

# Infrastructure

## Overview

The Infrastructure chapter delves into the existing utility systems and future planning efforts for aging infrastructure within Boone County. Water and sanitation systems are essential for community life and future development. Maintaining these structures and addressing growth needs without primarily using septic tanks and wells is often a careful balancing act. Commercial and industrial needs also need to be mindfully planned so that demand for utility services does not exceed the supply.

Counties traditionally have a more complex relationship with utilities, as they often work with multiple municipalities which have a wide variety of needs and currently established systems. This chapter analyzes existing conditions, existing capacity, and will assess future needs of the water, sewer, storm water, internet, and electric utilities in Boone County. The primary goal of this chapter is to create and solidify guidelines and standards to guide major utility investments.

## Infrastructure Goals

- **Goal 1:** Ensure adequate infrastructure to provide a high level of service for existing service areas and future expansion areas
  - Update guidelines on monitoring and inspecting existing infrastructure.
  - Work to guide moderate intensity or high intensity development to areas that are contiguous to cities within the County or along existing service areas.
  - Encourage design and land uses that support an efficient system.
  - Explore ways to increase the access to high-speed internet.
  - Develop trunk utility service corridors to support planned future land uses.
  - Consolidate the aging surplus maintenance facilities into two primary facilities.
- **Goal 2:** Review current policies and code of utility standards
  - Encourage the use of energy and water conservation practices.
  - Utilize best management practices to reduce total utility load and to reduce surface water runoff and erosion.
  - Add storm water management requirements for rural developments, including sump pumps and sewer outlets.
- **Goal 3:** Solidify partnerships and policies regarding sanitation and water systems
  - Analyze current watersheds within drainage districts and work with trustees to improve current drainage plans.
  - Assess Boone County Landfill's long-range capacity.
  - Expand partnership with Keep Boone County Beautiful to increase outreach programs.
  - Review the Don Williams Lake Watershed Improvement Plan to examine if sediment build up was reduced and if additional modifications are needed.



Figure 8.1 – Water Tower and Utility Lines

Source: Boone County

## Utility Providers

Within Boone County there are a variety of utility providers. Many utilities are available to most of the County such as water and electric, but sewers and storm water systems are primarily available within incorporated areas. Broadband internet providers are inconsistent throughout the County depending on location, with many areas not having the infrastructure to be able to receive such services.

Table 8.1: Boone County Utility Providers		
Utility	Provider	Locations
<i>Water System</i>	Xenia Rural Water	Entire county
	Boone Water Works	City of Boone
	Ogden Municipal Utilities	City of Ogden
	Madrid Water	City of Madrid
<i>Electrical</i>	Boone REC	Non-incorporated areas
	Midland Power	Non-incorporated areas
	Ogden Municipal Utilities	City of Ogden
	Interstate Power and Light Company (Alliant)	Incorporated areas
<i>Internet</i>	CenturyLink	Along Hwy 30
	Rise Broadband	Along Hwy 30
	HughesNet	Satellite
	Viasat	Satellite
<i>Natural Gas</i>	Black Hills Energy	Entire County
	Interstate Power and Light Company (Alliant)	Entire County
<i>Sanitary Sewer</i>	No rural sewer system	Non-incorporated areas
	Municipal	Incorporated areas
<i>Storm Water</i>	Municipal	Incorporated areas
<i>Solid Waste Disposal</i>	Boone County Landfill	Entire County
	North Dallas County Landfill	Entire County

Table 8.1 – Boone County Utility Providers

*Source: Boone County Data*

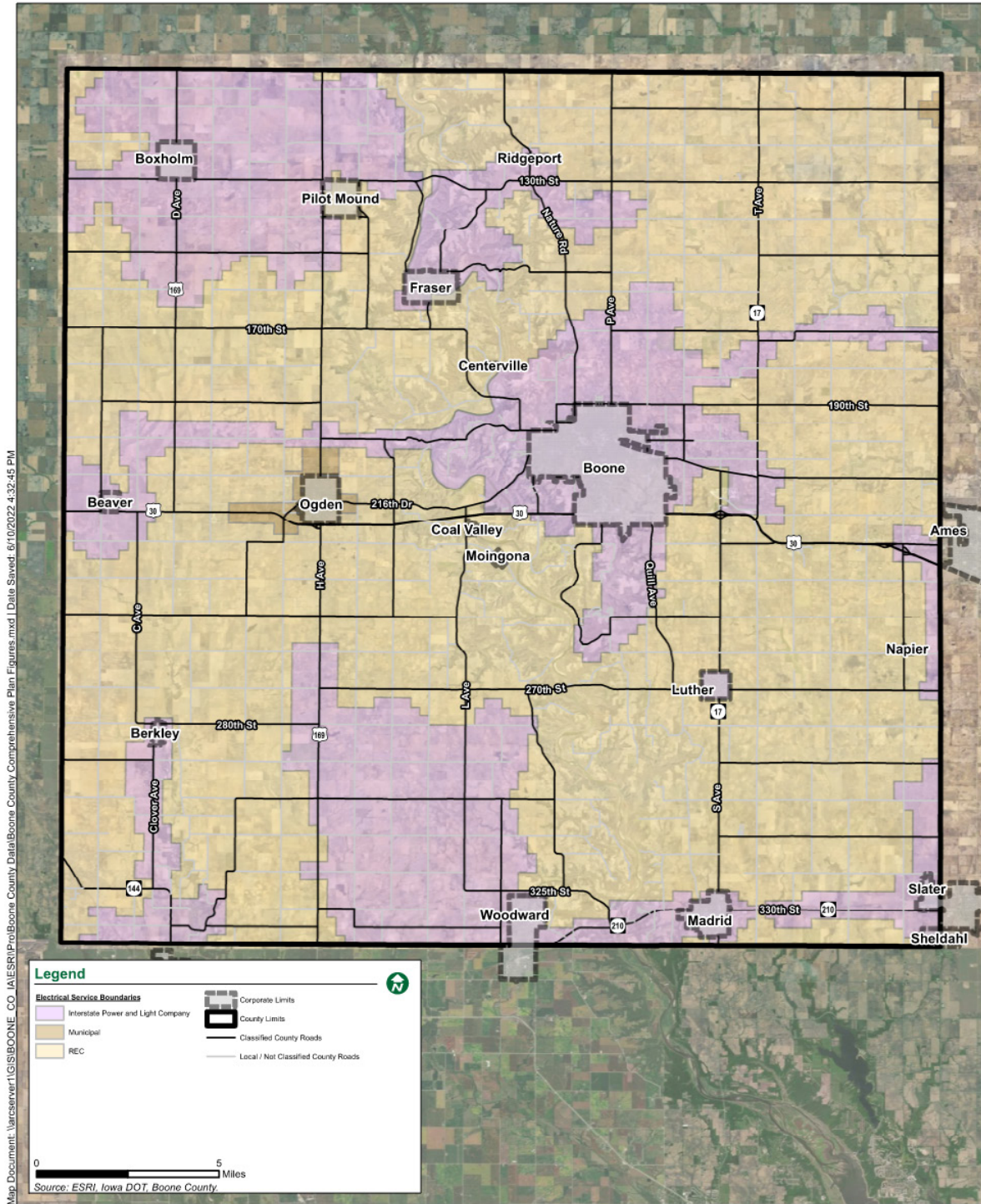


Figure 8.2 – Boone County Electrical Services

Source: Boone County Data

Created: Bolton & Menk Inc.

## Facilities

Boone County maintains its system of public infrastructure, buildings, and equipment through the Boone County Engineering Department. The specific team that handles this is the Maintenance Division within the Engineering Department. There are major maintenance facilities located in the cities of Boone, Ogden and Madrid. Satellite shops are located in Berkley, Boxholm, Mackey, and Luther. Many of these facilities were built by the Works Progress Administration during the mid-1930s to early-1940s. Due to the age of the facilities, and the decentralized nature of the maintenance shops, there are often unnecessary delays added to completing tasks. Reducing the number of maintenance shops and updating the equipment used within would decrease the delays by centralizing parts and equipment. With current funding and facilities, approximately two major projects are completed each year by the Boone County Engineering Department.

## Sanitary Sewer & Water

Rural Boone County generally does not have access to a sanitary sewer collection system. As such, most new development located outside of incorporated communities utilize septic tanks and systems. Sanitary sewer is provided by local municipalities within incorporated areas. There are currently no plans to expand sanitary sewer into rural portions of the County.

Rural water is provided by Xenia Rural Water and by wells. The Cities of Boone, Ogden, and Madrid each run their own water system.

## Stormwater

Presently there are no storm water management requirements for developments within rural Boone County. Without stormwater requirements there is a risk for runoff and resulting soil erosion to occur following significant rainfall events. Requirements for natural resources inventory to ensure that natural resources are protected are also traditionally within a stormwater management plan. Natural resources include traditionally native plants, wetlands, streams, and forested areas to help minimize flooding risks by stabilizing soil and increasing natural water retention. Best Practices and guidelines can be found in the Statewide Urban Design and Specifications (SUDAS) or Iowa Storm Water Management Manual. Both contain general guidelines for storm water management but differ on benchmark dates and the inclusion of storm water quality treatment. It is advisable to review both manuals and adopt a best practice to the County ordinance. Due to these factors, a storm water management plan would be recommended.

### Option 1: SUDAS Stormwater Management Manual

- Post Developed peak runoff shall meet pre-developed runoff for 5-, 10-, 50-, & 100-year storm.
- Does not include stormwater quality treatment.

### Option 2: Iowa Stormwater Management Manual

- Post Developed peak runoff shall meet pre-developed runoff for 1-, 5-, 10-, 50-, & 100-year storm.
- Does include stormwater quality treatment.

## Internet

Rural access to internet has rapidly shifted from a useful luxury to a readily required utility. Agricultural sales, schools, and communication have broadened and have made the need of internet apparent. Within Boone County, hard-wired internet is not consistent to the west of Highway 17. Throughout the County, internet primarily comes from phone lines (Digital Subscriber Line) or from satellite internet. Both often don't provide adequate speeds for modern use such as streaming videos that other infrastructure such as cable and fiber can provide. The largest satellite internet providers are HughesNet and Viasat. East of Highway 17 CenturyLink and Rise Broadband provides hard-wired service along Highway 30, but both are primarily available in Ames and the City of Boone.

## Survey Responses

The survey found that 88.7% of respondents found publicly provided services to be fair or better quality. 94.4% found the waste management services in Boone County to be fair or better quality and 86.8% found their electricity services to be fair or better quality. The goals for the infrastructure is to maintain the high quality of service for existing services, while exploring different opportunities to provide additional services such as internet to residents of Boone County.