



INDIANAPOLIS
METROPOLITAN PLANNING
ORGANIZATION

Tech Memo III-AA2

Refined Purpose and Need Statement

Indianapolis Metropolitan Area Rapid Transit Study



Prepared By:



Schimpeler/American
Jacobs Civil, Inc.

Paul I. Cripe, Inc. – Shrewsbury & Associates
Infinite, Inc. – Manuel Padron & Associates
Jakes Associates, Inc. – Barnes & Thornburg

TABLE OF CONTENTS

1.0 Introduction..... 1
2.0 Purpose of the Project 1
2.1 Corridor Definition..... 3
2.1.1 Existing Transportation System..... 6
2.1.2 Existing Transit Service..... 7
2.1.3 Bicycles and Pedestrians 8
2.1.4 Existing Land Use 8
3.0 Need for the Transportation Improvements 12
3.1 Public Transit 12
3.2 Existing Transportation System..... 13
I. 3.3 Traffic Congestion 15
3.4 Air Quality..... 17
4.0 Goals and Objectives 18

List of Figures

Figure 1: DiRecTionS Study Area..... 2
Figure 2: Northeast Corridor 4
Figure 3: Population Density Within the Northeast Corridor 5
Figure 4: Commuting Patterns into and from Marion County..... 6
Figure 5: Existing Transit Service in the Indianapolis Region..... 9
Figure 6: Greenways Within the Northeast Corridor 10
Figure 7: Existing Land Use Within the Northeast Corridor..... 11
Figure 8: Forecasted Population Growth Within the Northeast Corridor 14
Figure 9: Forecasted Employment Growth Within the Northeast Corridor 16
Figure 10: Highways Anticipated to Operate at Level of Service F by 2025 17

List of Tables

Table 1: Comparison of Demographic Data for the Northeast Corridor, Marion and Hamilton
Counties, and the Nine-County Indianapolis MSA..... 3
Table 2: 2004 IndyGo Ridership in the Northeast Corridor 7
Table 3: Indianapolis Statistics from the 2004 Urban Mobility Study..... 15
Table 4: General Goals and Specific Objectives 19

1.0 INTRODUCTION

The impetus for the Indianapolis Metropolitan Planning Organization (MPO) to undertake a study of the alternative transportation options in the Northeast Corridor of Indianapolis began decades ago. The opening of I-465 and the associated changes in travel patterns and trends in the region's growth has fueled the need for greater transportation options. Most recently, the ConNECTions study, which included the development of a Draft Environmental Impact Statement (DEIS) for multimodal transportation improvements in the Northeast Corridor, examined transit alternatives as a joint project of the Indiana Department of Transportation (INDOT), Federal Highway Administration (FHWA), and Federal Transit Administration (FTA). The ConNECTions study's purpose was to identify a locally supported, financially feasible, transportation strategy to address year 2025 traffic congestion and mobility limitations in the Northeast Corridor of the Indianapolis Metropolitan Region. In the ConNECTions DEIS, it was determined that additional studies were needed to determine the transit needs of the greater central Indiana region.¹ As a result, this regional transit study (called "DiRecTionS") was undertaken in Fall 2002 to determine the range and extent of the region's transit needs.

The primary purpose of the DiRecTionS study is to evaluate the viability and cost-effectiveness of improving mobility, reducing traffic congestion, and improving air quality within the entire Indianapolis Metropolitan Region through the development of a regional rapid transit system. With 1.5 million people and nearly 700,000 households, the Indianapolis Metropolitan Statistical Area (MSA) is the 29th largest in the US. The general DiRecTionS study area, consisting of the Indianapolis Metropolitan Planning Organization (MPO) modeling area (referred to as the primary study area) and the nine-counties that comprise the Indianapolis MSA (the secondary study area), is depicted in **Figure 1**.

Since its inception, DiRecTionS has been a regional study to determine the viability of implementing a regional rapid transit system. The analyses have focused on the potential implementation of transit within seven corridors branching out from Downtown Indianapolis. These corridors have been evaluated in terms of regional goals and objectives developed through broad-based public outreach. As the study progressed, implementing rapid transit within the Northeast Corridor proved to satisfy those goals and objectives to a higher degree than the other alternatives considered. In Summer 2004, the Indianapolis Regional Transportation Council (IRTC) selected the Northeast Corridor as the first priority for rapid transit implementation. Based on that selection, the current proposed action is to implement rapid transit within the Northeast Corridor.

2.0 PURPOSE OF THE PROJECT

The early DiRecTionS public involvement meetings established the broad points of agreement that an alternative transportation investment is needed in the Indianapolis Metropolitan Region to achieve mobility, growth, and livability objectives. Guided by continued public involvement and technical analyses, the primary purpose of DiRecTionS has evolved into a more refined purpose for the Northeast Corridor.

¹ Source: ConNECTions Final Environmental Impact Statement (FEIS)



Figure 1: DiRecTionS Study Area

The purposes implementing rapid transit in the Northeast Corridor are as follows:

- Improve mobility in the Northeast Corridor by providing a viable, attractive, and cost-effective alternative to the private automobile.
- Support desired development patterns and enhance economic development.
- Improve the transportation linkages between communities and employment centers within the Northeast Corridor and the Indianapolis Regional Center.
- Reduce congestion on major arterials.

2.1 Corridor Definition

The Northeast Corridor, shown in **Figure 2**, extends approximately 20 miles from Downtown Indianapolis northeast to Noblesville in Hamilton County. It includes all of the Indianapolis Regional Center (as defined in the Indianapolis Regional Center Plan 2020). The corridor is roughly bounded by US 31/Meridian Street to the west, SR 32 to the north in Hamilton County, a line parallel to and approximately one mile southeast of SR 37 (Binford Boulevard)/I-69, and the Indianapolis Regional Center to the south. In addition to the Indianapolis Regional Center, portions of the communities of Carmel, Meridian Hills, Fishers, and Noblesville are contained within the Northeast Corridor.

Table 1 presents a comparison of demographic data for the Northeast Corridor, Marion and Hamilton Counties, and the Nine-County Indianapolis MSA. Based on 2000 Census data, approximately 218,514 people live within the Northeast Corridor. That figure represents 20.9% of the total population of Marion and Hamilton Counties (1,043,194 people), and 13.6% of the population of the nine-county region (1,607,486 people). The Northeast Corridor contains approximately 99.3 square miles, representing approximately 11.5% of Marion and Hamilton Counties (864.7 square miles) and 2.8% of the nine-county region (3,522.9 square miles).

Table 1: Comparison of Demographic Data for the Northeast Corridor, Marion and Hamilton Counties, and the Nine-County Indianapolis MSA

Geographic Area	Population (2000)	Area (Sq. Miles)
Northeast Corridor	218,514	99.3
Marion & Hamilton Counties	1,043,194	864.7
Nine-County Region	1,607,486	3,522.9
<i>Northeast Corridor compared to:</i>		
<i>Marion & Hamilton Counties</i>	20.9%	11.5%
<i>Nine-County Region</i>	13.6%	2.8%

Population density within the Northeast Corridor is shown in **Figure 3**. The Indianapolis Regional Center and portions of the corridor as it enters into Hamilton County are sparsely populated as the land is devoted to other uses. Density is relatively high between the Regional Center and I-465 with several areas containing more than 10,000 persons per square mile.

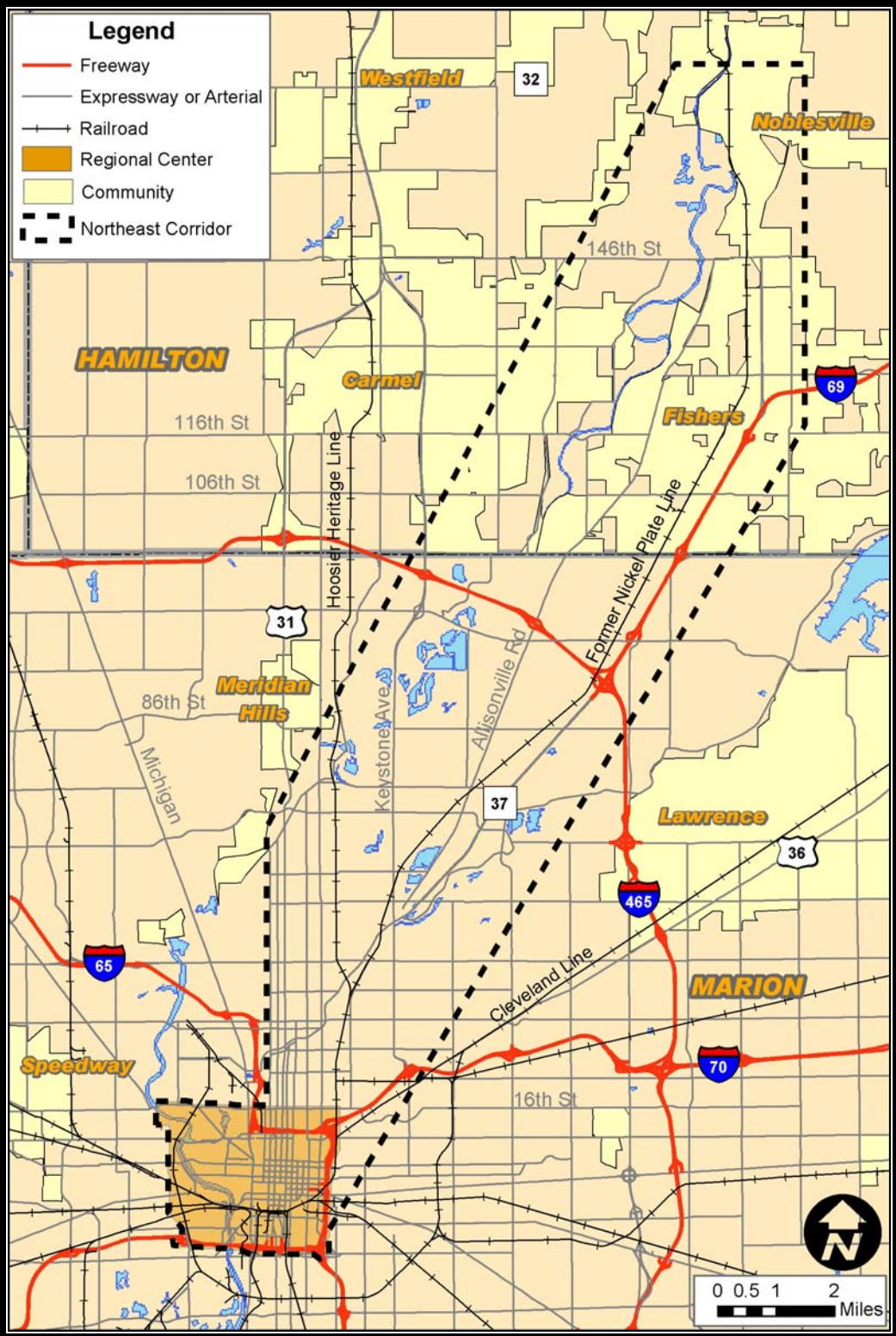


Figure 2: Northeast Corridor

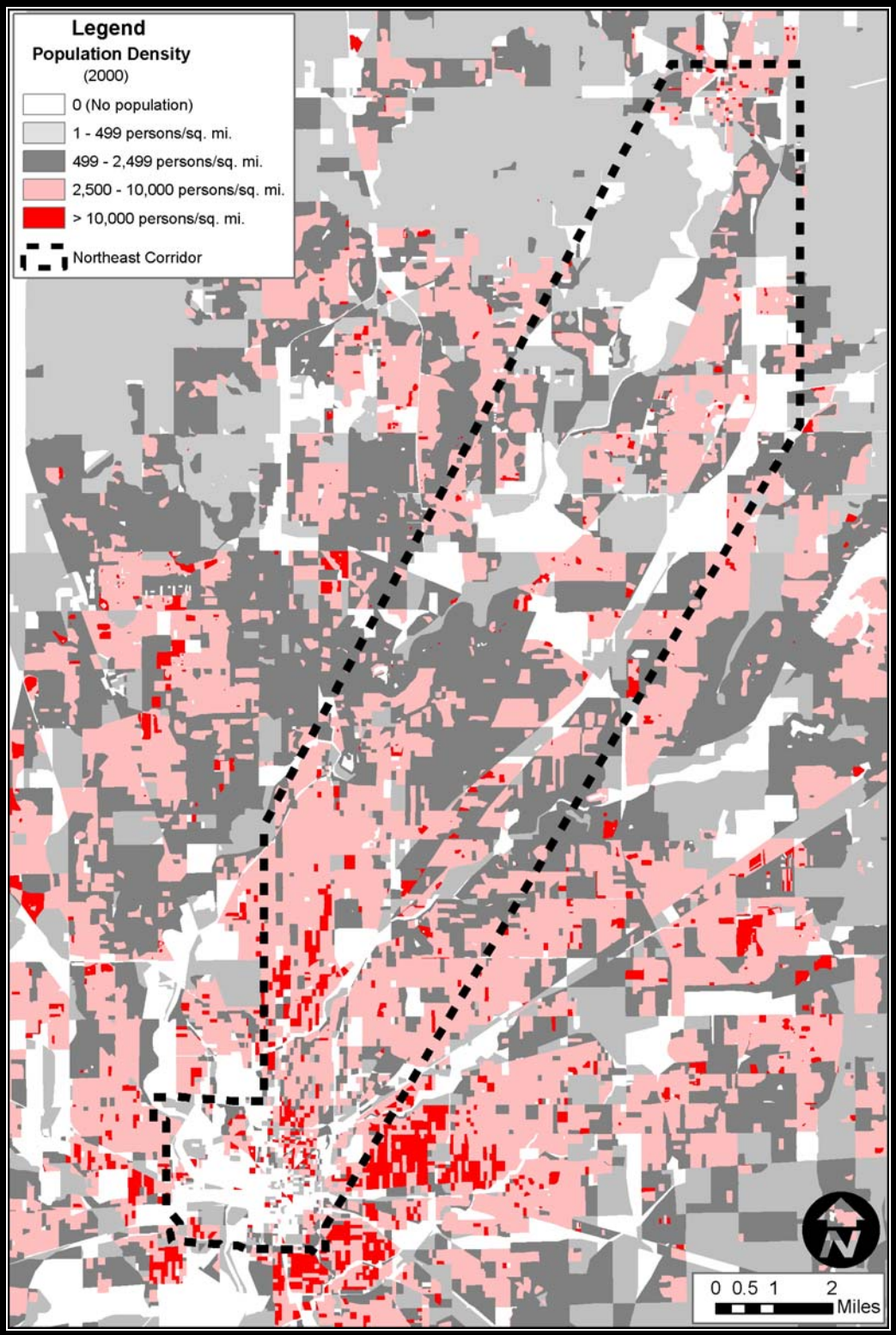


Figure 3: Population Density Within the Northeast Corridor

2.1.1 Existing Transportation System

The Northeast Corridor transportation network includes numerous radial and lateral highway alignments and rail lines. The primary network components (as well as the functional classification for highways) are listed below (see **Figure 2**). Arterial highways and freeways serve as trunk lines, providing the majority of vehicle throughput as traffic filters to them from collector and local roads.

Highways:

- I-65 - freeway
- I-70 - freeway
- I-465 - freeway
- US 31/Meridian Street – primary arterial
- Keystone Avenue – secondary arterial
- SR 37 (Binford Boulevard)/I-69 – primary arterial/freeway
- Allisonville Road – secondary arterial
- US 36/SR 67 – secondary arterial
- SR 32 – primary arterial

Rail Lines:

- Hoosier Heritage Railroad
- Former Nickel Plate Line
- CSX-Cleveland Railroad Line
- Central Indiana & Western Railroad (shortline)

I-465 is the circumferential route encompassing the core of Indianapolis, and I-65 and I-70 connect northeast of downtown Indianapolis. US 31/Meridian Street provides a direct connection between Indianapolis and the City of Carmel. Allisonville Road connects Indianapolis to Noblesville, and SR 37 (Binford Boulevard)/I-69 connects Indianapolis to Fishers.

Travel demand within the Northeast Corridor is high, particularly to and from Hamilton County. **Figure 4** represents the five-highest counties with respect to workers commuting into and from Marion County in 2002. Approximately 46,440 workers commute into Marion County from Hamilton County, and another 10,958 travel from Marion County to Hamilton County for work.

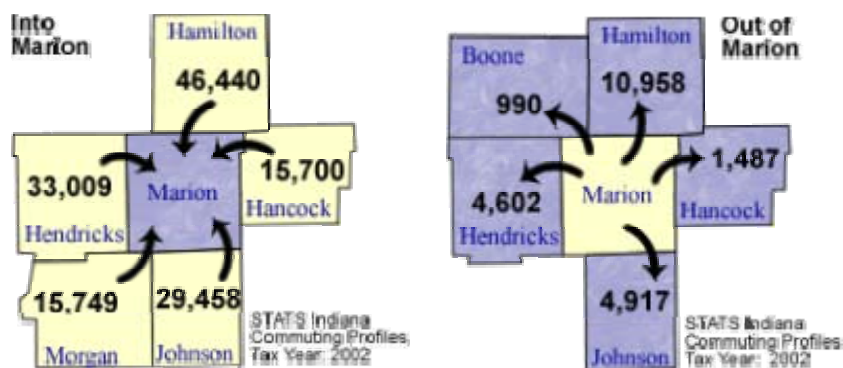


Figure 4: Commuting Patterns into and from Marion County

2.1.2 Existing Transit Service

Figure 5 presents the existing transit service within the Indianapolis region. The Indianapolis Public Transportation Corporation operates the IndyGo bus system. The existing IndyGo Transit System consists of 28 local bus routes (no express route service). The existing transit system is radial oriented designed to pulse service to/from downtown Indianapolis (only 2 crosstown bus routes and one downtown circulator). Much of the existing transit service is operated at 30 to 60 minute service frequencies, with a couple of the core high ridership routes providing 15 to 20 minute peak period service frequencies. In recent years the transit system size has retracted in both size and service coverage area due to budgetary constraints. However recently, IndyGo has been able to implement some service level improvements on select routes that have been experiencing passenger overloads. The existing transit system carried approximately 27,600 average weekday passengers and 8.2 million annual passengers in 2004. IndyGO's current route system, as of fall 2004, is shown in Figure 5. IndyGo currently operates eight routes in the Northeast Corridor, which carried approximately 10,000 average weekday passengers and 2.8 million annual passengers in 2004. Table 2 presents the 2004 IndyGo ridership in the Northeast Corridor.

Table 2: 2004 IndyGo Ridership in the Northeast Corridor

Route	2004 Ridership	Rank (out of 38 routes)	Average Weekday Ridership*
2	295,144	10	995
4	247,821	12	934
5	399,237	5	1,454
17	405,651	4	1,330
18	182,257	16	629
19	310,949	8	1,145
26	154,825	17	572
39	786,594	3	3,012
Total - Northeast Corridor Routes	2,782,478		10,071
Total - All IndyGo Routes	8,197,280		27,604
Percent of total	33.9%		36.5%

*Note: Average weekday ridership is based on September 2004 statistics.

The IndyGo fleet includes 50 open-door vans used to operate 63 paratransit routes. IndyGo's heaviest ridership routes (Route 8—Washington Street; Route 10—10th Street; and Route 39—East 38th Street) are operated at 15-minute headways during the peak and at 30-minute headways during the off-peak, while the balance of the bus routes generally provide only 30-minute peak and 130-minute off-peak service. Many of the routes do not operate on the weekends; those that do have one-hour headways on Saturdays. Only five routes operate on Sunday, and they have two-hour headways. According to the Texas Transportation Institute's (TTI) 2004 Urban Mobility Study, public transit saved Indianapolis 665,000 person-hours of delay in 2002, equating to \$12 million in savings.

Janus Developmental Service, Inc. operates demand response service within the Noblesville City Limits. Utilizing three ADA-accessible vehicles, the service saw 17,557 passenger boardings in 2003.

Amtrak's Cardinal/Hoosier State route connects the cities of New York, Washington, DC, Cincinnati, Indianapolis, and Chicago. Facilities in the Indianapolis region include Union Station in downtown Indianapolis and the Beech Grove maintenance facility. The Indiana Department of Transportation provided financial assistance for capital improvements to the historic Amtrak Beech Grove maintenance facility. These improvements included the renovation of buildings used to expand repair services.

2.1.3 Bicycles and Pedestrians

Early in 1996, the Indianapolis MPO completed the Indianapolis Regional Bicycle & Pedestrian System Plan. The plan defines 327 miles of primary and secondary bike paths within Marion County, including greenway trails, multi-use paths, and roadway facilities. **Figure 6** shows the greenway trails within the Northeast Corridor that are part of this system. The Indianapolis Regional Pedestrian Plan is currently in Phase IV, which is the final phase of study looking at surrounding counties in the Indianapolis MSA. The plan encourages a balanced transportation system to: increase opportunities for walking to schools, parks, work, transit, shopping and services; provide mobility and independence to those that cannot drive; improve air quality by providing alternate means of transportation; and promote healthy lifestyles.² As part of IndyGo's "Bus 'n Bike" Program, the majority of the system's fixed-route bus fleet has bike racks, allowing cyclists opportunities for increased mobility.

2.1.4 Land Use

The Northeast Corridor comprises a variety of land uses, as illustrated in **Figure 7**. Primary land uses include low-density residential and transportation/industrial/commercial. High-density residential areas are found closer to the Indianapolis Regional Center. As the corridor proceeds northeast, the primary land use function generally turns into agricultural uses.

² Source: Indianapolis Regional Pedestrian Plan.

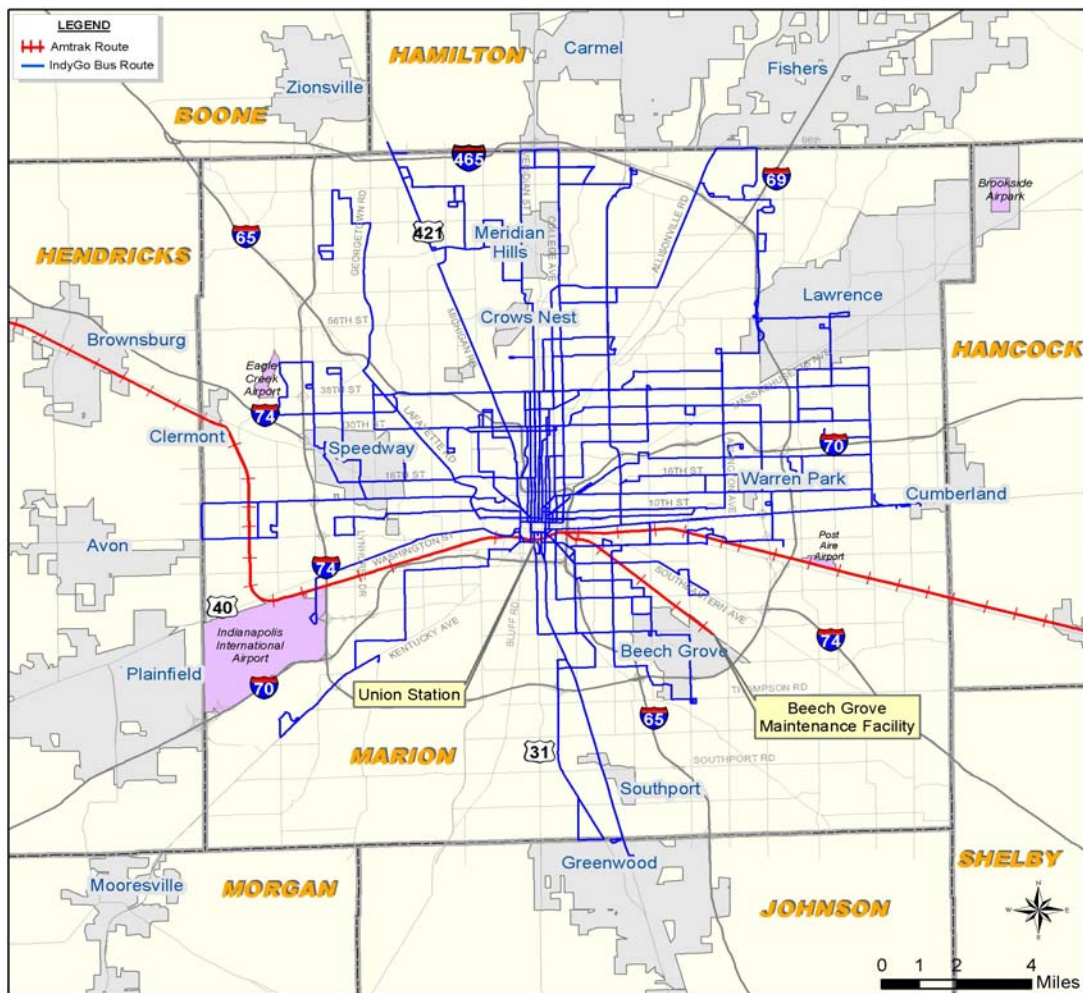


Figure 5: Existing Transit Service in the Indianapolis Region

Downtown Indianapolis, bounded by I-65, I-70, and the White River State Park, comprises an area of approximately 5.5 square miles. Home to over 17,000 residents (2000 Census), the downtown contains over 68,000 parking spaces and provides over 106,000 jobs. Significant land uses include high-density office and retail space, 24 parks and memorials, 20 museums and historic sites (including the Indianapolis Children's Museum, the largest children's museum in the world), and 31 hotels. Other major activity centers include sports venues such as the RCA Dome (60,000+ seats), home to the National Football League Indianapolis Colts; Consecro Fieldhouse, home of the Indiana Pacers; and Victory Field (12,500 permanent stadium seats, a 1,000-seat bleacher, and room for approximately 2,000 fans in the lawn), home to the Indianapolis Indians (AAA affiliate of the Pittsburgh Pirates). The downtown area also includes medical facilities such as the IU Medical Center; Riley Hospital for Children; Clarian Health; and Wishard Hospital. Universities such as Indiana University-Purdue University Indianapolis (IUPUI has 30,000 students and a 40-acre research and development park.) and Butler University (4,326 students) are found within, or within proximity to, the Indianapolis Regional Center. Important manufacturing and employment centers include Eli Lilly corporate campus and pharmaceutical manufacturing; Anthem; the State House; and the Government Center. Other tourist attractions include the Indianapolis Zoo and White River State Park, which are both located on the west side of downtown Indianapolis.

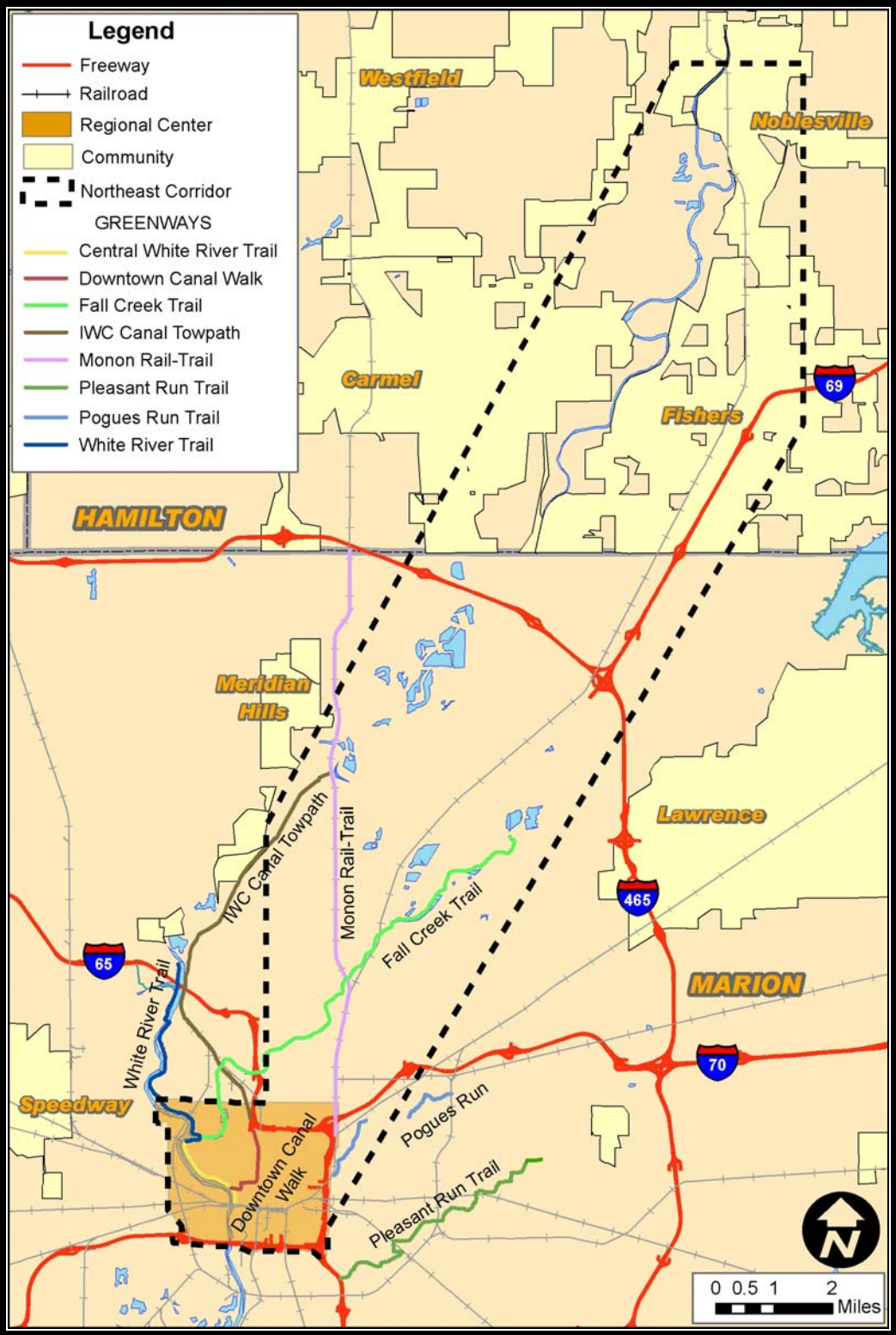


Figure 6: Greenways Within the Northeast Corridor

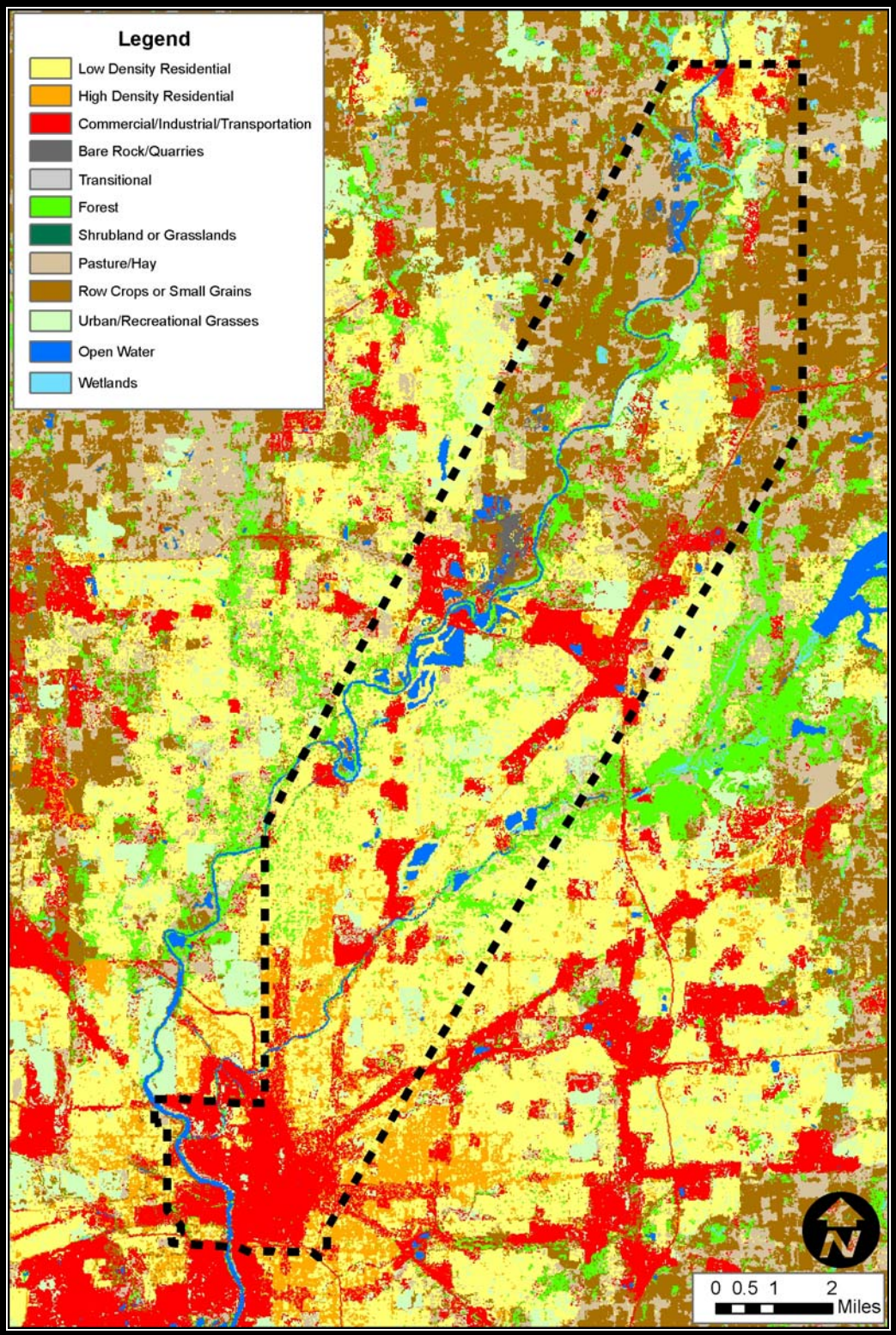


Figure 7: Existing Land Use Within the Northeast Corridor

Numerous activity centers are located elsewhere within the Northeast Corridor. The Indiana State Fairgrounds, opened in 1892 and home to events year-round, is centrally located within the Northeast Corridor. Several high density employment and commercial centers are located in the Northeast Corridor, including the following: Castleton Corporate Park; Castleton Square Shopping Mall/Center; Castleton Park; the Castle Industrial Park; and the Verizon Wireless Music Center. The Fort Harrison Reuse Authority's redevelopment program and State Park, the Northeast Center at Lawrence, and the McCordsville Industrial Park are adjacent to the corridor. In addition, the corridor includes a concentration of high-density housing north of 96th Street and east of the White River. This area includes the Geist Reservoir development area with its surrounding high-end housing subdivisions, retail and commercial businesses.

3.0 NEED FOR THE TRANSPORTATION IMPROVEMENTS

This section identifies the need for improvements in transit facilities and services in the Indianapolis metropolitan region, and more specifically the Northeast Corridor, by specifying both the transportation and non-transportation goals and objectives that the transit improvements should satisfy by resolving the specific transportation problems. The Northeast Corridor is the most heavily congested corridor in the Indianapolis region. This congestion is expected to worsen over the next 20 plus years (see Table 3 & Figure 10), if no major transportation improvements are made. According to the Indiana Business Research Center at Indiana University's Kelley School of Business, population and employment in Hamilton County which contains both the Town of Fishers and the City of Noblesville, are expected to grow over 60 percent over the next twenty to twenty-five years (see Figures 8 & 9). The town of Fishers and the city of Noblesville in Hamilton County have experienced large growth over recent years. The main commuter link between the Fishers and Noblesville communities and downtown Indianapolis is State Road 37 and I-69. Major delays and back ups, sometimes for hours at a time, occur at the ramps from I-69 and I-465. There are similar delays on the ramps from I-69 to SR 37 near Fishers. Future growth will further increase this traffic congestion and delay.

Existing transportation infrastructure in the corridor is overburdened handling current levels of travel demand. Peak-period traffic congestion on the region's interstate highway network and its feeder roads is a growing problem for morning and evening commuters. As traffic congestion increases, both in duration and geographic coverage, more trips will be affected by congestion. Increasing congestion has many negative impacts that include increased air pollution and noise pollution, compromised economic development, causes stress, and ultimately leads to conditions that adversely affect public safety causing even more professional and personal time to be lost during a commute.

In addition to the decline of quality of life resulting from congestion and traffic delays, the growing number of automobile trips and the resulting congestion are causing other problems, namely air quality. Air pollution has become and will continue to be an increasing problem for the region, as the federal air quality standards get tougher (see Section 3.4).

3.1 Public Transit

The City-County Council passed an ordinance in June 2004 authorizing a Regional Transportation Authority (RTA) in Indianapolis and central Indiana. The RTA is currently under development, and will eventually plan for, coordinate, and implement regional transit options. The RTA has initiated a strategic plan to develop its mission and goals - - a plan that will fully explore the options for the relationship between IndyGo, the local bus system, and the RTA, which include allowing IndyGo a 'regional' jurisdiction. Currently, though, the Indianapolis Public Transportation Corporation, which operates IndyGO, is compelled to provide transit service primarily within the city limits of Indianapolis. By comparison, the private interurban transit lines that went out of business, when they could no longer compete with the automobile, provided broader geographic coverage for the Indianapolis region in the early 1900s. The absence of high-quality regional transit coverage is a problem for the region.

Transit ridership declined precipitously in the post World War II period from about 85 million trips annually in 1950 to about ten million annually in 1997, when surveys of ridership showed a high percentage of IndyGo riders had no other transportation option, used the bus regularly, and used it for commuting to and from work. A 1991 report estimated that 40 percent of IndyGo's riders are transit-dependent and that 20 percent are elderly or handicapped. Ridership increased to over 11 million annually in 1999. However, ridership experienced a 9% decrease between 1999 and 2002, from 11.2 million passengers to 10.2 million passengers, respectively. Patronage grew again in 2003, with 11.3 million passengers using the service.

Not only is public transit service in the Indianapolis metropolitan region currently limited in geographic coverage, but also the region's highways, which facilitate the dominant mode of travel in the region, are currently congested and cannot be expanded sufficiently to keep up with the pace of urban sprawl or overcome anticipated future congestion. Where highway expansion is possible, new roadways would likely result in impaired water quality and fragmentation of existing wildlife habitat. The city's limited bus system and its service, which is adversely affected by the region's traffic congestion, are not sufficient to draw enough patrons to reduce congestion and air pollution.

The peak-period origin-destination survey data indicate that a majority of peak-period trips extend beyond the current local bus service area. Thus, the current bus service cannot affect enough trips to reduce congestion. Existing bus transit operates in mixed traffic and experiences the same congestion as a private automobile. In most circumstances, congestion penalizes the transit traveler more than motorists when both in-vehicle and out-of-vehicle travel times are taken into consideration. Existing transit, therefore, is incapable of effectively competing with the single occupant vehicle. Even expanding the existing local bus service area and using the current routing plans and technology will not significantly relieve the problem. The overriding problem that would remain is the extended bus service coverage would not yield competitive travel times with the automobile. However, a transit system operating in an exclusive guideway/right-of-way and fed by a local feeder bus system, just like the interstate highway network is fed by arterial and local streets, is needed to meet the transit needs of the Indianapolis metropolitan region.

The resulting decline in the region's public transit service has decreased the mobility of those who use transit, including both transit dependents and those who prefer to use transit. In addition, the lack of a desirable alternative to the automobile diminishes the region's ability to meet its air quality goals and makes the region vulnerable to energy shortages. Consequently, the region's elected officials are seeking to develop an effective multimodal public transit service that will address the mobility, environmental, energy, and development needs of the community.

3.2 Existing Transportation Network

The interstate highway network provides a radial pattern centered on downtown Indianapolis with a major ring road, I-465, around the region that has facilitated suburban development. Reinvestment in this infrastructure with the Hyperfix project (reconstruction of I-65/I-70 through downtown Indianapolis), widening of I-465, and even expansion of the network with the proposed I-69 project, represent a considerable expenditure of federal dollars. However, the available right-of-way to further expand the network to eight, ten, and even 12 lanes is not available without significant displacements.

Housing, industrial, commercial, and office uses have been decentralized to the perimeter of the region. This decentralization has resulted in increasing total vehicle miles of travel for trips between increasingly farther apart home, shopping, and work destinations. In addition, federal tax laws have subsidized suburban housing mortgages, further encouraging an exodus of population from the central core to the edges of the region. The resulting development pattern has helped make the automobile the dominant mode of travel in the Indianapolis metropolitan region and has contributed to the decline of the region's public transit system. These trends have also led to a geographic stratification of the regional economy, isolating many low-income persons from jobs. Similarly, as the

population ages, increasing numbers of persons cannot drive, and become cut off from important services and from entertainment opportunities.

Growth in the Northeast Corridor will continue to place a burden on the existing transportation network. Based on analyses of the socioeconomic data contained within the Traffic Analysis Zones (TAZ) that comprise the regional travel demand model, **Figure 8** presents the projected population growth within the corridor between 2000 and 2025. With the exception of the Indianapolis Regional Center and some sporadic areas, the corridor's population is expected to grow. Several TAZ's are expected to more than double in population by 2025. Overall, the corridor is anticipated to grow by 13.9%, and the average TAZ will increase in population by 20.57%.

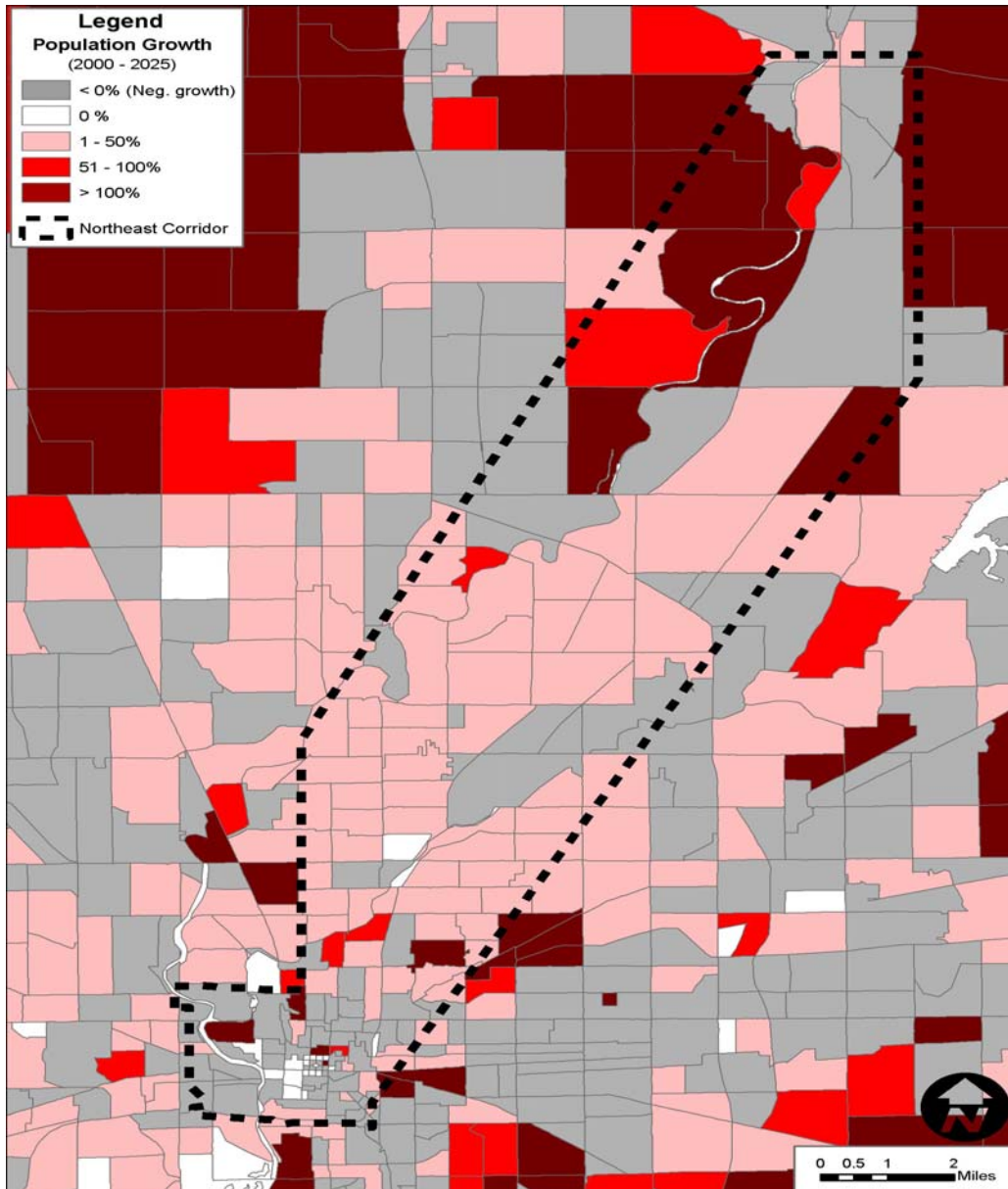


Figure 8: Forecasted Population Growth Within the Northeast Corridor

Figure 9 presents the Northeast Corridor’s anticipated growth in employment between 2000 and 2025. The majority of job growth within the corridor is focused in the outer reaches of the Marion County and in Hamilton County. Overall, the corridor is expected to see a 20.2% increase in employment.

3.3 Traffic Congestion

The Indianapolis metropolitan region has encountered considerable increases in congestion over the last couple of decades. Much of the increase in congestion can be attributed to suburban growth in the once rural hinterlands outside Indianapolis combined with the growth in employment within the City. The physical separation between newer residential neighborhoods and employment centers has resulted in increased travel times and longer distances for commuters to travel.

Twenty years ago it took about four percent longer to make a trip during the peak period in the Indianapolis metropolitan region than it would when free-flow conditions prevailed, whereas in 2002 it took 24 percent more time to make that peak-period trip, according to the 2004 Urban Mobility Study (see **Table 3**). The study shows that time lost to congestion has increased more than tenfold, to the point where congestion in 2002 caused each Indianapolis-area motorist to consume an extra 34 gallons of fuel and to lose 20 hours a year, which together cost each motorist an extra \$357, annually. The Indianapolis metropolitan roadway network was congested for a total of 7.2 hours each day in 2002. Expressed another way, congested travel accounted for 67% of the total vehicle-miles of travel on Indianapolis streets and freeways during peak periods, which is more than double the period of congestion in 1990 (25%) and nearly six times what it was in 1982 (11%). The extent of Indianapolis’ congestion in 2002 ranked it 31st in the US in terms of annual delay, a jump of 19 places since 1990.

Table 3: Indianapolis Statistics from the 2004 Urban Mobility Study

2002 Daily Vehicle-Miles of Travel	30,950,000
2002 Annual Delay (person-hours)	20,852,000
2002 Amount of Congested Travel	67%
2002 Congestion Cost (\$ million)	\$369
2002 Daily "rush" hours (hours of congestion)	7.2

Continued increases in vehicle miles traveled also exacerbate the problem in the Indianapolis metropolitan region. In 2002, Indianapolis-area motorists drove nearly 31 million miles per day on the area’s roads and freeways—a 47% increase since just 1990. However, the miles of paved roadway increased by only 14% in that same period because adequate right-of-way no longer remains to expand the roadways.

Within the Northeast Corridor, travel demand will exceed (and in some cases currently exceeds) the capacity of the highway network. As the population and employment opportunities grow, so too will travel demand. **Figure 10** presents the highways within the Indianapolis region that are expected to operate at Level of Service (LOS) F by 2025 without significant improvement or widening. LOS is a rating system, ranging from A to F, used to describe the quality of traffic flow. Similar to letter grades in school, LOS A indicates free-flowing traffic conditions with little to no delay, and LOS F indicates severe congestion. As indicated in Figure 8, highways anticipated to operate at LOS F extend well into Hamilton County, and nearly every major travel corridor within the Northeast Corridor is included.

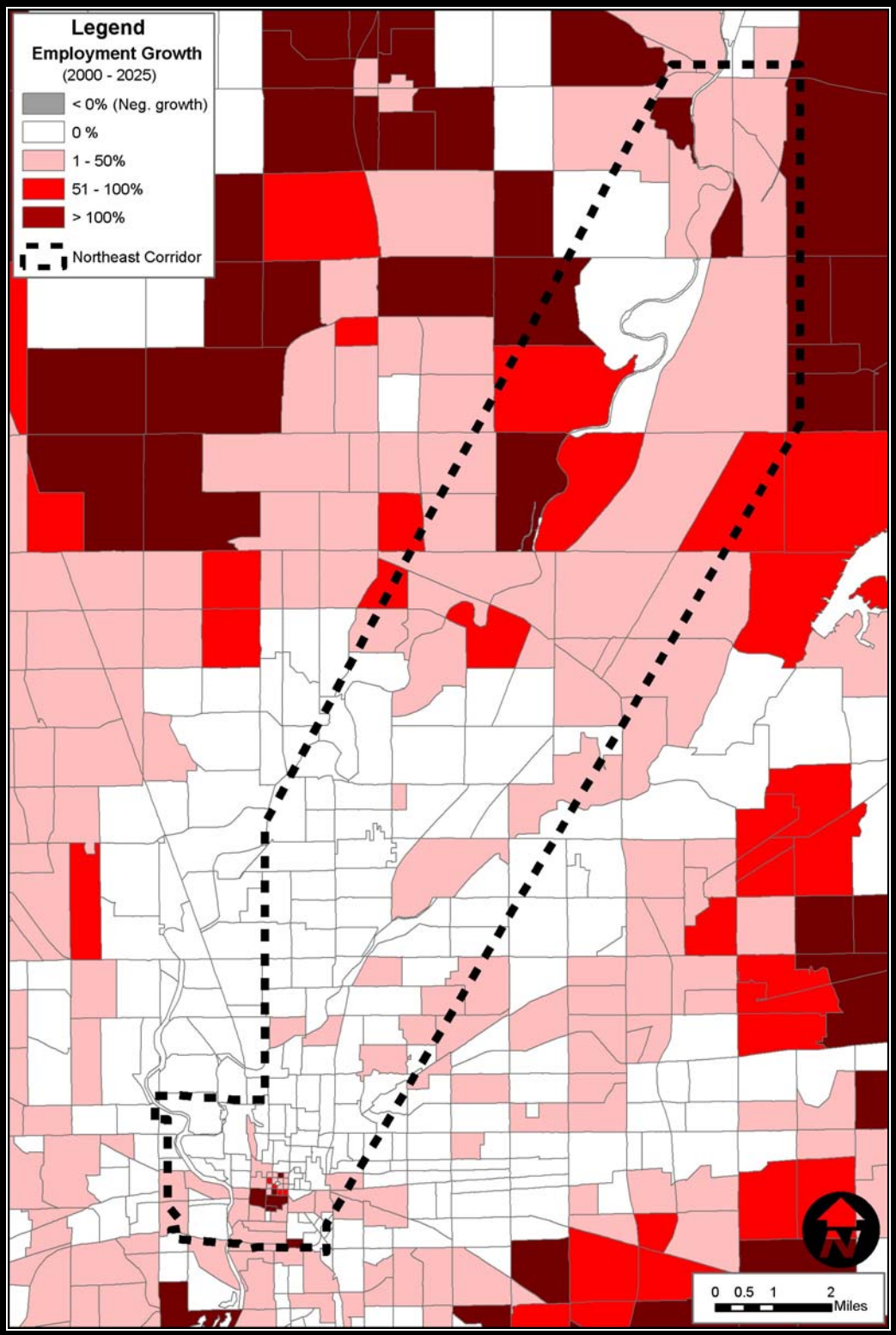


Figure 9: Forecasted Employment Growth Within the Northeast Corridor

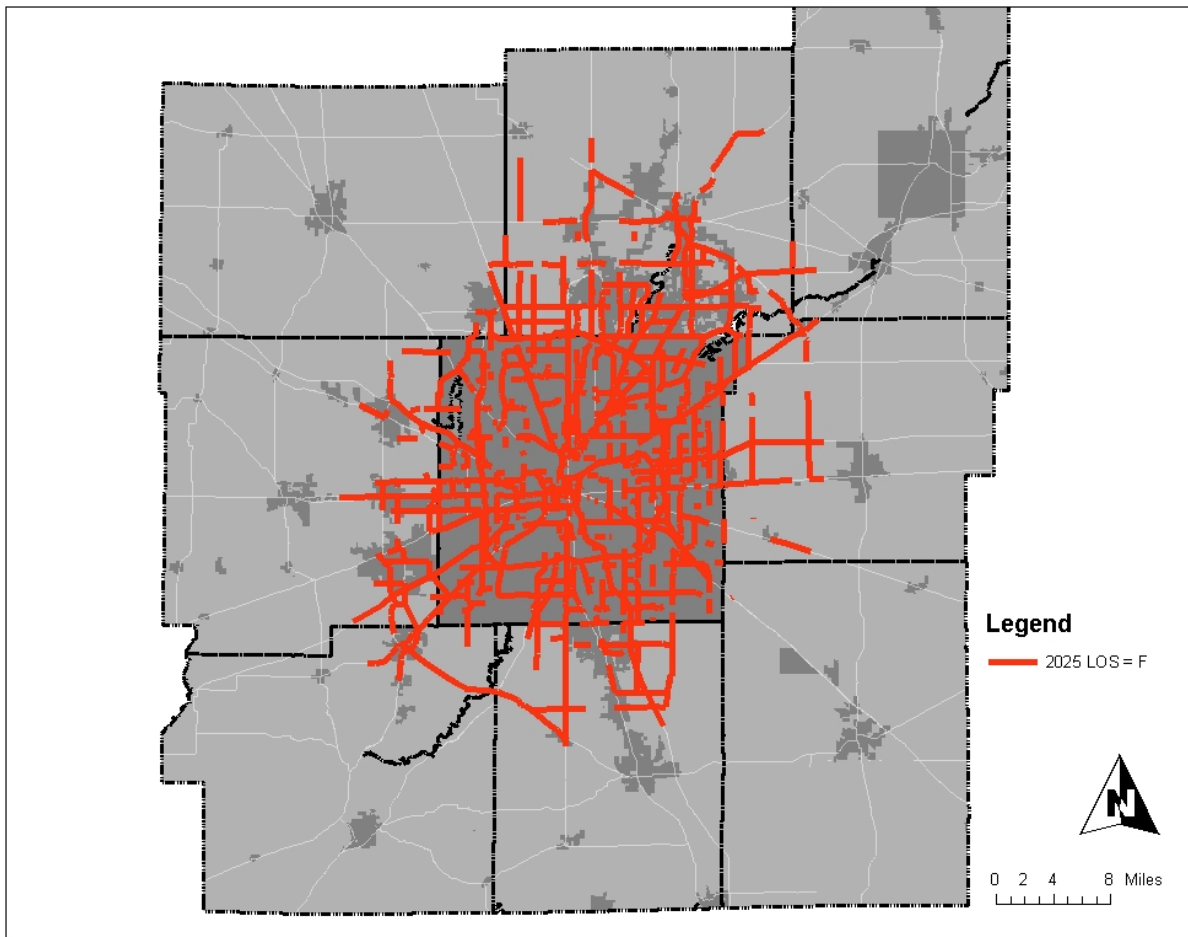


Figure 10: Highways Anticipated to Operate at Level of Service F by 2025
(Source: Indianapolis Metropolitan Planning Organization)

3.4 Air Quality

The air quality in central Indiana is a problem. Ozone (O_3), which is created when sunlight and warm temperatures mix with volatile organic compounds (VOCs) and nitrogen oxides (NOx), is the primary culprit. Hancock County reported the highest number of days (27) with poor air quality in the state in 2002, according to data in the U.S. Environmental Protection Agency's (EPA) *State of the Air: 2003* report. The Noblesville monitor has the highest average of the fourth highest values over the last three years at 93 parts per billion (ppb), according to the Indiana Department of Environmental Management (IDEM). In an April 2004 letter regarding the recent implementation of the eight-hour standard, the nine-county Indianapolis metropolitan region was designated non-compliant, subjecting the area to federal sanctions and more restrictive mitigation measures. Plans for achieving attainment status must be submitted to the EPA by Spring 2007, and the region must be in compliance by 2009.

On June 29, 2004, the EPA proposed that five counties within the Indianapolis MSA (Marion, Hamilton, Hendricks, Morgan, and Johnson) should be designated nonattainment areas for particulate matter, or particles found in the air such as soot, smoke, dirt, or liquid droplets. Plans for achieving attainment status must be submitted to the EPA by early 2008. Areas designated as nonattainment will be required to meet the federal standard by 2010.

4.0 GOALS AND OBJECTIVES

Table 4, below, presents the general goals and specific objectives for the regional rapid transit study in the Indianapolis metropolitan region. These goals provide the basis for evaluating the alternatives for transit implementation within the Northeast Corridor, and the objectives permit specifically measuring the desirability of each alternative in order to be able to select one or more for detailed analysis and potential implementation.

The Purpose and Need Statement (and the evaluation measures which will be used to measure the impact/trade-off/benefits of each alternative) must flow precisely from the study's community involvement based goals and objectives - - and vice-versa. Specific objectives have been developed (also developed in community consultation during each phase of the DiRecTionS study) which provide greater definition to the generalized statement of community goals. As the MPO viewed the community involvement based statements of generalized community goals, and more specific community objectives related to each of the community goals, a set of performance measures was adopted which create a metric for assessing the performance of each of the alternatives relative to the goals and objectives statements. Typically, numerous "metrics" are used to provide (in most cases) an objective measure of the performance of an alternative with respect to a specific community goal. In those cases where an individual performance measure does not lend itself to the objective assignment of a "metric" or "score," the system defaults to a subjective assessment (e.g., high, medium, low) of the performance of a given alternative with respect to the performance measure under study. The goals and objectives, rated by the community participants at the public involvement meetings, were used to evaluate alternate routes and technologies that could be implemented within the Northeast Corridor. Ultimately, public opinion, as ranked by the goals and objectives, honed the many alternates to four and the rapid transit technologies to three (AGT, BRT and LRT). Furthermore, the next stage of the project development process will refine the goals and objectives (if necessary) through the community involvement process and will be utilized by both the public and policy makers on the selection of a locally preferred alternative.

The underlying goal is to create a multimodal transportation network with frequent, convenient, fast, safe and comfortable service that users can rely on throughout the Indianapolis metropolitan region, and more specifically the Northeast Corridor, in order to provide an alternative to the automobile. The frequency and duration of service must match users needs and expectations. By developing rapid transit in appropriate corridors and strategically locating stations, transit can become an instrument of sound growth in that it encourages development within areas that place minimal strain on the environment and existing infrastructure. The service should provide good access to downtown and key activity centers, notably the Airport with its new midfield terminal and surrounding job base. The service needs to interface with the new downtown transit center and provide good circulation for the downtown. Consideration should also be given to tying into the Central Business District (CBD) cultural trail program and to interfacing with the Clarian people-mover system connecting local hospitals at the northwest edge of downtown. Any new modes that are introduced need to interface with IndyGo's bus network, which will need to be modified to optimize the overall transportation operations. Suburban employment concentrations will also need to be served so that inner ring residents, notably the transit dependent, can make the reverse commute to outlying jobs.

Table 4: General Goals and Specific Objectives

General Goals	Specific Objectives
<p>Goal No. 1: Maximize Engineering Feasibility and Public Safety</p>	<ul style="list-style-type: none"> • Objective No. 1: Optimize locations and layout of stations and bus stops. • Objective No. 2: Provide adequate operating clearances for vehicles. • Objective No. 3: Minimize potential for rapid transit/automobile and rapid transit/pedestrian collisions. • Objective No. 4: Ensure optimum passenger capacity and comfort.
<p>Goal No. 2: Maximize Community Benefits and Personal Safety</p>	<ul style="list-style-type: none"> • Objective No. 1: Minimize land acquisition and displacements. • Objective No. 2: Maximize potential ridership and ensure personal safety. • Objective No. 3: Minimize visual impacts. • Objective No. 4: Minimize loss of street capacity and parking. • Objective No. 5: Provide new or improved economic development opportunities.
<p>Goal No. 3: Minimize Environmental Impacts</p>	<ul style="list-style-type: none"> • Objective No. 1: Ensure air quality standards are met. • Objective No. 2: Avoid/minimize impacts to wetlands, floodplains, and critical habitats. • Objective No. 3: Minimize operating noise and vibration levels. • Objective No. 4: Avoid/minimize impacts to sensitive land uses. • Objective No. 5: Minimize adverse socioeconomic impacts.
<p>Goal No. 4: Maximize Operational Efficiency</p>	<ul style="list-style-type: none"> • Objective No. 1: Maintain adequate vehicle spacing to minimize travel time and optimize both normal and emergency operations. • Objective No. 2: Provide optimal service speeds and ride comfort. • Objective No. 3: Maximize transit system integration. • Objective No. 4: Ensure reliable operations.
<p>Goal No. 5: Minimize Costs</p>	<ul style="list-style-type: none"> • Objective No. 1: Minimize construction and operating costs. • Objective No. 2: Ensure compatibility with existing, local, state, and federal funding sources. • Objective No. 3: Maximize potential revenue sources. • Objective No. 4: Maximize system value by balancing costs and benefits.