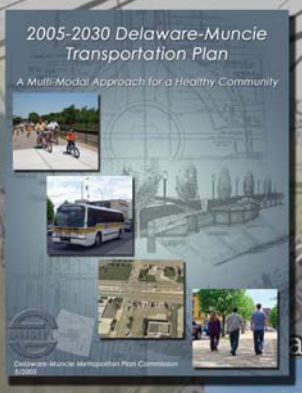
2009-2030 Delaware-Muncie Transportation Plan Update

A Multi-Modal Approach for a Healthy Community

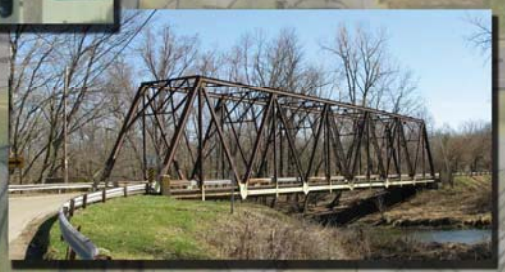


Trail

Improved
Sight & Safety

City Welcome Sign

East Jackson Street



DMMPC

Delaware-Muncie Metropolitan Plan Commission
6/2009

Trail Head
Parking

PUBLICATION NOTICE

This program is the result of tax supported initiatives and as such is not subject to copyright. It has been financed in part through a grant from the United States Department of Transportation, administered through the Federal Highway Administration.

WORK PROGRAM FULFILLMENT

The 2009-2030 Transportation Plan fulfills in part Work Element Number 700 of the Delaware-Muncie Metropolitan Plan Commission's Fiscal Year 2009-10 Unified Planning Work Program (UPWP). The purpose of Program Number 700 hereby fulfilled is to produce a Long range Transportation Plan that is in compliance with Transportation Conformity requirements in Delaware County, Indiana.

DELAWARE-MUNCIE METROPOLITAN PLAN COMMISSION STAFF

Marta Moody, Executive Director

Hugh Smith, Principal Planner
Pam Spoonemore, Zoning Planner
Cheryl McGairk, Transportation Planner
Fred Daniel, GIS Planner I
Lorey Stinton, Environmental Planner
Mary Ann Gervolino, Planning Technician
Carol Fisher, Office Manager
Kimberly Cuthbertson, Secretary

ACKNOWLEDGMENTS

DELAWARE-MUNCIE METROPOLITAN PLAN COMMISSION

Dave Howell, President
Deane Rundell, Vice President
Gary Alexander
Julius Anderson
Larry Bledsoe
Jerry Dishman
Tom Green
Stan Hiatt
John Kelley
Lance Lillie
Bill O'Rourke

DELAWARE COUNTY BOARD OF COMMISSIONERS

Todd Donati, President
Don Dunnuck
Larry Bledsoe

DELAWARE COUNTY COUNCIL

Chris Matchet, President
Brad Bookout
Ted Bowman
Mary Chambers
James King
Kevin Nemyer
Ron Quakenbush

MAYOR OF MUNCIE

Honorable Sharon McShurley

MUNCIE CITY COUNCIL

Alison Quirk, President
Mary Jo Barton
Mark Conatser
Jerry Dishman
Linda Gregory
Mike King
Robert S. Marshall
Monte M. Murphy
Brad Polk

TRANSPORTATION COMMITTEES AND AFFILIATIONS

ADMINISTRATIVE COMMITTEE

Mayor Sharon McShurley, Chairman
Represented by:
Dick Shirey, Deputy Mayor
Larry King, Muncie Indiana Transit System
Jack Klingensmith, Citizen Representative
Marta Moody, DMMPC Executive Director
Gary Alexander, Plan Commission
Ken Schuck, Chamber of Commerce
Todd Donati, County Commissioners
Thomas Kinghorn, Ball State University
Represented by:
Kevin Kenyon, Facilities & Planning
Dwane Myers, INDOT Greenfield Dist.

Advisors:
Stan Hiatt, Consulting City Engineer
Angie Moyer, County Project Manager
Hugh Smith, DMMPC
Larry Heil, Federal Highway Admin.

Cheryl McGairk, Recording Secretary

TECHNICAL ADVISORY COMMITTEE

Marta Moody, Chairman
Randy Walter, INDOT Program Section
Indiana-American Water Co.
Mary Gaston, MITS (Transit System)
MaryAnn Gervolino, DMMPC Planner
Michael Linn, Delaware County Airport
Nita Barnard, SBC/AT&T
Stan Hiatt, Muncie City Engineer
Brian Jones, INDOT Transit Section
Pete Olson, Yorktown Town Manager
Shahnaz Afzaal, INDOT Greenfield District
Jim Lowe, Ball State University
Diane Michener, Vectren Energy Delivery
Larry Heil, Federal Highway Administration
Jim Riggle, American Electric Power
Larry Robinson, Chamber of Commerce
Trucking Industry Representative
Fred Ludington, Parker City Town Council
John Kelley, Delaware Co. Surveyor
Angie Moyer, Delaware Co. Engineer Dept.
Dick Shirey, Deputy Mayor, Muncie
Hugh Smith, DMMPC Principal Planner

Cheryl McGairk, Recording Secretary

AIR QUALITY CONSULTING PARTIES

Indiana Department of Environmental Management – Shawn Seals, Gale Ferris, Brian Callahan
Indiana Department of Transportation – Steve Smith, Laurence Brown, Randy Walter
Bernardin, Lochmueller & Associates – Vince Bernardin, Jr.
Madison County Council of Governments – Jerry Bridges, Peter Mitchell
Federal Highway Administration – Larry Heil
Federal Transit Administration – Andy Minyo
Environmental Protection Agency – Pat Morris
Delaware-Muncie Metropolitan Plan Commission – Marta Moody, Hugh Smith

CONSULTANTS

Bernardin, Lochmueller & Associates, Inc.

TABLE OF CONTENTS

SECTION I

INTRODUCTION: MISSION AND GOALS

The *2009-2030 Delaware-Muncie Transportation Plan* updates and replaces the 2005-2030 transportation plan developed in 2005, though many of the previous sections remain intact with minor updates. The purpose of this plan is to provide long-range guidance toward developing and maintaining the transportation systems within Delaware County. The federal guidance toward this effort began with the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), extended further with the Transportation Equity Act for the 21st Century in 1998 (TEA-21), and was further enhanced in 2005 by the Safe, Accountable, Flexible, Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU). ISTEA expanded the role of Metropolitan Planning Agencies, set up the transportation plan process, and encouraged the inclusion of transportation enhancement projects in transportation improvement programs. Tea-21 carried those efforts further and added environmental justice. SAFETEA-LU expanded the safety and equity aspects of transportation improvements while maintaining and expanding the previous efforts.

Delaware County was declared a Non-attainment Area for air quality on June 15, 2004 and we will have to show that the projects listed in this plan will not contribute toward poorer air quality. Delaware County reached air quality attainment and became a Maintenance Area in late 2005, but we are still be required to provide air quality conformity analysis for our Transportation Plans and Transportation Improvement Programs (TIP). Because we lost our original attainment status, it is a federal requirement that the Delaware Muncie Transportation Plan be updated every four years. The TIP is a four-year program of federal aid projects and draws its projects from the Transportation Plan. A TIP is effective for four years or until the next TIP is approved, usually every one or two years. The projects listed in the last two years of a TIP can be moved up a year or two to replace projects delayed. Delays generally occur because of the effort to ensure that projects are designed and built to appropriate federal standards.

SAFETEA-LU set eight factors that must be considered in developing a transportation plan. The factors are: 1) Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency; 2) Increase the safety of the transportation system for motorized and non-motorized users; 3) Increase the security of the transportation system for motorized and non-motorized users; 4) Increase the accessibility and mobility of people and freight; 5) Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns; 6) Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight; 7) Promote efficient system management and operation; and 8) Emphasize the preservation of the existing transportation sytem. The 2009-2030 Transportation Plan was developed using those factors.

MISSION

The mission of the *2009-2030 Delaware-Muncie Transportation Plan* is to guide the continuous development of an integrated intermodal transportation system that facilitates the efficient, effective and environmentally sound movement of people and goods. This document covers all federal aid

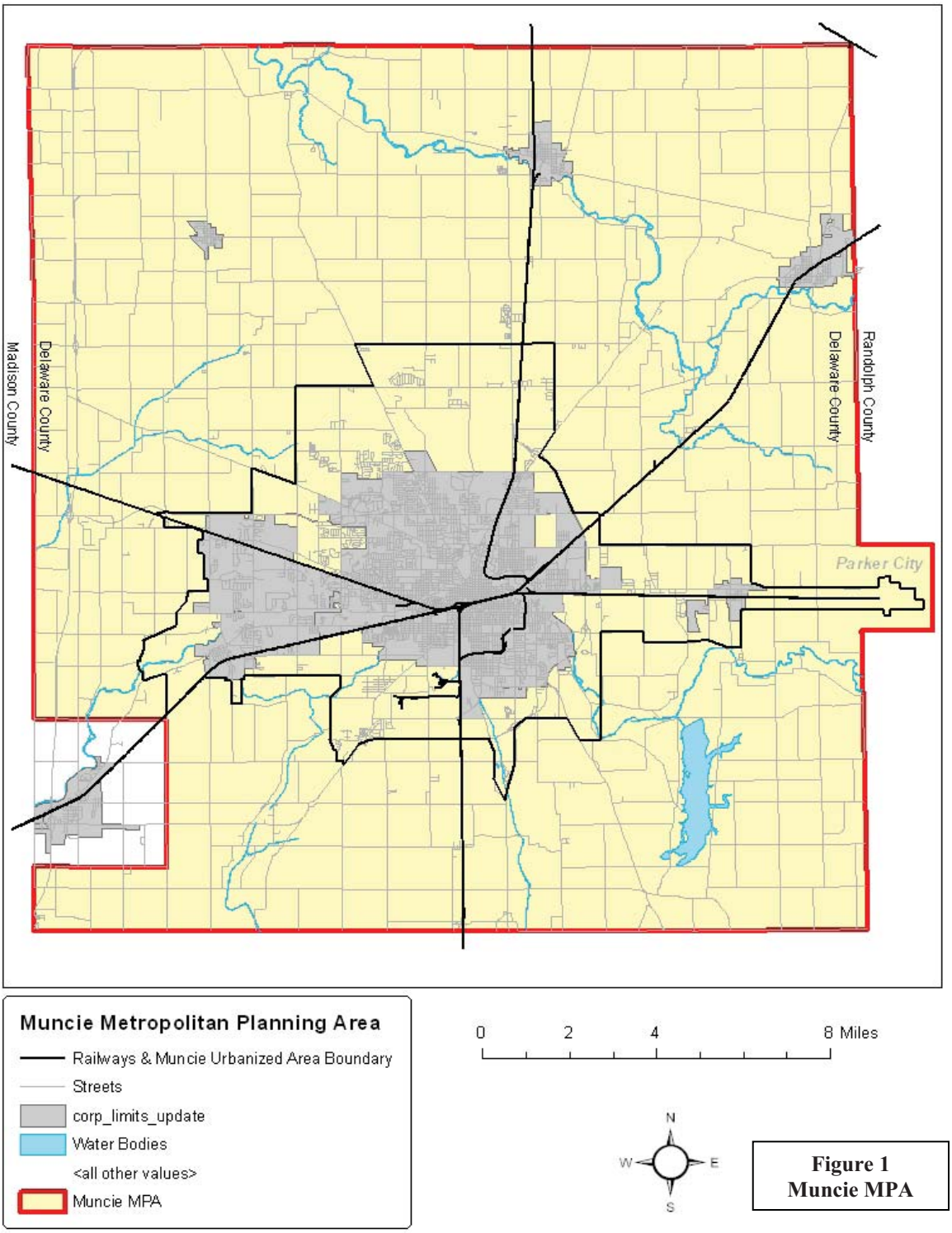


Figure 1
Muncie MPA

transportation projects in the metropolitan planning area (MPA) and all air quality significant transportation projects within Delaware County. The Muncie MPA is shown in Figure 1 and covers approximately 386.6 square miles of Delaware County, Indiana, and 4 square miles of Randolph County near Parker City, Indiana. The Anderson MPA has the remaining 10.5 square miles of Delaware County in the Daleville Area.

GOALS AND OBJECTIVES

Over the course of the last two years, the previously established goals and objectives were scrutinized through the local transportation planning process involving elected officials, technical advisors, public and private transportation providers, and private citizens. This review resulted in the following, which were reconfirmed through the 2009 series of public meetings:

Goals:

Provide a safe, well-maintained, functional multimodal transportation system that is compatible with planned community growth and minimizes congestion.

Develop cost-effective, environmentally sound plans, programs, standards and enforcement procedures for the maintenance and extension of public and private facilities.

Promote the development of land, parking facilities and effective movement of people and goods within the Central Business District (also known as the City Center), while improving the aesthetic character and environmental quality of downtown Muncie.

Promote the community's ability to improve the surface transportation system by means of an improved economic base resulting from orderly economic development encompassing all industries - housing, retail, manufacturing and tourism.

Objectives:

Assure a cost-effective transportation system.

Use the existing transportation facilities to their maximum efficiency.

Decrease transportation related fatalities and accidents.

Reduce congestion and improve circulation, particularly for the City Center, University and major activity areas.

Provide satisfactory access/ connectivity from developed areas to the regional highway system.

Increase intermodalism to promote energy and environmental conservation.

Improve accommodation of non-motorized travel and the elimination of conflict between modes of travel.

Improve and increase the role of transit services to improve overall transportation system efficiency.

Improve and promote pedestrian and bicycle facilities and circulation to create a bicycle and pedestrian friendly community.

Ensure that transportation planning efforts consider citizen needs for all modes of transportation and concerns for impacts of the transportation system on other elements such as neighborhoods and business.

AIR QUALITY CONFORMITY

Beginning with the 2005-2030 Transportation Plan, the document planning area is expanded include all of Delaware County, Indiana as a result of being declared non-attainment in terms of meeting the Eight-Hour National Ambient Air Quality Standards for Ozone. All of Delaware County is classified as one "airshed" which includes rural non-MPA areas, a part of the Anderson Urbanized Area surrounding Daleville, and the previously cited Muncie Metropolitan Planning Area. The Delaware-Muncie Metropolitan Plan Commission is charged with additional transportation conformity planning activities covering the entire airshed in order to show that the Transportation Plans with projects in Delaware County are in compliance with the National Ambient Air Quality Standards (NAAQS). The Transportation Conformity rule established by the Clean Air Act (§176(c)) can be found at 40 CFR parts 51.390 and 93. Conformity is intended to ensure that federal funding and approval are given to transportation activities that are consistent with air quality goals. The transportation conformity requirements address air pollution from on-road mobile sources – emissions

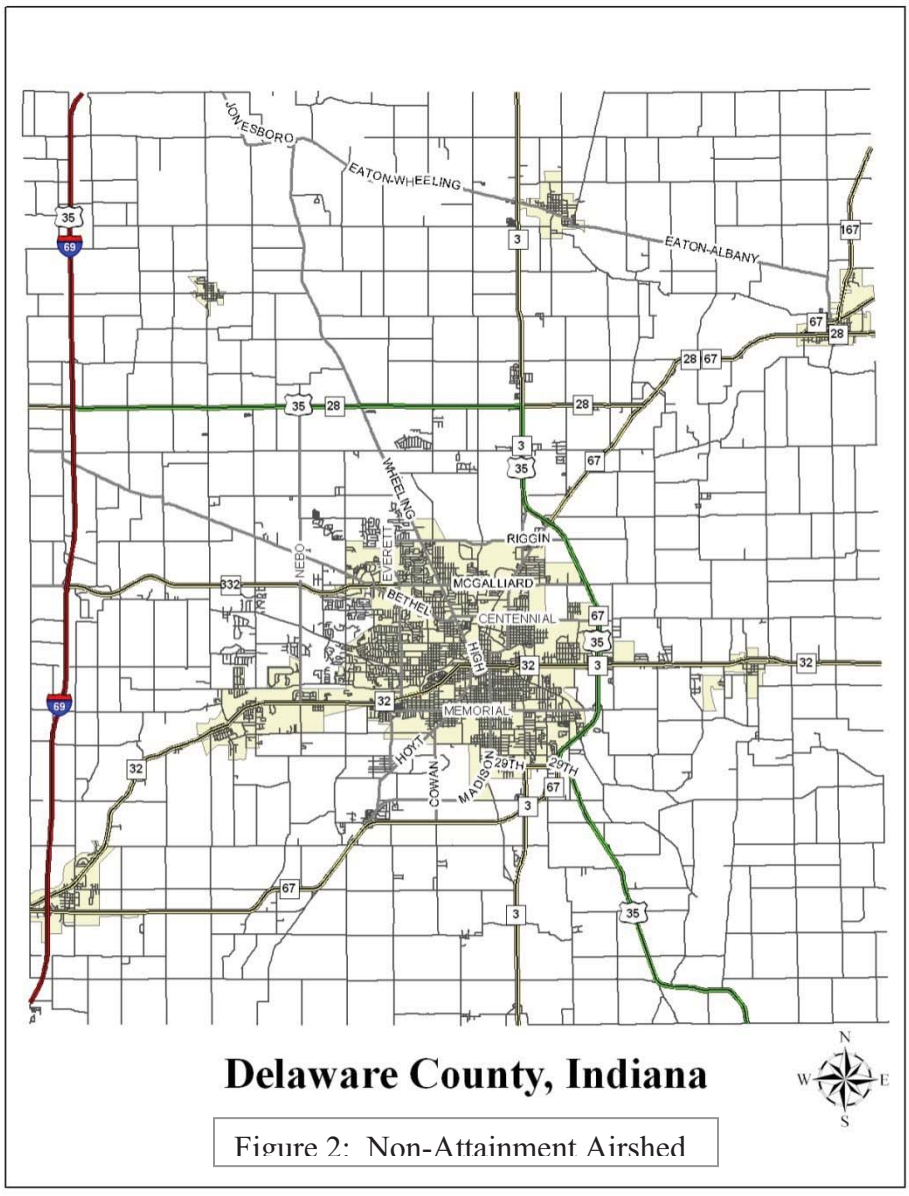


Figure 2: Non-Attainment Airshed

created by cars, trucks, motorcycles and transit. Transportation Conformity applies to the long range Transportation Plan, the Transportation Improvement Program (TIP), all projects using federal transportation funds and regionally significant non-federal aid projects.

The data sources and methodology used to show conformity must be a part of the Transportation Plan. This Conformity Documentation is included in the Appendix. Delaware County was redesignated a Maintenance Area for air quality in late 2005 – indicating we have attained the applicable air quality standards, however, Transportation Conformity continues to be a requirement in maintenance areas as well as non-attainment areas. A Mobile Source Emissions Budget was established for the Delaware County Air Quality Maintenance Area in 2007. That budget of 3.50 tons per day of volatile organic compounds (VOC) and 4.82 ton per day of nitrogen oxide (NOx) is a standard that Delaware County must stay under now and in the future to retain the maintenance area designation. The updated Conformity Documentation was prepared using the model years 2010, 2015, 2025, and 2030 which were used in the original Conformity Documentation of the previous Transportation Plan, but with the models calibrated to 2010 traffic volumes using traffic counts from 2006 to 2008 adjusted forward to 2010.

SECTION II

DEMOGRAPHICS: SOCIOECONOMICS AND GROWTH TRENDS

As emphasized by the ISTEA, TEA-21 and SAFETEA-LU acts, there is an undeniable interrelationship among and between transportation, land use, demographics and socioeconomic factors. Policies, decisions and actions undertaken within one arena will affect the others. With a strong economy, existing businesses will expand and new business will locate in an area (after consideration of feasibility factors such as capacity of transportation facilities, utilities, labor force, etc.). This, in turn, provides new employment opportunities and these new employees will create a demand for housing and other urban amenities and services. Increased amenities (social, recreational, environmental) and services (roads, transit, utilities) increase the attractiveness of an area and its potential for obtaining more new business; and the cycle continues.

HISTORY

A very brief history of growth and development of the Delaware-Muncie area begins with the first permanent settlement in 1820 of a trading post amidst the Munsee Indian territory. Munseytown became the county seat in 1827 (over Granville and Smithfield, both on like waterways). Muncie was incorporated in 1854 and became a city in 1865. It became an Indiana second-class city in 1921.

Waterways and wagon paths were supplemented with railroads (8 lines laid between 1901 and 1948) and public roads. Enhanced connections between cities and towns were developed through a system of county roads, turnpikes and, eventually, a state highway system. The final connectors came with the completion of I-69 and the expansion of Johnson Field into the Delaware County airport, which ties the Delaware-Muncie area into a nationwide arena and a global economy.

Muncie was transformed from an agricultural trading center into an industrial community (glass, rubber, metals) with the discovery of natural gas in 1886. Depletion of the gas supply was followed by a growing automobile industry. The glass industry, via the Ball family, fostered a small community college, Normal City, which grew into Ball State Teachers College (with a 1944 enrollment of 1,346) and became Ball State University in 1965 with enrollment steadily increasing until the mid 1990's to a current range of some 19,000 students, which has risen and fallen near that level for ten years.

ECONOMY

As with many communities, the economic base of the Delaware-Muncie area used to be characterized by a small number of large manufacturing firms and the provision of professional services. The manufacturing base included Ball Brothers, Borg-Warner, Westinghouse, Owens-Illinois, General Motors, and Dayton-Walther - all of which have are now gone. Ball State University and Ball Memorial Hospital continue to represent a majority of the professional services industry. Diversification and new recruitment, including manufacturing concerns, and retention/ growth of the service industry has helped to maintain some stability for the local economy. Employment trends have continued along patterns established over the last few decades, in part, and in line with national trends toward a tertiary economy. East central Indiana has shown more job and population loss than most areas of the State, however, the

IU Business Research Center does show projections that, over the next 20 years, Delaware County will maintain stability and some growth.

TRAVEL MODEL FORECAST

HISTORY

Prior to the 2005 Transportation Plan, Bernardin, Lochmueller & Associates (BLA) developed a Travel Model for Delaware County and a forecast of socio-economic factors to guide the calculations of future vehicle trips and their patterns within Delaware County. The independent socioeconomic variables used in the generation of trips by the travel demand model included household population, the number of households, vehicle ownership per household, workers per household, household mean income, employment (total as well as the ten business sectors – agriculture, mining, construction, manufacturing, transportation/ communication/public utilities, retail, wholesale, finance/insurance/real estate, services and government), and school enrollment (college and vocational versus primary and secondary).

Countywide control totals of socioeconomic variables were forecasted in five-year increments from 2000 to the year 2025 in order to serve as a basis for developing projections for the individual 514 Travel Analysis Zones (TAZs), which represented all general locations that traffic could travel between. BLA developed a base year traffic model for 2000 and a future year traffic model for 2025. The following Delaware County forecasts were the basis by which trips were generated and distributed on paths between the TAZs for the Delaware-Muncie Metropolitan Plan Commission Travel Demand Model:

The labor force projection for Delaware County was 69,745 workers in the year 2025, an increase of 10,005 workers (16.7%) from the Indiana Department of Workforce Development (IDWD) estimate of 59,740 workers in the year 2001.

Based on the assumption that the labor force participation rate would rebound until the year 2010 (to slightly below the National rate) when it will begin to decline to the year 2025 (to slightly above the National rate, but comparable to Monroe County), the population forecast for Delaware County was 132,855 persons for the year 2025, an increase of 14,086 persons (11.9%) from the 2000 Census count of 118,769. For the year 2020, the Delaware County forecast of 130,237 persons was considerably higher than most recent forecast of 117,344 persons by the Indiana State Data Center[1] and the Woods & Poole Economics forecast of 118,430 persons[2], but comparable to the 1970 Census count of 129,129 persons and the 1980 Census count of 128,597 persons. (When the labor force participation rate declines, the population increases; thus, if the ratio did not decline after 2010, there would be less population growth.)

[1] *1998 Preliminary Series – Indiana County Population Projections*; Indiana Business Research Center (IBRC).

[2] *Woods & Poole Projections, 2000 Edition*; Woods & Poole Economics, Inc.

Using the population projection and assuming a stable population in group quarters, 54,959 households were projected for the year 2025 for Delaware County resulting in a net increase of 7,828 households over the year 2000 count of 47,131 households. This reflected a future reduction in the gap between the household size in the United States and Indiana versus Delaware County. In the year 2000, the household size was 2.37 persons per household for Delaware County compared to 2.59 persons per household in the United States and 2.53 persons per household in Indiana. By the year 2025, the household size was projected to be 2.29 persons per household for Delaware County compared to 2.47 persons per household in the United States forecast by the U.S. Bureau of Census (2.34 persons per household in Delaware County by Woods and Poole Economics).

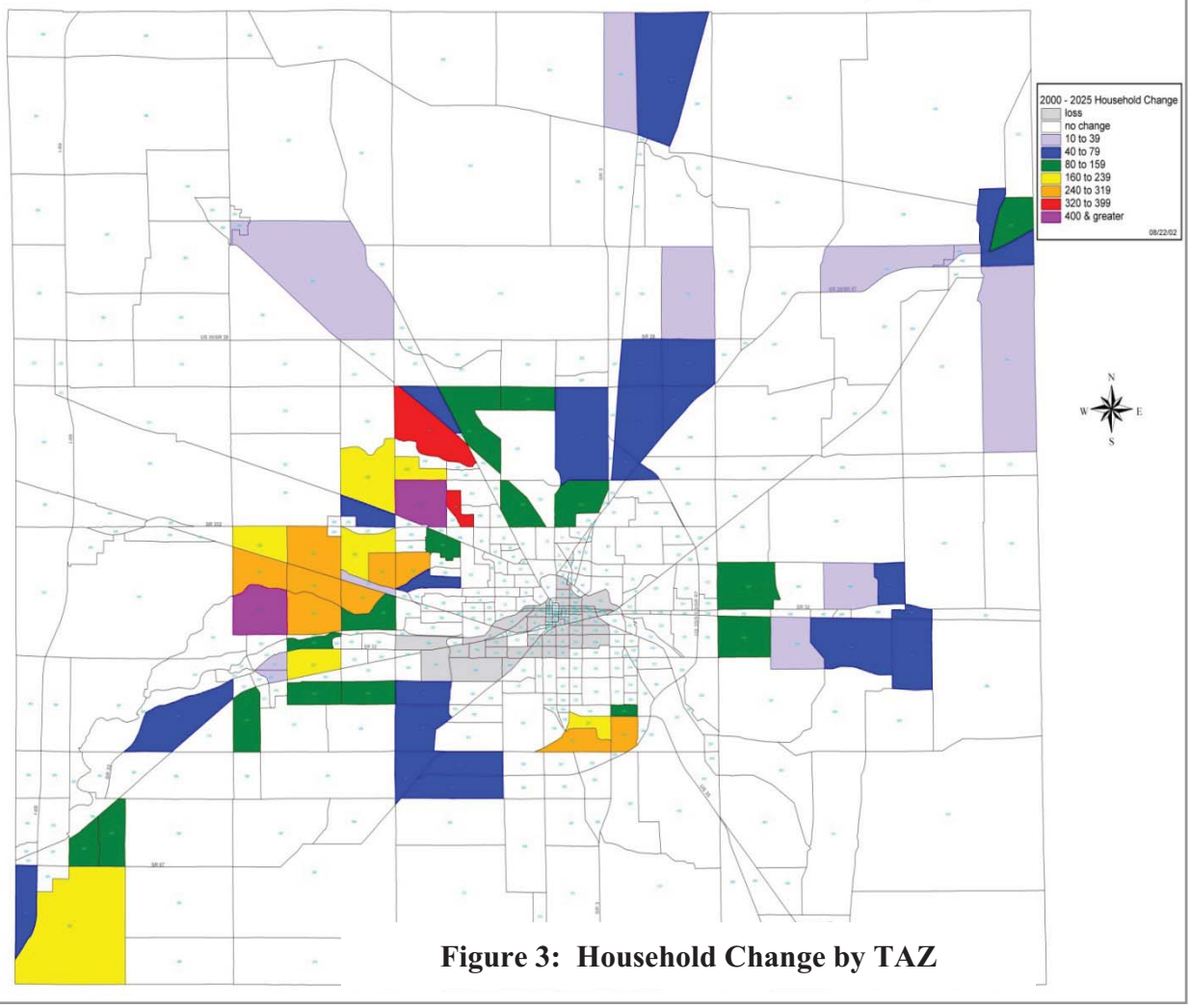


Figure 3: Household Change by TAZ

With the population projection and the declining household size projection, the corresponding median household income for Delaware County was $39,344 in the year 2025 (in constant year 2000 dollars) up from the most recent estimate of $37,291 in 1998 (in constant year 2000 dollars).

The personal vehicle forecast for the year 2025 was 97,583, up from 87,286 vehicles in the year 2000. This increase in personal vehicles registered in Delaware County also reflected an increase in the ratio of vehicles-per-household consistent with the national trend due to smaller households.

Based on the best employment projection regression equations, the forecasted employment by place of work in the year 2025 was 67,591 "wage and salary" (non-farm jobs excluding proprietorships). This was an increase of 13,859 "wage and salary" jobs (25.8%) over 53,732 jobs in the year 2000. The percent growth increase was still smaller than the Woods & Poole Economics forecast of a 27.5% increase in non-farm jobs (including proprietorships). As the growth in jobs exceeds the growth in population and labor force over the same twenty-five year period, Delaware County will become an even greater net importer of labor with the number of jobs (including farms and proprietorships) exceeding the available labor force in the county.

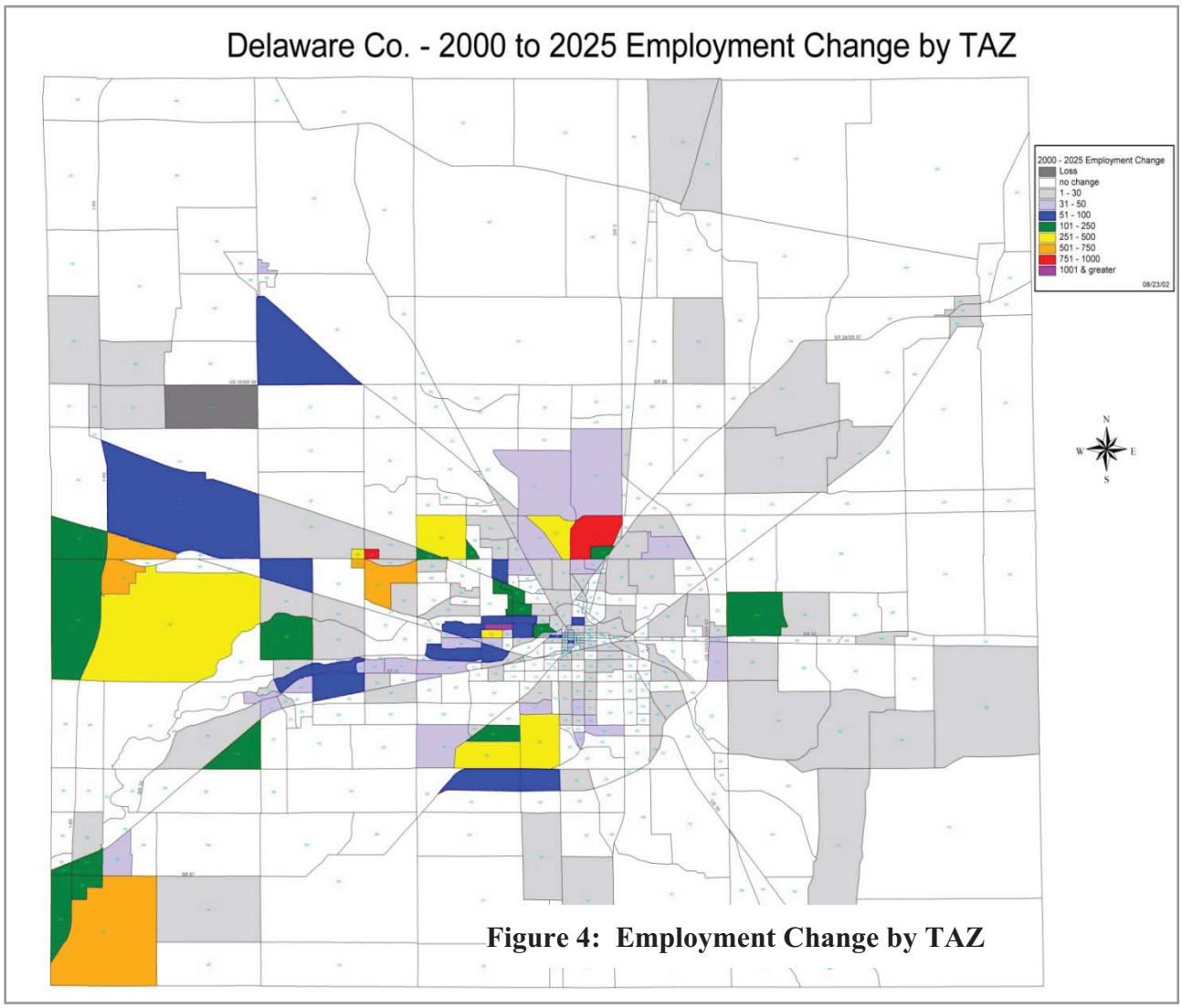


Figure 4: Employment Change by TAZ

Model control totals were developed by Bernardin, Lochmueller & Associates (BLA) and later expanded by the Plan Commission staff to include an air quality base year of 2002 and a Transportation Plan target year of 2030. Table 1 lists the socio-economic factor control totals.

Table 1: Summary of Forecast Control Totals

Sources: (a) Indiana Department of Workforce Development for labor force and "wage and salary" employment; U.S. Bureau of the Census for 1990-2000 population and housing; and Indiana Business Research Center for median household income and motor vehicle registration with the State of Indiana Bureau of Motor Vehicles.

(b) Bernardin-Lochmueller & Associates for Projections

(c) DMMPC projections using March 2002 Indiana employment figures and BLA figures.

(d) DMMPC projections using BLA figures.

Variable	2000[a]	2002c	2005[b]	2010[b]	2015[b]	2020[b]	2025[b]	2030d
Labor Force	58,710	61,540	62,990	66,530	68,379	69,110	69,745	70,390
Total Population	118,749	120,227	120,984	124,691	128,161	130,237	132,855	135,525
Group Quarters	6,933	7,000	7,000	7,000	7,000	7,000	7,000	7,000
Household Population	111,836	113,227	113,984	117,691	121,161	123,237	125,855	128,523
Households (occupied units)	47,131	47,978	48,504	50,511	52,451	53,581	54,959	56,371
Household Size	2.37	2.36	2.35	2.33	2.31	2.30	2.29	2.28
Median Household Income (Yr 2000 dollars)	$37,401	$37,328	$37,218	$37,884	$38,042	$38,765	$39,344	$39,930
Total Vehicles	105,436	108,645	109,684	114,031	118,378	122,724	127,071	131,569
Personal (Household) Vehicles	87,286	89,818	90,803	94,401	98,000	101,598	105,197	108,921
Retail Employment	11,943	12,751	12,890	13,444	13,907	14,136	14,360	14,587
Non-retail Employment	41,789	45,161	45,656	47,611	49,702	51,472	53,231	55,128
Mining	34	29	26	22	21	20	19	18
Construction	2,375	2,616	2,638	2,725	2,778	2,795	2,811	2,827
Manufacturing	9,569	10,142	10,170	10,284	10,298	10,194	10,081	9,969
Transportation /Communications Public Utilities	3,279	3,781	3,827	4,009	4,136	4,191	4,244	4,297
Retail	11,943	12,751	12,890	13,444	13,907	14,136	14,360	14,587
Wholesale	1,507	1,507	1,507	1,507	1,507	1,507	1,507	1,507
Finance / Insurance /Real Estate	1,846	1,903	1,913	1,954	1,991	2,007	2,024	2,041
Services	15,073	16,818	17,167	18,562	20,307	22,052	23,796	25,678
Government	8,126	8,373	8,408	8,548	8,665	8,707	8,749	8,791
Total Employment	53,732	57,920	58,546	61,055	63,610	65,609	67,591	69,715

Bernardin, Lochmueller & Associates (BLA) used data from various sources to further refine the employment totals and obtained information on school enrollments. Ball State University provided information on university student enrollment. BLA contacted vocational schools, parochial school systems and public schools systems to obtain address specific information on the grades and enrollment at each school. The school enrollment was then allocated for each Transportation Area Zone (TAZ) and used to determine the travel patterns connected to school-related trips.

Table 2: Summary of Existing and Future Socio-Economic Data by TAZ

Component	Year 2000	Change from 2000 to 2025	Year 2025
Population	118,769	14,080	132,849
Group Quarters Population	6,933	67	7,000
Household Population	111,836	14,013	125,849
Households	47,131	7,828	54,959
Grades K to 12 School Enrollment	18,615	1,396	20,011
College & University Enrollment	20,346	0	20,346
Total Enrollment	38,961	1,396	40,357
Farm Employment	307	0	307
Mining Employment	9	0	9
Construction Employment	2,586	475	3,061
Manufacturing Employment	10,281	573	10,854
Transportation, Communication & Public Utilities Employment	1,739	512	2,251
Wholesale Employment	1,891	0	1,891
Retail Employment	13,841	2,801	16,642
Finance, Insurance & Real Estate Employment	2,794	269	3,063
Services Employment	27,991	11,411	39,402
Government Employment	1,068	82	1,150
Total Employment in Year 2025	62,507	16,123	78,630

Source: Bernardin-Lochmueller & Associates, Inc.

The forecasts used in the Travel Model were cross-checked by utilizing building permit data. Permit location patterns were consistent with the Travel Model forecasts which emphasize growth to the west and northwest of the City of Muncie. The forecasts indicated an increase of 1,373 new dwelling units from 2000-2005. With approximately 20 permits per year for the small towns, a five year period would add 100 new units. Also, a fourplex development in the county was undercounted by 60 units and a city apartment project for 52 units was counted as one commercial permit. The 5 year total of 1323 is within 4% of the forecast.

County New Residential					County New Commercial/Industrial				
2000	**2001**	**2002**	**2003**	**2004**	**2000**	**2001**	**2002**	**2003**	**2004**
152	163	165	180	185	24	9	11	8	13
TOTAL: 845					**TOTAL: 65**				
Muncie New Residential					**Muncie New Commercial/Industrial**				
2000	**2001**	**2002**	**2003**	**2004**	**2000**	**2001**	**2002**	**2003**	**2004**
45	62	53	41	65	22	16	14	8	16
TOTAL: 266					**TOTAL: 76**				

DEMOGRAPHIC & GROWTH TREND UPDATE

The Muncie-Delaware County area is currently experiencing declines from the nationwide recession that impact the projections used with the traffic model. For the most part, the growth areas reflected in the model appear to remain viable – the rate of growth has slowed significantly. An update of the new residential permit locations does shown a wider dispersal of growth though most new construction is occurring in those areas used in the model projections. The following table projects that population decline in the Muncie-Delaware County area will slowly begin to reverse over the next 20 years.

Table 3: Population Change

Description	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030
Anderson	-3,156	-2,054	-284	475	335
Bloomington	4,252	3,544	2,781	2,622	3,339
Gary Division (Indiana portion of Chicago)	9,375	9,120	11,785	11,435	10,237
Cincinnati-Middltown, OH-KY-IN (IN portion)	2,734	2,168	1,707	1,304	869
Columbus	228	429	1,180	1,561	1,446
Elkhart-Goshen	6,526	7,289	9,005	9,919	10,094
Evansville, IN-KY (IN portion)	2,548	3,042	3,330	4,212	3,022
Fort Wayne	7,509	9,462	13,063	14,038	13,082
Indianapolis	121,208	107,773	82,927	61,799	52,283
Kokomo	-929	-622	400	1,011	1,040
Lafayette	3,123	3,715	3,256	5,322	5,457
Louisville, KY-IN (IN portion)	7,625	5,638	4,515	3,007	1,343
Michigan City-LaPorte	-528	-154	826	851	632
Muncie	-388	67	697	896	933
South Bend-Mishawaka, IN-MI (IN portion)	-1,794	1,095	4,487	7,357	6,532
Terre Haute	-434	304	1,585	2,275	1,757

Source: Projections developed by the Indiana Business Research Center, December 2007

Population projections for Delaware County in 2035 show a low of 109,081, a medium of 119,497 and a high of 132,754. The high range is reflected in the 2005-2030 Model, however, given current conditions, the slowing of permits by more than half and the recovering economy, the medium population projections were used for the 2009 Transportation Plan Update. This basically means that the 2030 population will have recovered to approximate the 2000 population.

Business loss has occurred within the City of Muncie, however, new business attraction in the last 5 years has occurred in the 3 industrial park areas –the Airpark on the north side, the Industria Centre on the southwest side and the Park One center at I-69 and SR 332. All of these areas were shown as growth areas in the 2005-2030 TAZ areas.

SECTION III

COMPREHENSIVE PLAN IMPLEMENTATION – WESTERN GROWTH STUDY[3]

Communities plan so that they can better manage their future and provide a high quality of life to their residents. By carefully planning land uses and public investments, public services can be more efficiently provided, scarce land resources can be put to their highest uses, and public resources can be effectively targeted to pervasive problems. The Comprehensive Plan, adopted in 2000, focuses on seven key plan elements. These plan elements are equal in importance to one another, and include:

- ***Alleviating and preventing problems created by urban sprawl***, through focusing new developing around the existing "service area villages" as well as encouraging infill development and defining an effective growth boundary for the City of Muncie.

- ***Preserving agricultural land and farming operations***, by focusing new development around existing development.

- ***Redevelopment and revitalization*** of existing urban areas and neighborhoods within the City of Muncie, including the Central Business District-Downtown Muncie.

- ***Implementing key thoroughfare improvements***, including the earliest completion of the western growth and arterial circulation study and, by extension, completion of the infrastructure improvements endorsed by the study.

- ***Encouraging economic development*** through the provision of new Class A industrial and office space, and taking advantage of the proximity of the community to the Indianapolis metropolitan area via I-69.

- ***Preserving and protecting the natural environment***, and maximizing the recreational value of natural areas for all citizens, through constraining development to non-environmentally sensitive areas, expanding the greenway system, and encouraging, where feasible, clustered development that preserves open space.

- ***Enhancing the attractiveness of the community*** through enhanced design standards for major gateway corridors, and implementing improvements to major gateways, such as SR 332 and SR 67.

Appeal to the Great Spirit

[3] This section consists of excerpts from the *Delaware-Muncie Comprehensive Plan*, HNTB, 2000, and from the Western Growth & Arterial Analysis Study, Bernardin-Lochmueller & Associates with Claire Bennet Associates, 2004, both of which are incorporated as supporting documentation. A Comprehensive Plan Update is planned for 2010.

DEVELOPMENT PROCESS

In addition to garnering input from citizens, the process of developing the comprehensive plan was overseen by a Steering Committee with broad representation from the City and County. The Committee provided input and feedback at all stages of the new comprehensive plan.

Public Input

Several opportunities were available for citizens to participate in the process of developing the new comprehensive plan. First, several public meetings were held to garner public input. Second, a more focused issues symposium explored three of the more pressing issues in greater detail – economic development, farmland preservation and open space/recreation. A website was established to inform viewers of the Comprehensive Plan process and status and to allow viewers to email comments.

Based on the public input and background data collection detailing conditions and trends, a draft comprehensive land use plan was prepared. The steering committee, DMMPC staff and transportation subcomiittees were all used for extensive review prior to a series of public meetings and hearings in front of the Plan Commission. Several changes were made primarily in the transportation considerations resulting in the western growth study which has been specifically incorporated into this long range plan.

Almost all comments received ultimately endorsed the concepts presented in the comprehensive plan – focusing development in and around the City of Muncie, protecting the existing transportation system (leading to the concept of corridor overlay districts to control and enhance the major gateway roadways, most of which are state highways), revitalizing existing neighborhoods especially the downtown area, and improving the appearance of the gateways and community in general.

The public input and revision process was so successful that the final adoption in front of the Delaware County Board of Commissioners and the Muncie City Council occurred with no negative comment – and the only concern expressed was that the plan be implemented. As indicated in the key Comprehensive Plan elements, completion of the Western Growth Study was highly recommended. Figure 5, taken from the Comprehensive Plan, depicts the originally conceived study area, however, in anticipation of the update for the 2005-2030 Transportation Plan, the scope of the study was enlarged and the entire county became the study area. The Comprehensive Plan and Land Use Map, shown on the following page, were used as a base. Focus groups were used to further develop future travel forecasts as mentioned in the previous Section.

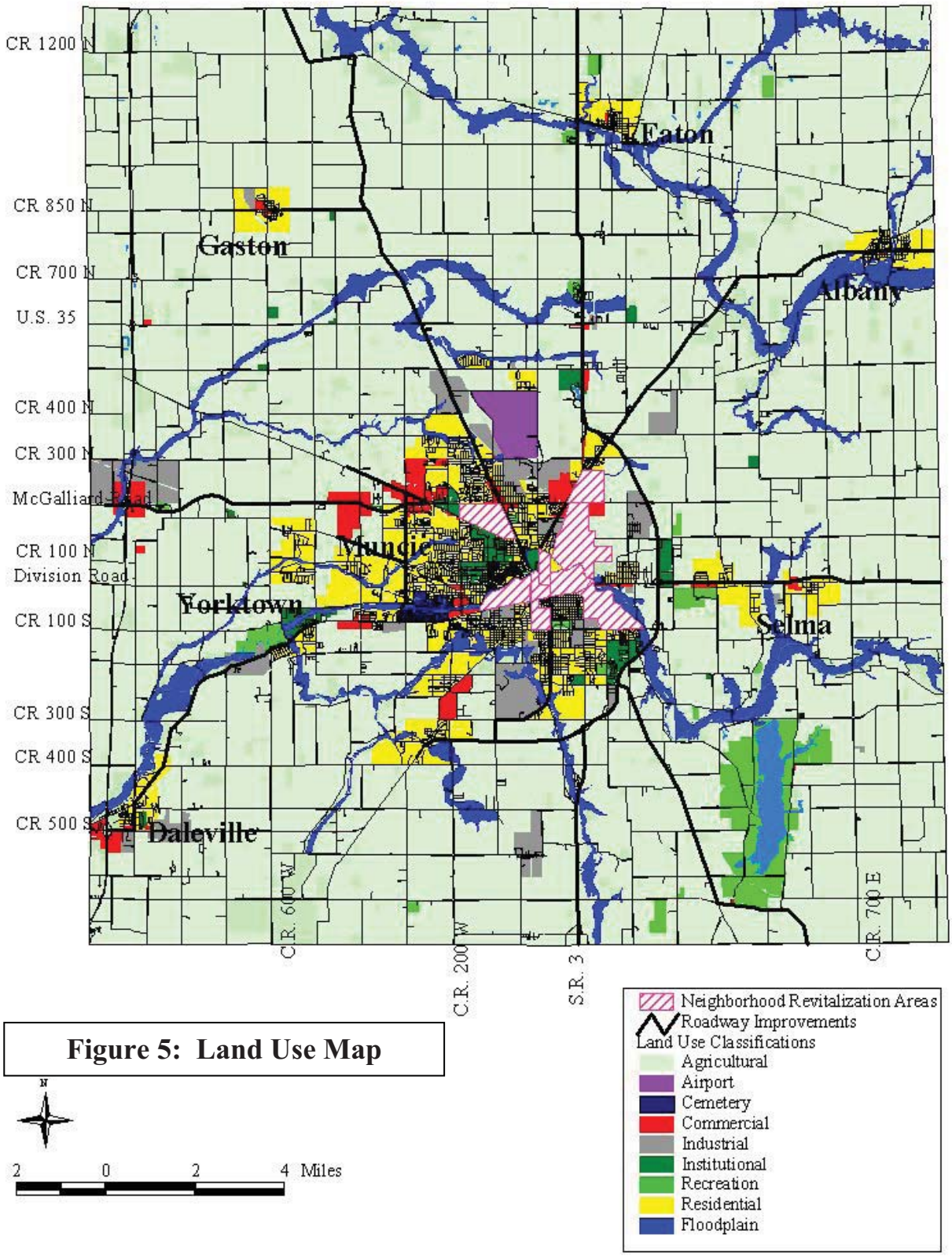


Figure 5: Land Use Map

The following are excerpts from the Western Growth & Arterial Analysis Study, which is incorporated by reference as a part of this Transportation Plan Update as it shows the extent of analysis used to study the concept of a "western loop" and the final conclusion that such a loop was not needed, nor supported by the data, at this time:

This project is a transportation study and network analysis for future transportation improvements designed to enhance travel movements in the development growth areas of Delaware County (including Muncie and Yorktown). The main purpose of the study is to determine the best combination of improvements to deal with congested traffic resulting from growth toward the north and the west edges of Muncie, Indiana. A second purpose of the study is to compare the impact of extending the Muncie Bypass around the north and west side of Muncie to the impact of a variety of alternative improvements. The objectives of this study are:

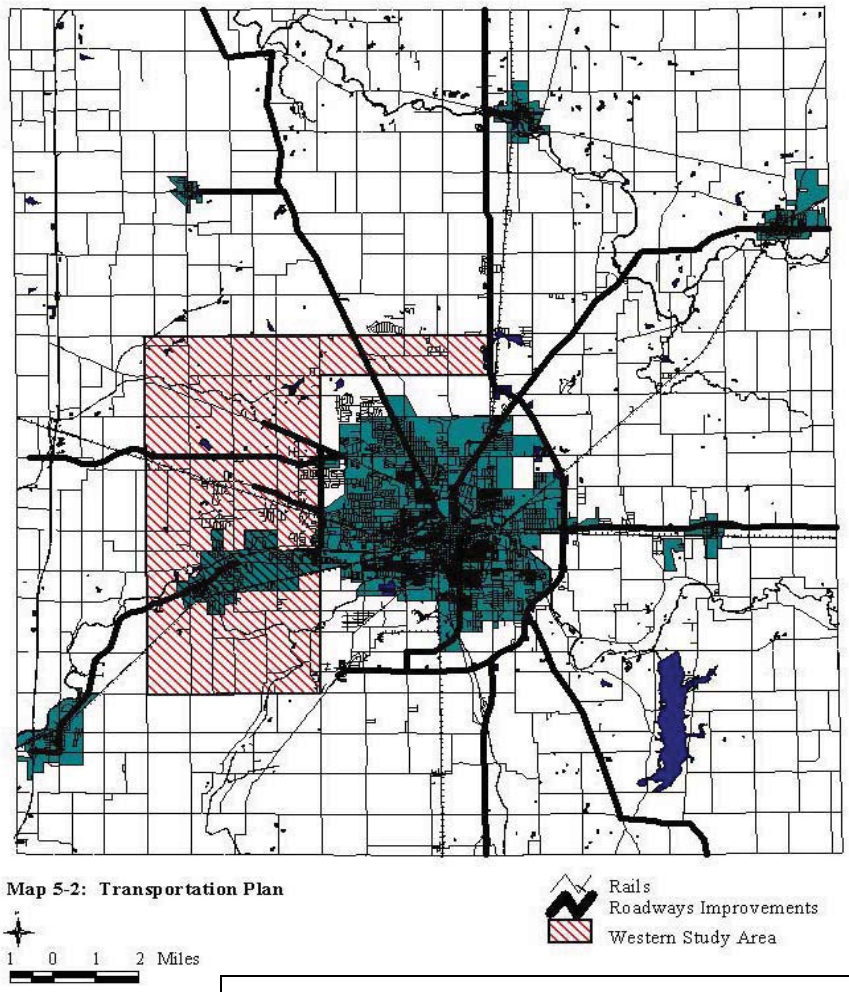


Figure 6: Western Growth Area

- *To establish existing and future travel patterns through a new travel demand model.*
- *To analyze traffic congestion in growth areas.*
- *To compare alternative improvements for resolving existing and future traffic flow problems.*
- *To solicit public input on the alternative improvements.*
- *To recommend a combination of improvements for inclusion in the Delaware-Muncie Long-Range Transportation Plan.*

A state-of-the-art travel demand model has been developed for Delaware County to identify existing and future traffic needs and to examine the effectiveness of alternative improvement projects. This travel demand model incorporates year 2000 demographic and employment information, and

provides a forecast of future travel patterns based on year 2025 housing and employment growth patterns of the Muncie-Delaware Comprehensive Plan and a panel of development experts.

Committed roadway improvements have been added to the existing highway network to establish the base condition for the examination of improvement alternatives. (Committed roadway improvements include the widening of SR 32/Kilgore Avenue from Tiger Drive to Glendale Drive, the widening of Wheeling Avenue from Cowing Drive to Riverside Avenue, the widening of SR 67 from the Muncie Bypass to SR 167, and the construction of interchanges on the Muncie Bypass at Cowan Road and McGalliard Road). Despite these committed roadway improvements, many facilities will experience severe traffic congestion. (The level-of-service of roadways is rated A through F similar to the academic grading system. A level-of-service A represents the maximum possible traffic flow (capacity) for a facility, and a level-of-service F reflects a breakdown (failure) of traffic flow.)

While the 2000-2025 Delaware-Muncie Transportation Plan [previous Transportation Plan] has identified many long-range transportation improvements to address severe future traffic congestion, it has not identified improvement projects for severe congestion in the several key locations, such as McGalliard Road from Wheeling Avenue to Nebo Road and Wheeling Avenue from Wysor Street to Royerton Road (despite programmed widening). Further, the extension of the Muncie Bypass around the north and west side of Muncie was not identified as an improvement project in the long-range transportation plan. Thus, the Western Growth and Arterial Analysis Study examines the effectiveness of completion of the Muncie beltway and a combination of improvements proposed in the Long-Range Transportation Plan and the Delaware-Muncie Official Thoroughfare Plan (1979) which identifies future transportation corridors for right-of-way preservation.

The Study confirms the continuing need for most projects already proposed in the Long-Range Transportation Plan, and these should carry forward into the annual update of the Transportation Improvement Program. Project goals for the Western Growth and Arterial Analysis Study are as follows:

- *Assure a cost-effective transportation system.*
- *Use the existing transportation facilities to their maximum efficiency.*
- *Reduce congestion and improve circulation, particularly for the City Center, University and major activity areas.*
- *Provide satisfactory access/connectivity from developed areas to the regional highway system.*
- *Ensure that transportation planning efforts consider citizen needs for all modes of transportation and concerns for impacts of the transportation system on other elements such as neighborhoods and businesses.*

Transportation improvement alternatives were evaluated on the basis of achievement of project goals, traffic considerations, environmental considerations and public input. Major criteria used to select any preferred alternative during the development of this study include:

- *project goals;*
- *input from the public;*

- *input from local officials;*
- *environmental considerations;*
- *social and economic impacts and benefits; and*
- *project costs.*

The Muncie Western Growth and Arterial Study began with an inventory of existing roadway and traffic conditions. While evaluating existing conditions, programmed improvements from the Delaware-Muncie Transportation Improvement Program and the Indiana Statewide Transportation Improvement Program were taken into consideration. These improvements include major transportation investments that add through-traffic carrying capacity to the existing highway network. The addition of these programmed transportation improvements to the existing roadway network establishes the "No Build" Alternative against which alternative major transportation investments (termed "build" alternatives) are compared relative to performance and impacts.

Existing and future traffic patterns were evaluated using a travel demand model and by assessing levels-of-service on roadways throughout Muncie. Future transportation needs were then identified after the traffic and level-of-service evaluations. Early coordination meetings were held with the Core Steering Committee, which was created to guide the development of the Study, and with the public to discuss preliminary transportation needs and identify roadways with congestion problems. Based on information and input from the first public meeting, seven preliminary alternatives were developed for evaluation. One "no build" and six "build" alternatives (three of which were beltway options) were involved in the first evaluation process. The evaluation process involved an assessment of the performance of each of the alternatives relative to the established project goals based on a review of traffic, engineering and environmental considerations.

Based on a May 1, 2003 Core Steering Committee meeting, three more "build" alternatives were developed. These three new alternatives, which were beltway options, plus the previous six "build" alternatives went through a second evaluation process. The "no build" and nine "build" alternatives were then presented at a second public meeting. After the second public meeting, a tenth "build" alternative was presented at the Core Steering Committee meeting on July 31, 2003. This alternative involved a combination of major widening projects and a segment of the beltway extension between SR 332 and SR 32. An eleventh alternative was then developed based on the tenth alternative. Alternative 11 was the same as Alternative 10; however, the segment of new beltway in Alternative 11 would extend from SR 28/US 35 to SR 67 on the south. A third evaluation process assessed the performance of these eleven alternatives.

After eliminating Alternative 10 (and by inference Alternative 11), a new alternative was developed. Alternative 12, a variation on Alternative 3, included a refinement of major widenings to existing roadways (without a beltway extension). Based on a fourth evaluation, Alternative 12 was decided to be the Preferred Alternative.

This study grew out of local concerns about the adverse community impacts of growing traffic and congestion in western Muncie. In the year 2025, serious transportation congestion problems will exist on the west and north sides of Muncie despite the programmed improvements in these areas.

SECTION IV

BASE TRANSPORTATION SYSTEM

Existing Major Roadway Facilities:[4]

The major roadway facilities that serve Delaware County include an interstate, a national highway and various state highways. Interstate 69, located in the far western portion of the county, is the most significant roadway serving the area. US 35 provides an eastern bypass around the city of Muncie. The bypass continues around the south side of Muncie as SR 67.

The interstate, national and state highways are part of the National Truck Network which are highways built to accommodate large truck travel. Some of the highways in Delaware County are also part of the National Highway System, which is a system of 160,000 miles of roadway important to the nation's economy, defense and mobility. Functional classifications are given to roadways throughout the nation to evaluate statewide significance relative to levels of passenger or freight operations (see Figure 3 for Delaware County functional classifications). Indiana has developed a simplified corridor classification scheme for statewide planning purposes. This hierarchy has three levels: Statewide Mobility Corridors, Regional Corridors and Local Access Corridors (see Figure 4 for Indiana corridor hierarchy). I-69 and SR 67 from I-69 to SR 3 are considered Statewide Mobility Corridors. US 35, SR 3, SR 28, SR 32, and SR 67 are considered Regional Corridors. All other roadways are considered Local Access Corridors.

Interstate 69. Interstate 69 runs south-north from the Madison County Line to the Grant County Line. It is classified as a Rural Interstate, excluding a segment between the SR 67 and SR 32 interchanges in Daleville, where it is classified as an Urban Interstate. I-69 connects Delaware County to other metropolitan areas in Indiana and the national market and is part of the National Highway System.

United States Highway 35. US 35 begins at the Henry County Line in southeastern Delaware County and travels north to 29th Street in Muncie, where it connects to SR 67/SR 3 and becomes the Muncie Bypass. US 35 travels around the east side of Muncie and north along SR 3 to SR 28. It then runs along the alignment of SR 28 west to I-69. US 35 lacks directional continuity through the county. US 35 is classified as a Rural Minor Arterial from the Henry County Line to Fuson Road, an Urban Principal Arterial south and north of the Bypass to SR 28, an Urban Freeway/Expressway on the Bypass, and a Rural Principal Arterial as it runs concurrently with SR 28.

State Road 32. SR 32 runs west-east from the Madison County Line to the Randolph County Line. It begins at the Madison County Line east of Daleville and travels through Daleville northeast to Yorktown. From Yorktown, it travels east through central Muncie and Selma. SR 32 exits the county east of Selma at the Randolph County Line. From the Madison County Line to Tillotson Ave, SR 32 is classified as an Urban Principal Arterial; however, it is classified as a Rural Minor Arterial for a two-mile segment between Daleville and Yorktown. It is classified as an Urban Minor Arterial from Tillotson Avenue to US 35 through Muncie. From County Road 700 East to the Randolph County Line, SR 32 is classified as a Urban Principal Arterial. SR 32 provides continuous access throughout the county.

State Road 332. SR 332 runs west-east from Interstate 69 to Tillotson Avenue where the state route terminates. It continues eastward as McGalliard Road to the Muncie Bypass. It is classified as a Rural

[4] This section is taken from the Western Growth & Arterial Analysis Study, BLA with CBA, 2004 and remains current.

Major Collector from I-69 to County Road 700 West, a Rural Minor Arterial from there to County Road 500W and as an Urban Principal Arterial from County Road 600 West to the Tillotson.

SR 3, SR 28, SR 67, SR 167. These highways serve Delaware County, but are located outside of the Study Area. SR 3, SR 28 and SR 67 are classified as Rural Principal and Minor Arterials. SR 3 is also classified as an Urban Freeway/Expressway at the Muncie Bypass and is part of the National Highway System from the Henry County Line to its intersection with SR 67. SR 28 is also classified as a Rural Major Collector through Albany. SR 67 is classified as an Urban Principal Arterial around Daleville and as an Urban Freeway/Expressway when it ties into the Muncie Bypass. SR 67 is also on the National Highway System from I-69 to its intersection with SR 3. SR 167 is classified as a Rural Major Collector northward from Albany.

The Base Roadway Network:

The road network in the Delaware-Muncie area provides, for the most part, efficient and convenient traffic movement. The state highway system provides the major routes crossing Delaware County. The Muncie Bypass allows traffic on the state highways to avoid the delays from city traffic and yet provide easy access to the major streets serving Muncie. The Muncie street system is on a grid crossed by diagonal minor arterials that provide quick access toward the downtown or across town. The major rural roads efficiently connect various small communities with each other, the state highway system and Muncie.

The State Highway System provides one major central north-south route (SR 3) through Delaware County and four east-west routes connecting between Interstate 69 and the Muncie area. Four highways on the State's system connect Muncie and Delaware County with lower populated counties toward the northeast, east and southeast. Interstate 69, on the western edge of Delaware County, provides efficient traffic movement toward other cities in the region including Anderson, Indianapolis, and Ft Wayne.

The Muncie street network is organized in a grid system of four major arterials with 4-5 lanes each connected to quarter-mile collector streets by minor arterials that rotate outward on straight and diagonal directions, creating a wagon wheel effect. The major arterials providing easy access to each side of the city are: McGalliard Road (north), Memorial Drive (south), Madison/Broadway Avenue (east), and Tillotson Avenue (west). The minor arterials branching off in various directions are: Walnut, Jackson, Elm/Granville, Burlington, Hoyt, Kilgore, and Bethel. Other minor arterials such as Riggin, Centennial, Willard, Eighteenth, Batavia/Nichols, Cowan and Morrison help complete a normal grid pattern.

Muncie's downtown network was set up in a system of one-way streets to better handle the high volume of traffic projected in the past for growing activity downtown. State Road 32 separates onto Main and Jackson Streets through the downtown, carrying major east-west traffic movements on a pair of two-lane one-way streets. Washington, Adams, and Charles are local one-way streets designed to provide east-west capacity to supplement State Road 32. Walnut Street separates into a one-way 3-lane loop through the Central Business District (CBD) using High, Gilbert, Mulberry, and Seymour Streets. The local one-way streets supplementing the downtown loop's north-south capacity are: Franklin, Jefferson and Elm Streets.

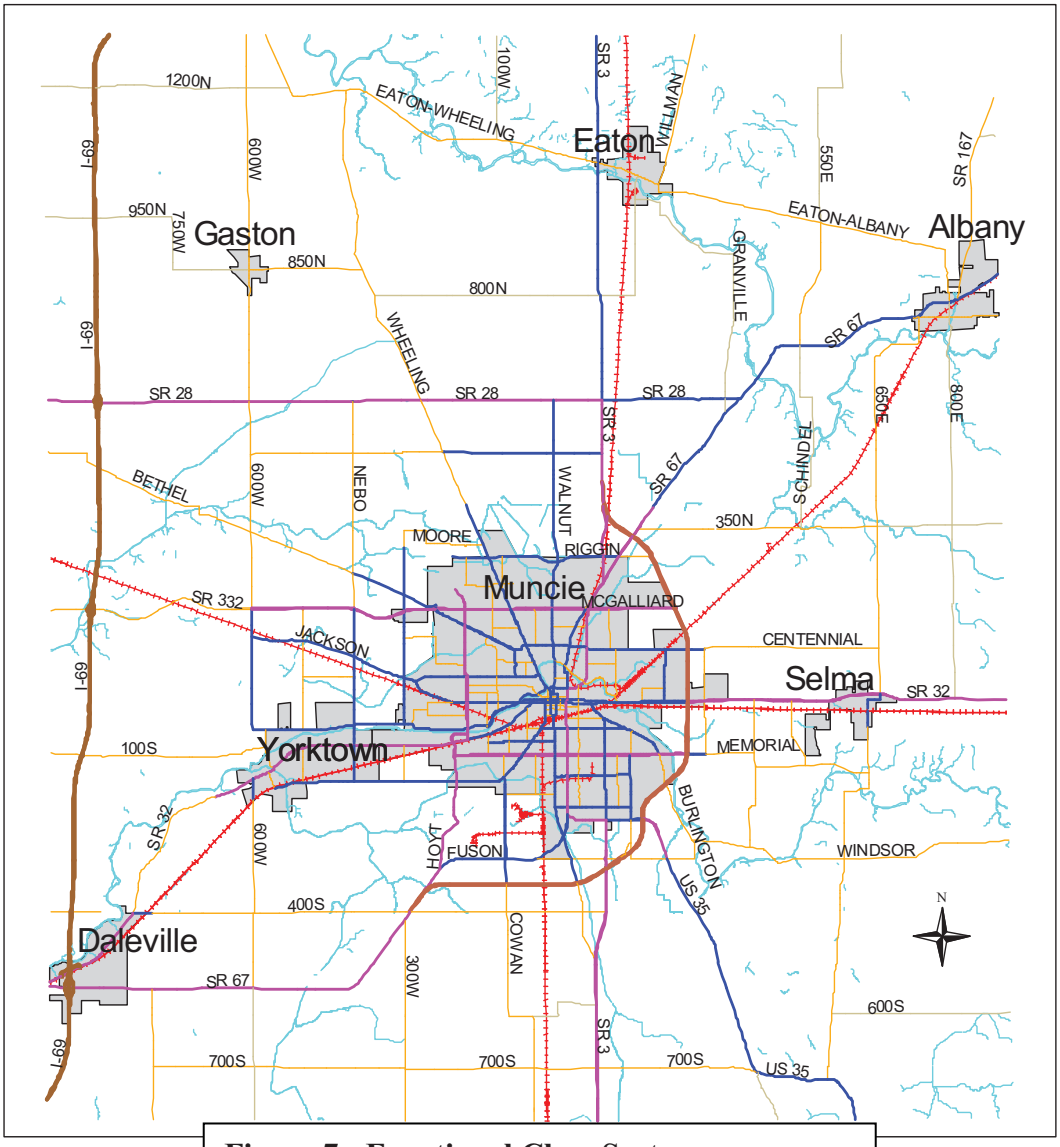


Figure 7: Functional Class System

The lack of north-south arterial streets in northwestern Muncie is a problem for handling future traffic due to growth there. Tillotson Avenue is nearing capacity as the main north-south traffic route and there appear to be no parallel streets where overflow traffic would be acceptable. Some collector streets may need to be upgraded and connections made to create acceptable minor arterial routes to supplement the capacity of Tillotson Avenue. Added to the problem is the fact that

McKinley Avenue, as a street through Ball State University, is not on an appropriate path for an arterial handling through traffic. Most urban Indiana street networks accessing universities are designed to carry traffic along the edge of the university to limit car/pedestrian conflicts. Reconstruction, signal modifications and improvements to the street network at the perimeter of the University is expected to provide alternative solutions.

The major one-way streets for State Road 32 and the downtown loop have performed well in carrying a majority of the north-south and east-west traffic through the downtown. However, the extra capacity from other one-way streets supplementing the major downtown traffic movements is not needed and the street characteristics tend to interfere with the neighborhoods' sense of community. These one-way streets act as short-cut routes where pedestrians are at risk from fast traffic and night-time noise is a problem.

Committee discussions on downtown revitalization have indicated a desire to return the supplemental one-way streets to two-way traffic with on-street parking. This planned future street configuration creates a higher normal level of traffic conflict and causes the drivers to be more cautious. When the drivers slow for traffic conflicts they have time to notice pedestrian movements. The idea is to make a street safer by increasing the level of risks that a driver perceives. This concept is an accepted traffic calming method and succeeds due to the oddities of human nature. An added benefit to the two-way traffic movement is the ease in accessing a location directly by motorized vehicle instead of maneuvering on a circuitous one-way path.

Walnut Plaza was rebuilt as a city street with an attractive sidewalk and landscaping in 1999-2000 and a rotary at the southern end of the downtown loop in 2007. Additional parking was added via a short-term free public parking lot a half-block from Walnut Plaza. The on-street parking and public parking lot appear to have helped restaurants and night-spots starting business in Walnut Plaza. In conjunction with transportation improvements, the success that has been achieved in revitalizing downtown Muncie is being done through a comprehensive approach facilitated by the Downtown Development Partnership – a not-for-profit public/private partnership – that has included factors such as façade renovations, event planning, business retention and expansion, and aesthetics.

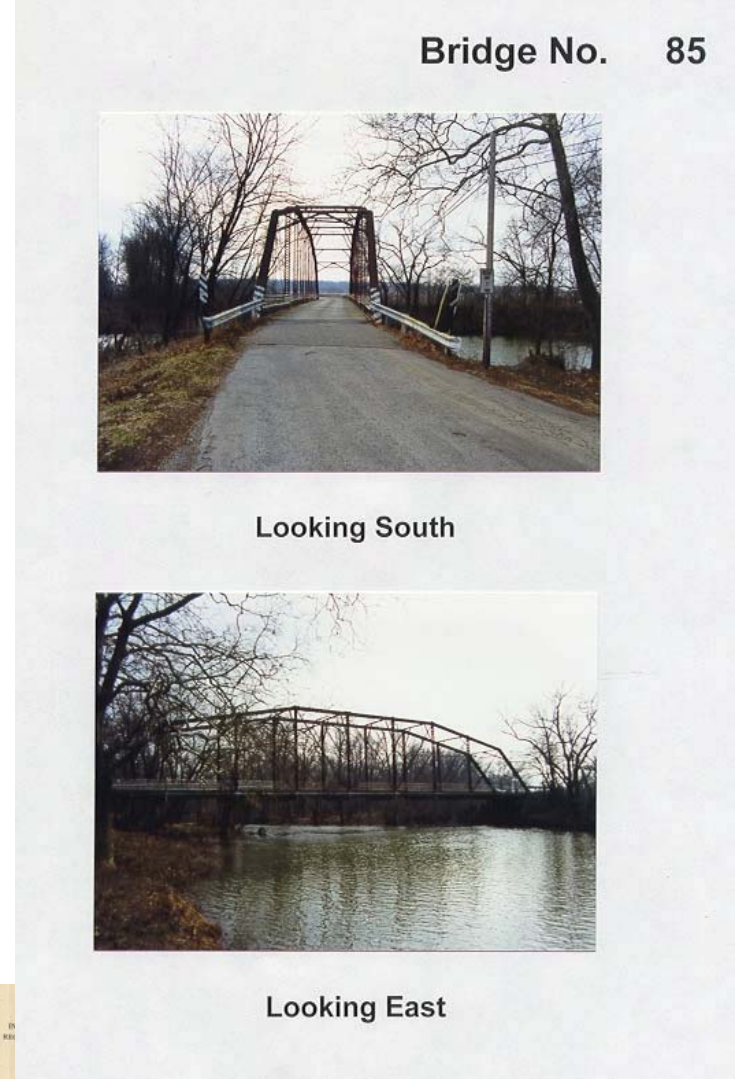
Future plans for Walnut Street in Walnut Plaza include: considerations of converting traffic on from one-way to two-way for easier access and creating a public park at the south end of the plaza.

Bridges*:*

The local roadway system has 190 waterway bridges and one railroad overpass structure. The provision of these bridge structures are required due to the White River, the Mississinewa River, and their tributaries as well as the rail lines previously described. The waterways create topographic features which greatly influence the surface transportation system and traffic flow. The White River, Buck Creek and Kilbuck Creek require the provision and maintenance of sixty bridge structures in the urbanized area. There are about 130 more bridges in the rural areas of Delaware County.

The Delaware County Bridge Inspection Report, compiled biennially, provides comprehensive information on the various characteristics, function and condition of the bridges in the local jurisdiction. The report also suggests maintenance, repair and replacement improvements suggested for the bridges within five years. Future bridge inspection reports will give consideration to the upgrading of some bridges to allow more rural roads to handle heavy vehicles carrying grain to market.

It should be noted that Delaware County has 8 historic metal bridges remaining on its roadway network – a ninth bridge #131was by-passed and left in place during a federally funded bridge reconstruction project. This by-passing greatly increased project costs on this low volume roadway. Most of these structures were manufactured by the Muncie-Delaware County based Indiana Bridge Company, which moved here in 1886 and became nationally prominent under the engineering guidance of John R. Marsh and the management of Charles M. Kimbrough. With this unique history, retention of the structures is seen as important, however, in balancing that desire with the Comprehensive Plan's emphasis on economic development and preservation of the farming industry, relocation of some may be the most desirable end result. Such relocations will be a continuing consideration as the county-wide bicycle and pedestrian improvements are constructed – with many of our trails and paths following waterways, there will be a need for bridge crossings to create connections.



White River & Major Tributaries

It should also be noted that Delaware County maintains numerous culverts that allow surface drainage through the local road system. The difference between a bridge and a culvert is that a bridge is at least twenty feet in length.

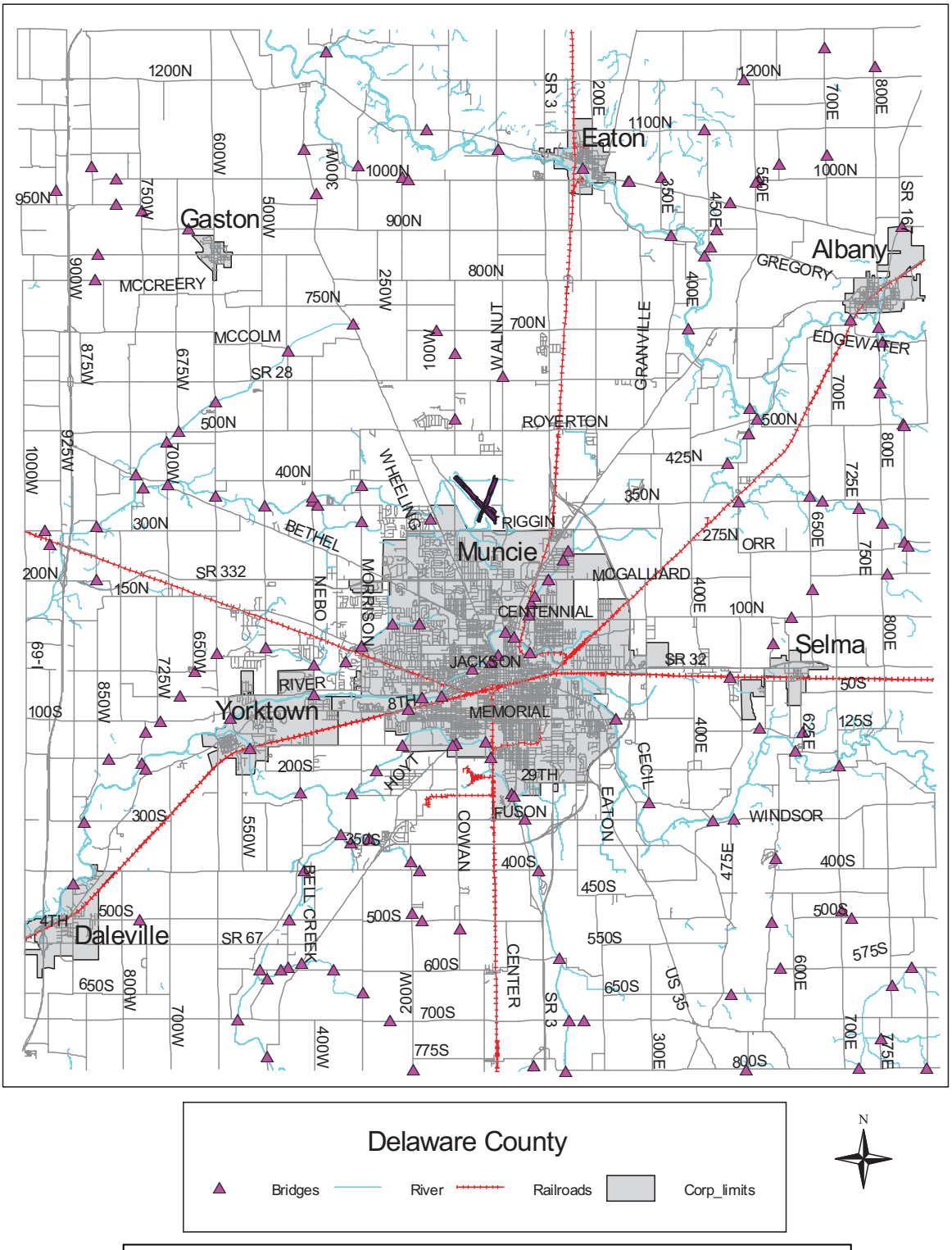


Figure 8: Delaware County Bridges

Railroads:

Railroads are a vital part of the American transportation system as the primary long-distance freight transportation mode. In 1991, railroads carried 37 percent of intercity freight. The railroad share of long-haul transportation is even higher: railroads accounted for 46 percent of traffic over 500 miles in 1990. Railroads carry a wide range of key commodities and manufactured goods. One important role is as a carrier of bulk commodities. Railroads carry 60 percent of U.S. coal shipment, 68 percent of pulp and paper, 53 percent of lumber and 45 percent of food products. Railroads also play a major role as transporters of manufactured goods. More than 67 percent of new cars and 55 percent of household appliances are moved by rail. And increasingly, those goods are being moved intermodally.

U.S. freight railroads used approximately 3 billion gallons of diesel fuel in 1993, accounting for 2 percent of total U.S. petroleum fuels consumed for transportation. Passenger trains accounted for less than 0.1 percent. Railroads can move a typical ton of freight more than 279 miles on just one gallon of diesel fuel. Transportation by rail benefits air quality through low emissions and reduction of highway congestion. Vehicles stalled in traffic emit up to 250 percent more pollutants than free-flowing traffic. One doublestack intermodal freight train carries the equivalent of 280 truck loads. Since 1908. railroads have increased their fuel efficiency by 52 percent and further improvements will occur in the coming years. Additionally, the improved efficiency of new generation locomotives allows three locomotives to do a job that 10 years ago required four.The average highway is three times as wide as a railroad right-of-way, but carries much less traffic. In carrying capacity, two railroad tracks are equivalent to 16 lanes of highway. Railroads are the safe way to move freight. Railroads have cut derailments and train accidents by more than 50 percent since 1981, and almost 30 percent in the last 10 years. Additionally, the rail record in moving hazardous materials is especially impressive. Railroads carry more than 1 million carloads of hazardous materials annually and 99.99 percent reach their destinations safely without an unintended release of the product as a result of an accident.

The rail network, comprised of four major routes intersecting in Muncie, provides the area with the means of heavy freight movement on a national network. The CSX Railroad has an east-west route that follows State Road 3. The Norfolk Southern Railway has a local east-west multi-county route through Muncie, and two major north-south routes through Indiana that merge in Muncie and connect southeast with Cincinnati, Ohio.

Two national rail systems maintain routes through Delaware County which intersect in Muncie, Indiana. The CSX Railroad has the heaviest rail traffic on its east-west route it obtained when the Conrail Transportation Company was split up in 1988. This route carries thirty (30) trains per day and more than twenty million gross tons of freight per mile. The Norfolk Southern Railway carries the remaining rail traffic. Its northern route through Royerton carries sixteen (16) trains per day. The Norfolk Southern Railway western route through Cammack carries eight (8) trains per day and the railroad plans to gradually increase that traffic as part of a north-south route through central Indiana.
The Norfolk Southern Railway west route through Albany carries a minimum two (2) trains per day. The southern route through Cowan carries twenty-four (24) trains per day, combining the traffic from the other routes.

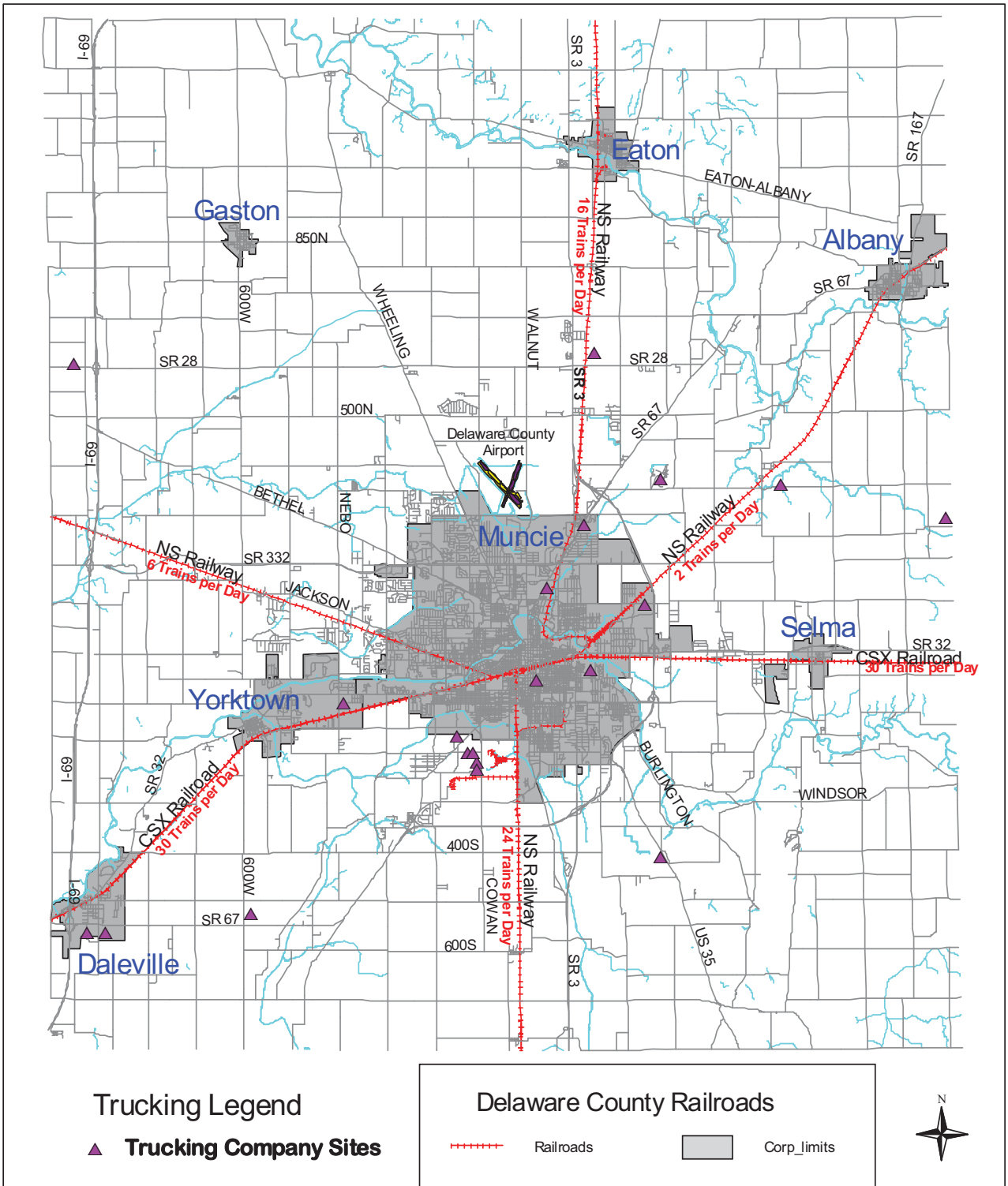


Figure 9: Freight Transportation Facilities

Muncie & Western, a local railroad with a small amount of side tracks near Memorial Drive and Macedonia Avenue was dissolved and abandoned around 1995. The Norfolk Southern Railway has side tracks reaching into industrial areas south of 18th Street in Muncie and in the Industrial Centre south of Muncie. The CSX Railroad has a side track that heads south from the downtown parallel to the Cardinal Greenway Trail. This side track exists, but does not appear ready for rail traffic.

One rail overpass and five rail underpasses in Muncie and three overpasses on Muncie Bypass help to reduce rail/street traffic conflicts and improve traffic movement. The Dr. Martin Luther King Boulevard overpass (Tillotson Extension) allows traffic to avoid the CSX Railroad in western Muncie. The Downtown has two underpasses that bypass both major railroads using Jackson Street to the east and Madison Street to the south. Three railroad underpasses along the north side of the White River allow traffic on McCulloch Boulevard and Bunch Boulevard to avoid the Norfolk Southern Railway just north of the downtown. Muncie Bypass has overpasses over the CSX Railroad and over the Norfolk Southern Railway's northern and eastern routes, but has a rail crossing with its southern rail route. The Indiana Department of Transportation (INDOT) plans to replace that rail crossing with an overpass 0.75 miles east of Cowan Road. State Road 332 has an overpass over the Norfolk Southern Railway's western route and Interstate 69 has overpasses over both major railroads in western Delaware County.

A study has been planned for a possible relocation of the northern Norfolk Southern Railway route to follow the Bypass and come in from the east with its route from Albany. Federal discretionary funds were secured toward this study and more are being sought to cover a full 80-percent of the study cost. The northern rail route was used to access an industrial area in northeast Muncie. The industrial uses that needed rail access have gone and there is a strong conflict between traffic near Muncie Mall and the rail traffic on the northern route.

Muncie used federal discretionary funds toward a study of rail crossings in the downtown. The Roberts Hotel and Horizon Convention Center have cited instances in which they lost business due to noise from train whistles in the downtown. The rail crossing study inventoried the existing crossing protection devices and considered possible safety upgrades that would allow Muncie to pursue a Train Horn Quiet Zone through the downtown area. The transportation improvement project to install those improvements has been programmed and the funding is secured. An analysis of the crossing data and proposed improvements is in process to assure the Federal Railroad Administration (FRA) that the group of crossings within the proposed quiet zone will have a safety index within acceptable levels once the improvements are in place. The City of Muncie plans to enact legislation to create the quiet zone when the FRA has accepted that analysis and the improvements are in place.

There are freight stations and switching operations for the two major rail systems within Muncie. The CSX Railroad has a combined freight station/switching operation on High Street south of the Central Business District (CBD). The Norfolk Southern Railway's principal terminal is southwest of the CBD with additional freight and warehouse facilities between the CBD and Kilgore Avenue. A switching terminal on Gavin Street in northeastern Muncie

connects the northern rail route with the rest of the Norfolk Southern rail network. This terminal would be relocated near Muncie Bypass if the northern rail route were relocated to connect there.

Freight Intermodal is the movement of highway trailers and containers by rail and at least one other mode such as truck or steamship. Intermodal service has inherent advantages: it combines the door-to-door convenience of trucks with the high volume, long-haul economies of railroads. Railroads first reported intermodal loadings as a separate category of traffic in 1955. In that year, intermodal, then known as "piggyback", accounted for less than one-half of one percent of all rail carloadings. Today, intermodal is the fastest-growing segment of the rail industry, and is second only to coal as a source of business. In 1993, railroads moved more than 7 million trailers and trailers.

One important issue for the rail industry is the status of "intermodal connectors". Intermodal connectors are the roads, streets, and highways that connect rail terminals to the main highway system. Without investment in high-quality intermodal connectors, intermodal service will be unable to fulfill its potential for shifting from highways to railroads. Improvement in such roads and/or locating intermodal facilities near major highways would benefit railroads, the trucking industry, and the public in general. The Norfolk Southern Railway runs intermodal traffic through Ft Wayne and Muncie, so relocating the switching terminal from Gavin Street to near Muncie Bypass and adding truck freight facilities would allow for intermodal service there. This possibility is tied to future plans to relocate the northern Norfolk Southern Railway route to follow the Muncie Bypass and could be a benefit of that effort.

Trucking*:*

Twenty-one companies that truck freight or materials have facilities in Delaware County. Five companies are major freight trucking firms and a majority of the rest are local trucking concerns. Materials hauled other than common goods include petroleum products; sand, gravel and concrete; grain; etc. The Industrial Centre, south of Muncie, has two freight trucking companies and two mail transport facilities. Daleville has two freight trucking companies on State Road 67 near Interstate 69. One freight trucking company is located on State Road 28 near Interstate 69. Six local trucking concerns are located in Muncie and the rest of the trucking businesses are located near the state highway system throughout the county (see Figure IV-1).

Elements of the Trucking Industry

Freight planning starts with the development of a good economic profile of the industries in the region; an understanding of which industries generate freight; and a sense of how those industries and the economic structure of a region are likely to change over time. Detailed long-range economic forecasts are not necessary for most state and metropolitan freight projects, but a basic understanding of the economy and current trends is mandatory.

Economic Structure - The economic structure of a state or metropolitan area - that is the types of business and industry in an area and the number and type of jobs and households they support - is the key determinant of the type and volume of freight and goods that will move through a region.

Industry Logistics Patterns - The logistics strategies of business and industry - very generally, the decisions about where to buy goods and where to sell them determine freight flows.

Infrastructure - The freight system infrastructure includes highways, rail lines, freight terminals, warehouses, and airports - the physical facilities over which goods and commodities flow.

Traffic Flows - The economic structure of a region, the logistics strategies of its industries, and the available infrastructure determine the flow of trucks, rail cars, and planes.

Institutional Arrangements - The final element of the freight transportation system is its institutional structure - the pattern of ownership, regulation, and pricing that shapes logistics strategies, determines who uses freight transportation facilities, and controls the flow of vehicles.

At this time, most state DOT's and MPO's lack sufficient truck trip data to model the comparative costs of different truck freight networks and investment levels. A quick assessment can be made by evaluating a sample of truck trips against alternative networks and performance standards: Do the networks provide comparable coverage of major businesses and industries? Are there significant differences in access, circuitry, reliability, cost, and safety.

Some local industries may have logistics models that will analyze shipping costs and indicate potential benefits. The state DOT's and MPO's can arrange to review network plans with motor carrier and economic advisory councils, industry associations, and local development groups.

Currently there are only a few trucking firms available locally for each type of commodity transported. The variety of trucking based out of Delaware County reflects a variety of commodity types and transport needs. The transportation options are limited for an efficient cost-effective movement of goods. The options for the goods mobility can be enhanced through intermodal connectivity.

The trucking industry is needed in the planning process to ensure that as the local transportation systems improve and evolve, the movement of goods and commodities is maintained and enhanced. There is a trucking representative position on the Technical Advisory Committee. Delaware County has lost a few long-haul trucking firms that restructured and centralized operations with terminals closer to Indianapolis. It may be necessary to rotate trucking representation in planning on a regular basis to keep it active and to maintain dynamic input.

As mentioned, exact figures on the amount of trucks included in average daily traffic (ADT) counts are not readily available. Most of the local data on truck volumes come from turning movement counts, but a more comprehensive set of data will be available after the Plan Commission Office updates its traffic count equipment to counters that will collect that data with better ease and accuracy. Current count data indicates that trucks make up about 2% of the ADT, but some highway facilities carry a higher portion of trucks due to travel patterns and road designs that better accommodate heavy trucks. Special attention is needed so that the arterial streets selected for truck routes are maintained with the proper channelization, ingress/egress accesses and pavement strength to accommodate heavy trucks.

Airport*:*

The Delaware County Airport, also known as Johnson Field, is located in Hamilton Township, 3+ miles north of the center of the City of Muncie, just outside the city limits at the northwest corner of Walnut Street and Riggin Road.

Construction for the airport began in March, 1932, and was completed six months later on September 11, 1932. The airport facility has grown over the years with the last significant improvements occurring in the 1980's through funding grants from the Federal Aviation Administration (FAA) and the Aeronautics Commission of Indiana.

The airport has an "X" shaped runway configuration. The runways have an asphalt surface with dimensions of 6500 by 150 feet for runway 14/32 and 5000 by 100 feet for runway 2/20. There are various repair, service, storage and support airport facilities plus a restaurant on-site.

The airport facilities include a Federal Aviation Administration control tower under part-time operation (as opposed to 24-hour). The elevation is 937 feet above sea level and the longest runway is usable for its full length of 6500 feet. The airport location identifier is "MIE". The airport is an FSS (Flight Service Station) facility up to a certain frequency where the controlling FSS, Terre Haute, would provide service. There is lighting for the airport from sunset to sunrise.

Public Transit*:*

Muncie Public Transit System (MITS)

The Muncie Public Transportation Corporation (MPTC), created in 1981, is the governing board for the Muncie Indiana Transit System (MITS), which has provided Muncie with public transit services since 1981. Muncie City Lines, a private company, provided the transit service for over 40 years prior to 1981 using subsidies from the City of Muncie to keep the operation financially solvent. MITS is a non-profit public entity that has a local city tax draw and receives state and federal funds to subsidize its operating costs. The MPTC owns 27 medium-sized buses for 15 fixed routes and owns 14 transit vans for the MITS Plus demand responsive service and 3 trolley buses for a downtown shuttle in Muncie, Indiana.

The MPTC contracts with First Transit, Inc. of Cincinnati to provide the management for MITS. First Transit was ATE in 1981 when the MPTC first contracted with them for management services. The current personnel under contract with First Transit to manage MITS are from the local area and were promoted from within MITS because of their level of expertise. MITS is considered one of the best transit systems serving a second-class city in the United States.

Muncie, Indiana is a second-class city with a population of 67,430 people according to the 2000 Census. The MITS fixed route system provides service that accesses most of Muncie. In 2004, Route #6 was expanded to handle trip demand on north Walnut Street and in the

Airpark Industrial Park and Route #16 was expanded to serve the Woodsedge/Bethel Area. The fifteen MITS fixed routes include fourteen routes that operate Monday through Friday (roughly 6 am to 6 pm) and Saturday (roughly 8 am to 6 pm) with weekday evening service to about 9 pm for seven of the routes (shown in red on the map on the next page).

A few years ago, MITS added a limited service route to Wilson Middle School south of Muncie. Route #18-Wilson Middle School provides service for two hours at the beginning and two hours at the end of school days when school is in session. Wilson M.S. is in the MITS tax district even though it is outside of Muncie. The school was built outside the city, although a large majority of its students are Muncie residents. Route #18 provides public transit for students involved in after-school activities and serves the general public along the route.

MITS expanded its regular weekday service in 2000 to Kilgore Avenue (within Muncie) for Route #19-Youth Opportunity Center. Route #19 started a few years ago as an experimental route to Warner Gear for day-shift workers at that factory. The route failed to receive adequate work trips, but was continued for limited service to the Youth Opportunity Center (near Warner Gear). Route #19 was dropped in 2004 and its path was incorporated into Route #2-Ball State Jackson.

A downtown shuttle using reserve MITS Plus vans was started in 1999. This service provided parking on Muncie Central High School property for public employees and the general public to access government buildings in the downtown. The vans were replaced by trolley buses in 2000 and provided transit trips on a loop through the downtown's central business district.

MITS also uses MITS Plus vans to provide some work trips for JobConnection in Muncie to areas and/or times not served by the fixed routes. JobConnection is a federally subsidized program to provide transit trips to work for people who could not afford a private vehicle and whose potential job locations and times don't fit the fixed route service. These people would probably have to go on welfare without this service.

MITS Plus, the demand responsive service for the elderly and disabled in Muncie, operates Monday through Saturday during fixed route hours. MITS came into full ADA compliance in June, 1993. All MITS fixed route buses are wheelchair accessible and MITS transit service information/ communications have been upgraded to accommodate people with hearing and sight impairments.

Level of Service. The MITS fixed route headways, or length of time between successive buses, are 30 minutes on thirteen routes and 15 minutes on Routes #4 and #16 Monday through Friday. The route headways on Saturday are 60 minutes for ten routes and 30 minutes on four routes (serving Northwest Plaza, Muncie Mall, Southway Plaza, and Walmart). The buses meet at the downtown transfer station to exchange passengers every fifteen minutes Monday through Friday and every half-hour on Saturday. On weekdays, half of the buses are at the transfer station at the hour and half-hour, and the rest come at the quarter-hour and three-quarters-hour. This scheme makes it easier for the transfer station to accommodate 16 buses (8 buses at a time) and allows passengers to wait no more than fifteen minutes on a transfer between buses.

The transit service hours for MITS, including MITS Plus, are 6:00 am to 9:00 pm Monday through Friday and 8:00 am to 6:00 pm on Saturday. The number of MITS Plus vans in use at different hours of the day vary by number of trip requests, but trips are available at any time within the service hours previously listed. Trip requests by ADA-certified riders of MITS Plus may be made up to 14 days prior to the trip and next day trip requests are accepted. Same day trips (at a $2 fare) may be requested Monday through Saturday, depending on the availability of empty service slots. MITS Plus service complies with ADA in allowing trips for a companion/personal care attendant and for ADA-certified riders from other transit systems.

Fare Structure. The MITS base fares are 50-cents for a fixed route (bus) trip and one dollar for a demand responsive trip (MITS Plus). MITS requires all MITS Plus riders to be ADA certified. The fixed route (bus) fare for elderly and disabled riders is 25 cents. A transfer to a second bus to complete a trip is free. Children under age 5 ride free with a paying adult and students ride free. A one-day fixed route (bus) pass is $1.00 (50 cents for elderly and disabled riders). MITS offers a 30-day bus pass. The transit vehicles are equipped with fareboxes that process passes and sell single fares and one-day passes.

Physical Facilities. MITS has an excellent administrative and maintenance facility that was constructed in 1986. The T. J. Ault Transfer Station, completed in 1987, is an excellent facility with amenities for both passengers and drivers. MITS expanded its Garage/Administration facility by building an annex on the other side of Blaine Street and placing its training room, meeting room, and van storage area there in 2004. An exercise room was added in 2005 to act as a fitness center for MITS employees. MITS is in the process of updating its public information in 2005, including the addition of an electronic map at the transfer station to show the locations of the buses on the routes.

Marketing Policies. The public transit marketing program was almost non-existent prior to 1981, but it has gradually developed into a dynamic program that represents MITS well. The marketing program has brought new ridership to the fixed route service in recent years, tapping the Ball State University (BSU) student trip needs and Muncie shopping trip needs as sources for service expansion. MITS has worked with the local school systems, the public library, BSU, local government, and various public groups in promoting the use of public transit in Muncie.

MITS maintains a website to keep the public current on transit services offered, special events supported by transit service, and transit detours resulting from local street projects. Trip planning software will be added to the website within a couple of years to give potential passengers specific directions on how to access and use MITS bus routes for a specific trip. The trip planner would allow someone unfamiliar with MITS to make a transit trip, including transfers, in the shortest time possible to arrive at a specific destination by a desired time. This new electronic service will give potential riders the confidence that they can easily use transit to meet their travel needs within a reasonable travel time.

Financial Condition. MITS is in excellent financial condition due to sound fiscal management, an excellent maintenance program, good personnel policies, a good local tax base, and state and federal operating subsidies. The passenger fares for MITS are among the lowest in the nation. The fares were raised in 1993 to maintain significant fare revenue while keeping fares affordable. The fare structure was adjusted in 1999 to simplify it for electronic fare-boxes

that can issue one-day pass tickets as well as process fares. The annual increase in the local tax rate for MITS has been kept low.

New InterUrban Public Transit Service

LifeStream Services (previously known as Area 6 Council on Aging) has maintained a demand responsive service for the elderly and disabled in Delaware County outside of Muncie since 1994. MITS provided the rural service from 1981 until 1991, when federal regulations forced them to give it up to the private sector. From 1991 into 1994 Family Services of Jay County provided the service naming it "Golden Age" and operating in a multi-county area. LifeStream Services operated rural transit service in various counties, but with separate efforts in each county. Lifestream Services, using input from the public and service agencies, developed plans in 2001for a multi-county rural transit service. The "New Interurban" started fixed route service in addition to existing demand responsive service in Jay and Randolph Counties in 2002. It expanded into Delaware County in 2004 and Blackford County in 2005. New Interurban has been well planned and locally supported, and is a good example for how rural transit can thrive in Indiana.

The New Interurban and MITS agreed in 2004 to accept a free transfer of passengers between the two transit services in a program called Connect & Go. The cooperation between the transit services made trips between rural and urban areas much easier and freed New Interurban vehicles to provide more travel outside Muncie while spending less time in central Muncie. The revenue from fares probably balances between the two transit services and passenger trip numbers are enhanced. Fare revenues cover a fraction of the cost for public transit and will continue to do so until transit captures a significant minority of local person-trips.

FTA funds are available under FTA Section 5310 for capital purchases toward the provision of public transit service to the elderly and persons with disabilities, who otherwise would be without such services. The non-profit agencies that have applied for FTA Section 5310 (previously 16B2) funds within the past decade are: LifeStream Services and Comprehensive Mental Health Services (CMHS).

Public Transit Coordination

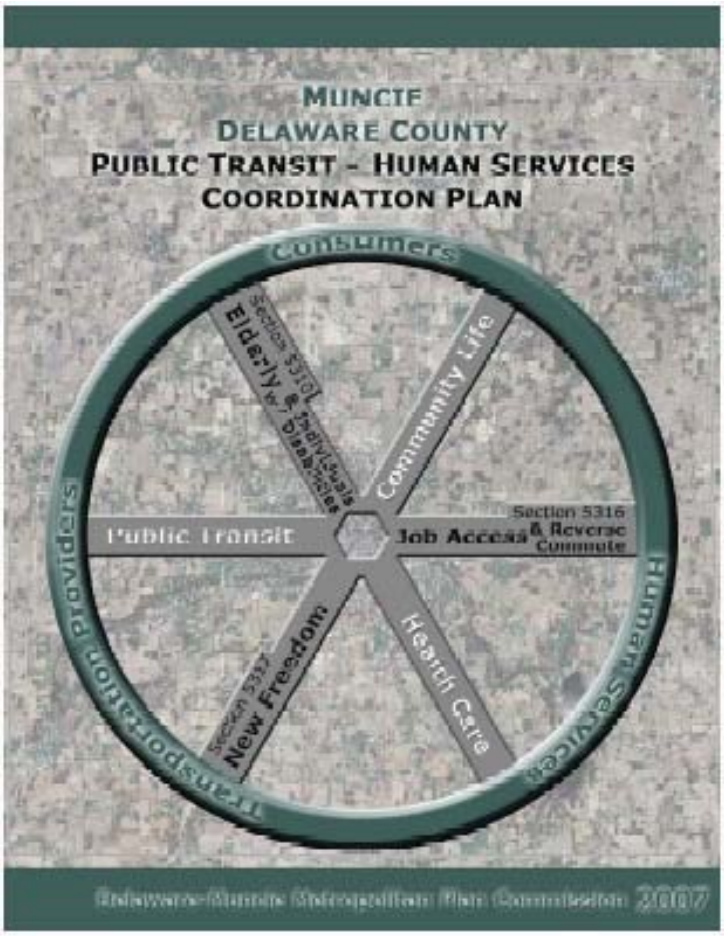
LifeStream Services hosts a Transit Transportation Advisory Committee meeting quarterly (since March, 1994) to discuss public transit and service coordination issues involving non-profit agencies in a multi-county area (Grant, Blackford, Jay, Delaware, Randolph and Henry Counties). The meeting topics have included: ridership needs for cross county trips, driver training, availability of phone/radio communications on vehicles, and current rules for Medicaid eligible costs.

LifeStream Services handles the demand responsive public transit service for the elderly and persons with disabilities in Delaware County outside of Muncie, while MITS handles the same service within Muncie. The demand responsive service provided by MITS in Muncie started with 4 vans in 1981 and ridership demand required MITS to expand to 15 vans in 2000. MITS has been able to maintain the current service with 14 vans.

The New InterUrban has had growing ridership in its established service and has expanded into adjacent counties. This rural transit service uses vans from various service agencies and will continue to need replacement transit vehicles to maintain this service. LifeStream Services uses FTA Section 5311 funds to supplement the rural transit operating costs. The New InterUrban now has a maintenance garage in Yorktown so LifeStream Services can keep the fleet of vans in good condition.

A new service began in 2009 through a cooperative effort between MITS, the MPO, and Eaton EMT that provides 24/7 demand responsive public transportation for persons with disabilities – MITS provides administrative support and Eaton EMT is the service provider. The handicap accessible vans providing the service were purchased with New Freedom funds and private donations from the United Way, the City of Muncie and the Delaware County Commissioners. The service hopes to expand to provide the same 24/7 service for work trips funded with Job Access and Reverse Commute federal funds. This new service stemmed from a recommendation in the Muncie-Delaware County Public Transit - Human Services Coordination Plan completed by the DMMPC/Muncie MPO in 2007.

This Plan is hereby incorporated by reference as a part of the 2009-2030 Transportation Plan. Future public transit projects will be guided by the recommendations, goals and objectives laid out in this document.



Role of Public Transportation

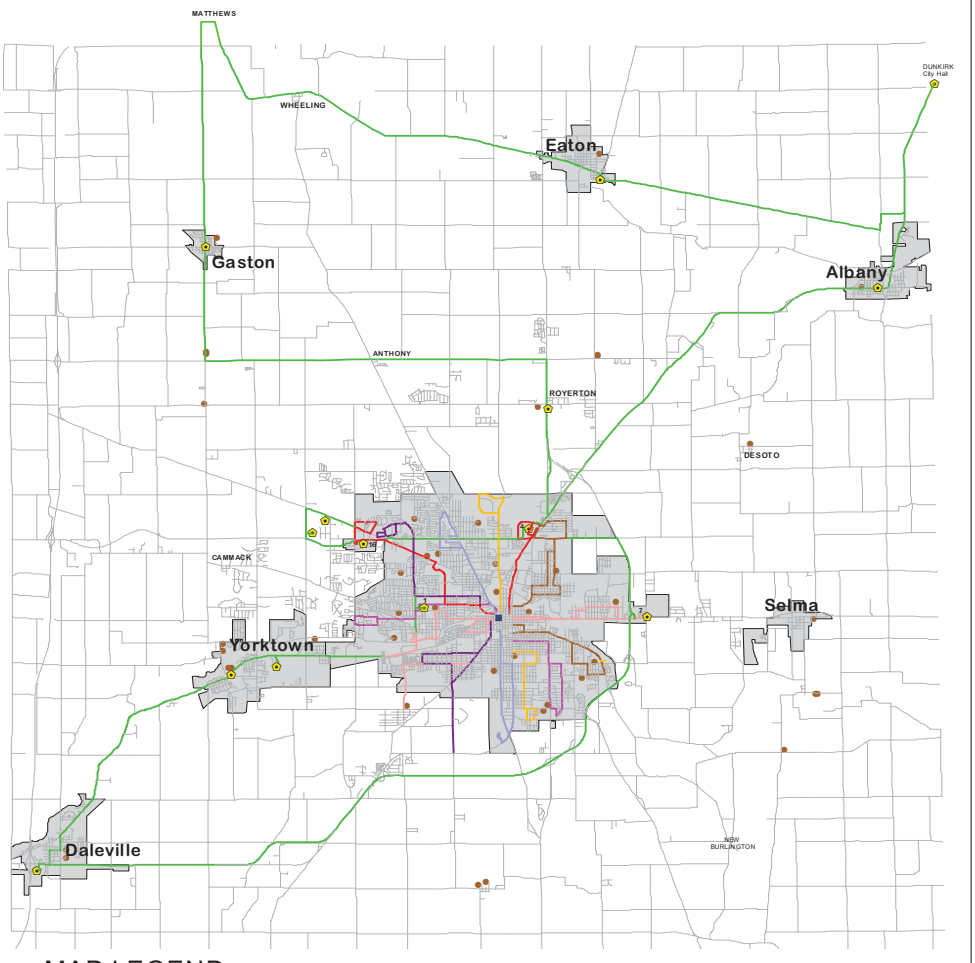
MITS provided 1,511,377 bus rides in 2004, an all-time high for the transit service. This is roughly 1.4 percent of the person trips made by an estimated 67,430 people in Muncie, Indiana. One or two percent may seem low, but that equates to over a million vehicle trips removed from the traffic flow each year. More than a million fewer vehicle trips in 2004 contributed to congestion in Muncie, Indiana, than would have without transit.

Transit allows a portion of the population to choose not to drive and provides greater mobility to the elderly, persons with disabilities, and those who cannot afford a car. Public transit is a vital service for healthy urban and rural environments in that it helps to reduce traffic congestion, reduce energy consumption, reduce air pollution and provide travel options for those who can't or shouldn't drive. It is a service that can be maintained in skeleton form, as it is now, and expanded in the future when energy sources

may be limited. Public transit services are gaining in importance as our country struggles to find ways to maintain a good quality of life without sacrificing mobility.

Transit also provides opportunities for connection to the bicycle and pedestrian system as it develops. As will be seen in the Bicycle and Pedestrian Plan section, one of the data layers taken into consideration when developing the bike-ped network was the MITS routes and shelter locations. Bike racks on buses are available and emphasis will be given to sidewalk facilities leading to shelters.

TRANSIT ROUTES & NEW INTER-URBAN STOPS
IN DELAWARE COUNTY, INDIANA
(Showing Muncie Indiana Transit System
Updated for Fall 2004)



MAP LEGEND

- MITS SHUTTLES
- MITS ROUTES
- NEW INTER-URBAN ROUTE
- NEW INTER-URBAN STOPS
- SCHOOLS

Figure 10: Transit Routes

Note: The New Inter-Urban Fixed Route diverts to specific nearby locations upon passenger request and connects to the end of the southside MITS routes that way.

Bicycle and Pedestrian Systems:

Though Section VI will provide more detail on the Bike-Ped Plan, Figure 11 shows the existing base system for bicycle and pedestrian use. The Cardinal Greenway if a 5 county rails-to-trails project extending from Marion, IN to Richmond, IN with 20 plus miles of off-road asphalt ADA accessible trail located in Muncie and Delaware County. The northwest segment, north of Gaston, is an on-road facility of approximately 7 miles. The extreme southeast segment was completed last year and final segments in Wayne County are soon to be underway. The White River Greenway is an off-road trail extending along the north bank of the White River through the City of Muncie with a total length of 6 miles. The first 2 phases are complete and the phases 3 & 4 have been combined and will be underway this year. The final phase involves a major trailhead on the east side with a river crossing from east to west that will provide another connection to the Cardinal Greenway. This phase is planned for 2011-2012.

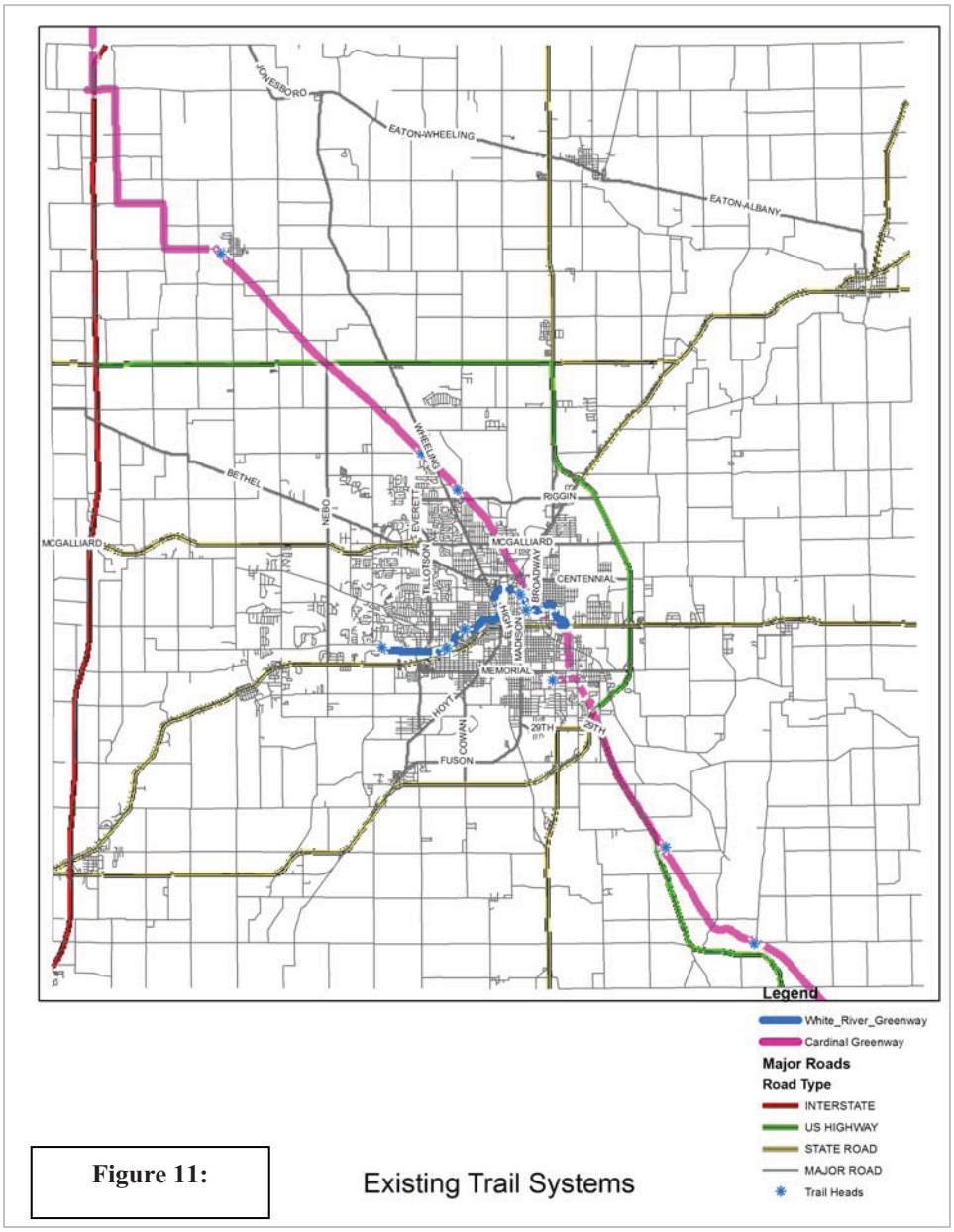


Figure 11: Existing Trail Systems

These two trails have been built as the result of private dollars providing local match for federal funding. Public participation has played a major role, not the least of which is support of the overall effort which is managed through the nonprofit organization Cardinal Greenway, Inc.

Over 80% of the Muncie-Delaware County population lives within 1 mile of these combined trails.

SECTION V

TRAVEL CHARACTERISTICS

TRANSPORTATION, DEMAND AND CONGESTION

Congestion occurs when the traffic on a street segment nears or exceeds its practical capacity. The capacity of a street segment depends on a variety of factors: numbers of lanes, lane width, acceptable gap between vehicles, percent turning movements, percent truck/bus traffic, curb cuts per mile, green time for lanes at intersection, type of area served by road, etc.

A simplified set of capacity figures were determined using a formula (page 11-11 of Special Report 209 of the Highway Capacity Manual) that uses number of lanes and green time per signal cycle: Capacity = 1600 vehicles per hour (vph) * # of Lanes * percent green time / multi-lane factor. The base traffic flow of 1600 vehicles per lane assumes an acceptable gap of 2.25 seconds between vehicles. A simple signal with two equal phases will have 45 percent green time and 5 percent lost time (amber & all red) for each direction. A default value of 0.45 was used for green time per cycle. The multi-lane factor is 1.05 for streets with two lanes per travel direction and 1.00 where only one lane per direction exists (page 11-11 of Special Report 209).

Capacity is generally calculated for the worst hour and daily capacity is an estimated value derived from that. If a road segment had a capacity of 1,000 vehicles per hour, then it could handle 24,000 vehicles per day if it had 24 peak travel hours. However, peak travel generally occurs within 6-10 hours daily with 9-11 percent of the travel during the peak hour. The peak travel drops toward 8 percent per hour as a road approaches capacity during the peak travel hours. The table below lists default capacity values calculated for street segment base capacities with an adjustment (0.966) for the conversion from average weekday traffic (when congestion is likely) to average annual daily traffic. The daily capacity was calculated with peak hour traffic at 8 percent of the daily traffic and with a 55/45 percent traffic directional split during the peak hour.

BASE CAPACITIES FOR STREET SEGMENTS

# of Lanes	1 DIRECTION		2 DIRECTIONS		With Central
Per Direction	Hourly Cap.	Daily Capacity	Hourly Cap.	Daily Capacity	Turn Lane
1	720	8,700	1,310	15,800	21,600
2	1,370	16,540	2,490	30,070	35,870
3	2,020	24,380	3,670	44,340	

NOTE: Cap. = capacity

To analyze traffic flow conditions, level-of-service is used similar to a school grading system from A to F where F constitutes a failure in traffic flow. Level-of-Service (LOS) is an evaluation of traffic flow conditions based on the volume-to-capacity ratio for roadway segments and the delay experienced by drivers at intersections. It is generally accepted that a LOS of C is desirable and a LOS of D is marginally accepted. On a national basis, LOS C is usually established as the minimum standard for the horizon year in rural areas, and LOS D is established as the minimum standard for the horizon year in urban areas. The Indiana Department of Transportation (INDOT) Roadway Design Manual uses such standards. LOS E is considered undesirable, and LOS F is clearly unacceptable.

Level-of-Service (LOS) will decrease in Muncie with the increase in future traffic. Currently, LOS ranges from C to F along the major routes in Muncie. In 2025, with no improvements, the LOS along many routes will drop to between D and F. Table 1 shows the existing (year 2000) and future (year 2025) daily travel model assignments with associated LOS for major roadways in Muncie experiencing severe congestion. A majority of the roadway sections listed in Table 1 will be at LOS F in 2025 if no improvements are made. On the other hand, the program of projects presented herein addresses several of the most congested roadways and results in lower future traffic volumes on facilities still rated LOS E or F. Further, many of the facilities still rated LOS E or F are on the cusp of performing at LOS D if observed peak-hour factors unique to the particular facility are used instead of a uniform peak-hour factor for all facilities. Moreover, community input has decided in the case of facilities with remaining LOS E and F ratings in built up areas with severe right-of-way constraints that the community can live with a little congestion rather than suffer the long-term adverse consequences of significant displacements associated with major roadway widenings.

The vast majority of the Muncie-Delaware County roadway network operates at a level-of-service of A and B, however, traffic flow throughout Muncie experiences some congestion on most of the major routes. As shown in the Western Growth Study Area, average daily traffic (ADT) on Wheeling Avenue ranges from 7,715 vehicles per day (vpd) between Riggin Road and Royerton Road to 32,870 vpd from Wysor Street to Minnetrista Boulevard. By the year 2025, traffic is estimated to increase an average of 19 percent on Wheeling Avenue resulting in severe congestion. Nebo Road will experience the greatest percentage of increased traffic in the year 2025. Nebo Road from Kilgore Road to River Road will experience a 41 percent increase in traffic. From River Road to Jackson Street, Nebo Road will experience a 58 percent increase, and from Jackson Street to McGalliard Road, a 68 percent increase is expected.

The following chart is taken from the Western Growth & Arterial Analysis technical report prepared by Bernardin-Lochmueller & Associates. It illustrates the Levels-of-Service for major roadways on a base system consisting of the existing network plus committed projects that appeared in the 2002 Transportation Improvement Program. Note that forecasts have since been extended to 2030 for this document.

With the previous program of projects, the Travel Demand Model and forecasts indicate 17 roadway segments that will still be experiencing capacity problems in the future.

ROADWAY	TERMINI	"NO BUILD" (E+C) 2000	"NO BUILD" (E+C) 2025		
		ADT	LOS	ADT	LOS
SR 3	Muncie Bypass to SR 28	12358	F	13374	F
	SR 28 to Wheeling Pike	10882	E	11708	F
SR 28	Wheeling Ave. to Nebo Rd.	8331	D	9645	D
SR 32	600W to Randolph Co. Line	11583	E	14569	F
	Nebo Rd. to Tiger Dr.	15648	C	18464	D
	Tiger Dr. to 600W	15004	F	18175	F
	600W to 400S	9866	D	12294	F
	400S to I-69	9013	D	11580	E
	I-69 to Madison Co. Line	11140	E	14593	F
SR 67	Janet to SR 28	13071	E	15014	F
Bethel Ave.	Tillotson Ave. to McGalliard Rd.	16095	F	18369	F
	McGalliard Rd. to Nebo Rd.	9118	D	11202	E
Broadway	Macedonia Rd. to Riggin Rd.	13280	F	14923	F
Centennial Ave.	Wheeling Ave. to Walnut St.	19256	F	20193	F
Jackson St.	Main St. to Bunch Blvd.	12345	F	13497	F
	Bunch Blvd. To Manhattan Ave.	15235	F	16748	F
	Kilgore Ave. to White River Blvd.	15482	F	16083	F
	White River Blvd. To Tillotson Ave.	14479	F	14960	F
Kilgore Ave.	Nichols Ave. to Jackson St.	13527	F	14136	F
McGalliard Rd.	Wheeling Ave. to Bethel Ave.	25977	D	36049	F
	Bethel Ave. to Nebo Rd.	27182	D	39182	F
McKinley Ave.	Neely Ave. to Jackson St.	13038	E	11848	E
Morrison Rd.	Petty Rd. to Keller Rd.	13050	F	17009	F
Nebo Rd.	Kilgore Ave. to River Rd.	14922	C	21077	D
	River Rd. to Jackson St.	10356	D	16393	F
	Jackson St. to McGalliard Rd.	9730	D	16300	F
Nichols Ave.	Kilgore Ave. to White River Blvd.	12175	E	13129	F
Ohio/Burlington	Jackson St. to Macedonia Ave.	11986	E	12160	E
Riverside Ave.	McKinley Ave. to New York Ave.	10099	D	12316	E
Walnut St.	McCulloch Blvd. To Centennial Ave.	13036	F	15801	F
Wheeling Ave.	Riggin Rd. to Royerton Rd.	7715	C	9491	D
	Wysor St. to Minnetrista Pkwy.	32870	F	32246	F
	Minnetrista Pkwy.	25888	F	25709	F
University Ave.	Tillotson Ave. to McKinley Ave.	9911	D	12316	E

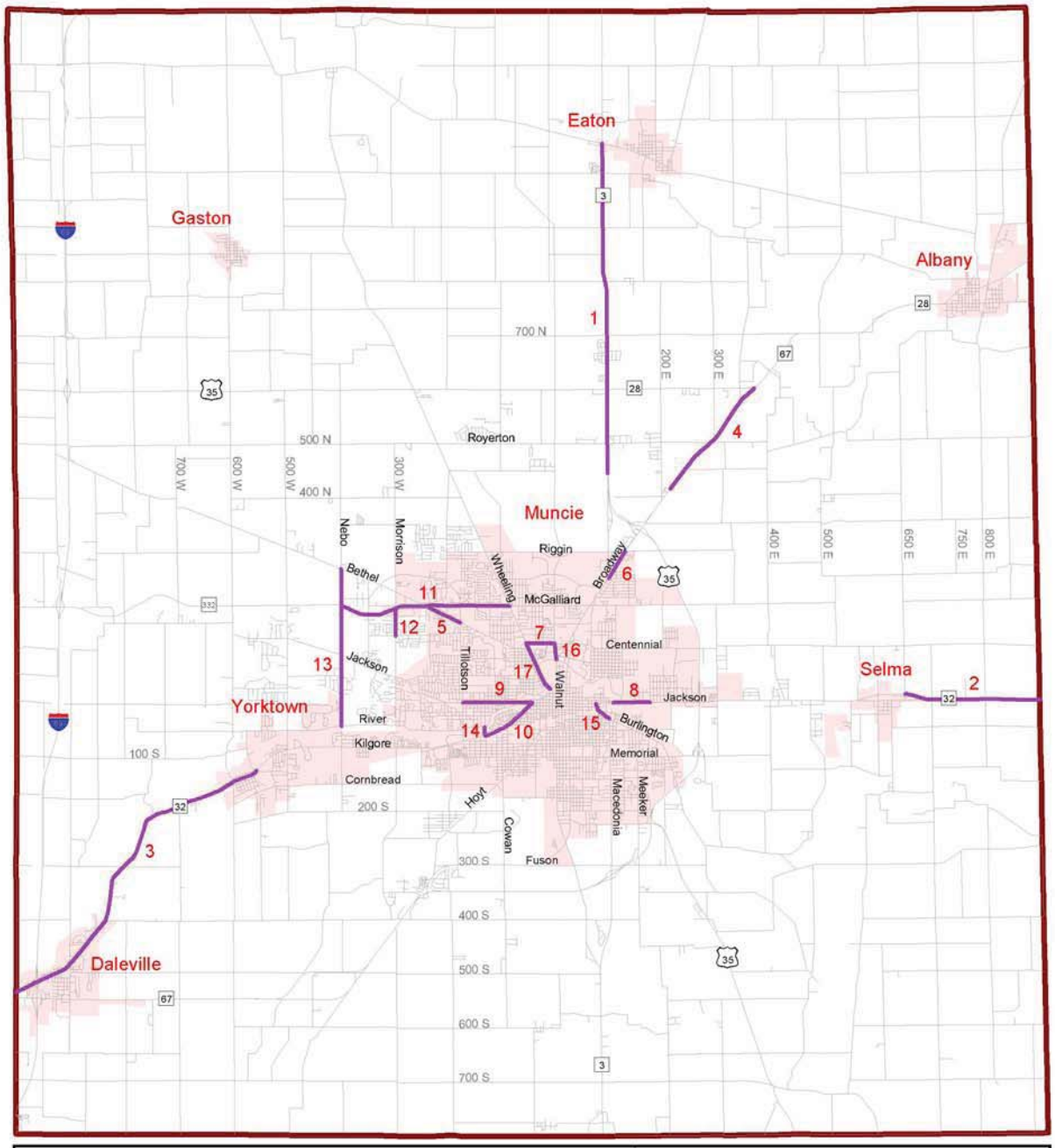


Figure 12: Future Needs

Source: Bernardin, Lochmueller & Associates, Inc.

Legend
Future Transportation Needs
Roadways
Future Needs
Delaware County Border
Corporation Limits

Future Transportation Needs:

Even with the programmed improvements open to traffic, major transportation problems still exist in the year 2025 for the No Build Alternative (Existing Plus Committed Roadway Network):

1) SR 3 from the Muncie Bypass to Wheeling Eaton Pike (LOS E and F) – 10,800 to 13,800 ADT.
2) SR 32 from 650 E to Randolph County Line (LOS F) – 13,200 to 14,600 ADT.
3) SR32 from Tiger Drive to Madison County Line (LOS E and F) – 10,700to 14,600 ADT.
4) SR 67 from Janet to SR28 (LOS F) – 15,000 ADT.
5) Bethel Avenue from McGalliard Road to Tillotson Avenue (LOS F) – 18,200 to 18,400 ADT.
6) Broadway (Business 67) from Macedonia Road to Riggin Road (LOS F) – 14,600 to 15,000 ADT.
7) Centennial Avenue from Wheeling Avenue to Walnut Street (LOS F) – 13,000 to 20,200 ADT.
8) Jackson Street from Main Street to Manhattan Avenue (LOS F) – 13,500 to 16,800 ADT.
9) Jackson Street from Kilgore Avenue to Tillotson Avenue (LOS F) – 12,300 to 16,100 ADT.
10) Kilgore Avenue (SR32) from Nichols Avenue to Jackson Street (LOS E and F) – 11,000 to 14,100 ADT.
11) McGAlliard Road from Wheeling Avenue to Nebo Road (LOS E and F) – 31,000 to 39,200 ADT.
12) Morrison Road from Petty Road o McGalliard Road (LOS F) – 17,000 ADT.
13) Nebo Road from River Road to McGalliard Road (LOS F) – 14,300 to 16,400 ADT.
14) Nichols Avenue from Kilgore Avenue to White River Boulevard (LOS F) – 13,200 ADT.
15) Ohio Avenue/Burlington Drive from Jackson Street to Macedonia Avenue (LOS E) – 12,200 ADT.
16) Walnut Street from McCulloch Boulevard to Centennial Avenue (LOS F) – 15,100 ADT.
17) Whelling Avenue from Wysor Street to Centennial Avenue (LOS F) - 25,700 to 32,300 ADT.

Through the Western Growth Study, the Travel Demand Model was used to create model runs illustrating the Level-of-Service for all links within the model network. The following figures, taken directly from the Western Growth Study[5], show these volume-to-capacity results for the model base year – 2000 – and future projections for 2025 using the previous program of projects and a revised program of projects ultimately presented in the Western Growth Study. Also note that, at the time, the base model year was recalibrated to the Year 2002 for conformity purposes and projections were extended to the Year 2030.

[5] The labels are original to the Western Growth Study and are not sequential with others figures in this document.

Figure V-2: E + C Network with Programmed Improvements – 2000 Traffic Volumes Color-Coded by Level-of-Service

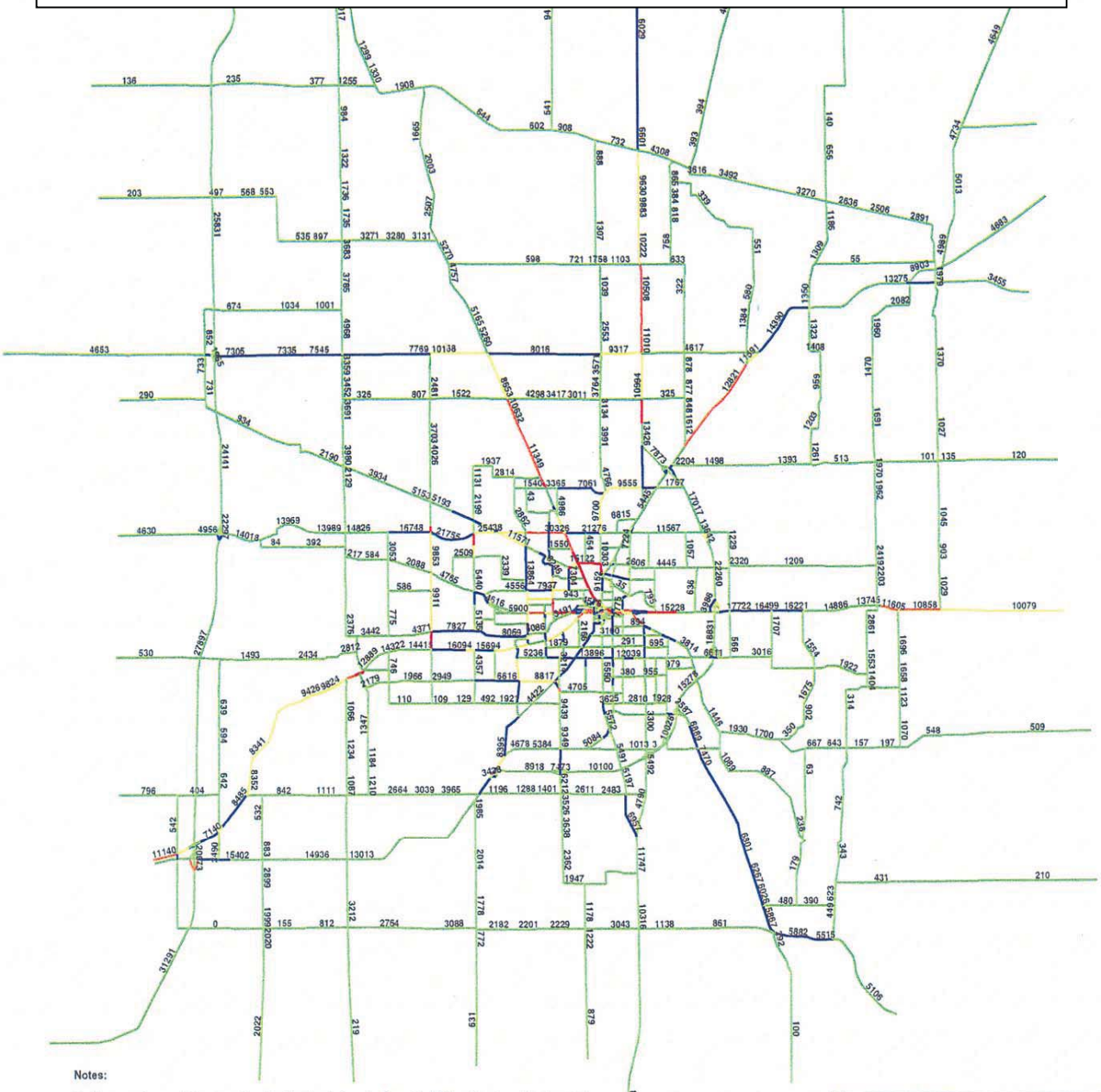
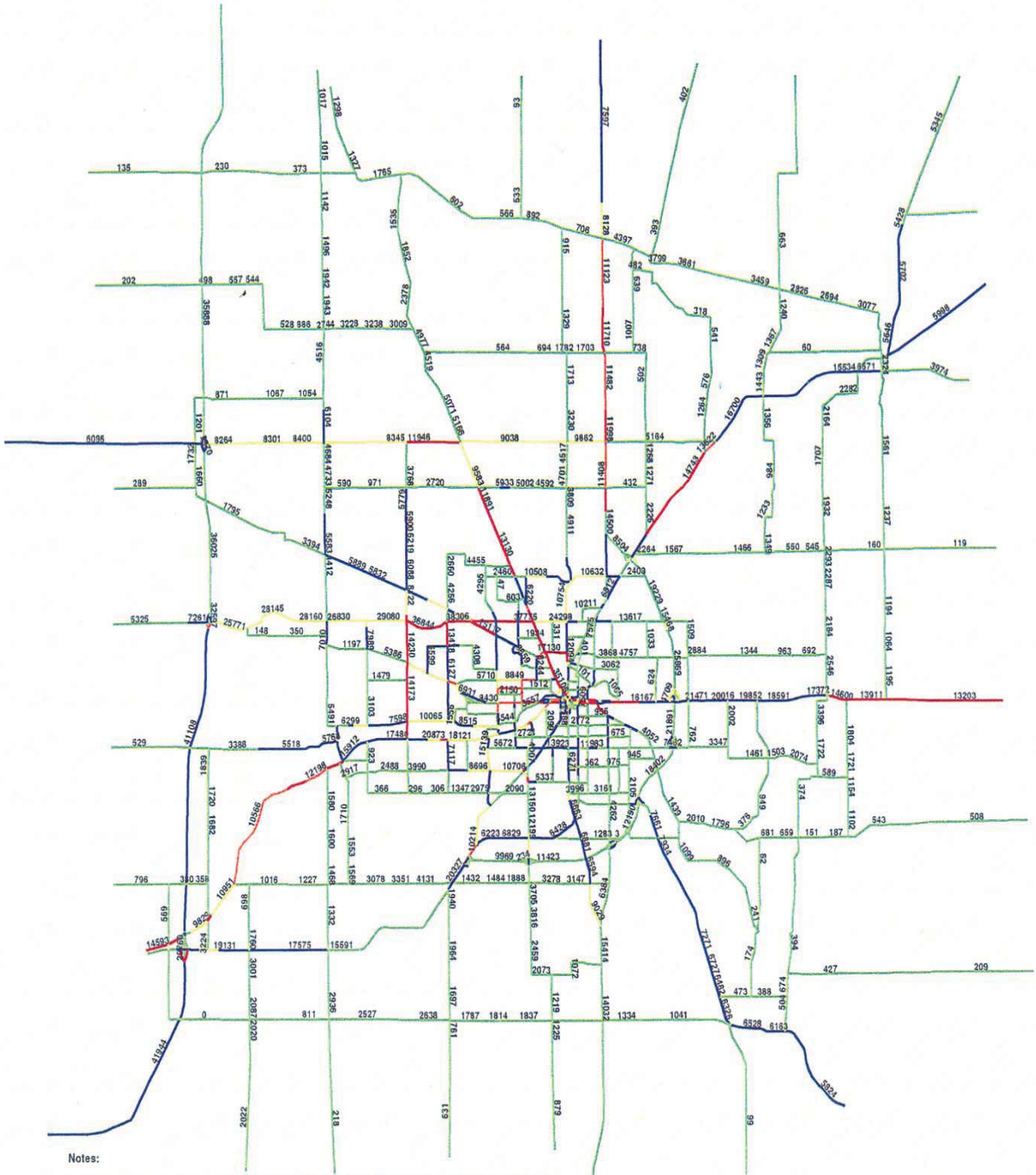


Figure V-3: Future Year E & C Network with Programmed Improvements
2025 Traffic Volumes Color-Coded by Level-of-Service



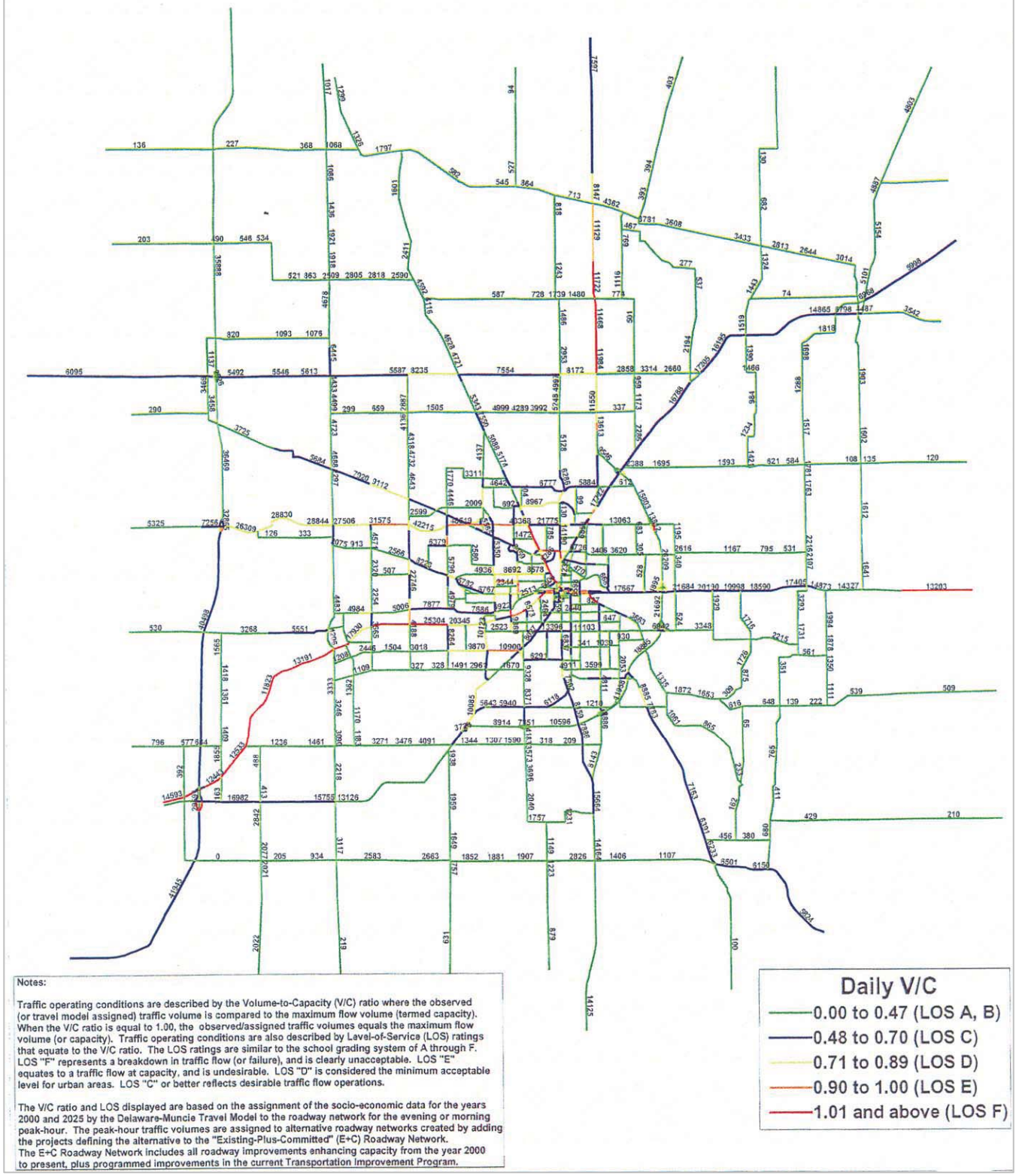
Notes:

Traffic operating conditions are described by the Volume-to-Capacity (V/C) ratio where the observed (or travel model assigned) traffic volume is compared to maximum flow volume (termed capacity). When the V/C ratio is equal to 1.00, the observed/assigned traffic volumes equals the maximum flow volume (or capacity). Traffic operating conditions are also described by Level-of-Service (LOS) ratings that equate to the V/C ratio. The LOS ratings are similar to the school grading system of A through F. LOS "F" represents a breakdown in traffic flow (or failure), and is clearly unacceptable. LOS "E" equates to a traffic flow at capacity, and is undesirable. LOS "D" is considered the minimum acceptable level for urban areas. LOS "C" or better reflects desirable traffic flow operations.

The V/C ratio and LOS displayed are based on the assignment of the socio-economic data for the years 2000 or 2025 by the Delaware-Muncie Travel Model to the roadway network for the evening or morning peak-hour. For the year, 2000 and 2025, the peak-hour traffic volumes are assigned to the "Existing-Plus-Committed" (E+C) Roadway Network. The E+C Roadway Network includes all roadway improvements enhancing capacity from the year 2000 to present, plus programmed improvements in the current Transportation Improvement Program.

Daily V/C
- 0.00 to 0.47 (LOS A, B)
- 0.48 to 0.70 (LOS C)
- 0.71 to 0.89 (LOS D)
- 0.90 to 1.00 (LOS E)
- 1.00 to 5.00 (LOS F)

Figure V-4: Final Alternative Network –
2025 Traffic Volumes Color-Coded by Level-of-Service



During development of the Comprehensive Plan, much discussion centered around whether a "beltway" was needed, completing the US 35, SR 3 & 67 By-Pass around the City of Muncie. The scope of the Western Growth Study included analysis of this issue. The following section is taken from the Western Growth & Arterial Analysis Study to provide background on beltway considerations, public input and a cost-benefit and environmental analysis that resulted in a determination that the beltway concept was not warranted and improvements to the existing system would provide adequate capacity for the future network.

A. Preliminary Alternatives Evaluation (First Screening)

Based on information and input from the first public meeting, seven preliminary alternatives were developed for evaluation. One "no build" and six "build" alternatives were involved in the first screening. The first three "build" alternatives involved major widenings of existing roadways and the last three "build" alternatives were beltway extension options. These six alternatives were subjected to a "screening" process that involved an evaluation of the performance of each of the alternatives relative to the established project goals based on a review of traffic, engineering and environmental considerations.

B. Supplemental Alternatives Evaluation (Second Screening)

Based on the May 1, 2003 Core Steering Committee meeting, three more "build" alternatives were developed. Alternatives 7 through 9 were generated as additional beltway options. These options address the concerns that Alternatives 4 and 6 encounter serious horizontal and vertical clearance restrictions along the north side of the Delaware County airport, that Alternative 4 passes through a major senior citizens retirement community on the south side of SR 32 (Kilgore Avenue) east of Yorktown, and that Alternative 5 is ineffective while carrying the highest price tag. (See Appendix B of the Plan Technical Report for more airport information.) The second screening process involved the previous alternatives, plus the three new beltway alternatives. The alternatives were evaluated using the same traffic, engineering, and environmental considerations as were used in the first screening.

Table 4: Public Survey Responses

(from the Second Public Information Meeting on July 22, 2003)

Alternative	Number of Responses*	Percentage
No Build	100	39.4%
Alternative 1	14	5.5%
Alternative 2	14	5.5%
Alternative 3	47	18.5%
Alternative 4	9	3.5%
Alternative 5	9	3.5%
Alternative 6	26	10.2%
Alternative 7	5	2.0%
Alternative 8	5	2.0%
Alternative 9	10	3.9%
No Response	15	5.9%
Total	254	

Source: Bernardin, Lochmueller & Associates, Inc.

Note: The total number of respondents was 245; however, the total number of responses was 254, as several respondents voted for more than one alternative.

C. Preliminary Final Alternatives Evaluation (Third Screening)
After the second public meeting, a tenth "build" alternative was presented at the Core Steering Committee meeting on July 31, 2003. The tenth "build" alternative involved a combination of major widening projects and a segment of the beltway extension between SR 332 and SR 32. An eleventh alternative was then developed based on Alternative 10. Alternative 11 is the same project as Alternative 10; however, the segment of new beltway in Alternative 11 would extend from SR 28/US 35 on the north to SR 67 on the south.

D. Final Alternative Evaluation (Fourth Screening)
After eliminating Alternative 10 (and by inference Alternative 11), a new alternative was developed. Alternative 12 is a variation on Alternative 3, and includes a refinement of major widenings to existing roadways (without a beltway extension). Based on a fourth screening, Alternative 12 was decided to be the Preferred Alternative.

Alternative 12 is a refinement of Alternative 3 with major widenings to existing roadways (without a beltway extension) to reduce adverse community impacts. The projects included in this alternative appear in Figure 19.

In addition, intersection improvements are suggested on SR 28 at Nebo Road and Wheeling Avenue and on SR 32 from Yorktown to Daleville at 600W, 700W, Priest Ford Road, 300S and 400S.

Finally, in light of rapid commercial development in the McGalliard Road corridor (SR 332), further study is needed of access along SR 332 from I-69 to Tillotson Road with the goal of maintaining freeflow characteristics of the roadway in the future.

This alternative performed well regarding project goals and the traffic, engineering and environmental considerations. (See Plan Technical Report page 81.)

A third public information meeting was held on September 3, 2003 at Muncie Central High School in Muncie. A formal presentation was given explaining the project and the final recommended alternative. Approximately 70 people attended the meeting. A public comment survey was distributed to all meeting attendees. A total of 68 comment sheets were returned. Overwhelming support for the Final Alternative is confirmed by the comments.

The following figures show the general environmental characteristics considered throughout the Western Growth Study analysis and the final Alternative 12 program of project areas. These areas were used to develop the program of projects for the 2005-2030 Transportation and remain the local project locations for this 2009-2030 Transportation Plan Update. Some projects have been downsized due to socio-economic and demographic projections as well as a comparison of historic traffic counts showing a reduction in volumes on some of the major roadways scheduled for improvement.

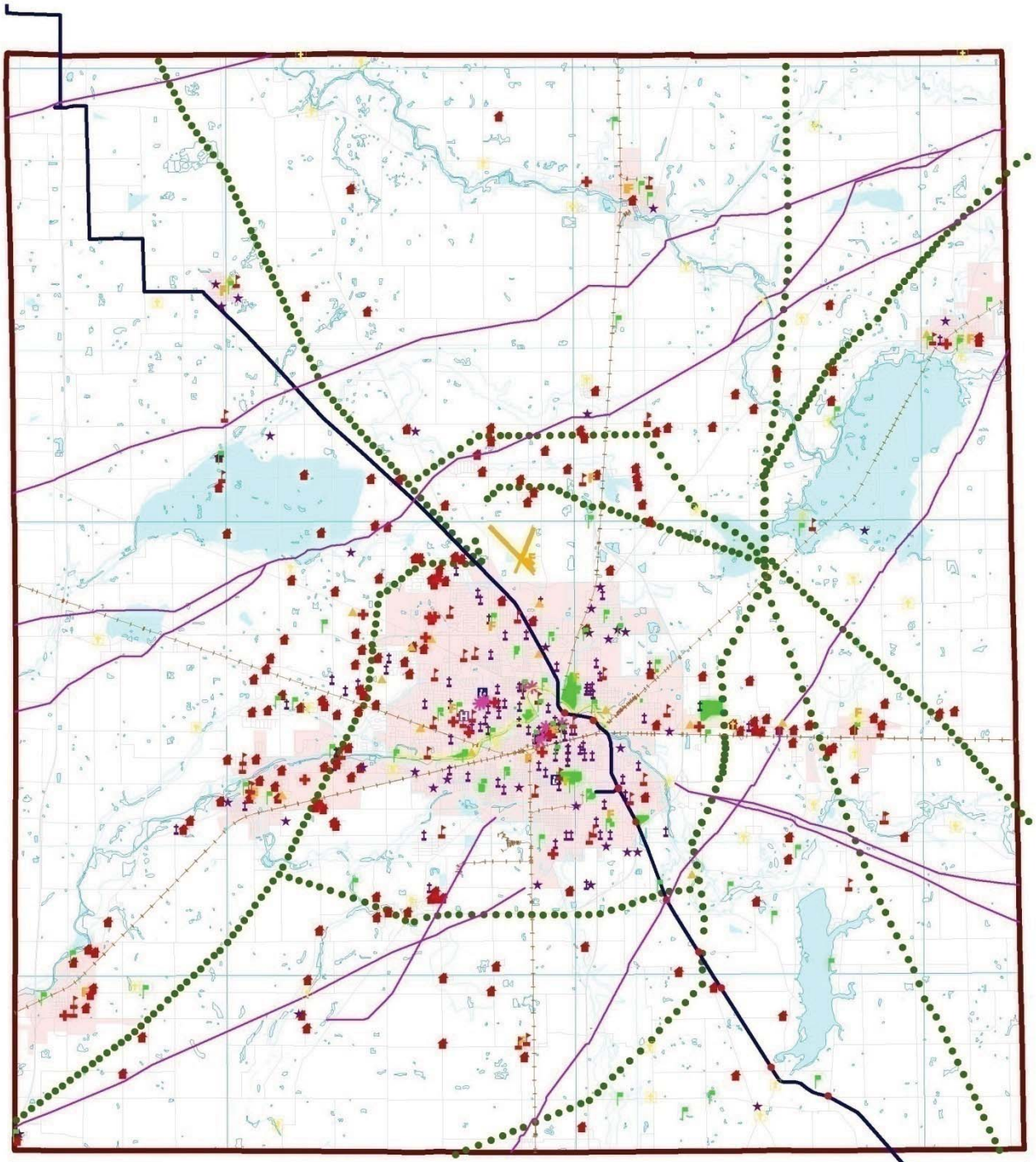


Figure 13 Delaware County Environmental Inventory

Sources: Delaware-Muncie Metropolitan Plan Commission
Delaware County GIS
Environmental Systems Research Institute, Inc. (ESRI)
Indiana Department of Natural Resources

Legend

- Hospitals
- Medical Facilities
- Cemeteries
- Outdoor Recreation
- Mobile Homes
- Nursing Homes
- Schools
- Pipelines
- Fire Stations
- Airport
- Trail Heads
- Cardinal Greenway Trail
- White River Greenway Trail
- Subdivisions
- Places of Worship
- Railroads
- Museums and Theatres
- Libraries
- Electric
- Municipal Parks
- Delaware County Border
- Roadways
- Wetlands
- Waterbodies
- Floodplain
- Corporation Limits

N

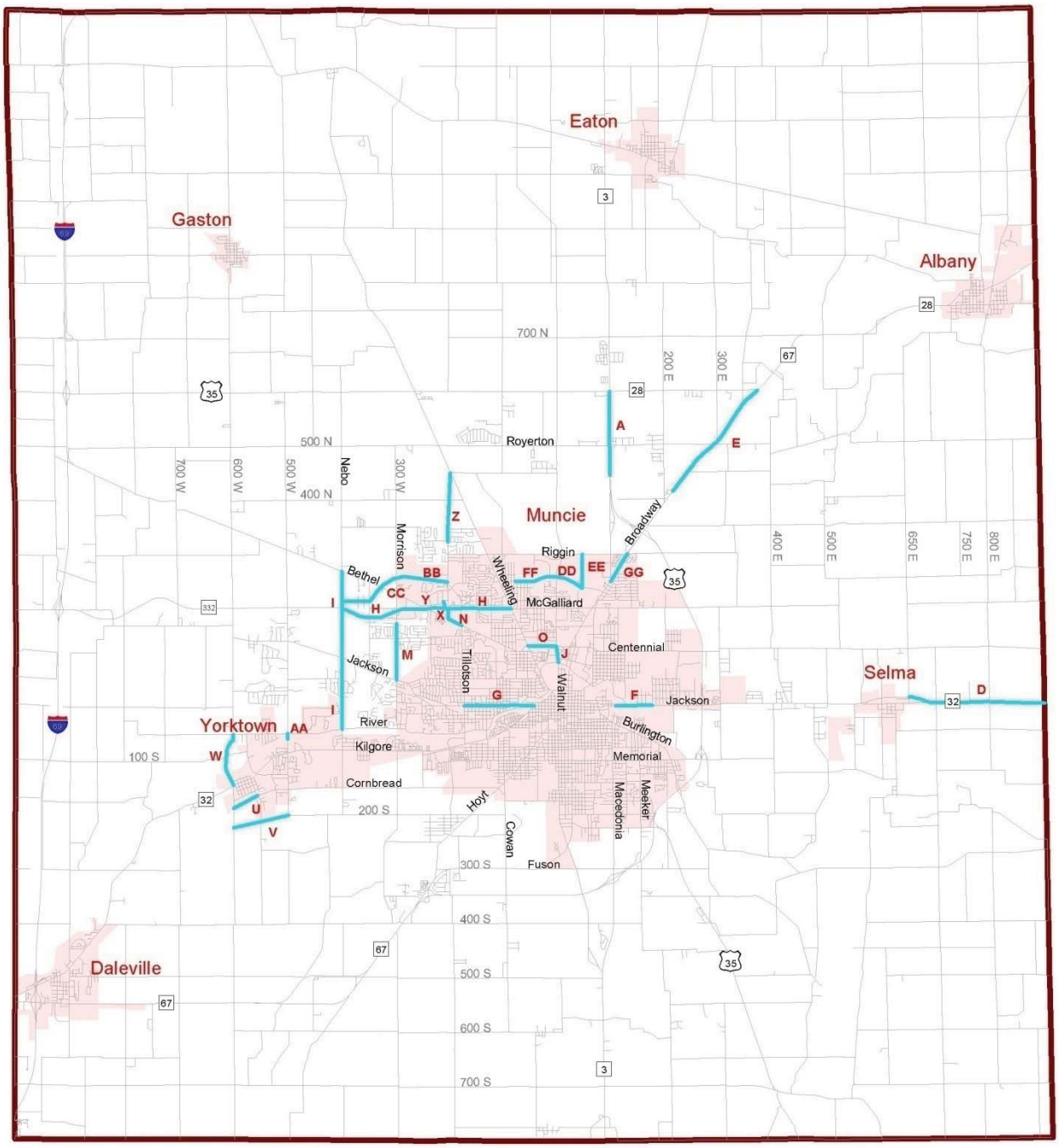


Figure 14 : Alternative 12 - Final Alternative

Sources:
Delaware - Muncie Transportation Plan
Delaware - Muncie Official Thoroughfare Plan
Delaware - Muncie Comprehensive Plan
MPO Transportation Committee discussions (2000-2002)

Legend
Alternative 12 - Final
Roadways
Possible Improvement Suggestions
Delaware County Border
Corporation Limits

SECTION VI

DELAWARE-MUNCIE BICYCLE/PEDESTRIAN PLAN

INTRODUCTION

Traditionally, using the word "transportation" in the Delaware-Muncie community evokes images of automobiles and roadways. With the advent of the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991, most communities have developed a multi-modal approach to transportation planning which takes into consideration automobiles, railways, airlines, waterways, mass transit and, of course, bicyclists and pedestrians.

Each community is different in terms of the public's modal choice and the modal choice of residents within the Delaware-Muncie area has traditionally been the automobile. However, over the last twenty years, transportation officials have come to recognize the bicycle as a viable mode of travel for not only recreation but for commuting, health and other travel purposes. Also over the same time period, the degree of bicycle traffic on our local roadway system appears to have grown significantly as has the incidence of walkers, joggers and runners. Consequently, a multi-modal approach to transportation planning in the Delaware-Muncie community includes the bicycle and the pedestrian.

The new direction for transportation, involving a multi-modal approach, was again emphasized by TEA-21 as originally set forth in the following excerpt:

It is the policy of the United States to develop a National Intermodal Transportation System that is economically efficient and environmentally sound, provides the foundation for the Nation to compete in the global economy, and will move people and goods in an energy efficient manner.

> *The National Intermodal Transportation System shall consist of all forms of transportation in a unified, interconnected manner, including the transportation systems of the future, to reduce energy consumption and air pollution while promoting economic development and supporting the Nation's preeminent position in internation commerce. [P.L. 102-240, Section 2]*

The authorization act following TEA-21, SAFETEA-LU, continues with this emphasis and the programs aimed at providing funding opportunities for local communities.

In recognition of the growing emphasis on multi-modal forms of travel and the particular needs of this community, a Bike Route Task Force was created in the early 1990's to investigate the needs and concerns of the bicycling public. The first Bikeways Plan was presented in the 1995 Transportation Plan. The second Bike-Pedestrian Plan was presented in the 2000 Transportation Plan document and it provided some updates, but primarily focused on an anticipated Community Connections project, being an implementation measure from the

Comprehensive Plan, that was funded through a Transportation and Community and System Preservation grant. The Community Connections Project used the consulting services of Claire Bennett and Associates with Bernardin-Lochmueller & Associates, beginning in 2002 and continuing through 2004. Extensive public input was solicited and participation was greater than most transportation planning meetings. The routes, mapping and projects are taken from that project initiative. That project should be considered as being incorporated by reference into this 2009-2030 Transportation Plan. A project summary, presented below, was prepared for the various public sessions and for posting on the web site.

Project Vision

Everyone within Delaware County is within 10 minutes of connecting to "the system".

Project Mission

To create a countywide multi-modal transportation network that is coordinated with the existing roadway network and has the potential for regional growth.

Project Description

This project is the development of a 21st Century Thoroughfare Plan for motorized and non-motorized travel - replacing the traditional thoroughfare plan which merely addresses roadway classification and proposed rights-of-way.

The basic premise is that traditional measures used to classify roadways can be applied to sidewalks and trails. The new thoroughfare plan would then include a functionally classified sidewalk network and trail system as well as the traditional roadway network. Criteria will be developed for classifying these non-traditional networks using measures such as connectivity, development densities, type of land use served, levels of service (LOS), extent of projected use, safety and congestion mitigation factors, and modal conflict resolution. The end result would be a thoroughfare map showing existing and proposed principal arterial sidewalks and trails, major collector sidewalks and trails, local sidewalks and trails, etc. - obviously covering both urban and rural environments. Also, just as we develop locally acceptable levels of measure for accidents, hazardous roadway segments and congestion, similar measures would be developed for these non-traditional networks.

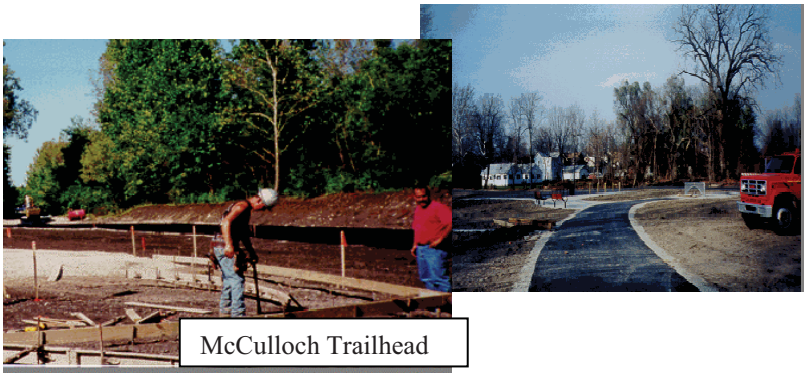
Project Consultants

Claire Bennett Associates in coordination with Bernardin Lochmueller & Associates, Inc.

➢ Bicycle & Pedestrian Network Plan

This document is expected to include, but not be limited to an inventory and analysis of the existing system, recommendations for future system improvements, and designation of priorities and phasing for recommended projects.

Footpath at Elks on 500W



McCulloch Trailhead

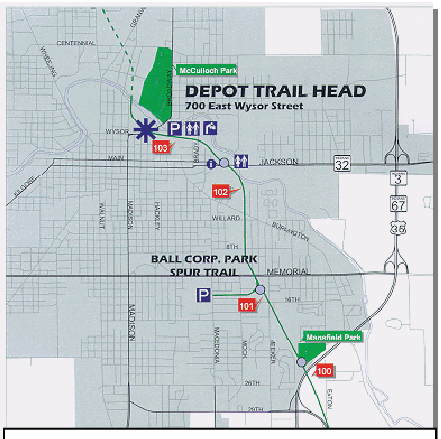
➢ *Bicycle & Pedestrian Network Map*

This map is expected to graphically identify existing bicycle & pedestrian connections, recommended network improvements, and proposed future additions. In addition, an informational map should be produced that can be distributed to the general public to aid in the navigation of the local network.

➢ Recommended Guidelines

The study is also expected to provide a set of regulatory and policy guidelines that local officials can utilize in implementing the proposed bicycle & pedestrian network plan. These guidelines may include right-of-way requirements, facility design standards, and maintenance recommendations.

Design Do & Don't



Cardinal Greenway Map Example

BIKE/PED PLAN VISION

The long range vision guiding the Delaware-Muncie Bicycle and Pedestrian Plan is to provide a changing transportation system which allows true modal choice for walkers and cyclists in the conduct of their everyday lives for the widest range of trip purposes possible - recreation, health, consumption and commuting.

GOALS AND OBJECTIVES

Improve the efficiency of the transportation system: potential increase in transit, pedestrian and bicycle travel; reduction of modal conflict; projected areas of congestion developed with consideration of bicycle and pedestrian traffic and circulation patterns.

Reduce impacts of transportation on the environment: design standards scaled to the surrounding environment; land use patterns, development and infrastructure improvements guided by preservation practices rather than mitigation; amenities installed complementing the natural environment.

Reduce the need for costly future investments in public infrastructure: retrofitting kept to a minimum; developers charged with installing a coordinated system of infrastructure improvements; right-of-way dedications based on system-wide planning; planned acquisitions at current value preventing inflationary increases

Ensure efficient access to jobs, services and centers of trade: alternatives modes offered at logical and desired locations; maintenance of low travel times; conflicts decreased at access points.

Examine development patterns and identify strategies to encourage private sector development patterns which achieve goals of the TCSP: comprehensive plan coordinated with thoroughfare planning; personal preference survey results produced in report format for public distribution identifying supply/demand issues; reliance on planned infrastructure improvements built in conjunction with private development.

PLAN METHODOLOGY

One of the first activities was to conduct a valid random survey of Delaware County residents that accurately reflected the demographic mix of our population. A focused survey of Ball State students was also conducted for comparison purposes and did show that there was higher use of the bicycle and walking as a mode of travel by students than the general population. The results of the survey and a listing of the stakeholders group (that operated as the steering committee) is in the public participation Appendix C.

The Delaware County Geographic Information System was then used extensively for various data layers to be factored into developing routing for bikeways and pedestrian ways. The various data layers that were used are displayed on the following figures. The starting point for the system was the existing trails that have been developed over the last 10 years using primarily Transportation Enhancement funds and private match dollars. These two trail efforts resulted in the Cardinal Greenway and the White River Greenway which had public/private groups overseeing their development. These two groups merged members to form an umbrella organization that is currently considering a name for doing business. For simplicity's sake, this

group will be referred to as Cardinal Greenway, Inc. (the first non-profit formed and the owner of the old CSX right-of-way containing the Cardinal trail).

Following the data, preliminary bike routes were mapped and several public review sessions were held. Local bicycling clubs were contacted for input and a general plan principle was established – based on both public input dealing with sidewalk needs and the Comprehensive Plan which emphasized concentrating development in and around the City of Muncie, improving the quality of life for Muncie residents, promoting infill and development within the City to increase the tax base thereby decreasing the tax rate, and the need to preserve farming and farmland. Consequently, the new construction projects were focused in the urbanized area with a system of preferred bike routes identified for the outer areas. The preferred route map is shown on a following page. The intent is for these routes to be signed with a combination of standard bike route signage and a share-the-road sign as a part of an educational initiative.

"Share the Road" signs are of interest as a potential means of alerting motorists to the presence of bicyclists and encouraging cooperative behavior. Such signs may also be used in conjunction with bike lanes. An approach which appears to couple the advantages of both while addressing some of the criticisms of bike lanes is the so-called "Hybrid Bike Lane." A good description is contained in Hybrid Bike Lanes, produced by Urban Systems in Canada. Signs have been installed on certain routes laid out in the 2005-2030 Plan and this program will continue in the future.

In addition to continuing with bicycle projects, development of the pedestrian system is a considered a priority in this Plan Update and work will focus on expanding existing datasets, developing criteria for priorities and funding.

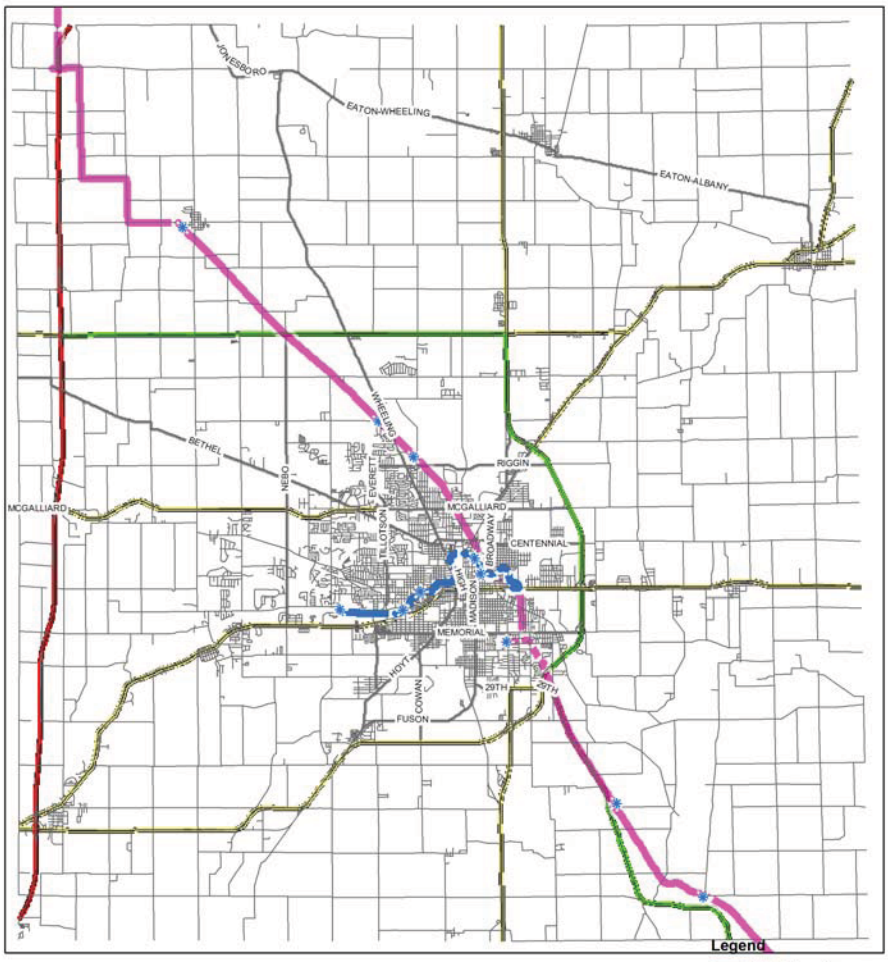


Figure 15 Existing Trail Systems

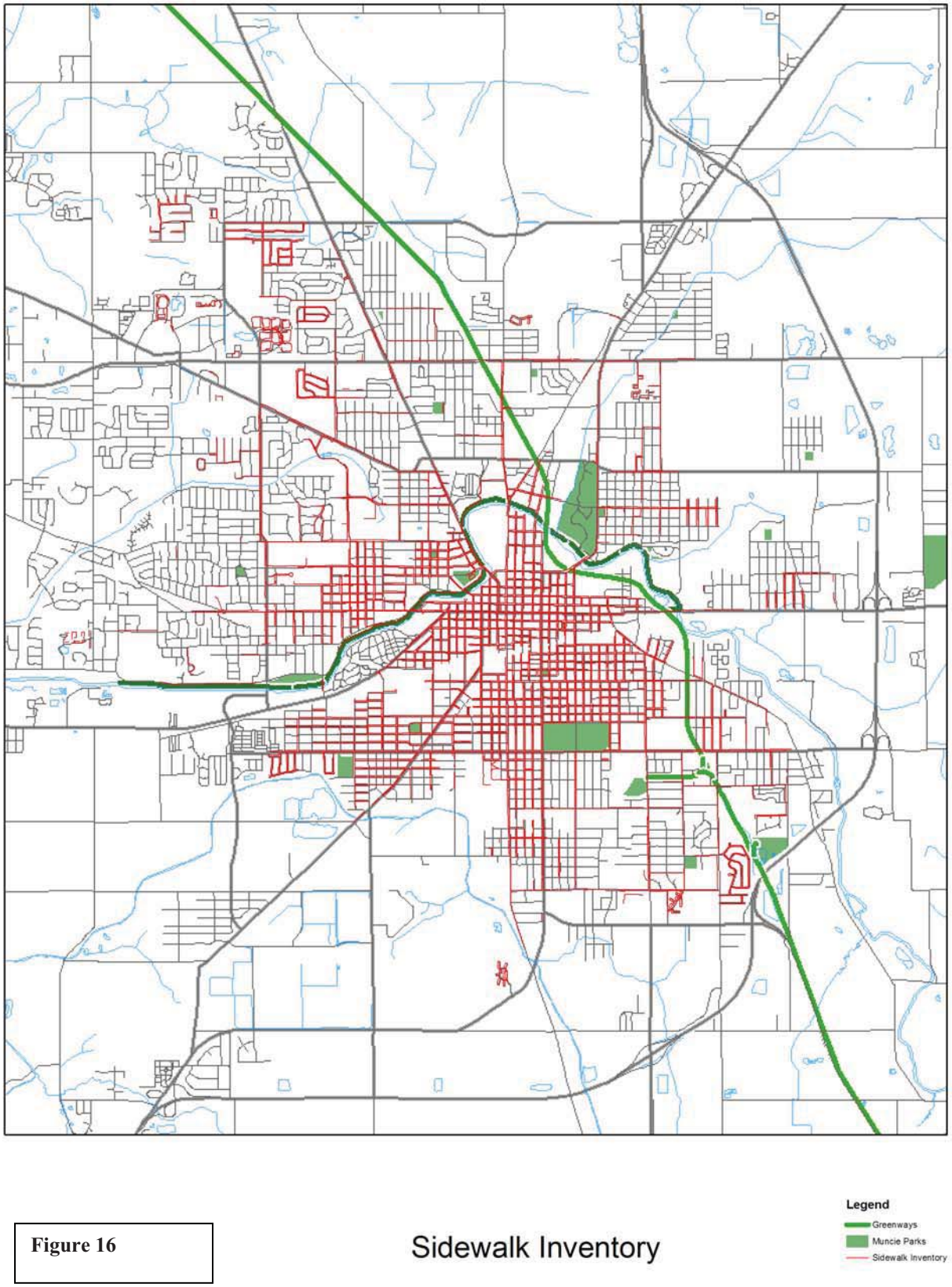
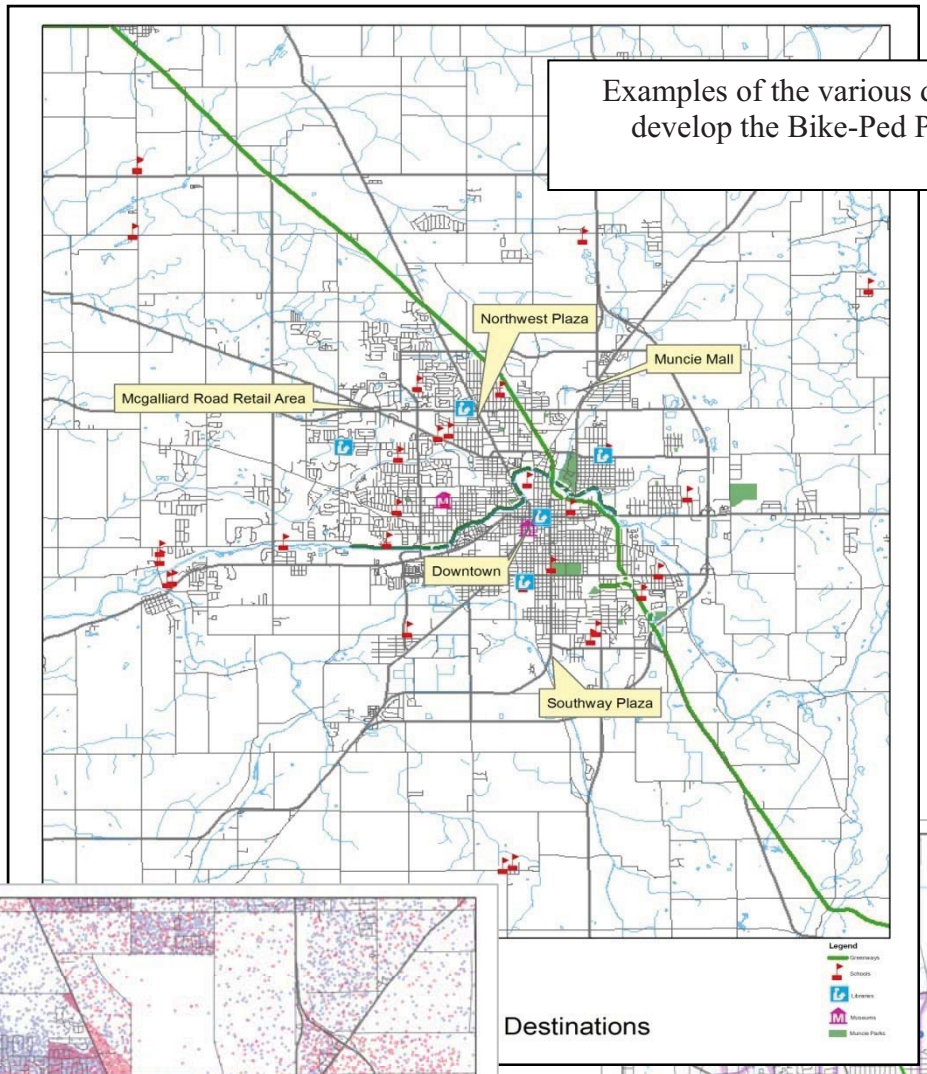


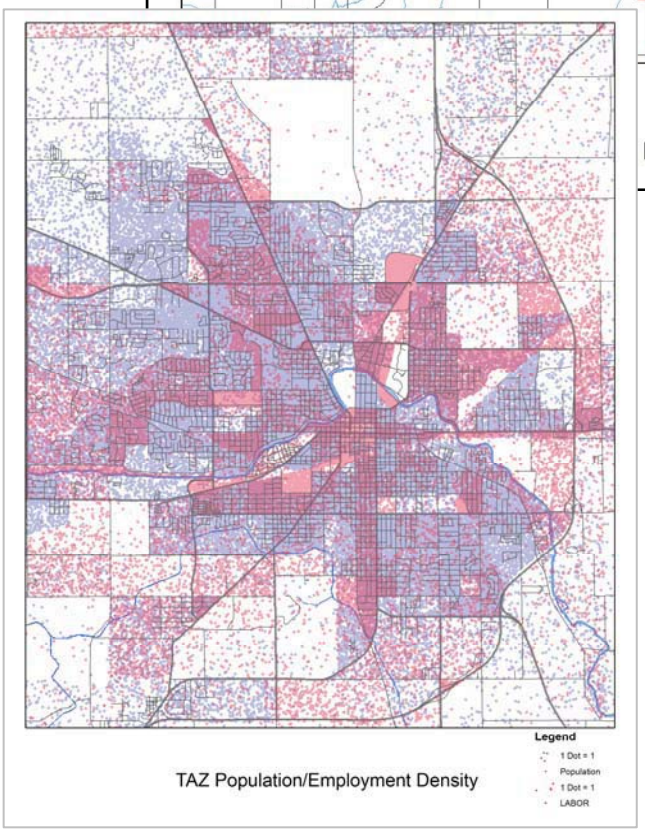
Figure 16

Sidewalk Inventory

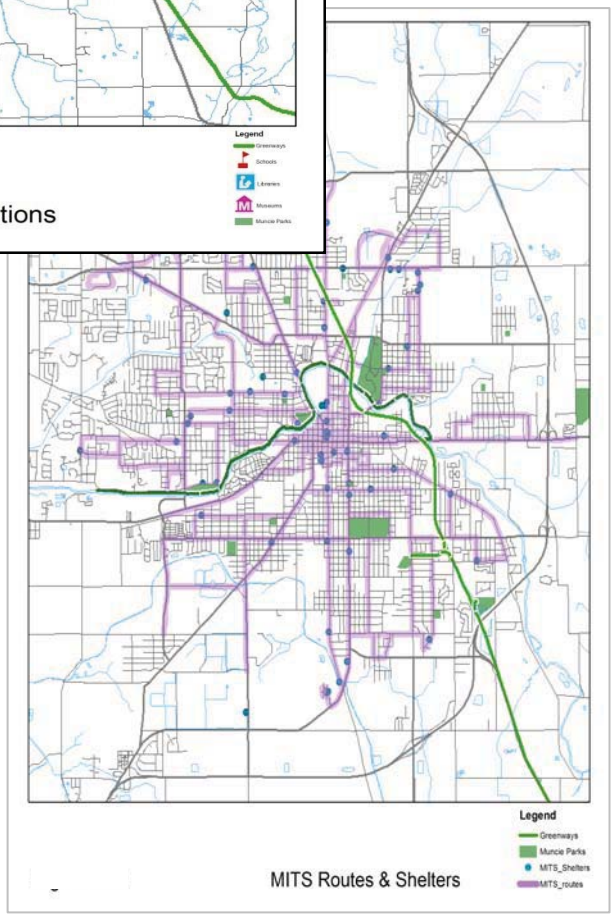
Examples of the various datasets used to develop the Bike-Ped Plan network.



Destinations



TAZ Population/Employment Density



MITS Routes & Shelters

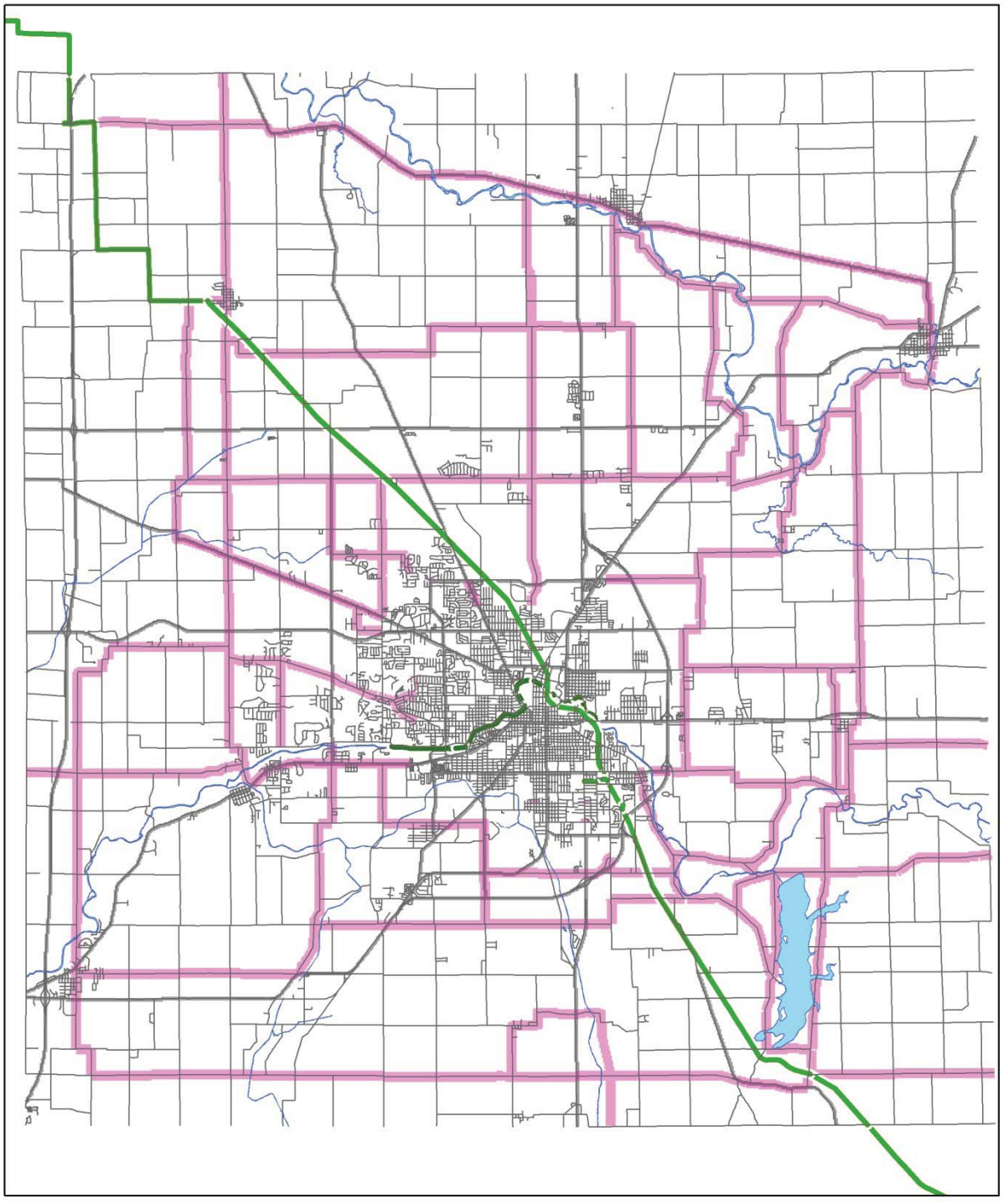


Figure 17

Preferred County Bicycle Routes

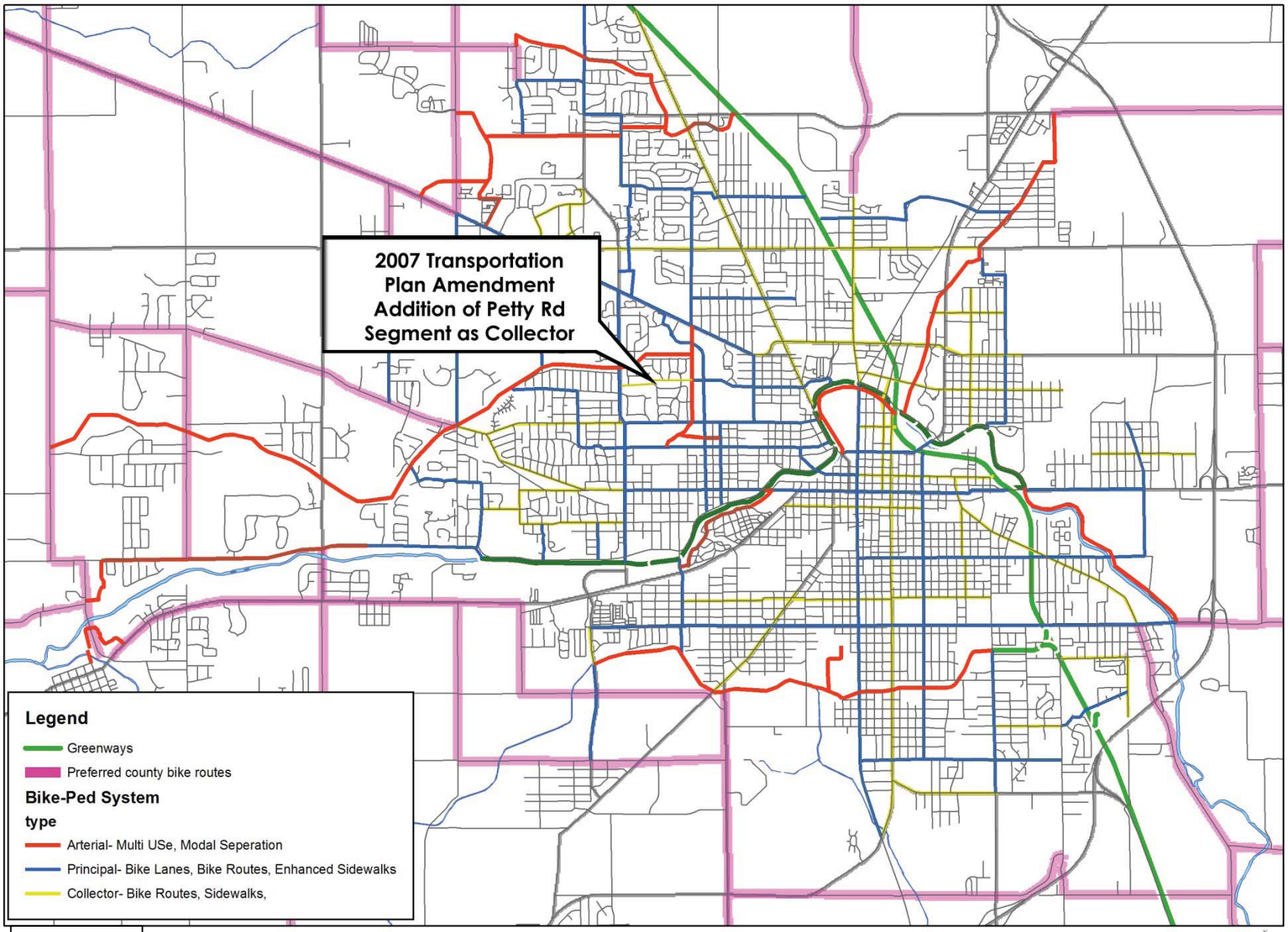


Figure 18 Urban Area Bicycle Pedestrian System

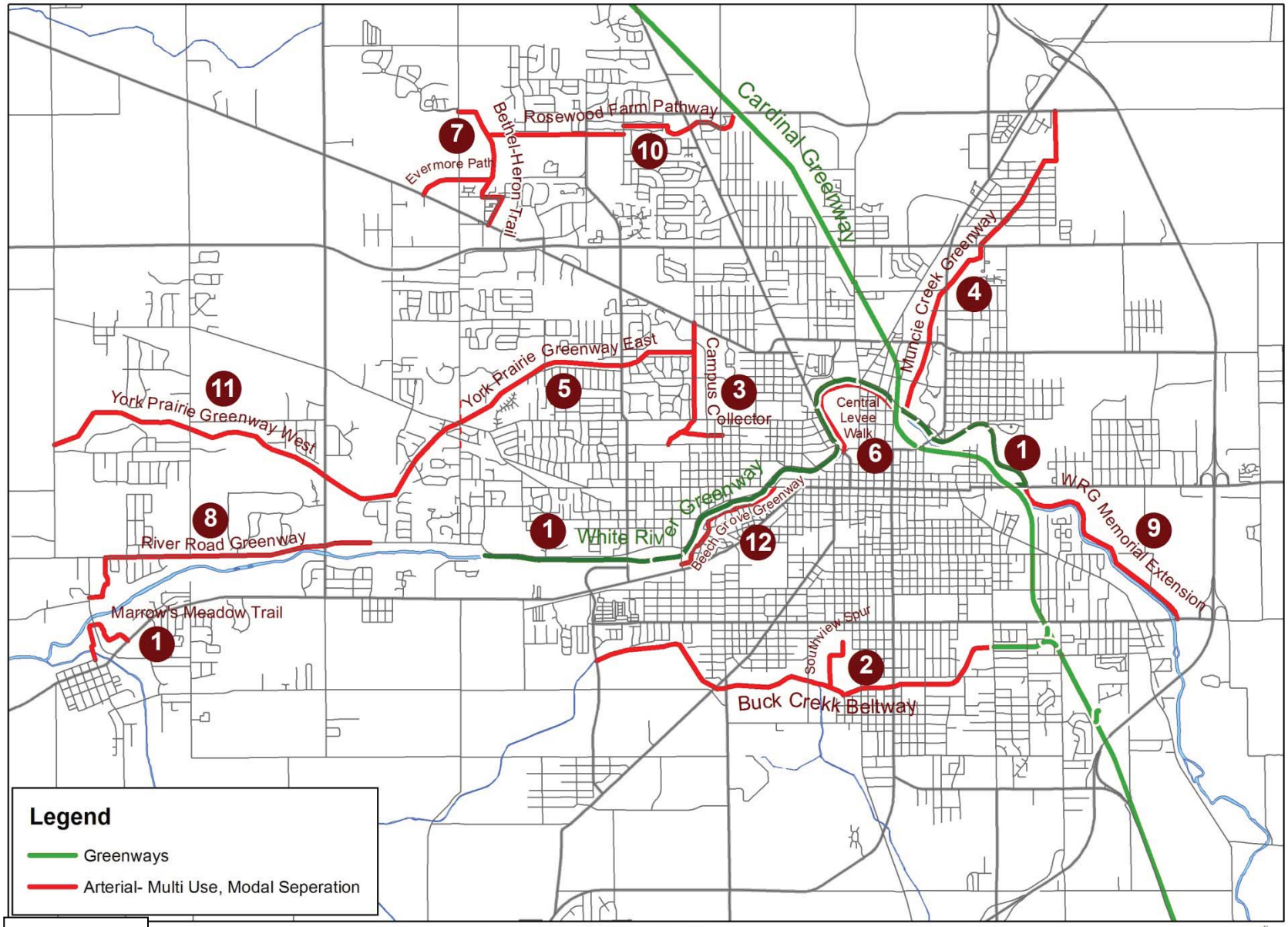


Figure 19

Arterial Multi-Use Pathways
and Project Priorities

Urban AreaBicycle & Pedestrian System		
Facility Type	**Mileage**	**Cost Estimate[6]**
Arterial Multi-Use Pathways		
White River Greenway (plus trailhead)	1.5	1,000,024
Morrow's Meadow Trail	0.58	174,000
Buck Creek Beltway	2.6	780,000
Campus Connector	1.38	414,000
Muncie Creek Greenway	2.7	810,000
York Prairie Greenway East	2.7	810,000
Central Levee Walk	1.02	306,000
Bethel Heron Trail	1.17	351,000
River Road Greenway	2.4	720,000
White River Greenway Memorial Extension	1.69	507,000
Rosewood Farm Pathway	2.02	606,000
York Prairie Greenway West	2.8	840,000
Beech Grove Greenway	0.9	270,000
Pathways Totals	**23.46**	**7,588,024**
Principal Routes		
Various Routes per Mapping – ½ 5' walks; ½ 6' walks	107.24	8,377,338
Collector Routes		
Various Routes per Mapping – 5' walks	75.08	5,331,881
Route/Sidewalk Totals	**182.32**	**13,709,219**
		21,297,243

Revenue Estimates: $500,000 per year in TE funds over 25 years equals $12,500,000; an anticipated $200,000 per year in CMAQ/STP funds over 25 years equals $5,000,000 for a total of $17,500,000. Potential additional sources of federal revenue are shown on the following page.

Other Projects: Other anticipated projects would include a bike-ped coordinator, educational outreach, trailheads/park & ride areas, and signage.

[6] Cost Estimates are based on $300,000 per mile for multi-use pathways and final costs could be significant different depending on design and engineering details. Cost estimates for the Principal and Collector routes are for sidewalk construction based on $13.45 per linear foot for 5 foot wide walks and $16.14 per linear foot for 6 foot wide walks.

Figure 1: Bicycle and Pedestrian Project Transportation Funding Availability

	National Highway System	Surface Transportation Program	Hazard Elimination Program	Railway-Highway Crossing Program	Transportation Enhancement	Congestion Mitigation/ Air Quality	Scenic Byways	Bridge	State & Community Traffic Safety Program	State/ Metropolitan Planning Funds	Transportation & Community and System Preservation	Access to Jobs/Reverse Commute	Recreational Trails Program	Federal Transit Capital, Urban & Rural Funds	Transit Enhancement
Bicycle and Pedestrian Plan		•				•				•	•				
Bicycle Lanes on Roadway	•	•	•	•	•	•	•	•						•	•
Paved Shoulders	•	•	•	•	•	•	•	•							
Signed Bike Route	•	•			•	•	•								
Shared Use Path or Trail	•	•			•	•	•	•					•		
Single Track Hike/Bike Trail													•		
Spot Improvement Program		•	•		•	•									
Maps		•				•			•						
Bike Racks on Buses		•			•	•								•	•
Bicycle Parking Facilities		•			•	•	•							•	•
Trail/Highway Intersection	•	•	•		•	•	•						•		
Bicycle Storage/Service Center		•			•	•					•	•		•	•
Sidewalks, New or Retrofit	•	•	•	•	•	•	•	•						•	•
Crosswalks, New or Retrofit	•	•	•	•	•	•	•							•	•
Signal Improvements	•	•	•	•	•	•									
Curb Cuts & Ramps	•	•	•	•	•	•									
Traffic Calming		•	•	•	•	•					•				
Coordinator Position		•				•					•				
Safety/Education Position		•				•			•						
Police Patrol		•				•			•						
Helmet Promotion									•						
Safety Brochure/Book						•			•						
Training						•			•						

Source: U.S. Department of Transportation, Federal Highway Administration, *FHWA Guidance: Bicycle and Pedestrian Provisions of Federal Transportation Legislation.* (June 2001)

BRIDGING OPPORTUNITIES

Figure VI-10 indicates those areas where the pathways and routes cross waterways. These sites are potential locations for historic metal bridge relocation projects with Delaware County bridges having the highest priority for reuse.

ACTION ITEMS

Create a prioritized Program of Projects per available funds.

Institute partnerships with Cardinal Greenway, Inc., the City of Muncie Board of Works and the Delaware County Commissioners (and others as applicable) for bicycle-pedestrian coordination/coordinator and for implementation of the Bicycle-Pedestrian Plan section of the 2009-2030 Transportation Plan.

Completion and endorsement of a Pedestrian Plan including an expansion on the detail for sidewalk construction working in conjunction with Community Development and other potential funders. The graphic below is from the 2005-2030 Plan is work has already begun to update these priority areas with more detail, based on criteria that includes population by density and by age, public transit, income levels, and funding sources.

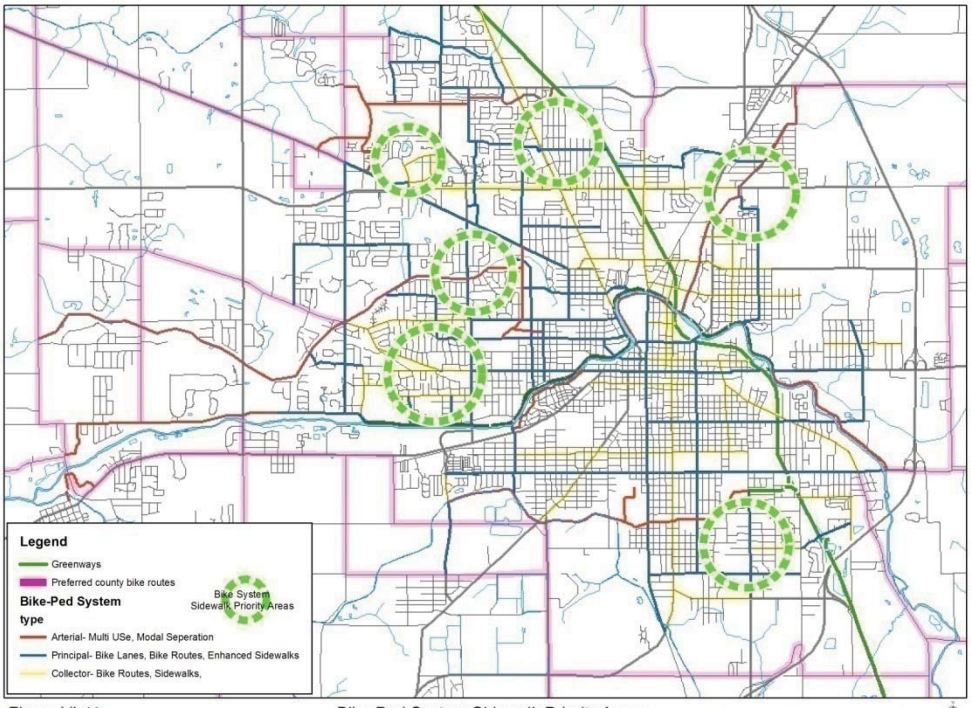


Figure VI-11 Bike-Ped System Sidewalk Priority Areas

Sidewalk priorities are not listing by roadway segment. General areas have been prioritized based on the data layer input and public input. Figure 17 shows those routes that should be included in roadway projects under their established phasing. The order of priority could be impacted by availability of local match through neighborhood partnerships and/or private sponsorships-donations.

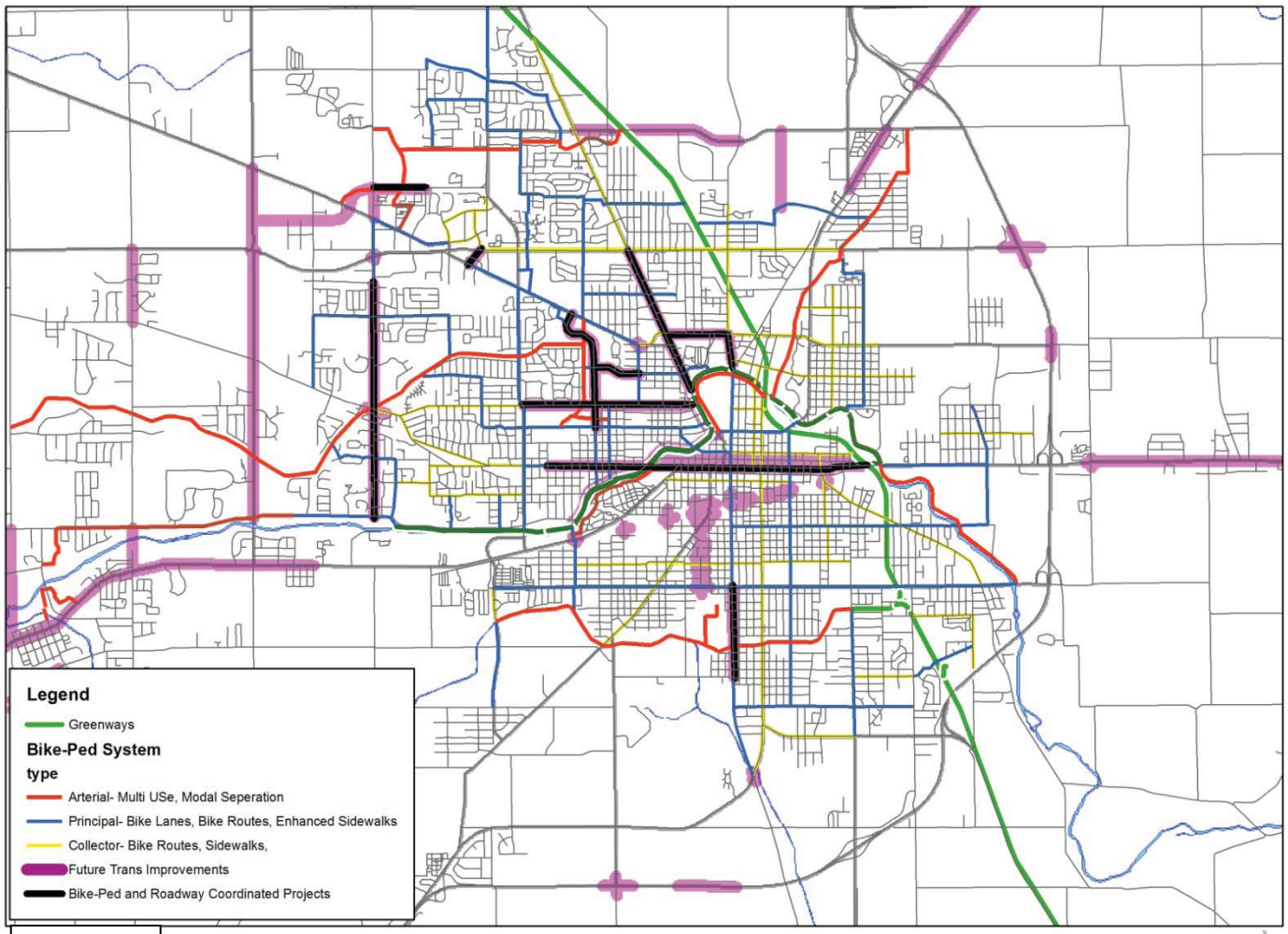
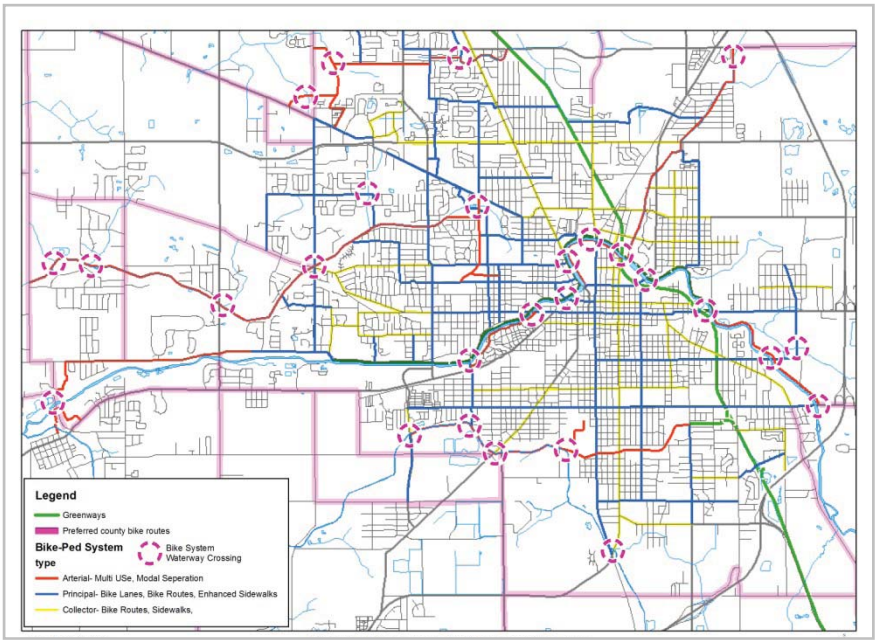


Figure 20

This graphic to the right shows those areas along the Multi-Use Path network where bridge crossings could occur to create connections between on-road and off-road facilities. This is also where historic metal bridges could be utilized as previously mentioned.

Work has begun on sidewalks and a pedestrian plan. The following tables provide some preliminary recommendations and information regarding potential local funding in addition to federal funding through the CMAQ, TE and other programs.



Recommendation: *Work to repair, maintain & develop sidewalks throughout the County*				
Action Plans for Implementation	**Estimated Timing** **Short Term**	**Long Term**	**Funding Needs**	**Lead Agency(s)**
GIS Graduate Assistantship – Data Collection: • Work with existing inventories (Muncie) and develop sidewalk inventories where needed (within towns and county areas) • Categorize sidewalks by condition & lengths • Create data layer of areas not served • Identify platted right-of-way for areas not served and areas where right-of-way will be needed • Cross-reference with census data by age, income, public transportation routes, etc.	2009-2010 Academic Year	May not be needed for the Data Collection phase	$4,250 for summer (Est.) $8,500 for Academic Year (current cost if not raised by BSU)	Delaware-Muncie Metropolitan Plan Commission, Delaware County GIS, and/or City of Muncie Community Development Department
GIS Graduate Assistantship – Sidewalk Capital Improvement Program (CIP) Development: • Work with GIS data layers and US Census data to create listing of needs • Work with various jurisdictions to prioritize areas of need based on each area's criteria • Research financial capacity by jurisdiction • Create a 5 and 10 year CIP based on need, finances and potential funding sources	2009-2010 Academic Year	Future internships will likely be needed to create CIP's for each jurisdiction & assist in carrying out the CIP's	$8,500 for academic year (costs could be increased per BSU schedules)	City of Muncie Engineering and Community Development Departments, Town Councils (Intern could be also be supervised through the DMMPC or DC GIS)
Sidewalk Installations: Based on Muncie sidewalk inventories, MITS routes, census data for age and income, and geographic dispersion by quadrant, initial areas were identified covering 74-117 blocks; other projects were acknowledged – HOPE VI, etc.	2009 - 2030	This is a very long-term project easily covering a 20 yr period	$25/sq. ft. plus allowance for ADA approximately $15,000 per ave. block (both sides) Add 30% for federal aid with inflation rates applied to final program	City of Muncie Engineering Department and/or Community Development Department

Additional Information: The sidewalk installation action is a long-term expensive action step. The development of the CIP's will aid in moving toward pedestrian friendly communities county-wide. A list of potential funding sources was developed – see below. The small towns and unincorporated "villages" will involve less expense than the City of Muncie due to volume. For Muncie, a map was developed showing the potential blocks to be initially serviced as well as areas identified for alternative funding sources (attached). The Barrett Law option was suggested in areas of higher income (per census data) and the White River Greenway is a project that is slated for construction this year that will provide a 6 mile pedestrian connection running east/west through the City. An area of Whitely is slated for a HOPE VI project that will include sidewalks, there is a sidewalk project in the works for the Morrison Road TIF area north of McGalliard and the Morrison Road reconstruction/widening (between Jackson & McGalliard) project will include walkways on one side.

Potential Funding Sources:

1. Barrett Law: A mechanism set out in State Law for funding public improvements like sidewalks that is based on a prorated assessment of the property owners benefited by the improvement and that can be paid in 10, 20 or 30 annual installments.
2. Community Development Block Grant (CDBG) funds: Funds that can be used for sidewalk improvements in "targeted areas" – areas based on Census Tracts and low income levels.
3. Federal Funds: Federal funds could be provided from 3 sources - Surface Transportation Program (STP) funds, Congestion Mitigation & Air Quality (CMAQ) funds or Transportation Enhancement (TE) funds. Federal funds would pay 80% of the cost and local funds must be found to pay the remaining 20%.
4. Local Match Funds: Potential sources for the 20% local match could be CDBG funds in target areas, EDIT funds from the City, Barrett Law assessments or private sources likes foundations.
5. Homeowner Sharing Agreements: A public/private agreement between the City and the property owner where the % of contribution would be a part of the agreement.
6. Private Funds: This would be funds from foundations, neighborhood associations, homeowner associations, etc.
7. TIF Districts: Tax Increment Financing funds can be used for public improvements such as sidewalks as determined by the Muncie Redevelopment Commission or the Delaware County Redevelopment Commission.
8. CReEd Districts: This is a mechanism allowed by State Law whereby a portion of the sales tax comes directly to a local Community Revitalization Enhancement District for improvements that could include sidewalks. Note: The State is currently not approving additional CReEd areas.
9. Fees: Paid by developers/property owners under various scenarios such as Impact Fees or Permit Fee additions deposited into a dedicated fund. This option would need to be investigated to ensure legality, how long money could be held before actual construction, etc.

SECTION VII

LONG RANGE TRANSPORTATION SYSTEM PLAN

The major elements of this transportation plan include the surface transportation components of roads, bridges, railroads, airport, trucking, bicycle, pedestrian, and public transit. The railroad, airport and trucking components depend heavily on the private entities involved, but must be tied into the rest of the transportation system using the other components of surface transportation. The roads leading to railroad switching facilities, airport terminals, and truck terminals are common connections that must be maintained for an intermodal vehicular transportation system. However, transit and bicycle/pedestrian networks also need further development to expand the intermodal options of the transportation system that also benefit air quality.

The circular interconnections between various transportation networks is considered an inherent foundation for developing this transportation plan. An airport served by an efficient road network, a good trucking network, consistent transit service, and good bicycle/pedestrian access can enhance the attractiveness of air travel by allowing a variety of mobility options to and from available flights. A good railroad switching operation freight facility connects rail and trucking freight movement options in a manner that enhances both industries. Good transit service and bicycle/pedestrian networks enhance the vehicle traffic flow on roads and supplement the road network's capacity for moving people.

Safety is an additional factor toward developing intermodal options. The provision of sidewalks allows pedestrian traffic to move safely off the roadway and away from conflicts with vehicle traffic. A good bicycle network reduces the potential for conflict with motor vehicles and enhances the attractiveness of this form of non-motorized travel. Comprehensive transit service reduces vehicle congestion and expands pedestrian trip options. Lower congestion provides safer roadways through fewer conflicts between vehicles. Better non-driving travel options permit those who shouldn't drive to be mobile without driving.

Good mobility requires an efficient roadway network with good pavement, bridges and traffic controls that allow traffic to flow smoothly and safely. A good roadway network is the basis from which intermodal options can be developed. The maintenance of both motorized and non-motorized travel facilities is necessary to enhance both options within the transportation system because they affect the efficiency of each other.

The Delaware-Muncie Transportation Plan includes strategies for developing a surface transportation system from a multi-modal, intermodal standpoint. Through updated processes and methods for the evaluation of the overall transportation system and related projects, multi-modalism and intermodal connectors will be emphasized. Efforts on the part of the Plan Commission staff will include solicitation of more active participation from modal representatives. Through the various committee structures, existing and proposed, the Plan Commission staff will coordinate intermodal concerns and requirements. An example would be the development of a design checklist covering the safe and efficient movement of public transit within private developments that would be distributed along with zoning requirements to developers. As this type of multi-modal focus becomes more predominant, the various committees will develop their own ideas and the Plan Commission staff will be in a position to coordinate among and between these groups.

Fiscal constraint is another focus stemming from ISTEA, TEA-21, and SAFETEA-LU. The purpose of this transportation plan is to provide a comprehensive long-range plan of transportation improvements for which adequate funding has been identified and conformity can be demonstrated. This is not a hopeful wish-list, but a practical list of projects/improvements that will provide for a better transportation system over time. It has been determined that making more efficient use of the existing facilities and right-of-ways is preferable to creating new facilities that parallel and replace the old. Some new connections and new facilities are needed to supplement and enhance, not to replace, the existing facilities. The financial resources for the projects/improvements were projected over 25 years and then the long range program was adapted to fit within those constraints.

FINANCIAL PLAN

The timing of available local, state and federal funding has to be coordinated with transportation improvement needs to have a viable financial plan. The use of federal transportation improvement funds depends on local funds being provided for a portion of project costs. The traditional local funding available for the match on federally subsidized projects and other necessary local transportation improvements come from: the Local Road and Street Accounts (LRS) for the various jurisdictions, the Delaware County Cumulative Bridge Fund (CUMBR), and Economic Development Income Tax (EDIT) for Muncie and Delaware County. The State also provides special funds to go toward local transportation improvements with no local match required. Motor Vehicle Highway (MVH) funds and a portion of the LRS funds go toward administrative costs for the local highway departments and a majority of local EDIT funds are used for a variety of non-transportation improvements for enhancing the local economies. These revenues have been steadily decreasing. The Base Year Revenues table shows the portion of local funds that normally would be available per year for transportation improvements. (Financial information provided by City and Delaware County Auditor.)

		2006	2007	2008
LRS	City	611,874	603,383	571,976
	County	646,673	637,239	602,242
MVH	City	2,054,324	2,006,556	1,863,009
	County	3,115,184	3,064,440	2,826,865
EDIT	City	450,000	300,000	275,000
	County	2,156,611	2,105,558	2,077,129
CUMBR	County	2,283,713	2,291,283	1,579,592

It should be noted that the local funds projected for transportation improvements are for all road improvement work including road maintenance and is not exclusively for matching federal funds on local federally subsidized projects. The use of these funds must be a balanced between maintaining and upgrading the road network. Also, a portion of the local transportation improvements use local funds exclusively for a variety of reasons. The improvements on roads that are not major roads on the federal Functional Class System are not eligible for federal transportation funds. Some improvements eligible for federal funds can be done at a much lower cost exclusively with local funds because federal standards and procedures tend to result in higher project costs. Also, with traditional funding sources shrinking and improvement costs rising, non-traditional funding sources have been sought including:

private funding primarily through non-for-profits, bonding, partnerships with other governmental agencies such as Ball State University and the Muncie Sanitary District, and Tax Increment Financing Districts. Another potential funding source for local road improvements is a wheel tax, which has been a topic of discussion in Delaware County and is currently before the Delaware County Council again for adoption before July 1, 2009. Institution of a wheel tax would help to release more of the traditional sources of funding – LRS – for local match of the federally funded projects. Figures have not been included since the tax has not yet been instituted.

Table 5: BASE YEAR REVENUES

FUNDS	CITY OF MUNCIE	DELAWARE COUNTY
LRS	$ 570,000	$ 600,000
EDIT	200,000	500,000
CUMBR		500,000
TOTAL	$ 770,000	$ 1,600,000

Some projects fit well in the federal aid process. All bridge improvements follow the same process at the Indiana Department of Transportation (INDOT) so they fit the process to use federal funds more easily. Some improvements cost too much to be funded in a timely manner without the help of federal funds.

The table below shows the local transportation improvement funds as projected for the next 21 years using estimated revenues available in the base year and holding that flatline until 2015, then applying a two-percent per 5 year growth factor (based on slow growth in the latter years). The funds listed are the annual average of what was available in 2008 not including what was needed for operations (MVH) and other projects. The work completed with these funds included paving to maintain major local roads. These local funds are expected to continue to be available at this level in current years, but funding sources and amounts may change significantly over the next 25 years.

Table 6: PROJECTED LOCAL TRANSPORTATION IMPROVEMENT FUNDS

FUND SOURCE	2009	2010-2014	2015-2019	2020-2024	2025-2029	21-YEAR TOTAL
City of Muncie Total	770,000	3,850,000	3,927,000	4,005,540	4,085,651	$16,638,191
LRS	570,000	2,850,000	2,907,000	2,965,140	3,024,443	12,316,583
EDIT	200,000	1,000,000	1,020,000	1,040,400	1,061,208	4,321,608
Delaware County Total	1,600,000	8,000,000	8,160,000	8,323,200	8,489,664	$34,572,864
LRS	600,000	3,000,000	3,060,000	3,121,200	3,183,624	12,964,824
EDIT	500,000	2,500,000	2,550,000	2,601,000	2,653,020	10,804,020
CUMBR	500,000	2,500,000	2,550,000	2,601,000	2,653,020	10,804,020

The table below displays the projected federal Urban STP funds available for major local road projects and Federal Transit Administration (FTA) Section 5307 funds available to the Muncie

Indiana Transit System (MITS) from 2005 through 2029.

Table 7: PROJECTED FEDERAL TRANSPORTATION IMPROVEMENT FUNDS

FUND SOURCE	2009	2010-2014	2015-2019	2020-2024	2025-2029	21-YEAR TOTAL
STP-Urban	9,185,000	10,000,000	11,040,808	12,189,944	13,458,683	55,874,435
FTA Sect. 5307	1,176,000	6,470,000	7,115,000	7,825,000	8,610,000	31,196,000
Federal Total	10,361,000	16,470,000	18,155,808	20,014,944	22,068,683	87,070,435

Abbreviations: STP-Urban - Surface Transportation Program funds allocated to the urbanized area.
SAFTETEA-LU balances are reflected in the 2009 STP column; $2 M per yr base for 2010-2014 with 2% added per 5 yr phase beginning in 2015. FTA funds were given a 2% per yr increase. ARRA & Earmarks not included.

Bridge Projects

The exact locations and timing of bridge projects is driven by the Bridge Reinspection Report, which is updated every two years using federal funds. The Bridge Reinspection Report specifies improvements needed for urban and rural bridges. Rural bridges are those located outside of the Urbanized Area and Urban bridges are inside. A distinction is made per the funding policies of the Indiana Department of Transportation (INDOT). Bridge projects compete on a statewide basis and the needed improvements far outweigh available Bridge funds. Additionally, Surface Transportation Program (STP) funds can be used for bridge projects while Bridge funds are solely for bridge structures and there is a federal mandate in the Transportation Bill that a certain percentage must be used on rural bridges. As a result, INDOT's policy requires that if there are unused STP funds in an Urbanized Area, an urban bridge project must be funded through STP. The current practice for a county is to have 2 to 3 bridge projects in a construction program as it takes from 2-4 years to reach actual construction. There are currently four bridges in the "works": Bridge 513, Bridge 141, Bridge 85 and Bridge 161. Federal Bridge funds will continue to be sought for some rural bridges using the Bridge Reinspection Report as support in order to maintain an on-going improvement process. The remainder of the bridge improvements are anticipated to be covered by local bridge funding. There will be consideration for upgrading some bridges to allow more rural roads to handle heavy vehicles carrying grain or livestock to market.

Rail Crossing Projects

Rail crossings are also evaluated on a statewide basis by the Indiana Department of Transportation (INDOT). INDOT determines the rail crossings that are eligible for federal transportation improvement funds. Rail crossing projects will be included in the Delaware-Muncie Transportation Improvement Program (DMTIP) when the locations become eligible for federal funds provided that the local jurisdiction has determined the improvement needed and are committed to it. Current railroad projects involve the establishment of a Quiet Zone extending through the Muncie downtown area. Study efforts involving the feasibility of relocating certain rail lines will continue.

It has been noted that rail crossing approach sight-distances are sometimes compromised by brush along fences outside of road and railroad right-of-ways. A local effort to maintain rail crossing sight-distance clearance will be set up for both public and private land areas near each crossing.

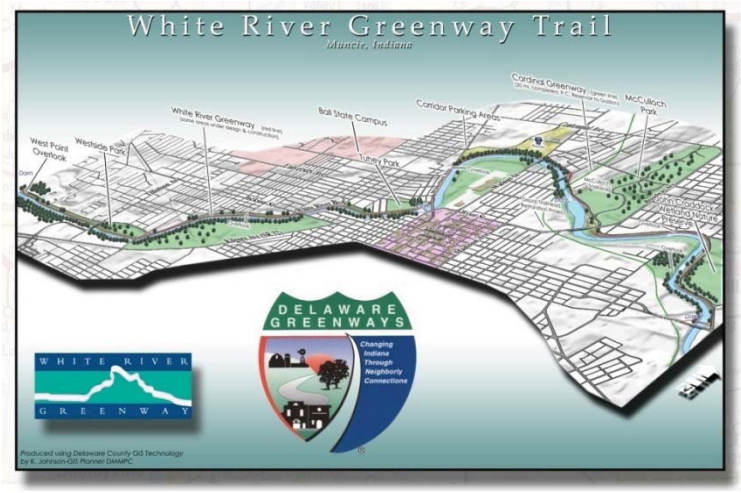
Safety Projects

A program of safety projects will be the focus over the next 3 years. One of the first projects will center around the McGalliard Road rail crossing which is the most hazardous crossing in the state. Other improvements will be driven by the annual examination of accidents and turning movement count data. It is anticipated that certain intersection improvements will result. Signage will also be an area of emphasis.

Transportation Enhancement Projects

Projects using Transportation Enhancement (TE) federal funds from the Surface Transportation Program (STP) are approved by the Governor of Indiana after going through a selection process. Currently, TE funds are allocated to the Muncie urbanized area based on population. The Comprehensive Plan identified key areas of emphasis which directly relate to the enhancement program and it is anticipated that future projects will be sought aimed at enhancing the appearance of our communities, developing a countywide bicycle and pedestrian network and increasing our quality of life. Section VI containing the Bicycle and Pedestrian Plan for Muncie and Delaware County will provide the planning support for these types of projects. TE funds can only be used for the following types of projects:

- Provision of facilities for pedestrians and bicycles.
- Acquisition of scenic easements and scenic or historic sites.
- Scenic or historic highway programs (including provision of tourist and welcome center facilities).
- Landscaping and other scenic beautification.
- Historic preservation.
- Rehabilitation and operation of historic transportation buildings, structures, or facilities (including historic railroad facilities and canals).
- Preservation of abandoned railway corridors (including the conversion and use thereof for pedestrian or bike trails).
- Control and removal of outdoor advertising.
- Archaeological planning and research.
- Environmental mitigation to address water pollution due to highway runoff or reduce vehicle-caused wildlife mortality while maintaining habitat connectivity.



- Provision of safety and educational activities for pedestrians and bicyclists.
- Establishment of Transportation Museums.

The current focus is completion of the White River Greenway with a new emphasis on sidewalks – especially those creating a connection to the trail system.

Public Transit Needs

The Muncie Indiana Transit System (MITS) has been responsive in expanding and altering its fixed route system to reach new areas of growth within Muncie. The changes made to serve WalMart, the Airpark Industrial Center, and the Sportsplex are examples of this. Poor road configurations and a lack of sidewalks are major barriers to efficient transit service at new developments. The efforts to develop a pedestrian system that reaches throughout the urban area will help transit service by making bus stops more easily accessible to the public. It has been estimated that roughly half of the MITS Plus passengers could use the fixed route service in good weather if adequate sidewalks were available. The fixed route service provides greater independence to its passengers and is less costly than demand responsive service. Local changes in ordinances as a result of the Comprehensive Plan effort will help to encourage development near existing services and municipal facilities. The concentration of growth near or within Muncie should provide better opportunities to expand the MITS transit services. MITS, like most transit services in the United States, provides for 1 to 2 percent of urban trips. Increased transit service would decrease traffic congestion and enhance traffic safety.

Long-range transit projects will continue to maintain, and expand as needed, the operation of the urban public transit system; will expand the rural transit system as needed using the New Interurban; and will remain open to other public transit opportunities such as light rail. It is anticipated that Delaware County will join the Central Indiana Regional Transportation Authority (CIRTA) as planning continues toward connection with Indianapolis and the surrounding counties. Future projects will also be driven by the 2007 Public Transit-Human Services Coordination Plan.

Intelligent Transportation Systems (ITS)

Being a small urban area, ITS efforts focus on technological advances that serve to optimize efficient traffic movement, use of traffic enforcement personnel and data gathering rather than incident management to reduce congestion delays and similar issues facing larger areas.

Two areas under development provide a foundation for ITS applications and solutions: the signal modernization project and the countywide GIS (geographic information system). An on-going program for identifying and implementing such improvements will be instituted and should significantly benefit other areas mentioned previously such as the analysis of signs and signals. All efforts are being made to ensure that local ITS applications are coordinated to prevent redundancy.

Congestion Mitigation & Air Quality (CMAQ) Funds

A new category of funding is now available to the Delaware County area as a result of having once been designated non-attainment for National Ambient Air Quality Standards. This category of funds is actually separated out from the Surface Transportation Program Funds and must be used only for eligible projects – ones that will have a positive impact on air quality and not increase vehicle emissions. There is a consulting committee that oversees the requested projects to determine their eligibility. Once that is confirmed by the Federal Highway Administration, the projects can be programmed for the use of CMAQ funds. There was roughly $600,000 of CMAQ Funds available for use within Delaware County per year from 2004 to 2009, determined after SAFETEA-LU was adopted by Congress in August, 2005. The next multi-year federal transportation bill will determine the amount of CMAQ funds available after 2009. Types of projects funded through CMAQ include Ozone

education, bicycle and pedestrian facilities, and transit. It could also include new concepts such is an Idle-Air equipped truck stops since idling vehicles have higher emissions. It is anticipated that, since bicycle and pedestrian facilities are in demand and TE funds have be focused on trails, CMAQ projects will focus on pedestrian facilities with special attention to sidewalks providing access to the transit system. Funds to date have been used for alternative fuel vehicles and the trail system. A 2009 activity will create a longer range program of projects utilizing CMAQ funds.

LONG RANGE PROJECTS

The long range program of projects is shown on the following pages. Previously they have included only those projects within the Metropolitan Planning Area, but this listing has been expanded to include all federally funded projects and all regionally significant projects located in Delaware County, Indiana, to comply with Transportation Conformity requirements. As a result, the list includes State projects both inside and outside of the Metropolitan Planning Area, projects listed in the Madison County Council of Governments Transportation Plan located in the Daleville area which is a part of the Anderson Urbanized Area, and rural local projects outside the Metropolitan Planning Area. The listing does not include the bicycle and pedestrian projects which are shown in Section VI. The listing is separated by jurisdiction and by funding phase. There are three funding phases: 2009-2014; 2015-2024; and 2025-2029. The listing also includes a label for Project Class which refers to whether it is considered an expansion project or an exempt project. Expansion projects are those that expand capacity and are subject to a conformity analysis to determine that they will not have an adverse impact on air quality. The analysis of the expansion projects was completed and is included in Appendix A. Bicycle and pedestrian projects are classified as exempt.

The listing includes a column labeled Model Year. The DMMPC is required to conduct an air quality analysis – as more fully explained in Appendix A – for certain years and those selected must meet certain requirements such as they must be no more than 10 years apart. The model years selected are 2010, 2015, 2025 and 2030. The model year of a project means the year in which that particular project has been added to the system and modeled for air quality conformity. A project is added to the model year only if it will be completed and open to traffic by the "ozone season" which is April through October. For purposes of this Plan, if a project has been added to a particular model year, it means that it was open to traffic in January of that year.

As a result of public input, one expansion project – the Evermore Extension #15 scheduled for 2015-2024 – will be revisited. Preliminary review of the TransCAD model reflects low traffic volumes on this new road segment that may not justify its extension. If further review fails to find satisfactory volumes and positive impacts on surrounding roadway segments, it will be deleted either through a Plan amendment or when the next Plan is prepared. Public input also covered comments that long range right-of-way needs to be acquired particularly for those projects that will be phased over time, first expanding to 3 lanes and then to 5 lanes. Acquiring adequate right-of-way at the outset could save costs in the long run, but also could have a greater negative impact to residents for improvements that might be warranted a decade or two after the forecast need.

State projects reflect those in the State Long Range Plan which is scheduled for an update in 2010.

Table 8: *Transportation Plan Projects by Jurisdiction, Project Class and Funding Phase*

Jurisdiction **City of Muncie**

Project Class Exempt

Funding Phase	Project Name	Des #	Miles	Type of Expansion Project	Type of Exempt Project	Model Year	Project Cost	Federal Cost	Local Cost	Federal Funding	Local Funding
2009-2014	(#32) Madison St. Gateway	0401076	0.44		Enhancement/Reconstruction	2015	$1,250,000	$1,000,000	$250,000	TE	Other
2009-2014	(#33) McKinley/Riverside		1.60		Safety	2015	$6,500,000	$5,200,000	$1,300,000	Earmark	BSU
2009-2014	(#34) Muncie Signal System	0089080	0.00		Other	2015	$2,200,000	$1,760,000	$440,000	Earmark/STP	EDIT
2009-2014	(#35) Quiet Zone	0300821	2.95		RR Crossing	2015	$2,200,000	$1,760,000	$440,000	Urban STP	TIF/EDIT
2009-2014	(#36) Neely Reconstruction 1	0800342	0.38		Reconstruction/Safety	2015	$2,200,000	$1,234,000	$966,000	Earmark/TCSP	LRS
2009-2014	(#39) White River Trail	0301164	5.75		Bike/Pedestrian	2015	$5,228,250	$4,182,600	$1,045,650	TE/CMAQ/STP	Private
2009-2014	(#21) Neely Reconstruction 2	0501033	0.37		Reconstruction/Safety	2015	$ 800,000	$640,000	$160,000	Earmark/STP	LRS
2009-2014	(#23) Walnut Reconstruction 1	0710089	0.91		Reconstruction	2015	$2,500,000	$2,000,000	$500,000	Earmark/CMAQ/STP	TIF
2009-2014	(#24) Macedonia Ave. Sidewalk	0800089	0.25		Bike/Pedestrian	2015	$ 50,000	$ 50,000	0	CMAQ	
2009-2014	(#28) Kitselman Trailhead	0800295	0.00		Bike/Pedestrian	2015	$1,050,000	$840,600	$210,000	TE/CMAQ	Private
2009-2014	(#30) Tillotson Avenue Surfacing	0901174	1.30		Resurfacing/Sidewalk Upgrade	2015	$1,130,000	$1,130,000	0	ARRA	
2009-2014	(#31) McGalliard Road Surfacing	0901173	1.55		Resurfacing/Sidewalk Upgrade	2015	$ 920,000	$ 920,000	0	ARRA	
2015-2024	(#44) Centennial Reconstruction		0.77		Reconstruction/Turn Lanes	2025	$2,200,000	$1,760,000	$440,000	STP	LRS/EDIT
2015-2024	(#46) Walnut Reconstruction 2		0.75		Reconstruction/Turn Lanes	2025	$2,100,000	$1,680,000	$420,000	STP	LRS/TIF
2015-2024	(#45) Riverside Reconstruction		0.60		3-R	2025	$1,000,000	$800,000	$200,000	STP	LRS/EDIT
2015-2024	(#51) Bethel/New York Intersection		0.00		Intersection Improvement	2025	$3,000,000	$2,400,000	$600,000	STP/CMAQ	LRS/EDIT

Project Class Expansion

Funding Phase	Project Name	Des #	Miles	Type of Expansion Project	Type of Exempt Project	Model Year	Project Cost	Federal Cost	Local Cost	Federal Funding	Local Funding
2009-2014	(#3) Morrison Widening		1.05	Center Turn Lane		2015	$4,800,000	$3,840,000	$960,000	Earmark/STP	LRS/EDIT
2015-2024	(#4,8) Wheeling Widening	9786020	1.00	Added Travel Lanes		2025	$3,300,000	$2,640,000	$660,000	Urban STP	LRS/EDIT
2009-2014	(#5) Everbrook Extension		0.22	New Road		2015	$800,000	$640,000	$160,000	Earmark	TIF
2009-2014	(#6) Evermore Extension		0.43	New Road		2015	$1,800,000		$1,800,000		TIF
2015-2024	(#7) Jackson Widening		0.80	Center Turn Lane		2025	$2,500,000	$2,000,000	$500,000	Urban STP	LRS/EDIT
2009-2014	(#49) Morrison Median		0.24	Median/Center Lane		2015	$1,000,000		$1,000,000		TIF
2015-2024	(#1) Barr Extension		0.61	New Road		2025	$2,000,000		$2,000,000		TIF
2015-2024	(#12) Riggin Widening		1.40	Center Turn Lane		2025	$4,000,000	$3,200,000	$800,000	Urban STP	TIF/EDIT
2015-2024	(#16) Morrison Widening		0.90	Center Turn Lane		2025	$3,500,000	$2,800,000	$700,000	Earmark/STP	LRS/EDIT

Jurisdiction Delaware County

Project Class Exempt

Funding Phase	Project Name	Des #	Miles	Type of Expansion Project	Type of Exempt Project	Model Year	Project Cost	Federal Cost	Local Cost	Federal Funding	Local Funding
2009-2014	(#41) Jackson/Morrison Intersection		0.00		Intersection Improvement	2015	$3,300,000	$2,640,000	$660,000	STP	CUMBR
2009-2014	(#42) Br#513 Jackson St over White River		0.00		Bridge Replacement	2015	$2,800,000	$2,240,000	$560,000	STP	CUMBR
2009-2014	(#48) Br#141 Tiger Dr over White River		0.00		Bridge Rehabilitation	2015	$2,050,000	$1,640,000	$410,000	STP	CUMBR
2009-2014	(#52) Br#161 CR 170 S over White River		0.00		Bridge Replacement	2015	$2,000,000	$1,600,000	$400,000	BRZ	CUMBR
2009-2014	(#53) Br# 85 Strong-800E over Mississinewa River		0.00		Bridge Replacement	2015	$1,400,000	$1,120,000	$280,000	BRZ	CUMBR
2009-2014	(#55) Fuson Road Surfacing		1.80		Resurfacing	2015	$ 650,000	$ 650,000		ARRA	

Project Class Expansion

2009-2014	(#10.5) Nebo Widening		0.68	Center Turn Lane		2015	$3,000,000	$2,400,000	$600,000	Earmark	TIF/EDIT
2025-2029	(#17.5) Nebo		2.92	Added Travel Lanes		2030	$3,525,000	$2,820,000	$705,000	STP	TIF/EDIT

Jurisdiction Yorktown

Project Class Exempt

Funding Phase	Project Name	Des #	Miles	Type of Expansion Project	Type of Exempt Project	Model Year	Project Cost	Federal Cost	Local Cost	Federal Funding	Local Funding
2009-2014	(#13) CR 600W Surfacing		1.50		Surfacing	2015	$ 175,000	$ 175,000	$ 0	ARRA	

Project Class Expansion

2015-2024	(#11) Andrews/500W Connection		0.35	New Road/Bridge		2025	$5,500,000	$4,400,000	$1,100,000	STP	YGF/CBR
2009-2014	(#2) Sutherland Extension		0.52	New Road		2015	$750,000		$750,000		Private
2009-2014	(#9) Nebo Widening		1.11	Center Turn Lane		2015	$2,500,000	$2,000,000	$500,000	STP	YGF/TIF
2009-2014	(#10) Nebo Widening		1.12	Center Turn Lane		2015	$2,500,000		$2,500,000		TIF/YGF
2015-2024	(#13) CR 600W Extension		1.00	New Road		2025	$6,000,000	$3,500,000	$2,500,000	STP/Earmark	YGF/CMBR
2025-2029	(#14) CR 200S Extension		1.00	New Road		2030	$4,700,000	$3,760,000	$940,000	STP	YGF
2025-2029	(#17) Nebo		2.23	Added Travel Lanes		2030	$11,750,000	$7,000,000	$4,750,000	STP	YGF/TIF

Jurisdiction Selma

Project Class Exempt

Funding Phase	Project Name	Des #	Miles	Type of Expansion Project	Type of Exempt Project	Model Year	Project Cost	Federal Cost	Local Cost	Federal Funding	Local Funding
2009-2014	(#56) Albany St. Surfacing		0.25		Surfacing	2015	$ 50,000	$ 50,000	$ 0	ARRA	

Jurisdiction Gaston

Project Class Exempt

Funding Phase	Project Name	Des #	Miles	Type of Expansion Project	Type of Exempt Project	Model Year	Project Cost	Federal Cost	Local Cost	Federal Funding	Local Funding
2009-2014	(#50) Sycamore St. Phase II	0400035	0.50		3-R	2015	$650,000	$520,000	$130,000	Rural STP	

Jurisdiction **State**

Project Class **Exempt**

Funding Phase	Project Name	Des #	Miles	Type of Expansion Project	Type of Exempt Project	Model Year	Project Cost	Federal Cost	Local Cost	Federal Funding	Local Funding
2009-2014	(#54) SR 3	0100556	0.00		Other	2015	$800,000	$640,000	$160,000	Rural STP	State
2009-2014	(#57) SR 32	9802540	1.52		3-R	2015	$12,000,000	$9,600,000	$2,400,000	Urban STP	State
2009-2014	(#65) SR 332 at Nebo	0201140	0.00		Safety	2015	$1,500,000	$1,200,000	$300,000	Urban STP	State
2009-2014	(#66) SR 332 Reconstruction	0600178	7.65		Reconstruction	2015	$5,000,000	$4,000,000	$1,000,000	STP	State
2009-2014	(#67) Walnut St. Bridge over SR 67	0800037	0.00		Bridge Repair & Maintenance	2015	$45,500	$ 9,400	$10,000	STP	State
2009-2014	(#68) Bethel Av. Bridge over I-69	0800039	0.00		Bridge Repair & Maintenance	2015	$60,400	$48,320	$12,080	STP	State
2009-2014	(#69) SR 3 Surfacing	0600233	13.00		Surfacing (ARRA)	2015	$2,180,000	$2,180,000	$ 0	ARRA	
2009-2014	(#70) SR 32 small structure	0101418	0.00		Replace Small Structure	2015	$280,000	$224,000	$56,000	STP	State
2009-2014	(#71) SR 67 Turn Lanes/Safety	0500183	5.10		Preservation	2015	$14,800,000	$11,840,000	$2,960,000	STP	State
2009-2014	(#72) SR 28-State at SR 28/67	0100424	0.00		Intersection Improvements	2015	$200,000	$160,000	$40,000	STP	State
2009-2014	(#73) SR 167 Resurfacing	0710493	4.28		Resurfacing	2015	$940,000	$752,000	$188,000	STP	State
2009-2014	(#74) SR 332 at I-69 Signals	0710873	0.00		New Signals	2015	$300,000	$240,000	$60,000	STP	State
2009-2014	(#75) SR 28-State Bridge over Halfway	0400856	0.00		Bridge Replacement	2015	$500,000	$400,000	$100,000	STP	State

Project Class Expansion

Funding Phase	Project Name	Des #	Miles	Type of Expansion Project	Type of Exempt Project	Model Year	Project Cost	Federal Cost	Local Cost	Federal Funding	Local Funding
2009-2014	(#18) I-69	9700420	0.00	Added Lane Ramp modification		2015	$600,000	$480,000	$120,000	Other	State
2009-2014	(#19) Bypass (US 35/SR 3 & 67)	9901350	0.00	Grade Separation NSRR		2015	$20,000,000	$16,000,000	$4,000,000	Urban STP	State
2009-2014	(#20) Centennial Grade Separation	9901360	0.00	Grade Separation		2015	$6,000,000	$4,800,000	$1,200,000	Urban STP	State
2009-2014	(#22) SR 32	9700310	1.71	Added Travel Lanes		2015	$11,500,000	$9,200,000	$2,300,000	Urban STP	State
2009-2014	(#25) SR 67	9901680	3.30	Center Turn Lane		2015	$9,000,000	$7,200,000	$1, 800,000	Rural STP	State
2009-2014	(#26) Bypass (US 35/SR 3 & 67)	0013780	0.00	Interchange – Cowan Road		2015	$25,000,000	$20,000,000	$5,000,000	Urban STP	State
2009-2014	(#27) Bypass (US 35/SR 3 & 67)	0013840	0.00	Interchange – McGalliard Road		2015	$25,000,000	$20,000,000	$5,000,000	Urban STP	State
2009-2014	(#29) SR 3	0400893	1.62	Center Turn Lane		2015	$4,000,000	$3,200,000	$800,000	Urban STP	State

Abbreviations: STP = Urban Surface Transportation Program
TE = Transportation Enhancement
CMAQ = Congestion Mitigation & Air Quality
ARRA = American Recovery & Reinvestment Act
TIF = Tax Increment Financing

Fiscal Responsibility and Unmet Needs:

Based on anticipated federal revenues, which have been estimated more conservatively than in the past, and cost estimates based on year of construction, three projects had to be removed from the program for now:

#43 Broadway Median from SR 3 to Riggin Road
#47 Walnut Median from Centennial to McCulloch
#15 Evermore Extension from Morrison to Nebo

Also, the amount of federal STP funding for some of the higher cost projects had to be reduced to maintain fiscal constraint. STP reductions were made where other funds could be used – CMAQ & TIF. In some cases, earmarks or additional local funds will be needed.

Based on an examination of projects in each phase, year of construction costs and the available funding in each phase, certain projects had to be moved back into later years:

Moved to 2015-2024

#44 Centennial Reconstruction from Wheeling to Granville
#46 Walnut Reconstruction from Memorial to 23rd
#4&8 Wheeling Widening from Riverside to Haines
#11 Andrews/500W Extension from SR 32 to River Rd

Moved to 2025-2029

#17 Nebo Widening from River Rd to SR 332
#17.5 Nebo Widening from SR 332 to Bethel
#14 CR 200S Extension from Andrews-500W to CR 600W

This Transportation Plan and the program of projects reflect fiscal responsibility based upon best estimates of anticipated funding. The projects costs reflect the best estimates based on year of construction costs using an annual inflation factor of 3.5%.

The following pages include a local listing of unmet needs using road inventory information compiled on all road segments in Muncie and Delaware County. The chart lists the road names that contain segments that have been inventoried as in poor or fair condition – those in need of 3-R attention (reconstruction, rehabilitation, restoration). All road segments have been categorized in one of 4 ways – poor, fair, good and new.

The lowest two categories were used and would be road segments that may be selected to be programmed for federal funding due to the scarcity of local improvement funds. The priority areas within the City of Muncie are:

Memorial – Tillotson to Madison	Bethel – Wheeling to Tillotson
Memorial – Madison to White River Bridge	Bethel – Tillotson to McGalliard
McGalliard – Broadway/MLK to By-Pass	Jackson – Westview to Nebo
McGalliard – Tillotson to Wheeling	Westview – Jackson to Jackson
Tillotson – Kilgore to Riverside	Wysor/MLK/Broadway – Madison to Old SR 3
Madison – Wysor to Memorial	26th – Walnut to Meeker
Madison – Memorial to 29th	Macedonia – 29th to Burlington
Walnut – Seymour to Memorial	Batavia – Memorial to Kilgore
Wheeling – Haines to McGalliard	CBD – Wysor to Victor/Liberty to Jefferson
Wheeling – McGalliard to Riggin	Burlington/Ohio – Memorial to Main

Muncie Roads- Fair & Poor Condition

10TH	BEECHWOOD	CHELSEA	ESTHER	HIGHLAND
11TH	BELLAIRE	CHEROKEE	ETHEL	HINES
13TH	BELMONT	CHERRY	EUCLID	HODSON
14TH	BENNETT	CHINQUAPIN	EVERBROOK	HOLLAND
15TH	BENNINGTON	CHIPPEWA	EVERETT	HOLLY
16TH	BERKLEY	CHRISTY	EWING	HOLLYWOOD
17TH	BERKSHIRE	CLAIR MAR	FAULKNER	HORIZON
18TH	BERWYN	CLARK	FERN	HOWELL
19TH	BETHEL	CLARKDALE	FOREST	HOYT
1ST	BIDWELL	CLOVER	FOX RIDGE	HUTCHINSON
20TH	BILTMORE	COLBERT	FRANKLIN	IMPERIAL
21ST	BIRCH	COLE	FRED	INDIANA
22ND	BIRCHWOOD	COLLEGE	FULLHART	IVY
23RD	BITTERSWEET	COLSON	GARNET	JACKSON
24TH	BLAINE	COLUMBUS	GARVER	JANNEY
25TH	BOWMAN	CONCORD	GATEWOOD	JAY BIRD
26TH	BRADBURN	CORNELL	GAVIN	JEFFERSON
27TH	BRADY	COUNCIL	GHARKEY	JERSEY
28TH	BRENTWOOD	COUNTRY CLUB	GIBSON	JOHNSON
29TH	BRIAR	COURT	GILBERT	JUNIPER
2ND	BRIARWOOD	COWING	GILMAN	JUST-A-MERE
32ND	BRITTAIN	COWING PARK	GISHLER	KATHY
3RD	BROADWAY	CROMER	GLEN	KEESLING
5TH	BROOK	DALINDA	GLENN ELLYN	KIMBERLY
6TH	BROOKFIELD	DALY	GLENWOOD	KING
7TH	BROTHERTON	DARTMOUTH	GODFREY	KINGSWOOD
8TH	BRYDEN	DAVIDSON	GODMAN	KINNEY
9TH	BUCKLES	DAYTON	GRACELAND	KIRBY
ABBOTT	BUNCH	DELAWANDA	GRAFTON	KIRK
ACE	BURLINGTON	DEPAUW	GRANDE	KOHLMETZ
ADAMS	BURNS	DEVON	GRANT	KOONTZ
ALAMEDA	BURR OAK	DICKS	GRANVILLE	KYLEWOOD
ALDEN	BURTON	DILL	GRAYS	LANCASTER
ALLISON	BUTLER	DUANE	GREENBRIAR	LANEWOOD
AMHERST	BUTTERFIELD	DUDLEY	GREENLAWN	LARRY
ANDOVER	CADE	DUNN	GREENTREE	LAUREL
ANDREW	CADET	EARL	GREENWOOD	LELAND
APACHE	CALVERT	EASTLAWN	HACKLEY	LIBERTY
ARLINGTON	CAMBRIDGE	EASTWOOD	HAINES	LIGHT
ASHLAND	CARDINAL	EATON	HAMPSHIRE	LILAC
AUDUBON	CARSON	EBRIGHT	HARTFORD	LINCOLN
AULT	CARVER	EDGEWOOD	HARVARD	LINCOLNSHIRE
AZALEA	CATALPA	ELGIN	HARVEY	LINDA LAYNE
BALL	CEDAR	ELIZABETH	HAWTHORNE	LINDEN
BARCELONA	CELIA	ELLIOTT	HAZEL	LINDWETH
BARR	CENTRAL	ELM	HELEN	LOCUST
BATAVIA	CESSNA	ELSIE	HEMLOCK	LOMAX
BEACON	CHADAM	EMERSON	HEREFORD	LOMBARD
BECK	CHARLES	ENTERPRISE	HESSLER	LORRAINE
BECKETT	CHARTER	ESSEX	HIGH	LOUIS

LOWELL	NORWOOD	ROOSEVELT	UTICA
LUICK	OAKDEN	ROSEMONT	VERNON
MACEDONIA	OAKLYN	ROSEWOOD	VICTOR
MADDOX	OAKWOOD	ROSS	VICTORIA
MADISON	OHIO	ROYAL OAK	VIENNA WOODS
MAIN	OLD BURLINGTON	ROYALE	VIERWOOD
MANCHESTER	OLD STATE RD 3	RUSSEY	VILLAGE
MANHATTAN	OLDFIELD	SALEM	VINE
MANN	OLIVER	SAMPSON	VIRGINIA
MANNING	OPEECHEE	SCHROEDER	WABASH
MANOR	PALIGRAF	SEMINOLE	WAGNER
MANRING	PARK	SHADY	WAID
MANSFIELD	PARKWAY	SHAFFER	WALDEMERE
MANVILLE	PASTURE	SHEFFIELD	WALDEN
MAPLE	PAULINE	SHELLBARK	WALL
MAPLEWOOD	PEACHTREE	SHERIDAN	WALLING
MARIGOLD	PEBBLE	SHERMAN	WALNUT
MARION	PENN	SHIPLEY	WARD
MARKET	PERKINS	SHORT	WARWICK
MARSH	PERSHING	SHRINER	WASHINGTON
MARTIN	PETTY	SILVER	WATT
MAY	PHILLIP	SKYWAY	WAYNE
MCCULLOCH	PIERCE	SOUTHWEST	WEBER
MCKENZIE	PIN OAK	SPRUCE	WELLINGTON
MCKINLEY	PINE	STATE	WESTWOOD
MEADOW	PIPER	STATE RD 3	WHEELING
MEADOWLARK	PORT	STIRLING	WILDWOOD
MEEKER	POWERS	STRADLING	WILLARD
MEMORIAL	PRIMROSE	STREETER	WILLOW
MERRYWOOD	PRINCETON	SURREY	WILLS
MIAMI	PROUD	SUSSEX	WILSON
MICHIGAN	PURDUE	SWARTZ	WILTSHIRE
MILL	QUEEN	SYCAMORE	WINDSOR
MILTON	QUEENSBURY	SYLVAN	WINSTON
MINNETRISTA	QUILLING	TACOMA	WINTHROP
MITCHELL	RAMBLER	TAFT	WISTERIA
MOCK	RECTOR	TALLEY	WOLFE
MONROE	REDDING	TARA	WOODBRIDGE
MORRISON	REDWOOD	TENNESSEE	WOODMONT
MOUND	REGAL	THOMAS	WOODRIDGE
MULBERRY	RESERVE	TILLOTSON	WOODWARD
MUNCIE CREEK	REVERE	TILMOR	WOODWAY
MYRTLE	REX	TIMBER	WYSOR
NEELY	RIBBLE	TORQUAY	YALE
NEW YORK	RICHMOND	TOWER	
NICHOLS	RIDGE	TREEVIEW	
NO NAME	RIGGIN	TULIP	
NOEL	RILEY	TURNER	
NORMANDY	RIVERSIDE	TWICKINGHAM	
NORTH	ROBIN	TYRONE	
NORTHFIELD	ROBINWOOD	UMBARGER	
NORTHWOOD	ROCHESTER	UNIVERSITY	

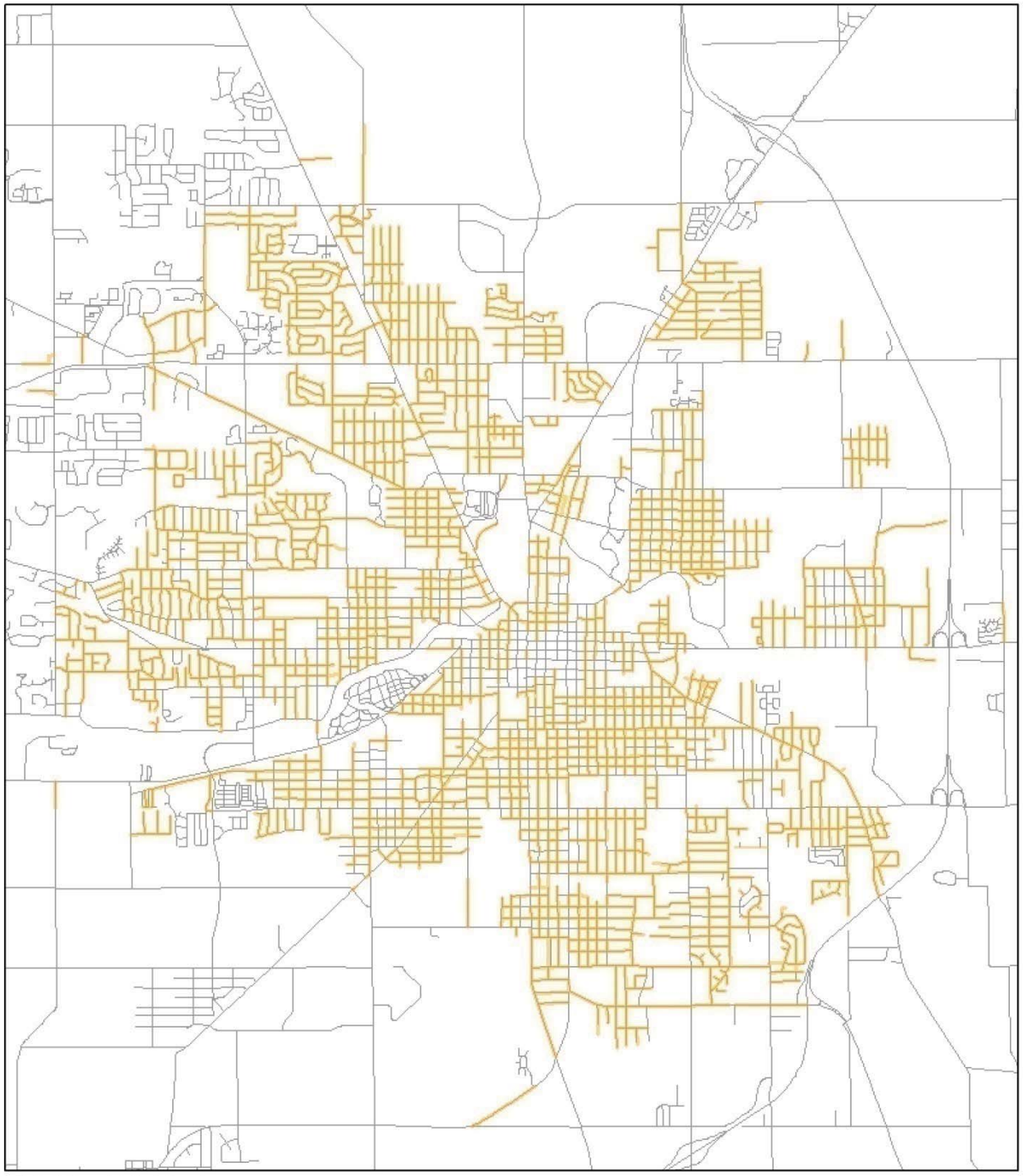
Muncie Roads – Fair & Poor Cont.

Delaware County Roads – Fair & Poor Condition

100 N	388 E	750 W	BLISS	GAY VIEW
1000 N	396 E	762 E	BONAIRE	GIBBENS
1000 W	400 E	766 S	BOUGAINVILLEA	GLOUCESTER
1025 N	400 N	775 E	BREEZEWOOD	GRAY
105 E	400 S	775 S	BROADWAY	GREENVIEW
1050 N	400 W	775 W	BUCKEYE	GREGORY
1070 N	400E	800	BURGESS	HACKBERRY
1100 N	416 E	800 E	BURLINGTON	HAMBY
1150 N	422 S	800 N	CALE	HARPER
1200 N	425 E	800 S	CAMMACK	HARRISON
125 S	450 E	800 W	CAMPBELL CREEK	HAWTHORN HILL
1268 N	450 N	825 W	CAROLYN	HAZELNUT
150 E	450 S	838 W	CECIL	HELLIS
150 N	450 W	850	CENTENNIAL	HERON POINTE
175 E	50 N	850 E	CHEYENNE	HI-LO PARK
200 E	50 S	850 N	COOK	HIBISCUS
200 N	500 E	850 W	COOPER	HICKORY
200 S	500 N	875 E	COTTONWOOD	HIGH BANKS
200 W	500 S	875 W	COUNTRY CLUB	HIGHPOINT
225 S	500 W	900 E	COUNTRY VIEW	HILL
225 W	525 E	900 N	CROOKED CREEK	HILLS AND DALES
25 S	534 E	900 W	CYPRESS	HINES
25 W	550 E	907 W	DANBURY	HOLLOWELL
250 N	550 N	920 N	DELAWARE	HONEY
250 S	550 S	925 W	DESOTO	HONEYCREEK
250 W	560 E	950 N	DEVONSHIRE	HORSESHOE
25N	563 E	950 W	DIVISION	HUGHES
26TH	575 S	96 E	DOGWOOD	INLOW SPRINGS
275 E	581 N	975 W	DOVIN GATE	ISABELLA
275 W	600	AIRWAY	EDGEWATER	JACKSON
27TH	600 E	ALLEN	EDGEWOOD	JOHN
287 W	600 S	ALLISON	EDWARDS	JUDITH
28TH	613 E	ANDREWS	ELDORADO	KASTER
294 W	619 E	ANGLER CLUB	ELK POINT	KELLER
29TH	625 E	ANNA	ELLIOTT	KENN
300 E	650 E	ARMITAGE	ELLIOTT ACRES	KERNWOOD
300 N	650 N	ASHCRAFT	ELMVIEW	KEY
300 S	650 S	ASHFORD	EUCALYPTUS	LAFAYETTE
30TH	650 W	ASPEN	EVERETT	LAKEWOOD
312 E	675 W	AUBREY	FAIRVIEW	LANGDON
31ST	700 E	BALSAM	FARMDALE	LEE PIT
320 E	700 N	BARNHOUSE	FIR TREE	LENEAR TREE
32ND	700 S	BAYBERRY	FIRTREE	LESLIE
330 E	700 W	BEECH	FISTHER	LITTLE JOHN
333 E	700E	BELL	FLEMING	LOCKERBY
350 E	700S	BELL CREEK	FLOYD	LONE BEECH
350 N	725 E	BENROD	FOX	LYN MAR
350 S	725 W	BENTON	FOX RUN	MAGNOLIA
364 W	75 S	BETHEL	FRANCES	MALISSA
370 W	750 E	BLACK CEMETERY	FT WAYNE	MANTEL
375 N	750 N	BLACKS MILL	FUSON	MAPLE MANOR

MAR-JAC	RIGDON	WINDSOR
MCCREERY	RIGGIN	WINMERE
MEADOWCREST	RINKER	WINTERHAWK CT
MEL	RIVER	WOODLAWN
MEMORIAL	ROBERT	WOODS
MERRYWOOD	ROYERTON	WOODSIDE
MICHELLE	RUSSELL	WOODSTOCK
MOCK	SACRAMENTO	YORKSHIRE
MOODY	SANTA BARBARA	YOSEMITE
MOORE	SCHINDEL	
MORRISON	SCISCOE	
MURIEL	SENECA	
MURPHY	SEQUOIA	
MYRA	SHAFFER	
NANCI	SHEFFIELD	
NEBO	SHIDLER	
NEFF	SHORTCUT	
NEW	SIERRA	
NORTHWOOD	SKYLARK	
NORWAY	STANLEY	
NOTTINGHAM	STATION	
OAKFLAT	STICK CITY	
OAKVILLE	STOCKPORT	
OLD BURLINGTON	STRINGTOWN	
OLD MILL	SUGAR MAPLE	
OLD STATE RD 3	SUN-MOR	
OLIVE	SUSAN	
ORCHARD	SWEET GUM	
ORCHID	TILLOTSON	
ORR	TORRENCE	
PALISADES	TRACKSIDE	
PANTHER	TRAILS END	
PARK	TRUITT	
PEARL	TULIP TREE	
PETE	TURTLEDOVE	
PETTY	TWILIGHT	
PICCADILLY	UNNAMED STREET	
PITT	VISTA VIEW	
PLEASANT	WALNUT	
POST	WARREN	
PRIESTFORD	WATERVIEW	
PRIVATE?	WEDGEWOOD CT	
PROCTOR	WESTBROOK	
PROW	WESTPORT	
PUGSLEY	WHEELING	
RAVINE	WHITE	
RED BUD	WHITE OAK	
REED	WHITNEY	
REYNARD	WILLOUGHBY	
RICK	WINDING	

Delaware County Roads – Fair & Poor



Fair & Poor Rated Roads
(222.16 miles out of 334.17 total)
66.48 %

Legend

GASB Muncie Fair & Poor

Muncie-Delaware County
Roadway Needs Assessment
Muncie Detail

N
W E
S

0 0.15 0.3 0.6 0.9 1.2 Miles

Figure 21

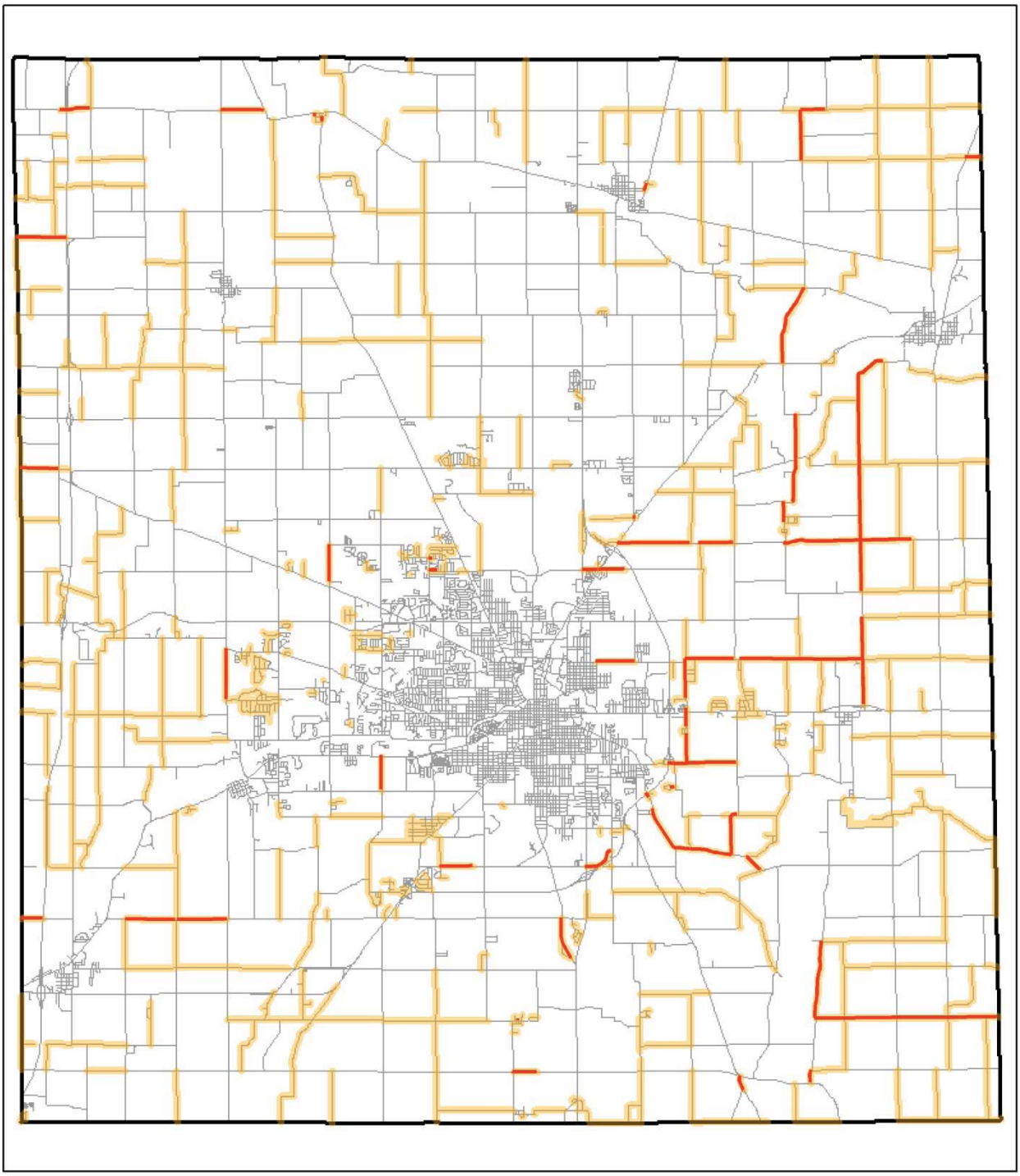

Fair & Poor Rated Roads
(341.25 miles out of 869.68 total)
39.23%
Legend
Fair & Poor Rated Roads
Fair & Poor Throroughfare Roads
Muncie-Delaware County
Roadway Needs Assessment
N
W
E
S
0 0.4 0.8 1.6 2.4 3.2
Miles

Figure 22

These project locations are shown on the following Figure 23.

Construction in 2009-2014 - 2015 Model Year Expansion Projects

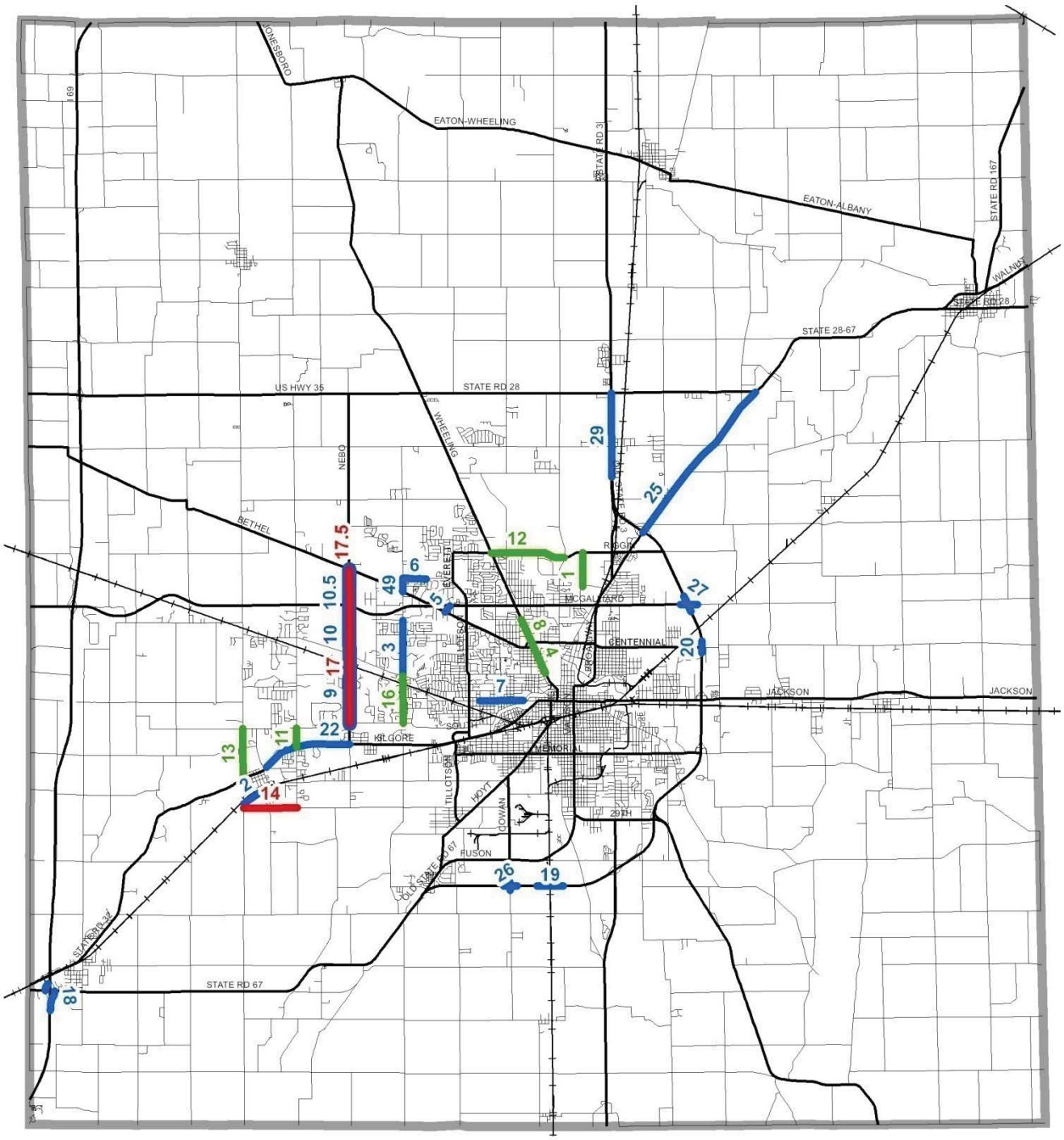
LPA	Des #	Project	Location	Type of Work
Muncie	0710092	(#3) Morrison Widening	from Jackson St. to Keller Rd.	Center Turn Lane
	0501031	(# 5) Everbrook Extension	from SR 332 to Bethel Avenue.	New Road
		(# 6) Evermore Extension	from Marleon Dr. to Morrison Rd.	New Road
		(#49) Morrison Widening	from Evermore to Bethel Avenue	Center Turn Lane
Yorktown / Muncie		(#10) Nebo Rd. Widening 2	from Norfolk S.R.R. to SR 332	Center Turn Lane
Yorktown		(# 2) Sutherland Extension	from Broadway St. to CR 600W	New Road
		(# 9) Nebo Road Widening	from River Road to Norfolk S.R.R.	Center Turn Lane
Delaware County		(#10.5) Nebo Rd. Widening 3	from SR 332 to Bethel Avenue	Center Turn Lane
State	9700420	(#18) I-69	ramps to and from SR 67	Added Lanes (2)
	9901350	(#19) SR 67 over NSRR	Bypass east of Cowan Road	Grade Separation
	9901360	(#20) Bypass (US 35/SR3,67)	Bypass at Centennial Ave.	Grade Separation
	9700310	(#22) SR 32 Widening	from Nebo Rd. to Andrews to Tiger Dr	Added Lanes (4,3)
	9901680	(#25) SR 67 Widening	from Bypass to SR 28	Center Turn Lane
	0013780	(#26) SR 67 at Cowan Road	new interchange for Bypass	Interchange
	0013840	(#27) US 35 at McGalliard	new interchange for Bypass	Interchange
	0400893	(#29) SR 3 Widening	Bypass to SR 28	Center Turn Lane

Construction in 2015-2024 - 2025 Model Year Expansion Projects

LPA	Des #	Project	Location	Type of Work
Muncie	9786020	(# 1) Barr Extension	from Princeton Av. to Riggin Rd.	New Road
		(# 4&8) Wheeling Widening	from Riverside Ave. to Haines St.	Center Turn Lane
		(# 7) Jackson Widening	from Celia Ave. to White River Blvd.	Center Turn Lane
		(#12) Riggin Widening	from Wheeling Ave. to Walnut St.	Center Turn Lane
		(#16) Morrison Widening	from River Rd. to Jackson St.	Center Turn Lane
Yorktn/Co	0710090	(#11) Andrews/500W Exten.	from SR 32 to River Road	New Road/Bridge
		(#13) CR 600W Extension	from SR 32 to River Rd.	New Road

Construction in 2025-2029 - 2030 Model Year Expansion Projects

LPA	Des #	Project	Location	Type of Work
Delaware County		(#17.5) Nebo Widening	from SR 332 to Bethel Avenue.	Added Lanes
Yorktown		(#14) CR 200S Extension	From Andrews-500W to CR 600W	New Road
		(#17) Nebo Widening	from River Rd. to SR 332.	Added Lanes



Proposed Transportation Plan Expansion Projects

Figure 23

These project locations are shown on the following Figure 24.

Construction in 2009-2014 - 2015 Model Year Air Quality Exempt Projects

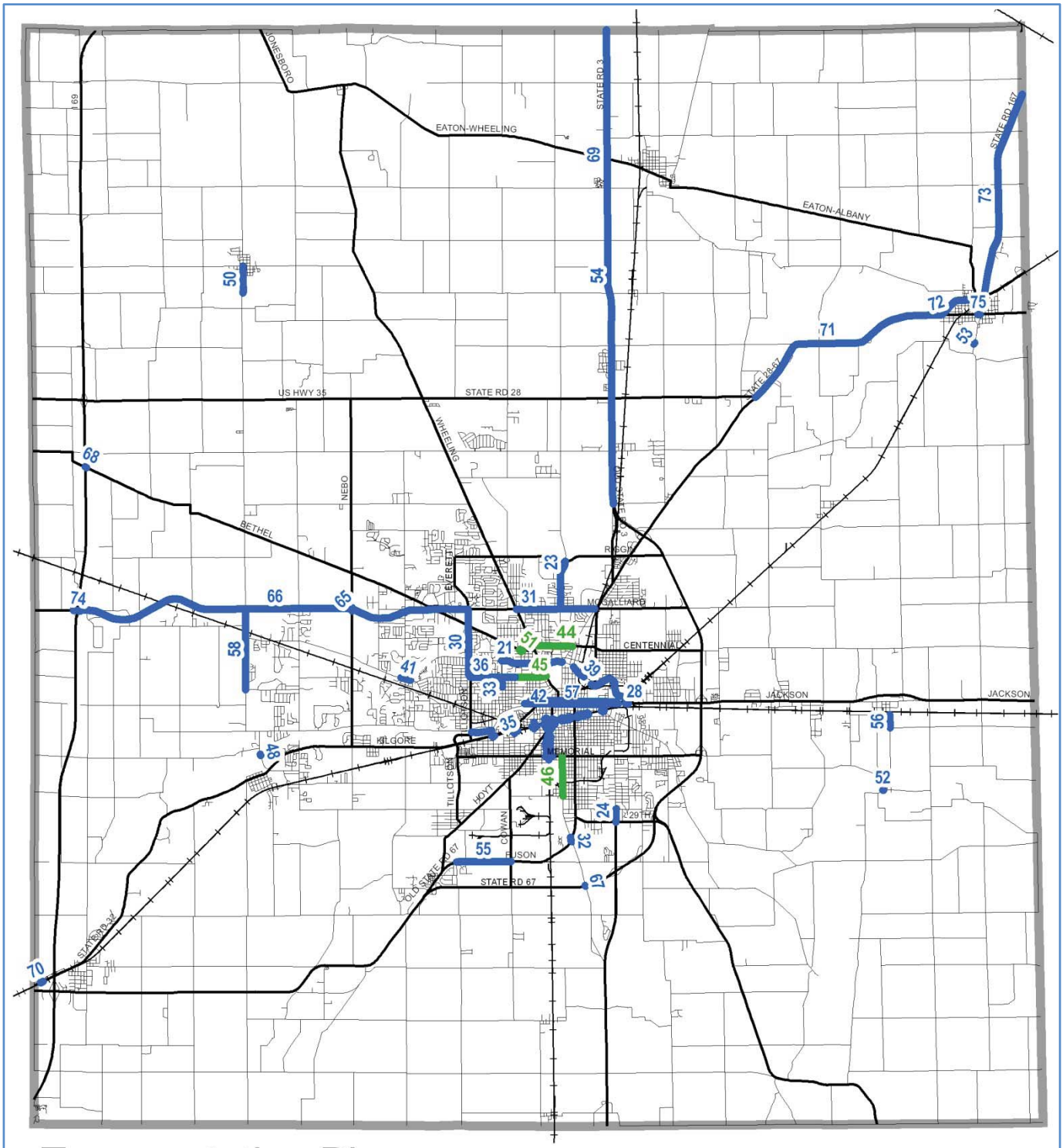
LPA	Des #	Project	Location	Type of Work
Muncie	0401076	(#32) Madison Street Gateway	from Walnut St. to 29th St.	Stscape/Reconst.
		(#33) McKinley/Riverside	east of Tillotson/south of Riverside	Safety/Reconst.
	0501032	(#34) Muncie Signal System	Madison from Wysor to 29th St.	Signal Upgrades
	0300821	(35) Quiet Zone RR Crossings	Downtown Muncie Area.	Safety
	0800342	(#36) Neely Avenue Upgrade	from McKinley Ave. to New York Ave.	Safety/Reconst.
	0301164	(#39) White River Trail	Phase 3 & 4 extension/upgrades	Bike/Ped Trail
	0501033	(#21) Neely Avenue Upgrade	from New York Ave. to Wheeling Ave.	Safety/Reconst.
	0710089	(#23) Walnut Reconstruction	from McGalliard Rd. to Riggin Rd.	3R Reconstruction
	0800089	(#24) Macedonia Sidewalk	from 26th to 29th St	New Sidewalk
	0800295	(#28) Kitselman Trailhead	N of SR 32 near White River	Bike/Ped Trail
		(#30) Tillotson Ave. (ARRA)	from Riverside Ave. to McGalliard Rd.	Resurfacing
		(#31) McGalliard Rd. (ARRA)	from Wheeling Ave. to Broadway Ave.	Resurfacing
Delaware County	0501034	(#41) Jackson/Morrison	Intersection	Roundabout
	0710091	(#42) Br#513 Jackson Bridge	over White River in Muncie	Replace Bridge
	0710098	(#48) Br#141 Tiger Bridge	over White River in Yorktown	Rehab Bridge
	9680560	(#52) Br#161 CR 170S Bridge	over White River in Smithfield	Replace Bridge
	0500078	(#53) Br#85 Strong Rd Bridge	over Mississinewa River near Albany	Replace Bridge
		(#55) Fuson Road (ARRA)	from SR 67 to Cowan Road	Resurfacing
Selma		(#56) Albany Street (ARRA)	from Miller to CR 50S	Resurfacing
Yorktown		(#58) CR 600W (ARRA)	from SR 332 to Lone Beech Bridge	Resurfacing
Gaston	0400035	(#50) Sycamore St. Phase II	from Elm south to town limits	Reconstruction
State	0100556	(#54) SR 3 small structure	2.31 miles north of SR 28	Replace Structure
	9802540	(#57) SR 32 Upgrade	Through downtown Muncie	Reconstruction
	0201140	(#65) SR 332 at Nebo Road	intersection	Safety/Upgrade
	0600178	(#66) SR 332 Reconstruction	from I-69 to Tillotson Avenue	Reconstruction
	0800037	(#67) Old SR3 Bridge	over SR 67, 0.65 miles west of SR 3	Br. Repair/Maint.
	0800039	(#68) Bethel Avenue Bridge	over I-69, 1 mile south of SR 28	Br. Repair/Maint.
	0600233	(#69) SR 3 Resurface (ARRA)	from 400N to 11 miles north of SR 28	Prev. Maintenance
	0101418	(#70) SR 32 small structure	0.6 miles east of I-69	Replace Structure
	0500183	(#71) SR 67 turn lanes/safety	from SR 28-600N to SR 167	Preservation
	0100424	(#72) SR 28-State at SR 28/67	intersection improvements in Albany	Major Pavement
	0710493	(#73) SR 167 Resurfacing	from SR 67 to 4.28 miles N of SR 67	Resurfacing
	0710873	(#74) SR 332 at I-69 signals	Intersections for I-69 NB & SB ramps	New Signals
	0400856	(#75) SR 28-State St Bridge	over Halfway Creek in Albany	Replace Bridge

Construction in 2015-2024 - 2025 Model Year Air Quality Exempt Projects

LPA	Des #	Project	Location	Type of Work
Muncie		(#45) Riverside Avenue	from Dicks St. to Wheeling Ave.	Reconstruction
		(#51) Bethel at New York	Intersection	Safety Upgrade
		(#44) Centennial Reconst.	from Wheeling Ave. to Granville Ave.	Reconstruction
		(#46) Walnut Reconstruction	from Memorial Dr. to 23rd St.	Reconstruction

Construction in 2025-2029 - 2030 Model Year Air Quality Exempt Projects

LPA	Des #	Project	Location	Type of Work



Transportation Plan
Air Quality Exempt Projects

Legend

Air Quality Exempt Projects

- 2009-2014
- 2015-2024
- 2025-2029

map not to scale

Source: DMMPC

June, 2009

34 Muncie signal system not shown.
Improvements involve scattered site intersections.

Figure 24

SECTION VIII

ENVIRONMENTAL JUSTICE

This section provides environmental justice analysis concerning the program of local projects in the Muncie Urbanized Area and concerning low-income and minority areas. The two analyses of these areas are separate. Through our public involvement process and participation with community groups, the plan commission staff attempts to keep the public aware of their opportunities to provide input toward the transportation planning process.

Low-Income Areas

The census tract data for all of Delaware County was analyzed and the low-income areas highlighted on this map are the 2000 Census Tracts with at least 30 percent of the individuals living below the poverty level in 1999. The 2000 Census indicates that 15.1 percent of Delaware County's population lived below the poverty level. The low-income areas had 15,887 people, or 17.5 percent of the 90,673 population for the Muncie Urbanized Area.

The projects in the 2009-2030 Delaware Muncie Transportation Plan (TP) that are expected to be constructed before 2015 are outlined in brown on the map (figure 25) on the next page. Additional projects that will be completed during other time phases in the Transportation Plan are shown in green, blue and orange on the map. Most of the first period local projects are within or near enough to the low-income areas to benefit the residents there, with a small negative impact during construction. The state projects are scattered throughout the state highway system. The TP is aimed at improvements supporting the downtown, rural bridge safety, rail crossing safety, and enhancing pedestrian and bicycle movements within Muncie.

Minority Areas

The Minority Areas, as shown on the map (figure 26), are the 2000 Census Tracts with over half of the population as minorities. The population of 2000 Census Minority Areas totaled 4,780 people, or 5.3 percent of the Muncie Urbanized Area population of 90,673. The minority areas are comprised of the Whiteley Neighborhood in the northeast and the Industry Neighborhood south of the downtown.

There is a bike/pedestrian path and no road expansion projects planned within the minority areas, but one road project abuts a minority area and three projects in the downtown are close enough to benefit the minority areas. The Walnut Street projects through the downtown will improve the streetscape from the northwest edge of the Industry Neighborhood. The downtown rail crossing project will reduce train noise for the neighborhood and enhance safe access to the downtown.

The High Street Bridge and the Wheeling Avenue Cantilever are complete and White River Greenway Trail projects will create a bicycle/pedestrian path along the north bank of the White River in central Muncie. These three projects will benefit the minority areas and all neighborhoods abutting the downtown. The redevelopment improvements planned for the downtown will provide all Muncie citizens with access to recreation, restaurants, shopping, and public services. The planned future sidewalk improvements include the minority areas.

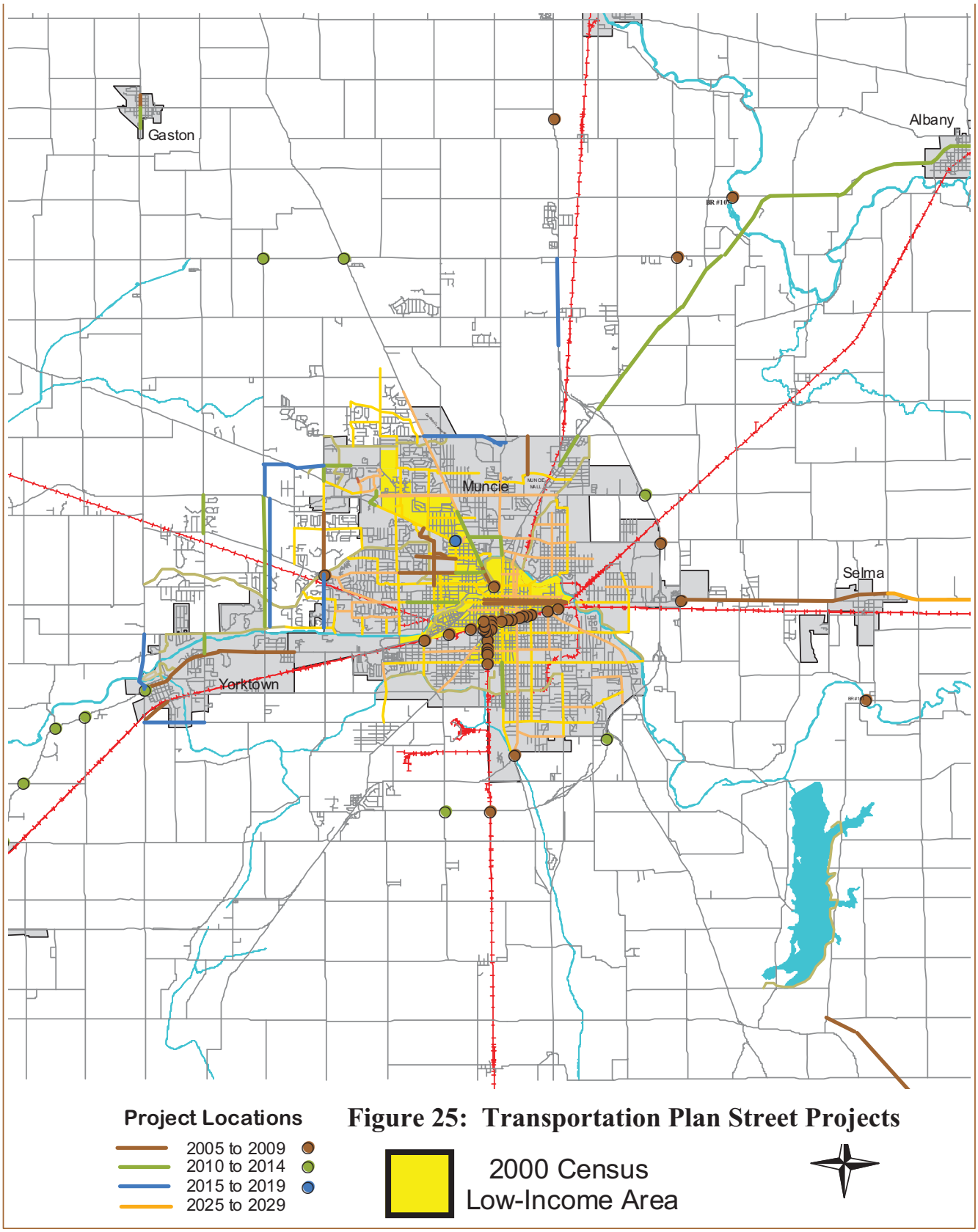


Figure 25: Transportation Plan Street Projects

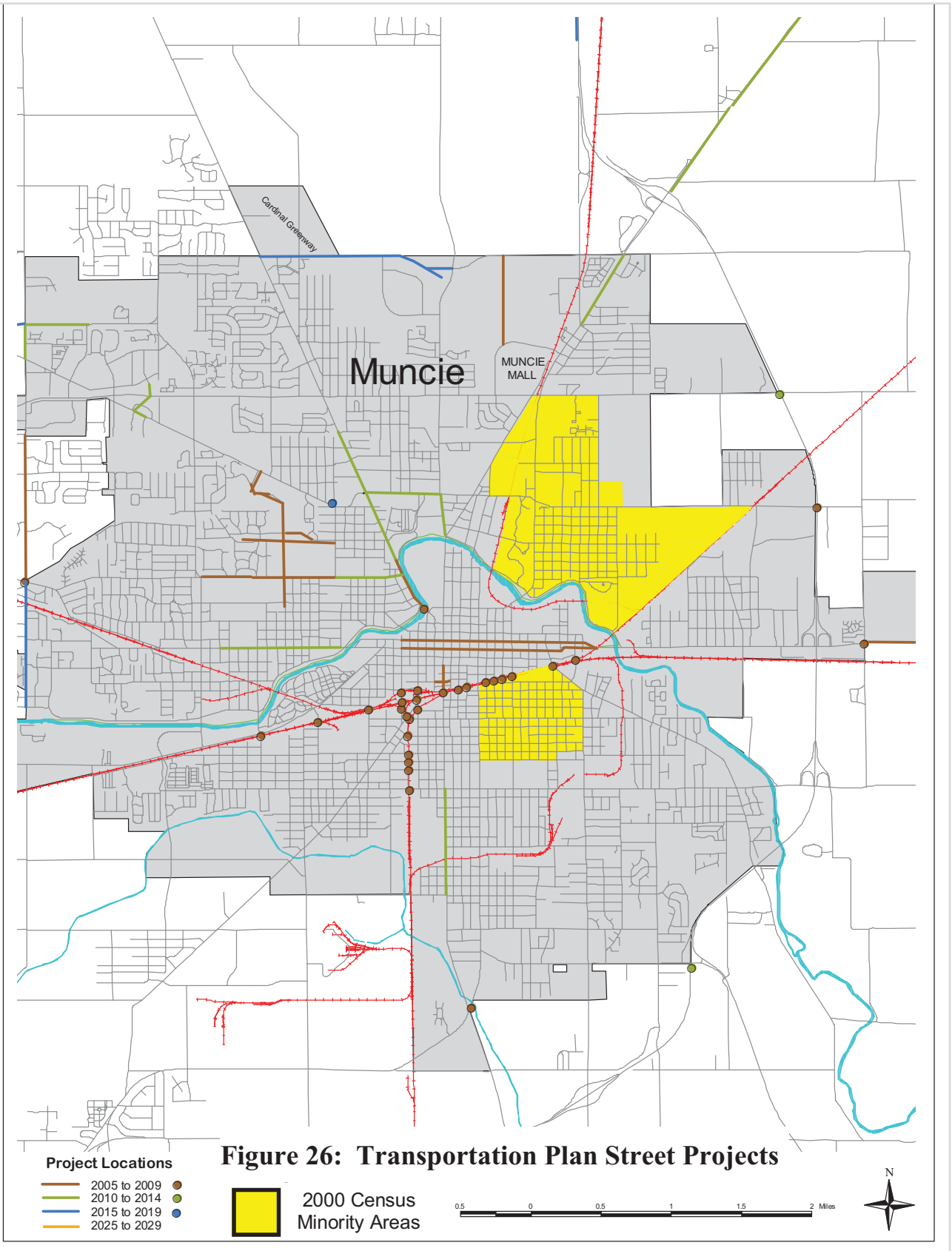


Figure 26: Transportation Plan Street Projects

Bicycle/Pedestrian Concerns

The Plan Commission developed a bicycle/pedestrian system through the Community Connections effort and this system will be used to support transportation improvement projects toward better bicycle and pedestrian facilities. The projects and time periods for these improvements have not been specified, but a portion of the federal funds guided by this Transportation Plan will go toward bicycle/pedestrian improvements to up grade the existing system. The some major roads within Muncie need sidewalks or wider sidewalks and we anticipate such improvements to be specified within projects of the Transportation Improvement Program. Purdue Road in Lindenbrook Addition was cited during public input as a street with significant pedestrian traffic and wheelchair traffic that needs a sidewalk for safe movements. Jackson Street west of Tillotson Avenue is an area that has sidewalks that should be replaced with wider sidewalks that can safely handle wheelchair traffic that currently has to use the busy street to gain access to the area. These two situations are examples where the lack of safe sidewalks for the disabled persons limits their access to the transportation system and we plan to begin addressing that issue with projects that further the specified bicycle/pedestrian system. A better pedestrian system also makes it easier for the public to access transit service and allows them mobility options beyond simply using a personal car.

The Census 2000 Low-Income Area map (figure 27) shows how the planned bicycle/pedestrian system will serve low- income areas as well as Muncie. Likewise, the Census 2000 Minority Area map (figure 28) shows how the bicycle/pedestrian system will serve areas with higher minority populations. It is our intent to have a bicycle/pedestrian system that serves Muncie and Delaware County well and in doing that, our initial projects are likely to favorable impact the low-income areas and the minority areas. The arterial routes, shown in red, are off-road multi-use pathways. The Muncie Creek Greenway is the number 3 priority and extends northeast from the White River into the area designated as one with a higher minority population. This route will provide the area with direct access to the White River Greenway and the Cardinal Greenway – the 2 premier routes of the Muncie-Delaware system. The number one priority actually involves projects that are in the works – the White River Greenway and a Morrow's Meadow trail in Yorktown. The White River Greenway, at the east side, serves both the low income and minority areas.

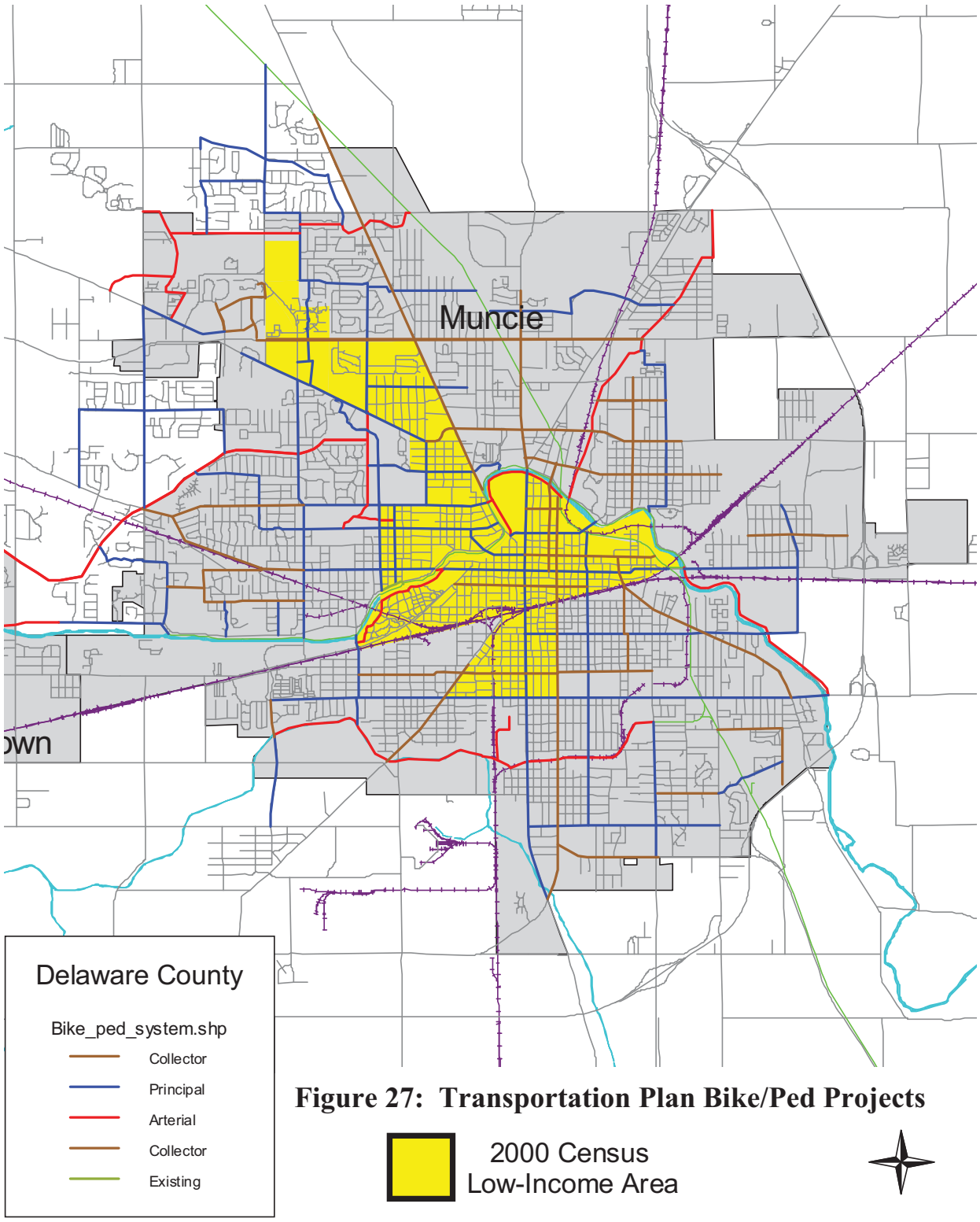


Figure 27: Transportation Plan Bike/Ped Projects

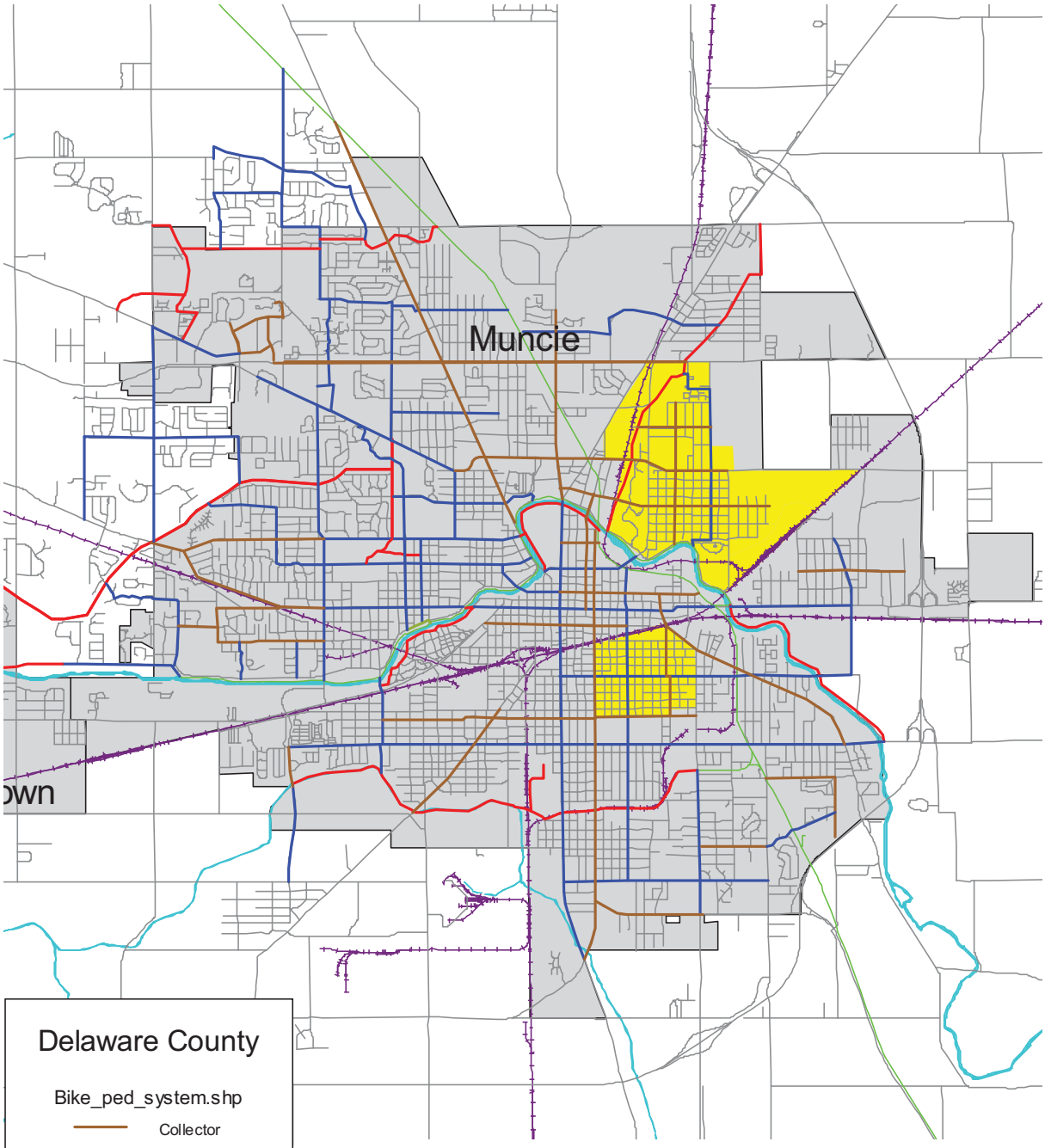


Figure 28: Transportation Plan Bike/Ped Projects

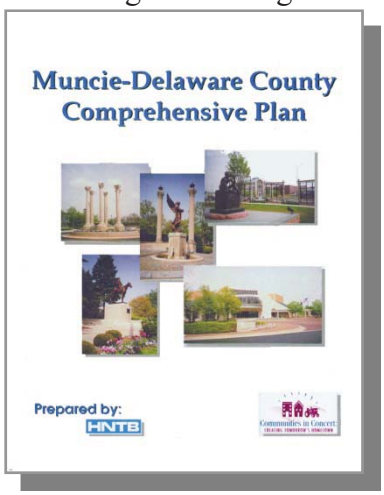
SECTION IX

SAFETEA-LU UPDATES

As set forth in the Safe, Accountable, Flexible and Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU), the transportation planning process shall be continuous, cooperative and comprehensive, and shall provide for consideration and implementation of projects, strategies, and services that will address the following factors, which have been somewhat expanded and altered from the TEA-21 authorization act:

1. Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;
2. Increase the safety of the transportation system for motorized and non-motorized users;
3. Increase the security of the transportation system for motorized and non-motorized users;
4. Increase accessibility and mobility of people and freight;
5. Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns;
6. Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
7. Promote efficient system management and operation; and
8. Emphasize the preservation of the existing transportation system.

The changes are found in Item 3 where security was separated out as its own factor and Item 5 which added the last clause dealing with consistency with growth and economic development patterns. The Delaware-Muncie Metropolitan Plan Commission (DMMPC), as the Muncie Metropolitan Planning Organization (MPO), has added a security planning element to the Unified Planning Work Program and has begun building partnerships with the local Emergency Management Agency. All of the elements of Item 5, including the new connection with growth and economic development, are matters which are routinely dealt with by the Delaware-Muncie Metropolitan Plan Commission as it is the local planning and zoning agency. As such, the DMMPC works with the City of Muncie, the County Commissioners, the Chamber of Commerce and many other state and local agencies and groups to carry out the transportation planning program and to implement the Delaware-Muncie Comprehensive [Land Use] Plan. The DMMPC plans to prepare a 2010 Comprehensive Land Use and Transportation Plan Update which will incorporate the 2010 State Long Range Plan projects for Delaware County.



VISUALIZATION TECHNIQUES

The Delaware County Geographic Information System (GIS) will continue to be used during public presentations and in documents. During public input sessions for the original 2005-2030 Transportation Plan and this Update, a GIS station was set up and proved extremely helpful in areas

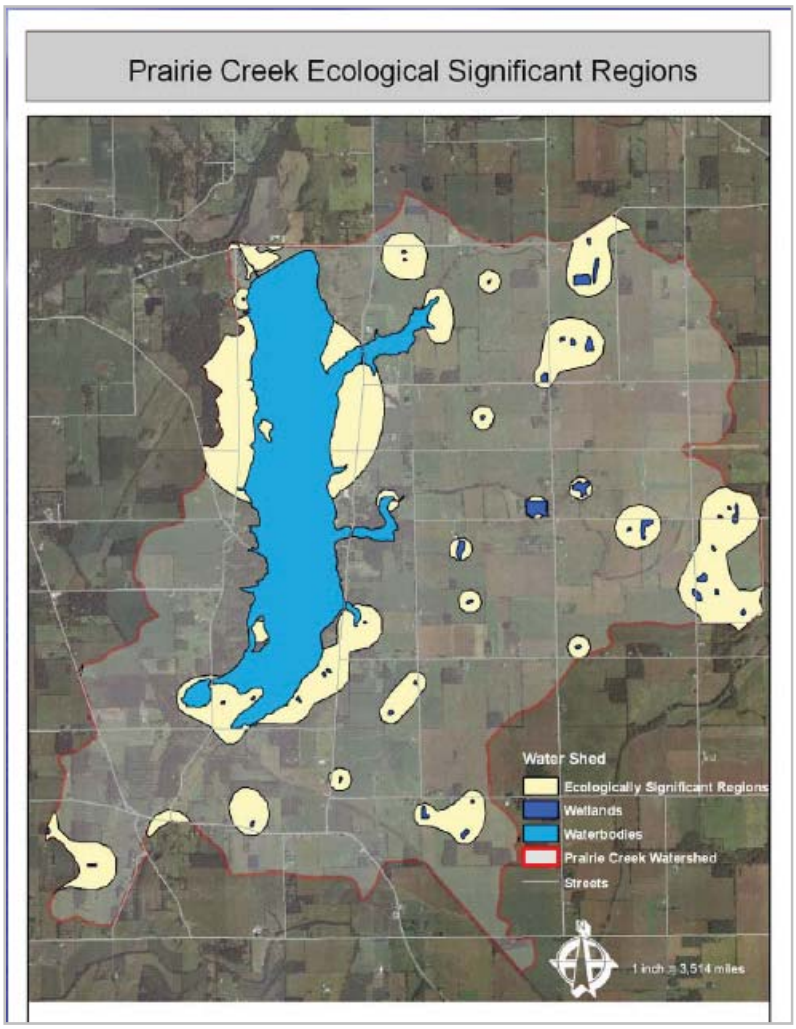
such as explaining project locations and proximity of structures to proposed improvements. Use of mapping derived from the GIS in this document and in the Transportation Improvement Program immediately pinpoints project locations and the adjacent areas. The acquisition of oblique photography will serve to enhance the public's ability to locate and visualize project impacts. It will continue to be used in the next Transportation Plan Update scheduled for 2010.

Mapping and other products dealing with the transportation planning program will be posted to a revamped and reorganized website for the DMMPC. The most recent addition is a Muncie-Delaware County traffic count map and a Transportation Maps section will soon be available showing data sets for the Metropolitan Planning Area, the Bike-Ped System, and more.

The DMMPC will also focus on the use of flow charts to illustrate the process used for activities such as document preparation and project development.

ENVIRONMENTAL MITIGATION

During development of the original 2005-2030 Transportation Plan, the Western Growth Study provided the base as more fully explained in Section V. Bernardin-Lockmueller was the consultant selected to develop the Western Growth Study and one key factor in their selection was an environmental analysis approach to their consideration of projects. This type of approach will continue to be used in future studies and plan updates. The County GIS will provide excellent background data for this type of analysis. As an example, the GIS data layers include files received through a partnership with the Indiana Department of Natural Resources. These files have been used to create a data layer known as Ecologically Significant Areas. The DMMPC will continue with this initiative to gather data from local, State and Federal resources that can be used to supplement the GIS.



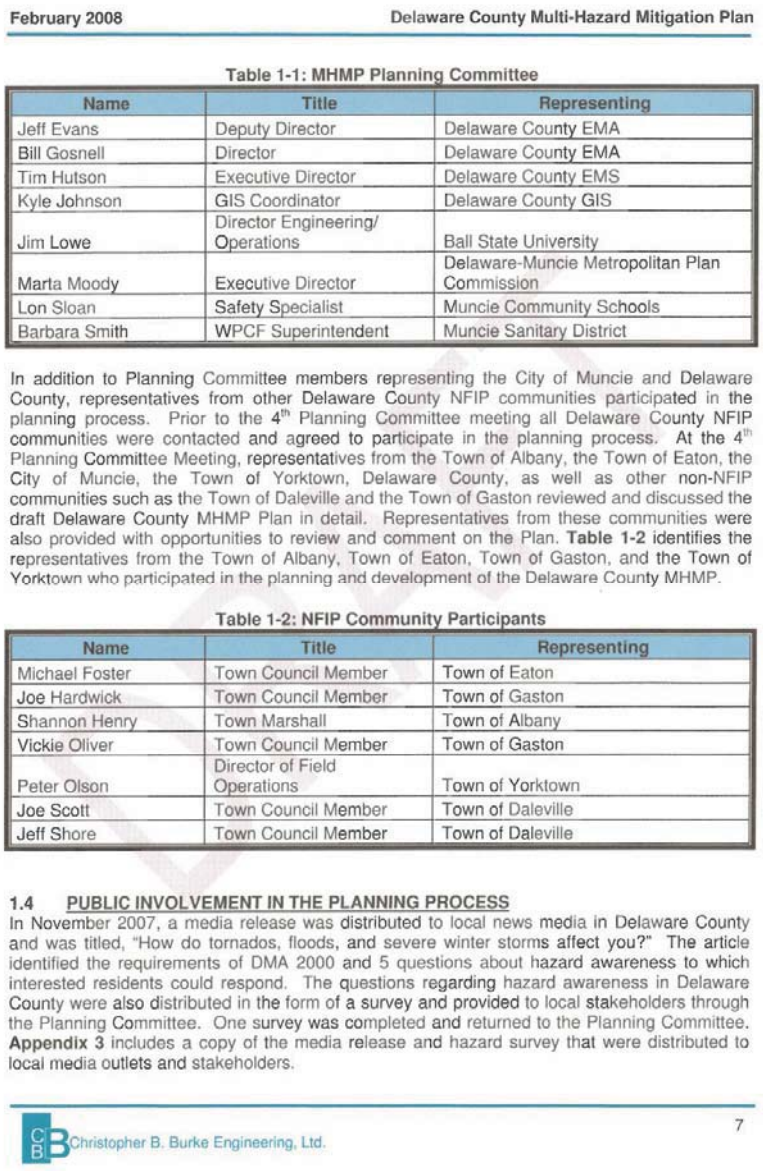
Existing data layers include items such as wetland inventories, flood plains, wooded areas, soils, endangered species, habitat areas, and ground water resources. The DMMPC intends to create a historic preservation data set in the near future. Impact on the human environment can also be assessed using

the existing data layers for subdivision and scattered-site home development. The DMMPC will also work with the appropriate agencies to develop a "mitigation data layer" where the intent would be to identify geographic areas/parcels that would be candidates for mitigation measures – i.e. for tree plantings, wetlands, parks/open space, etc.

SECURITY

The DMMPC will continue to participate in the Local Emergency Planning Council (LEPC) and emergency agencies will be incorporated into the transportation planning process. Members of the DMMPC staff have been designated as Emergency Support Function personnel who will be called out in an emergency to provide technical support for response actions and strategies. Additional security planning will continue through Work Program activities.

The DMMPC participated in the creation of the Multi-Hazard Mitigation Plan and will continue to be involved in implementation and updates through membership on the LEPC other safety and/or security related initiatives. Through the GIS, the DMMPC will continue to create datasets and mapping that will assist the local emergency responders and agencies in maintaining the security of the transportation network. Such active participation in committees, planning initiatives, and data support promotes communication and knowledge of what is and what should be considered to promote transportation safety, security and efficiency. Some investment in ITS projects has occurred that will aid in the security and efficiency



February 2008 Delaware County Multi-Hazard Mitigation Plan

Table 1-1: MHMP Planning Committee

Name	Title	Representing
Jeff Evans	Deputy Director	Delaware County EMA
Bill Gosnell	Director	Delaware County EMA
Tim Hutson	Executive Director	Delaware County EMS
Kyle Johnson	GIS Coordinator	Delaware County GIS
Jim Lowe	Director Engineering/ Operations	Ball State University
Marta Moody	Executive Director	Delaware-Muncie Metropolitan Plan Commission
Lon Sloan	Safety Specialist	Muncie Community Schools
Barbara Smith	WPCF Superintendent	Muncie Sanitary District

In addition to Planning Committee members representing the City of Muncie and Delaware County, representatives from other Delaware County NFIP communities participated in the planning process. Prior to the 4th Planning Committee meeting all Delaware County NFIP communities were contacted and agreed to participate in the planning process. At the 4th Planning Committee Meeting, representatives from the Town of Albany, the Town of Eaton, the City of Muncie, the Town of Yorktown, Delaware County, as well as other non-NFIP communities such as the Town of Daleville and the Town of Gaston reviewed and discussed the draft Delaware County MHMP Plan in detail. Representatives from these communities were also provided with opportunities to review and comment on the Plan. **Table 1-2** identifies the representatives from the Town of Albany, Town of Eaton, Town of Gaston, and the Town of Yorktown who participated in the planning and development of the Delaware County MHMP.

Table 1-2: NFIP Community Participants

Name	Title	Representing
Michael Foster	Town Council Member	Town of Eaton
Joe Hardwick	Town Council Member	Town of Gaston
Shannon Henry	Town Marshall	Town of Albany
Vickie Oliver	Town Council Member	Town of Gaston
Peter Olson	Director of Field Operations	Town of Yorktown
Joe Scott	Town Council Member	Town of Daleville
Jeff Shore	Town Council Member	Town of Daleville

1.4 PUBLIC INVOLVEMENT IN THE PLANNING PROCESS

In November 2007, a media release was distributed to local news media in Delaware County and was titled, "How do tornados, floods, and severe winter storms affect you?" The article identified the requirements of DMA 2000 and 5 questions about hazard awareness to which interested residents could respond. The questions regarding hazard awareness in Delaware County were also distributed in the form of a survey and provided to local stakeholders through the Planning Committee. One survey was completed and returned to the Planning Committee. **Appendix 3** includes a copy of the media release and hazard survey that were distributed to local media outlets and stakeholders.

CBB Christopher B. Burke Engineering, Ltd. 7

SYSTEM OPERATIONS, MANAGEMENT & PRESERVATION

The DMMPC will be working closer than ever with the local public agencies (LPA's) to improve the performance of the existing transportation facilities. Emphasis areas will include accident locations

and rates as well as increased turning movement counts. The DMMPC staff will then assist the LPA's with devising strategies to address problem areas to relieve congestion, maximize safety and mobility. Strategies will focus on solutions such as signage, intersection improvements, signal interconnects, other ITS projects, and technology (GIS, modeling, etc.).

LPA's and the public have indicated preservation of the existing facilities is their main concern. A few years ago, a wheel tax initiative was turned down. With shrinking revenues and increased maintenance/preservation needs, the issue is back before County Council for consideration with support from the LPA's, the MPO, the Chamber and others.

SECTION X

PUBLIC INPUT AND IMPLEMENTATION

This document has been produced by the DMMPC staff with review and oversight from the above committees. Public input was solicited following the Public Participation Plan with notices mailed to interested parties, a Spring Plan News article (distribution of 210 and website), a public presentation on May 5, 2009, and public meetings on May 14, May 20 and June 4, 2009. The comments received were to maintain the existing system, work toward a bicycle friendly community, and maximize the leveraging of local dollars. Notices were mailed as follows:

ADMIN: GARY ALEXANDER, TODD DONATI, LARRY HEIL KEVIN KENYON, LARRY KING, TOM KINGHORN, JACK KLINGENSMITH, ANGIE MOYER, DWANE MYERS, KEN SCHUCK, DICK SHIREY, MAYOR MCSHURLEY
AIR QUALITY: REGINALD ARKELL, LAURENCE BROWN, LARRY HEIL, LARRY KING, MCCOG, PATRICIA MORRIS, SHAWN SEALS, STEVE SMITH, MARK YAUDAS
ARMY CORP OF ENGINEERS
BZA: TOM DEWEESE, MIKE ELLIS, JAMES FOWLER, GARY GREENLEE, KATHRYN KENNISON, LANCE LILLIE, JACK NEAL, JR, MARK TURNER
CHAMBER OF COMMERCE: BRUCE BALDWIN, TERRY MURPHY
COUNTY COMMISSIONERS: LARRY BLEDSOE, TODD DONATI, DON DUNNUCK
COUNTY COUNCIL: BRAD BOOKOUT, TED BOWMAN, MARY CHAMBERS, JAMES KING, CHRIS MATCHETT, KEVIN NEMYER, RON QUAKENBUSH
DNR DIVISION OF WATER and DNR DIVISION OF NATURE PERSERVES: CHRISTIE STINFER
FREIGHT TRANSPORTATION: ACME TRANSFER OF MUNCIE; B&C SERVICES INC; ECONOWAY-OVERLAND MOTOR COACH; IMI; R&L CARRIERS, INC; MCINTIRE CONCRETE & SAND; ABF FREIGHT SYSTEM; BROADWAY TRUCKING
MPC: GARY ALEXANDER, JULIUS ANDERSON, LARRY BLEDSOE, JERRY DISHMAN, TOM GREEN, DAVID HOWELL, JOHN KELLEY, LANCE LILLIE, DEANE RUNDELL
NATIONAL PARKS SERVICE: RORY ROBINSON
NATURAL RESOURCES CONSERVATION SERVICES: MIKE HUGHES
NEIGHBORHOOD ASSN: EAST CENTRAL INDIANA NEIGHBORHOOD ASSN; EASTSIDE/MAYFIELD NEIGHBORHOOD ASSN; INDUSTRY NEIGHBORHOOD ASSN; KENMORE NEIGHBORHOOD ASSN; MCKINLEY NEIGHBORHOOD ASSN; MINNETRISTA NEIGHBORHOOD ASSN; MORNINGSIDE NEIGHBORHOOD ASSN; OLD WEST END NEIGHBORHOOD ASSN; PETTIGREW ACRES NEIGHBORHOOD ASSN; RIVERSIDE/NORMAL CITY NEIGHBORHOOD ASSN; ROBINWOOD NEIGHBORHOOD ASSN; SOUTH CENTRAL NEIGHBORHOOD ASSN; THOMAS PARK/AVONDALE NEIGHBORHOOD ASSN; UNIVERSITY HEIGHTS NEIGHBORHOOD ASSN; WESTRIDGE NEIGHBORHOOD ASSN; WESTSIDE NEIGHBORHOOD ASSN; WHITE RIVER WEST NEIGHBORHOOD ASSN; WHITELY NEIGHBORHOOD ASSN; EAST CENTRAL REINVESTMENT CORP; SOUTHSIDE REDEVELOPMENT CORP
PRIVATE PROVIDERS OF TRANSIT: A&A LUXURY LIMOSINE SERVICE; ACTION INC; CMHS; ISNOGEL CENTER; LIFESTREAM; MICKEY'S TAXI SERVICE
REPRESENTATIVES OF THE DISABLED: LINDA MUCKWAY
REP'S FOR BIKE/PED USERS: CARDINAL GREENWAYS INC; AREA 6 BICYCLE COALITION; WHITE RIVER RAMBLERS
SCHOOLS IN DELAWARE COUNTY: DALEVILLE SCHOOL CORP; LIBERTY-PERRY SCHOOL CORP; COWAN COMMUNITY SCHOOLS; DELAWARE COMMUNITY SCHOOLS; MT PLEASANT TWP SCHOOLS; MUNCIE COMMUNITY SCHOOLS; WES-DEL SCHOOL CORP
TAC: SHAHNAZ AFZAAL, NITA BARNARD, MARY GASTON, LARRY HEIL, STAN HIATT, BRIAN JONES, JOHN KELLEY, DAVID LINKENSDOFER, JIM LOWE, FRED LUDINGTON, MICHAEL LYNN, DIANA MICHENER, ANGIE MOYER, PETE OLSON, JIM RIGGLE, LARRY ROBINSON, DICK SHIREY, RANDY WALTER
TOWNS IN DELAWARE COUNTY: CLERK/TREASURER OF SELMA; TOWN OF YORKTOWN; TOWN OF ALBANY; TOWN OF DALEVILLE; TOWN OF EATON; TOWN OF GASTON

The Conformity Documentation was produced by the DMMPC staff, with programming services provided by Bernardin-Lochmueller & Associates, with assistance from our transportation conformity consulting parties – the Environmental Protection Agency, the Indiana Department of Environmental Management, the Federal Highway Administration, the Indiana Department of Transportation, and the Madison County Council of Governments. The Conformity Documentation is included in Appendix A.

The various long range strategies and plan components set forth herein will be implemented through the local governmental agencies, in terms of improvements, and the Delaware-Muncie Metropolitan Plan Commission (DMMPC) in its capacity as a Metropolitan Planning Organization (MPO) as well as a Metropolitan Plan Commission. Much of the DMMPC's implementation efforts will be conducted by the staff and the Committee structure with public participation throughout. Consultants overseen by staff will be utilized where needed due to staffing constraints and work load.

As an MPO, the DMMPC's jurisdiction is considered a small urbanized area with a group II city and an urbanized area population of greater than 50,000 people and less than 200,000. The DMMPC was formed in 1965 under state planning law as a metropolitan advisory plan commission. The DMMPC was designated as the urbanized area's MPO in the 1970's. The Commission's membership is set by state statute and consists of five representatives for the City of Muncie including a City Council member and a school corporation representative and four representatives for Delaware County including a Board of County Commissioner's member and a person active in farming. There are 14 MPO agencies operating in Indiana. The DMMPC is one of three small MPO's throughout the state that are also local plan commissions with planning and zoning responsibilities. The other two are Bloomington and Lafayette. Of the three, the DMMPC is the only one with transportation conformity responsibilities as a result of Delaware County's non-attainment/maintenance designation. The existing committee structure includes the MPO Policy Committee known as the Administrative Committee, the Technical Advisory Committee and the Transportation and Planning Involvement Council (a citizen's participation group).

Traditional roadway, bridge, railroad, enhancement, and like projects will be implemented through the Transportation Improvement Program (TIP) process. On-going activities, studies and strategies will continue to be included in the Unified Planning Work Program. The staff will continue work activities aimed at accomplishing the strategies and plans set forth herein. Future updates to the Transportation Plan will continue to be coordinated with updates to the Comprehensive Land Use Plan, regional issues, statewide planning initiatives, federal areas of emphasis, and transportation conformity.

Delaware County Transportation Plan
2009 - 2030

Air Quality Conformity Documentation

Prepared for the
Delaware Muncie Metropolitan Plan Commission

Originally Prepared in May 2005 by:
Bernardin, Lochmueller & Associates, Inc.
6200 Vogel Road
Evansville, Indiana 47715
(812) 479-6200 * (800) 423-7411 * (812) 479-6262 FAX

Revised September 2006 & April 2007
Updated June 2009
By Delaware-Muncie Metropolitan Plan Commission Office

Table of Contents

List of Tables

List of Figures

EXECUTIVE SUMMARY

The Air Quality Conformity Determination for the 2009-2030 Delaware-Muncie Transportation Plan was performed in order to meet federal regulations from the Clean Air Act Amendment of 1990 and the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). Delaware County was designated non-attainment for ozone in June, 2004. Delaware County was re-designated from non-attainment to attainment for ozone under the 8-hour standard in January, 2006. Delaware County is considered a maintenance area for conformity purposes with an established budget in the State Implementation Plan (SIP).

The Delaware-Muncie Metropolitan Plan Commission, as the Metropolitan Planning Organization (MPO) for the Delaware County Maintenance Area, must demonstrate that the Transportation Plan will conform to air quality emission budgets for the ozone precursors of volatile organic compounds (VOC's) and nitrogen oxides (NOx) for the year 2015. Air quality conformity for the 2009-2030 Delaware-Muncie Transportation Plan was determined based on the analysis of each of the study years of the Plan (2010, 2015, 2025 & 2030) and it was determined that VOC and NOx emissions would not exceed the 2015 SIP budget if the projects are implemented as set forth in the Plan. The original conformity analysis for Delaware County established the 2002 baseline emissions. The 2010 emission analysis was included to show an interim test that was below the baseline.

The conformity analysis demonstrates that vehicle emissions based on the 2009-2030 Delaware-Muncie Transportation Plan are below the 2002 baseline budget for 2010 and below the 2015 SIP budget for 2015, 2025 and 2030. The 2010 analysis year to 2002 baseline year comparison supports the finding that there are no factors which would cause or contribute to a new violation or exacerbate an existing violation in the years 2006 to 2015. Based on this documentation, the 2009-2030 Delaware-Muncie Transportation Plan conforms to the Clean Air Act as amended and Delaware County meets the conformity requirements of the Clean Air Act as amended.

Table ES-1: Interim 2010 Analysis Year Comparison to Baseline Emissions

Analysis Year	Total VOC Emissions Tons/Day	2002 VOC Baseline Tons/Day	Total NOx Emissions Tons/Day	2002 NOx Baseline Tons/Day
2010	3.87	8.19	6.52	13.89

Table ES-2: 2015, 2025 and 2030 Analysis Year Comparison to 2015 SIP Budget

Analysis Year	Total VOC Emissions Tons/Day	2015 VOC SIP Budget Tons/Day	Total NOx Emissions Tons/Day	2015 NOx SIP Budget Tons/Day
2015	3.14	3.5	4.28	4.82
2025	2.16	3.5	2.26	4.82
2030	2.18	3.5	2.01	4.82

INTRODUCTION

Delaware County, Indiana was designated as a basic non-attainment area in June 2004 and redesignated a maintenance area in January 2006 for ozone under the 8-hour ozone standard. With this designation, the Delaware Muncie Metropolitan Planning Commission, serving as the Metropolitan Planning Organization for the Muncie - Delaware County area, is the agency responsible for conducting the mobile source air quality analyses. All plans, programs and projects must be reviewed for conformity with the standards to assure that they do not exceed the established budgets as established in the State Implementation Plan (SIP). Projects under the jurisdiction of the Indiana Department of Transportation (INDOT) and the Madison County Council of Governments (MCCOG) are located within Delaware County and have been included in the 2009-2030 Delaware-Muncie Transportation Plan Update and the transportation conformity analysis.

In general, examinations for conformity have two major components: (1) an air quality analysis to determine that air pollutant emissions do not exceed the budgets for VOCs and NOx set in the State Implementation Plan (SIP) and (2) a monitoring of the progress in implementation of the Transportation Control Measures (TCMs) contained in the SIP. Delaware County, a maintenance area, has an established emissions budget (since 2007) based upon a SIP.

The air quality analysis involved four procedures. First, a travel model using the TransCAD software was used to determine the vehicle-miles-traveled (VMT) for each of the analysis years: 2010 (Base Year and within 5 years of last conformity determination), 2015 (within 10 years of last conformity determination), 2025, and 2030(the final Transportation Plan horizon year). The VMT was then adjusted using factors that were derived for Base Year (2010) using 2007 estimated VMT's from the Highway Performance Monitoring System (HPMS). Second, a post processing procedure was used to compute average speeds for each FHWA functional classification, and from that data, Mobile 6.2 input files were created. Third, the Mobile 6.2 emission factor model was used to determine the emission factors for VOCs and NOx. Fourth, the VMT by functional classification was then multiplied by the emission factors to determine the emissions. Further explanation of the components of the analysis is documented in this report.

FEDERAL CONFORMITY REQUIREMENTS

Federal Regulations for Metropolitan Planning in 23 CFR (Code of Federal Regulations) Part 450 require that federally funded highway and transit projects be included in a conforming plan and Transportation Improvement Program (TIP). 40 CFR Part 93, amended August 15, 1997, outlines the requirements for making conformity determinations under Subpart A. Applicable requirements are listed below.

1. The Transportation Plan must specifically describe the transportation system envisioned for certain future years, which are called horizon years.

- *The horizon years may be no more than 10 years apart.*
- *The first horizon year may not be more than 10 years from the base year used to validate the travel demand model.*
- *If the attainment year is in the time span of the Transportation Plan, the attainment year must be a horizon year.*
- *The last horizon year must be the last year of the Transportation Plan's forecast year.*

The 2030 Transportation Plan lists specific projects by time periods that meet this requirement. Traffic modeling for the conformity analysis was done for the years 2010, 2015, 2025, and 2030. The target attainment year under the maintenance plan in the SIP now is 2015, thus this year was included along with 2025 and 2030 in the current analysis.

2. The Transportation Plan will quantify and document the demographic and employment factors influencing the expected transportation demand; and the highway and transit system shall be described in terms of the regionally significant additions or modifications to the existing transportation network, which the transportation plan envisions to be operational in the horizon years.

The documentation of how travel demand is estimated using existing and forecasted demographic and employment data is described in the March, 2005 Travel Demand Model Technical Documentation included as an appendix of the 2030 Transportation Plan. Regionally significant additions or modifications to the transportation system included in the financially constrained transportation plan are listed by time period in the next section of this report. Non-capacity increasing projects, which were not used in the conformity analysis, are listed in the main Transportation Plan document.

3. The Transportation Plan must be financially reasonable and the TIP must be fiscally constrained consistent with the U.S. DOT's metropolitan planning regulations at 23 CFR part 450 in order to be found in conformity.

All projects included in the conformity analysis are fiscally constrained within the plan horizon. A list of illustrative (fiscally unconstrained) projects is also included in the main Transportation Plan document.

4. The conformity determination must be based on the latest emission estimation model available.

This analysis uses the US EPA approved Mobile 6.2 software, which is the latest emission model available for use in Indiana.

5. The MPO must make the conformity determination according to the interagency consultation procedures required in 40 CFR Parts 51 and 93 (sections 51.390 and 93.105), and according to the public involvement procedures established by the MPO in compliance with 23 CFR Part 450.

All major decisions relating to methodology, assumptions, and data used in the conformity analysis have been made via the interagency consultation process. Parties to the interagency consultation process include DMMPC, INDOT, IDEM, FHWA, US EPA, and FTA, each has had the opportunity to participate in the consultation meetings. The plan updated process has also included a public involvement component that is consistent with the MPO's currently adopted public involvement procedures.

> *6. The Transportation Plan must provide for the timely implementation of Traffic Control Measures (TCM) from the applicable State Implementation Plan (SIP). Nothing in the plan may interfere with the implementation of any TCM in the applicable implementation plan.*

An implementation plan has not yet been developed. No TCMs are currently applicable in the Muncie/Delaware County MPO area.

> *7. The Transportation Plan must be consistent with the motor vehicle emissions budget in the applicable State Implementation Plan (SIP).*

Delaware County was a designated Maintenance Area for Ozone in January 2006. A SIP was developed for this county and a motor vehicle budget is in effect.

> *8. The regional emissions analysis shall estimate emissions from the entire transportation system, including all regionally significant projects contained in the Transportation Plan and all other regionally significant highway and transit projects expected in the non-attainment area in the time frame of the Transportation Plan.*

All regionally significant projects within Delaware County have been included in the 2030 Transportation Plan list of projects. Those projects that involve an increase in a regionally significant increase in capacity have been included in the conformity analysis.

> *9. The emissions analysis methodology shall meet the requirement of section 93.122: (a) Regional emissions analysis for the Transportation Plan shall include all regionally significant projects expected in the maintenance area. Projects that are not regionally significant are not required to be explicitly modeled, but VMT from such projects must be estimated in accordance with reasonable professional practices. The effects of TCM's and similar projects that are not regionally significant may also be estimated in accordance with reasonable professional practices. (b) For TCM's demonstrating a quantifiable emission reduction benefit, the emissions analysis may include that emissions reduction credit. (c) For areas with a Transportation Plan that meets the content requirements of section 93.106, the emissions analysis shall be performed for each horizon year.*

The emissions analysis methodology includes all regionally significant projects. VMT from all facilities is included in the analysis, including off-model facilities. There are no required TCMs for the Delaware County non-attainment area. There are also no additional credits being sought from the Congestion Mitigation and Air Quality (CMAQ) program funded projects that will be implemented in Delaware County.

2030 Long Range Plan

Capacity expansion projects that were explicitly modeled in the conformity analysis are listed below in Table 1. The fiscally constrained listing specifies, by conformity horizons, when projects are expected to be completed. For a complete listing of projects, capacity, non-capacity, financially constrained, and non-financially constrained, please refer to the main 2030 Transportation Plan document.

TABLE 1: LONG RANGE PROJECT LIST – MODELED

2015 Model Year Expansion Projects – Construction in 2014 or Sooner

Gov.	Des #	Project	Location	Type of Work
Muncie	0710092	(#3) Morrison Widening	from Jackson St. to Keller Rd.	Center Turn Lane
	0501031	(# 5) Everbrook Extension	from SR 332 to Bethel Avenue.	New Road
		(# 6) Evermore Extension	from Marleon Dr. to Morrison Rd.	New Road
		(#49) Morrison Widening	from Evermore to Bethel Avenue	Center Turn Lane
Yorktown / Muncie		(#10) Nebo Rd. Widening2	from Norfolk S.R.R. to SR 332	Center Turn Lane
Yorktown		(# 2) Sutherland Extension	from Broadway St. to CR 600W	New Road
		(# 9) Nebo Road Widening	from River Road to Norfolk S.R.R.	Center Turn Lane
Delaware County		(#10.5) Nebo Rd. Widen 3	from SR 332 to Bethel Avenue	Center Turn Lane
State	9700420	(#18) I-69	ramps to and from SR 67	Added Lanes (2)
	9901350	(#19) SR 67 over NSRR	Bypass east of Cowan Road	Grade Separation
	9901360	(#20) Bypass (US35/SR3,67)	Bypass at Centennial Ave.	Grade Separation
	9700310	(#22) SR 32 Widening	from Nebo Rd. to Andrews to Tiger	Added Lanes (4,3)
	9901680	(#25) SR 67 Widening	from Bypass to SR 28	Center Turn Lane
	0013780	(#26) SR 67 at Cowan Road	new interchange for Bypass	Interchange
	0013840	(#27) US 35 at McGalliard	new interchange for Bypass	Interchange
	0400893	(#29) SR 3 Widening	Bypass to SR 28	Center Turn Lane

2025 Model Year Expansion Projects – Contruction in 2024 or Sooner

Gov.	Des #	Project	Location	Type of Work
Muncie	9786020	(# 1) Barr Extension	from Princeton Av. to Riggin Rd.	New Road
		(# 4&8) Wheeling Widening	from Riverside Ave. to Haines St.	Center Turn Lane
		(# 7) Jackson Widening	from Celia Ave. to White River Blvd.	Center Turn Lane
		(#12) Riggin Widening	from Wheeling Ave. to Walnut St.	Center Turn Lane
		(#16) Morrison Widening	from River Rd. to Jackson St.	Center Turn Lane
Yorktown /County	0710090	(#11) Andrews/500W Exten.	from SR 32 to River Road	New Road/Bridge
		(#13) CR 600W Extension	from SR 32 to River Rd.	New Road

2030 Model Year Expansion Projects – Construction in 2029 or Sooner

Gov.	Des #	Project	Location	Type of Work
Yorktown		(#14) CR 200S Extension	from Andrews-500W to CR	Added Lanes
		(#17) Nebo Widening	600W.from River Rd. to SR 332.	New Road
Delaware County		(#17.5) Nebo Widening	from SR 332 to Bethel Avenue.	Added Lanes

TRAVEL DEMAND MODEL

The Muncie/Delaware County regional travel demand model is a mathematical computer model, using state of the art TransCAD software, which relates current and future travel demand to basic socioeconomic information. The model area covers all of Delaware County.

This area is divided into 545 smaller units called traffic analysis zones. All major roadways are represented in the travel model.

The Muncie/Delaware County regional travel demand model underwent a calibration and conversion to TransCAD software as part of the *Western Growth & Arterial Study* which was completed in 2003. This calibration established 2000 as the base year for the model. The model update and recalibration in 2003 utilized the latest data from the 2000 Census, ES202 employment dataset, 2000 Census Transportation Planning Package, and several additional sources which are reported in detail in the Travel Demand Model Technical Documentation. During the model calibration process, model parameters were adjusted such that the model output matched—within accepted standards--several calibration criteria based on measured data. These criteria included items such as comparisons against traffic counts, modeled vs. observed vehicle miles of travel, trip lengths by trip purpose, etc. The result of the recalibration was a travel model which replicated travel in the Muncie area for 2002, and was capable of producing accurate traffic forecasts out to year 2030.

The Muncie/Delaware County travel demand model was recalibrated by Bernardin, Lochmueller & Associates in 2009 using 2010 as the base year. The recalibrated travel model was used in the regional air quality analysis. The Muncie/Delaware County travel demand model uses the standard four steps of modeling: trip generation, trip distribution, mode choice, and traffic assignment. In addition, it considers travel by vehicles (trucks and autos) entering, leaving, and crossing the study area. These types of trips are known as external-internal, internal-external, and external-external, respectively.

Trip generation is the process of determining the number of unlinked trip ends—called productions and attractions--and their spatial distribution based on socioeconomic variables such as households and employment. Trip rates used to define these relationships were derived from the travel data collection efforts described above. The internal trip purposes are home-based work, non home-based work, home-based other, home based other, non home-based other, home-based school.

Trip distribution is the process of linking the trip ends thereby creating trips which traverse the area. The travel model uses a gravity model to link all trips except the external-external ones. The gravity model is based on the principle that productions are linked to attractions as a direct function of the number of attractions of a zone and as an inverse function of the travel time between zones. This inverse function of travel time is used to generate parameters called friction factors which, in turn, direct the gravity model. The friction factors used in the gravity model were developed as part of the calibration effort performed during the model update of 2000.

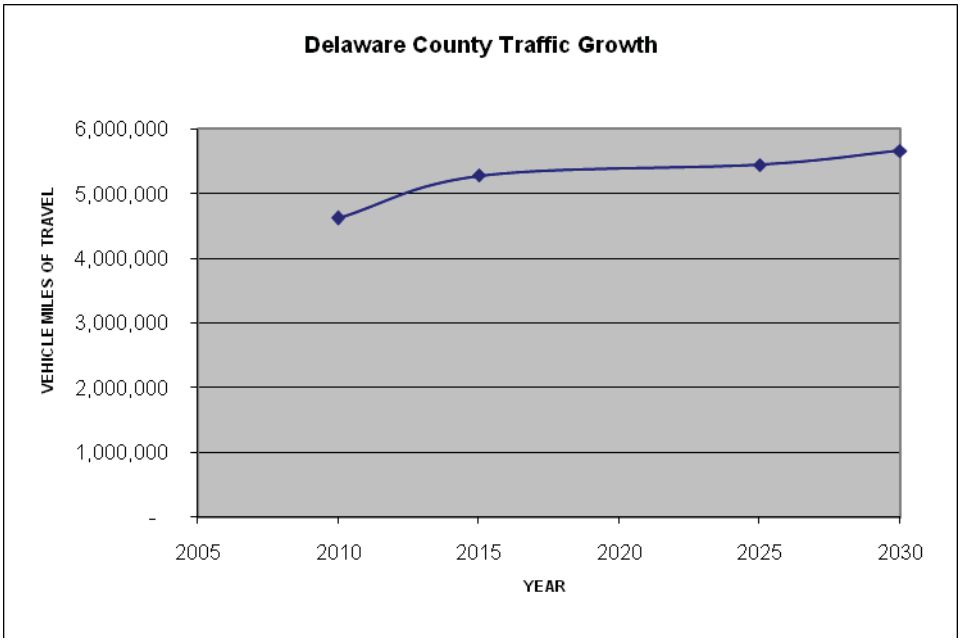
Mode choice is the process used to separate the trips which use transit from those which use automobiles. It is also used to separate the auto drive-alone trips from auto shared-ride trips.

In the Muncie/Delaware County travel demand model, mode choice is modeled based on stratifications by trip purpose and travel times using recent household travel survey data from the 2000 Evansville Household Survey. This procedure accounts for person trips that use transit or shared-ride (carpool), and the result is a origin to destination auto trip table.

Traffic assignment is the process used to determine which links of the network an auto or truck trip will use. A capacity restraint provision is used to adjust travel times between assignment iterations, to account for the effects of congestion. This sequence is called an equilibrium assignment. The results of this process produces a forecast of traffic volumes on each link in the network and an estimate of congested travel speeds, which allows for the calculation of vehicle-miles-traveled (VMT) and vehicle-hours-traveled (VHT).

Each of the horizon years contained in the Transportation Plan were coded into the model as a specific socioeconomic forecast with appropriate network capacity projects for that time period. These scenarios yielded the traffic forecasts used in the conformity analysis. Vehicle miles of travel forecasts from these model runs are summarized in Figure 1.

FIGURE 1: MODELED VEHICLE MILES OF TRAVEL



MODEL POST-PROCESSING AND MOBILE 6.2 INPUT FILES

Model outputs are expressed in terms daily volumes for each roadway segment. The raw model results from each scenario have traffic estimates only for those facilities coded in the model. These modeled traffic estimates generally include facilities that are classified as major

collector or higher. Travel on the lower classed roadways (collector and local), while not entirely absent, is under-represented in the model. For estimating total emissions, raw model VMT is summarized by functional classification. These values are adjusted on a functional classification basis using a Model-to-HPMS VMT adjustment factor. The Model-to-HPMS VMT adjustment factor is calculated using the base year 2002 Model VMT compared to the base year HPMS reported VMT. HPMS is considered to be a more complete estimate of vehicle miles of travel in a county, and accounts for travel on all classifications of roadways. The HPMS adjustment factors are used in each of the Transportation Plan scenarios.

TABLE 2: HPMS ADJUSTMENT FACTORS

Functional Classification	Functional Class Code	HPMS Adjustment Factor
Rural Interstate	1	1.01
Rural Principal Arterial	2	0.88
Rural Minor Arterial	6	0.78
Rural Major Collector	7	3.52
Rural Minor Collector	8	0.56
Rural Local	9	4.22
Urban Interstate	11	0.92
Urban Expressway	12	1.06
Urban Principal Arterial	14	1.08
Urban Minor Arterial	16	1.03
Urban Collector	17	0.36
Urban Local	19	9.46

Functional Classification	Functional Class Code	HPMS Adjustment Factor
Rural Interstate	1	0.86
Rural Principal Arterial	2	1.26
Rural Minor Arterial	6	0.86
Rural Major Collector	7	5.45
Rural Minor Collector	8	0.94
Rural Local	9	2.68
Urban Interstate	11	3.34
Urban Expressway	12	1.09
Urban Principal Arterial	14	1.03
Urban Minor Arterial	16	1.13
Urban Collector	17	0.52
Urban Local	19	4.98

Additionally, it is necessary to post-process the model estimates of travel speed by each road link to better match observed speeds. In the post-processing, an average speed and VMT are computed for each time period for each link via excel spreadsheet. The spreadsheet also contains an attribute for FHWA functional class. In the post-processing, peak period volumes are compared to a peak period capacity to determine a volume to capacity ratio. Capacities use HCM 2000 methodology (described in the model documentation). Time of day factors by

trip purpose in the Muncie/Delaware Model were derived from the 2000 Evansville Household Travel Survey, see table 3 on the next page.

TABLE 3: TIME OF DAY FACTORS

TIME OF DAY FACTORS BY TRIP PURPOSE					
PERIOD	HBW	HBSC	HBO	NHBW	NHBO
AM PEAK 3 HOURS	36.7%	47.5%	15.9%	17.6%	10.1%
PM PEAK 3 HOURS	30.8%	23.5%	26.1%	28.0%	23.7%
OFF PEAK 18 HOURS	32.5%	29.0%	58.0%	54.4%	66.2%

Source: 2000 Evansville Household Travel Survey

Volume to capacity (v/c) ratios for each link for each hour are then used to estimate a period specific speed. A BPR volume delay function was used to estimate the link speeds for each time period formulated as follows.

$$Speed_{congested} = \frac{Speed_{freeflow}}{1 + \alpha (v/c)^{\beta}}$$

Alpha and Beta parameters are US EPA recommended values, where:

TABLE 4: BPR CURVE PARAMETERS

Volume-Delay Curve Parameters		
	Under 60 mph	Over 60 mph
Alpha	0.20	0.15
Beta	8.00	10.00

To avoid unrealistically low average speeds, the V/C ratio is capped at 1.6. Any links that have a V/C ratio that exceeds 1.6 is assumed to remain at 1.6 for speed estimation purposes.

After speeds were estimated for each modeled link for the three daily time periods and for each of the analysis years, the data was aggregated by FHWA functional classification for use in Mobile 6.2 using the AVERAGE SPEED command. The average speed for each functional class was calculated using a VMT weighted average. The VMT weighted average was computed by multiplying the speed for each link by the link's VMT. Next, the Speed*VMT values were summed for each functional class. The functional class sum was divided by the sum of that functional class's modeled VMT to yield an average speed.

The calculated congested speeds for Rural Interstates, Urban Interstates and Urban Expressways were adjusted for an assumed percentage of ramp VMT according to the procedures outlined in the Mobile6 User's Guide Section 2.8.8.2.d. Speed assumptions are listed in Tables 7 through 11 and in the Mobile 6.2 input files contained in the Appendix.

Indiana specific VMT per vehicle type was derived by IDEM from the Indiana Department of Transportation (INDOT) 2002 state-wide HPMS data for vehicle classification for each of the twelve INDOT functional classes. The INDOT data covers thirteen vehicle groups which are different from the sixteen vehicle groups required by Mobile6. An adjustment was made by IDEM to convert the INDOT VMT fraction to a Mobile6 VMT fraction, and this data was

provided by IDEM for the Muncie/Delaware analysis. The VMT fraction for each functional class was input to Mobile6 using the VMT FRACTION command. All VMT Fractions used in the analysis are listed in Table 5 and in the Mobile 6 input files contained in the Appendix.

TABLE 5: VMT FRACTIONS

		Mobile 6 Vehicle Type															
HPMS Classification	**Mobile 6 Classification**	**LDV**	**LDT1**	**LDT2**	**LDT3**	**LDT4**	**HDV2B**	**HDV3**	**HDV4**	**HDV5**	**HDV6**	**HDV7**	**HDV8A**	**HDV8B**	**HDBS**	**HDBT**	**MC**
Rural Interstate	Freeway / Freeway Ramp	0.353	0.054	0.178	0.055	0.025	0.107	0.011	0.008	0.006	0.023	0.028	0.030	0.109	0.006	0.003	0.005
Rural Other Principal Arterial	Non-Ramp	0.433	0.066	0.219	0.068	0.031	0.057	0.006	0.005	0.003	0.013	0.015	0.016	0.059	0.003	0.002	0.005
Rural Minor Arterial	Arterial / Collector	0.466	0.071	0.236	0.073	0.033	0.037	0.004	0.003	0.002	0.008	0.010	0.011	0.038	0.003	0.001	0.004
Rural Major Collector	Arterial / Collector	0.482	0.073	0.244	0.075	0.035	0.028	0.003	0.002	0.002	0.006	0.007	0.008	0.028	0.002	0.001	0.005
Rural Minor Collector	Arterial / Collector	0.453	0.069	0.229	0.071	0.033	0.040	0.004	0.003	0.002	0.009	0.010	0.011	0.041	0.003	0.001	0.021
Rural Local	Arterial / Collector	0.479	0.073	0.242	0.075	0.034	0.029	0.003	0.002	0.002	0.007	0.008	0.008	0.030	0.003	0.001	0.005
Urban Interstate	Freeway / Freeway Ramp	0.416	0.063	0.210	0.065	0.030	0.069	0.007	0.005	0.004	0.015	0.018	0.020	0.070	0.004	0.002	0.003
Urban Freeway/Expressway	Freeway / Freeway Ramp	0.455	0.069	0.230	0.071	0.033	0.045	0.004	0.004	0.003	0.010	0.012	0.013	0.046	0.002	0.001	0.003
Urban Other Principal Arterial	Arterial / Collector	0.487	0.074	0.246	0.076	0.035	0.025	0.003	0.002	0.001	0.006	0.007	0.007	0.026	0.002	0.001	0.004
Urban Minor Arterial	Arterial / Collector	0.494	0.075	0.250	0.077	0.035	0.020	0.002	0.002	0.001	0.005	0.005	0.006	0.021	0.002	0.001	0.004
Urban Collector	Arterial / Collector	0.502	0.076	0.254	0.078	0.036	0.015	0.002	0.001	0.001	0.003	0.004	0.004	0.016	0.001	0.001	0.006
Urban Local	Local Road	0.510	0.078	0.258	0.080	0.037	0.011	0.001	0.001	0.001	0.002	0.003	0.003	0.011	0.003	0.001	0.003

Vehicle fleet age distribution was provided for light duty vehicles for Delaware County by IDEM, these values are used in the IN_cty18.d file. For other vehicle classes, the standard Mobile 6.2 defaults are used. The IN_cty18.d remains constant in each scenario, the file is listed in the Appendix

Other assumptions, such as the minimum and maximum July temperatures (64.0 and 84.9) for Muncie; absolute humidity (93.7), cloud cover (0.34), and sunrise/sunset (5am & 8pm respectively) were provided by IDEM. Each of these variables are specified in the Mobile 6.2 input files for each scenario.

The Mobile 6.2 model is run using the above-mentioned user inputs to get emission rates for each of the model scenarios. Emissions are then calculated from the adjusted VMT, by functional classification, using the Mobile 6.2 output emission rates.

ANALYSIS RESULTS

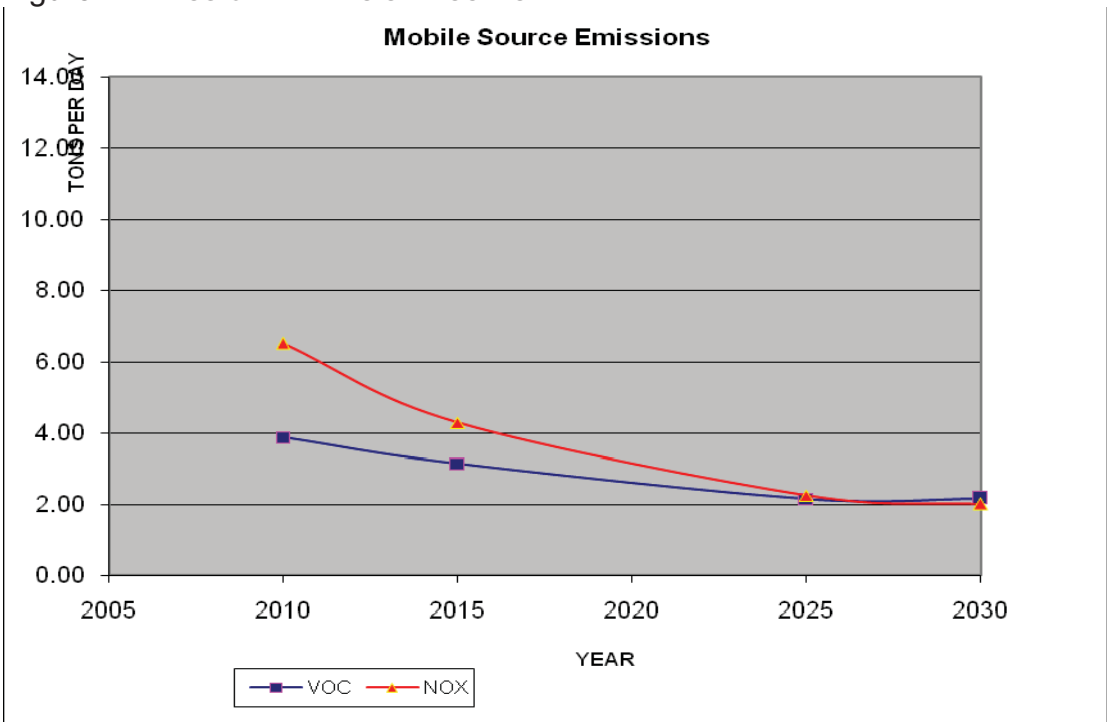
The regional emissions analysis was conducted to provide estimates of the levels of emissions of volatile organic compounds (VOC) and oxides of Nitrogen (NOx) for the various scenarios. VOC and NOx contribute directly to the production of ozone. The revised Indiana State Implementation Plan (SIP) with was approved effective January 2, 2006 with a maintenance plan mobile source emissions budget for VOC and NOx for Delaware County.

The results of the regional emissions analysis are summarized in Tables 6 through 12, and in Figure 2. Table 6 shows that Analysis Year 2010 emissions for VOC and NOx are lower than in 2002 and near the Maintenance Plan Budget, while the analysis years from 2015 on are below the Maintenance Plan Budget. Figure 2 illustrates that emissions for both ozone precursors is estimated to decline steadily over the next 25 years.

TABLE 6: EMISSION ANALYSIS RESULTS

Year	Daily VMT	VOC *Tons/day*	NOX *Tons/day*
2002	4,410,000	8.19	13.89
Budget		3.50	4.82
2010	4,626,495	3.87	6.52
2015	5,283,346	3.14	4.28
2025	5,448,718	2.16	2.26
2030	5,663,927	2.18	2.01

Figure 2: EMISSION ANALYSIS RESULTS



TABLES 7-10: DETAILED EMISSION ANALYSIS RESULTS

Modeled Vehicle Miles of Travel and Mobile Source Emissions for 2010 Scenario

Functional Class System	Model VMT	Adjusted VMT	Average Speed	VOC Tons/day	NOx Tons/day
Rural Interstate	707,939	615,165	69.6	0.479	1.137
Rural Principal Arterial	174,249	219,554	57.9	0.173	0.353
Rural Minor Arterial	240,438	206,777	56.8	0.164	0.313
Rural Major Collector	273,643	1,491,354	47.7	1.230	1.986
Rural Minor Collector	41,112	38,645	43.8	0.033	0.050
Rural Local	35,356	94,754	41.3	0.081	0.119
Urban Interstate	26,560	113,325	64.0	0.089	0.206
Urban Expressway	142,878	163,770	56.4	0.131	0.267
Urban Principal Arterial	606,198	624,384	41.9	0.531	0.789
Urban Minor Arterial	546,738	617,814	34.4	0.552	0.755
Urban Collector	147,122	76,503	31.6	0.070	0.094
Urban Local	72,779	362,439	28.9	0.342	0.450
Ramp	22,109	*		*	*
Forecast 2015 Totals	3,037,121	4,626,495		3.87	6.52

*Adjusted VMT contains ramp VMT in Interstate and Expressway

Modeled Vehicle Miles of Travel and Mobile Source Emissions for 2015 Scenario

Functional Class System	Model VMT	Adjusted VMT	Average Speed	VOC Tons/day	NOx Tons/day
Rural Interstate	769,351	668,500	69.5	0.374	0.688
Rural Principal Arterial	199,660	251,572	58.2	0.142	0.230
Rural Minor Arterial	294,600	253,356	56.8	0.143	0.219
Rural Major Collector	311,676	1,698,634	48.2	0.994	1.318
Rural Minor Collector	42,609	40,052	43.8	0.024	0.030
Rural Local	39,446	105,715	41.3	0.064	0.078
Urban Interstate	27,824	119,569	64.0	0.067	0.121
Urban Expressway	151,941	178,731	56.4	0.102	0.165
Urban Principal Arterial	720,275	741,883	42.9	0.445	0.551
Urban Minor Arterial	630,475	712,437	34.9	0.448	0.510
Urban Collector	185,605	96,515	32.6	0.062	0.069
Urban Local	50,772	414,366	29.7	0.274	0.300
Ramp	83,206	*		*	*
Forecast 2015 Totals	3,484,651	5,283,346		3.14	4.28

*Adjusted vmt contains ramp vmt in Interstate and Expressway

Modeled Vehicle Miles of Travel and Mobile Source Emissions for 2025 Scenario

Functional Class System	Model VMT	Adjusted VMT	Average Speed	VOC Tons/day	NOx Tons/day
Rural Interstate	857,185	744,425	69.4	0.277	0.364
Rural Principal Arterial	204,361	257,495	57.2	0.097	0.115
Rural Minor Arterial	285,739	245,736	47.4	0.092	0.107
Rural Major Collector	322,046	1,755,151	46.8	0.683	0.708
Rural Minor Collector	41,709	39,206	42.2	0.016	0.015
Rural Local	40,244	107,854	38.2	0.044	0.042
Urban Interstate	31,794	134,331	54.5	0.050	0.065
Urban Expressway	152,479	180,057	55.1	0.068	0.081
Urban Principal Arterial	721,872	743,528	31.2	0.298	0.289
Urban Minor Arterial	646,160	730,161	27.4	0.309	0.275
Urban Collector	194,368	101,071	28.1	0.044	0.038
Urban Local	81,863	407,678	28.5	0.184	0.157
Ramp	29,561	*		*	*
Forecast 2015 Totals	3,609,382	5,448,718		2.16	2.26

*Adjusted vmt contains ramp vmt in Interstate and Expressway

Modeled Vehicle Miles of Travel and Mobile Source Emissions for 2030 Scenario

Functional Class System	Model VMT	Adjusted VMT	Average Speed	VOC Tons/day	NOx Tons/day
Rural Interstate	905,011	785,880	69.3	0.283	0.321
Rural Principal Arterial	213,168	268,592	57.8	0.097	0.102
Rural Minor Arterial	295,761	254,354	45.9	0.093	0.095
Rural Major Collector	331,711	1,807,825	45.9	0.682	0.630
Rural Minor Collector	42,555	40,002	42.1	0.015	0.014
Rural Local	42,102	112,833	38.3	0.044	0.038
Urban Interstate	33,570	141,525	54.3	0.052	0.058
Urban Expressway	157,527	186,181	55.1	0.069	0.071
Urban Principal Arterial	746,281	768,669	29.9	0.299	0.259
Urban Minor Arterial	674,569	762,263	26.8	0.313	0.250
Urban Collector	201,184	104,616	27.7	0.044	0.034
Urban Local	86,176	429,156	28.3	0.186	0.142
Ramp	30,887	*		*	*
Forecast 2015 Totals	4,094,628	5,663,927		2.18	2.01

*Adjusted vmt contains ramp vmt in Interstate and Expressway

The regional emissions analysis of the projects in the 2030 Transportation Plan indicates that the plan contributes to the improvement of air quality. The historic trends for Delaware County in recent decades include: decreased manufacturing including the recent closing of a major GM factory, slow population growth, and active local environmental groups. An ethanol plant is planned in the Shideler area, but its emissions would have a minor impact. There are no known factors that would cause or seriously contribute to an air quality violation

from now in 2007 to the year 2015. In summary, it can be concluded that the Transportation Plan conforms to the national air quality standards.

APPENDIX – MOBILE 6.2 FILES

DELAWARE COUNTY VEHICLE REGISTRATION – INPUT FILE

```
REG DIST
*
* THIS FILE CONTAINS THE DEFAULT MOBILE6 VALUES FOR THE DISTRIBUTION OF
* VEHICLES BY AGE FOR JULY OF ANY CALENDAR YEAR.  THERE ARE SIXTEEEN (16)
* SETS OF VALUES REPRESENTING 16 COMBINED GASOLINE/DIESEL VEHICLE CLASS
* DISTRIBUTIONS.  THESE DISTRIBUTIONS ARE SPLIT FOR GASOLINE AND DIESEL
* USING THE SEPARATE INPUT (OR DEFAULT) VALUES FOR DIESEL SALES FRACTIONS.
* EACH DISTRIBUTION CONTAINS 25 VALUES WHICH REPRESENT THE FRACTION OF
* ALL VEHICLES IN THAT CLASS (GASOLINE AND DIESEL) OF THAT AGE IN JULY.
* THE FIRST NUMBER IS FOR AGE 1 (CALENDAR YEAR MINUS MODEL YEAR PLUS ONE)
* AND THE LAST NUMBER IS FOR AGE 25.  THE LAST AGE INCLUDES ALL VEHICLES
* OF AGE 25 OR OLDER.  THE FIRST NUMBER IN EACH DISTRIBUTION IS AN INTEGER
* WHICH INDICATES WHICH OF THE 16 VEHICLE CLASSES ARE REPRESENTED BY THE
* DISTRIBUTION.  THE SIXTEEN VEHICLE CLASSES ARE:
*
*  1  LDV    LIGHT-DUTY VEHICLES (PASSENGER CARS)
*  2  LDT1   LIGHT-DUTY TRUCKS 1 (0-6,000 LBS. GVWR, 0-3750 LBS. LVW)
*  3  LDT2   LIGHT DUTY TRUCKS 2 (0-6,001 LBS. GVWR, 3751-5750 LBS. LVW)
*  4  LDT3   LIGHT DUTY TRUCKS 3 (6,001-8500 LBS. GVWR, 0-3750 LBS. LVW)
*  5  LDT4   LIGHT DUTY TRUCKS 4 (6,001-8500 LBS. GVWR, 3751-5750 LBS. LVW)
*  6  HDV2B  CLASS 2B HEAVY DUTY VEHICLES (8501-10,000 LBS. GVWR)
*  7  HDV3   CLASS 3 HEAVY DUTY VEHICLES (10,001-14,000 LBS. GVWR)
*  8  HDV4   CLASS 4 HEAVY DUTY VEHICLES (14,001-16,000 LBS. GVWR)
*  9  HDV5   CLASS 5 HEAVY DUTY VEHICLES (16,001-19,500 LBS. GVWR)
* 10  HDV6   CLASS 6 HEAVY DUTY VEHICLES (19,501-26,000 LBS. GVWR)
* 11  HDV7   CLASS 7 HEAVY DUTY VEHICLES (26,001-33,000 LBS. GVWR)
* 12  HDV8A  CLASS 8A HEAVY DUTY VEHICLES (33,001-60,000 LBS. GVWR)
* 13  HDV8B  CLASS 8B HEAVY DUTY VEHICLES (>60,000 LBS. GVWR)
* 14  HDBS   SCHOOL BUSSES
* 15  HDBT   TRANSIT AND URBAN BUSSES
* 16  MC     MOTORCYCLES (ALL)
*
* THE 25 AGE VALUES ARE ARRANGED IN TWO ROWS OF 10 VALUES FOLLOWED BY A ROW
* WITH THE LAST 5 VALUES.  COMMENTS (SUCH AS THIS ONE) ARE INDICATED BY
* AN ASTERISK IN THE FIRST COLUMN. EMPTY ROWS ARE IGNORED.  VALUES ARE
* READ "FREE FORMAT," MEANING ANY NUMBER MAY APPEAR IN ANY ROW WITH AS
* MANY CHARACTERS AS NEEDED (INCLUDING A DECIMAL) AS LONG AS 25 VALUES
* FOLLOW THE INITIAL INTEGER VALUE SEPARATED BY A SPACE.
*
* IF ALL 28 VEHICLE CLASSES DO NOT NEED TO BE ALTERED FROM THE DEFAULT
* VALUES, THEN ONLY THE VEHICLE CLASSES THAT NEED TO BE CHANGED NEED TO
* BE INCLUDED IN THIS FILE.  THE ORDER IN WHICH THE VEHICLE CLASSES ARE
* READ DOES NOT MATTER, HOWEVER EACH VEHICLE CLASS SET MUST CONTAIN 25
* VALUES AND BE IN THE PROPER AGE ORDER.
*
REG DIST
* COUNTY 18, DELAWARE
* LDV
1 0.0428 0.0571 0.0505 0.0495 0.0617 0.0591 0.0560 0.0588 0.0536 0.0615
  0.0564 0.0551 0.0551 0.0488 0.0416 0.0439 0.0343 0.0260 0.0215 0.0167
  0.0127 0.0065 0.0031 0.0037 0.0241
* LDT1
2 0.0411 0.0548 0.0485 0.0270 0.0331 0.0205 0.0306 0.0264 0.0459 0.0465
  0.0535 0.0475 0.0422 0.0659 0.0436 0.0700 0.0538 0.0600 0.0558 0.0439
  0.0254 0.0170 0.0126 0.0115 0.0229
* LDT2
3 0.0634 0.0845 0.0747 0.0605 0.0896 0.0810 0.0797 0.0761 0.0556 0.0527
  0.0511 0.0451 0.0365 0.0291 0.0223 0.0214 0.0239 0.0081 0.0083 0.0066
  0.0076 0.0043 0.0021 0.0025 0.0132
* LDT3
4 0.0468 0.0624 0.0552 0.0531 0.0694 0.0823 0.0549 0.0542 0.0546 0.0638
  0.0484 0.0419 0.0349 0.0171 0.0241 0.0321 0.0293 0.0213 0.0219 0.0184
  0.0162 0.0103 0.0063 0.0041 0.0772
* LDT4
5 0.0679 0.0905 0.0802 0.0761 0.0797 0.0878 0.0662 0.0612 0.0617 0.0504
  0.0374 0.0144 0.0243 0.0135 0.0194 0.0041 0.0054 0.0072 0.0104 0.0108
  0.0032 0.0009 0.0014 0.0005 0.1256
```

2010 SCENARIO FILES – MOBILE 6.2 INPUT FILE

```
MOBILE6 INPUT FILE :
DATABASE AGES      : 5, 1
POLLUTANTS         : HC NOX
DATABASE OUTPUT    :
DATABASE OPTIONS   : C:\PROGRA~1\TRANSC~3\Muncie10.d
EMISSIONS TABLE    : C:\PROGRA~1\TRANSC~3\Muncie10.tb1

RUN DATA
```

```
MIN/MAX TEMP       : 64.0 84.9
ABSOLUTE HUMIDITY  : 93.7
CLOUD COVER        : 0.34
SUNRISE/SUNSET     : 6  9
FUEL RVP           : 9.0
SEASON             : 1

SCENARIO REC       : Scenario 1: Rural Interstate (M6 Freeway/Freeway Ramp)
CALENDAR YEAR      : 2010
EVALUATION MONTH   : 7
AVERAGE SPEED      : 69.6 FREEWAY 97.0 0.0 0.0 3.0

SCENARIO REC       : Scenario 2: Rural OPA (M6 Non-Ramp)
CALENDAR YEAR      : 2010
EVALUATION MONTH   : 7
AVERAGE SPEED      : 57.9 NON-RAMP

SCENARIO REC       : Scenario 3: Rural Minor Arterial (M6 Arterial/Collector)
CALENDAR YEAR      : 2010
EVALUATION MONTH   : 7
AVERAGE SPEED      : 56.8 ARTERIAL

SCENARIO REC       : Scenario 4: Rural Major Collector (M6 Arterial/Collector)
CALENDAR YEAR      : 2010
EVALUATION MONTH   : 7
AVERAGE SPEED      : 47.7 ARTERIAL

SCENARIO REC       : Scenario 5: Rural Minor Collector (M6 Arterial/Collector)
CALENDAR YEAR      : 2010
EVALUATION MONTH   : 7
AVERAGE SPEED      : 43.8 ARTERIAL

SCENARIO REC       : Scenario 6: Rural Local (M6 Arterial/Collector)
CALENDAR YEAR      : 2010
EVALUATION MONTH   : 7
AVERAGE SPEED      : 41.3 ARTERIAL

SCENARIO REC       : Scenario 7: Urban Interstate (M6 Freeway/Freeway Ramp)
CALENDAR YEAR      : 2010
EVALUATION MONTH   : 7
AVERAGE SPEED      : 64.0 FREEWAY 92.0 0.0 0.0 8.0

SCENARIO REC       : Scenario 8: Urban Freeway/Expressway (M6 Freeway/Freeway Ramp)
CALENDAR YEAR      : 2010
EVALUATION MONTH   : 7
AVERAGE SPEED      : 56.4 FREEWAY 92.0 0.0 0.0 8.0

SCENARIO REC       : Scenario 9: Urban OPA (M6 Arterial/Collector)
CALENDAR YEAR      : 2010
EVALUATION MONTH   : 7
AVERAGE SPEED      : 41.9 ARTERIAL

SCENARIO REC       : Scenario 10: Urban Minor Arterial (M6 Arterial/Collector)
CALENDAR YEAR      : 2010
EVALUATION MONTH   : 7
AVERAGE SPEED      : 34.4 ARTERIAL

SCENARIO REC       : Scenario 11: Urban Collector (M6 Arterial/Collector)
CALENDAR YEAR      : 2010
EVALUATION MONTH   : 7
AVERAGE SPEED      : 31.6 ARTERIAL
SCENARIO REC       : Scenario 12: Urban Local (M6 Arterial/Collector)
CALENDAR YEAR      : 2010
EVALUATION MONTH   : 7
AVERAGE SPEED      : 28.9 ARTERIAL
END OF RUN         :
```

2010 Scenario Files – Mobile 6.2 Output File

```
************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                           *
* Input file: C:\PROGRA~1\TRANSCAD\~X4H1.IN (file 1, run 1).            *
************************************************************************
  M617 Comment: User supplied alternate AC input: Cloud Cover Fraction set to 0.34.
  M618 Comment: User supplied alternate AC input: Sunrise at  6 AM, Sunset at  9 PM.

* # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 1: Rural Interstate (M6 Freeway/Freeway Ramp)
* File 1, Run 1, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M 96 Warning: 69.6     speed reduced to 65 mph maximum
  M515 Warning: The combined freeway and ramp average speed entered cannot be greater than 63.3 miles per hour. The
average speed will be reset to this value.
  M582 Warning: The user supplied freeway average speed of 63.3
            will be used for all hours of the day. 100% of VMT has been assigned to a fixed combination of freeways
and freeway ramps for all hours of the day and all vehicle types.
```

```
  M 48 Warning: there are no sales for vehicle class HDGV8b

                     Calendar Year:  2010
                             Month:  July
                          Altitude:  Low
                Minimum Temperature:  64.0 (F)
                Maximum Temperature:  84.9 (F)
                  Absolute Humidity:   94. grains/lb
                   Nominal Fuel RVP:   9.0 psi
                      Weathered RVP:   8.8 psi
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                       ATP Program:  No
                   Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:                 <6000     >6000     (All)
                  ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.3478    0.3890    0.1336              0.0359    0.0003    0.0020    0.0860    0.0054    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      0.613     0.691     1.186     0.818     0.837     0.138     0.338     0.253      2.44     0.706
     Composite NOX :      0.543     0.699     1.057     0.790     2.689     0.658     1.147    11.251      1.59     1.677
  ---------------------------------------------------------------------------------------------------------------------



* # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 2: Rural OPA (M6 Non-Ramp)
* File 1, Run 1, Scenario 2.
* # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M581 Warning: The user supplied freeway average speed of 57.9 will be used for all hours of the day. 100% of VMT
             has been assigned to the freeway roadway type for all hours of the day and all vehicle types.
  M 48 Warning: there are no sales for vehicle class HDGV8b

                     Calendar Year:  2010
                             Month:  July
                          Altitude:  Low
                Minimum Temperature:  64.0 (F)
                Maximum Temperature:  84.9 (F)
                  Absolute Humidity:   94. grains/lb
                   Nominal Fuel RVP:   9.0 psi
                      Weathered RVP:   8.8 psi
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                       ATP Program:  No
                   Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:                 <6000     >6000     (All)
                  ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.3478    0.3890    0.1336              0.0359    0.0003    0.0020    0.0860    0.0054    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      0.625     0.702     1.210     0.832     0.843     0.138     0.337     0.252      2.04     0.716
     Composite NOX :      0.529     0.680     1.033     0.770     2.586     0.515     0.897     8.975      1.43     1.460
  ---------------------------------------------------------------------------------------------------------------------



 * # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 3: Rural Minor Arterial (M6 Arterial/Collector)
* File 1, Run 1, Scenario 3.
* # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning: The user supplied arterial average speed of 56.8 will be used for all hours of the day.  100% of VMT
             has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types.
  M 48 Warning: there are no sales for vehicle class HDGV8b

                     Calendar Year:  2010
                             Month:  July
                          Altitude:  Low
                Minimum Temperature:  64.0 (F)
                Maximum Temperature:  84.9 (F)
                  Absolute Humidity:   94. grains/lb
                   Nominal Fuel RVP:   9.0 psi
                      Weathered RVP:   8.8 psi
                Fuel Sulfur Content:   30. ppm
```

```
              Exhaust I/M Program:  No
                 Evap I/M Program:  No
                      ATP Program:  No
                 Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
              GVWR:                <6000     >6000     (All)
                     ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.3478    0.3890    0.1336              0.0359    0.0003    0.0020    0.0860    0.0054    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.627     0.705     1.216     0.835     0.847     0.138     0.338     0.253      1.98     0.718
    Composite NOX :      0.527     0.677     1.029     0.767     2.567     0.497     0.866     8.021      1.40     1.375
  ---------------------------------------------------------------------------------------------------------------------



* # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 4: Rural Major Collector (M6 Arterial/Collector)
* File 1, Run 1, Scenario 4.
* # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning: The user supplied arterial average speed of 47.7 will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types.
  M 48 Warning: there are no sales for vehicle class HDGV8b

                   Calendar Year:  2010
                           Month:  July
                        Altitude:  Low
              Minimum Temperature:  64.0 (F)
              Maximum Temperature:  84.9 (F)
                Absolute Humidity:   94. grains/lb
                 Nominal Fuel RVP:   9.0 psi
                    Weathered RVP:   8.8 psi
              Fuel Sulfur Content:   30. ppm

              Exhaust I/M Program:  No
                 Evap I/M Program:  No
                      ATP Program:  No
                 Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
              GVWR:                <6000     >6000     (All)
                     ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.3478    0.3890    0.1336              0.0359    0.0003    0.0020    0.0860    0.0054    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.657     0.730     1.269     0.868     0.890     0.145     0.354     0.275      1.87     0.748
    Composite NOX :      0.510     0.655     1.003     0.744     2.412     0.394     0.686     6.365      1.19     1.208
  ---------------------------------------------------------------------------------------------------------------------



* # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 5: Rural Minor Collector (M6 Arterial/Collector)
* File 1, Run 1, Scenario 5.
* # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning: The user supplied arterial average speed of 43.8 will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types.
  M 48 Warning: there are no sales for vehicle class HDGV8b

                   Calendar Year:  2010
                           Month:  July
                        Altitude:  Low
              Minimum Temperature:  64.0 (F)
              Maximum Temperature:  84.9 (F)
                Absolute Humidity:   94. grains/lb
                 Nominal Fuel RVP:   9.0 psi
                    Weathered RVP:   8.8 psi
              Fuel Sulfur Content:   30. ppm
```

```
                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                        ATP Program:  No
                   Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
              GVWR:                <6000     >6000     (All)
                     ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.3478    0.3890    0.1336              0.0359    0.0003    0.0020    0.0860    0.0054    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.672     0.742     1.293     0.883     0.917     0.149     0.365     0.291      1.89     0.764
    Composite NOX :      0.503     0.645     0.992     0.734     2.345     0.369     0.642     5.957      1.14     1.163
  ---------------------------------------------------------------------------------------------------------------------
```

```
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 6: Rural Local (M6 Arterial/Collector)
* File 1, Run 1, Scenario 6.
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
             The user supplied arterial average speed of 41.3
             will be used for all hours of the day.  100% of VMT
             has been assigned to the arterial/collector roadway
             type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                    Calendar Year:  2010
                            Month:  July
                         Altitude:  Low
                Minimum Temperature:  64.0 (F)
                Maximum Temperature:  84.9 (F)
                  Absolute Humidity:   94. grains/lb
                   Nominal Fuel RVP:   9.0 psi
                      Weathered RVP:   8.8 psi
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                        ATP Program:  No
                   Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
              GVWR:                <6000     >6000     (All)
                     ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.3478    0.3890    0.1336              0.0359    0.0003    0.0020    0.0860    0.0054    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.682     0.750     1.308     0.892     0.938     0.153     0.375     0.304      1.92     0.774
    Composite NOX :      0.499     0.639     0.986     0.728     2.303     0.358     0.624     5.786      1.13     1.142
  ---------------------------------------------------------------------------------------------------------------------
```

```
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 7: Urban Interstate (M6 Freeway/Freeway Ramp)
* File 1, Run 1, Scenario 7.
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M515 Warning:
             The combined freeway and ramp average speed entered
             cannot be greater than 60.7 miles per hour.
             The average speed will be reset to this value.
  M582 Warning:
             The user supplied freeway average speed of 60.7
             will be used for all hours of the day. 100% of VMT
             has been assigned to a fixed combination of freeways
             and freeway ramps for all hours of the day and all
              vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                    Calendar Year:  2010
                            Month:  July
                         Altitude:  Low
```

```
                Minimum Temperature:  64.0 (F)
                Maximum Temperature:  84.9 (F)
                  Absolute Humidity:   94. grains/lb
                   Nominal Fuel RVP:   9.0 psi
                      Weathered RVP:   8.8 psi
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                        ATP Program:  No
                   Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:                 <6000     >6000     (All)
                    ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.3478    0.3890    0.1336              0.0359    0.0003    0.0020    0.0860    0.0054    1.0000
 ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.622     0.698     1.199     0.826     0.846    0.140     0.341     0.258      2.42     0.714
    Composite NOX :      0.545     0.701     1.062     0.793     2.664    0.642     1.118    10.942      1.57     1.651
 ---------------------------------------------------------------------------------------------------------------------
```

```
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 8: Urban Freeway/Expressway (M6 Freeway/Freeway Ramp)
* File 1, Run 1, Scenario 8.
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M582 Warning:
             The user supplied freeway average speed of 56.4
             will be used for all hours of the day. 100% of VMT
             has been assigned to a fixed combination of freeways
             and freeway ramps for all hours of the day and all
              vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                    Calendar Year:  2010
                            Month:  July
                         Altitude:  Low
                Minimum Temperature:  64.0 (F)
                Maximum Temperature:  84.9 (F)
                  Absolute Humidity:   94. grains/lb
                   Nominal Fuel RVP:   9.0 psi
                      Weathered RVP:   8.8 psi
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                        ATP Program:  No
                   Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:                 <6000     >6000     (All)
                    ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.3478    0.3890    0.1336              0.0359    0.0003    0.0020    0.0860    0.0054    1.0000
 ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.632     0.708     1.221     0.839     0.853    0.140     0.341     0.258      2.13     0.724
    Composite NOX :      0.536     0.688     1.046     0.780     2.580    0.527     0.918     9.090      1.44     1.478
 ---------------------------------------------------------------------------------------------------------------------
```

```
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 9: Urban OPA (M6 Arterial/Collector)
* File 1, Run 1, Scenario 9.
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
             The user supplied arterial average speed of 41.9
             will be used for all hours of the day.  100% of VMT
             has been assigned to the arterial/collector roadway
             type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                    Calendar Year:  2010
                            Month:  July
                         Altitude:  Low
                Minimum Temperature:  64.0 (F)
                Maximum Temperature:  84.9 (F)
                  Absolute Humidity:   94. grains/lb
                   Nominal Fuel RVP:   9.0 psi
                      Weathered RVP:   8.8 psi
```

```
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                        ATP Program:  No
                   Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
              GVWR:                <6000     >6000     (All)
                    ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.3478    0.3890    0.1336              0.0359    0.0003    0.0020    0.0860    0.0054    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      0.679     0.748     1.304     0.890     0.933     0.152     0.372     0.300      1.91     0.772
     Composite NOX :      0.500     0.641     0.987     0.730     2.314     0.361     0.628     5.829      1.13     1.147
  ---------------------------------------------------------------------------------------------------------------------
```

```
* # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 10: Urban Minor Arterial (M6 Arterial/Collector)
* File 1, Run 1, Scenario 10.
* # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
             The user supplied arterial average speed of 34.4
             will be used for all hours of the day.  100% of VMT
             has been assigned to the arterial/collector roadway
             type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                    Calendar Year:  2010
                            Month:  July
                         Altitude:  Low
                Minimum Temperature:  64.0 (F)
                Maximum Temperature:  84.9 (F)
                  Absolute Humidity:   94. grains/lb
                   Nominal Fuel RVP:   9.0 psi
                      Weathered RVP:   8.8 psi
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                        ATP Program:  No
                   Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
              GVWR:                <6000     >6000     (All)
                    ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.3478    0.3890    0.1336              0.0359    0.0003    0.0020    0.0860    0.0054    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      0.714     0.775     1.357     0.924     1.015     0.168     0.410     0.352      2.03     0.810
     Composite NOX :      0.492     0.629     0.975     0.717     2.185     0.344     0.599     5.554      1.09     1.109
  ---------------------------------------------------------------------------------------------------------------------
```

```
* # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 11: Urban Collector (M6 Arterial/Collector)
* File 1, Run 1, Scenario 11.
* # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
             The user supplied arterial average speed of 31.6
             will be used for all hours of the day.  100% of VMT
             has been assigned to the arterial/collector roadway
             type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                    Calendar Year:  2010
                            Month:  July
                         Altitude:  Low
                Minimum Temperature:  64.0 (F)
                Maximum Temperature:  84.9 (F)
                  Absolute Humidity:   94. grains/lb
```

```
                  Nominal Fuel RVP:   9.0 psi
                     Weathered RVP:   8.8 psi
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                        ATP Program:  No
                   Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
              GVWR:                <6000     >6000     (All)
                    ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.3478    0.3890    0.1336              0.0359    0.0003    0.0020    0.0860    0.0054    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.734     0.793     1.390     0.945     1.058     0.176     0.430     0.379      2.09     0.832
    Composite NOX :      0.499     0.635     0.982     0.723     2.138     0.345     0.601     5.581      1.07     1.115
  ---------------------------------------------------------------------------------------------------------------------
```

```
* # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 12: Urban Local (M6 Arterial/Collector)
* File 1, Run 1, Scenario 12.
* # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 28.9
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                    Calendar Year:  2010
                            Month:  July
                         Altitude:  Low
                Minimum Temperature:  64.0 (F)
                Maximum Temperature:  84.9 (F)
                  Absolute Humidity:   94. grains/lb
                     Nominal Fuel RVP:   9.0 psi
                        Weathered RVP:   8.8 psi
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                        ATP Program:  No
                   Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
              GVWR:                <6000     >6000     (All)
                    ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.3478    0.3890    0.1336              0.0359    0.0003    0.0020    0.0860    0.0054    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.755     0.812     1.424     0.969     1.108     0.185     0.452     0.409      2.17     0.856
    Composite NOX :      0.508     0.643     0.994     0.733     2.092     0.349     0.608     5.644      1.04     1.127
  ---------------------------------------------------------------------------------------------------------------------
```

2015 SCENARIO FILES – MOBILE 6.2 INPUT FILE

```
MOBILE6 INPUT FILE :
DATABASE AGES      : 5, 1
POLLUTANTS         : HC NOX
DATABASE OUTPUT    :
DATABASE OPTIONS   : C:\PROGRA~1\TRANSC~3\Muncie15.d
EMISSIONS TABLE    : C:\PROGRA~1\TRANSC~3\Muncie15.tb1

RUN DATA
MIN/MAX TEMP       : 64.0 84.9
ABSOLUTE HUMIDITY  : 93.7
CLOUD COVER        : 0.34
SUNRISE/SUNSET     : 6  9
FUEL RVP           : 9.0
SEASON             : 1
```

```
SCENARIO REC       : Scenario 1: Rural Interstate (M6 Freeway/Freeway Ramp)
CALENDAR YEAR      : 2015
EVALUATION MONTH   : 7
AVERAGE SPEED      : 69.6 FREEWAY 97.0 0.0 0.0 3.0

SCENARIO REC       : Scenario 2: Rural OPA (M6 Non-Ramp)
CALENDAR YEAR      : 2015
EVALUATION MONTH   : 7
AVERAGE SPEED      : 58.2 NON-RAMP

SCENARIO REC       : Scenario 3: Rural Minor Arterial (M6 Arterial/Collector)
CALENDAR YEAR      : 2015
EVALUATION MONTH   : 7
AVERAGE SPEED      : 56.8 ARTERIAL

SCENARIO REC       : Scenario 4: Rural Major Collector (M6 Arterial/Collector)
CALENDAR YEAR      : 2015
EVALUATION MONTH   : 7
AVERAGE SPEED      : 48.2 ARTERIAL

SCENARIO REC       : Scenario 5: Rural Minor Collector (M6 Arterial/Collector)
CALENDAR YEAR      : 2015
EVALUATION MONTH   : 7
AVERAGE SPEED      : 43.8 ARTERIAL

SCENARIO REC       : Scenario 6: Rural Local (M6 Arterial/Collector)
CALENDAR YEAR      : 2015
EVALUATION MONTH   : 7
AVERAGE SPEED      : 41.3 ARTERIAL

SCENARIO REC       : Scenario 7: Urban Interstate (M6 Freeway/Freeway Ramp)
CALENDAR YEAR      : 2015
EVALUATION MONTH   : 7
AVERAGE SPEED      : 64.0 FREEWAY 92.0 0.0 0.0 8.0

SCENARIO REC       : Scenario 8: Urban Freeway/Expressway (M6 Freeway/Freeway Ramp)
CALENDAR YEAR      : 2015
EVALUATION MONTH   : 7
AVERAGE SPEED      : 56.4 FREEWAY 92.0 0.0 0.0 8.0

SCENARIO REC       : Scenario 9: Urban OPA (M6 Arterial/Collector)
CALENDAR YEAR      : 2015
EVALUATION MONTH   : 7
AVERAGE SPEED      : 42.9 ARTERIAL

SCENARIO REC       : Scenario 10: Urban Minor Arterial (M6 Arterial/Collector)
CALENDAR YEAR      : 2015
EVALUATION MONTH   : 7
AVERAGE SPEED      : 34.9 ARTERIAL

SCENARIO REC       : Scenario 11: Urban Collector (M6 Arterial/Collector)
CALENDAR YEAR      : 2030
EVALUATION MONTH   : 7
AVERAGE SPEED      : 32.6 ARTERIAL

SCENARIO REC       : Scenario 12: Urban Local (M6 Arterial/Collector)
CALENDAR YEAR      : 2030
EVALUATION MONTH   : 7
AVERAGE SPEED      : 29.7 ARTERIAL
END OF RUN         :
```

2015 Scenario Files – Mobile 6.2 Output File

```
************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                           *
* Input file: C:\PROGRA~1\TRANSCAD\~X4H3.IN (file 1, run 1).            *
************************************************************************
  M617 Comment: User supplied alternate AC input: Cloud Cover Fraction set to 0.34.
  M618 Comment: User supplied alternate AC input: Sunrise at  6 AM, Sunset at  9 PM.

* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 1: Rural Interstate (M6 Freeway/Freeway Ramp)
```

```
* File 1, Run 1, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M 96 Warning: 69.6     speed reduced to 65 mph maximum
  M515 Warning: The combined freeway and ramp average speed entered cannot be greater than 63.3 miles per hour.
           The average speed will be reset to this value.
  M582 Warning: The user supplied freeway average speed of 63.3 will be used for all hours of the day. 100% of VMT
           has been assigned to a fixed combination of freeways and freeway ramps for all hours of the day and all
            vehicle types.
  M 48 Warning: there are no sales for vehicle class HDGV8b
  M 48 Warning: there are no sales for vehicle class LDDT12

                    Calendar Year:  2015
                            Month:  July
                         Altitude:  Low
               Minimum Temperature:  64.0 (F)
               Maximum Temperature:  84.9 (F)
                 Absolute Humidity:   94. grains/lb
                  Nominal Fuel RVP:   9.0 psi
                     Weathered RVP:   8.8 psi
               Fuel Sulfur Content:   30. ppm

               Exhaust I/M Program:  No
                  Evap I/M Program:  No
                       ATP Program:  No
                  Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:              <6000     >6000     (All)
                    ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.3031    0.4218    0.1449              0.0360    0.0003    0.0021    0.0866    0.0053    1.0000
 ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.397     0.496     0.878     0.594     0.569     0.075     0.234     0.193      2.44     0.507
    Composite NOX :      0.344     0.456     0.796     0.543     1.310     0.241     0.662     5.357      1.59     0.933
 ---------------------------------------------------------------------------------------------------------------------


* # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 2: Rural OPA (M6 Non-Ramp)
* File 1, Run 1, Scenario 2.
* # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M581 Warning: The user supplied freeway average speed of 58.2 will be used for all hours of the day. 100% of VMT
           has been assigned to the freeway roadway type for all hours of the day and all vehicle types.
  M 48 Warning: there are no sales for vehicle class HDGV8b
  M 48 Warning: there are no sales for vehicle class LDDT12

                    Calendar Year:  2015
                            Month:  July
                         Altitude:  Low
               Minimum Temperature:  64.0 (F)
               Maximum Temperature:  84.9 (F)
                 Absolute Humidity:   94. grains/lb
                  Nominal Fuel RVP:   9.0 psi
                     Weathered RVP:   8.8 psi
               Fuel Sulfur Content:   30. ppm

               Exhaust I/M Program:  No
                  Evap I/M Program:  No
                       ATP Program:  No
                  Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:              <6000     >6000     (All)
                    ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.3031    0.4218    0.1449              0.0360    0.0003    0.0021    0.0866    0.0053    1.0000
 ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.402     0.502     0.893     0.602     0.572     0.075     0.234     0.192      2.06     0.512
    Composite NOX :      0.335     0.445     0.778     0.530     1.262     0.191     0.523     4.313      1.43     0.830
 ---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 3: Rural Minor Arterial (M6 Arterial/Collector)
* File 1, Run 1, Scenario 3.
* # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning: The user supplied arterial average speed of 56.8 will be used for all hours of the day.  100% of VMT
           has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types.
  M 48 Warning: there are no sales for vehicle class HDGV8b
  M 48 Warning: there are no sales for vehicle class LDDT12

                    Calendar Year:  2015
                            Month:  July
                         Altitude:  Low
               Minimum Temperature:  64.0 (F)
               Maximum Temperature:  84.9 (F)
                 Absolute Humidity:   94. grains/lb
                  Nominal Fuel RVP:   9.0 psi
                     Weathered RVP:   8.8 psi
               Fuel Sulfur Content:   30. ppm
```

```
                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                        ATP Program:  No
                   Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
            GVWR:                 <6000     >6000     (All)
                     ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.3031    0.4218    0.1449              0.0360    0.0003    0.0021    0.0866    0.0053    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      0.404     0.504     0.897     0.604     0.575     0.075     0.234     0.193      1.98     0.513
     Composite NOX :      0.334     0.442     0.775     0.528     1.251     0.182     0.500     3.828      1.40     0.785
  ---------------------------------------------------------------------------------------------------------------------



* # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 4: Rural Major Collector (M6 Arterial/Collector)
* File 1, Run 1, Scenario 4.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning: The user supplied arterial average speed of 48.2 will be used for all hours of the day.  100% of VMT
             has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types.
  M 48 Warning: there are no sales for vehicle class HDGV8b
  M 48 Warning: there are no sales for vehicle class LDDT12

                     Calendar Year:  2015
                             Month:  July
                          Altitude:  Low
                Minimum Temperature:  64.0 (F)
                Maximum Temperature:  84.9 (F)
                  Absolute Humidity:   94. grains/lb
                   Nominal Fuel RVP:   9.0 psi
                      Weathered RVP:   8.8 psi
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                        ATP Program:  No
                   Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
            GVWR:                 <6000     >6000     (All)
                     ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.3031    0.4218    0.1449              0.0360    0.0003    0.0021    0.0866    0.0053    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      0.420     0.518     0.929     0.623     0.600     0.079     0.244     0.208      1.87     0.531
     Composite NOX :      0.324     0.429     0.757     0.513     1.179     0.146     0.401     3.069      1.19     0.704
  ---------------------------------------------------------------------------------------------------------------------



* # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 5: Rural Minor Collector (M6 Arterial/Collector)
* File 1, Run 1, Scenario 5.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
             The user supplied arterial average speed of 43.8
             will be used for all hours of the day.  100% of VMT
             has been assigned to the arterial/collector roadway
             type for all hours of the day and all vehicle types.
  M 48 Warning:
             there are no sales for vehicle class HDGV8b
  M 48 Warning:
             there are no sales for vehicle class LDDT12

                     Calendar Year:  2015
                             Month:  July
                          Altitude:  Low
                Minimum Temperature:  64.0 (F)
                Maximum Temperature:  84.9 (F)
                  Absolute Humidity:   94. grains/lb
                   Nominal Fuel RVP:   9.0 psi
                      Weathered RVP:   8.8 psi
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                        ATP Program:  No
                   Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
```

```
             GVWR:              <6000     >6000     (All)
                  ------     ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.3031    0.4218    0.1449              0.0360    0.0003    0.0021    0.0866    0.0053    1.0000
 ---------------------------------------------------------------------------------------------------------------------
Composite Emission Factors (g/mi):
    Composite VOC :      0.431     0.527     0.946     0.634     0.619     0.082     0.252     0.222      1.89     0.542
    Composite NOX :      0.319     0.422     0.748     0.505     1.143     0.135     0.372     2.848      1.14     0.678
 ---------------------------------------------------------------------------------------------------------------------
```

```
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 6: Rural Local (M6 Arterial/Collector)
* File 1, Run 1, Scenario 6.
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning: The user supplied arterial average speed of 41.3 will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types.
  M 48 Warning: there are no sales for vehicle class HDGV8b
  M 48 Warning: there are no sales for vehicle class LDDT12

                    Calendar Year:  2015
                            Month:  July
                         Altitude:  Low
               Minimum Temperature:  64.0 (F)
               Maximum Temperature:  84.9 (F)
                 Absolute Humidity:   94. grains/lb
                  Nominal Fuel RVP:   9.0 psi
                     Weathered RVP:   8.8 psi
               Fuel Sulfur Content:   30. ppm

               Exhaust I/M Program:  No
                  Evap I/M Program:  No
                       ATP Program:  No
                  Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:              <6000     >6000     (All)
                  ------     ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.3031    0.4218    0.1449              0.0360    0.0003    0.0021    0.0866    0.0053    1.0000
 ---------------------------------------------------------------------------------------------------------------------
Composite Emission Factors (g/mi):
    Composite VOC :      0.437     0.532     0.956     0.640     0.633     0.084     0.259     0.232      1.92     0.549
    Composite NOX :      0.316     0.418     0.743     0.501     1.122     0.132     0.361     2.767      1.13     0.667
 ---------------------------------------------------------------------------------------------------------------------
```

```
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 7: Urban Interstate (M6 Freeway/Freeway Ramp)
* File 1, Run 1, Scenario 7.
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M515 Warning: The combined freeway and ramp average speed entered
            cannot be greater than 60.7 miles per hour. The average speed will be reset to this value.
  M582 Warning: The user supplied freeway average speed of 60.7 will be used for all hours of the day. 100% of VMT
            has been assigned to a fixed combination of freeways and freeway ramps for all hours of the day and all
             vehicle types.
  M 48 Warning: there are no sales for vehicle class HDGV8b
  M 48 Warning: there are no sales for vehicle class LDDT12

                    Calendar Year:  2015
                            Month:  July
                         Altitude:  Low
               Minimum Temperature:  64.0 (F)
               Maximum Temperature:  84.9 (F)
                 Absolute Humidity:   94. grains/lb
                  Nominal Fuel RVP:   9.0 psi
                     Weathered RVP:   8.8 psi
               Fuel Sulfur Content:   30. ppm

               Exhaust I/M Program:  No
                  Evap I/M Program:  No
                       ATP Program:  No
                  Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
```

```
             GVWR:              <6000     >6000     (All)
                  ------     ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.3031    0.4218    0.1449              0.0360    0.0003    0.0021    0.0866    0.0053    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.402     0.501     0.887     0.599     0.574     0.076     0.237     0.197      2.42     0.512
    Composite NOX :      0.345     0.457     0.799     0.545     1.298     0.235     0.646     5.209      1.57     0.921
  ---------------------------------------------------------------------------------------------------------------------
```

```
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 8: Urban Freeway/Expressway (M6 Freeway/Freeway Ramp)
* File 1, Run 1, Scenario 8.
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M582 Warning: The user supplied freeway average speed of 56.4  will be used for all hours of the day. 100% of VMT
            has been assigned to a fixed combination of freeways and freeway ramps for all hours of the day and all
             vehicle types.
  M 48 Warning: there are no sales for vehicle class HDGV8b
  M 48 Warning: there are no sales for vehicle class LDDT12

                    Calendar Year:  2015
                            Month:  July
                         Altitude:  Low
                Minimum Temperature:  64.0 (F)
                Maximum Temperature:  84.9 (F)
                  Absolute Humidity:   94. grains/lb
                   Nominal Fuel RVP:   9.0 psi
                      Weathered RVP:   8.8 psi
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                       ATP Program:  No
                   Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:               <6000     >6000     (All)
                  ------     ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.3031    0.4218    0.1449              0.0360    0.0003    0.0021    0.0866    0.0053    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.408     0.506     0.901     0.607     0.578     0.076     0.237     0.197      2.13     0.517
    Composite NOX :      0.339     0.449     0.788     0.536     1.257     0.193     0.530     4.330      1.44     0.835
  ---------------------------------------------------------------------------------------------------------------------
```

```
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 9: Urban OPA (M6 Arterial/Collector)
* File 1, Run 1, Scenario 9.
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning: The user supplied arterial average speed of 42.9 will be used for all hours of the day.  100% of VMT
has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types.
  M 48 Warning: there are no sales for vehicle class HDGV8b
  M 48 Warning: there are no sales for vehicle class LDDT12

                    Calendar Year:  2015
                            Month:  July
                         Altitude:  Low
                Minimum Temperature:  64.0 (F)
                Maximum Temperature:  84.9 (F)
                  Absolute Humidity:   94. grains/lb
                   Nominal Fuel RVP:   9.0 psi
                      Weathered RVP:   8.8 psi
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                       ATP Program:  No
                   Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:               <6000     >6000     (All)
                  ------     ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.3031    0.4218    0.1449              0.0360    0.0003    0.0021    0.0866    0.0053    1.0000
  ---------------------------------------------------------------------------------------------------------------------
```

```
 Composite Emission Factors (g/mi):
     Composite VOC :      0.433     0.528     0.950     0.636     0.624     0.082     0.255     0.226      1.90     0.544
     Composite NOX :      0.318     0.421     0.746     0.504     1.135     0.134     0.368     2.820      1.14     0.674
  ---------------------------------------------------------------------------------------------------------------------


* # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 10: Urban Minor Arterial (M6 Arterial/Collector)
* File 1, Run 1, Scenario 10.
* # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
             The user supplied arterial average speed of 34.9
             will be used for all hours of the day.  100% of VMT
             has been assigned to the arterial/collector roadway
             type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                    Calendar Year:  2015
                            Month:  July
                         Altitude:  Low
              Minimum Temperature:  64.0 (F)
              Maximum Temperature:  84.9 (F)
                Absolute Humidity:   94. grains/lb
                 Nominal Fuel RVP:   9.0 psi
                    Weathered RVP:   8.8 psi
              Fuel Sulfur Content:   30. ppm

              Exhaust I/M Program:  No
                 Evap I/M Program:  No
                      ATP Program:  No
                 Reformulated Gas:  No

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
              GVWR:                 <6000     >6000     (All)
                     ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.3031    0.4218    0.1449              0.0360    0.0003    0.0021    0.0866    0.0053    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      0.456     0.546     0.985     0.658     0.677     0.091     0.280     0.266      2.02     0.570
     Composite NOX :      0.312     0.411     0.734     0.494     1.068     0.126     0.347     2.655      1.10     0.649
  ---------------------------------------------------------------------------------------------------------------------


* # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 11: Urban Collector (M6 Arterial/Collector)
* File 1, Run 1, Scenario 11.
* # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
             The user supplied arterial average speed of 32.6
             will be used for all hours of the day.  100% of VMT
             has been assigned to the arterial/collector roadway
             type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                    Calendar Year:  2015
                            Month:  July
                         Altitude:  Low
              Minimum Temperature:  64.0 (F)
              Maximum Temperature:  84.9 (F)
                Absolute Humidity:   94. grains/lb
                 Nominal Fuel RVP:   9.0 psi
                    Weathered RVP:   8.8 psi
              Fuel Sulfur Content:   30. ppm

              Exhaust I/M Program:  No
                 Evap I/M Program:  No
                      ATP Program:  No
                 Reformulated Gas:  No
```

```
      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:                 <6000     >6000     (All)
                   ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.3031    0.4218    0.1449              0.0360    0.0003    0.0021    0.0866    0.0053    1.0000
 -------------------------------------------------------------------------------------------------------------------
Composite Emission Factors (g/mi):
    Composite VOC :      0.466     0.556     1.002     0.670     0.698     0.094     0.290     0.282      2.07     0.582
    Composite NOX :      0.315     0.414     0.739     0.497     1.050     0.127     0.348     2.664      1.08     0.652
 -------------------------------------------------------------------------------------------------------------------



* # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 12: Urban Local (M6 Arterial/Collector)
* File 1, Run 1, Scenario 12.
* # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 29.7
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                    Calendar Year:  2015
                            Month:  July
                         Altitude:  Low
              Minimum Temperature:  64.0 (F)
              Maximum Temperature:  84.9 (F)
                Absolute Humidity:   94. grains/lb
                 Nominal Fuel RVP:   9.0 psi
                    Weathered RVP:   8.8 psi
              Fuel Sulfur Content:   30. ppm

              Exhaust I/M Program:  No
                 Evap I/M Program:  No
                      ATP Program:  No
                Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:                 <6000     >6000     (All)
                   ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.3031    0.4218    0.1449              0.0360    0.0003    0.0021    0.0866    0.0053    1.0000
 -------------------------------------------------------------------------------------------------------------------
Composite Emission Factors (g/mi):
    Composite VOC :      0.481     0.569     1.027     0.686     0.729     0.099     0.305     0.305      2.14     0.599
    Composite NOX :      0.320     0.418     0.746     0.502     1.025     0.128     0.350     2.683      1.05     0.657
 -------------------------------------------------------------------------------------------------------------------
```

2025 SCENARIO FILES – MOBILE 6.2 INPUT FILE

```
MOBILE6 INPUT FILE :
DATABASE AGES      : 5, 1
POLLUTANTS         : HC NOX
DATABASE OUTPUT    :
DATABASE OPTIONS   : C:\PROGRA~1\TRANSC~3\Muncie25.d
EMISSIONS TABLE    : C:\PROGRA~1\TRANSC~3\Muncie25.tb1

RUN DATA
MIN/MAX TEMP       : 64.0 84.9
ABSOLUTE HUMIDITY  : 93.7
CLOUD COVER        : 0.34
SUNRISE/SUNSET     : 6  9
FUEL RVP           : 9.0
SEASON             : 1

SCENARIO REC       : Scenario 1: Rural Interstate (M6 Freeway/Freeway Ramp)
CALENDAR YEAR      : 2025
EVALUATION MONTH   : 7
AVERAGE SPEED      : 69.6 FREEWAY 97.0 0.0 0.0 3.0

SCENARIO REC       : Scenario 2: Rural OPA (M6 Non-Ramp)
CALENDAR YEAR      : 2025
EVALUATION MONTH   : 7
AVERAGE SPEED      : 57.9 NON-RAMP
```

```
SCENARIO REC       : Scenario 3: Rural Minor Arterial (M6 Arterial/Collector)
CALENDAR YEAR      : 2025
EVALUATION MONTH   : 7
AVERAGE SPEED      : 56.8 ARTERIAL

SCENARIO REC       : Scenario 4: Rural Major Collector (M6 Arterial/Collector)
CALENDAR YEAR      : 2025
EVALUATION MONTH   : 7
AVERAGE SPEED      : 48.4 ARTERIAL

SCENARIO REC       : Scenario 5: Rural Minor Collector (M6 Arterial/Collector)
CALENDAR YEAR      : 2025
EVALUATION MONTH   : 7
AVERAGE SPEED      : 43.8 ARTERIAL

SCENARIO REC       : Scenario 6: Rural Local (M6 Arterial/Collector)
CALENDAR YEAR      : 2025
EVALUATION MONTH   : 7
AVERAGE SPEED      : 41.0 ARTERIAL

SCENARIO REC       : Scenario 7: Urban Interstate (M6 Freeway/Freeway Ramp)
CALENDAR YEAR      : 2025
EVALUATION MONTH   : 7
AVERAGE SPEED      : 64.0 FREEWAY 92.0 0.0 0.0 8.0

SCENARIO REC       : Scenario 8: Urban Freeway/Expressway (M6 Freeway/Freeway Ramp)
CALENDAR YEAR      : 2025
EVALUATION MONTH   : 7
AVERAGE SPEED      : 56.4 FREEWAY 92.0 0.0 0.0 8.0

SCENARIO REC       : Scenario 9: Urban OPA (M6 Arterial/Collector)
CALENDAR YEAR      : 2025
EVALUATION MONTH   : 7
AVERAGE SPEED      : 42.7 ARTERIAL

SCENARIO REC       : Scenario 10: Urban Minor Arterial (M6 Arterial/Collector)
CALENDAR YEAR      : 2025
EVALUATION MONTH   : 7
AVERAGE SPEED      : 34.9 ARTERIAL

SCENARIO REC       : Scenario 11: Urban Collector (M6 Arterial/Collector)
CALENDAR YEAR      : 2025
EVALUATION MONTH   : 7
AVERAGE SPEED      : 33.0 ARTERIAL

SCENARIO REC       : Scenario 12: Urban Local (M6 Arterial/Collector)
CALENDAR YEAR      : 2025
EVALUATION MONTH   : 7
AVERAGE SPEED      : 28.9 ARTERIAL

END OF RUN         :
```

2025 SCENARIO FILES – MOBILE 6.2 OUTPUT FILE

```
************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                           *
* Input file: C:\PROGRA~1\TRANSCAD\~X4H4.IN (file 1, run 1).           *
************************************************************************
  M617 Comment: User supplied alternate AC input: Cloud Cover Fraction set to 0.34.
  M618 Comment: User supplied alternate AC input: Sunrise at  6 AM, Sunset at  9 PM.

* # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 1: Rural Interstate (M6 Freeway/Freeway Ramp)
* File 1, Run 1, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M 96 Warning: 69.6     speed reduced to 65 mph maximum
  M515 Warning: The combined freeway and ramp average speed entered cannot be greater than 63.3 miles per hour.
           The average speed will be reset to this value.
  M582 Warning: The user supplied freeway average speed of 63.3 will be used for all hours of the day. 100% of VMT
           has been assigned to a fixed combination of freeways and freeway ramps for all hours of the day and all
            vehicle types.
  M 48 Warning: there are no sales for vehicle class HDGV8b
  M 48 Warning: there are no sales for vehicle class LDDT12

                  Calendar Year:  2025
```

```
                          Month:  July
                       Altitude:  Low
              Minimum Temperature:  64.0 (F)
              Maximum Temperature:  84.9 (F)
                Absolute Humidity:   94. grains/lb
                 Nominal Fuel RVP:   9.0 psi
                    Weathered RVP:   8.8 psi
              Fuel Sulfur Content:   30. ppm

              Exhaust I/M Program:  No
                 Evap I/M Program:  No
                       ATP Program:  No
                 Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:              <6000     >6000     (All)
                     ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.2788    0.4388    0.1507              0.0365    0.0003    0.0022    0.0876    0.0051    1.0000
 -------------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.265     0.338     0.513     0.383     0.306     0.038     0.119     0.161      2.44      0.338
    Composite NOX :      0.218     0.325     0.540     0.380     0.405     0.050     0.288     1.534      1.59      0.443
 -------------------------------------------------------------------------------------------------------------------------




* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 2: Rural OPA (M6 Non-Ramp)
* File 1, Run 1, Scenario 2.
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M581 Warning: The user supplied freeway average speed of 57.9 will be used for all hours of the day. 100% of VMT
            has been assigned to the freeway roadway type for all hours of the day and all vehicle types.
  M 48 Warning: there are no sales for vehicle class HDGV8b
  M 48 Warning: there are no sales for vehicle class LDDT12

                    Calendar Year:  2025
                          Month:  July
                       Altitude:  Low
              Minimum Temperature:  64.0 (F)
              Maximum Temperature:  84.9 (F)
                Absolute Humidity:   94. grains/lb
                 Nominal Fuel RVP:   9.0 psi
                    Weathered RVP:   8.8 psi
              Fuel Sulfur Content:   30. ppm

              Exhaust I/M Program:  No
                 Evap I/M Program:  No
                       ATP Program:  No
                 Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:              <6000     >6000     (All)
                     ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.2788    0.4388    0.1507              0.0365    0.0003    0.0022    0.0876    0.0051    1.0000
 -------------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.269     0.342     0.522     0.388     0.308     0.037     0.119     0.160      2.04      0.340
    Composite NOX :      0.213     0.315     0.527     0.369     0.390     0.039     0.226     1.202      1.43      0.404
 -------------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 3: Rural Minor Arterial (M6 Arterial/Collector)
* File 1, Run 1, Scenario 3.
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:   The user supplied arterial average speed of 56.8 will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types.
  M 48 Warning: there are no sales for vehicle class HDGV8b
  M 48 Warning: there are no sales for vehicle class LDDT12

                    Calendar Year:  2025
                          Month:  July
                       Altitude:  Low
              Minimum Temperature:  64.0 (F)
              Maximum Temperature:  84.9 (F)
                Absolute Humidity:   94. grains/lb
                 Nominal Fuel RVP:   9.0 psi
                    Weathered RVP:   8.8 psi
              Fuel Sulfur Content:   30. ppm

              Exhaust I/M Program:  No
                 Evap I/M Program:  No
                       ATP Program:  No
                 Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:              <6000     >6000     (All)
                     ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.2788    0.4388    0.1507              0.0365    0.0003    0.0022    0.0876    0.0051    1.0000
```

```
 ---------------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.271     0.344     0.524     0.390     0.310    0.038     0.119     0.161      1.98      0.341
    Composite NOX :      0.212     0.314     0.525     0.368     0.387    0.038     0.218     1.126      1.40      0.396
 ---------------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 4: Rural Major Collector (M6 Arterial/Collector)
* File 1, Run 1, Scenario 4.
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning: The user supplied arterial average speed of 48.4 will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types.
  M 48 Warning: there are no sales for vehicle class HDGV8b
  M 48 Warning: there are no sales for vehicle class LDDT12

                     Calendar Year:  2025
                             Month:  July
                          Altitude:  Low
                Minimum Temperature:  64.0 (F)
                Maximum Temperature:  84.9 (F)
                  Absolute Humidity:   94. grains/lb
                   Nominal Fuel RVP:   9.0 psi
                      Weathered RVP:   8.8 psi
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                        ATP Program:  No
                   Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:                 <6000     >6000     (All)
                     ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.2788    0.4388    0.1507              0.0365    0.0003    0.0022    0.0876    0.0051    1.0000
 ---------------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.283     0.354     0.543     0.402     0.326    0.039     0.124     0.173      1.87      0.353
    Composite NOX :      0.206     0.304     0.511     0.357     0.365    0.030     0.175     0.898      1.20      0.366
 ---------------------------------------------------------------------------------------------------------------------------

 * # # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 5: Rural Minor Collector (M6 Arterial/Collector)
* File 1, Run 1, Scenario 5.
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 43.8
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                     Calendar Year:  2025
                             Month:  July
                          Altitude:  Low
                Minimum Temperature:  64.0 (F)
                Maximum Temperature:  84.9 (F)
                  Absolute Humidity:   94. grains/lb
                   Nominal Fuel RVP:   9.0 psi
                      Weathered RVP:   8.8 psi
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                        ATP Program:  No
                   Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:                 <6000     >6000     (All)
                     ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.2788    0.4388    0.1507              0.0365    0.0003    0.0022    0.0876    0.0051    1.0000
 ---------------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.292     0.361     0.554     0.410     0.339    0.041     0.129     0.185      1.89      0.362
    Composite NOX :      0.203     0.298     0.503     0.351     0.353    0.028     0.162     0.827      1.14      0.355
 ---------------------------------------------------------------------------------------------------------------------------
```

```
* # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 6: Rural Local (M6 Arterial/Collector)
* File 1, Run 1, Scenario 6.
* # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 41.0
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                    Calendar Year:  2025
                            Month:  July
                         Altitude:  Low
              Minimum Temperature:  64.0 (F)
              Maximum Temperature:  84.9 (F)
                Absolute Humidity:   94. grains/lb
                 Nominal Fuel RVP:   9.0 psi
                    Weathered RVP:   8.8 psi
              Fuel Sulfur Content:   30. ppm

              Exhaust I/M Program:  No
                 Evap I/M Program:  No
                      ATP Program:  No
                 Reformulated Gas:  No
```

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.2788	0.4388	0.1507		0.0365	0.0003	0.0022	0.0876	0.0051	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	0.298	0.365	0.561	0.415	0.350	0.042	0.133	0.194	1.92	0.368
Composite NOX :	0.202	0.295	0.499	0.347	0.346	0.027	0.156	0.799	1.13	0.350

```
* # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 7: Urban Interstate (M6 Freeway/Freeway Ramp)
* File 1, Run 1, Scenario 7.
* # # # # # # # # # # # # # # # # # # # # # # # # # #
  M515 Warning:
            The combined freeway and ramp average speed entered
            cannot be greater than 60.7 miles per hour.
            The average speed will be reset to this value.
  M582 Warning:
            The user supplied freeway average speed of 60.7
            will be used for all hours of the day. 100% of VMT
            has been assigned to a fixed combination of freeways
            and freeway ramps for all hours of the day and all
             vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                    Calendar Year:  2025
                            Month:  July
                         Altitude:  Low
              Minimum Temperature:  64.0 (F)
              Maximum Temperature:  84.9 (F)
                Absolute Humidity:   94. grains/lb
                 Nominal Fuel RVP:   9.0 psi
                    Weathered RVP:   8.8 psi
              Fuel Sulfur Content:   30. ppm

              Exhaust I/M Program:  No
                 Evap I/M Program:  No
                      ATP Program:  No
                 Reformulated Gas:  No
```

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.2788	0.4388	0.1507		0.0365	0.0003	0.0022	0.0876	0.0051	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	0.269	0.342	0.519	0.387	0.309	0.038	0.121	0.164	2.42	0.341
Composite NOX :	0.219	0.325	0.543	0.381	0.401	0.049	0.281	1.494	1.57	0.440

```
  ------------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 8: Urban Freeway/Expressway (M6 Freeway/Freeway Ramp)
* File 1, Run 1, Scenario 8.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M582 Warning:
            The user supplied freeway average speed of 56.4
            will be used for all hours of the day. 100% of VMT
            has been assigned to a fixed combination of freeways
            and freeway ramps for all hours of the day and all
             vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                    Calendar Year:  2025
                            Month:  July
                         Altitude:  Low
              Minimum Temperature:  64.0 (F)
              Maximum Temperature:  84.9 (F)
                Absolute Humidity:   94. grains/lb
                 Nominal Fuel RVP:   9.0 psi
                    Weathered RVP:   8.8 psi
              Fuel Sulfur Content:   30. ppm

              Exhaust I/M Program:  No
                 Evap I/M Program:  No
                      ATP Program:  No
                 Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:                <6000     >6000     (All)
                     ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.2788    0.4388    0.1507              0.0365    0.0003    0.0022    0.0876    0.0051    1.0000
  ------------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.273     0.346     0.527     0.392     0.312     0.038     0.121     0.164      2.13     0.344
    Composite NOX :      0.215     0.319     0.534     0.374     0.389     0.040     0.231     1.226      1.44     0.410
  ------------------------------------------------------------------------------------------------------------------------


* # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 9: Urban OPA (M6 Arterial/Collector)
* File 1, Run 1, Scenario 9.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 42.7
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                    Calendar Year:  2025
                            Month:  July
                         Altitude:  Low
              Minimum Temperature:  64.0 (F)
              Maximum Temperature:  84.9 (F)
                Absolute Humidity:   94. grains/lb
                 Nominal Fuel RVP:   9.0 psi
                    Weathered RVP:   8.8 psi
              Fuel Sulfur Content:   30. ppm

              Exhaust I/M Program:  No
                 Evap I/M Program:  No
                      ATP Program:  No
                 Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:                <6000     >6000     (All)
                     ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.2788    0.4388    0.1507              0.0365    0.0003    0.0022    0.0876    0.0051    1.0000
  ------------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.294     0.363     0.557     0.412     0.343     0.041     0.130     0.188      1.90     0.364
    Composite NOX :      0.203     0.297     0.502     0.349     0.351     0.028     0.160     0.817      1.14     0.353
  ------------------------------------------------------------------------------------------------------------------------



* # # # # # # # # # # # # # # # # # # # # # # # # #
```

```
* Scenario 10: Urban Minor Arterial (M6 Arterial/Collector)
* File 1, Run 1, Scenario 10.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 34.9
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
               there are no sales for vehicle class HDGV8b
  M 48 Warning:
               there are no sales for vehicle class LDDT12

                     Calendar Year:  2025
                             Month:  July
                          Altitude:  Low
               Minimum Temperature:  64.0 (F)
               Maximum Temperature:  84.9 (F)
                 Absolute Humidity:   94. grains/lb
                  Nominal Fuel RVP:   9.0 psi
                      Weathered RVP:   8.8 psi
               Fuel Sulfur Content:   30. ppm

               Exhaust I/M Program:  No
                  Evap I/M Program:  No
                       ATP Program:  No
                  Reformulated Gas:  No
```

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.2788	0.4388	0.1507		0.0365	0.0003	0.0022	0.0876	0.0051	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	0.313	0.376	0.579	0.428	0.378	0.046	0.143	0.221	2.02	0.384
Composite NOX :	0.199	0.290	0.492	0.341	0.330	0.026	0.151	0.768	1.10	0.342

```
* # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 11: Urban Collector (M6 Arterial/Collector)
* File 1, Run 1, Scenario 11.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 33.0
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
               there are no sales for vehicle class HDGV8b
  M 48 Warning:
               there are no sales for vehicle class LDDT12

                     Calendar Year:  2025
                             Month:  July
                          Altitude:  Low
               Minimum Temperature:  64.0 (F)
               Maximum Temperature:  84.9 (F)
                 Absolute Humidity:   94. grains/lb
                  Nominal Fuel RVP:   9.0 psi
                      Weathered RVP:   8.8 psi
               Fuel Sulfur Content:   30. ppm

               Exhaust I/M Program:  No
                  Evap I/M Program:  No
                       ATP Program:  No
                  Reformulated Gas:  No
```

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.2788	0.4388	0.1507		0.0365	0.0003	0.0022	0.0876	0.0051	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	0.320	0.382	0.588	0.435	0.389	0.047	0.148	0.232	2.06	0.391
Composite NOX :	0.201	0.291	0.495	0.343	0.326	0.026	0.151	0.771	1.08	0.344

```
* # # # # # # # # # # # # # # # # # # # # # # # # #
```

```
* Scenario 12: Urban Local (M6 Arterial/Collector)
* File 1, Run 1, Scenario 12.
* # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 28.9
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                    Calendar Year:  2025
                            Month:  July
                         Altitude:  Low
                Minimum Temperature:  64.0 (F)
                Maximum Temperature:  84.9 (F)
                  Absolute Humidity:   94. grains/lb
                   Nominal Fuel RVP:   9.0 psi
                       Weathered RVP:   8.8 psi
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                        ATP Program:  No
                   Reformulated Gas:  No
```

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.2788	0.4388	0.1507		0.0365	0.0003	0.0022	0.0876	0.0051	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	0.337	0.398	0.611	0.452	0.417	0.051	0.159	0.260	2.17	0.410
Composite NOX :	0.206	0.297	0.503	0.350	0.315	0.027	0.153	0.782	1.04	0.349

2030 SCENARIO FILES – MOBILE 6.2 INPUT FILE

```
MOBILE6 INPUT FILE :
DATABASE AGES      : 5, 1
POLLUTANTS         : HC NOX
DATABASE OUTPUT    :
DATABASE OPTIONS   : C:\PROGRA~1\TRANSC~3\Muncie30.d
EMISSIONS TABLE    : C:\PROGRA~1\TRANSC~3\Muncie30.tb1

RUN DATA
MIN/MAX TEMP       : 64.0 84.9
ABSOLUTE HUMIDITY  : 93.7
CLOUD COVER        : 0.34
SUNRISE/SUNSET     : 6  9
FUEL RVP           : 9.0
SEASON             : 1

SCENARIO REC       : Scenario 1: Rural Interstate (M6 Freeway/Freeway Ramp)
CALENDAR YEAR      : 2030
EVALUATION MONTH   : 7
AVERAGE SPEED      : 69.6 FREEWAY 97.0 0.0 0.0 3.0

SCENARIO REC       : Scenario 2: Rural OPA (M6 Non-Ramp)
CALENDAR YEAR      : 2030
EVALUATION MONTH   : 7
AVERAGE SPEED      : 58.0 NON-RAMP

SCENARIO REC       : Scenario 3: Rural Minor Arterial (M6 Arterial/Collector)
CALENDAR YEAR      : 2030
EVALUATION MONTH   : 7
AVERAGE SPEED      : 56.8 ARTERIAL

SCENARIO REC       : Scenario 4: Rural Major Collector (M6 Arterial/Collector)
CALENDAR YEAR      : 2030
EVALUATION MONTH   : 7
AVERAGE SPEED      : 48.5 ARTERIAL

SCENARIO REC       : Scenario 5: Rural Minor Collector (M6 Arterial/Collector)
```

```
CALENDAR YEAR       : 2030
EVALUATION MONTH    : 7
AVERAGE SPEED       : 43.9 ARTERIAL

SCENARIO REC        : Scenario 6: Rural Local (M6 Arterial/Collector)
CALENDAR YEAR       : 2030
EVALUATION MONTH    : 7
AVERAGE SPEED       : 41.1 ARTERIAL

SCENARIO REC        : Scenario 7: Urban Interstate (M6 Freeway/Freeway Ramp)
CALENDAR YEAR       : 2030
EVALUATION MONTH    : 7
AVERAGE SPEED       : 64.0 FREEWAY 92.0 0.0 0.0 8.0

SCENARIO REC        : Scenario 8: Urban Freeway/Expressway (M6 Freeway/Freeway Ramp)
CALENDAR YEAR       : 2030
EVALUATION MONTH    : 7
AVERAGE SPEED       : 56.4 FREEWAY 92.0 0.0 0.0 8.0

SCENARIO REC        : Scenario 9: Urban OPA (M6 Arterial/Collector)
CALENDAR YEAR       : 2030
EVALUATION MONTH    : 7
AVERAGE SPEED       : 42.7 ARTERIAL

SCENARIO REC        : Scenario 10: Urban Minor Arterial (M6 Arterial/Collector)
CALENDAR YEAR       : 2030
EVALUATION MONTH    : 7
AVERAGE SPEED       : 34.9 ARTERIAL

SCENARIO REC        : Scenario 11: Urban Collector (M6 Arterial/Collector)
CALENDAR YEAR       : 2030
EVALUATION MONTH    : 7
AVERAGE SPEED       : 33.1 ARTERIAL

SCENARIO REC        : Scenario 12: Urban Local (M6 Arterial/Collector)
CALENDAR YEAR       : 2030
EVALUATION MONTH    : 7
AVERAGE SPEED       : 29.9 ARTERIAL

END OF RUN          :
```

2030 SCENARIO FILES – MOBILE 6.2 OUTPUT FILE

```
*****************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                                *
* Input file: C:\PROGRA~1\TRANSCAD\~X4H5.IN (file 1, run 1).                *
*****************************************************************************
  M617 Comment: User supplied alternate AC input: Cloud Cover Fraction set to 0.34.
  M618 Comment: User supplied alternate AC input: Sunrise at  6 AM, Sunset at  9 PM.

* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 1: Rural Interstate (M6 Freeway/Freeway Ramp)
* File 1, Run 1, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M 96 Warning: 69.6     speed reduced to 65 mph maximum
  M515 Warning: The combined freeway and ramp average speed entered cannot be greater than 63.3 miles per hour.
            The average speed will be reset to this value.
  M582 Warning: The user supplied freeway average speed of 63.3 will be used for all hours of the day. 100% of VMT
            has been assigned to a fixed combination of freeways and freeway ramps for all hours of the day and all
             vehicle types.
  M 48 Warning: there are no sales for vehicle class HDGV8b
  M 48 Warning: there are no sales for vehicle class LDDT12

                    Calendar Year:  2030
                            Month:  July
                         Altitude:  Low
               Minimum Temperature:  64.0 (F)
               Maximum Temperature:  84.9 (F)
                 Absolute Humidity:   94. grains/lb
                  Nominal Fuel RVP:   9.0 psi
                     Weathered RVP:   8.8 psi
               Fuel Sulfur Content:   30. ppm

               Exhaust I/M Program:  No
                  Evap I/M Program:  No
                        ATP Program:  No
                  Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:                 <6000     >6000     (All)
```

```
                     ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.2788    0.4388    0.1507              0.0365    0.0003    0.0022    0.0876    0.0051    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      0.262     0.335     0.467     0.369     0.283     0.036     0.085     0.155      2.44     0.327
     Composite NOX :      0.211     0.314     0.466     0.353     0.223     0.045     0.204     0.994      1.59     0.371
  ---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 2: Rural OPA (M6 Non-Ramp)
* File 1, Run 1, Scenario 2.
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M581 Warning: The user supplied freeway average speed of 58.0 will be used for all hours of the day. 100% of VMT
             has been assigned to the freeway roadway type for all hours of the day and all vehicle types.
  M 48 Warning: there are no sales for vehicle class HDGV8b
  M 48 Warning: there are no sales for vehicle class LDDT12

                      Calendar Year:  2030
                              Month:  July
                           Altitude:  Low
                 Minimum Temperature:  64.0 (F)
                 Maximum Temperature:  84.9 (F)
                   Absolute Humidity:   94. grains/lb
                    Nominal Fuel RVP:   9.0 psi
                       Weathered RVP:   8.8 psi
                 Fuel Sulfur Content:   30. ppm

                 Exhaust I/M Program:  No
                    Evap I/M Program:  No
                         ATP Program:  No
                    Reformulated Gas:  No



       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
              GVWR:                 <6000     >6000     (All)
                     ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.2788    0.4388    0.1507              0.0365    0.0003    0.0022    0.0876    0.0051    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      0.266     0.339     0.475     0.374     0.286     0.036     0.085     0.154      2.05     0.329
     Composite NOX :      0.206     0.305     0.454     0.343     0.215     0.035     0.160     0.775      1.43     0.343
  ---------------------------------------------------------------------------------------------------------------------


* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 3: Rural Minor Arterial (M6 Arterial/Collector)
* File 1, Run 1, Scenario 3.
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
             The user supplied arterial average speed of 56.8
             will be used for all hours of the day.  100% of VMT
             has been assigned to the arterial/collector roadway
             type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                      Calendar Year:  2030
                              Month:  July
                           Altitude:  Low
                 Minimum Temperature:  64.0 (F)
                 Maximum Temperature:  84.9 (F)
                   Absolute Humidity:   94. grains/lb
                    Nominal Fuel RVP:   9.0 psi
                       Weathered RVP:   8.8 psi
                 Fuel Sulfur Content:   30. ppm

                 Exhaust I/M Program:  No
                    Evap I/M Program:  No
                         ATP Program:  No
                    Reformulated Gas:  No

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
              GVWR:                 <6000     >6000     (All)
                     ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.2788    0.4388    0.1507              0.0365    0.0003    0.0022    0.0876    0.0051    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      0.268     0.341     0.477     0.376     0.288     0.036     0.085     0.155      1.98     0.330
     Composite NOX :      0.205     0.303     0.452     0.341     0.213     0.034     0.154     0.744      1.40     0.339
  ---------------------------------------------------------------------------------------------------------------------


* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 4: Rural Major Collector (M6 Arterial/Collector)
* File 1, Run 1, Scenario 4.
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
```

```
  M583 Warning: The user supplied arterial average speed of 48.5 will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types.
  M 48 Warning: there are no sales for vehicle class HDGV8b
  M 48 Warning: there are no sales for vehicle class LDDT12

                     Calendar Year:  2030
                             Month:  July
                          Altitude:  Low
                Minimum Temperature:  64.0 (F)
                Maximum Temperature:  84.9 (F)
                  Absolute Humidity:   94. grains/lb
                   Nominal Fuel RVP:   9.0 psi
                      Weathered RVP:   8.8 psi
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                        ATP Program:  No
                   Reformulated Gas:  No
```

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.2788	0.4388	0.1507		0.0365	0.0003	0.0022	0.0876	0.0051	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	0.280	0.351	0.494	0.388	0.303	0.038	0.089	0.167	1.87	0.342
Composite NOX :	0.200	0.293	0.439	0.331	0.201	0.027	0.124	0.594	1.20	0.316

```
* # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 5: Rural Minor Collector (M6 Arterial/Collector)
* File 1, Run 1, Scenario 5.
* # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 43.9
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                     Calendar Year:  2030
                             Month:  July
                          Altitude:  Low
                Minimum Temperature:  64.0 (F)
                Maximum Temperature:  84.9 (F)
                  Absolute Humidity:   94. grains/lb
                   Nominal Fuel RVP:   9.0 psi
                      Weathered RVP:   8.8 psi
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                        ATP Program:  No
                   Reformulated Gas:  No
```

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.2788	0.4388	0.1507		0.0365	0.0003	0.0022	0.0876	0.0051	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	0.289	0.358	0.505	0.395	0.316	0.039	0.093	0.178	1.89	0.351
Composite NOX :	0.197	0.288	0.432	0.325	0.195	0.025	0.114	0.546	1.14	0.307

```
* # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 6: Rural Local (M6 Arterial/Collector)
* File 1, Run 1, Scenario 6.
* # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning: The user supplied arterial average speed of 41.1 will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types.
  M 48 Warning: there are no sales for vehicle class HDGV8b
  M 48 Warning: there are no sales for vehicle class LDDT12

                     Calendar Year:  2030
                             Month:  July
                          Altitude:  Low
                Minimum Temperature:  64.0 (F)
                Maximum Temperature:  84.9 (F)
```

```
                Absolute Humidity:   94. grains/lb
                 Nominal Fuel RVP:   9.0 psi
                    Weathered RVP:   8.8 psi
               Fuel Sulfur Content:   30. ppm

               Exhaust I/M Program:  No
                  Evap I/M Program:  No
                       ATP Program:  No
                  Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:                <6000     >6000     (All)
                       ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.2788    0.4388    0.1507              0.0365    0.0003    0.0022    0.0876    0.0051    1.0000
 -----------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.295     0.362     0.512     0.400     0.325     0.040     0.096     0.187      1.92     0.357
    Composite NOX :      0.195     0.285     0.427     0.321     0.191     0.024     0.110     0.528      1.13     0.303
 -----------------------------------------------------------------------------------------------------------------------
```

```
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 7: Urban Interstate (M6 Freeway/Freeway Ramp)
* File 1, Run 1, Scenario 7.
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M515 Warning:
            The combined freeway and ramp average speed entered
            cannot be greater than 60.7 miles per hour.
            The average speed will be reset to this value.
  M582 Warning:
            The user supplied freeway average speed of 60.7
            will be used for all hours of the day. 100% of VMT
            has been assigned to a fixed combination of freeways
            and freeway ramps for all hours of the day and all
             vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                    Calendar Year:  2030
                            Month:  July
                         Altitude:  Low
               Minimum Temperature:  64.0 (F)
               Maximum Temperature:  84.9 (F)
                 Absolute Humidity:   94. grains/lb
                  Nominal Fuel RVP:   9.0 psi
                     Weathered RVP:   8.8 psi
               Fuel Sulfur Content:   30. ppm

               Exhaust I/M Program:  No
                  Evap I/M Program:  No
                       ATP Program:  No
                  Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:                <6000     >6000     (All)
                       ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.2788    0.4388    0.1507              0.0365    0.0003    0.0022    0.0876    0.0051    1.0000
 -----------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.265     0.339     0.472     0.373     0.287     0.036     0.086     0.158      2.42     0.331
    Composite NOX :      0.212     0.314     0.469     0.354     0.221     0.043     0.199     0.969      1.57     0.369
 -----------------------------------------------------------------------------------------------------------------------
```

```
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 8: Urban Freeway/Expressway (M6 Freeway/Freeway Ramp)
* File 1, Run 1, Scenario 8.
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M582 Warning:
            The user supplied freeway average speed of 56.4
            will be used for all hours of the day. 100% of VMT
            has been assigned to a fixed combination of freeways
            and freeway ramps for all hours of the day and all
```

```
            vehicle types.
  M 48 Warning:
            there are no sales for vehicle class HDGV8b
  M 48 Warning:
            there are no sales for vehicle class LDDT12

                  Calendar Year:  2030
                          Month:  July
                       Altitude:  Low
            Minimum Temperature:  64.0 (F)
            Maximum Temperature:  84.9 (F)
              Absolute Humidity:   94. grains/lb
               Nominal Fuel RVP:   9.0 psi
                  Weathered RVP:   8.8 psi
            Fuel Sulfur Content:   30. ppm

            Exhaust I/M Program:  No
               Evap I/M Program:  No
                    ATP Program:  No
               Reformulated Gas:  No
```

Vehicle Type: / GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VMT Distribution:	0.2788	0.4388	0.1507		0.0365	0.0003	0.0022	0.0876	0.0051	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	0.270	0.343	0.480	0.378	0.290	0.036	0.086	0.158	2.13	0.334
Composite NOX :	0.209	0.309	0.461	0.347	0.214	0.036	0.163	0.791	1.44	0.348

```
* # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 9: Urban OPA (M6 Arterial/Collector)
* File 1, Run 1, Scenario 9.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 42.7
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
            there are no sales for vehicle class HDGV8b
  M 48 Warning:
            there are no sales for vehicle class LDDT12

                  Calendar Year:  2030
                          Month:  July
                       Altitude:  Low
            Minimum Temperature:  64.0 (F)
            Maximum Temperature:  84.9 (F)
              Absolute Humidity:   94. grains/lb
               Nominal Fuel RVP:   9.0 psi
                  Weathered RVP:   8.8 psi
            Fuel Sulfur Content:   30. ppm

            Exhaust I/M Program:  No
               Evap I/M Program:  No
                    ATP Program:  No
               Reformulated Gas:  No
```

Vehicle Type: / GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VMT Distribution:	0.2788	0.4388	0.1507		0.0365	0.0003	0.0022	0.0876	0.0051	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	0.291	0.360	0.508	0.397	0.320	0.040	0.094	0.182	1.90	0.353
Composite NOX :	0.196	0.287	0.430	0.323	0.193	0.025	0.112	0.539	1.14	0.306

```
* # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 10: Urban Minor Arterial (M6 Arterial/Collector)
* File 1, Run 1, Scenario 10.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 34.9
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
            there are no sales for vehicle class HDGV8b
  M 48 Warning:
            there are no sales for vehicle class LDDT12
```

```
                    Calendar Year:  2030
                            Month:  July
                         Altitude:  Low
                Minimum Temperature:  64.0 (F)
                Maximum Temperature:  84.9 (F)
                  Absolute Humidity:   94. grains/lb
                   Nominal Fuel RVP:   9.0 psi
                      Weathered RVP:   8.8 psi
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                        ATP Program:  No
                   Reformulated Gas:  No
```

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.2788	0.4388	0.1507		0.0365	0.0003	0.0022	0.0876	0.0051	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	0.310	0.373	0.528	0.413	0.352	0.044	0.105	0.213	2.02	0.372
Composite NOX :	0.193	0.279	0.420	0.315	0.182	0.023	0.106	0.506	1.10	0.297

```
* # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 11: Urban Collector (M6 Arterial/Collector)
* File 1, Run 1, Scenario 11.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 33.1
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                    Calendar Year:  2030
                            Month:  July
                         Altitude:  Low
                Minimum Temperature:  64.0 (F)
                Maximum Temperature:  84.9 (F)
                  Absolute Humidity:   94. grains/lb
                   Nominal Fuel RVP:   9.0 psi
                      Weathered RVP:   8.8 psi
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                        ATP Program:  No
                   Reformulated Gas:  No
```

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.2788	0.4388	0.1507		0.0365	0.0003	0.0022	0.0876	0.0051	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	0.317	0.379	0.537	0.419	0.361	0.045	0.108	0.223	2.06	0.379
Composite NOX :	0.195	0.281	0.423	0.317	0.180	0.023	0.106	0.508	1.08	0.298

```
* # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 12: Urban Local (M6 Arterial/Collector)
* File 1, Run 1, Scenario 12.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 29.9
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                    Calendar Year:  2030
```

```
                     Month:  July
                  Altitude:  Low
Minimum Temperature:  64.0 (F)
Maximum Temperature:  84.9 (F)
  Absolute Humidity:   94. grains/lb
     Nominal Fuel RVP:   9.0 psi
        Weathered RVP:   8.8 psi
Fuel Sulfur Content:   30. ppm

Exhaust I/M Program:  No
   Evap I/M Program:  No
         ATP Program:  No
   Reformulated Gas:  No
```

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.2788	0.4388	0.1507		0.0365	0.0003	0.0022	0.0876	0.0051	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	0.329	0.391	0.553	0.432	0.381	0.048	0.115	0.244	2.14	0.393
Composite NOX :	0.198	0.284	0.427	0.321	0.175	0.023	0.107	0.511	1.05	0.301