

EXECUTIVE SUMMARY

1. Introduction.

The purpose of this Preliminary Routing/Corridor Study and Design of the Upper Southeast Salt Creek Trunk Sewer is to evaluate and select an alignment for the extension of the Salt Creek sewer system to serve future growth in south Lincoln. The study includes a review of previous route concepts performed by Olsson Associates in 1999, and a screening process to select one route corridor. Detailed investigation of this route included the analysis of upstream service area requirements, and options for pipe alignment through the Wilderness Park corridor. This report includes discussion on geotechnical investigations, historical and environmental assessments, physical design constraints, estimated project costs, and selection criteria for six alternative alignment options.

2. Public Involvement Process.

A major component of this study was the solicitation of active input from the general public and various stakeholder groups. The environmentally sensitive nature and unique ecological considerations of Wilderness Park offer a rare opportunity and challenge to develop a project that addresses and balances the City's need for additional infrastructure with the valuable assets of the park. At several stages during the development and evaluation of alternative routes for the proposed trunk sewer, the project team held public meetings to "spread the word" about the nature of this project. These public information meetings, and the public input process were directed by the Heartland Center for Leadership Development, to provide a structured and open process for public participation. Information regarding project timelines, alternative routes, habitat characteristics, potential park impacts and park restoration, and construction techniques were discussed in detail. Those present at the meetings were offered the opportunity to voice their concerns and comments, and provide additional input on specific details of the corridor study and evaluation of alternatives.

Continued public involvement in this project, as it moves forward from the Preliminary Study to final design and construction, will be an integral part of the success of the project.

3. Service Area Alternatives.

In order to meet the wastewater collection needs for future growth in south Lincoln, the study reviewed three possible service area scenarios. The Comprehensive Plan Tier I service area includes projected growth for a 25-year period, for a total of 4,137 acres. The Tier II service area includes projected growth for a 50-year period, for a total of 7,311 acres. The Total Ridgeline service area includes all land within the natural drainage basin boundaries of Urban Planning Zones S-2, S-3, and S-5 (including 868 acres within the Town of

Roca's planning jurisdiction), for a total of 8,179 acres. Due to the long-term planning nature of trunk sewer design, the Tier I option was eliminated. The existing 48-inch trunk sewer has the capacity to serve a total of 7,802 additional acres, assuming full-pipe conditions at design flow.

4. BNSF Railroad Crossing at Rokeby Road.

At the Rokeby Road location, the selected sewer alignment must cross from the west to the east side of the BNSF railroad. On the west side, Wilderness Park has an abrupt transition from reclaimed agricultural fields ("Old Fields") to mature woodlands. The Old Fields area (north of Rokeby Road) is currently dominated by non-native grasses and plants, while the woodland area (south of Rokeby Road) is an established area of large oak, hackberry, and hickory trees. On the east side of the railroad, Wilderness Ridge golf course property (currently a detention pond) is north of Rokeby Road, and private agricultural land is south of Rokeby Road.

At Rokeby Road, there is a large change in ground elevation on the east side of the railroad, and an exposed outcropping of sandstone is evident along the railroad, and in the golf course property. Three pipe alignment alternatives are presented to determine the best route in terms of constructibility, cost, and protection of the park.

5. Alignment Selection Criteria and Cost Estimates.

The three alignment alternatives at Rokeby Road were compared and ranked against each other based on a number of engineering and ecological factors. Based on the ranking criteria, the alignment north of Rokeby Road is slightly favored over the diagonal crossing or the south alignment. Further geotechnical investigation in the area is necessary to determine the limits of the sandstone formation, and its affect on each of the alignments.

Estimates of project cost were prepared for a total of six alternatives, including each of the two service area options and three alignment options. The cost estimates range from \$ 3,547,000 to \$ 4,458,000. The two lowest cost alternatives were Option 1A and Option 1C, which were for the 48-inch pipe, with either the north or south crossing at Rokeby Road. These two cost estimates were \$3,576,000 and \$3,547,000, considered to be equivalent at the preliminary design phase.

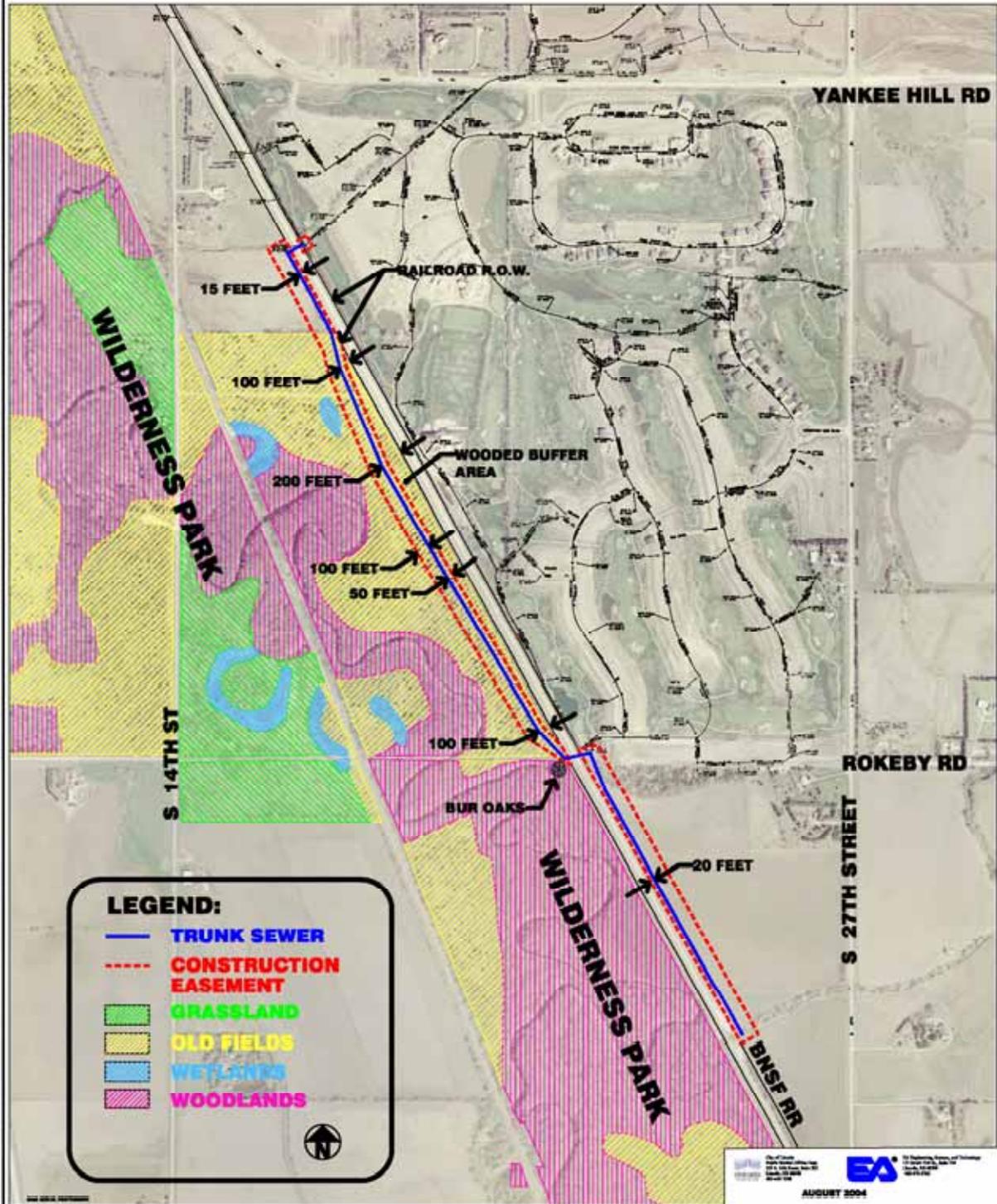
6. Conclusions and Recommended Alternative.

Alignment 1A, which serves the Tier II service area and crosses the BNSF railroad on the north side of Rokeby Road, is the one of the lowest cost options,

and provides for the least disruption of Wilderness Park, while including all of the required elements for long-term operation and maintenance by the Lincoln Wastewater System. The 48-inch pipe alternative is recommended over the 54-inch pipe, due to the cost savings and the 48-inch option can serve all of the Tier II area, and potentially serve the Total Ridgeline area with an acceptable amount of surcharge in the pipeline under peak flow conditions. The north crossing of Rokeby Road is the recommended alternative at this location, due to reduced impacts on the woodlands area of Wilderness Park, and the reduced cost versus a long diagonal bore under the BNSF railroad.

Alignment Option 1A should be pursued for final design of the Upper Southeast Salt Creek trunk sewer. Continuing the public participation process, as the details of final design are determined and construction activity is underway, is strongly recommended to insure that the concerns and expectations of the diverse group of stakeholders are addressed at each phase of the Upper Southeast Salt Creek trunk sewer project.

FIGURE 1 - RECOMMENDED ALTERNATIVE UPPER SOUTHEAST SALT CREEK TRUNK SEWER PRELIMINARY ROUTING STUDY -LINCOLN WASTEWATER SYSTEM-



EA ENGINEERING, SCIENCE, AND TECHNOLOGY		UPPER SE SALT CREEK TRUNK SEWER PRELIMINARY ROUTING STUDY LINCOLN, NEBRASKA			RECOMMENDED ALTERNATIVE				
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