Utilities

Summary

The **Comprehensive Plan** includes a broad goal for this Element which states that "quality utility service" is to be provided. In line with the Land Use Plan that drives this policy document, the Utilities Element serves as one means of implementation. As a result the utility recommendations contained in this Element focus on providing services to Growth Areas. This serves to implement the general direction of the County Plan, which is to direct growth to those locations that can best handle it, thereby protecting agriculture and conserving greenspace. This element does that.

Planning Issues

*The following is an overview of utility-related planning issues. For a detailed discussion, please refer to the report **Planning Issues**.*

The focus of utilities as an issue facing Wayne County has been two-fold: meeting the needs of a growing population and addressing pollution concerns in several key locations. Local needs are met in many locations by community systems and individual package plants and wells. These systems have excess capacity in some cases. Many rural homeowners are served instead by on-site systems. However the unincorporated area suffers from severe soil constraints, especially relative to septic systems and leach fields. As a result the Ohio Environmental Protection Agency (OEPA) has been stressing system improvements in several locations where water pollution is a growing concern, such as Fredericksburg and Burbank, and will not permit new package plants.

Existing Conditions and Trends

*The following is an overview of existing conditions and trends. For a detailed presentation please refer to the report **Existing Conditions and Trends**.*

Principal utilities required by and provided to developed communities within Wayne County include water supply and wastewater treatment. A summary is presented of such utility services and the need for utility improvements. Newly developing areas are summarized as well. Data for this assessment was provided by individual communities and their engineering consultants.

Water Supply

Water service appears to be adequate in most Wayne County communities with the exception of some rapidly growing areas and newly developed subdivisions where demands are stressing limited resources. In developing areas, new wells with sufficient capacity may be installed if supply exists. Demand for water in low-yield groundwater locations may only be met by extending water service from nearby community systems - if economically feasible.

Sources of water used for drinking, sanitation and industrial purposes in Wayne County are primarily from groundwater resources. High-, moderate- and low-yield groundwater resources are delineated by the Ohio Department of Natural Resources (ODNR).

- **Existing Systems** - Larger communities in the County derive their water from high-yield groundwater sources. The cities of Rittman, Orrville and Wooster have developed well fields, in which each well may yield from 100 to 500 gallons per minute (gpm). Multiple wells have been developed in order to supply adequate water quantities to

meet local demands. A majority of the other communities with populations of over 100 persons also have water treatment systems. The villages of Congress and Burbank, however, are not served by water treatment systems.

- **Capacity** - A majority of water supply systems appear to have adequate capacity to serve current needs. Dalton, Orrville and Shreve are operating at 100 percent capacity and Fredericksburg, Marshallville and West Salem are approaching capacity with production rates at or above 75 percent of design capacity.

  The larger facilities provided in communities such as Orrville and Wooster currently have sufficient capacity to serve the community population as well as industry in the vicinity. A new Orrville water treatment plant nearing completion of construction will provide twice the capacity of the existing plant. Once the new Orrville plant is put in service, the old water treatment plant will be used to provide cooling water exclusively for the Orrville electric power plant.

  Smaller communities which may soon require expansion to accommodate future growth include Dalton, Fredericksburg, Marshallville, Shreve and West Salem.

Wastewater Treatment

Wastewater collection and treatment service is provided to Wayne County in a variety of ways. The following narrative describes such methods:

- **Community Collection and Treatment** - Larger communities such as Rittman, Orrville and Wooster have area collection sewers and wastewater treatment facilities, as well as Apple Creek, Creston, Dalton, Doylestown, Marshallville, Shreve, Smithville and West Salem.
- **Sewers and Package Plants** - Seven locations are serviced by sewer systems and package treatment plants operated by the County. These are Eastwood, Gingery, Hillcrest Area, Juvenile Attention Center, Lake Harmony, Meadows Allotment and Wayne County Airport. The flows of the Meadows Allotment and Lake Harmony areas are operating at treatment plant design capacity, as reported by the Wayne County Environmental Services Office.
- **On-Lot Septic Systems** - Many residences within the County have on-lot septic systems for treatment of sewage. Septic system failure rates range from 50 to 75 percent in 10 communities, according to the County Health Department. Most of Wayne County is constrained by severe soil limitations.

A need for selective system improvements exists based on the following factors: current and projected growth, newly constructed subdivision areas, inadequate water treatment or distribution facilities, inadequate sewer collection or treatment facilities, noncompliant treatment systems and failing on-site septic systems.

Community and System Needs

Several communities and local systems will be making improvements to both their water and wastewater systems to resolve problems due to aging systems, inadequate facilities or other system failures. The following system improvements and treatment plant upgrades are planned or scheduled: Burbank, Dalton, Fredericksburg, Marshallville, Mount Eaton, Orrville, Smithville and West Salem.

Rural Subdivisions

Population increases and development are occurring outside the boundaries of areas presently served by community or County water and wastewater systems. Current subdivision development is typically located outside existing community water systems, where new water wells must be constructed to meet supply demands and outside community wastewater service areas or locations not served by County wastewater systems.

Water supply demands in these areas can be adequately met since the areas are located within moderate yield groundwater resource areas. Sewer collection and treatment facilities however must be newly constructed or extended from existing communities which have available capacity to meet demands of area growth.

Goals, Objectives and Strategies

Policies are the basis of the **Comprehensive Plan** and this section presents the Utilities Goal and two objectives. Together these policies are the driving force behind the Utilities Element. The Implementation section presents actions for each objective. The Utilities Goal is:

To provide quality utility service.

The objectives and their respective strategies are:

Objective 1 - Provide Adequate Water Service - Maintain and ensure the future production of adequate quantities of water for drinking, sanitary and where needed, commercial and industrial purposes to Growth Areas, by:

1.1 Understanding community water needs.

1.2 Determining effective capacity of current facilities.

1.3 Evaluating need for system expansion based on managed growth projections for areas to be served.

1.4 Identifying sources of funding for future construction.

1.5 Constructing adequate water facilities where needed.

Objective 2 - Provide Effective Wastewater Treatment - Maintain and provide effective wastewater treatment for all Growth Areas, by:

2.1 Understanding deficiencies in area sewage collection and treatment systems.

2.2 Determining adequacy of current facilities.

2.3 Evaluating need for expansion of current wastewater facilities based on managed growth projections for areas to be served.

2.4 Coordinating activities and designing facilities to be compatible with protecting natural resources.

2.5 Identifying sources of funding for future construction.

2.6 Constructing effective wastewater facilities where needed.

Utilities Plan

Sizing for Managed Growth Projections

The intent of this Element is to provide adequate water supply and wastewater treatment facilities for Wayne County communities based on **Comprehensive Plan**

land use recommendations and where need is established by managed growth projections and anticipated area development. Acreage for growth has been allocated to specific communities in the managed growth approach. The projection for utility needs is based on providing for 2.0 dwelling units per additional acre with an average of 3.0 persons per dwelling unit. This results in a managed growth population of 6.0 persons per acre to be developed. This can be considered a "worst case" scenario in that one of the Plan's intentions is higher density development in Growth Areas, which would reduce the need to extend utility lines, which could be a cost savings.

Capacity of Facilities for Managed Growth

The projection for additional water capacity to provide treated water to meet the needs of managed growth population projections is based on providing an additional flow at the rate of 100 gallons per person per day. The projection for future wastewater flows of the managed growth population is based on sewer treatment facilities at a flow at the rate of 65 gallons per person per day. Table 10.1 lists the community-managed growth population increases and the needed additional capacities for water and wastewater service.

Table 10.1
Projected Managed Growth Capacities

Community	Projected Additinal Acres	Dwellings at 2/acre	Persons at 3/DU	Additional MGD Capacity Water at 100 gpcd	Sewer at 65 gpcd
Apple Creek	100	200	600	0.06	0.04
Burbank	75	150	450	0.05	0.03
Creston	75	150	450	0.05	0.03
Dalton	100	200	600	0.06	0.04
Doylestown	150	300	900	0.09	0.06
Fredericksburg	75	150	450	0.05	0.03
Orrville	600	1,200	3,600	0.36	0.23
Rittman	250	500	1,500	0.15	0.098
Shreve	150	300	900	0.09	0.06
Smithville	300	600	1,800	0.18	0.12
West Salem	100	200	600	0.06	0.04
Wooster	1,200	2,400	7,200	0.72	0.47
Townships	748	1,496	4,488	0.45	0.29

Source: Burgess & Niple. Ltd., 1997

Water Supply Capacity Assessment

Data collected from public water suppliers was assessed using growth assignments related to the Land Use Plan. The goal was to evaluate water systems relative to their ability to provide capacity to support either current or future development. Current and available water treatment plant (WTP) average capacities were prepared for Wayne County communities listed in Table 10.2. Plants with available capacity sufficient to provide the future growth flows are identified in the table.

Table 10.2
Water Supply - Capacity/Availability for Growth

Community	Current WTP Capacity MGD	Current Flow MGD	Available Capacity MGD	Need for Capacity Available Growth MGD	For Growth
Apple Creek	0.27	0.10	0.17	0.06 Yes	
Burbank	-	(1)	-	0.05 -	
Congress	-	-	-	- -	
Creston		0.30	0.10	0.20 0.05	Yes
Dalton	0.18	0.165	0.015	0.06 No	
Doylestown	0.30	0.22	0.10	0.09 Yes	
Fredericksburg	0.05	0.042	0.008	0.05 No	
Marshallville	0.11	0.08	0.03	- Yes	
Mount Eaton	0.08	0.04	0.04	- Yes	
Orrville	3.70	1.71	1.99	0.36 Yes	
Rittman	2.20	0.590	1.61	0.15 Yes	
Shreve	0.72	0.25	0.47	0.09 Yes	
Smithville	0.54	0.175	0.365	0.18 Yes	
West Salem	0.15*	0.110	0.04	0.06 No	
Wooster	7.00	3.40	3.6	0.72 Yes	
Townships	-	(2)	-	0.45 -	

Key: (1)Source of water is currently from individual wells, (2) Many areas on individual wells.
*Outside source of 150,000 gallons per day available, "-" information incomplete.

Source: Burgess & Niple, Ltd., 1997

The following community water facilities would have **available capacity** to treat water to meet needs for future commercial or industrial growth:

- Apple Creek
- Creston
- Doylestown
- Marshallville
- Mount Eaton
- Orrville
- Rittman
- Shreve
- Smithville
- Wooster

Facilities which would be considered **inadequate** due to the fact that they do not have sufficient capacity to meet water demands of the projected managed growth population include:

- Burbank
- Congress
- Dalton

- Fredericksburg
- West Salem

The status of community water treatment facilities with respect to future capacity and need for expansion due to managed growth is identified on the Water Supplies Future Needs map. The facility is identified as adequate or inadequate with reference to having sufficient size treatment capacity to meet future needs.

Even though considered of adequate capacity to meet future managed growth needs, the expansion or improvement to specific WTPs may be needed to incorporate the following:

- System features and peak demands.
- Unit sizing and efficiency.
- Desired water quality.
- Highly variable industrial usage.
- Future commercial or industrial growth.

Wastewater Treatment Capacity

Data collected from public wastewater systems was assessed using growth assignments related to the Land Use Plan. The goal was to evaluate wastewater systems relative to their ability to provide capacity to support either current or future development. Current and available wastewater treatment plant (WWTP) average capacities were prepared for the Wayne County communities listed in Table 10.3. Plants with available capacity sufficient to handle the future growth flows are identified in the table.

Table 10.3
Wastewater Treatment Capacity Assessment

Community	Current WWTP Capacity MGD	Current Flow MGD	Available Capacity MGD	Need for Capacity Avail. Growth MGD	for Growth
Apple Creek	-	-	-	0.04 -	
Burbank	*	-	-	0.03 -	
Congress	*	-	-		
Creston		0.30	0.14	0.160.03	· Yes
Dalton	0.30	0.19	0.11	0.04· Yes	
Doylestown	0.50	0.23	0.27	0.06· Yes	
Fredericksburg	-	-	-	0.03 -	
Marshallville	-	-	-	- -	
Mount Eaton	*	-	-	- -	
Orrville	3.00	2.60	0.40	0.23· Yes	
Rittman	1.50	0.57	0.93	0.098· Yes	
Shreve	1.35	0.48	0.87	0.06· Yes	
Smithville	0.36	0.14	0.22	0.12· Yes	
West Salem	0.20	0.12	0.08	0.04· Yes	
Wooster	7.50	5.00	2.50	0.47· Yes	
Townships	-	-	-	0.29 -	

Key: "*" currently utilize septic systems and "-" incomplete information.

Source:Burgess & Niple. Ltd., 1997

Most of the existing WWTPs have adequate average size to meet the demands of managed growth population projections along with projected commercial and industrial applications.

The following communities have **adequate** wastewater treatment capacity to handle and treat the projected managed growth domestic waste contribution:

- Wooster
- Orrville
- Smithville
- Rittman
- Doylestown
- Shreve
- Dalton
- West Salem
- Creston

Communities which will **need expansion** to meet Plan projections include:

- Apple Creek
- Burbank
- Congress
- Fredericksburg
- Marshallville
- Mount Eaton

Facilities are currently being designed or constructed for the Villages of Burbank and Fredericksburg.

The status of community WWTPs with respect to having available capacity to meet future managed growth needs is identified on the Wastewater Facilities Future Needs map.

The availability of capacity to meet future wastewater needs is based on a number of factors which must be further evaluated for each specific community with reference to the following conditions:

- Average and peak waste flow contributions.
- Unusual or highly variable daily flow fluctuations.
- Variations in waste loads and industrial waste contribution.
- Sewer system infiltration/inflow above flows.
- In-plant treatment unit capacity and efficiency.
- Age and condition of specific in-plant treatment units.
- Permit requirements and compliance capability of the treatment plant and specific units within the plant.

- Sludge generation, treatment, and disposal procedures and capability.

Implementation

Community/County Responsibility

The current evaluation may indicate adequate capacity to meet the managed growth projections for a specific community. Several of the facilities will be operating at design capacity once these population growth projections are actually encountered. Additional capacity for growth in excess of the projection will not be available in many of the communities and thus will not be available to serve projected growth and development within nearby township areas.

Water pumping systems and distribution mains may be needed to provide water services to Wayne County communities. Sewer collection systems, pump stations and sewer trunk lines may have to be constructed to provide the needed facilities. Economics will play a large part in deciding how future facilities are provided.

Establishment of need and acceptable solutions to meet an individual community's need must be resolved through coordination between:

- Local utility officials and personnel.
- Community engineer or engineering consultant.
- Wayne County Engineer and Wayne County Sanitarian.
- Local and County Health Department personnel.

Providing Utilities for Growth Areas

The provision of quality utility facilities and services into Growth Areas will be the responsibility of local community utility departments and area developers. Future utility services should be extended during development as needed, including water distribution lines, sanitary sewer collection lines, storm sewers, electric power and natural gas lines, and telephone and cable lines, etc. - but when the subject development is compatible with the Land Use Plan.

Future needs of some villages and hamlets within Wayne County for water and wastewater utilities may have to be met by utilizing treatment facilities at nearby larger villages and cities dependent on available capacity and economics, particularly in areas where individual systems are not adequate or local conditions are not satisfactory. But such extensions should ensure that future land use patterns will be compatible with the Land Use Plan.

Development efforts will have to be coordinated with local community plans, comply with community guidelines and codes, and fall within defined guidelines and objectives of the managed growth concept outlined in this Comprehensive Plan.

Actions

A detailed set of recommended actions follows which provide direction relative to the strategies presented earlier in this chapter. Actions are intended to be very defined steps that are necessary to implement individual strategies. Parties are identified that are responsible for implementing individual actions. Recommended timeframes are also provided as a measure of success. A summary of all actions presented in the **Comprehensive Plan** is provided in the Implementation Element.