City of Cleburne
Master Thoroughfare Plan Update

April 2008

Kimley-Horn and Associates, Inc.

City of Cleburne
Master Thoroughfare Plan

Prepared for:

City of Cleburne

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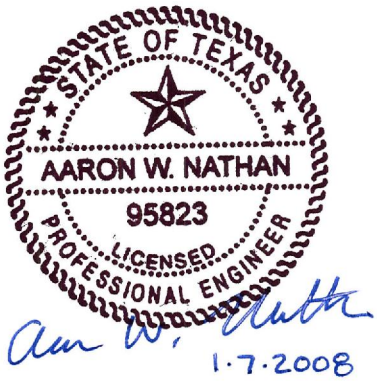

KHA Job No. 061165003

Kimley-Horn
and Associates, Inc.

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1.0 INTRODUCTION

Kimley-Horn and Associates, Inc. (KHA) was retained by the City of Cleburne to provide transportation planning services to analyze the City's existing and proposed roadway thoroughfare system. Based upon the analysis of the existing, 2015, and 2030 thoroughfare systems, KHA developed an updated Master Thoroughfare Plan and prioritized the City's future arterial widening and other capacity improvement projects.

The purpose of this study is to evaluate the short- and long-term transportation needs for the City of Cleburne. Over the next 20 to 30 years, the City of Cleburne is expected to double in population. Much of this growth will be attributed to Cleburne's ability to meet many people's desire for a city with rural character, the development stemming from the proposed construction of SH 121T / Southwest Parkway, and decreased travel time to communities to the north because of SH 121T. As the City grows, congestion in the area will continue to increase, if capacity improvements are not made. This study will evaluate the roadway network at final build-out of the City and its ETJ and identify transportation improvements needed to mitigate congestion for the next five to ten years. Cost projections will be made for each project, which in turn will be used to develop a Roadway Capital Improvements Program (CIP). Each improvement must be consistent with the Master Thoroughfare Plan. KHA customized the North Central Texas Council of Governments' (NCTCOG) Regional Travel Demand Model to develop traffic projections and recommend a transportation plan specific to the City of Cleburne that provides adequate capacity and blends the transportation system with the adjacent land uses.

2.0 GOALS AND OBJECTIVES

The following goals and objectives were used to update the City's Master Thoroughfare Plan. They were derived from City Staff input, prior Kimley-Horn experience and expertise, and the January 2006 Cleburne Comprehensive Land Use Plan.

Goal 1 - Develop a well defined and maintained system of thoroughfares, collectors and local roads which promote circulation and ensure the safety and general welfare of neighborhoods.

Objective 1-1 - Using as much of the existing infrastructure and right-of-way, develop a hierarchical grid system of roadways in the current City limits and extraterritorial jurisdiction (ETJ) of Cleburne in anticipation of the City's future growth.

Objective 1-2 - Create a truck routing map and sign the roadways accordingly to route trucks around the congested urban core of the city.

Goal 2 - Plan and design future roadways to encourage economic development.

Objective 2-1 - Design roadways in a manner that will create the highest possible property values by maximizing access to highways, creating hard corners, etc.

Goal 3 - Incorporate alternative forms of transportation into future plans and development policies.

Objective 3-1 - Encourage sidewalks and interconnected pathways that promote pedestrian and bicycle movement throughout the City.

Objective 3-2 - Consider plans for public transportation systems throughout the City.

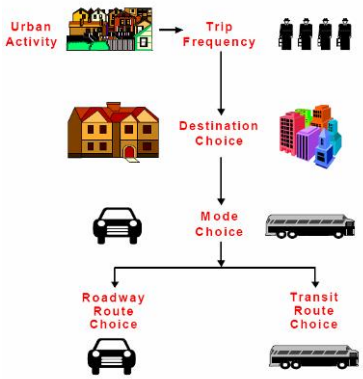
Objective 3-3 - Design and promote pathways that link neighborhoods to nearby activity centers such as parks, amenity centers and commercial areas.

3.0 THOROUGHFARE PLANNING PROCESS

To capture the vision of the community and produce the most suitable and effective plan possible, numerous elements and steps were incorporated into this Thoroughfare Plan. The first step involved studying the City's Comprehensive Land Use Plan to gain an understanding of the community vision depicted in the plan. Secondly, the planning process sought to involve City staff and officials with a series of review periods and workshops aimed at creating a useful plan. Lastly, the process used to generate this update of the Thoroughfare Plan differs from past efforts in that a regional travel demand model was used. This tool allowed for the testing of various roadway alignments, validation of roadway sizing, right-of-way needs, and the ability to forecast travel demand 25 years into the future. A detailed explanation of the modeling process is outlined below.

3.1 Travel Demand Modeling Methodology

Information contained within the North Central Texas Council of Governments (NCTCOG) regional travel demand model was used to obtain land use and demographic data for areas outside the City of Cleburne and its ETJ. KHA customized NCTCOG's regional travel demand model ("the model") to more accurately reflect travel patterns within the City of Cleburne and its ETJ. The model enables the City to estimate vehicular trips throughout the City and surrounding areas. In the simplest terms, the model turns people and employees into trips, finds their origin and destination and assigns them a path to complete their trip (see the adjacent graphic). The trips cover an entire 24-hour period, so it accounts for all trip types: home to work, home to shop, and back to home, etc.



With the use of a travel demand model, planners and engineers are able to estimate current and future traffic demands. The proposed build-out demographics have been incorporated into the model to estimate the traffic demands. The build-out was based upon the currently adopted future land use plan provided by the City. The following section will describe the basic theory of the travel demand model. Later sections will

describe the specific assumptions and adjustments that were made based on our validation analysis.

Basic Model Theory

By creating and using a travel model, one is attempting to produce a mathematical representation of an individual's decision-making process:

Why to make a trip
↳When to make the trip
↳Where to make the trip
↳How to make the trip
↳What route to follow to complete the trip.

These individual choices are then combined so that aggregate impacts can be determined. The model structure should also be manageable and supported with obtainable data.

As a transportation planning project develops, travel demand models may be used to make planning level decisions regarding future transportation needs. Models estimate the overall demand on a roadway system based on the proposed land uses. Models are also used to answer questions such as the number of lanes required along a given roadway or the need for a new roadway or interchange. Travel models are best suited to provide a comparison between alternatives, and the traffic projections provided will show general trends between these alternatives.

Four-Step Modeling Process

The model is comprised of a series of mathematical models that simulate travel on the transportation system. This macroscopic process encompasses the four (4) primary steps taken to estimate travel demand from a given land use and transportation network. The four steps in this approach are as follows:

Trip Generation – the estimation of the number of trip-ends for each zone in the region. More detail on the trip generation process is included in the following section.

Trip Distribution – the estimation of the number of trips between each regional zone pair.

Modal Split – the prediction of the number of trips made by each mode of transportation between each zone pair.

Traffic Assignment – the amount of travel (or number of trips) that is loaded onto the transportation network through path-building and is used to determine network performance.

3.2 Model Validation

Trip Generation

The number of households (units), population, and employment (subdivided into basic, service, and retail categories) in each Traffic Analysis Zone (TAZ) is modeled to create 24-hour and peak-hour estimates of person-trip ends. The trip ends are either *productions*, which means they are the source (or home) end of the trip, or *attractions*, which means they are the purpose (or destination) end of the trip. Trip generation predicts production and attraction trip ends for each TAZ. Although the results are similar to *ITE Trip Generation*, the methodology used in the travel demand model is not the same. While both methodologies utilize the characteristics of a development to determine the number of trips, the model uses a robust regional database of TAZ's to estimate interaction between various land uses. For example, a trip from work to home may involve an intermediate stop at a gas station. Within the regional model, this trip is accounted for from start to finish, whereas it is difficult to account for these types of trips at the regional level using *ITE Trip Generation*.

In order to determine the relative amount of trips generated within the study area at NCTCOG's TAZ level, it was necessary to develop a conversion between the inventoried land uses and demographic information for non-residential land uses (employment) required in the model. **Table 3.2.1** displays an overview of these general conversion factors.

TABLE 3.2.1 Land Use / Demographic Conversion

Employment Type	Definition	Square Feet Per Employee
Retail	Activities which provide for the retail sale of goods that primarily serve households and whose location choice is oriented toward the household sector such as grocery stores and restaurants.	800
Service	Activities which provide personal and professional activities such as government and other professional administrative offices.	350
Basic	Activities that produce goods and services such as those that are exported outside the local economy; manufacturing, construction, transportation, warehousing, and other industrial uses.	1200

Region Wide Demographics

Demographic data contained within the model were used to obtain land use and demographic data for areas outside the City of Cleburne and its ETJ. The demographic data used in the trip generation process includes the number of households, population, median income, and number of employees by type of employment. Demographic data and land uses are forecasted for future study years based on trends in development and current and previous growth patterns. The basis for the land use information comes from each city and the NCTCOG and their corresponding future land use plans.

3.3 Modeling Process for Cleburne

The following details the step-by-step process utilized to develop the Cleburne transportation model.

A. Data Collection

1. Recent aerials, appraisal district parcel shapefiles, and "on-the-ground" verification were used to determine existing conditions.

2. Twenty (20) 24-hour directional machine counts and nine (9) turning movement counts were performed at critical locations chosen by City of Cleburne staff.

3. Lots, tracts, floodplains, and City Limits shapefiles were collected from the City.

B. TransCAD Modeling

1. Using the model, the existing (2007) street network was updated with the current speed limits, travel lanes, capacities, and roadway classifications.

2. All of the demographic data for a TAZ are represented in a centroid (a dot contained within the TAZ). The centroid is connected to the roadway network using one or multiple "centroid connectors". The location of where these centroid connectors were modified to accurately load the roadway network. For example, if a neighborhood is represented in a TAZ the centroid connectors would connect to the roadway network where the major entrances and exits are located.

3. Based on aerials and census data, the 2007 demographics (population, employment and median income) were updated for each of the TAZ in and around Cleburne.

4. The 2007 network was calibrated so that the Cleburne and surrounding road volumes were within acceptable tolerances for modeling purposes. For this model, volumes were calibrated so nearly all of the roadway links were within 10% of the measured counts.

5. Based on the future land use maps and NCTCOG projections, the 2030* demographics were updated and shown below in **Table 3.3.1**.

   *2030 demographics were used for the City of Cleburne and its ETJ, while 2025 demographics were used for the rest of the region.

Table 3.3.1 2007 and 2030 Demographics

Demographics	Model		NCTCOG
	2005	2030	2030
Households	10,694	22,994	22,706
Population	28,850	58,908	58,786
Basic	4,670	7,726	
Retail	4,327	12,616	
Service	8,348	15,764	
Employment	17,345	36,106	39,408

6. The 2030 network was updated to incorporate Cleburne's working Master Thoroughfare Plan and comments made by City of Cleburne staff. Centroid connectors were adjusted to accurately load the network.

7. The 2030 demographics were developed based on the current future land use plan, development density trends in Cleburne and its environs, and population and employment forecasts produced by NCTCOG.

8. Four (4) different alternatives were modeled to determine their effects on mobility and network capacity. The four alternatives were:
   - Proposed Master Thoroughfare Plan
   - MTP with 2 lane connector between Old Foamy Road and CR 314
   - MTP with 4 lane connector between Old Foamy Road and CR 314
   - MTP without University Drive from Henderson Road to Old Foamy Road

9. To aid in determining the project prioritization, the future demographics were run on the existing network. The result shows where the greatest capacity deficiencies would exist if a "no-build" scenario was followed.

4.0 2007 UPDATED MASTER THOROUGHFARE PLAN

To fully appreciate the benefits of proper thoroughfare planning and its place within the entire spectrum of the transportation system, one should understand that all arterials, collectors, and local streets are classified by varying levels of functional mobility and access as shown in **Figure 4.0.1** and described in **Table 4.0.1**. The table is subdivided into roadway classifications with a corresponding typical right-of-way (ROW) width. As the access to and from a roadway decreases, the capacity and ROW width typically increase. The highest classification for a roadway is the **arterial roadway**, which carries the highest level of traffic, but provides for somewhat limited access. **Collector roadways** provide less mobility than arterials, but afford a much greater level of access. The lowest roadway class is the **local street**, which provides the highest level of land access, but carries a limited amount of traffic. In general, the miles of system roadways in each classification should decrease as functional classification increases (i.e., more miles of local roads than arterials).

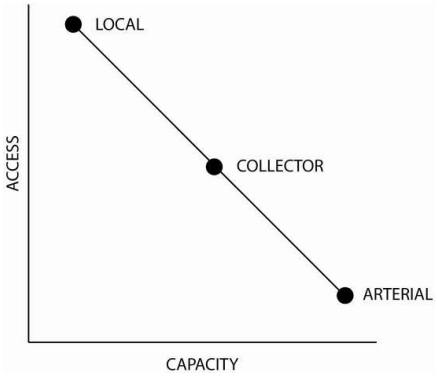


Figure 4.0.1 Access vs. Roadway Capacity

Table 4.0.1 Roadway Classifications

Classification		Typical ROW	Description
P6D	Principal Arterial 6-Lane Divided	120'	The primary function of P6D and P7U street is to provide traffic mobility between collectors and the highway system. P6D is preferred to improve safety by reducing conflict points.
P7U	Principal Arterial 6-Lane with 7th Two-Way Left Turn Lane	120'	
M4D	Major Arterial 4-Lane Divided	90'	M4D and M5U streets balance mobility and access. M4D is preferred to improve safety by reducing conflict points.
M5U	Major Arterial 4-Lane with 5th Two-Way Left Turn Lane	90'	
C4U	Collector 4-Lane Undivided	70'	The primary function of C4U streets is to connect residential collectors to arterials.
C3U	Collector 2-Lane with 3rd Two-Way Left Turn Lane	60'	C3U streets are typically used as commercial or industrial collectors with high left turning movements.
C2U	Collector 2-Lane Undivided	60'	C2U streets are typically used as residential collectors.
L	Local Street	50'	Local streets typically connect private driveways to the collector system.

4.1 Roadway Cross-Sections

The following figures represent the typical section for each functional classification. It should be noted that the dimensions shown below are only for general design intent and may not be matched exactly due to geometric, topographic, or other conditions as approved by the Director of Public Works.

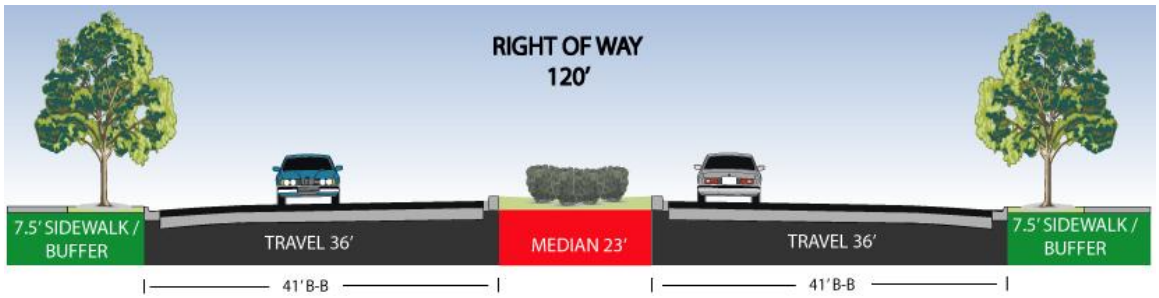


Figure 4.1.1 Principal Arterial Six-Lane Divided (P6D)

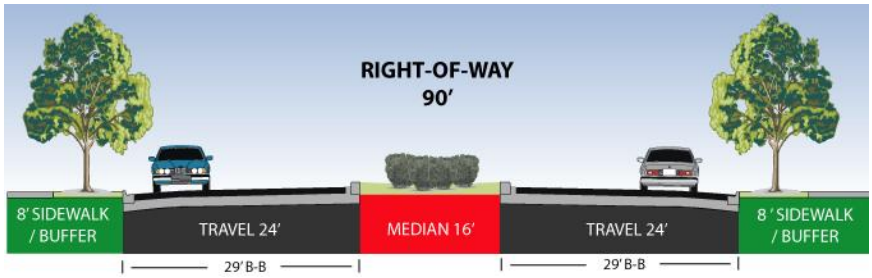


Figure 4.1.2 Major Arterial Four-Lane Divided (M4D)

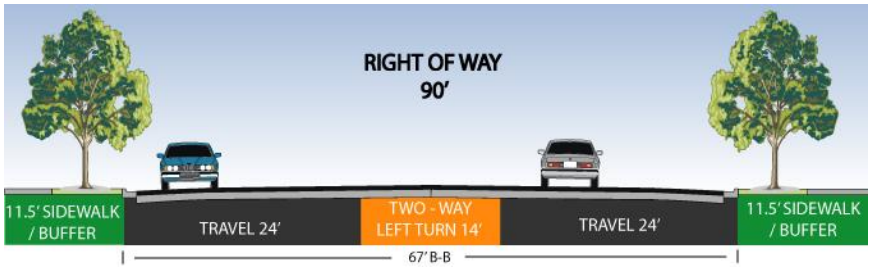


Figure 4.1.3 Minor Arterial Five-Lane Undivided (M5U)

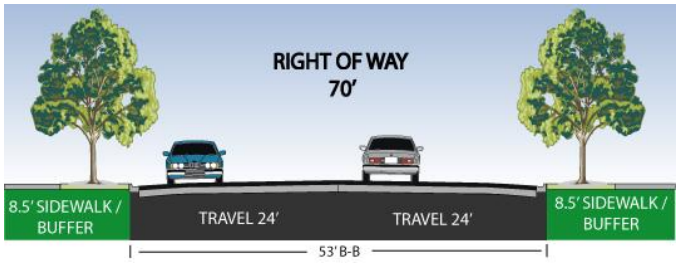


Figure 4.1.4 Collector Four-Lane Undivided (C4U)

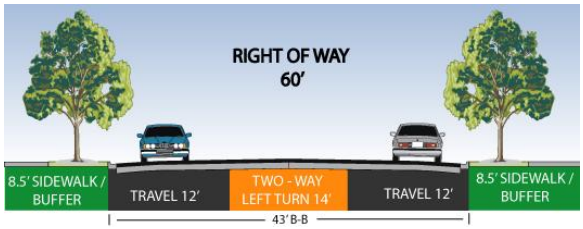


Figure 4.1.5 Collector Three-Lane Undivided (C3U)

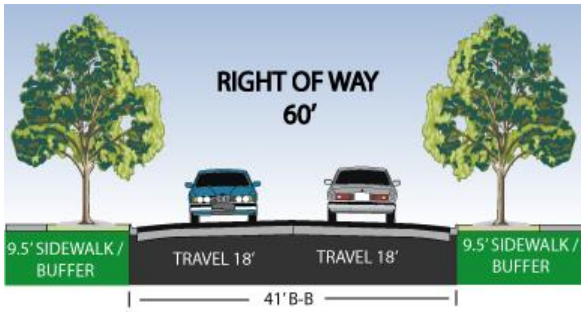


Figure 4.1.6 Collector Two-Lane Undivided (C2U)

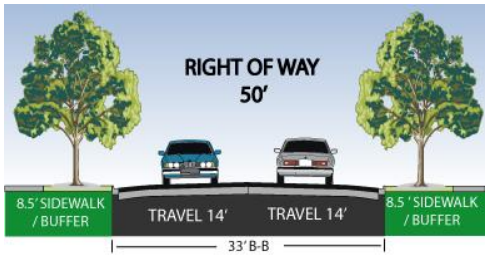
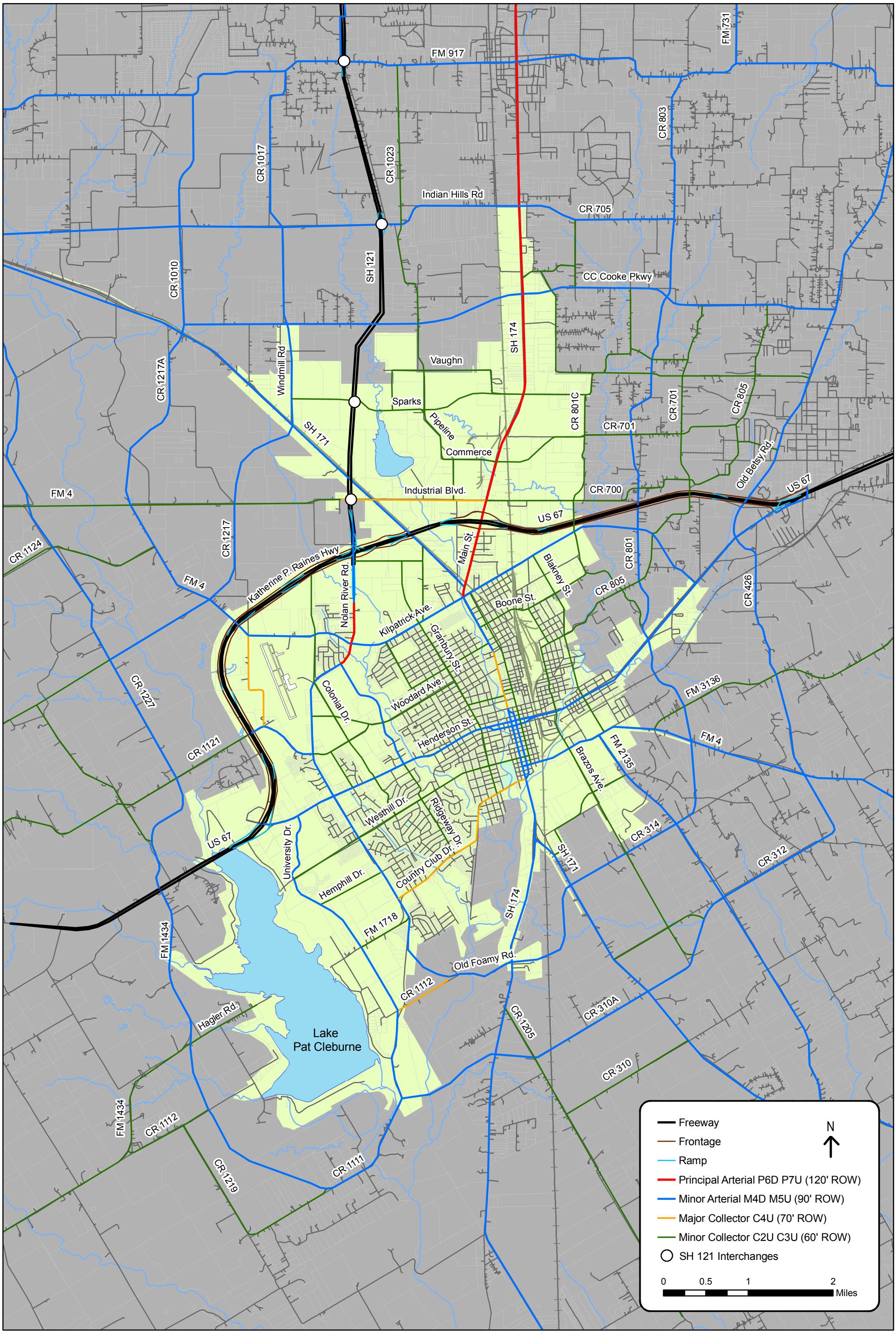


Figure 4.1.7 Local Street Two-Lane Undivided (L)

The 2007 Updated Master Thoroughfare Plan is shown in **Figure 4.1.8**. In general, roads were sized based on the volume and level of service (LOS) maps provided in the **Appendix** and the Through Truck Route map shown in **Figure 4.1.9**. The majority of the changes to the MTP stem from Goals 1 and 2 listed in **Section 2.0 Goals and Objectives**. A detailed list of the changes to the January 2006 Master Thoroughfare Plan can also be found in **Section 6.0 Implementation Plan**. A summary of the major changes is below:

- The ETJ was filled out with a hierarchical grid that is designed to move cars quickly and safely from the local streets to and from the arterials and highways. Refer to **Table 4.0.1** above for a description of the roadway facilities and their functions.
- Truck routes were proposed to divert pass-through trucks around the congested urban core. To be effective, these routes must be signed visibly and accurately and regularly enforced. The through truck route map can be seen in **Figure 4.1.9**.
- Roads were designed to promote economic growth by maximizing access to highways, creating hard corners (90° intersections), and creating regional arterials.

The second and third alternatives mentioned in Step 8 of **Section 3.3B TransCAD Modeling** were modeled to determine if a connector from Old Foamy Road at SH 174 to CR 314 would be warranted based on demand. Both model runs show approximately 6,000 vehicle trips per day using the connector. Because this facility would be used as a direct truck route around the southwest side of the city, it was decided that this connection would be warranted as a 4-lane facility. The four lanes would allow vehicles to pass trucks as needed and provide additional peak-hour capacity. The fourth alternative was modeled to determine the impact of University Drive as a parallel route to Nolan River Road. The modeling shows that University Drive is projected to draw approximately 7,000 vehicle trips from Nolan River Road, which would significantly reduce congestion on Nolan River Road.



CITY OF CLEBURNE, TEXAS

Figure 4.1.8 Master Thoroughfare Plan

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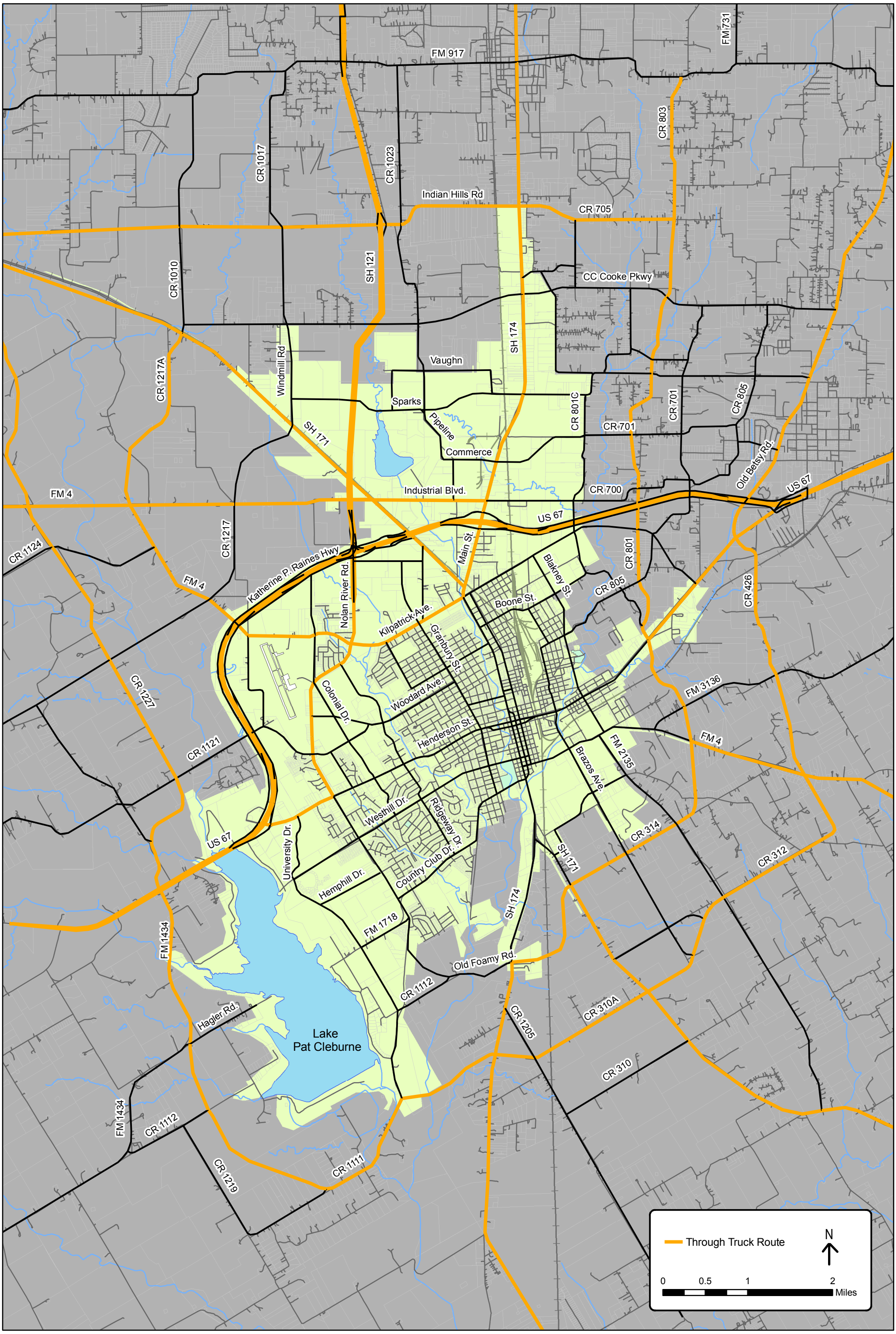

CITY OF CLEBURNE, TEXAS

Figure 4.1.9 Through Truck Routes

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5.0 MULTI-MODAL TRANSPORTATION

While the car will likely remain the dominant mode of transportation in Cleburne (and the DFW region), alternate forms of transportation should be incorporated in the transportation system to encourage infill redevelopment and economic growth, alleviate congestion on roadways, and facilitate exercise and wellness for the residents of Cleburne.

5.1 Public Transit

The City of Cleburne currently operates Cletran, a citizen request based transportation system. Service is available to City residents to any City destination on weekdays from 7:00 am to 8:00 pm, and on Saturdays from 8:00 am to 5:00 pm. A nominal fee applies for each trip. The City currently owns and operates 23 buses that provide the Cletran service. City residents also have the ability to access a demand response bus service from 8:00 am to 5:00 pm on weekdays and an interurban bus service with three (3) daily round-trip routes that connect Cleburne to Joshua, Burleson, and the Fort Worth Transportation Authority Park 'n' Ride service adjacent to Spinks Airport.

The proposed Regional Rail System (see **Figure 5.1.1** below) has the ability to relieve congestion for commuters in the peak periods. The NCTCOG's Regional Rail Corridor Study (RRCS) revealed that a connected regional rail system could have the effect of adding an additional freeway lane in each direction to some of the most congested highways and tollways in North Central Texas. The RRCS currently has plans for a commuter rail line (W-4 on the map below) that will run on the BNSF line into the heart of Cleburne. This section of the plan will explore how Cleburne can integrate rideshare, vanpooling and transit into a palette of transportation options that are aimed at reducing the dependence on single occupant vehicles for commuting and basic services.

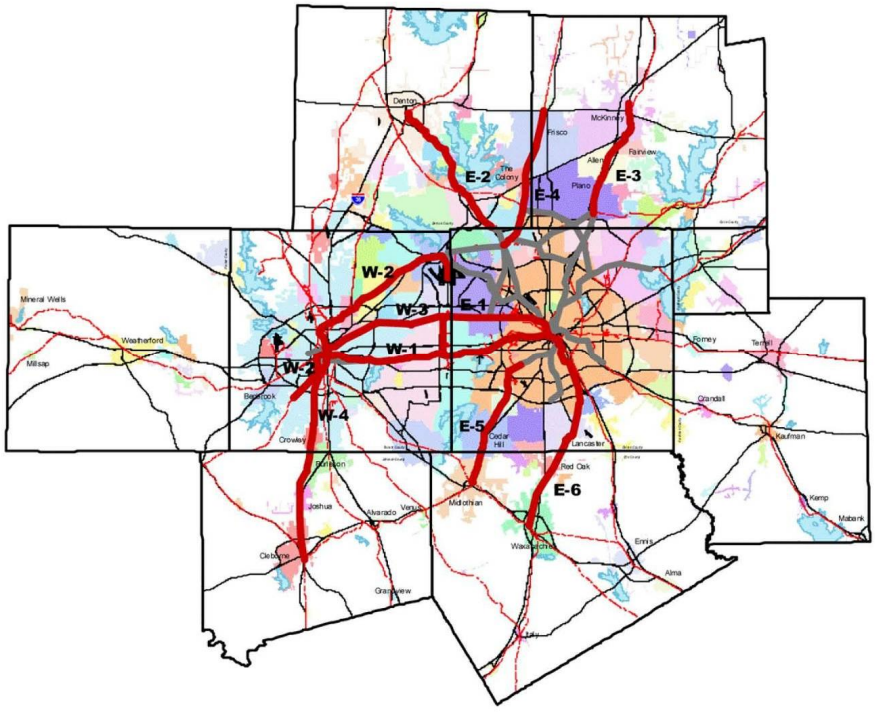


Figure 5.1.1 NCTCOG Regional Rail System

Planning for Transit

Currently, the Texas Eagle (operated by Amtrak) has a station at the Cleburne Intermodal Terminal. NCTCOG has two station locations identified on the W-4 line within the City of Cleburne in its Regional Rail Corridor Study. The terminus of the W-4 line is planned to be at the Cleburne Intermodal Terminal as a Park n' Ride along with a North Cleburne station near the SH 174 overpass. By designating a City Park n' Ride or Park n' Pool lot, prior to the W-4 line opening for commuter rail service, Cleburne can begin building ridership for this future mass transit. Ways to promote increased ridership and decrease roadway demand could include an active kiosk, a ride-matching program, and a public information campaign.

The Fort Worth Transportation Authority ("the T") has a very progressive vanpool program which is regional in nature. A Park n' Ride or Park n' Pool lot could be planned for near the intersection of Nolan River Road. and Kilpatrick Avenue to transit people from Cleburne to downtown Fort Worth as a complement to the commuter rail line and

the Interurban Express Route. Cleburne does not have to be in the T service area to benefit from vanpooling. The T can also provide ride-matching services to individuals or employers.

Planning efforts for transit services should begin now to allow transit to become an integral part of the City's transportation system. Instead of developing the transportation system to accommodate predominantly automobile demands and allowing land uses to be designed entirely for automobile usage; the City should start creating a more transit-friendly transportation system and promoting land uses that encourage transit ridership. The benefit of these efforts would be a reduction in automobile demand on the roadway network.

5.2 Bicycles and Pedestrians

The City of Cleburne has a network of bike routes, bike lanes, and multi-use paths for bicyclists and pedestrians with future routes planned. It is recommended that the City of Cleburne continues to consider bicycle routes, bicycle lanes, and multi-use trails during thoroughfare construction and reconstruction projects.

6.0 IMPLEMENTATION PLAN

In order to assist the City of Cleburne in prioritizing their needed arterial widening and building capital improvement projects, the existing year (2007) and three horizon years (2011, 2020, and 2030) were used. 2011 was chosen as the first horizon year as that is the anticipated opening of SH 121 that will connect Cleburne to Tarrant County and the City of Fort Worth. The prioritization list developed as part of this analysis should be used as a guide for City leaders in deciding where future arterial widening funds may be spent. There may be other factors outside of the scope of this analysis that may dictate a different priority ranking system.

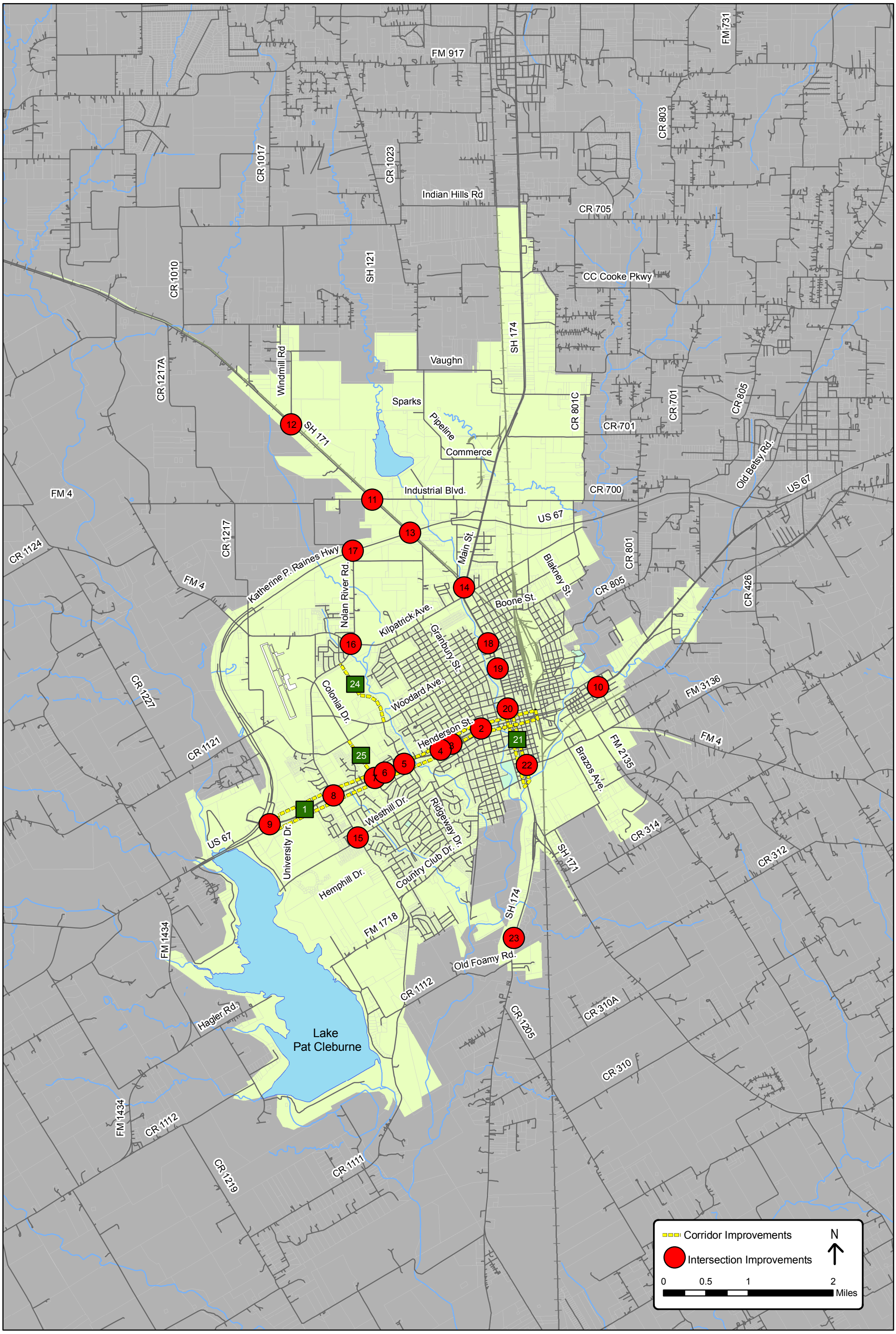
It should be noted that the subsequent tables reflect only conceptual-level opinions regarding the future project costs. Construction, engineering, and ROW acquisition included an inflation factor based on current ENR projections and the applicable design year (2011, 2020, and 2030). Actual project costs are likely to change with time and are dependent on market and economic conditions that cannot be predicted. The cost projections utilized in this study should not be utilized for the City's building program or construction CIP until more detailed preliminary engineering work can be performed.

6.1 Existing Needs (2007)

Prior to completing this long-range transportation plan, an inventory of existing intersection and roadway deficiencies was conducted. The needs identified are listed below in **Table 6.1.1** and shown in **Figure 6.1.1**.

Table 6.1.1 Existing Needs

Corridor	ID #	Cross Street	Recommended Improvements	Total Project Cost
Henderson	1	Entire Corridor	- Prepare an Access Management Plan to address ingress / egress to existing properties, identify driveway removals, and suggest potential cross access opportunities between properties.	$60,000
			- Provide coordinated signal timing for all traffic signals along Henderson St.	IN PROGRESS
			- Install mast arm mounted street name signs for cross streets.	$5,000
			- Evaluate and recommend ADA improvements.	$20,000
	2	Prairie / Granbury	- Install left-turn and lane usage signs for the north - south approaches.	$2,000
			- Re-stripe NB approach to allow N-S to run together - eliminating the split phase.	$5,000
			- Eliminate driveway just north of signal (HEB driveway)	$5,000
			- Consolidate Jack in the Box driveways	$10,000
	3	Cleburne Bible Church	- Remove on-street angled parking (WB).	$5,000
	4	Saint Mark Methodist Church	- Remove on-street angled parking (EB).	$5,000
	5	N. Ridgeway	- Install north - south stop bars.	$1,500
	6	Wal-Mart entrance	- Modify entrance to further restrict left-turns out of site.	$32,000
	7	Colonial	- Add left-turn and lane usage signs for north - south approaches.	$31,000
			- Remove existing north - south split phasing. Modify signal heads accordingly.	$5,000
	8	Nolan River	- Install a SB right-turn overlap to allow this right turn traffic to turn without stopping during the EB left-turn protected phase.	$31,000
			- Realign north - south approaches to eliminate split phase operations.	$130,000
	9	US 67 Frontage Road	- Restripe to provide an EB left-turn lane.	$2,000
	10	Oran	- Remove this signal if it's not warranted.	$5,000
SH 171	11	Industrial (CR 900)	- Construct NB & SB left-turn lanes.	IN PROGRESS
			- Restripe to provide a WB left-turn lane.	IN PROGRESS
	12	Windmill (CR 1017)	- Widen and restripe to provide a SB left-turn lane.	IN PROGRESS
			- Look at potential sight distance issues looking west from Windmill.	IN PROGRESS
			- Construct an acceleration lane along SH 171 for traffic turning from Windmill leading north.	IN PROGRESS
			- Signalize intersection.	IN PROGRESS
	13	US 67 Frontage Road	- Construct a SB right-turn lane.	$100,000
	14	SH 174	- Signalize intersection to help manage the large NB left-turn queue along SH 174. Coordinated signal timing with signal at FM 4.	$175,000
Nolan River	15	Westhill	- Stripe out a WB right-turn lane.	$2,000
	16	Kilpatrick	- Detector problem along Kilpatrick.	$2,000
	17	SH 171 / US 67 Connections	- Install directional wayfinding signs for access to SH 171 and US 67.	$5,000
SH 174	18	Poindexter	- Close driveways across from T-approach (WB approach).	$5,000
	19	Williams	- Close driveways at SW corner (gas station).	$5,000
	20	Willingham	- Install pedestrian push buttons and pedestrian signals.	$7,000
	21	Downtown	- Re-time traffic signals.	IN PROGRESS
			- Install pedestrian signals.	IN PROGRESS
	22	2nd (FM 4)	- Stripe out a SB left-turn lane.	$2,000
			- Signalize Caddo & 2nd (FM 4) to eliminate queues extending to SH 174.	$175,000
	23	Sheriff's Posse Arena	- Construct a SB left-turn lane.	$100,000
Ridgeway	24	Corridor	- Extend Ridgeway to Nolan River.	$5,100,000
Colonial	25	Corridor	- Extend Colonial from Woodard Ave. to Business US 67 (Henderson Ave.).	$1,400,000



CITY OF CLEBURNE, TEXAS

Figure 6.1.1 Short-Term Operational Improvements

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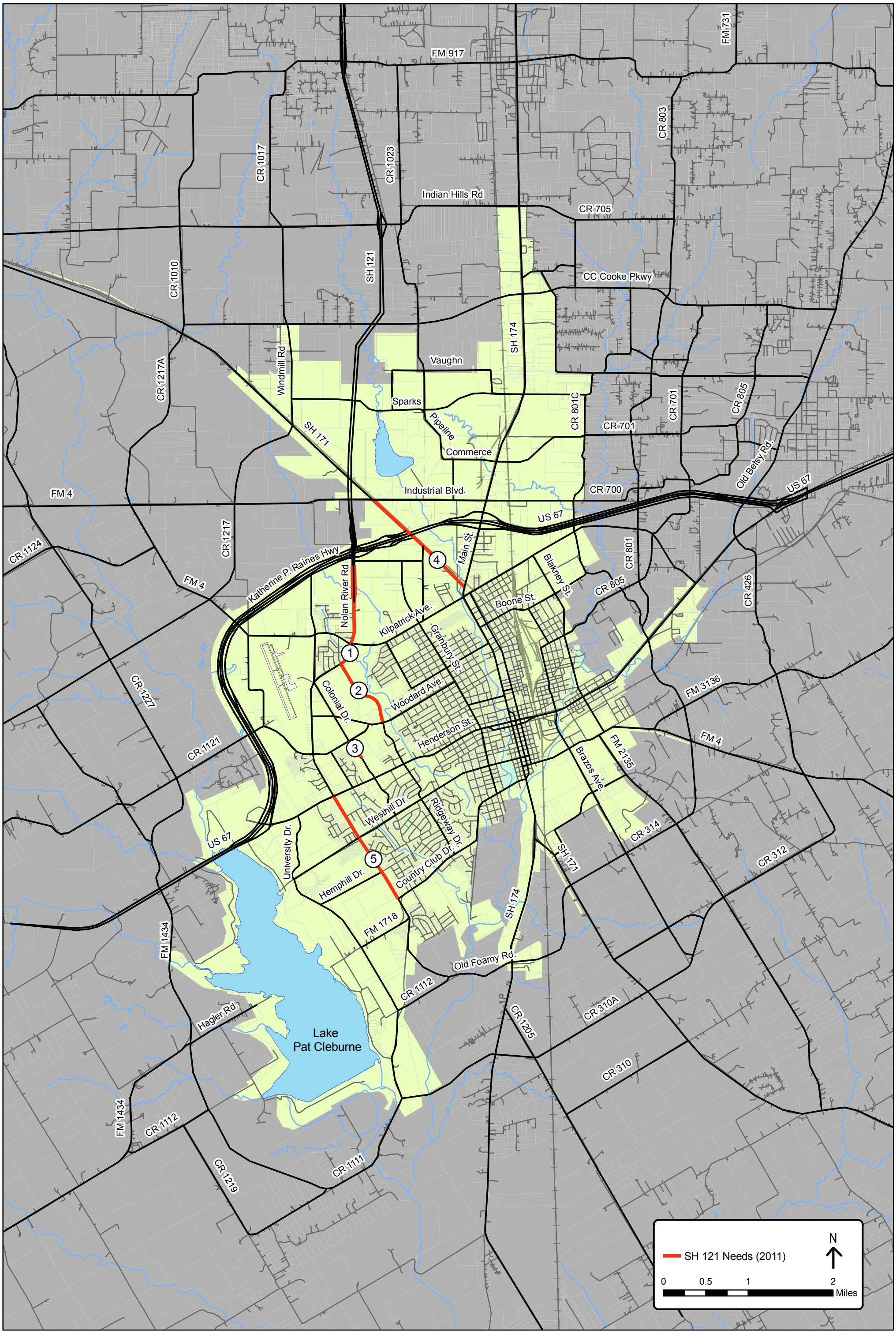
6.2 SH 121 Needs (2011)

2011 was used as a horizon year because it corresponds with the anticipated opening day of SH 121. These needs are listed below in **Table 6.2.1** and shown in **Figure 6.2.1**.

Table 6.2.1 SH 121 Needs (2011)

	Corridor	Existing	Build-Out	From	To	Length (miles)	Cost (in millions)
1	Nolan River Rd.	M5U	P6D	SH 121 terminus	Ridgeway Dr. extension	1.26	$9.6
2	Ridgeway Dr.	N/A	M4D	Woodard Ave.	Nolan River Dr.	0.92	$5.1
3	Colonial Dr. [IN PROGRESS]	N/A	C2U	Woodard Ave.	S. Colonial Dr.	0.24	$1.4
4	SH 171	C2U	M4D	SH 174	Industrial Blvd.	1.51	$9.0
5	Nolan River Rd.	C2U	M4U / M4D	Henderson St.	Country Club Rd.	1.43	$7.7
					Total	5.36	$32.8



CITY OF CLEBURNE, TEXAS

Figure 6.2.1 SH 121 Needs (2011)

Kimley-Horn and Associates, Inc.

6.3 Mid-Term Needs (2020)

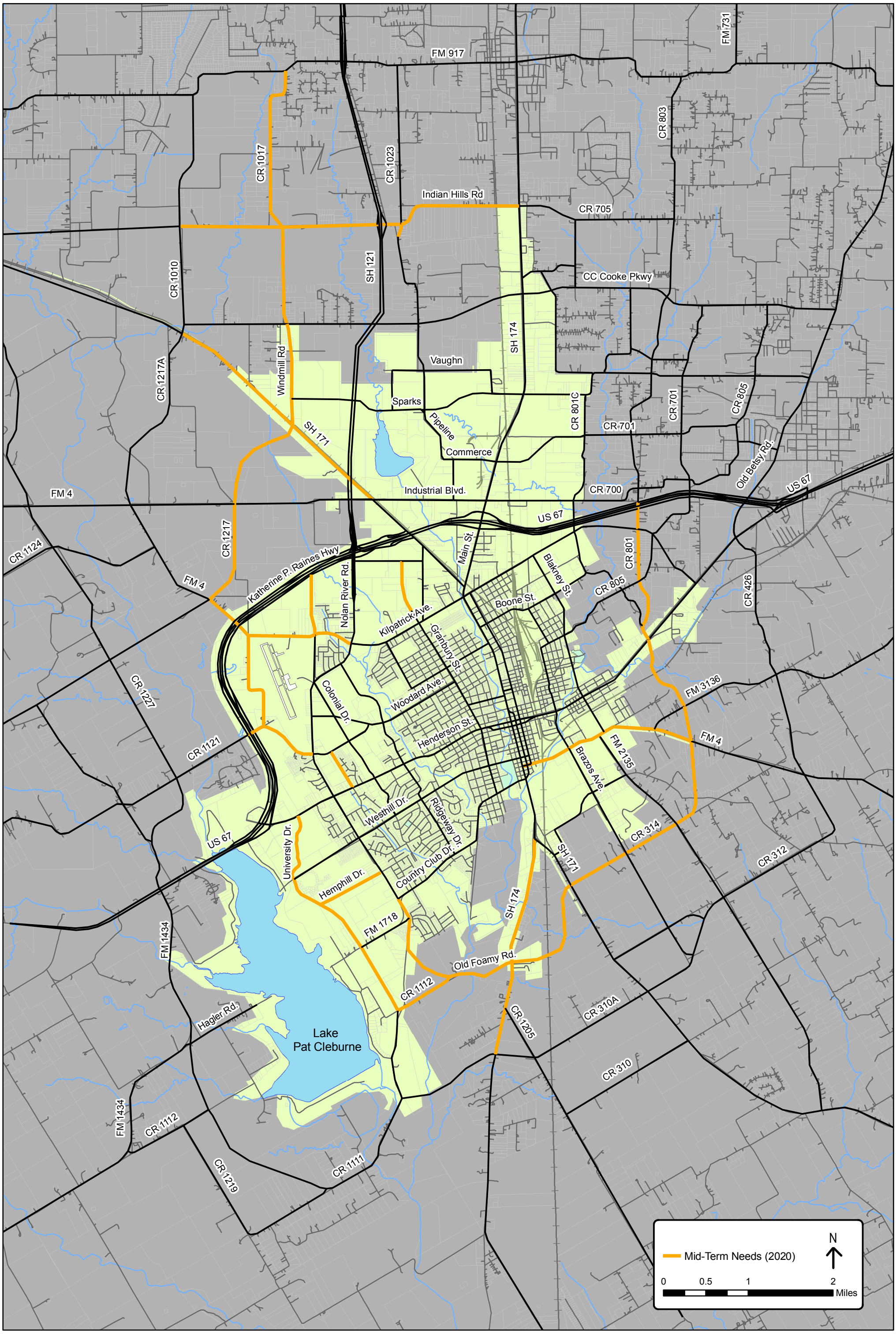
These improvements are listed below in **Table 6.3.1** and shown in **Figure 6.3.1**. The 2020 needs primarily correspond to the build out of US 67 and construction of the truck routes around the southwest and southeast sides of the city.

Table 6.3.1 Mid-Term Needs (2020)

Realignments	Old MTP	New MTP	From	To	Length (miles)	Cost (in millions)
Nolan River Rd.	N/A	M4D	south of Country Club Rd.	Old Foamy Road	1.24	$7.4
University Dr.	N/A	M4D	FM 1718	CR 1112	0.86	$5.1
				Total	2.10	$12.5

Expansions	Old MTP	New MTP	From	To	Length (miles)	Cost (in millions)
CR 314 / CR 801B (SE Loop)	C2U	M4D	SH 171	US 67	5.52	$34.0
CR 1017 / Windmill Road / CR 1217	C2U	M4D	FM 4	FM 917	6.89	$42.4
CR 1217	N/A	C4U	Kilpatrick Ave.	Woodard Ave.	1.23	$6.3
FM 4	M4U/M5U	M4D/M5U	Nolan River Rd.	CR 1125B	1.80	$11.9
FM 4	M4U	M4D	Main St.	SE Loop	2.12	$12.9
Indian Hills Rd.	C2U	M4D	CR 1010	SH 174	4.11	$25.9
Old Foamy Rd.	M4U	M4D	Nolan River Rd.	SH 174	2.03	$12.8
SH 171	P4U	M4D	Industrial Blvd.	CR 1010	2.99	$18.2
SH 174	P4U	M4D	SH 171 (S)	future CR 310A extension	2.60	$16.3
University Dr.	M4U	M4D	Henderson St.	CR 1112	2.84	$17.3
Woodard Ave	C2U	M4D	Nolan River Rd.	US 67	0.83	$5.0
				Total	32.96	$203.0

New Facilities	Old MTP	New MTP	From	To	Length (miles)	Cost (in millions)
CR 1112	N/A	C4U	University Dr.	Old Foamy Rd.	0.73	$3.7
Granbury St. Extension	C2U	C2U	Kilpatrick Ave.	Hedrick Rd.	0.61	$2.6
Hemphill Dr.	C2U	C2U	Nolan River Rd.	University Dr.	0.75	$3.1
Hyde Park	C2U	C2U	Henderson St.	Woodard Ave.	0.50	$2.1
Old Foamy Rd.	N/A	M4D	SH 174	CR 314	1.40	$8.9
Yellowjack et	C2U	C2U	Kilpatrick Ave.	US 67 EBFR	0.72	$3.0
				Total	4.71	$23.4



CITY OF CLEBURNE, TEXAS

Figure 6.3.1 Mid-Term Needs (2020)

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6.4 Build-Out Needs (2030)

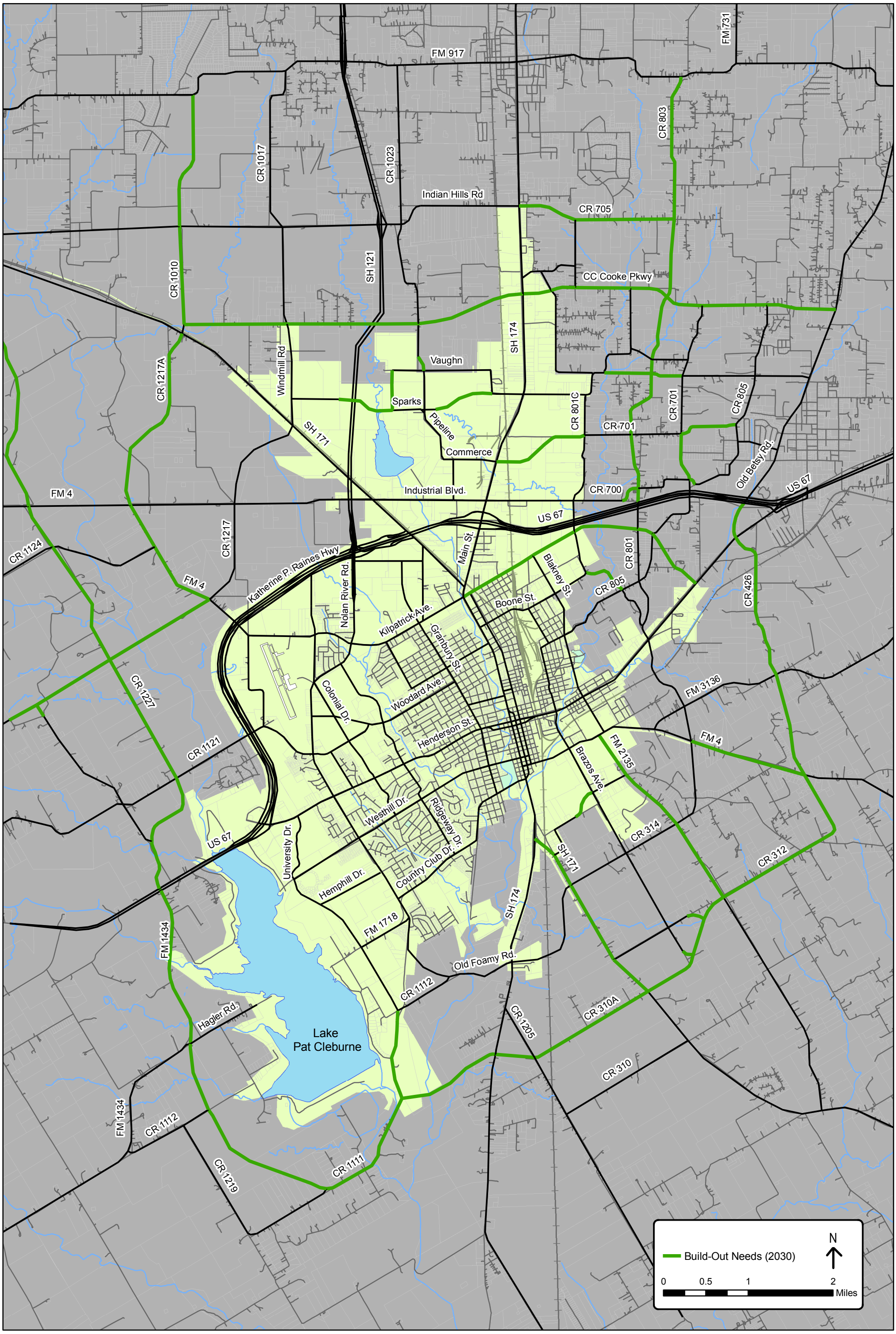
These improvements are listed below in **Table 6.4.1** and shown in **Figure 6.4.1**. The 2030 needs primarily correspond to the build-out of the City and its ETJ. A conglomeration of all of the City's thoroughfare needs is shown in **Figure 6.4.2**.

Table 6.4.1 Build-Out Needs (2030)

Realignments	Old MTP	New MTP	From	To	Length (miles)	Cost (in millions)
CC Cooke Pkwy. Extension	C2U	M4D	CR 1010	Old Betsy Rd. (FM 2280)	7.83	$61.8
CR 1227	C2U	M4D	US 67	SH 171	8.34	$65.7
CR 310A	M4U	M4D	CR 1111 (S. Nolan River)	CR 1205	1.71	$13.6
CR 315	C2U	C2U	Edgewood Lane	CR 429	0.38	$2.0
CR 700	N/A	C2U	near CR 801B	and US 67	0.27	$1.4
CR 803 / Hopewell / CR 801	C2U	M4D	US 67	FM 917	5.26	$41.1
Indian Hills Rd. / CR 705	C2U	M4D	SH 174	CR 803	1.87	$14.8
Sparks	C2U	C2U	Windmill Rd	Pipeline Rd.	1.64	$9.3
Vaughn Rd.	C2U	C2U	Windmill Rd	Old Betsy Rd. (FM 2280)	6.44	$35.3
				Total	33.74	$245.0

Expansions	Old MTP	New MTP	From	To	Length (miles)	Cost (in millions)
CR 1111 (S. Nolan River Rd.)	M4U	M4D	Preakness Ct	CR 1112	2.55	$20.3
CR 310A / CR 312	M4U	M4D	CR 1205	CR 426 extension	4.59	$41.7
CR 426	M4U	M4D	FM 3136	Old Betsy Rd extension	2.24	$17.3
FM 1434	M4U	M4D	US 67	Hagler Rd.	1.90	$15.9
FM 2135	M4U	M4D	FM 4	CR 312	2.43	$18.7
FM 4	M4U	M4D	SE Loop	CR 426 extension	1.40	$10.8
Kilpatrick Ave.	M4U	M4D	Main St.	Bus US 67	3.26	$26.3
SH 171	M4U	M4D	SH 174	CR 310A	2.28	$18.2
Unnamed	M4U	M4D	Hagler Rd.	CR 1111 (S. Nolan River)	2.57	$20.4
				Total	23.22	$189.6

New Facilities	Old MTP	New MTP	From	To	Length (miles)	Cost (in millions)
Commerce Blvd extension	N/A	C2U	SH 174	CR 701	1.15	$6.1
CR 1010 / CR 1217A / FM 4	N/A	M4D	CR 1125	FM 917	7.83	$59.2
CR 426 extension	N/A	M4D	FM 3136	CR 312	1.98	$15.0
Ferguson Rd extension	N/A	C2U	CR 805	Boone St.	0.54	$2.9
Old Betsy Rd (FM 2280) extension	N/A	M4D	US 67	CR 426	0.44	$3.3
Unnamed	N/A	M4D/C2U	west of CR 1227	FM 4	3.21	$24.3
Unnamed	N/A	C2U	CR 701	CR 700	0.67	$4.2
Unnamed	N/A	C2U	CR 701	CR 805	0.69	$3.6
				Total	16.51	$118.6



CITY OF CLEBURNE, TEXAS

Figure 6.4.1 Build-Out Needs (2030)

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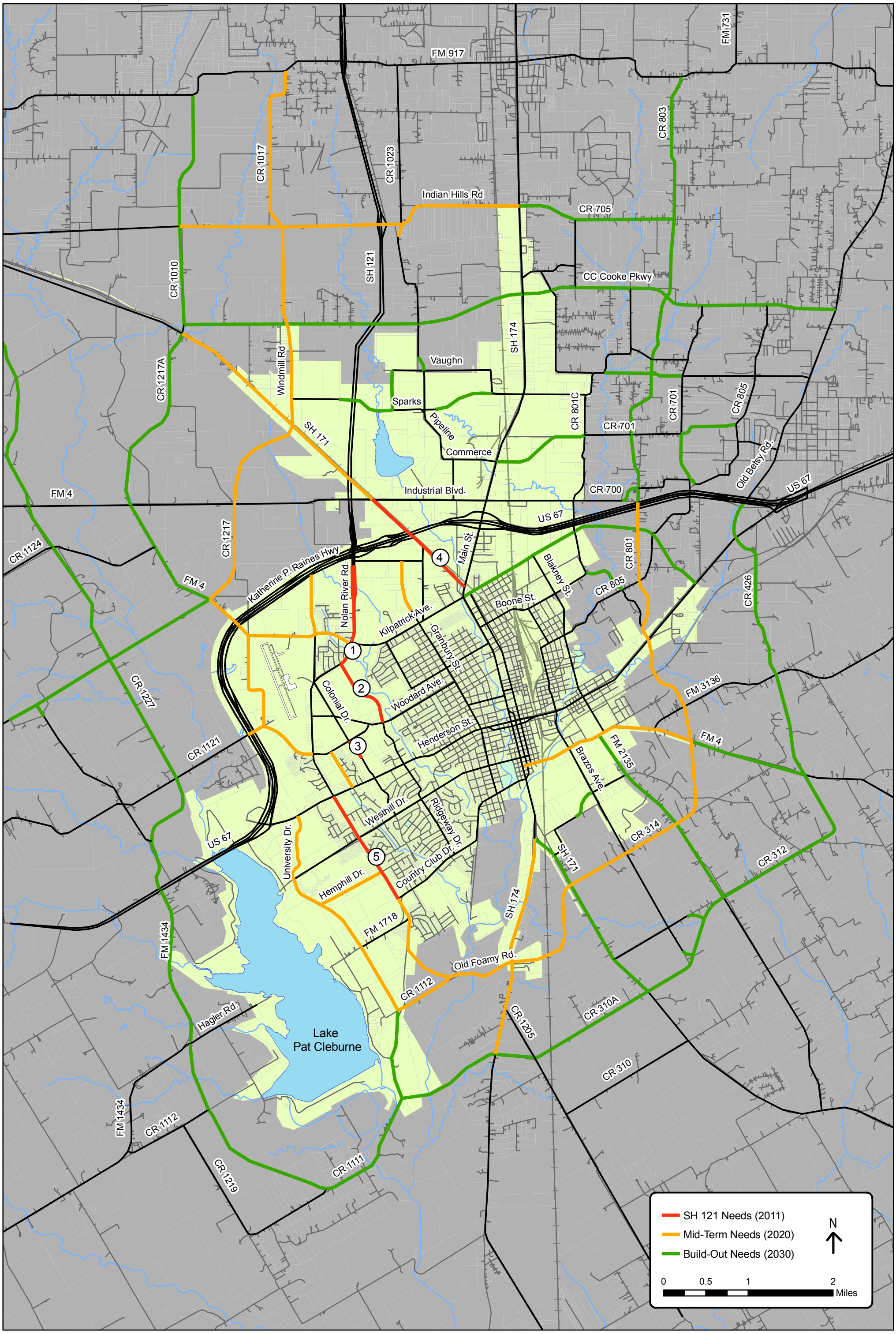


CITY OF CLEBURNE, TEXAS

Figure 6.4.2 Roadway Improvement Implementation Plan

Kimley-Horn and Associates, Inc.

7.0 STRATEGIES FOR FUNDING

Considering the relative cost of investing in major arterial widening and related capacity improvements, opportunities to leverage local funding with County, State, or Federal funding should be explored. Given the length of time it typically takes to secure this type of funding, the City should explore interim intersection improvements or other capacity improvement projects (i.e., signal timing projects, corridor access management plans, etc.) to extend the amount of time before expensive capacity improvements become required.

We recommend the City consider exploring the following funding options to meet the roadway expansion needs:

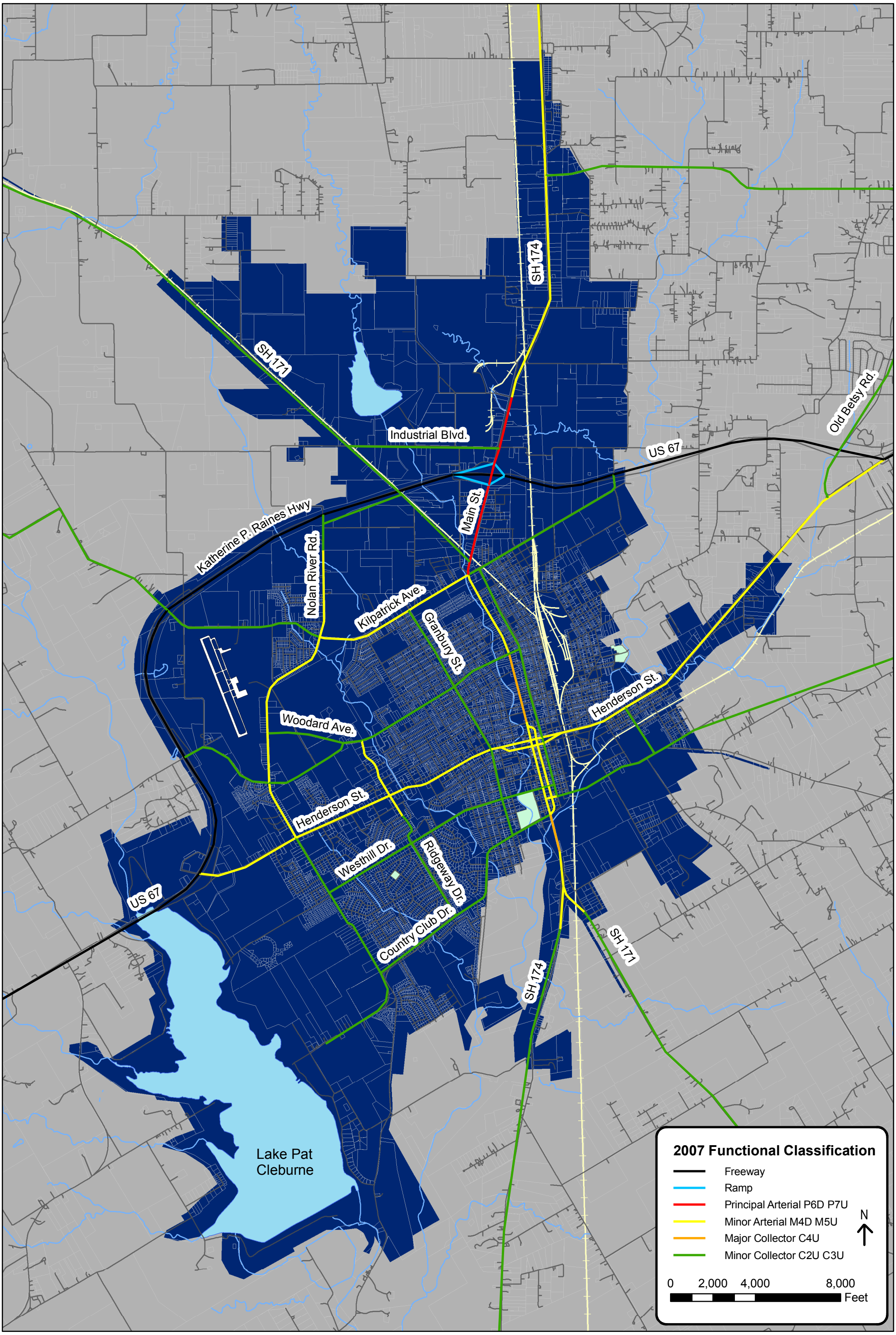
Funding Partnerships

- Johnson County Bond Elections
- NCTCOG Call for Projects
- TxDOT Pass Through Financing

Local Funding Options

- Roadway Impact Fee Ordinance
- Public / Private Partnership with major development projects
- Tax Increment Finance (TIF) Districts or Tax Increment Reinvestment Zones (TIRZ)
- Chapter 380 Agreements (typically an agreement where a developer is reimbursed for infrastructure improvements using sales tax dollars generated by the development)
- General Obligation (GO) Bonds, Revenue Bonds, or Certificates of Obligation (CO)

APPENDIX



CITY OF CLEBURNE, TEXAS

Figure A.1 2007 Roadway Classifications

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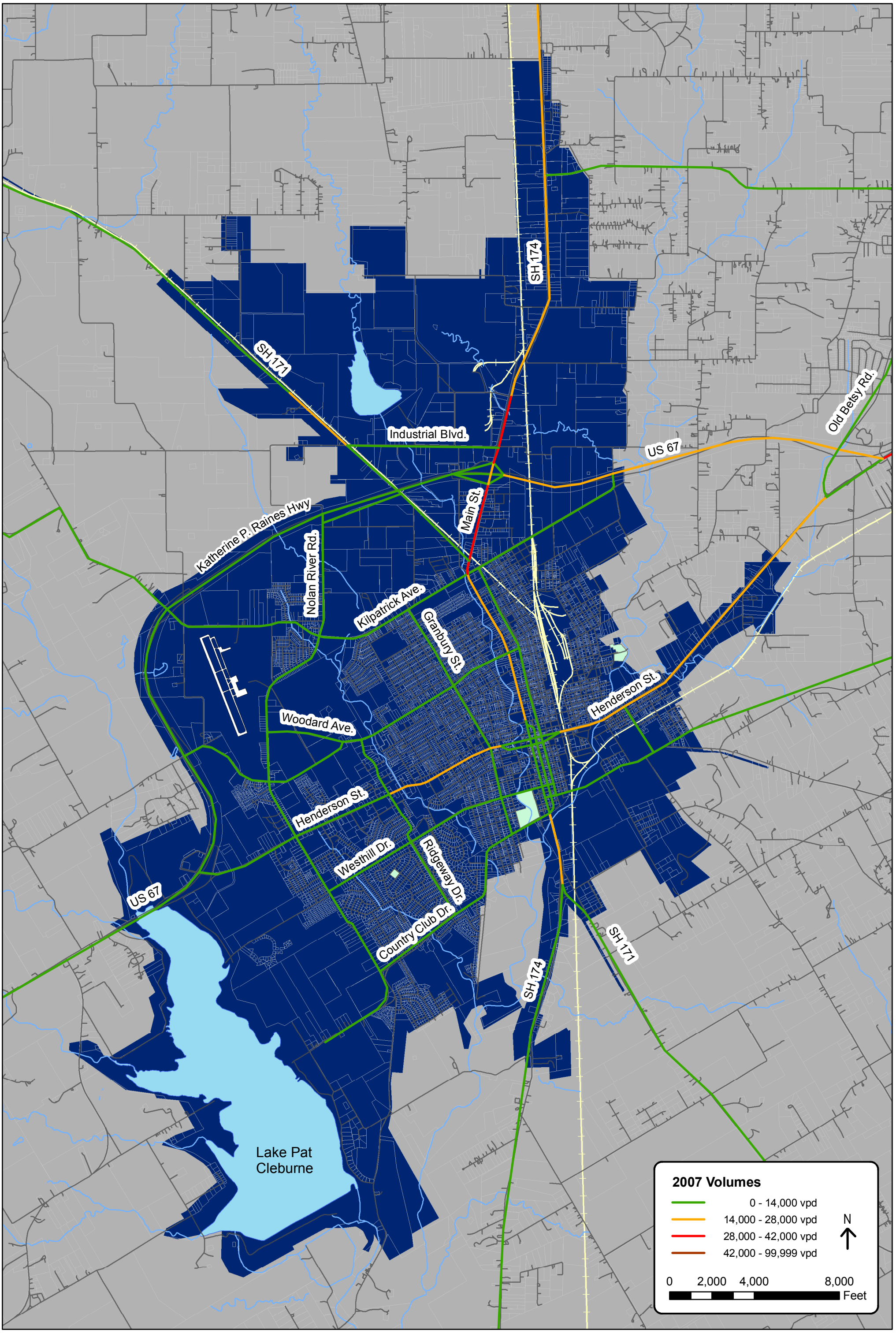
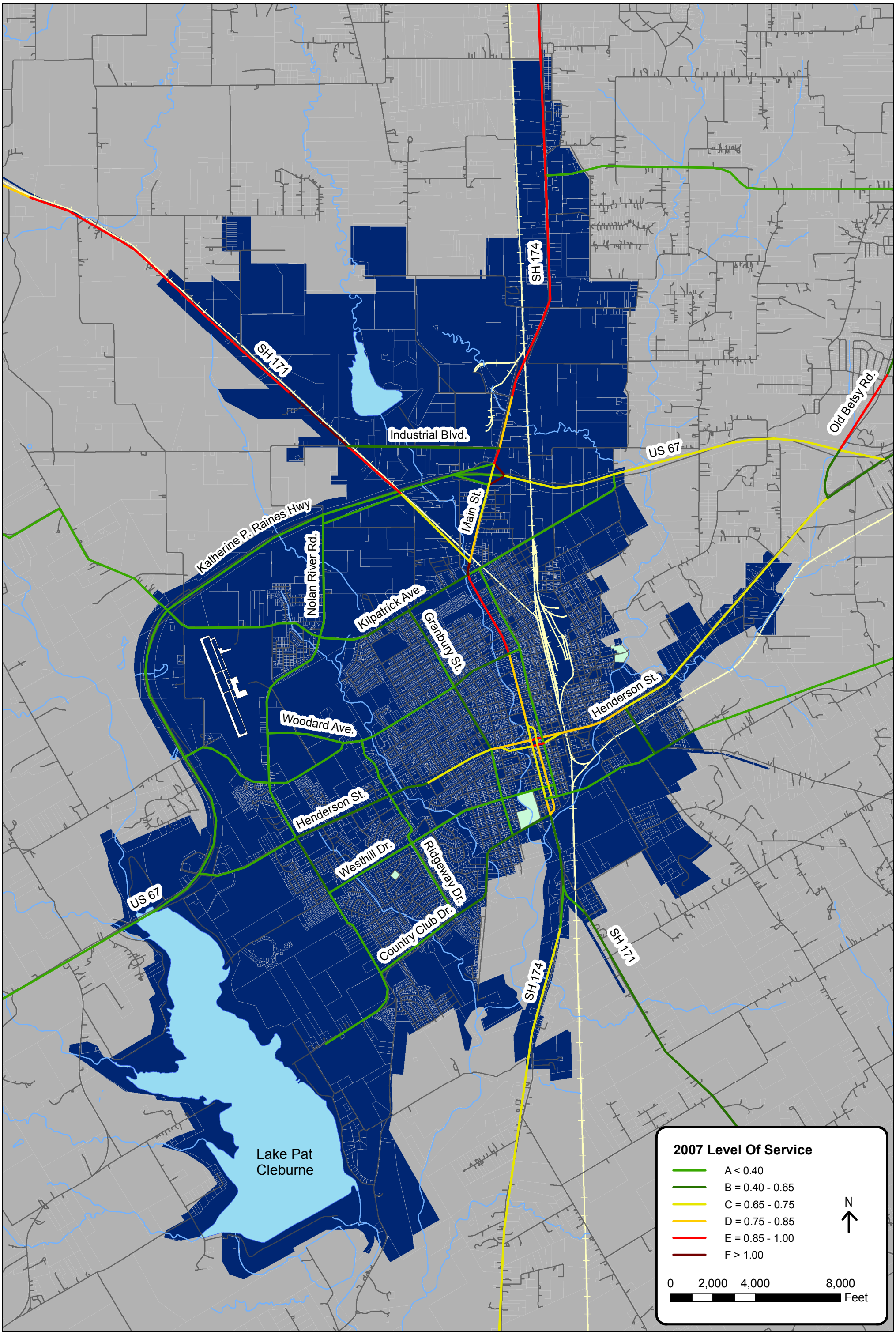


CITY OF CLEBURNE, TEXAS

Figure A.2 2007 Volumes

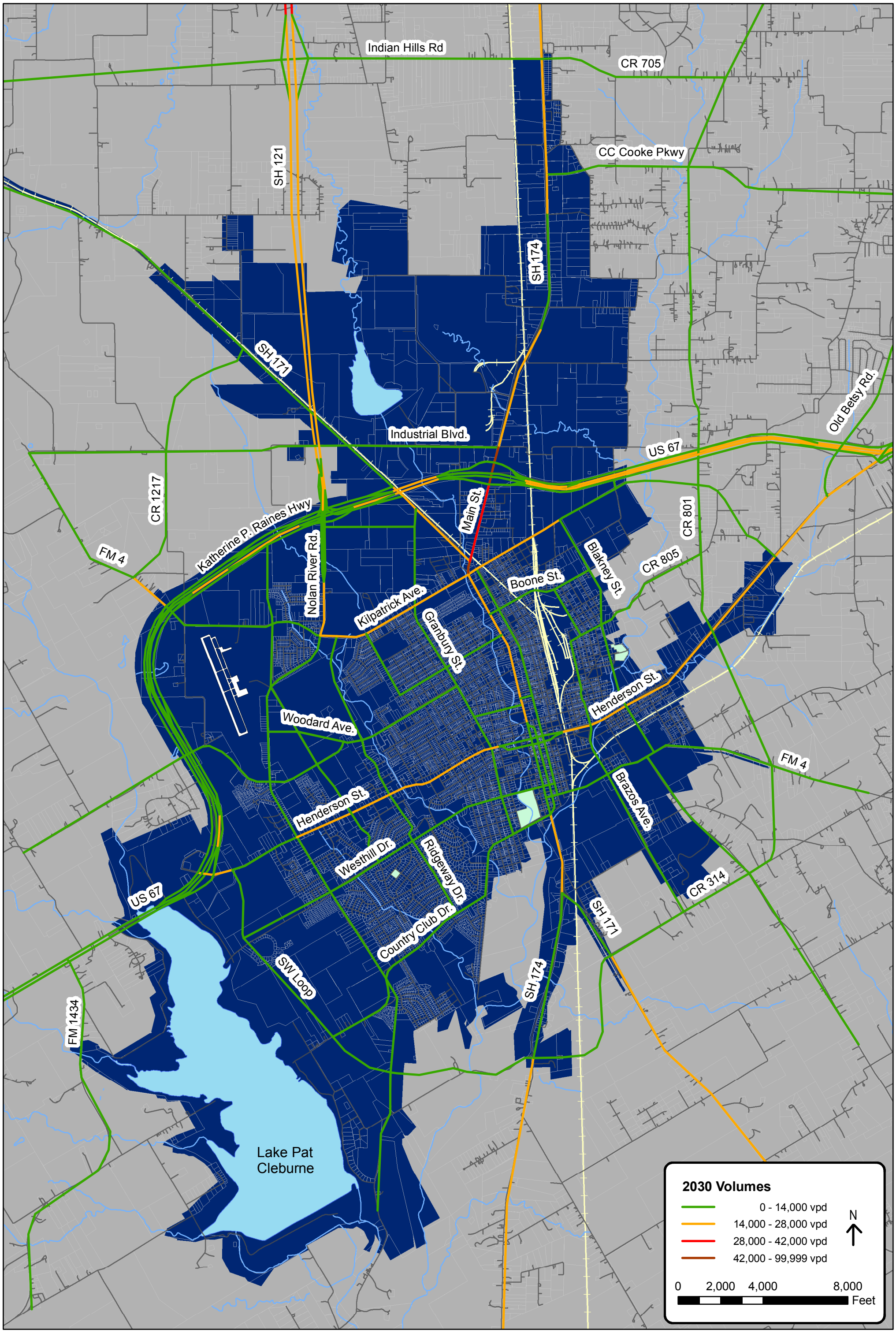
Kimley-Horn and Associates, Inc.



CITY OF CLEBURNE, TEXAS

Figure A.3 2007 Level Of Service

Kimley-Horn and Associates, Inc.



CITY OF CLEBURNE, TEXAS

Figure A.4 2030 Volumes

Kimley-Horn and Associates, Inc.

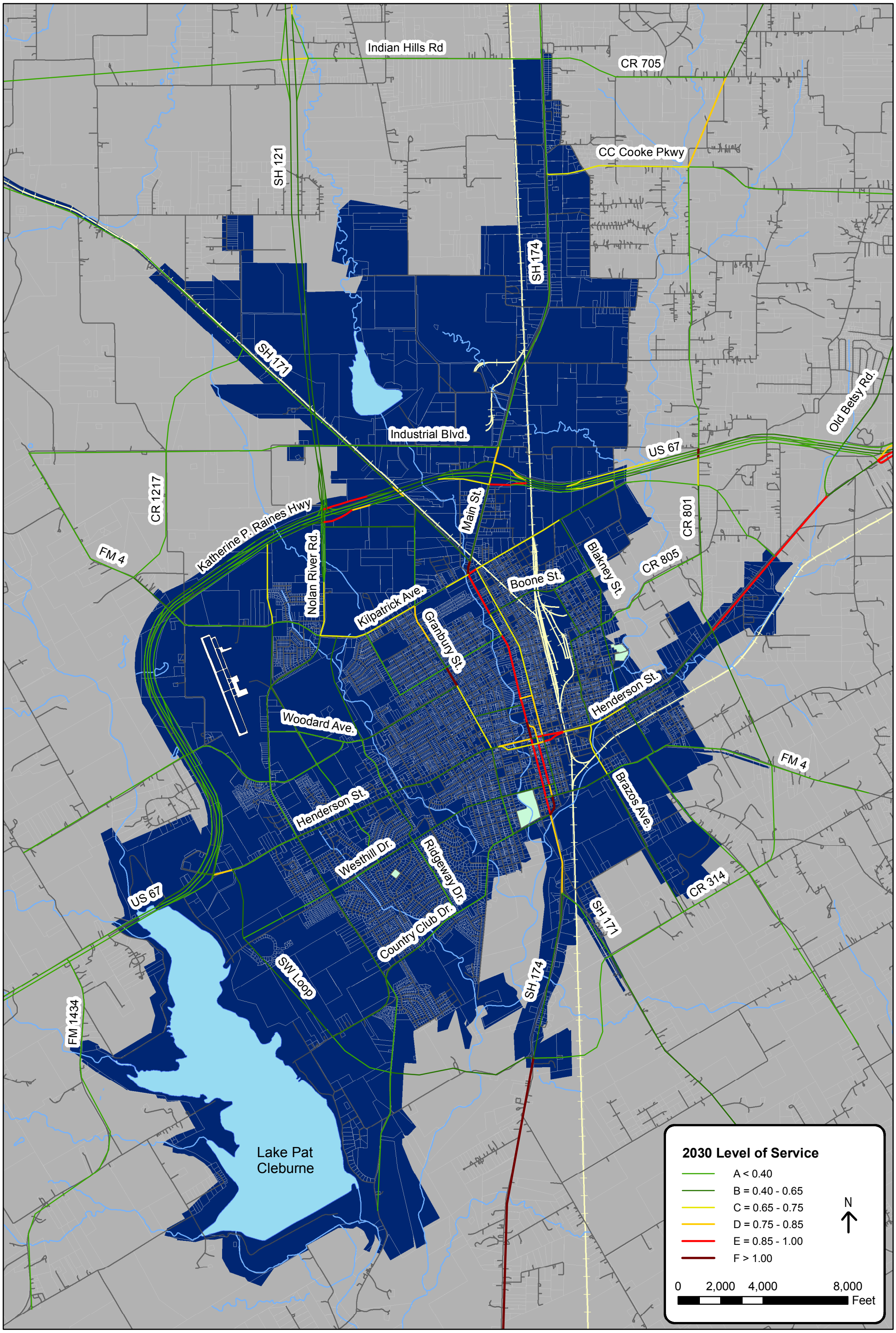


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Figure A.5 2030 Level Of Service

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