1.0 INTRODUCTION

This report provides information about existing conditions in the Daniel Boone Study Area for both the recent past as well as projections to the year 2020. This information is organized into sections covering land use, demographics, travel patterns, the environment and characteristics of the surface transportation system in the Study Area. This information will be used to assist the study team in developing a detailed understanding of transportation related issues in the Study Area through the year 2020, the planning horizon for the Major Transportation Investment Analysis (MTIA) being conducted for this Study Area.

The Daniel Boone Study Area lies in west central St. Louis County (see Figure 1.0-1) and is roughly bounded by the Missouri River on the West, Page Avenue and Olive Boulevard on the North, slightly east of I-170 on the East and just north of Manchester Road and Clayton Road on the South (see Figure 1.0-2), comprising an area of approximately 85 square miles. Twenty two municipalities lie wholly, or in part, within the Study Area as well as a portion of the unincorporated area of St. Louis County.

FIGURE 1.0-1
STUDY AREA REGION

FIGURE 1.0-2
STUDY AREA

2.0 LAND USE

This section discusses existing land use, recent land use changes, regional plans and policies, utility corridors, trends in land values, and a Study Area summary.

2.1 EXISTING LAND USE

The Daniel Boone Study Area is located entirely within St. Louis County. Following are descriptions of each of the land use types found within this Study Area which are presented in Figure 2.1-1, along with acreages of each land use presented in Table 2.1-1.

TABLE 2.1-1
LAND USE ACREAGE

Land Use	No. of Parcels	Total Area in Acres	Percentage of Land Use
Residential	41,301	26,267	51%
Commercial	1,164	2,788	5%
Industrial/Utilities	765	2,855	6%
Institutional	329	3,453	7%
Park/Recreational	1,427	7,970	15%
Vacant/Agricultural	2,257	8,480	16%
Total	47,243	51,813	100%

Source: St. Louis County Department of Planning, November 1998.

2.1.1 Residential Land Use

Approximately 50 percent of the Study Area's land use is residential. The majority of the residential land use is single-family residential with multi-family clustered in the following areas:

- Along I-170 from south of I-64/U.S.40 north to Olive Boulevard (Mo. Route 340)
- Along Olive Boulevard from I-170 west to I-64 in the Chesterfield Mall area
- North of Olive Boulevard, west of Lindbergh Boulevard (U.S. 67)
- Along Villa Dorado Drive west of Schultz Road
- Both east and west of Fee Fee Road north of Olive Street Road
- Along the west side of Woods Mill Road (Mo. Route 141) from Ladue Road (Mo. Route AB) south to Clayton Road (Mo. Route HH) at the southern Study Area boundary
- Both east and west of Baxter Road north of Clayton Road
- Along the Chesterfield Parkway north, east, and south of the Chesterfield Mall

These multi-family developments are about evenly split between rental units and condominium or attached for-sale units (single-family units that are attached to at least one other single-family unit in which the homeowner also owns the lot on which the unit sits). Most of the apartments are concentrated east of Woods Mill Road with the condominiums and attached for-sale units to the west.

FIGURE 2.1-1
EXISTING LAND USE

Single-family housing varies in both style and price. These range from small (750 square feet) bungalows on 40 foot by 120 foot lots found east of I-170 immediately north of I-64/U.S 40 to estates of several acres in the communities of Ladue and Huntleigh. In general, the price of housing in the Study Area is the highest, on average, of any housing in the entire St. Louis region.

2.1.2 Commercial Land Use

This section deals with three types of commercial land use within the Study Area: office, retail and hotel, which account for five percent of the Daniel Boone Study Area's land use.

Office Land Use

Office land use generally is concentrated within several "office parks" that are located at the interchanges of the interstate system with the major arterial roads. However, there are concentrations of office uses that are along portions of major arterial roadways that are not at interstate interchanges. Interstate 270 appears to be the dividing line with most of the former pattern occurring to the west and the latter pattern occurring to the east. It must be noted that the northern Study Area boundary severs the Westport industrial park area between I-270 on the west and Lindbergh Boulevard on the east. Approximately 75 percent of the industrial park area lies outside of the Study Area boundary.

The major concentrations of office land use are in the northern and western parts of the Study Area, along both Olive Boulevard and Page Avenue. A major concentration also is located along I-64/U.S. 40/61 west of I-270 with high concentrations at Woods Mill Road and Olive Street Road/Clarkson Road at the Chesterfield Mall. Both Monsanto and Mallinckrodt Corporations have office and research facilities in the northwest quadrant of this interchange. Monsanto Corporation also has recently announced that their new Plant Biology Research Center will be located on what is now vacant land along the north side of Olive Boulevard across from their headquarters complex west of Warson Road. In addition to Monsanto having its headquarters complex at Lindbergh and Olive Boulevards, Solutia Inc., a spin-off company that was once part of Monsanto, has its headquarters on the west side of Lindbergh Boulevard south of Olive Boulevard. The area near the terminal building of the Spirit of St. Louis Airport is developing major office and light industrial uses and could be a larger office land use concentration in the future. Several major office building projects have recently been completed and new ones announced in the area north of I-64/U.S.40/61 west of I-270.
Of note, is a vacant parcel along the north side of the I-64/U.S. 40/61 freeway between I-270 and Mason Road, the first interchange west of I-270. In late 1998, the City of Town and Country announced that they were going to purchase the site and turn it into a park and/or natural open space. The city is doing this because of citizen opposition to the proposed office development (St. Louis Post-Dispatch, May 13, 1998; August 3, 1998; November 9, 1998).

Retail Land Use

The Study Area has two superregional (a mall with more than 1,000,000 square feet) and one regional (a mall with more than 500,000 square feet) enclosed malls within its boundaries. These shopping centers include the following:

- The St. Louis Galleria; a superregional center along the west side of Brentwood Boulevard between Clayton Road and I-64/U.S. 40 (1,300,000 square feet)

- Chesterfield Mall; a superregional center in the southwest quadrant of the interchange between I-64/U.S. 40/61 and Olive Street Road/Clarkson Road (1,550,000 square feet)

- Plaza Frontenac; a regional center in the southwest quadrant of Lindbergh Boulevard and Clayton Road

just south of I-64/U.S. 40 (approximately 466,000 square feet)

There also are several “Big Box” or “Power Centers” shopping centers within the Study Area. The most prominent of these is the Promenade at Brentwood (300,000 square feet) along the south side of Eager Road at the south terminus of I-170, east of Brentwood Boulevard. This center contains such stores as Target, PetsMart, Sports Authority, and is designed with the stores in their own buildings built around a central parking lot.

Another type of shopping center, a community type, is found throughout the Study Area. These shopping centers are typically those that are anchored by a large, 60,000 to 70,000 square foot, supermarket and could be considered community type centers. Several of these centers are located within the Study Area along the major roadways at the intersection of either two major arterial streets or a major arterial and minor arterial streets.

The remaining retail land use within the Study Area can be found along major and minor arterial streets in small “strip” centers that have no large anchor tenant. These small centers are usually located near the large, enclosed malls, the “Big Box” centers, or the “Community” centers.

The Study Area does not have suburban downtown-type retail centers within it. This is mainly due to the relative newness of the developments and the lack of older, individual community retail centers that developed in the suburbs of St. Louis further to the east. The historical lack of any type of rail public transit system, streetcar or commuter line within the Study Area also contributed to the lack of development of small community downtowns that did occur in other local suburbs such as Maplewood, Kirkwood, Ferguson, and Clayton.

Hotel Land Use

Hotel land use is scattered throughout the Study Area within the office and retail land uses. The highest concentration of hotels can be found in the southeast quadrant of I-270 and Page Avenue south of the Westport development at the northern Study Area boundary. Multiple hotels also are found in the Maryville Center Office Park in the northeast quadrant of I-64/U.S. 40/61 and Woods Mill Road, in the area of the Chesterfield Mall and adjacent offices development on both the east and west sides of Olive Street Road north of I-64/U.S. 40/61, and along Olive Boulevard in Creve Coeur east of I-270. Single hotel developments are found east of the St. Louis Galleria along McMorrow Avenue at I-170 and the Galleria Parkway, and in the southwest quadrant of I-64/U.S. 40 and Lindbergh Boulevard north of Plaza Frontenac.

2.1.3 Industrial/Utility Land Use

The Daniel Boone Study Area has a selectively small amount of industrial land use compared to other areas in the region largely due to a minimum rail and water transportation facilities serving the Study Area. The existing industrial uses within the Study Area, however, are closely tied to the single existing rail line and the Spirit of St. Louis Airport in the Chesterfield Valley. This land use category accounts for six percent of the Study Area’s total acreage.

The largest concentration of industrial land use is located along the northern boundary east of I-270 to the Study Area’s eastern border near I-170 and Page Avenue and extends north of Page Avenue out of the Study Area. It is served by both I-170 and the St. Louis Terminal Railroad/Union Pacific Railroad. Most of the activity in the area could be considered light industrial with assembly and warehousing type uses.

West of Lindbergh Boulevard along both the north and south side of Page Avenue is the Westport Industrial/Office Park, one of the first, large planned industrial parks in the region. Some of the facilities in this area date to the late 1960’s and early 1970’s. Some also have been demolished and the land

redeveloped for a different type of industrial, office/warehouse, that is more compatible with the market's needs in the 1990s. Approximately 25 percent of the Westport area is within the Study Area boundary.

The Hanley Business Park, another older industrial area, is in the southeast corner of the Study Area along both the east and west side of the proposed Cross-County extension of the MetroLink regional light rail line in Brentwood. This area has recently been upgraded and the city of Brentwood has developed a plan for the business park to insure that it will remain competitive in the regional market.

The newest industrial area in the Study Area is in the Chesterfield Valley mainly along the south side of I-64/U.S. 40/61 on both sides of Chesterfield Airport Road. Virtually all of this valley is in the 100-year floodplain of the Missouri River (see Section 6.0). New levees have been built and old ones improved and increased in height to the 500-year flood level so that a flooding as occurred in 1993 will, hopefully, not recur. The industrial uses in the valley are mainly light assembly and warehousing and other activities that are connected with the Spirit of St. Louis Airport.

2.1.4 Institutional Land Use

The institutional land uses in this Study Area consist of schools, hospitals, libraries, churches, and nursing homes with a small number of other institution land uses.

Schools

The school facilities in the Daniel Boone Study Area range from elementary-level, both public and private, to university-level as well as higher level religious schools such as the Missouri Baptist College, Covenant Theological Seminary and Principia College. The Study Area includes almost all of the Ladue School District and the central one-half of the Parkway School District. Other school districts partially included in the Study Area include Brentwood, Clayton, Kirkwood, Pattonville, Ritenour, Rockwood, and University City. Major public school facilities include the offices and high school of the Brentwood School District, the offices and high school of the Clayton School District, the offices and all of the schools in the Ladue School District, and the offices and three of the four high schools of the Parkway School District. Of the other school districts mentioned, only the Rockwood School District has a high school, Marquette, in the Study Area. The remaining public schools within the Study Area are either middle or elementary schools. These districts are shown in Figure 2.1-2.

The Study Area has a large number of private schools ranging from elementary to university level. Some of these schools include Maryville University, Principia College, Logan School of Chiropractic, Villa Duchesne, Visitation Academy, and St. Joseph's Academy for girls; and DeSmet Jesuit High School, Chaminade College and the Priory for boys. Kennedy High School, Mary Institute/Country Day School, John Burroughs, Yeshiva High, and Westminster Christian Academy are coeducational institutions.

Hospitals

The Daniel Boone Study Area has the second highest concentration of hospital facilities in the St. Louis region with Barnes West County hospital on Olive Street Road at Mason Road, Missouri Baptist Medical Center on Ballas Road in the southeast quadrant of the I-64/U.S. 40/61 and I-270 interchange, St. John's Medical Center also on Ballas Road along the east side of I-270 northeast of the same interchange, and St. Luke's Hospital on Woods Mill Road north of the I-64/U.S. 40/61 and Woods Mill Road interchange at Conway Road. There also are numerous medical clinics, outpatient surgery and care facilities, and doctors' offices both near these major medical facilities and within other office clusters in the Study Area.

Libraries

This Study Area is somewhat unusual in that of the 19 St. Louis County library system facilities, there are only two such facilities within its boundaries. St. Louis County's library system's headquarters is located in

the Study Area on Lindbergh Boulevard about 1,000 feet south of Clayton Road and I-64/U. S. 40. The Thornhill

FIGURE 2.1-2
SCHOOL DISTRICTS

Branch is located in an unincorporated part of St. Louis County located between Creve Coeur on the south and Maryland Heights on the north in an area called “North Creve Coeur” by the staff of the St. Louis County Planning Commission. The library is located on Willowyck Drive immediately north of Fee Fee Road between Seven Pines Drive and Bennington Place. The Mid-County Branch is in Clayton on Maryland Avenue approximately two blocks east of the eastern Study Area border. The Daniel Boone Branch is located on Clarkson Road between Clayton Road on the north and Manchester Road on the south. The Mid-County Branch and the Daniel Boone Branch are not within the Study Area but could service some of the residents living along the Study Area’s eastern, southern and western borders.

Churches

There are many churches of various denominations located throughout the region. Within the Study Area, the mixture of churches and their denominations generally follows the region’s mix as a whole. One church stands out due to its unique architecture. This is the new Temple of the church of Jesus Christ of Latter-Day Saints. The new St. Louis Temple opened within the past year and is located along North Outer 40 Drive approximately one mile west of the I-270 and I-64/U.S. 40 interchange. An itemization of the churches within the Study Area will be completed at a later stage of the overall study when specific corridors and alignments have been identified for transportation investments.

Nursing Homes

Similar to the churches, there are numerous nursing homes, both skilled and intermediate care facilities, throughout the Study Area. Some are on the grounds of one of the hospitals in the area such as the St. John’s Mercy Skilled Nursing Center. Others, while operated by one of the hospitals, are not physically on the grounds of the hospital such as Surrey Place, which is operated by St. Luke’s Hospital. Again, there are too many facilities to list for this report, but nursing homes will be examined in more detail when the overall study process has identified more specific corridors and/or alignments for study.

Other Institutional Land Uses

There are four remaining Institutional land uses in the Study Area that are significant: the City of St. Louis water treatment plant at Howard Bend; the St. Louis County water treatment plant along Hog Hollow Road; the Spirit of St. Louis Airport, the main private aircraft airport for the region; and the St. Louis County Jail. All of these facilities are located in Chesterfield Valley.

2.1.5 Parks and Recreational Land Use

The Parks and Recreational land use category includes not only parks, but also other recreational facilities that may involve payment of membership fee or dues, such as a country club or golf course. Other areas shown on Figure 2.1-1 include common ground in both single-family detached and single-family attached as well as in condominium developments. This land use category accounts for 15 percent of the Study Area’s acreage.

The major parks within the Study Area are owned by the St. Louis County Department of Parks and Recreation. These parks include Edgar M. Queeny Park, on the boundary between Ballwin and Town and Country, along the west side of Mason Road between Clayton Road on the north and Manchester Road on the south; Faust County Park in Chesterfield, along the north side of Olive Street Road approximately one mile northeast of I-64/U.S. 40/61; and Tilles Park in the northwest quadrant of Litzsinger and McKnight Roads in Ladue at the border with Brentwood.

In terms of acreage, the next most significant park and recreation land use is the public and private country clubs and golf courses within the Study Area. The largest ones include the following:

- Bellerive Country Club at Ladue and Mason Roads just inside the Town and Country city limits at the border with Creve Coeur.
- Westwood Country Club on the north side of Conway Road east of Ballas Road around which the Village of Westwood is built.
- Old Warson Country Club along the north side of Old Warson Road east of Warson Road in the southern part of Ladue.
- St. Louis Country Club in the southwest quadrant of Ladue and Price Roads in the north central part of Ladue.
- A combination of the Bogey and Log Cabin Country Clubs along the south side of Clayton Road east of Log Cabin Lane in the central part of Ladue.
- Meadowbrook Country Club along the north side of Clayton Road east of Kehrs Mill Road in Ballwin at its border with Chesterfield.

The larger municipalities provide park and recreation facilities for their residents with this service including both outdoor parks, ballfields, playgrounds, and indoor facilities such as pools and gymnasiums as well as meeting rooms for community organizations.

2.1.6 Vacant/Agricultural Land Use

The Study Area contains very little existing agricultural land use (see Section 6.0) with most of it in Chesterfield Valley in the Missouri River flood plain. A few isolated areas of agriculture are in the upland area. Historically, this Study Area was almost all farmland west of I-270. Development came after World War II and continued to spread over the past 50 years until very few agricultural acres remain, especially in the upland area out of the Missouri River floodplain. The existing land use shown in Figure 2.1-1 indicates there are few tracts of vacant land within this Study Area.

2.2 RECENT AND PLANNED MAJOR DEVELOPMENT

Due to the built-up nature of this Study Area, there are not many major new developments that are planned for the next five years. Most of the ones that are planned are in the City of Chesterfield and those developments are in the Chesterfield Valley. Other cities are experiencing the completion of older, planned developments that were started in the 1970's or 1980's and are now "filling-up" by developing their last few available lots. Some jurisdictions, especially those at the eastern edge of the corridor, are still pursuing redevelopment opportunities in some parts of their community. An examination of what is happening in each community follows with the major changes identified in Figure 2.2-1 and listed in Table 2.2-1. Figure 2.2-2 shows the cities by name. Those cities without major planned developments are not listed.

TABLE 2.2-1
RECENT AND PLANNED DEVELOPMENT

Map Designation	Development Description
A	The Promenade at Brentwood
B	Brentwood Town Center
C	Hanley Business Park
D	Chesterfield Commons – 585,000 square feet
E	Chesterfield Crossing – 23-acre site
F	Chesterfield Grove – 1000,000 square feet and 99-room hotel
G	Office Develoment – 800,000 square feet
H	Enterprise Leading Headquarters
I	Old Town Clayton Condominiums
J	Five Office/Apartments/Hotel Towers – 1,266,000 square feet
K	Monsanto Research Center
L	Vacated Venture Store – 100,000 square feet
M	Four, 7-Story Condominiums – 230 units
N	Unity Health System Headquarters
O	Safeco Insurance Regional Headquarters – 800 employees
P	West County Mall Expansion – over 1,000,000 total square feet
Q	Frontenac Square Expansion – 50,000 square feet
R	Plaza Frontenac Expansion – 50,000 square feet
S	Several Moderately-Priced Motels
T	Proposed “Power Center” similar to The Promenade
U	Proposed Joint Development with New MetroLink Station
V	Manhassett Village Rehabilitation and Expansoin
W	Maryville Centre Completion
X	New Park
Y	“Creve Coeur North”
Z	New Light Industrial Redevelopment

Source: Discussions with City staff, representatives of St. Louis Post-Dispatch, St. Louis Business Journal, local newspapers, etc., 1999.

FIGURE 2.2-1
RECENT AND PLANNED DEVELOPMENT

FIGURE 2.2-2
CITY BOUNDARIES

2.2.1 Brentwood

Brentwood is located in the southeastern corner of the Study Area (only the northern one-half of the city is actually in the Study Area). Within the past year, the Promenade at Brentwood (A on Figure 2.2-1) has opened at the southern terminus of I-170 and Eager Road, just south of I-64/U.S. 40. It is a "Big Box" retail development, which includes a Greatland Target, Sports Authority, PetsMart, and other stores, in a layout with the stores facing an internal parking lot.

The city also has recently approved a redevelopment of Brentwood Square, a 1950's era strip center, located on the west side of Brentwood Boulevard between Eager Road on the north and Wrenwood Drive on the south (B on Figure 2.2-1). The redevelopment will take approximately 65 single-family residences along Bob-O-Link Place and Kenilworth Drive immediately west of Brentwood Square. The proposed development, to be called the Brentwood Town Center, will have 250,000 square feet of retail space along with a 200-room hotel. The project has only recently been approved by the city, and the developer is in the process of acquiring the property.

In addition, the City of Brentwood has requested EWGCC and Bi-State to consider moving the planned station on the initial phase of the Cross-County MetroLink extension from its preliminarily planned location on Eager Road at I-64/U.S. 40 south, a distance of about one-half mile, to a location near what would be the intersection of an extension of West Bruno Avenue and the MetroLink alignment (C on Figure 2.2-1). This would foster potential redevelopment of the old, industrial property along Hanley Road south of West Bruno Avenue and to help "stabilize" the Hanley Business Park that is located along the west side of the proposed MetroLink alignment.

2.2.2 Chesterfield

Of all the communities in the Daniel Boone Study Area, Chesterfield is experiencing a comparatively high level of development activity due in part to its strategic location along I-64/U.S. 40/61. Following is a partial list of the more significant projects that are either under construction or will be within the next few years:

- Chesterfield Commons (D on Figure 2.2-1): A 1,185,000 square foot mixed use development will be located along both the north and south sides of Chesterfield Airport Road south of I-64/U.S. 40/61 at Boone's Crossing that will include a Wal-Mart and Lowe's in the 585,000 retail strip center. A total of four office buildings are proposed along the freeway with a total of almost 484,000 square feet. The remaining development will include up to 12 outlots along the south side of Chesterfield Airport Road for retail and service type activities. A full diamond interchange is presently under construction for this development.

- Chesterfield Crossing (E on Figure 2.2-1): A 23-acre site west of Long Road between the freeway and Chesterfield Airport Road is proposed for mixed-use development. This area was designated Action Area W1 in the Chesterfield Valley Master Development Plan and Implementation Strategy. The development will include two hotels by Holiday Inn, an extended stay facility and a mid to high range facility, built along the freeway frontage and approximately 100,000 square feet of a mixture of office and retail development.

- Chesterfield Grove (F on Figure 2.2-1): A mixed-use development with a 99-room Hilton Gardens hotel and four office buildings totaling approximately 100,000 square feet is proposed. The development will be at the eastern end of Chesterfield Airport Road between Baxter Road and the Union Pacific Railroad at the foot of the Missouri River bluffs.

- Unnamed Development (G on Figure 2.2-1): An office development of five buildings totaling approximately 800,000 square feet is proposed along the northern side of the freeway's north service road west of the Timberlake Manor Drive interchange.

The majority of the remaining development within the city is housing of varying types. Several pieces of vacant land remain within the Chesterfield Village area. Chesterfield Mall has some vacant commercial sites along Chesterfield Village Parkway. Development of the parcels would complete the original village master plan.

2.2.3 Clayton

The only part of Clayton within the Daniel Boone Study Area is west of Brentwood Boulevard in the eastern portion of the Study Area. This area is immediately west of the Clayton Central Business District and contains a wide variety of land uses including Shaw Park and Clayton High School and District Offices. The most significant new development was the recent completion of the headquarters for Enterprise Leasing (H on Figure 2.2-1), the nation's largest automobile leasing company, in the wedge of land south of the Forest Park Parkway between Brentwood Boulevard and the abandoned Terminal Railroad right-of-way (ROW). That ROW now belongs to the Citizens for Modern Transit and is currently proposed for use as the northern segment of the Cross-County MetroLink Extension-Segment 1.

Another significant land use change that is occurring north of not only Shaw Park, but also in the area north of the Central Business District, in Old Town Clayton, is the elimination of 50 year-old multifamily housing units and replacement with attached single-family condominiums (I on Figure 2-2.1) with starting prices well above $275,000 per unit. In Old Town, the units being demolished are older single-family units on relatively large, 20,000 square foot lots.

There also have been five proposals for new, high-rise office towers of approximately 1,266,000 square feet, within the area bounded by Forsyth Avenue, the Forest Park Parkway, and Brentwood Boulevard (J on Figure 2.2-1). To date, however, only one of the proposals has gone forward, with the others waiting for funding and potential tenants. The one moving ahead is a mixed-use, 23-story, 275,000 square foot development called The Clayton at Park's Edge. It will contain 121 luxury apartments on the top 13 floors, an extended-stay hotel residence on floors three through ten, a restaurant on the second floor, and one level of underground parking (St. Louis Post-Dispatch, March 5, 1999).

2.2.4 Creve Coeur

Creve Coeur is the location of most of the mixed-use development along Olive Boulevard from Warson Road on the east to Fee Fee Road on the west. This segment of Olive Boulevard has three areas of intense land use. Centered at Lindbergh Boulevard is Monsanto, Solutia, several automobile dealers and small office buildings; the Center Core Business District along both north and south sides of Olive Boulevard between Mosley Road and I-270; and the remaining area west of I-270 to Fee Fee Road, in particular the area between Ross Road on the east and Mason Road on the west.

Perhaps the most significant new development in Creve Coeur was the announcement by Monsanto that they would build their new Plant Biology Research Center (K on Figure 2.2-1) on now vacant land along the north side of Olive Boulevard west of Warson Road. While there have been other new developments announced for each of the three areas, all of these proposed facilities are actually following long-range plans prepared for each area several years ago. Market conditions have changed and demand for both office and new retail space has improved. There was the recent closing of the Venture Store (L on Figure 2.2-1) in the northwest corner of I-270 and Olive Boulevard. That store opens about 100,000 square feet of potential retail space on the market.

Within the City's Center Core, an announcement was made recently that four, seven-story condominiums will be built between Emerson Road on the west and Decker Lane on the east. The buildings will have up to 230 units (M on Figure 2.2-1) (discussion with Scott Haley, Creve Coeur's Planner, March 9, 1999).

The City has seen, and is continuing to see, infill housing construction on what was marginal land initially and on residential lots that have been subdivided allowing for as many as four new homes to be built where only one existed originally.

2.2.5 Des Peres

Des Peres is bisected by the southern Study Area boundary. The northern half is within the Study Area and contains primarily single-family residential land use. At the interchange of Manchester Road and I-270, however, a large amount of office development has been built along both sides of I-270 north of Manchester Road. That development is still occurring and a new headquarters for Unity Health System (N on Figure 2.2-1) is under construction. Safeco Insurance Company (O on Figure 2.2-1) has recently announced that it will also consolidate its 800 employees in a new office building in the Manchester/I-270 area. While the exact location has not been identified, it may ultimately be south of the Study Area.

The most significant new development in Des Peres is the proposed remodeling and expansion of the West County Mall (P on Figure 2.2-1), located in the southeast quadrant of the I-270/Manchester Road interchange adjacent to the Study Area. This expansion rebuilds the mall with only the present JC Penney store building remaining. The expansion will result in a total of over 1,000,000 square feet of retail space and include a new Famous-Barr store and the addition of Lord & Taylor and Nordstrom stores as well as additional space for individual stores and parking garages.

2.2.6 Frontenac

The most prevalent land use in Frontenac is single-family residential. What commercial use exists is located along the city's eastern boundary, Lindbergh Boulevard. The northeast corner of the City consists of an old neighborhood, West End Park, that was platted in the early 1900's to provide housing for workers in nearby quarries. As the quarries closed and the railroad left, the area changed to one of middle to upper middle-income housing on lots that, in some cases, are consolidations of the earlier platting. Commercial, office, and retail activities have developed along the old railroad line. New office space and medical offices in the now commercial area (Q on Figure 2.2-1) is proposed.

The city also is the home of Plaza Frontenac (R on Figure 2.2-1), the first up-scale mall in the region with Neiman Marcus and Saks as the anchor tenants.

2.2.7 Maryland Heights

Maryland Heights is included in the Study Area in only two small segments; at the I-270/Page Avenue interchange east to Lindbergh Boulevard and in the Missouri River flood plain near the St. Louis County water treatment plant. In the first area, some infill development is taking place between Lackland Road and Page Avenue where new moderately priced motels are being built along with a few single or two-story office buildings (S on Figure 2.2-1). In the second area, nothing is being built due to the flood plain nature of the area. Should new and much improved levees be built along the Missouri River in this area, development could take place that might be similar to that happening in Chesterfield.

2.2.8 Olivette

The older suburban City of Olivette has received a proposal to build a “Big Box” center, similar to the Promenade at Brentwood in the northwest quadrant of I-170 and Olive Boulevard (T on Figure 2.2-1). Such a project would require the purchase of the entire Hilltop single-family residential area that was built in the late 1940’s to the early 1950’s. The City is reviewing the proposal and the developers are attempting to obtain options on all of the homes in the development area. The city is also experiencing infill redevelopment of single-family homes, especially on large lot and vacant properties.

2.2.9 Richmond Heights

Richmond Heights is actively pursuing planning efforts to take advantage of the proposed MetroLink Extension from the Forest Park Station west through Clayton and then south through Richmond Heights to I-44 near the St. Louis City Limits. As of this writing, a MetroLink station location is along the abandoned Terminal Railroad ROW at the Galleria Parkway interchange with I-170 (U on Figure 2.2-1).

The city also is examining a proposal to do a major rehabilitation and addition to the Manhassett Village apartments (V on Figure 2.2-1) located on Eager Road, south of I-64/U.S. 40, along both sides of McCutcheon Road. This proposal would upgrade the existing apartments and also provide new units through increasing the density of the total development.

2.2.10 Town and Country

Town and Country straddles I-64/U.S. 40/61 from just east of Ballas Road on the east to just west of the Woods Mill Road interchange on the west. Within its boundaries are several large office developments along the north side of I-64/U.S. 40/61 as well as institutions and medical facilities. One of these developments is Maryville Center (W on Figure 2.2-1) adjacent to Maryville University just east of Woods Mill Road. This planned development has been under construction for the past 20 years starting with several office buildings and then a hotel and more office buildings over subsequent years. At the present time, another hotel is under construction along with at least two office buildings. These developments will complete the overall initial plan for the center.

In the fall of 1998, the City decided to purchase a piece of vacant land fronting on the North Forty Service Road and extending north almost to Conway Road into Creve Coeur (X on Figure 2.2-1). There had been several development plans for this land which were not approved. The City will turn this property into a park or natural area.

2.2.11 Unincorporated St. Louis County

A large segment of the north-central part of the Study Area is located in unincorporated St. Louis County. Specifically, it is the area west of Warson/Ashby Roads on the east to Creve Coeur Mill Road on the west and from Page Avenue on the north to the city limits of Creve Coeur on the south (Y on Figure 2.2-1). Redevelopment of some of the industrial land uses south of Page Avenue west of Lindbergh Boulevard is occurring. Several large, 25 to 30 year-old manufacturing and assembly/warehousing buildings were demolished at the intersection of Page Avenue and Lackland Road and new light industrial buildings were constructed to meet the needs of today (Z on Figure 2.2-1). This redevelopment of industrial land use could expand to other areas within St. Louis County and within the Study Area.

2.3 PLANS AND POLICIES/INSTITUTIONAL CONSTRAINTS

2.3.1 Plans and Policies

Several comprehensive plans were available for review at the writing of this report – Chesterfield, Ladue, Richmond Heights, and Brentwood. This review indicates a wide variation in the use of the plans and how current the planning documents are. Some municipalities, such as Huntleigh, have no plan because they are small in both size and acreage and are totally homogeneous with regard to their land use. That land use is almost always large-lot single-family residential. Other cities, such as Richmond Heights, actively use their plan and update it on a regular basis, sometimes as soon as five years after the plan was originally adopted. Still other municipalities, such as Ladue, have a plan, but it is well over 20 to 30 years old and new development or redevelopment pressures are being felt in various places within the city. These communities need an updated direction to follow in order to stabilize and take advantage of their assets and redevelop their deficits.

2.3.2 Institutional Constraints

One of the major institutional constraints to a broader geographic application of land use policies in the St. Louis region, particularly St. Louis County, is the decentralization of jurisdictions into the multitude of individual municipalities and taxing districts. St. Louis County alone has 92 municipalities ranging in population (1990 Census Data) from 11 in Champ to 51,038 in Florissant.

In addition to these 92 municipalities, there are a total of 198 other taxing districts for which St. Louis County collects the tax. Some of the larger number of districts include the following categories:

- Subdistricts of the Metropolitan St. Louis Sewer District (MSD) 38
- School Districts 24
- Fire Protection Districts 23

The remainder of these districts include such purposes as a Community College System, Libraries, Zoological Park & Museums, Sheltered Workshop and Residence Fund and Special Business Districts. Added to this total is a large number of Tax Increment Financing (TIF) districts within various municipalities as well as other miscellaneous districts, resulting in a total of about 300 taxing entities within St. Louis County.

As a result of the large number of taxing bodies, there is disparity in the ability of both municipalities and school districts to provide comparable levels of municipal and teaching services to people residing within the particular districts or municipalities. Typically, the communities and school districts must levee a high tax rate since they do not have a large or high valued property tax base on which to rely for municipal and school district services. This leads to increased competition for land uses that augment local tax bases and political pressure to more readily make zoning changes.

2.4 NEIGHBORHOOD CHARACTERISTICS

Due to the large number of municipalities (20) in this Study Area, “Neighborhood Identification” is, in fact, community identification. These communities are present along with census data in Table 2.4-1 as a basis for comparison. Figure 2.2-2 shows the individual cities and Figure 2.1-2 shows the school districts within the Study Area.

The data indicates that the Daniel Boone Study Area contains some of the highest priced homes in the region along with some of the highest median family incomes as well (see Section 3.0). Two of the communities, Country Life Acres and Huntleigh, have median values in excess of $500,000 for their owner-

occupied units with six more communities having median values in excess of $250,000 for their owner-occupied units.

TABLE 2.4-1
CENSUS DATA BY COMMUNITY

Country Life Acres leads the way in median household income with over $150,000 and a per-capita income level of almost $87,000, although its 1990 population was only 101 persons. A total of five additional municipalities have per-capita income levels of over $100,000. At the lower end of the spectrum, only four of these municipalities have median values of less than $100,000 for their owner-occupied homes along with five municipalities with per-capita incomes of less than $20,000.

The data also reflects the movement of population to the west. The communities that are at least partially west of I-270 all had increases in population between 1980 and 1990 while those to the east had population declines, with the exception of Crystal Lake Park.

2.5 MAJOR UTILITY CORRIDORS

Several major utility corridors can be found in the Daniel Boone Study Area (see Figure 2.5-1). One primary corridor, owned by AmerenUE, is generally 150 feet wide and runs east-west from approximately Lindbergh Boulevard to Route 141 in the northern portion of the Study Area. The corridor continues to the south and west from this point, however, becomes an easement with the majority of the parcels owned by subdivision trustees. The easement continues to maintain a width of 150 feet. St. Louis City Water Works and the St. Louis County Water Company own a second utility corridor in the Study Area. Also running east-west, this 100-foot corridor serves the water treatment plant located in the Chesterfield bottoms north of Highway 40. The water companies' ownership terminates at approximately I-270. A third utility corridor runs diagonally across the study area from approximately I-270 at Olive to the southeastern corner of the Study Area, parallel to an abandoned rail right-of-way. This corridor is generally 100 feet in width and is owned by AmerenUE.

2.6 TRENDS IN LAND VALUES

One indicator of a city's stability is its assessed value over time. The St. Louis County Department of Revenue provided the assessed valuation for each of the 20 municipalities within the Study Area as determined on January 1st for the years 1990 and 1998. This data includes both real estate and personal property as well as a total valuation for each municipality. This information is shown in Table 2.6-1, including the percentage change from the 1990 value to the 1998 value.

The data in the table illustrates the differences between the communities in the eastern part of the Study Area and those to the west. The change in Total Assessed Value of property in municipalities east of Lindbergh Boulevard were all less than 20 percent with the exception of Ladue whose values went up by 41 percent. Those cities west of Lindbergh Boulevard, generally, had assessed property values increase by at least 30 percent, up to 73 percent in the case of Manchester.

In terms of dollar amount increase of assessed value, Chesterfield, Maryland Heights, and Creve Coeur all had increases of over $200 million over the past nine years. All three of these communities have large amounts of retail and office land uses which have increased in both value and number of acres.

Overall, the value of property is increasing in every part of the Daniel Boone Study Area, but the greater increases are primarily occurring in the western part of the area and in municipalities with relatively large amounts of commercial land use.

FIGURE 2.5-1
EXISTING UTILITY CORRIDORS

TABLE 2.6-1
MUNICIPAL ASSESSED VALUE COMPARISONS

Municipality	Assessed Value ($M) on 1/1/90			Assessed Value ($M) on 1/1/98			Change 1990 to 1998	
	Real Estate	Personal Property	Total	Real Estate	Personal Property	Total	Number	Percentage
Ballwin	163.073	27.889	190.962	264.116	58.229	322.345	131.380	68%
Brentwood	110.323	44.558	155.533	138.809	37.193	176.002	20.459	13%
Chesterfield	530.370	140.368	670.737	773.773	183.958	957.731	286.994	43%
Clarkson Valley	54.257	6.859	61.117	65.489	11.379	76.867	15.750	26%
Clayton	364.892	55.371	420.263	401.884	85.553	487.437	67.174	16%
County Life Acres	2.627	0.191	2.817	3.839	0.381	4.221	1.403	50%
Creve Coeur	308.852	77.754	386.606	452.637	144.870	597.478	210.872	55%
Crystal Lake Park	7.271	1.036	8.308	8.853	1.378	10.131	1.823	22%
Des Peres	135.462	24.920	160.382	178.296	37.267	215.562	55.180	34%
Frontenac	97.585	10.316	107.900	123.961	16.131	140.092	32.192	30%
Huntleigh	14.685	1.262	15.947	20.762	1.792	22.554	6.607	41%
Ladue	261.285	26.885	288.169	366.235	38.893	405.128	116.959	41%
Manchester	59.285	10.892	70.176	100.304	21.248	121.553	51.377	73%
Maryland Heights	348.290	96.482	444.772	477.689	245.371	723.060	268.288	60%
Olivette	94.909	20.897	115.806	105.789	27.795	133.585	17.779	15%
Overland	121.787	28.252	150.038	119.709	36.143	155.852	5.814	4%
Richmond Heights	135.780	19.499	155.278	180.802	29.702	210.504	55.226	36%
Town & Country	242.128	52.142	294.271	380.277	90.629	470.906	176.635	60%
University City	247.444	39.231	286.674	269.356	57.918	327.274	40.600	14%
Westwood	8.837	1.179	10.016	11.230	1.633	12.862	2.846	28%

Source: St. Louis County Department of Planning, 1990 and 1998.

2.7 STUDY AREA SUMMARY

Based on the previously presented information about the Daniel Boone Study Area, the following comments can be made:

- The core of the study area contains mainly single-family residential land use with multi-family uses clustered along the study area boundary and at activity centers and major roadway intersections.

- The eastern and northern boundaries contain what little industrial land use is in the study area and some of these locations are being redeveloped into newer light industrial uses due to changing market needs.

- Office and hotel land use is concentrated along the I-64/U.S.40/61 alignment especially west of I-270, the belt freeway for the region. Another concentration of office land use is part of the Clayton Central Business District (CBD) located in the northeast corner of the study area. Retail land use is concentrated in the superregional, regional and community shopping centers which are scattered throughout the Study Area.

- Population in the municipalities has remained stable or shows a slight decline with the greatest decline of 13 percent occurring in the city of Westwood. The greatest increase of 81 percent occurred in Clarkson Valley and was due, mainly, to annexation rather than the construction of new housing.

- Only four of the cities have a median value of owner occupied housing units in 1998 that is below $100,000 while eight cities have median values greater than $225,000, and with two cites having 1998 median housing values above $500,000.

- Median Household Income ranges from a low of $32,150 in University City to a high of over $150,000 in Country Life Acres. Per Capita Income follows Median Household Income, with the lowest, $17,260, in University City and the highest, $86,978, in Country Life Acres.

- Between 1990 and 1998, total assessed value of both real estate and personal property increased in each municipality. The range of the increase was between a high of 73 percent in Manchester to a low of 13 percent in Brentwood.

3.0 DEMOGRAPHICS

This section describes past, current and future projections of demographic information of the Northside Study Area. These factors include population, age, race, income distribution, housing, car ownership, and employment. For additional information regarding race and housing see Section 2.0. An analysis of this information provides a basis for determining trends and factors, which could influence the need for and type of transportation improvements for the Northside Study Area.

3.1 POPULATION

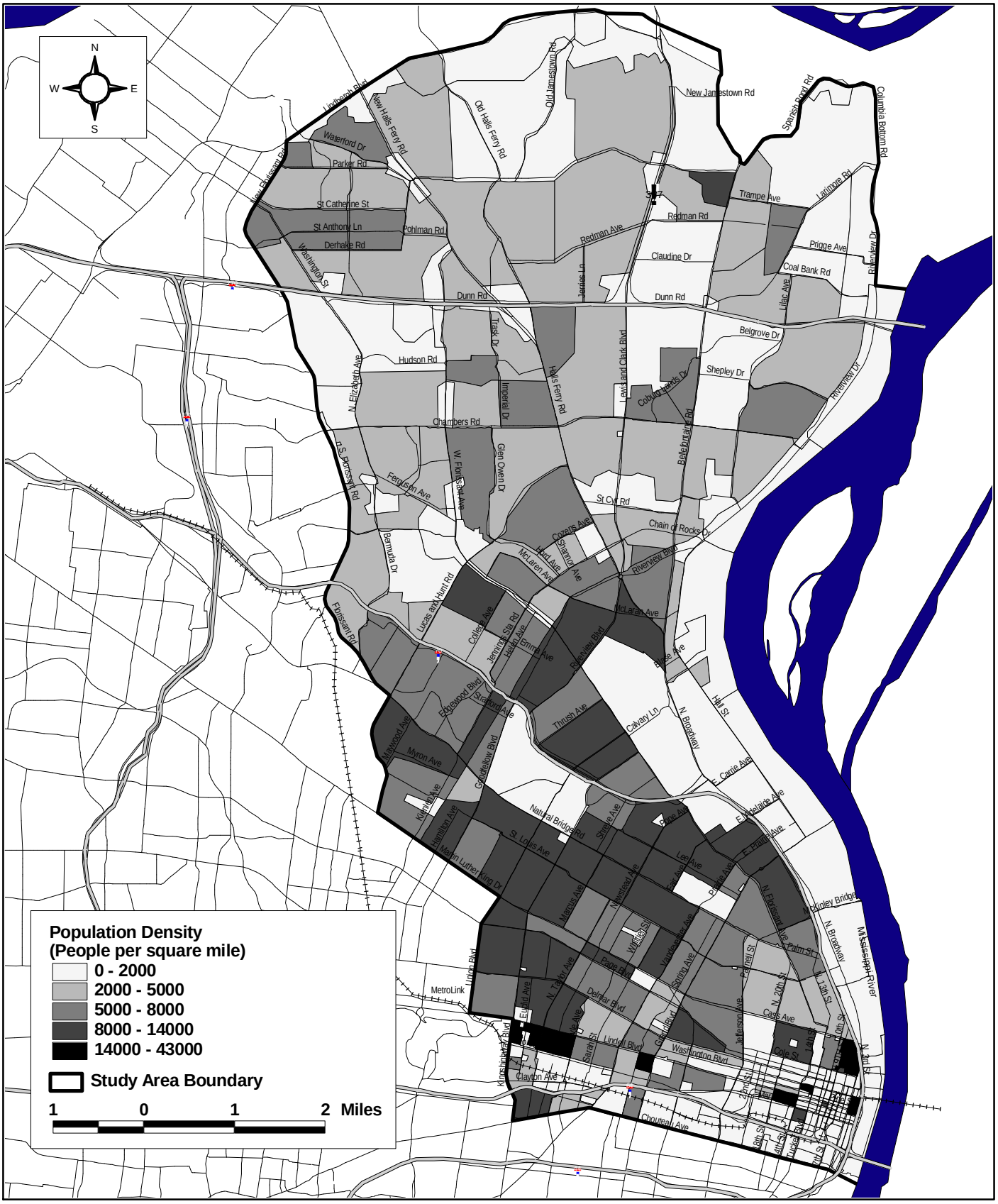
Table 3.1-1 displays the total population of the Northside Study Area and St. Louis County from 1980 to 2020. The 1980 and 1990 figures are based upon decennial census tabulations. The 1996 estimates are based upon demographic data compiled since the 1990 census, whereas 2020 estimates are based upon projections developed by East-West Gateway Coordinating Council (EWGCC), in cooperation with the local jurisdictions, such as St. Louis County. Note that total Study Area population has decreased by 62,600 people between 1980 and 1996, a 10.1 percent decrease. The population in the City of St. Louis portion of the Study Area declined by 52,500 while the population of the St. Louis County portion of the Study Area decreased by 10,100. Year 2020 projections indicate a continued decline in total population of about 28,400 persons, a 9.1 percent decrease from 1996. This projection assumes a further decline in population in the City of St. Louis portion of the Study Area of 12,000 and a decrease in population in the County portion of almost 16,300. This projection is based upon the assumption that there will continue to be an out-migration of population to the outer counties of the region, particularly from the City of St. Louis and inner suburbs of the St. Louis County portion of the Study Area. There also will be a continued decline in average household size due to both smaller family sizes as well as life-cycle changes of households (e.g. “empty nest”).

TABLE 3.1-1
TOTAL POPULATION

Year	Northside Total	Percent Change from 1980	City of St. Louis Portion	St. Louis County Portion
1980	375,477	--	199,382	176,095
1990	337,523	-10.1%	167,891	169,632
1996	312,856	-16.7%	146,933	165,923
2020	284,480	-24.2%	134,868	149,612

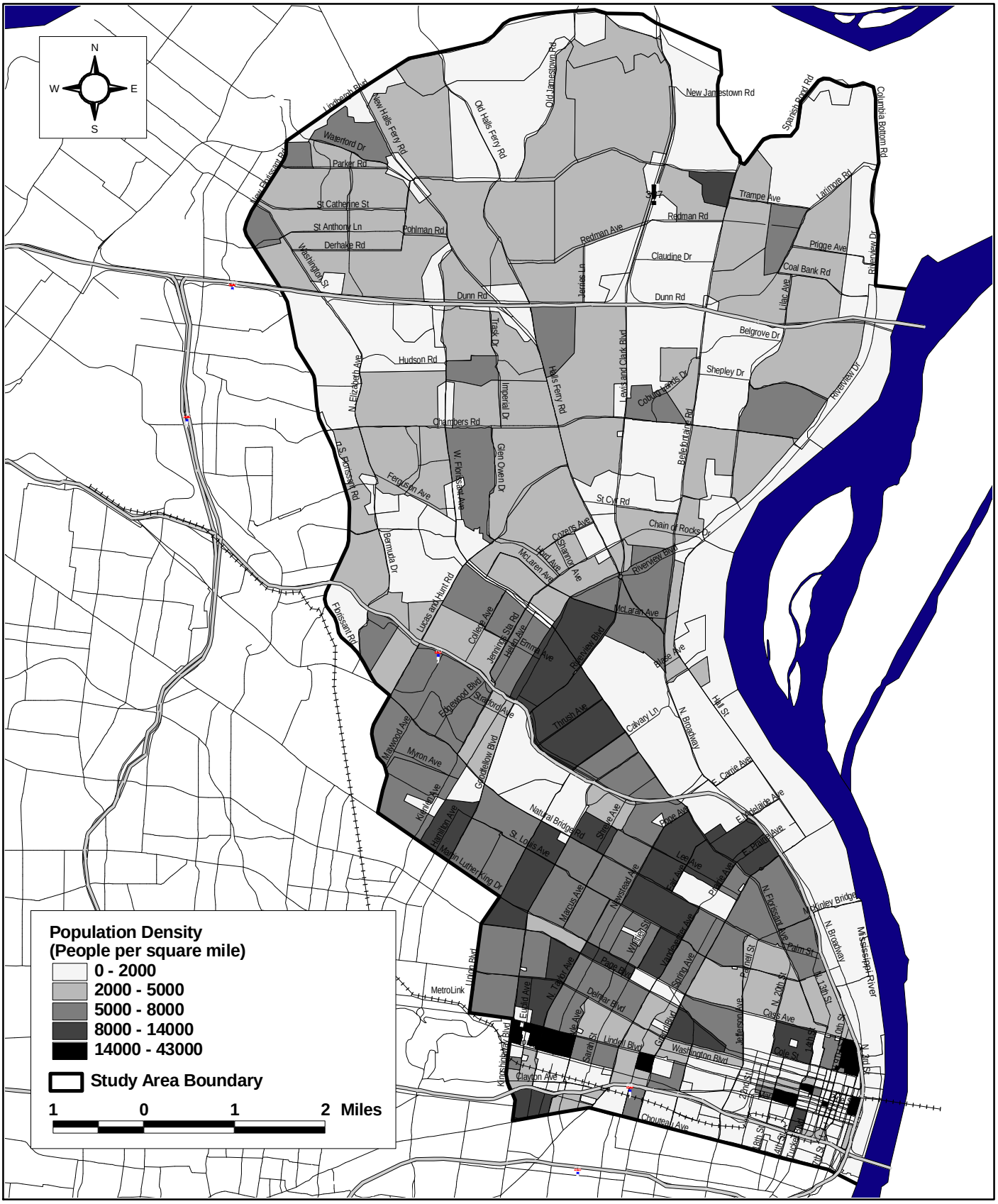
Source: 1990 Census (Data File STF3A); East-West Gateway Coordinating Council, 1999.

Figures 3.1-1 and 3.1-2 display the year 1996 and 2020 population density in persons per square mile for the Northside Study Area. The City of St. Louis portion of the Study Area has the higher population densities, generally greater than 5,000 persons per square mile, while the County’s portion of the Study Area predominantly has population densities lower than 5,000 persons per square mile. These population densities are forecast to decline through the year 2020 planning horizon due to forecast declines in total population. Higher population densities tend to encourage transit use, as a more concentrated population is easier to serve with transit as more people live within walking distance of transit stops. Conversely, lower population densities tend to encourage automobile use and discourage transit use, as households that are dispersed are more difficult to serve effectively with fixed route transit services.



Source: East-West Gateway Coordinating Council, November 1998.

Figure 3.1-1
Population Density (1996)



Source: East-West Gateway Coordinating Council, November 1998.

Figure 3.1-2
Population Density (2020)

3.2 AGE DISTRIBUTION

Table 3.2-1 shows the percentage distribution of the population by age group for the Northside Study Area based on the 1990 census, both for the Study Area in total, as well as broken out into the City portion and County portion. The age distributions are very similar between the two portions of the Study Area, with the City portion having a slightly younger distribution than the County portion and they compare closely to the age distributions for the total City and total County. Note that 38.7 percent of the population was either under the age of 16 or over the age of 65, which indicates a need to provide transportation options for these potentially mobility deficient age groups.

TABLE 3.2-1
PERCENT POPULATION BY AGE GROUP

Age Group	Northside Total	City of St. Louis Portion	St. Louis County Portion	City of St. Louis Total	St. Louis County Total
0-15	23.7%	25.1%	22.5%	22.8%	22.0%
16-24	13.3%	14.9%	11.9%	12.7%	11.5%
25-34	16.4%	15.5%	17.2%	18.4%	17.1%
35-44	13.2%	12.2%	14.1%	12.8%	15.9%
45-59	13.6%	12.4%	14.7%	12.0%	15.6%
60-64	4.8%	4.6%	5.1%	4.6%	4.8%
65+	15.0%	15.3%	14.6%	16.7%	13.1%

Source: 1990 Census (Data File STF3A); East-West Gateway Coordinating Council, 1999.

3.3 RACE

Table 3.3-1 illustrates the ethnic breakdown within the Northside Study Area, the City of St. Louis and St. Louis County, based on 1990 Census data. According to this table, the Northside Study Area is predominantly African-American, with white being the second largest ethnic group in the Study Area. However, Table 3.3-1 also shows that the Southside Study Area has a larger white population and fewer African-Americans relative to the County and City of St. Louis as a whole.

TABLE 3.3-1
ETHNIC BREAKDOWN

Race	Northside Total	City Portion	County Portion	City Total	County Total
White	39.1%	14.6%	63.0%	51.0%	84.2%
African-American	59.9%	84.4%	36.0%	47.4%	14.0%
American Indian/Eskimo	0.2%	0.3%	0.1%	0.3%	0.2%
Asian/Pacific Islander	0.6%	0.5%	0.6%	0.9%	1.4%
Other	0.2%	0.2%	0.2%	0.4%	0.2%

Source: 1990 Census (Data File STF3A); East-West Gateway Coordinating Council, 1999.

3.4 INCOME DISTRIBUTION

Table 3.4-1 presents the percentage distribution of population by household income based upon the 1990 census for both the Northside Study Area in total as well as both the City of St. Louis and St. Louis County portions of the Study Area and the City and County total distributions. The distribution of the City and County portions of the Study Area indicates lower incomes compared to the overall distributions for the City and County. Note that the income levels in the City portion of the Study Area were significantly below those in the County portion of the Study Area, with almost 60 percent of households in the City portion earning less than $20,000 per year in 1990 compared with 28.5 percent in the County portion. In fact, the median annual household income for the City portion of the Study Area was $16,000 below the County portion. This indicates that residents of the City portion of the Study Area likely have fewer transportation options than the County portion and both have fewer options than the remainder of the region as lower incomes correlate with lower vehicle ownership and operation (refer to next section).

TABLE 3.4-1
POPULATION DISTRIBUTION BY INCOME RANGE - 1990

Annual Income	Northside Total	City of St. Louis Portion	St. Louis County Portion	City of St. Louis Total	St. Louis County Total
0-$20k	43.8%	59.8%	28.5%	51.1%	21.6%
$20k-$40k	30.3%	25.1%	35.3%	29.9%	31.0%
$40k-$60k	16.3%	9.3%	22.9%	12.1%	23.1%
$60k-$75k	5.1%	2.7%	7.4%	3.6%	10.1%
$75k-$100k	2.9%	1.7%	4.1%	2.0%	7.2%
$100-$125K	0.8%	0.5%	1.1%	0.6%	2.9%
$125k-$150k	0.3%	0.3%	0.3%	0.3%	1.2%
$150k +	0.5%	0.6%	0.3%	0.5%	2.8%
Median Household Annual Income	$24,508	$16,224	$32,462	$20,300	$41,242

Source: 1990 Census (Data File STF3A); East-West Gateway Coordinating Council, 1999.

3.5 HOUSING

Table 3.5-1 displays the total number of households in the Northside Study Area from 1980 to 2020. The 1980 and 1990 figures are based upon decennial census tabulations. The 1996 estimates are based upon demographic data compiled since the 1990 census, whereas 2020 estimates are based upon projections developed by East-West Gateway Coordinating Council (EWGCC), in cooperation with the local jurisdictions, such as St. Louis County. The number of households in the Study Area have decreased by approximately 10,000 between 1980 and 1996, a 7.4 percent decrease, compared to the 16.7 percent population decrease cited above, indicating a decline in the average number of persons per household over that time period. In contrast to the population trends, the number of households has decreased in the City portion of the Study Area but increased in the County portion. Projections for the year 2020 estimate a small, additional decrease of 2,000 in the number of households in the overall Study Area over 1996. This compares with the projected decrease of 28,400 in total Study Area population. Again this projection assumes a continued decline in the number of persons per household due to fewer children per family and increased numbers of childless households, as well as a continued trend of abandonment of households in the City portion of the Study

Area. The trend of declining household size is projected to be greater in the St. Louis County portion of the Study Area compared to the City portion.

TABLE 3.5-1
TOTAL HOUSEHOLDS

Year	Northside Total	Percent Change from 1980	City of St. Louis Portion	St. Louis County Portion
1980	134,977	--	72,463	62,514
1990	128,813	-4.6%	63,924	64,889
1996	125,049	-7.4%	59,182	65,867
2020	122,987	-8.9%	57,956	65,031

Source: 1990 Census (Data File STF3A); East-West Gateway Coordinating Council, 1999.

Table 3.5-2 shows the housing statistics for the Northside Study Area as well as the City of St. Louis and St. Louis County as a whole. Occupancy rates are higher in the County portion of the Study Area compared to the City portion of the Study Area. This pattern is consistent with housing trends observed throughout the St. Louis region. The Northside Study Area has slightly lower occupancy rates and higher vacancy rates compared to other areas in the City of St. Louis and St. Louis County. In addition, nearly 57 percent of the housing in the Northside Study Area is owner-occupied, while a little over 43 percent of the housing in the Study Area is occupied by renters. The majority of those renters live in the City portion of the Study Area.

TABLE 3.5-2
HOUSING STATISTICS

	Northside Total	City Portion	County Portion	City Total	County Total
Housing Units	148,874	79,047	69,827	194,881	401,877
Percent Occupied	86.9%	80.4%	94.2%	84.6%	94.6%
Percent Vacant	13.0%	19.5%	5.7%	15.4%	5.4%
Percent Owner-Occupied	56.5%	40.0%	72.4%	45.1%	73.9%
Percent Renter-Occupied	43.5%	60.0%	27.6%	54.9%	26.1%

Source: 1990 Census (Data File STF3A); East-West Gateway Coordinating Council, 1999.

3.6 CAR OWNERSHIP

Table 3.6-1 presents the distribution of households by number of vehicles owned/operated by members of the household based upon the 1990 census for the Northside Study Area in total, as well as for both the City and County portions of the Study Area and City and County total. Both portions of the Study Area have lower auto ownership than the City or County overall. However, the City portion of the Study Area has significantly lower auto ownership than the County portion, with 39 percent of the households in the City portion not having an auto available compared to only 8.5 percent in the County portion. This indicates that the mobility available to households in the Northside Study Area is significantly restricted and that the City portion of the Study Area has a measurably higher transit dependency than the County portion due to the greater lack of access to automobiles.

TABLE 3.6-1
DISTRIBUTION OF VEHICLES PER HOUSEHOLD

Number of Vehicles Per Household	Northside Total	City of St. Louis Portion	St. Louis County Portion	City of St. Louis Total	St. Louis County Total
0	23.5%	39.0%	8.5%	29.1%	6.0%
1	39.1%	40.1%	38.2%	42.9%	33.0%
2	26.9%	15.7%	37.7%	21.8%	43.4%
3	7.9%	3.8%	11.9%	4.6%	13.1%
4	2.0%	1.0%	2.9%	1.2%	3.5%
5+	0.6%	0.3%	0.8%	0.3%	1.0%
Average per Household	1.28	0.89	1.65	1.07	1.78

Source: 1990 Census (Data File STF3A); East-West Gateway Coordinating Council, 1999.

3.7 EMPLOYMENT

Table 3.7-1 displays the total employment in the Northside Study Area by year. The 1990 data is from the decennial census (1980 data is unavailable). The 1996 data is an estimate based upon the 1990 census and state and county trend data. Year 2020 is a projection by EWGCC based upon information provided by state and local agencies. As can be seen in the table, employment in the Study Area has been decreasing during the past decade and is projected to continue to decrease through the study planning horizon of 2020. Total Study Area employment is forecast to decrease by approximately 12,400 jobs between 1996 and 2020, a 5.4 percent decrease over the 24-year projection, indicating a relatively small employment loss. However, this projected decrease is comprised of an almost 14,200 job loss in the City portion of the study area compared to a slight 1,900 job increase in the County portion of the Study Area. The Northside Study Area's proportion of total City employment is forecast to remain at about 77 percent and its proportion of total County employment is projected to remain at about seven percent.

TABLE 3.7-1
TOTAL EMPLOYMENT BY YEAR

Year	Northside Total	Percent Change from 1990	City of St. Louis Portion	St. Louis County Portion
1990	241,882	--	201,722	40,160
1996	230,451	-4.7%	191,036	39,415
2020	218,133	-9.8%	176,801	41,332

Source: 1990 Census (Data File STF3A); East-West Gateway Coordinating Council, 1999.

Table 3.7-2 displays a distribution of employment by type of employment for the Northside Study Area overall as well as the City and County portions of the Study Area and the distribution for the entire City and County. The most predominant employment categories in the Study Area overall are Administrative Support/Clerical and Service, and they are also the most predominant categories in the City portion of the Study Area. The two most predominant categories in the County portion of the Study Area are

Administrative Support/Clerical and Professional. "White collar" employment categories made up about 36 percent of the total employment in the Northside Study Area.

TABLE 3.7-2
1990 EMPLOYMENT BY TYPE

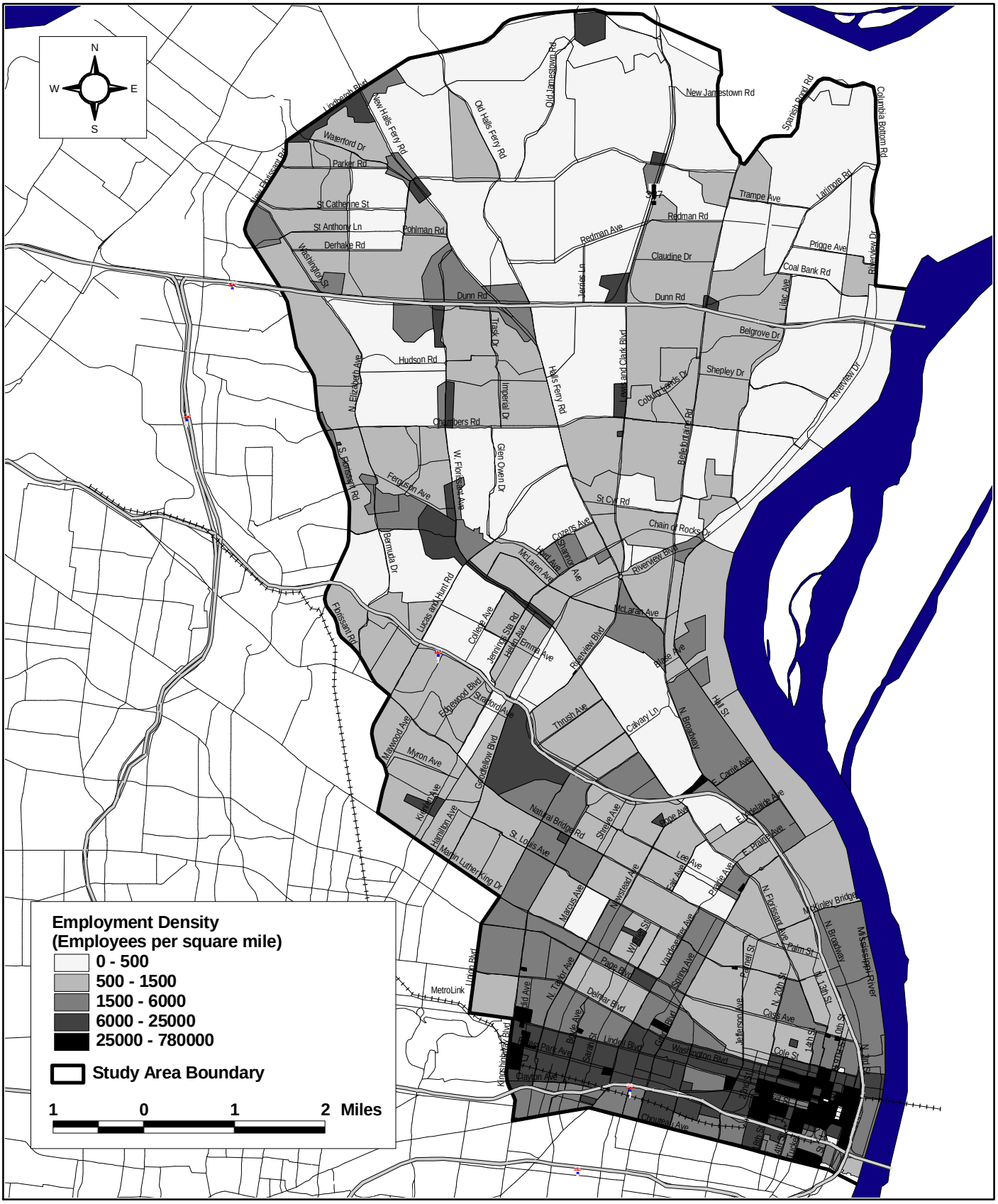
Type of Employment	Northside Total	City of St. Louis Portion	St. Louis County Portion	City of St. Louis Total	St. Louis County Total
Executive, administrative & managerial	9.6%	7.6%	11.1%	9.7%	15.7%
Professional specialty	13.3%	12.4%	14.0%	13.6%	18.0%
Technical/support	4.0%	4.1%	4.0%	4.0%	4.3%
Sales	9.6%	7.7%	10.9%	9.6%	14.0%
Administrative support, clerical	19.7%	18.9%	20.3%	19.0%	18.1%
Service, private household	0.7%	1.5%	0.2%	0.7%	0.2%
Protective service	2.1%	2.8%	1.6%	2.5%	1.2%
Service (except protective and household)	16.0%	21.7%	12.0%	16.8%	9.4%
Farming, forestry and fishing	0.6%	0.7%	0.5%	0.7%	0.6%
Precision production, craft and repair	8.5%	5.4%	10.6%	7.7%	8.5%
Operators, fabricators and laborers	7.4%	7.9%	7.0%	7.2%	4.2%
Transportation and material moving	4.1%	4.4%	3.9%	3.8%	2.8%
Handlers, equipment cleaners, helpers and laborers	4.4%	4.9%	4.0%	4.6%	3.0%

Source: 1990 Census (Data File STF3A); East-West Gateway Coordinating Council, 1999.

Figures 3.7-1 and 3.7-2 display the employment density in employees per square mile for 1996 and 2020 for the Northside Study Area. The highest employment densities are generally found in the southern portion of the Study Area within the City of St. Louis. They include the City of St. Louis Central Business District (CBD), the BJC Medical Complex, and the Olive Street/Lindell Boulevard corridor in between with A.G. Edwards and Sons and St. Louis University. Other high employment density locations in the study area include the Mark Twain Industrial area, Emerson Electric, and along I-270, especially near New Halls Ferry Road. The employment projections anticipate relatively stable locations of these higher density employment areas, with some decreases in employment densities in the southwest portion of the Study Area.

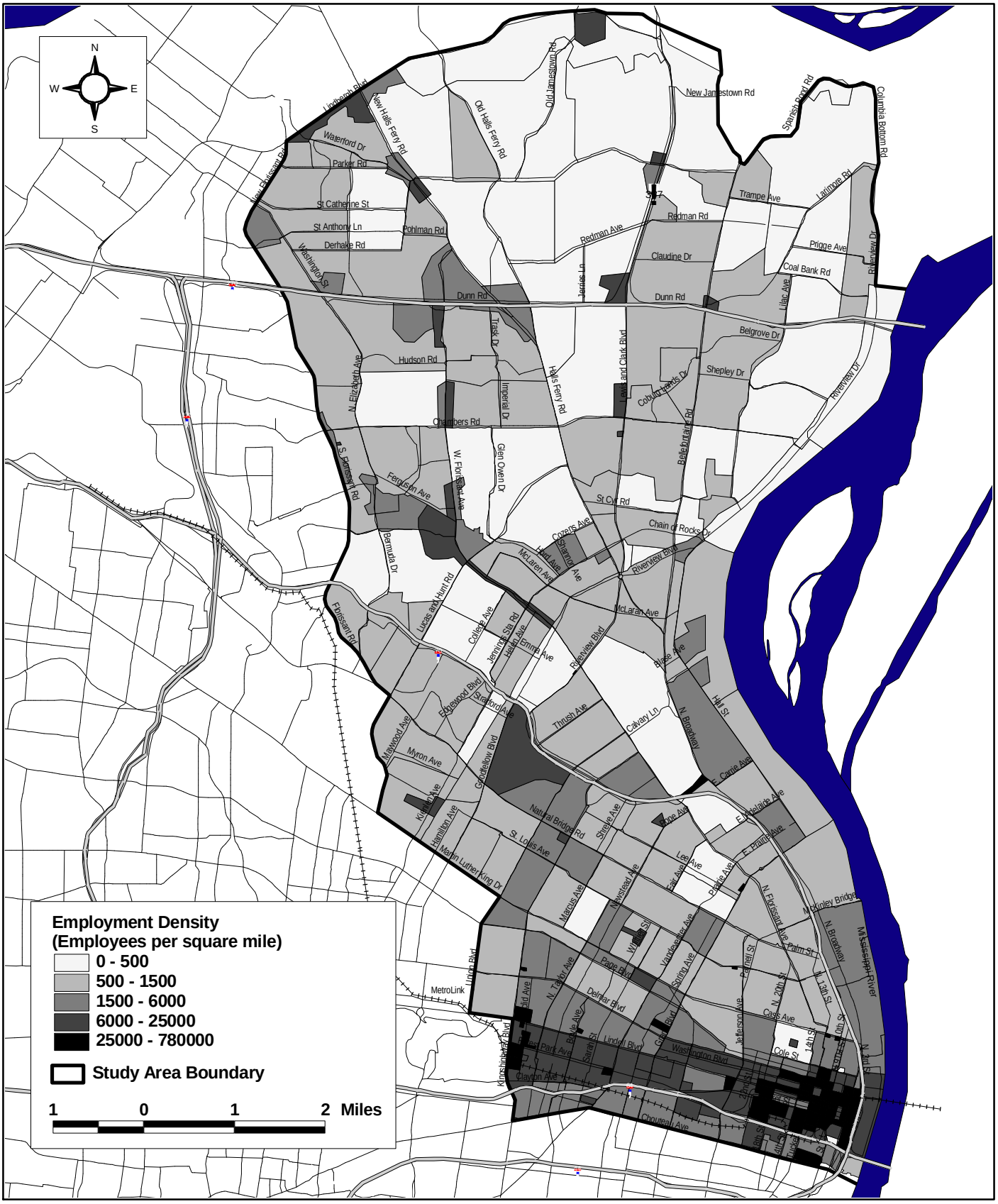
3.8 CONCLUSION

The summary of this demographic data shows that the Northside Study Area is forecast to have declining population and employment, household incomes and car ownership levels significantly below regional averages, and a full range of population and employment densities from low to high. These demographic characteristics will be taken into account when developing and evaluating transportation improvement alternatives.



Source: East-West Gateway Coordinating Council, November 1998.

Figure 3.7-1
Employment Density (1996)



Source: East-West Gateway Coordinating Council, November 1998.

Figure 3.7-2
Employment Density (2020)

4.0 TRAVEL PATTERNS

This section describes the travel characteristics of the Daniel Boone Study Area for both the base year of 1996 and the forecast year of 2020. Some of these travel characteristics are presented for the St. Louis metropolitan area as a whole as they are not able to be estimated for the Study Area alone.

4.1 MAGNITUDE OF TRAVEL

Table 4.1-1 displays the estimated average daily trips produced by or attracted to the Daniel Boone Study Area in 1996 and 2020 and the forecast change in trips between these two years. Total average daily trips produced in the Study Area are estimated to increase by 5.6 percent between 1996 and 2020, while total trips attracted to the Study Area are forecast to increase by 8.2 percent. These changes are consistent with the estimated changes in population and employment in the Study Area discussed in Section 3.0 of this report. Note that home-based work trips and home-based non-work trips produced in the Study Area are forecast to decline slightly between 1996 and 2020 due to the forecast slight decline in Study Area population. However, forecast work and non-work trips attracted to the Study Area are forecast to increase by about five percent as a result of the forecast increase in employment in the Study Area.

4.2 TRAVEL PATTERNS

Tables 4.2-1 and 4.2-2 display the estimated pattern of average daily total person trips produced by or attracted to the Study Area to/from other areas of the St. Louis region for the years 1996 and 2020. Note that total daily person trips produced in the Study Area are forecast to increase by about 41,000 between 1996 and 2020, only a 5.6 percent increase, consistent with projected changes in population, households and employment in the Study Area. Similarly, trips attracted to the Study Area are forecast to increase by 84,000, a 7.7 percent increase. The majority of trips in both years are estimated to both start and end within the Study Area, with 59.1 percent in 1996 and 57.6 percent in 2020 of the trips produced estimated to remain in the Study Area, and 39.9 percent in 1996 and 38.1 percent in 2020 of the trips attracted estimated to come from locations within the Study Area. The second largest location of trip productions in both years to the Study Area is the rest of St. Louis County as it is the second largest location of trip attractions for trips produced in the Daniel Boone Study Area. Only 2.3 percent of the trips produced by the Study Area are attracted to the St. Louis Central Business District (CBD) in 1996 and this is estimated to decline to only two percent of trips in 2020.

Tables 4.2-3 and 4.2-4 display the estimated pattern of average daily work person trips produced by or attracted to the Study Area for the years 1996 and 2020. These trips are estimates of the daily trips that are made directly between a person's residence and place of work, and are most likely to occur during peak commuting times (i.e., "rush hour"). Work trips are estimated to be approximately 22 percent of total daily trips produced in the Study Area in 1996 and 20 percent in the year 2020. As shown in Tables 4.2-3 and 4.2-4, the majority of work trips produced in the Study Area in both years are attracted to work locations within the Study Area. The second largest attractor of Study Area work trips in both years is the rest of St. Louis County. Only 6.8 percent of estimated 1996 Study Area work trips produced in the Study Area and 6.0 percent of estimated 2020 work trips produced in the Study Area are attracted to the St. Louis CBD. Looking at work trips attracted to the Study Area, it can be seen that the majority in both 1996 and 2020 are estimated to be produced by the rest of St. Louis County, while the second largest producer of work trips attracted to the Study Area in both years is the Study Area itself.

TABLE 4.1-1
AVERAGE DAILY TOTAL PERSON TRIPS 1996 AND 2020

Produced/		1996				2020				Pct. Change			
Attracted		HBW	HBNW	NHB	Total	HBW	HBNW	NHB	Total	HBW	HBNW	NHB	Total
Daniel Boone	P*	159,549	240,528	333,382	733,459	157,846	234,321	382,543	774,710	-1.1%	-2.6%	14.7%	5.6%
	A*	307,803	442,321	333,382	1,083,506	325,657	464,471	382,543	1,172,671	5.8%	5.0%	14.7%	8.2%
Region Totals		1,867,083	3,321,157	2,046,091	7,234,331	2,048,169	3,632,617	2,432,482	8,113,268	9.7%	9.4%	18.9%	12.1%

Source: East-West Gateway Coordinating Council February, 1999
Notes: * P= trips produced from the study area; A= trips attracted to the study area
HBW= home-based work trips (i.e from home to place of work)
HBNW= home-based non-work trips (e.g. from home to shopping)
NHB= non-home based trips (e.g. from workplace to grocery store)

TABLE 4.2-1
TOTAL PERSON TRIPS - 1996

	Attracted To												
Produced By	Central Business District	**Daniel Boone**	Northside	Southside	R/O St. Louis County	R/O St. Louis City	Jefferson	Madison	St. Clair	Monroe	St. Charles	Franklin	**Total**
Central Business District	30,744	**4,065**	19,361	15,551	6,499	2,303	396	1,479	3,722	61	334	16	84,531
Daniel Boone	**16,832**	**431,794**	**31,738**	**21,409**	**193,471**	**12,736**	**1,613**	**1,175**	**1,522**	**79**	**18,171**	**53**	**730,593**
Northside	88,295	**72,575**	424,357	63,837	188,360	28,142	995	18,971	8,270	166	15,491	44	909,503
Southside	88,405	**62,399**	82,325	447,395	139,275	36,657	30,718	3,821	10,471	2,134	2,642	830	907,072
R/O St. Louis County	51,427	**378,072**	151,312	102,904	912,662	40,549	14,665	9,242	4,775	524	54,039	343	1,720,514
R/O St. Louis City	11,774	**24,654**	27,852	28,271	34,763	25,342	586	526	1,012	49	951	20	155,800
Jefferson	10,741	**20,892**	8,853	62,341	66,776	4,129	194,303	1,511	2,281	616	1,262	4,158	377,863
Madison	19,860	**9,597**	34,958	10,689	26,012	2,235	2,303	564,839	66,256	2,488	3,073	770	743,080
St. Clair	34,428	**10,495**	25,533	21,886	17,253	3,190	1,001	70,953	593,184	6,667	2,752	895	788,237
Monroe	846	**774**	720	3,426	1,963	215	332	3,025	6,402	18,607	65	432	36,807
St. Charles	6,336	**66,273**	16,105	4,675	117,182	1,763	210	2,277	5,974	98	509,167	821	730,881
Franklin	1,669	**1,916**	1,117	5,610	4,366	426	6,458	1,503	5,027	2,118	1,554	17,686	49,450
Total	361,357	**1,083,506**	824,231	787,994	1,708,582	157,687	253,580	679,322	708,896	33,607	609,501	26,068	7,234,331

Source: East-West Gateway Coordinating Council, December 1998.

TABLE 4.2-2
TOTAL PERSON TRIPS - 2020

	Attracted To												
Produced By	Central Business District	**Daniel Boone**	Northside	Southside	R/O St. Louis County	R/O St. Louis City	Jefferson	Madison	St. Clair	Monroe	St. Charles	Franklin	**Total**
Central Business District	30,327	**4,535**	18,871	15,636	6,821	2,140	491	3,188	6,364	118	417	35	88,943
Daniel Boone	**15,382**	**445,239**	**30,751**	**24,922**	**209,031**	**11,838**	**3,301**	**1,792**	**2,628**	**217**	**26,298**	**141**	**771,540**
Northside	75,978	**70,057**	399,378	57,482	187,452	23,645	1,117	25,412	14,966	268	16,251	67	872,073
Southside	80,447	**75,715**	76,137	442,100	145,281	32,552	34,356	8,017	17,128	3,387	5,133	1,280	921,533
R/O St. Louis County	42,650	**392,170**	144,011	100,077	976,706	35,270	19,956	12,488	7,675	805	66,991	563	1,799,362
R/O St. Louis City	9,648	**24,202**	24,633	25,433	34,369	22,015	651	957	1,631	63	1,235	26	144,863
Jefferson	11,618	**35,336**	9,819	69,330	85,037	4,146	256,876	3,205	4,052	1,095	3,563	6,911	490,988
Madison	25,738	**9,383**	35,770	12,762	24,207	2,244	2,536	654,934	82,731	3,087	3,116	1,221	857,729
St. Clair	40,202	**12,382**	30,025	22,467	19,054	3,178	952	86,416	675,694	9,654	3,555	1,260	904,839
Monroe	1,447	**1,237**	1,087	4,112	2,282	234	462	4,320	10,288	32,447	155	751	58,822
St. Charles	6,651	**99,290**	18,384	7,337	159,721	2,342	649	3,310	6,833	208	822,691	1,110	1,128,526
Franklin	2,101	**3,125**	1,438	7,235	5,801	457	10,662	2,326	6,277	3,118	1,752	29,758	74,050
Total	342,189	**1,172,671**	790,304	788,893	1,855,762	140,061	332,009	806,365	836,267	54,467	951,157	43,123	8,113,268

Source: East-West Gateway Coordinating Council, December 1998.

TABLE 4.2-3
TOTAL PERSON WORK TRIPS - 1996

	Attracted To												
Produced By	Central Business District	**Daniel Boone**	Northside	Southside	R/O St. Louis County	R/O St. Louis City	Jefferson	Madison	St. Clair	Monroe	St. Charles	Franklin	**Total**
Central Business District	1,341	**151**	411	381	155	57	2	18	38	-	9	-	2,563
Daniel Boone	**10,921**	**87,522**	**9,186**	**6,244**	**39,490**	**3,016**	**91**	**287**	**351**	**7**	**2,434**	**-**	**159,549**
Northside	38,452	**25,415**	77,301	21,395	51,293	7,024	92	7,674	1,878	45	3,853	6	234,428
Southside	38,823	**23,964**	27,270	92,562	46,114	8,951	6,018	1,402	3,485	697	596	103	249,985
R/O St. Louis County	33,984	**119,017**	42,884	30,453	206,890	10,768	1,767	3,875	1,529	149	9,645	20	460,981
R/O St. Louis City	5,766	**7,136**	7,099	6,388	7,836	4,035	50	165	273	13	227	1	38,989
Jefferson	6,390	**8,194**	3,889	18,456	25,879	1,516	38,199	581	959	243	539	602	105,447
Madison	13,070	**5,073**	15,584	5,416	12,556	1,170	686	122,089	14,308	599	1,195	178	191,924
St. Clair	17,833	**5,100**	10,514	10,108	9,312	1,229	413	19,031	124,525	1,829	923	220	201,037
Monroe	523	**428**	328	1,412	1,022	106	98	929	1,603	2,548	32	77	9,106
St. Charles	5,089	**24,938**	5,764	2,782	44,882	783	30	905	1,757	41	112,312	156	199,439
Franklin	1,082	**865**	537	2,094	1,945	184	1,535	440	1,295	465	328	2,865	13,635
Total	173,274	**307,803**	200,767	197,691	447,374	38,839	48,981	157,396	152,001	6,636	132,093	4,228	1,867,083

Source: East-West Gateway Coordinating Council, December 1998.

TABLE 4.2-4
TOTAL PERSON WORK TRIPS - 2020

	Attracted To												
Produced By	Central Business District	**Daniel Boone**	Northside	Southside	R/O St. Louis County	R/O St. Louis City	Jefferson	Madison	St. Clair	Monroe	St. Charles	Franklin	**Total**
Central Business District	1,402	**182**	443	430	182	59	1	60	91	1	8	-	2,859
Daniel Boone	**9,388**	**87,395**	**8,095**	**5,908**	**40,862**	**2,611**	**151**	**429**	**552**	**32**	**2,420**	**3**	**157,846**
Northside	31,218	**23,718**	73,009	17,952	50,921	5,739	82	9,680	3,423	52	3,478	7	219,279
Southside	34,170	**26,233**	23,957	91,734	46,016	7,693	7,005	2,710	5,608	1,171	822	159	247,278
R/O St. Louis County	27,161	**119,197**	39,653	26,851	224,913	8,937	2,274	5,140	2,329	204	9,256	40	465,955
R/O St. Louis City	4,511	**6,690**	5,883	5,310	7,593	3,224	45	292	418	13	237	-	34,216
Jefferson	7,013	**12,275**	4,454	19,983	31,564	1,454	53,557	1,567	1,815	422	1,273	1,108	136,485
Madison	15,760	**4,685**	14,224	6,063	10,247	1,105	514	138,521	17,248	627	1,021	280	210,295
St. Clair	20,356	**5,982**	11,555	9,517	9,117	1,185	261	21,507	141,018	2,384	1,070	274	224,226
Monroe	887	**548**	432	1,489	993	103	105	1,270	2,718	5,381	61	142	14,129
St. Charles	5,243	**37,651**	6,664	3,868	62,664	1,090	89	1,478	2,180	79	193,959	249	315,214
Franklin	1,360	**1,101**	629	2,484	2,226	184	2,986	727	1,672	814	474	5,730	20,387
Total	158,469	**325,657**	188,998	191,589	487,298	33,384	67,070	183,381	179,072	11,180	214,079	7,992	2,048,169

Source: East-West Gateway Coordinating Council, December 1998.

Table 4.2-5 displays the estimated traffic volumes for 1996 and 2020 for six cutlines in the Daniel Boone Study Area. A cutline is an imaginary line along which all traffic on roadways crossing the line is summarized to present a picture of total travel movements at that location. Figure 4.2-1 displays the location of the six cutlines established by the study team to summarize travel patterns in the Daniel Boone Study Area. Cutlines one through four summarize east-west travel volumes, while cutlines five and six summarize north-south travel volumes. Among the four east-west cutlines, cutline SL-1, the most eastern, closest to the City of St. Louis, has the highest volume of traffic for both 1996 and 2020, while SL-4, the most western, has the lowest volume of traffic in both years. However, the two most western cutlines are forecast to have the greatest percentage increase in traffic volumes between 1996 and 2020, reflecting the proportionately higher growth in travel demand in the western portion of the study area as well as St. Charles County to the west of the study area. The two cutlines, SL-5 and SL-6, summarizing north-south traffic volumes, have the highest estimated traffic volumes among the six cutlines in both 1996 and 2020, indicating a high level of travel demand in the direction "perpendicular" to the main east-west axis of the study area. This travel growth "perpendicular" to the main geographic axis of the study area will need to be accounted for in the development of transportation alternatives either in this MTIA or other studies that would focus on north-south travel in central and western St. Louis County.

TABLE 4.2-5
CUTLINE VOLUMES

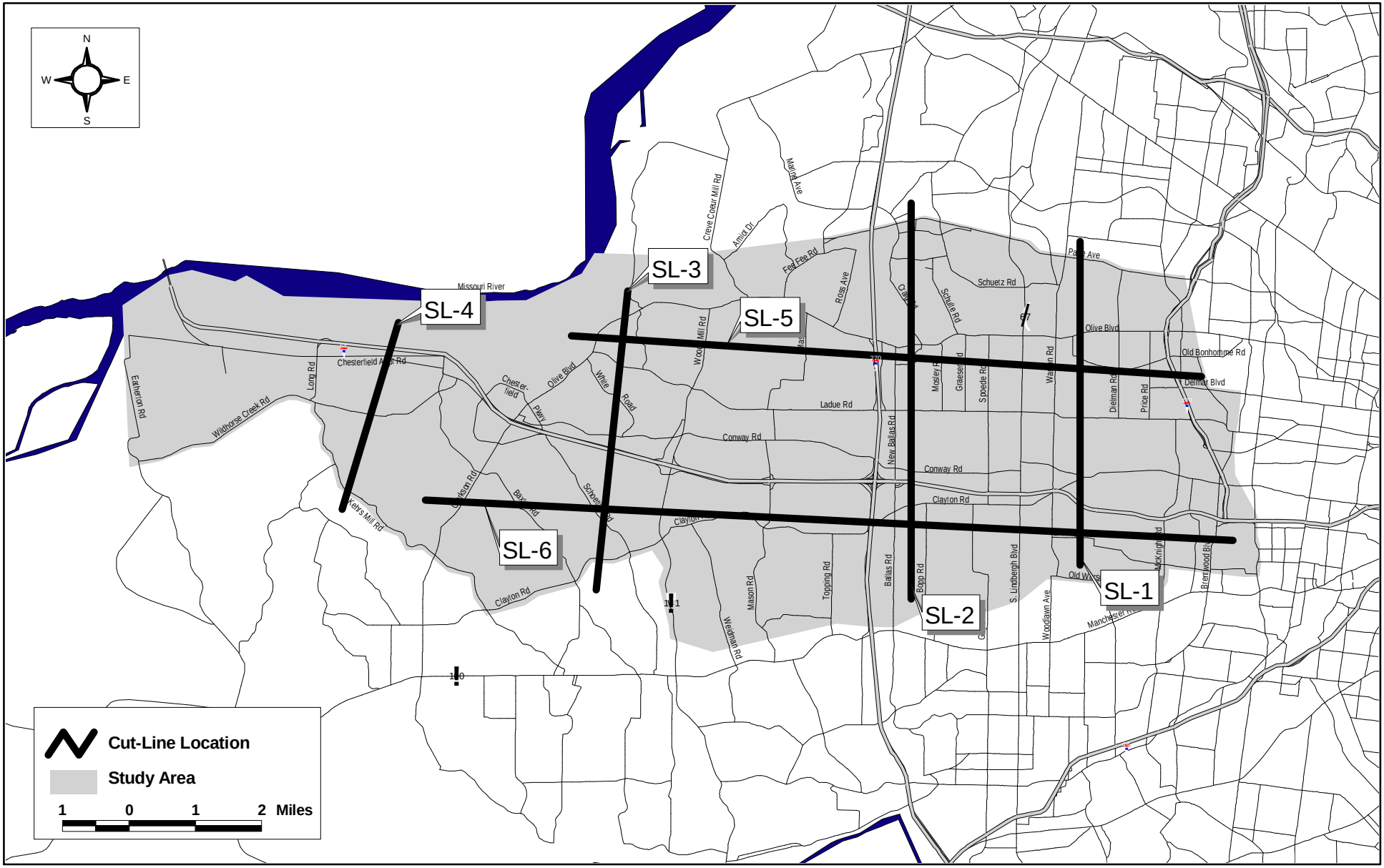
Cutline	1996 Volume	2020 Volume	Change	Percent Change
SL-1	233,200	270,700	37,500	16.1%
SL-2	223,500	258,200	34,700	15.5%
SL-3	116,400	165,800	49,400	42.4%
SL-4	76,300	116,800	40,500	53.1%
SL-5	340,600	396,200	55,600	16.3%
SL-6	311,300	384,800	73,500	23.6%

Source: East-West Gateway Coordinating Council, December 1998.
Note: Average annual weekday two-way traffic volume.

4.3 REGIONAL TRAVEL STATISTICS

While estimates of average trip length by Study Area are not available, regional estimates show that daily average trip lengths are forecast to increase from 8.9 miles per trip in 1996 to 9.8 miles in 2020. This reflects a forecast continuation of the trend of dispersal of households and employment throughout the region, particularly in outlying areas, requiring longer distances to be traveled, on average to reach the daily variety of travel destinations.

Similarly, regional average trip duration is forecast to increase from 16 minutes in 1996 to 19 minutes in 2020. This reflects a forecast of longer distances per trip, as described above, along with somewhat slower speeds per trip due to forecast increases in the amount and duration of traffic congestion on the region's roadways. Both these factors are expected to affect the Daniel Boone Study Area in a similar fashion to the rest of the region.



Cut-Line Volume Source: East-West Gateway Coordinating Council, November 1998.

Regional vehicle occupancies for total trips are estimated to decline slightly from 1996 to 2020. Average regional work trip occupancies are estimated to decline slightly from 1.11 persons per vehicle in 1996 to 1.10 persons per vehicle in 2020. Similarly, home-based non work trip vehicle occupancies are estimated to decline slightly from 1.335 persons per vehicle in 1996 to 1.326 persons per vehicle in 2020 and non-home based trip occupancies are forecast to decline from 1.236 (year 1996) to 1.228 (year 2020) persons per vehicle.

4.4 TRANSIT SHARES

Table 4.4-1 and Table 4.4-2 display the county to county fraction of total daily work person travel that is estimated to be taken by public transit in 1996 and 2020. Shares for travel to/from work are presented as these trips primarily occur during peak travel times of the day and because they comprise the highest percentage of the trips made on public transit. These transit shares are not yet able to be calculated for the Daniel Boone Study Area separately from the remainder of St. Louis County. The projected year 2020 shares assume the completion of the St. Clair County MetroLink extension currently under construction and all three segments of the Cross-County Corridor MetroLink line between Forest Park, Clayton and I-270/I-70 in the north and Butler Hill Road in the south in St. Louis County, along with associated improvements to Bi-State bus routes to provide feeder service to the new MetroLink stations. The data in Table 4.4-1 shows that the transit share of work trips produced by households in St. Louis County in 1996 are estimated to be 1.9 percent, increasing to 2.3 percent of trips in 2020 (see Table 4.4-2). Similarly, the transit share of work trips attracted to jobs located in St. Louis County in 1996 is estimated to be 0.9 percent, increasing to 1.3 percent of trips in 2020. The highest transit share from St. Louis County in both years is estimated to be for those trips destined to the St. Louis CBD, with a 9.9 percent share of work trips in 1996, increasing to a 12.7 percent share in 2020, most likely due to the assumed implementation of MetroLink service in the Cross-County Corridor.

TABLE 4.4-1
WORK TRIP TRANSIT SHARE - 1996

Origin	Destination									Total
	Franklin	Jefferson	Madison	Monroe	St. Charles	St. Clair	St. Louis Co.	St. Louis City	CBD	
Franklin	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Jefferson	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.6%	0.0%
Madison	0.0%	0.0%	0.4%	0.0%	0.0%	1.2%	0.4%	2.9%	13.2%	1.4%
Monroe	0.0%	0.0%	0.0%	0.2%	0.0%	0.6%	0.1%	1.4%	11.5%	0.9%
St. Charles	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	1.7%	9.2%	0.4%
St. Clair	0.0%	0.0%	0.6%	0.0%	0.0%	3.3%	0.9%	4.5%	16.5%	4.0%
St. Louis Co.	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.8%	3.6%	9.9%	1.9%
St. Louis City	0.0%	0.0%	0.4%	0.0%	0.0%	3.5%	4.0%	9.7%	22.0%	10.1%
CBD	0.0%	0.0%	0.0%	0.0%	0.0%	2.6%	6.4%	13.3%	9.5%	10.3%
Total	0.0%	0.0%	0.4%	0.1%	0.0%	3.0%	0.9%	5.7%	13.8%	2.8%

Source: East-West Gateway Coordinating Council, February 1999.

TABLE 4.4-2
WORK TRIP TRANSIT SHARE - 2020

Origin	Destination									Total
	Franklin	Jefferson	Madison	Monroe	St. Charles	St. Clair	St. Louis Co.	St. Louis City	CBD	
Franklin	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Jefferson	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.6%	3.2%	8.8%	1.0%
Madison	0.0%	0.0%	0.4%	0.0%	0.0%	1.7%	0.7%	3.2%	13.3%	1.6%
Monroe	0.0%	0.0%	0.1%	0.2%	0.0%	0.8%	0.4%	2.1%	11.8%	1.0%
St. Charles	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	1.9%	8.6%	0.3%
St. Clair	0.0%	0.0%	0.7%	0.0%	0.0%	4.0%	1.6%	5.3%	19.5%	4.9%
St. Louis Co.	0.0%	0.0%	0.0%	0.0%	0.0%	1.1%	1.1%	4.7%	12.7%	2.3%
St. Louis City	0.0%	0.0%	0.3%	0.0%	0.0%	4.7%	4.6%	9.4%	22.0%	9.7%
CBD	0.0%	0.0%	3.2%	0.0%	0.0%	4.3%	4.3%	10.8%	7.9%	8.1%
Total	0.0%	0.0%	0.4%	0.2%	0.0%	3.6%	1.3%	6.2%	15.5%	2.8%

Source: East-West Gateway Coordinating Council, February 1999.

5.0 ACTIVITY CENTERS

Activity centers associated with the Daniel Boone Study Area are described according to the following categories: A) recreational/cultural/parks, B) major employers, C) shopping centers, and D) educational institutions. While all activity centers are enumerated below, only the most significant of these centers are described with some level of detail. It is the presence of activity centers, either individually or in combination, which creates demands upon the regional transportation network. As a result, any analysis of regional transportation needs must include an examination of major activity centers. Many of the more significant activity centers described in this section are illustrated in Figure 5.0-1.

5.1 RECREATIONAL/CULTURAL/PARKS

As previously illustrated in Section 3.0, the Daniel Boone Study Area is dominated by a rather affluent population. As a result, large lot residential development is common, thereby providing a feeling of openness in many portions of the Study Area. In addition, numerous private and public golf courses are found throughout the corridor.

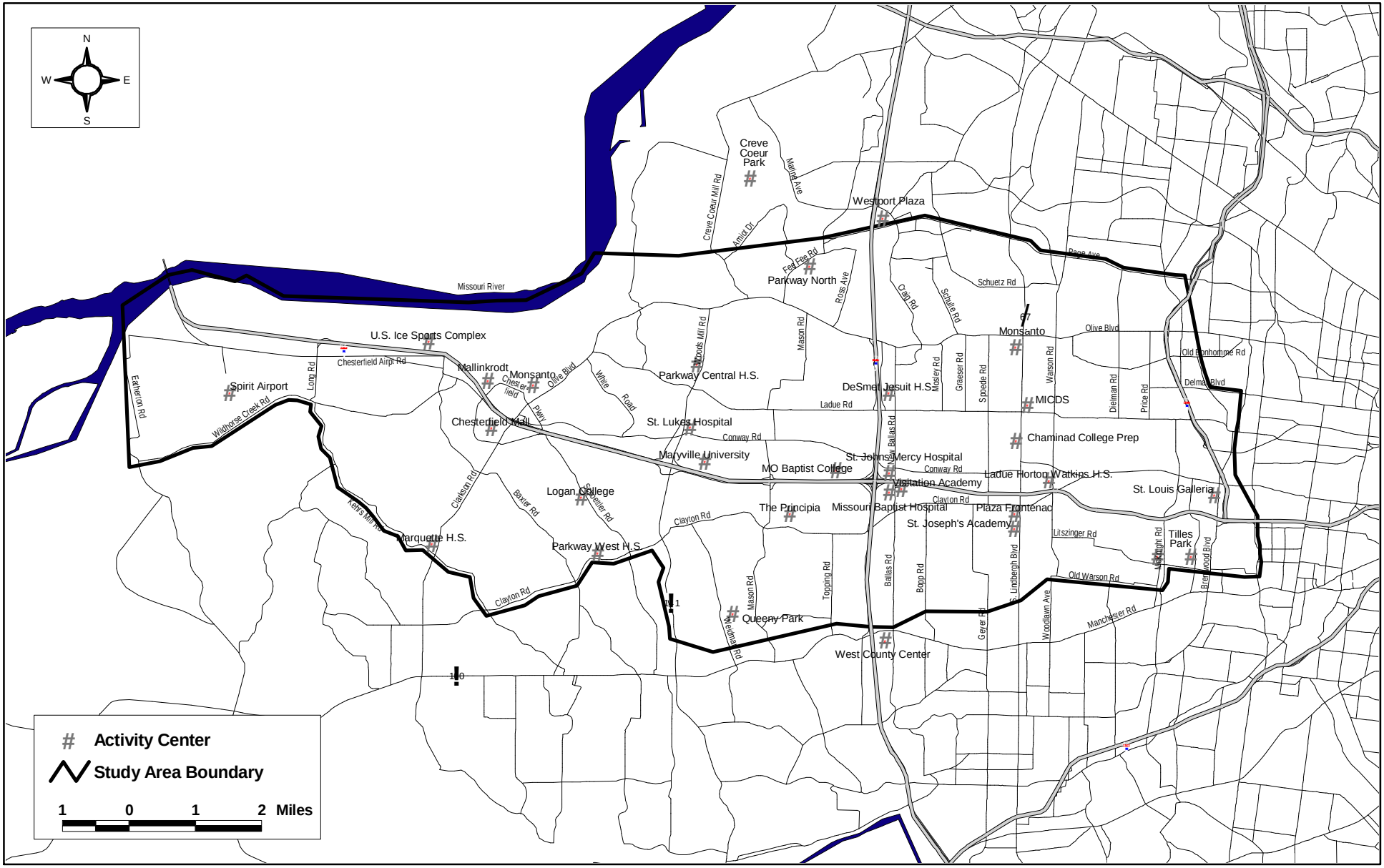
5.1.1 Recreational Facilities

In addition to the municipal, county and state parks that are identified and/or described below, the Study Area has many public and private golf courses, ice rinks, and state, county and municipal parks (parks are described after cultural facilities). Major golf courses and recreational facilities located within the Study Area include:

- Bellerive Country Club - Ladue
- Old Warson Country Club - Ladue
- St. Louis Country Club - Ladue
- Log Cabin Country Club - Ladue
- Bogey Country Club - Ladue
- Westwood Country Club - Westwood
- Meadowbrook Country Club - Chesterfield
- Creve Coeur Golf Course - Creve Coeur
- Four Seasons Golf Club - Chesterfield
- Chesterfield Golf Club - Maryland Heights
- Shaw Park Ice Rink - Clayton
- Queeny Park Ice Rink - St. Louis County
- Brentwood Ice Rink - Brentwood
- US Ice Center - Chesterfield

Bellerive, Old Warson, Westwood, Meadowbrook, and St. Louis Country Clubs, all located within the Daniel Boone Study Area, are ranked among the regions twelve toughest private golf courses. Therefore, these golf courses may host major tournaments on occasion. In addition to the recreational benefits associated with golf, the seven private country clubs listed above provide other recreational resources for the clubs' membership. These other benefits or recreational activities include competitive and leisure swimming and tennis, among others. In addition, on relatively rare occasions, Bellerive Country Club will host a major professional golf tournament which will draw thousands of spectators over a three or four day period.

The two public courses, Creve Coeur and Chesterfield, provide a recreational resource that is generally limited to golf. Neither of these courses are ranked among the toughest courses in the region and it is highly unlikely that these three facilities will ever host a major golf event.



Source: St. Louis County Department of Planning, November 1998.

Over the past ten to fifteen years, ice hockey has become an increasingly popular sport in the St. Louis Metropolitan Area. As a result, the demand for "ice time" has grown considerably. In response to this expanded interest, the hours of operation of existing facilities have been extended (to as much as twenty hours of daily operation), older facilities have been renovated, and new state-of-the-art complexes have been developed. The most notable of these newer facilities is the U.S. Ice Center in Chesterfield, which boasts three separate ice rinks. As a result of the size and popularity of the Chesterfield facility, it has become a significant traffic generator. However, peak ice times generally do not conflict with the peak travel times along I-64/U.S. 40, the major roadway serving the facility.

5.1.2 Cultural Facilities

Given the cultural heritage of the St. Louis Metropolitan Area and the willingness of residents of St. Louis City and St. Louis County to support cultural and educational facilities through a special taxing district, it is interesting to note that only a few cultural facilities and/or events occur within the Daniel Boone Study Area. The most significant of these facilities/activities include:

- St. Louis Symphony Summer Pops Concerts - Queeny Park
- St. Louis Dog Museum - Queeny Park
- Thornhill (1819 house of Missouri's second governor), Faust Historical Village, 1920's Dentzel Carousel, and Sophia M. Sachs Butterfly House and Education Center - Faust Park

5.1.3 Parks

Residents of the Daniel Boone Study Area are fortunate to have 24 state, county or municipal parks. In total, these parks provide approximately 3,500 acres of open/recreational space. Several of these parks also provide residents with a wide variety of activities ranging from athletic fields to performances by the St. Louis Symphony Orchestra. A listing of these parks is provided below and is followed by a brief description of four of the best known parks.

- Edmund A. Babler Memorial State Park - Wildwood
- Queeny County Park - Town and Country
- Faust County Park - Chesterfield
- King Memorial County Park -Overland
- Tilles County Park - Ladue
- Beirne Park – Creve Coeur
- Centerton Park - Olivette
- Conway Park - Creve Coeur
- Des Peres City Park - Des Peres
- Indian Meadow Park - Olivette
- Lake School Park - Creve Coeur
- McKinley Park - Rock Hill
- Memorial Park - Brentwood
- Oakhaven Park - Rock Hill
- Oak Trail Nature Park - St. Louis County
- Rosalie-Eulalie Park - Brentwood
- Royal Oaks Park – Warson Woods
- Villa Park – Olivette
- Stacy Park - Olivette
- Woodson Park – Overland
- Shaw Park – Clayton

- Ruth Park – University City
- Roads Park – Ladue
- Warson Park - Olivette

Edmund A. Babler State Memorial Park

This 2,449 acre state park provides a major outdoor recreational resource for all residents of the St. Louis Metropolitan Area. Located at the western edge of the Study Area, this park is nearly equally divided by the southern boundary of the Daniel Boone Study Area. The park provides picnic sites and shelters, swimming pools, softball fields, tennis courts, camping, playgrounds, a theater, museum, trails, and an outdoor education center for persons with disabilities.

Queeny County Park

Queeny County Park, a 569 acre park, is located in unincorporated St. Louis County between Mason and Weidman Roads. Included among the main attractions within the park are: the Dog Museum, picnic sites, a major playground, indoor and outdoor ice rinks, hiking trails, tennis courts, meeting rooms, equestrian trails, rollerblade and bicycle trails, a swimming pool, and an outdoor theater. Also, as noted in the discussion of cultural facilities, the St. Louis Symphony Orchestra annually conducts the Summer Pops Concert series at Queeny Park.

Tilles Park

Tilles Park is a 76 acre facility located at the intersection of Litzsinger and McKnight Roads. This St. Louis County park provides picnic sites and shelters, tennis courts, playgrounds, softball and baseball fields, soccer/football fields, a fishing lake, and a parcourse fitness circuit. A major annual activity within the park that draws literally thousands of residents from throughout the St. Louis Metropolitan Area is the holiday light display that occurs during the months of November and December.

Shaw Park

Located within Clayton, this city run facility provides year round recreational opportunities for all city residents. Included within this 48 acre park are baseball and softball fields, football/soccer fields, tennis courts, an outdoor ice skating rink, a theater, picnic sites and shelter, swimming and diving pools, playgrounds, a community center, and meeting rooms. This popular park provides a year round schedule of activities that benefit both residents and businesses within Clayton.

5.2 MAJOR EMPLOYERS/EMPLOYMENT CENTERS

Major employers and/or employment centers within the Daniel Boone Study Area include, among others, those providing business services for a large corporation (Monsanto World Headquarters); a major medical center (St. John's Mercy Hospital); a node comprised of retail, office and service activities (Clayton Central Business District); or large regional shopping malls (Galleria). Major employers and employment centers within the Daniel Boone Study Area are listed below.

Major employers:

- Monsanto World Headquarters - Creve Coeur
- Citicorp Mortgage - Town and Country
- U. S. Army Records Center/Publications Center - Overland
- Shriner Hospital - Frontenac
- Missouri Baptist Hospital - Town and Country

- St. John's Mercy Hospital - Creve Coeur
- Barnes West County Hospital – Creve Coeur
- St. Luke's Hospital - Chesterfield
- Mallinckrodt - Chesterfield
- Monsanto Research – Chesterfield

Major employment centers:

- Clayton Central Business District – Clayton
- Spirit of St. Louis Airport – Chesterfield
- St. Louis Galleria – Richmond Heights
- Plaza Frontenac Shopping Center – Frontenac
- Chesterfield Village – Chesterfield
- Maryville Center – Town and Country
- Olive Boulevard Corridor – Creve Coeur

Some of these major employers and employment sites are highlighted in the following subsections.

5.2.1 Monsanto Company

The world headquarters of Monsanto Company is located at the southeast corner of Lindbergh and Olive Boulevards, in the City of Creve Coeur. According to information provided by the firm, Monsanto employs approximately 3,800 people at various locations in the St. Louis Metropolitan Area. However, the vast majority of these employees are assigned to the headquarters facility.

5.2.2 Citicorp Mortgage, Inc.

Located along North Outer Forty Drive in the Maryville Center office park in Town and Country, Citicorp employs approximately 2,200 people at this location.

5.2.3 St. John's Mercy Hospital

With 859 licensed beds, this hospital provides health care services for many residents of the Study Area. In addition, as the second largest medical center in the region, it has 970 physicians on staff and employs 1,760 people.

5.2.4 St. Luke's Hospital

St. Luke's Hospital, located on Woods Mill Road in Chesterfield, employs approximately 2,300 employees and is licensed for nearly 500 beds.

5.2.5 Clayton Central Business District

The Clayton Central Business District (CBD) is the second largest employment center in the St. Louis region, with an estimated 30,000 people employed. The St. Louis City CBD ranks first with an estimated 80,000 employees. According to the 1999 St. Louis Office Leasing Guide, the Clayton office occupancy rate is at 95 percent. Also, although new office development has not occurred in Clayton for more than a decade, three new major office developments are currently in various stages of planning and are expected to break ground in 1999. They are:

- A 240,000 square foot World Trade Center near the intersection of Carondelet and Clayton Avenues The 270,000 square foot Shaw Park Plaza office tower at the northwest corner of Brentwood Boulevard and Forsyth Boulevard
- A 236,000 square foot speculative office tower near the southeast corner of Maryland Avenue and Forsyth Boulevard.

5.2.6 Chesterfield Valley/Spirit of St. Louis Airport

Chesterfield Valley, located in west St. Louis County, is a 7,000 acre area (10.9 square miles) located entirely within the alluvial floodplain of the Missouri River. Approximately 4,000 acres of land within this floodplain are protected by the Chesterfield Monarch Levee. For at least the past ten years, the City of Chesterfield has examined a variety of development alternatives for this area that have included office, retail, light industrial, warehousing, and entertainment activities.

In 1996, the Valley had approximately 3.4 million square feet of developed floor space and a growth rate estimated at 200,000 square feet of light industrial, office and retail space. Recent studies completed for the City of Chesterfield anticipate that by the year 2016, an additional 6.3 million square feet of floor area will be added within the Valley.

A major employment center within the Valley that has and will continue to serve as a catalyst for new development is the Spirit of St. Louis Airport. Airport administrators estimate that approximately 2,500 employees are engaged in a variety of light industrial, office and service activities that are located at the airport facility.

Based upon standards developed by the Urban Land Institute (1.61 employees per 1,000 square feet of light industrial space), it is estimated that 5,500 people are currently engaged in a variety of business and industrial activities within the Valley, and that by 2016, that number will grow to approximately 15,500 people.

5.2.7 Maryville Centre

Maryville Centre is a relatively new and expanding office development located along I-64/U.S. 40 at Maryville Centre Drive. It contains several office buildings and a Marriott Hotel. Recently, ground was broken for additional office buildings and a Courtyard by Marriott. Estimates of employment provided by EWGCC indicate that approximately 5,000 people are currently engaged in a variety of business-related activities.

5.3 RETAIL SHOPPING

Four major regional shopping malls and ten shopping centers are located within the Daniel Boone Study Area. This comparatively affluent Study Area provides a strong market for higher-end and specialty retail establishments. Also, as noted in Section 5.2 Major Employers/Employment Centers, large regional malls also represent major employment centers. In their 1998 Fact Book, the St. Louis County Department of Planning identified the regional malls and retail shopping centers that are located within the Daniel Boone Study Area. These include:

Regional Malls	Area Under Roof
• Chesterfield Mall	1,551,000 square feet
• St. Louis Galleria	1,284,000 square feet
• West County Center	605,000 square feet
• Plaza Frontenac	466,000 square feet

Major Shopping Centers	Area Under Roof
• Manchester Meadows	455,000 square feet
• Overland Plaza	272,000 square feet
• Heritage Place	253,000 square feet
• Four Seasons	180,000 square feet
• Westport Plaza	163,000 square feet
• Lamp & Lantern Village	148,000 square feet
• West Oak Village	144,000 square feet
• Creve Coeur Plaza	135,000 square feet
• Schnucks Ladue Crossing	135,000 square feet
• Des Peres Square	129,000 square feet

Again, using multipliers developed by the Urban Land Institute (5.08 employees per 1,000 square feet of retail space) to calculate the number of people actively engaged in retail sales in these regional malls as well as retail centers yields approximately 30,000 people. Unfortunately, reliable estimates of the number of shoppers using these facilities on an annual basis are not readily available.

5.4 EDUCATIONAL INSTITUTIONS

Several of the region's finest educational institutions are either located within the Daniel Boone Study Area, or they are located along the Study Area's travel shed to the east. Although some of these institutions are beyond the eastern limits of the Study Area, they are significant institutions that impact traffic within the corridor. Included among these are public and private high schools and several prominent colleges and universities. The most notable among these institutions are:

Colleges and Universities	Enrollment (1997/1998 School Year)
• Washington University	12,059
• St. Louis University	10,998
• Maryville University	3,055
• Missouri Baptist College	2,716
• Logan College of Chiropractic	1,015

High Schools	Enrollment (1997/1998 School Year)
• DeSmet Jesuit High School	1,298
• Parkway North High School	1,370
• Parkway South High School	2,040
• Parkway Central High School	1,420
• Parkway West High School	1,508
• Marquette High School	1,917

6.0 ENVIRONMENTAL CONSIDERATIONS

This section provides an initial overview of the environmental considerations. It characterizes the types of environmental concerns that may be encountered within the Study Area. This level of analysis will identify "environmental fatal flaws" and other potential environmental constraints. A greater depth of environmental analysis will be conducted in a later phase of the MTIA. The sources of information for this section were limited to general data that was readily available to the public from the Missouri Department of Natural Resources (MDNR), the East-West Gateway Coordinating Council (EWGCC), the Bi-State Development Agency (BSDA), the U. S. Environmental Protection Agency (EPA), the Federal Emergency Management Agency (FEMA), the Natural Resource Conservation Service (NRCS), the Archaeological Survey of Missouri (ASM) and the United States Fish and Wildlife Service (USFWS).

6.1 WATER/WETLANDS

The Study Area is located within the watersheds of three rivers, the Missouri River, the Mississippi River and the Meramec River. The major tributaries traversing the Study Area include Bonhomme Creek, Caulk's Creek, Smith Creek, Two-Mile Creek, Deer Creek, Fee Fee Creek and Creve Coeur Creek.

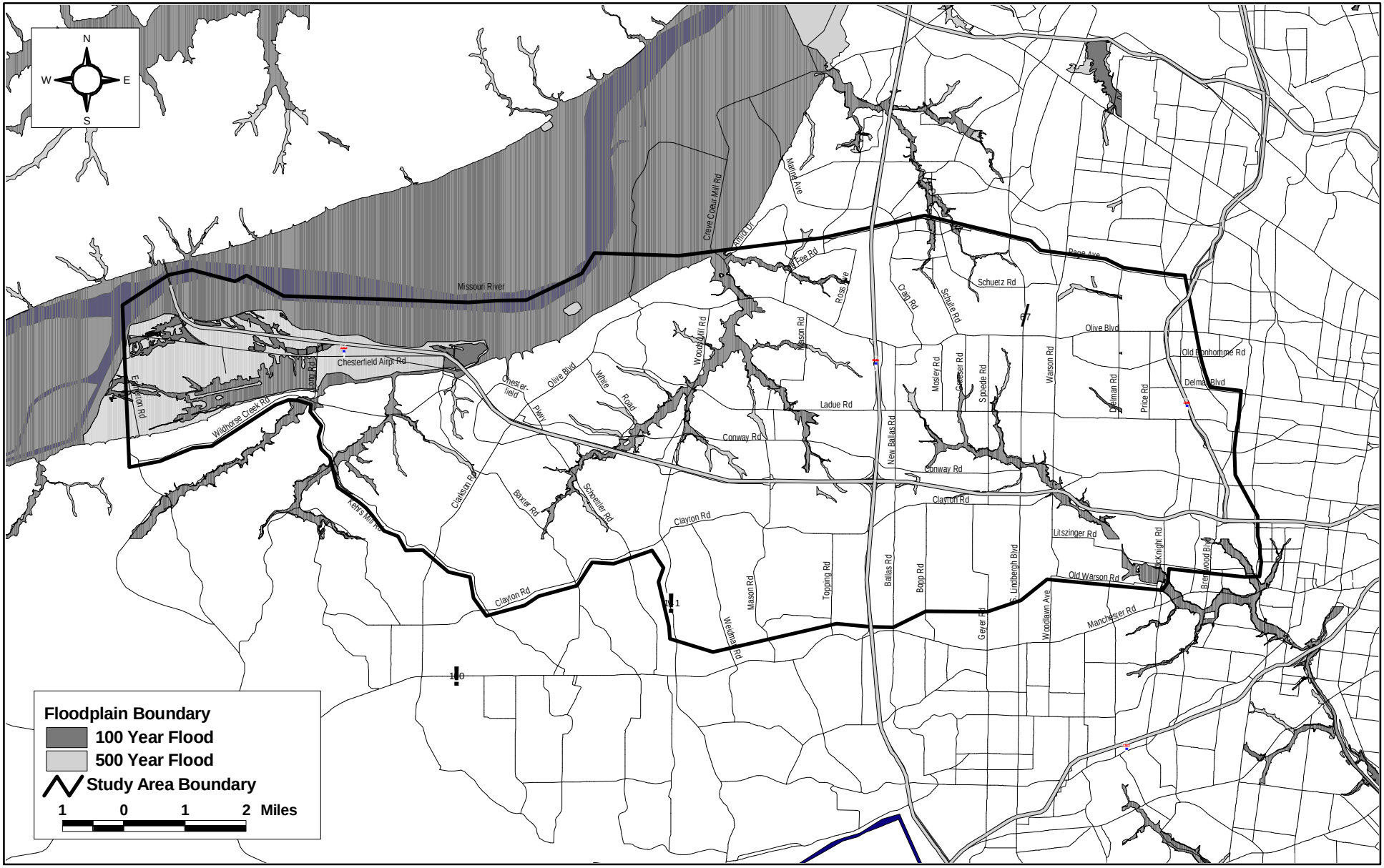
All cities within the Study Area participate in the FEMA program. The one hundred year and the five hundred year floodplains (see Figure 6.1-1) have been identified by FEMA as being associated with Bonhomme Creek, Caulk's Creek, Two-Mile Creek, Deer Creek, Fee Fee Creek, Creve Coeur Creek, Smith Creek and the Missouri River. FEMA requires each community to designate floodways to avoid the possibility of significantly increasing upstream flood elevations. Each community in the Study Area must prohibit development within the designated floodway that would cause any additional rise in base flood elevations. Federal regulations require that facilities constructed within the 100-year floodplain must not increase flood levels by more than one foot.

A review of the National Wetland Inventory (NWI) maps indicate over 480 wetlands within the Study Area. A majority of these wetlands are associated with the tributaries listed above and are widely dispersed throughout the Study Area (see Figure 6.1-2). Only the U.S. Army Corps of Engineers (USACE) or the NRCS can make determinations as to whether a potential wetland is in fact a jurisdictional, or regulated, wetland. No jurisdictional determinations have been made at this time.

The wetland classes within the Study Area are identified as palustrine or riverine on the NWI maps. Palustrine wetlands are those wetlands which are associated with ponds (less than 20 acres), marshes, depressions and other areas which hold or trap water or have a high water table. Riverine wetlands are those wetlands that are contained within a channel with periodically or continuously moving water.

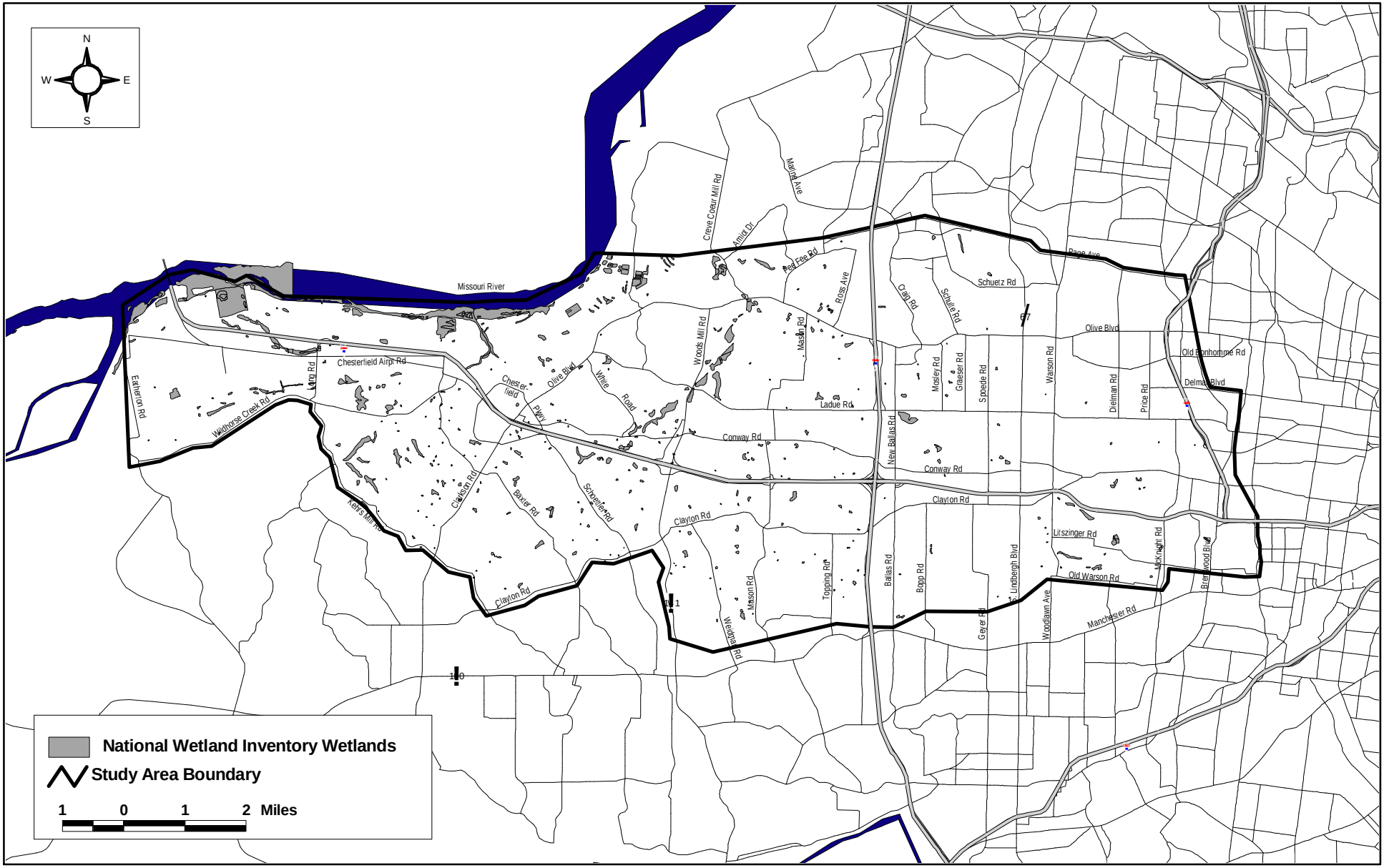
The different types of palustrine systems found within the Study Area include forested wetlands, scrub shrub wetlands, emergent wetlands, and unconsolidated bottom. Most of the forested wetland areas are associated with the reservoirs, ponds and lakes found throughout the corridor and typically represent the seasonally saturated bottomland areas of rivers, streams or creeks. Emergent wetlands in the project corridor typically consist of cattail marshes with fringe open water and lacustrine habitat. Scrub shrub wetland habitat in the Study Area consists of secondary growth of succession species such as willows. Unconsolidated bottom habitat types are unvegetated mud flats, sandbars and gravel beds. Riverine habitats are those areas contained within a channel. This wetland class includes excavated ditches and drainageways found throughout the Study Area and lined tributaries.

The USACE regulates impacts to wetlands under Section 404 of the Clean Water Act (CWA). In addition to the requirements of the CWA, the USACE must also comply with other federal laws in the evaluation of an application. These include the following:



Source: Federal Emergency Management Agency, 1998.

Figure 6.1-1
Floodplain Boundaries



Source: National Wetland Inventory Maps, 1993.

- The Fish and Wildlife Coordination Act requires federal agencies to coordinate with the USFWS, the National Marine Fisheries Service (NMFS) and the appropriate state wildlife resource agencies.

- The Endangered Species Act requires federal agencies to coordinate with the USFWS or NMFS to insure that the federal action does not jeopardize any threatened or endangered species.

- The National Historic Preservation Act of 1966 requires coordination with the appropriate agencies regarding eligible resources for listing on the National Register of Historic Places.

- Section 401 of the Clean Water Act requires a state certification of water quality.

Wetland impacts must be avoided, minimized or replaced according to current regulations. Minimization of wetland involvement would be an important component of the development of transportation improvement alternatives in the Study Area.

6.2 HAZARDOUS MATERIALS AND WASTE

A review of the MDNR database was conducted to identify properties containing hazardous materials, hazardous waste, and solid waste. The database identified 37 properties containing hazardous materials and waste in the Study Area (see Figure 6.2-1). The majority of these sites are located in the Chesterfield Valley (the western most portion of the Study Area) and in the northeast portion of the Study Area. It is important to note, however, that the database review does not represent a Phase I – Preliminary Site Investigation, therefore, the status or level of risk associated with each of these sites is unknown at this time.

6.3 THREATENED AND ENDANGERED SPECIES

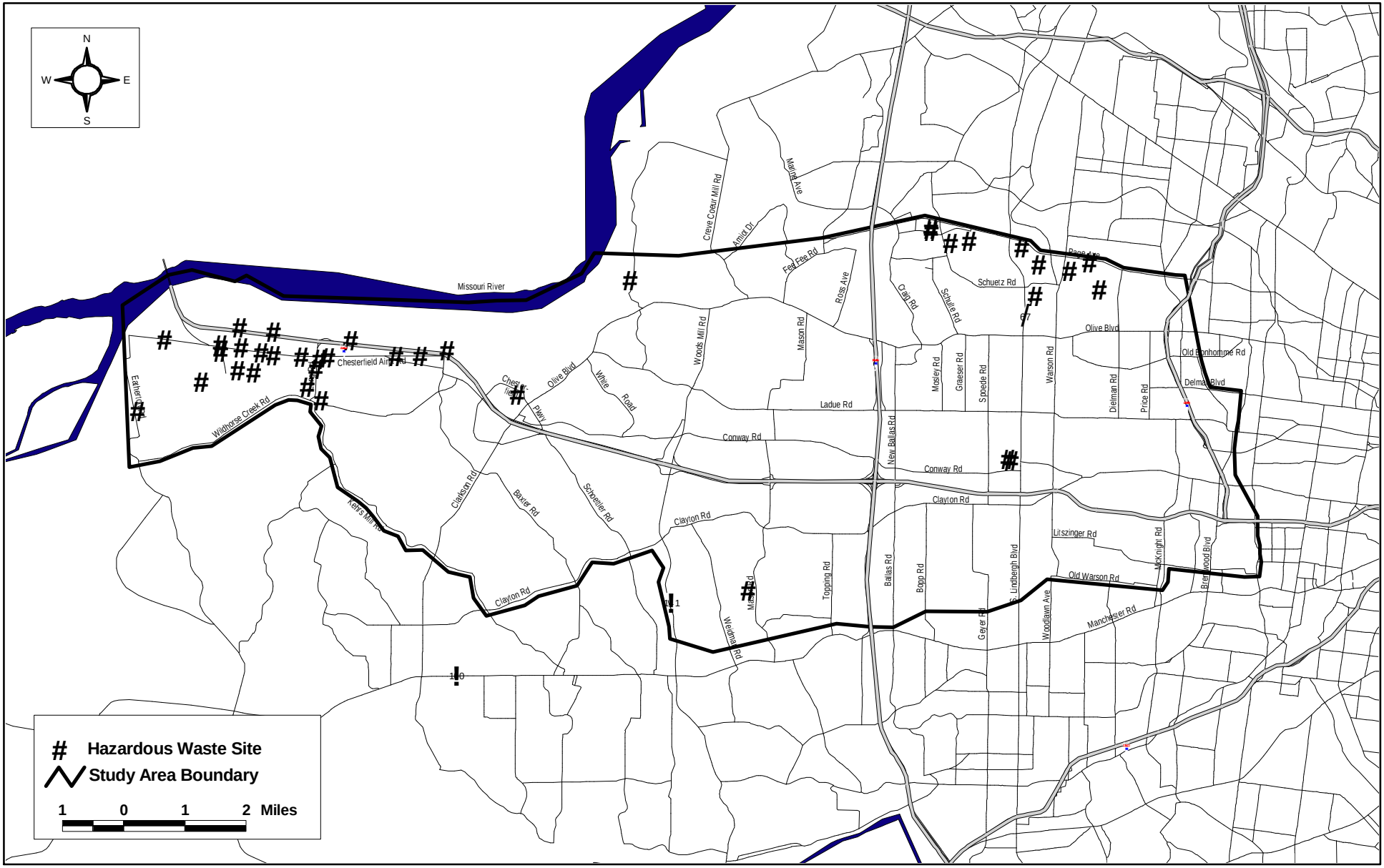
Natural heritage resources are defined as the habitat of rare, threatened or endangered species, unique or exemplary natural communities and significant geologic formations. Avoiding the disturbance of threatened or endangered species is mandatory in the development of transportation improvement alternatives.

A total of 25 threatened and endangered species are known to exist in the vicinity of the Study Area. The listed threatened and endangered species include: the gray bat, the Indiana bat, the ozark big-eared bat, the bald eagle, the American peregrine falcon, the piping (Interior) plover, the least (interior population) tern, the pallid sturgeon, the fat pocketbook clam, the pink mucket pearly mussel, the winged maple leaf mussel, the curtis' pearly mussel, the higgin's eye pearly mussel, the decurrent false aster, the Missouri bladderpod, the running buffalo clover, the minimum geocarpon, the western prairie fringed orchid, the mead's milkweed, and the pondberry. The Proposed and Candidate species include the Arkansas darter, the sturgeon chub, the sicklefin chub, the topeka shiner, and the tumbling creek cavesnail. It is important to note that only an on-site inspection could verify the absence or existence of these species. The area of greatest concern exists near and within the Mississippi, Missouri and Meramec Rivers and associated tributaries. No protected natural heritage sites have been identified within the Study Area.

6.4 AIR QUALITY

Section 107 of the 1977 Clean Air Act Amendments (CAAA) requires the EPA to publish a list of all geographic areas in compliance with the National Ambient Air Quality Standards (NAAQS), as well as those not attaining the NAAQS. Areas not in compliance with the NAAQS are termed non-attainment areas. Areas which have insufficient data to make a determination are unclassified, and are treated as being attainment areas until proven otherwise. The designation of an area is made on a pollutant-by-pollutant basis.

As required by the Clean Air Act, NAAQS have been established for the six major air pollutants. The "primary" standards have been established to protect the public health. The "secondary" standards are intended to protect the nation's welfare and account for air pollutant effects on soil, water, visibility, materials, vegetation, and other aspects of the general welfare.



Source: Missouri Department of Natural Resources, 1998.

The CAAA of 1990 direct the EPA to implement strong environmental policies and regulations that would ensure cleaner air quality. According to Title I, Section 101, Paragraph F of the Amendments, "No federal agency may approve, accept or fund any transportation plan, program or project unless such plan, program or project has been found to conform to any applicable State Implementation Plan (SIP) in effect under this act."
Currently, St. Louis County is listed by the EPA as a "moderate" non-attainment area. The area failed to meet the November 1996 attainment deadline. According to the Missouri Department of Natural Resources, the possibility remains for the EPA to reclassify St. Louis to a "serious" non-attainment area resulting in greater regulatory controls.

All transportation improvement alternatives must be subject to an air quality analysis and conformity determination as required by the Federal Clean Air Act Amendments of 1990. It must be demonstrated that transportation improvement alternatives do not adversely affect attainment of the NAAQS for the region and the Study Area, or they cannot be implemented.

6.5 NOISE/SENSITIVE RECEPTORS

A review of land uses was made to identify land uses and sites sensitive to noise impacts within the Study Area. A noise impact occurs when a transportation improvement alternative generates noise levels which substantially exceed existing noise levels. Sensitive receptors are those where serenity and quiet are of extraordinary significance and serve an important public need, and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.

Sensitive receptors include facilities such as schools, churches, hospitals, day care centers, and nursing homes. These facilities are primarily concentrated in the northern and southern parts of the Study Area. Derived using available land use, the Study Area (see Figure 6.5-1) contains:

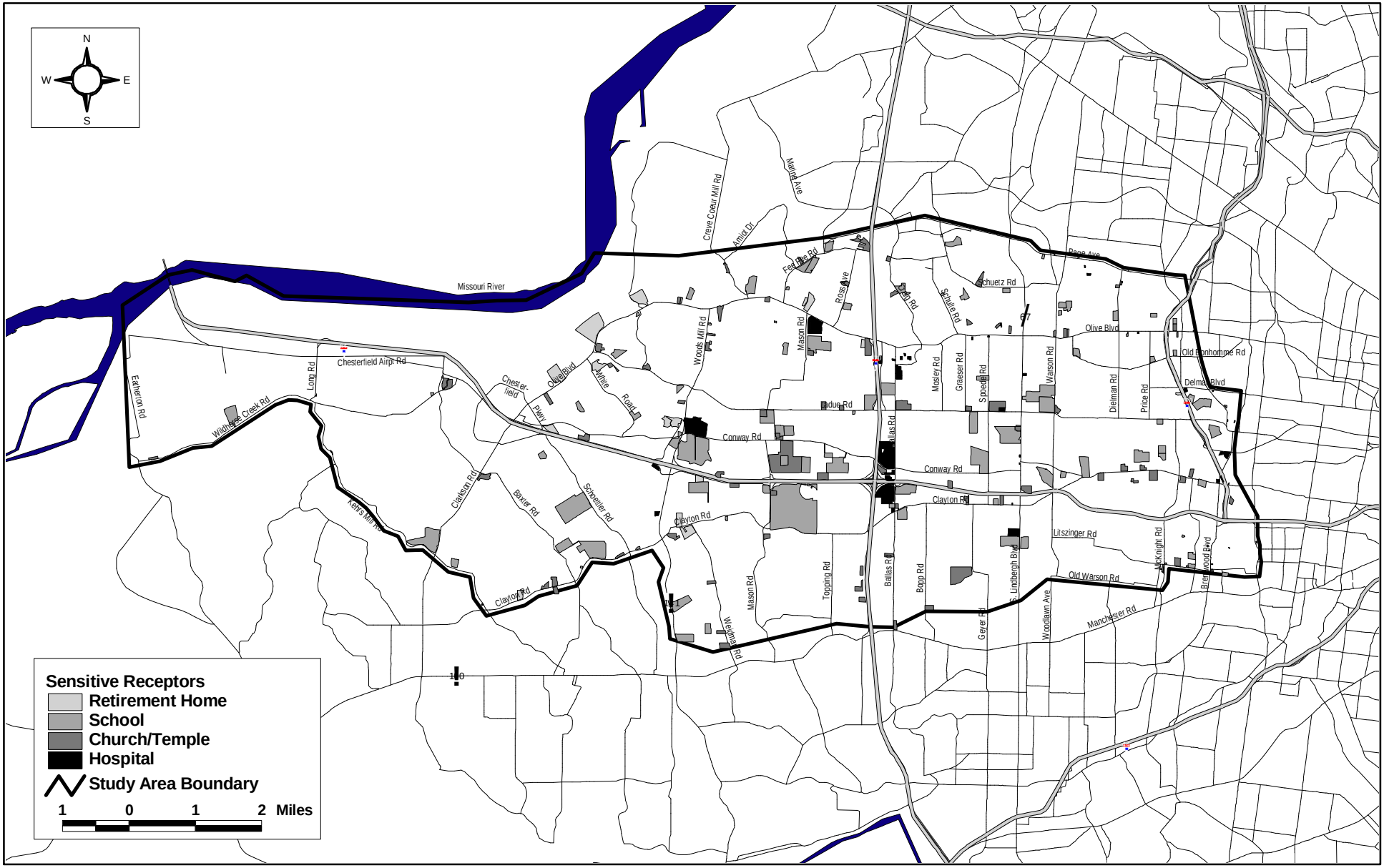
- 18 Retirement Homes/Orphanages
- 98 Nursery Schools/Schools
- 31 Hospitals/Medical Facilities
- 85 Churches

While EPA provides a broad direction, a more explicit statutory basis for mitigating adverse noise impacts is contained in the Federal Transit Laws. Before approving a construction grant under Section 5309, the Federal Transit Administration (FTA) must make a finding that "…the preservation and enhancement of the environment, and the interest of the community in which a project is located, were considered; and no adverse environmental effect is likely to result from the project, or no feasible and prudent alternative to the effect exists and all reasonable steps have been taken to minimize the effect."

The FTA impact assessment procedures advise that alternative locations for a proposed transportation project should be evaluated before consideration is given to other measures to mitigate anticipated impacts if the identified impacts are considered to be "severe." For adverse but not "severe" impacts, the FTA procedures recommend that mitigation measures be considered if it is feasible and reasonable to do so.

Similarly, the Federal Highway Administration (FHWA) has established Procedures for Abatement of Highway Traffic Noise and Construction Noise, as published in the Code of Federal Regulations, Volume 23, Part 772, August, 1982. These procedures allow for the acoustical impact of a proposed action to sensitive noise receptors to be assessed and the need for abatement measures to be determined.

A detailed noise analysis should be completed as part of future studies on a locally preferred alternative. If a transportation improvement is selected, mitigation measures to noise impacts, if required, would be defined at that time. Public participation should be part of the decision-making process.



Source: St. Louis County Department of Planning, November 1998.

6.6 GEOLOGY AND LANDFORM

The Daniel Boone Study Area has several major landform and geological conditions. The area is characterized by rolling topography and hills, occasionally cut by deep ravines. The northern and western edge of the corridor includes part of the alluvial plain of the Missouri River Valley. Relatively steep bluffs periodically cut by deep ravines border the edge of the alluvial plain. The bluffs define the edge between the alluvial plain and the rolling hills of the remainder of the rest of the Study Area.

The generalized geologic characteristics of the corridor and immediate vicinity include sequential beds of Pennsylvanian age shales, sandstones, siltstones and limestones with thin seams of coal and clay in the northeast to north central areas. Two layers of glacially derived (wind-deposited) loess soils overlie this. The top layer is Peoria loess with a relatively thin, low-clay silt. Below the Peoria layer is a layer of Roxana loess, with higher clay content.

Deep limestones of the Ste. Genevieve, St. Louis, and Salem Formations characterize the south to south central parts of the study corridor and the alluvial plain of the Missouri River. The alluvium material that fills the valley of the Missouri River is over 100 feet thick and consists of stratified sand, silt and clay with beds of gravel and lenses of organic material. The Peoria and Roxana loess mantles the bedrock.

Portions of the north central to south central parts of the corridor include areas characterized as predominantly shales and siltstone with interbedded limestone and sandstone. In these areas, the bedrock is near the surface.

The most problematic geological units within the Study Area are the shales in the south central quadrant and the alluvial materials in the Missouri River Valley. However, the geological conditions are such that they pose no major constraints to transportation related construction.

6.7 HISTORIC/CULTURAL AND ARCHAEOLOGICAL

Section 106 of the National Historic Preservation Act of 1966 requires that a federal agency consider the effect of a federally-assisted project on any district, site, building, structure or object listed on, in, or eligible for the National Register of Historic Places. The Criteria of Effect and Adverse Effect were established in 36 CFR 800.9. An undertaking is considered to have an adverse effect when the effect on a historic property may diminish the integrity of the property's location, design, setting, materials, workmanship, feeling or association. Adverse effects on historic properties include, but are not limited to:

- physical destruction, damage or alteration of all or part of the property
- isolation of the property from or alteration of the character of the property's setting when that character contributes to the property's qualifications for the National Register
- introduction of visual, audible or atmospheric elements that are out of character with the property or alter its setting
- neglect of a property resulting in its deterioration or destruction
- transfer, lease or sale of the property

Section 4(f) of the Department of Transportation Act of 1966 requires that no federally-assisted transportation program or project use land from a significant publicly owned public park, recreation area or wildlife and waterfowl refuge, or any significant historic site, unless a determination is made that (1) there is no feasible and prudent alternative to using that land, and (2) such program or project includes all possible planning to minimize harm to the property resulting from such use.

According to the Archaeological Survey of Missouri, there are 725 recorded archeological/cultural resource sites within the Study Area. A majority of these sites are located south of U.S. 40/I-64.

A state search of the National Register Information System revealed eight sites currently listed on the National Register of Historic Places (NHRP) (see Figure 6.7-1). They include Busch's Grove, Des Peres Presbyterian Church, Jarville, Old Stone Church, Theodore A. Pappas House, Samuel Plant House, Price School, Seven Gables Building and Thornhill. There may be other sites that are eligible for the NHRP and they will be identified in later phases of the study. No historic districts were identified within the Daniel Boone Study Corridor.

6.8 PRIME FARMLAND

Less than five percent of the Study Area would meet criteria as prime farmland, almost all of which occurs in the bottomlands near the Missouri River, at the northwestern edge of the Study Area. On the upland, small remnant patches of prime farmland occur near major creeks. However, since the Study Area is within an urban developed area with minimal agricultural land use, there are no protected agricultural areas as defined by Section 1540 (c) (1) of the Farmland Protection Act. Therefore, there will be no constraints to the development of transportation improvements alternatives.

6.9 SECTION 4(f)/6(f)

6.9.1 Section 4(f)

Protection of public parks, recreational areas, wildlife refuges and historic places is required in accordance with Section 4(f) of the Department of Transportation (DOT) Act of 1966 and applies only to agencies within the DOT and only to publicly-owned parks, recreational areas, and wildlife and waterfowl refuges. The Section states:

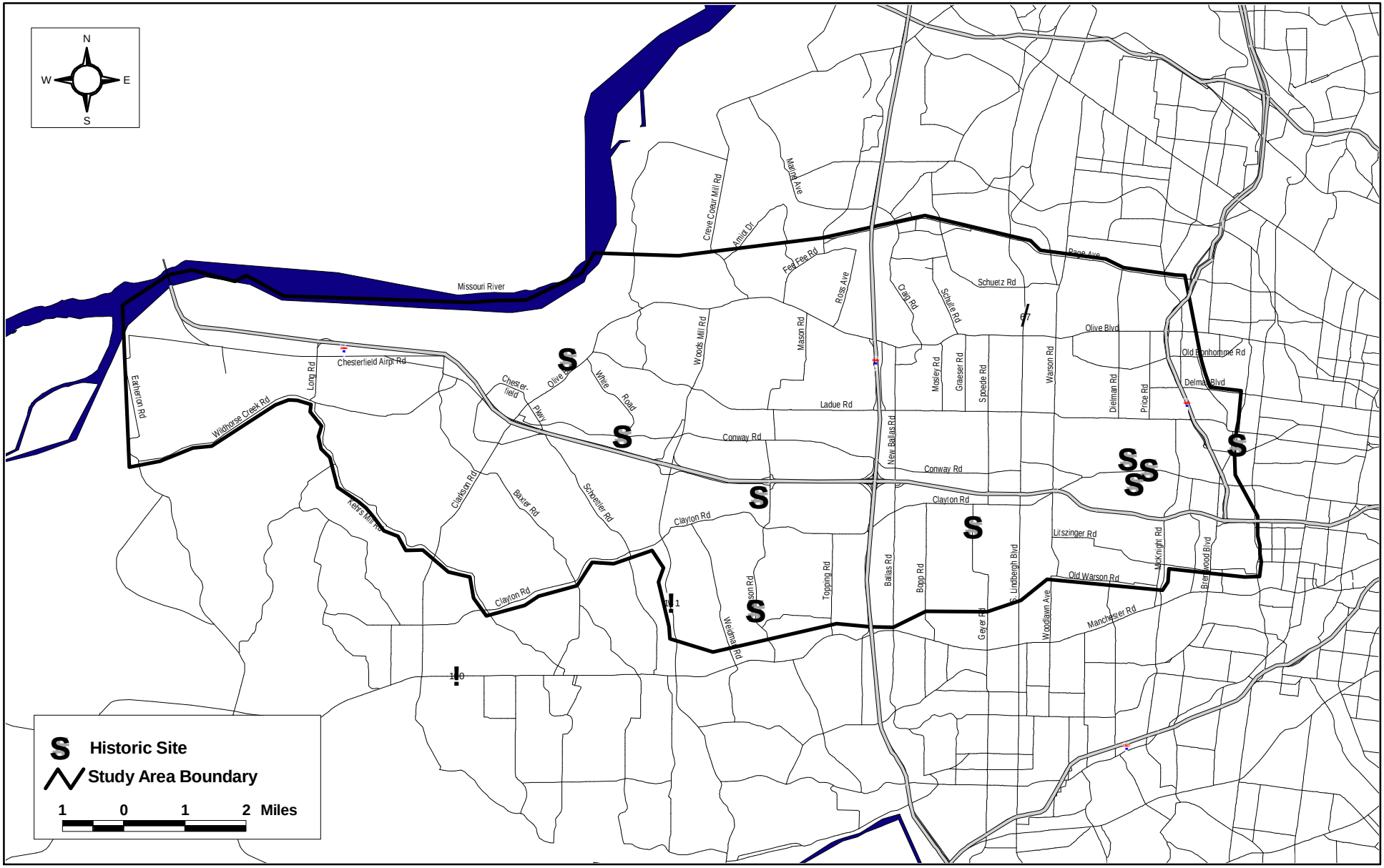
> *"It is hereby declared to be the national policy that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites. The Secretary of Transportation shall cooperate and consult with the Secretaries of the Interior, Housing and Urban Development, and Agriculture, and with the State in developing transportation plans and programs that include measures to maintain or enhance the natural beauty of the lands traversed."*

As previously mentioned, if a property determined to be eligible for the National Register of Historic Places is effected by the proposed project, a 4(f) evaluation will be required.

6.9.2 Section 6(f)

Section 6(f) refers to the manner in which open space or public recreation areas have been acquired. In the event land acquired or improved with Federal grant money (Land and Water Conservation Fund (LWCF) Section 6(f) or Department of Housing and Urban Development open space funds), the final section of the 6(f) evaluation shall include a description of the coordination with the grantor agency. Section 6(f) of the LWCF Act states:

> *"No property acquired or developed with assistance under this section shall, without the approval of the Secretary (Interior) be converted from outdoor recreation uses. The Secretary shall approve such conversion only if he finds it to be in accord with the then existing comprehensive statewide outdoor recreation plan and only upon such conditions as he deems necessary to assure the substitution of other recreational properties of at least equal fair market value and of reasonable equivalent usefulness and location …"*



Source: National Register of Historic Places, 1998.

Various LWCF projects, public parks, and historic sites are located within the Daniel Boone Study Area. If it is determined that the proposed project will impact Section 4(f) and/or Section 6(f) properties, coordination with the St. Louis Department of Parks, Recreation and Forestry, the Department of Natural Resources, and the United States Department of Interior will be required. A detailed analysis of Section 4(f)/6(f) properties should be completed as part of future studies on a locally preferred alternative.

7.0 TRANSPORTATION FACILITIES/SERVICES

7.1 ROADWAYS

This section provides an overview of the transportation facilities in the Study Area. It begins with a discussion of the roadways, including existing facilities and planned improvements, operating conditions and safety. This section then reviews transit, covering system description, ridership, planned changes, the Paratransit/Demand Responsive System, and MetroLink Light Rail Transit (LRT). The section concludes with a description of bicycle/pedestrian facilities and the movement of goods in the region.

7.1.1 Interstate System

Existing Characteristics

There are two interstates located within the Daniel Boone Study Area. Interstate 270 (I-270) runs north-south through the center of the study area. Interstate 64 (I-64) (US 40/61) provides the major east-west travel route through the Study Area. Figure 7.1-1 shows the existing roadway classifications within the Study Area.

Within the Study Area, I-270 provides four lanes for both northbound and southbound traffic. Interchanges are located at I-64, Ladue Road, Olive Boulevard and Page Avenue. Auxiliary lanes (additional lanes between on and off ramps to facilitate weaving) are provided between all interchanges. The interchange at I-64 was recently upgraded to a fully-directional configuration.

Interstate 64 (Highway 40/61) runs through approximately the center of the study area providing a connection from downtown St. Louis to St. Charles County and Interstate 70 (I-70). The interstate designation actually ends just west of Clarkson Road (Route 340) where the existing highway does not meet interstate standards. The typical section of I-64 (Highway 40/61) through the study area varies. The section between approximately Ballas Road to west of Clarkson Road has been upgraded recently, providing three lanes in each direction and auxiliary lanes. The section between I-170 and Ballas Road (included in the Cross-County Corridor MTIA) provides three lanes of traffic in each direction. The section between west of Clarkson Road and the existing Missouri River Bridge provides two lanes of traffic in each direction. Existing interchanges within the study area are located at I-170, Brentwood Boulevard, Clayton Road, Lindbergh Boulevard, Spoede Road, Ballas Road, I-270, Mason Road, Woods Mill Road (Route 141), Chesterfield Parkway East, Clarkson Road (Route 340), Chesterfield Parkway West and Chesterfield Airport Road.

Interstate 170 runs north from I-64 in the eastern section of the Study Area. The current section provides three lanes in each direction for both northbound and southbound traffic. This section of I-170 also was studied in the Cross-County MTIA. Figure 7.1-1 shows the existing roadway classification.

Planned Improvements

Proposed roadway improvements are listed in Table 7.1-1 and shown graphically on Figure 7.1-2. In addition to these improvements, numerous roadway resurfacing and bridge rehabilitation and replacement projects are planned.

FIGURE 7.1-1
EXISTING ROADWAY CLASSIFICATIONS

FIGURE 7.1-2
PROPOSED ROADWAY IMPROVEMENTS

TABLE 7.1-1
PROPOSED ROADWAY IMPROVEMENTS

Number[1]	Roadway	Location	Planned Improvement
W1	Page Avenue Extension	Bennington Place to St. Charles County	New road on new alignment
W2	I-64	Clarkson Road to Daniel Boone Bridge	Widen from 4 to 6 lanes (interstate standards)
W3	I-64 Westbound		New Daniel Boone Bridge
W4	I-64	Boone's Crossing	New interchange in Chesterfield Valley
W5	I-64	Spoede Road to McCausland Boulevard	Widen from 6 to 8 lanes, interchange improvements, ramp modifications, alignment modifications
W6	Highway 40/61	St. Charles County	Upgrade to interstate standards
W7	I-170	@ Galleria Parkway, Forest Park Parkway, Ladue Road, Delmar Boulevard, Olive Boulevard, and Page Avenue	Interchange improvements/ auxiliary lanes
W8	Route 141	Vance Road to Clayton Road	Reconstruct as 6-lane expressway
W9	I-270 @ Olive Boulevard		Interchange improvements (single point diamond)
W10	Olive Boulevard	Ladue Road to River Valley Drive	Widen from2 to 5 lanes
W11	Clayton Road	Clarkson Road to Baxter Road	Widen from 2 to 3 lanes
W12	I-64		Add auxiliary lane at Lindbergh Boulevard onto I-64 westbound
W13	Ballas Road	Olive Boulevard to Magna Carta	Widen from 4 to 5 lanes
W14	Schuetz Road	Lackland Road to Fee Fee Road	Widen from 2 to 3/4/5 lanes
W15	Weidman Road	Manchester Road to Clayton Road	Widen from 2 to 3 lanes

[1] See Figure 7.1-2.
Source: East-West Gateway Coordinating Council, Transportation Redefined II, January 1999.

Usage

Peaking Attributes/Directionality of Travel/Average Vehicle Occupancy (AVO)

The EWGCC defines weekday peak period of travel as 7:00 to 9:00 a.m. and 4:00 to 7:00 p.m. The

assumed peak hour of travel volume is then assumed to be 56 percent of the a.m. peak period volume and 36 percent of the p.m. peak period volume. The regional travel forecasting model, maintained by EWGCC, estimates eastbound and northbound directions have the heaviest traffic volumes for the a.m. peak with the opposite holding true for the p.m. peak. The a.m. peak directionality split ranges between 35/65 and 45/55 on I-64 for the east-west movements, with the difference decreasing as one travels east. North/southbound directionality on I-270 ranges from 30/70 to the south of I-64 to 40/60 to the north of I-64 for the a.m. peak period. The p.m. peak period has less directionality split for both north-south and east-west movements. Along I-64, for instance, the directionality ranges from 50/50 east of I-270 to approximately 45/55 west of Route 141. Interstate 270 maintains an approximate split of 40/60 throughout the Daniel Boone Study area. The major arterial and collector roadways in the study area generally show the same directionality for the peak periods, however, the split can be as high as 10/90 in the a.m. peak. Most p.m. peak periods do not have as significant a split and can be as low as 50/50 in many areas.

The actual distribution of traffic for interstate segments within the Study Area can be found in Table 7.1-2.

TABLE 7.1-2
TRAFFIC DIRECTIONAL DISTRIBUTION

Roadway		a.m. Peak	p.m. Peak
I-64/MO Route 40	E of I-270	65/35	70/30
	W of I-270	70/30	55/45
I-170		55/45	55/45
I-270	N of I-64/MO Route 40	60/40	55/45
	S of I-64/MO Route 40	70/30	60/40
Page Avenue		60/40	55/45
Clarkson Road/Olive Street	E of I-270	65/35	55/45
	W of I-270	70/30	60/40
MO Route 41	N of I-64/MO Route 40	55/45	55/45
	S of I-64/MO Route 40	65/35	60/40
Clayton Road		70/30	60/40
MO Route 67/Lindbergh Boulevard	N of I-64/MO Route 40	65/35	55/45
	S of I-64/MO Route 40	70/30	60/40

Source: East-West Gateway Coordinating Council, November 1998.

Average Daily Traffic (ADT)

Traffic volumes (average daily traffic) for 1996 are shown on Figure 7.1-3. Forecasted volumes for 2020 are shown on Figure 7.1-4. Average daily two-way traffic volumes (1996) along I-270 within the study area range from over 130,000 vehicles just north of Manchester Road to almost 150,000 near Page Avenue. Forecasts for the year 2020 indicate an increase in volumes to 180,000 north of Manchester to almost 190,000 near Page Avenue.

Along I-64 (Route 40), 1996 average daily traffic volumes vary from over 110,000 near I-170, 130,000 just west of I-270 to almost 60,000 at the Missouri River Bridge. Year 2020 forecasts indicate an increase in volumes to 140,000 near I-170, 150,000 west of I-270 and 90,000 at the Missouri River bridge.

FIGURE 7.1.3
TRAFFIC VOLUMES (1995)

FIGURE 7.1.4
TRAFFIC VOLUMES (2020)

Existing daily volumes along I-170 vary from 83,000 to 107,000 within the Study Area. The forecasts for the year 2020 range from 85,000 to 111,000.

Projections for 2020 along Page Avenue crossing the Missouri River are over 88,000 vehicles per day.

The increase in traffic anticipated along both I-270 and I-64 (Route 40) is a result of the continued regional growth in West St. Louis County and St. Charles County.

Truck Percentages

The truck percentage on interstates of total daily traffic in the Daniel Boone Study Area is approximately three percent west of I-270 and approximately four percent east of I-270. In addition, I-270 has trucks comprising approximately four percent of average daily traffic.

Level of Service

The peak hour levels of service for the major roadways within the Daniel Boone Study Area were estimated for both 1996 and 2020 and are shown in Figures 7.1-5 and 7.1-6. Moderate congestion (levels of service D or E) occurred along both I-270 and I-64 (Highway 40/61). Breakdown occurs along I-64 (Highway 40/61) on the segment of the highway just west of Clarkson Road which is only two lanes in each direction.

Traffic forecasts provided by EWGCC for the year 2020, which include the planned improvements previously discussed, indicates moderate congestion (levels of service D or E) along all three interstates within the study area. Breakdown conditions (level of service F) are predicted for a section of I-270 between I-64 and Ladue Road and sections of I-64 west of Route 141.

Forecasts indicate a general increase in the number of locations of traffic congestion along all the interstates within the Study Area.

Safety Issues

The latest full year of accident data available for the Daniel Boone Study Area is 1996. Table 7.1-3 illustrates the accident rate (accidents per million vehicle miles traveled) for roadway segments inside the study area and the statewide accident rate for comparable roadway segments.

The state records also show that seven of the total accidents on these segments were fatal.

Park and Ride Lots

At this time, there are no MoDOT constructed or sponsored park and ride lots located in the Daniel Boone Study Area. It does appear there are retail parking lots which are being used by car-poolers and bus riders since many parking lots have signs prohibiting commuter parking.

FIGURE 7.1-5
LEVEL OF SERVICE (PM PEAK 1996)

FIGURE 7.1-6
LEVEL OF SERVICE (PM PEAK 2020)

TABLE 7.1-3
1996 ACCIDENT RATES
(ACCIDENTS PER MILLION VEHICLE MILES TRAVELED)

Roadway	Segment	Accident Rate	Statewide Accident Rate
I-270 Northbound	Route 100 to Page	149.06	139.28
I-270 Southbound	Route 100 to Page	192.77	139.28
I-64/40 Eastbound	Missouri River to Hanley	148.76	139.28
I-64/40 Westbound	Missouri River to Hanley	183.30	139.28
Route 141	Brittany Parkway to Olive Boulevard	271.09	289.76
340 (Clarkson Road/ Olive Boulevard)	Clayton to I-170	313.74	289.76
67 (Lindbergh Boulevard)	Deacon Drive to Page	245.36	190.04
AB (Ladue Road	Route 141 to I-270	157.80	264.37
CC (Wild Horse Creek Road)	Highway 109 to Chesterfield Airport Road	226.86	264.37
HH (Clayton Road)	Ballas Road to Clarkson Road	385.00	264.37
JJ (Ballas Road)	Route 100 to I-64	101.26	264.37
Page Avenue	Bennington Place to I-270	299.36	264.37

Source: Missouri Department of Transportation, 1996.

7.1.2 Major Arterials/Principal Roadways

In addition to the interstate highways serving the Daniel Boone Study Area, there are numerous arterials and other major roadways (see Figure 7.1-1). Included are state numbered and lettered routes (maintained by MoDOT) and arterial roadways (maintained by the St. Louis County Department of Highways and Traffic). These are augmented by many local roadways, which are maintained primarily by the municipalities.

Maintained by MoDOT are the following numbered and lettered routes that lie wholly or partially within the Daniel Boone Study Area:

- Route 67 Lindbergh Boulevard
- Route 141 Woods Mill Road
- Route 340 Clarkson Road/Olive Boulevard
- Highway JJ Ballas Road
- Highway HH Clayton Road
- Highway AB Ladue Road
- Highway D Page Avenue
- Highway CC Wild Horse Creek Road

These roadways vary in the number of lanes they provide and the type of access control. Roadways such as Lindbergh Boulevard and Page Avenue provide a total of four lanes of traffic with some access control. Others such as Wild Horse Creek Road and Ladue Road provide for two lanes of traffic with a more rural typical section.

Usage

Existing (1996) average traffic volumes (see Figure 7.1-3) along Lindbergh Boulevard, a major north–south route serving the eastern portion of the study area, range from 37,000 to 55,000 vehicles per day. Forecasts for year 2020 (see Figure 7.1-4) show an increase to between 44,000 to 58,000 in the Study Area. Another major north-south route, Woods Mill Road, serving the western portion of the Study Area, has existing traffic volumes ranging from 18,000 to 53,000 vehicles per day. Forecasts for Year 2020 indicate volumes between 19,000 to 65,000 vehicles per day.

Clarkson Road, south of I-64 has current daily two-way volumes of around 40,000, which is expected to grow slightly to around 43,000 vehicles per day in Year 2020. Olive Boulevard, west of I-270, currently carries between 12,000 to 48,000 vehicles per day. East of I-270 these volumes range from 18,000 to 48,000. Year 2020 volumes are expected to increase west of I-270 to between 18,000 to almost 55,000. East of I-270 volumes are expected to range from 19,000 to 52,000 in Year 2020. Similar type growth is anticipated on other roadways within the Daniel Boone Study Area, due to the forecast growth in population and employment within the Study Area and the neighboring areas of St. Louis and St. Charles Counties.

Level of Service

The peak hour levels of service for 1996 and 2020 (see Figures 7.1-5 and 7.1-6) also were determined for some of the major roadways within the Daniel Boone Study Area. Current conditions indicate areas of moderate congestion (levels of service D or E) along many of the major roadways including Page Avenue, Olive Boulevard, Ladue Road, Clayton Road, Lindbergh Boulevard, Woods Mill Road and Clarkson Road. Breakdown conditions (level of service F) are occurring along sections of Page Avenue, Olive Boulevard, Clayton Road, Clarkson Road, McKnight Road and Brentwood Boulevard. In the Year 2020, even with the planned improvements, most of these same roadways are forecast to continue to experience moderate congestion. Breakdown as described above occur along more segments of these same roadways due to the forecast increase in traffic volumes.

7.2 TRANSIT

7.2.1 Intraregional Bus Services

Local Routes

Approximately 15 local fixed routes provide regular service to the Daniel Boone Study Area. Local route coverage is shown in Figure 7.2-1. The local routes that serve the Daniel Boone Study Area tie into Bi-State's regional transit network.

St. Louis's regional transit system is generally oriented on a radial network connected by a series of ring or cross town routes. See Figure 7.2-2 for a map of the region's existing transit system. This framework largely serves a transit trip pattern that links suburban communities and the outlying residential areas in the city with major concentrations of employment in downtown St. Louis. Cross town and cross county routes provide some connections between non-downtown points.

Fixed route service in the Daniel Boone corridor is more concentrated in the eastern portions of the Study Area, due, in part, to higher population densities, but largely to link the Clayton Central Business District and other significant employment sites with the regional transit network to the west. Several local routes converge in the University City area and in Clayton. In the central and western portions of the Daniel Boone Study Area, fixed route service is comparatively dispersed and oriented towards serving clusters of

development along major travel corridors such as Page Avenue, Olive Boulevard, Clayton Road, and Lindbergh Boulevard.

FIGURE 7.2-1
EXISTING LOCAL BUS ROUTES

FIGURE 7.2-2
ST. LOUIS REGIONAL TRANSIT NETWORK

Although service frequency varies throughout the Daniel Boone Study Area, typical weekday headways during the peak periods are between 15 and 30 minutes (see Table 7.2-1). Off-peak, buses tend to run about every 30 minutes and, in some cases, every 60 minutes. On Saturdays, headways are generally 60 minutes. In the Daniel Boone Study Area, buses do not run on Sundays and Holidays, except for a few routes such as Forest Park (#52), Lindell (#93), Page (#94), and Olive (#91). Hours of operation vary by route. During a typical weekday, buses generally run from about 6:00 a.m. to 12:00 a.m. On those routes where service is provided on Saturdays and Sundays, buses typically operate from about 7:00 a.m. to 11:00 p.m.

As can be expected, existing ridership correlates strongly with the level of transit service provided. Revenue hours of service listed in Table 7.2-1 is one measure that illustrates the level of transit service provided by each route. Revenue hours of service measures the total amount of time per day that buses on the route are providing service to passengers. Revenue hours are a function of the frequency of service, the length of the route (total run time), the span of service (hours of operation). The high frequency routes with peak hour headways of 15 to 20 minutes tend to exhibit the highest numbers of average daily passengers compared to routes with headways of 30 to 60 minutes.

In addition, existing transit ridership is heaviest on those routes which originate in downtown St. Louis and terminate in the eastern portion of the Study Area, such as the Forest Park (#52), Lindell (#93), and Delmar (#97) routes, or which skirt the edge of the Daniel Boone Study Area, for example the Page Avenue route (#94). Ridership is somewhat lower on those local routes which transverse the full Study Area: Olive (#91) and Lindbergh (#49).

According to 1998 transit data provided by Bi-State, the level of transit service in the Daniel Boone Study Area as measured by revenue service hours and route coverage is the lowest of the three MTIA study areas: Daniel Boone, Northside, and Southside (see Table 7.2-1). Existing transit ridership in the Daniel Boone Study Area also is comparatively low. Examination of the average weekday ridership in each of the areas yielded the following median routes as shown in Table 7.2-2. Half of the routes in each Study Area have ridership that is higher than the median route and about half exhibit ridership that is lower. This finding of lower ridership in the Daniel Boone Study Area is correlated with its higher auto ownership levels and lower densities of development as described in Sections 2.0 and 3.0.

TABLE 7.2-2
MEDIAN ROUTES – RIDERSHIP

Study Area	Median Route[1]	Weekday ADP
Daniel Boone	Clayton Bee (55)	1,258
Southside	Gravois (05)	1,933
Northside	City Limits (16)	2,455

Source: Bi-State Development Agency, FY 1998 Transit Data
Note: [1]Median Route = 50% of routes in Study Area below/above Average Daily Passengers for this route
ADP = Average Daily Passengers

TABLE 7.2-1

Express Routes

Within the Daniel Boone Study Area, three bus routes provide express service in the Daniel Boone Study Area. These routes are summarized in Table 7.2-3 and are also mapped in Figure 7.2-3.

TABLE 7.2-3
EXPRESS ROUTES

Route No.	Route Name	Peak Period Trips	ADP
152	Hwy. 40 – Clayton Road Express	4	172
57	Ellisville Express	3	94
191	Chesterfield Valley Connector	2	49
194	Page Limited	4	27,007

Source: Bi-State Development Agency, Transit Center Hub Restructuring Study, February 1998.
Note: ADP = Average Daily Passengers

These express routes primarily serve commuter trips in the peak periods and use I-64/Route 40 to connect outlying communities (Chesterfield, Ellisville) with downtown St. Louis. Route 191, the Chesterfield Valley Connector, operates in the reverse commute direction from the city of St. Louis, via Clayton, to the Spirit of St. Louis Airport in Chesterfield.

Demand Response Services

Bi-State operates two demand response programs in the St. Louis region, Call-A-Ride and Call-A-Ride Plus. Demand response programs are where riders call in to make an appointment for curb-to-curb van service. Call-A-Ride is open to the general public in St. Louis County, whereas Call-A-Ride Plus is provided only to the disabled community in both the county and the city of St. Louis. Call-A-Ride is used for a variety of trip purposes, while Call-A-Ride Plus is mostly used for medical appointments. Based on FY 1998 data provided by Bi-State, ridership for Call-A-Ride services averages about 1,300 passengers per weekday regionwide. The vast majority of these riders are disabled (83 percent) or elderly (eight percent).

Bi-State has also initiated efforts to develop a Transportation Management Association (TMA) to advance demand response services in the St. Louis Metropolitan region. To date, the TMA consists of 29 member agencies, including social service agencies, funding agencies and transportation service providers. The TMA provides coordinated communications, vehicle routing, scheduling, dispatching, and customer service enhancements among its association members and is geared towards furnishing a “one stop” transportation solution for transit passengers. Transportation providers are linked through the use of “real time” routing and scheduling computer terminals within the vehicles and are coordinated through a unified system of Call Centers. These features allow for rapid response trip dispatching for unscheduled or emergency trips and for vehicle deployment in the event of a vehicle breakdown or unanticipated incident.

7.2.2 MetroLink Light Rail Transit (LRT)

The Daniel Boone Study Area is not directly served by the current MetroLink line between Lambert International Airport and East St. Louis, Illinois. However, portions of the Study Area are indirectly served via feeder bus service. Table 7.2-4 lists the local routes in the Daniel Boone Study Area that provide direct connections with MetroLink rail stations.

FIGURE 7.2-3
EXPRESS ROUTES

TABLE 7.2-4
FEEDER BUS ROUTES

Route No.	Route Name	MetroLink Station(s) Served
91	Olive	Delmar Station
94	Page	Wellston Station
93	Lindell	Forest Park Station
97	Delmar	Delmar Station
52	Forest Park	Central West End Station
47	Cross County	UMSL South, UMSL North, North Hanley Stations
55	Clayton Shuttle Bee	Forest Park Station
58	Clayton Ballas	Forest Park Station
62	Kirkwood-Clayton-Wellston	Delmar Station
49	Lindbergh	Lambert Airport Station

Source: Bi-State Development Agency, FY 1998

In addition, EWGCC, in cooperation with Bi-State and MoDOT, is currently examining extensions of MetroLink that would provide direct rail service in the Daniel Boone Study Area. Figure 7.2-4 shows the existing MetroLink system as well as planned extensions identified by the Cross County Corridor MTIA that was revised in March 1998. Design studies for this project are currently underway. As of this writing, a precise alignment for Cross County MetroLink has yet to be determined.

7.2.3 Transit Facilities

Bi-State is currently examining options to transition from the more traditional radial configuration of fixed route bus services to a transit center-based system. This is driven, in part, by the need to better serve changes in regional travel patterns resulting from shifts in population and employment throughout the region (see Sections 3.0 and 4.0) and still preserve financial resources. In February 1998, Bi-State completed the "Transit Center Hub Restructuring Study" which identified seventeen potential transit centers in urban/suburban St. Louis. General locations for these transit centers are shown in Figure 7.2-5.

Four of the proposed transit centers would serve the Daniel Boone Study Area:

- Clayton Central Business District
- West County
- Westport Plaza
- Sutton Loop

FIGURE 7.2-4
METROLINK SYSTEM – EXISTING AND PLANNED

FIGURE 7.2-5
PROPOSED TRANSIT CENTERS

Two of these transit centers, Clayton and Sutton Loop, are intended to play a major role in facilitating travel between west St. Louis County and the City of St. Louis as well as provide transfer points for travel within west County. Downtown Clayton is a significant activity center with a focused concentration of employment. Sutton Loop, just outside the Daniel Boone Study Area, lies in the center of Maplewood in an active commercial area with a strong residential transit base. Proposed transit centers at West County and Westport Plaza are centrally located in the Daniel Boone Study Area, however, these two hubs would be positioned at the westernmost edge of Bi-State's local service network. These two locations were identified as being logical connection points between conventional local service and new, potential transit strategies such as collector-distributor shuttle services and flexible route services. The transfer facilities will figure significantly in the development of flexible route and point deviation routing.

In addition, Call-A-Ride and Call-A-Ride Plus vehicles would also serve proposed transit centers to facilitate transfers between fixed route services and Call-A-Ride.

7.3 BICYCLE/PEDESTRIAN FACILITIES

The St. Louis Regional Bicycle Facilities Plan (1994) recognizes the growth of bicycling as a transportation alternative in the St. Louis region. Transportation Redefined (1994) listed pedestrian walkways and thoroughfares as a method to encourage sustainable development.

The purpose of the Regional Bicycle Facilities Plan (1994) is to "encourage cooperative and coordinated development of facilities that provide access for bicyclists and pedestrians to population centers, educational and government institutions, employment and retail centers, along with recreational areas and parks throughout the region." With input from the public and technical advisors, existing routes and facilities were identified, current trends were analyzed, and specific routes were identified.

Using the above information, the Plan recommended and prioritized specific routes "determined to be the best routes available in linking communities and principal regional services, employment, and institutional destinations." A number of these recommended routes are within the Daniel Boone Study Area. These include:

- Ellisville – St. Louis Bikeway. This proposed route is along Clayton Road, and would serve the communities of Ellisville, Ballwin, Chesterfield, Town & Country, Frontenac, Ladue, Clayton, and the City of St. Louis.

- Chesterfield – St. Louis Bikeway. The route would run parallel to the Interstate 64/Highway 40 corridor, serving the St. Louis communities of Chesterfield, Town & Country, Creve Coeur, Clayton, University City, and the City of St. Louis.

- The Interstate 170 Innerbelt Bikeway. The route would run parallel to I-170 and serve the communities of Overland, Olivette, University City, Clayton, Ladue, Richmond Heights, Brentwood, and Maplewood in central St. Louis County.

- The Interstate 270 Outerbelt Bikeway. This proposed route would run parallel to the I-270 corridor, diverging east near the intersection of Watson Road and Lindbergh in St. Louis County.

The need for integrated bicycle/pedestrian facilities also is recognized by St. Louis County and a number of the municipalities in the Daniel Boone Study Area. Interviews of representatives from local municipalities by EWGCC's Community Participation Consultant identified the desire to include consideration of bicycle and pedestrian-related issues in transportation planning.

The City of Chesterfield has expressed interest in the linkage of Chesterfield Valley and Beckmeier Park with a Maryland Heights trail system and to the KATY Trail, one of the most utilized recreational trails in the state. Part of this proposed trail system could utilize existing railroad right-of-way. This system also would provide a connection to the heavily utilized Creve Coeur Lake Trail.

In addition to these plans, MoDOT is currently in the process of defining a regional bicycle and pedestrian plan and identifying facility locations. At this time, it is not known whether or not any potential facilities may lie within the Study Area. MoDOT does consider bicycle and pedestrian facility improvements in conjunction with roadway and other improvements where feasible.

7.4 FREIGHT/INTERMODAL

One of the seven focus areas within Transportation Redefined (1994) is "the efficient movement of goods, improving the movement of freight within and through the region by rail, water, air and surface transportation modes." Some of the measures in evaluating system performance include the amount of freight moved, average travel time, cost, and ease of access to terminal facilities and between facilities. These are important to the region's economy due to the number of major industries located in St. Louis.

The EWGCC report, Industry Perspectives and Recommendations for a Regional Freight Planning Process (1997) studied the movement of goods in the region. Substantial input from the region's shippers and carriers was received through numerous meetings and surveys. According to the report:

> *The St. Louis region historically has held a vital role in the country's transportation system, particularly with the movement of freight. The region's central location, the confluence of major river systems, its extensive railroad network, a strong international airport, and a major interstate highway system have made the St. Louis region an important link in freight movement. This, in turn, has attracted major manufacturing and distribution centers to the area, as well as many Fortune 500 businesses. St. Louis is the nation's 17th largest metropolitan area, and the eight-county bi-state area has a population of 2.4 million.*
>
> *St. Louis has the second largest inland port,[1] the northernmost ice-free port, the third largest rail network[2] (second largest in terms of rail jobs), and the sixth[3] busiest airport in the United States. The region, situated at the crossroads of Interstates I-70, I-44, I-55, and I-64, has the sixth largest interstate system, comprising approximately 300 miles of interstate highway system. The region ranks sixteenth nationally in distribution centers and thirteenth nationally in manufacturing facilities.*

[1] Based on annual freight tonnage handled by the port.
[2] Based on the number of rail lines.
[3] Based on the number of arriving and departing flights.

Table 7.4-1 shows the mode use for commodity flow to/from the St. Louis metropolitan area.

TABLE 7.4-1
COMMODITY FLOWS BY MODE

Mode	Percent
Truck	76
Water	11
Rail	5
Air	2

Source: Industry Perspectives and Recommendations for a Regional Freight Planning Process, 1997.

The highways located within the Daniel Boone Study Area used for goods movement are I-64 (Highway 40/61), I-270 and I-170. Spirit of St. Louis Airport located in Chesterfield Valley ships almost 40 tons of freight each year (second in the region after Lambert-St. Louis International Airport). There are no major rail freight yards, truck terminals, or ports located in this Study Area.

Several rail and rail right-of-way facilities can also be found in the Daniel Boone Study Area. A map of these facilities for both active and abandoned lines can be found in Figure 7.4-1.

FIGURE 7.4-1
EXISTING RAIL FACILITIES

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