

# Utilities

**ALLEN COUNTY/FORT WAYNE COMPREHENSIVE LAND USE PLAN**  
**UTILITY SYSTEMS - EXISTING CONDITIONS**  
**KEY FINDINGS**

The Key Findings of the Utility Systems Work Group regarding the existing utility conditions include the following:

**Overall.**

1. In Allen County, the availability of utilities, primarily sanitary sewer service, has been and continues to be the key driver to the new land development aspect of land use planning.
2. The successful pursuit of the dual goals of improving regional water quality through the reduction or elimination of failed septic systems, combined sewer overflows (CSOs) and sanitary sewer overflows (SSOs) and the continued availability of new sanitary sewer capacity for land development will greatly depend on improved coordination and a regionalization of interests in this dual accomplishment rather than focusing entirely on growth.
3. No significant amount of federal grant money is expected to assist with the current regional water quality concerns. Local sources will be the primary, perhaps sole, provider of funding to address current regional water quality concerns.

**Sanitary Sewers.**

4. There are primarily fourteen (14) sanitary sewer systems in Allen County serving approximately 100,000 customers. The City of Fort Wayne (80,000 customers or 80%), Aqua Indiana (11,600 customers or 12%) and The City of New Haven (4,500 or 5%) provide service to more than 95% of the customers in Allen County. A majority of all of the sewer systems in Allen County plan for improvements to the capacity of their systems to accommodate expected growth during the next twenty (20) years.
5. Until 1950, most all urbanized land was served by the City of Fort Wayne Utilities while most remaining areas of Allen County were served by septic systems. As suburban areas began developing outside the City of Fort Wayne municipal limits and other urban areas developed, Allen County planning entities adopted a subdivision control ordinance which required sanitary sewer systems. As a result, several individual treatment systems (both publicly owned and privately owned) were established throughout Allen County.
6. Several tens of millions of dollars of federal grant money in the 1970s and 1980s funded interceptor pipe extensions and treatment plant upgrades to accomplish the

regional water quality improvement goals at the time such as amending widespread failure or underperformance of small sewage treatment systems.

7. Current regional water quality concerns include failed or underperforming septic systems, combined sewer overflows (CSOs) and sanitary sewer overflows (SSOs). There will be a significant cost to reduce or eliminate these community wide issues. Solutions to CSO issues alone could cost more than \$8,000 per customer. Septic system solutions have exceeded \$6,000 per household if available. The occurrence of SSOs is not allowed by regulatory agencies and could result in substantial fines per event.
8. Dual goals for sanitary sewer utility investment result: Improvements to regional water quality through the reduction or elimination of failed septic systems, combined sewer overflows and sanitary sewer overflows and the continued availability of new sanitary sewer capacity for land development.

### **Drinking Water.**

9. There are primarily twelve (12) public drinking water systems in Allen County serving approximately 100,000 customers. The City of Fort Wayne (75,000 customers or 75%), Aqua Indiana (17,500 customers or 18%) and The City of New Haven (4,500 or 5%) provide service to more than 97% of the customers in Allen County. A majority of all of the drinking water systems plan for improvements to the capacity of their systems to accommodate expected growth during the next twenty (20) years.
10. All drinking water utilities have source water protection areas to assure the preservation of their raw water supplies. Systems supplied by groundwater wells (all except the City of Fort Wayne and the City of New Haven) have Well Head Protection areas surrounding the groundwater wells that have recently been and will continue to be key drivers of land development in those protection areas. The City of Fort Wayne participates in St. Joseph River watershed initiatives to protect the river water supply for Fort Wayne and New Haven. In addition, all drinking water providers will continue work regarding homeland security issues related to safe drinking water.

### **Stormwater.**

11. Stormwater impacts the use and enjoyment of property, the public health, and the economy of the community.
12. Stormwater and its drainage patterns do not recognize political boundaries and require a coordinated effort to ensure that all standards and reviews for new developments are conducted in such a manner to protect Allen County's general public and the environment.

13. Increased demand for stormwater improvements and closer environmental regulatory scrutiny have resulted in the necessity of increased emphasis, funding and other resources for stormwater programs.

**ALLEN COUNTY/FORT WAYNE COMPREHENSIVE LAND USE PLAN  
UTILITY SYSTEMS**

**EXISTING CONDITIONS**

**I. Planning and Policy Component.**

The availability of water and sewer systems has been a significant factor for growth throughout the United States. The availability of publicly available systems in Allen County have fostered areas of rapid development in the northern and northeastern portions of Fort Wayne, the northern towns of Leo-Cedarville, Huntertown, Grabill, Harlan and adjacent areas as well as in Aboite Township in the southwestern part of Allen County.

Water and sewer systems have been developed and regulated at several levels of government and by private companies to help conform to geographic conditions, soils, public health, political boundaries, infrastructure in-place and planned, and other factors. Systems have been developed as a response to private development interests, or based on government initiatives to encourage development in selected areas. Following construction of a utility system, there is an incentive for the utility management to encourage development in the serviceable area resulting in additional customers to recover capital costs, minimize rates, and keep the system financially sound. This fiscal incentive holds true both for private, and for government-owned utilities.

Individual wells and septic systems, aerated individual effluent treatment, package wastewater treatment plants for subdivisions, and zero-discharge/irrigation schemes have been used to allow development of parcels where there have been challenges to be connected to a central system. These decentralized systems pose problems of inspection, maintenance, repair, and potential failure.

**A. Historical Development.** The majority of urban land prior to 1950 was served by the municipal sewer and water systems of the City of Fort Wayne while most outlying communities in Allen County were served by septic systems. During the 1950's, suburban areas began

developing outside of the Fort Wayne municipal limits, ultimately resulting in the adoption of a subdivision control ordinance for Allen County in 1960 to provide standards for new development. The ordinance required that new subdivisions of land must be served by a centralized sewer system unless waivers were granted by the County Board of Health. While rural home sites with private disposal systems were allowed to continue at the rate of two lot sales per year, subdivision developers began installing small-centralized systems to meet the demand for new housing. Also, seeing the opportunity to serve the new developments, several private utility companies were formed to provide sewer and water service to new subdivisions and offer septic system relief in already developed areas. In time, both operational and financial difficulties led to the purchase of these small-centralized systems by either the City of Fort Wayne or the predecessors to Aqua Indiana. Further, the federal government provided millions of dollars in grants in the 1970s and 1980s to provide the additional infrastructure necessary to connect these scattered facilities to the City's sewer system. Subsequent City of Fort Wayne policies have allowed the expansion of its sewer and water system to fully utilize the federal government investment to serve large areas north and east of the City beyond its municipal boundaries.

**B. Impacts and Costs of Central Water and Sewer Systems.** Water and sewer systems in Allen County have been important in maintaining quality of life and economic prosperity for the citizens of the County and its municipalities. While both water and sewer services are critical, sewer service is typically the more costly of the two to provide, and is more commonly the controlling factor in the economic balance between development and utility extensions. The ongoing implementation of State and Federal environmental protection measures for wastewater treatment may result in added expenditures and may result in rate increases. The timing, magnitude and cost of these measures remains uncertain.

In areas of the County without sewers in place, planned, or nearby, the existing and future problems cannot be ignored without cost and environmental harm. Where existing on-site systems are failing, solutions can be found in the extension of central sewer systems if such extensions are economical and acceptable in a specific instance. Central system extensions have been a preferred solution, however, there have always been the concern that such extensions will

allow, or stimulate, more development in areas not planned for development due to other considerations. As sewers have been extended to fix existing problems, it can be difficult to prevent additional development in the service area or along connecting utility lines.

**C. Failure of On-Site Treatment Systems.** One objective of the planning process has been to address the existing on-site wastewater disposal problems in the County and prevent recurrence in the future, as well as to integrate future utility development schedule with an overall plan. The proposed application of new, more restrictive, standards for soil testing and design of leach fields by the Indiana Department of Environmental Management and the State Board of Health may mean fewer septic systems in the future. Where future individual on-site wastewater disposal systems can be utilized, an approach must be applied that ensures proper long-term functioning. Allen County is implementing such approaches with the creation of the Allen County On-site Wastewater Management District. This program has begun to provide government agency oversight with inspection and maintenance that is funded with user fees.

**D. Trunk Sewer Extensions vs. Decentralized Treatment.** The City of Fort Wayne has plans for trunk sewer extensions to the north, northeast, and northwest of the City for future development. Aqua Indiana also has plans to extend sewer service in the area to the southwest of Fort Wayne. These two areas of the County are the focus of greatest recent growth (per Section 3, Demographics report), and are projected for rapid growth in the near future. Other municipal sewer systems in the County are planning expansions to serve nearby development. In all of these areas of planned utility expansion, the central sewer systems can be expected to provide satisfactory service and reduce the numbers of new on-site septic and surface discharge units.

**E. Growth Pressures and Utility Systems.** Major questions for Allen County, and for municipalities within the County, have been how to encourage and guide development with the goals of providing residents with their desired quality of life at reasonable tax and utility rates. This necessarily involves planning and regulation of development with a long-term view. Developers and landowners often view regulations as too rigid, especially when market conditions favor development of a parcel of land that may not fall in the category for development at a specific time.

Development in Allen County has typically occurred in one of two means. A majority of land development has been caused by firms that assess consumer preferences, assemble land, plan infrastructure systems, and obtain appropriate zoning for subdivisions under the applicable County or municipal subdivision regulations. The other means of development can occur with parceling no more than two lots per year from larger tracts of land as “metes-and-bounds” sell offs. This type of development typically results in construction of individual homes along existing roadways with on-site sewage disposal and drinking water supply. These systems have been prone to failure if not located in appropriate soil areas and with sound construction principles and operated and properly maintained.

**F. Coordination.** In developing and implementing recommendations, interagency and intercommunity cooperation has been effective when utilized. A cohesive policy of development guidance and direction, linked with utility upgrades and extensions, can increase efficiencies in development and make the best use of public resources and services. Good planning and adherence to comprehensive plan policies by all political entities can yield many benefits to county residents and businesses.

## **II. Sanitary Sewer Issues.**

Sanitary Sewer issues have frequently influenced land development with considerations such as availability and capacity, cost of construction, cost of service, environmental concerns, public safety, and effects on development. Many times, sanitary sewer availability has been the determining factor to land use development patterns and locations.

**A. Existing Sanitary Sewer Facilities.** There are primarily fourteen (14) sanitary sewer systems in Allen County providing sanitary sewer service. These systems are listed in Table 1. The approximate location and extent of these sanitary sewer systems is shown on Figure 1.

The City of Fort Wayne Sewer Utility. This utility serves most areas within the municipal boundaries of Fort Wayne, several nearby communities, regional sewer districts, unincorporated areas of Allen County, and a private utility company. The City of Fort Wayne provides

wastewater collection, treatment, and disposal services for approximately 80,000 customers. A single treatment plant discharges to the Maumee River east of downtown Fort Wayne. The plant is rated at 60 million gallons per day (mgd) with planned upgrades expected to increase to 85 mgd. Current average flows are 43 mgd for typical dry-weather conditions and 49 mgd for wet weather conditions. The Fort Wayne Utilities Department has developed a planning document for sewer service improvement and expansion in areas north of Fort Wayne, providing service to additional customers over the next twenty (20) years. Collection system improvements and sewer interceptor improvements on the St. Joseph Interceptor sewer and several tributary interceptors are planned. The existing capacity plus planned improvements allow the City to continue adding customers by serving development in areas directly served, served by nearby communities, served by regional sewer districts and private utilities and with the replacement of on-site disposal systems with central sewer service.

Fort Wayne has an ongoing program to eliminate septic systems with an accomplishment rate of averaging 100 to 150 units per year.

Aqua Indiana (previously Utility Center and AquaSource). Aqua Indiana is a publicly held private company providing sewer service in Allen County. This company is the second largest provider of sewer service based on number of customers. Aqua Indiana provides service in two geographically separate areas of the County for a total of approximately 11,600 customers.

The northern assets of Aqua Indiana provide sewer service to the Clearwater, Pine Valley and Lake River Estates areas for a total of approximately 1,600 customers. Aqua Indiana does not provide wastewater treatment in these areas but instead transports the sewage to the Fort Wayne system for treatment.

The Aboite Township assets provide service to approximately 10,000 customers over an area of 17,260 acres. Two wastewater treatment plants are located in this system. Expansion plans for the Aboite area suggest an additional area of 8,220 acres in Allen County with additional areas in Whitley and Huntington Counties.

**Table 1. Sanitary Sewer Systems in Allen County.**

<b>Sanitary Sewer System.</b>	<b>Discharge Water Destination.</b>
City of Fort Wayne Sewer Utility	Maumee River Basin
Aqua Indiana Sewer Utility – Aboite System.	Wabash River Basin
Aqua Indiana Sewer Utility- North System.	Transported to the Fort Wayne System.
Allen County Regional Sewer and Water District.	Eight (8) of the nine (9) systems discharge to the Fort Wayne System. Remaining system (Hoagland) discharges to Maumee River Basin
Leo-Cedarville Regional Sewer and Water District.	Transported to the Fort Wayne System.
Town of Grabill Sewer Utility.	Transported to the Fort Wayne System.
Maysville Regional Sewer and Water District.	Transported to the Fort Wayne System.
Town of Monroeville Sewer Utility.	Maumee River Basin.
City of Woodburn Sewer Utility.	Maumee River Basin.
City of New Haven Sewer Utility.	Transported to the Fort Wayne System.
Town of Huntertown Sewer Utility.	Transported to the Fort Wayne System.
Town of Zanesville Sewer Utility.	Transported to the Fort Wayne System.
Oakmont Development (Deer Track Subdivision).	St. Joseph River Basin.
Hessen Utilities (County Court Estates Mobile Home Park)	St. Mary’s River Basin.

*Source: Fort Wayne City Utilities*

There are about 1,200 homes in the Aboite area that are on individual wastewater disposal systems, such as septic systems. Aqua Indiana has an ongoing program to eliminate septic systems within its jurisdiction.

The City of Fort Wayne is proceeding to purchase the northern sewer and water assets of Aqua Indiana. The condemnation processes has been challenged by Aqua Indiana in the Circuit Court of Allen County.

Allen County Regional Water and Sewer District The Allen County Regional Water and Sewer District was created to address the water and sewer needs of unincorporated areas of Allen County. This district has provided financing and project facilitation for septic system relief to areas throughout Allen County. There are nine (9) wastewater systems located throughout Allen County that operate under the ownership and direction of the Allen County Regional Water and Sewer District (ACRWSD). The ACRWSD has a total of approximately 600 customers. The

ACRWSD Hoagland system has an aerated lagoon treatment system with an effluent discharge to the St. Mary's River Basin. The remaining eight systems transport sewage to the Fort Wayne utility for treatment. Those eight systems include Arcola, Canyon Run, Mayhew, Hessen Cassel, Lockville, Bienke, Ridgeway and North Woodland Heights.

Leo-Cedarville Regional Sewer and Water District. This area is located to the northeast of Fort Wayne and provides only sewer service. This system pumps its wastewater to the Fort Wayne system. No specific plans for expansion are finalized, but Fort Wayne is planning additional sewer capacity for new customers in this area over the next twenty (20) years.

Town of Grabill. This system provides sewer service in an area lying northeast from the City of Fort Wayne in and around the Town limits of Grabill.

For the Grabill service areas, existing sewers carry flow to the Leo-Cedarville system, where the accumulated flow is carried by a 21-inch trunk running via the St. Joseph River interceptor sewer southwest to the Fort Wayne system. The system serves an area of about 1,000 acres with a population of 791. The existing facilities cannot carry significant additional flow and so improvements are necessary for added capacity. Alternatives are under investigation and negotiations are underway with Fort Wayne to determine the best means of adding the needed flow capacity. These alternatives include new sewer facilities to travel along the south of the Leo-Cedarville system, and the possibility of redirecting the flow from the Town of Grabill and the Maysville Regional Sewer and Water District to the City of Woodburn Sewer Utility. No plans for expansion are finalized, but Fort Wayne is planning growth in this area for the next twenty (20) years.

Maysville Regional Sewer and Water District. This system provides sewer service in an area lying northeast from the City of Fort Wayne and southeast of the Town of Grabill.

The Maysville system carries sewage to the Town of Grabill system (which transports sewage to the City of Fort Wayne system). The Maysville system serves approximately 350 customers. The existing facilities cannot carry significant additional flow and so improvements are necessary for added capacity. Alternatives are under investigation and negotiations are

underway with Fort Wayne to determine the best means of adding capacity. These alternatives include new sewer facilities to travel along the south of the Leo-Cedarville system, and the possibility of redirecting the flow from the Town of Grabill and the Maysville Regional Sewer and Water District to the City of Woodburn Sewer Utility. No plans for expansion are finalized, but Fort Wayne is planning growth in this area for the next twenty (20) years.

Town of Monroeville. Monroeville provides sewer service. It is located in the southeast area of Allen County.

The system serves 505 customers in an area of about 500 acres within the municipal boundary. Monroeville treats its wastewater for discharge into Flat Rock Creek. It has a lagoon system with three lagoons and disinfection. The capacity is an average of 0.10 mgd and increases to 0.23 mgd during peak conditions. There are no plans to expand the service area or the capacity of treatment.

City of Woodburn. This system provides sewer service. It is located to the east of Fort Wayne. Woodburn supplies a population of about 1,300 persons.

The Woodburn system operates a wastewater treatment plant with 0.4 mgd capacity. A new waste water treatment plant is planned for the future. The capacity of this new facility has not been determined.

City of New Haven. This system is located to the southeast of Fort Wayne and provides sewer service. Wastewater is pumped to Fort Wayne under a wholesale contract. There are approximately 4,500 existing customers with 700 expected to be added by 2007. Existing wastewater flow is 1.6 mgd average, 3 mgd peak; and is expected to increase to 1.8 mgd average, and decrease to 2.5 mgd peak.

For the area lying east and southeast from New Haven, the contractual arrangements between the City of Fort Wayne and New Haven require that Fort Wayne not provide direct water or sewer

service. Systems potentially serving development in this area include New Haven and Woodburn.

New Haven is planning to separate its remaining combined sewers before 2007.

Town of Huntertown. Huntertown, located to the north of Fort Wayne, provides sewer service. Wastewater is pumped to the Fort Wayne system.

The Huntertown sewer system discharges into the Beckett Run trunk sewer of the Fort Wayne system, the existing trunk sewer cannot accommodate expected new growth in the Huntertown service area. Planned improvements in the Fort Wayne system include provision for growth in this area, but the timing and funding arrangements have not been finalized. The City of Fort Wayne is planning for an increase of customers for the next 20 years.

Town of Zanesville. Zanesville, located in the southwest corner of Allen County, provides sewer service. Wastewater is pumped to the Fort Wayne system.

Oakmont Development (Deer Track Subdivision). The Deer Track residential subdivision is located in northern Allen County near the intersection of Tonkle Road and North County Line Road. The subdivision developer, Oakmont Development, privately owns the sanitary sewer facilities and provides sewer service to the Deer Track subdivision and nearby homes and businesses. Sewage is treated at a sanitary sewage package treatment plant and effluent is discharges to an underground tributary of Cedar Creek. Cedar Creek is a tributary to the St. Joseph River. A total of approximately twenty-four (24) customers are serviced by this system.

Hessen Utilities (Country Court Estates Mobile Home Park). The County Court Estates Mobile Home Park is located in southern Allen County near the intersection of Interstate 469 and United States Route 27. The mobile home park owners privately own the sanitary sewer facilities and provides sewer service to this mobile home park. Sewage is treated at a sanitary sewage package treatment plant and effluent is discharges to a tributary of the St. Mary's River. A total of approximately 250 mobile home lots are serviced by this system.

**B. Individual Treatment Systems (Septic Tanks).** In portions of the County, and in some of the smaller municipalities, individual septic systems or aerated surface discharge units have been installed in recent decades. Many of these are not functioning satisfactorily due to soil conditions or maintenance failures. A report “Decentralized Wastewater Management Planning the Coldwater Road-Cedar Creek Allen County Study Area” by Schnelker Engineering, Inc. prepared for the Allen County Regional Water and Sewer District in 2003 provides a good analysis of one of the problem areas. The local Utility providers continue work to eliminate existing septic systems within the county. The Health Department has more than 12,000 permitted on-site systems, but there are many more systems that do not have permits.

**C. Regulatory Issues.** Regulatory issues for public sewer systems and other water quality issues in Allen County have influenced land use planning in the past and will continue in the future. Regulatory emphasis will primarily be placed on improving overall regional water quality through a focus on reducing or eliminating failed septic systems, combined sewer overflows (CSOs) and sanitary sewer overflows (SSOs). Additional regulatory focus will be placed on preventing or minimizing future water quality degradation through a focus on increased required performance levels of new septic system and new sewage treatment facilities.

The regulations are expected to be effective in improving overall water quality but are likely to increase the cost of improving existing conditions and future land stewardship and development. The cost increases are expected to effect initial installations and the on-going costs of new facilities and improvements to existing septic systems, their costs to operate, repair and maintenance and the cost to provide alternative solutions such as connection to an available sewer utility. The cost increases are expected to effect continued additions to sewer utilities, the on-going costs of new facilities and the improvements to existing facilities. The cost increases are expected to effect the initial installation and on-going operation and maintenance of new septic systems and new sewage treatment facilities. The magnitude and timing of these increased costs are not yet certain.

Notable regulatory programs significantly influencing land use planning are listed below and then further described.

- The Allen County On-site Wastewater Management District.
- The National Pollutant Discharge Elimination System (NPDES).
- Total Maximum Daily Load (TMDL) Programs.
- The Great Lakes Initiative (GLI).
- The Mercury Reduction Rules

The Allen County On-site Wastewater Management District. This septic system management district emphasizing improvements to overall water quality through a focus to increase the oversight and performance of new individual systems and their continued operation and maintenance. New on-site sewage treatment facilities as well as improvements and replacement of existing facilities will be subject to this new district.

The National Pollutant Discharge Elimination System (NPDES). The NPDES programs address point source discharges to the environment such as sewer collection system overflows and wastewater treatment plant discharges. Goals of the NPDES program include reducing or eliminating discharge of untreated or inadequately treated wastewater including CSOs and SSOs and adequate performance at sewage treatment facilities. The reduction or elimination of CSOs is addressed by a Long Term Control Plan (LTCP) by the City of Fort Wayne. This LTCP is under review by IDEM and the EPA. The City of New Haven plans total separation of its combined sewers in the near future. The NPDES approach for SSOs can include enforcement actions by IDEM or the EPA. In addition, approaches to SSOs may include Capacity Management Operation and Maintenance (CMOM) initiatives or added regulations. The NPDES impacts to new and existing sewage treatment facilities may include related influence from GLI and Mercury reduction initiatives. New sewage treatment facilities as well as improvements to existing facilities will continue to be subject to existing and potentially new NPDES programs.

Total Maximum Daily Load (TMDL) Programs. The continued assessment and maintenance of water quality in Allen County includes IDEM's TMDL program. The focus of this program is to

identify 'impaired' water body segments which are near failure of their designated water quality uses and associated water quality standards. The TMDL program can result in a watershed management plan for affected basins that includes strategies to control pollution from non-point type sources. Restrictions resulting from these strategies could effect new and existing sewer facilities. New septic system facilities, new sewage treatment facilities as well as existing septic system facilities and sewer utility facilities could be impacted by the TMDL programs.

The Great Lakes Initiative. Regulations resulting from the Great Lakes Initiative are focused on preventing degradation of the water resources of the Great Lakes. These regulations include wastewater effluent discharge limitations that are considered 'cleaner' than previous limitations. These regulations are administered as part of the NPDES programs. The GLI rules are also considered to be indicators of future regulatory changes to the remaining areas of Indiana including the Allen County areas outside of the Great Lakes basin. New sewage treatment facilities as well as improvements to existing facilities may be subject to the increased scrutiny of GLI.

The Mercury Reduction Rules. Several regulatory initiatives have focused on reducing the level of mercury in the environment. These initiatives include reducing and eliminating the amount of mercury in commercial products (such as novelty items and electrical switches), medical equipment (such as thermometers) and the educational systems (such as school science labs). Further, the regulations approach mercury disposal, air emissions, and water discharge are being reexamined by both federal and state agencies. The resulting regulations could include wastewater effluent discharge limitations that are proposed to be 'cleaner' than previous limitations. New sewage treatment facilities as well as improvements to existing facilities may be subject to the increased focus on mercury.

### **III. Drinking Water Issues**

Unlike the dry regions of the United States such as the southwest, drinking water has been abundant in Allen County. Drinking water issues are similar to the wastewater issues in many areas of concern, including cost of service, availability, public safety, and effects on development. In general, the challenges of drinking water systems are less than sewer service because the engineering characteristics of water systems make them generally more flexible and less costly than wastewater systems. However, water supply systems can at times be a controlling factor.

**A. Existing Drinking Water Facilities.** There are primarily twelve (12) public water systems in Allen County providing drinking water service. These systems are listed in Table 2. The location and the extent of these drinking water facilities is presented in Figure 2.

The City of Fort Wayne. This system serves most all areas within its municipal boundaries and significant areas outside the municipal boundaries. The Fort Wayne Drinking Water Utility serves a total of approximately 75,000 residential, commercial and industrial accounts and several bulk water agreements. Raw water storage facilities consists of three river fed reservoirs containing more than 2.5 billion gallons of water. The production facilities include a centralized surface water plant with a treatment capacity of 72 million gallons per day (MGD) and an ultimate high service pumping capacity of almost 80,000 gallons per minute. The finished water storage and distribution facilities includes approximately 1,000 miles of piping and a total of more than 32 millions gallons of underground, ground level and elevated storage.

The available capacity of the Fort Wayne system exceeds the current demand and expected new demands over the next twenty (20) years. There is; however, considerations to diversifying the water supply through the addition of groundwater wells.

**Table 2. Drinking Water Systems in Allen County.**

<b>Drinking Water System.</b>	<b>Source Water.</b>
City of Fort Wayne Sewer Utility.	Surface Water Source, St. Joseph River.
Aqua Indiana Sewer Utility – Aboite System.	Groundwater Wells.
Aqua Indiana Sewer Utility- North System.	Groundwater Wells.
Town of Grabill Sewer Utility.	Groundwater Wells.
Maysville Regional Sewer and Water District.	Purchased Water from Grabill.
Town of Monroeville Sewer Utility.	Groundwater Wells.
City of Woodburn Sewer Utility.	Groundwater Wells.
City of New Haven Sewer Utility.	Purchased Water from Fort Wayne.
Town of Huntertown Sewer Utility.	Groundwater Wells.
Sunnymeade Association	Purchased Water from Fort Wayne.
Pioneer Water	Groundwater Wells.
Hessen Utilities (County Court Estates Mobile Home Park)	Groundwater Wells.

*Source: Fort Wayne City Utilities*

Aqua Indiana. Aqua Indiana is a publicly held private company providing sewer service in Allen County. This company is the second largest provider of drinking water service based on number of customers. Aqua Indiana provides service in two geographically separate areas of the County for a total of approximately 17,500 customers.

The northern assets of Aqua Indiana provide drinking water service the northern portion of Fort Wayne and areas further north for a total of approximately 7,500 customers. Aqua Indiana operates three drinking water plants supplied with groundwater in this area.

The Aboite Township assets provide service to approximately 10,000 customers. Three (3) drinking water plants are located in this system. Expansion plans for the Aboite area suggest an additional service in Allen County with additional areas in Whitley County and Huntington County.

The City of Fort Wayne is proceeding to purchase the northern sewer and water assets of Aqua Indiana. The condemnation processes has been challenged by Aqua Indiana.

Allen County Regional Water and Sewer District. This District does not provide water service, although it is chartered to do so under its legal structure.

Town of Grabill. This system provides water service in an area lying northeast from the City of Fort Wayne. Grabill has groundwater wells for water supply and serves approximately 250 customers and the Maysville Regional Water and Sewer District. No capacity expansion is planned.

Maysville Regional Water and Sewer District. This system provides water service in an area located northeast of Fort Wayne and southeast of Grabill. This system purchases water from Grabill. There are no plans for expansion of the service area or capacity.

Town of Monroeville. Monroeville provides water service. It is located in the southeast area of Allen County. The supply is from wells, with treatment at a single plant rated for 0.1 mgd average and 0.645 mgd peak. The system serves 505 customers in an area of about 500 acres within the municipal boundary. There are no plans for expansion of the service area or capacity.

City of Woodburn. This system provides water service and is located to the east of Fort Wayne. Woodburn supplies a population of about 1,300 from groundwater wells.

City of New Haven. This City provides both water and sewer service. New Haven serves about 4,500 customers with treated water purchased from Fort Wayne under a wholesale contract limited to a maximum of 3 mgd peak. They plan to increase the limit to 4 mgd if possible, and 700 additional customers by 2007. Average demand is 1.6 mgd and the peak, 1.9 mgd, expected to increase to 2 mgd average and 2.5 mgd peak. New Haven has entered into an agreement with Fort Wayne to provide service to a large area to the east of New Haven, to the eastern county line (also the border with Ohio).

Town of Huntertown. Huntertown, located to the north of Fort Wayne, provides water service. Groundwater wells provide treated water supply to 3,780 customers in Huntertown.

Sunnymeade Community Water Association. This system serves a residential subdivision of Sunnymeade located in the western portion of the City of New Haven along the south side of New Haven Avenue. This system purchases drinking water from the City of Fort Wayne and distributes the water to approximately 520 customers.

Pioneer Water. This system serves a portion of the Leo-Cedarville area. Groundwater wells provide the source water for this utility that has approximately 330 customers. The current area of service in Leo-Cedarville includes the residential subdivisions of Pioneer Village, Matea Valley and a portion of Lions Gate. In addition, several customers are served along the nearby roadways of Hoesler Road, State Road 1 and Amstutz Road. This system plans expansion of its facilities in by 2006.

Hessen Utilities (Country Court Estates Mobile Home Park). The County Court Estates Mobile Home Park is located in southern Allen County near the intersection of Interstate 469 and United States Route 27. The mobile home park owners privately own the public water system facilities and provides drinking water service to this mobile home park. Drinking Water is obtained from groundwater wells. A total of approximately two hundred and fifty (250) mobile home lots are serviced by this system.

**B. Private Individual Drinking Water Wells.** Private wells for individual domestic and commercial supply are common throughout the county, with over 10,000 recorded. These typically extend into the limestone bedrock in the southern part of the County, and provide adequate supplies of safe water, but high levels of mineralization, especially sulphates may cause taste and odor problems for some of these wells. Where central water supply is extended to areas of individual bedrock wells, users can generally obtain better quality supply from the central system where treatment removes excess minerals.

**C. Impact of Regulatory Issues.** Regulatory issues for public water supplies in Allen County have not resulted in major concerns. Wellhead protection plans have been developed for groundwater supplies in accordance with requirements. Possible future regulatory issues that will continue to be monitored by water utilities include:

- The U.S. Environmental Protection Agency (EPA) Groundwater Rule for groundwater well systems.
- The Microbial and Disinfection Byproduct (DBP) Rules for surface water supplies.
- The changes of the total Coliform Rule.
- Containment Candidate List 2.
- The Arsenic Rule.

Surface water suppliers (Fort Wayne) could be required to make changes to compliance standards. Ground water well supplies could be required to change disinfection processes, depending on the specific requirements that are included in the final Groundwater rule. This could involve a cost to these types of systems.

Development of large capacity wells for public or commercial/industrial water facilities can cause water levels to fall nearby to the private wells. In these cases, it may be necessary to either improve the effected individual wells or to provide replacement supply from a different system.

#### **D. Source Water Protection**

Groundwater Wellhead Protection Areas, Delineation and Restrictions. Wellhead protection areas have been delineated for 11 individual well sites in Allen County, including the community water systems of Aqua Indiana, Grabill, Huntertown, Monroeville, Pioneer Water, Hessen Utilities and Woodburn. These drinking water wellhead protection areas are shown on Figure 3.

A Wellhead Protection Area is a designated zone around a drinking water well that is established to protect the well from contamination. It is intended to encompass, at minimum, the "active" zone of contribution to the well. Wellhead Protection Areas are typically defined on either a fixed radius or "time of travel" basis. The "time of travel" concept is based on the distance that one drop of water is predicted to move through an aquifer over a given period of time, usually expressed in years. IDEM uses either a minimum fixed radius of 3,000 feet around the well or a

5-year time of travel to define wellhead protection areas, depending upon the size and capacity of the system.

Wellhead protection requirements come from the federal Safe Drinking Water Act. Indiana's resulting Wellhead Protection Program Rules (327 IAC 8-4.1) requires all community public water systems relying on groundwater to define a Wellhead Protection Area, identify potential sources of contamination within the Wellhead Protection Area, and develop a Wellhead Protection Plan. In addition, there are state-level restrictions on certain activities such as new landfills, underground storage systems, and hazardous materials storage areas that are located within wellhead protection areas.

Surface Water Watershed Protection Areas, Delineation and Restrictions. The largest single surface water supply for Allen County residents, and the source for the Fort Wayne water system, is the St Joseph River. The City of Fort Wayne participates in the St. Joseph Watershed Initiative which works to protect the watershed areas from contamination. The St. Joseph Watershed is shown on Figure 3.

## **VI. STORMWATER SYSTEMS**

The disposition of stormwater in Allen County impacts a broad spectrum of the community. Flooding and habitual high water areas impact the quality of life by restricting the use and enjoyment of property, as well as posing environmental and health issues. Poorly drained lands also create economic hardships for the communities of Allen County in their efforts to overcome existing storm drainage problems for their citizens and significantly add to the cost of preparing land for new development. Since stormwater drainage patterns do not recognize political boundaries, a uniform approach to identifying and resolving stormwater issues would assist in the resolution of these issues.

Stormwater related issues encompass multiple components that include both the drainage systems' capacity and water quality elements. Capacity issues are influenced by the needs and demands of property owners throughout the rural and urbanized parts Allen County as well as

the development community. These concerns range from identifying and solving existing drainage problems as well as proactively planning for future development so that new development can occur without generating additional problems.

In addition to the environmental regulations of the Federal and State governments, water quality issues are influenced by the expectations of the property owners and residents of Allen County and their desire to have safe, clean waterways. The National Pollutant Discharge Elimination System (NPDES) was formulated in 1990 under the Clean Water Act for the purpose of improving water quality by reducing pollution. In 1999 the United States Environmental Protection Agency (EPA) expanded the initial Phase I NPDES program to include smaller urbanized areas and smaller land disturbing activities – NPDES Phase II.

The impact and implementation of these issues affects multiple units of local government in Allen County. The urban areas of Allen County are required to comply with Federal and State environmental quality mandates for stormwater drainage. These requirements will have significant impacts on capital and operating costs, administration of standards and policies and growth for the local governing bodies. The City of Fort Wayne formed its stormwater utility in 1991 in response to the Stormwater Phase I regulations. The Allen County Drainage Board and the City of New Haven both formed stormwater utilities in 2004 in preparation for implementation of federal and state stormwater regulation requirements. Not only is it necessary for the governing agencies to establish mechanisms to fund these mandates, they will be required to develop standards and policies that will align development and construction practices within the urban areas with the required environmental protection standards established through the NPDES program. Current local stormwater project design and construction methods will require substantial modification, impacting both the public and private sectors.

Because stormwater watersheds and flow patterns follow natural topographic features rather than political/jurisdictional boundaries, activities and the implementation of local regulations in one jurisdiction will likely impact a neighboring jurisdiction. Jurisdictional responsibilities and inter-agency cooperation has been successful when utilized when considered within the stormwater planning element.

**A. Existing System Summary.** Allen County is located within two major river basins; the western third of the County is in the Wabash River Basin generally flowing south and west. The eastern two thirds of the County is in the Maumee River Basin that flows easterly to Ohio and on to the Great Lakes.

The St. Joseph River enters the County from the north and the St. Mary's River flows into the County from the south. These two rivers merge in downtown Fort Wayne, forming the Maumee River. These three rivers serve as the ultimate stormwater conveyance system for the majority of Allen County and its various municipalities.

Regionally, water is conveyed through a number of open ditches, natural and regulated drains, and channels that meander through the rural and urbanized areas of the County. In many instances, these drainage systems cross municipal boundaries, ultimately making their way to one of the major river systems.

“Local” drainage systems draining neighborhoods and developed areas generally contain a maze of storm sewers and detention ponds that drain developed properties as well as the public thoroughfare systems.

The Fort Wayne Stormwater utility currently contains more than 600 miles of storm sewers, ditches, open channels and drains and serves more than 80,000 residential and commercial customers. The City of New Haven also has a stormwater utility. Other incorporated areas in Allen County including Huntertown, Leo-Cedarville, Grabill, Woodburn, and Monroeville have systems for conveying storm water however no municipal stormwater utility exists. No information is available at the present time regarding the storm drainage systems in the unincorporated areas of Arcola, Harlan, Hoagland, Yoder, and Zanesville.

The Allen County Surveyor's Office exercises jurisdiction over all of the County Regulated Drains and County Regulated Subdivisions throughout the County. This includes over 2600 miles of open ditches and tiles and the storm drainage systems for approximately 130 residential

subdivisions. The Allen County Drainage Board's stormwater utility primarily includes areas outside of the boundaries of the incorporated areas of the County; however several recently annexed residential subdivisions lie within the corporate limits of Fort Wayne. The rivers, streams and watercourses not identified as regulated drains are under the jurisdiction of the State of Indiana.

**B. Stormwater Management.** It appears there are two formalized stormwater management processes within Allen County. All new land development within the corporate limits of the City of Fort Wayne is reviewed by the engineering staff of City Utilities while the Allen County Surveyor's Office manages the drainage issues of County-Regulated Drains and County-Regulated Subdivisions. All water being conveyed to these county regulated systems from new land developments require approval from the County Surveyor and the County Drainage Board, regardless of the location of the site. Additionally, and upon request, the Surveyor's office reviews the storm drainage plans for new developments in Hometown, Leo-Cedarville, Grabill, and New Haven. As a matter of courtesy, the Surveyor's office also offers storm drainage review and comment for land developments within Fort Wayne. Because stormwater runoff from areas beyond corporate boundaries flows into incorporated areas and likewise, stormwater from municipally owned systems flow into the County, the condition and capacity of these larger systems is important to multiple stormwater authorities. Consequently, managing stormwater through the development process has been becoming increasingly challenging. As the condition of the larger receiving systems deteriorates and more impervious areas are created, runoff rates and flow patterns have been significantly impacted. Additionally, as stormwater utilities mature, customer expectations increase for the resolution of standing water and drainage problems. This leads to the development of capital projects and drainage system expansion. Looking at development and public sector drainage system expansion on a project- by -project basis, without adequate analysis of the overall condition and capacity of the watershed may not be practical. While thorough stormwater reviews are conducted for new developments in the majority of the urbanized area of Allen County, engineering standards and requirements often differ among the reviewing jurisdictions. This has lead to confusion for engineers and land developers and results in potential problems as new areas are annexed.

**C. Stormwater Quality – Regulatory.** As part of the new Federal NPDES Stormwater Phase II Regulations passed December 1999, the State of Indiana developed rules to deal with the ongoing problem of stormwater pollution. One such rule is Rule 13 (327 IAC 15-13) of the Indiana Administrative Code that deals with stormwater runoff associated with municipal separate storm sewer system conveyances. Phase II of Rule 13 regulations apply to most entities having a municipal separate storm sewer system serving populations in excess of 100,000 (MS4s) or in a designated urbanized area, as delineated by the U.S. Census Bureau. In Allen County, four communities are regulated under Rule 13: Fort Wayne, New Haven, Hometown and Leo-Cedarville. The Allen County Surveyor and the Allen County Drainage Board represent the designated urbanized area of the County outside of Fort Wayne and New Haven, including Hometown and Leo-Cedarville.

The major concern for urbanized stormwater runoff is nonpoint source pollution. Nonpoint Source Pollution comes from sources throughout a watershed, and its points of origin can be very difficult to determine. During rains events and snowmelts, water washes away pollutants that have accumulated on roads, highways, sidewalks and parking lots. Common nonpoint source pollutants include pesticides, fertilizers, oils, salt, litter and other debris. These pollutants are washed into local streams and rivers through ditches and storm sewers, resulting to damage to these water systems.

Other requirements associated with reducing pollution are identified in Indiana’s Rule 5 (327 IAC 15-5), also a part of the NPDES program. A significant source of pollution is sediment entering streams and waterways as a result of erosion. According to the federal government, soil loss due to erosion from construction sites is the single largest source of sediment deposited in waterways. Consequently, the purpose of Rule 5 is to reduce sediment pollution resulting from soil erosion on construction sites of 1 acre in size or larger. Phase II implementation of the Rule 5 standard applies to construction sites of 1 acre or larger while the regulation prior to 1999 applied to 5 acre sites. MS4s and designated urban areas are mandated to adopt and implement development standards, inspection and enforcement strategies that will ensure that land developments comply with the Rule 5 requirements. This will require greater involvement of the

local stormwater authorities during the plan review process and site preparation and construction phase of a project.

Because of the nature of stormwater drainage, these regulatory issues will require coordination, information sharing and planning strategies among the stormwater review agencies and providers throughout Allen County. Since a site under development may be located within the jurisdiction of one stormwater agency while its site runoff and drainage may flow into the control of a different stormwater agency, the impact of pollutants and sediment deposits extend beyond political boundaries.