

# **INFRASTRUCTURE**

## **INTRODUCTION**

Infrastructure is important to the development of any community. Without an adequate sewer and water network, residential, commercial, and industrial growth will be inhibited. Infrastructure development is costly, and, therefore, these networks must be adequately designed and maintained.

Because of Vandalia's position in the Miami River Valley, the stormwater management system also becomes an important infrastructure element. To prevent flooding within the City limits and downstream, an adequate stormwater management system must be in place.

Community facilities are also part of the overall infrastructure. These facilities include schools, public buildings, and park and recreation facilities. Parks and recreation are addressed in the open space plan. The other community facilities are addressed below.

## **CITIZEN INPUT**

In interviews with City officials and Vandalia's business community, respondents were asked whether the existing level of services meets the current needs of the City and will continue to meet them in the future. The great majority of the interviewees responded positively that the City meets present needs and will continue to do so in the future. When asked what services could be enhanced, the only repeated response was the operations of the City's tax department.

## **UTILITIES**

### **WATER SYSTEM**

The City of Vandalia receives its treated water supply from the City of Dayton Municipal Water System. Average daily demand for the City is 1.9 million gallons per day (MGD) from 4,722 accounts within the City limits. The City Council is actively pursuing a proposal with neighboring Tipp City for a centralized water treatment facility with a total treatment capacity of 7.0 MGD.

The distribution system consists primarily of cast iron piping and ranges in size from 30 inches to 4 inches. Replacement materials are also made of cast iron. The system is reported to be in very good shape. There are 702 hydrants located throughout the system and system pressure is reported to be adequate. The Vandalia Fire Department is responsible for yearly flushing of the hydrants. The distribution system has been modeled using KY Pipe.

Distribution storage consists of two 1.0 million gallon (MG) and one 0.5 MG elevated steel tanks. The two larger tanks were built in 1969 and 1996. The smaller tank was built in 1958. The City is in the process of repainting and repairing the older tanks.

The City charges users a fee per amount metered at each hookup. Fees are based on the size of the water meter at the hookup. Additionally, users are charged a flat fee for wellhead protection.

Expansion for the City is dependent upon Dayton's ability to supply water. Currently, the area south of the airport, in the western sector of the City, is being looked at for possible commercial development. In an interview with the City Engineer, Ted Rusen, he said that since the City of Vandalia built a 1.0 MG storage tank in that general area, expansion in this sector is feasible. Additionally, once the new water treatment facility is constructed, expansion capacity for Vandalia should be readily available.

## **RECOMMENDATIONS**

1. Continue with current negotiations / plans with Tipp City for a centralized water treatment facility. This facility will place the city in a stronger position when expansion plans are being considered. The construction of this water treatment plant will enable the city to have greater control over maintenance and operations and also over rates charged to consumers.

## **WASTEWATER SYSTEM**

Vandalia currently is tied in with two other cities, Tipp City and Huber Heights, to form the North Regional Wastewater Treatment Plant, located in Huber Heights. The plant has a total treatment capacity of 11.2 MGD with an average daily flow reported to be at 8.2 MGD.

Vandalia's collection system consists of clay, concrete, and plastic piping. The collection is 90 to 95 percent gravity feed. The oldest portions of the system are reported to be 60 years old. The system collects effluent from 4,810 accounts in the City. Currently, the City has an ongoing program of camera testing and repair to take care of inflow and infiltration problems in the piping.

The system is included under a capital improvement program and a capital budget has been established for facilities.

Expansion for the City's portion of the wastewater system appears to be quite feasible. The treatment facility was built in 1985 and so is relatively new. Average daily flows make up approximately 73% of the treatment capacity for the plant. An ongoing I / I inspection program is intended to keep hydraulic overload of the plant at a minimum. Current expansion plans include extending the collection system into the western sector of the City.

## **RECOMMENDATIONS**

1. Current maintenance efforts must be maintained, particularly in areas where the distribution system is older. These portions of the system must be monitored for inflow and infiltration regularly.

## **STORMWATER MANAGEMENT**

The majority of the drainage in the City is to natural streams tributary to the Miami River. The Miami River, which flows south, serves as the City's eastern boundary.

The City's existing stormwater management system is comprised of numerous physical structures for stormwater collection, conveyance, and storage. Collection structures are catch basins and curb inlets. Conveyance structures are manholes, junctions, headwalls, detention basin outlets, pipe tap connections, and open and closed culverts. Storage structures are detention basins, ponds, and depressional areas.

The *Natural Areas* map, located in Appendix 3, shows the major streams that flow through the City of Vandalia. Streams and rivers do not respect physical boundaries, and, therefore, stormwater management becomes a regional issue. At the time that this plan was completed, the City of Vandalia did not have a stormwater management plan in place.

## **RECOMMENDATIONS**

1. Undertake the preparation of a stormwater management plan that provides an inventory of the existing system, as well as making recommendations for future needs based on projected population and business growth.
2. Continue to work with MVRPC and the regional communities to address regional stormwater issues and the impacts of the individual communities on the system as a whole.



Comprehensive Plan Update 2000

**Water Supply System**  
City of Vandalia

**Map Key**

**Existing Water Facilities**

- Water Main
- METER

**Future Water Facilities**

- FUTURE 6"
- FUTURE 12"
- FUTURE 24"
- PROPOSED 12"
- PROPOSED 24"

**City of Vandalia**

- City Boundary
- Public Facilities
- ROW
- Railroad
- Airport
- Parcel
- Streams or Ditch



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**Sewer Collection System**  
City of Vandalia

**Map Key**

**Existing Sewer System**

- Sewer
- Flow Direction
- EXISTING
- LR Sewer
- LR Sewer Unimproved

**Future Sewer Extension**

- FUTURE 6"
- FUTURE 12"
- FUTURE 24"
- PROPOSED 6"
- PROPOSED 12"
- PROPOSED 18"
- PROPOSED 24"

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## **COMMUNITY FACILITIES**

The City of Vandalia provides the citizens and the business community with a high level of community facilities and services. The City desires to maintain this high level of services that contribute to the quality of life in Vandalia. The community facilities discussed below include schools, police, and fire. Other important community facilities include the parks and recreation system presented previously. The *Community Facilities* map is located in Appendix 3.

### **OBJECTIVES AND SUPPORTING PRINCIPLES**

#### **A. Objectives:**

City service facilities should be provided to efficiently meet the administrative, maintenance, and public safety needs of the community.

#### **B. Principles:**

1. Provide a primary focus for community activities and City services within a community center.
2. Maintain City services commensurate with available revenues based on sound fiscal practice.
3. As development occurs, ensure that the private sector participates in infrastructure improvements through rights-of-way dedication and road construction.

## **SCHOOLS**

“Socially, schools along with parks, act as nodes or focal points of the neighborhood and the community. They play an important role in creating and maintaining a cohesive community.”<sup>1</sup>

Residents from the City of Vandalia and Butler Township share a school district. Murlin Heights Elementary School and Smith Middle School are the only buildings located in Butler Township. All of the other school buildings, including the Vandalia-Butler Board of Education Offices are located within the City of Vandalia. The schools located in the City of Vandalia are Butler High School, Morton Middle School, Helke Elementary School, Demmitt Elementary School, and Vandalia Elementary School. Since the 1985 Plan update was completed, no new school facilities have been added within the City of Vandalia.

The majority of the school facilities are located west of Interstate 75. However, considerable residential growth has occurred in

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<sup>1</sup> 1985 Comprehensive Plan



the eastern portion of the City. If new facilities are needed, efforts should be made to construct at least one facility on the eastern side of the City. At this time no new school sites have been designated. If new construction occurs, it is likely that an existing facility will be razed and a new building constructed on that site. Morton Middle School, one of the oldest facilities, is in need of serious rehabilitation.

In interviews and citizen surveys, the school system was frequently cited as a primary reason as to why residents enjoyed living in the City. The quality of the school district serves as an important role in economic development. When businesses consider potential locations for relocation / expansion, the quality of the school district is an important factor often considered. As previously stated, Vandalia has higher rates of high school graduation than both Montgomery County and the State of Ohio. Additionally, in four of five 9<sup>th</sup> grade proficiency test subjects, pass rates exceeded 94 percent.

Vandalia-Butler Public Schools enrolled approximately 3,560 students during the 1998-1999 school year. Because of the quality starter homes that exist in the City and the high quality of the school system, young families with children will be attracted to the area, causing an increase in school enrollment figures. The school district has prepared projections that show a steady increase in enrollment, supporting this hypothesis. Therefore, existing sites must be expanded or new sites acquired to accommodate future enrollment. To maintain the quality of the school system and ensure that land will be available for future expansion, the City should work with Butler Township to coordinate land use policies and future land use plans. The school system should also undertake the development of a strategic plan that identifies future needs and potential expansion sites. Once these sites have been designated, Vandalia and Butler Township can both work with developers to ensure that land is set-aside as part of the subdivision process.

Representatives from the Board of Education stated that improved communication is needed between the government entities. A coordinated approach should be developed that addresses several elements including the airport and highway expansion. Also, economic development plans should be coordinated to ensure that the tax base continues to increase in both jurisdictions, not just the City of Vandalia.

The City of Vandalia supports the school district in several ways. First, the school district now gets shared revenues on tax abatements. The tax incentive programs established by the City of Vandalia do not hurt the school system. The Parks and Recreation Department also opens up many of the programs to Township residents. This support should continue.

Representatives from the Board of Education stated that the business community also supports the school district in several ways. Currently, a Business Advisory Committee is in place to facilitate cooperation. However, clearer partnerships with businesses should be defined. The City of Vandalia and Butler Township also need to develop a coordinated link for support to draw upon the resources in the community. The majority of large businesses that support the school district are located in the City of Vandalia. In

addition, the majority of fiscal support for the school district comes from property tax from Vandalia businesses and residents.

**POLICE DEPARTMENT**

Vandalia’s police department was frequently mentioned as a positive aspect of living in the City according to the results of the citizen survey. In addition, the Division of Police conducts its own survey of police services where respondents are asked to rate their satisfaction with the department based on a rating scale of 1 (lowest) to 10 (highest). The survey determines satisfaction with call receipt by the dispatcher, police response time, officer’s courtesy and concern, overall handling of the call, neighborhood safety and security, and City safety and security. Results from 138 surveys taken in 1999 indicate high satisfaction levels with ratings above 9.0.

An interview with Police Chief Doug Knight indicated that the City Council and staff are very supportive and that the department’s needs are met without exception. The Division of Police spends approximately \$3.5 million per year, and has an average response time of five minutes. The most commonly reported crimes in Vandalia are petty theft and vandalism.

Currently, the police department’s offices are centralized in one location, a new facility located on Bohanan Drive with a capacity for sixty-eight officers. Knight indicated that the current goals of the department are to provide two officers for every 1,000 in resident population. Vandalia’s population is estimated at 14,000. To attain Mr. Knight’s goal of not fewer than two officers for every 1,000 residents, twenty-eight officers would be needed. Currently, the Division of Police supports thirty-one full-time officers and three reserve officers, all of whom are trained EMT’s. To accommodate future population growth, a maximum of fifty-one officers will be needed by 2020. The new facility at Bohanan Drive will be capable of handling these new additions to the police force.

Table 11.1 indicates the most frequent locations in Vandalia where traffic accidents occurred during 1998. According to statistics provided by the police department, most accidents occurred in the middle of the week--between Tuesday and Thursday--and in the late afternoon. The most common causes for traffic accidents were speeding and failure to yield.

**Table 11.1**

<b>Most Frequent Locations</b>	<b>Number of Crashes</b>	<b>Intersection</b>
East National Road	57	I-75 ramp (11)
		Ranchview / Bohanan (10)
South Dixie Drive	35	Elva (9)
		Kenbrook (7)
West National Road	35	South Dog Leg (5)
		Access Road (4)
Little York	29	Poe (9)
		South Cassel (8)
South Brown School Road	25	East National Road (3)

Source: 1998 Traffic Crash Statistics, Vandalia Division of Police

## **FIRE DEPARTMENT**

There are two fire stations located in the City of Vandalia. Fire Station No. 1 is located on North Dixie Drive. It serves the majority of the population and businesses west of I-75. Fire Station No. 2, located on Brown School Road, serves residents and businesses east of I-75.

The City of Vandalia's fire department employs eight full time staff including firefighters, paramedics, and an inspector, as well as 52 paid, on-call personnel. Additionally, the City has a mutual aid agreement with Butler Township and other surrounding areas including parts of Miami County. According to Fire Chief John Sands, there is a discrepancy in that the Vandalia fire department goes on three times more mutual aid calls than the City gets from the surrounding areas. Sands said that Vandalia gave aid to the surrounding communities on 301 calls and received aid on 88 calls in 1999.

The Vandalia fire department has an average turn around time of 45 minutes. Average response times in 1999 were as follows:

- 1,873 first responder calls: 3.4 minutes
- 1,274 EMS calls: 5.27 minutes
- 599 fire calls: 6.02 minutes (includes mutual aid time)

Sands indicated the fire department has many plans and goals for the near future. The department plans to add two bays to Station 1 in addition to a medic unit where three medics will be available at all times. Facility goals include acquiring a training tower with burn rooms by 2001 and a new station in the Poe Avenue area. Currently, Vandalia firefighters train using Dayton's facilities, and service to the Poe Avenue area is provided by Butler Township. After the contract with Butler Township expires in the Poe Avenue area, Vandalia will be providing fire protection there as well.

Since January 2000, the fire department instituted a community services survey similar to that the police department has used. As with the police, Vandalia's fire department received favorable comments from City residents according to the results of the citizen survey.

## **RECOMMENDATIONS**

1. Work with Butler Township to coordinate land use policies and future land use plans.
2. Work with the school district in future planning efforts.
3. Coordinate approach on critical regional issues such as economic development and the airport and highway expansion.
4. Clarify the partnerships with the business community. Develop a coordinated link for support.

