

5. Transportation

A. Overview

Piqua first developed as an outpost along the Miami-Erie Canal and later as cross-roads of north/south and east/west railroad lines. The original settlement grew into a typical grid street system that has expanded over the years in response to population increases and economic stimuli. Around 1950 this pattern began to change as Piqua responded to new housing development and economic realities supported by a boom in industry and manufacturing, as well as population. Around this same time the transportation framework began to be influenced by the automobile as residents became focused on efficient travel across town, and to other more distant destinations.

Today, the City totals approximately 150 miles of streets and 28 miles of alleys. Essentially, the transportation focus is on cars and truck travel. Piqua's location on the I-75 corridor continues the tradition of being an important transportation location. Piqua is also well within the economic influence of I-70, another seminal link of the national transportation infrastructure. These highways have significance as a conduit for the movement of vast quantities of commodities and people.

No other single transportation factor has impacted Piqua more than I-75. The I-75 segment in Piqua and Miami County was complete by 1958. Sections connecting the Dayton area to the south and the Sidney area to the north were added in the early 1960s. The completion of the entire Ohio link and regional portion of I-75 significantly changed the growth

pattern of the City over the past four decades. The east corporation boundary has reached further and further east, to the Interstate and beyond, as a result of the I-75 corridor being established. Overtime this artery has been enveloped by a nucleus of commercial, institutional, and residential development. The land area around I-75 now contains a variety of local businesses, and a number of national and regional retailers and restaurants located in the area.

Aside from automobile travel, Piqua is also served by Class A rail service, Hartzell Field – the local municipal airport, is located within an hour drive of Dayton International Airport, and is served by the Miami County Transit system. Piqua has a number of local multi-use trails that are part of the Miami Valley Recreational Trails Network, one of the most extensive networks of non-motorized, multi-use trails in the Country.

This chapter outlines the recommendations for addressing Transportation related issues in Piqua. The remaining sections of the chapter include:

- B. Transportation Goal
- C. Key Findings
- D. Principles
- E. Objective and Strategies

B. Transportation Goal

The goal for Transportation is provided below. The goal was developed by the Steering Committee based on citizen’s input.

Develop and maintain a convenient, safe and efficient transportation system that effectively accommodates pedestrians, bicyclists, automobiles and public transportation.

C. Key Findings

As part of this planning process, an extensive analysis of existing conditions and trends was conducted. Listed below are a summary of the primary key findings related to transportation in Piqua. For a more detailed explanation of these findings, see the Transportation Chapter in the Existing Conditions report.

Growth is trending towards the Interstate 75 corridor, a sign that transportation access is an important precursor shaping local land use decisions: The growth in traffic (both car and truck) on I-75 over the last 30-40 years has brought growth to Piqua. Truck traffic on I-75 has increased nearly five-fold since around 1970. The City has grown considerably around I-75 corridor. While this growth has brought significant economic opportunities, it also presents the City with the challenge of serving growth in the area with adequate transportation infrastructure in a way that is safe, efficient, and fiscally responsible.

All of the key findings are addressed in the objectives and strategies section of the report.

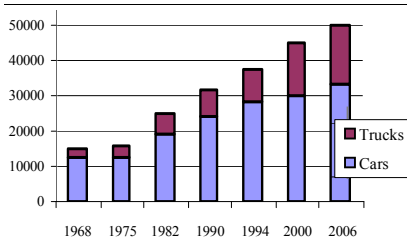
Unwarranted traffic signals are generating public concern: There is a public perception that the City has a number of non-warranted traffic signals in town. This concern was raised by members of the public during the planning process.

Unwarranted traffic signals can cause excessive delay, disobedience of signals, an increase in accident rates, and diversion of traffic to inadequate alternate residential routes around Piqua. Aside from the public safety issues there is also the inconvenience to the public and perpetual cost in operating a signalized intersection which cost on average \$1,500 per year depending on location and the number of signal heads involved. This figure does not include the fiscal impacts caused by the diversion of traffic and increased accidents rates due to disobedience.

Car traffic has increased on state routes while truck traffic has decreased. Both car and truck traffic has increased on I-75 through Piqua: Traffic counts suggest the federal and state routes serving Piqua (36, 66, and 185) have handled more car traffic over the last fifty years (see sidebar). Corresponding semi-truck traffic on the same routes over the same time period display a marked decline in volume (55-60%) when compared to car traffic.

While truck traffic on federal and state routes has declined, truck volumes through Piqua traveling on I-75 have trended in the opposite direction with a nearly five-fold increase. Car traffic has also been increasing on I-75 with an increase of approximately 200 percent during the analysis period (see sidebar).

ADT I-75 THROUGH PIQUA 1968-2006



Source: Floyd Browne

DEVELOPMENT SITES ALONG I-75

Name	Acres
GMS	5
Cromes	85
Innovation Parkway	62
JEB Development	101
Wyndham Ind. Park	108
Enos/Pautsch	312
PIC-114-SCR	25
PIC-100-JD	7
Total Acres	705

Source: Floyd Browne

Potential industrial development along the I-75 corridor will generate significant traffic flows when fully developed: There are a number of existing, and potential, industrial sites along the I-75 corridor in Piqua. In total, there are approximately 705 acres of industrial land currently available for development through this corridor, with the potential for more.

The Institute of Traffic Engineers (ITE) has published threshold levels relative to industrial types. The data provides information on the number of trips generated by different types of industrial uses. Applying the ITE averages to the total industrial acreage (see sidebar) generates average daily traffic volumes (ADT) estimates: 7,300 peak hour trips and 47,000 ADT. The final figures may be 20-40 percent lower depending on the specific land use, as these are gross figures, based on the total development potential of the land.

Access to I-75 is considered adequate but some industrial pockets of land near the Interstate are isolated: With an understanding of the potential industrial development along the I-75 corridor it is critical to understand the capacity of existing access points, and the need for future improvements. Proposed industrial and commercial development has the potential to

overwhelm the local street network in the future if transportation improvements do not keep pace. For example, the existing interchange at I-75 and US 36 is already functioning at a high capacity, but is also targeted to absorb new traffic from at least four nearby proposed industrial sites. With half of these sites developed the projected traffic volumes would exceed the design capacity of the interchange (see Tables 3.4 and 3.5 in the Transportation Chapter in the Existing Conditions Report).

There are some traffic related issues on state routes in Piqua due to truck traffic: Truck traffic is a concern of local residents. Bottlenecks in the City primarily involve semi-truck traffic trying to maneuver through tight turns on US route 36 and state routes 66 and 185. Multiple turns are required on each of these routes to traverse through the City. Residents have also expressed concern about the noise generated from the truck traffic on these routes.

The City has a well established network of multi-use pathways, and a number of defined neighborhoods and districts with sidewalks and pedestrian amenities: Piqua has a number of multi-use trails that serve local residents. There are three primary multi-use trails in Piqua: the River’s Edge trail which extends 3.5 miles along the Great Miami River, the P.A.T.H which runs east/west for 5.5 miles, and the Canal Run trail which runs north/south for 2.3 miles. Overall these pathways are in good shape.

Residents have expressed concerns about sidewalk conditions and connectivity. Neighborhoods and districts can be better connected to each other in certain areas, as well as the River’s Edge Trail, Canal Run, and the P.A.T.H. being better connected to the residential neighborhoods.

These principles should be used as a guide to help the City in evaluating future transportation improvements. Policy decisions, capital improvements, and development applications should consider the Principles, and support their intent. If a project, program or policy does not support the principles it should be reevaluated and made consistent with the intent of the principles.

D. Principles

The full list of principles that describe the direction and form of future development and revitalization efforts in Piqua are listed in the Land Use Chapter. These principles focus on the quality, pattern, form, character, and organization of development. Specific Land Use Principles that are transportation related include:

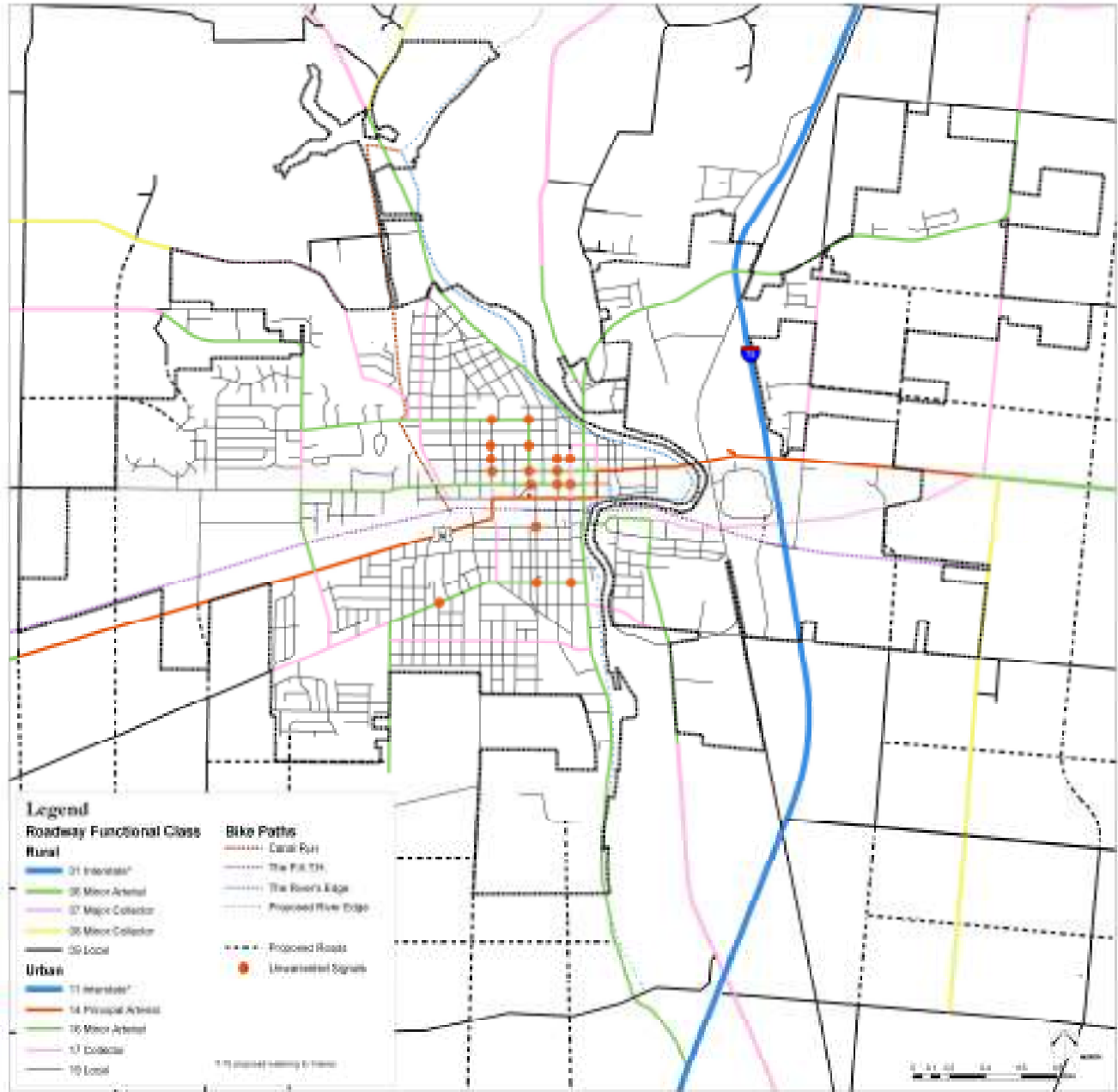
- 2. The entryways into Piqua will be enhanced through improving the existing and newly enhanced environment.**
- 9. Streets will create an attractive public realm and be exceptional places for people.**
- 10. Places will be better connected, to improve the function of the street network and facilitate pedestrian mobility; better opportunities will be created to walk and bike to and from the Miami Valley Trails.**

E. Objectives and Strategies

Outlined below are objectives and strategies intended to guide decisions related to transportation. The objectives and strategies were created based on

the findings from the existing conditions assessment, public input, and field work. The intent of the objectives and strategies is to achieve the Transportation Goal. Map 5.1 below illustrates the physical transportation improvements discussed in the strategies

MAP 5.1 - TRANSPORTATION MAP



Source: ACP - Visioning & Planning Ltd.

Notes:

- Roadway classification based on ODOT Classification and Staff input.
- Unwarranted signals identified by the Piqua Planning Department, Mainstreet Piqua, and the general public. Any changes to these intersections should be warranted by a study using ODOT criteria from the Ohio Manual of Uniform Traffic Control Devices.

Objective 1**Improve the local transportation network.**

Traffic congestion and flow are both typically connected to roadway design and the accessibility to and from adjacent properties. As the volume of vehicles on the road has increased over the past few decades, the infrastructure used to support vehicles (roadways) has become strained and in certain areas unable to handle the increased loads or in some cases is no longer serving a purpose (i.e. traffic signals). In other areas of the Community there is a need for improvements to the transportation network, specifically in aging neighborhoods and areas targeted for economic development along the I-75 corridor.

Strategies**T 1.1 Improve street thoroughfare signage.**

Several generations of sign types and sizes are in use, especially in the CBD. The City should adopt a uniform signage policy. This would help the City present a cleaner more defined public image.

T 1.2 Study and identify targeted infrastructure improvements along the I-75 commercial corridor to support future economic development.

As development occurs along the interstate corridor, the City should monitor traffic flows to determine when additional infrastructure will be needed. For example, the Looney Road/Patrizio Place/Cromes Drive/Statler Road link cuts through the heart of the proposed industrial sites. It has several existing capacity challenges and should be upgraded with a combination of off-site developer contributions and public monies.

T 1.3 Continue to review traffic signal timing, and coordinate signals along major corridors.

Coordinated traffic signal systems assist with alleviating congestion and improving traffic operation and safety of a corridor. Frequently, shifting traffic volumes cause signal timings to get out of synchronization with actual traffic loads, especially protected left turning movements. Traffic studies should be conducted along major arterials to determine the proper signal coordination for peak hour traffic volumes. This is particularly important in the downtown grid and a few selected intersections outside the downtown on state routes, and US 36. Special attention needs to be given to the state and federal routes with regards to the high number of left/right turns required to traverse through town.

T 1.4 Remove unwarranted traffic signal locations in town.

There is a public perception is that there are a number of unwarranted traffic signals in town. A formal technical study should be conducted to properly identify these signals and determine what traffic control features

may be better suited for these locations, or if a change in the signal’s operation would improve the level of service provided.

To assist in evaluating unwarranted signals, ODOT has grant programs that seek to study the signals in a given community and identify those that have outlived their legitimate value. The signals found at the following locations are suspected of being unwarranted: Wayne & High, Wayne & Greene, Downing & High, Downing & Ash, Downing & Greene, College & Ash, College & Greene, College & North, College & Park, South & Brice, South & Roosevelt, South & Wayne, Broadway and Park, Broadway & North, Broadway & Ash, Broadway & High, and Roosevelt & Wood. In addition, the geometrics of the intersections and the pedestrian movements should also be reviewed to evaluate what if any improvements should be made to improve the characteristics of the intersection (See Map 5.1). Any traffic signal that is targeted in this strategy should be studied carefully, and removed if they are no longer warranted as identified by the Manual of Uniform Traffic Control Devices (see sidebar).

These intersections have been identified as being unwarranted by the Piqua Planning Department, Mainstreet Piqua, and the general public. Any changes to these intersections should be warranted by a study using ODOT criteria from the Ohio Manual of Uniform Traffic Control Devices.

A series of “warrants” has been established to define the minimum conditions under which a traffic signal is appropriate. Simply meeting the warranting criteria does not mean that a signal is justified at a given location. If an existing traffic signal no longer meets any of the warrants, it should be removed but this decision matrix goes well beyond simple traffic congestion or lack of it. The traffic signal warrants currently contained in the national Manual on Uniform Traffic Control Devices (MUTCD) are summarized below.

- Minimum Vehicular Volume
- Interruption of Continuous Traffic
- Minimum Pedestrian Volume
- School Crossing
- Progressive Movement
- Accident Experience
- System Warrant (volumes)
- Combination of Warrants
- Four Hour Volume
- Peak Hour Delay
- Peak Hour Volume

T 1.5 Address capacity issues with US 36, especially at the two lane segments near the stadium on East Ash Street.

Ash Street narrows to two lanes at the noted location with wider segments immediately east and west of this location. This narrowing of the roadway creates capacity issues especially with the high volume of slower moving trucks through this area. Further, traffic is momentarily stopped in one direction for any left turns along this segment. This segment of roadway should be widened and enhanced with streetscape amenities as Piqua’s featured ingress/egress corridor for both through and local traffic.

T 1.6 Support the development of Hartzell Field

The City of Piqua should follow the lead of the Ohio Department of Transportation and other aviation indicators relative to its airport. ODOT periodically goes through rounds of funding programs in response to market conditions. The City should be aware of these funding sources to get its fair share of aviation funds. Projects such as protected safety zones, drainage improvements, installation of a lighting assisted landing system, and rehabilitation/expansion of the runway to accommodate small corporate jets should be pursued.

Objective 2

Improve the physical appearance of roads and streets to compliment the built environment.

The physical appearance of roadways can have far reaching effects on the Community, from impacting economic development opportunities, to creating place making elements. Roadways serve as more than a mode to transport vehicles, and should be integrated with the surrounding environment so as to compliment the public and private realm. Piqua would

benefit most from improving the streetscape at targeted gateways to help shape the Community’s identity and create a quality image when entering and leaving the City.

Strategies

T 2.1 Create and enforce regulations that build high quality streets.

Standards that require high quality streets should be adopted by the City. Criteria for establishing high quality streets may include such elements as a connected sidewalk system, tree lawns, street trees, lighting, and travel ways that are directly linked to neighborhood-scale development patterns.

T 2.2 Make improvements to identified roadway sections to upgrade landscaping, pedestrian facilities and general aesthetics, especially at targeted gateways.

Some important roadway corridors in Piqua may benefit from a plan to achieve a specific goal or theme for landscaping, pedestrian facilities and general aesthetics. Creation of such a plan would involve identifying details regarding items such as types of trees and shrubs, paving and lighting materials.

Members of the public as part of this planning process identified specific gateways that would benefit from these targeted improvements. These gateways include CR 25A north of downtown, Main Street/CR 25A from downtown south to I-75, Ash Street from the downtown to I-75, and beyond, and Covington Ave. from Sunset Dr. west, and the College Street corridor.

T 2.3 Modify the development regulations to guide future subdivisions to create block lengths and streets at neighborhood scales.

The existing development regulations require that blocks shall not exceed 1,600 feet in length. It would benefit future development to require a more specific standard for block length that encourages shorter block lengths. Shorter block lengths (300-500 feet) create better connections within development and accommodate pedestrian and bicycle mobility better than neighborhoods with long block lengths. Shorter blocks also improve Police, Fire, and EMS response times by creating better access.

In addition, the street width standards for new local and collector streets should be at a neighborhood scale to promote neighborhood activities by calming traffic, while reducing long term infrastructure and maintenance cost of the roadways.

T 2.4 Physically define thoroughfares as civic spaces through building placements and landscaping.

Harmony should be created between buildings, landscaping and roadways by coordinating aesthetic efforts. Thoroughfares do not have to be barriers between land uses or pedestrian interaction. Standards defining the placement of buildings, parking, open space, landscaping, and seating, as well



Examples of how thoroughfares incorporate civic spaces (Image: Burden 2003).

as the texture of pavement, can help to create civic space where vehicular traffic is in harmony with the adjacent environment. The application of this strategy would be particularly useful on Ash Street, Covington Avenue, and on Main Street.

T 2.5 Initiate an “Adopt a Road” project to encourage businesses to contribute funds for landscaping and maintenance along sections of roadways.

Support should be solicited from area business owners and civic groups to assist with the cost and continual effort to beautify and maintain the aesthetic quality of roadways in the Community. This program could be specifically applied to businesses that front a particular corridor. Efforts could be coordinated for the removal of trash/litter, installment and maintenance of landscaping and sidewalk treatments, and the activities of block watch organizations. The project should be supported and publicized locally, in newspapers and business journals. To create a sense of pride, plaques or signs could be presented by the City and incorporated into an annual award program.



These images are examples of traffic calming features that could be implemented on streets in Piqua. From top to bottom: Street trees, bulb-out, and planted median. All of these traffic calming features, as well as others, can be combined to slow the speed of traffic through a neighborhood, district or corridor (Image: www.walkable.org).

**Objective 3
Improve traffic safety.**

Traffic safety is a function of many factors, such as the weather, speed of individual vehicles, and the physical condition of roadways. Historical crash data should be analyzed to determine areas in need of safety improvements. Other historical traffic trends such as continual cut through traffic in residential areas, and speeding in specific locations, can also be analyzed. Engineering standards and policy recommendations should be considered to alleviate any identified problem areas.

Strategies

T 3.1 Create and adopt traffic calming guidelines for local Community streets.

In reaction to traffic on major through routes (specifically truck activity), traffic sometimes diverts to local residential streets, which provide attractive “short cuts” (currently the result of unwarranted signals). It has been noted by some members of the public that car traffic sometimes is diverted off Ash Street, Park Avenue and Main Street.

Establishing traffic calming guidelines responds to public concerns about speeding and cut-through traffic on neighborhood streets. The intent of traffic calming is to reduce the speed and volume of traffic to levels acceptable for the functional class of the street and the nature of the neighborhood. Traffic calming measures are meant to be self-enforcing as opposed to traffic control devices such as stop signs and speed limit signs, which are regulatory and require enforcement.

T 3.2 Reroute SR 185 to Sunset Drive.

This is an appropriate realignment for the purpose of consolidating state routes through Piqua. SR 185 would connect with US 36 via Sunset Drive and reduce the state route lane-miles in Piqua. Since SR 185 begins/ends in Piqua, county-wide continuity is less important. A downside consideration is increasing traffic on Sunset Drive. However, Park Avenue (currently carrying much of SR 185 in Piqua and home to a well maintained residential neighborhood) would see a reduction in traffic. ODOT should be consulted on the concept.

T 3.3 Lessen the impact of semi-trucks through the central business district (CBD).

Trucks definitely detract from the desired pedestrian scale and ambiance of the CBD. The City of Piqua should work towards the elimination of truck traffic through the CBD. Likewise, a number of tight turns through the CBD cause slow traffic as semi-trucks maneuver, especially the left turning movements. Alternate routes for truck traffic and/or intersection improvements at turn locations should be implemented. Implementing this strategy is not simply a matter of changing the signage but should be a priority in the Miami Valley Regional Planning Commission Long Range Transportation Plan as monies are earmarked for future projects.

T 3.4 Address congested traffic circulation patterns around elementary and intermediate schools.

Citizen concerns were voiced during the public meetings relative to inadequate vehicular circulation patterns around the older school buildings in the mature parts of town. Many of these complexes were designed and constructed before the advent of a highly mobile society evolved. In contrast, newer school campuses are laid out with both vehicular and student foot traffic in mind. To further aggravate this matter, several of the schools are located on busy thoroughfares. This makes the implementation of safety enhancement initiatives even more of a challenge.

To remedy the problem in the short term the City may consider school start/dismissal times by grade to reduce the peak demands, car pooling, and strict enforcement of school zone safety rules.

T 3.5 Improve signage in the central business district (CBD).

Consistent looking signage will help to enhance the profile and image of the CBD and the entire community. Further, pedestrian traffic will feel more comfortable with well marked and protected cross-walks. All signs should be consistent with the requirements of the Ohio Manual of Uniform Traffic Control Devices (OMUTCD) document published by ODOT to maintain the city's legal requirements. A consistent theme or style of sign should be

utilized, and older generations of sign types that exist should be updated to reflect a cohesive style.

Objective 4

Improve opportunities for pedestrians and bicyclists.

Piqua is fortunate to have sidewalks and pathways that facilitate pedestrian and bicycle mobility in many parts of the Community. Pedestrian and bicycle activity is important to maintaining a livable community, and are attractive amenities that will attract new residents and businesses. Increased opportunities for walkers and bikers should be a priority as the Community continues to grow. By increasing opportunities for pedestrian activity, reliance on the automobile is reduced and healthy lifestyles are promoted.

Strategies

T 4.1 Create regulations that require pedestrian facilities and multi-use path systems along new streets and during street upgrade projects.

Sidewalks and crosswalks, or other facilities meeting pedestrian needs, should be provided in all new developments and incorporated in locations which are lacking existing pedestrian facilities. Bicycle paths and lanes should also be considered as part of all new and redeveloped roadways.

T 4.2 Expand the multi-use path system to connect destinations.

Gaps in the multi-use path system should be joined to ensure connectivity to allow pedestrians and bikers a variety of destinations. Providing continuity in the multi-use path system will encourage day to day as well as recreational use of the facility, and place less emphasis on vehicular travel as a sole source of transportation in the Community.

The downtown and surrounding neighborhoods should be a primary target for improvements. The existing trail and right-of-way along the River is underutilized, in part because of limited access. Improving access will increase activity in the area and support other goals and objectives in the Plan (i.e. Redevelopment)

T 4.3 Incorporate multi-use paths in new and redeveloped areas.

Encouraging all modes of transportation is becoming increasingly important as growth creates additional demands on already congested street systems, and fuel prices continue to rise. Providing pedestrian and bicycle connections in new developments between residential, commercial and/or office areas creates new opportunities for pedestrian and bicycle mobility, while building community assets for the future.

T 4.4 Support future improvements and connections to the Miami Valley Trails.

The completion of the Piqua to Troy sections of the Miami Valley Trail network will leave only the Piqua to Shelby County section to be planned and

funded. Once completed the trail network will provide 22 miles of connected trails from Shelby County to Montgomery County's Five Rivers Metro Parks trails

Objective 5

Maintain and pursue funds for transportation improvements.

Piqua should continue to aggressively pursue OPWC funds and ODOT funding sources, as well as other infrastructure funding opportunities as they materialize. The City should create a transportation maintenance strategy, which identifies city funds and funds from outside sources.

T 5.1 Fund projects with 101 and 103 city funds, and supplement with Issue 2 Funds and other external resources.

Overall, Piqua recognizes the need for both capital and operating funds to support its surface transportation network. The 103 fund is an excellent source of dedicated transportation funds, wherein one-quarter percent of the City income tax goes to transportation uses. Meanwhile, the 101 fund is earmarked for maintenance items.

T 5.2 Cooperate with other entities in Miami County on public transit services.

It is important to maintain public transportation to support low and moderate income families and disabled and senior citizens. The City should continue to participate on the 2007 Public Transit Steering Committee and the Miami County Transit Advisory Committee to advise the Miami County Commissioners on the issue of long-term funding of public transit in Miami County.

T 5.3 Expand I-75 to 3 lanes both directions

The City should support the future expansion of I-75 to three lanes both directions. This expansion is aimed at improving traffic flow through the Piqua corridor, and safety at local access point to I-75. This expansion will also support future economic development efforts along the I-75 corridor in Piqua (see Map 5.1).

T 5.4 Develop future streets as the City grows to establish a neighborhood scale to the transportation network.

Future road expansions are planned to create a framework for a well connected road network that supports future growth and development. Future road ways are planned to form a modified grid network with crossroads to accommodate the development of mixed use neighborhood centers designed to support future residential growth (see Map 5.1 and the Conservation and Development Map 2.3).