# TRANSPORTATION

## INTRODUCTION

Since the most 1985 Comprehensive Plan update was completed, a measurable increase in traffic volumes and highway congestion has occurred in the City of Vandalia. Much of this increase is attributable to the increased mobility of families and the national trend of increased car ownership by these traditional families. However part of the problem is a direct result of historical access points on the city's major collector and arterial highways. The costs associated with remedying these situations are great, and the long-term implications profound.

One alternative proposed in this plan is the creation of a new city center that would redirect the orientation of the city to the west. This would have the effect of redirecting the City's commerce to an area that could be designed to accommodate it while providing relief to the National Road Corridor.

Air passenger and freight services continue to exist at the Dayton International Airport that is contiguous to the City to the northwest. Office and industrial sites within the airport's sphere of influence continue to find this proximity a major contributing factor in their decision to locate and expand in the region. Railroad access also exists in the currently designated office/industrial areas to the north and northeast areas of the City.

## LAND USE / TRANSPORTATION INTERFACE

A transportation plan should reflect the reality of implementing a land use plan. Both are developed through iterative planning processes based upon considerations such as utility capacities, environmental constraints, economic factors and the overall desires of the community. This planning process has benefited from a number of programs designed to encourage public input such as focus groups, surveys, and town meetings. This public input has contributed immeasurably to the planning process by both identifying and prioritizing citizen perceptions of the existing community, as well as its future needs.

## CITIZEN INPUT

### GENERAL DISCUSSION

In interviews with City officials and Vandalia's Chamber of Commerce, respondents were asked several questions regarding traffic and transportation. First, they were asked if the City's thoroughfares were adequate for the current traffic volume. The majority of the respondents answered positively, yet had concerns about adequacy for future traffic flows. Others commented that the City already had traffic problems in certain areas,

especially at times when the interstates were congested and travelers instead used City streets.

Interview participants were asked to identify areas in Vandalia where congestion is a problem. National Road was the most commonly cited area. Other congested roads include Dixie, Little York, Poe, Brown School, and Bohanan.

Interviewees were questioned as to whether they thought the proposed modification to the interchange would help or hurt the City. Most respondents believed that the interchange would help, but had some concern over the short-term effects and impacts on businesses. Only a few respondents said that the interchange would hurt the City or not make a difference.

Finally, interview respondents were asked if the proposed relocation of National Road was an issue for the City. They responded that it was an issue / problem and had special concerns about taking private land and traffic impacts.

## OBJECTIVES AND SUPPORTING PRINCIPLES

### A. Objectives:

The thoroughfare system within the City shall be planned, located, designed, constructed, and upgraded as growth occurs. The aim is to provide for the logical development of the City's road system and to ensure the safe and efficient movement of people and goods.

### B. Community Development Principles:

1. Provide easy access to all public facilities particularly schools and parks.
2. Protect residential neighborhoods from through-traffic or non-residential traffic.
3. Internalize traffic to encourage sound development patterns by discouraging direct access to major thoroughfares.
4. Provide for the separation of transportation modes within neighborhoods and along major streets where desirable for the public safety.
5. Develop streetscapes as attractive and integral parts of public open spaces, including an appropriate setback from the centerlines of all major thoroughfares as a natural buffer.
6. Reduce traffic hazards and preserve investments by avoiding spot and strip commercial development, and the inappropriate intrusion of commercial development into residential areas.

### C. Traffic Movement Principles:

1. Provide a variety of street systems, specifically designed to service the distinct traffic needs in the area, including: an expressway system, a major street system, a collector street system, local streets, and boulevards where desirable.
2. Provide for properly controlled access to all developed or readily developed property.

3. Maintain needed traffic capacity and desired quality of flow in the system by limiting on-street parking, spacing curb cuts, and providing direct access to residential uses exclusively.
4. Design all thoroughfare and terminal facilities, including parking, with sufficient capacity to accommodate anticipated traffic based upon intensity of projected and planned land use.
5. Control the intensity of land use to keep traffic volume on any thoroughfare from exceeding its planned capacity; and whenever it is considered desirable to modify the land use intensity, the capacities of the affected thoroughfares shall be modified accordingly. Street improvements shall occur within a reasonable time to accommodate traffic generation. Determination of construction schedule and financing agreements for road improvements shall occur prior to rezoning.
6. Plan the street system and land uses to keep commercial and industrial traffic off residential streets.

# THOROUGHFARE PLAN

## INTRODUCTION

A number of modifications have been recommended based upon the proposed future land use plan. Many of these upgrades are based upon land uses that were not projected during the previous plan update. These include the new I-75 interchange at Benchwood Road / Wyse Road; the industrial / office area west of Cassel Road; and the new City Center located south of National Road between Peters Pike and Dog Leg Road. Each of these land use changes require a number of highway improvements to adequately handle the future traffic volumes anticipated.

## NEW I-75 INTERCHANGE

This interchange upon completion will require a number of highway improvements to accommodate not only the introduction of I-75 traffic into the area but also the proposed commercial/office center of approximately 150 acres to the west of I-75 between Benchwood Drive and Stop Eight Road west to North Dixie Drive. The following highway classification upgrades are recommended with the implementation of this interchange:

| STREET | DESIGNATION | FROM / TO |
|---|---|---|
| Poe Avenue | Arterial | Interchange North to Little York Road |
| Wyse Road | Thoroughfare | East of Interchange |
| Benchwood | Thoroughfare | I-75 to North Dixie |
| Little York Road | Arterial | North Dixie to city limits |
| Miller Lane | Arterial | Benchwood Rd. to Little York Road |
| Miller Lane | Arterial | Benchwood Rd. to Stop Eight Road |
| Stop Eight Road | Arterial | North Dixie Drive to Webster |
| Webster Street | Thoroughfare | Existing South to Stop Eight Road |

| | | |
|---|---|---|
| Poe Avenue | Collector | South to Stop Eight Road |

**NORTHEAST INDUSTRIAL / OFFICE PARK**

This area of the City is projected to develop as an Office/Industrial land use. This is an extension of current uses with an ultimate buildout estimated at approximately 4 million square feet. This employment center will require a phasing of highway improvements as development occurs.

| STREET | DESIGNATION | FROM / TO |
|---|---|---|
| Northwoods Blvd. | Arterial | North Dixie Drive to Falls Creek |
| Falls Creek | Arterial | Northwoods Blvd. to Old Springfield Rd. |
| Old Springfield Rd. | Arterial | North Dixie Drive to the city limits |
| Crossroads Court | Collector | Existing |

**CITY CENTER WEST**

The proposed City Center West provides the City of Vandalia an opportunity to redefine its community image. The key component to the development of this area will hinge upon the construction of a new interchange on the Airport Access Road. The area designated to contain this center contain approximately 650 acres and is proposed for commercial / office land uses. This area at buildout could easily contain over five (5) million square feet of leasable area, requiring a number of highway improvements as phased development occurs.

| STREET | DESIGNATION | FROM / TO |
|---|---|---|
| W. Alkaline Springs Rd. | Arterial | Existing to Dog Leg Rd. |
| Stonequarry Road Rd. | Arterial | S. Dixie Drive to Dog Leg |
| Corporate Center Dr. | Collector | Existing |
| Worldwide Place | Collector | Existing |

**OTHER SUGGESTED IMPROVEMENTS**

| STREET | DESIGNATION | FROM / TO |
|---|---|---|
| National Road | Arterial | Brown School to Sunderland |
| National / Cassel Springfield | Collector | Sunderland to Old |

**NEW STREETS (PROPOSED)**

| STREET | DESIGNATION | FROM / TO |
|---|---|---|
| Stoneysprings Extension | Collector | Stonequarry to Mulberry |
| Poe Avenue | Local Street | Connection to Foxfire |
| Paddock Road | Local Street | Connection to Birnam Wood |

## THOROUGHFARE PLAN UPDATE / FUNCTIONAL CLASSIFICATION

Traffic volumes in the City have increased consistently during the past decade. This is particularly true of the regional thoroughfares and freeways, which contain considerable pass through traffic volumes; creating traffic congestion not of the City's making. The three major future development areas identified above collectively contain over 1000 acres of developable land. The final determinations regarding the development of these areas will evolve over the next few decades and are beyond the scope of this planning process; however, it is clear that these three areas have the capability of generating well over 10,000 new jobs at build out.

By identifying current transportation deficiencies based upon the future land use plan recommendations, the City of Vandalia will be in a position to match future services with demands. These thoroughfare recommendations are general in nature and are intended to provide guidance in planning for future transportation needs. However, as development proposals are submitted for consideration, in depth traffic studies should be initiated (particularly for the City Center West) to identify in detail, utility phasing schedules and the timing of the transportation infrastructure needs.

The Thoroughfare Plan found in the Appendix represents an updated functional classification of the City's transportation system. All street modifications noted above, have been included in the updated Thoroughfare Plan. The capacities of these highway upgrades can be enhanced with the development and implementation of an access management system designed to preserve the functionality of the existing highway system.

# ACCESS MANAGEMENT

Access management is the act of balancing access to developed parcels of land while ensuring the existing and continued movement of vehicles in a safe and efficient manner. Different roads provide different purposes based upon the land uses accessing the facility. No single highway can provide for both high levels of movement as well as high levels of accessibility to individual parcels.

In order to understand the role of access management, it is critical to keep in mind the close connection between land use and transportation. Highways provide access to land that enables the development of that land. Land uses generate vehicle trips. In order to manage traffic along a highway, both land use and transportation strategies are necessary. To manage one without the other will result in congestion; deterioration of the highway corridor; and resident, business, and landowner dissatisfaction.

> ***Local roads and streets*** are designed for localized traffic, slow design speeds with numerous driveway cuts. Parking is permitted on the street, which provides services to a diverse group of users from pedestrians, to localized automobile traffic and vehicles providing government services such as police, fire, and garbage

removal.

***Collectors*** provide a balanced responsibility of access to adjacent properties while facilitating through traffic movements. Collectors carry a moderate amount of traffic volumes during the day, with increased traffic volumes during both the AM and PM peak hours. Collectors also connect local roads and streets to the arterials.

***Arterials*** are higher-speed corridors usually within or between communities. These highways carry the majority of commuter traffic, in addition to goods and services each day across the community. These highways often tie into the freeway / interstate system at strategic locations. Free-flowing traffic movement is more critical than access to adjacent property.

***Freeways*** provide ease of movement through higher speeds, higher traffic capacities, improved safety, and a vast reduction of traffic conflicts. Freeways maximize movement and minimize direct access.

As the City of Vandalia continues to grow, concerns regarding its costs of services and the maintenance of its community character have increased. This is particularly true in areas where functional obsolescence created by strip commercial development has impacted the community's character as demonstrated by the National Road Corridor west of the I-75 interchange. This type of development is prominent throughout Ohio, where strip zoning commercial uses and indiscriminant access cuts onto arterial highways have been allowed.

As these traffic conflicts occur over time, the growing number of curb cuts and turning movements conflict with the intended function of the arterial system – to move people and goods safely, quickly, and efficiently. Poorly coordinated access systems force more trips onto the arterial, traffic conflicts multiply, and congestion increases. As the level of service declines, additional lanes, controlled medians, and access consolidation are programmed, however with the diminishing funds available to communities, localized cost sharing is often required of local property owners. As the functionality of the highway system diminishes, and the costs of retrofitting the highway system increases, these uses sometimes move up and out to new greenfield developments outside of the community.

Many factors go into the development of an access control plan. Though the scope of this planning process cannot provide the in-depth analysis necessary to implement an access management plan, it does allow for the discussion of the general elements necessary for its implementation.

Access management is more that just the simple evaluation of driveway access points onto the Vandalia highway system. It involves a combination of techniques including:

1. Spacing and design of driveways
2. Median use, including design and openings

3. Provisions for turn lanes
4. Proper spacing of traffic signals
5. Internal parcel circulation
6. Freeway interchanges
7. Functional class facilities
8. Functional area of intersections
9. Local road infrastructures

There are a number of benefits associated with the implementation of an "Access Management System."

***Fewer accidents*** occur on the highway system. An area that would benefit immediately from access management would be the immediate area west of the I-75 Interchange on National Road. Access conflicts that currently exist within this corridor have led to an incredibly high number of accidents, which would surely be reduced, with access consolidations.

***Increased capacity*** would be facilitated, possibly reducing the costs for road improvements such as the construction of additional lanes. This would also maintain the scale of the community while reducing the amount of impervious cover on the landscape.

***Travel times*** usually decrease in areas utilizing access management practices. This translates into reduced travel times, lower emissions, and substantial fuel savings.

***The protection of the public's investment*** is becoming even more important today as governments struggle to maintain adequate infrastructure services. By implementing access management programs, governments ensure that infrastructure investments are maximized and that the costs of the improvements reflect the direct benefits gained.

***Finally, it makes good business sense*** by not only enjoying the reduction of traffic accidents, but also reducing the need of constructing additional road lanes and the associated acquisition of additional right-of-way while stretching the service life of freeway interchanges.

## TEN WAYS TO MANAGE ROADWAY ACCESS IN YOUR COMMUNITY[1]

1. Lay the foundation for access management in the comprehensive plan.
2. Restrict the number of driveways per lot.
3. Locate driveways away from intersections.
4. Connect parking lots and consolidate driveways.
5. Provide residential access through neighborhood streets.
6. Increase minimum lot frontage on major roads.

[1] Center for Urban Transportation Research

7. Promote a connected street system.
8. Encourage internal access to outparcels.
9. Regulate the location, spacing and design of driveways.
10. Coordinate with the Department of Transportation.

**PLANNING POLICIES THAT ASSIST ACCESS MANAGEMENT**

1. Provide for mixed uses and higher densities.
2. Do not plan narrow, commercial strips along highways.
3. Redesign existing strip development areas.
4. Plan for a community street network.
5. Require master planning for large tracts of land.
6. Plan and design transportation improvement that fit with community character.

**RECOMMENDATIONS**

1. Undertake the development of an access management plan that provides a parcel-by-parcel inventory of existing problems, especially in the commercial corridors. The access management plan can provide site specific or corridor specific solutions to the current problem. In addition, the access management plan can contain roadway design standards that can be incorporated into the regulatory process to ensure that access management and quality design become a consideration in the construction of future roadways. The access management plan will also develop specific policies and standards that should be followed in the future.

## URBAN CORRIDORS

The elements that make up an urban corridor include nearly anything that can be seen from, or has an impact on, the roadway. Because of Vandalia's location in relation to the interstate system, several commercial corridors have developed over time. Vandalia's commercial corridors are not a-typical to other commercial corridors in the area or across the United States. Among the characteristics that have come to epitomize the common commercial corridor are:

1. Numerous large freestanding and portable signs;
2. Large expanses of unscreened surface parking;
3. Little or no landscaping of public or private property;
4. Few or no pedestrian improvements;
5. Aboveground utilities and overhead lights;
6. Numerous poorly delineated and closely spaced driveway access points; and
7. A generally uncoordinated approach to the design, location, and planning of various public and private improvements.

National Road, Vandalia's principle commercial corridor and "downtown," contains little more than national fast-food franchises, gas station chains, and aging strip centers. Indiscriminate curb cuts exist throughout the corridor and most businesses have an individual parking lot. The corridor is not pedestrian friendly and caters to the automobile. As the commercial properties / centers along National Road begin to redevelop, it becomes crucial to have standards in place to assure quality redevelopment.

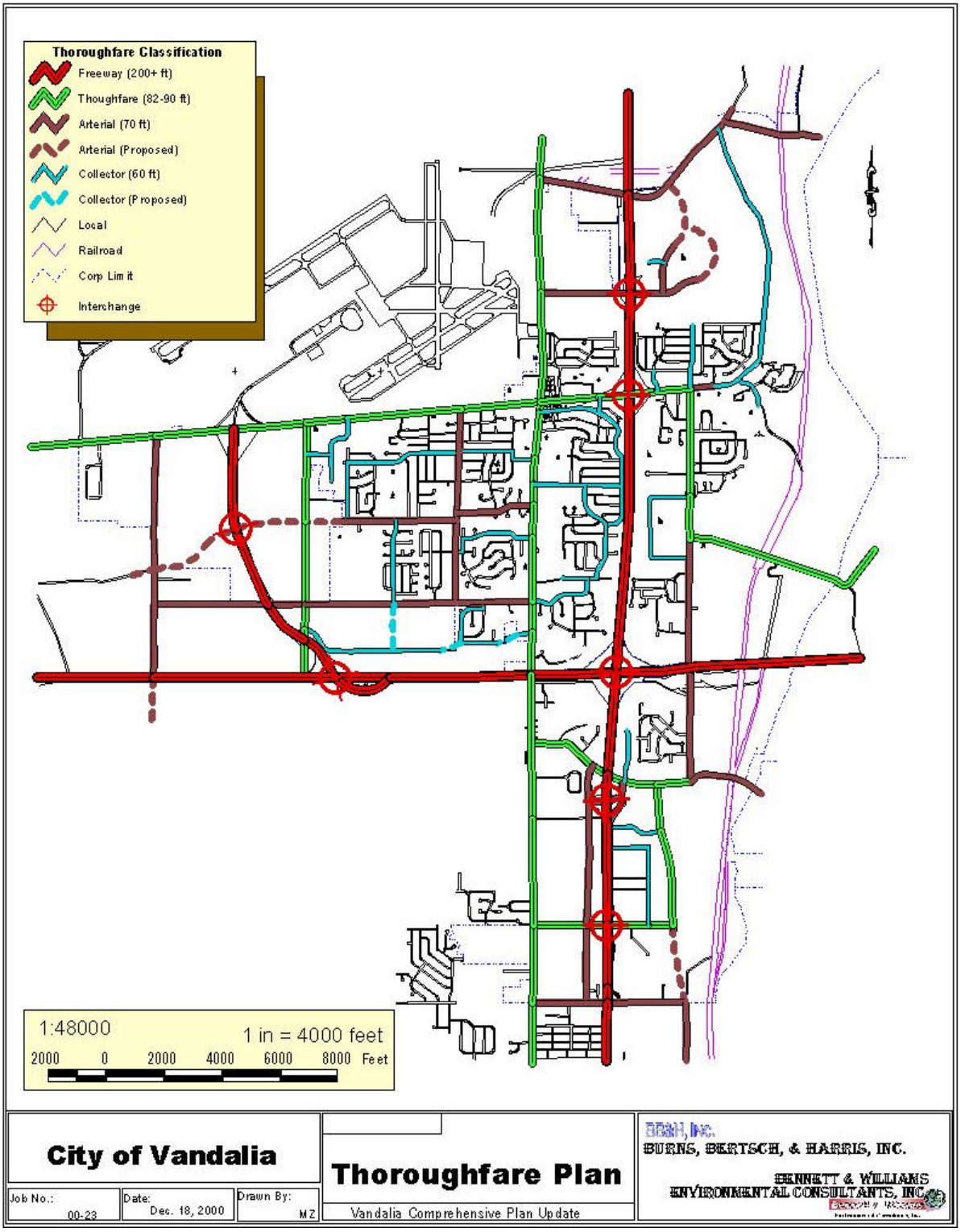
When the new interchange is constructed, Miller Lane will become a new commercial corridor. The majority of uses that will locate in this corridor will also cater to highway traffic. By implementing the recommendations found in this section, the Miller Lane corridor will not become a mirror of the National Road corridor.

## RECOMMENDATIONS

1. Implement tighter sign controls in the commercial corridors. Specifically, modify Section 1282.12. The size and height requirements are excessive. Add sections to the sign ordinance that address landscaping, letter style, color, and construction materials.
2. Establish landscaping standards for vehicular use areas.[2] For example, require a vegetative buffer, masonry wall, or earthen berm, with a height of between 36 and 54 inches between all vehicular use areas and abutting public rights-of-way.
3. Establish landscaping requirements for the interior of all vehicular use areas that exceed 5,000 square feet in size. For example, require landscaping of at least eight percent of the vehicular use area. Individual landscaped islands should be at least 100 square feet in size, with sides measuring at least five feet in length. One tree should be planted within these interior areas for each 100 square feet of required landscaping; three shrubs with a minimum installed height of two feet should be planted for each required tree.
4. Enhance the aesthetic appearance of the gateways through landscaping and the addition of gateway features.
5. Explore the creation of a "Special Improvement District" along National Road.
6. Extend the streetscape improvements in the National Road corridor. This is further discussed in Section VII.
7. Require site plan approval as a precondition of all development and redevelopment activity.
8. Create commercial corridor overlays to control building construction material, lighting, signage, etc.
9. Develop and implement appropriate access controls and driveway design criteria. For example, encourage the use of shared driveways by adjacent parcels.

[2] includes parking lots, loading areas, service drives, and all other areas subject to vehicle traffic

10. For commercial and industrial sites, establish a minimum 150-foot spacing requirement between private drives and major highway intersections, and a 100-foot spacing standard between private drives.




# City of Vandalia

## Thoroughfare Plan

Vandalia Comprehensive Plan Update

| Job No.: | Date: | Drawn By: |
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| 00-23 | Dec. 18, 2000 | MZ |

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