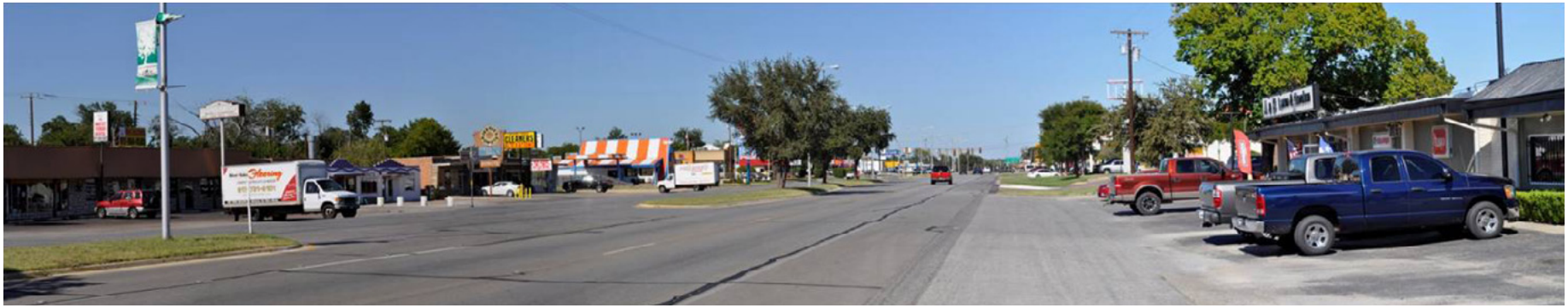


**Figure 3.37**– State Highway 183 Proposed Redevelopment

**State Highway 199 Corridor Street Section**

Similar to State Highway 183, State Highway 199 also has ample existing right-of-way to accommodate a median and pedestrian and bicycle facilities. **Figure 3.38** illustrates what the corridor might look like if redesigned into a boulevard with a median and separated multi-use paths in each direction. In addition to streetscape improvements, **Figure 3.38** also illustrates future redevelopment built to the street with a row of angled parking.

**Figures 3.39** and **3.40** illustrate 'before and after' shots of the State Highway 199 street section depicted in **Figure 3.39** with the street design concept applied. As shown, this boulevard safely accommodates automobiles, bicyclists, and pedestrians, while also inviting reinvestment in adjacent commercial properties.

**Figure 3.38** – State Highway 199 Corridor Proposed Street Section

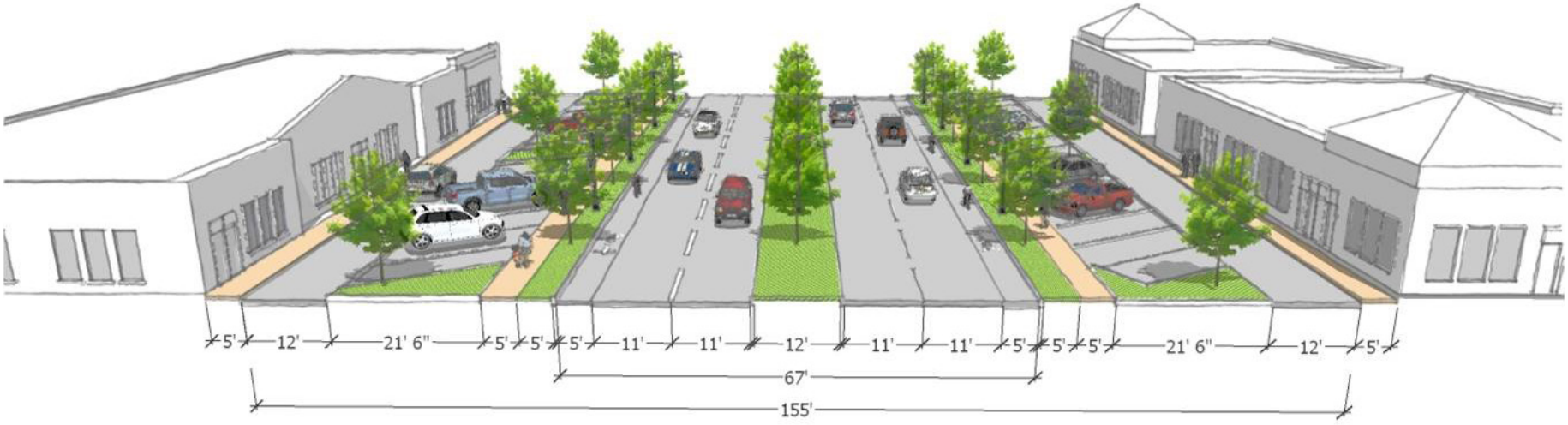


**Figure 3.39** – State Highway 199 Existing Conditions

**Figure 3.40** – State Highway 199 Proposed Redevelopment

Figures **3.41** and **3.42** illustrate a similar State Highway 199 street section, but include a median positioned to accommodate future transit–bus rapid transit or light rail.

**Figure 3.41** – State Highway 199 Corridor Street Section with Transit

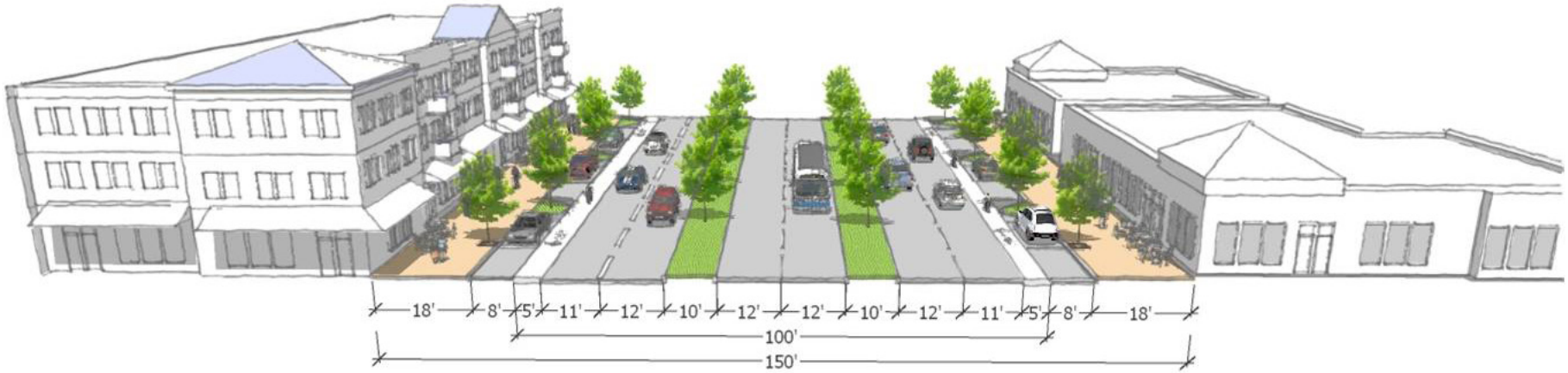
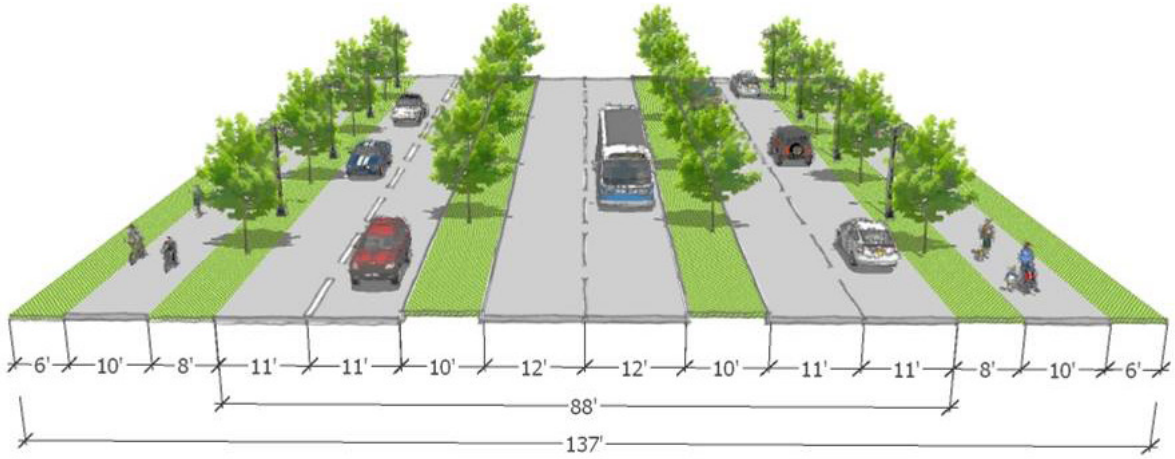



**Figure 3.42** – State Highway 199 Corridor Street Section with Transit



## Section 3.9 | Intergovernmental Coordination

As people become more mobile, economic capital becomes more fluid, and information becomes easier and cheaper to exchange, factors affecting economic vitality and livability depend less on individual jurisdictional boundaries and more on the image and quality of life within a region.

As described throughout the Regional Vision Report, many if not most of the issues experienced by the Cities of Benbrook, Fort Worth, Lake Worth, River Oaks, Sansom Park, Westworth Village and White Settlement and Tarrant County transcend individual boundaries. Potential residents and employers are often attracted to the convenience, quality of life, and opportunities offered by this part of the Dallas/Fort Worth Metroplex, rather than to a specific political jurisdiction. Increased cooperation can enable the communities to address complex, common challenges by making better use of limited resources, integrating major systems, such as transportation infrastructure, and coordinating decision-making on key issues that affect all partners.

Of course regional collaboration is not new to the NAS Fort Worth, JRB area. Since 2008, representatives of each jurisdiction as well as NAS Fort Worth, JRB have actively participated in the highly successful NAS Fort Worth, JRB Regional Coordination Committee (RCC). The RCC was initiated in response to the recognition that urban development may have a long-term impact on the military installation's ability to sustain its mission. Recognizing the land use constraints and development pressure surrounding the installation, the JLUS was initiated in 2006 by the base, the communities, and the NCTCOG to identify actions needed to enable the continued coexistence of the installation and the communities. Several recommended initiatives were developed as an outcome of the JLUS process, including formation of the RCC. The purpose of the RCC is to develop, implement, and monitor policies, programs, and projects which improve opportunities to expand operations at NAS Fort Worth, JRB in the next Base Realignment and Closure (BRAC) process. Committee members meet regularly and have the opportunity to discuss issues related to operations and quality of life at NAS Fort Worth, JRB, as well as comment on any proposed land use changes in the area that may affect or be affected by military operations.

The RCC is an outstanding example of intergovernmental coordination and has provided an excellent opportunity for elected and appointed officials from neighboring jurisdictions to develop relationships that can serve as the foundation of future cooperative efforts on other issues. Issues that may lend themselves to inter-jurisdictional efforts are briefly described below.

### Economic Development

Perhaps the area with the biggest need and most promising opportunities for regional coordination is economic development. A targeted branding and marketing strategy of "The Great Northwest" portion of Tarrant County would benefit all the jurisdictions by communicating to potential residents and employers the benefits of locating in the area. Potential areas of collaboration include:

- Funding a dedicated, full-time economic development professional to concentrate on promoting the area (or, if funding a full-time person is not possible, a consultant could be hired)
- Hiring a branding consultant to develop an easily recognizable name and brand for the area
- Providing a clearinghouse for population and economic data
- Sharing best practices related to land use planning, urban design and infrastructure planning

### Planning

Land use decisions will continue to be the purview of individual cities. However, some of the study area cities do not have the resources to hire a professional planner. Similar to the economic development professional described above, interested cities could join forces to hire a full or part-time planner who can provide services as needed in the implementation of the Regional Vision, individual city Comprehensive Plan Vision and associated development regulations. In addition, the planner could work with developers to help cities partner with them in development projects.

### City Services

The ability to manage resources and to deliver needed services efficiently are critical steps in sustaining the economic health of the region as well as individual jurisdictions. In the long term, some jurisdictions may wish to consider cooperating in the delivery of specific services, such as solid waste disposal, parks and recreation, workforce training or others. The direct economic benefits of this kind of regional cooperation include the ability to save citizens money by delivering services more efficiently.

### Homeland Security and Emergency Response

Broader coordination enables local communities to pool resources and improve communications and logistics among the region's public safety staff, so they can function as a single response unit during a major crisis.

To address these and other areas of mutual interest, the plan recommends that elected and/or appointed officials from interested cities begin to meet on a quarterly basis to discuss areas of mutual opportunity and concern, as well as potential co-operation.