5.0 Conclusions and Recommendations

5.1 Conclusions

5.1.1 Project Costs

Alignment No. 2 (Red Alignment) has the lowest opinion of probable project cost for the Beal Slough Relief Trunk Sewer Phases I & II. The ranking of alternative alignments by project cost is shown below.

Ranking by Opinion of Probable Project Cost

Ranking	Alignment	Project Cost	Δ% from Alternative No. 2
1	Alignment No. 2	$10,005,000	--
2	Alignment No. 3	$11,333,000	13.3%
3	Alignment No. 1	$12,365,000	23.6%

Alignment No. 2 has a lower cost because of the shorter lengths of tunnel crossings throughout the length of the sewer. This tunnel cost presents a differential of over one million dollars compared to Alignment Nos. 1 and 3. The cost differential between Alignment Nos. 1 and 3 is reflected in the total length of pipe. Alignment No. 3 has a direct route from the Salt Valley Relief Trunk Sewer connection to Highway 2 and 56th Street, compared to Alignment No. 1 deviating north of Highway 2 at 14th Street. Alignment No. 1 also required additional interconnection sewer extensions at 14th Street and 27th Street to convey flow from the southern portions of the Beal Slough drainage area to the new sewer.

5.1.2 Ranking Factors Results

The ranking table provided in the Findings and Evaluation of Alignment Selection Factors indicated that Alignment No. 2 is the most favored alternative with a score of 67. Alignment No. 1 is second with a score of 51, and Alignment No. 3 is third with a score of 43. Advantages of Alignment No. 2, compared to the other alignments, include: a reduced length of tunnels; capable of connecting to existing sewer lines from the southern

portion of the drainage basin; proximity to existing Beal Slough Trunk Sewer for interconnections; construction of a grade check on Beal Slough; fewer impacts to existing utilities; and no conflict with future widening of Highway 2.

5.2 Recommended Alternative

Alignment No. 2 (Red Alignment) is the best and most cost effective alternative for the LWWS, will provide the greatest compatibility with the existing sewer, and will minimize impacts to planned improvements along the alignment. Opportunities for joint projects along this alignment, including the installation of a grade check southwest of the State Penitentiary and replacement of the parking lot in Peterson Park will allow additional entities with the City to work together to improve the Beal Slough drainage basin. The grade check will stabilize the BNSF railroad bridge and the Correctional Services access road bridge while protecting LWWS siphon on the existing Salt Valley Trunk Sewer.