

6. Utilities and Communications

6.1 Wastewater

WRA Facility Plan Update

The **Wastewater Reclamation Authority** is a regional wastewater conveyance and treatment body created in 1979 under a “28E” agreement known as the Integrated Community Area (ICA) Agreement. A facility plan for the ICA was completed in 1982. The current plan is an update of that plan, accompanied by a reorganization of the WRA. Major issues included how to integrate the City of Des Moines’ combined sewer system with the WRA and the interest of several member communities in connecting to the regional system.

The plan’s first phase analysis determined that the cities of Ankeny, Altoona, Bondurant and Norwalk (Warren County) had the potential to connect to the system. The conclusion of the facility planning process was that the cities of Ankeny, Altoona and Bondurant would retire their wastewater treatment plants and connect to the WRA system, while the City of Norwalk would maintain its plant in the short term.

The governing structure of the WRA has also been updated under a restated 28E agreement with a cost-sharing allocation among the member communities. The plan identifies “core” projects (those that benefit the entire system) and “expansion” projects (those that benefit specific communities). It also identifies “core” and “expansion” communities. All communities share in the cost of core projects, but only expansion communities share in the capital costs of expansion projects.

Core communities are: the City of Des Moines, Urbandale-Windsor Heights Sanitary District, the City of Johnston, the City of Pleasant Hill, Polk County, and the Greenfield Plaza/Hills of Coventry Sanitary District.

Expansion communities are: the cities of West Des Moines, Clive, Ankeny, Altoona, Bondurant and Norwalk, and the Urbandale Sanitary Sewer District.

The primary expansion projects in the Polk County planning area are:

- **Four Mile Interceptor improvements** to serve flows from the three newly connecting communities of Altoona, Ankeny and Bondurant. The project will construct a parallel sewer to the existing Four Mile Interceptor to increase its capacity. The expansion must

be completed before the cities of Ankeny and Bondurant connect to the regional system.

- **Four Mile Interceptor extension**, from Broadway Street to the Ankeny wastewater treatment plant. The City of Ankeny will retire its plant and connect to the new interceptor between 2010 and 2013.
- **Little Four Mile Interceptor Extension**, from the east side of Highway 65 to the Altoona wastewater treatment plant, scheduled for 2005-2006. Altoona will retire its plant and connect to the new interceptor in July 2006.
- **Mud Creek Interceptor and Little Four Mile Interceptor – South Branch**. The Mud Creek Interceptor is designed to serve the City of Bondurant and coordinate with future development in the eastern part of the City of Altoona. The scheduling of the project will be determined based on development patterns and Bondurant's connection plans. The South Branch interceptor would serve as the outlet sewer for the Mud Creek interceptor and would also serve areas to the south and east of the City of Altoona.

It is important to note that Polk County is not an expansion community. Therefore, areas within unincorporated Polk County are not eligible to connect to the new trunk sewers, even when those run through unincorporated Polk County. This is an issue that has implications for land use in these areas, and will be discussed further in the development of the Comprehensive Plan.

Polk County is in the process of planning extensions of two trunk sewers within its own system.

- The **Saylor Creek Trunk Sewer** would extend north from the existing terminus of the WRA Saylor Creek Interceptor, possibly extending to the City of Ankeny. This would be considered a local Polk County project if it serves only unincorporated Polk County areas. If it serves Ankeny as well, it would be considered a WRA project.
- The County and the City of Johnston are planning the installation of a pressurized sewer system along NW Beaver Drive, to serve properties in that area that currently use on-site aerobic mechanical treatment systems that connect to the Johnston storm sewer system.

The existing WRA system, local trunk sewers and proposed extensions are shown on Figure 6.1.A.

6.2 Water Supplies

As discussed under Natural Resources, there are relatively few private wells supplying potable water within Polk County. Instead, most water is provided by public water suppliers (PWS), both municipal and private.

The Des Moines Water Works is the largest public water supplier, serving residential and commercial customers within an approximately 50-mile radius around the City of Des Moines. Water comes directly from the Des Moines and Raccoon rivers and from an infiltration gallery or radial collector wells in the sands and gravels along the Raccoon River. Water is treated prior to distribution at the Fleur Drive treatment plant in the City of Des Moines and a newer facility at Maffitt Reservoir southwest of the Des Moines metro area. DMWW sells water to many smaller public water suppliers and other entities in Central Iowa, and provides billing and collection services, meter reading and field services to some of these entities.

While the water supply comes from DMWW, rural water systems located in the unincorporated areas operate the distribution networks. Most of the southeast portion of the county is served the Southeast Polk Rural Water District, the northwestern portion by the Xenia Rural Water District, and the northeastern corner by the Central Iowa Water Association. Most of the north-central portion of the County is expected to connect to the SE Polk Rural Water System as service becomes available. Water suppliers' service areas are shown on Figure 6.2.A.

Most rural water systems provide only drinking water supplies, not supplies for fire protection or industrial processes. Supplies are limited by the diameter of the pipes, which range from 2 to 4 inches. Thus, rural water service has acted as something of a brake on large-scale development in the unincorporated parts of Polk County.



6.3 Energy Utilities and Infrastructure

Energy Utility Services and Rates

Polk County residents and businesses are served by several different energy utilities. The vast majority of the County's population, however, lies within MidAmerican Energy Company's service territory, which provides not only electric service throughout its service territory but also natural gas delivery service for most of the same communities. The State of Iowa has retained its regulated monopoly service territories for retail electric and gas delivery services, although some components of service have been deregulated. Polk County has both private (investor-owned) and publicly owned (municipal and rural cooperatives) utilities.

Table 6-1: Polk County Energy Utilities

Community	Electric Utility	Natural Gas
Alleman	MidAmerican Energy Co. Marshall REC/Consumers Energy	MidAmerican Energy Co.
Altoona	MidAmerican Energy Co.	MidAmerican Energy Co.
Ankeny	MidAmerican Energy Co.	MidAmerican Energy Co.
Avon	MidAmerican Energy Co.	MidAmerican Energy Co.
Bondurant	MidAmerican Energy Co.	MidAmerican Energy Co.
Carlisle	Carlisle Municipal Utility	None
Clive	MidAmerican Energy Co.	MidAmerican Energy Co.
Des Moines	MidAmerican Energy Co.	MidAmerican Energy Co.
Elkhart	MidAmerican Energy Co.	MidAmerican Energy Co.
Grimes	MidAmerican Energy Co.	Aquila, Inc. d/b/a Aquila Networks
Johnston	MidAmerican Energy Co.	MidAmerican Energy Co.
Mitchellville	MidAmerican Energy Co.	MidAmerican Energy Co.
Pleasant Hill	MidAmerican Energy Co.	MidAmerican Energy Co.
Polk City	MidAmerican Energy Co.	MidAmerican Energy Co.
Runnells	MidAmerican Energy Co.	None
Sheldahl	Interstate Power & Light (IES, IE)	Interstate Power & Light (IES, IE)
Urbandale	MidAmerican Energy Co.	MidAmerican Energy Co.
West Des Moines	MidAmerican Energy Co.	MidAmerican Energy Co.
Windsor Hts	MidAmerican Energy Co.	MidAmerican Energy Co.
Unincorporated Northwest	Midland Power Cooperative	None
Unincorporated Northcentral, Northeast	Marshall REC/Consumers Energy	None

Electric Utility Service

Electric utility service is considered a universal service – every part of the State has a designated service provider who must provide adequate service at reasonable rates for qualified customer. For most residents and businesses, electric rates are approved by the Iowa Public Utilities Board according to a set of rules and standards designed to prevent monopoly pricing by the investor-owned utility. The overall goal of rate regulation is to set rates at the cost (including reasonable profit) of providing electric service for each rate class of customer.

Polk County has five different electric utilities: two investor owned (MidAmerican Energy and Interstate Power and Light) and three public utilities (Midland Power Cooperative, Marshall Co Rural Electric Cooperative/Consumers Power, and the Carlisle municipal utility). MidAmerican provides electric service for almost all County residences and businesses. Interstate serves only a few small slivers in the far north of the County. The two co-operative companies have service territory in the rural north of the County, while Carlisle municipal is limited to the portion of the City of Carlisle that lies within Polk County.

MidAmerican has six general rate categories, in which most customers receive service under the following three rate categories: Residential, General Service, and Large General Service. Within these categories are a number of specific rate schedules to address different cost-based circumstances, such as residential base use and residential electric heat.

As the most populated county in Iowa and the hub of much of the state's economic activity, Polk County has a well-established electric transmission and primary distribution system. A 345 kilovolt (KV) loop was constructed around Des Moines in 1994 to ensure reasonable connections to power sources outside the Des Moines area. The local transmission system is connected to the national transmission infrastructure via 345 kilovolt (KV) transmission lines from the southwest, west, northwest, and east, connecting the County with the Nebraska Cooper nuclear plant, Council Bluffs, Sioux City, and the Louisa station and Minnesota power producers respectively.

MidAmerican is building a new 345 KV line to a substation near Grimes which will provide additional reinforcement to the grid. The primary distribution system and much secondary distribution system has adequate capacity to accommodate economic and housing growth for many years into the future.

MidAmerican is in the process of building a new generating plant – the Greater Des Moines Energy Center. The 540 MW power plant will be ultimately be a high efficiency combined cycle natural gas fired generator. The Iowa Utilities Board identifies only two additional generating facilities greater than 100 MW in Polk County, meaning that most of the County’s electric power is imported via the transmission system.

Polk County does not have significant economical wind power resources, but is connected to several Iowa wind farms in the north central and northwest portions of the state. Some individual wind energy systems may be found in the more rural areas of the County but no significant commercial opportunities exist for utility scale wind generators. For small renewable energy generators (household or small businesses) the State has created provisions to allow sale of electricity back to the utility at the same price that the household or business pays for electricity, a process called net metering. A recent court decision has cleared the way for statewide net metering, including not only the investor-owned utilities but also the co-operatives and municipal utilities.

Gas Utility Service

Unlike electric service, natural gas systems are not considered universal utilities. Most Polk County residents and businesses have access to the natural gas system but some outlying communities, and virtually all of the unincorporated areas, lack natural gas access.

As with electric service, natural gas delivery services are currently rate-regulated by the Iowa Utilities Board. The actual fuel cost of the gas, however, has been unregulated. Residential and small business consumers pay the going wholesale price for gas (as part of their natural gas bill) passed through their local distribution company. Most large businesses and some small businesses contract directly with suppliers in the wholesale market for natural gas, and pay the local distribution utility only for delivery and sometimes for backup service. School districts are allowed under state law to aggregate their gas demand and contract directly with gas suppliers as a means of capturing more market power and lowering costs.

Interstate pipelines connect the local distribution system to the gas suppliers and to natural gas hubs. Polk County has two pipeline connections to the Northern Natural Gas Company transportation system (now owned by MidAmerican Energy). The primary connection is to the City of Boone, where several pipeline branches converge.

MidAmerican recently built a second smaller natural gas pipeline connecting the County to pipeline systems in the southern part of the state. Sufficient pipeline capacity exists to serve economic and population growth, although additional capacity might be needed to ensure competitive gas transportation rates and access to distinct natural gas supply basins.

6.4 Communications Utilities and Infrastructure

Polk County is served by a wide variety of communications businesses and technologies. The combination of new communications technologies and the deregulation of the telecommunications industry has, over the last ten years, greatly expanded both the type of communications options available within Polk County and the number of businesses that offer services to at least some market segments.

Telephone Services and Infrastructure

Companies that provide telecommunications services are required to file with the Iowa Utilities Board. Companies that provide telephone and related services are classified into one of three categories: incumbent, competitor, or wireless.

The traditional telephone utilities which provided regulated monopoly service prior to 1995 are now known as Incumbent Local Exchange Carriers (ILECs). These companies typically own and maintain the physical equipment comprising the local exchange, which is operated as a common carrier for the ILECs and other competitors. The incumbent companies are generally required to offer basic telephone services to all qualified residents and businesses within the geographic limits of the exchange. Incumbents also must sell access to the local network at a reasonable cost to competitive carriers. Polk County has only two ILECs; Qwest, and Iowa Telecommunications Services. Qwest is the ILEC for most of the County; only the small communities of Alleman and Elkhart are in non-Qwest exchanges.

Competitive Local Exchange Carriers (CLECs) do not have to offer services over the full geographic exchange, nor do they have to offer services to all types of customers. Some CLECs provide a full range of telecommunications services to residents and businesses, while others may target only particular market segments and provide only a niche of telecommunications services. Some CLECs, for instance, provide only long distance service. CLECs frequently target high-volume business customers, but sometimes also



Table 6-2: Competitive Local Exchange Carriers (CLECs) in Polk County

Community	CLEC	Community	CLEC
Alleman	MCImetro Access Transmission Services, Inc.	Grimes	AT&T Communications
Altoona	Choicetel LLC		Choicetel LLC
	Comm South Companies, Inc.		Ionex Communications North, Inc.
	Digital Telecommunications, Inc.		MCImetro Access Transmission Services, Inc.
	Ionex Communications North, Inc.		McLeodUSA Telecommunications Services, Inc.
	MCImetro Access Transmission Services, Inc.	Johnston	New Access Communications LLC
	McLeodUSA Telecommunications Services, Inc.		AT&T Communications
	New Access Communications LLC		Choicetel LLC
	Z-Tel Communications, Inc.		MCImetro Access Transmission Services, Inc.
Ankeny	AT&T Communications	Mitchellville	Choicetel LLC
	Choicetel LLC		MCImetro Access Transmission Services, Inc.
	Crystal Communications, inc. dba HickoryTech	Pleasant Hill	
	Excel Telecommunications, Inc.	Polk City	Choicetel LLC
	Iowa Telecom Communications		MCImetro Access Transmission Services, Inc.
	MCImetro Access Transmission Services, Inc.	Runnells	Choicetel LLC
	McLeodUSA Telecommunications Services, Inc.		MCImetro Access Transmission Services, Inc.
	New Access Communications LLC		New Access Communications LLC
	Orbitcom	Saylor Twp	AT&T Communications
	VarTec Telecom, Inc.	Urbandale	AT&T Communications
Avon	Choicetel LLC		Choicetel LLC
Bondurant	Choicetel LLC		Comm South Companies, Inc.
	MCImetro Access Transmission Services, Inc.		MCImetro Access Transmission Services, Inc.
Clive	AT&T Communications	West Des Moines	AT&T Communications
	Choicetel LLC		Choicetel LLC
	MCImetro Access Transmission Services, Inc.		Comm South Companies, Inc.
Des Moines	AT&T Communications		Crystal Communications, Inc. dba HickoryTech
	Choicetel LLC		MCImetro Access Transmission Services, Inc.
	Comm South Companies, Inc.		MCImetro Access Transmission Services, Inc.
	Crystal Communications, Inc. dba HickoryTech	Windsor Heights	Inc.
	Digital Telecommunications, Inc.		
	Excel Telecommunications, Inc.		
	Fast Phone of Nebraska		
	Houlton Enterprises dba Guaranteed Phone Service		

Table 6-2: Competitive Local Exchange Carriers (CLECs) in Polk County

Community	CLEC	Community	CLEC
Des Moines	Ionex Communications North, Inc. MCImetro Access Transmission Services, Inc. McLeodUSA Telecommunications Services, Inc. New Access Communications LLC QuantumShift Communications, Inc. TRX Inc. VarTec Telecom, Inc. Z-Tel Communications, Inc.		

provide services to smaller businesses or residential markets. The IUB reports that 18 different CLECs are permitted to operate in Polk County. A list of all CLECs, by community, is shown in Table 6-2.

Wireless carriers provide telephone and related services via analogue or digital wireless systems that are linked to the land-line system of local exchanges. As noted in the IUB’s 2004 report on competition, national studies show that only 5% of the local telephone market has switched to wireless. Polk County has six different wireless providers registered with the IUB.

The IUB is obligated under state law to deregulate communication services or facilities if the service is subject to effective competition. Some services, such as wireless communications and intra-state long distance, have been deregulated. The IUB conducted a survey of telecommunication providers in 2003 to determine the approximate geographic market coverage of competitive telecommunications services and customer class penetration of CLECs into ILEC markets. It determined that local telephone service was not yet competitive for most of the state; ILECS still control 92% of the residential market and 77% of the business market. Polk County exchanges were determined to be one of the geographic markets that were not yet competitive.

Table 6-3: Wireless Providers

Community	Wireless Providers
Alleman	NPCR d/b/a Nextel Partners Inc.
Altoona	NPCR d/b/a Nextel Partners Inc.
Ankeny	Iowa Wireless NPCR d/b/a Nextel Partners Inc.
Berwick	NPCR d/b/a Nextel Partners Inc.
Bondurant	NPCR d/b/a Nextel Partners Inc.
Clive	NPCR d/b/a Nextel Partners Inc.
Des Moines	NPCR d/b/a Nextel Partners Inc. RSA 1 Limited Partnership dba Cellular 29 Plus RSA 2 Limited Partnership dba Lyrix Wireless TracFone Wireless US Cellular Corporation
Elkhart	NPCR d/b/a Nextel Partners Inc.
Grimes	Iowa Wireless NPCR d/b/a Nextel Partners Inc.
Johnston	NPCR d/b/a Nextel Partners Inc. RSA 2 Limited Partnership dba Lyrix Wireless RSA 1 Limited Partnership dba Cellular 29 Plus
Mitchellville	NPCR d/b/a Nextel Partners Inc. RSA 1 Limited Partnership dba Cellular 29 Plus
Pleasant Hill	Iowa Wireless NPCR d/b/a Nextel Partners Inc.
Polk City	Iowa Wireless NPCR d/b/a Nextel Partners Inc.
Runnells	NPCR d/b/a Nextel Partners Inc.
Urbandale	Iowa Wireless NPCR d/b/a Nextel Partners Inc.
West Des Moines	Iowa Wireless NPCR d/b/a Nextel Partners Inc. RSA 2 Limited Partnership dba Lyrix Wireless

Data on specific levels of internet access for the County are difficult to obtain, but most Polk County communities have access to broadband services. Table 6-4 shows the results of the IUB survey on broadband access for Polk County communities.

Table 6-4: Iowa Utility Board 2004 Assessment of Communities Accessing High-Speed Technologies

Community Name ^{1, 2}	DSL Technologies		Cable Modem Technologies		Wireless Technologies	
	Access as of July-04	Access by July-05	Access as of July-04	Access by July-05	Access as of July-04	Access by July-05
Alleman	X	X			X	X
Altoona	X	X	X	X	X	X
Ankeny	X	X	X	X		
Avon					X	X
Bondurant			X	X	X	X
Clive			X	X		
Des Moines	X	X	X	X		
Elkhart	X	X		X		
Grimes		X	X	X	X	X
Johnston			X	X	X	X
Mitchellville			X	X	X	X
Pleasant Hill			X	X		
Polk City			X	X		
Runnells						
Urbandale	X	X	X	X	X	X
West Des Moines	X	X	X	X	X	X
Windsor Heights			X	X		

¹Some community names are no longer recognized as stand alone communities, but are still associated with specific telecommunications exchanges and thus appear on the telecommunications survey

²Availability of high-speed Internet access in a community does not mean the technology is available to all customers in that community.

Polk County is well-connected to the national telecommunications networks via the above-noted high capacity fiber optic systems. Access to the network, however, is not uniform across the County, or even within communities. High speed or broadband access is available to most Polk County communities via copper phone lines and cable lines, in addition to wireless access providers. No Polk County communities have fiber optic connections to the end user, except for large institutions or businesses

that can afford to pay for the direct connection. Bridging the final loop of the fiber optic communications system – from the switching station to the curb – is the most expensive component of a linked high speed fiber network.

Several communities in Polk County, and a number of Polk County businesses, are working to invest in an expanded fiber optic network in the state through a coalition called ‘Opportunity Iowa.’ Opportunity Iowa is promoting community investment in fiber optic networks including the last loop of connectivity – bringing fiber to the curb. One component of such investment would be the formation of a communication utility by each local government which would own and maintain the network. Such a high-capacity network to the curb would enable provision of all communications services over a single network – phone, television, internet, and other potential services.

Alternatives to a large investment in fiber to the curb include cable systems, the telephone systems, satellite-based wireless systems, and potentially the electric utility distribution system. Improvements in data compression continue to allow the use of the low-volume ‘twisted pair’ telephone system and the higher volume cable systems to expand broadband services over existing networks, but as yet are insufficient to match the capacity of fiber optic systems.