

2009 Derby Wastewater Improvements



**Community
Development Department**
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Residential Sewer and Water Rate Comparisons

7,000 gallons/month

Average household usage

Valley Center	\$92.17
Newton	\$91.17
Rose Hill	\$89.15
Mulvane	\$87.70
Maize	\$78.58
Hays	\$69.35
Pittsburg	\$69.10
Emporia	\$58.46
Winfield	\$55.35
Haysville	\$54.60
McPherson	\$49.60
DERBY	\$45.64
El Dorado	\$43.15
Wichita	\$42.49
Andover	\$40.90
Dodge City	\$38.48
Augusta	\$37.85
Goddard	\$21.00

Average \$59.15

Median \$54.98



The City of Derby is embarking on three wastewater improvement projects in 2009. These projects will be managed by the Community Development Department, along with consulting engineers.

Background

- ⇒ The wastewater treatment facility which can treat as much as 2.5 million gallons of wastewater per day, must comply with rules set forth by the EPA (Environmental Protection Agency) and KDHE (Kansas Department of Health and Environment).
- ⇒ Because of more stringent rules, the facility must plan for several upgrades over the next few years, which could cost an estimated \$8 million.
- ⇒ In March 2009, a consulting engineer is completing a sewer rate study for the City of Derby. The study assesses the current operating costs of the wastewater treatment facility compared to existing and future revenues and provides recommendations for updates to the City's rate structure.
- ⇒ The City Council reviewed the current rate structure at a workshop on February 17, and is poised to decide on changes to base rates and consumption rates, which will affect utility bills for both residential and commercial customers.
- ⇒ Derby currently charges well below average rates for sewer. The average residential combined water and sewer bill is also lower than most area cities (see chart at left).

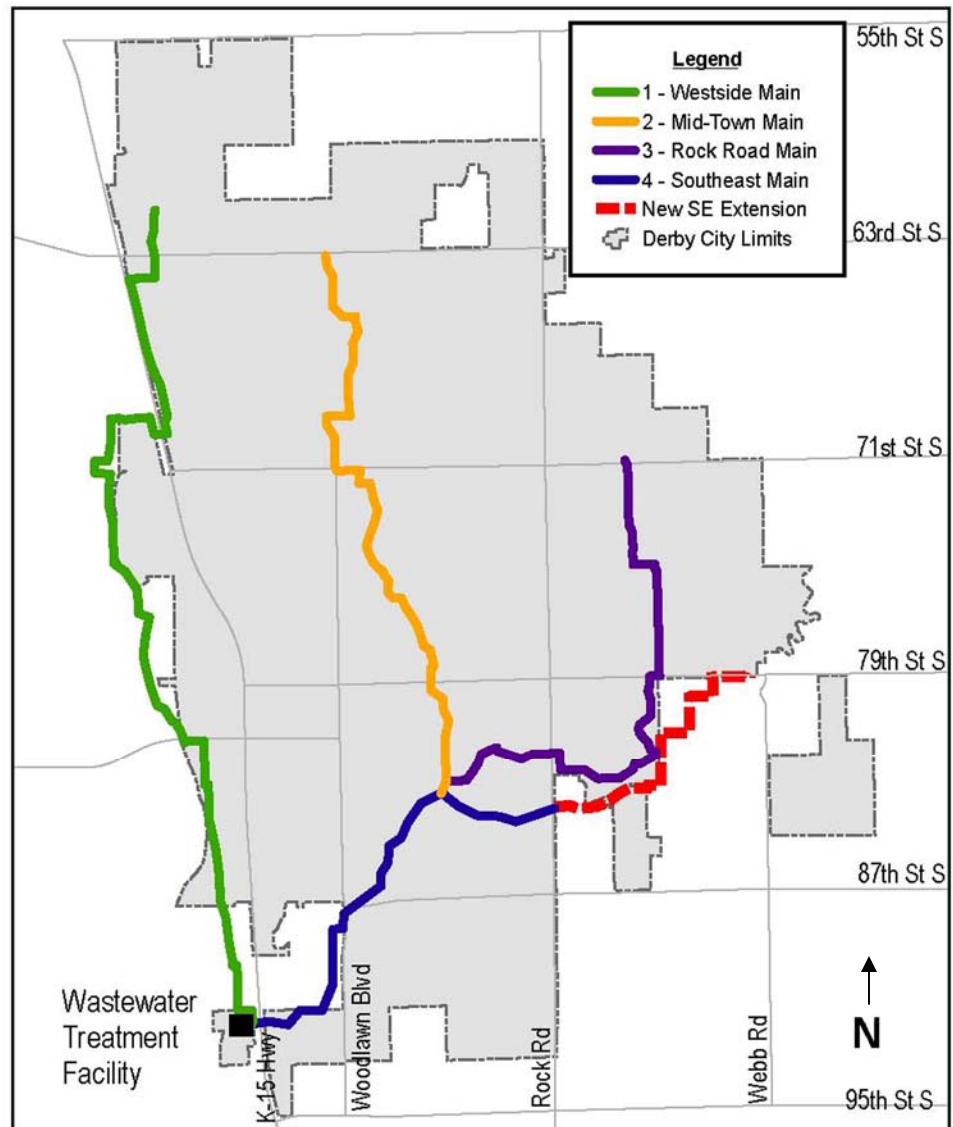
Project Overview

- ⇒ *Bio-Solids Upgrade*
Bio-solids are organic matter, or sludge, that are removed from wastewater before it's discharged. Once removed, bio-solids are applied to agricultural fields. The planned upgrades to the treatment plant will refine the process so the percentage of bio-solids is higher and the amount of water is lower. Operational savings will occur because the number of trips to the agricultural fields will be reduced. A key goal for this project is to extend the life of the current wastewater treatment facility. The project will begin this year.
- ⇒ *Main Extension*
A main sewer line is typically located near a low elevation so surrounding areas can drain downhill, by gravity. This project will extend the City's fourth sewer line from Spring Creek and Rock Road east to High Park (see map on back). This project will provide service for future residential growth in that area. Construction is scheduled to begin this year.
- ⇒ *Nutrient Removal*
The City will begin a feasibility and cost study in 2009. Nutrients, such as phosphorous, nitrate and nitrite, are found in wastewater. Too high of a level of these nutrients can cause problems for natural habitats in the Arkansas River, where the treated wastewater is discharged.

Sanitary Sewer Collection System

Advantages of a Sanitary Sewer System

- ⇒ The predominant soil type in Derby is heavy clay, which is not conducive to percolation required for efficient septic systems.
- ⇒ Septic tank system failure can lead to unsanitary conditions and may contaminate groundwater.
- ⇒ City-wide collection and treatment systems are maintained by local government, whereas septic systems require homeowners to provide expensive, periodic sludge removal from the tank and replacement of the rock-filled lateral field.
- ⇒ Using a sanitary sewer system and centralized treatment results in more compact and cost-efficient development. Septic systems require a large, rock-filled lateral field for percolation of the liquid into the soil, resulting in a need for large residential lots and less efficient use of land.
- ⇒ By using a wastewater treatment facility for treating and discharging water, the ecosystem is protected from contamination. The water goes through a stringent treatment process defined by EPA and KDHE before being released to the Arkansas River.



The City of Derby has four large main lines, as indicated in the map above. A new extension to the Southeast Main (red dotted line) is planned for construction in 2009.

1. **Westside Main:** Begins at the wastewater treatment facility and runs north through Woodland Valley and Huckleberry Estates, then east to K-15 near Atwood's, and north to Patriot Avenue.
2. **Mid-Town Main:** Begins at Kay Street and where Spring Creek and Dry Creek join, heads north along Dry Creek to the Oaks Addition.
3. **Rock Road Main:** Begins at Kay Street and where Spring Creek and Dry Creek join, and heads northeast through Oak Forest, Springcreek, Timberleaf, and Glen Hills Additions. It serves the new commercial development along Rock Road.
4. **Southeast Main:** Begins at the wastewater treatment facility and follows Spring Creek northeasterly to Kay Street where it intersects the Mid-Town and Rock Road Mains. From here it runs east through the Oakwood Valley and Tiara Pines Additions to the east side of Rock Road, just south of the Spring Creek Bridge. The extension planned for 2009 will extend the sewer line northeasterly to near High Park.