

# Utilities

9



## Introduction

The utilities in Morgan County are provided by a mix of public, private, and member-owned entities. In order to focus on the utilities that have the greatest impact on land use, this Utility Plan has chosen to address the areas of water, wastewater, electricity, gas, and telecommunications. The purpose of the Plan is to provide guidance on the expansion of infrastructure to better serve the county's goals and objectives.

## Development Principles for Utilities

### SR-37 Corridor Utility Plan

The most significant opportunity for utility expansion in the County is along the SR-37 corridor. Regardless of whether I-69 is constructed, this corridor is expected to have considerable growth.



SR 37 at 252

To prepare for expansion in the corridor, it is recommended that the County assist in developing a coordinated infrastructure plan for the areas. Since the county does not have direct control over utilities, they should serve in a facilitator's role and help the various utilities set policies over how and when utilities will be extended.

Several recommended policies have been noted in the SR 37/144 Corridor plan, and include:

- ◆ Development should be limited where "rural" water service is not sufficient for fire protection.
- ◆ Encourage residential development to be provided with sanitary sewers in areas with soil unsuitable for on-site septic systems, regardless of the size of the development.
- ◆ Sanitary sewer systems should be capable of being regionalized.
- ◆ Commercial/industrial development should be prohibited in areas not provided with sanitary sewer systems.
- ◆ Promotion of infill development where utilities already exist.

## Water Supply and Treatment

### Inventory and Assessment

Water service is provided in the county by several providers, including Indiana American Water, Hill Water Corporation, Indianapolis Water Morgan (IW Morgan), Morgan County Rural Water Corporation, Brooklyn Water, Martinsville Water, Mapletown Utilities, Painted Hills Utilities, Morgantown Water, and Paragon Water. The incorporated cities and towns in the county all have water service. Most rural areas also have water service in reasonable proximity.

### Indiana American Water

Indiana American Water supplies water primarily in the old town limits of Mooresville. The system serves approximately 3,700 customers, has a production capacity of approximately 2,800,000 gallons of water per day, and has a storage capacity of 750,000 gallons. The distribution system consists of roughly 53 miles of mains and 400 fire hydrants. The average system pressure is approximately 60 psi.

Indiana American has two interconnections with a neighboring water provider, Hill Water Corporation. These interconnections are for emergency purposes, such as adding pressure for fire protection. One of the interconnections is located near the intersection of SR-42 and Bethel Road. The other interconnection is along SR-144, between 400 East and Pennington Road.

Representatives from Indiana American Water said the utility operates below their production capacity. The utility expressed available capacity to serve future developments.

#### **Hill Water Corporation**

Hill Water Corporation is a cooperative utility that started in 1971 as an extension of Indiana American Water. The utility serves approximately 2,620 customers in the areas southeast and southwest of Mooresville, and continues south to Brooklyn. Hill Water's production capacity is approximately 1,440,000 gallons of water per day. The system has a storage capacity of 1,440,000 gallons from the following sources: two 500,000 gallon elevated storage tanks, a 50,000 gallon elevated storage tank, and a 390,000 gallon standpipe. The distribution system has nearly 87 miles of mains.

Hill Water expanded significantly in the mid to late 1990s, adding excess capacity which has not fully been utilized. For example, in 2007 the average daily water production was 628,000 gallons, which is only 44% of the plant's capacity. Representatives from Hill Water said this excess capacity could be used to serve future development in and around Mooresville.

#### **Indianapolis Water Morgan**

Indianapolis Water Morgan (IW Morgan) is a subsidiary of Indianapolis Water (IW), which is owned by the City of Indianapolis and operated by Veolia Water. IW Morgan serves approximately 1,600

customers in the eastern end of Morgan County. The service area extends from the north to the south boundaries of the county. Most of the distribution system consists of small mains that serve domestic customers. However, there are large mains along Paddock Road, Mann Road, and I-70 that could potentially serve future development.

The supply from IW Morgan comes from the South Wellfield Station, which is located in southern Marion County. The wells from this station also serve residents in the City of Indianapolis. Within Morgan County, there are a couple key storage tanks, including a 250,000 gallon elevated tank at Conservation Road and a 100,000 gallon elevated tank at New Harmony Road. IW Morgan also has booster stations at Nast Chapel Road and New Harmony Road.

#### **Morgan County Rural Water Corporation**

Morgan County Rural Water is a non-profit cooperative that serves much of western Morgan County. The water system was built to serve rural residential customers. In the 1960s, the original treatment plant was built, and was expanded in the 1990s to its current condition. During the expansion, the utility decided that any future capacity would be best added through an interconnect with another large utility. This interconnect occurred recently, as Morgan County Rural Water has seen more demand in their north service boundary due to growth south of I-70. In order to increase capacity, the utility has entered into a contract with Indianapolis Water to purchase between 100,000 and two million gallons of water per day. This water will be provided at an interconnect near the Hendricks/Morgan County line.

The Morgan County Rural Water system has approximately 225 miles of water mains over a service area encompassing 148 square miles. The normal system-wide water usage is between 500,000 and 600,000 gallons per day. The system has two

wells and several storage facilities. The storage facilities include: 500,000 gallon elevated tank, 75,000 gallon tank, 250,000 gallon elevated tank, 338,000 gallon standpipe, and three 250,000 gallon ground reservoirs. The system has high pressure, so new customers are required to install pressure relief valves with their service meters.

#### **Brooklyn Water**

Brooklyn Water serves the Town of Brooklyn and the Town of Bethany. The water supply is from two wells that are located in City Park, which is on the east side of Brooklyn. The treatment plant is adjacent to the wells, and the plant was most recently updated in 2000. The current daily water demand for the utility is approximately 100,000 gallons of water per day. This daily water usage is under 25% of the plant's treatment capacity. Representatives from Brooklyn Water indicated that they also have good pressure in the system.

#### **Martinsville Water**

Martinsville has a water department that serves approximately 4,500 customers. These customers are mostly within the city, though water mains do extend considerably north and south of the corporate limits. The city's water comes from three wells that are located to the northwest, near the intersection of Cunningham Street and Elliott Street. The wells are designated as Well #3, Well #4, and Well #5. The pumping capacities of the wells are 1200 gallons per minute (GPM), 759 GPM, and 1391 GPM, respectively. Each pump operates at 80 psi of head.

Storage in the water system is currently 1,375,000 gallons, and is currently being expanded. The storage is provided by two structures, a one million gallon elevated tank off Sycamore Street, and a 375,000 gallon standpipe off Lincoln Hill Road. The City has received complaints about water pressure in the southern end of their system. To address the

problem, the City built a 1.5 million gallon ground storage tank off Burton Lane. The tank will be in service by the spring of 2009. Once completed, the total storage in the system will be 2.9 million gallons, with the system pressure expected to be 60 psi.

The city's water treatment plant was constructed in 2006. Prior to this time, the water was treated at the well site using chlorine and fluoride. The current treatment plant includes chlorine, fluoride, phosphate, and granular activated charcoal. The plant's capacity is two million gallons of water per day.

#### **Mapleturn Utilities**

Mapleturn Utilities is a non-profit company that provides both water and wastewater services to an area north of Martinsville, between SR-37 and Blue Bluff Road. The water system consists of two wells that have a total production capacity of 432,000 gallons of water per day. The storage in the system is provided by a 180,000 gallon ground storage tank. The utility has approximately 580 water customers, who use an annual average of 150,000 gallons of water per day.

#### **Painted Hills Utility Company**

Painted Hills Utility Company is a water service provider located east of Martinsville. The utility has approximately 600 customers and an annual average demand of 150,000 gallons of water per day. The utility's water comes from two wells off of Cramertown Loop Road, and they have a production capacity of approximately one million gallons of water per day. Storage in the system is 170,000 gallons, from three ground storage tanks.

#### **Morgantown Water**

Morgantown has a water system that serves approximately 400 customers within the town's

corporate limits. The system currently has three wells, though the plan is to change to a single new well in 2009. The new well will have a capacity of over 200,000 gallons of water per day, which is more than the three existing wells combined. Chlorine and fluoride are added to the water at the town's 100,000 gallon elevated tank. The town's water usage is well below the system's capacity, and there are no complaints of low system pressure.

#### **Paragon Water**

Paragon has a small water utility that serves approximately 300 customers within the town's corporate limits. The utility's production is from two wells, and the only storage structure is an 80,000 gallon elevated storage tank. The normal usage in the system is approximately 45,000 gallons of water per day, which is well below the production and treatment capacity.

#### **Action Steps**

- ◆ Encourage upgrades to small water mains in high density developments in order to provide fire protection.
- ◆ Promote infill development to reduce the need for water main extensions.
- ◆ Ensure new utilities along SR-37 are sized appropriately for high density development.

### **Stormwater**

#### **Inventory and Assessment**

The County collects and conveys stormwater through a collection system that ultimately discharges to local rivers and streams. In recent years, the Environmental Protection Agency (EPA) has worked to improve the quality of stormwater discharged by municipalities by designating and regulating municipal separate storm sewer systems (MS4s). Morgan County is designated as an MS4 entity.

As an MS4 entity, municipalities must establish a program that establishes best management practices (BMPs) and measurable goals to meet six "minimum control measures." The minimum control measures are: Public Education and Outreach, Public Participation/Involvement, Illicit Discharge Detection and Elimination, Construction Site Runoff Control, Post-Construction Runoff Control, and Pollution Prevention/Good Housekeeping. In order to meet the requirements of the MS4 program, several communities have established stormwater utilities. These utilities typically have rates for the use of the stormwater system, providing revenue to help fund improvements to stormwater systems and for management of the MS4 program.

Morgan County has been permitted under the MS4 program, and therefore has already established its program to meet the minimum control measures. As capital improvements are planned to the stormwater system, consideration should be given to establishing a stormwater utility to fund needed stormwater improvements.

### **Wastewater**

#### **Inventory and Assessment**

Wastewater management in the County is provided by both sewer systems and individual septic systems. The areas with sewer systems are mostly limited to locations within, or adjacent to, cities and towns. The providers in these areas include Mooresville Wastewater, Martinsville Wastewater, Brooklyn Wastewater, Mapletown Utilities, Morgantown Wastewater, Paragon Wastewater, and Monrovia Wastewater. An explanation of each of these utilities is given below.

In addition, there are a few subdivisions outside cities and towns that provide their own wastewater services. For example, Wildwood Shores is a

subdivision southwest of the intersections of Paddock Road and Hadley Road. Other examples include Rolling Vista Estates and Heartland Crossing. These subdivisions provide wastewater service to the subdivision residents only. The remaining areas in the County are served by individual septic systems.

#### **Mooreville Wastewater**

Mooreville has a sanitary sewer system consisting of gravity sewers and force mains, which transport sewage to the town's wastewater treatment plant. In the past few years, the system has had problems of infiltration and inflow (I/I). This results in large flows going to the treatment plant during substantial rain events. In order to reduce I/I, the town has invested in sewer replacement and/or rehabilitation projects. As a result of these projects, the system currently has most I/I issues resolved.

The town's wastewater treatment plant was first built on the present site in 1959 and has been upgraded over time. Currently, the treatment plant has a design flow of 1.5 million gallons per day (MGD) with a peak of 2.5 MGD. The treatment plant has recently been operating at full capacity, averaging flows over the design of 1.5 MGD. In order to address this, the town has planned four phases of improvements to the plant. The first two phases of improvements have already been completed. The third phase of improvements has been designed by an engineering firm and is expected to be built in 2008-2009. The fourth and final phase of improvements is still in the planning process. This final phase will address the capacity of the plant and look to expand the plant by at least 1.0 MGD. According to the town, the plant may expand to a design flow of 2.5 MGD without altering the existing levee around the plant. But if the levee were adjusted, the town could have enough space to expand the plant even further, to an estimated 3.2 MGD.

The treatment plant appears to be a significant obstacle in promoting future economic development in the town. Until the treatment plant expansion takes place, the town does not have the capacity to add large new businesses or housing development.

#### **Martinsville Wastewater**

The majority of the properties in the Martinsville corporate limits are served through the city's sanitary sewer system. The sanitary sewer system consists of both gravity sewers and force mains. Over the last several years, the system has had problems of I/I into the collection system. In order to reduce I/I, the city has performed a Sanitary Sewer Evaluation Study (SSES) to identify the potential areas of concern.

The city's wastewater treatment plant (WWTP) was first built on the present site in the late 1950s and has seen two significant upgrades. Most recently, the WWTP completed an upgrade and was put into service in early 2007. The project was initiated to meet new ammonia requirements and increase the peak flow capabilities of the plant.

The WWTP is currently rated for an average daily flow design of 2.2 MGD and a peak treatment capacity of 6.25 MGD. After the improvements project the average daily flow was measured at 1.4 MGD for 2007. For the year the plant operated at a 64% capacity. The high rainfall in 2008 has taken some of the capacity at the treatment plant because the collection system receives a high amount of I/I. The influent flows from January thru July averaged 1.89 MGD; operating at 86% capacity. The peak flow sent to and handled at the plant during that time was 4.97 MGD.

#### **Brooklyn Wastewater**

The Town of Brooklyn has a sanitary sewer system that serves both Brooklyn and Bethany. The treatment plant is located near the corporate boundaries

separating Brooklyn and Bethany. The treatment plant has sequencing batch reactors (SBRs) which were installed as part of an upgrade project in 2000. As part of the upgrade project, a chlorine contact tank and sludge retention were also added to the plant. The plant has a design flow of 340,000 gallons per day with a peak capacity of 620,000 gallons per day, but normally the plant operates at approximately 150,000 gallons per day. Representatives from the utility stated that I/I has been a problem in specific areas where people move mobile housing without properly capping the service laterals.

#### **Mapletown Utilities**

As mentioned previously, Mapletown Utilities is a non-profit company that provides water and wastewater services to an area north of Martinsville. The utility has approximately 580 customers, with a daily production of approximately 140,000 gallons per day. The wastewater treatment plant is contact stabilization and has a design flow of 225,000 gallons per day.

#### **Morgantown Wastewater**

Morgantown provides sanitary sewer service to approximately 400 customers within the town's corporate limits. Treatment of the wastewater is provided by a lagoon system that is approximately 25 years old. The town has discussed expansion of the lagoon system, but there is not much urgency since the existing system is properly treating all flows.

#### **Paragon Wastewater**

Paragon provides sanitary sewer service to approximately 300 customers within the town's corporate limits. The system has had previous problems with I/I, but this was significantly reduced between 2006 and 2007 when the town conducted a stormwater project. The town treats the sanitary sewage at their activated sludge wastewater

treatment plant. The plant was upgraded in 1992, and is currently operating well below capacity.

#### **Monrovia Wastewater**

Monrovia finished installed a sanitary sewer collection system and treatment plant in 2001. The plant is Aero-Mod and was recently expanded to a design flow of 300,000 gallons per day. Typical flow is approximately 100,000 gallons per day, which is well below capacity. Both the collection system and treatment plant are in good condition due to their young age.

### **Septic Systems**

As mentioned above, wastewater services are provided in most cities and towns, as well as some subdivisions in the County. All other areas are served by individual septic systems. The permitting of new septic systems and investigation of septic system failure is the responsibility of the Morgan County Health Department.

According to the County Health Department, there are a few areas served by septic systems that have expressed an interest in sanitary sewer service. These areas include Eminence and Waverly. Eminence in particular has had problems of poor septic systems. But the town's small size and large distance from neighboring communities makes it difficult to provide sewer service without a significant cost to property owners. Waverly and its neighboring residents held a public meeting in 2008 about starting a regional sewer district. This would better position the area for future development. However, not all residents at the public meeting were in favor of creating the sewer district.

Lake Hart, southwest of Monrovia, is another area that has expressed an interest in sanitary sewer service. Properties along lakes, such as Lake Hart, Paradise Lake, and Lake Edgewood, can have problems of

septic systems failing and polluting the water. Ideally, these areas could be served by a neighboring sewer service, or by creating their own system with a treatment facility. It is recommended that Eminence, Waverly, and these lake communities each conduct studies to find the level of pollution from failing septic systems and to determine recommendations for alternative wastewater service.

### **Action Steps**

- ◆ Encourage wastewater studies for areas with failing septic systems, such as Eminence, Waverly, Lake Hart, Paradise Lake, and Lake Edgewood.
- ◆ Create a policy that septic systems are only allowed for residential properties where soils are adequate.
- ◆ Promote infill development to reduce the need for sewer extensions.
- ◆ Ensure new utilities along SR-37 are tied to a regional system or have the capability of being regionalized.

## **Electric, Natural Gas, and Telecommunications**

### **Inventory and Assessment**

#### **Electricity**

Electric service in the County is provided by Hendricks Power Cooperative, Indianapolis Power & Light Company (IPL), Brooklyn Electric Department, Johnson County REMC, Duke Energy, and South Central Indiana REMC. The service regions for each of these utilities are described below.

- ◆ Hendricks Power Cooperative: Northwest corner of the County.

- ◆ IPL: A band starting at the west side of the County, moving northeast towards Marion County. The region includes the Town of Mooresville.
- ◆ Brooklyn Electric Department: The Town of Brooklyn.
- ◆ Johnson County REMC: A strip along the eastern boundary of the County.
- ◆ Duke Energy: Southern parts of the County, including Martinsville, Morgantown, and Paragon.
- ◆ South Central Indiana REMC: Rural areas throughout the County, especially in the middle and southern sections.

#### **Natural Gas**

Vectren Gas Company serves portions of the County.

#### **Telecommunications**

A fiber optic network is known to run through Morgantown and Martinsville, on its way further south to Bloomington. There is also a network along US-40 in neighboring Hendricks County. There may be private phone companies that have fiber optic cable in parts of the County, but it is not part of a large high-speed network.

### **Action Steps**

- ◆ Encourage the extension and upgrade of electric, natural gas and telecommunications infrastructure.

