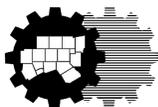


Collin County

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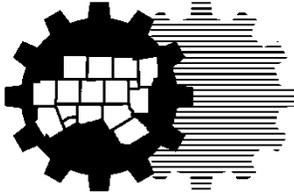
**North Central Texas
Council of Governments**

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 **233 members**, including 16 counties, 165 cities, 23 independent school districts, and 29 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 **6.4 million**, which is larger than 35 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 235.



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
P. O. Box 5888
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NCTCOG's Department of Transportation

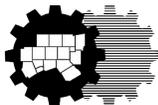
Since 1974 NCTCOG has served as the Metropolitan Planning Organization (MPO) for transportation for the Dallas-Fort Worth area. NCTCOG's Department of Transportation is responsible for the regional planning process for all modes of transportation. The department provides technical support and staff assistance 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.

"The contents of this report reflect the views of the authors who are responsible for the opinions, findings, and conclusions presented herein. The contents do not necessarily reflect the views or policies of the Federal Highway Administration, the Federal Transit Administration, or the Texas Department of Transportation."

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Table of Contents

- 1.0 OVERVIEW..... 1-9
 - 1.1 Feasibility Study Overview..... 1-9
 - 1.2 Concept 1-10
 - 1.3 Potential Site Locations 1-12

- 2.0 ESTIMATION OF THE MARKET 2-1
 - 2.1 Population and Employment..... 2-1
 - 2.2 Existing Collin County Intermodal Market 2-5
 - 2.3 Future Collin County Intermodal Market 2-8
 - 2.4 Truck Volumes and Congestion Issues 2-9
 - 2.5 National Logistics Operations 2-13
 - 2.6 International Logistics Operations..... 2-14
 - 2.7 The Global Perspective..... 2-15
 - 2.8 Foreign Trade Zone and Pre-Clearance 2-16

- 3.0 PHYSICAL AND OPERATIONAL REQUIREMENTS 3-1
 - 3.1 Site Descriptions 3-1
 - 3.2 Infrastructure..... 3-1
 - 3.3 Transportation Facilities and Access 3-1
 - 3.4 Utilities (Existing and Needs) 3-2
 - 3.5 Environmental Issues..... 3-5
 - 3.5.1 Land Use..... 3-5
 - 3.5.1.1 Methodology/Research 3-6
 - 3.5.1.2 Existing Conditions and Future Projections/Plans..... 3-6
 - 3.5.2 Public/Community Facilities and Services 3-7
 - 3.5.2.1 Methodology/Research 3-7
 - 3.5.2.2 Existing Conditions..... 3-7
 - 3.5.3 Cultural Resources..... 3-9
 - 3.5.3.1 Methodology/Research 3-9
 - 3.5.3.2 Existing Conditions and Future Projections..... 3-10
 - 3.5.4 Demographics 3-15
 - 3.5.4.1 Methodology/Research 3-15

Collin County Intermodal Hub Feasibility Study

3.5.4.2 Existing Conditions and Future Projections.....3-15

3.5.5 Racial Distribution3-15

3.5.6 Employment3-18

 3.5.6.1 Methodology/Research3-18

 3.5.6.2 Existing Conditions and Future Projections.....3-18

3.5.7 Development.....3-20

 3.5.7.1 Methodology/Research3-20

 3.5.7.2 Existing Conditions and Future Projections.....3-21

3.5.8 Natural Resources3-21

 3.5.8.1 Water Resources.....3-21

 3.5.8.2 Biological Resources.....3-23

3.6 Summary.....3-25

4.0 FINDINGS AND NEXT STEPS.....4-1

 4.1 Next Steps4-2

 4.1.1 Educational Components.....4-2

 4.1.2 Partnerships.....4-3

 4.2 Moving Forward.....4-3

APPENDIX A Maps

APPENDIX B Site Selection Matrix

List of Tables

Table 2.1 Study Area Population and Employment Estimates2-1

Table 2.2 Regional Population and Employment Estimates2-2

Table 2.3 Study Area Population and Employment Growth Estimates.....2-2

Table 2.4 Regional Population and Employment Growth Estimates2-2

Table 3.1 Study Area Transportation Facilities Access 3-2

Table 3.2 Study Area 2005 Land Use.....3-6

Table 3.3 Intermodal Hub Inclusion in Local Plans.....3-7

Table 3.4 Public/Community Facilities and Services by Study Area.....3-8

Table 3.5 Independent School Districts (ISD) within the Feasibility Study Area3-9

Table 3.6 NRHP-Listed Districts within the Study Area3-10

Table 3.7 NRHP-Listed Properties..... 3-11

Table 3.8 Museums3-13

Table 3.9 Historical Markers3-13

Table 3.10 Cemeteries3-13

Table 3.11 Number of Historic-Age Structures3-14

Table 3.12 Number of Historic-Age Structures by Study Area.....3-14

Table 3.13 Population Forecast for the Year 20303-15

Table 3.14 2000 Census Race and Ethnic Composition of the Study Area.....3-16

Table 3.15 2000 Census Median Income and Low-Income Status3-17

Table 3.16 2000 Census Limited English Proficiency (LEP) Population.....3-18

Table 3.17 Employment by Industry within Census Tracts in the Study Area3-19

Table 3.18 Year 2000 and Year 2030 Employment Estimates3-19

Table 3.19 Major Employers by Sector3-20

Table 3.20 Major Employers3-20

Table 3.21 Area Development Monitoring3-21

Table 3.22 FEMA 100-Year Floodplains within the Study Area3-22

Table 3.23 National Land Cover Dataset (NLCD) Wetlands within the Study Area.....3-22

Table 3.24 Coverage of Vegetation Types by Study Area3-23

Table 3.25 Typical Vegetation Type and Distribution3-24

Table 3.26 Summary of Impacts3-25

List of Figures

Figure 1.1 North Central Texas Regional Logistics and Intermodal Hubs..... 1-10

Figure 1.2 National Logistics and Intermodal Hubs 1-11

Figure 1.3 Collin County Intermodal Hub General Study Areas 1-13

Figure 1.4 Collin County Intermodal Hub Study Area 1..... 1-13

Figure 1.5 Collin County Intermodal Hub Study Area 2..... 1-14

Figure 1.6 Collin County Intermodal Hub Study Area 3..... 1-14

Figure 1.7 Collin County Intermodal Hub Study Area 4..... 1-15

Figure 1.8 Collin County Intermodal Hub Study Area 5..... 1-15

Figure 2.1 Study Area Population Estimates – 2010 and 2030 2-3

Figure 2.2 Study Area Employment Estimates – 2010 and 2030 2-3

Figure 2.3 Collin County and Regional Population Estimates – 2010 and 2030 2-4

Figure 2.4 Collin County and Regional Employment Estimates – 2010 and 2030 2-4

Figure 2.5 Annual Rail Tons on Texas Rail Routes, 2007 2-6

Figure 2.6 North Central Texas Intermodal Market Coverage 2-7

Figure 2.7 NCTCOG System Performance Levels of Congestion 2-8

Figure 2.8 Collin County Study Area 1 Truck Volumes – 2005..... 2-9

Figure 2.9 Collin County Study Area 1 Truck Volumes – 2030..... 2-10

Figure 2.10 Collin County Study Area 2 Truck Volumes – 2005..... 2-10

Figure 2.11 Collin County Study Area 2 Truck Volumes – 2030..... 2-11

Figure 2.12 Collin County Study Area 3 Truck Volumes – 2005..... 2-11

Figure 2.13 Collin County Study Area 3 Truck Volumes – 2030..... 2-12

Figure 2.14 Collin County Study Area 5 Truck Volumes – 2005..... 2-12

Figure 2.15 Collin County Study Area 5 Truck Volumes – 2030..... 2-13

Figure 2.16 Dallas-Fort Worth Reach Map 2-14

Figure 3.1 Electrical Utility Providers Study Area 1 3-3

Figure 3.2 Electrical Utility Providers Study Area 2 3-3

Figure 3.3 Electrical Utility Providers Study Area 3 3-4

Figure 3.4 Electrical Utility Providers Study Area 4 3-4

Figure 3.5 Electrical Utility Providers Study Area 5 3-5

Figure 4.1 Study Area 3 4-1

1.0 OVERVIEW

The purpose of this chapter is to present an overview of the intermodal hub concept and potential site locations within Collin County.

1.1 Feasibility Study Overview

The movement of freight is vital to the Texas economy and specifically to the Dallas-Fort Worth (DFW) Metropolitan Area. In 2008, the DFW region had the ninth highest export value of any United States (U.S.) metropolitan area.¹ The region is home to the largest foreign trade zone (FTZ), in terms of value of foreign imports,² and has the fifth highest gross domestic product (GDP) of all U.S. metropolitan areas.³ Additionally, the DFW region represents one of the largest inland ports in the nation where freight is moved, transferred, and distributed to destinations across the state, nation, and around the world. The region ranks nineteenth out of 50 U.S. ports in the value of total shipments.⁴ The North Central Texas region has one of the most extensive surface and air transportation networks in the world, providing extensive trade opportunities for the more than 700 motor/trucking carriers and freight forwarders, and the seven Class I and regional railroads operating within the DFW area.

The DFW region is currently home to two intermodal/logistics hubs, AllianceTexas in Fort Worth and the Dallas Logistics Hub in southern Dallas County, as shown in **Figure 1.1**. Both of these logistics hubs are served by freight railroads and trucks.

¹ International Trade Administration, U.S. Dept. of Commerce

² 70th Annual Report of the FTZ Board to Congress, U.S. Import Administration

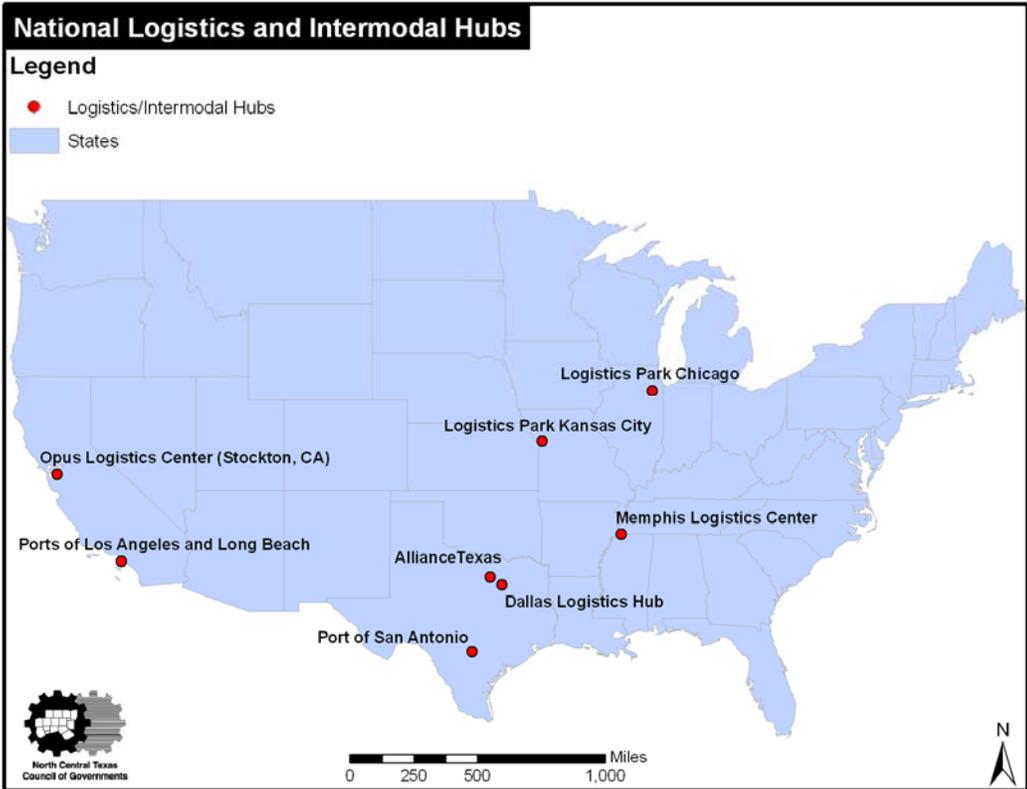
³ Bureau of Economic Analysis, U.S. Dept. of Commerce

⁴ 2007 Top U.S. Freight Gateways, Bureau of Transportation Statistics

necessary to accommodate these facilities and the supplier businesses located within the hub, as well as allowing heavy trucks to travel within the site without having to obtain an oversize/overweight permit. In addition, a minimum of 10,000 feet of track within the acreage and parallel to the mainline is necessary, along with appropriate header and tail track for stacking trains and moving trains into, out of, and through the facility. Ideally, six miles of track on a tangent should be included in the site selection criteria. There are several logistics hubs/logistics parks located throughout the U.S., as illustrated in *Figure 1.2*. These include:

- AllianceTexas (Fort Worth)
- Dallas Logistics Hub
- Logistics Park Chicago
- Logistics Park Kansas City
- Ports of Los Angeles and Long Beach
- Opus Logistics Center (Stockton, CA)
- Port of San Antonio
- Memphis Logistics Center

Figure 1.2 National Logistics and Intermodal Hubs



Source: NCTCOG, 2010

Each logistics hub shown in **Figure 1.2** has a Class I Railroad hub, yard, or terminal in addition to the logistics components of manufacturing, distribution, office and retail space, and drayage. For a logistics hub to be viable and successful it must serve a market, be located on a freight rail line, and have enough land available to allow for expansion as additional logistics-related firms and facilities are added to the site. A logistics hub in Collin County could not only import goods from outside of the region, but could also produce and export goods throughout the nation and the world.

In 2002, 53 million tons of freight, worth \$36 billion, was moved along U.S. transportation infrastructure, including roadway, rail, water, air, pipeline, and intermodal. An estimated 58.9 million tons per day of freight were moved along the U.S. transportation infrastructure in 2008.⁵ This increase in freight tonnage moving across the country necessitates additional facilities, such as logistics and intermodal hubs, to sort, store, and ship cargo.

1.3 Potential Site Locations

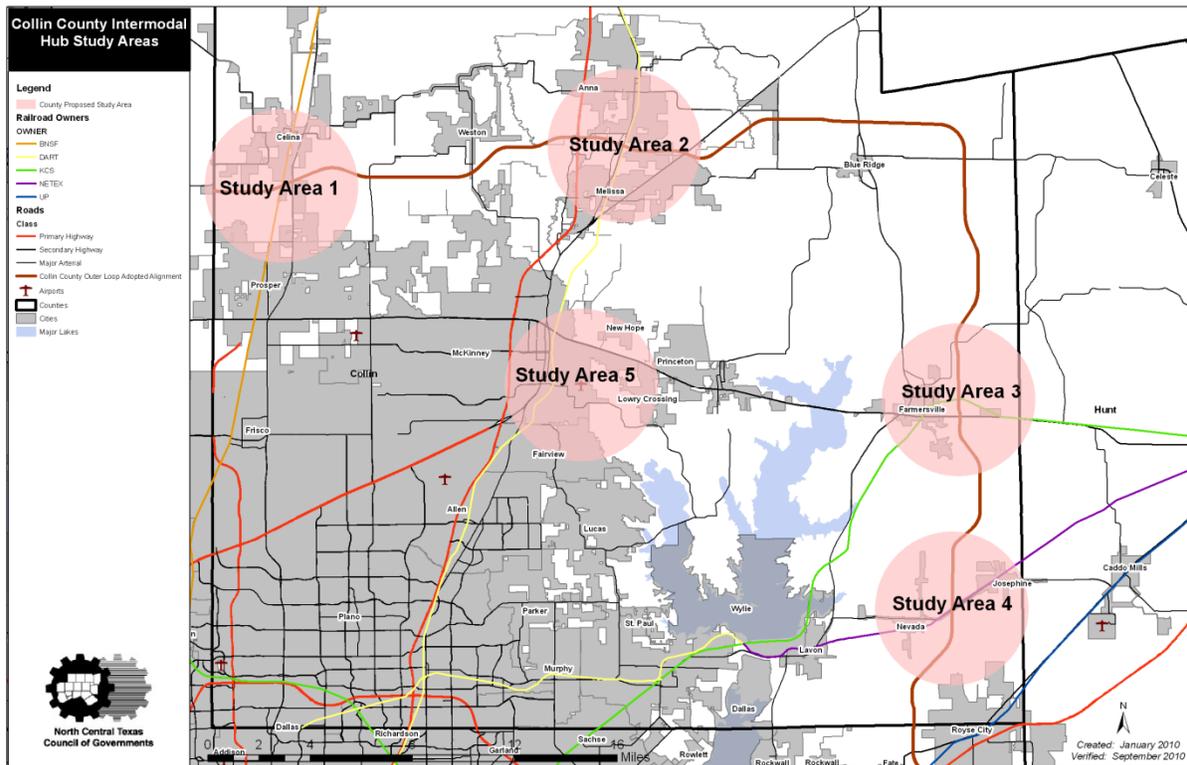
Based on the components needed for a successful logistics hub, potential locations within Collin County were reviewed. Access to rail, a major roadway facility, and availability of land were key criteria. Based on the criteria, five potential study areas were identified for a logistics hub:

- Study Area 1: Celina - at the intersection of the proposed Regional Outer Loop and the BNSF Railway line;
- Study Area 2: Melissa - at the intersection of the proposed Regional Outer Loop and the Dallas Area Rapid Transit (DART) rail line;
- Study Area 3: Farmersville - at the intersection of the proposed Regional Outer Loop and the Kansas City Southern (KCS) rail line;
- Study Area 4: The intersection of the proposed Regional Outer Loop and the NETEX rail right-of-way between Nevada and Josephine; and
- Study Area 5: Collin County Regional Airport, McKinney.

These study areas are shown in **Figures 1.3 through 1.8**. Each of these study areas has a three-mile radius; however, not all of the area shown within a study area would be necessary to build an intermodal hub. The intermodal facility itself would only require 2,500 acres.

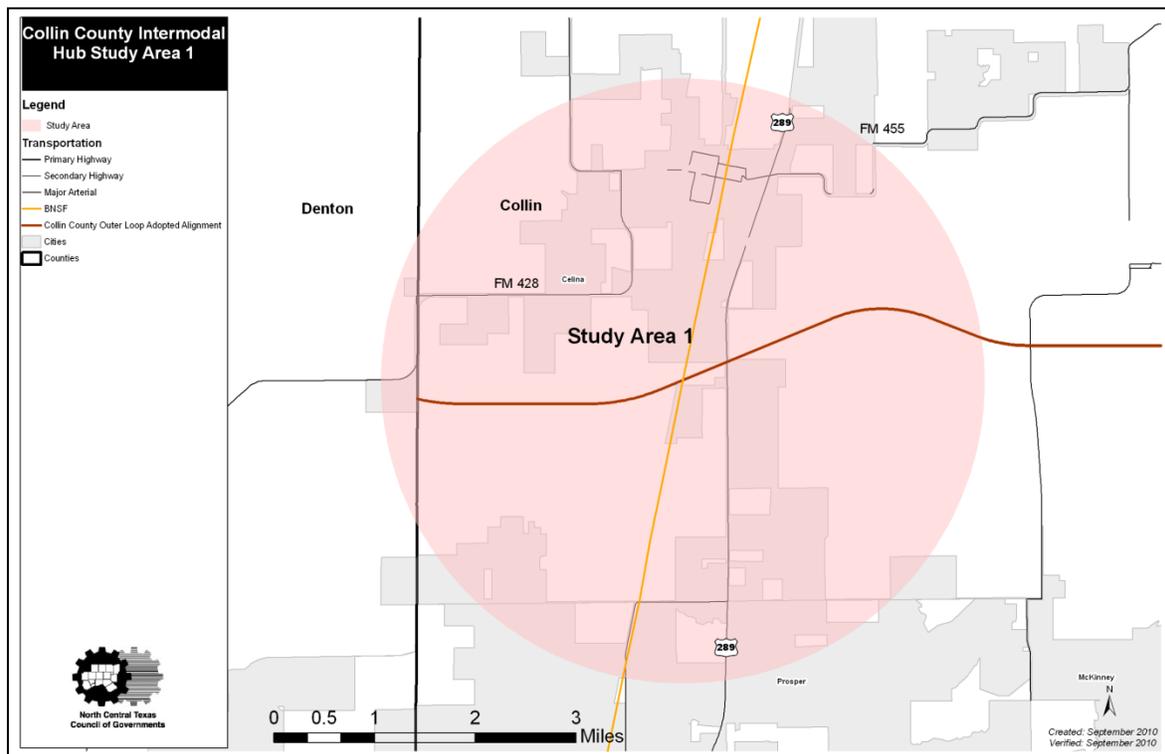
⁵ Freight Facts and Figures 2009, Office of Freight Management and Operations, USDOT.

Figure 1.3 Collin County Intermodal Hub General Study Areas



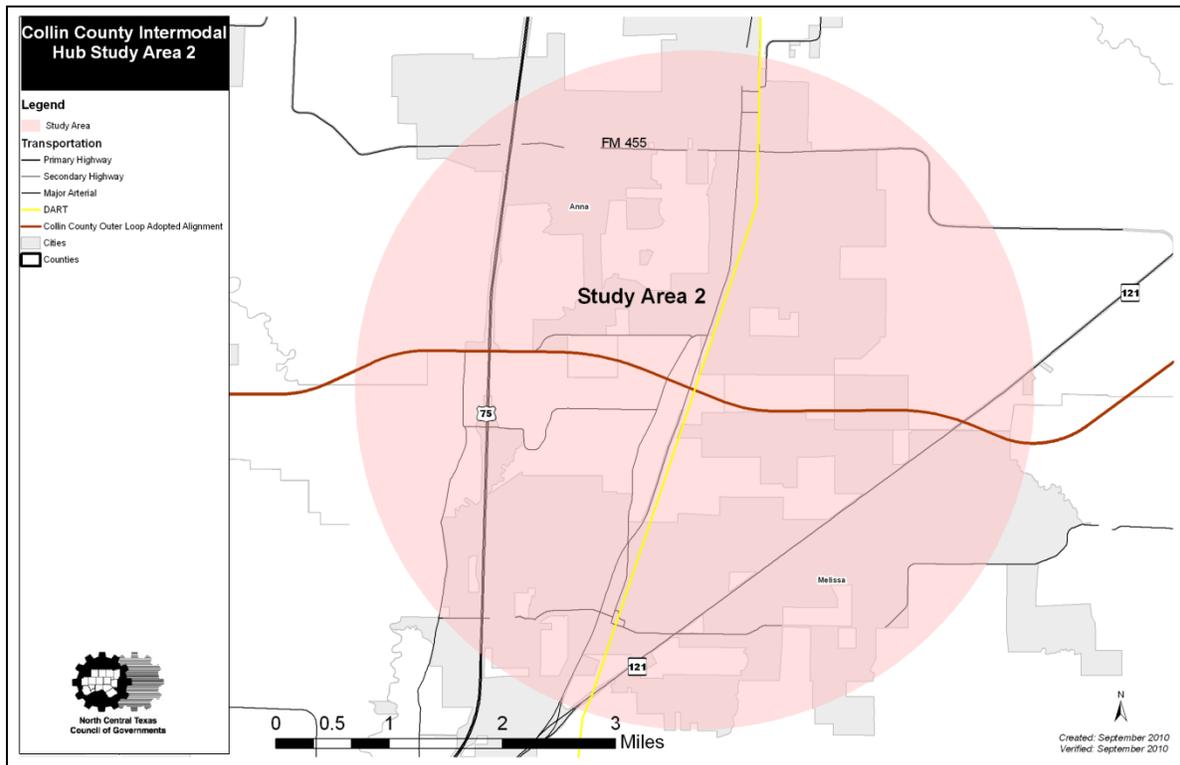
Source: NCTCOG, 2010

Figure 1.4 Collin County Intermodal Hub Study Area 1



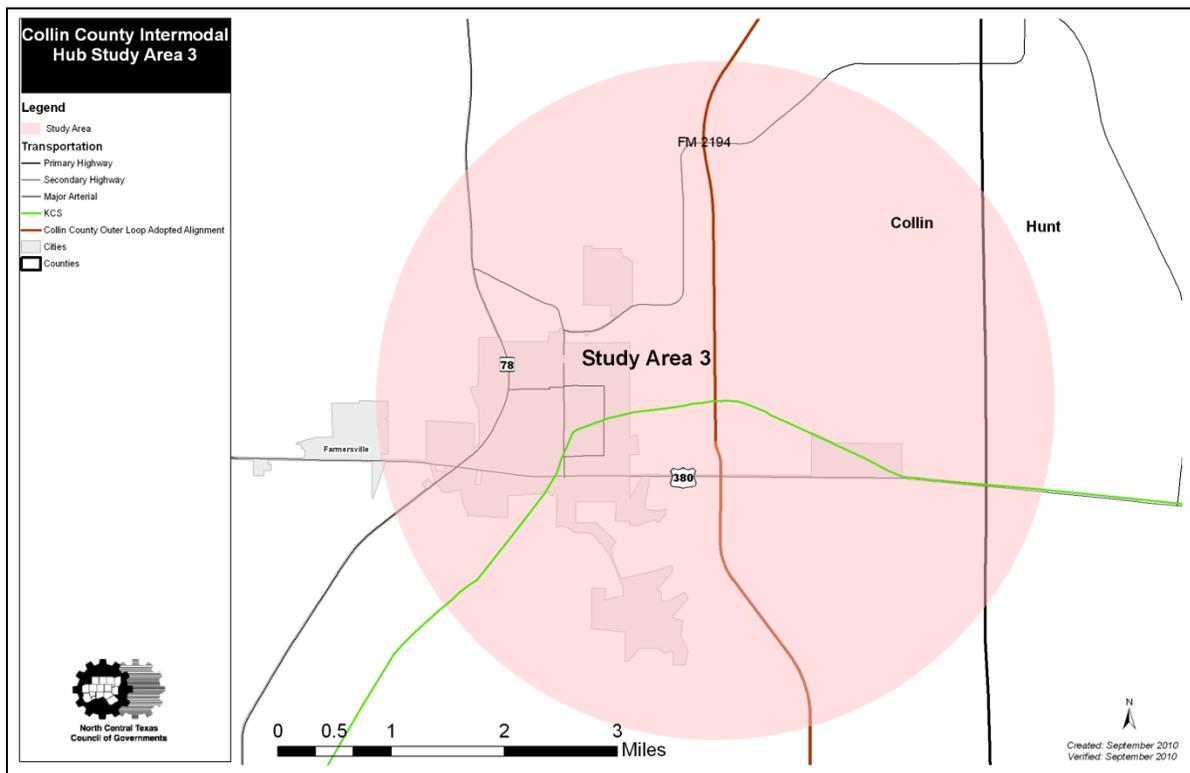
Source: NCTCOG, 2010

Figure 1.5 Collin County Intermodal Hub Study Area 2



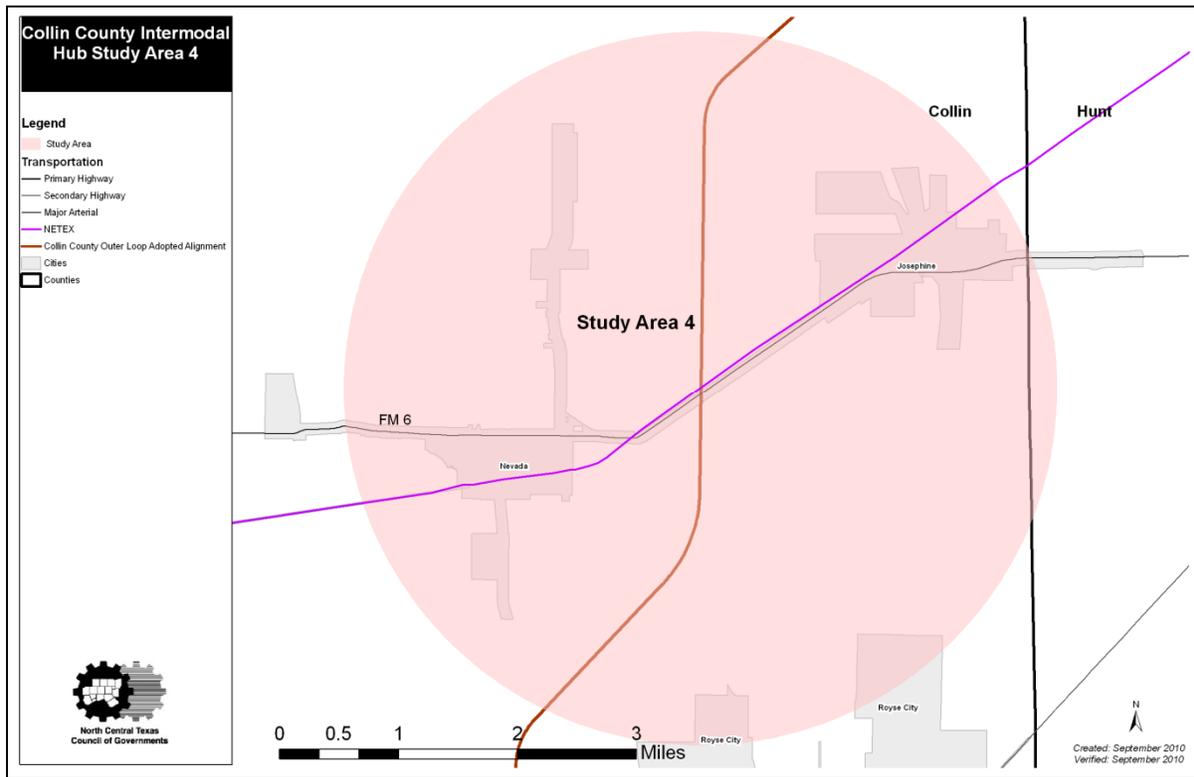
Source: NCTCOG, 2010

Figure 1.6 Collin County Intermodal Hub Study Area 3



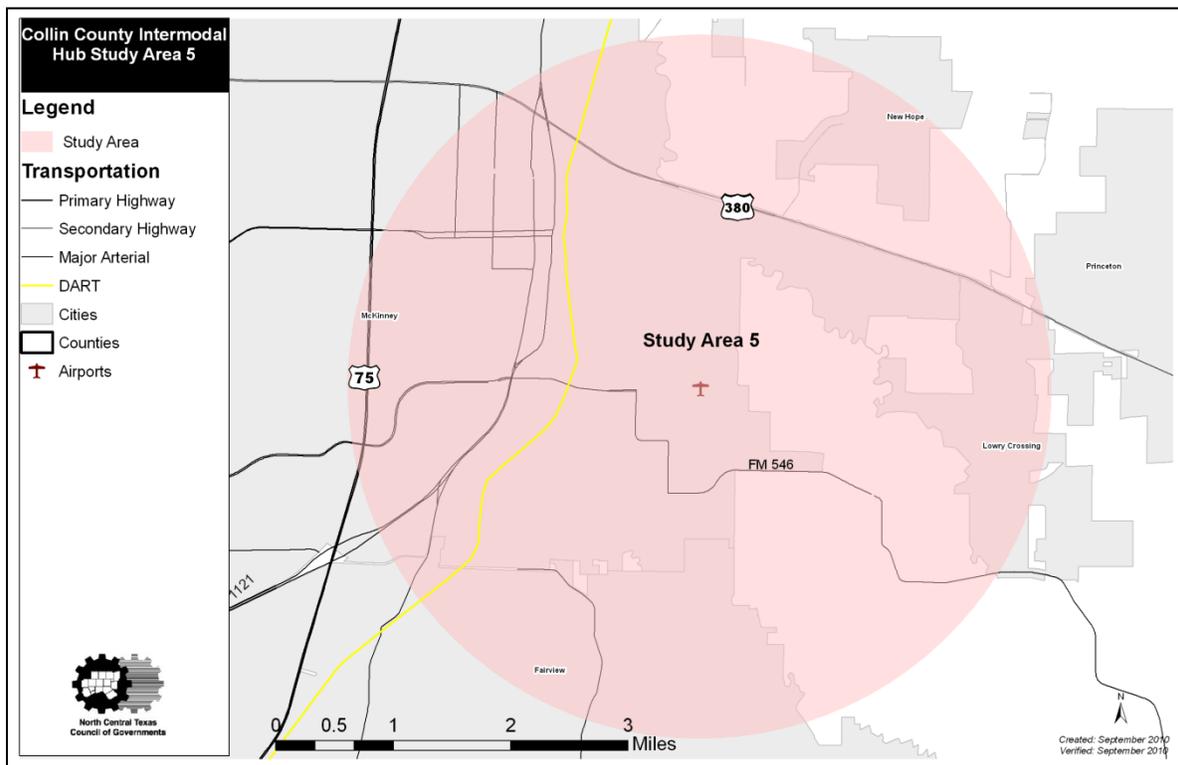
Source: NCTCOG, 2010

Figure 1.7 Collin County Intermodal Hub Study Area 4



Source: NCTCOG, 2010

Figure 1.8 Collin County Intermodal Hub Study Area 5



Source: NCTCOG, 2010

2.0 ESTIMATION OF THE MARKET

The purpose of this chapter is to discuss the current and future market for a third regional intermodal/logistics hub.

2.1 Population and Employment

North Central Texas has experienced significant and rapid growth over the last decade. Between the years 2000 and 2010, the region grew by an estimated 1.3 million residents, an increase of 25 percent.⁶ This growth has helped the region become the fourth largest metropolitan area in the nation, with an estimated 6.3 million residents.⁷ The DFW area has sustained a long period of economic growth because of three primary factors: a favorable business climate, attractive tax policies, and an abundance of available land. With continued growth projected, the demand for housing, employment, goods and services, and transportation infrastructure will increase. **Tables 2.1 through 2.4** and **Figures 2.1 through 2.4** illustrate the population and employment estimates for the years 2010 and 2030 for each of the five study areas, described in Chapter 1.

Table 2.1 Study Area Population and Employment Estimates

Study Area	2010 Population	2030 Population	2010 Employment	2030 Employment
1	9,473	38,418	4,457	14,749
2	9,640	30,851	3,038	10,686
3	7,411	24,380	2,828	9,236
4	10,836	25,188	2,097	6,690
5	61,944	112,690	24,271	56,270

Source: NCTCOG, 2010

⁶ US Census Bureau, state and county QuickFacts (2010)

⁷ NCTCOG 2010 Population Estimates

Table 2.2 Regional Population and Employment Estimates

Area	2010 Population	2030 Population	2010 Employment	2030 Employment
Collin County	749,343	1,166,645	292,533	517,264
NCTCOG Region	6,328,181	9,107,229	3,896,953	5,416,718

Source: NCTCOG, 2010

Table 2.3 Study Area Population and Employment Growth Estimates

Study Area	2010-2030 Population Growth	2010-2030 Population Growth (Percentage)	2010-2030 Employment Growth	2010-2030 Employment Growth (Percentage)
1	28,945	306%	10,292	231%
2	21,211	220%	7,648	252%
3	16,969	229%	6,408	227%
4	14,352	132%	4,593	233%
5	50,746	82%	31,999	132%

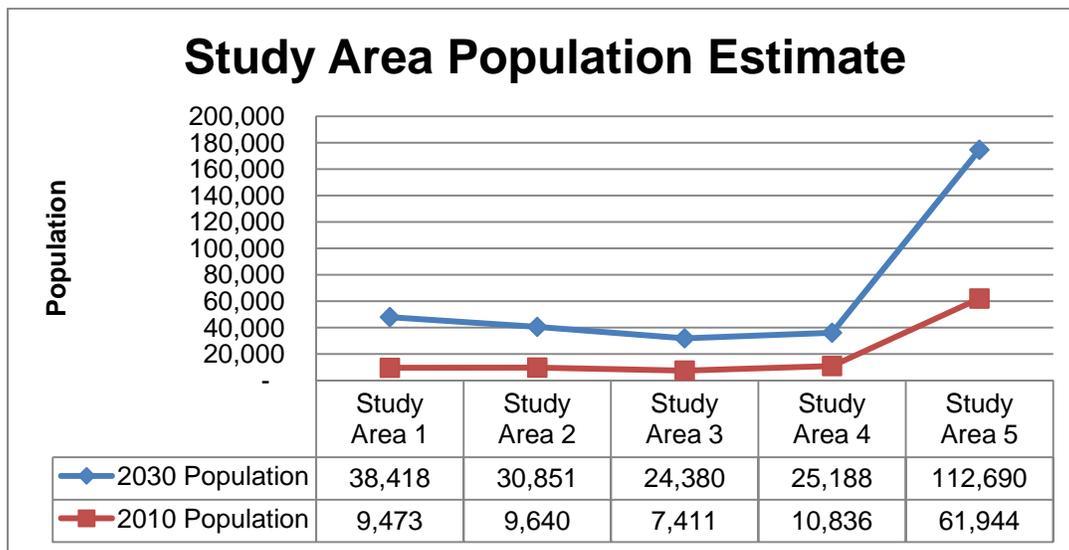
Source: NCTCOG, 2010

Table 2.4 Regional Population and Employment Growth Estimates

Area	2010-2030 Population Growth	2010-2030 Population Growth (Percentage)	2010-2030 Employment Growth	2010-2030 Employment Growth (Percentage)
Collin County	417,302	56%	224,731	77%
NCTCOG Region	2,779,048	44%	1,519,765	39%

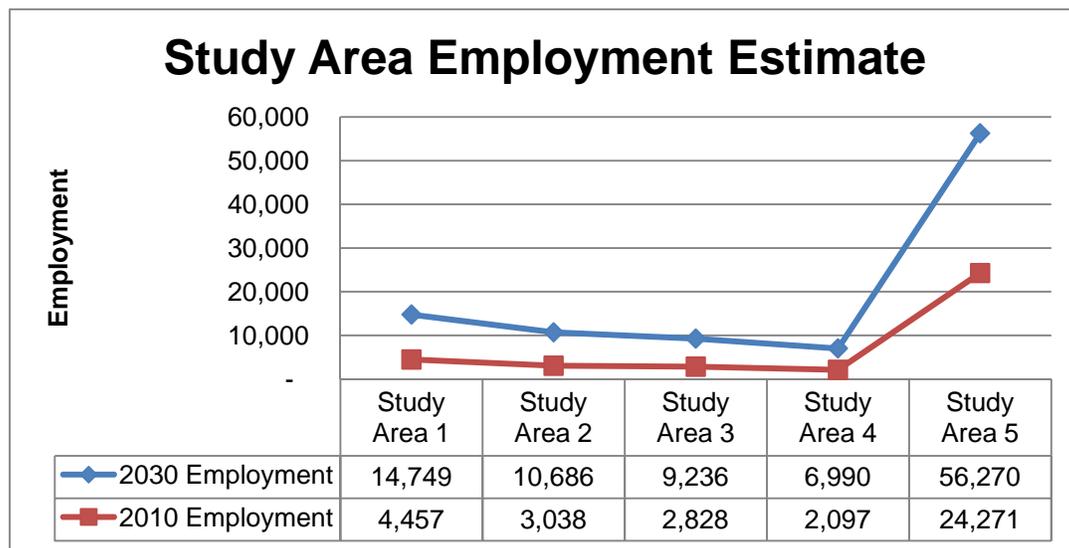
Source: NCTCOG, 2010

Figure 2.1 Study Area Population Estimates – 2010 and 2030



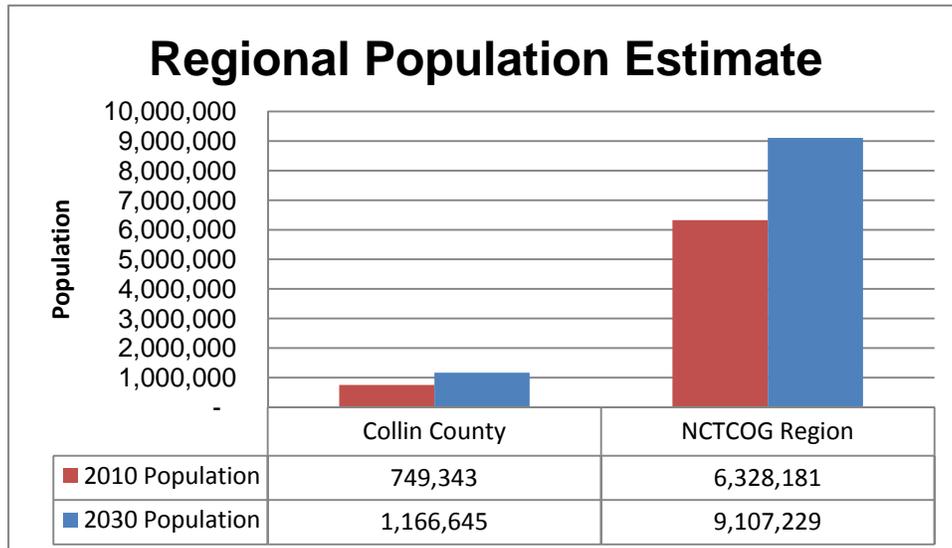
Source: NCTCOG, 2010

Figure 2.2 Study Area Employment Estimates – 2010 and 2030



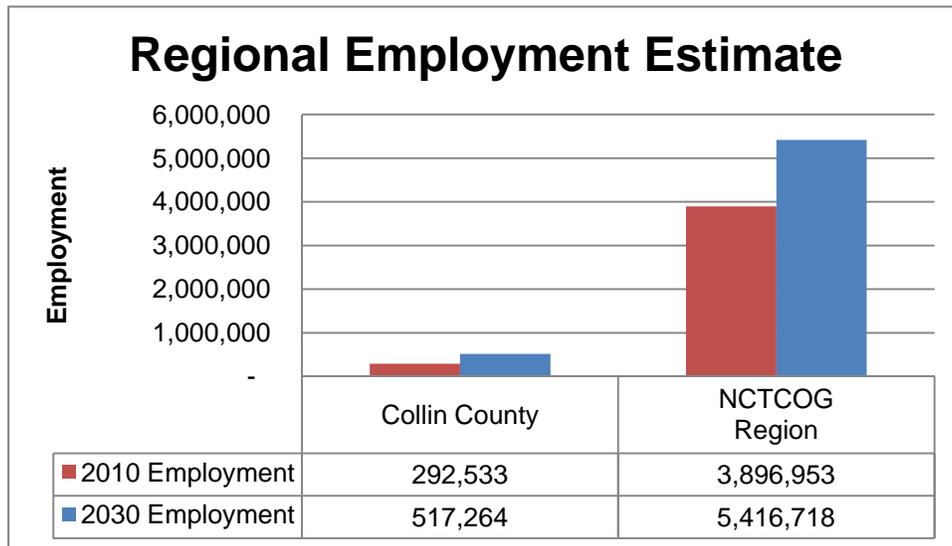
Source: NCTCOG, 2010

Figure 2.3 Collin County and Regional Population Estimates – 2010 and 2030



Source: NCTCOG, 2010

Figure 2.4 Collin County and Regional Employment Estimates – 2010 and 2030



Source: NCTCOG, 2010

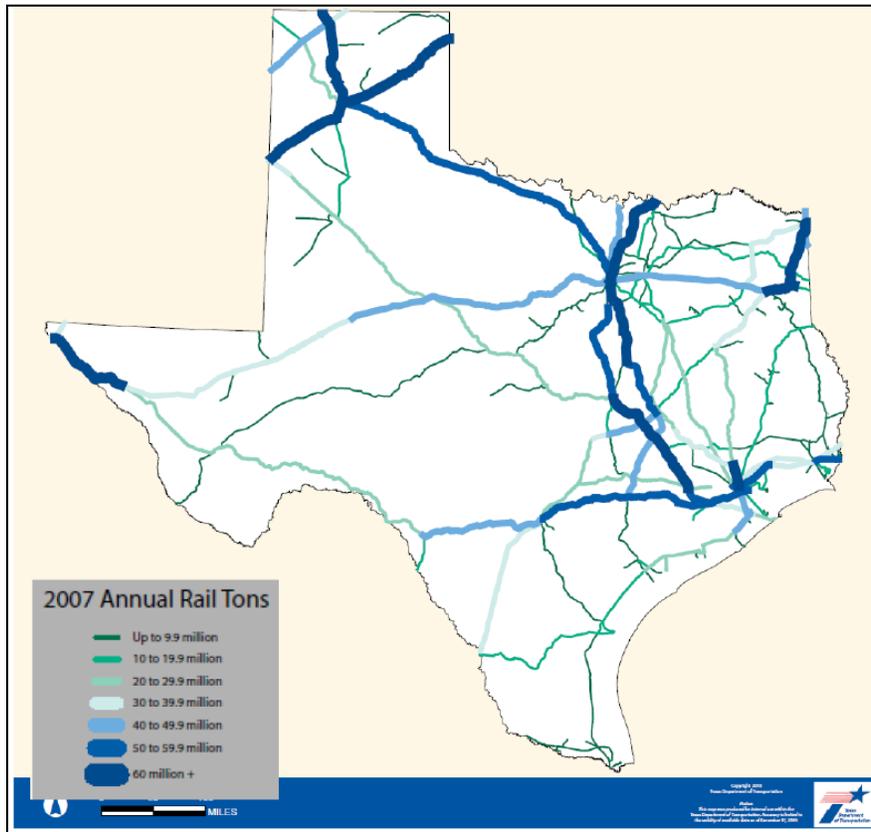
An intermodal hub would include employment for a variety of sectors, including the railroad and trucking sectors, manufacturing sectors (such as food manufacturing, bottling plants, and plastic and metal extrusion facilities), as well as the service and supplier industries for the operations within the hub. The potential employment, as well as the potential salaries of employees, is dependent upon the type of businesses located within the hub. For instance, if a food manufacturer were to locate within the site, the average salary would be \$38,000. If a plastics and metal extrusion plant were to locate within the hub, the average salary would be \$52,000.

In addition to the employment available within the hub, service industries would be located adjacent to or near the facility. These would include gas stations and restaurants. The average salaries for these service industries would depend upon the establishment.

2.2 Existing Collin County Intermodal Market

The DFW region is the major economic engine in the State of Texas, generating 33 percent of the gross sales in Texas and accounting for 29 percent of the state's employment. As noted in NCTCOG's *Mobility 2030: The Metropolitan Transportation Plan for the Dallas-Fort Worth Area-2009 Amendment*, the DFW region is considered by most economic and logistics experts to be the primary truck, rail, and air cargo center in the southwestern U.S., as well as the primary urban gateway between the U.S. and Mexico. The Commodity Flow Data gathered by the U.S. Department of Transportation (USDOT) in 2002 indicates that over 135 million tons of freight were shipped from the DFW combined statistical area (CSA), while approximately 150 million tons were shipped to the DFW CSA. The DFW CSA ranks tenth nationally in total freight tonnage handled and is only one of two CSAs in the top ten without direct seaport access; Atlanta-Sandy Springs-Gainesville being the other CSA. This represents an increase over the 1997 totals by 30 percent in freight shipped to and 15 percent in freight shipped from the region. **Figure 2.5** shows the freight flows through the Texas via rail in 2007.

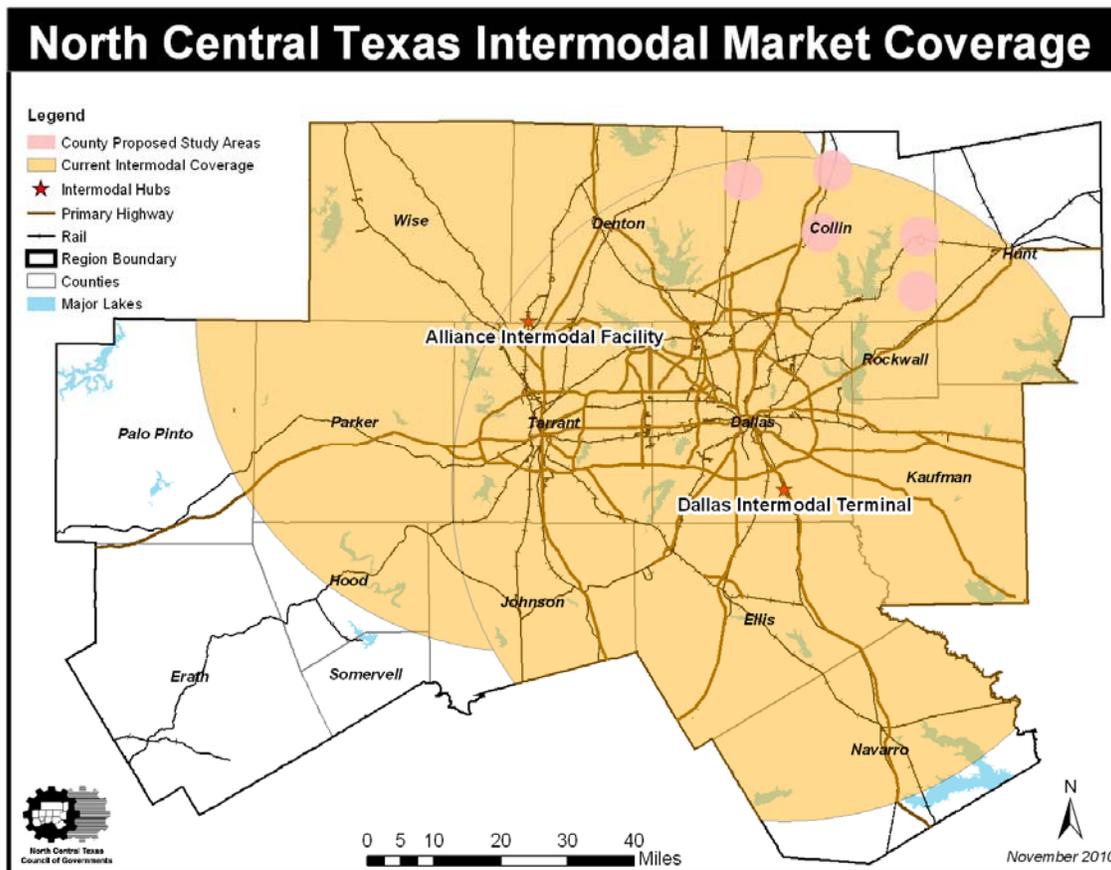
Figure 2.5 Annual Rail Tons on Texas Rail Routes, 2007



Source: TxDOT, 2010

Currently, goods brought into the region from ports are brought to one of the two existing intermodal hubs: AllianceTexas in Fort Worth and the Dallas Logistics Hub in southern Dallas County. **Figure 2.6** shows the service area, a 50 mile radius, for each hub. While the areas overlap, goods that arrive at either hub has a longer distance to travel and a longer time in transit to Collin County than goods destined for Tarrant or Dallas Counties.

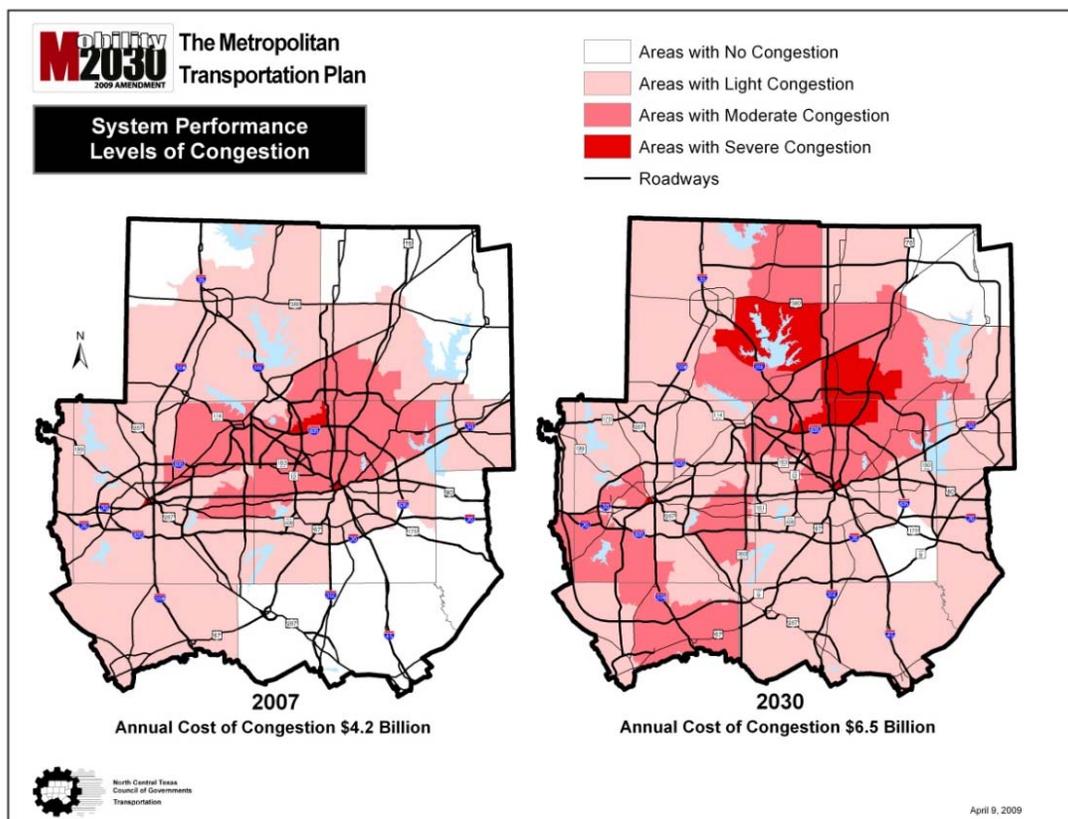
Figure 2.6 North Central Texas Intermodal Market Coverage



Source: TxDOT, 2010

Figure 2.7 shows the levels of service and congestion for 2007 and the year 2030 for the DFW Metropolitan Area. In 2007, only approximately half of Collin County had “light” or “moderate” congestion; half had no congestion. In 2030, approximately 75 percent of the county has congestion, the majority of which being “light” and “moderate,” but with a good portion having “severe” congestion.

Figure 2.7 NCTCOG System Performance Levels of Congestion



Source: NCTCOG, 2009

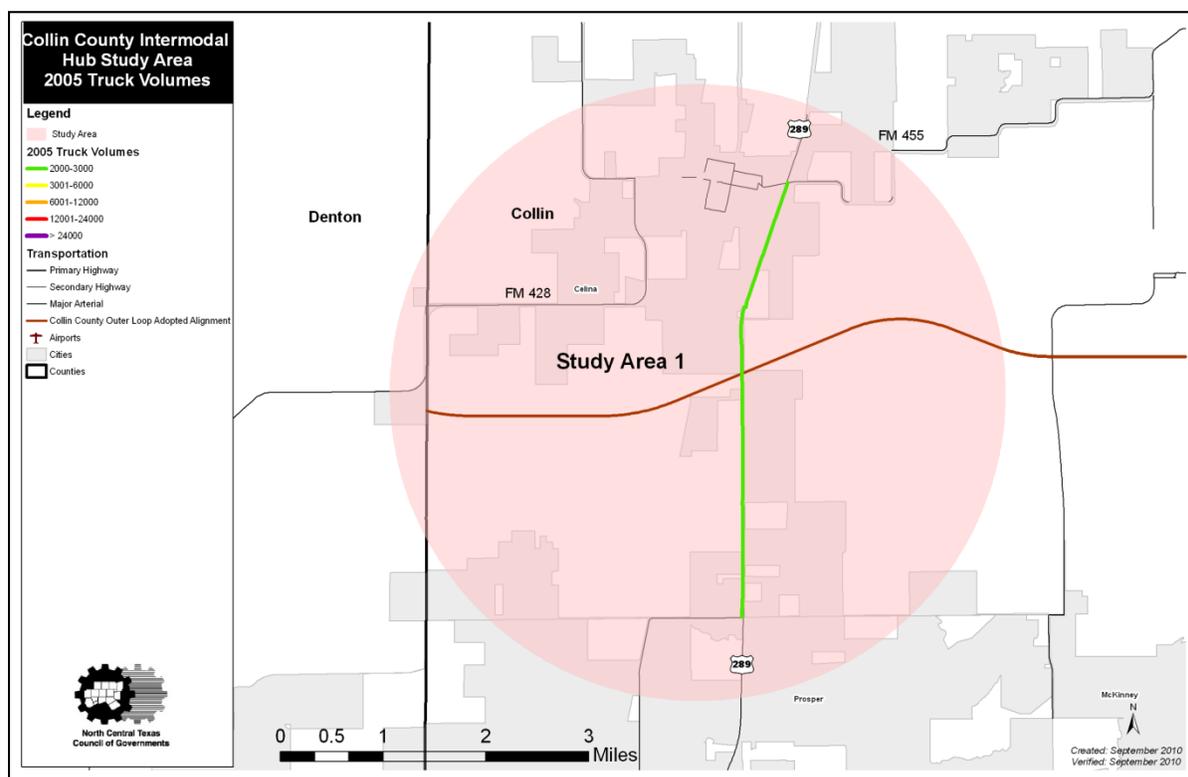
2.3 Future Collin County Intermodal Market

As roadway congestion increases, travel times for freight trucks become less reliable. Many firms have adjusted delivery schedules to avoid the morning and evening peak demand periods, but the expanding population is leading to longer peak congestion periods and higher congestion levels even in off-peak periods. Congestion problems are especially severe on core urban freeways and interchanges, some of which were designed and constructed in the 1950s and 1960s. An intermodal hub in Collin County could be an important element in the goods movement system by providing a route for freight destined to/from Collin County, North East Texas, East Coast Ports, or Southern Ports.

2.4 Truck Volumes and Congestion Issues

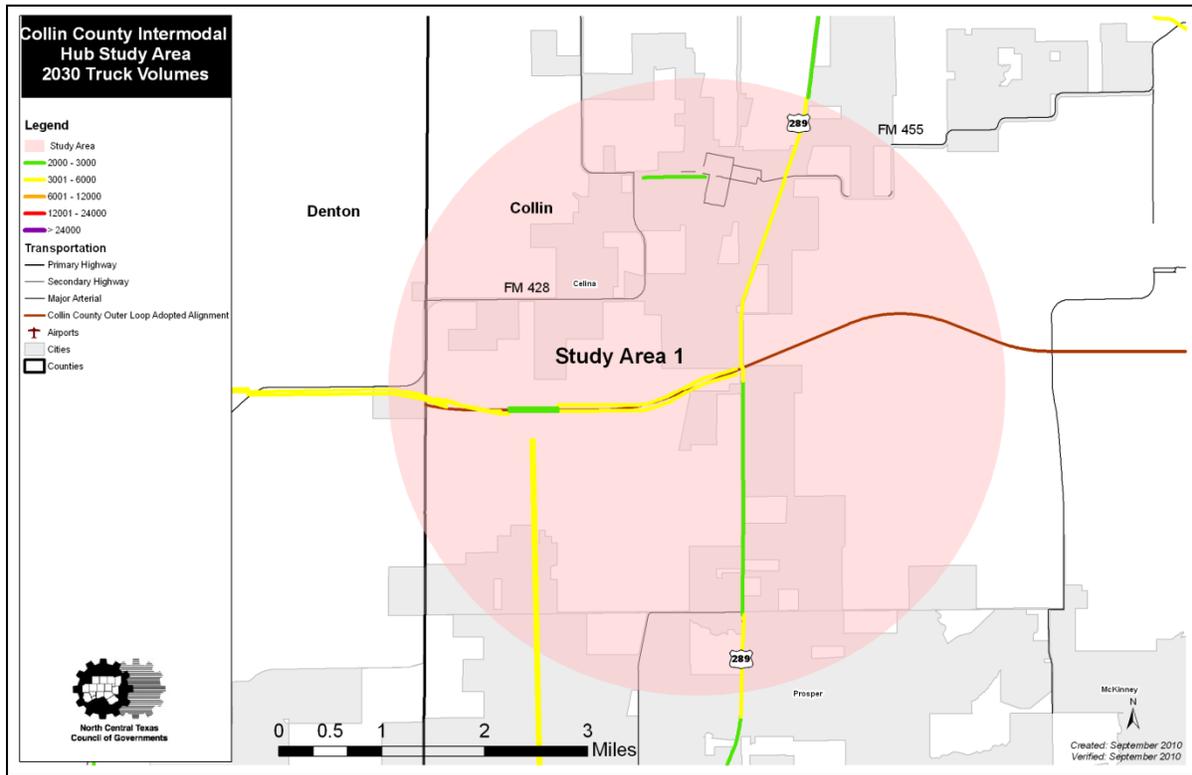
Everything that we use on a daily basis travels to us by truck. Trucks are crucial to the first and last mile that freight travels within its respective supply chain. North Central Texas experiences a large volume of truck traffic due to the demand for goods within the region. This high demand is due to the large population, employment, and attractions within the region. The truck volumes for the roadways within Study Areas 1-3 and 5, for the years 2005 and 2030, are illustrated in **Figures 2.8 through 2.15**. The truck volumes in Study Area 4 are not significant and do not change between 2005 and 2030.

Figure 2.8 Collin County Study Area 1 Truck Volumes – 2005



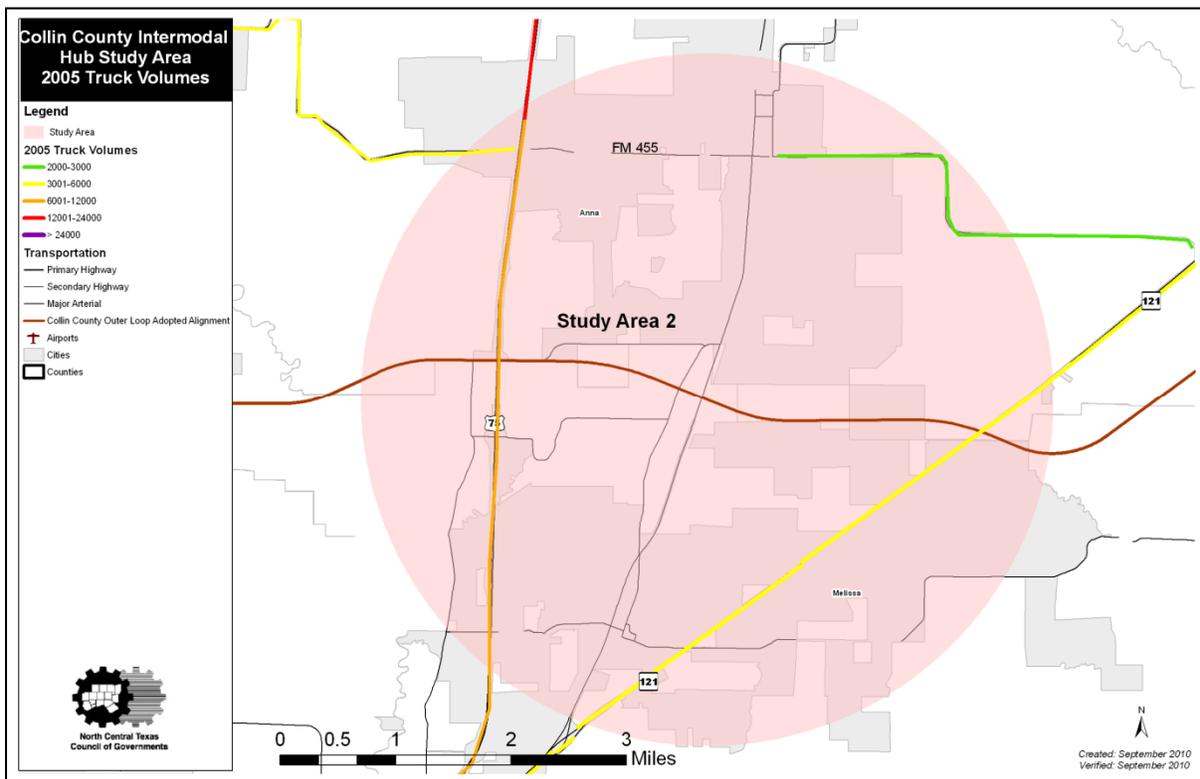
Source: NCTCOG, 2010

Figure 2.9 Collin County Study Area 1 Truck Volumes – 2030



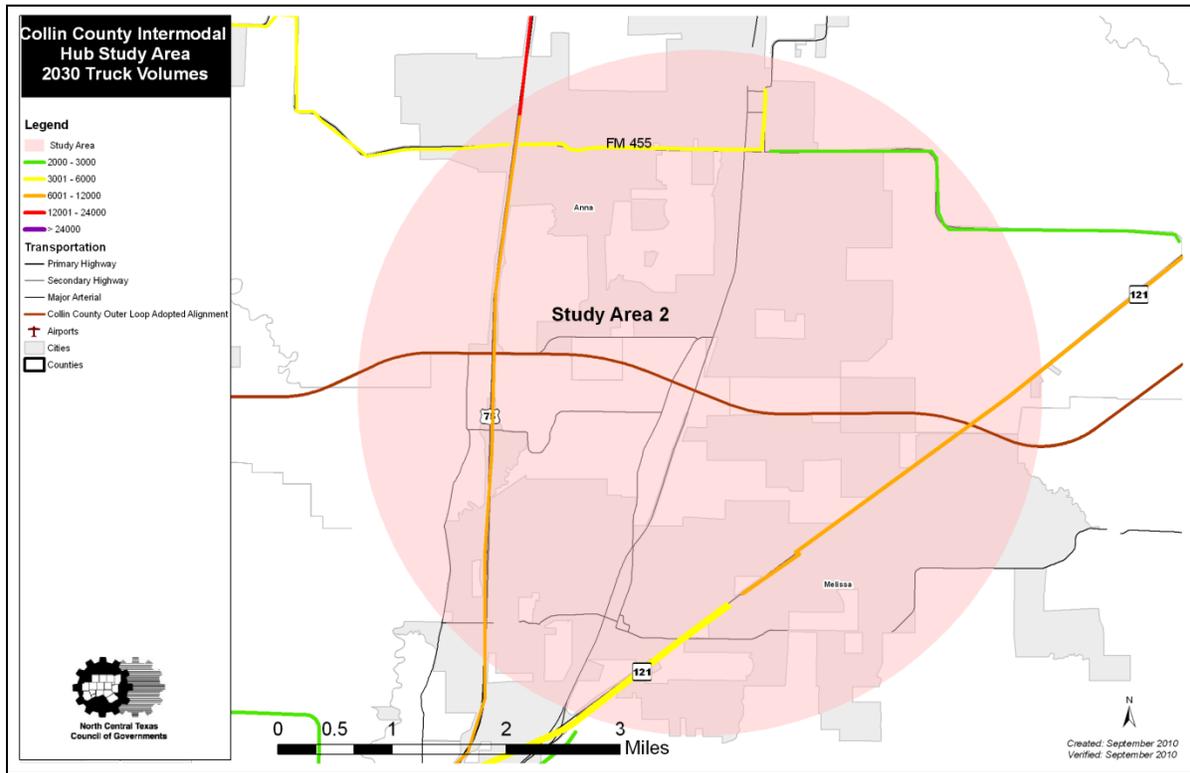
Source: NCTCOG, 2010

Figure 2.10 Collin County Study Area 2 Truck Volumes – 2005



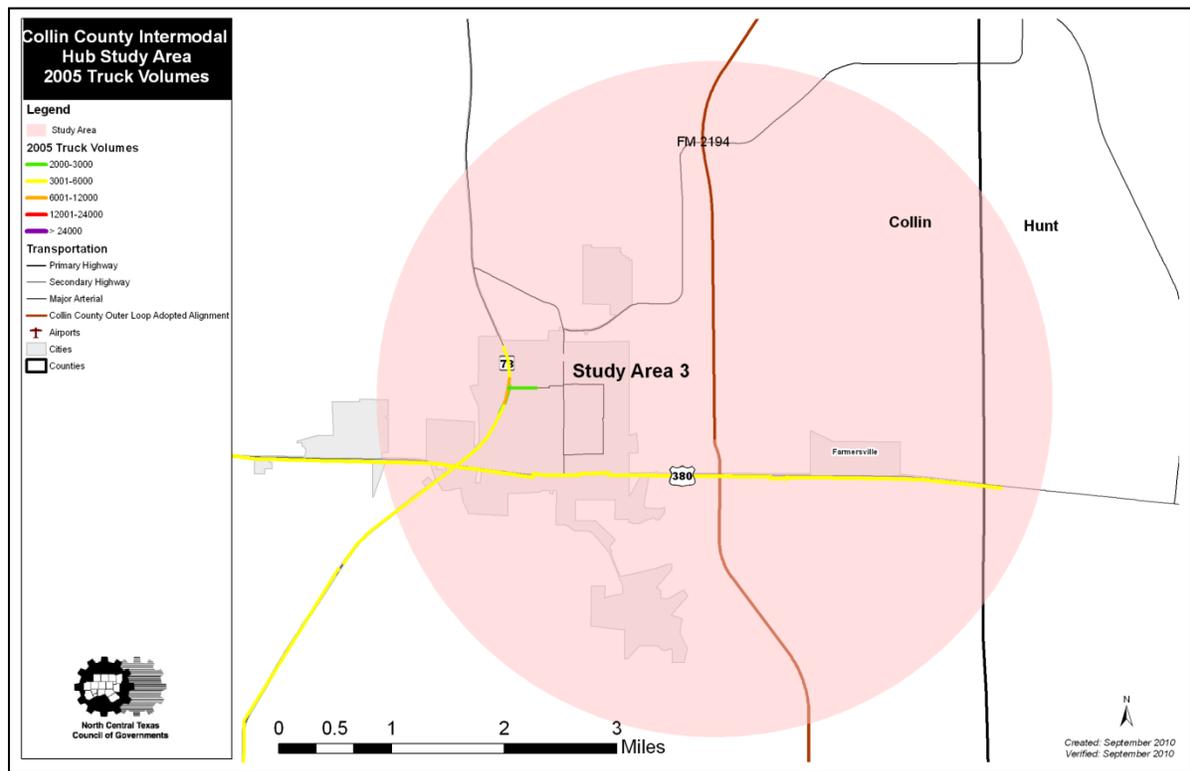
Source: NCTCOG, 2010

Figure 2.11 Collin County Study Area 2 Truck Volumes – 2030



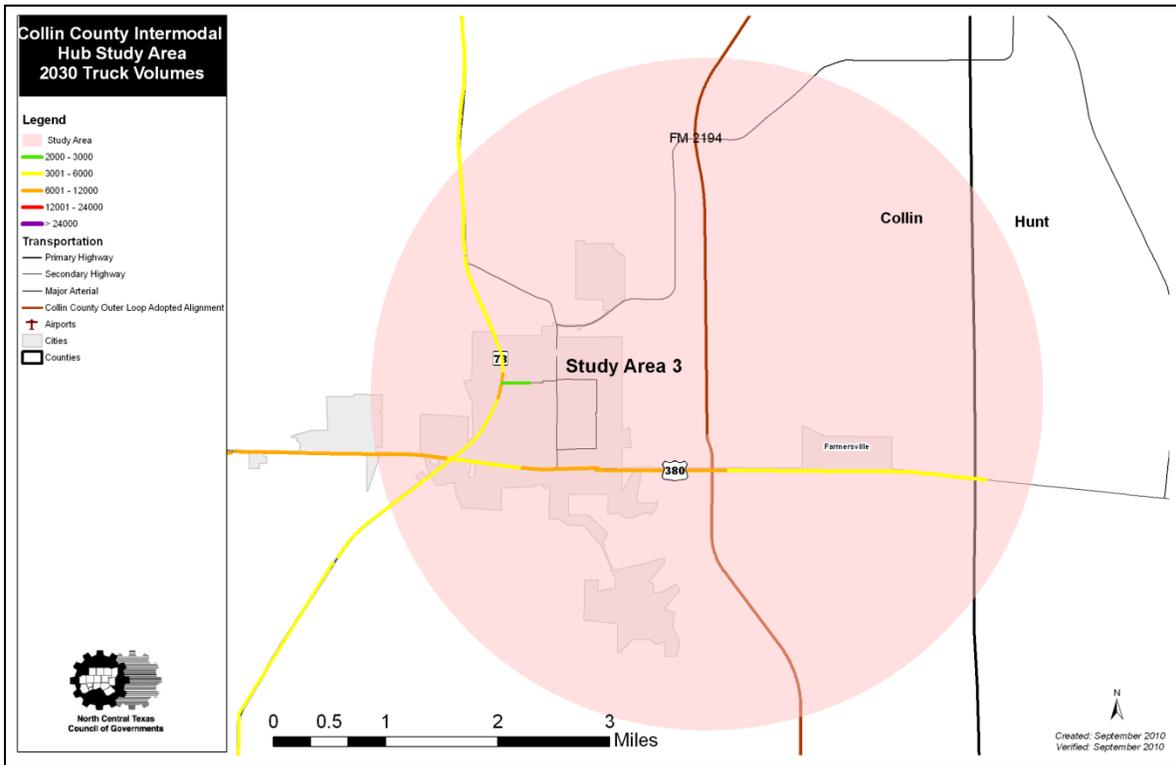
Source: NCTCOG, 2010

Figure 2.12 Collin County Study Area 3 Truck Volumes – 2005



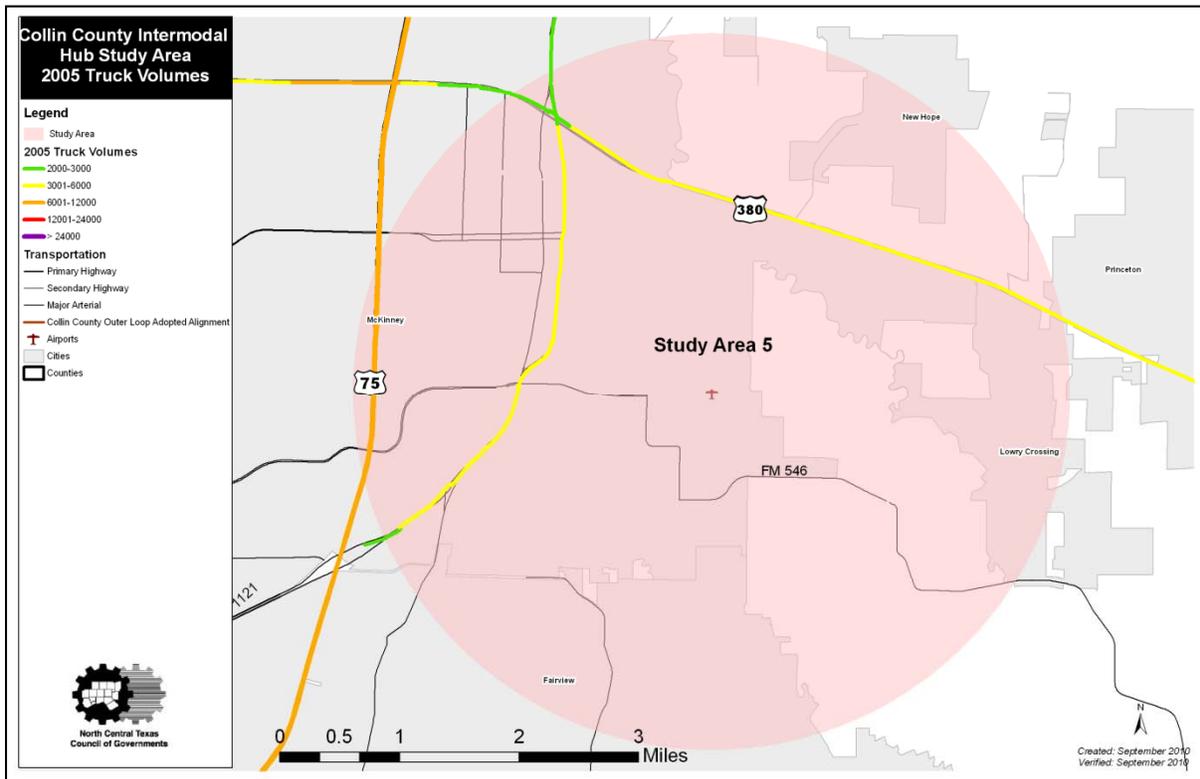
Source: NCTCOG, 2010

Figure 2.13 Collin County Study Area 3 Truck Volumes – 2030



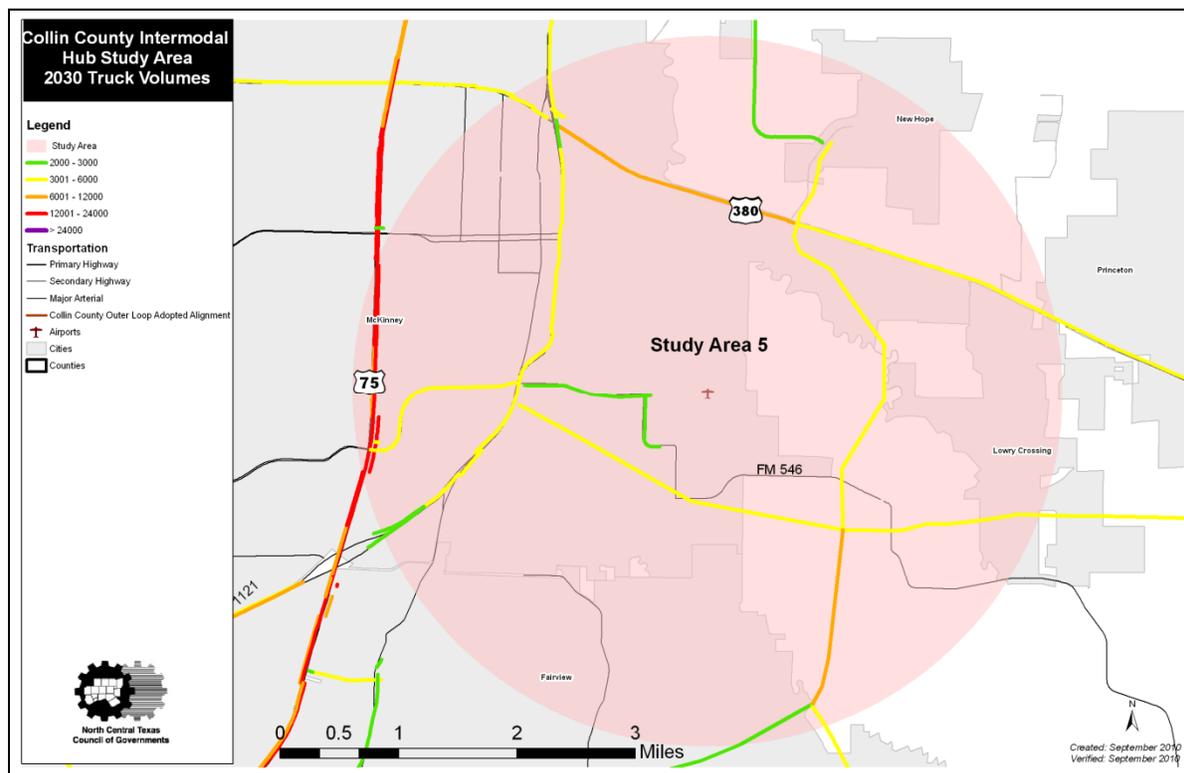
Source: NCTCOG, 2010

Figure 2.14 Collin County Study Area 5 Truck Volumes – 2005



Source: NCTCOG, 2010

Figure 2.15 Collin County Study Area 5 Truck Volumes – 2030



Source: NCTCOG, 2010

2.5 National Logistics Operations

Domestically, logistics operations move in two distinct ways:

- From production center to export center, as is the case of agricultural products from the Midwest.
- From ports along the coast to distribution centers throughout the country, as is the case with containers arriving from Asia, through the Ports of Los Angeles/Long Beach via truck or train to the DFW region.

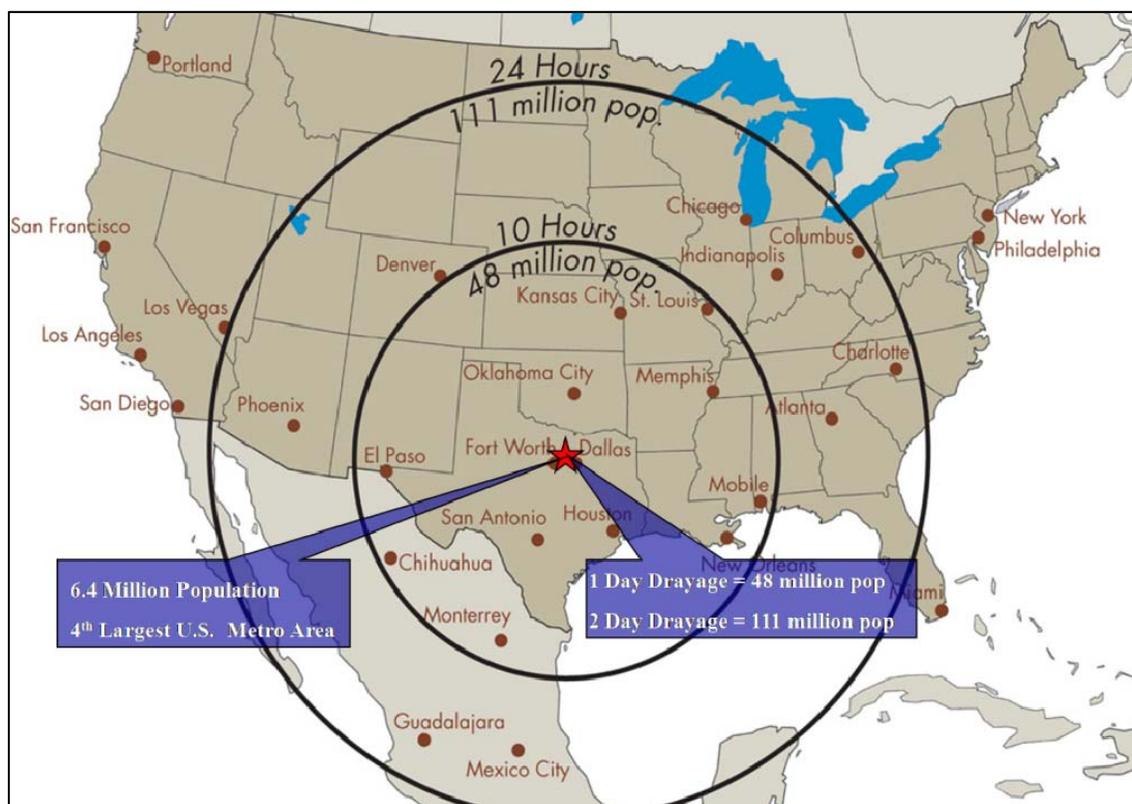
A majority of the imports into the U.S. travel through the Ports of Los Angeles and Long Beach, the two busiest sea ports in the nation. Nationally, there are over 180 public sea ports which develop and maintain terminal facilities for intermodal transfer of cargo between ships, barges, trucks and railroads, and for ferry and cruise ship passenger loading and unloading along U.S. coastline, including the Atlantic, Pacific, Gulf, and Great Lakes coasts, as well as in Alaska, Hawaii, Puerto Rico, Guam, and the U.S. Virgin Islands.⁸

North Central Texas is centrally located within the U.S., which allows the region to serve as a distribution center, or inland port, for the southwestern U.S. and the nation. Trucks leaving the

⁸ American Association of Port Authorities website.

region can reach 98 percent of the U.S. population in the lower 48 states within 48 hours (see **Figure 2.16**).⁹ North Central Texas is at the crossroads of the east-west rail line from the Ports of Los Angeles/Long Beach to the eastern half of the U.S., as well as the north-south rail lines from Houston and Mexico. The region is also a large air cargo hub and a major distribution center.

Figure 2.16 Dallas-Fort Worth Reach Map



Source: AllianceTexas, 2010

2.6 International Logistics Operations

Many ports and facilities that generate/receive large volumes of domestic cargo and freight traffic also generate/receive large volumes of international cargo traffic. The largest international logistics operation in the U.S. is located at the Port of Los Angeles, which handles over 190 million metric revenue tons of freight annually.¹⁰ In 2009, the Port of Los Angeles set a new national container record when it moved 8.5 million twenty-foot equivalent units (TEUs).¹¹ Deep-draft ports, which accommodate ocean-going vessels, move 99.4 percent of U.S.

⁹ Dallas-Fort Worth International Airport website.

¹⁰ The Port of Los Angeles website.

¹¹ The Port of Los Angeles website.

overseas trade by volume and 64.1 percent by value.¹² The remaining volume travels by truck (from Mexico and Canada) or by air.

The leading commodities shipped for domestic and foreign trade through U.S. ports include:

- Crude petroleum and petroleum products;
- Chemicals and related products;
- Bituminous, metallurgical, and steam coal;
- Food and farm products;
- Forest products;
- Iron and steel;
- Soil, sand, gravel, rock, and stone;
- Automobiles, auto parts, and machinery; and
- Clothing, shoes, electronics, and toys.¹³

2.7 The Global Perspective

Globally, larger and larger volumes of freight are being moved. A majority of this freight originates in Asia, moving west to the Ports of Los Angeles and Long Beach and moving east through the Suez Canal to Europe and East Coast Ports. The Panama Canal is in the process of being widened and deepened. This project will allow the canal to handle the largest cargo ships currently being built and is scheduled for completion in 2014. The current Panamax ships (ships that cannot fit through the pre-widened Panama Canal) are 965 feet long by 106 feet wide and can carry a maximum of 5,000 TEUs.¹⁴ These 5,000 containers would equal 2,500 trucks or approximately 21 freight trains. The new Panamax ships are 1,200 feet long by 160.7 feet wide and can carry a maximum of 12,000 TEUs.¹⁵ These 12,000 containers would equal 6,000 trucks or approximately 50 freight trains.

One possible solution to handling this increase in container traffic at ports is to establish an inland freeport. An inland freeport zone would allow containers to be moved from the port to the facility where the necessary inspections can take place and the individual containers can then be distributed. In an effort to help the congestion that could occur at Texas ports after the widening of the Panama Canal and to alleviate current congestion at the Port of Houston, the creation of a freeport at the future Intermodal Hub site would be necessary. The creation of a

12 American Association of Port Authorities website.

13 American Association of Port Authorities website.

14 Autoridad del Canal de Panama

15 Autoridad del Canal de Panama

freeport would create economic and employment opportunities in the area. The question that still remains, however, is what impact the Panama Canal widening will have on Texas ports.

2.8 Foreign Trade Zone and Pre-Clearance

Within the DFW region, there are four FTZs. These are federally designated sites where goods are considered to be outside of U.S. Customs territory, including:

- Alliance Airport (#196)
- Dallas/Fort Worth International Airport (#39)
- Metroplex (#168); and
- Midlothian (#113).

In addition to the four main sites, there are 13 additional satellite FTZs working under the Dallas/Fort Worth International Airport (#39) FTZ or Metroplex (#168) FTZ that are scattered throughout the region. Based on the annual report of the FTZ Board to the U.S. Congress, the value of foreign merchandise that comes into the Alliance FTZ (#196) continues to rank highest among all FTZs in the country.

The U.S. Custom and Border Patrol's Free and Secure Trade (FAST) program is a commercial clearance program for known low-risk shipments entering the U.S. from Canada and Mexico and allows U.S./Canada and U.S./Mexico partnering importers expedited release for qualifying commercial shipments by promoting free and secure trade through risk-management principles, supply chain security, industry partnership, and advanced technology.¹⁶ Currently there are more than 87,000 commercial drivers enrolled in the FAST program.¹⁷ Participation in FAST requires that every link in the supply chain, from manufacturer to carrier to driver to importer is certified under the Customs-Trade Partnership Against Terrorism (C-TPAT) program; currently more than 7,500 companies worldwide are certified C-TPAT members.¹⁸

16 U.S. Customs and Border Patrol

17 U.S. Customs and Border Patrol

18 U.S. Customs and Border Patrol

FAST approved U.S./Mexico highway carriers benefit from:

1. Dedicated lanes (where available) for greater speed and efficiency in the clearance of FAST trans-border shipments;
2. Reduced number of examinations for continued compliance with Customs FAST requirements;
3. A strong and ongoing partnership with the Mexican and Customs (C-TPAT) administrations;
4. Enhanced supply chain security and safety while protecting the economic prosperity of both countries;
5. The knowledge that they are carrying shipments for a C-TPAT approved importer; and
6. A head start for the upcoming modifications to FAST that will expand eligible electronic cargo release methods. The FAST processing of Pre-Arrival Processing System (PAPS) is currently in use and will commence at locations along the U.S./Mexico border this year.¹⁹

3.0 PHYSICAL AND OPERATIONAL REQUIREMENTS

The purpose of this chapter is to evaluate the physical and operational requirements of the potential sites based on infrastructure, environmental issues, and trade zone clearances.

3.1 Site Descriptions

Based on the components needed for a successful logistics hub, discussed in Chapter 1, five potential locations within Collin County were identified for this feasibility study:

- Study Area 1: Celina - at the intersection of the proposed Regional Outer Loop and the BNSF Railway line;
- Study Area 2: Melissa - at the intersection of the proposed Regional Outer Loop and the DART rail line;
- Study Area 3: Farmersville - at the intersection of the proposed Regional Outer Loop and the KCS rail line;
- Study Area 4: The intersection of the proposed Regional Outer Loop and the NETEX rail right-of-way between Nevada and Josephine; and
- Study Area 5: Collin County Regional Airport, McKinney

These sites are shown in **Figures 1.3 through 1.8** in Chapter 1.

3.2 Infrastructure

This section presents an overview of infrastructure resources within the study areas identified for this feasibility study.

3.3 Transportation Facilities and Access

Each of the five study areas described in Chapter 1 and in Section 3.1, has access to a rail line, or rail right-of-way, as well as current/future access to a major roadway facility. The transportation facilities and access for each of the five study areas are detailed in **Table 3.1**.

Table 3.1 Study Area Transportation Facilities Access

Study Area	Roadway Access	Railroad Access	Airport Access
1	Proposed Regional Outer Loop S.H. 289	BNSF Railway Line	N/A
2	Proposed Regional Outer Loop S.H. 121 U.S. 75	DART rail line	N/A
3	Proposed Regional Outer Loop S.H. 78 U.S. 380	KCS rail line	N/A
4	F.M. 6 Proposed Regional Outer Loop	NETEX rail right-of-way	N/A
5	S.H. 121 U.S. 380 U.S. 75	N/A	Collin County Regional Airport

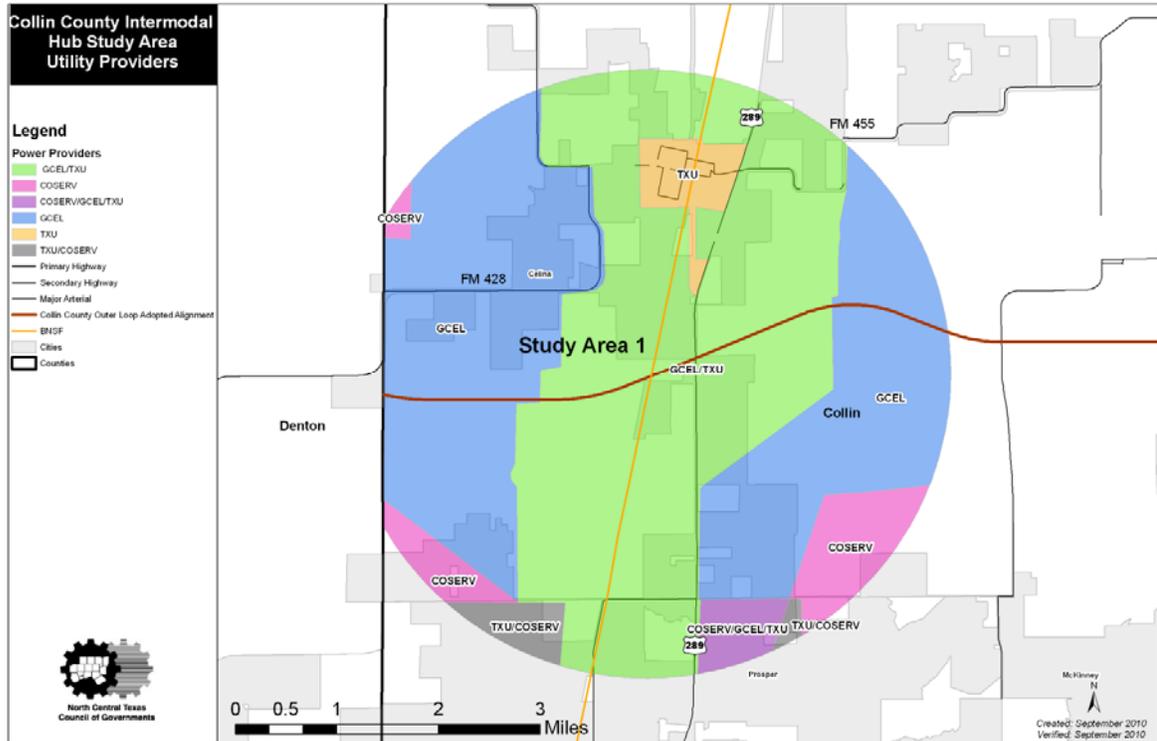
Source: NCTCOG, 2010

Notes: N/A = Not Applicable

3.4 Utilities (Existing and Needs)

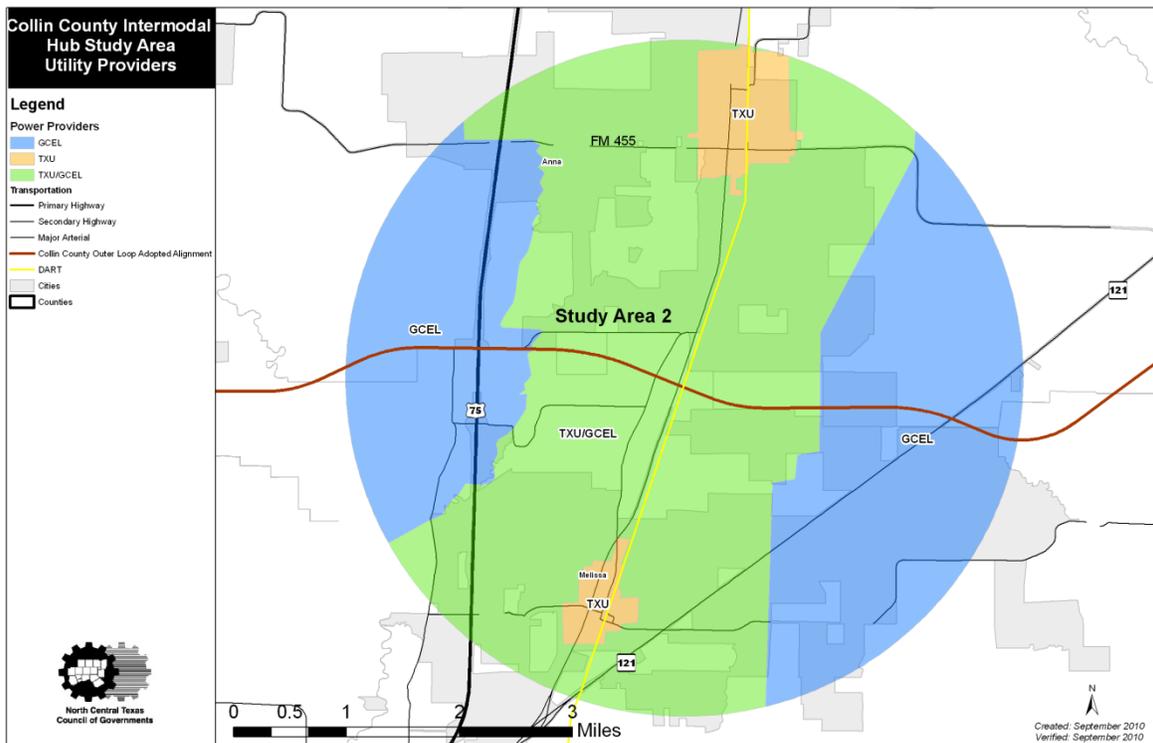
Access to utilities within each of the five study areas is an important component to the selection of an intermodal hub site. Each of the five study areas has access to critical infrastructure including water mains, gas pipelines, electrical lines, and communications systems. Currently, storm water infrastructure is not available in all five study areas, but could be extended. One of the most important utilities to an intermodal hub, electricity, is available from a variety of providers in each of the study areas. **Figures 3.1 through 3.5** show the providers within each study area. The type and level of utilities needed for an intermodal hub will depend on the size and scale of the manufacturing and operations with the hub.

Figure 3.1 Electrical Utility Providers Study Area 1



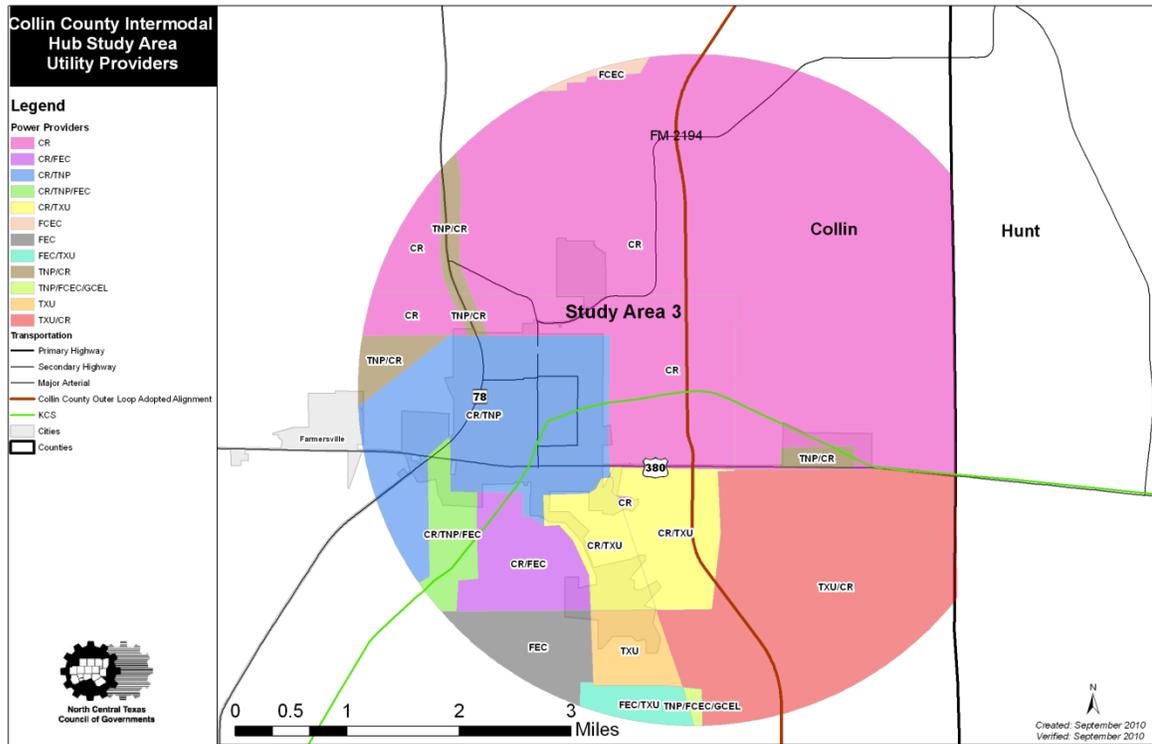
Source: Collin County, 2010

Figure 3.2 Electrical Utility Providers Study Area 2



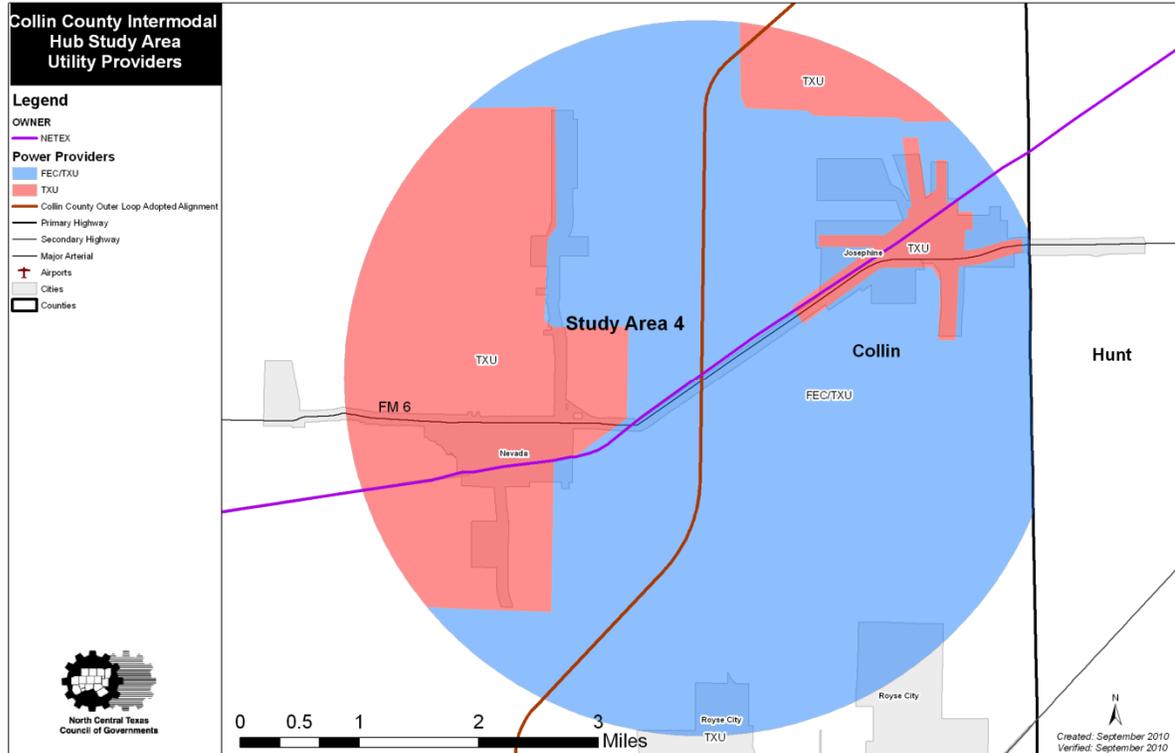
Source: Collin County, 2010

Figure 3.3 Electrical Utility Providers Study Area 3



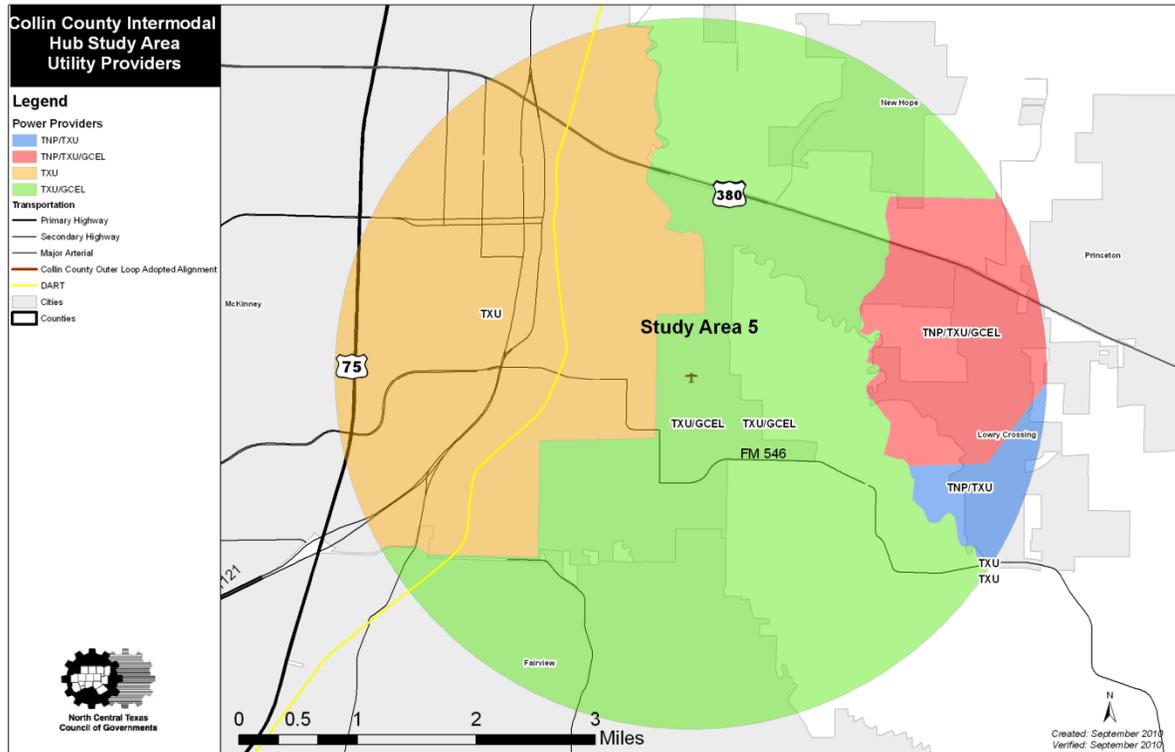
Source: Collin County, 2010

Figure 3.4 Electrical Utility Providers Study Area 4



Source: Collin County, 2010

Figure 3.5 Electrical Utility Providers Study Area 5



Source: Collin County, 2010

3.5 Environmental Issues

This section presents an overview of critical social, economic, and natural environmental resources within the study areas identified for this feasibility study. Each subsection discusses the methodology/research, existing conditions, and when available, future projections and plans. Resources presented include land use, public/community facilities and services, cultural resources, demographics, employment, water resources, and biological resources. During the discussions, the term study area is used; the limits of the five study areas are defined in Chapter 1, Section 3.1, and shown in **Figures 1.3 through 1.8**.

3.5.1 Land Use

This section describes the current land uses and local government plans and policies in the five study areas.

3.5.1.1 Methodology/Research

Land use within the five study areas was identified using Geographic Information System (GIS) 2005 land use data obtained from NCTCOG. The data for the study areas was compared to land use data from Collin County. Local municipality comprehensive plans and future land use and zoning plans were reviewed to determine potential future land use projections.

3.5.1.2 Existing Conditions and Future Projections/Plans

The land use data is divided into eight categories:

- Commercial;
- Dedicated;
- Government/Educational;
- Industrial;
- Infrastructure;
- Residential;
- Undeveloped; and
- Water.

Table 3.2 shows the different land use types within each of the five study areas. **Figures A-1 through A-5** in Appendix A illustrate the land uses in the five study areas.

Table 3.2 Study Area 2005 Land Use

Land Use Type	Study Area				
	1	2	3	4	5
Commercial	0	0	0	0	2%
Dedicated ¹	0	0	1%	0	4%
Government/Educational	1%	0	1%	1%	4%
Industrial	2%	1%	1%	0	6%
Infrastructure	0	0	0	0	0
Residential	11%	17%	20%	14%	20%
Undeveloped	85%	79%	73%	84%	62%
Water	1%	1%	2%	1%	1%
Total²	100%	100%	100%	100%	100%

Source: NCTCOG, 2005

Notes: ¹ Dedicated land includes parks, recreation land, landfills, and flood control.

² Percentage totals may not equal 100 percent because of rounding.

As shown in **Table 3.2**, the majority of the study area is undeveloped with the largest percentage of developed land being residential. Study Area 5 contained the lowest percent of undeveloped land at 62 percent, with the greatest percentage as residential at 20 percent. In contrast, Study Area 1 contained the highest percentage of undeveloped land at 85 percent.

None of the comprehensive plans or any of the land use planning and zoning documents from the 12 municipalities within one of the five study areas have included a Collin County intermodal hub in their future land use, zoning, and/or comprehensive plans, as shown in **Table 3.3**. Half of the municipalities do have some type of industrial district, area, or sector designated in their land use planning and zoning documents.

Table 3.3 Intermodal Hub Inclusion in Local Plans

Municipality	Inclusion in Comprehensive Plan, Land Use, and Zoning Plans	Industrial District or Designated Industrial Areas/sectors
City of Anna	No	Yes
City of Farmersville	No	Yes
City of Josephine	--	--
City of Lowry Crossing	--	--
City of McKinney	No	Yes
City of Melissa	No	Yes
City of Nevada	--	--
City of Princeton	No	Yes
Town of Celina	No	No
Town of Fairview	No	No
Town of New Hope	No	No
Town of Prosper	No	Yes

Source: Municipal comprehensive plans and/or future land use and zoning

Notes: "--" = No plan available

3.5.2 Public/Community Facilities and Services

This section describes the public/community facilities and services within the five study areas.

3.5.2.1 Methodology/Research

An analysis was performed to inventory public/community facilities and services. Using aerial photography, demographics from NCTCOG and the U.S. Census Bureau, and GIS data, the study areas were examined.

3.5.2.2 Existing Conditions

The five study areas for this feasibility study include portions of one county and 12 municipalities. Communities within the five study areas are characterized by varying degrees of cohesion. Strong community cohesion is characterized by extensive interaction among

neighbors and friends, participation in community activities and organizations, and involvement in local government and politics. Typically, cohesive communities have several generations of families, extended families, and strong informal (non-governmental) social support networks, which can provide for child care, emergency assistance, and spiritual guidance, among other possibilities. Transportation and land use changes can have effects on community cohesion.

There are over 118 public facilities/services, in 18 different categories, within the five study areas. **Table 3.4** provides a summary listing of those categories by study area.

Table 3.4 Public/Community Facilities and Services by Study Area

Public/Community Facilities and Services	Study Area					Total
	1	2	3	4	5	
Cemetery	2	4	2	1	3	12
City Hall	--	1	1	2	2	6
Cultural	--	--	--	--	3	3
Education	4	7	4	6	7	28
College	--	--	1	--	1	2
Elementary School	1	3	1	2	5	12
High School	1	2	--	2	1	6
Junior High/High School	--	--	1	--	--	1
Middle School	2	2	1	2	--	7
Fire	--	2	1	--	1	4
General Aviation	--	--	--	--	1	1
Golf Course	--	--	1	--	2	3
Government Building	--	--	--	--	1	1
Hospital	--	--	--	--	1	1
Library	1	1	1	--	1	4
Medical Office	--	--	--	--	2	2
Nursing Home	2	--	1	--	3	6
Place of Worship ¹	--	--	--	--	3	3
Police	1	--	1	--	1	3
Post Office	1	2	1	1	--	5
Public Safety	--	--	--	--	1	1
Recreation/ Community Center	--	--	--	--	4	4
Wastewater Treatment Plant	1	--	1	1	--	3
Total	16	24	18	17	43	118

Source: NCTCOG, 2008

Notes: ¹ Places of worship are defined as churches, mosques, synagogues, and temples.

Public schools are administered by 11 independent school districts (ISD) within the study areas. The ISDs within the five study areas are summarized by study area in **Table 3.5**. **Figure A-6** in Appendix A shows the locations of the ISDs.

Table 3.5 Independent School Districts (ISD) within the Feasibility Study Area

Study Area	Independent School District (ISD)
1	Celina Prosper
2	Anna McKinney Melissa
3	Bland Farmersville
4	Community Royce City
5	Lovejoy McKinney Princeton

Source: NCTCOG, 2010

The Dallas-Fort Worth Regional Travel Model (DFWRTM) includes major activity centers, known as special generators, in the travel demand model. These non-work based sites attract more trips to a particular area than other sites. The travel demand model includes three types of special generators:

- Regional shopping malls with over 500,000 square feet;
- Universities and colleges with over 1,500 enrolled students; and
- Hospitals with over 300 service employees.

Within the five study areas, there is one special generator, the Medical Center of McKinney located in Study Area 5.

3.5.3 Cultural Resources

This section describes the cultural resources within the five study areas.

3.5.3.1 Methodology/Research

The Texas Historic Commission's (THC) Texas Historic Sites Atlas was utilized to review the Official State Historical Markers (OSHM) and the National Register of Historic Places (NRHP) properties in Texas. With a projected constructed date of 2030 and a five-year buffer to allow for unexpected delays in project planning, 1980 was established as the cutoff date for evaluating non-archeological resources that meet the 50-year age guideline for NRHP eligibility. This date was established to help assess if a structure could be of historic age and does not establish NRHP eligibility. GIS parcel data from Collin County was used to determine the year structures on a parcel were built, within each study area. All of these features were investigated using GIS data to identify potential historical resources and locations in the study areas.

An area of potential effect for historic properties was not established for this feasibility study because a specific site has not been selected; the purpose of this research was to determine the location of the existing and known historic sites. Only archeological resources that were listed on the NRHP have been included. It has been assumed that archeological sites could be avoided and specific sites would be studied during the formal environmental and permitting process.

3.5.3.2 Existing Conditions and Future Projections

There are three nationally registered districts in the study area, all located within the City of McKinney. **Table 3.6** contains the listing of these districts and **Figure A-7** in Appendix A shows the locations of these districts. Each of these districts are recognized by the NRHP and logged in the *Texas Historic Sites Atlas* as an area that possesses a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development.

Table 3.6 NRHP-Listed Districts within the Study Area

Study Area	NRHP Reference Number	District Name	Address	City	Listed Date
5	83003132	McKinney Commercial Historic District	Roughly bounded by Hunt, Johnson, Virginia, McDonald, Louisiana, Cloyd, Davis, and Church Streets	McKinney	01/10/1983
5	87001740	McKinney Cotton Mill Historic District	Roughly bounded by Elm, Union Pacific railroad tracks, and Amcott Streets	McKinney	10/08/1987
5	87001744	McKinney Residential Historic District	Roughly bounded by Lamar, Bengé, Louisiana, Bradley, and Oak Streets	McKinney	10/08/1987

Source: Texas Historic Commission, 2008

Within the five study areas, there are 56 NRHP-listed properties; a majority of these properties (50) are houses or homesteads. **Table 3.7** contains a detailed listing of these properties. **Figures A-7 and A-8**, in Appendix A, show the locations of these properties.

Table 3.7 NRHP-Listed Properties

Study Area	NRHP Reference Number	Resource Name	Address	City	Date Listed
3	83003131	Aston Building	113 South Main Street	Farmersville	06/30/1983
3	05000245	Farmersville Masonic Lodge No. 214, A.F. & A.M.	101 South Main Street	Farmersville	03/30/2005
5	87001661	Beverly--Harris House	604 Parker	McKinney	10/08/1987
5	87001662	Bingham, John H., House	800 South Chestnut	McKinney	06/27/1988
5	87001663	Board--Everett House	507 North Bradley	McKinney	10/08/1987
5	87001666	Brown, John R., House	509 North Church	McKinney	10/08/1987
5	87001671	Burrus--Finch House	405 North Waddill	McKinney	06/27/1988
5	87001679	Clardy, U.P., House	315 Oak	McKinney	10/08/1987
5	87001681	Cline--Bass House	804 Tucker	McKinney	06/27/1988
5	87001682	Coggins, J. R., House	805 Howell	McKinney	10/08/1987
5	87001685	Collin County Mill and Elevator Company	407 East Louisiana	McKinney	10/08/1987
5	87001691	Crouch--Perkins House	205 North Church	McKinney	10/08/1987
5	87001695	Davis, H.L., House	705 North College Street	McKinney	10/08/1987
5	87001697	Davis--Hill House	710 North Church	McKinney	10/08/1987
5	87001699	Dowell, J.S., House	608 Parker	McKinney	10/08/1987
5	87001704	Dulaney, Joe E., House	311 South Chestnut	McKinney	10/08/1987
5	87001702	Dulaney, Joseph Field, House	315 South Chestnut	McKinney	10/08/1987
5	95001365	Estes House	903 North College Street	McKinney	11/29/1995
5	87001705	Faires, F.C., House	505 South Chestnut	McKinney	10/08/1987
5	87001706	Faires--Bell House	South side Chestnut Square	McKinney	10/08/1987
5	87001707	Ferguson, John H., House	607 North Church	McKinney	10/08/1987
5	87001708	Foote--Crouch House	401 North Bengé	McKinney	06/27/1988
5	87001709	Fox, South H., House	808 Tucker	McKinney	10/08/1987
5	87001688	Goodner, Jim B., House	302 South Tennessee	McKinney	10/08/1987
5	87001710	Gouch--Hughston House	1206 West Louisiana	McKinney	06/27/1988
5	87001711	Heard--Craig House	205 West Hunt	McKinney	10/08/1987
5	87001712	Hill, Ben, House	509 Tucker	McKinney	10/08/1987
5	87001713	Hill, John B., House	605 North College Street	McKinney	10/08/1987
5	87001714	Hill, Moran, House	203 North Waddill	McKinney	10/08/1987
5	87001715	Hill, W.R., House	601 North College Street	McKinney	10/08/1987
5	87001716	Hill--Webb Grain Elevator	400 East Louisiana	McKinney	10/08/1987
5	87001717	House at 1303 West Louisiana	1303 West Louisiana	McKinney	10/08/1987

Table 3.7 NRHP-Listed Properties (continued)

Study Area	NRHP Reference Number	Resource Name	Address	City	Date Listed
5	87001718	House at 201 North Graves	201 North Graves	McKinney	10/08/1987
5	87001719	House at 301 East Lamar	301 East Lamar	McKinney	10/08/1987
5	87001720	House at 610 Tucker	610 Tucker	McKinney	10/08/1987
5	87001721	House at 704 Parker	704 Parker	McKinney	10/08/1987
5	87001722	Houses at 406 and 408 Heard	406 & 408 Heard	McKinney	10/08/1987
5	87001723	Johnson, John, House	302 Anthony	McKinney	10/08/1987
5	87001724	Johnson, Thomas, House	312 South Tennessee	McKinney	10/08/1987
5	87001737	King, Mrs. J.C., House	405 West Louisiana	McKinney	10/13/1988
5	87001738	Kirkpatrick, E.W., House and Barn	903 Parker	McKinney	10/8/1987
5	87001739	McKinney Cotton Compress Plant	300 blk. Throckmorton	McKinney	06/27/1988
5	87001743	McKinney Hospital, Old	700--800 South College	McKinney	10/08/1987
5	87001745	Neathery, Sam, House	215 North Waddill	McKinney	06/27/1988
5	87001746	Nenney, J.P., House	601 North Church	McKinney	06/27/1988
5	87001748	Newsome--King House	401 West Louisiana	McKinney	10/08/1987
5	87001747	Newsome, R.F., House	609 Tucker	McKinney	10/08/1987
5	87001749	Rhea, John C., House	801 North College Street	McKinney	06/27/1988
5	87001750	Scott, A.M., House	1109 West Louisiana	McKinney	10/08/1987
5	87001751	Scott, L.A., House	513 West Louisiana	McKinney	06/27/1988
5	87001752	Smith, West D., House	703 North College Street	McKinney	10/08/1987
5	87001753	Taylor, J.H., House	211 North Waddill	McKinney	10/08/1987
5	87001754	Thompson House	1207 West Louisiana	McKinney	10/08/1987
5	87001755	Waddill, R. L., House	302 West Lamar	McKinney	10/08/1987
5	87001756	Wiley, Thomas West, House	105 South Church	McKinney	10/08/1987
5	87001757	Wilson, A.G., House	417 North Waddill	McKinney	10/08/1987

Source: Texas Historic Commission, 2008

The THC Local History Programs Division has compiled a database that lists more than 500 museums throughout the state. The types of museums compiled in this database are general, art, historic, and children's museums as well as special interest museums catering to interests as diverse as agriculture and firefighting or chronicling personalities from Texas. Based on this database, there are two museums within the study areas, both located in Study Area 5. A listing of these museums is in **Table 3.8** and their locations can be seen in **Figure A-7** in Appendix A.

Table 3.8 Museums

Study Area	Resource Name	Address	City
5	Heard Natural Science Museum and Wildlife Sanctuary	1 Nature Place	McKinney
5	Collin County Central Museum at the Old Post Office	Chestnut at Virginia	McKinney

Source: Texas Historic Commission, 2008

There are 62 historical markers within the five study areas. **Table 3.9** shows a summary table of historical markers categories. **Figures A-7 through A-11** in Appendix A show the locations of these markers.

Table 3.9 Historical Markers

Marker Category	Study Area					Total
	1	2	3	4	5	
Bank	--	--	1	--	1	2
Building	1	--	--	--	--	1
Business	--	--	--	--	1	1
Cemetery	1	3	1	1	1	7
Church	--	4	2	1	3	10
City	--	--	1	--	--	1
County	--	--	--	--	1	1
Courthouse	--	--	--	--	1	1
Governor	--	1	--	--	1	2
House	--	1	1	--	27	29
Park	--	--	--	--	1	1
Person	--	1	--	--	1	2
Prison	--	--	--	--	1	1
Road	--	--	--	1	--	1
School	--	1	--	--	1	2
Total	2	11	6	3	40	62

Source: Texas Historic Commission, 2009

NCTCOG lists 34 cemeteries in the study area. **Table 3.10** is a list of these cemeteries. **Figures A-12 through A-16** in Appendix A show the locations of the cemeteries in the study area.

Table 3.10 Cemeteries

Study Area	Number of Cemeteries
1	6
2	9
3	7
4	3
5	9
TOTAL	34

Source: NCTCOG, 2010

To identify potential historic-aged resources and locations in the study area, available parcel data for Collin County that contained records of the year a structure, or structures, on the parcel was built was evaluated. **Table 3.11** shows the number of structures built from 1792 to 1980 grouped. **Table 3.12** shows the number of historic-age structures in each study area.

Table 3.11 Number of Historic-Age Structures

Years	Number of Structures	Years	Number of Structures
1792 to 1880	24	1931 to 1940	426
1881 to 1900	195	1941 to 1950	760
1901 to 1910	94	1951 to 1960	1,575
1911 to 1920	225	1961 to 1970	1,161
1921 to 1930	382	1971 to 1980	807

Source: Collin County, 2007

Table 3.12 Number of Historic-Age Structures by Study Area

Study Area	Number of Structures
1	584
2	568
3	929
4	302
5	3,266
TOTAL	5,649

Source: Collin County, 2007

There is potential for future development within the five study areas that could remove currently listed historic-aged structures. Some of the development may fall under federal or state regulatory resource protection review and could be protected, preserved, or mitigated. However, residential and commercial development would not fall under the regulatory review process; therefore, historic resources in these developments would have no protection under federal or state laws.

3.5.4 Demographics

This section presents information related to population, race, ethnicity, income, and language.

3.5.4.1 Methodology/Research

Population, income, and Limited English Proficiency (LEP) data were obtained for this section from the U.S. Census Bureau utilizing GIS. The 2000 Census Summary File 1 data utilized was for the race counts and Summary File 3 data utilized was for income and LEP. LEP populations were determined for the population five years old and older, persons who speak English less than “not well.” Census data was gathered for municipalities and census tracts in the five study areas. Population forecasting data in this section was provided by NCTCOG and represents the region’s forecasts used in regional infrastructure planning.

3.5.4.2 Existing Conditions and Future Projections

Populations for the cities within the five study areas are projected to increase by 2030. **Table 3.13** illustrates the population forecast for the municipalities in the five study areas. Population and employment estimates for each of the study areas are shown in Section 2.1 in Chapter 2.

Table 3.13 Population Forecast for the Year 2030

Location	Population		Population Increase	
	2000 ¹	2030 ²	Changes from 2000 to 2030	Percent Changed
City of Anna	1,225	NA	NA	NA
City of Farmersville	3,118	5,308	2,190	70.2%
City of Josephine	594	NA	NA	NA
City of Lowry Crossing	1,229	2,897	1,668	135.7%
City of McKinney	54,369	225,933	171,564	315.6%
City of Melissa	1,350	5,375	4,025	298.2%
City of Nevada	563	NA	NA	NA
City of Princeton	3,477	NA	NA	NA
Town of Celina	1,861	25,216	23,355	1,255.0%
Town of Fairview	2,644	18,100	15,456	584.6%
Town of New Hope	662	NA	NA	NA
Town of Prosper	2,097	5,304	3,207	152.9%

Sources: ¹ 2000 U.S. Census and ² NCTCOG Demographic Forecast Information

NA= Not Available, data was not available

3.5.5 Racial Distribution

Minority racial and ethnic composition for the census data utilized is defined as:

- American Indian/Alaskan Native: having origins from any of the original people of North America and who maintain cultural identification through tribal affiliation or community recognition.

- Asian-American: having origins from any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or Pacific Islands.
- Black: having origins from any black racial groups of Africa.
- Hispanic or Latino: have origins from Mexico, Puerto Rico, Cuba, Central or South America, or other Spanish culture or origin, regardless of race.

Table 3.14 provides 2000 U.S. Census data on minority racial and ethnic composition at the county and municipal level.

Table 3.14 2000 Census Race and Ethnic Composition of the Study Area

Census Geography	Census 2000 Total Population	Racial Distribution			
		Black	American Indian/Alaskan Native	Asian-American	Hispanic or Latino ¹
City of Anna	1,225	0.90%	1.06%	0.73%	27.59%
City of Farmersville	3,118	10.10%	0.42%	0.06%	16.13%
City of Josephine	594	1.18%	0.51%	0.67%	10.61%
City of Lowry Crossing	1,229	0.65%	0.41%	0.73%	6.43%
City of McKinney	54,369	7.20%	0.54%	1.56%	18.16%
City of Melissa	1,350	0.52%	0.44%	0.52%	13.33%
City of Nevada	563	5.51%	1.42%	0.71%	6.57%
City of Princeton	3,477	0.95%	0.98%	0.29%	10.90%
Town of Celina	1,861	9.19%	0.27%	0.11%	22.73%
Town of Fairview	2,644	0.26%	0.61%	1.82%	3.90%
Town of New Hope	662	0.15%	0.76%	0.00%	5.74%
Town of Prosper	2,097	0.29%	0.62%	0.38%	19.17%
Collin County	491,675	4.79%	0.47%	6.97%	10.27%

Source: 2000 U.S. Census

Notes: ¹Total of persons reporting as Hispanic or Latino ethnic origin. As race and ethnic origin are two separate and distinct concepts, these persons may be of any race.

The majority of the municipalities within the study areas are predominately non-minority. Within the study areas, the City of Farmersville has the highest percentage of Black population with 10.10 percent, while the Town of New Hope had the lowest with 0.15 percent. The City of Anna had the highest percentage of Hispanic or Latino population with 27.59 percent, while the Town of Fairview had the lowest with 3.90 percent.

For the purpose of this report, low-income population means any readily identifiable group of low-income persons who live in geographic proximity, and if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who would be similarly affected by a program, policy, or activity. The measure used to identify low-

income populations was the average median household income for the inclusive counties, municipalities, and census tracts.

Low-income populations were examined at the municipality level, **Table 3.15**. A majority of the five study areas consist of census tracts in which the majority of the residents are neither minority nor low-income. The census tracts within the study areas showed 7.57 percent of the population as under the poverty level.

Table 3.15 2000 Census Median Income and Low-Income Status

Census Geography	Median Income in 1999 Dollars		Total Per Capita Income in 1999 Dollars	Percent Below Poverty
	Households	Families		
City of Anna	\$45,938	\$51,250	\$15,920	9.08%
City of Farmersville	\$38,094	\$46,700	\$18,693	12.45%
City of Josephine	\$34,750	\$41,250	\$15,879	12.25%
City of Lowry Crossing	\$67,222	\$73,393	\$26,574	2.97%
City of McKinney	\$63,366	\$72,133	\$28,185	8.50%
City of Melissa	\$60,909	\$66,172	\$26,193	5.28%
City of Mesquite	\$50,424	\$56,357	\$20,890	6.78%
City of Nevada	\$46,500	\$49,688	\$15,221	4.75%
City of Princeton	\$38,590	\$45,948	\$17,092	9.11%
Town of Celina	\$37,383	\$41,131	\$17,499	13.37%
Town of Fairview	\$107,267	\$114,210	\$44,455	3.68%
Town of New Hope	\$66,563	\$67,083	\$24,542	2.66%
Town of Prosper	\$64,063	\$68,542	\$25,672	7.54%
Collin County	\$70,835	\$81,856	\$33,345	4.87%

Source: 2000 U.S. Census

Table 3.16 provides a summary of the LEP data for the five study areas by municipality. In 2000, LEP populations within the study area census tracts ranged from 0 to 13.19 percent, averaging 4.11 percent. The census tracts average, within the study area, was higher than the Collin County average of 3.48 percent. Based on this information, there is a very small LEP population within the study areas. Of those who spoke English less than “not well,” 95.81 percent spoke Spanish, 2.34 percent spoke Asian/Pacific Island languages, 1.34 percent spoke Indo-European languages, and 0.51 percent spoke all other languages.

Table 3.16 2000 Census Limited English Proficiency (LEP) Population

Census Geography	Population Over Five-Years Old	Speak English “not well” or “not at all”	Percent Speak English “not well” or “not at all”
City of Anna	1,084	143	13.19%
City of Farmersville	2,826	182	6.44%
City of Josephine	544	5	0.92%
City of Lowry Crossing	1,030	6	0.58%
City of McKinney	48,902	3,373	6.90%
City of Melissa	1,196	16	1.34%
City of Nevada	513	20	3.90%
City of Princeton	3,105	55	1.77%
Town of Celina	1,724	170	9.86%
Town of Fairview	2,419	29	1.20%
Town of New Hope	633	11	1.74%
Town of Prosper	1,912	107	5.60%

Source: 2000 U.S. Census

3.5.6 Employment

This section discusses the employment within the study area.

3.5.6.1 Methodology/Research

Employment data was obtained from the U.S. Census Bureau from the 2000 Census and divided by census tracts in the study area. Major employers were identified using the NCTCOG Major Employers data inventory. NCTCOG identifies major employers as employment establishments with a minimum of 250 full-time and part-time workers. The employment figures reported are based on location rather than company-wide totals. An employment establishment may consist of a single building or a collection of adjacent buildings occupied by one employer, such as a college campus or business park.

Future employment numbers were obtained from the NCTCOG 2030 demographic forecast, approved in 2003. This database supplies existing and estimated numbers of employed persons by county for the years 2000 through 2030, in five-year increments.

3.5.6.2 Existing Conditions and Future Projections

Table 3.17 summarizes the 2000 Census employment by industry within the 13 census tracts covering the five study areas, **Figure A-17** Appendix A shows the census tract locations for the five study areas. The 2000 Census data revealed that, for persons 16 years of age or older within the study areas, the top four industries in terms of employment were manufacturing, educational, health and social services, retail trade, and construction. The fewest number of jobs were in agriculture, forestry, fishing and hunting, and mining.

Table 3.17 Employment by Industry within Census Tracts in the Study Area

Industry	Study Area					Collin County
	1	2	3	4	5	
Agriculture, forestry, fishing and hunting, and mining	518	135	211	129	300	854
Arts, entertainment, recreation, accommodation and food services	352	222	328	387	1,917	3,956
Construction	989	478	1,125	1,085	2,749	5,589
Educational, health and social services	1,629	527	1,275	1,286	3,524	9,395
Financial, insurance, real estate and rental and leasing	686	317	466	486	1,735	5,625
Information	331	188	332	305	1,321	3,995
Manufacturing	1,405	759	1,487	1,401	4,226	10,214
Other Services (except public administration)	457	219	489	482	1,254	2,893
Professional, scientific, management, administrative, and waste management services	983	331	720	721	2,502	7,641
Public Administration	372	179	330	288	932	2,093
Retail Trade	981	520	1,119	1,119	3,195	8,163
Transportation and warehousing, and utilities	503	209	682	653	1,051	2,671
Wholesale Trade	322	485	309	293	1,436	3,038
Total	9,528	4,569	8,873	8,635	26,142	66,127

Source: U.S. Census, 2000

Table 3.18 shows the projected employment for the year 2030 for the 12 municipalities located within the five study areas.

Table 3.18 Year 2000 and Year 2030 Employment Estimates

Municipality	2000 Employment	2030 Employment	Percent Increase
City of Anna	35	141	302.9%
City of Farmersville	321	807	151.4%
City of Josephine	NA	NA	NA
City of Lowry Crossing	48	220	358.3%
City of McKinney	26,293	74,750	184.3%
City of Melissa	147	840	471.4%
City of Nevada	NA	NA	NA
City of Princeton	416	1,445	247.4%
Town of Celina	1,589	5,690	258.1%
Town of Fairview	218	11,670	5,253.2%
Town of New Hope	NA	NA	NA
Town of Prosper	215	1,924	794.9%

Source: NCTCOG Demographics, 2000 and 2030

NA= Not Available, data were not available

Within the five study areas, the major employers include health care and hospitals, manufacturing facilities, and public administration centers, as shown in **Table 3.19**. The major employers in the study areas are listed in **Table 3.20** by study area. Major employers are considered businesses that employ 250 or more employees. A total of six major employers were identified in the five study areas, all located in study area 5.

Table 3.19 Major Employers by Sector

Type	Study Area				
	1	2	3	4	5
Administration	--	--	--	--	--
Construction	--	--	--	--	--
Education	--	--	--	--	--
Finance	--	--	--	--	--
Health Care	--	--	--	--	1
Manufacturing	--	--	--	--	3
Public Administration	--	--	--	--	2
Real Estate	--	--	--	--	--
Retail	--	--	--	--	--
Transportation	--	--	--	--	--
Warehouse	--	--	--	--	--
Total	--	--	--	--	6

Source: NCTCOG Major Employers, 2009

Table 3.20 Major Employers

Study Area	Employer	Estimated Employees	Type	City
5	Medical Center of McKinney	879	Health Care	McKinney
5	Encore Wire Corp	800	Manufacturing	McKinney
5	City of McKinney	607	Public Administration	McKinney
5	Timber Blind Manufacturing	550	Manufacturing	McKinney
5	Watson & Chalin Manufacturing Inc	389	Manufacturing	McKinney
5	Collin County	308	Public Administration	McKinney

Source: NCTCOG Major Employers, 2009

3.5.7 Development

This section will discuss the development within the five study areas.

3.5.7.1 Methodology/Research

Information from the NCTCOG development monitoring database was used to obtain existing and future developments in the study areas. This database tracks over 8,000 major

developments that are existing, closed, demolished, vacant, announced, in the conceptual phase, or under construction. Major developments are defined by NCTCOG as locations with over 80,000 square feet and/or 80 employees.

3.5.7.2 Existing Conditions and Future Projections

The database research found 74 existing developments within the five study areas. For proposed developments, five announced, one conceptual, and five under construction areas were identified. **Table 3.21** shows the developments in the five study areas.

Table 3.21 Area Development Monitoring

Study Area	Existing Developments				Proposed Developments		
	Existing	Closed	Demolished	Vacant	Announced	Conceptual	Under Construction
1	5	--	--	--	2	--	1
2	9	--	--	--	2	--	3
3	4	--	--	--	--	1	--
4	3	--	--	--	--	--	--
5	53	--	--	--	1	--	1
Total	74	--	--	--	5	1	5

Source: NCTCOG GIS - Activity Centers, 2009

A total of 74 existing developments and 11 proposed developments were located in the study areas. The majority of the proposed developments were located in Study Area 2, while Study Area 5 contained the majority of the existing developments.

3.5.8 Natural Resources

This section discusses the existing water and biological resources within the study areas.

3.5.8.1 Water Resources

This section discusses floodplains, wetlands, and waters of the U.S.

Methodology/Research

- Floodplains -The scope of this hydrologic assessment included a review of the Flood Insurance Rate Maps for the entire study area. The 100-year flood hazard zones within the study area were mapped using Federal Emergency Management Agency (FEMA) Q3 Flood Data.
- Wetlands/Waters of the U.S. - The purpose of the wetlands/waters of the U.S. investigation was to determine the location and extent of waters of the U.S., including wetlands within the study area that are subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE), pursuant to Section 404 of the Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act. Wetland determinations for the study

area were completed through the use of the 2001 National Land Cover Dataset (NLCD) maps from the EPA.

Existing Conditions and Future Projections

- Floodplains - The study area contains many perennial streams. FEMA Q3 Flood Data for Collin County was used to determine the portions of the study area that are in flood hazard zones. The mapped floodplain boundaries and floodway limits within the study areas are contained in Appendix A, *Figures A-18 through A-22*. *Table 3.22* lists the acres that lie within the mapped 100-year floodplains by study area.

Table 3.22 FEMA 100-Year Floodplains within the Study Area

Study Area	Acres within 100- Year Floodplain
1	1,510
2	1,331
3	1,222
4	1,135
5	4,717

Source: NCTCOG, 2010

Wetlands/Waters of the U.S.

The determination of wetlands locations within the study area was made based on the use of existing NLCD maps for the study area. The NLCD classifies wetlands into two categories: woody wetlands and emergent herbaceous wetlands. The area covered by emergent herbaceous wetlands within the study areas ranged from 3.5 in Study Area 4 to 25.67 in Study Area 5. The area covered by woody wetlands within the study areas ranged from 0.0 in Study Areas 1, 3, and 4 to 265.7 in Study Area 5. **Table 3.23** shows the acreage identified as wetlands by NLCD broken down by subarea. The NLCD does not constitute a complete inventory of wetlands within the study area and field investigations in coordination with the USACE would be necessary to determine the locations and extents of affected wetlands in subsequent studies.

Table 3.23 National Land Cover Dataset (NLCD) Wetlands within the Study Area

Study Area	Emergent Herbaceous Wetlands (acres)	Woody Wetlands (acres)	Total Wetlands (acres)
1	4.2	0.0	4.2
2	25.7	31.3	57.0
3	14.8	0.0	14.8
4	3.5	0.0	3.5
5	25.5	265.7	291.2

Source: Environmental Protection Agency National Land Cover Dataset, 2001 and NCTCOG, March 2009

The water bodies and wetlands within the proposed study areas are illustrated in Appendix A, **Figures A-23 through A-27**.

3.5.8.2 Biological Resources

This section discusses vegetation.

Methodology/Research

- Research for the existing conditions was conducted through GIS. Data for vegetation was obtained from the Texas Parks and Wildlife Department (TPWD) and based on the *Vegetation Types of Texas* and TPWD eco-regions. Future conditions for all biological resources were based on existing trends in development discussed in previous sections.

Existing Conditions and Future Projections

- Vegetation - The five study areas contain three vegetation types from the *Vegetation Types of Texas*. *Table 3.24* lists the coverage of vegetation type by study area. *Figure A-28* in Appendix A shows the vegetation types.

Table 3.24 Coverage of Vegetation Types by Study Area

Vegetation Type	TPWD Vegetation Type Code Number	Study Area				
		1	2	3	4	5
Crops	44	95%	100%	100%	100%	95%
Other Native or Introduced Grasses	45	5%	0	0	0	0
Water	47	0	0	0	0	5%
Total		100%	100%	100%	100%	100%

Source: Texas Parks and Wildlife Department GIS: Vegetation Types of Texas, February 2009

The majority of the study area would fall into the “Crops” category; “Other Native or Introduced Grasses” areas and “Water” types covered a small percentage of the study area. **Table 3.25** describes the typical vegetation species found in each vegetation type and where the distribution of the vegetation type occurs.

Table 3.25 Typical Vegetation Type and Distribution

Vegetation Type/Code Number	Commonly Associated Plants	Distribution
Crops (44)	Cultivated cover crops or row crops providing food/fiber for either man or domestic animals. This type may also portray grassland associated with crop rotations.	Statewide
Other Native or Introduced Grasses (45)	Mixed native or introduced grasses and forbs on grassland sites or mixed herbaceous communities resulting from the clearing of woody vegetation. This type is associated with the clearing of forests in northeast and east-central Texas and may portray early stages of Type 41, Young Forest. Also occurs in the South Texas Plains where brush has been cleared. Such areas are particularly subject to change due to regrowth brush.	Primarily northeast, east-central and south Texas
Water (47)	Water is defined as any large body of water such as lakes. These areas may contain fringe obligate plants and other underwater aquatic plant species.	Statewide

Source: *Vegetation Types of Texas*, 1984

3.6 Summary

A summary of the impacts of the proposed intermodal hub within each of the five study areas are detailed in **Table 3.26**.

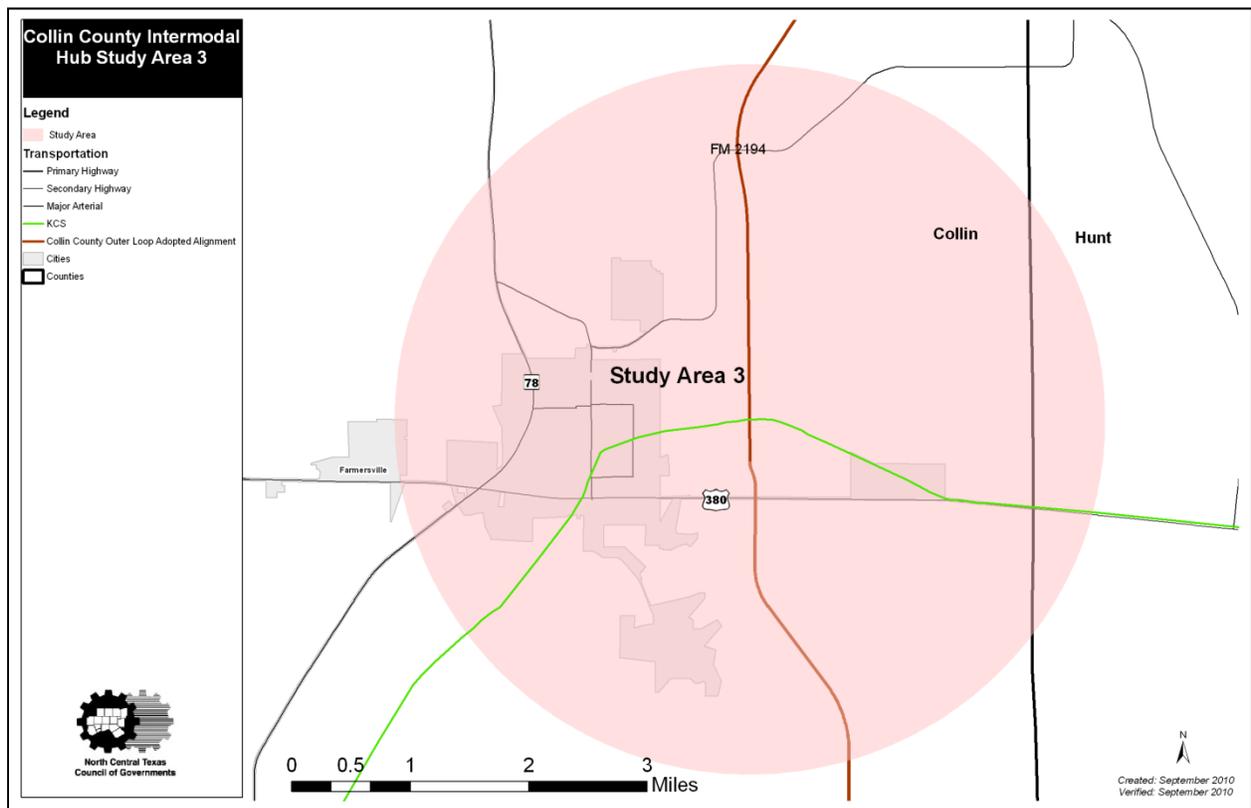
Table 3.26 Summary of Impacts

Impact Type	Study Area				
	1	2	3	4	5
Land Use					
Compatibility with Local Land Use Plans	No	No	No	No	No
Public/Community Facilities and Services					
Number of Facilities	16	24	18	17	43
Cultural Resources					
Historic-Age Properties	584	568	929	302	3,266
Historical Markers	2	11	6	3	40
NRHP-Listed Properties	0	0	2	0	54
NRHP-Listed Historic Districts	0	0	0	0	3
Cemeteries	6	9	7	3	9
Developments					
Existing	5	9	4	3	53
Proposed	3	5	1	0	2
Floodplain, 100-year					
Acreage	1,510	1,331	1,222	1,135	4,717
Waters of the U.S.					
Wetlands Acreage	4.2	57.0	14.8	3.5	291.2
Vegetation Impacts					
Cropland	95%	100%	100%	100%	95%
Other Native or Introduced Grasses	5%	0%	0%	0%	0%
Water	0%	0%	0%	0%	5%

4.0 FINDINGS AND NEXT STEPS

Based on the elements that are necessary for a successful intermodal hub, including access to rail, a major roadway facility, and availability of land, Study Area 3, the Farmersville site at the intersection of the proposed Regional Outer Loop and the KCS rail line, scores the best in the site selection matrix. Study Area 3 is shown in **Figure 4.1**. The completed site selection matrix developed is shown in **Table 4.1**. The supporting information is in **Appendix B**. Study Area 3 has access to both rail and highways, land availability, and most importantly, local support. The results of the site selection matrix indicate that Study Area 3 is the area best suited to an intermodal hub and warrants further study.

Figure 4.1 Study Area 3



Source: NCTCOG, 2010

Table 4.1 Intermodal Hub Study Site Location Matrix

Need	Site #1: Celina	Site #2: Melissa	Site #3: Farmersville	Site #4: Outer Loop at NETEX	Site #5: Collin County Airport
A minimum of 2,500 acres	+	+	+	+	-
Land is flat with a slope of less than	+	-	-	+	-
Access to a rail line	+	+	+	0	-
Land adjacent to rail is linear	+	0	+	0	-
A minimum of 10,000 feet of track,	-	0	-	+	-
Access to a major roadway facility	+	+	+	0	+
Access to air transportation*	-	-	-	-	-
Access to/Availability of Utilities:					
• Water	0	0	0	0	+
• Electricity	+	+	+	+	+
• Gas and Pipelines	0	0	0	0	+
• Sanitation	0	0	0	0	+
• Storm Water	0	0	0	0	0
• Communication Systems	+	+	+	+	+
Available workforce	0	0	+	0	+
Serves the need of the market	-	-	-	-	-
Site qualifies for further analysis	-	-	+	-	-

*Not a disqualifying factor.

Rating Scale		
-	0	+
Negative	Neutral	Positive

4.1 Next Steps

This document is only a feasibility study to determine whether or not a third regional intermodal hub is possible. A market evaluation will need to be completed by an interested party at a later date. In addition to the market evaluation, additional items need to be taken into consideration, including educational components and partnerships.

4.1.1 Educational Components

Education facilities located within the intermodal hub are critical to educating, training, and maintaining the skill sets of employees. The location of a community college and/or university training facility on-site is necessary. Being on-site allows employees to be trained in warehousing, manufacturing, and equipment operation where they work. Having a university extension on-site also allows employees to pursue higher education degrees in logistics, business management, and computer training and provides students with ready internship opportunities.

4.1.2 Partnerships

Partnerships between the public and private sector are crucial to the success of this facility. Collin County must partner and work with the railroads to determine their needs. The county can move forward and partner with the City of Farmersville to create a logistics business park within Study Area 3 that could grow to be an intermodal hub. Partnering with business and education institutions will allow the county to create to best possible logistics business park.

4.2 Moving Forward

While Study Area 3 is recommended for further study as an intermodal hub, the need for a third regional hub is not immediate. The location of an intermodal hub within Study Area 3 is dependent upon the wishes of the City of Farmersville and the needs of the railroad. If the city and county are interested in moving forward with locating an intermodal hub within Study Area 3, it is recommended that the city begin acquiring the land for the intermodal hub so that the land is in public control. While the City of Farmersville and Collin County could move ahead and take these preliminary steps to make the area attractive as an intermodal hub, ultimately the decision to place an intermodal hub within Collin County ultimately rests with the Class I Railroads.

APPENDIX A
MAPS

Figure A-1 Study Area 1 Land Use

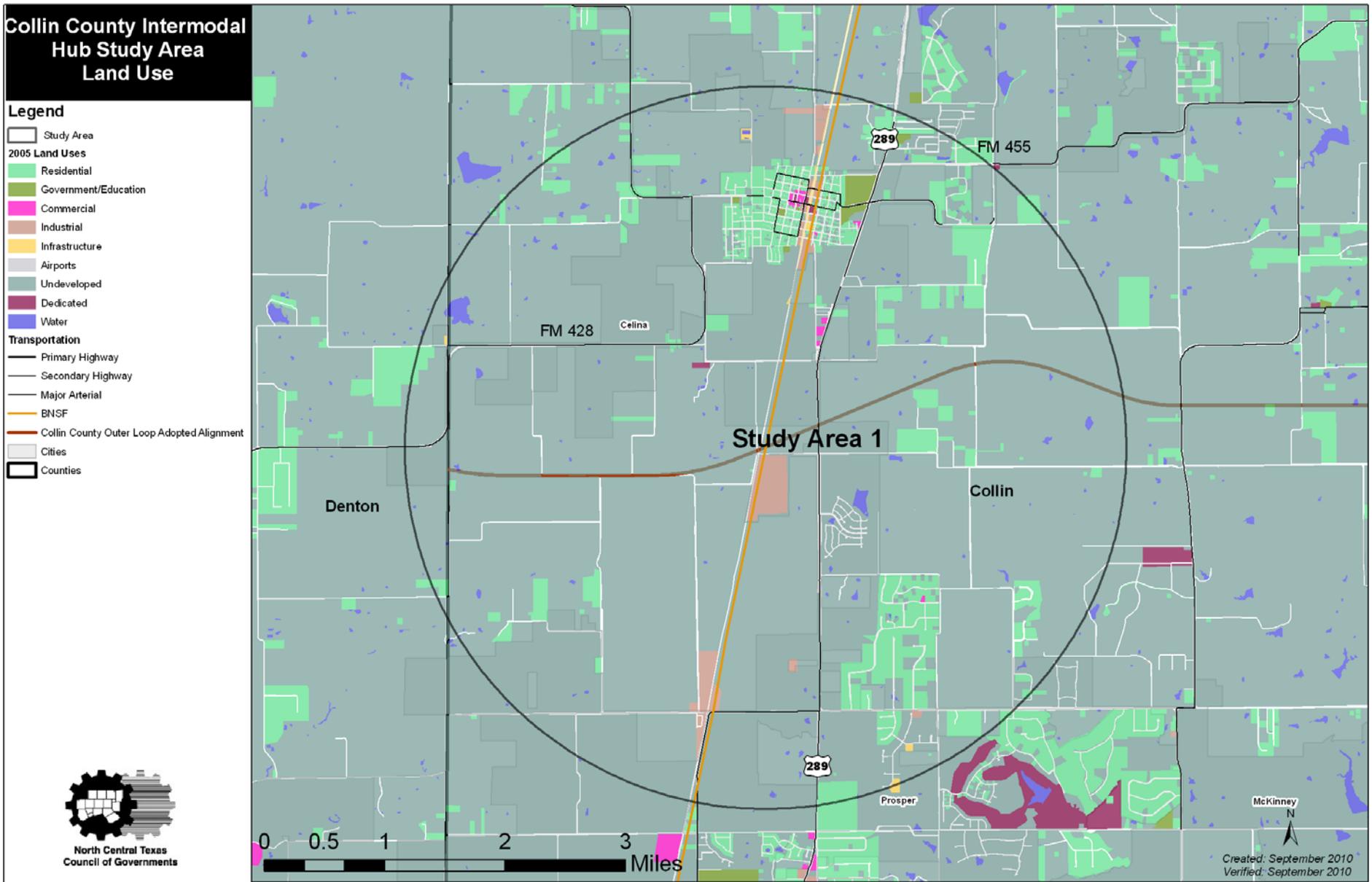


Figure A-2 Study Area 2 Land Use

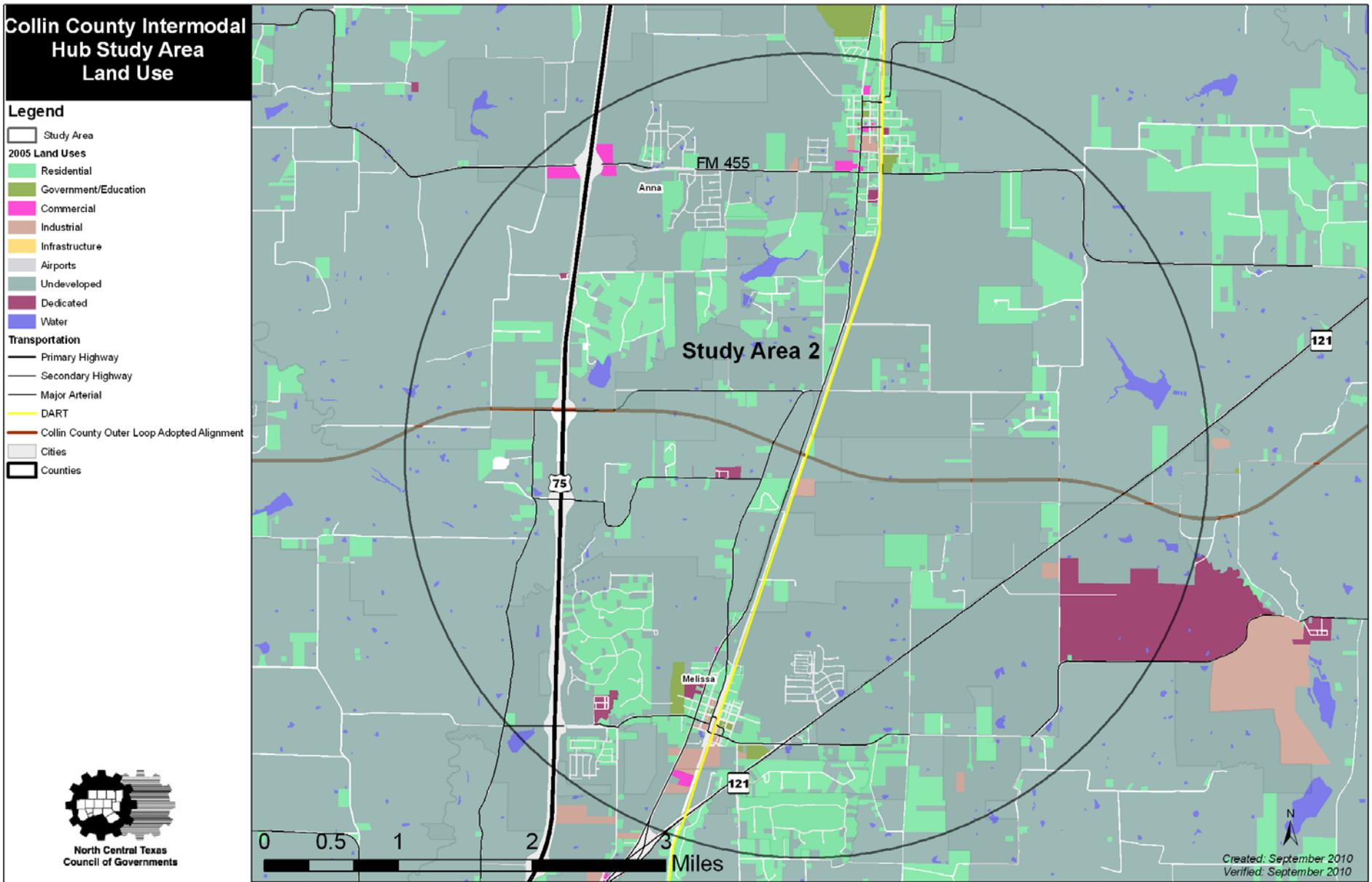


Figure A-3 Study Area 3 Land Use

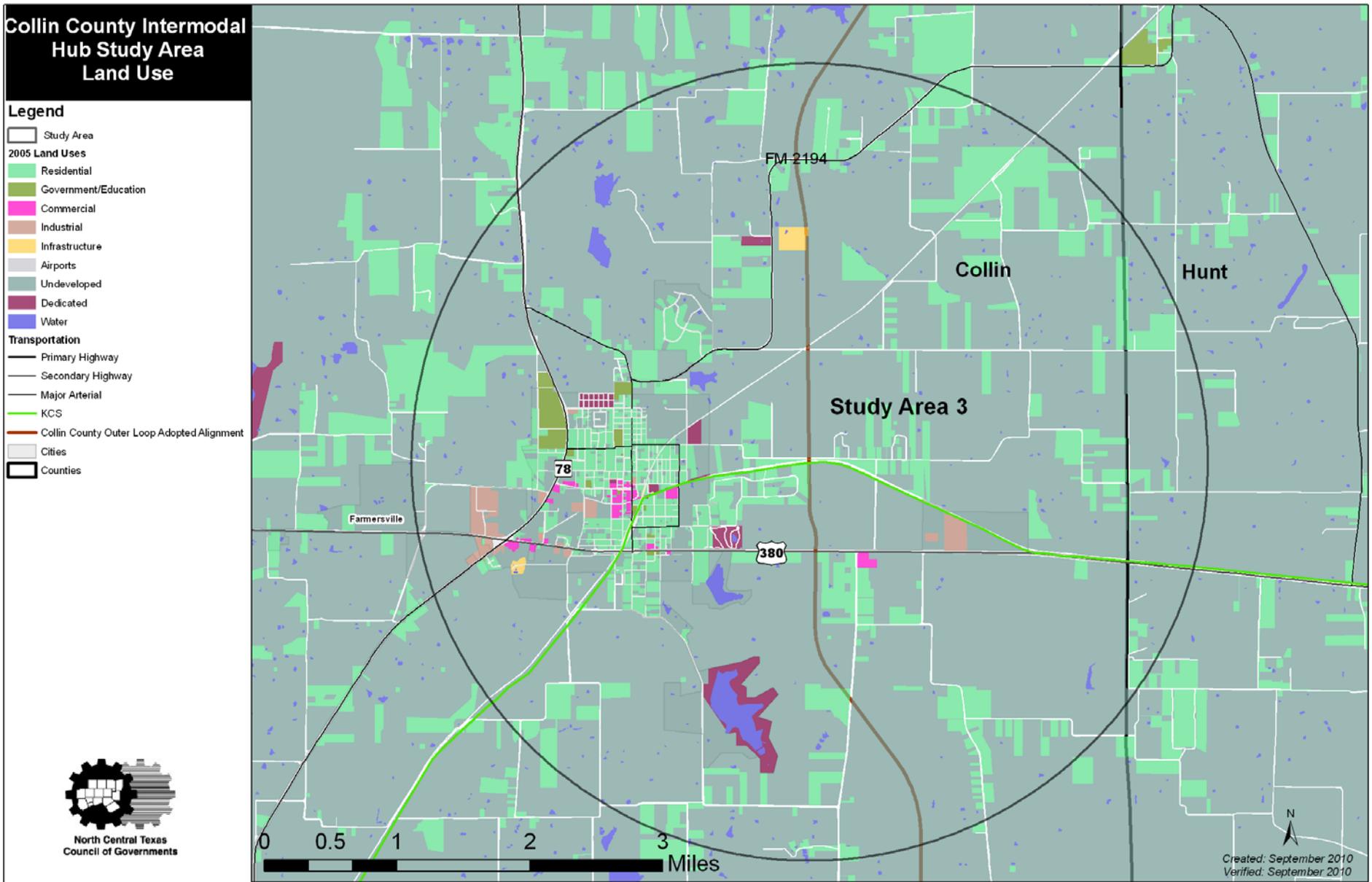


Figure A-4 Study Area 4 Land Use

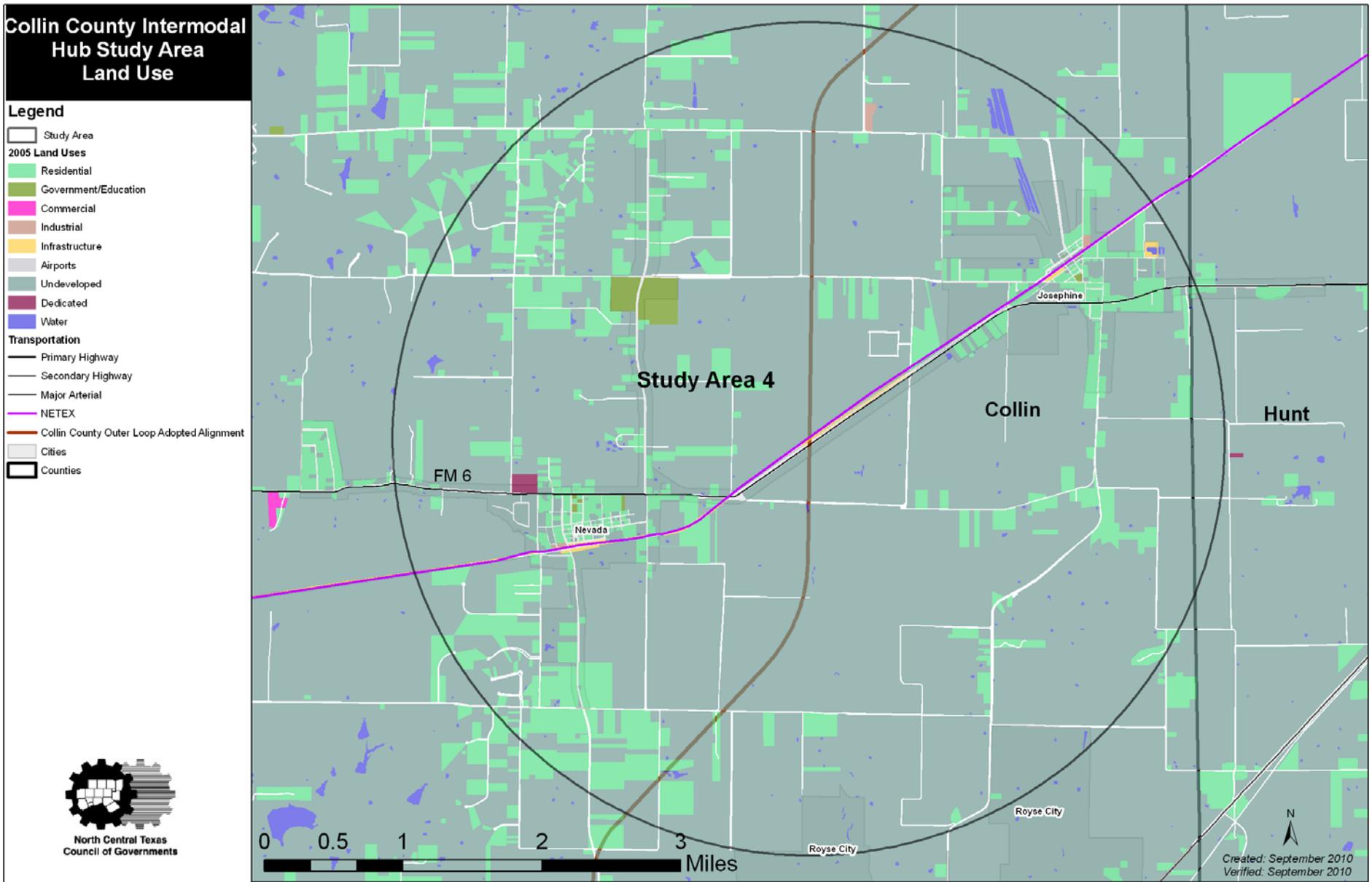


Figure A-5 Study Area 5 Land Use

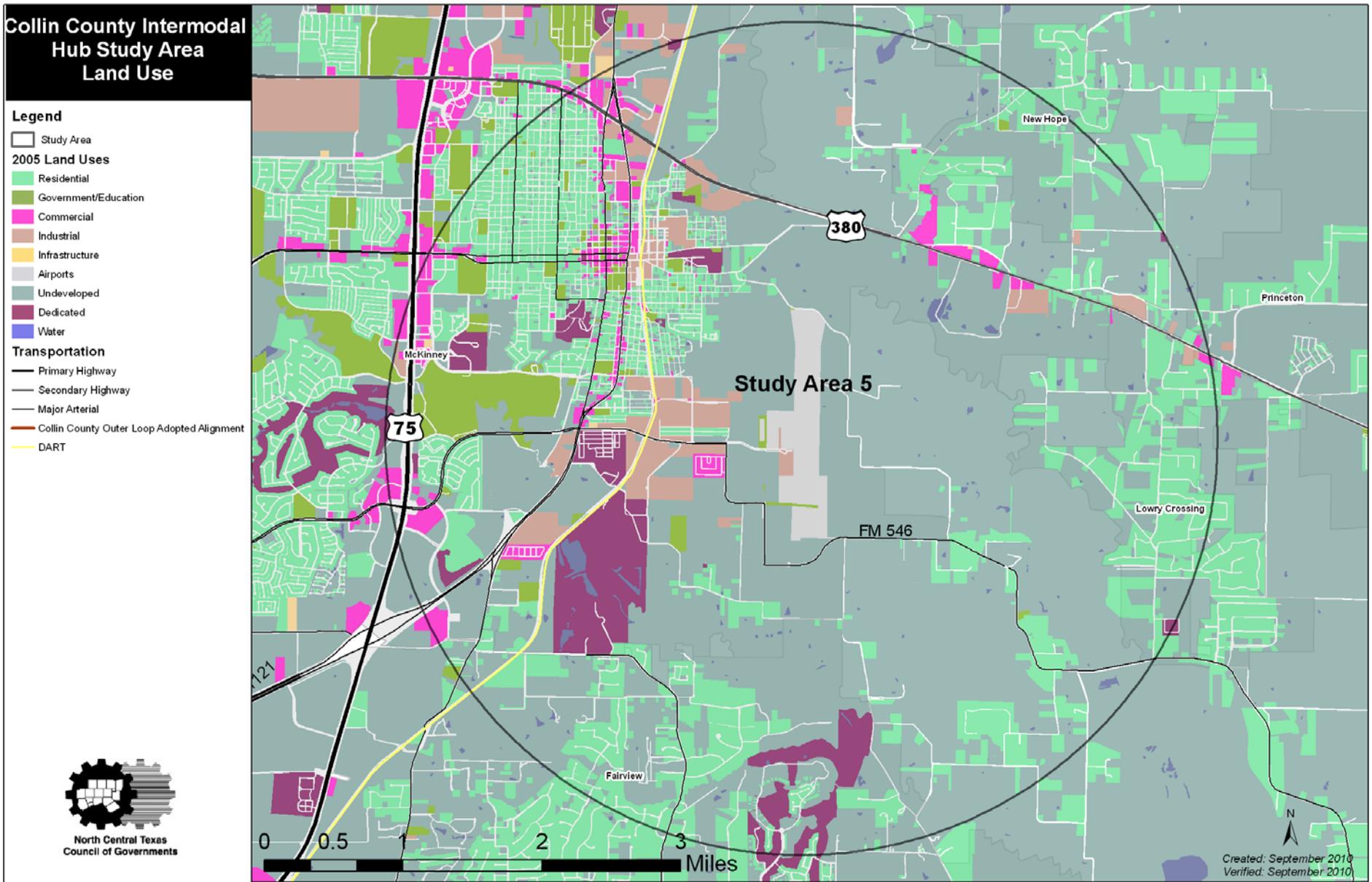


Figure A-6 Independent School Districts (ISD) within the Study Areas

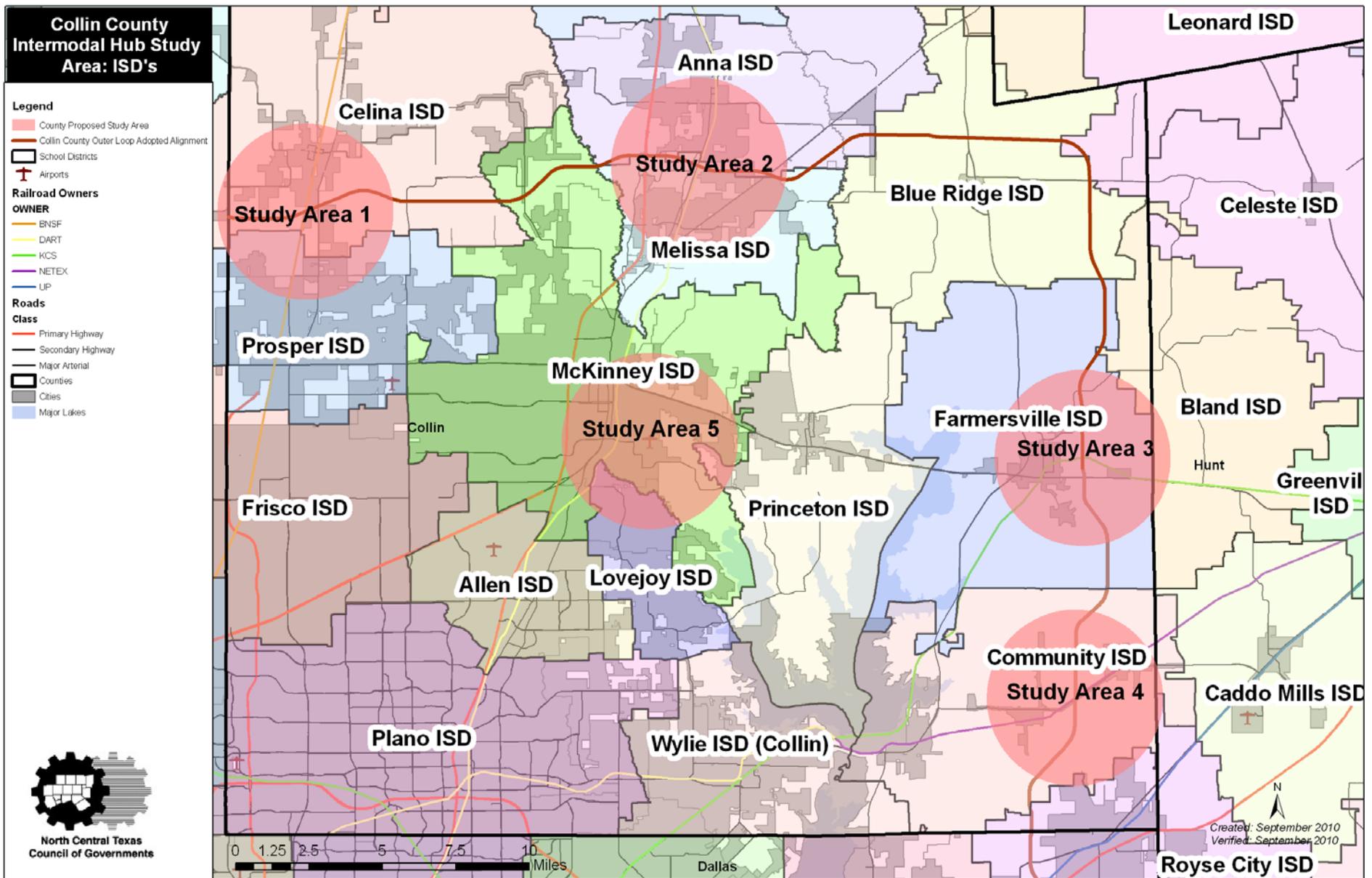


Figure A-7 Historical Elements in Study Area 5

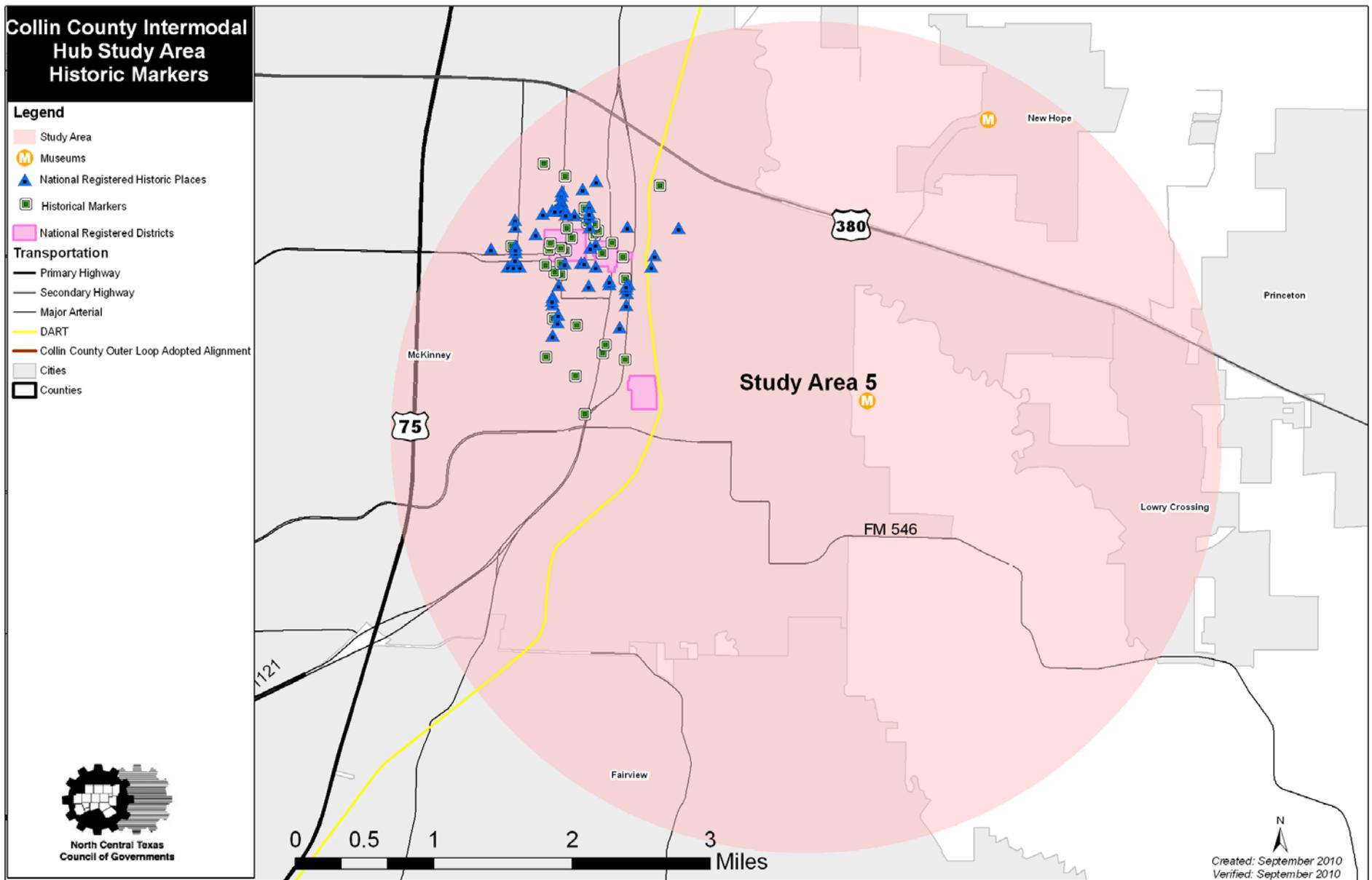


Figure A-8 Historical Elements in Study Area 3

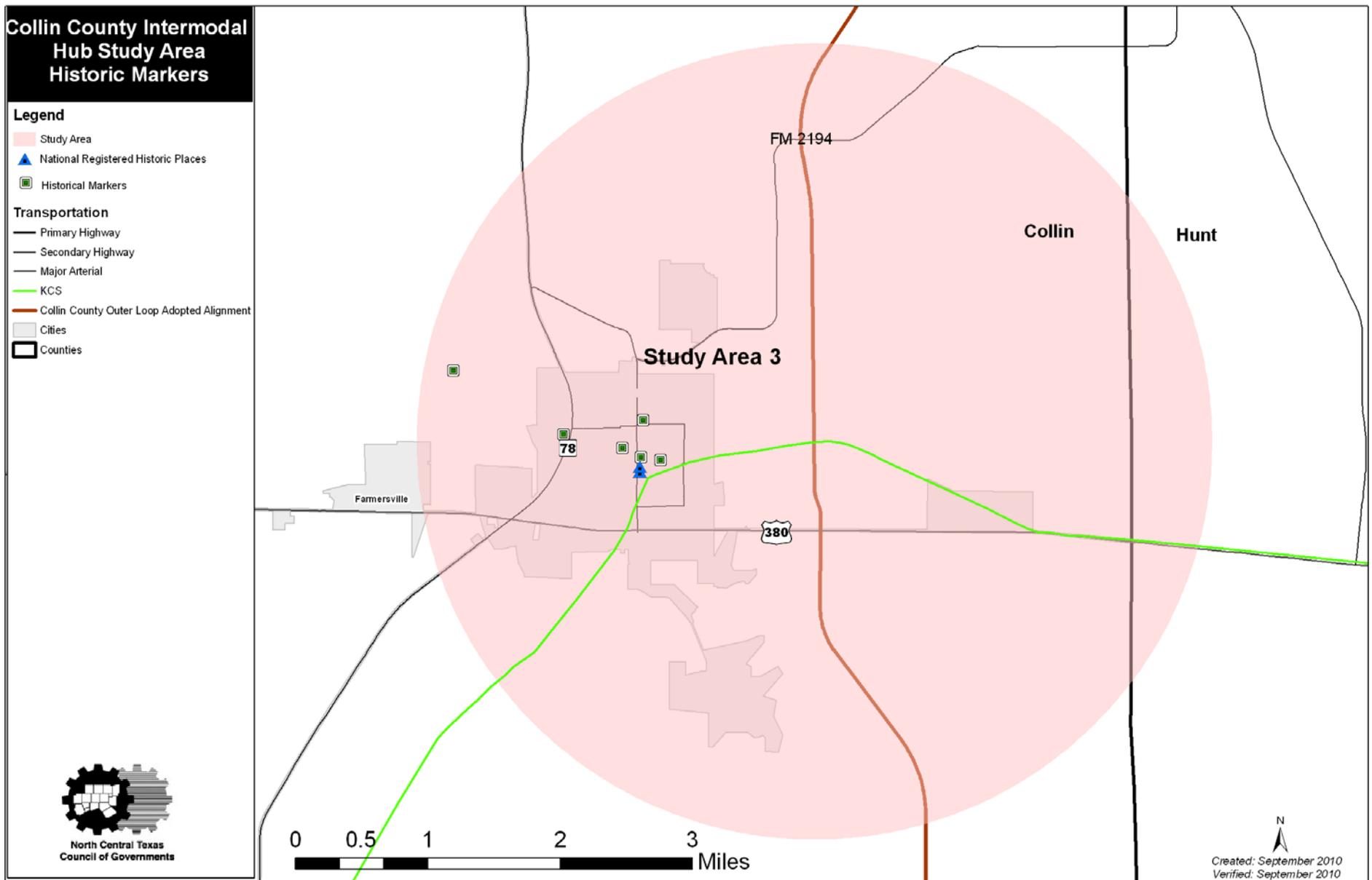


Figure A-9 Historical Markers in Study Area 1

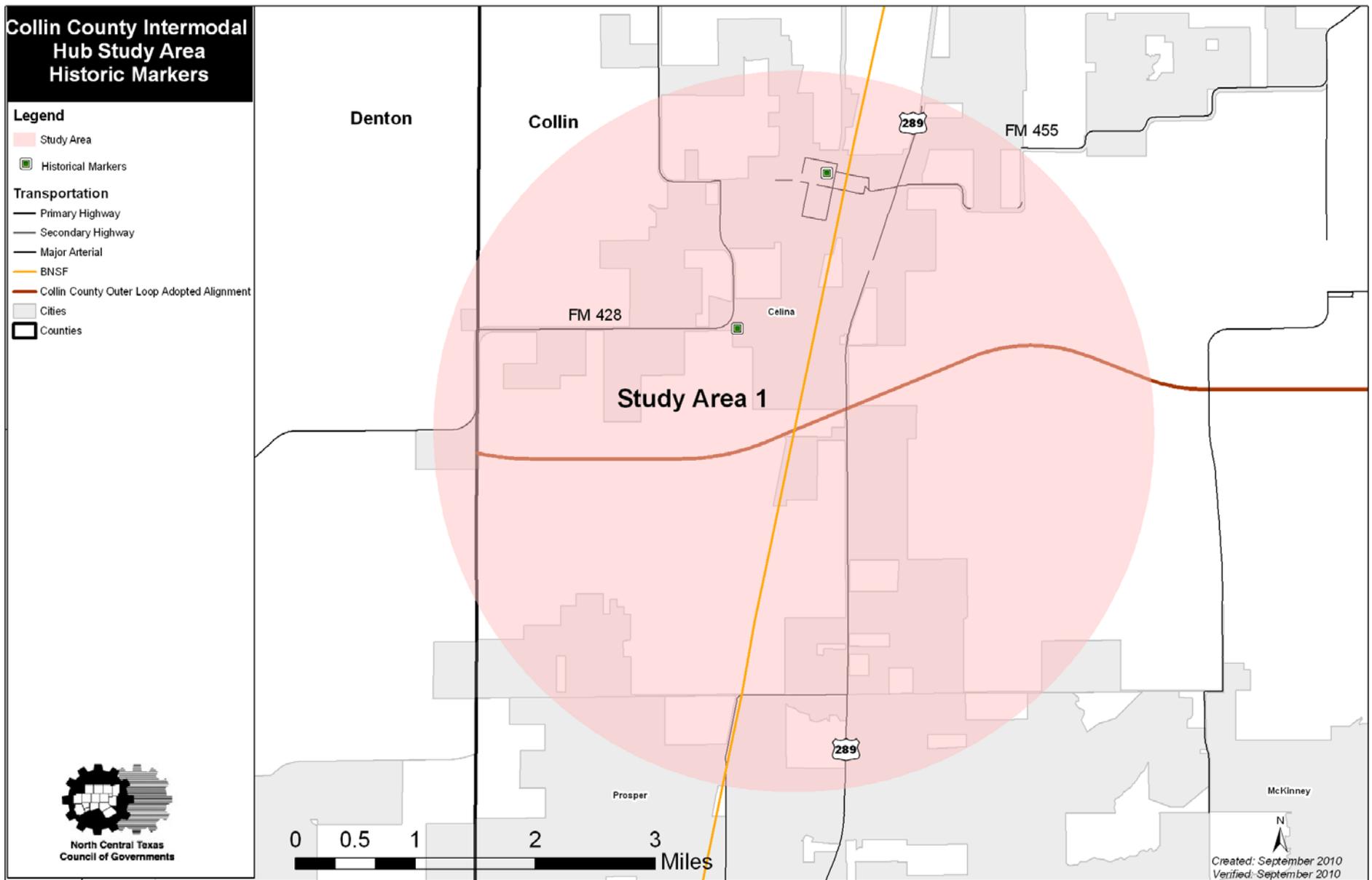


Figure A-10 Historical Markers in Study Area 2

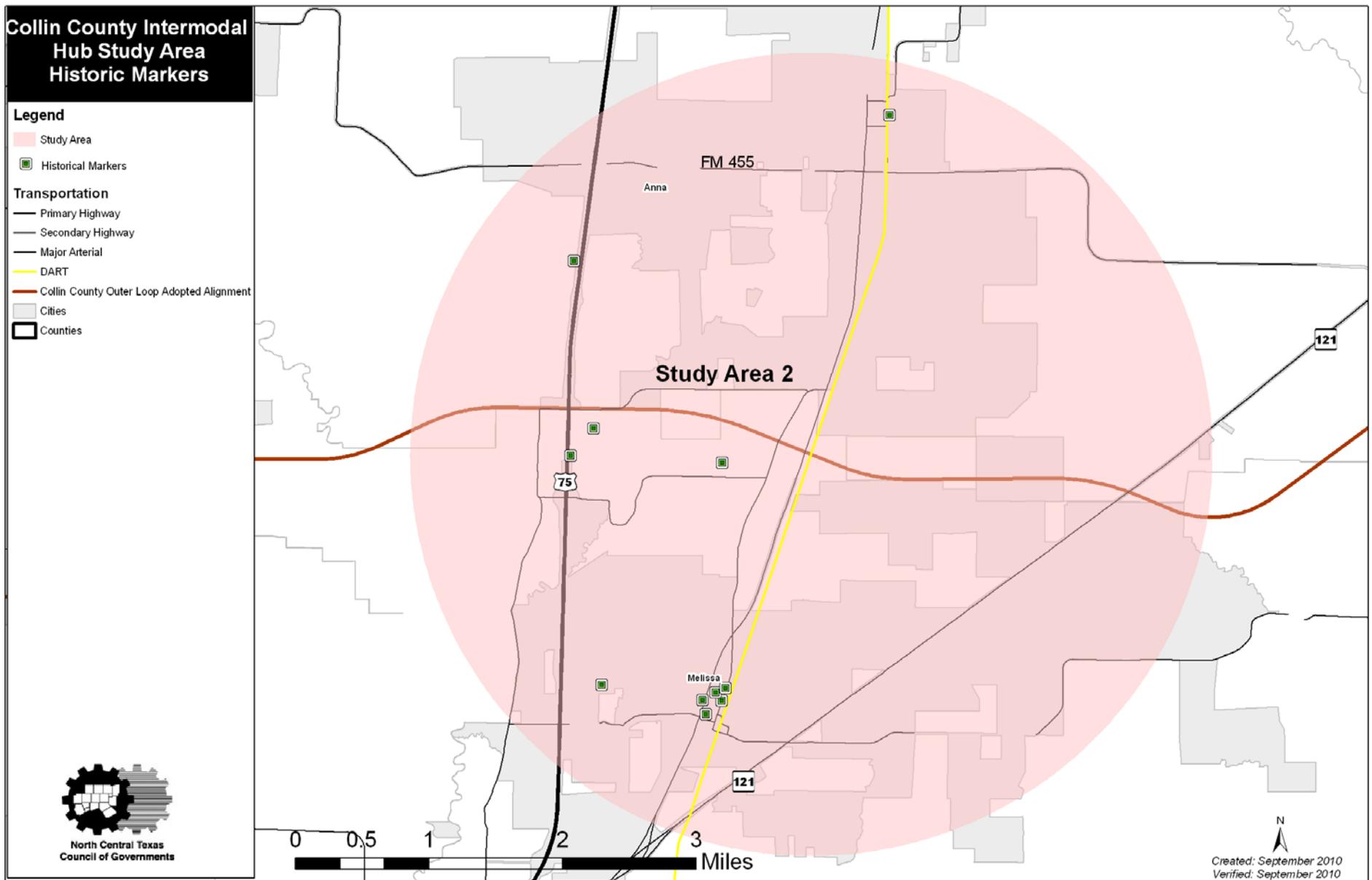


Figure A-11 Historical Markers in Study Area 4

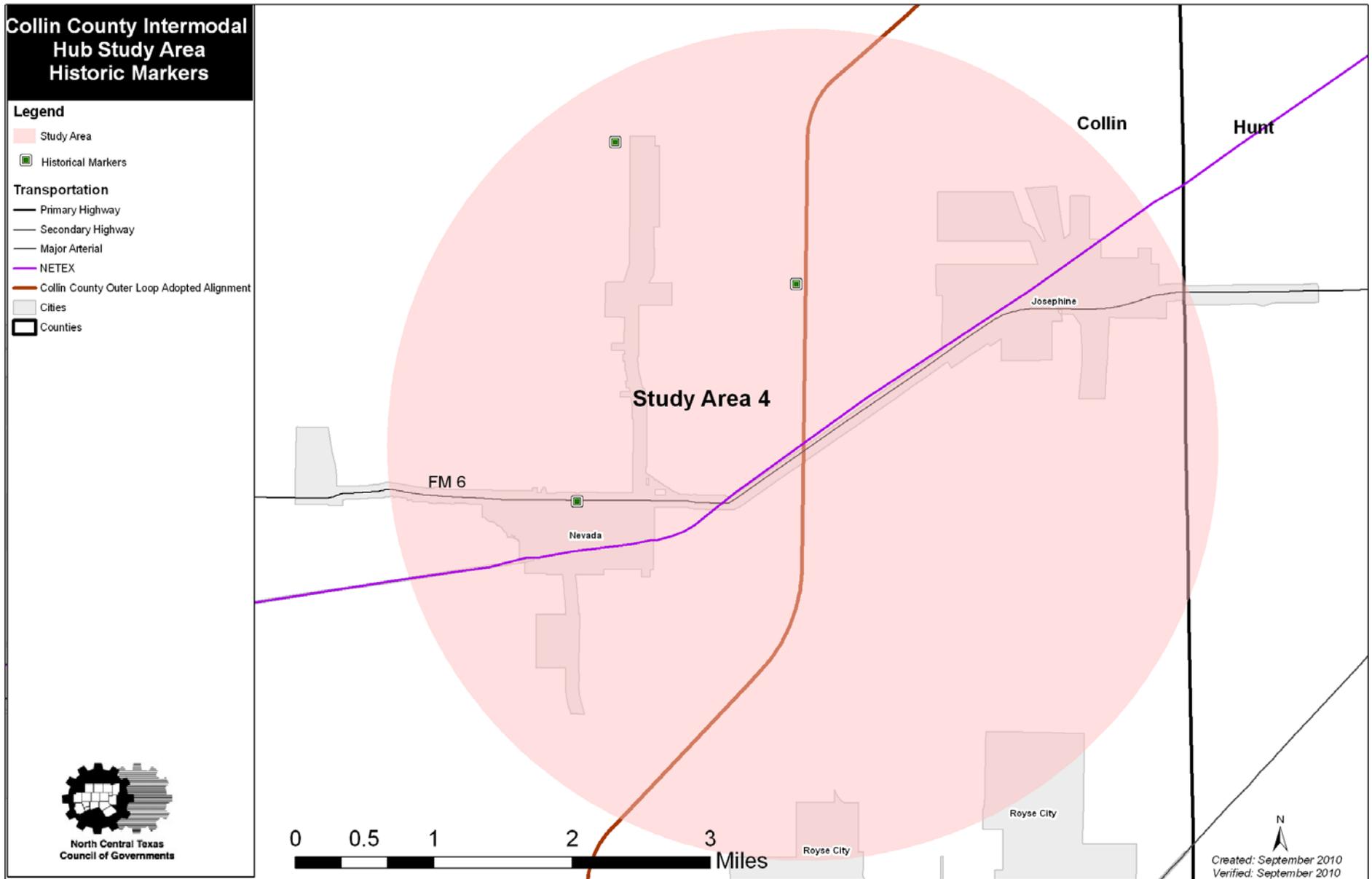


Figure A-12 Cemeteries in Study Area 1

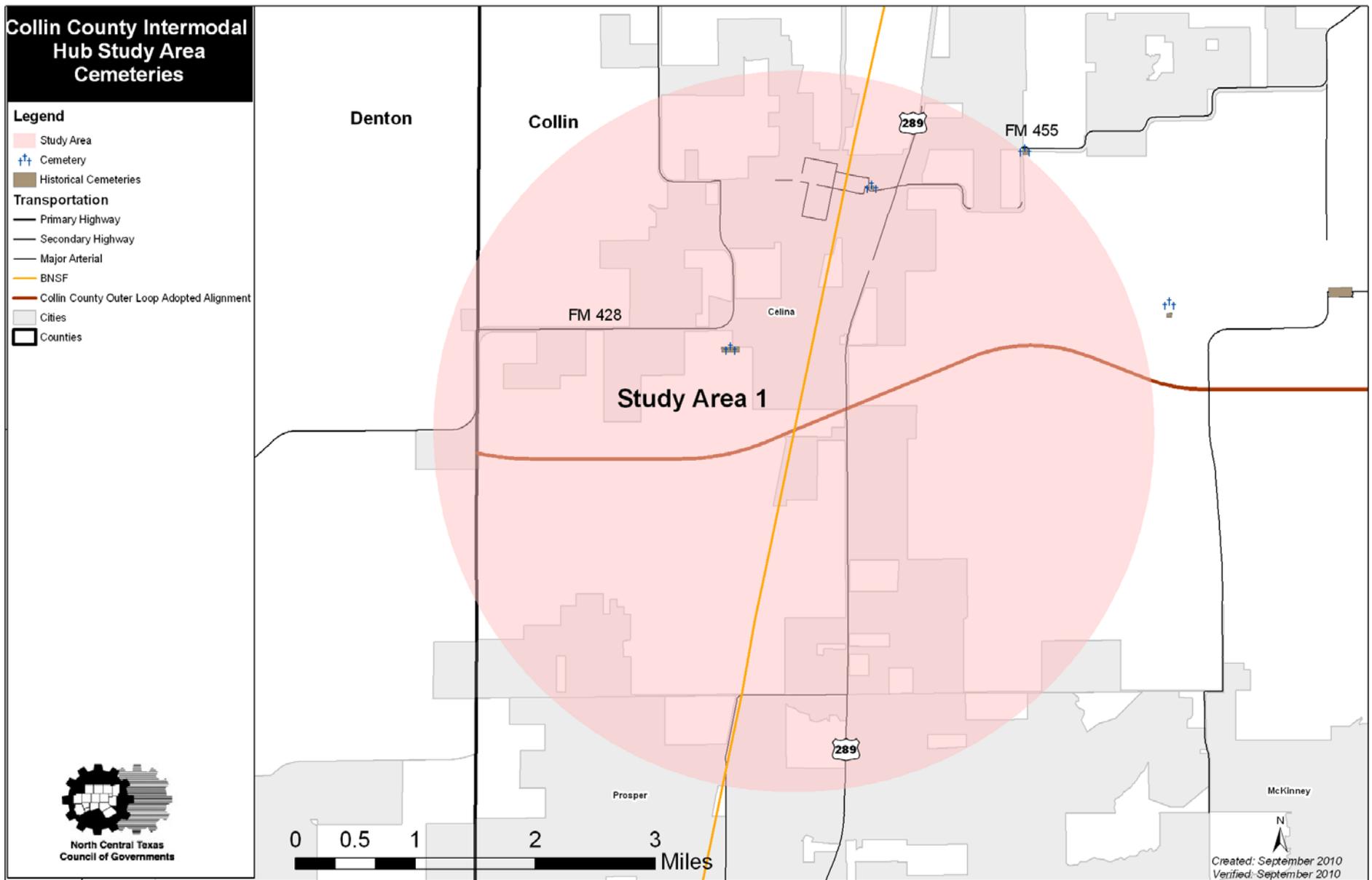


Figure A-13 Cemeteries in Study Area 2

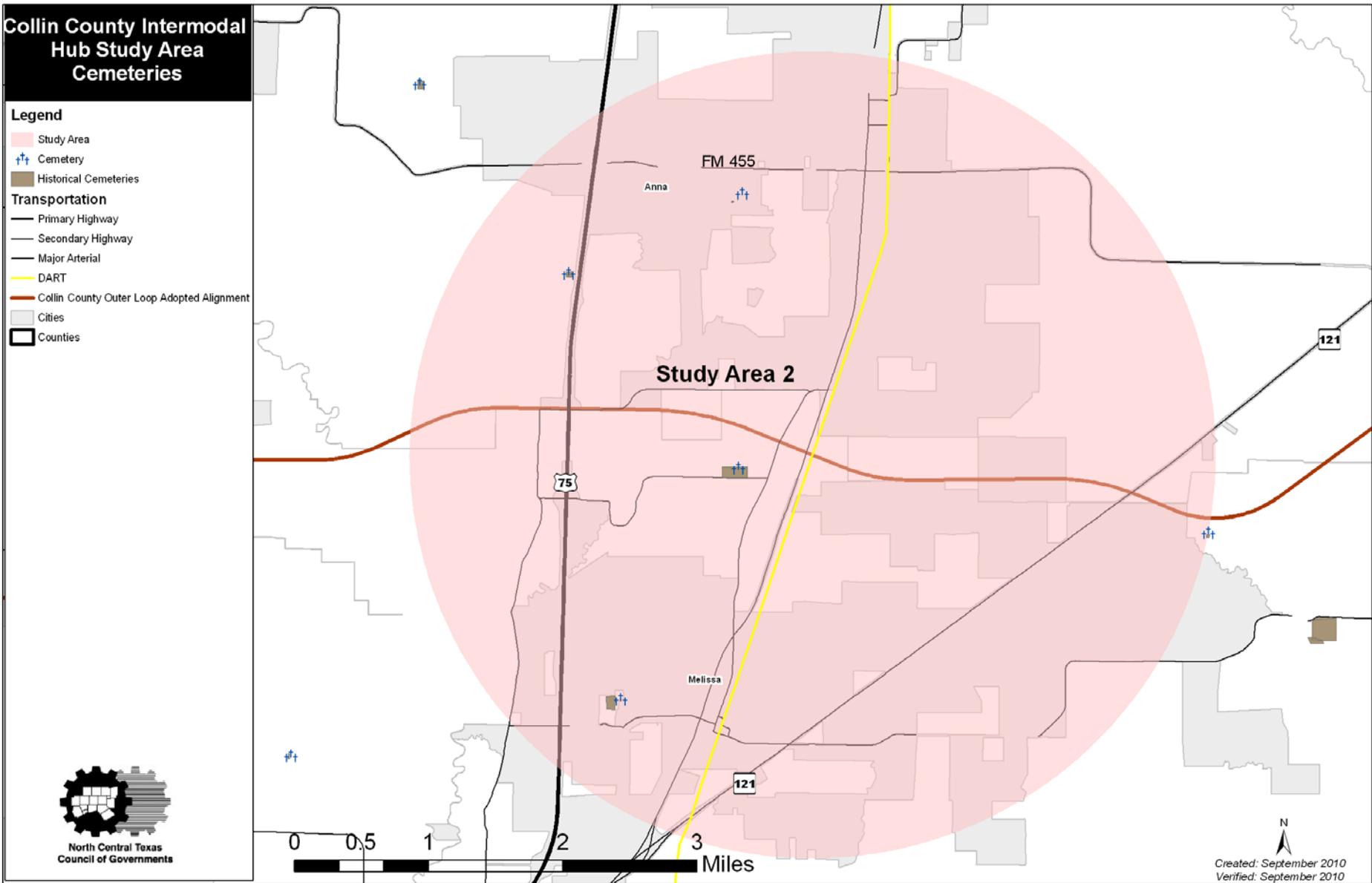


Figure A-14 Cemeteries in Study Area 3

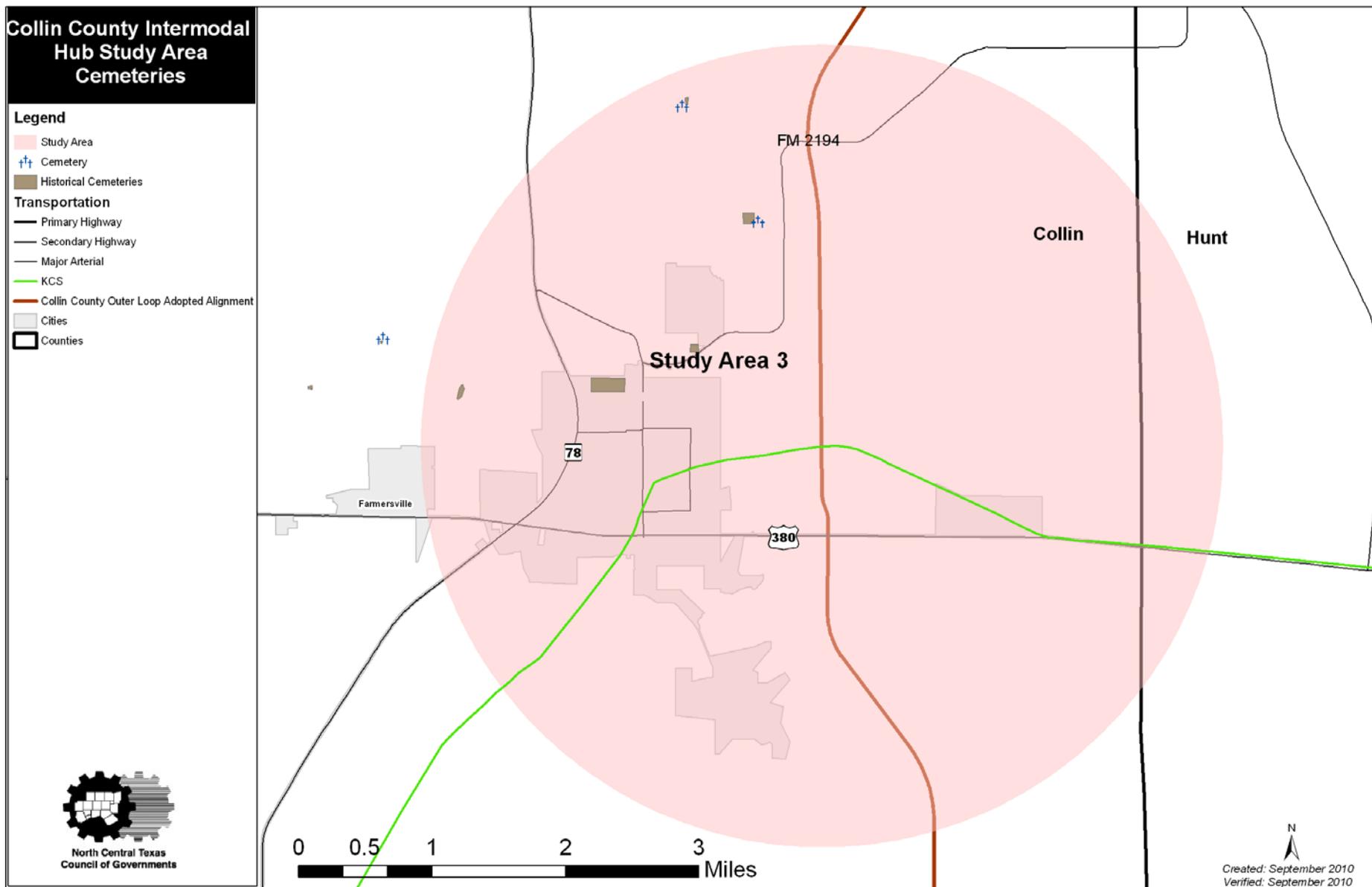


Figure A-15 Cemeteries in Study Area 4

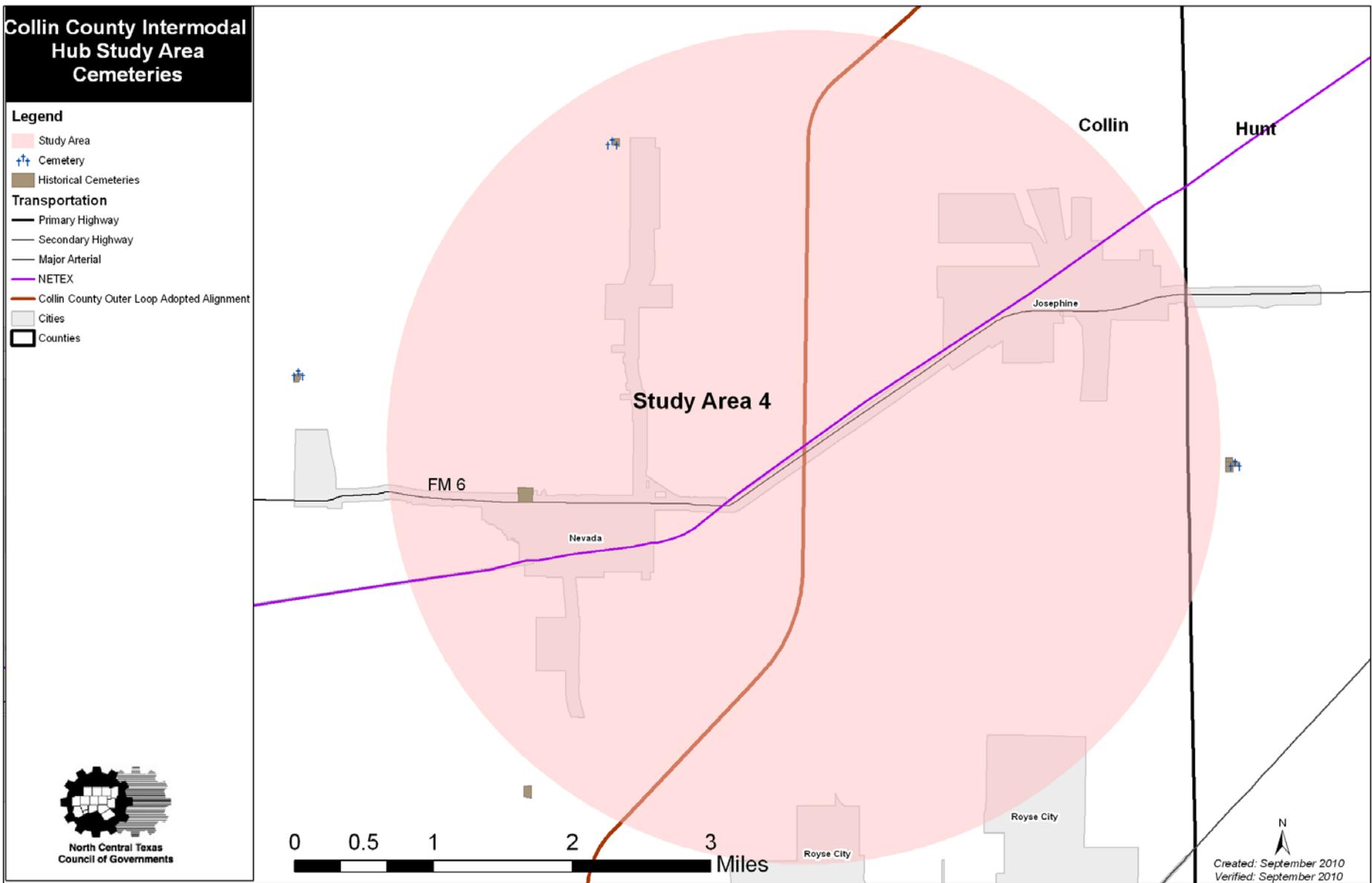


Figure A-16 Cemeteries in Study Area 5

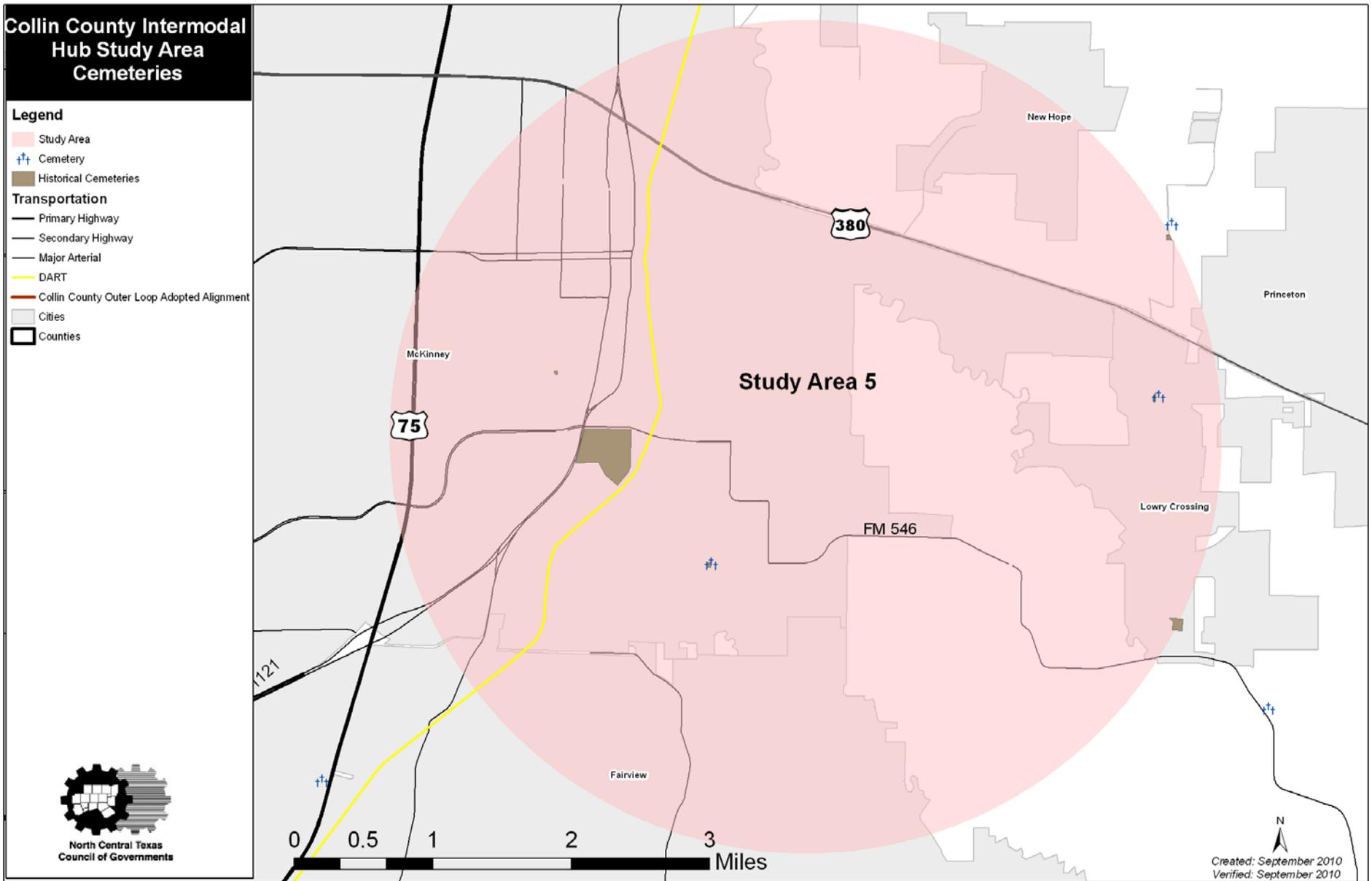


Figure A-17 Census Tracts within the Study Areas

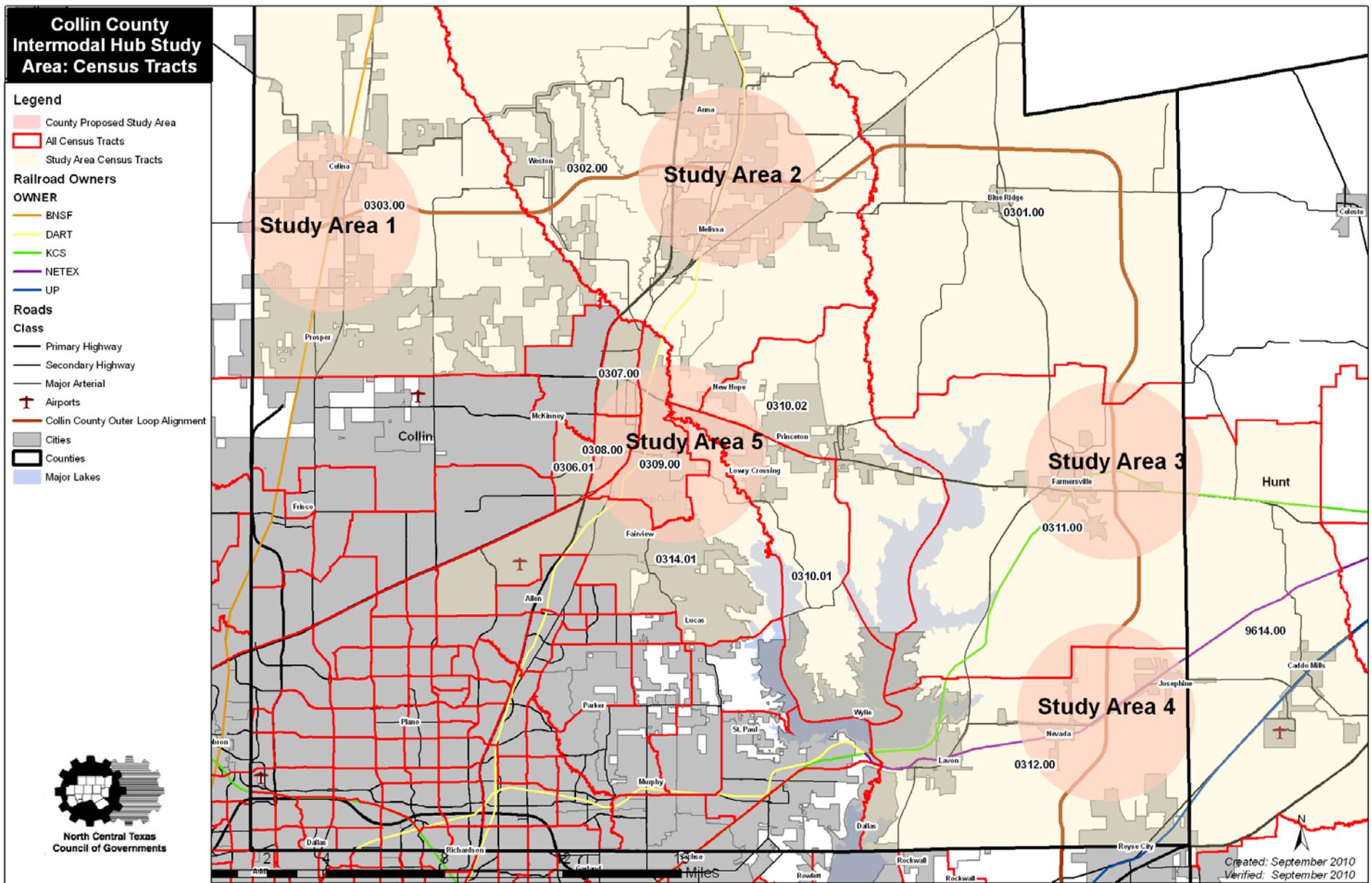


Figure A-18 Floodplains in Study Area 1

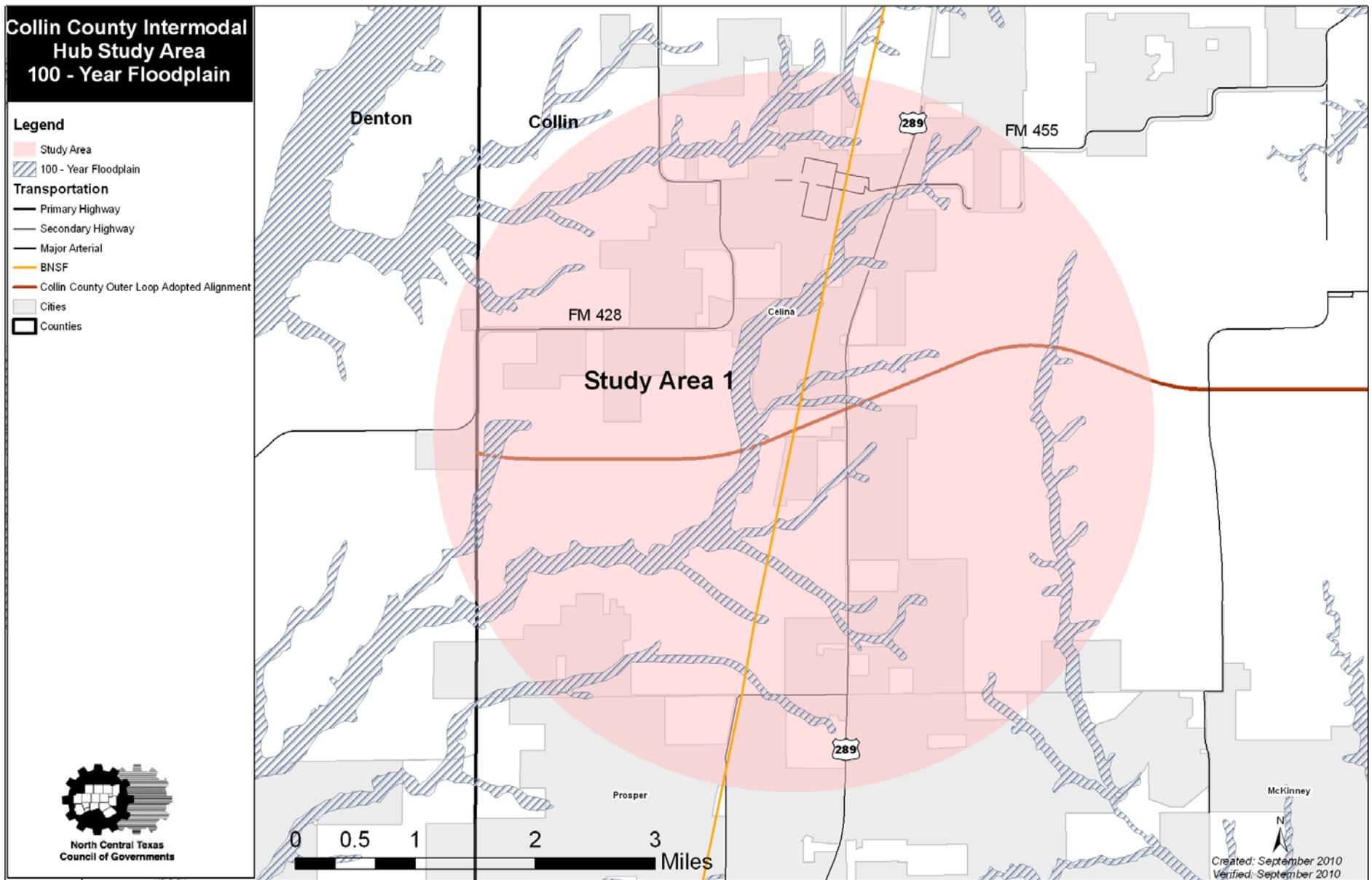


Figure A-19 Floodplains in Study Area 2

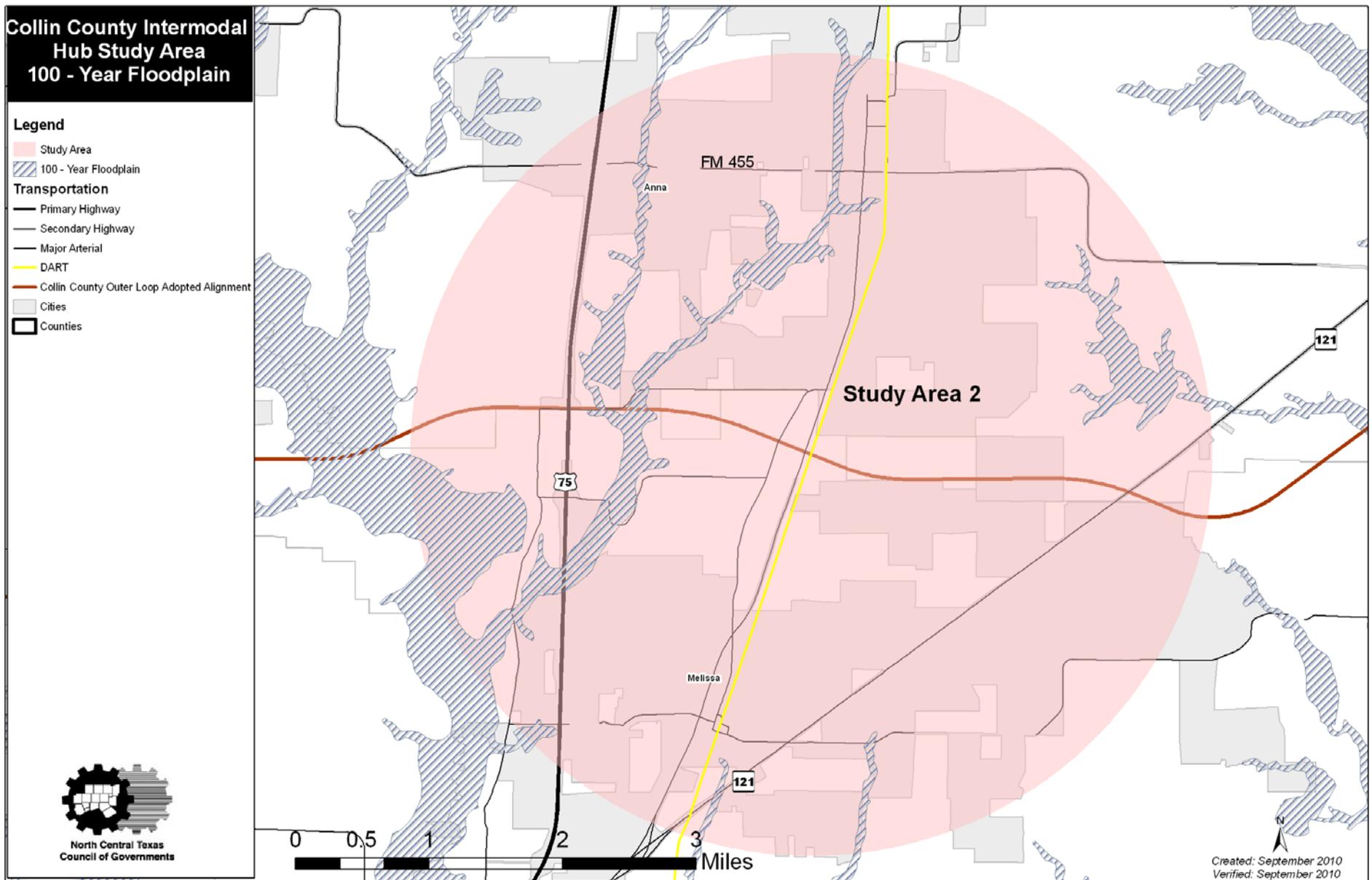


Figure A-20 Floodplains in Study Area 3

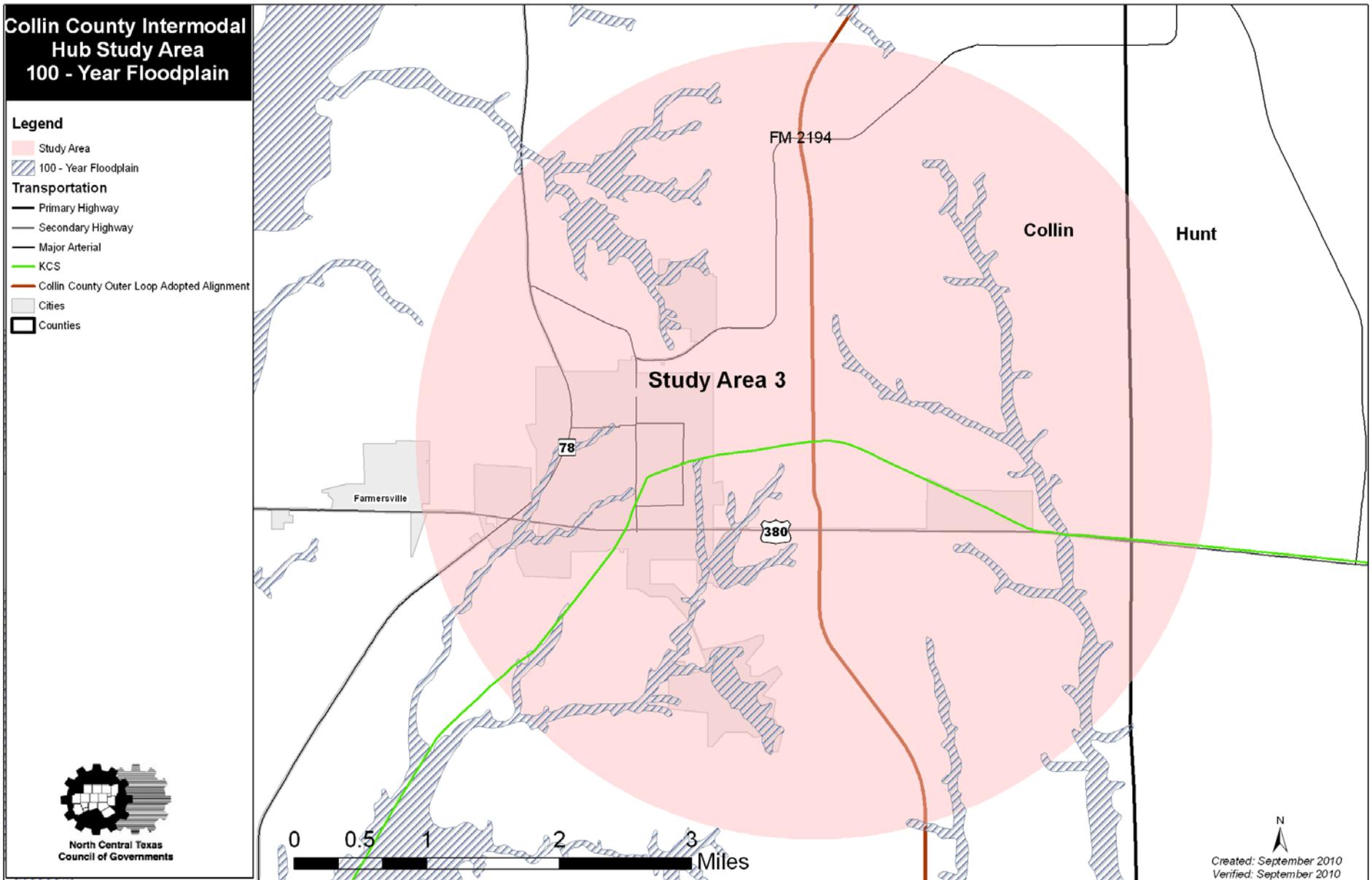


Figure A-21 Floodplains in Study Area 4

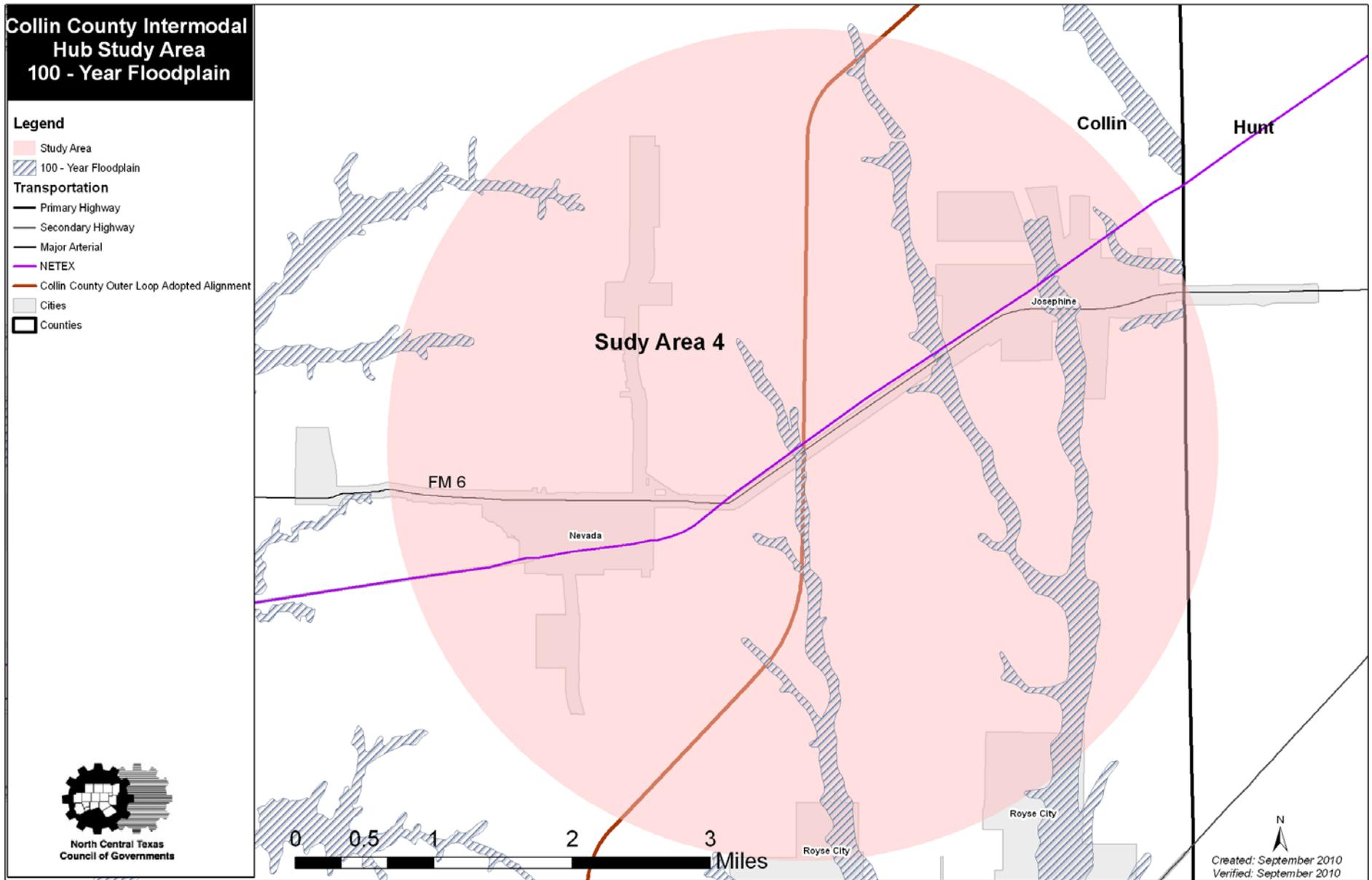


Figure A-22 Floodplains in Study Area 5

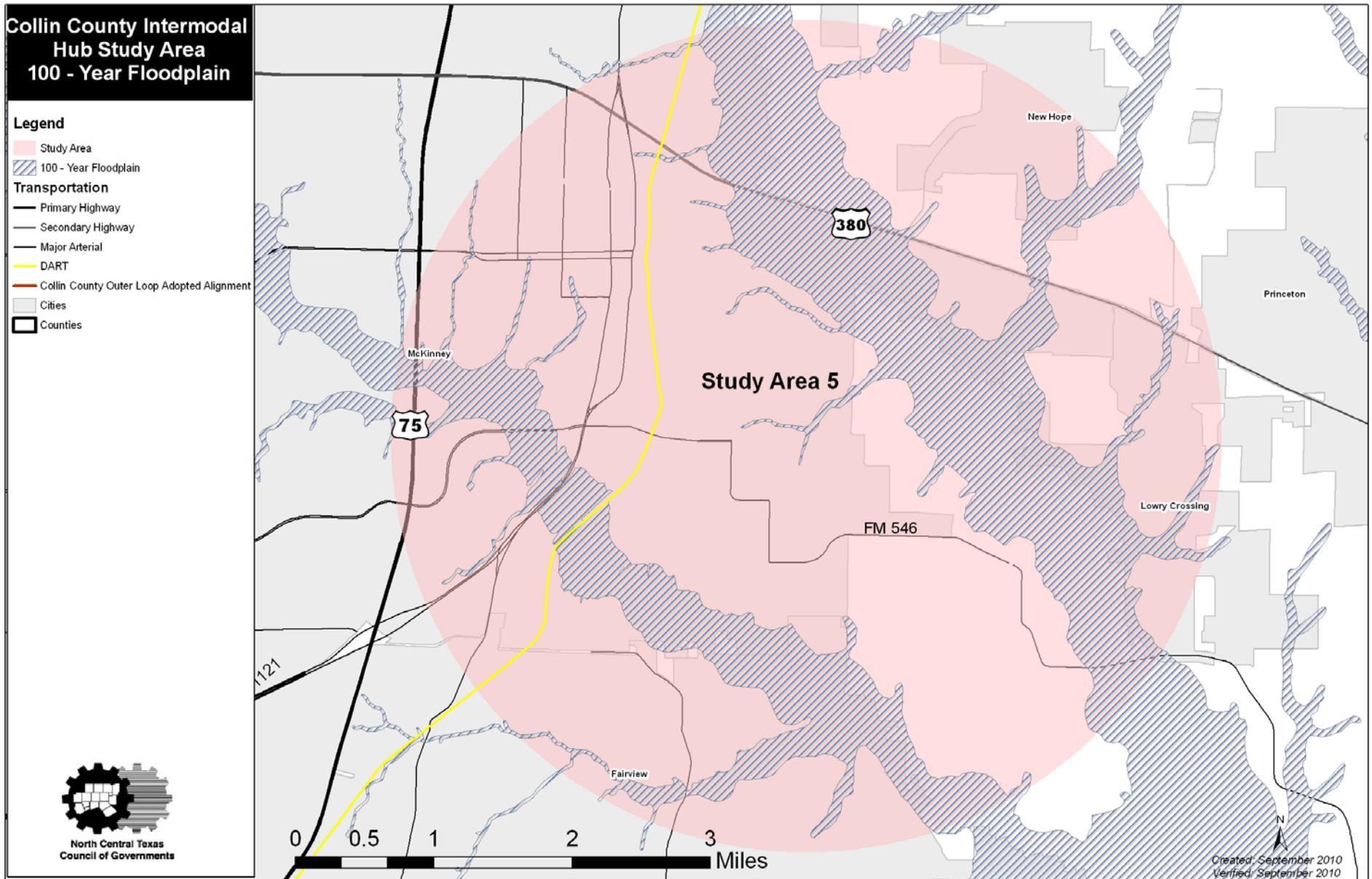


Figure A-23 Wetlands in Study Area 1

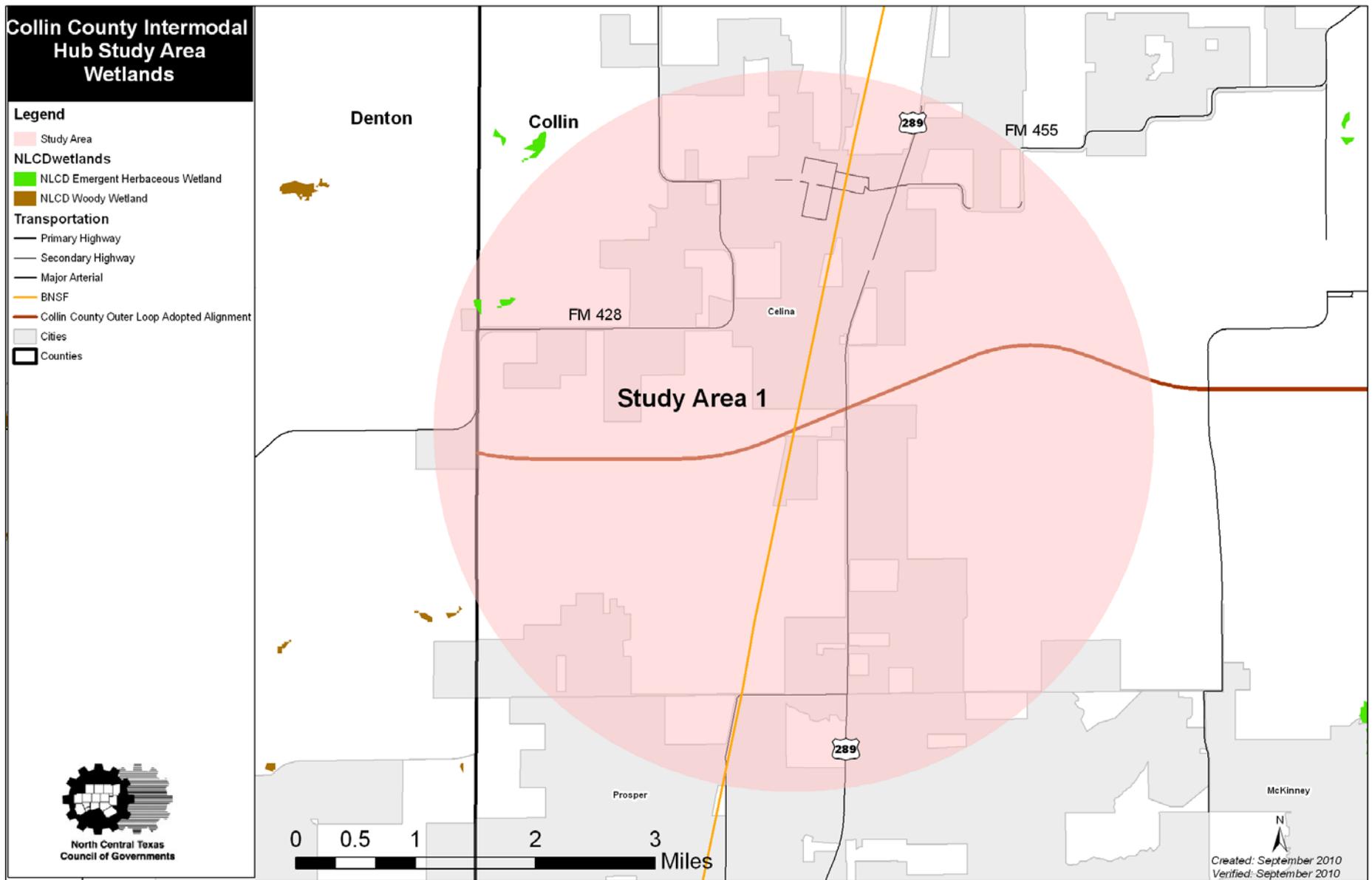


Figure A-24 Wetlands in Study Area 2

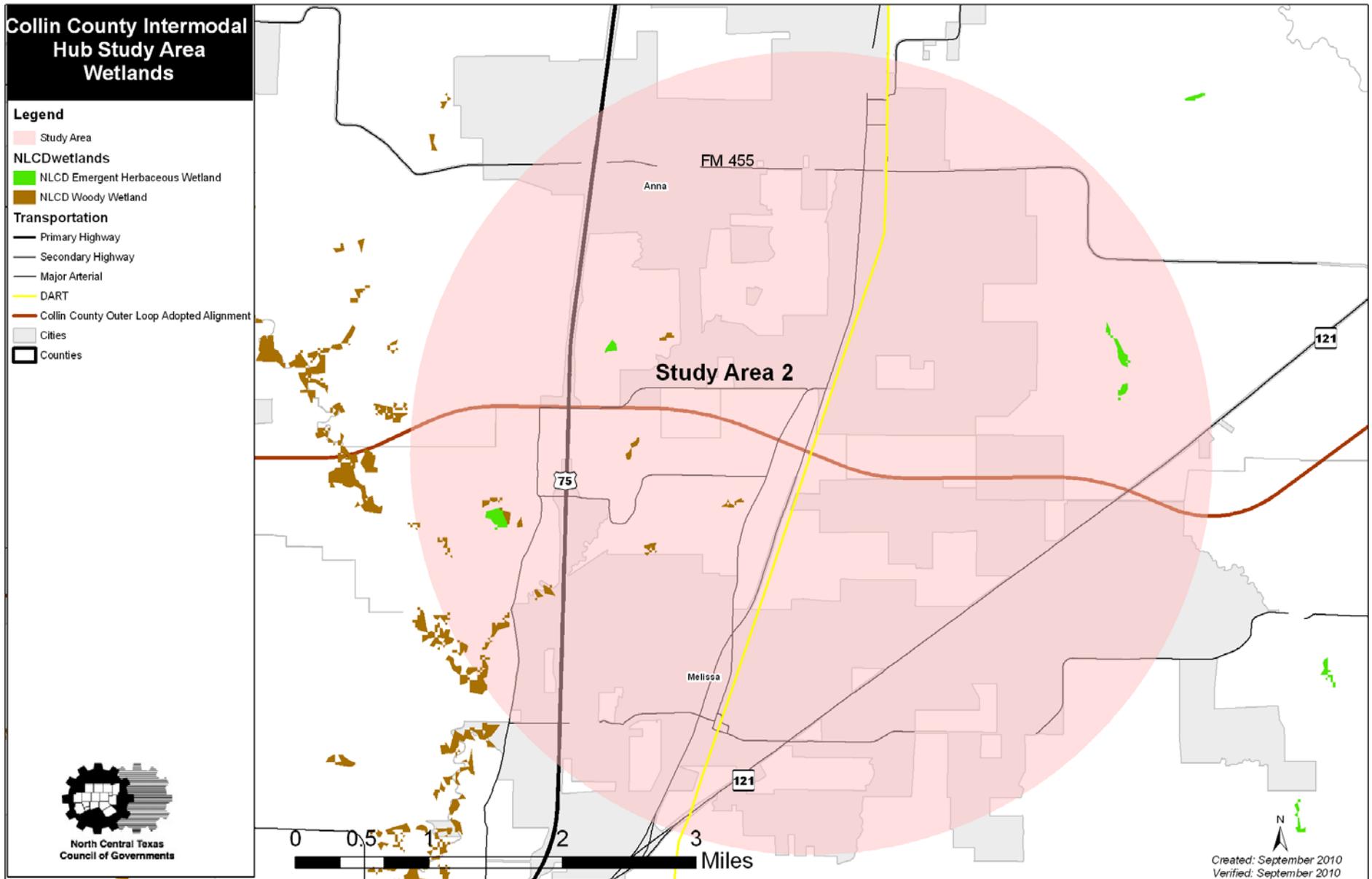


Figure A-25 Wetlands in Study Area 3

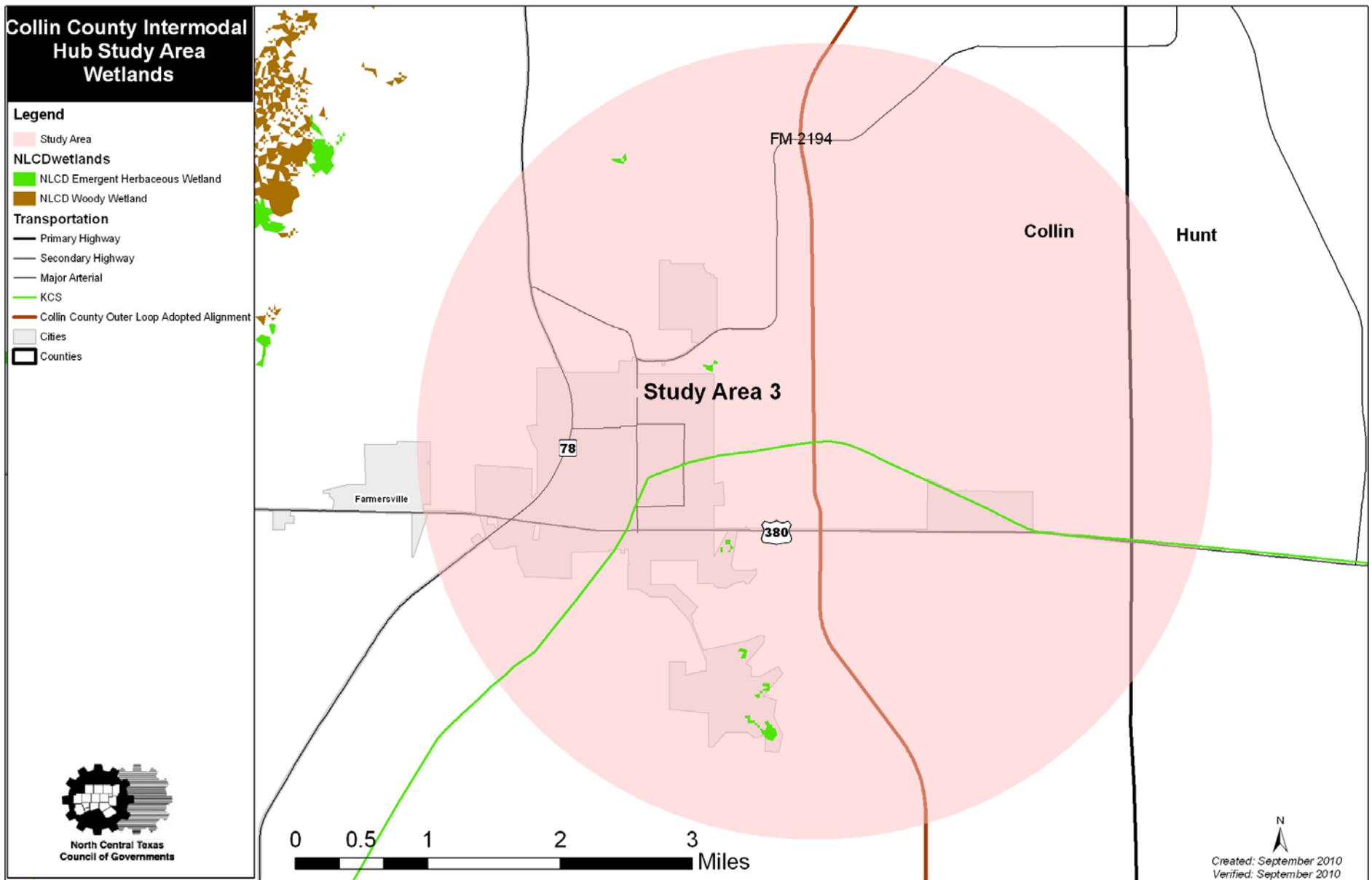


Figure A-26 Wetlands in Study Area 4

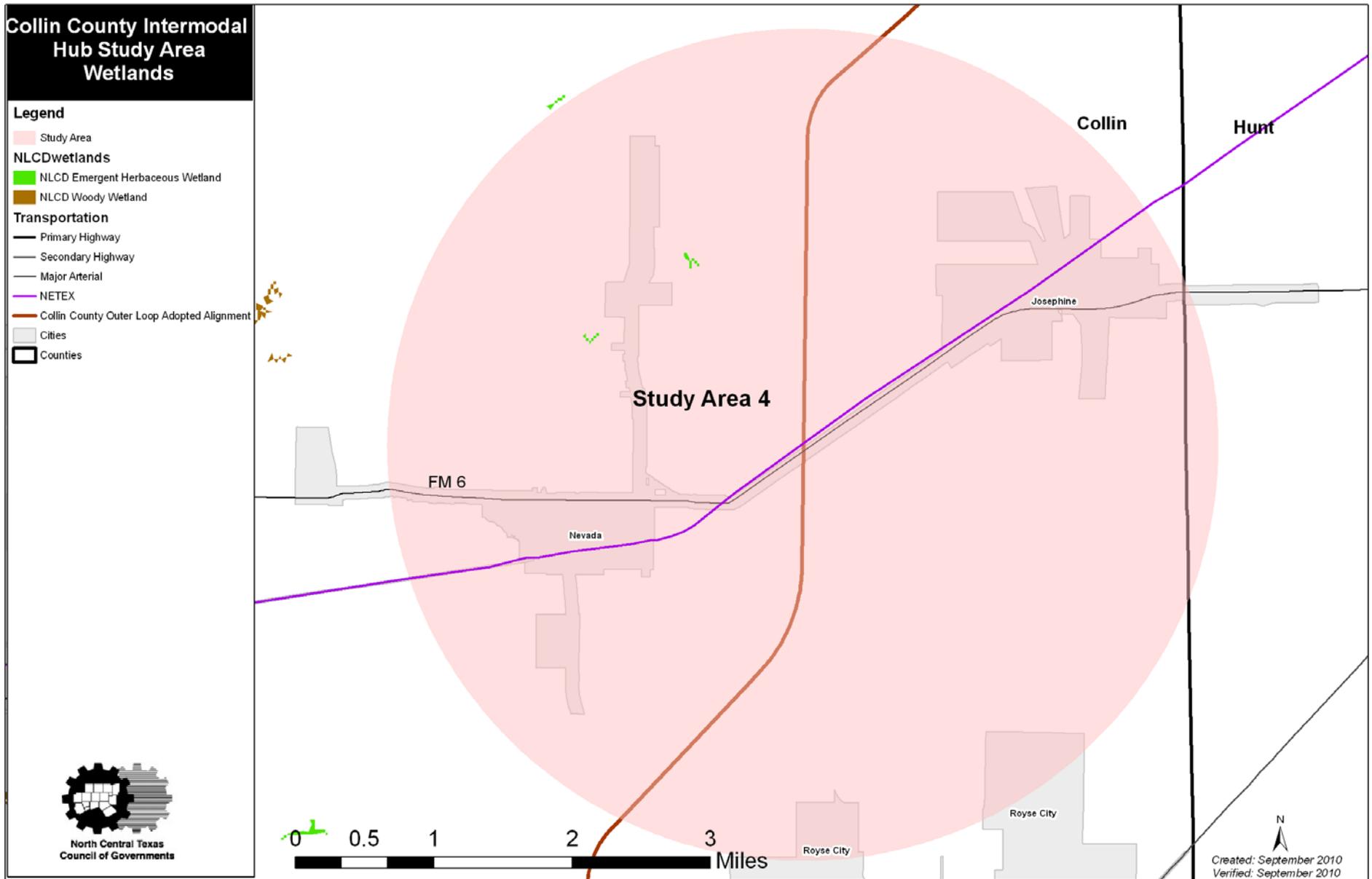


Figure A-27 Wetlands in Study Area 5

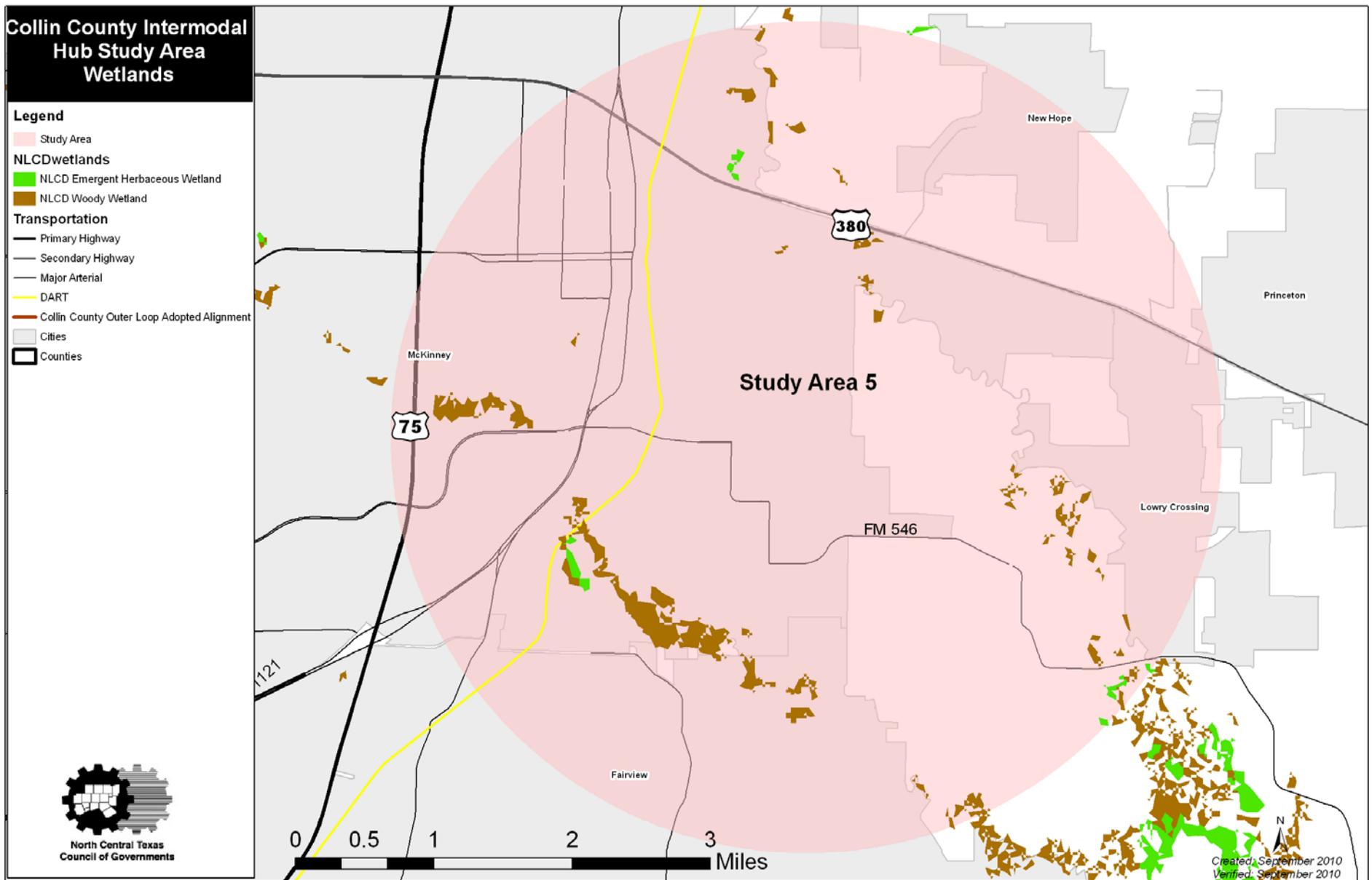
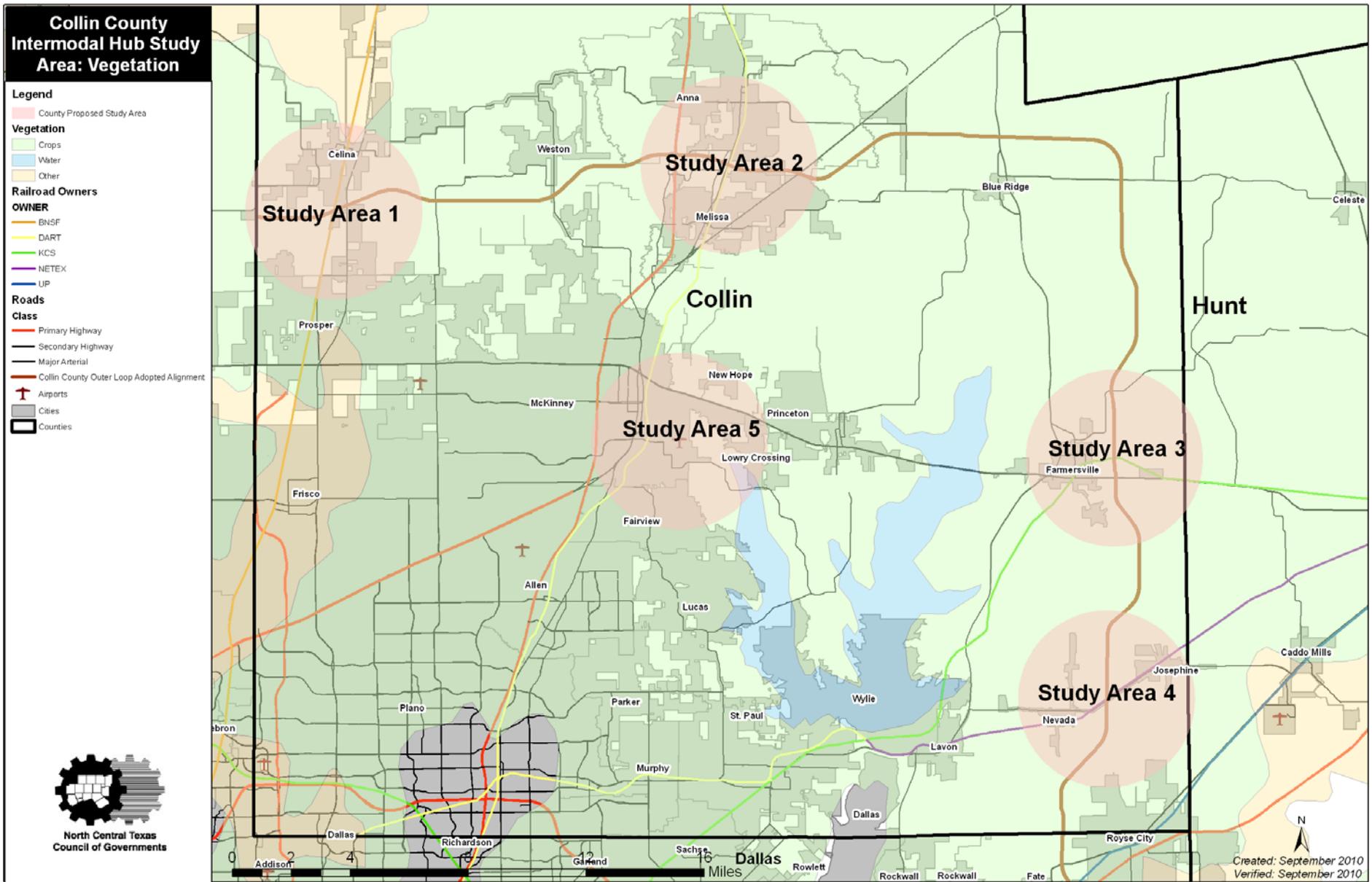


Figure A-28 Vegetation Types within the Study Areas



APPENDIX B
SITE SELECTION MATRIX

Intermodal Hub Study Site Location Matrix

Need	Criteria Explanation
A minimum of 2,500 acres	Is there a site with a minimum of 2,500 contiguous acres within the study area?
Land is flat with a slope of less than 3%	Is more than 50% of the land within the study area at a slope of less than 3%?
Access to a rail line	Does the study area have access to/is adjacent to an active through rail line?
Land adjacent to rail is linear	Is the land within the study area that is adjacent to the rail line linear and parallel to the track?
A minimum of 10,000 feet of track, on a tangent	Is there a minimum of 10,000 feet of track located within the 2,500 acre site?
Access to a major roadway facility	Does the study area have access to an existing major Interstate Highway, State Highway, or US Highway?
Access to air transportation*	Is there a general aviation airport located in the study area?
Access to/Availability of Utilities:	
• Water	Does the site have the ability to access water pipelines? (Need would be determined at a later date)
• Electricity	Are there electrical providers serving the study area?
• Gas and Pipelines	Does the site have the ability to access gas and pipelines? (Need would be determined at a later date)
• Sanitation	Does the site have the ability to access sanitation infrastructure? (Need would be determined at a later date)
• Storm Water	Does the site have the ability to access storm water infrastructure? (Need would be determined at a later date)
• Communication Systems	Does the site have the ability to access communication systems?
Available workforce	Does the study area have an available workforce population within or adjacent to it? (number of working age adults, 16 or over) Employment numbers for persons 16 years and older are shown in Table 3.17 in Chapter 3. While these are Census 2000 numbers, those employed in the agriculture, forestry, fishing and hunting, and mining sectors (historically lower paying jobs) could be brought over into the manufacturing and warehousing jobs (historically higher paying) in the intermodal hub.
Serves the need of the market	Does the location of the study area serve the need(s) of the DFW market? Does the study area serve a typical intermodal hub area (50 mile radius) that is not currently served?
Site qualifies for further analysis	Does the study area have potential to serve as a third regional intermodal hub?