

6.0 Project Costs for Selected Improvements

6.1 Basis for Project Costs

Capital costs developed for the alternative sewer alignments were based on opinions of cost for previous HDR projects and records from previous LWWS projects. All horizontal lengths for pipelines, tunnels, and siphons were obtained from the 2005 aerial photographs, utilizing the Lancaster County Coordinate System; vertical information was derived from the 2004 LIDAR data, all obtained from the Lincoln/Lancaster County GIS ftp site. All project costs are provided in August 2005 dollars. Additional amounts for contingencies; easement acquisition; and engineering, legal, and administrative costs were added to obtain a total opinion of probable project cost for each alignment.

6.2 Construction and Engineering Costs

Costs were calculated on a linear foot basis for the sewer on each alignment accounting for depth of bury for the pipe. Horizontal auger boring beneath roads and the airport taxiway were evaluated for each location to provide a cost per linear foot of crossing. Siphon crossing of Oak Creek was calculated on a lump sum basis to include all required structures and piping. Additional costs were included for dewatering, manholes, street repairs, utility relocations, and seeding.

Five percent of the cost for each line item was added for the contractors general conditions. Fifteen percent of the direct construction cost was added to each alignment alternative as an allowance for unknowns that can be expected at this level of estimating and for project contingencies. Twenty percent of the direct construction cost plus contingencies was allocated for engineering, legal, and administrative costs associated with each alignment.

6.3 Easement Acquisition Costs

Easement acquisition costs were estimated based on a square foot basis for permanent easements and temporary construction easements. A cost of \$0.50 to \$1.00 per square foot was used for permanent easements, based on the location of the property in reference to the 100-year flood elevation, and \$0.10 per square foot was used for temporary construction easements.

Easements for construction on lands owned by the Lincoln Airport Authority (LAA) will be dedicated to the City at no charge. The only easements required to be purchased will occur at the north end of the trunk sewer alignments where property is owned by entities other than the LAA.

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6.4 Total Project Costs

The opinion of probable project cost for each sewer segment for the 5,950 acres (Existing, Tier I, and 1,500 acres of Tier III) development plan is listed in Table 6-1. The opinion of probable project cost for each segment for the 4,450 acres (Existing and Tier I) development plan is listed in Table 6-2. The complete breakdown of the capital costs for each alignment is located in Appendix B. The project cost for each alternative includes capital costs, general requirements, contingencies, and engineering, legal, and administrative costs; and easement acquisition costs.

Table 6-1: Opinion of Probable Project Costs (5,950 acres of Development in Basin)				
Segment	Construction Cost	Easement Costs	Eng, Legal, Admin. Costs	Total Project Cost
E-3	\$1,088,000	-	\$218,000	\$1,306,000
Additional Siphon Barrel	\$255,000	-	\$51,000	\$306,000
E-6d	\$428,000	\$86,000	\$103,000	\$617,000
Red-1 and Red-2	\$2,301,000	-	\$460,000	\$2,761,000
Pink-1 and New Siphon	\$1,067,000	-	\$213,000	\$1,280,000
Orange-2	\$1,189,000	\$99,000	\$258,000	\$1,546,000
Pink-2, 3, and 4	\$1,699,000	-	\$222,000	\$2,039,000
Yellow-2 and Orange-1	\$1,724,000	-	\$345,000	\$2,069,000
Total Cost	\$9,751,000	\$185,000	\$1,870,000	\$11,924,000

Table 6-2: Opinion of Probable Project Costs (4,450 acres of Development in Basin)				
Segment	Construction Cost	Easement Costs	Eng, Legal, Admin. Costs	Total Project Cost
E-3	\$1,088,000	-	\$218,000	\$1,306,000
Additional Siphon Barrel	\$255,000	-	\$51,000	\$306,000
E-6d	\$428,000	\$86,000	\$103,000	\$617,000
Red-1 and Red-2	\$2,248,000	-	\$450,000	\$2,698,000
Pink-1 and New Siphon	\$981,000	-	\$196,000	\$1,177,000
Pink-2, 3, and 4	\$1,439,000	-	\$288,000	\$1,727,000
Yellow-2 and Orange-1	\$1,232,000	-	\$246,000	\$1,478,000
Total Cost	\$7,671,000	\$86,000	\$1,552,000	\$9,309,000