FINAL PLANNING STUDY REPORT

NEW MAUMEE RIVER CROSSING PROJECT
PID #: 22984
STATE JOB #: 423780

FOR REVIEW BY:

THE OHIO DEPARTMENT OF TRANSPORTATION
THE FEDERAL HIGHWAY ADMINISTRATION

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Section I

Executive Summary

EXECUTIVE SUMMARY
NEW MAUMEE RIVER CROSSING PROJECT
PID #: 22984 - STATE JOB #: 423780

INTRODUCTION

For many years local officials have recognized the need to better connect the northern and southern halves of the City of Napoleon, in Henry County, Ohio)(Figure I-1). The city, which was founded in 1834, is physically separated by the Maumee River. A single river crossing at State Route 108 currently provides the only direct transportation link between the two halves of the community. Two alternative river crossings exist, however both are too far removed from the City of Napoleon's major traffic routes to be of much use to its residents, except during emergency situations when the SR 108 Bridge has to be closed. One bridge is located at Henry County Road 17c, 7.5 miles upstream of the SR 108 Bridge, west of the City. The second alternative river crossing is located on US Route 6, 4 miles downstream of the SR 108 Bridge, to the east of the City.

Providing a viable transportation solution to this community of 9,300 residents is needed for several reasons. First, there is a need to provide a more direct transportation corridor between the two designated industrial development areas that are located on the east side of the city, both north and south of the Maumee River. Secondly, an option is needed to improve emergency response times when traffic is disrupted on the existing bridge that crosses the river on SR 108 in the city. Thirdly, although the majority of Napoleon's developed areas are located on the north side of the river, the south side of the river contains the largest single employer in Napoleon, the world's largest Campbell's Soup plant, which employs an average of 1,200 people. The Henry County fairgrounds, several small businesses, and residential areas also exist on the south side of the Maumee River.

Heavy traffic volumes on the single river crossing at SR 108 also causes significant traffic congestion and delays in the central business district (downtown) during peak traffic periods. These peak traffic periods are associated with shift changes and truck traffic both to and from the Campbell's facility and school traffic, which together place high demands on the lone bridge. A transportation solution is needed that will provide an alternative link for these important areas of the community and reduce the demand on the State Route 108 Bridge. This will also reduce congestion within the downtown area of Napoleon.

Given the limitations of having only one river crossing in the City of Napoleon, local officials have initiated a study to identify a transportation solution that will alleviate the current and future demand that is an will be placed on the SR 108 bridge, provide a better link between the two halves of the community, alleviate downtown congestion and foster economic development. In addition, on April 7, 2003, the City of Napoleon approved a comprehensive master plan. This comprehensive plan is a critical tool for guiding the city into the future by providing logical development strategies and infrastructure improvements. One critical infrastructure improvement intended to facilitate economic development for the city and surrounding area is a second river crossing that is strategically located to meet the needs of the community.

FINAL PLANNING STUDY REPORT

The evaluation of a transportation solution for the SR 108 Corridor in the City of Napoleon will follow the Ohio Department of Transportation's (ODOT) Project Development Process (PDP). Steps One through Three of the PDP involves the following tasks:

1. Working with stakeholders to identify and understand the problems, needs, and goals of the community;
2. Conducting research and technical studies to characterize existing and future conditions and identify engineering and environmental "red flags"; and
3. Identification and evaluation of potential transportation planning solutions that meet the Purpose and Need for the project.

Upon completion of Steps One through Three, a Final Planning Study Report is then developed (Step Four of the PDP) to document the findings of Steps One through Three and carry forward the implementation of the project. The Final Planning Study Report presented herein includes the following elements:

PUBLIC INVOLVEMENT PLAN

The Public Involvement Plan (PIP) outlines the strategy that will be implemented in order to engage the public in this project. Public involvement will provide a means for public participation in the identification of the problems, needs, goals and objectives for the community; to inform project stakeholders and the general public of the decisions that are being made; to provide a forum to present ideas and voice concerns; and to collect input regarding the project.

PURPOSE & NEED

City and County officials were involved in establishing goals for the project. From this input, the following four issues were identified as major needs for the community.

1. Provide a direct link between existing industrial development areas on both sides of the Maumee River;
2. Improve access to future development areas, consistent with the Comprehensive Plan
3. Improve connectivity within the community
4. Reduce the traffic demands on downtown roadways, decrease congestion and enhance public safety

The Purpose & Need Statement for the project establishes the need for the transportation solution in the study area. For this project, the transportation solution for the study area should:

1. Improve traffic operations on the SR 108 bridge and corridor;
2. Improve safety by decreasing crashes in the corridor and enhancing the ability of local emergency response teams in the area;

3. Improve access to future and planned development areas on both sides of the Maumee River – to link existing industrial areas and improve access and transportation operations for Campbell's Soup and other businesses; and
4. Coordinate with and ensure consistency with the local Comprehensive Plan.

TRANSPORTATION PLANNING SOLUTIONS

This component of the Final Planning Study Report discusses all of the conceptual solutions that have been considered for the project. In all, five conceptual solutions are considered. Four of these involve the construction of a new bridge over the Maumee River at the following locations:

- Corridor 1 - West of SR 108 Bridge to Western Corporation Limits
- Corridor 2 - East of SR 108 Bridge to West of CR 12
- Corridor 3 - West of CR 12 to US 6 Bridge over Maumee River
- Re-use of Abandoned Railroad Bridge north of the Campbell's Soup plant

A fifth conceptual solution, involving a no-build alternative that considers various measures, such as the addition of turn lanes, improving signal coordination and the implementation of access management strategies to address some or all of the transportation-related issues that exist as a result of having only one river crossing is also discussed.

Each transportation solution/concept is evaluated based on its ability to meet the Purpose & Need for the project, including:

- Its ability to provide a link between existing industrial development areas;
- Its connectivity to the existing highway system;
- Its ability to improve access to future development areas consistent with the Comprehensive Plan;
- Its ability to increase overall community connectivity;
- Its ability to provide improvements to Napoleon and Henry County emergency services'; and
- Ability to reduce downtown traffic congestion and enhance public safety

Impacts to parks, farmland, cultural resources, endangered species, ecological resources and flood plains are also evaluated for each transportation solution/concept based on preliminary screenings. Based on the Purpose & Need criteria and on the impacts of the preliminary screenings, only three transportation solutions/concepts are being recommended for further evaluation. These include a new river crossing at Corridor 2 (Industrial Drive), a new river crossing at Corridor 3 (Henry County Road 12) and the No-build alternative.

Several additional Conceptual Alternative Solutions were also considered but then dropped from further consideration based on their inabilities to meet the elements of the Purpose and Need:

- **Rail (Freight)** – Development and use of rail to transport goods between the two industrial areas in the City of Napoleon was considered but then dismissed from further

consideration, as it would satisfy only one of the elements of the project Purpose and Need. The only benefit would be a reduction of trucks from the Campbell Soup facility to the storage facilities on the north side of the river. However, this conceptual alternative solution would not reduce any other traffic such as employee commuter trips and trips associated with the schools. This option would require the construction of new rail lines to connect facilities on the south side of the river with those on the north side, and require either re-habilitating the abandoned rail bridge or constructing a new river crossing. Addition of a rail line would not enhance emergency response times in the event that the SR 108 Bridge was to be closed during an emergency, nor would it increase community connectivity. As a result, if this conceptual alternative were implemented, other measures would have to be considered to address these issues.

- **Transit (Bus or Light Rail)** – The introduction of bus or light rail to the community was also considered, but dismissed as it would minimally satisfy only one element of the Purpose and Need. This alternative would also require major investment in either buses or light rail equipment and tracks. These services may reduce a minimal amount of local trips to the major employer on the south side of the river (Campbell Soup), but many of the employees come from areas outside of Napoleon who would still need to drive personal vehicles to commute to and from work. This option would also entail an annual cost to operate buses or trains, staff to run and operate such services, all of which would likely not be supported solely by fares as ridership would be limited based on the small population of the City.

- **Ferry Service** – This concept would minimally meet possibly one or two of the elements of the Purpose and Need, and was therefore dismissed for further consideration. This concept would require the construction of roads to a determined crossing location along with storage for vehicles waiting on the ferry service. This service may eliminate some traffic on the SR 108 Bridge and provide a connection between industrial locations, however potential usage would be limited as fees would be associated with the crossing, which would encourage vehicles to keep using the free river crossing that also entails not waiting on a ferry. This service would also be seasonal as it would likely not be able to operate in winter months when the river freezes and also when the river levels drop low enough during dry spells that may not allow transport. Annual maintenance costs, purchases of ferry boats, and staffing would create on-going costs that would not likely be supported solely on user fees.

- **Replicating EMS, Fire and Police Services on Both Sides of Maumee River** – Replicating EMS capabilities on both sides of the Maumee River was dismissed from further consideration as it would only meet one of the Purpose and Need criteria that involved improving local emergency response times. In addition, this concept would require that the City take on additional annual costs associated with additional vehicles, a new facility, and additional staff. The EMS would still need to travel across the river to access the one hospital in the City and as such would remain limited by a single river crossing should it become blocked or closed. Construction of a second hospital, on the south side of the river, would not be cost effective, as the existing population would not support two hospital facilities.

- **Access Management** – This concept was dismissed as it would only address only one element of the Purpose and Need, which would be to increase safety on the SR 108 corridor. Access management would also be difficult to implement, as many of the drives located on the SR 108 corridor would have to remain, as there is no alternative access location to parcels on the corridor due to no adjacent public roadway access to parcels and that state law requires at least one access to a public roadway per parcel. This option would therefore have only limited locations where drives could be reduced and would not reduce traffic on the corridor.

DESIGN CONCEPT AND SCOPE

This component of the Final Planning Study Report outlines the general design concept, which is a roadway bridge crossing of the Maumee River and connecting roadways to either CR Z or to SR 110 on the south side of the river and SR 424 on the north side. The Design Scope discusses the general design characteristics of the project, such as the number of lanes, length of project, etc.

GENERAL COST ESTIMATE

A generalized cost estimate is provided for preliminary planning purposes. The cost estimate will vary depending on the conceptual solution. Preliminary cost estimates indicate a cost range of $14.5 million to $16.5 million for a new river crossing.

PROJECT ACTION PLAN

At this time, no specific funding has been identified for this project. The project action plan is based on the assumption that the project will be funded in its entirety (100%) with the appropriate ODOT and federal funds. The project timetable and delivery schedule will follow the ODOT Project Development Process (PDP). As the project proceeds through the ODOT PDP, specific funding sources, along with their timeframes and other restrictions will be identified and applied for.

APPENDIX A - STAKEHOLDERS AND MAILING LIST

This appendix provides a detailed list of those stakeholders that will be contacted directly for notices of public meetings and project updates. This list will be updated, as appropriate during the PDP.

APPENDIX B - TECHNICAL REPORTS

This section of the Final Planning Study Report includes several supporting technical reports or plans that were utilized in developing a Purpose and Need for the project. These documents were also utilized for provide information during the comparative analysis of the conceptual solutions. These reports include:

- *Origin-Destination Study of State Route 108 (Perry St.) Bridge - May 2003*
- *The Napoleon Comprehensive Plan - 2003*
- *Henry County Comprehensive Plan - 2003*

APPENDIX C - SOURCE BIBLIOGRAPHY

The source bibliography provides documentation of the secondary and primary sources of information that were utilized for preliminary research for the project in evaluating each conceptual alternative.

Section II

Public Involvement Plan (PIP)

Public Involvement Plan (PIP)
New Maumee River Crossing Project
PID #: 22984 - State Job #: 423780

INTRODUCTION

In 2003, the New Maumee River Crossing project management team began implementing a public involvement strategy in the early planning stages of the project to address the concerns of local stakeholders and to provide a means of public input for the project. To date, input from ODOT and FHWA has also been solicited for the project.

The goals of the Public Involvement Process are to:

- Obtain information from the public to help identify problems, needs goals and objectives of the community that might be addressed by improvements in the transportation infrastructure
- Inform the public of project history and current project activities
- Provide a forum for gathering information and sharing ideas
- Solicit comments from the public and governmental agencies
- Incorporate ideas from public involvement into the project decision-making process

PUBLIC INVOLVEMENT PLAN (PIP)

The PIP has been developed to guide the public involvement process that will be used during the course of this study. These activities are intended to encourage active participation throughout the project and to provide a means of disseminating project-related information. Proactive public participation will increase the likelihood of developing a project that will adequately addresses the needs of the community and be supported by the public and project stakeholders. The following key elements will be crucial to the success of the public involvement process:

- Identification of key local, state, and federal stakeholders
- Timely dissemination of project-specific information
- Continued involvement of project stakeholders and local agencies regarding the selection of a preferred alternative
- Presentation of preliminary analyses, concepts considered, and recommended concepts for further study
- Solicitation of questions, comments, and concerns from the public
- Integration of public input into the decision-making process

Public participation will be considered successful if:

- Interested citizens and stakeholders perceive that they are well informed during the course of the project and that their input was documented and considered
- Comments and questions from citizens are addressed in a timely manner

- The public understands the time element and scope of work for the overall development of the project, including construction
- The project is implemented without significant delays that may arise as a result of controversies
- Support for the project is maintained among local officials, stakeholders, and the public
- A line of information and communication is maintained between the project team and the community so that the public and stakeholders feel informed and involved in the project development process
- The project team is well-informed on public concerns and able to address concerns before they become problems for the project

PROJECT MANAGEMENT TEAM

The project management team includes the following individuals:

Randolph Germann - Henry County Engineer
Michael Ligibel - ODOT District Two
Mike Smith - The Mannik & Smith Group, Inc.
John Kusnier - The Mannik & Smith Group, Inc.
Russ Critelli – The Mannik & Smith Group, Inc.

The Henry County Engineer is the project sponsor and is responsible for local guidance of the project. ODOT provides state and federal guidance and coordination of the project and reviews all studies and documentation. The Mannik & Smith Group, Inc (MSG) is performing various technical aspects of the project, including all engineering and environmental studies and analyses, technical research, document preparation, and public involvement activities.

The Henry County Engineer and MSG will work together to develop project direction including development of the Purpose and Need, characterization of existing and future conditions, identification and evaluation of conceptual alternatives, identification of preliminary corridors and preliminary alignments, and identification of the preferred alignment. ODOT and FHWA will review all project findings, reports, and analyses to determine if the project is being implemented in accordance with the PDP. Project stakeholders and the general public will be solicited for input at critical points in the project schedule.

PIP ACTIVITIES

The following public involvement activities have been developed for this project:

Identify Stakeholders

Project stakeholders are those agencies, local units of government, businesses, property owners, interested groups and the general public that offer unique perspectives in identifying the transportation problem and what could ensure a successful project outcome. Some stakeholders will be notified of public involvement meetings by direct mailings, while others, such as the general public, will be notified through local media

outlets (newspapers, radio, and television) and advertisements placed at various locations throughout the community such as churches, post office, and major retail centers. Table II-1 contains those stakeholders that have been identified for this project, as well as the mode of contact that will be used to notify these parties. The stakeholder list will be updated as appropriate throughout the course of this study.

Table II-1
Local Stakeholders

Stakeholder	Contacted By
City of Napoleon Administrative Officials	Direct Mailing
Napoleon City Council	Direct Mailing
Napoleon Fire/EMS Services	Direct Mailing
Napoleon Police Department	Direct Mailing
Napoleon Park District	Direct Mailing
Local Township Officials	Direct Mailing
Local School Districts	Direct Mailing
Chamber of Commerce & Members	Direct Mailing
Henry County Engineer	Direct Mailing
Henry County Commissioners	Direct Mailing
Henry County CIC	Direct Mailing
Henry County Sheriff	Direct Mailing
Henry County Planning Commission	Direct Mailing
Campbell Soup Company	Direct Mailing
Residential Property Owners Within or Adjacent to Corridors	Direct Mailing
Businesses Within or Adjacent to Corridors	Direct Mailing
Residents of Napoleon	Media Press Release
Various Churches	Media Press Release
Various Community Groups	Media Press Release

Note: A complete mailing list of those sent direct mailings are provided in *Appendix A*.

Several of the stakeholders were contacted early in the project to provide comments and guidance on early planning, data collection, preliminary conceptual solutions, and confirmation of preliminary findings. These included the following:

- Henry County Engineer
- City of Napoleon
- Napoleon Police Department
- Napoleon Fire/EMS Department
- Napoleon City Schools
- Campbell Soup Company

State and Federal Agencies

The state, federal and agency stakeholders include all agencies that may be involved with or have an interest in the project. Many of these agencies often review data and analyses collected for the project. Table II-2 below provides a listing of these stakeholders for the New Maumee River Crossing project:

Table II-2
State, Federal, and Agency Stakeholders

Stakeholder	Contacted By
Ohio Department of Transportation (ODOT)	Direct Mailing
Federal Highway Administration (FHWA)	Direct Mailing
Toledo Metropolitan Area Council of Governments (TMACOG)	Direct Mailing
NW Ohio Scenic River Coordinator	Direct Mailing
Northwest Ohio Rivers Council	Direct Mailing
Ohio Division of Wildlife	Direct Mailing
U.S. Army Corps of Engineers	Direct Mailing
U.S. Fish and Wildlife Service	Direct Mailing
Ohio Department of Natural Resources (ODNR)	Direct Mailing
Ohio Environmental Protection Agency (OEPA)	Direct Mailing
Ohio State Historic Preservation Office	Direct Mailing
Ohio Department of Agriculture	Direct Mailing
Local Officials of Ohio House of Representative	Direct Mailing
Local Officials of Ohio Senate	Direct Mailing
Local Officials of U.S. House of Representative	Direct Mailing
Local Officials of U.S. Senate	Direct Mailing

Note: A complete mailing list of those sent direct mailings are provided in *Appendix A*.

Mailing List

A database of stakeholders has been developed to facilitate the mailing of notices for public involvement meetings. This mailing list will includes property owners and businesses within or adjacent to all of the preliminary alternative corridors being evaluated for this project. Other individuals and organizations not included on the mailing list will be notified indirectly by press releases. These individuals will have an opportunity, at any time during the project, to be added to the direct mailing list for any future notices of public meetings and project updates. The current mailing list is presented in *Appendix A*.

News Releases

News releases will be prepared to inform the local and regional media about the project at important milestones, such as the public involvement meetings and the identification of the Preferred Alternative. News releases will be drafted by the project management team and reviewed by the Henry County Engineer and ODOT before being submitted to the media for release. The media will be utilized to notify the general public and others not being sent direct mailings of public involvement meetings. A media contact list supplied by ODOT will be used to electronically submit press releases to local and other NW Ohio media of upcoming public meetings and project milestones.

Advertisements

Flyers will be developed for advertisements of public meetings. These flyers will be distributed to community businesses, organizations and major employment centers for posting in visible locations. Examples of such facilities may include grocery stores, government offices, major employment facilities, and major retail centers within the community.

Public Involvement Meetings

Public involvement meetings will be held at critical points during the PDP to share information, solicit input from the public, and to answer any questions the general public may have. The public meetings will include a brief formal presentation followed by a question and answer session. The remainder of the meeting will be an "Open House" style format where the public can visit stations set up at the meeting and ask questions to experts involved with the project. Written comments can either be submitted at the meeting in a comment box or can be mailed in within a two-week period.

These public involvement meetings will involve the following elements:

- News releases and advertisements
- Mailings to stakeholders
- Meeting materials
    - Handouts
    - Sign-in sheets
    - Nametags
    - Station signs
    - Station exhibits
    - Comment sheets
    - Copies of project-related studies
        - Origin-Destination study
        - Napoleon Comprehensive Master Plan
        - Henry County Comprehensive Master Plan

Meeting Locations

The consultant will work with the local agencies to decide on where meeting will be held. Meeting locations will satisfy requirements of the Americans with Disabilities Act (ADA).

Informational Handouts

A handout will be developed for each public meeting that includes a summary of the project purpose, the impacts of each concept under consideration, a map of the conceptual solutions, a list of contact persons, and a comment sheet.

Meeting Exhibits

Meeting exhibits will at minimum include a Preliminary Engineering Exhibit. Additional exhibits that summarize traffic issues, community connectivity, purpose & need,

proposed project schedule and other aspects of the project may also be displayed, as deemed appropriate.

Public Comment Period
Comment forms will be available at the public meeting, and will be included as part of informational handouts. These comment forms will provide individuals the opportunity to record questions, concerns and preferences regarding the project. Comments can be submitted at the public meeting or they will also be accepted for a two-week period after the public meeting. All comments received will be reviewed and considered during future decision-making and all questions will be addressed.

Documentation
All public involvement activities will be documented throughout the study. . Photographs will be taken during all public involvement activities to help document the meetings.

PUBLIC INVOLVEMENT TIMELINE

Public involvement activities will be conducted throughout this study. This includes meetings and input from key and local stakeholders in early project activities followed by public involvement with the general public as the project progresses and preliminary alternatives are developed. Below is a generalized timeline of when public involvement is anticipated to occur in the project development process:

Project Kick-Off Meeting with Key and Local Stakeholders
Several meetings were held during the beginning of the project in March 2003 with officials from the City of Napoleon and Henry County, Ohio. During these meetings, the following issues were discussed:

- Proposed project study area
- Purpose and need for the project
- Previously collected data for a new river crossing
- Public opinion/perceptions of the project
- Development of stakeholders and mailing lists
- Developing preliminary corridors
- Logical termini for a new river crossing within these corridors
- Results of the Origin-Destination Study
- Police and fire/EMS issues
- Traffic issues
- School transportation issues
- Hospital issues
- Funding issues
- Overall project approach.

Information collected during these meetings were then used to help develop the Purpose and Need for the project, which is presented in Section III of this document.

Public Involvement Meeting No. 1

The first public involvement meeting for this study was held on February 24, 2004 at the American Legion Post #300 at 500 Glenwood Avenue in Napoleon, Ohio 43545. The purpose of the meeting was to present preliminary findings of the Purpose and Need for the project, the results of preliminary traffic and environmental studies, and to solicit input from the public on the five conceptual solutions that were currently being considered for the project:

- New river crossing at Corridor 1 – south of Glenwood Avenue
- New river crossing at Corridor 2 – south of Industrial Drive
- New river crossing at Corridor 3 – south of County Road 12
- Reuse of the existing railroad bridge at Corridor 4 - north of Poe Road
- No-Build Alternative

A handout was provided that included a summary of the project Purpose and Need; the conceptual solutions under consideration; a map showing the locations of each conceptual solution; a list of contact persons; and a comment sheet. The meeting was facilitated by MSG, with support by TranSystems Corporation, who was working as a subconsultant to MSG at that time.

Upon completion of the public meeting and the two-week comment period, all comments and questions were addressed and considered in continuing development of the project.

One hundred and fifty (150) people provided comments at the public meeting. Of these, individuals, 140 (93 percent) were in favor of building a second roadway bridge over Maumee River in the City of Napoleon. Only three respondents were opposed to a new bridge over the river.

During the public meeting, attendees also had an opportunity to list their preference for one of four concepts for the location of a second river crossing. Fifty-six (56) percent of the individuals who responded preferred Corridor 2, located south of Industrial Drive. Approximately 33 percent of the respondents preferred Corridor 3, located south of County Road 12. Corridor 1, south of Glenwood Avenue, was preferred by only 5.5 percent of the respondents, while the No-build alternative was supported by only 0.5 percent of those who responded to the survey.

Letters from Local Stakeholders

Between September 2005 and July 2006, the following public and private entities sent ODOT six letters of support for a second river crossing in the City of Napoleon:

- Henry County Commissioners, September 12, 2005
- Henry County Community Improvement Corporation, September 20, 2005
- Napoleon/Henry County Chamber of Commerce, October, 2005
- Cloverleaf Cold Storage, October 27, 2005
- Campbell Soup Company, October 28, 2005

- Henry County Community Improvement Corporation, July 13, 2006

In each of the six letters, project proponents stated a preference for Corridor 3, south of County Road 12, for one or more of the following reasons:

- Foster economic development
- Serve as alternative route for traffic to avoid congested areas on SR 108
- Provide a faster route to county hospital
- Provide a vital link for Campbell Soup Company
- Provide more direct access to the Henry County Hospital

The letters of support that have been received for the project will be incorporated into the environmental document for the project.

Section III

Purpose & Need

Purpose and Need
New Maumee River Crossing Project
PID #: 22984 - State Job #: 423780

INTRODUCTION

The City of Napoleon is a community that is divided into two halves by the Maumee River. Currently only one bridge at SR 108 connects the northern and southern halves of the city. The nearest existing alternative river crossings are located at County Road 17c and U.S. Route 6 , which lie 7.5 miles to the west and 4 miles to the east of the SR 108 Bridge, respectively (See Figure III-1).

Having only one river crossing at SR 108 places a significant demand on the local roads within the downtown area of Napoleon. This is especially evident on weekdays between 3 PM to 6 PM, when trucks, school buses full of students and employees entering and leaving the Campbell's Soup plant (located on the south side of the river) converge onto the SR 108 Bridge to cross the Maumee River. This convergence of traffic also results in congestion within the downtown area of Napoleon. While the recently reconstructed and wider SR 108 Bridge has alleviated some of the congestion in the downtown area, a reduction in the through traffic along the SR 108 corridor, north of the river, in the central business district, is still needed to reduce the number of trucks and other through traffic that is causing congestion within the city. A transportation solution is needed that will move a substantial amount of truck and shift-change traffic away from the SR 108 corridor, decrease the demand on the SR 108 Bridge and reduce congestion in the downtown area.

Several events have also occurred in Henry County and the City that have increased public awareness and support for an efficient, alternative means to connect the northern and southern halves of the City of Napoleon, in the event that the SR 108 Bridge would have to be closed during an emergency. In 2003 the Damascus Bridge (SR 109), located 2.5 miles east of the US 6/US 24 bridge, was closed due to the presence of an unknown, potentially hazardous substance that was spilled onto the bridge pavement by a moving vehicle. After the spill was discovered, local officials had to close the bridge for two hours as local emergency crews determined the risks associated with the cleanup and disposal of the unknown material. If a similar situation took place on the SR 108 Bridge in Napoleon, closure of the bridge would place a severe hardship and safety concern on the community. Closing the bridge completely would severely hamper the ability of emergency personnel, such as fire, police and emergency medical services, to efficiently respond to calls on the south side of the Maumee River.

With no other reasonable detour options, local officials have been forced to allow the SR 108 Bridge to remain partially open when the bridge should be closed for emergency purposes. A few years earlier, a suicide attempt took place on the SR 108 Bridge. With no alternatives, local officials maintained two lanes of traffic while emergency crews responded to the emergency situation. While no specific records exist, City and County safety officials have stated that over the years, there have been a number of other emergencies on the SR 108 Bridge that under normal circumstances would have warranted closing the bridge until the situation had been

resolved. However, since the detour length is so great, local safety officials have instead maintained traffic on the bridge by assigning additional emergency personnel to the scene to direct traffic during these situations. There is a strong belief among local officials that these situations compromise the safety of City and County emergency response personnel who must put themselves in harms way to maintain traffic. Napoleon residents and the traveling public are also forced to become a part of such events on the SR 108 Bridge, which puts their health and safety at risk as well. These situations could be avoided if an alternative means to cross the river was available nearby that could be utilized as an efficient detour in the event of an emergency.

To address these issues, in 2002 the Henry County Engineer, with the support of the City of Napoleon, the Henry County Commissioners, Henry County Community Improvement Corporation and the Napoleon/Henry County Chamber of Commerce, commissioned a study to evaluate various transportation solutions that, if implemented, would achieve the following goals:

1. Improve traffic operations on the SR 108 bridge and corridor;
2. Improve safety by decreasing crashes in the corridor and enhancing the ability of local emergency response teams in the area;
3. Improve access to future and planned development areas on both sides of the Maumee River – to link existing industrial areas and improve access and transportation operations for Campbell's Soup and other businesses; and
4. Coordinate with and ensure consistency with the local Comprehensive Plan.

LOGICAL TERMINI AND INDEPENDENT UTILITY

The original study area for this project encompassed the Maumee River Corridor from Florida, Ohio to US 6 as indicated in Figure III-1. During the development of the Purpose and Need for the project logical termini were refined to consist of SR 424 to the north, Glenwood Avenue to the west, CR 12 to the east, and CR Z or SR 110 on the south side of the river(Figure III-2).

PURPOSE AND NEED STATEMENT

The purpose of the project is to develop ways to:

- Improve traffic operations on the SR 108 Bridge and corridor;
- Improve safety by decreasing crashes throughout the corridor and enhancing the ability of local emergency crews (fire, police and EMT) to respond to calls throughout their jurisdictions;
- Improve access to future development areas located in the study area; and
- Coordination and consistency with the local comprehensive plan.

To that end, in 2002 the Henry County Engineer commissioned a study to determine what transportation-related solution(s), if implemented, would meet the needs of the community, as listed above.

Each need element is described in greater detail below.

ACCESS AND FUTURE DEVELOPMENT

Henry County is largely agricultural; however, the City of Napoleon supports the largest Campbell's Soup plant in the world, along with numerous heavy and light industrial warehouses. The Campbell's plant is comprised of two large facilities on 742 acres: the original V8 plant, acquired by Campbell's in 1948, and a second facility completed in 1957. The plant is located along SR 110, immediately south of the Maumee River, about two miles east of the existing SR 108 Bridge. The plant is located across the river from Industrial Drive, which connects to an interchange for the US 6/US 24 Napoleon bypass.

Three other companies, Silgan Manufacturing, TMT (trucking company) and Amcor PET Packaging, also are located on the south side of the Maumee River, adjacent to the Campbell's facility. Additional industrial land uses in Napoleon are located in the vicinity of Industrial Drive, on the north side of the Maumee River.

Approximately 14 years ago, Campbell's discontinued rail service to their Napoleon facility. Since that time, the distribution of materials and goods into and out of the Campbell's facility has occurred entirely by truck. More than half of the truck traffic that services the Campbell's facility must travel across the SR 108 Bridge, through the commercial heart of downtown Napoleon on the north side of the river, to reach the US 24 westbound or the Ohio Turnpike (I-80/90), a major east-west route. Trucks also utilize the SR 108 Bridge to reach the cold and dry storage facilities that are located in the Industrial Park adjacent to Industrial Drive on the north side of the river. To access this area, the trucks must travel across the river on the SR 108 Bridge and the northeast on SR 424 to Industrial Drive, as shown in Figure III-3, below.

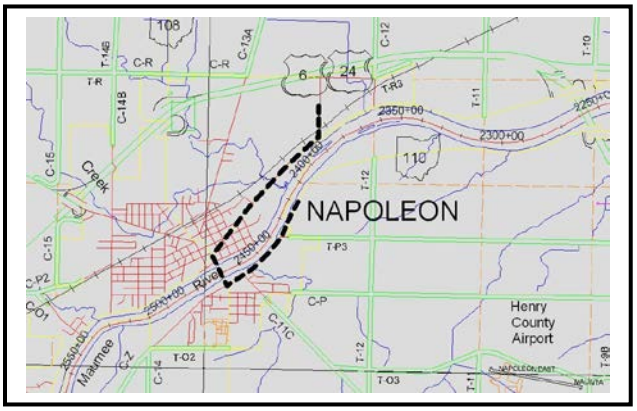


Figure III-3: the dark, dashed line represents the current preferred truck route from Campbell's plant to their cold and dry storage facilities located adjacent to Industrial Drive.

Based upon information supplied by Campbell Soup Company, the total number of trucks entering and exiting the plant varies from 275 to 400 per day. When leaving the plant, Campbell's estimates that 50 percent of these trucks (138 to 200 trucks on average) travel east on SR 110 to the US 6 interchange. From there about half of the trucks (69 to 100 trucks) travel east on US 6 to I-75, while the remaining half travel north on US 6 to US 24 east. The remaining 50 percent (138 to 200 trucks on average) of the truck traffic leaving the Campbell Soup Company travel west on SR 110 to SR 108, where they cross the Maumee River to access the cold and dry storage facilities off Industrial Drive, US 24 westbound at the SR 108 interchange,

or the Ohio Turnpike (located to the north on SR 108). It is estimated that 40-75 trucks per day access the facilities off of Industrial Drive, while the remaining trucks, which represent the majority of the trucks crossing the river at SR 108, continue north on SR 108 to either US 24 or the Ohio Turnpike.

In addition to the truck traffic, employee traffic from Campbell's, Silgan and TMT adds to the passenger trips across the existing SR 108 Bridge. The Campbell's facility operates 24 hours a day, seven days a week throughout the year. As of December, 2006, Campbell's employed 1,154 permanent and 410 temporary full-time employees. They operate in three shifts, with changes generally occurring at midnight, 7:00 am and 3:30 pm. A detailed breakdown of employee shift changes is presented below:

Midnight Shift:

- 11:00pm Start with 6:00am Departure – 100 people
- 12:00am Start with 7:00am Departure – 200 people

7am Shift:

- 6:00am Start with 2:30pm Departure – 150 people
- 7:00am Start with 3:30pm Departure – 350 people

3:30pm Shift:

- 2:30pm Start with 11:00pm Departure – 100 people
- 3:30pm Start with 12:00am Departure – 300 people

The above breakdown equates to 1,200 employees, which represents Campbell's reported average. This number does not include 164 individuals who work on site for Silgan Manufacturing, 125 employees at TMT and 35 employees at Amcor PET Packaging. As a result of the shift changes, a large spike in traffic currently occurs along SR 110, from the Campbell's plant west to the SR 108 Bridge and north into downtown Napoleon. This increased demand on the SR 108 bridge results in considerable traffic congestion in the downtown area. (For further traffic analyses refer to Section V.) Approximately 90 percent of Campbell's work force resides within 30 miles of the plant. Major population centers within this radius are located north of the Maumee River, which means that the bulk of the work force must cross the river to access the plant.

The 2008 ODOT Traffic Survey Report (TSR) indicates that on average, 700 trucks travel on the existing SR 108 Bridge each day. An estimated 470 trucks travel on SR 110 east of SR 108 and 270 trucks travel south on SR 108. Given this and the above detailed Campbell Soup truck traffic, the following projections and assumptions can be made:

Of the 700 trucks that utilize the SR 108 bridge, the 470 trucks on SR 110 east of SR 108 can be subtracted as these trucks would utilize a new river crossing (these 470 trucks would contain the 150 Campbell's trucks). This would leave an estimated 230 trucks on the SR 108 Bridge. This corresponds well with the 270 truck volume on SR 108 south of SR 110 as these trucks would primarily be through traffic on SR 108, with a portion using SR 110 to access Campbell's and

US 6 further to the east. Future 2015 and 2035 traffic volumes supplied by ODOT are discussed later in the Traffic Operations section of this document.

In May 2006, Campbell's Soup Company announced that it is planning a $41 million investment in its Napoleon facility, where it will construct a 346,000 square foot addition to its warehouse operation in order to add to its soup inventory. This new investment is in addition to $50 million the company said in 2004 that it would spend to upgrade its soup and juice operations at the plant. Officials from the Campbell's facility have indicated that the new warehousing will be used to store finished product and will not cause a decrease in the number of trucks that will have to travel between the plant and the storage facilities on the north side of the River, at Industrial Drive.

TMT has recently entered into a contract with Campbell Soup to store, repackage and ship product from the company's Napoleon operations. This new business, which will create fifty permanent, full time positions, will be established on land that is located southwest of the US 24/Industrial Drive interchange. According to TMT officials, as many as fifty additional trucks per day will be required to cross the Maumee River to transport product from the Campbell Soup plant to the new TMT facility.

In summary, there is a need to improve the access from Campbell's Soup Plant and TMT to their cold and dry storage facilities located adjacent to Industrial Drive on the north side of the river.

COMPREHENSIVE MASTER PLAN

On April 7, 2003, the City of Napoleon approved a comprehensive Master Plan to help guide the community into the future. Henry County approved the plan in June/July 2003. The Master Plan includes future land use plans showing the development of additional industrial/commercial areas in the vicinity of the US 6/US 24 and the Industrial Drive interchange and also in areas east and south of the existing Campbell's plant. The Master Plan also identifies a new river crossing at the southern terminus of Industrial Drive. (*Note: While a specific location is shown in the Master Plan, the location of the proposed crossing has not been officially determined*.) Listed below are some of the economic development opportunities, concept areas and improvements the City of Napoleon has specified that will have continued effects on truck traffic and the SR 108 bridge. (See Economic Development Plan, Thoroughfare Plan, and Future Land Use/Concept Area Plan at the end of Section III).

Due to increased traffic congestion on Scott Street, City officials and residents have proposed a connector street that would link Scott Street to Oakwood Avenue. That proposed alignment would create a connection from Industrial Drive to Scott Street via Interchange Drive and the new connector.

The North Pointe Retail, Technology and Industrial Campus was recently annexed and zoned in the Northeast part of Napoleon adjacent to the US 6/US 24 interchange with Industrial Drive. This 400-acre site is expected to become the location of several new technology-based firms and retailers. The city of Napoleon is currently in the process of extending water and sewer utilities and lengthening Industrial Drive north from the US 6/US 24 interchange to allow the site to

properly develop. According to the Napoleon Master Plan, development will begin on two parcels (30 acres) in the next several months.

The recently opened Napoleon Commerce Park (Phase One) currently is experiencing its first new construction. A 40,000 square foot building located off Industrial Drive is the first of several buildings that are being constructed to create new investment and jobs in Napoleon and Henry County. The Commerce Park plan calls for 14 industrial buildings, 10 commercial buildings and 32 housing units for low to moderate-income families located just off Industrial Drive.

Phase Two of the Napoleon Commerce Park is the brownfield redevelopment of the former Holgrefe auto property, consisting of 65 acres. The city of Napoleon intends to utilize State of Ohio Issue One monies to potentially raise more than $70 million in new tax revenue along with the generation of thousands of new jobs, according to the Napoleon Master Plan.

The City of Napoleon is already facing traffic issues with the number of trucks traveling in the downtown area, the congestion that occurs at the SR 108 bridge and the congestion of SR 108 north (Scott Street) because of truck traffic and retail development, anchored by a new Wal-Mart Super Center. Further development along the Industrial Drive corridor and areas south and east of the existing Campbell's plant will increase traffic in these areas. Because of Campbell's size and reputation, companies want to locate in and around Napoleon to become suppliers and warehousers of Campbell's products. Therefore, if no new transportation link is provided, trucks from these new businesses will continue to use the SR 108 Bridge. This increase in demand to cross the river will exacerbate safety and traffic congestion problems along the SR 108 corridor north.

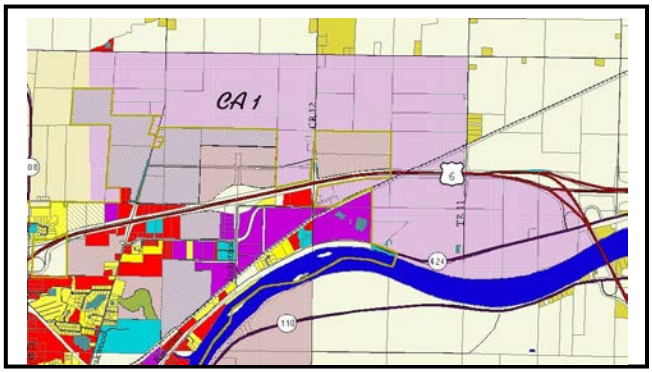
Listed below are two Concept Areas from the Napoleon Master Plan. Concept Area 1 is located in the northeast part of Napoleon adjacent to the Industrial Drive interchange with US 6/US 24. The Concept Area is bounded by US 6 on the east, the Maumee River and existing developments on the south, Township Road S to the north, and areas just west of County Road 13A. With the extension of Industrial Drive and two newer roads north of US 6/US 24, this concept area is experiencing current industrial and commercial growth in the North Point Campus. Concept Area 2 is located south of the Maumee River adjacent to the Campbell's Soup Plant, and is bounded by County Road 12 to the east, County Road P to the south, the Maumee River to the north and northwest, and the existing City limits of Napoleon to the west.

CONCEPT AREA (CA) 1: INDUSTRIAL AND COMMERCIAL GROWTH AREA – 1,515 ACRES

Preferred Uses: *I-1 and I-2 (enclosed and open industrial uses). C-4 and C-5 (planned commercial and highway commercial uses), R-R (rural residential), and other planned development concepts. Special studies may be required to substantiate approval of other uses, especially higher density residential uses. Locations near and contiguous to the North Pointe Retail, Technology, and Industrial Campus should be a continuation of land uses compatible with existing uses at this site. Land uses such as higher density residential and other residential uses should be buffered to ensure overall quality of life and safety for residents (Napoleon Master Plan).*

Source: Napoleon Master Plan

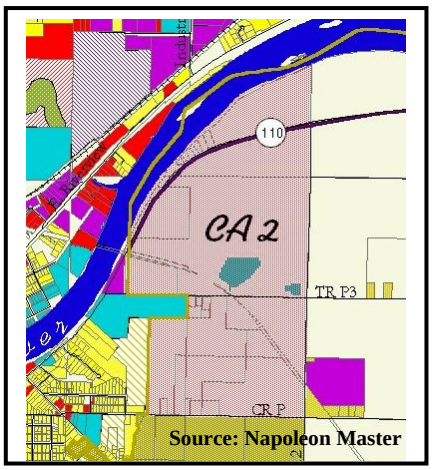
Utility Grade: *B. Water available upon extension (with limitations), pump station required for sanitary sewer. Planned water and sewer improvements to accommodate the North Pointe Campus could make utility extensions to this concept area more feasible in the future (Napoleon Master Plan).*



CONCEPT AREA (CA) 2: GROWTH AREA (INDUSTRIAL AND COMMERCIAL USES) – 558 ACRES

Preferred Uses: *North of Township Road P3, I-1 (enclosed industrial uses) and planned development concepts. South of Road P-3, planned residential developments with buffering from industrial uses should occur. Special studies may be required to substantiate approval of other uses (Napoleon Master Plan).*

Utility Grade: *B. Water available upon extension (with limitations), pump station required for larger developments needing sanitary sewer extension (Napoleon Master Plan).*



With Campbell's on-going expansion, this area is poised for development of uses associated with the Campbell's and Silgan Plants. Both of these Concept Areas are the only industrial and mixed commercial use areas for Napoleon in the future. Because of their proximity to US 6/US 24 and the Industrial Drive interchange, these areas will continue to generate considerable truck traffic, which will place increased demands on the local roadway network. A more efficient transportation corridor is needed between these two Concept Areas to increase the viability and marketability of the undeveloped land and create a better transportation network to complement the budding industrial market in Napoleon.

INCREASE COMMUNITY CONNECTIVITY

Henry County occupies roughly 415 square miles and is home to 29,210 people, according to the 2000 Census. The City of Napoleon has a population of 9,318. The vast majority of medical, commercial, and financial services exist on the north side of the river (see Table III-1 below). Consequently, residents who live on the south side of the river must cross the SR 108 Bridge to access these services.

Table III-1
Number of Facilities/Services/Business Establishments on North and South Sides of The Maumee River

Type of Service	Number of Facilities/Services/Business Establishments[1]	
	North of River	South of River
Police/Sheriff	2	0
Fire	1	0
Medical/Chiropractic/Counseling	16	1
Dental	10	0
Hospital	1	0
Nursing Home/Senior Centers	2	1
Schools	9	1
Parks	1	1
Churches	8	2
Restaurants	10	0
Retail	3	0
Automotive	10	0
Grocery	2	0
Pharmacy	1	1
Insurance	8	0
Banking/Financial	13	1

[1] Based on search of www.maps.google.com

There are approximately 5,600 licensed drivers in the City of Napoleon and approximately 14,000 within Henry County. On average, over 13,000 vehicles cross the existing SR 108 Bridge per day (2008 traffic data). The existing SR 108 Bridge is a vital link to the City and the surrounding area (See Figure III-2).

The Napoleon Police Department, Fire Department and the Henry County Hospital are located on the north side of the Maumee River and provide services to both sides of the community. The Henry County Sheriff and Napoleon Police and Fire Chiefs reported that response times would increase by 20 minutes by having to use the US 6/US 24 bridge if the SR 108 Bridge is closed to traffic. During periodic congestion or collisions in the vicinity of the SR 108 Bridge, services to the south side of the river are slowed. Currently, the bridge is kept open during all incidents and accidents to allow continuous movement north and south within the City of Napoleon and Henry County, which places increased risk on emergency crews who must maintain traffic through the area during this time.

The public library and the majority of the public schools in Napoleon, including the middle school and high school, are located on the north side of the river and serve students from both sides of the existing bridge. One elementary school is located on the south side. The bus routes for Napoleon City Schools use the SR 108 Bridge for all trips to the north and south. Its closure or delays affect the bus traffic because detour routes are lengthy.

In the table below, a calculation of the cost to personal and commercial users are determined for short term closures of the existing SR 108 Bridge due to accidents, events, or acts of terrorism.

The calculation was performed based upon current traffic information and the methodology utilized in S*aving Time, Saving Money: The Economics of Unclogging America's Worst Bottlenecks,* from the American Highway Users Alliance, 1999.

In 2008, 13,050 vehicles per day utilized the existing SR 108 Bridge, consisting of 700 commercial trucks and 12,350 passenger cars. The shortest detour route available is approximately 8 miles (round trip), which can be traveled in approximately 12 minutes. The average total operating cost for passenger cars is estimated to be $0.522 per mile (US DOT Bureau of Transportation Statistics, 2006), with $8.97 per hour value for time (mean per capita hourly wage, based on mean per capita income for residents of Henry County in 2000). The average operating cost for heavy commercial vehicles is assumed to be $53.18 per hour, based on data published by the Minnesota Department of Labor and Industry in December, 2007. Employer costs for commercial truck drivers were assumed to be $25.12 per person, per hour. This estimate was obtained by adding the national mean hourly wage of heavy and tractor trailer operators ($17.46) reported in May, 2006 to the mean employer cost for employee compensation in the private sector ($7.66 per hour) for 3rd quarter of 2007, as reported but the US Department of Labor, Bureau of Labor Statistics. The resulting calculations are shown in Table III-2 below. It should be noted that the calculations assumed only one user per vehicle traveling the detour/closure route, so the actual costs may be somewhat higher depending upon vehicle occupancy.

Table III-2
User Costs due to Closure or Detour of SR 108 Bridge[1]

Duration	Commercial Operating Costs	Commercial Salary Costs	Total
1 Hour	$310.22	$146.53	$456.75
1 Day	$7,445.20	$3,516.80	$10,962.00
	Passenger Operating Costs	Passenger Salary Costs	Total
1 Hour	$2,148.90	$923.16	$3,072.06
1 Day	$51,573.60	$22,155.90	$73,729.50

[1] See preceding text for the data sources and assumptions that were used to calculate costs.

Using the above information, total user costs for passenger and commercial vehicles during a 1 hour detour/closure of the SR 108 Bridge will be approximately $3,529 and 1-day detour/closure would be $84,691.

Based upon the information provided above, a transportation solution is needed to improve connectivity between the northern and southern halves of the city, including convenience of access to public facilities and services, police, and emergency services. Such a solution is also

needed to decrease response times for emergency services to the south side of the river at all times and especially during times of increased congestion. School bus routes will have more options to alleviate delays and reduce costs. Also, an efficient transportation solution is needed so that City and County officials can shut down the existing SR 108 Bridge to safely deal with accidents, special events, or acts of terrorism. This will enhance public safety and reduce user costs, estimated at nearly $3,529 per hour, when the SR 108 Bridge is closed.

TRAFFIC OPERATIONS

Traffic volumes during the 3 to 6 PM weekday period in Napoleon are a continuing problem due to the large demand that is placed on the SR 108 Bridge by a combination of trucks, Campbell's employees leaving and entering the facility, school busses transporting children and the traveling public. The release times for the Napoleon School District and Campbell's shift change overlap during the first hour of this time period and create safety and congestion issues. The congestion is localized at the SR 108 Bridge northbound, SR 108 through the downtown, especially at the Scott/Clinton/Woodlawn 5-approach intersection, and SR 108 north (Scott Street) through the retail corridor of Napoleon. Traffic traveling on SR 108 into the downtown area and through the 5-approach intersection also becomes congested as trucks and buses have to make left and right turns. A transportation solution is necessary to reduce the demand on the SR 108 Bridge. Congestion problems could be relieved by removing a large portion of the truck traffic and/or relieving the influence of shift changes on the peak traffic period.

In reviewing the 1999 and 2008 ODOT Traffic Survey Reports (TSR), it was determined that traffic entering Scott Street (SR 108) from Clinton Street has increased approximately 15 percent during this time period (Table III-3).

Table III-3
Truck and Passenger Car Traffic Data
From ODOT Traffic Survey Reports (TSR)

ODOT TSR Data Year	ADT for Passenger & "A" Commercial	ADT for "B & C" Commercial	Total ADT	Percent Change
1999	9,060	640	9,700	Nearly 15% increase in traffic from 1999 to 2008
2008	10,300	840	11,140	

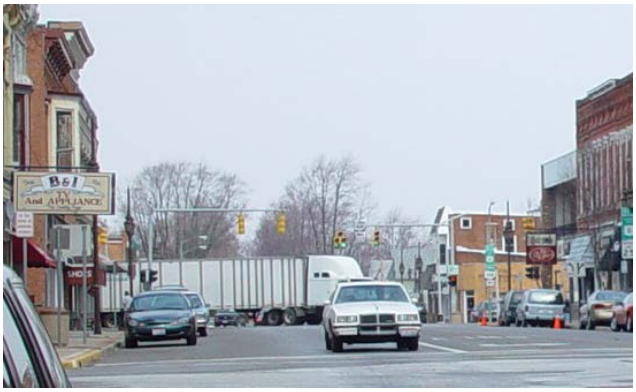
Likely causes for the increase in traffic can be attributed to three major factors as listed below:

- The closure of the Oakwood Avenue Intersection at US 6/US 24 in 2000. With the increased industrial development adjacent to Industrial Drive, the Oakwood intersection was closed and moved ¼ - mile east to Industrial Drive.
- Wal-Mart relocating its Super Center from Oakwood Avenue to Scott Street (SR 108). With the closure of the Oakwood Intersection, Wal-Mart abandoned its store adjacent to the intersection and moved west to the Scott Street retail corridor. This relocation changed related travel patterns within Napoleon.

- Campbell's Soup Company has continued to grow and locate its related industries within Napoleon. Therefore, truck traffic has increased throughout Napoleon, especially in the downtown SR 108 corridor.

All of these changes have caused an increase in traffic throughout the SR 108 corridor. Because of this increased traffic, Henry County and the City of Napoleon are looking for a transportation solution that will divert the majority of the truck traffic away from SR 108. The Oakwood Avenue and Perry Street intersection has been an ongoing problem through the downtown.

At the intersection of SR 108 and Clinton Street traffic must make a left turn when traveling northbound or right turns when traveling south/eastbound. Currently, the traffic signal allows both traffic movements at the same time even though the path of two trucks would overlap. The picture to the right shows a truck turning right onto Perry Street (SR 108) and swinging over the centerline of the road to negotiate the turn movement.



The City of Napoleon and the Napoleon City Schools identified the main areas where school children reside relative to the existing schools they attend on the north side of the river. The majority of the schools are located to the southwest of downtown, to the west and south of SR 108 and the 5-approach intersection involving Scott Street/Clinton Street/Woodlawn Avenue. Four major concentrations of school age children (136 students currently) are located just across SR 108 to the east and north along with Woodlawn Avenue. Whether those children take the bus, a car, walk, or bike, the pathway takes them into the downtown and across SR 108 and through the 5-approach intersection. Morning and evening school traffic and after school activities (occurring during peak traffic periods), combined with an increase in traffic, particularly truck traffic, enhances the possibility of accidents involving school age children.

ODOT supplied traffic projections for the state and federal routes that are impacted by use of the existing SR 108 Bridge over the Maumee River as displayed in Table III-4 below for the years 2015 and 2035.

Table III-4
New Maumee River Crossing
2015 & 2035 Traffic Projections (supplied by ODOT)

Location	2015 ADT	2035 ADT	2035 DHV	Directional Distribution	Percent Trucks
US 6 (log 15.50) near TR-11	18830	25100	2510	55%	45%
US 6 (log 16.50) at Bridge over Maumee River	8880	11750	1175	55%	27%
SR 108 (log 15.00) near TR-2	6700	7150	715	55%	7%
SR 108 (log 15.65) at Bridge Over Maumee River	15200	15380	1540	55%	7%
SR 108 (log 16.00) near N. Perry St.	9680	10690	1070	55%	7%
SR 110 (log 0.40) near Appian Ave.	8680	9950	995	55%	7%
SR 110 (log 0.65) near Maumee Ln.	4550	5030	505	55%	10%
SR 110 (log 3.00) east of TR-12	2230	2680	270	55%	40%
SR 424 (log 9.20) near Haley Ave.	8250	10650	1065	55%	2%
SR 424 (log 10.00) near Wayne St.	4280	4730	475	55%	8%
SR 424 (log 13.00) east of TR-11	2130	2430	245	55%	11%

An urban arterial analysis for the SR 108 Bridge for the section from the SR 108 & SR 110 intersection northward to Washington Street in Downtown Napoleon was conducted utilizing the *HCS+ Arterials Version 5.3* software to analyze the predicted Level of Service (LOS) for the SR 108 Bridge. Level of Service (LOS) is a qualitative measure of traffic graded from LOS A to LOS F, with LOS A representing free flow and LOS F representing extremely heavy congestion. The analysis revealed the following preliminary results:

- The current SR 108 Bridge with existing ODOT traffic volumes (2008) is operating at a LOS D. This is below the minimum LOS C desired for an Urban Principal Arterial.
- In 2015 under a "No Build" condition, the SR 108 Bridge is predicted to operate at a LOS E.
- In design year 2035 under a "No Build" condition, the SR 108 Bridge is predicted to operate at a LOS E.

These results of the arterial analysis indicate that the existing SR 108 Bridge currently does not meet the minimum design guidelines for an urban principal arterial as outlined in the ODOT *L&D Manual*. This indicates a need for additional capacity in order to accommodate the peak hour of traffic that utilizes the river crossing.

Safety

The Ohio Department of Transportation (ODOT) provided CAM-Tool crash data for the time period of 10/29/2005 through 10/29/2008. The SR 108 bridge replacement was fully open on 10/29/05 thus the reason for starting the three year crash period on that date, and at the time of

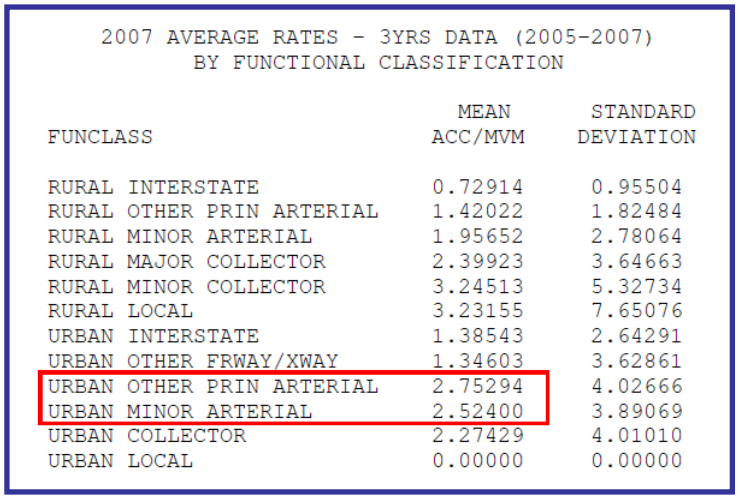
the study revisions, the most recent 2008 data available was only to the end of October. The findings of the crash data review is provided in the Table III-5.

Table III-5
Crash Data Summary – SR 108 Bridge Crossing
10/29/05 (after bridge replacement) through 10/29/2008 (most recent data available)

Primary Intersections			**Key Roadway Sections**		
SR 424 (Riverview Ave.) & SR 108 (Perry St.)			SR 108 from Clinton St. to S. Corp. Limit		
Year	Crashes	3-Year Rate	Year	Crashes	3-Year Rate
10/29/05 – 12/31/06	5	N/A	10/29/05 – 12/31/06	27	N/A
2007	4	N/A	2007	22	N/A
2008 (through 10/29)	3	N/A	2008 (through 10/29)	13	N/A
Total	**12**	**0.67 MEV**	**Total**	**62**	**5.49 MVM**
SR 110 (Maumee Ave.) & SR 108 (Perry St.)			SR 424 from Scott St. to CR-12		
Year	Crashes	3-Year Rate	Year	Crashes	3-Year Rate
10/29/05 – 12/31/06	6	N/A	10/29/05 – 12/31/06	6	N/A
2007	1	N/A	2007	8	N/A
2008 (through 10/29)	4	N/A	2008 (through 10/29)	4	N/A
Total	**11**	**0.71 MEV**	**Total**	**18**	**2.03 MVM**
MEV indicates average number of accidents per million vehicles entering the intersection. **MVM** indicates average number of accidents per million vehicle miles traveled through the section of roadway.			SR 110 from SR 108 (Perry St.) to TR-P3		
			Year	Crashes	3-Year Rate
			10/29/05 – 12/31/06	8	N/A
			2007	3	N/A
			2008 (through 10/29)	4	N/A
			Total	**15**	**1.96 MVM**

The rebuilt SR 108 Bridge was open on October 29, 2005. In order to obtain the three most recent years of data, crash data was obtained October 29, 2005 to October 29, 2008. The bridge improvements seem to correlate with a decrease in the number of crashes over the three year period in most sections and locations as shown in the table above. The three year intersection crash totals of 12 and 11 at the SR 108/SR 424 and SR 108 and SR 110 intersections, respectively are both below the three-year threshold of 14 crashes. The 3-year crash rates at the two intersections are also minimal, at 0.67 MEV and 0.71 MEV.

When evaluating roadway sections, a 3-year crash total of 20 crashes is considered to be high. Of the three roadway sections evaluated, the only section of roadway that exceeds this threshold is the segment of SR 108 from the south corporation limit north to Clinton Street. Here, 62 crashes occurred over the 1.13 mile section of SR 108 over the three year period, with a crash rate of 5.49 MVM. This rate is nearly double that of the State average



2007 AVERAGE RATES - 3YRS DATA (2005-2007)
BY FUNCTIONAL CLASSIFICATION

FUNCLASS	MEAN ACC/MVM	STANDARD DEVIATION
RURAL INTERSTATE	0.72914	0.95504
RURAL OTHER PRIN ARTERIAL	1.42022	1.82484
RURAL MINOR ARTERIAL	1.95652	2.78064
RURAL MAJOR COLLECTOR	2.39923	3.64663
RURAL MINOR COLLECTOR	3.24513	5.32734
RURAL LOCAL	3.23155	7.65076
URBAN INTERSTATE	1.38543	2.64291
URBAN OTHER FRWAY/XWAY	1.34603	3.62861
URBAN OTHER PRIN ARTERIAL	2.75294	4.02666
URBAN MINOR ARTERIAL	2.52400	3.89069
URBAN COLLECTOR	2.27429	4.01010
URBAN LOCAL	0.00000	0.00000

for an urban principal arterial. This indicates that the funneling of traffic through the downtown and across the single river crossing at SR 108 results in crash frequency and rates above state thresholds and rate averages. The SR 108 section reviewed for crashes is where the highest peak periods of traffic occur, when traffic from both the Campbell's Soup Plant and school buses converge at the same time in the afternoon. This suggests that even with the recent SR 108 Bridge replacement and intersection improvements; there is still a need to reduce the traffic funneling effect through the downtown area and across the SR 108 Bridge

It is also important to note that the upcoming improvements to US 24, from Napoleon eastbound to Waterville, Ohio, which started construction in the second quarter of 2008, will result in the elimination of the existing at grade intersection between US 24 and Township Road 10, just east of the US 6/US 24 interchange. Currently, trucks traveling along US 24 from the east exit US 24 at Township Road 10. They then travel west on SR 424 to US 6, where they then head south to cross the Maumee River. They then exit on SR 110 and travel west to the Campbell Soup facility. With the elimination of the at grade intersection at Township Road 10, the trucks that must travel to the Campbell's Soup plant from westbound US 24 will have to exit at SR 108 and travel through the downtown area to cross the Maumee River. This will cause an increase in truck traffic along the SR 108 corridor thereby increasing congestion in the downtown area of the city.

A transportation solution is needed to reduce downtown traffic conflicts and congestion and reduce traffic volumes through high accident segments of SR 108, as well as additional downtown streets, and the existing bridge crossing. It must also provide for trucks crossing the river from westbound US 24, after the closure of the at grade intersection of US 24 and Township Road 10.

CONCLUSION

Based upon the identified needs described above, a transportation solution is needed in the vicinity of Napoleon, Ohio to:

1. Provide a direct link between existing industrial development areas on both sides of the Maumee River;
2. Improve access to future development areas, consistent with the Comprehensive Plan
3. Improve connectivity within the community
4. Reduce the traffic demands on downtown roadways, decrease congestion and enhance public safety

The Purpose & Need Statement for the project establishes the need for the transportation solution in the study area. For this project, the transportation solution for the study area should:

1. Improve traffic operations on the SR 108 bridge and corridor;
2. Improve safety by decreasing crashes in the corridor and enhancing the ability of local emergency response teams in the area;

3. Improve access to future and planned development areas on both sides of the Maumee River – to link existing industrial areas and improve access and transportation operations for Campbell's Soup and other businesses; and
4. Coordinate with and ensure consistency with the local Comprehensive Plan.

Purpose & Need
Referenced Figures

- Figure III-1: Original Study Area Boundaries
- Figure III-2: Revised Study Area Boundaries
- Draft Comprehensive Plan - Existing Land Use
- Draft Comprehensive Plan - Thoroughfare Plan
- Draft Comprehensive Plan - Existing and Future Land Use with Concept Areas
- Draft Comprehensive Plan - Economic Development Plan

Section IV

Conceptual Alternatives

Conceptual Alternatives
New Maumee River Crossing Project
PID #: 22984 - State Job #: 423780

CONCEPTUAL ALTERNATIVE SOLUTIONS

In following the guidance of the ODOT's Project Development Process, the Project Management Team has developed several Conceptual Alternative Solutions (concepts) that have the potential to address the identified transportation needs of the community. These initial concepts were evaluated against the project Purpose and Need to determine whether the concept had enough merit to be considered for further evaluation.

Based on the elements of the project Purpose and Need, in order for a concept to be carried through for more detailed evaluation, it should:

- Improve traffic operations on the SR 108 bridge and corridor;
- Improve safety by decreasing crashes in the corridor and enhancing the ability of local emergency response teams in the area;
- Improve access to future and planned development areas on both sides of the Maumee River – to link existing industrial areas and improve access and transportation operations for Campbell's Soup and other businesses; and,
- Coordinate with and ensure consistency with the local Comprehensive Plan.

After evaluating each concept against the above criteria, they were divided into two following categories:

- Concepts that are recommended for further evaluation; and,
- Concepts that were considered and then dismissed.

These two categories of concepts are briefly discussed in the next two sections.

CONCEPTUAL ALTERNATIVE SOLUTIONS RECOMMENDED FOR FURTHER INVESTIGATION

The following Conceptual Alternative Solutions were determined to merit further investigation as potential feasible alternatives, based on their abilities to meet the elements of the Purpose and Need:

1. **Transportation Corridor 1** – West of SR 108 Bridge; from Glenwood Avenue (north side of river) to CR-Z (south side of river) (Figure IV-1). This concept involves a 1,000-foot wide corridor that would explore the feasibility of a southerly extension of Glenwood Avenue across the Maumee River to a terminus on the southern side of the

river. This concept was recommended for further study as it could possibly address several of the Purpose and Need criteria.

2. **Transportation Corridor 2** – East of SR 108 Bridge; from Industrial Drive (north side of river) to SR 110 and CR-12 (south side of river) (Figure IV-1). This concept involves a 1,000-foot wide corridor that would explore the feasibility of a southerly extension of Industrial Drive across the Maumee River to a terminus on the southern side of the river. This concept was recommended for further study as it could possibly address several of the Purpose and Need criteria.

3. **Transportation Corridor 3** – East of SR 108 Bridge; from CR-12 (north side of river) to SR 110 (south side of river (Figure IV-1). This concept involves a 1,000-foot wide corridor that would explore the feasibility of a southerly extension of CR-12 across the Maumee River to a terminus on the southern side of the river. This concept was recommended for further study as it could possibly address several of the Purpose and Need criteria.

4. **Re-use of Abandoned Railroad Bridge** between SR 424 (north side of river) and SR 110 (south side of river) (Figure IV-1). This concept involves a possible adaptive re-use of the existing abandoned railroad bridge structure in place that spans the Maumee River. This concept was recommended for further study as it could possibly address several of the Purpose and Need criteria.

5. **No Build** – This concept would involve no improvements other than routine maintenance of the existing Maumee River crossing in Napoleon and the adjacent roadway network. This option fails to meet any of the Purpose and Need criteria, but must be carried forward as a base comparison of the build concepts as to what would occur should no improvements occur.

These concepts are explored in greater detail in the section entitled: Ability to Meet the Purpose and Need and Possible Impacts.

CONCEPTS THAT WERE CONSIDERED AND DISMISSED

The following Conceptual Alternative Solutions were considered but then dropped from further consideration based on their inabilities to meet the elements of the Purpose and Need:

- **Rail (Freight)** – Development and use of rail to transport goods between the two industrial areas in the City of Napoleon was considered but then dismissed from further consideration, as it would satisfy only one of the elements of the project Purpose and Need. The only benefit would be a reduction of trucks from the Campbell Soup facility to the storage facilities on the north side of the river. However, this conceptual alternative solution would not reduce any other traffic such as employee commuter trips and trips associated with the schools. This option would require the construction of new rail lines to connect facilities on the south side of the river with those on the north side, and require either re-habilitating the abandoned rail bridge or constructing a new river crossing. Addition of a rail line would not enhance emergency response times in the event that the SR 108 Bridge was to be closed during an emergency, nor would it

increase community connectivity. As a result, if this conceptual alternative were implemented, other measures would have to be considered to address these issues.

- **Transit (Bus or Light Rail) –** The introduction of bus or light rail to the community was also considered, but dismissed as it would minimally satisfy only one element of the Purpose and Need. This alternative would also require major investment in either buses or light rail equipment and tracks. These services may reduce a minimal amount of local trips to the major employer on the south side of the river (Campbell Soup), but many of the employees come from areas outside of Napoleon who would still need to drive personal vehicles to commute to and from work. This option would also entail an annual cost to operate buses or trains, staff to run and operate such services, all of which would likely not be supported solely by fares as ridership would be limited based on the small population of the City.

- **Ferry Service –** This concept would minimally meet possibly one or two of the elements of the Purpose and Need, and was therefore dismissed for further consideration. This concept would require the construction of roads to a determined crossing location along with storage for vehicles waiting on the ferry service. This service may eliminate some traffic on the SR 108 Bridge and provide a connection between industrial locations, however potential usage would be limited as fees would be associated with the crossing, which would encourage vehicles to keep using the free river crossing that also entails not waiting on a ferry. This service would also be seasonal as it would likely not be able to operate in winter months when the river freezes and also when the river levels drop low enough during dry spells that may not allow transport. Annual maintenance costs, purchases of ferry boats, and staffing would create on-going costs that would not likely be supported solely on user fees.

- **Replicating EMS, Fire and Police Services on Both Sides of Maumee River –** Replicating EMS capabilities on both sides of the Maumee River was dismissed from further consideration as it would only meet one of the Purpose and Need criteria that involved improving local emergency response times. In addition, this concept would require that the City take on additional annual costs associated with additional vehicles, a new facility, and additional staff. The EMS would still need to travel across the river to access the one hospital in the City and as such would remain limited by a single river crossing should it become blocked or closed. Construction of a second hospital, on the south side of the river, would not be cost effective, as the existing population would not support two hospital facilities.

- **Access Management –** This concept was dismissed as it would only address only one element of the Purpose and Need, which would be to increase safety on the SR 108 corridor. Access management would also be difficult to implement, as many of the drives located on the SR 108 corridor would have to remain, as there is no alternative access location to parcels on the corridor due to no adjacent public roadway access to parcels and that state law requires at least one access to a public roadway per parcel. This option would therefore have only limited locations where drives could be reduced and would not reduce traffic on the corridor.

ABILITY TO MEET THE PURPOSE AND NEED AND POSSIBLE IMPACTS

Based upon the identified needs of the community, Henry County considered three potential 1,000-foot wide corridors on new alignment and the re-use of an existing railroad bridge for construction of a new roadway bridge crossing the Maumee River. These four alternatives are shown on *Figure 4: Conceptual Project Alternative Corridors* at the end of Section VIII and are identified as:

- Corridor 1 – West of SR 108 Bridge, from Glenwood Avenue to CR Z
- Corridor 2 – East of SR 108, From Industrial Drive to SR 110 and CR 12
- Corridor 3 – East of SR 108, from CR 12 to SR 110
- Re-use of Abandoned Railroad Bridge between SR 424 and SR 110

Each of the possible bridge corridors (including the re-use location), in addition to the No-build Alternative, were evaluated based on the following criteria:

- Their ability to provide a direct link between existing industrial development areas on both sides of the Maumee River;
- Connectivity to existing highway system;
- Their ability to improve access to future development areas consistent with the comprehensive plan;
- Their ability to increase community connectivity;
    - Possible improvements to Napoleon and Henry County emergency services;
    - Access to Henry County Hospital;
    - Access to Napoleon city schools;
- Their ability to reduce downtown traffic congestion and enhance public safety.

The three corridors, re-use of the abandoned railroad bridge, and the no-build alternative were also evaluated for potential impacts to the following resources:

- Parkland
- Farmland
- Cultural resources
- Endangered species
- Ecological resources, including wetlands
- FEMA 100-year flood plains

CORRIDOR 1 – WEST OF SR 108 SOUTH OF GLENWOOD AVENUE

ABILITY TO MEET PURPOSE AND NEED

This 1,000-foot corridor is a southerly extension of Glenwood Avenue, which currently terminates at SR 424 on the north side of the Maumee River (Figure IV-1). County Road Z, which parallels the south bank of the Maumee River, would be the likely connecting point on the south side of the river. A new river crossing at this location would connect a mostly residential area on the west side of the city to an agricultural and residential area southwest of the city. An evaluation of this corridor's ability to meet the Purpose and Need for this project is provided below.

Provide a Link between Existing Industrial Development Areas

The majority of industrial development in the City of Napoleon is located on the east side of the city, north and south of the Maumee River. Locating a new river crossing at the Glenwood Avenue would place the new bridge on the opposite side of the city from the industrial development areas. As such this location would not improve the transportation linkage between these areas.

Connectivity to Major Highway System

A river crossing at Glenwood Avenue would not provide an efficient link to the existing major highway systems (namely US 6 and US 24) and would not provide any considerable improvements over the existing conditions. Traffic using a river crossing at this location to access US6 and US 24 would be required to travel along County Road Z and Glenwood Avenue, which pass through residential areas and contain twenty-four intersections with local side streets. Traffic would then have to travel west on Woodlawn Avenue before accessing the interchange with US 6 an US 24.

Improve Access to Future Development Areas Consistent with the Comprehensive Plan

The majority of land that has been identified for future industrial development in the City of Napoleon is located on the east side of the city. Locating a river crossing south of Glenwood Avenue, on the opposite side of the city, would do little to improve access to these identified future development areas.

Increase Community Connectivity

A river crossing located in Corridor 1 would provide an efficient connection to the south side of the river for emergency services and the Napoleon City Schools. However, the location of this corridor on the far west side of the City enhances community connectivity for that portion of the City's population which resides west of SR 108. Access to the Henry County Hospital would not improve with the addition of this crossing since the bridge would be located on the opposite side of the city. As a result, the overall improvement in community connectivity would be moderate.

Reduce Downtown Traffic Congestion and Enhance Public Safety

A bridge crossing in Corridor 1 has the potential to draw some truck traffic from the downtown area, particularly trucks coming from the west on US 6/US 24 to the industrial area on the south side of the river. However, this shift in traffic would also shift traffic congestion to Glenwood Avenue and County Road Z. Public safety might improve somewhat along the SR 108 Corridor, but it would deteriorate along the new corridor. This is due to the fact that trucks that would choose to use a river crossing in Corridor 1 would have to travel past the High School/Junior High School campus and then through the residential areas along Glenwood Avenue and County Road Z to reach SR 110 on the south side of the river. Conflicts between these trucks, school buses, students who drive to and from school, people who utilize the parks located on both sides of the river and residential traffic would increase along this corridor.

Finally, while trucks that need to head west on US 6/US 24 might choose to use Corridor 1 to avoid negotiating the turns at SR 108 and Woodlawn and Oakwood Avenues, it is likely that this alternative would attract only a minor amount of shift change traffic from the Campbell's facility located on the east side of Napoleon. As a result, Corridor 1 is expected to have a minimal impact on reducing downtown shift change traffic associated with the Campbell's plant.

POSSIBLE IMPACTS

A summary of potential impacts that may occur as a result of Corridor 1 are presented below. Within each issue is a description of potential impacts based on the proposed corridor.

Parkland

This corridor will impact park property on the north side of the Maumee River and potentially impact park property on the south side of the river. Impacts to these areas would require Section 4(f) coordination.

Farmland

This corridor will impact farmland on the south side of the Maumee River.

Cultural Resources

The areas within the corridor, adjacent to the Maumee River, may contain previously unidentified archaeological sites. Additionally, this corridor contains a potentially historically noteworthy property on the south bank of the Maumee River. Proposed alignments may potentially impact these areas, requiring Section 106 coordination during the project development process.

Endangered Species

All corridors would require surveys for potential roosting or nesting sites for the Indiana bat and endangered mollusk species in the Maumee River. Additionally, bald eagles are known to nest along the Maumee River corridor, in the vicinity of Florida, Ohio.

Ecological Resources, Including Wetlands
Alignments proposed within each corridor would require in-stream work that would require a Section 404 permit from the US Army Corps of Engineers, a Section 401 Water Quality Certification from Ohio EPA, a Section 10 Permit from the U. S. Army Corps of Engineers a Section 9 Bridge Permit from the U.S. Coast Guard and Scenic River coordination with ODNR.

FEMA 100-year Flood Plains
Due to the nature of the project, it is a certainty that the project will encroach into the limits of the 100-year flood plain regardless of location.

CORRIDOR 2 – EAST OF SR 108 BRIDGE, SOUTH OF INDUSTRIAL DRIVE

ABILITY TO MEET PURPOSE AND NEED

This 1,000-foot wide corridor is located in the vicinity of Industrial Drive, which terminates at SR 424 north of the Maumee River (Figure IV-1). At State Route 110, south of the Maumee River, the corridor continues southeastward toward County Road 12, as shown in Figure 4. Listed below are the major factors in determining whether this corridor location meets the various elements of the Purpose and Need.

Provide a Link between Existing Industrial Development Areas
The location of a river crossing in the vicinity of Industrial Drive would create a direct transportation link between the north and south sides of the river, between Napoleon's major industrial development areas. This would also improve the connection for the Campbell's Soup Plant to the cold and dry storage facilities located on the north side of the river.

Connectivity to Highway System
This corridor lies directly south of the interchange at Industrial Drive and US 6/US 24. As such, it provides direct access the major highway system in the area. Not including SR 110, only three at grade intersections and six driveways exist along this corridor.

Improve Access to Future Development Areas Consistent with the Comprehensive Plan
The location of a bridge crossing in the vicinity of Industrial Drive would be near Napoleon's Industrial/Mixed Use Concept Areas and would provide a direct link to future growth and truck traffic in close proximity to this corridor. This is consistent with the City of Napoleon's Comprehensive Master Plan.

Increase Community Connectivity
This corridor would provide necessary alternatives for emergency services and allow Napoleon City Schools to provide a more circular bus route within the city. This corridor will also provide a good alternative route for the community on the south side of the river

to the Henry County Hospital, which is located on the north side of the Maumee River. It would also provide better access for those commuting to and from work in the industrial development areas.

While the Corridor 1 location would best reduce emergency response times to the south side of the river (with respect to the other alternatives currently being considered), the Industrial Drive corridor would provide a considerable improvement in response times from the current situation. The location of the bridge crossing within this corridor would provide considerable improvement and an additional route for emergency vehicles to reach the Henry County Hospital.

Reduce Downtown Traffic Congestion and Enhance Public Safety

Industrial Drive currently has an interchange with the US 6/US 24 bypass. Given this, it is assumed that an Industrial Drive bridge crossing would attract the largest amount of trucks since it has direct access to the bypass. This location would also remove the most traffic (trucks and shift change traffic) associated with the Campbell Soup Company facility and surrounding businesses from the existing SR 108 bridge. This route would contain no turning movements and would further provide a direct link of the Campbell's facility on the south side of the river to their support warehouses off of Industrial Drive.

POSSIBLE IMPACTS

A summary of potential impacts from Corridor 2 are provided below. Within each issue is a description of potential impacts based on the proposed corridor.

Parkland
A river crossing located within this corridor would not affect any currently identified park property.

Farmland
This corridor will impact farmland on the south side of the Maumee River.

Cultural Resources
The areas adjacent to the Maumee River within this corridor may contain unidentified archaeological sites, which may be impacted by proposed alignments. No impacts to historic structures are anticipated in this corridor.

Endangered Species
All corridors would require surveys for potential roosting or nesting sites for the Indiana bat and endangered mollusk species in the Maumee River. Additionally, bald eagles are known to frequent the Maumee River Corridor. One active nest is known to exist several miles west of SR 108 in the vicinity of Florida, Ohio.

Ecological Resources, Including Wetlands
Alignments proposed within each corridor would require in-stream work that would require a Section 404 permit from the US Army Corps of Engineers, a Section 401 Water Quality Certification from Ohio EPA, a Section 10 permit from the U.S. Army Corps of Engineers, Section 9 Bridge permit form the U.S. Coast Guard and Scenic River coordination with ODNR.

FEMA 100-year Flood Plains
Due to the nature of the project, it is a certainty that the project will encroach into the limits of the 100-year flood plain regardless of location.

CORRIDOR 3 - EAST OF SR 108 BRIDGE, SOUTH OF CR 12

ABILITY TO MEET PURPOSE AND NEED

This 1,000-foot wide corridor is located south of the intersection of SR 424 and County Road 12 (Figure IV-1). A bridge at this location would connect the eastern end of Napoleon's industrial park area on the north side of the river to industrially zoned land south of the river. The new crossing would likely terminate at SR 110 and link the northern and southern sections of CR 12. Listed below are the major factors in determining the ability of this alternative to meet the project Purpose and Need.

Provide a Link between Existing Industrial Development Areas
This corridor would provide a direct link between the existing industrial areas because of its location on the eastern side of the City. Truck traffic would potentially use this alternative to bypass the downtown and it would improve upon the existing conditions.

Connectivity to Major Highway System
This corridor would provide an indirect link to US 6 via the interchange with SR 424 and to US 24 via the interchange with Industrial Drive. Accessing both interchanges will require that vehicles travel on SR 424. As a result, the connection to the major highway system is not as efficient as it is in Corridor 2.

Improve Access to Future Development Areas Consistent with the Comprehensive Plan
Corridor 3 would provide an adequate connection between future growth areas to the south of the Maumee River. However, as stated above, the connection to US 6 and US 24 is not as efficient as it is in Corridor 2.

Increase Community Connectivity
Corridor 3 is located too far to the east of the city to provide an efficient route for the local school district to utilize as a bus route. However, the corridor does provide excellent access to the Henry County Hospital for emergency vehicles that have to transport patients to the hospital from the south side of the Maumee River.

While Corridor 3 serves as a good connection for the industrial areas in the community and provides good access to the Henry County Hospital from the south side of the river, this corridor does not provide an efficient link for the residents of the community, who will likely continue to utilize the SR 108 bridge to access the businesses, schools and other facilities on both sides of the river.

Reduce Downtown Traffic Congestion and Enhance Public Safety
A river crossing located within Corridor 3 would reduce truck and commuter vehicle traffic that travel to and from the industrial areas on the south and north sides of the river from SR 108 and the downtown area, but would not be expected to achieve as much of a reduction as would be realized in Corridor 2.

The CR-12 river crossing alternative would require routing trucks onto SR 424 and would involve turning movements at several intersections to access CR-12. It would not provide a direct link between the US 6/US 24 bypass. However, this alternative would likely attract more truck and vehicular traffic than the Glenwood Avenue Alternative (west of the SR 108 bridge), but would attract less than the Industrial Drive Alternative.

POSSIBLE IMPACTS

Potential impacts of this corridor are listed below. Within each section is a description of potential impacts based on the proposed corridor.

Parkland
This corridor has the potential to impact park property that is located on the north bank of the Maumee River, requiring a possible 4(f) document.

Farmland
This corridor will impact farmland on the south side of the Maumee River.

Cultural Resources
The area surrounding the Maumee River within this corridor may contain unidentified archaeological sites, which may be impacted by proposed alignments within this corridor.

Endangered Species
All corridors would require surveys for potential roosting or nesting sites for the Indiana bat and endangered mollusk species in the Maumee River. Additionally, bald eagles are known to frequent the Maumee River Corridor. One active nest is known to exist several miles west of SR 108 in the vicinity of Florida, Ohio.

Ecological Resources, Including Wetlands
Alignments proposed within each corridor would require in-stream work that would require a Nationwide or Section 404 permit from the US Army Corps of Engineers, a Section 401 Water Quality Certification from Ohio EPA, and Scenic River coordination with ODNR.

FEMA 100-year Flood Plains
Due to the nature of the project, it is a certainty that the project will encroach into the limits of the 100-year flood plain regardless of location.

RE-USE OF ABANDONED RAILROAD BRIDGE

ABILITY TO MEET PURPOSE AND NEED

This option could potentially utilize the existing piers of the abandoned railroad bridge located approximately ¾-mile downstream (east) of the SR 108 Bridge (Figure IV-1). The abandoned railroad bridge is a four-span steel truss structure on concrete piers that was constructed in early 1900. While the other corridors are not alignment specific at this stage, this alternative would not deviate from the existing bridge location. The possible new bridge and road would connect SR 424 to SR 110 near Campbell's plant entrance. Listed below are the major factors in assessing the ability of this alternative to meet the Purpose and Need.

Provide a Link between Existing Industrial Development Areas
This existing railroad bridge location would create a new transportation route from the south to the north side of the river and the majority of Napoleon's industrial development. However, this corridor does not provide as direct a transportation link as corridors 2 and 3, since it would require trucks and other vehicles to travel a considerable distance on SR 424 and on SR 110 to access these areas. Therefore, this alternative would provide only a moderate improvement over the existing condition.

Connectivity to Highway System
Unlike Corridor 2, this alternative does not provide a direct connection to the US 6/US 24 bypass to the north of the city. Vehicles that would cross the river at this location would have to access US 6/US 24 by traveling east on SR 424 and then north on Industrial Drive, or west on SR 424 to SR 108 north. Therefore, this alternative would only be a marginal improvement marginal improvement over the existing condition.

Improve Access to Future Development Areas Consistent with the Comprehensive Plan
While providing a better location for a bridge crossing than Corridor 1, this location does not provide as good of a connector to future development areas as Corridors 2 and 3, due to the need to make right and left hand turns on local roads to access these areas. As a result, this alternative would provide only a marginal improvement over the existing condition.

Increase Community Connectivity
This location would provide an alternative for emergency services and allow Napoleon City Schools to provide a more circular bus route within the City. While the Corridor 1 location would best reduce emergency response times to calls on the south side of the river, this corridor provides a better route to the Henry County Hospital for emergency vehicles that have to travel to the hospital from the south side of the river. With the majority of schools located near Corridor 1, this location would not provide noteworthy

upgrades for the schools other than the ability to provide a circular route for bus traffic which is a desire of the local schools.

Reduce Downtown Traffic Congestion and Enhance Public Safety
Because of its location near the center of town, this corridor has the potential to capture a substantial amount of passenger vehicles that need to travel across the river.

This alternative would also be expected to attract some shift change traffic for the Campbell's facility and would also attract some truck traffic for the facility. However, the terminus on the north side of the river would still route traffic onto local roadways (SR 424) and place traffic back into the downtown area and on local roads to gain access to the US 6/US 24 Bypass. This alternative would therefore be less effective in attracting truck traffic and shift change traffic from the existing SR 108 Bridge than the Industrial Drive or CR-12 alternatives.

POSSIBLE IMPACTS

Listed below are the major factors in determining the Possible Impacts. Within each issue is a description of potential impacts based on the location.

Parkland
A river crossing located along this alignment would not affect any currently identified park property.

Farmland
This option would impact no farmland on either side of the Maumee River.

Cultural Resources
The area surrounding the Maumee River adjacent to the existing bridge may contain unidentified archaeological sites, which may be impacted.

Endangered Species
All corridors would require surveys for potential roosting or nesting sites for the Indiana bat and endangered mollusk species in the Maumee River. Additionally, bald eagles are known to frequent the Maumee River Corridor. One active nest is known to exist several miles west of SR 108 in the vicinity of Florida, Ohio.

Ecological Resources, Including Wetlands
Alignments proposed within each corridor would require in-stream work that would require a Nationwide or Section 404 permit from the US Army Corps of Engineers, a Section 401 Water Quality Certification from Ohio EPA, and Scenic River coordination with ODNR.

FEMA 100-year Flood Plains
Due to the nature of the project, it is a certainty that the project will encroach into the limits of the 100-year flood plain regardless of location.

NO-BUILD ALTERNATIVE

ABILITY TO MEET PURPOSE AND NEED

The No-build Alternative was evaluated with respect to its ability to meet the Purpose and Need for the Project. It is important to note that the No-build Alternative does not mean doing nothing within the study area to address the problems that currently exist. Other measures, such as the development of improved signal coordination and providing additional turn lanes along the SR 108 corridor and rerouting traffic away from the downtown area could be considered to reduce congestion in downtown Napoleon an alleviate the existing demand on the SR 108 Bridge. An evaluation of this alternative's ability to meet the Purpose and Need for this project is presented below.

Provide a Link between Existing Industrial Development Areas

The No-build Alternative, which would include one or more of the combinations listed above, would not provide a direct link between existing industrial areas in the City of Napoleon. Under the No-build Alternative, vehicles that travel between the two industrial development areas would still be required to utilize the SR 108 or US 6/US 24 river crossings, as they currently must do.

Connectivity to Highway System

By its very nature, the No-build Alternative will not provide a better, more efficient connection to the surrounding highway system.

Improve Access to Future Development Areas Consistent with the Comprehensive Plan

The No-build Alternative will not improve access to future development areas consistent with the Comprehensive Plan. As development progresses, improved access will become more of a necessity, as more vehicles need to travel to, from and between these areas. The No-build Alternative will have a negative impact on development, as prospective businesses will be deterred from these areas because of inefficiencies in vehicular access.

Increase Community Connectivity

The No-build Alternative will not increase connectivity within the community. With only one river crossing, with time, community connectivity will decrease as the level of service (LOS) declines on the SR 108 Bridge to a LOS E in 2025, as predicted by the Urban Arterial Analysis that was completed for this project. This reduction in LOS will result in increased travel times across the river for all vehicles, including school busses and emergency service vehicles. With time, as the LOS declines on the SR 108 Bridge, the No-build Alternative will have a negative impact on the ability of emergency services to respond to calls across the river.

The No-build Alternative will also have a negative impact on people's ability to access the hospital from the south side of the Maumee River.

It will also have a negative impact on the Napoleon City School's ability to efficiently transport students across the Maumee River. Once again, this negative impact is associated with a decrease in LOS that is expected to occur under this alternative.

Reduce Downtown Traffic Congestion and Enhance Public Safety
Under the No-build Alternative, an increase in traffic is expected to occur as indicated by the decrease in the LOS on the SR 108 river crossing. Hence traffic congestion will continue to increase in the downtown area; public safety will be reduced and will continue to deteriorate with time. Adding turn lanes, improving signal coordination and rerouting traffic may help to reduce downtown traffic congestion on a temporary basis. However, as development continues in the industrial area to the east of the city, south of the Maumee River, these measures will eventually become ineffective and congestion within along the SR 108 corridor will become more severe, as more and more vehicles are forced to cross the Maumee River at SR 108.

This alternative would continue to encourage truck traffic and Campbell's facility traffic to utilize the current SR 108 bridge, as there is no nearby alternative river crossing. This will become more of a problem as congestion increases with continued increases in traffic volumes.

POSSIBLE IMPACTS

By its very nature, the No-build Alternative is expected to have no negative impacts on parkland, farmland, cultural resources, endangered species, ecological resources and FEMA 100-year floodplains.

CONCLUSION

Based upon the ability to meet the project purpose and need, it is recommended that Corridors 2 and 3, as well as the No-build alternative, be carried forward for further detailed analyses. This reduction in the number of corridors being recommended for further detailed analyses was made so as to concentrate on the two corridors that best meet the Purpose and Need for the project and are therefore the most feasible. Both corridors will be studied in greater detail, along with the No-build alternative. The following is a discussion of reasons for determining whether a corridor is feasible or not feasible:

- Corridor 1 (West of SR 108 Bridge, South of Glenwood Avenue) was eliminated based on its poor evaluation in the matrix and its inability to meet the project Purpose and Need. It consistently ranked as having providing little or no benefit over the current conditions. A bridge constructed in that corridor also would have considerable impacts to known cultural resources and park property.

- Corridor 2 (East of SR 108 Bridge, South of Industrial Drive) ranked high on the majority of Purpose and Need elements. This corridor would provide a direct link between existing industrial development areas, provide an efficient link with the existing highway system to the north of the city, improve access to future development areas consistent with the

Comprehensive Plan, reduce downtown traffic congestion and enhance public safety. This corridor would also increase community connectivity, and provide better access for residents south of the river to emergency facilities north of the river, and enhance school transportation in the city.

- Corridor 3 (East of SR 108, South of CR 12) also ranked relatively high on several of the factors that were used to evaluate each alternative. While ranking lower than Corridor 2 on several important factors, this corridor would provide an efficient link between existing industrial development areas, improve access between future development areas that are consistent with the comprehensive master plan and provide a good alternative emergency route to the Henry County Hospital for residents who live and work south of the river. It would also decrease demand on the existing SR 108 Bridge, thereby reducing downtown traffic congestion and enhancing public safety. It does not provide an as good a route for school buses as do corridors 1 and 2, due to its location on the far east side of the city.

- Re-use of the abandoned railroad bridge is ranked overall as the third best corridor when compared with the other corridors that have been considered. However, the use of the existing bridge piers in this corridor may be cost-prohibitive due to existing structural deficiencies. The existing railroad bridge is a four-span steel truss structure on concrete piers that was constructed in early 1900. During an earlier investigation, the piers were found to contain vertical cracks that extended into the full depth of the pier stems. Compressive tests of concrete cores taken from the piers also indicated weakness in the outer layers of the pier concrete. In 1994 a Level II underwater inspection of pier foundations revealed that the overall condition of the piers below the water level was fair, with some scour and undercutting present. Earlier remedial action had been performed by driving protective sheet piling to mitigate damage that had resulted from scour at the river piers. The bridge also carries an asbestos covered waterline on its deck. Based on these observations, it appears that the existing piers may not have the longevity required to support a new structure for its normal design life. In addition, construction costs of such a project could be excessive, requiring the dismantling of the existing steel truss and bridge deck, replacement or retrofitting of the existing piers, and the lowering of the elevated rail bed in the vicinity of SR 424.

  In addition to the above structural uncertainties, this corridor would provide moderate improvements over the existing condition with respect to providing a direct link between industrial development areas, increasing community connectivity, providing more efficient routes for emergency services, schools and access to the Henry County Hospital and reducing downtown congestion and enhancing public safety. This alternative provides only marginal improvements over the existing condition with respect to its connection to the US6/US24 bypass and providing improved access to development areas consistent with the Comprehensive Plan. As such, it is recommended that this alternative be dropped from further consideration as a feasible alternative.

- No-build Alternative - The No-build Alternative will continue to be evaluated, along with Feasible Corridors 2, and the reuse of the existing railroad bridge until the Preferred

Alternative is selected for this project. However, this alternative fails to provide a link between existing industrial development areas, does not enhance connectivity to the surrounding highway system, fails to increase community connectivity and does not improve access to future development areas consistent with the Comprehensive Plan. With time, this alternative will result in an increase in downtown traffic congestion and decrease the ability of emergency services and the schools to efficiently access all areas of the community. Efficient access to the community hospital from areas south of the river will also decline under this alternative.

It is therefore recommended that Corridor 1 – West of SR 108 Bridge, South of Glenwood and the reuse of the existing railroad bridge be eliminated based on the evaluation criteria from the Purpose and Need. Corridor 2 best meets the Purpose and Need while having less potential for impacts over the Glenwood Road Alternative. Corridor 3 also appears to meet several key elements of the purpose and need. As such, both corridors should be carried forward to the next phase of the project. The No-build Alternative, while failing to meet the Purpose and Need for the project, will also be evaluated in accordance with NEPA requirements.

Section V

Design Concept and Design Scope of Project

Design Concept and Design Scope
New Maumee River Crossing Project
PID #: 22984 - State Job #: 423780

DESIGN CONCEPT

The Purpose and Need (P&N) and evaluation of Conceptual Alternatives demonstrate that a new roadway bridge crossing the Maumee River is the only feasible transportation solution that will address the needs of the City of Napoleon. The design concept is envisioned to be a roadway bridge crossing of the Maumee River with a connecting roadway between either SR110 on the south side of the river, and to SR 424 on the north side. The limits of the study area for this crossing will be generally in and around the corporate limits of the City of Napoleon.

DESIGN SCOPE

The bridge and connecting roadways will accommodate two lanes of through traffic; with adequate turn lanes, storage lengths, and signalization at intersections. The length of the project is anticipated to be between 1,800 and 3,200 feet (including bridge and connecting roadway). The facility will be curbed and have an enclosed storm drainage system. The pavement associated with the design will be sufficient to accommodate anticipated heavy truck traffic volumes associated with the design year. Additional infrastructure modification work adjacent to each end of the project such as pavement and curb work, drainage changes, and traffic control devices are possible regardless of location.

Section VI

General Cost Estimate

GENERAL COST ESTIMATE

A generalized cost estimate was prepared to determine a preliminary planning cost for a new river crossing (Table VI-1). These values were based on 2007 costs.

Table VI-1
Henry County Maumee River Crossing Cost Estimate

Work Item	Unit Cost	Project Limits Between SR-424 & SR-110	
		Qty.	Cost
Removal Of Exist. Roadway-2 lane (ft.)	$ 40	700	$28,000
Removal Of Exist. Roadway-3 lane (ft.)	$32		$0
Roadway Construction - embank (ft.)			$0
Roadway Construction-2 lane w/c&g, (ft.)	$265	700	$185,500
Roadway Construction - 3 lane (ft.)	$320		$0
Traffic Signals (ea.)	$100,000	2	$200,000
Retaining Wall - Conventional (s.f.)	$100		$0
Retaining Wall – MSE/Soil Nails (s.f.)	$50		$0
Noise Wall (FT.)	$150		$0
ROADWAY SUBTOTAL			**$413,500**
Drainage	15%		$62,000
Erosion Control	4%		$17,000
Maintenance of Traffic	5%		$21,000
Traffic Control	6%		$25,000
Miscellaneous, (GR, Fence, etc.)	11%		$45,000
INCIDENTAL SUBTOTAL			**$170,000**
ROADWAY TOTAL			**$583,500**
Bridge Removal (s.f.)	$50	0	$0
Bridge - Roadway (s.f.)	$200	56250	$11,250,000
BRIDGE SUBTOTAL			**$11,833,500**
CONSTRUCTION SUBTOTAL			**$7,586,750**
20% Contingency			$2,366,700
CONSTRUCTION TOTAL			**$14,200,200**
Engineering	6%		$852,000
Utility Costs	3%		$426,000
Right of Way			$40,000
GRAND TOTAL			**$15,518,200**
Suggested Cost Estimate Range			**$14.5M - $16.5M**

Section VII

Project Action Plan

Project Action Plan
New Maumee River Crossing Project
PID #: 22984 - State Job #: 423780

PROJECT ACTION PLAN

The Henry County Engineer recommends that project funding be sought through various federal and state programs. Upon receipt of adequate funding for this project, the project timetable and delivery schedule will follow the ODOT Project Development Process (PDP). Providing additional project funding can be secured by July 2009, a feasible timetable for completion of this project is presented in Table VII-1.

Table VII-1
New Maumee River Crossing
Project Action Plan

Project Development	Responsibility	Completion Date
1. Environmental Clearance and Stage 1 Plans	Henry County Engineer	July 2010
2. Stage 2 Design	Henry County Engineer	January 2011
3. Right-of-Way Acquisition	Henry County Engineer	March 2011
4. Stage 3 Design	Henry County Engineer	July 2011
5. Final Plan Package	Henry County Engineer	October 2011
6. Award Construction Contract	Henry County Engineer	March 2012
7. Construction (Start)	Henry County Engineer	April 2012

Appendix A

Stakeholders and Mailing List

Appendix B

Technical Reports

Technical Reports
New Maumee River Crossing Project
PID #: 22984 - State Job #: 423780
Napoleon, Ohio

SUPPORTING TECHNICAL REPORTS

Several supporting technical reports were utilized in developing a purpose and need for the project and for conducting analyses in comparing the various alternatives. Following is a list of those technical reports that were utilized:

Origin-Destination Study of State Route 108 (Perry St.) Bridge - May 2003
This study was conducted to determine existing traffic patterns on the current SR 108 Bridge and to predict the amount of traffic that may detour to a new river crossing depending on the proposed location.

The Napoleon Comprehensive Plan - 2003
This comprehensive plan provided much background data for the City of Napoleon area. The Plan also contains a Thoroughfare Plan that includes a new river crossing as a key component of the plan.

Henry County Comprehensive Plan - 2003
This document provides insight into planning for the peripheral areas of the City of Napoleon within the rural county areas. Items such as growth areas are predicted.

Appendix C

Source Bibliography

Source Bibliography
New Maumee River Crossing Project
PID #: 22984 - State Job #: 423780
Napoleon, Ohio

SECONDARY SOURCES

ENVIRONMENTAL SERVICES PRELIMINARY SCREENING:

- Ohio Environmental Protection Agency - Biological Screening
- National Wetland Inventory (NWI) Maps
- FirstSearch Technology Corporation - Environmental FirstSearch for Napoleon Area
- Henry County Soil Survey
- USGS Quadrangle Maps

CULTURAL RESOURCES PRELIMINARY SCREENING:

Center for Archival Collections, Bowling Green State University, Bowling Green

- General historic references for context development
- Local histories, atlases, and photographs of properties within the potential area of effects

The Local History Collection at the Toledo/Lucas County Public Library, Toledo

- Standard historic references for context development
- Local histories, atlases, and photographs of properties within the potential area of effects

Ohio Historic Preservation Office, Columbus

- Search for preciously-recorded resources in the Ohio Historic Bridge Inventory
- Search for preciously-recorded resources in the Ohio Historic Inventory
- Search for preciously-recorded resources in the Ohio Archaeological Inventory
- Search National Register of Historic Places
- Identify previous survey reports within the area of potential effects, including:
    1. *Archaeological Survey of the Van Hyning Creek Area, City of Napoleon, Henry County, Ohio"* (Schermer and Burdick, 1978)
    2. *Literature Review and Archaeological Survey for the Proposed Oakwood Park in the City of Napoleon, Napoleon Township, Henry County, Ohio* (Archaeological Services Consultants, Inc., 1992)
    3. *Literature Review, Reconnaissance Survey, and Architectural Documentation for the Napoleon Bridge Replacement Over the Maumee River on State Route 108 in Napoleon Township, Henry County, Ohio* (Archaeological Services Consultants, Inc., 1995)

4. *Literature Review for the Proposed U.S. Route 6/24 and Industrial Drive Interchange (HEN-6-13.45) near Napoleon in Liberty and Napoleon Townships, Henry County, Ohio* (Archaeological Services Consultants, Inc., 1992)
5. *A Reconnaissance Survey for the Proposed U.S. Route 6/24 and Industrial Drive Interchange (HEN-6-13.45) Near Napoleon in Liberty and Napoleon Townships, Henry County, Ohio* (Archaeological Services Consultants, Inc., 1992)

Other Secondary Literature Utilized:

The Napoleon Comprehensive Plan, 2003
Henry County Comprehensive Plan, 2003
Ohio Department of Transportation - Traffic Survey Data

PRIMARY SOURCES

Origin-Destination Study of State Route 108 (Perry St.) Bridge - May 2003

Data supplied by the Campbell Soup Company

- Employee Data
- Shift Data
- Truck Data
- Shipping Data

Various Data Supplied by City of Napoleon

Various Data Supplied by Henry County

Traffic Data Supplied by ODOT