TRANSPORTATION MASTER PLAN

City of Bowling Green

THE CITY OF BOWLING GREEN Ohio

December 2007

Prepared By:

The Mannik & Smith Group, Inc.

TABLE OF CONTENTS

SECTION: PAGE NO.:

1.0 INTRODUCTION 1-1
1.1 TRANSPORTATION MASTER PLAN UPDATE PURPOSE 1-1
1.2 PLANNING PROCESS 1-2
1.2.1 Oversight Committee 1-2
1.2.2 Public Involvement 1-3
1.3 PLAN VISION, GOALS & OBJECTIVES 1-3
1.4 MASTER PLAN USE 1-4
2.0 TRANSPORTATION SYSTEM ASSESSMENT 2-1
2.1 ROADWAY NETWORK 2-1
2.1.1 Study Area and Roadways Reviewed 2-1
2.1.2 Programmed Roadway Improvements & Regional Planning 2-1
2.2 FUNCTIONAL CLASSIFICATIONS 2-3
2.2.1 State Functional Classification Categories 2-3
2.2.2 Functional Classifications in Study Area 2-4
2.3 LAND USE INFLUENCES ON TRAFFIC 2-4
2.3.1 Land Use and Trip Generation 2-4
2.3.2 Potential High Growth Areas 2-4
2.3.3 Land Use Analysis Conclusion 2-4
2.4 IDENTIFIED HIGH CRASH LOCATIONS BY HIGHWAY SAFETY PROGRAM (HSP) 2-5
2.4.1 Non-Freeway "Hot Spot" and High Crash Location Listings 2-5
2.4.2 Bowling Green Police Division – 2006 Traffic Crash Analysis 2-10
2.4.3 Safety Recommendations 2-10
2.5 TRAFFIC VOLUMES 2-13
2.5.1 Existing 2007 Traffic 2-13
2.5.2 Future 2027 Traffic 2-13
2.5.3 Traffic Patterns 2-13
2.5.4 Truck Traffic 2-13
2.6 TRAFFIC CONTROL INVENTORY 2-14
2.6.1 Signals 2-14
2.6.2 Multiway Stops 2-18
2.7 TRAFFIC MODEL 2-18
2.7.1 Traffic Operations in 2007 2-18
2.7.2 Traffic Operations in 2027 2-18
2.7.3 Summary of Capacity Constraint Locations 2-22
2.8 PEDESTRIAN & BICYCLE FACILITIES 2-22
2.8.1 Types of Pedestrian/Bicycle Facilities 2-22
2.8.2 Pedestrian/Bicycle Destinations 2-23
2.8.3 Pedestrian/Bicycle Facility Recommendations 2-24
2.9 PARKING 2-24
2.10 PUBLIC TRANSPORTATION 2-26
2.10.1 Demand-Based Taxi Services 2-26
2.10.2 Bowling Green State University (BGSU) Shuttle Services 2-26
2.10.3 Public Transportation Recommendations 2-26
2.11 AIRPORTS 2-27

TABLE OF CONTENTS (Continued)

SECTION: PAGE NO.:

2.11.1 Wood County Regional Airport 2-27
2.11.2 Bordner Airstrip 2-27
2.11.3 Airport Facility Recommendations 2-27

3.0 TRANSPORTATION MASTER PLAN RECOMMENDATIONS & IMPLEMENTATION 3-1

3.1 RECOMMENDED TRANSPORTATION IMPROVEMENTS AND PRIORITIES 3-1
3.2 IMPLEMENTATION & FUNDING STRATEGIES 3-1

FIGURES

FIGURE 1.1 LOCATION MAP 1-1
FIGURE 2.1 ROADWAYS AND INTERSECTIONS REVIEWED 2-2
FIGURE 2.2 EXISTING FUNCTIONAL CLASS 2-6
FIGURE 2.3 FUTURE FUNCTIONAL CLASS 2-7
FIGURE 2.4 FUTURE LAND USE GROWTH AREAS 2-8
FIGURE 2.5 TRAFFIC GROWTH ASSUMPTIONS BASED ON LAND USE GROWTH AREAS 2-9
FIGURE 2.6 HSP (HIGHWAY SAFETY PROGRAM) CRASH LISTINGS (2003-2005) 2-11
FIGURE 2.7 HIGH CRASH INTERSECTIONS & CORRIDORS (2003-2005) 2-12
FIGURE 2.8 EXISTING 2007 TRAFFIC 2-15
FIGURE 2.9 FUTURE 2027 TRAFFIC 2-16
FIGURE 2.10 EX. TRUCK TRAFFIC & RECOMMENDED TRUCK ROUTES FOR SPECIAL EVENTS & DETOURS 2-17
FIGURE 2.11 EXISTING SIGNAL AND ALL-WAY STOP LOCATIONS AND POTENTIAL SIGNAL LOCATIONS 2-19
FIGURE 2.12 2007 AM & PM LEVELS OF SERVICE (LOS) 2-20
FIGURE 2.13 2027 AM & PM LEVELS OF SERVICE (LOS) 2-21
FIGURE 2.14 PEDESTRIAN/BICYCLE FACILITIES AND DESTINATIONS 2-25
FIGURE 3.1 RECOMMENDED IMPROVEMENTS 3-9

TABLES

TABLE 2.1 PROGRAMMED ROADWAY IMPROVEMENTS 2-1
TABLE 2.2 ODOT'S FUNCTIONAL CLASSIFICATION CATEGORIES 2-3
TABLE 2.3 CITY OF BOWLING GREEN LOCATIONS ON HCLIS (2003-2005) 2-5
TABLE 2.4 BG TRANSIT FY2007 FUNDING SOURCES 2-26
TABLE 3.1 PROJECT LISTINGS AND IMPLEMENTATION STRATEGIES 3-2

APPENDICES

APPENDIX A PUBLIC INVOLVEMENT DOCUMENTATION
APPENDIX B TRAFFIC COUNT LOCATIONS
APPENDIX C REFERENCES

1.0 INTRODUCTION

A transportation master plan is an official document adopted by a local government to establish transportation planning and general policies for the development of a community. This transportation plan assesses the existing conditions and operations of the transportation system in and around Bowling Green, and develops a plan for improving transportation conditions from the current needs through the next 20 years based on predicted land uses and development patterns. In accordance with Ohio Revised Code (ORC) 723.01; a municipal corporation shall have special power to regulate the use of the streets, and the legislative authority of a municipal corporation shall have the care, supervision, and control of the public highways, streets, avenues, alleys, sidewalks, public grounds, bridges, aqueducts, and viaducts within the municipal corporation. Given this responsibility, the City of Bowling Green has developed this *Transportation Master Plan* to assess conditions and determine transportation needs through the next 20 years to ensure that the transportation network will provide a safe and efficient system that services all aspects of transportation in the City while allowing continued development to occur. The City recognizes the need to maintain transportation infrastructure as residential and commercial/industrial growth continues, and with this in mind, has taken the initiative to update the plan to assist and guide the community in determining growth areas, transportation needs, and strategies to implement recommended improvements.

1.1 Transportation Master Plan Update Purpose

The purpose of updating Bowling Green's *Transportation Master Plan* is to develop a strategy that outlines existing and future transportation needs for the City to support both motorized and non-motorized transportation modes through the next 20 years. The recommendations of the Plan are developed to support economic and residential growth while maintaining Bowling Green's historic background and sense of place. Bowling Green is situated such that (*Figure 1.1*) it is located along a major north-south interstate (I-75) and a primary east-west arterial (US 6) in Northwest Ohio. The City is home to many businesses as well as Bowling Green State University (BGSU), which is a major university with a large number of commuter students. The location of the City within less than an hour drive to Toledo, Findlay, and Lima creates a great deal of commuter

Figure 1.1
Location Map

traffic to and from the City of Bowling Green in addition to those commuters at BGSU, particularly during the work week. The transportation plan will develop recommendations to improve traffic operations within and around the City and address the peak traffic demands placed on the network by commuter traffic as well as other anticipated growth through identifying needed transportation improvements and developing policies and guidelines to protect the transportation infrastructure of the City. Recommendations within the *Transportation Master Plan* will be utilized to support having projects included on the Toledo Metropolitan Area Council of Governments' (TMACOG) Transportation Improvement Program (TIP). The TMACOG regional planning coverage area includes all of Wood County and Lucas County in Northwest Ohio. Given this, TMACOG is responsible for all programming of projects within these two counties, and for a project to be considered for State or Federal funding opportunities; projects must be listed in the TIP.

1.2 Planning Process

The planning process for the *Transportation Master Plan* update began in April 2006 with a project kick-off meeting to establish the goals and objectives for the Plan. Research and data collection of existing plans and studies were then performed. Traffic counts (24-hour) were conducted on major roadway sections and turn movement counts (AM & PM peak hours) at major intersections. The collected research and traffic data was utilized to document the existing conditions and to estimate future growth and conditions. The documentation of existing conditions allowed for the identification of traffic conditions, patterns and trends. The future conditions were based on growth trends as well as a review of anticipated future land uses. Future conditions entailed projecting traffic growth to a 20-year horizon to predict future transportation demands and needs. The findings and recommendations were then reviewed by a diversified project oversight committee for input. Once input was received, it was incorporated into the recommendations and cross-checked with existing and future conditions and a final list of recommendations was developed. The recommendations were then offered to the residents of Bowling Green for comments at a public meeting and applicable comments were incorporated into the recommendations to produce a final list of needed improvements. The final *Transportation Master Plan* will then be presented to the City for formal adoption of the Plan.

1.2.1 Oversight Committee

The Oversight Committee for the update of the *Transportation Master Plan* consisted of representatives from the following:

- City's Planning Department
- City's Engineering Department
- City's Police Department
- City Council
- Bowling Green City Schools
- Bowling Green State University
- Planning Commission

The Oversight Committee met three times throughout the development of the *Transportation Master Plan* to provide local input on the recommendations and policies being developed for the document. Once draft recommendations were developed, they were presented to the general public at a public involvement meeting for comments.

1.2.2 Public Involvement

A public meeting was held on Monday July 30, 2007 from 4:00 – 7:00 PM at the Bowling Green Community Center to solicit public input on the recommendations developed from the update of the *Transportation Master Plan*. Comments were incorporated into the final list of recommendations. A summary of the comments received and the Oversight Committee responses to the comments are provided in *Appendix A*, along with the meeting sign-in sheet and public meeting handout.

1.3 Plan Vision, Goals & Objectives

Plan Vision:
The City of Bowling Green desires to maintain and promote a transportation network that facilitates safe and efficient circulation within and through the community that supports both motorized and non-motorized modes of transportation and promotes economic development for the area. The transportation system must strive to develop more efficient and safer roadways; plan for anticipated growth areas based on future land uses; ensure adequate access to I-75 and US 6; provide a more pedestrian/bicycle friendly community; develop a list of improvements and implementation strategies; and update the City's *Access Management Policies & Guidelines* in a separate document.

Plan Goals & Objectives:
The key goals & objectives of the *Transportation Master Plan* will assist in achieving the vision of the Plan. These goals address current and future related transportation issues in the City:

Goal #1:
Develop more efficient and safer roadways
Objectives:
- Evaluate current and future capacity operations to determine needed improvements to reduce congested areas and move traffic more efficiently
- Determine the high crash intersections and sections within the City and provide recommendations to reduce crash occurrences

Goal #2:
Plan for anticipated growth areas based on future land uses
Objectives:
- Identify various growth areas of the City based on the future land use plan
- Utilize high growth areas to project traffic increases to determine potential lane needs, intersection needs, and access to arterial roadways

Goal #3:
Ensure adequate access to I-75 and US 6 for the next 20 years to support commuter traffic demands and support economic development
Objectives:
- Inventory existing operations of access to I-75 and US 6
- Determine if future growth areas over the next 20 years will require improved or new access to both I-75 and US 6

Goal #4:
Create a more pedestrian/bicycle friendly community
Objectives:

- Create a plan to improve pedestrian friendly facilities in the City of Bowling Green
- Develop improvements such as the use of ADA compliant curb ramps; pedestrian signals/pushbuttons at signalized intersections; development of multi-use paths; bicycle parking facilities and improved connectivity to sites

Goal #5:
Develop a list of improvements and implementation strategies for the next 20 years
Objectives:

- Develop a comprehensive list of improvement recommendations to maintain a safe and efficient transportation network for the City over the next 20 years
- Provide planning level costs for each improvement; an implementation strategy; and potential funding sources to consider

Goal #6:
Integrate the City's Access Management Policies & Guidelines into the Transportation Master Plan and provide updates
Objectives:

- Integrate the City's Access Management Policies & Guidelines into the *Transportation Master Plan*
- Update the policies & guidelines as necessary to reflect current access management practices and current City transportation facility maintenance needs so as to maintain the integrity of the roadways

1.4 Master Plan Use

Bowling Green's *Transportation Master Plan* will provide a planned approach for improving the safety and efficiency of the roadway network in the City. The recommendations of the plan will provide improvements needed over the next 20 years based on current and projected conditions. In addition to providing recommended construction improvements and further studies, it also provides policy and guideline recommendations as well as assessment strategies to monitor maintenance items related to transportation (such as repaving, type of pavement, sign inventory, etc.). Finally, the document will provide implementation suggestions and potential funding sources that may be available for each identified improvement. The plan will also assist the City with having recommended projects added to the TMACOG Transportation Improvement Program (TIP).

2.0 TRANSPORTATION SYSTEM ASSESSMENT

The development of a transportation master plan involves conducting an overall system assessment. This is accomplished by reviewing existing data and previous studies; requesting available data from various agencies; conducting primary data where not available; and then performing analyses to determine existing conditions and future needs based on current and anticipated trends. Improvements and recommendations are then developed based on operations and future needs.

2.1 Roadway Network

The first step involved determining the intersections and roadway sections in the City of Bowling Green that are considered critical for transportation efficiency and safety for the community and for future economic development. This was accomplished by guidance from the City's Planning and Engineering departments; a review of roadway connectivity; a review of traffic volumes; field visits; and access to I-75 and US 6.

2.1.1 Study Area and Roadways Reviewed

The roadways and intersections reviewed for the *Transportation Master Plan* are displayed on *Figure 2.1*. This figure also displays the Study Area as indicated by the black dashed line.

2.1.2 Programmed Roadway Improvements & Regional Planning

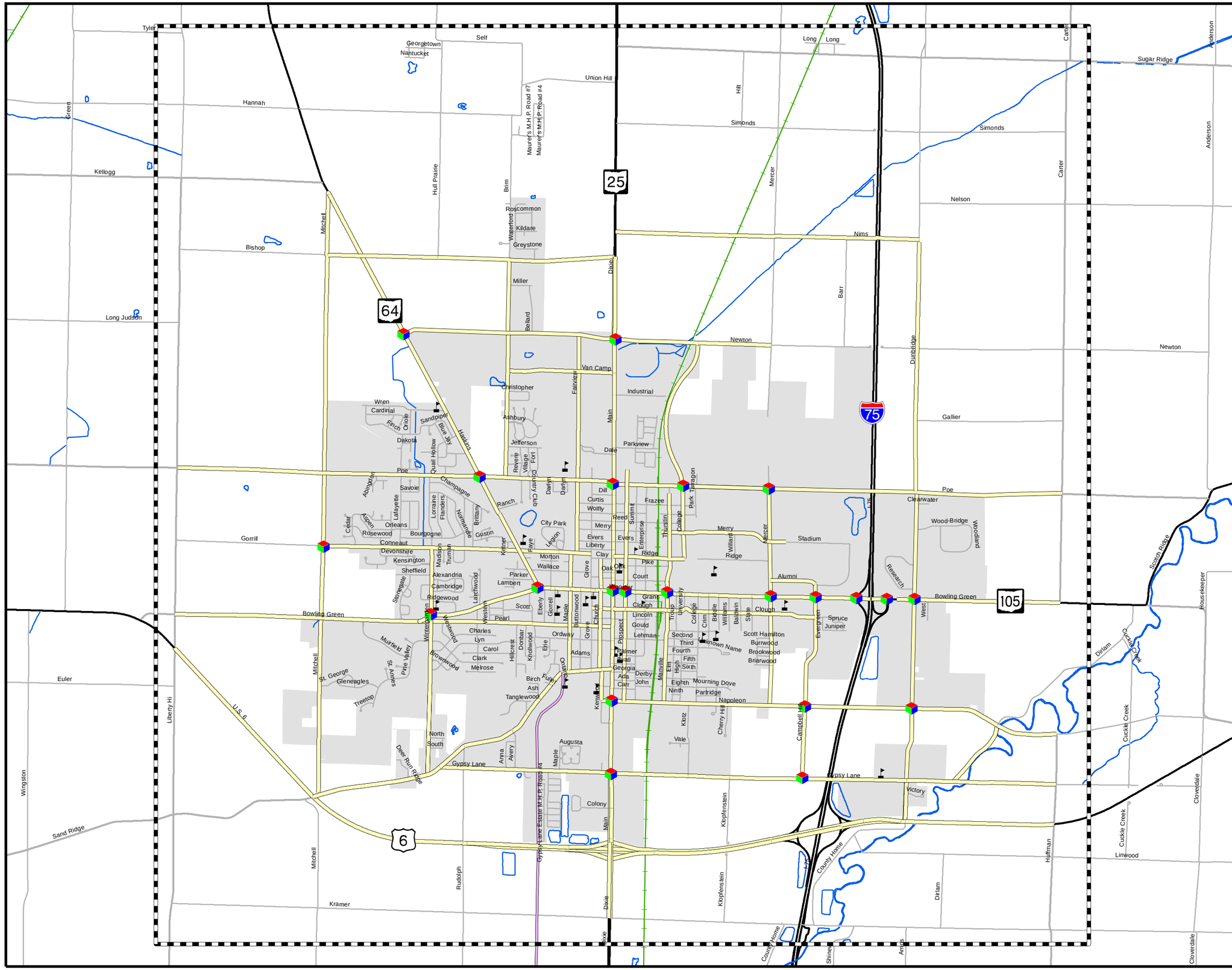
Aside from the general maintenance and repaving that is performed on a regular basis in the City, the major programmed projects were inventoried to document forthcoming improvements. The major projects currently programmed are displayed on *Table 2.1*.

Table 2.1
Programmed Roadway Improvements

Facility	Project Limits	Project Scope	Date
W. Poe Rd.	Haskins to Lafayette	Roadway Widening	ROW Acquisition (2008) Construction (2008)
SR 25 (N. Main St.)	Poe to Newton	Roadway Widening	ROW Acquisition (2009) Construction (2010)

No other major projects currently have secured funding in the next few years. The SR 25 (N. Main St.) project will be a major undertaking as it will involve property impacts to many businesses. The SR 25 project is currently under design and was therefore not analyzed as part of this study given it is being designed per on-going preliminary engineering analyses.

In regards to regional planning, the Toledo Metropolitan Area Council of Governments (TMACOG) coordinates transportation projects within both Wood and Lucas Counties through the development of the Transportation Improvement Program (TIP). The potential for Federal & State funding of projects is dependent upon the project being listed in the TIP. Given this, it is essential that the City of Bowling Green maintain a *Transportation Master Plan* that regularly updates project listings so they can be requested to be included on TMACOG's TIP so Federal & State funding options can be sought.



THE CITY OF BOWLING GREEN Ohio

Figure 2.1
Roadways and Intersections Reviewed

Legend

- School
- River/Stream
- Slippery Elm Bike Trail
- Rail Road
- Corp Limits
- Roadways Reviewed
- Intersection Reviewed
- Study Area

Mannik & Smith Group, Inc.
1800 Indian Wood Circle
Maumee, Ohio 43537
(419) 891-2222
Fax: (419) 891-1595
Civil Engineering, Surveying and Environmental Consulting
MAUMEE ♦ CLEVELAND ♦ MONROE ♦ CANTON

Notes

Project # BOWC3A February 2007
Streets.mxd

1" = 3,500'

2.2 Functional Classifications

Functional Classification is the grouping of roads, streets, and highways into a hierarchy based on the type of highway service they provide. In general, roadways provide two types of service that include either traffic mobility or land access and can be ranked in terms of the proportion of service they perform. Classifications are within either a rural area or an urban area. The roadways focusing more on mobility include Arterials which emphasize a high level of mobility for the through movement of traffic and land access is secondary to this primary function. Generally, travel speeds and distances are greater on these facilities compared to the other classes. The highest classes of arterials, Interstates and freeways, are limited access to allow the free flow of traffic. The intermediate roadways between the Arterials and the Locals are the Collectors. They collect traffic from the lower facilities (Locals) and distribute it to the higher (Arterials). Collectors provide both mobility and land access. Generally, trip lengths, speeds, and volumes are moderate. The roadways that have the primary service of providing access to land areas are the Local streets and roads. Travel speeds, distances, and volumes are generally low, and through traffic usually discouraged.

In regards to funding, the Functional Class of a roadway determines eligibility for funds. In 1991, the Intermodal Surface Transportation Efficiency Act (ISTEA) created the National Highway System (NHS). The ISTEA continued the requirement that a street, road, or highway had to be classified higher than a Local in urban areas and higher than a Local and Minor Collector in rural areas before federal funds could be spent on it. The selection of routes eligible for NHS funding was also based on functional criteria. In 1998, the Transportation Equity Act changed eligibility requirements slightly. The Act allows up to 15% of amounts reserved for rural areas to be spent on rural minor collectors. In urban areas, an eligible facility must still be above an Urban Local.

2.2.1 State Functional Classification Categories

The functional classifications utilized by the State of Ohio are shown in *Table 2.2*. The Ohio Department of Transportation (ODOT) assigns all roadways in the State one of these classifications.

Table 2.2
ODOT's Functional Classification Categories

Functional Class Identification Number	Functional Class
Rural Classifications	
1	Principal Arterial – Interstate
2	Principal Arterial – Other
6	Minor Arterial
7	Major Collector
8	Minor Collector
9	Local
Urban Classifications	
11	Principal Arterial – Interstate
12	Principal Arterial – Other Freeway/Expressway
14	Principal Arterial – Other
16	Minor Arterial
17	Collector
19	Local

2.2.2 Functional Classifications in Study Area

Existing Functional Classifications

The current (2007) functional classifications within the study area of the *Transportation Master Plan* as determined by ODOT are displayed on *Figure 2.2*. The two Urban Principal Arterials within the City include SR 25 (Main St.) for the entire length within the City, and SR 64 (E. Wooster St.) from N. Main St. to I-75. All of US 6 which traverses the southwestern and southern limits of the City is a Principal Arterial and I-75 is an Interstate. There are also several Minor Arterials and Urban Collectors as well as shown.

Future Functional Classifications

The future functional classifications within the study area are shown in *Figure 2.3*. The future changes primarily involve classifying all proposed new roadways or roadway extensions as Urban Collectors. In addition to the proposed roadways, there are also several locations where existing roadway sections are upgraded to a higher functional class to provide improved planning for the facility.

2.3 Land Use Influences on Traffic

One of the major influences on traffic volumes of a roadway is the land uses that are being serviced. Land uses vary greatly in the intensity of traffic they generate. Therefore, it is critical to identify and evaluate future growth areas and their anticipated land uses to assist in determining future traffic growth potentials for roadways servicing these areas.

2.3.1 Land Use and Trip Generation

The type and size of a land use greatly determines the amount of trips that will be generated. Land uses such as retail, restaurants, convenience stores, etc. have high trip generation whereas uses such as residential, parks, and hotels have lower trip generation. In between these extremes are trips generated by industrial, offices, and manufacturing uses. Given these variations in trip generation, it is important to identify anticipated future growth areas in Bowling Green and the anticipated type of land use that would be expected to develop in the future.

2.3.2 Potential High Growth Areas

High growth areas were identified in Bowling Green through the use of various sources. These included review of the future land use plan from Bowling Green's *Land Use Plan*; review of recent development trends; and input from the City's Planning Department. The anticipated high growth areas are shown on *Figure 2.4*. There were three general types of future land use growth areas identified including:

- Industrial/Office/Manufacturing
- Residential
- Commercial/Highway

2.3.3 Land Use Analysis Conclusion

Annual growth rates on roadways being studied in the *Transportation Master Plan* were assigned based on the type of anticipated future growth area they were primarily servicing. Growth rates of 1%, 2%, and 3% annual increases were used to predict future traffic growth. The higher growth rates are in the fringe areas where more land is available

for development and within the older urban areas smaller growth rates were used given land is essentially built out already. The annual growth rates applied to the studied roadways are displayed on *Figure 2.5*.

2.4 Identified High Crash Locations by Highway Safety Program (HSP)

The State's Highway Safety Program (HSP) has a High Crash Location Identification System (HCLIS) that develops annually a listing of high crash locations on all State Routes, Federal Routes, and Interstates in Ohio for the most recent three year period. Several lists are developed for both Non-Freeway and Freeway facilities. The two lists that are applicable to the City of Bowling Green are the "Hot Spot" Non-Freeway List and the HSP Non-Freeway List. These lists not only provide valuable information on where crash problems exist, but are also used to determine where safety program funding should be utilized to reduce crashes.

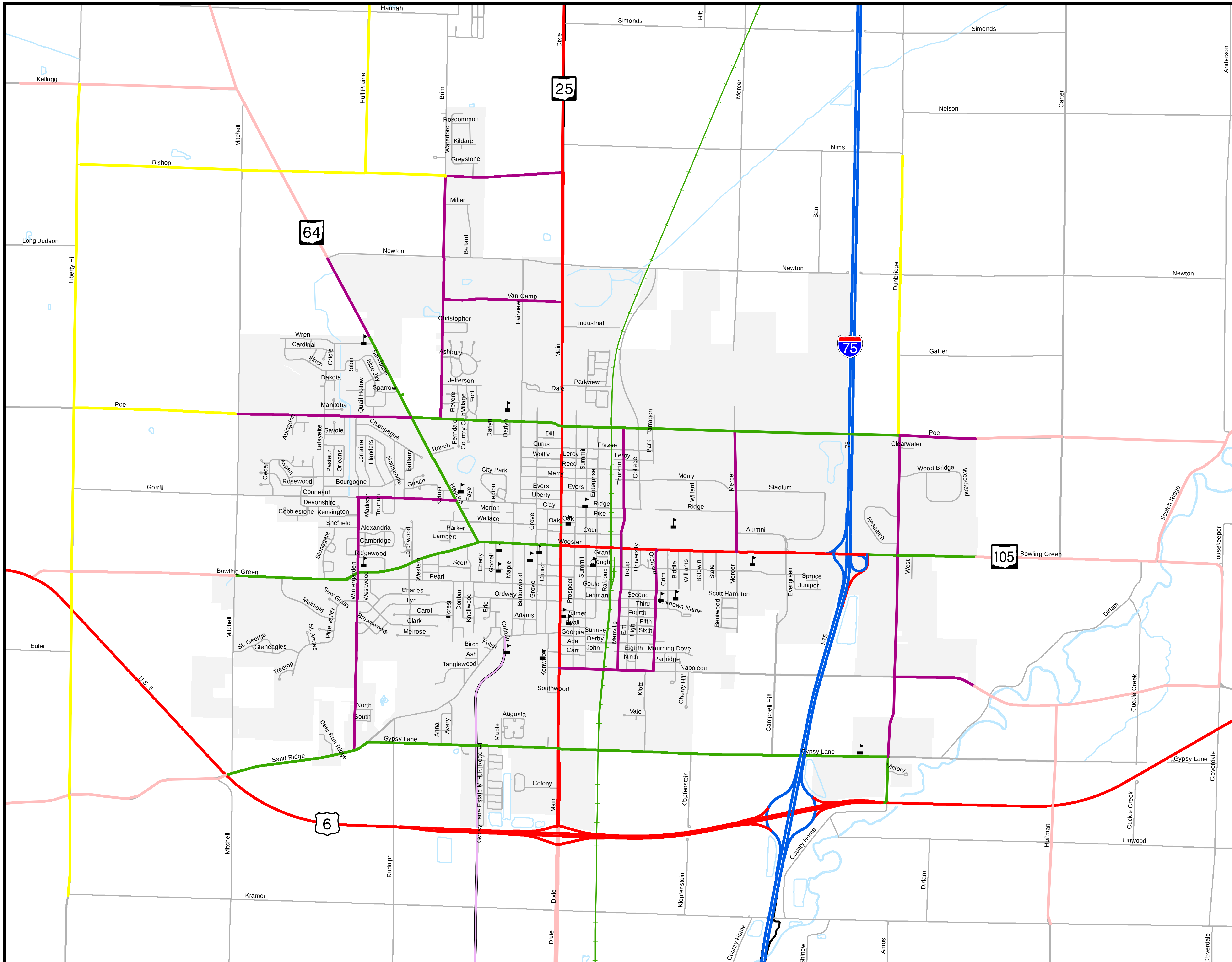
2.4.1 Non-Freeway "Hot Spot" and High Crash Location Listings

The 2003-2005 high crash listings for the City of Bowling Green are displayed on *Table 2.3* as well as on *Figure 2.6*. The "Hot Spot" listings are 2-mile long corridors in which there were more than 150 crashes in the three year period.

Table 2.3
City of Bowling Green Locations on HCLIS (2003-2005)

Hot Spot Non-Freeway List				
Location	Rank	Accidents	Accident Rate	State Log Mile
1. SR 64 (I-75 to Summit St.)	80	424	22.09	0.00 – 2.00
2. SR 25 (US 6 Ramp to W. Oak St.)	144	341	11.55	8.00 – 10.00
3. SR 25 (W. Oak St. to Bishop Rd.)	150	335	12.91	10.00 – 12.00
2005 HSP Non-Freeway List (2003-2005)				
Location	Rank	Frequency	Accident Rate	State Log Mile
4. SR 25 (W. Gypsy Ln. to N. of Dale Ave.)	67	346	10.47	8.66 – 10.97
5. SR 64 (S. Church St. to Parker Ave.)	179	30	5.86	2.26 – 2.76
6. SR 64 (Williams St. to N. Prospect St.)	189	96	14.00	1.32 – 2.07
7. SR 64 (Alumni Dr. to State St.)	448	122	20.41	0.69 – 1.21
8. SR 64 (Wooster & Mercer)	569	30	2.61	1.07
9. SR 25 (Main & Washington)	818	30	1.87	9.69
10. SR 64 (Main & Wooster)	910	22	2.95	9.40
11. R 64 (Wooster & Haskins)	970	28	5.00	2.68
12. SR 25 (Main & Napoleon)	1212	34	2.12	9.12
13. SR 64 (Wooster & Prospect)	1276	23	2.52	2.08
14. SR 25 (Main & VanCamp)	1530	26	2.06	11.40
15. SR 25 (Main & Gypsy)	1552	26	1.94	8.62
16. SR 64 (Wooster & Enterprise)	1673	17	1.86	1.94
17. SR 64 (Wooster & College)	1819	26	2.84	1.57
18. SR 25 (Main & Dale)	2286	21	1.83	0.75

There were a total of three "Hot Spot" corridors identified in Bowling Green, two involving SR 25 (Main St.) and one involving SR 64 (Wooster St.). In addition to these three high crash corridors, there were 15 other identified high crash locations, of which 4 were sections and 11 were intersections (as noted in *Table 2.3*). All of these locations have the potential to receive safety program funding given they are documented as high crash locations.



THE CITY OF BOWLING GREEN Ohio

Figure 2.2
Existing Functional Class

Legend

- School
- River/Stream
- Slippery Elm Bike Trail
- Rail Road
- Corp Limits

Functional Class

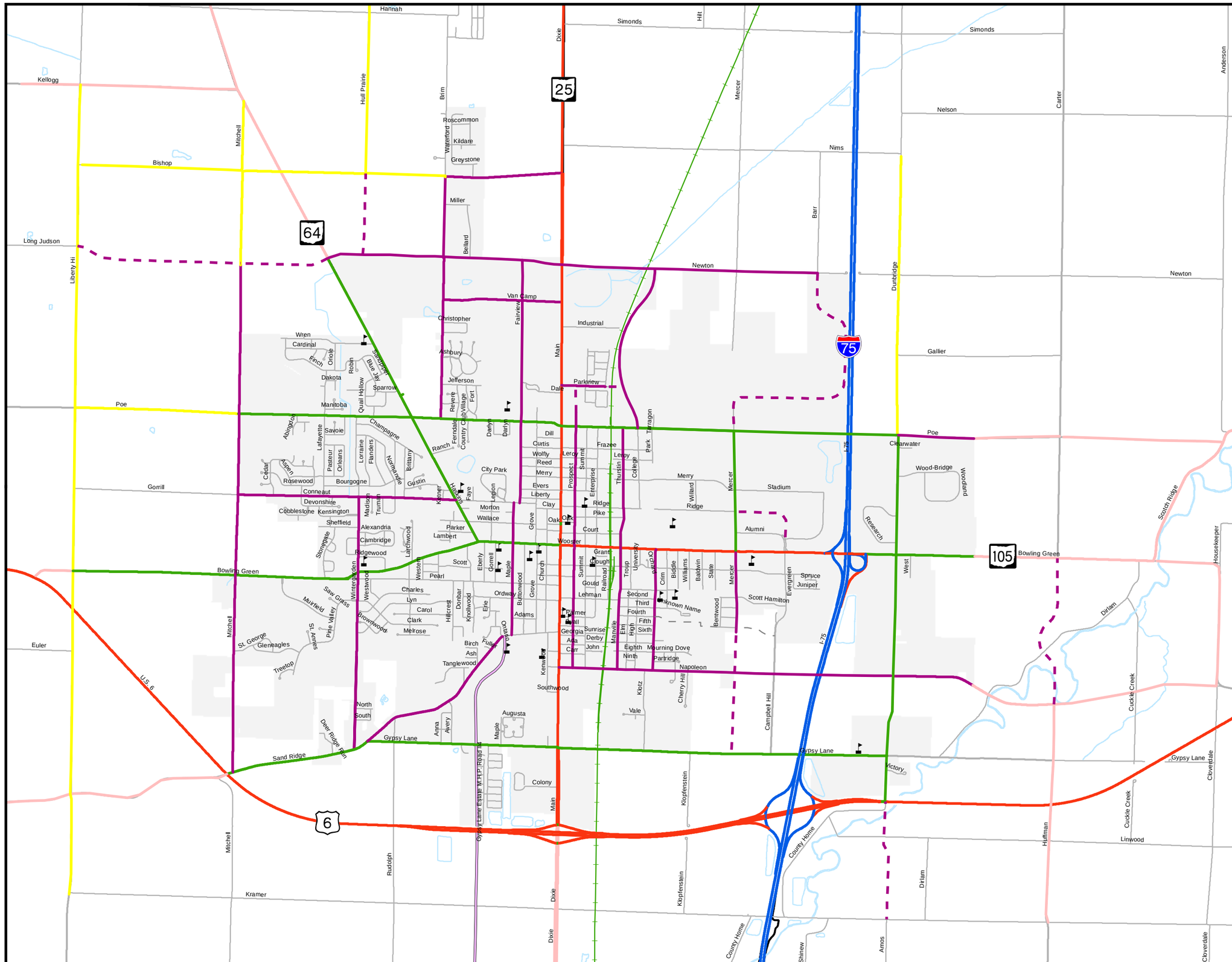
- Interstate (Urban/Rural)
- Principal Arterial (Urban/Rural)
- Minor Arterial (Urban/Rural)
- Collector (Urban)
- Major Collector (Rural)
- Minor Collector (Rural)
- Local (Urban or Rural)

The Mannik & Smith Group, Inc.
1800 Indian Wood Circle (419) 891-2222
Maumee, Ohio 43537 Fax: (419) 891-1595
Civil Engineering, Surveying and Environmental Consulting
MAUMEE ♦ CLEVELAND ♦ MONROE ♦ CANTON

Notes

Project # BOWC3A February 2007
Bowc3a.FunctionalClass.mxd

1" = 3,000'



THE CITY OF BOWLING GREEN Ohio

Figure 2.3
Future Functional Class

Legend

Functional Class

- Interstate (Urban/Rural)
- Principal Arterial (Urban/Rural)
- Minor Arterial (Urban/Rural)
- Collector (Urban)
- Collector (Future Road)
- Major Collector (Rural)
- Minor Collector (Rural)
- Local (Urban or Rural)
- Local (Future Road)
- School
- River/Stream
- Slippery Elm Bike Trail
- Rail Road
- Corp Limits

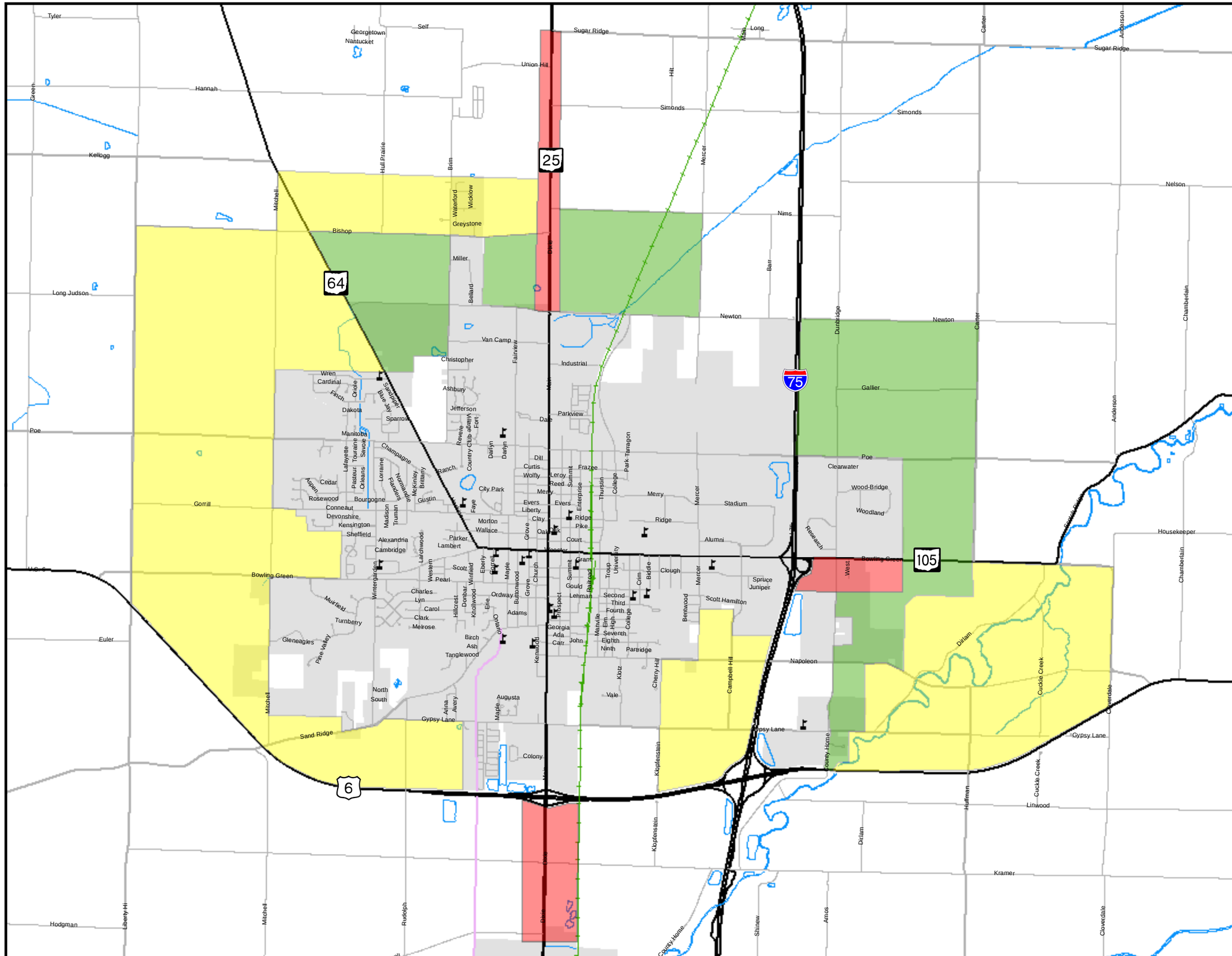
The Mannik & Smith Group, Inc.
1800 Indian Wood Circle
Maumee, Ohio 43537
(419) 891-2222
Fax: (419) 891-1595
Civil Engineering, Surveying and Environmental Consulting
MAUMEE ♦ CLEVELAND ♦ MONROE ♦ CANTON

Notes

Project # BOWC3A July 2007
Bowc3a.FunctionalClass.mxd

N

1" = 3,000'



THE CITY OF BOWLING GREEN Ohio

Figure 2.4
Future Land Use
Growth Areas

Legend

- School
- River/Streams
- Slippery Elm Bike Trail
- Rail Road
- Corp Limits

Growth Areas

- Industrial/Office/Mfg.
- Residential
- Commercial/Highway

Mannik & Smith The Group, Inc.
1800 Indian Wood Circle (419) 891-2222
Maumee, Ohio 43537 Fax: (419) 891-1595
Civil Engineering, Surveying and Environmental Consulting
MAUMEE ♦ CLEVELAND ♦ MONROE ♦ CANTON

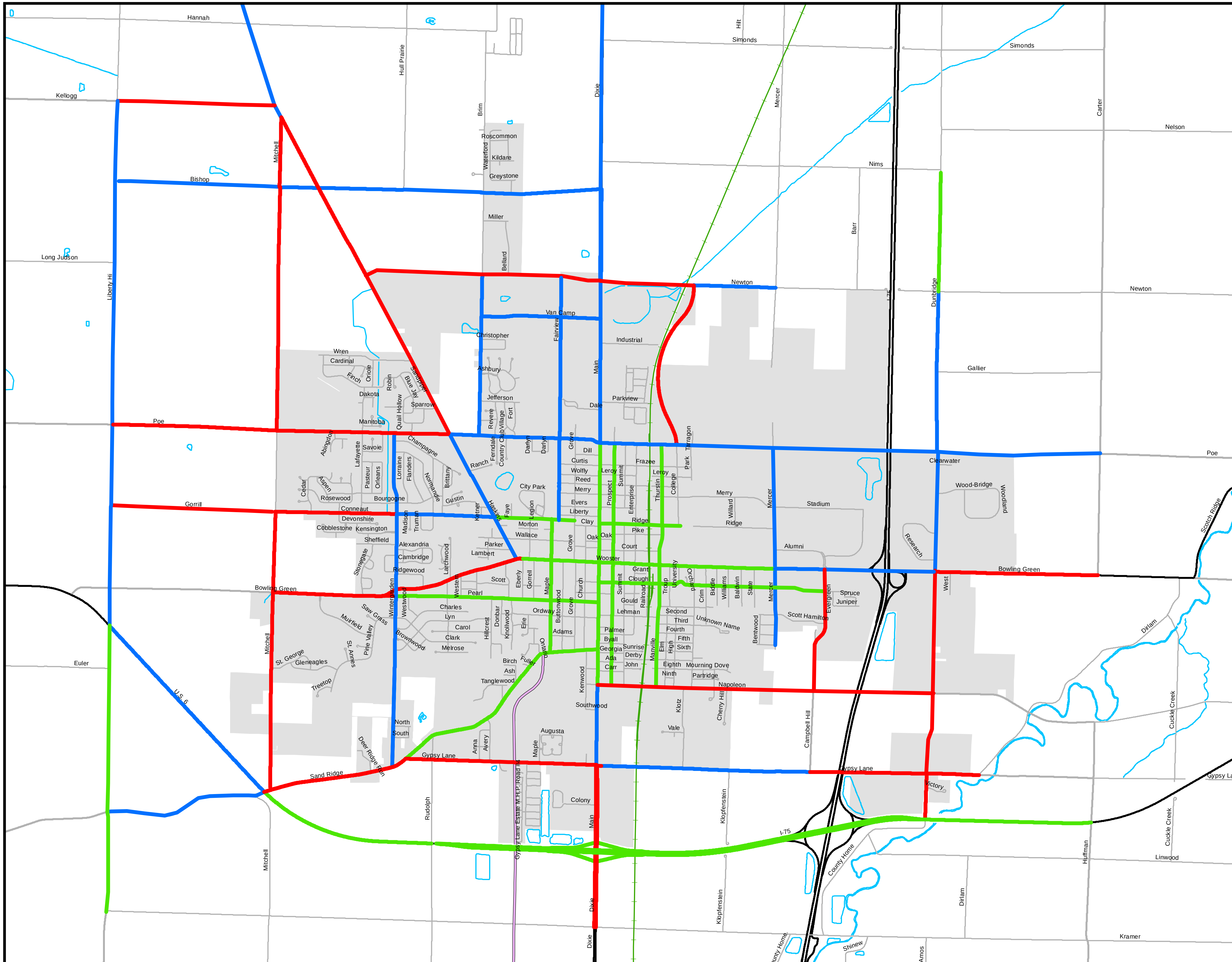
Notes

Project # BOWC3A July 2007
BOWC3A.FLGA.mxd

1" = 3,500'

THE CITY OF BOWLING GREEN Ohio

Figure 2.5
Traffic Growth Assumptions Based on Land Use Growth Areas



Legend

- River/Streams
- Slippery Elm Bike Trail
- Rail Road
- Corp Limits

Annual Growth Rate

- 1%
- 2%
- 3%

The Mannik & Smith Group, Inc.
1800 Indian Wood Circle
Maumee, Ohio 43537
(419) 891-2222
Fax: (419) 891-1595
Civil Engineering, Surveying and Environmental Consulting
MAUMEE ♦ CLEVELAND ♦ MONROE ♦ CANTON

Notes

Project # BOWC3A February 2007
BOWC3A.TGA.mxd

1" = 3,000'

2.4.2 Bowling Green Police Division – 2006 Traffic Crash Analysis

In addition to the crash data obtained from the HSP, the City of Bowling Green's Police Division supplied data in the form of a report titled *2006 Traffic Crash Analysis*. The report provided additional data to further document the locations identified by HSP are in fact high crash locations within the City. The recommendations of the report acknowledges that both SR 25 (Main Street) and SR 64 (Wooster Street) contain a majority of the crashes in the City (particularly in the vicinity of downtown) and that both increased enforcement as well as coordination with engineering solutions should be performed. The study is also beneficial in that it highlights all locations in the City where high crash occurrences are located whereas the HSP crash data only provides data on State and Federal routes. The high crash intersections and corridors identified by the City's report are displayed on *Figure 2.7*.

2.4.3 Safety Recommendations

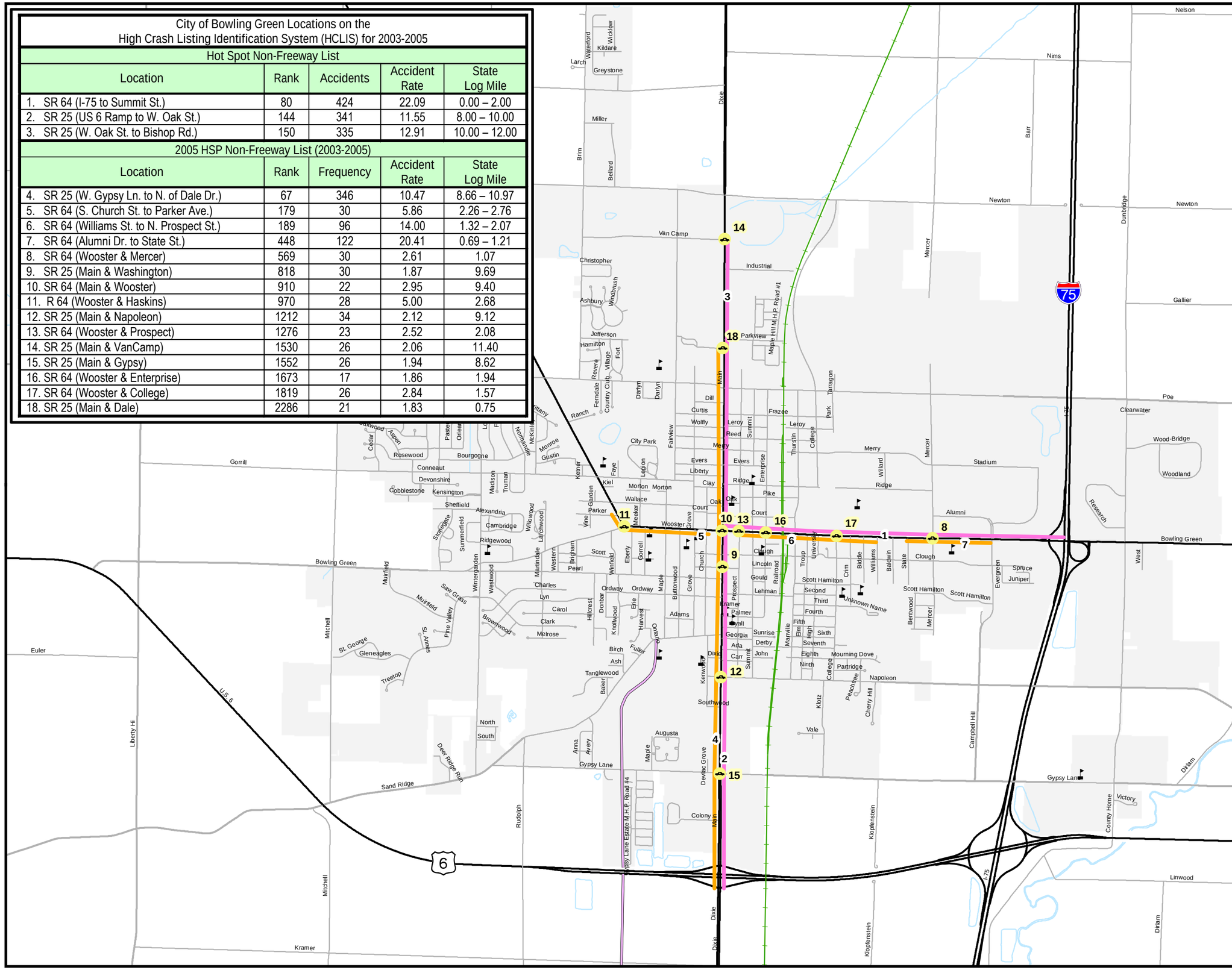
Based on the high crash areas identified in the Highway Safety Program (HSP) and also the City's 2006 Traffic Crash Analysis, the following safety recommendations are made:

- Conduct a citywide signal system study to develop recommendations for improving traffic progression and coordination through the city to reduce the number of stops. An improved signal system would improve capacity, reduce congestion, and improve signal visibility. All of these factors would reduce the number of crashes.
- Corridor Safety Study of SR 25 (Main St.) from US 6 to W. Oak St.
- Corridor Safety Study of SR 64 (Wooster St./Haskins Rd.) from Thurstin Ave. to Parker Ave.
- Corridor Safety Study of SR 25 (Main St.) from W. Oak St. to Bishop Rd. (It should be noted that a major widening project is anticipated for construction in 2010, from Poe Rd. to Newton Rd. which will improve safety on a large portion of this corridor, the project is currently in the design phase)
- Conduct a citywide overhead guide sign study to determine key locations needing overhead signs to guide motorists to the major arterials and also to provide overhead lane use signs at key intersections
- Corridor Safety Study of Poe Rd. from Haskins Rd. to Park Ave.

In addition to these specific safety recommendations, the improvements developed for the *Transportation Master Plan* considered the existing conditions (including high crash locations) and projected conditions to assist in developing the recommended improvements.

City of Bowling Green Locations on the
High Crash Listing Identification System (HCLIS) for 2003-2005

Hot Spot Non-Freeway List				
Location	Rank	Accidents	Accident Rate	State Log Mile
1. SR 64 (I-75 to Summit St.)	80	424	22.09	0.00 – 2.00
2. SR 25 (US 6 Ramp to W. Oak St.)	144	341	11.55	8.00 – 10.00
3. SR 25 (W. Oak St. to Bishop Rd.)	150	335	12.91	10.00 – 12.00
2005 HSP Non-Freeway List (2003-2005)				
Location	Rank	Frequency	Accident Rate	State Log Mile
4. SR 25 (W. Gypsy Ln. to N. of Dale Dr.)	67	346	10.47	8.66 – 10.97
5. SR 64 (S. Church St. to Parker Ave.)	179	30	5.86	2.26 – 2.76
6. SR 64 (Williams St. to N. Prospect St.)	189	96	14.00	1.32 – 2.07
7. SR 64 (Alumni Dr. to State St.)	448	122	20.41	0.69 – 1.21
8. SR 64 (Wooster & Mercer)	569	30	2.61	1.07
9. SR 25 (Main & Washington)	818	30	1.87	9.69
10. SR 64 (Main & Wooster)	910	22	2.95	9.40
11. R 64 (Wooster & Haskins)	970	28	5.00	2.68
12. SR 25 (Main & Napoleon)	1212	34	2.12	9.12
13. SR 64 (Wooster & Prospect)	1276	23	2.52	2.08
14. SR 25 (Main & VanCamp)	1530	26	2.06	11.40
15. SR 25 (Main & Gypsy)	1552	26	1.94	8.62
16. SR 64 (Wooster & Enterprise)	1673	17	1.86	1.94
17. SR 64 (Wooster & College)	1819	26	2.84	1.57
18. SR 25 (Main & Dale)	2286	21	1.83	0.75



THE CITY OF BOWLING GREEN Ohio

Figure 2.6
HSP
(Highway Safety Program)
Crash Listings
(2003-2005)

Legend

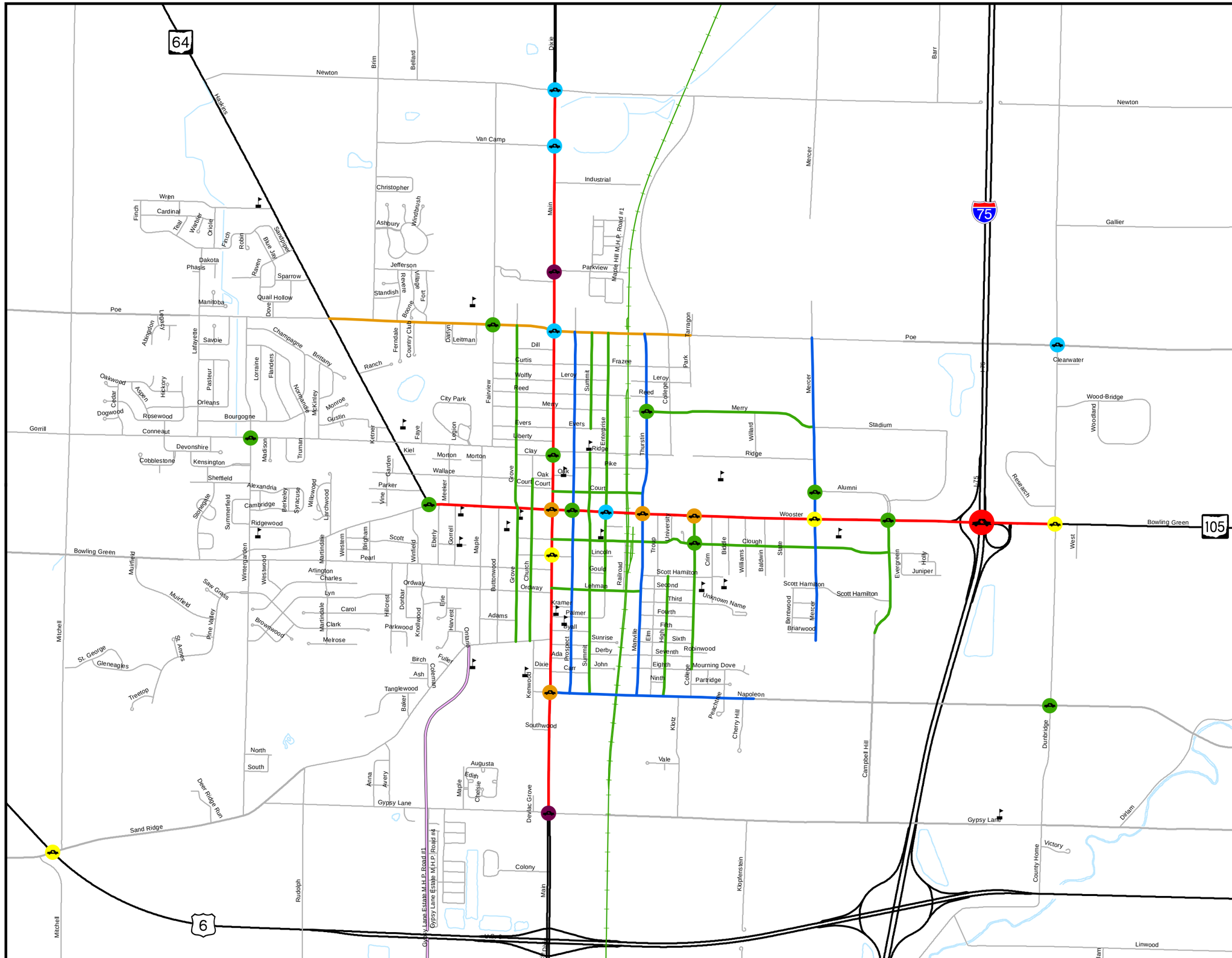
- School
- River/Stream
- Slippery Elm Bike Trail
- Rail Road
- Corp Limits
- Intersection Listing
- Hot Spot Listing
- Section Listing

The Mannik & Smith Group, Inc.
1800 Indian Wood Circle (419) 891-2222
Maumee, Ohio 43537 Fax: (419) 891-1595
Civil Engineering, Surveying and Environmental Consulting
MAUMEE ♦ CLEVELAND ♦ MONROE ♦ CANTON

Notes

Project # BOWC3A February 2007
Bowc3a.CrashHSP.mxd

1" = 2,500'



THE CITY OF BOWLING GREEN Ohio

Figure 2.7
High Crash Intersections & Corridors (2003-2005)

Legend

- School
- River/Stream
- Slippery Elm Bike Trail
- Rail Road

High Crash Intersection

Number of Crashes

- 14-19
- 20-24
- 25-29
- 30-40
- 41-50
- 51 or More

High Crash Corridor

Number of Crashes

- 20-50
- 51-100
- 101-500
- Over 500

The Mannik & Smith Group, Inc.
1800 Indian Wood Circle (419) 891-2222
Maumee, Ohio 43537 Fax: (419) 891-1595
Civil Engineering, Surveying and Environmental Consulting
MAUMEE ♦ CLEVELAND ♦ MONROE ♦ CANTON

Notes

Project # BOWC3A February 2007
Bowc3a.Crashes.mxd

1" = 2,000'

2.5 Traffic Volumes

The traffic volumes for the study were obtained through several sources. These included existing Bowling Green counts; ODOT traffic data; TMACOG traffic data; and traffic data from various traffic studies and design projects. In addition, the City of Bowling Green and the Mannik & Smith Group, Inc. (MSG) coordinated collecting primary data at 10 hose count locations as well as conducting both AM and PM turn movement counts at 22 intersections (see *Appendix B* for listing of locations). All counts were conducted in 2006 and volumes were projected to 2007 (utilizing the growth rates shown on *Figure 2.5*). The intersection turn counts were collected to construct a *Synchro* traffic model to assist in analyzing congestion and assessing needed intersection improvements.

2.5.1 Existing 2007 Traffic

The average daily traffic (ADT) volumes for a 24-hour period are shown on *Figure 2.8*. These volumes indicate that Wooster St. (particularly E. Wooster) currently carries over 20,000 vehicles between Main St. and I-75. The SR 25 (Main St.) corridor carries anywhere from 12,300 to 19,600 vehicles per day depending on location. Other notable roadways carrying 8,000 to 10,000 vehicles per day include portions of Poe Rd., Napoleon Rd., W. Wooster, and Thurstin Ave.

2.5.2 Future 2027 Traffic

Traffic volumes were projected to a 20 year horizon (2027) to determine transportation needs for the future (*Figure 2.9*). The growth rates utilized for these projections are shown on *Figure 2.5*. The previous high volume roadways noted in 2007 continue to increase their volumes as shown on the figure. In addition to these roadways, several others are predicted to grow to volumes in the 8,000 to 10,000 range including Bowling Green Road West; Manville Ave.; Mercer Rd.; Campbell Hill Rd.; Dunbridge Rd.; and Gypsy Ln.

2.5.3 Traffic Patterns

The review of existing ADT volumes reveals that the primary commuter route is E. Wooster St. as it is the primary roadway that interchanges with I-75. This corridor was recently improved with a widening project. The corridor contains many BGSU students as well as those residents commuting to regional employment areas such as the Toledo Area to the north and Findlay & Lima to the south. Current traffic operates adequately given the recent improvements; however, if traffic projections hold true there could be over 30,000 vehicles per day by 2027 which could cause operational constraints. This creates a need to explore the justification of providing an additional I-75 access north of the current Wooster St. interchange to provide a second access for northern parts of the City, including BGSU. The *BGSU Master Plan* also documents the need for a northern interchange for the long term needs of the campus. The other two primary gateways into and out of the City are S. Main St. from US 6 and N. Main St. near Newton Rd. There is currently a planned widening project for SR 25 from Poe to Newton which would improve operations greatly and help accommodate future traffic growth on this corridor.

2.5.4 Truck Traffic

In addition to documenting traffic volumes, the mixes of traffic on State Routes through the City were also reviewed to determine short term and long term truck routes for special events and detours. Truck traffic percentages were obtained from ODOT's *Traffic Survey*

Report (2006). The truck percentages and 24-hour volumes are displayed on *Figure 2.10*. The largest number (and percentage) of trucks occurs on SR 25 through the City. The next highest truck route is E. Wooster St. from I-75 to SR 25.

The short term (green route) and long term (red route) truck routes developed for the City are shown on *Figure 2.10*. These routes were developed to plan for truck traffic being detoured from the State Routes through the City when there are road closures. This occurs primarily for two reasons. One is for planned special events where often the downtown area is closed to vehicles. The other instance is when there is an emergency road closure due to an unforeseen event such as a traffic crash; large fire; felled tree; or some other natural event. Periodically a crash on I-75 also creates traffic detouring onto City streets. The recommended truck routes shown would facilitate trucks in guiding them to the State Routes without having to enter the downtown and residential areas where often turning movements are quite tight for trucks. These routes can be posted with signs or also encouraged with changeable message signs (especially if the detour will occur for a day or several hours).

The short term route is recommended based on current roadway facilities in place. The long term route is recommended once future roadway improvements become available such as the Newton Road extension to Mitchell Road; Mitchell Road improvements; and a new northern interchange with I-75. The three intersections where blue squares are displayed are locations where turning radii improvements would facilitate truck turning.

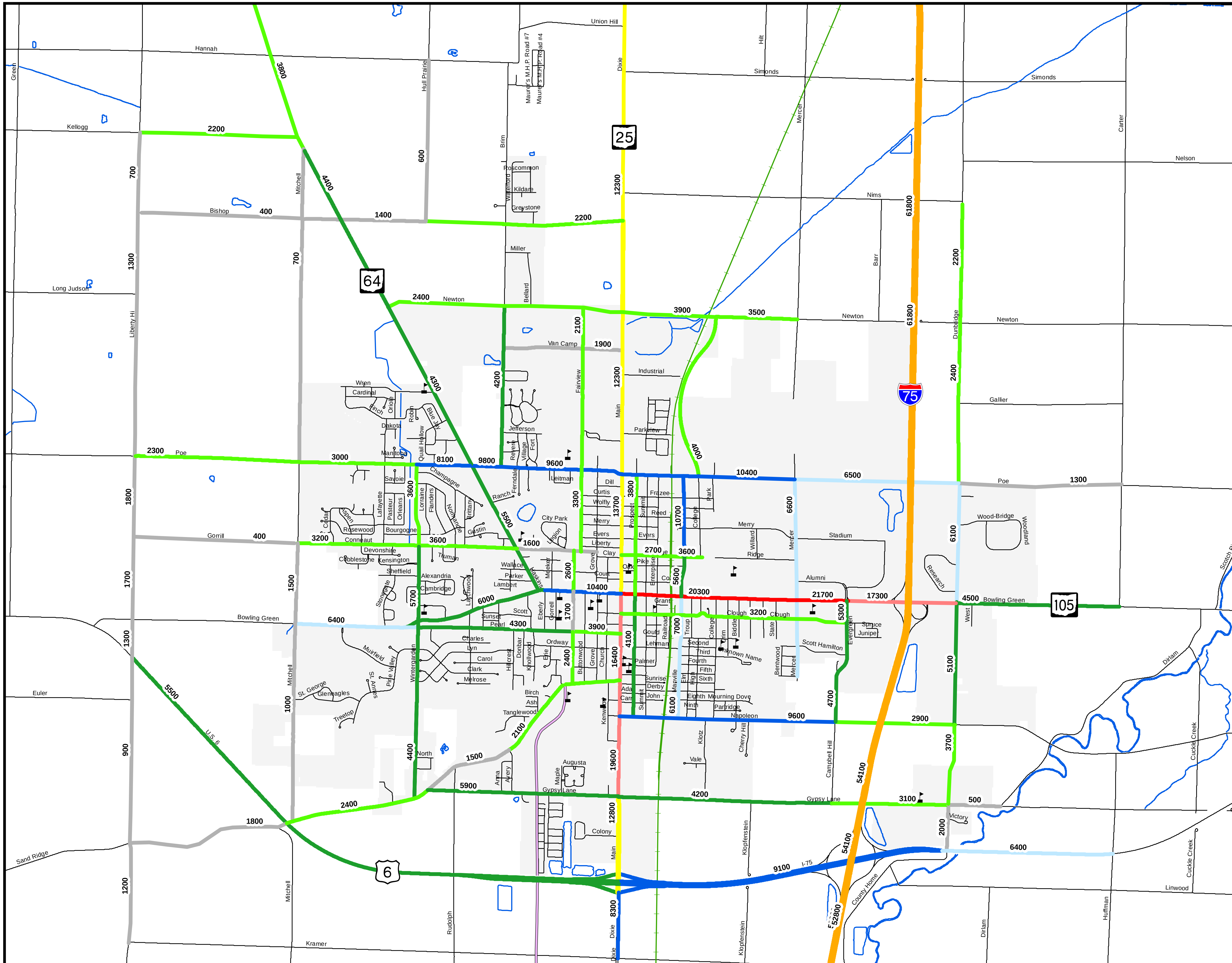
2.6 Traffic Control Inventory

An inventory of existing traffic control that can cause traffic delays were inventoried to assist in developing a traffic model for the City. Traffic control that typically can lead to delays, particularly during peak traffic periods, involve multiway stops and traffic signals as discussed below.

2.6.1 Signals

The City of Bowling Green at the time of this update (2007) for the *Transportation Master Plan* had a total of 28 signals in the City. The locations of these signals are displayed on *Figure 2.11* as small traffic signal symbols. In addition to the existing signals, there are nine (9) locations where potential future signals could be located when they are found to meet applicable signal warrants, and they are represented by a different signal symbol.

A review of the signal locations revealed that only 3 of the 28 signals are located on non-state route designated roadways. The remaining 25 signals include 15 on State Route 25 (Main St.) and 10 on SR 64 (Wooster St./Haskins Rd.). The presence of so many signals on the two primary arterials through the City emphasizes the critical need for optimal coordination/progression so as to maximize the capacity of the roadways. Studies have shown that improved signal coordination/progression can add anywhere from 15% to 30% capacity without widening any roadways. It is therefore recommended that the City of Bowling Green conduct a citywide signal system study to determine signal upgrade needs for all traffic signals to develop a coordinated signal system to take advantages of improved technologies that will improve signal operations, signal visibility, vehicular detection, and signal communications.



THE CITY OF BOWLING GREEN Ohio

Figure 2.8
Existing 2007 Traffic
(24-Hour Volumes)

Legend

- School
- River/Stream
- Slippery Elm Bike Trail
- Rail Road
- Corp Limits

Traffic Volumes (ADT)

- 2000 or Less
- 2001 - 4000
- 4001 - 6000
- 6001 - 8000
- 8001 - 12000
- 12001 - 16000
- 16001 - 20000
- 20001 - 24000
- 24001 or Greater
- Low Volume or Not Counted

The Mannik & Smith Group, Inc.
1800 Indian Wood Circle, Maumee, Ohio 43537
(419) 891-2222 Fax: (419) 891-1595
Civil Engineering, Surveying and Environmental Consulting
MAUMEE ♦ CLEVELAND ♦ MONROE ♦ CANTON

Notes

Project # BOWC3A February 2007
BOWC3A.Traffic.mxd

1" = 3,000'

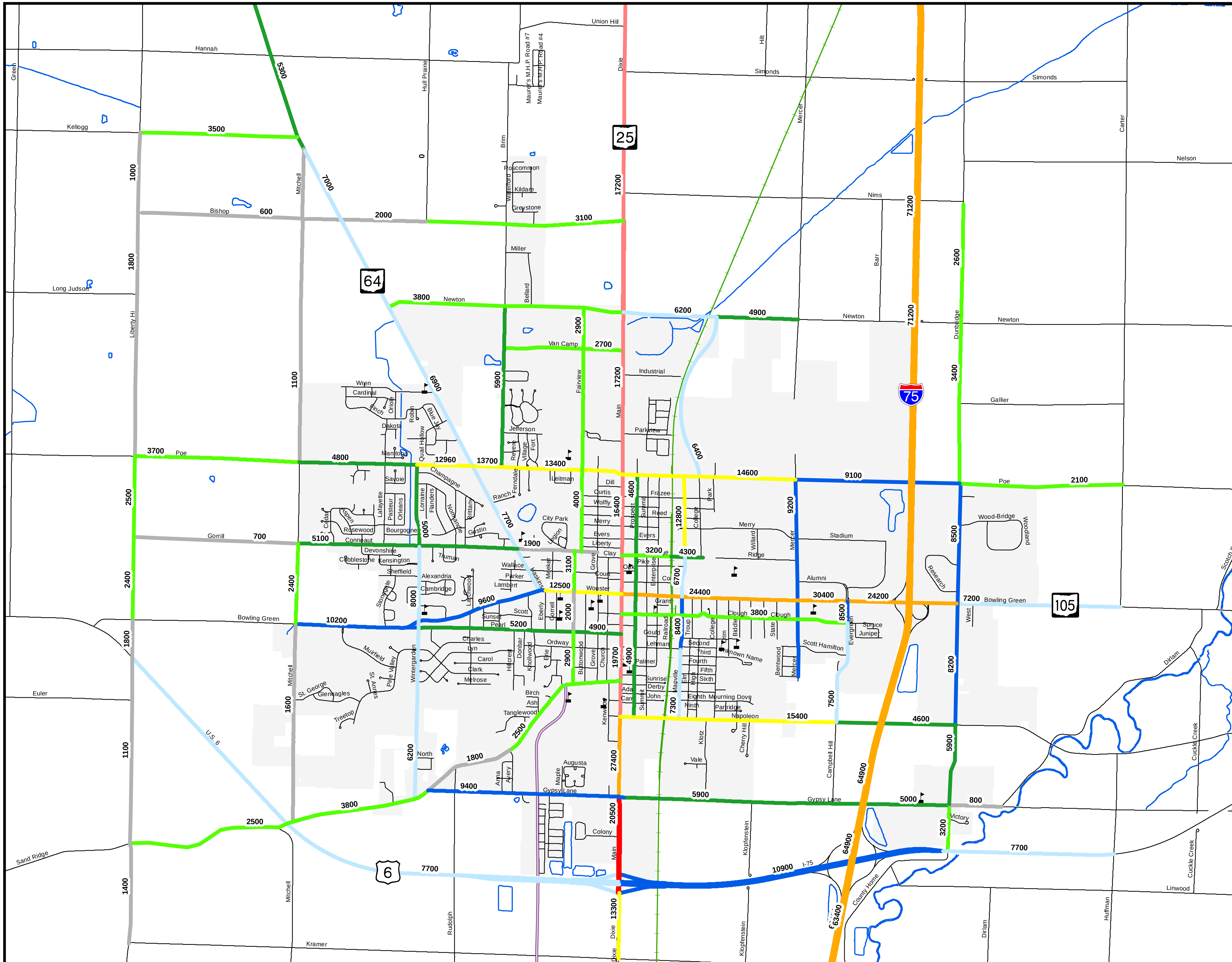


Figure 2.9
Future 2027 Traffic
(24-Hour Volumes)

Legend

- School
- River/Stream
- Slippery Elm Bike Trail
- Rail Road
- Corp Limits

Traffic Volumes (ADT)

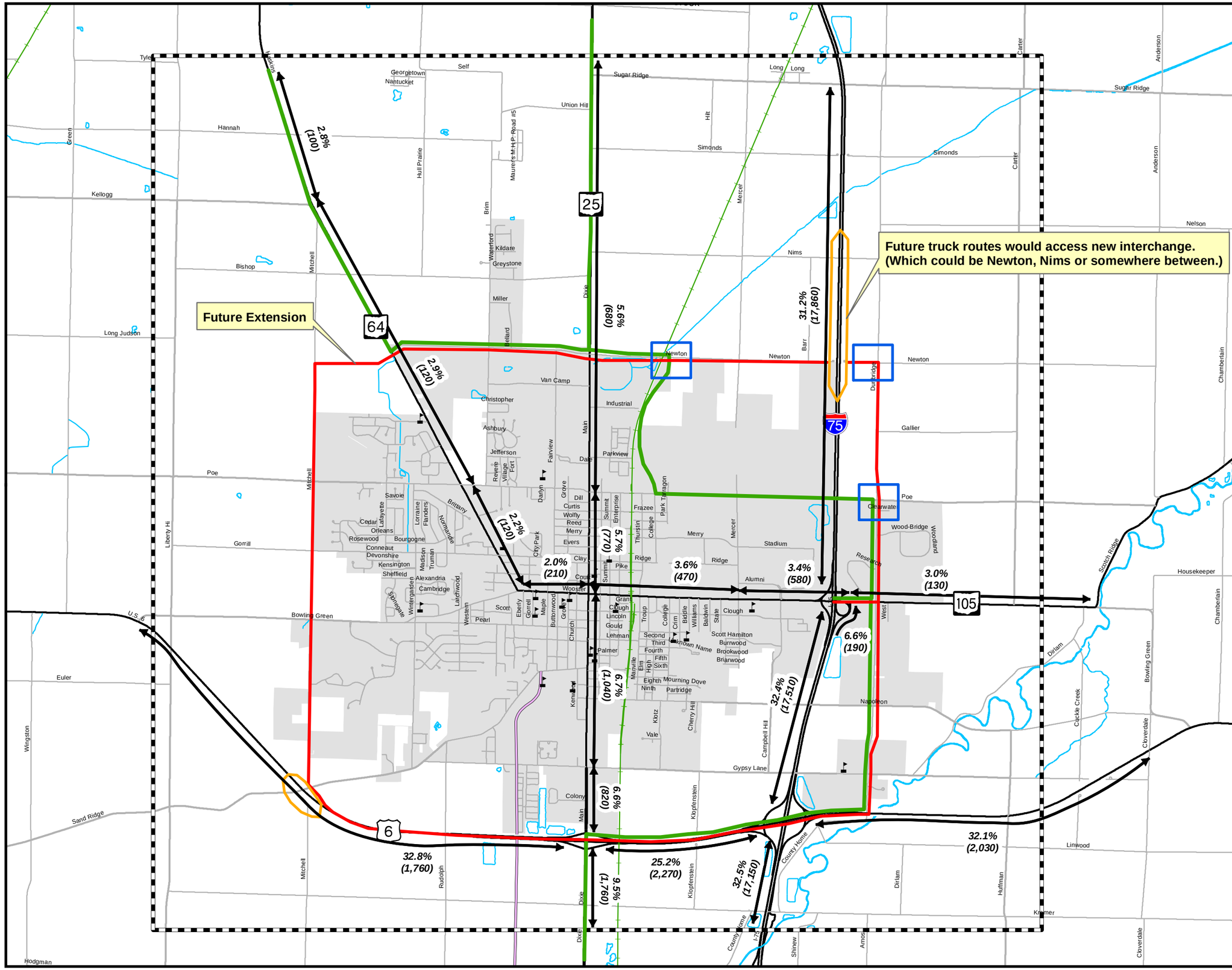
- 400 - 2000
- 2001 - 4000
- 4001 - 6000
- 6001 - 8000
- 8001 - 12000
- 12001 - 16000
- 16001 - 20000
- 20001 - 24000
- 24001 or Greater
- Low Volume or Not Counted

The Mannik & Smith Group, Inc.
1800 Indian Wood Circle (419) 891-2222
Maumee, Ohio 43537 Fax: (419) 891-1595
Civil Engineering, Surveying and Environmental Consulting
MAUMEE ♦ CLEVELAND ♦ MONROE ♦ CANTON

Notes

Project # BOWC3A February 2007
BOWC3A.Traffic.mxd

1" = 3,000'



THE CITY OF BOWLING GREEN Ohio

Figure 2.10
Existing Truck Traffic and Recommended Truck Routes for Special Events & Detours

Legend

- School
- River/Streams
- Slippery Elm Bike Trail
- Rail Road
- Corp Limits
- Study Area
- Short Term Truck Route
- Long Term Truck Route
- Future Interchange
- 24 HR. Truck % & Volume
- Radii Improvements

The Mannik & Smith Group, Inc.
1800 Indian Wood Circle
Maumee, Ohio 43537
(419) 891-2222
Fax: (419) 891-1595
Civil Engineering, Surveying and Environmental Consulting
MAUMEE ♦ CLEVELAND ♦ MONROE ♦ CANTON

Notes

Project # BOWC3A February 2007
BOWC3A.ExTruck.mxd

1" = 3,500'

2.6.2 Multiway Stops

A total of 20 multiway stops were inventoried in the City as shown on *Figure 2.11* by the stop sign symbols. Multiway stops should not be installed simply as a means of slowing traffic on a roadway. Multiway stops are typically used where volumes on the intersecting roads is approximately equal. The guidelines outlined in Section 2B.07 of the *Ohio Manual of Uniform Traffic Control Devices (OMUTCD)* should be followed in deciding on the installment of a multiway stop.

2.7 Traffic Model

A traffic model was developed to analyze traffic at key intersections within the City. The model was developed for both AM and PM peak traffic conditions using the *Synchro* traffic simulation software package. A total of 22 intersections were counted for the *Transportation Master Plan* for developing the traffic model. The model was used to document traffic operations in both 2007 and 2027 and to assist in developing intersection lane needs and to test the impacts that proposed improvements at the intersections would provide. The outputs of the model provide the necessary data required for several funding sources to construct projects to improve traffic flow.

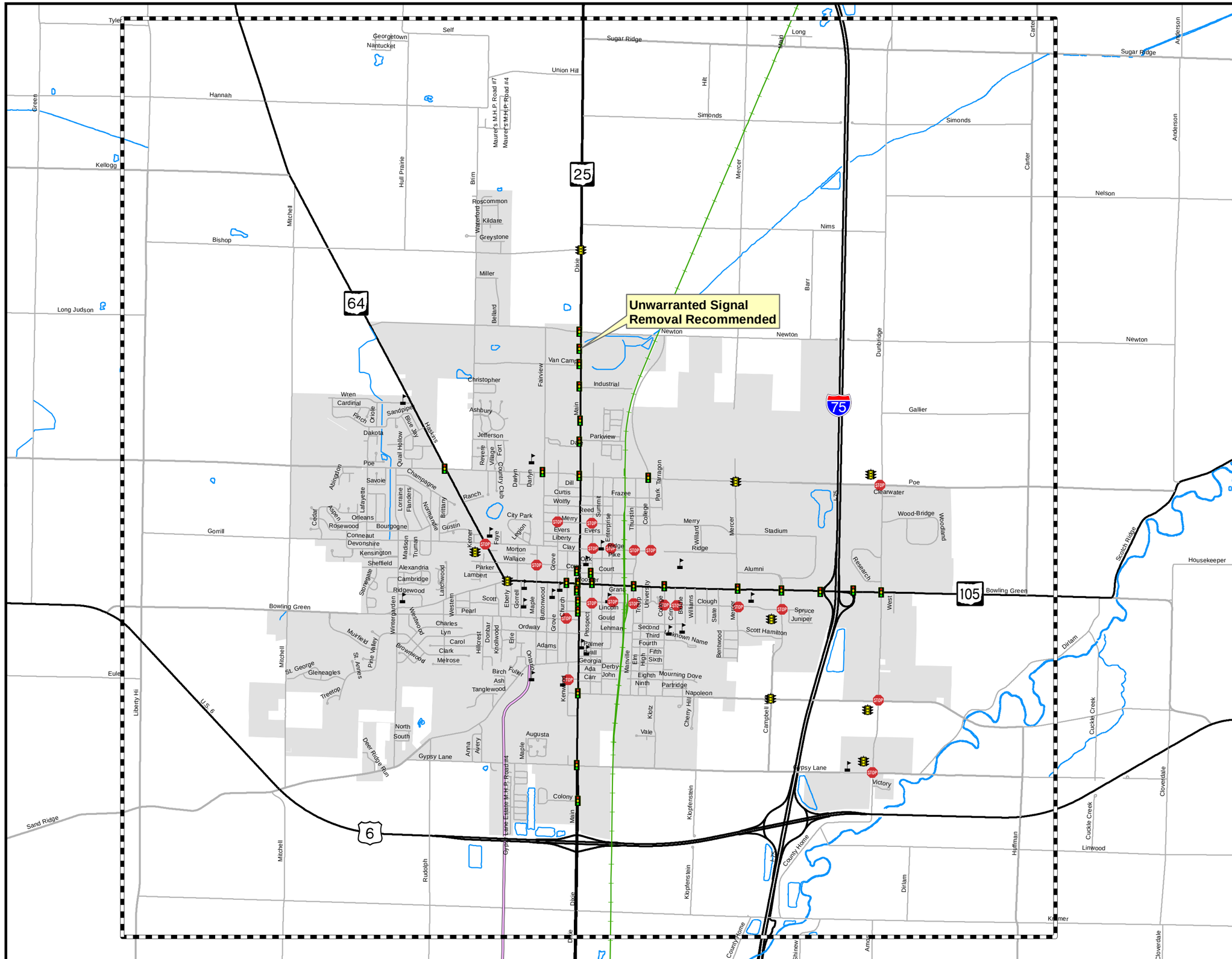
One output of the model is the Level of Service (LOS) of traffic movements at an intersection, which are based on the delay (in seconds) a vehicle experiences in waiting to move through an intersection. The LOS is similar to a grade card in that the values range from “A to F”. The LOS A represents minor delays, whereas a LOS F represents large delays and is basically gridlock traffic at peak periods. Typically a LOS A, B, or C is considered acceptable; a LOS D or E starts to experience moderate delays and congestion during peak periods; and the LOS F is representative of serious delays and major congestion.

2.7.1 Traffic Operations in 2007

The traffic model for 2007 reveals that various intersections studied around the City contain moderate delays and congestion during peak traffic periods as shown on *Figure 2.12*. The majority of delays are found on SR 25 (Main St.) and SR 64 (Wooster St.) as these are the two heaviest traveled corridors in the City. The intersections between Poe and Newton were not studied given this section of roadway is in detailed analyses and design for widening the project in 2009/2010. The obvious delays along these two corridors indicate a need to conduct a signal system study to determine if upgraded signals, timing/phasing, progression, and coordination would improve these operations.

2.7.2 Traffic Operations in 2027

In the year 2027, as shown on *Figure 2.13*, additional locations experience moderate delays (indicated by yellow symbols) as well as serious delays (indicated by red symbols). Despite the recent widening improvements to E. Wooster St. by 2027 there are once again serious delays as traffic is anticipated to reach over 30,000 in some locations. This supports the need to develop a second interchange north of Poe Rd. so as to provide a second access for BGSU commuters as well as residents living in the northern half of the City. There are also some unsignalized intersections with delays that could possibly be corrected by a traffic signal or roundabout. The southern gateway into the City on SR 25 from US 6 also indicates capacity constraints in 2027. This supports the need to begin planning for a possible southwestern interchange to as to provide a second access into the City. One such potential location is the US 6 and Mitchell/Sand Ridge intersection.



THE CITY OF BOWLING GREEN Ohio

Figure 2.11
Existing Signal and
All-Way Stop Locations
and Potential Signal Locations

Legend

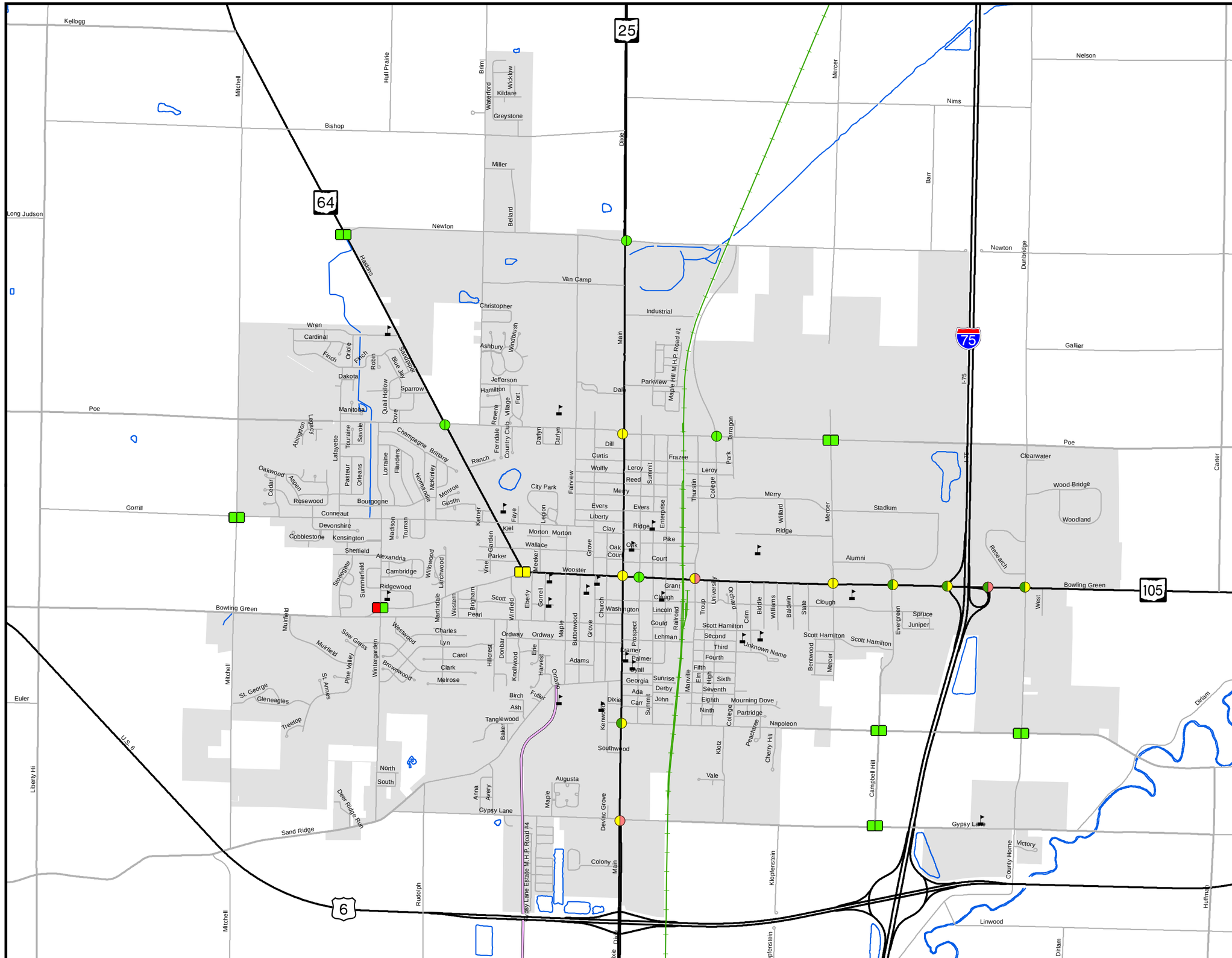
- School
- River/Streams
- Slippery Elm Bike Trail
- Rail Road
- Corp Limits
- Study Area
- Existing Signal
- Potential Signal
  (or All Way Stop if Signal not Warranted)
- Existing All-Way Stop

Mannik & Smith The Group, Inc.
1800 Indian Wood Circle (419) 891-2222
Maumee, Ohio 43537 Fax: (419) 891-1595
Civil Engineering, Surveying and Environmental Consulting
MAUMEE ♦ CLEVELAND ♦ MONROE ♦ CANTON

Notes

Project # BOWC3A January 2007
BOWC3A.Signals.mxd

1" = 3,500'



THE CITY OF BOWLING GREEN Ohio

Figure 2.12
2007 AM & PM
Levels of Service (LOS)

Legend

- School
- River/Stream
- Slippery Elm Bike Trail
- Rail Road
- Corp Limits

Signalized Intersections

- All Movements LOS C or Better
- Some Movements LOS D & E
- Some Movements LOS F

Unsignalized Intersections

- All Movements LOS C or Better
- Some Movements LOS D & E
- Some Movements LOS F

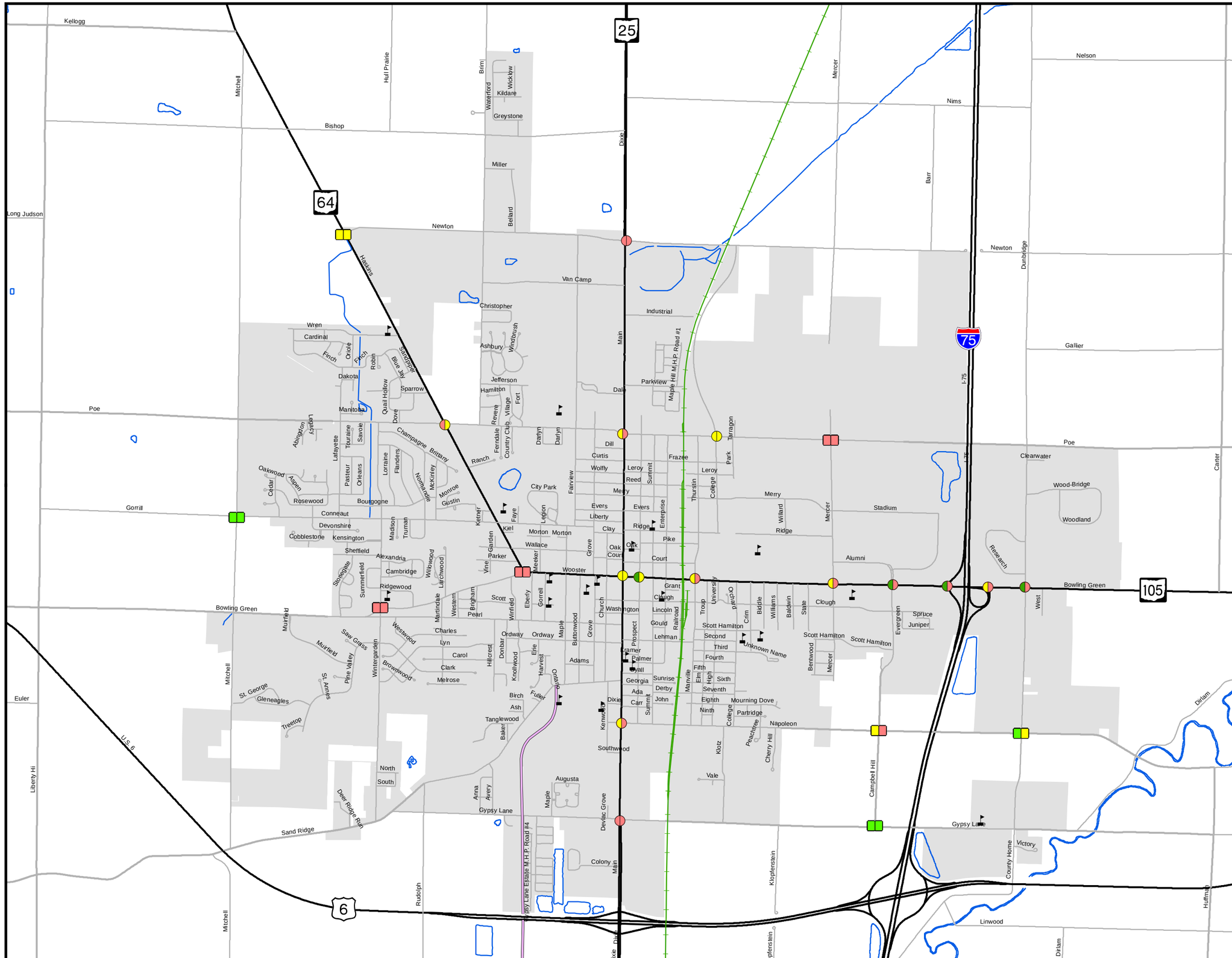
Note:
Left half of circle or square indicates the AM LOS & right half is the PM LOS

The Mannik & Smith Group, Inc.
1800 Indian Wood Circle (419) 891-2222
Maumee, Ohio 43537 Fax: (419) 891-1595
Civil Engineering, Surveying and Environmental Consulting
MAUMEE ♦ CLEVELAND ♦ MONROE ♦ CANTON

Notes

Project # BOWC3A July 2007
BOWC3A.LOS.mxd

1" = 2,500'



THE CITY OF BOWLING GREEN Ohio

Figure 2.13
2027 AM & PM
Levels of Service (LOS)

Legend

- School
- River/Stream
- Slippery Elm Bike Trail
- Rail Road
- Corp Limits

Signalized Intersections

- All Movements LOS C or Better
- Some Movements LOS D & E
- Some Movements LOS F

Unsignalized Intersections

- All Movements LOS C or Better
- Some Movements LOS D & E
- Some Movements LOS F

Note:
Left half of circle or square indicates the AM LOS & right half is the PM LOS

The Mannik & Smith Group, Inc.
1800 Indian Wood Circle (419) 891-2222
Maumee, Ohio 43537 Fax: (419) 891-1595
Civil Engineering, Surveying and Environmental Consulting
MAUMEE ♦ CLEVELAND ♦ MONROE ♦ CANTON

Notes

Project # BOWC3A July 2007
BOWC3A.LOS.mxd

1" = 2,500'

2.7.3 Summary of Capacity Constraint Locations

The traffic model indicates there are currently delay and congestion problems on SR 25 (Main St.) as well as on portions of SR 64 (Wooster St.) during peak traffic periods. It is recommended that a citywide signal system upgrade study be conducted to determine needed signal improvements to provide a more efficient system. In addition, several widening projects and intersection improvements are recommended as outlined in *Table 3.1*. These projects would improve operations at specific locations throughout the City and assist in dispersing traffic to other roadways.

2.8 Pedestrian & Bicycle Facilities

The City of Bowling Green is a community in which parks and recreation are very important to the residents as documented by surveys that have been conducted by the Parks and Recreation Department. A survey indicated that the second highest need in the City regarding parks and recreational activities is Paved Walking/Biking Trails (which was second only to Social and Cultural Programs). The Master Plan of the Parks and Recreation Department has developed a long-range plan of projects and the Top Priority of projects to pursue is Recreational Trails.

In developing recommendations in the *Transportation Master Plan* for pedestrian/bicycle facilities a meeting was held with the director of the Parks and Recreation Department for input on community preferences and key destinations to provide facilities that connect them.

2.8.1 Types of Pedestrian/Bicycle Facilities

The types of bicycle facilities fall into two broad categories which are either Roadway-Based Bicycle Facilities or Independent Bicycle Facilities. The different types of bicycle facilities of each category are briefly discussed below:

Roadway-Based Bicycle Facilities

1. *Shared Roadways* – Approximately 98% of Ohio's streets and roads are shared roadways. The roadways that prohibit bicycles and pedestrians from using them are typically interstates and limited access or controlled access freeways. Sometimes shared roadways that are frequently used by bicyclists may have bicycle route signs posted or share the roadway signs.

2. *Signed Bike Routes* – A signed, shared roadway (also called a bike route), is the same as a shared roadway with the addition of bicycle route signs posted alongside it.

3. *Wide Curb Lanes* – These facilities perform well as shared roadways given motorists can pass bicyclists while not crossing the center line, and bicyclists travel unimpeded. The width of wide curb lanes varies from place to place. Often the wide curb lanes are marked with an edge line to indicate to motorists where they are to travel in the wide lane, and this somewhat provides an unofficial bike lane as it leaves the outside portion of the lane for bikes.

4. *Bike Lanes* – Bike lane pavement markings are required when Bike Lane signs are used. Signs and symbols can be found in Chapter 9 of the *OMUTCD*. Typically a width of 4' is desired for roadways with no curb & gutter and a width of 5' is needed for those with curb & gutter.

5. *Paved Shoulders* – Paved shoulders are built as part of the roadway rather than to provide a place for bicyclists to ride, although they perform that function well. There is no need to mark bike lanes on these shoulders.

6. *Shoulder Bike Lanes* – Shoulders of 4' to 6' in width are typical and these facilities are not much different than paved shoulders. These facilities have characteristics of both paved shoulders and bike lanes. The pavement buildup is the same as for a roadway shoulder, and a pavement stripe separates if from motorized traffic lanes.

Independent Bicycle Facilities

1. *Shared Use Paths on New Alignments* – This is a path that follows a stream, river, property line, sewer line, or crosses open fields on new alignment. New alignments are the most costly type of shared use paths given more environmental and survey work, design decisions, and construction materials are needed.

2. *Rail-Trails* – These are built on well-graded base materials originally put into place for tracks and ties and railroad operation. The right-of-way is typically wide enough to construct a two-way shared use path. The railroad alignment is not dependent upon roadways, thus, railroads go through fields and forests and can provide an aesthetic experience to the user.

3. *Rails-with-Trails* – This is a shared use path developed parallel to an active railroad track. The railroad safety officials have concerns on these types of facilities involving trespassing and liability issues, which limits the number of these types of facilities.

4. *Sidepaths* – These are built parallel to roadways in the usual location for sidewalks, but differ from sidewalks in that they are 10' wide, designed for shared use, and require a barrier of 5' or greater separation from the roadway. These facilities are often called "Sidepaths" because often local laws prohibit bicycles on "Sidewalks".

A combination of these types of facilities is likely to be incorporated into the recommended corridors of pedestrian/bicycle facilities displayed on *Figure 2.14*. All future roadway design projects should incorporate bicycle and pedestrian facilities into their design where feasible. Funding sources such as transportation enhancements and other programs should be considered to obtain additional money to implement these facilities.

2.8.2 Pedestrian/Bicycle Destinations

The primary pedestrian/bicycle destinations are displayed on *Figure 2.14* as green numbered circles. These destinations were determined based on information supplied by the Parks and Recreation Department, input from the City and Oversight Committee, review of the land use plan, and through site visits. The pedestrian/bicycle corridors were developed such as to connect these facilities and were based on accessibility, directness, continuity within the City, connecting to regionally planned corridors by TMACOG, route attractiveness, minimizing conflicts with vehicles, costs, and ease of implementing.

2.8.3 Pedestrian/Bicycle Facility Recommendations

It is recommended that the City adopt a policy that requires all new or re-construction roadway projects to consider providing pedestrian/bicycle facilities as part of the project, especially if the roadway is on one of the corridors recommended on *Figure 2.14*. Any proposed private developments or re-developments along these corridors should also at minimum be required to set aside right-of-way or an easement for these facilities or be required to construct a facility.

Various funding sources should be pursued in developing these corridors. The Share Use Paths on New Alignments are the highest quality and safest option, however these types of facilities are costly given they typically require additional right-of-way and involve new construction as new alignment has no existing base to utilize. Sources such as Transportation Enhancements, Safe Routes to Schools, or public-private partnerships should all be explored in developing the facilities.

All bike routes, trail crossings, and pedestrian crossings on the roadways should have improved signing such as the fluorescent green-yellow warning signs as well as improved pavement markings for crossings and bike lanes. Any bicycle routes that are recommended on roadways within the City should also consider the feasibility of eliminating parking on these routes, particularly if the majority of houses have driveways and businesses have off-street parking. This would greatly increase the visibility of bicycles and pedestrians on these designated routes through the City.

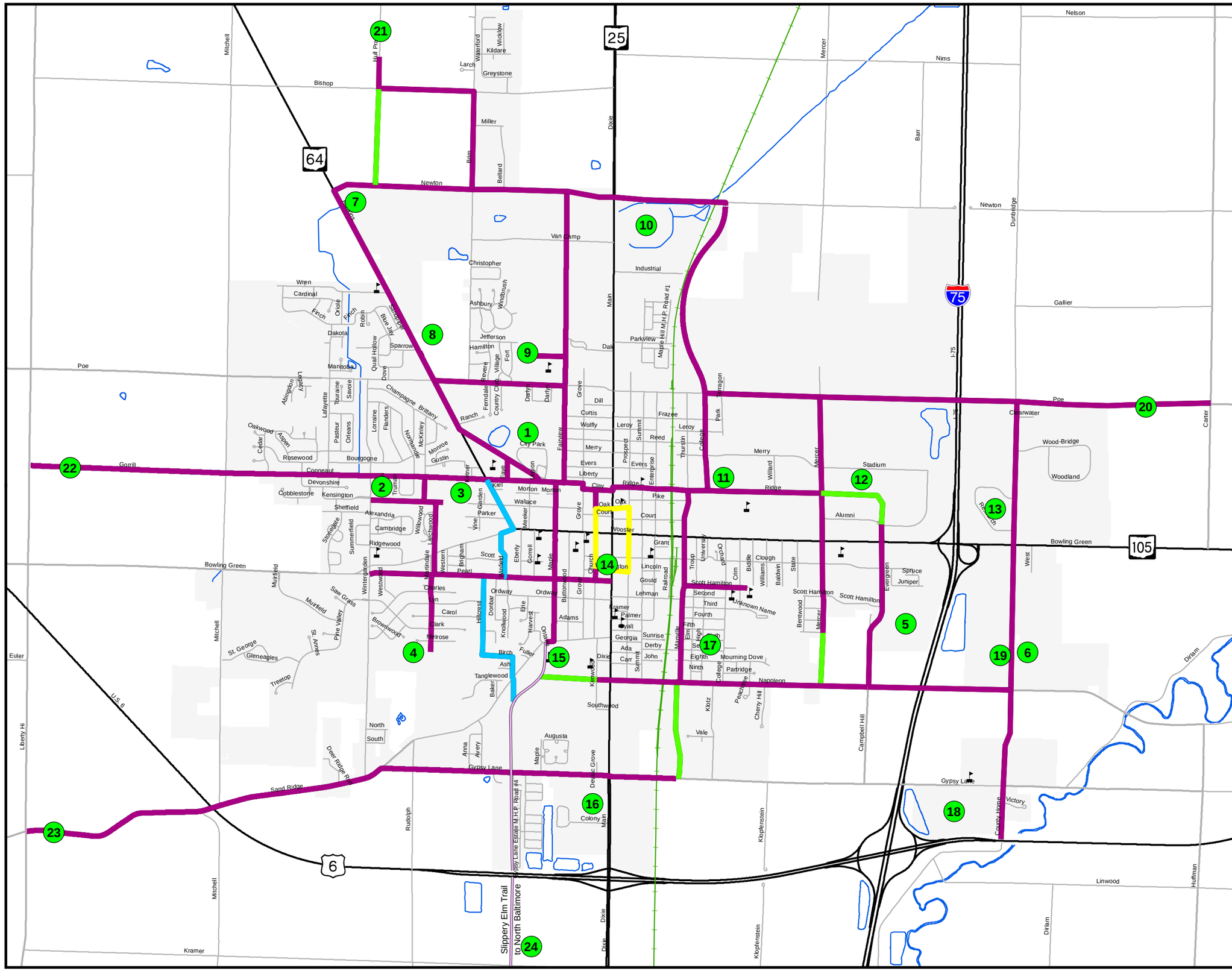
Community Priority
One identified community priority of the pedestrian/bicycle facilities shown on *Figure 2.14* is developing the corridor that connects destinations ① (City Park), ⑦ (BG Community Center), and ⑧ (Fairgrounds Area). This priority has been identified by surveys conducted by the Parks and Recreation Department and also by Community Leaders. Given this, the corridor has been listed on *Figure 3.1* (Future Improvements). The remaining corridors listed on *Figure 2.14* have no set priority and should be implemented as opportunities present themselves through the various funding sources mentioned and as roadway and site development projects occur.

2.9 Parking

The primary concerns involving parking entail the downtown area of Bowling Green where there is a great deal of competing land uses for parking such as retail businesses, apartments, eating/drinking establishments, banking and other services, and public business. The recent update of the City of Bowling Green's Downtown Plan offers details on the existing conditions of parking in and around the downtown area.

Given the numerous issues involving parking in the downtown area, it is recommended that the City conduct a comprehensive parking facilities study to determine the ideal utilization of existing parking facilities and if there is a need for additional parking facilities.

Also, as mentioned previously, consideration should be given to removing on-street parking on those streets where bicycle routes have been designated, especially if off-street parking is available. This would increase bicycle safety, and possibly allow for a bike lane to be striped on the roadway.



THE CITY OF BOWLING GREEN Ohio

Figure 2.14
Pedestrian/Bicycle Facilities and Destinations

DESTINATIONS

1. City Park
2. Garden Park
3. Conneaut/Haskins Park
4. Wintergarden/St. John's Nature Preserve
5. Carter Park
6. Dunbridge Rd. Soccer Fields
7. BG Community Center
8. Fairgrounds Area
9. BG High School
10. Woodland Mall
11. West BGSU Campus
12. East BGSU Campus
13. East Retail & Business Parks
14. Downtown Area
15. Slippery Elm Trail head
16. South Retail Area
17. Numerous Apartments/Student Housing
18. Wood County Complex
19. Apartments/Municipal Court Area
20. Route to East
21. Route to North
22. Route to West
23. Route to Weston
24. Route to South (Slippery Elm)

Legend

- School
- River/Streams
- Rail Road
- Slippery Elm Bike Trail
- Corp Limits
- Recommended Multi-use Path or Shared Lane or Signing
- Future Multi-use Path or Shared Lane or Signing
- Alternate Multi-Use Path or Shared Lane or Signing
- Downtown Bicycle Circle Route

The Mannik & Smith Group, Inc.
1800 Indian Wood Circle
Maumee, Ohio 43537
(419) 891-2222
Fax: (419) 891-1595
Civil Engineering, Surveying and Environmental Consulting
MAUMEE ♦ CLEVELAND ♦ MONROE ♦ CANTON

Notes

Project # BOWC3A March 2007
BOWC3A.TrailsParks.mxd

1" = 2,500'

2.10 Public Transportation

Interest in public transportation has increased in recent years with the large rising costs of gasoline. The City of Bowling Green currently has one public transportation service and one semi-public service operating within the City. The one system is a demand-based taxi service available to the general public, and the other is the BGSU Shuttle Services which provide service to students for on-campus and off-campus destinations.

2.10.1 Demand-Based Taxi Services

The demand-based taxi service in Bowling Green is named B.G. Transit. This service is funded through various funding programs as well as through user fees. In fiscal year 2007 the funding was nearly $500,000 as shown in *Table 2.4*.

Table 2.4
BG Transit FY2007 Funding Sources

Funding Source	Amount
Federal Government Grant (through FTA)	$276,106
State Government Grant (through ODOT)	$87,479
Elderly/Disabled Grant	$43,948
CDBG Funds	$50,000
Bowling Green City General Funds	$37,918
TOTAL (Non-User Fee Sources)	$495,451
Anticipated Revenues from User Fees (Regular Rider Fee is $3.50) (Elderly, Disabled, & Children 4-13 Fee is $1.75)	$70,000 - $80,000

A majority of the grant funding received by BG Transit requires the taxi service to remain a demand-based service and not to go to fixed routes. If the service were to go to fixed routes they would be required to provide paratransit routes and buses which would greatly increase operating costs. BG Transit currently has a total of 7 vehicles (all vans) that are all ADA compliant, with two of them having wheelchair lifts and the remaining have ramps. The long range plans are to maintain current services being provided to the community.

2.10.2 Bowling Green State University (BGSU) Shuttle Services

The current goal of the BGSU Shuttle Services is to maintain current operations with no plans for future expansion of services. These services are funded 100% through BGSU revenue sources. The shuttles are used regularly by students for both the on-campus and off-campus routes. The BGSU shuttle service has a total of 7 buses that provide four primary routes that operate as fixed routes with fixed operating time frames. The routes offer a bus every 10 to 20 minutes during the time frame of operation.

2.10.3 Public Transportation Recommendations

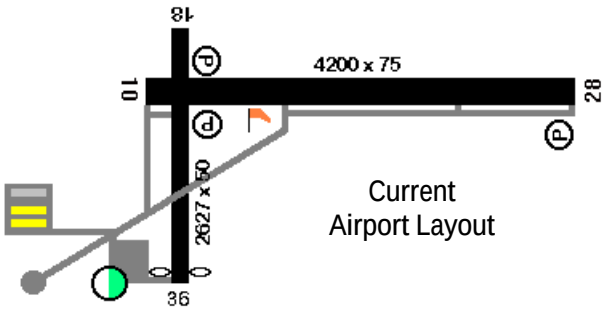
It is recommended the current transportation services being offered in Bowling Green maintain their current operations. The two services should remain separate as they service two different types of riders and needs. The combining of the two services would require fixed routes which would greatly reduce the funding currently obtained by B.G. Transit and also require offering paratransit routes and buses thereby increasing costs to provide services.

2.11 Airports

A mode of transportation not often considered by a community in development of a transportation master plan is air transport, primarily due to the fact that most airports are located outside of communities where open space is readily available. The City of Bowling Green has the benefit of having the Wood County Regional Airport in the northeastern fringe of the community adjacent to the BGSU campus and the corporation limits of the City. Given this, it was necessary to include discussion of air transport in the plan.

2.11.1 Wood County Regional Airport

The *Wood County Regional Airport Master Plan* (2006) was utilized to assess future plans for airport operations. The airport is constrained by four roadway facilities including I-75 (eastern constraint); N. College Rd. (western constraint); Poe Rd. (southern constraint); and Newton Rd. (northern constraint). All of these constraints limit the expansion of the runways to an ultimate length of 7,760' needed to serve large airplanes. The maximum length that can be reached at the Wood County Regional Airport is 5,245' for the east-west runway, which is the main runway.



The recommendations of the airport master plan involve improving the east-west runway by expanding it to the west by 1,265' to reach a total length of 5,245' and widening the runway by 25' to reach a width of 100'. In addition, the airport plan documented a need to increase hanger storage since there is a waiting list for hangar space at the airport. Finally, in 2005 a new terminal/administration building (3,000 SF) was opened at the airport and is forecasted to be adequate through the next 20 years.

2.11.2 Bordner Airstrip

This airstrip is located near the intersection of Hodgman and Wingston Roads, which is approximately four miles southwest of downtown Bowling Green. The airstrip is privately owned and consists of hangers, plane tie-downs, and one runway (designated 09-27) which is 2,703' in length and 30' wide. The runway is constructed of a 1,000' asphalt concrete middle section with tar-and-chip and turf runway extensions. The runway is illuminated at night with low intensity runway lights. Aviation fuel is not available at the airstrip. The short length and narrow width of the runway allows only small general aviation aircraft to access the airstrip. These conditions dictate that the future of the airstrip is to maintain operations for only small general aircraft.

2.11.3 Airport Facility Recommendations

The proposed recommendations of expanding the east-west runway at the Wood County Regional Airport to a final length of 5,245' by 100' wide would provide a facility that can support larger airplanes than those currently serviced. The expansion of hanger space is also recommended based on the current waiting list for such space. These improvements would provide an airport facility that would be attractive to local businesses/industries that have corporate aircraft, and would thus be an incentive to include in promoting the Bowling Green area to prospective developments.

3.0 TRANSPORTATION MASTER PLAN RECOMMENDATIONS & IMPLEMENTATION

The conclusion of the *Transportation Master Plan* involves detailing the recommended improvements as developed from research, analyses, and local input throughout this *Transportation Master Plan*. The recommendations are presented graphically through use of *Table 3.1* as well as *Figure 3.1* to facilitate review by the audience and to provide a quick reference of future improvements recommended over the next 20 years. Recommended improvements were placed into one of six categories depending on the nature of the improvement. These six categories include:

- Infrastructure Management
- Pedestrian Improvements
- Improvement Studies
- Intersection Improvements
- Existing Roadway Section Improvements
- New Roadway Section Improvements

The first column of *Table 3.1* called "Map Key #" is used to identify the improvement location on *Figure 3.1*. Not all of the improvements listed in the first three categories are shown on the figure since several of them are more policy or citywide recommendations and would be difficult to represent on a map.

3.1 Recommended Transportation Improvements and Priorities

The recommended improvements were developed based on a review of existing conditions and analyses as well as projected conditions based on future land uses and current trends. The initial list of recommendations was reviewed by the City and Oversight Committee and weighted scores were developed to create an initial priority listing within each category of projects. This initial priority list was then evaluated based on existing conditions and projected needs. Minor revisions to the initial priority list based on the weighted scores were made based on results of the analyses. The list of improvements was then presented to the general public at a public meeting held on Monday July 30, 2007 from 4:00 to 7:00 PM. The final listing of improvements in *Table 3.1* has projects listed in the order of priority within each category. For example, in the Recommended Improvement Studies category, S1 (Citywide Signal System Study) is the highest priority study project and in the Recommended Intersection Improvements category, I1 (S. Main & Gypsy) is the highest priority intersection project. It should be noted that locations within the SR 25 (N. Main St.) section from Poe Rd. north to Newton Rd. were not evaluated individually since this is section is a programmed project anticipated for construction in 2010 and was in detailed engineering design at the time of this master plan update. The entire programmed project is listed as a top priority project.

3.2 Implementation & Funding Strategies

In addition to the listing of projects in *Table 3.1* and their priorities, there is also information on an estimated timeframe range, a preliminary planning cost estimate (in 2007 dollars), and an implementation strategy and potential funding sources for each project. The timeframe range listed is a combination of considering both the priority as well as the ease of implementing a project. For example, the construction of a new northern interchange with I-75 is a rather high priority in the New Roadway Section Improvements category which likely makes it a short range need, but given the large planning efforts to accomplish this project it is more realistically a long range timeframe. The timeframe categories listed include Current (1-2 years); Short (3-5 years); Medium (6-10 years); and Long (10-20 years). The table also lists a brief implementation strategy and lists potential funding sources to explore.

Please Note – In the Timeframe Range column, the timeframe listed is as follows: Current Need (1-2 years); Short Range (3-5 years); Medium Range (6-10 years); and Long Range (10-20 years).
These timeframes are anticipated based on current trends and analyses, and will undoubtedly change over time as developments, population trends, traffic patterns/growth, crash frequency, economic growth, and political priorities change.

Table 3.1
Project Listings and Implementation Strategies

Map Key #	Project Facility	Project Description	Project Limits	Timeframe Range	Preliminary Planning Constr. Cost Estimate	Implementation Strategy and Potential Funding Sources	Focus Group Weighted Rating
Recommended Infrastructure Management							
N/A	Asset Management Program	Establish an asset management program to monitor transportation infrastructure programs in the City to provide an electronic inventory of facilities, improvement histories, existing conditions, and future improvement needs.	Citywide	Current	City Labor costs if incorporated into existing GIS	City should explore incorporating Asset Management into the current GIS system. If this is not feasible, then a separate program should be pursued.	3.50
Recommended Pedestrian Improvements							
P1	Pedestrian/Bicycle Corridor Facility	Construct a Pedestrian/Bicycle facility connecting the City Park and Community Center.	City Park to Community Center	Short	$600K (asphalt) or $250K (crushed stone)	Explore funding sources such as Safe Routes to School; Transportation Enhancements; ODNR Recreational Trails Program; and private-public partnerships. If facility is located on the east side of Haskins Rd. land donations may be available from the County Fairgrounds property.	Community Priority
N/A	Multi-Use Paths, Sidewalks, or Shared Lane Facilities	Incorporate a City requirement that all roadway construction or re-construction projects are to include construction of multi-use path, sidewalks, or shared lanes.	All roadway construction or re-construction projects	None	None	Incorporate into City policies.	3.33
N/A	E. Wooster (I-75 Overpass)	Add pedestrian facilities across the structure.	Overpass structure	Short	$400K - $600K	Coordinate with ODOT to see if funding would be available for adding a pedestrian facility. Potential funds might include Transportation Enhancements or to request that the next time the bridge is upgraded that it includes a pedestrian facility.	3.00
N/A	Safe Routes to Schools	Organize a Safe Routes To Schools (SRTS) board and develop a Route Plan so as to apply to SRTS funds	School pedestrian routes	Current	None	Coordinate with School Board and develop a SRTS committee to develop a plan of the preferred safe routes. Potential funding from the SRTS Program can be sought for those routes that are within two miles of a school that houses Grade 8 or younger. If awarded, the funding is 100% and no local match is required.	2.83
N/A	E. Napoleon (I-75 Overpass)	Add pedestrian facilities across the structure.	Overpass structure	Medium	$400K - $600K	Same strategies as the E. Wooster overpass if this bridge should become more of a priority.	1.17
Recommended Improvement Studies							
S1	City Traffic Signals	Conduct a citywide signal system study.	All city signals	Current	$45K - $55K	Utilize City funds to conduct study. The study findings can then be utilized to solicit funding from State and Federal sources such as the CMAQ program, Safety Program, or through the TMACOG TIP.	4.00
S2	SR 25 (Main St.)	Corridor Safety Study.	US 6 to W. Oak St.	Current	$10K - $15K	Coordinate with ODOT's District Safety Review Team. Funding sources may include Safety Funding; TMACOG TIP; and local funds.	3.00
S3	New Northern I/C with I-75	Interchange Justification Study (IJS).	I-75 (Newton Rd. to Nims Rd.)	Short	$45K - $65K	Coordinate with ODOT and County	3.00
S4	New Southwestern I/C with US 6	Interchange Justification Study (IJS).	US 6 (Sandridge Rd. & Mitchell Rd.)	Medium	$45K - $65K	Coordinate with ODOT and County	3.00
S5	SR 64 (Wooster/Haskins)	Corridor Safety Study.	Thurstin Ave. to Parker Ave.	Short	$10K - $15K	Coordinate with ODOT's District Safety Review Team. Funding sources may include Safety Funding; TMACOG TIP; and local funds.	2.83
S6	SR 25 (Main St.)	Corridor Safety Study.	W. Oak St. to Bishop Rd.	Short	$10K - $15K	Coordinate with ODOT's District Safety Review Team. Funding sources may include Safety Funding; TMACOG TIP; and local funds.	2.67
S7	City Guide Signs	Conduct a citywide overhead guide sign study	Focus on city streets that have state or federal route designations or intersect these routes	Current	$10K	Utilize City funds to conduct study, or include this analysis within the citywide signal system study.	2.50
S8	Poe Rd.	Corridor Safety Study.	Haskins Rd. to Park Ave.	Medium	$10K - $15K	Coordinate with ODOT's District Safety Review Team. Funding sources may include Safety Funding; TMACOG TIP; and local funds.	2.17
Recommended Intersection Improvements							
I1	SR 25 (S. Main & Gypsy)	Re-align intersection, add westbound left turn, add northbound right turn, add southbound right turn, improve signal timing/phasing & signing.	Intersection	Current	$450K - $550K	Investigate potential safety funding for project with ODOT D2 and also CMAQ funds with TMACOG. This could possibly be part of a project identified through a citywide signal system study.	2.88

Table 3.1
Project Listings and Implementation Strategies

Map Key #	Project Facility	Project Description	Project Limits	Timeframe Range	Preliminary Planning Constr. Cost Estimate	Implementation Strategy and Potential Funding Sources	Focus Group Weighted Rating
I2	SR 25 (S. Main & Napoleon)	Add northbound right turn lane and improve turn radius, also improve signal timing/phasing & detection. Add southbound left turn if feasible.	Intersection	Short	$300K - $350K	Investigate potential safety funding for project with ODOT D2 and also CMAQ funds with TMACOG. This could possibly be part of a project identified through a citywide signal system study.	3.25
I3	SR 64 (E. Wooster & Prospect)	Signal timing/phasing improvements and signing.	Intersection	Current	$1K - $2K	Minimal project that could be part of a signal system project, or paid for through City funds.	3.38
I4	SR 64 (W. Wooster & Haskins)	Signalize intersection if meets warrant, add eastbound left turn lane if feasible, and improve signage.	Intersection	Current	$250K - $350K	Investigate potential safety funding for project with ODOT D2 and also CMAQ funds with TMACOG. This could possibly be part of a project identified through a citywide signal system study.	3.00
I5	Sand Ridge (New Alignment)	Construct new roadway (Re-align existing roadway)	Wintergarden to Gypsy	Medium	$150K - $200K	Coordinate with County and determine if a sharing of costs for the project is possible since it is both in the City and the County.	3.14
I6	SR 25 (S. Main & Washington)	Signal timing/phasing improvements & signing improvements.	Intersection	Current	$1K - $2K	Investigate potential safety funding for project with ODOT D2 and also CMAQ funds with TMACOG. This could possibly be part of a project identified through a citywide signal system study.	3.13
I7	SR 25 (N. Main & Poe)	Determine feasibility of a roundabout to improve intersection operations and reduce crashes via reducing congestion.	SR 25 (N. Main) & Poe Intersection and Approaches	Short	Include in programmed N. Main (SR25) Widening Project	Although this intersection is part of the N. Main St. widening project, the feasibility of a roundabout should be explored. Safety funds or CMAQ funds may be potential sources, or have it included as part of the SR 25 project.	2.75
I8	SR 64 (Haskins & W. Poe)	Construct modern roundabout if feasible. If not, then construct left turn lanes on Haskins, right turn lanes for all approaches; and improve the signal & signage.	Intersection	Medium	$600K - $800K	Potential funding may be available through CMAQ funds. Otherwise the project should be added to the City's capital improvements list.	2.75
I9	W. Poe & Fairview	Improve signal timing/phasing and signage.	Intersection	Medium	$1K - $2K	Minimal project that could be part of a signal system project, or paid for through City funds.	2.75
I10	SR 25 (N. Main & Bishop)	Add turn lanes to intersection and improve sight distance limited by the fencing on the northwest corner of intersection.	SR 25 (N. Main) & Bishop Intersection Approaches	Current	$350K - $400K	Project is outside the City, but both ODOT and County should be contacted to be made aware of a potential project need.	2.63
I11	SR 105 (E. Wooster & Dunbridge)	Add right turn lanes for the southbound, eastbound, & northbound approaches; and update signal timing/phasing.	Intersection	Short	$380K - $430K	Investigate potential safety funding for project with ODOT D2 and also CMAQ funds with TMACOG. This could possibly be part of a project identified through a citywide signal system study.	2.50
I12	E. Poe & Dunbridge	Signalize intersection if meets warrant, and provide additional turn lanes where feasible given turn volumes and consideration of the large ditch along south side of roadway.	Intersection	Medium	$500K - $550K ($160K if signal only)	Coordinate with County and determine if a sharing of costs for the project is possible since it is both in the City and the County.	2.63
I13	Conneaut & Wintergarden	Consider feasibility of a roundabout and in the interim, look at reversing the stop signs to the minor movement approaches. Provide sign improvements at the intersection and for the approaches to the intersection.	Intersection	Medium	$120K - $150K	Determine feasibility of a roundabout. Likely funding source would be the City's capital improvements list.	2.38
I14	SR 64 (Haskins & Conneaut)	Signalize intersection if meets warrant (possible school warrant), improve southbound right turn radius, and improve signage, particularly for school crossing.	Intersection	Medium	$140K - $160K	Safe Routes to School funding should be considered to improve the intersection as these are 100% funding sources.	2.25
I15	Dunbridge & Napoleon	Signalize intersection if meets warrant, and provide left turn lanes to all approaches.	Intersection	Current	$600K - $800K	Coordinate with County and determine if a sharing of costs for the project is possible since it is both in the City and the County.	1.75
I16	SR 64 (Haskins & Newton)	Construct southbound left turn lane, and re-construct additional turn lanes when extension to Mitchell occurs.	Intersection	Medium	$150K - $200K	Coordinate with County and determine if a sharing of costs for the project is possible since it is both in the City and the County.	1.88
I17	Clough & Crim	Provide sign improvements at the intersection and for the approaches to the intersection.	Intersection	Current	Less Than $1K	Minimal improvement – City can implement at little cost.	1.63
I18	SR 25 (N. Main & Clay)	Construct a right-In/right-out only curb island and improve signing to restrict left turns at this intersection or make Clay St. one-way to the west.	Clay St. Approach to N. Main	Current	$1K - $3K	Minimal improvement – City can implement at little cost.	1.25
Recommended Existing Roadway Section Improvements							
R1	SR 25 (N. Main)	Programmed Project – Widening of N. Main	Poe to Newton	Current	Programmed Project	Programmed Project	4.63

Table 3.1
Project Listings and Implementation Strategies

Map Key #	Project Facility	Project Description	Project Limits	Timeframe Range	Preliminary Planning Constr. Cost Estimate	Implementation Strategy and Potential Funding Sources	Focus Group Weighted Rating
R2	W. Poe	Widen roadway to provide a center two-way left turn lane and additional turn lanes at intersections for key movements. Incorporate access management to private drives and intersections within the corridor.	SR 64 (Haskins) to Lafayette	Current	Programmed Project	Programmed Project	3.38
R3	SR 25 (N. Main)	Improve signing and signal progression between Poe & Downtown. Incorporate access management to private drives and intersections within the corridor.	Wooster to Poe	Short	Costs & specific improvements would be determined in the Safety Study & Citywide Signal Study	Investigate potential safety funding for project with ODOT D2 and also CMAQ funds with TMACOG. A safety study would document detailed crash problems and specific improvements.	3.71
R4	SR 25 (S. Main)	Improve signing and signal progression between Wooster & US 6. Incorporate access management to private drives and intersections within the corridor.	US 6 to Wooster	Short	Costs & specific improvements would be determined in the Safety Study & Citywide Signal Study	Investigate potential safety funding for project with ODOT D2 and also CMAQ funds with TMACOG. A safety study would document detailed crash problems and specific improvements.	3.14
R5	SR 64 (E. Wooster)	Widen roadway and/or remove parking to obtain a consistent center two-way left turn lane, improve intersections with turn lanes where feasible, improve signal progression, and provide improved signing. Incorporate access management to private drives and intersections within the corridor.	Prospect to RR Crossing	Short	$90K - $110K	Investigate potential safety funding for project with ODOT D2 and also CMAQ funds with TMACOG. A safety study would document detailed crash problems and specific improvements and a citywide signal study could provide potential projects for improving progression.	3.13
R6	E. Poe	Widen roadway to provide a center two-way left turn lane and additional turn lanes at intersections for key movements. Incorporate access management to private drives and intersections within the corridor.	N. College to Mercer	Long	$550K - $600K	Partial funding may be available though TMACOG if the project becomes listed on their TIP, otherwise the project is likely a City capital improvements project.	3.14
R7	W. Poe	Widen roadway to provide a center two-way left turn lane and additional turn lanes at intersections for key movements. Incorporate access management to private drives and intersections within the corridor.	N. Main to SR 64 (Haskins)	Medium	$460K - $510K	Partial funding may be available though TMACOG if the project becomes listed on their TIP, otherwise the project is likely a City capital improvements project.	3.00
R8	SR 64 (Haskins)	Improve with resurfacing (as needed), signing, and pavement markings. Improve pedestrian crossings for school and any other pedestrian/bicycle crossings.	Wooster to Poe	Medium	Include signing & pedestrian crossings into Resurfacing Program for project	Project is likely to simply be part of City's resurfacing program.	3.00
R9	W. Poe	Improve lane widths, shoulders, drainage, and signing. Provide left and right turn lanes at key intersections.	Lafayette to Mitchell	Long	$270K - $320K	Partial funding may be available though TMACOG if the project becomes listed on their TIP, otherwise the project is likely a City capital improvements project.	2.88
R10	Brim	Improve with resurfacing (as needed), signing, and pavement markings. Improve pedestrian crossings for school & fairgrounds, and any other pedestrian/bicycle crossings.	Poe to Jefferson	Medium	Include signing & pedestrian crossings into Resurfacing Program for project	Project is likely to simply be part of City's resurfacing program.	2.88
R11	SR 64 (W. Wooster)	Widen roadway and/or remove parking to obtain a consistent center two-way left turn lane, improve intersections with turn lanes where feasible, improve signal progression, and provide improved signing. Incorporate access management to private drives and intersections within the corridor.	Main to Haskins	Medium	$360K - $400K	Investigate potential safety funding for project with ODOT D2 and also CMAQ funds with TMACOG. A safety study would document detailed crash problems and specific improvements and a citywide signal study could provide potential projects for improving progression.	2.63
R12	Mercer	Widen roadway, improve intersections & approaches, improve signing & pedestrian crossings on corridor. Incorporate access management to private drives and intersections within the corridor.	SR 64 (E. Wooster) to Poe	Long	$950K - $1,000K	Partial funding may be available though TMACOG if the project becomes listed on their TIP. The City may also explore partnership with BGSU to fund project, otherwise the project is likely a City capital improvements project.	2.86
R13	SR 64 (Haskins)	Improve with resurfacing (as needed), signing, and pavement markings. Improve pedestrian crossings for fairgrounds and any other pedestrian/bicycle crossings.	Poe to Newton	Long	Include signing & pedestrian crossings into Resurfacing Program for project	Coordinate with ODOT and County as this project is partially in the City and in the County on a State Route.	2.75

Table 3.1
Project Listings and Implementation Strategies

Map Key #	Project Facility	Project Description	Project Limits	Timeframe Range	Preliminary Planning Constr. Cost Estimate	Implementation Strategy and Potential Funding Sources	Focus Group Weighted Rating
R14	Brim	Improve lane widths, shoulders, drainage, and signing. Provide left and right turn lanes at key intersections.	Jefferson to Newton	Long	$400K - $500K	Partial funding may be available though TMACOG if the project becomes listed on their TIP, otherwise the project is likely a City capital improvements project.	2.75
R15	Newton	Improve lane widths, shoulders, drainage, and signing. Provide left and right turn lanes at key intersections. Improve any pedestrian/bicycle crossings.	SR 25 (N. Main) to N. College	Long	$290K - $340K	Partial funding may be available though TMACOG if the project becomes listed on their TIP, otherwise the project is likely a City capital improvements project.	2.63
R16	W Gypsy	Widen roadway to provide a center two-way left turn lane and additional turn lanes at intersections for key movements. Incorporate access management to private drives and intersections within the corridor.	SR 25 (S. Main) to Rudolph	Medium	$770K - $820K	Partial funding may be available though TMACOG if the project becomes listed on their TIP. The City may also explore partnership with the County to fund project, otherwise the project is likely a City capital improvements project.	
R17	E. Poe	Incorporate access management to private drives and intersections within the corridor, and improve signing.	N. Main to N. College	Short	Include signing & access management into City's resurfacing program	Minimal improvement – City can implement at little cost.	2.29
R18	E. Poe	Widen roadway to provide a center two-way left turn lane and additional turn lanes at intersections for key movements. Incorporate access management to private drives and intersections within the corridor.	Mercer to Dunbridge	Long	$650K - $700K	Partial funding may be available though TMACOG if the project becomes listed on their TIP. The City may also explore partnership with ODOT given the overpass of I-75; otherwise the project is likely a City capital improvements project.	2.25
R19	Bishop	Improve lane widths, shoulders, drainage, and signing. Provide left and right turn lanes at key intersections.	SR 25 to Brim	Medium	$360K - $410K	Partial funding may be available though TMACOG if the project becomes listed on their TIP. The City may also explore partnership with the County to fund project as the majority is within the County, otherwise the project is likely a City capital improvements project should the roadway become incorporate into the City.	2.63
R20	Rudolph	Improve with resurfacing (as needed), signing, and pavement markings. Improve any pedestrian/bicycle crossings.	Sand Ridge to US 6	Medium	Include signing & pedestrian crossings into Resurfacing Program for project	Partial funding may be available though TMACOG if the project becomes listed on their TIP. The City may also explore partnership with the County to fund project as the majority is within the County, otherwise the project is likely a City capital improvements project should the roadway become incorporate into the City.	2.75
R21	Brim	Improve with resurfacing (as needed), signing, and pavement markings. Improve any pedestrian/bicycle crossings.	Newton to Bishop	Medium	Include signing & pedestrian crossings into Resurfacing Program for project	Project is likely to simply be part of City's resurfacing program.	2.50
R22	Sand Ridge	Improve lane widths, shoulders, drainage, and signing.	W. Gypsy to SR 25 (S. Main)	Medium	$730K - $780K	Partial funding may be available though TMACOG if the project becomes listed on their TIP, otherwise the project is likely a City capital improvements project.	2.38
R23	E. Gypsy	Improve lane widths, shoulders, drainage, and signing. Provide left and right turn lanes at key intersections. Incorporate access management to private drives and intersections within the corridor.	N. Main to Campbell Hill	Long	$660K - $710K	Partial funding may be available though TMACOG if the project becomes listed on their TIP. The City may also explore partnership with the County to fund project as the roadway is a mix of both City and County jurisdictions, otherwise the project is likely a City capital improvements project.	2.13
R24	Napoleon	Widen roadway to provide a center two-way left turn lane and additional turn lanes at intersections for key movements. Incorporate access management to private drives and intersections within the corridor.	Kenwood to Campbell Hill	Medium	$1.34 – $1.39 Million	Partial funding may be available though TMACOG if the project becomes listed on their TIP. The City may also explore partnership with the County to fund project as the roadway is a mix of both City and County jurisdictions, otherwise the project is likely a City capital improvements project.	2.13
R25	Campbell Hill	Improve with resurfacing (as needed), signing, and pavement markings. Improve any pedestrian/bicycle crossings.	Alumni to Napoleon	Medium	Include signing & pedestrian crossings into Resurfacing Program for project	Project is likely to simply be part of City's resurfacing program.	2.25
R26	Merry	Re-open railroad crossing; improve with resurfacing and signing as needed; and improve any pedestrian/bicycle crossings.	Enterprise to Thurstin	Medium	$50K - $100K	Coordination with the railroads will be needed in re-opening a crossing. This project is likely a City capital improvements project.	2.38

Table 3.1
Project Listings and Implementation Strategies

Map Key #	Project Facility	Project Description	Project Limits	Timeframe Range	Preliminary Planning Constr. Cost Estimate	Implementation Strategy and Potential Funding Sources	Focus Group Weighted Rating
R27	Maple/Fairview/Conneaut	Provide roadway improvements to facilitate this north-south movement with either: back-to-back left turn lanes on Conneaut between Maple and Fairview; relocating Fairview to align with Maple; or utilizing small urban roundabouts.	Conneaut from Maple to Fairview	Long	$260K - $310K	Partial funding may be available though TMACOG if the project becomes listed on their TIP. The project is likely a City capital improvements project.	2.00
R28	Sand Ridge	Improve lane widths, shoulders, and signing. Provide left and right turn lanes at key intersections. Incorporate access management to private drives and intersections within the corridor.	US 6 to W. Gypsy	Medium	$400K - $450K	Partial funding may be available though TMACOG if the project becomes listed on their TIP. The City may also explore partnership with the County to fund project as the roadway is primarily a County jurisdiction.	1.88
R29	Bowling Green Rd. West	Widen roadway to provide a center two-way left turn lane and additional turn lanes at intersections for key movements. Incorporate access management to private drives and intersections within the corridor.	Mitchell to Wintergarden	Long	$720K - $770K	Partial funding may be available though TMACOG if the project becomes listed on their TIP. The City may also explore partnership with the County to fund project as the roadway is a mix of both City and County jurisdictions, otherwise the project is likely a City capital improvements project.	1.88
R30	Gorrill	Improve lane widths, shoulders, drainage, and signing. Provide left and right turn lanes at key intersections.	Mitchell to Corporation Limits	Long	$110K - $160K	Project is likely to simply be part of City's capital improvements.	1.88
R31	Mitchell	Improve lane widths, shoulders, drainage, and signing. Provide left and right turn lanes at key intersections.	Bowling Green Rd. West to W. Poe	Long	$510K - $560K	Partial funding may be available though TMACOG if the project becomes listed on their TIP. The City may also explore partnership with the County to fund project as the roadway is a mix of both City and County jurisdictions, otherwise the project is likely a City capital improvements project.	1.88
R32	Newton	Improve lane widths, shoulders, drainage, and signing. Provide left and right turn lanes at key intersections. Improve any pedestrian/bicycle crossings.	N. College to Mercer Extension	Long	Project would be included in the I/C Project funding	Project is dependent on the northern I-75 new interchange project, and funding would be tied to that obtained for the interchange.	2.00
R33	Newton/Nims/Barr	Depending on eventual location of a new interchange with I-75, major roadway improvements will be necessary for the roadways servicing the new interchange.	Vicinity Improvements for new I/C	Long	Project would be included in the I/C Project funding	Project is dependent on the northern I-75 new interchange project, and funding would be tied to that obtained for the interchange.	2.00
R34	Bowling Green Rd. West	Improve lane widths, shoulders, drainage, and signing. Provide left and right turn lanes at key intersections.	US 6 to Mitchell	Long	$620K - $670K	Partial funding may be available though TMACOG if the project becomes listed on their TIP. The City may also explore partnership with the County to fund project as the roadway is primarily a County jurisdiction.	1.75
R35	Bishop	Improve with resurfacing (as needed), signing, and pavement markings. Improve any pedestrian/bicycle crossings.	Brim to SR 64	Long	Include signing & pedestrian crossings into Resurfacing Program for project	Coordinate with ODOT and County	2.00
R36	Mitchell	Improve lane widths, shoulders, drainage, and signing. Provide left and right turn lanes at key intersections.	Sand Ridge to Bowling Green Rd. West	Long	$620K - $670K	Coordinate with ODOT and County	1.75
R37	Mitchell	Improve lane widths, shoulders, drainage, and signing. Provide left and right turn lanes at key intersections.	W. Poe to Newton Extension	Long	$500K - $550K	Partial funding may be available though TMACOG if the project becomes listed on their TIP. The City may also explore partnership with the County to fund project as the roadway is a mix of both City and County jurisdictions, otherwise the project is likely a City capital improvements project.	1.75
R38	Dunbridge	Improve with resurfacing (as needed), signing, and pavement markings. Improve any pedestrian/bicycle crossings.	Newton to Poe	Medium	Include signing & pedestrian crossings into Resurfacing Program for project	Project priority is related to the northern I-75 new interchange project, and funding would be tied to the interchange project.	1.75
Recommended New Roadway Section Improvements							
N1	Newton (Extension)	Construct new roadway	SR 64 (Haskins) to Mitchell	Short	$420K - $470K	Partial funding may be available though TMACOG if the project becomes listed on their TIP. The City may also explore partnership with the County to fund project as the roadway would benefit both entities, otherwise the project is likely a City capital improvements project.	4.00

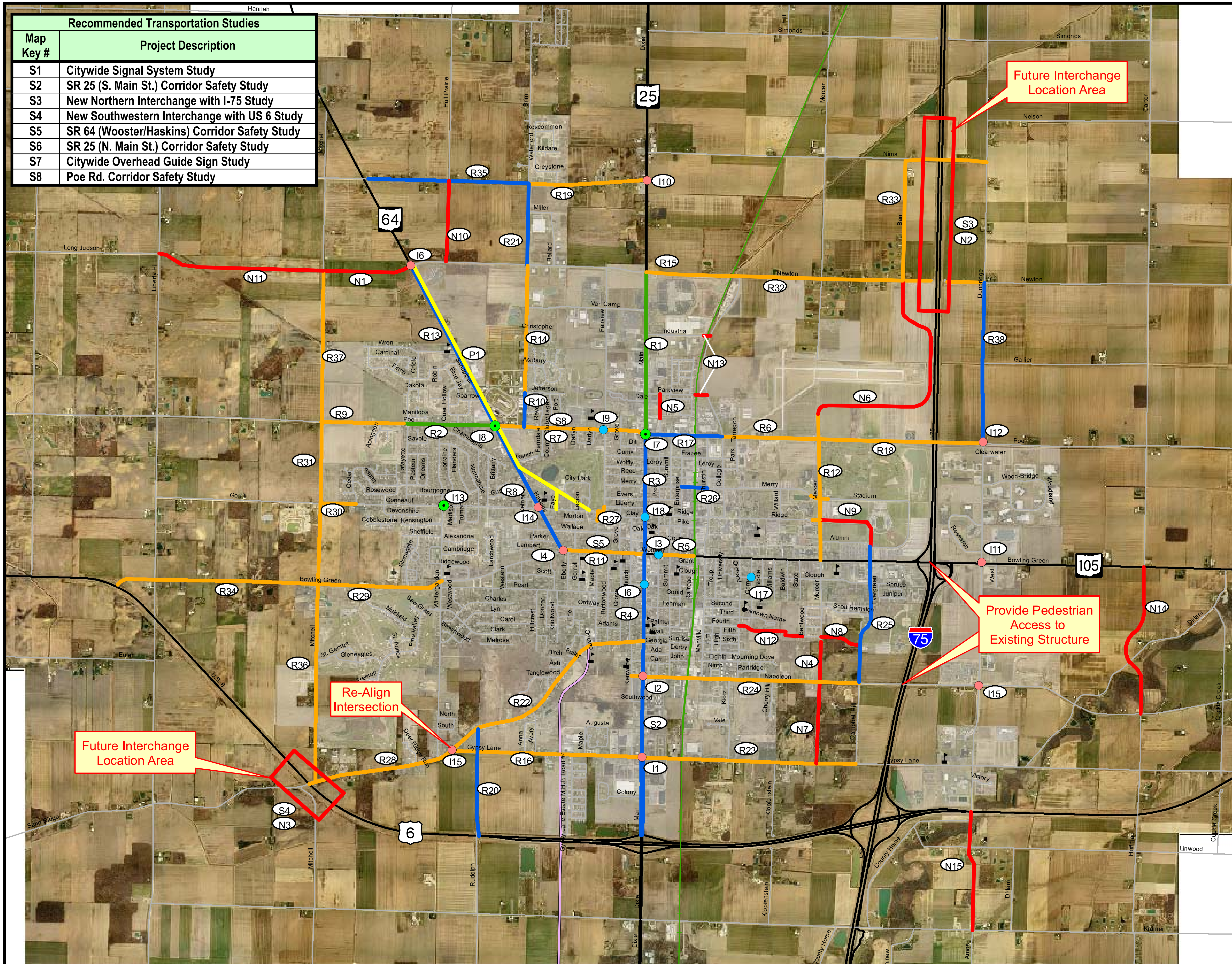
Table 3.1
Project Listings and Implementation Strategies

Map Key #	Project Facility	Project Description	Project Limits	Timeframe Range	Preliminary Planning Constr. Cost Estimate	Implementation Strategy and Potential Funding Sources	Focus Group Weighted Rating
N2	New Northern I/C with I-75	Construct new interchange	I-75 (Newton Rd. to Nims Rd.)	Long	$5 - $10 Million	Partial funding may be available though TMACOG if the project becomes listed on their TIP. The City may also explore a partnership with the County and BGSU as this would benefit all entities. Consideration should be given to creating a TID (Transportation Improvement District) to help fund the project. Another option is to pursue funding through the T.R.A.C. process.	3.80
N3	New Southwestern I/C with US 6	Construct new interchange	US 6 (Sandridge Rd. & Mitchell Rd.)	Long	$5 - $10 Million	Partial funding may be available though TMACOG if the project becomes listed on their TIP. The City may also explore a partnership with the County and BGSU as this would benefit all entities. Consideration should be given to creating a TID (Transportation Improvement District) to help fund the project. Another option is to pursue funding through the T.R.A.C. process.	3.50
N4	Mercer (Extension)	Construct new roadway	Briarwood to Napoleon	Short	$130K - $180K	The project should consider utilizing a public-private partnership to complete the extension to Napoleon Road as further developments occur south of Briarwood. Otherwise, the project would likely be a City capital improvement project	3.29
N5	Prospect (Extension)	Construct new roadway	Northern Terminus to Parkview	Current	$70K - $90K	This small extension of Prospect to Parkview would allow local traffic access to commercial areas along the east side of N. Main (SR 25) without having to utilize the congested intersection of Main & Poe, and the N. Main corridor. The project would most likely be funded through the City capital improvement funds, but consideration should be given to also private partnerships with commercial properties that would benefit from this connection.	2.86
N6	Mercer (Extension)	Construct new roadway	Poe to Newton (around Airport)	Long	$1.15 - $1.20 Million	Funding considerations should include various sources such as City capital improvement funds; BGSU participation given this is a component of the campus transportation plan; Airport participation as the roadway would benefit airport land development; TMACOG funds from the TIP; and possibly Ohio Department of Development (ODOD) funds for the project as it could possibly be promoted as infrastructure improvements to promote job creation.	3.29
N7	Mercer (Extension)	Construct new roadway	Napoleon to Gypsy	Long	$250K - $300K	This roadway extension is located primarily within the County, but the extension of the roadway would benefit both the City and County by providing public road access to underdeveloped land. Given this, a joint County & City funding strategy should be explored. In addition, public-private partnerships should also be explored if large residential developments occur or if other private developments look to locate in this area.	2.43
N8	Briarwood (Extension)	Construct new roadway	Mercer to Campbell Hill	Medium	$120K - $170K	This extension would likely be funded through City capital improvement funds as it is primarily to provide east-west access for residential areas to Campbell Hill Road. In addition, public-private partnerships with developments that want to locate east of Mercer to Campbell Hill should be encouraged to construct parts of this project for access.	2.57
N9	Alumni (New Alignment)	Construct new roadway	Ridge/Mercer to Alumni	Long	$660K - $710K	This project is a component of the BGSU campus transportation plan and is located within the BGSU campus. Funding would primarily be through funding sources secured by the University. The City may elect to participate should the final roadway be a public roadway.	2.14

Table 3.1
Project Listings and Implementation Strategies

Map Key #	Project Facility	Project Description	Project Limits	Timeframe Range	Preliminary Planning Constr. Cost Estimate	Implementation Strategy and Potential Funding Sources	Focus Group Weighted Rating
N10	Hull Prairie (Extension)	Construct new roadway	Bishop to Newton	Long	$250K - $300K	This roadway extension is located primarily within the County, but the extension of the roadway would benefit both the City and County by providing public road access to underdeveloped land. Given this, a joint County & City funding strategy should be explored. In addition, public-private partnerships should also be explored if private developments look to locate in this area. The project might also consider funding through the Ohio Department of Development (ODOD) as the case could be made it is for opening land for economic development.	2.43
N11	Newton (Extension)	Construct new roadway	Mitchell to Liberty Hi	Long	$510K - $560K	The extension would be located within the County and would provide good east-west access from Liberty Hi Road east to SR 25 and points further east. The project would provide public road access to underdeveloped land. A joint County & City funding strategy should be explored as well as funding through TMACOG's TIP given the project would be providing a final link to establish a new east-west corridor that would connect Grand Rapids to SR 25 (via Long Judson Road and Newton Road) once Newton Road is completed between SR 64 & Liberty Hi Road.	2.29
N12	Fourth (Extension)	Construct new roadway	S. College to Bentwood	Medium	$200K - $250K	The project would likely be funded solely through the City's capital improvement funds or through large residential developments completing sections of this roadway for access as they develop. The roadway would provide east-west travel and access for residential areas to Mercer Road.	3.14
N13	Parkview (Extension) or Industrial Dr. (Extension)	Construct new roadway	Extend east across RR to N. College	Medium	$70K - $100K	Funding would likely be through use of the City's capital improvement funds. Either roadway extension option would involve securing a new at-grade railroad crossing agreement with the railroad, which typically involves the closure of one or two existing crossings elsewhere that are nearby so as to have a new crossing. Funding from the Ohio Department of Development (ODOD) might be explored for the extension of Industrial Dr. option as it could be used to justify supporting existing industries located on the roadway with better access to I-75 via N. College to Poe.	1.86
N14	Carter/Huffman (Connection)	Construct new roadway	SR 105 to Napoleon	Long	$480K - $530K	The completion of this project would provide an additional north-south corridor east of those areas currently developing along Dunbridge Road in eastern Bowling Green. Funding should be considered from various sources such as City funds; county funds; public-private partnerships if the area begins to develop; and funds available through the TMACOG TIP.	1.86
N15	Amos (Extension)	Construct new roadway	Kramer to US 6	Long	$360K - $410K	This project would extend the Dunbridge Road north-south corridor to areas south of US 6 to connect with Amos Road at Kramer Road (an east-west road south of Bowling Green). Funding should be considered from various sources such as City funds; county funds; public-private partnerships if the area begins to develop; and funds available through the TMACOG TIP.	1.29

Recommended Transportation Studies	
Map Key #	Project Description
S1	Citywide Signal System Study
S2	SR 25 (S. Main St.) Corridor Safety Study
S3	New Northern Interchange with I-75 Study
S4	New Southwestern Interchange with US 6 Study
S5	SR 64 (Wooster/Haskins) Corridor Safety Study
S6	SR 25 (N. Main St.) Corridor Safety Study
S7	Citywide Overhead Guide Sign Study
S8	Poe Rd. Corridor Safety Study



The City of BOWLING GREEN Ohio

Figure 3.1 Future Improvements

Legend

Intersection Improvements

- Major Improvements
- Minor Improvements
- Potential Roundabout

Roadway Improvements

- New Construction
- Major Improvements
- Minor Improvements
- Pedestrian/Bicycle Corridor
- Programmed Project
- School
- Slippery Elm Bike Trail
- Rail Road
- Corp Limits
- X# See Table 3.1 for Descriptions

Roadway/Intersection Improvements:
Major Improvements- Widening, Lane Additions, etc.
Minor Improvements- Resurfacing, Signing, etc.

The Mannik & Smith Group, Inc.
1800 Indian Wood Circle
Maumee, Ohio 43537
(419) 891-2222
Fax: (419) 891-1595
Civil Engineering, Surveying and Environmental Consulting
MAUMEE ♦ CLEVELAND ♦ MONROE ♦ CANTON

Notes
The photography dated April 2006, is provided by Michael Sibbersen, Wood County Auditor, as part of the Wood County GIS.
Project # BOWC3A October 2007
Bowc3a.improvements.mxd

1" = 3,000'

APPENDIX A

Public Involvement Documentation

THE CITY OF BOWLING GREEN Ohio

Transportation Master Plan (2007 Update)
Oversight Group Workshop Meeting
Sign-In Sheet for 04-18-07 @ 6:00 PM

The Mannik & Smith Group, Inc.

Name	Representing	Phone	Email
Patrick Etchie	Mannik & Smith Group, Inc.	419-891-2222	petchie@manniksmithgroup.com
Michelle Grigore	Parks + Rec	419-409-6353	mgrigore@bgohio.org
GARY SPENCER	BGID	419-352-5824	gspencer@bgohio.org
GALEN Ash	BG PLANNING COMM	419-352-0304	
Rick Ketzenberger	City of BG	419 354 6218	bgplans@bgohio.org
BRETT POGAN	BGSU	419-372-3853	bpogan@bgsu.edu
BRIAN O'CONNELL	BG ENGINEERING	419 354 6235	boconnell@bgsu.edu
DAN DAVIS	BG CITY SCHOOLS	419 354-8509	ddavis@BGCS.K12.OH.US
LARRY SORRELLS	BG CITY COUNCIL		

THE CITY OF BOWLING GREEN Ohio

Transportation Master Plan (2007 Update)
Oversight Group Workshop Meeting
Sign-In Sheet for 05-16-07 @ 6:00 PM

The Mannik & Smith Group, Inc.

Name	Representing	Phone	Email
Patrick Etchie	Mannik & Smith Group, Inc.	419-891-2222	petchie@manniksmithgroup.com
GARY SPENCER	BGPD	352-8775	gSPENCER@bgohio.ORG
BRIAN O'CONNELL	BG ENGINEER	354-6227	boconnell@bgohio.org
BRIAN CRAFT	BG Public Works Director	354-6227	bcraft@bgohio.org
GALEN ASH	PLANNING COMM	352-0306	
Rick Ketzenbarger	Planning	4-6218	bgplans@bgohio.org
BRETT POGAN	BGSU	372 3853	bpogan@bgsu.edu
Larry Sorrells	BG City Council	353-0682	councilman sorrells@yahoo.com

PUBLIC MEETING

PUBLIC INVOLVEMENT MEETING OPEN HOUSE
DRAFT BOWLING GREEN TRANSPORTATION MASTER PLAN UPDATE (2007)

SIGN-IN SHEET

Monday July 30, 2007 at the BG Community Center
1245 W. Newton Road, Bowling Green, OH 43402
4:00 p.m. to 7:00 p.m.

PLEASE PRINT

NAME	STREET ADDRESS	APT. #	CITY, STATE & ZIP CODE	PHONE (Opt.)
HAROLD BROWN	909 Parker		BG 43402	
John Quin	City BG		"	
PAT ETCHIE	MSG			
JEAN HARTLINE	MSG			
RICK KETZENBARGER	City PLANNING			
BRIAN O'CONNOR	BG			
Bob McOmber	420 Knollwood		BG	
Jeff Newby	923 Pearl		BG	
Dave Brattie	1320 W. Wooster St		BG	

PUBLIC MEETING
INFORMATION PACKAGE

DRAFT TRANSPORTATION MASTER PLAN
CITY OF BOWLING GREEN, OHIO 43402

<u>Project Sponsor:</u>
City of Bowling Green
304 N. Church Street
Bowling Green, Ohio 43402

<u>Project Consultant:</u>
The Mannik & Smith Group, Inc.
1800 Indian Wood Circle
Maumee, Ohio 43537

<u>Held At:</u>

BG Community Center
1245 W. Newton Road
Bowling Green, Ohio 43402
4:00 p.m. to 7:00 p.m.

TABLE OF CONTENTS

ITEM PAGE(S)

EXHIBITS STATION GUIDE ii

I. MEETING PURPOSE 1

II. PROJECT HISTORY 2

III. PROJECT METHODOLOGY 2

IV. COMMENT INFORMATION 2

V. FUTURE IMPROVEMENTS (*FIGURE 3.1*) 3

PUBLIC MEETING COMMENT SHEET

Exhibits Station Guide
Draft Transportation Master Plan
Open House Public Involvement Meeting
Bowling Green, Ohio 43402

Following is a list of the stations setup at the meeting and the items contained at each one:

Station 1 - Welcome & Sign-In
- The opportunity for meeting attendees to sign-in
- Public Meeting Informational Handouts

Station 2 – Study Purpose & Study Limits
- Study Purpose and Purpose of Public Involvement Meeting
- Exhibit of the Roadways & Intersections Reviewed and the Study Area

Station 3 – Existing & Future Conditions
- Exhibit of Highway Safety Program Crash Listings (2003-2005)
- Exhibit of High Crash Intersections & Corridors (2003-2005)
- Exhibit of Future Land Use Growth Areas
- Exhibit of Existing 2007 Traffic
- Exhibit of Future 2027 Traffic
- Exhibit of Existing 2007 AM & PM Levels of Service
- Exhibit of Future 2027 AM & PM Levels of Service
- *Synchro* Traffic Model Traffic Simulation

Station 4 – Recommended Improvements
- Exhibit of Pedestrian/Bicycle Facilities & Destinations
- Exhibit of Future Improvements on Aerial (2 copies of exhibit)
- Exhibit of Future Improvements Table (provides details of improvements shown on Aerial)

Station 5 – Comments
- A comment sheet is provided within this handout package
- Please fill out the comment sheet here at the meeting and deposit it in the comment box, or fill it out later and mail it in by August 13, 2007.

Public Involvement Meeting for Draft Transportation Master Plan Monday July 30, 2007

I. MEETING PURPOSE

The purpose of this Public Involvement Meeting is to present the preliminary findings of Bowling Green's Transportation Master Plan Update, and to solicit comments from the public on the list of recommended improvements that have been developed to service the transportation needs of the City over the next 20 years. The information package you are now reading was prepared to guide you through the stations that have been setup at this "Open House" style meeting and to give you the latest information that has been developed for the project. The City of Bowling Green's Planning and Engineering Departments are the lead agencies on this update of the Transportation Master Plan and have contracted The Mannik & Smith Group, Inc., a consulting firm that specializes in Transportation Planning and Traffic Engineering.

There is no formal presentation at this "Open House" meeting that runs from 4:00 to 7:00 PM and you are welcome to review exhibits at your own pace. There is city & consultant staff here at the meeting that will answer any questions you may have.

Comment sheets are available here at the meeting and one is included at the end of this information package to provide you with an opportunity to express any comments that you may have about the preliminary list of recommendations developed to provide quality transportation for the City through the next 20 years. Comments can either be submitted at this meeting in the drop box, or they can be mailed to meet the comment submission deadline date of August 13, 2007.

For further information on the project, please contact:

Mr. Rick Ketzenbarger
Planning Department – City of Bowling Green
304 N. Church St.
Bowling Green, Ohio 43402
(419) 352-0443
bgplans@wcnet.org

Your input into this planning process is important to us and will be documented in the Transportation Master Plan.

II. PROJECT HISTORY

The Bowling Green Transportation Master Plan Update began in mid-2006 when numerous traffic counts were conducted in the City to obtain current traffic data to provide details of traffic patterns and to also be used for constructing a traffic model for the City to be used for analyses. The last update of the Plan was conducted in 1996, and significant changes in roadways (E. Wooster widening, Newton Rd. extension, etc.) have occurred since then that required an update of the Plan.

III. PROJECT METHODOLOGY

The initial steps of the project involved collection of existing data and studies as well as numerous traffic counts that were conducted. Once all traffic data and existing data was collected, it was reviewed and analyzed to determine where current deficiencies exist and where future problem areas could be expected based on future land use and current trends. Once these deficiencies were determined, a list of recommended improvements was developed to address the issues. This draft list of improvements was reviewed by the City Planning and Engineering departments as well as an Oversight Committee that was established to review findings of the study, provide local input, and assist in prioritizing the improvements. Upon comments being received at the public meeting, the Transportation Master Plan will be finalized and officially adopted by the City to guide planning for the next 20 years.

IV. COMMENT INFORMATION

A public meeting comment sheet is provided at the end of this information package, and additional sheets are available at the comment station here at the meeting. You may complete your comment sheets and submit them here at the meeting in the Comment Box provided, or you can also submit sheets by mailing them out (requires stamp) to meet the comment deadline of August 13, 2007.

Thank you for attending this Public Involvement Meeting and taking an active role in the planning process for the transportation needs for the City of Bowling Green for the next 20 years.

PUBLIC MEETING - COMMENT SHEET

Bowling Green Transportation Master Plan Update (2007)
July 30, 2007 (4:00 PM to 7:00 PM)

ANYONE WISHING TO SUBMIT COMMENTS/SUGGESTIONS CONCERNING THE RECOMMENDED IMPROVEMENTS OF THE TRANSPORTATION MASTER PLAN MAY DO SO BY PRESENTING THIS FORM HERE AT THE MEETING, OR BY MAILING IT TO THE CITY OF BOWLING GREEN PLANNING DEPARTMENT AS PRINTED ON THE REVERSE SIDE OF THIS COMMENT SHEET.
THE DEADLINE FOR SUBMISSION OF COMMENTS IS AUGUST 13, 2007.

NAME_____TELEPHONE_____

STREET ADDRESS _____

CITY, STATE, ZIP _____

ORGANIZATION (if applicable)_____

IN GENERAL, DO YOU AGREE WITH THE LIST OF RECOMMENDED IMPROVEMENTS PRESENTED AT THIS MEETING TO SERVICE THE CITY'S TRANSPORTATION NEEDS FOR THE NEXT 20 YEARS?

PLEASE CHECK ONE: ☐ YES ☐ NO ☐ UNDECIDED

ARE THERE ANY TRANSPORTATION PROBLEM AREAS YOU ARE FAMILIAR WITH THAT WERE NOT ADDRESSED IN THE LIST OF RECOMMENDED IMPROVEMENTS?

PLEASE CHECK ONE: ☐ YES ☐ NO ☐ UNDECIDED

IF YES, PLEASE LIST THE PROBLEM AREAS NOT ADDRESSED:

_____

_____

_____

_____

PLEASE PROVIDE ANY OTHER COMMENTS YOU WISH TO HAVE DOCUMENTED?

_____

_____

_____

_____

_____

This sheet can be folded in thirds, taped, and mailed without an envelope.
Postage is required.

Place
Stamp
Here

Mr. Rick Ketzenbarger
Planning Department – City of Bowling Green
304 N. Church St.
Bowling Green, Ohio 43402

Public Comments Documentation

A public meeting was held on Monday July 30, 2007 from 4:00 – 7:00 PM at the Bowling Green Community Center to solicit public input on the recommendations developed from the update of the Transportation Master Plan. The meeting experienced little attendance as evident from the sign-in sheet located within this appendix. There were no comments submitted at the meeting. There was one set of comments submitted by a citizen as well as several comments from the Bicycle Safety Commission. The submitted comments are shown below, including the Oversight Committee response to the comments which are shown in red:

Private Citizen Comment:

The citizen cited three locations where typos were found and also provided a general discussion about the need to provide more minor arterials in the community to better move traffic within the city in a more efficient manner. Aside from these comments, the citizen also stated the following four recommendations:

1. Provide more collector streets to reduce the traffic loads on Main St. and Wooster St. These should join each other to provide continuous routes from one part of the city to another.
   Response: The future functional class figure (Figure 2.3), shows the planned arterials for the community. In the heavily developed areas there are few options to increase the number of through streets that would function as minor arterials given the heavily residential areas.
2. Extend Napoleon Rd. westward to connect with Wintergarden, with some connection to the local streets in the Westgate area.
   Response: This extension was considered in the Transportation Plan, however it was decided that constructing a roadway through the several park areas and the Slippery Elm bike trail would degrade the quality of the parks and create safety issues.
3. Change the designation of most Access Management Category 1 streets to Category 2. The standards calling for high speeds and very limited access seem impossible to attain and conflict with statutory speed limits.
   Response: The roadways classified as Category 1 are recommended for the category so as to promote roadway access standards on these key roadways. It is understood that the speed limit and access standards of this category will likely never be achieved throughout much of the roadway, however the standard is in place for when properties undergo re-development. In such instances the development must follow the guidelines. A recent example of this is on N. Main St. where the new Walgreen's store had to reduce the number of drives from the several properties they purchased. In addition, the access categories have exceptions that can be made by the city if the standards are not possible.
4. Plan for a connection between Conneaut and the BGSU area, possibly via Fairview and Merry.
   Response: The Plan recommends re-opening Merry at the railroad crossing to accomplish this.

Bicycle Safety Commission Recommendations:

The commission submitted a set of recommendations for the proposed Multi-Use Path and Pedestrian/Bicycle Destinations in the Transportation Master Plan that included:

1. Complete designated route to the Bowling Green Community Center from local city schools and parks.
   Response: This improvement is recommendation #P1 as shown on *Figure 3.1*.
2. Reduce the amount of on-street parking (especially in those areas identified as bicycling routes and where the majority of residents have driveways.)
   Response: A statement to this effect will be added in the Transportation Master Plan.
3. Identify a designated "downtown bike circle." (Oak, Church, Washington and Prospect Streets)
   Response: A recommendation for a designated circle bike route will be added to *Figure 2.14*.
4. Increase the amount of "bike route" signage.
   Response: A statement will be added in the Transportation Master Plan.

5. Create a designated east/west pedestrian/bicycle path on E. Wooster St. over the I-75 overpass, for traffic to Meijer, Municipal Court, and future BGSU buildings.
   Response: This improvement is indicated on both *Table 3.1* and *Figure 3.1*.
6. Ensure that all schools are included in bike routes.
   Response: Bike routes have been added to get to the schools.
7. Make Poe Rd. a trail segment to facilitate travel to/from BGHS.
   Response: This recommendation will be added to *Figure 2.14*.
8. Make S. College St. a trail segment to connect BGSU to student housing areas on Napoleon Rd.
   Response: The Oversight Committee for the Transportation Master Plan reviewed this comment and it was determined that the recommended Manville as a designated bike route would serve the student housing areas and that S. College would be a duplicate route.
9. Extend the bike route in the 100 block of W. Wooster all the way to Wintergarden Rd.
   Response: The Oversight Committee agrees with the need to extend a route westward to Wintergarden, but instead of W. Wooster which is a busy street and not conducive to pedestrians & bicycles, it is recommended that Pearl be used as the designated bike route from Church St. to Wintergarden. This recommendation will be added to *Figure 2.14*.

Transportation plan suggests paths for BG pedestrians

By HAROLD BROWN
Sentinel City Editor

A bicycle/pedestrian path to the community center and dedicated pedestrian access over two Interstate 75 overpasses are among transportation improvements proposed for Bowling Green in the next 20 years.

The draft update of the city's Transportation Master Plan was available for citizen review for three hours Monday night at the community center. Only nine people signed the attendance sheet, with just two of those not being associated with the city, its consulting firm or the media.

Plan calls for ...

- Bicycle and pedestrian path to the community center in BG
- Dedicated pedestrian access on Interstate 75 overpasses on East Wooster and Napoleon roads

The draft also proposes eight separate transportation studies, numerous roadway improvements, revamping of traffic signals, intersection improvements and a handful of new street construction projects.

The city hired The Mannik & Smith Group Inc. of Maumee as consultant on the project. The transportation master plan was last updated in 1996.

Documents remain available for public review in the Planning

(See BG on 5)

BG

(Continued from 1)

Department of the City Administrative Services Building, and are to be posted on the city's Web site by the end of the week. Written comments on the proposals can be submitted to the city through Aug. 13.

City Planning Director Rick Ketzenbarger said comments will be compiled and shared with the Oversight Committee that has been working on the update for several months. "The committee will consider possible changes and then submit the document to the planning commission," Ketzenbarger said.

The commission has traditionally spent several months studying proposed updates to the master plan, holding work sessions and then a public hearing. Once the commission is satisfied, the update will be sent to city council for additional study, another public hearing and eventually, approval. At its July 16 meeting council adopted the Parks and Recreation update to the master plan.

A map labeled "Future Improvements" shows the bicycle/pedestrian path to the community center would start at City Park and run northwest along the park's south boundary to Haskins Road. The path would continue northwest on the east side of Haskins Road to the center on Newton Road.

Pedestrian access paths are shown on the map for the I-75 overpasses of Ohio 64 (Wooster Street) and Napoleon Road.

The full list of projects is broken into current need (1 to 2 years) short range (3 to 5 years), medium range (6 to 10 years) and long range (10 to 20 years).

More than 20 intersections around the city have been reviewed, including 10 on Wooster Street spanning the city. Also reviewed were five intersections on Main Street, four on Poe Road, three on Haskins Road and two on Newton Road. In several cases the intersections involve two of the four streets listed in this paragraph.

The Poe and Haskins and Poe and Main intersections are suggested as possible locations for roundabouts, also known as a rotary in some parts of the country.

Realignment of the Sand Ridge and Gypsy Lane Road intersection is suggested and a full-blown interchange is a long-range possibility at U.S. 6 and Sand Ridge Road.

Recommended additional efforts would:

- Review the citywide signal system.
- Do a South Main Street corridor safety review.
- Explore a new northern interchange with I-75.
- Explore a Sand Ridge-Route interchange.
- Study safety issues on the Haskins-Wooster corridor.
- Study safety issues on Main Street.
- Conduct a citywide overhead sign review.
- Study Poe Road safety issues.

6D

THE CITY OF BOWLING GREEN Ohio

Transportation Master Plan (2007 Update)
Oversight Group Workshop Meeting
Sign-In Sheet for 10-17-07 @ 6:00 PM

The Mannik & Smith Group, Inc.

Name	Representing	Phone	Email
Patrick Etchie	Mannik & Smith Group, Inc.	419-891-2222	petchie@manniksmithgroup.com
Rick Ketzenberger	City of BG	354 6218	bgplans@bgohio.org
LARRY SORRELLS	City of BG	352-8854	councilman sorrells @ yahoo.com
GALEN ASH	CITY PLANNING COM	352-0306	
GARY SPENCER	BGPD	352-8775	gspencer@bgohio.org
BRIAN O'CONNELL	CITY OF BG	354-6227	boconnell @ bgohio.org
BRETT POGAN	BGSU	372 3853	bpogan@bgsu.edu
HAROLD BROWN	SENTINEL-TRIBUNE		
BRIAN CRAFT	City of BG - PUBLIC WORKS	419-354-6227	

APPENDIX B

Traffic Count Locations

Bowling Green Transportation Master Plan 2006 Update – Traffic Counts				
Primary Intersections				
ID #	Location	AM Count Period	PM Count Period	Comments
1	N Main (SR25) & Newton	7:00-8:30	4:30-6:00	Anytime
2	N Main (SR25) & Poe	7:00-8:30	4:30-6:00	Before Apr 28 or After Aug 21
3	Main (SR25) & Wooster (SR64)	7:00-8:30	4:30-6:00	Before Apr 28 or After Aug 21
4	S Main (SR25) & Napoleon	8:30-10:00	4:00-5:30	Anytime
5	S Main (SR25) & Gypsy	8:30-10:00	4:00-5:30	Anytime
6	W Poe & Haskins (SR64)	7:00-8:30	4:30-6:00	Anytime
7	W Wooster (SR64) & Haskins (SR64)	7:00-8:30	4:30-6:00	Anytime
8	E Wooster (SR64) & Mercer	7:30-9:00	4:30-6:00	Before Apr 28 or After Aug 21
9	E Wooster (SR64) & Campbell Hill	7:30-9:00	4:30-6:00	Before Apr 28 or After Aug 21
10	E Wooster (SR105) & Dunbridge	7:00-8:30	4:00-5:30	Before Apr 28 or After Aug 21
11	Dunbridge & Napoleon	7:00-8:30	4:00-5:30	Before Apr 28 or After Aug 21
12	N College & E Poe	7:30-9:00	4:30-6:00	Before Apr 28 or After Aug 21
Secondary Intersections				
13	E Wooster (SR64) & Manville/Thurstin	7:30-9:00	4:30-6:00	Before Apr 28 or After Aug 21
14	Napoleon & Campbell Hill	7:30-9:00	4:00-5:30	Before Apr 28 or After Aug 21
15	E Gypsy & Campbell Hill	7:30-9:00	4:00-5:30	Before Apr 28 or After Aug 21
16	E Poe & Mercer	7:30-9:00	4:30-6:00	Before Apr 28 or After Aug 21
17	Newton & Haskins (SR64)	7:00-8:30	4:30-6:00	Anytime
18	Conneaut & Mitchell	7:00-8:30	4:30-6:00	Anytime
19	W Wooster (SR64) & Wintergarden	7:00-8:30	4:30-6:00	Anytime
20	E Wooster (SR64) & Prospect	7:30-9:00	4:30-6:00	Before Apr 28 or After Aug 21
Beneficial Hose Count Locations				
H1	Dunbridge (Btwn Poe & SR105)			Before Apr 28 or After Aug 21
H2	Dunbridge (Btwn SR105 & Napoleon)			Before Apr 28 or After Aug 21
H3	Dunbridge (Btwn Napoleon & Gypsy)			Before Apr 28 or After Aug 21
H4	E Wooster (Btwn Manville & Mercer)			Before Apr 28 or After Aug 21
H5	E Wooster (Btwn Mercer & Campbell Hill)			Before Apr 28 or After Aug 21
H6	Newton (Btwn SR64 & Brim) (Pick Up Speed Data)			Anytime
H7	E Gypsy (Btwn Campbell Hill & Dunbridge)			Before Apr 28 or After Aug 21
H8	E Gypsy (Btwn Dunbridge & Dirlam)			Before Apr 28 or After Aug 21
H9	BG Road West (Btwn Mitchell & Wintergarden)			Anytime
H10	Napoleon (Btwn Campbell Hill & Dunbridge)			Before Apr 28 or After Aug 21

Note:

The *"Primary Intersections"* are those locations MSG has scoped in proposal. The *"Secondary Intersections"* would be beneficial for study but not critical. The *"Beneficial Hose Count Locations"* are not critical for the study, but would supply more recent count data than what currently exists from TMACOG (the hose counts are listed from most beneficial to least beneficial).

Counts with a comment *"Anytime"* are locations where BGSU being is session is not so much an issue and could be counted this summer, whereas those marked by *"Before Apr 28 or After Aug 21"* are influenced more by BGSU and should be counted when BGSU is in session.

Shaded counts above will be conducted by the City of Bowling Green.

APPENDIX C

References

The development of a Transportation Master Plan requires research and reference to many sources. The update of the Bowling Green Transportation Master Plan utilized various sources including the key sources listed below:

The following references were utilized in developing the *Bowling Green Transportation Master Plan (2007)*:

The City of Bowling Green Downtown Plan

The City of Bowling Green Land Use Plan Update

The City of Bowling Green Utility Master Plan Update

Bowling Green Parks and Recreation Department Parks and Recreation Master Plan

Wood County Regional Airport Master Plan

Bowling Green Police Division – 2006 Traffic Crash Analysis

BGSU Campus Master Plan and Roadway Improvements

TMACOG – On the Move 2007-2035 Transportation Plan

TMACOG – User's Guide to Bicycle Facilities in Northwest Ohio and Southeast Michigan

TMACOG – Traffic Count Online Services

Ohio Department of Public Safety – High Crash Listing Identification System

Ohio Department of Transportation – Traffic Survey Reports

The Ohio Department of Transportation's *State Highway Access Management Manual*
HTTP://WWW.DOT.STATE.OH.US/ROADWAYENGINEERING/ACCESS_MANAGEMENT/INDEX.ASP

ODOT DRIVEWAY STANDARDS (ALSO SEE APPENDIX B OF THIS DOCUMENT FOR DRIVE GEOMETRY):
HTTP://WWW.DOT.STATE.OH.US/ROADWAYENGINEERING/STANDARDS/PUBLICATIONS/LDM/800_JUL93.PDF

ODOT INTERSECTION STANDARDS:
HTTP://WWW.DOT.STATE.OH.US/ROADWAYENGINEERING/STANDARDS/PUBLICATIONS/LDM/2006-07-21/400_JUL06.PDF

ODOT'S LOCATION AND DESIGN MANUAL – VOLUME 1:
HTTP://WWW.DOT.STATE.OH.US/ROADWAYENGINEERING/STANDARDS/LOC_MANUALS.ASP