

Executive Summary

Introduction

The City of Lincoln (City) and the Lower Platte South Natural Resources District (NRD) are in the process of developing a Comprehensive Watershed Management Plan for the City of Lincoln and its future growth areas. This comprehensive watershed plan is being developed basin by basin, through the completion of watershed master plans for individual basins. Watershed master plans are used as planning tools to be referenced in conjunction with proposed development and as a guide in the preparation of future capital improvement projects (CIPs).

The City and NRD have previously adopted watershed master plans for the Antelope Creek, Beal Slough, Cardwell Branch, Deadmans Run, Little Salt Creek, Southeast Upper Salt Creek (SEUSC) and Stevens Creek basins. Master plans for Haines Branch, Middle Creek, and South Salt Creek basins are currently being prepared. Figure ES-1 shows the completed basins in the Comprehensive Watershed Master Plan highlighted in green and the basin plans under way highlighted in purple.

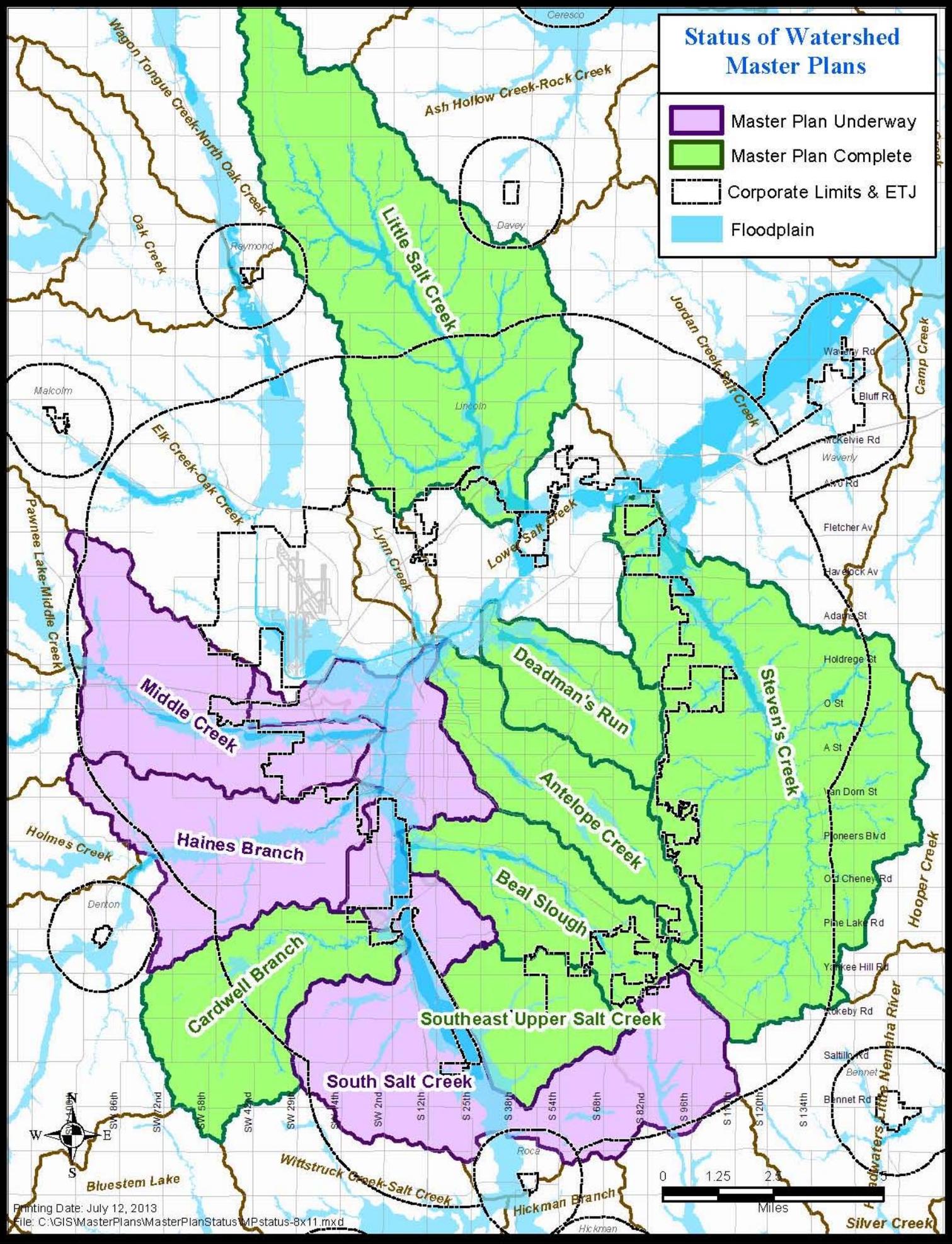
The South Salt Creek Watershed Master Plan (Master Plan) is summarized in this report. The purpose of the South Salt Creek Watershed Master Plan is to identify needed CIPs for water quality and stream stability as well as to quantify pre-development hydrologic conditions for sub-basins with potential future developments. The Master Plan also identifies special or unique areas in the watershed for consideration during the design and construction of the Watershed CIPs.

The South Salt Creek Watershed Study Area is located within and west of the City of Lincoln, to the west of Salt Creek as illustrated in Figure ES-2. The South Salt Creek Watershed Study Area is approximately 53 square miles. The limits of the study area were determined based upon the limits of the current Extraterritorial Jurisdiction (ETJ). The studied portion of the watershed is approximately 11 miles in length with a maximum width of about 11 miles. There are over 90 miles of open channel within the watershed study area. The South Salt Creek Study Area includes the northern most portion of the Wagon Train watershed in addition to tributaries draining directly to South Salt Creek.

The project team was led by the City and NRD, in cooperation with Lancaster County (County). The City/NRD retained the consultant team of Intuition & Logic (I&L), in association with the U.S. Geologic Survey (USGS) and Heartland Center for Leadership Development (HC).

Status of Watershed Master Plans

- Master Plan Underway
- Master Plan Complete
- Corporate Limits & ETJ
- Floodplain



Public Participation

As part of the Master Plan development, a public participation process was used to solicit input from area residents and other interested parties. The public participation process included the following:

- Two open houses in August 2013 and May 2014
- Project updates and information on the City's website to post preliminary results and upcoming events
- A series of Three newsletters mailed to over 800 individuals and organizations
- The City, County and the NRD each host open public hearings regarding the Master Plan which provide several opportunities for public input.

The public input and feedback received during this process was used by the project team to formulate and refine the master plan recommendations. Section 1 of the Master Plan provides further details regarding the public participation process.

Capital Improvement Projects

The results of the geomorphic, water quality, and special areas evaluations formed the foundation for identifying problem areas in the watershed. Potential improvement projects addressing each problem area were evaluated based on design considerations, economic feasibility, and overall efficiency.

The Master Plan includes 19 stream stability capital improvement projects. The general locations of the projects are shown in Figure ES-3, CIP Locations. The main stem of the stream is incising and widening. The dominant process on the South Salt Creek main stem is widening, the main stem also exhibits strong indication of potential future incision evidenced by the presence of knick points in the channel. The widening does not threaten any structures, therefore, no CIPs address widening along the main stem.

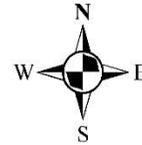
Projects 1-6, 9-11, and 15-19 are grade controls along the main stem and tributaries to halt active incision and protect the reaches upstream of the grade control. These grade controls will hold the profile grade of the channel, reducing the erosion and sediment released. Continued incision can cause erosion and bank failures that could threaten structures. Project 2 also involves bank stabilization with associated grade controls in Irvingdale Park. Projects 7-8, and 12-14 involve a stilling basin to protect the culvert outfalls.

The total cost for all 19 capital improvement projects is estimated to be approximately \$6.7 million using 2014 material and construction costs. Traditional funding options for the Capital Improvement Projects include City stormwater bonds, funding from the Lower Platte South Natural Resources District, and County/State funding for stream stability measures where appropriate in association with County/State road improvement projects. Therefore, projects to protect private infrastructure do not qualify as CIP Projects because they do not typically qualify for public funding.

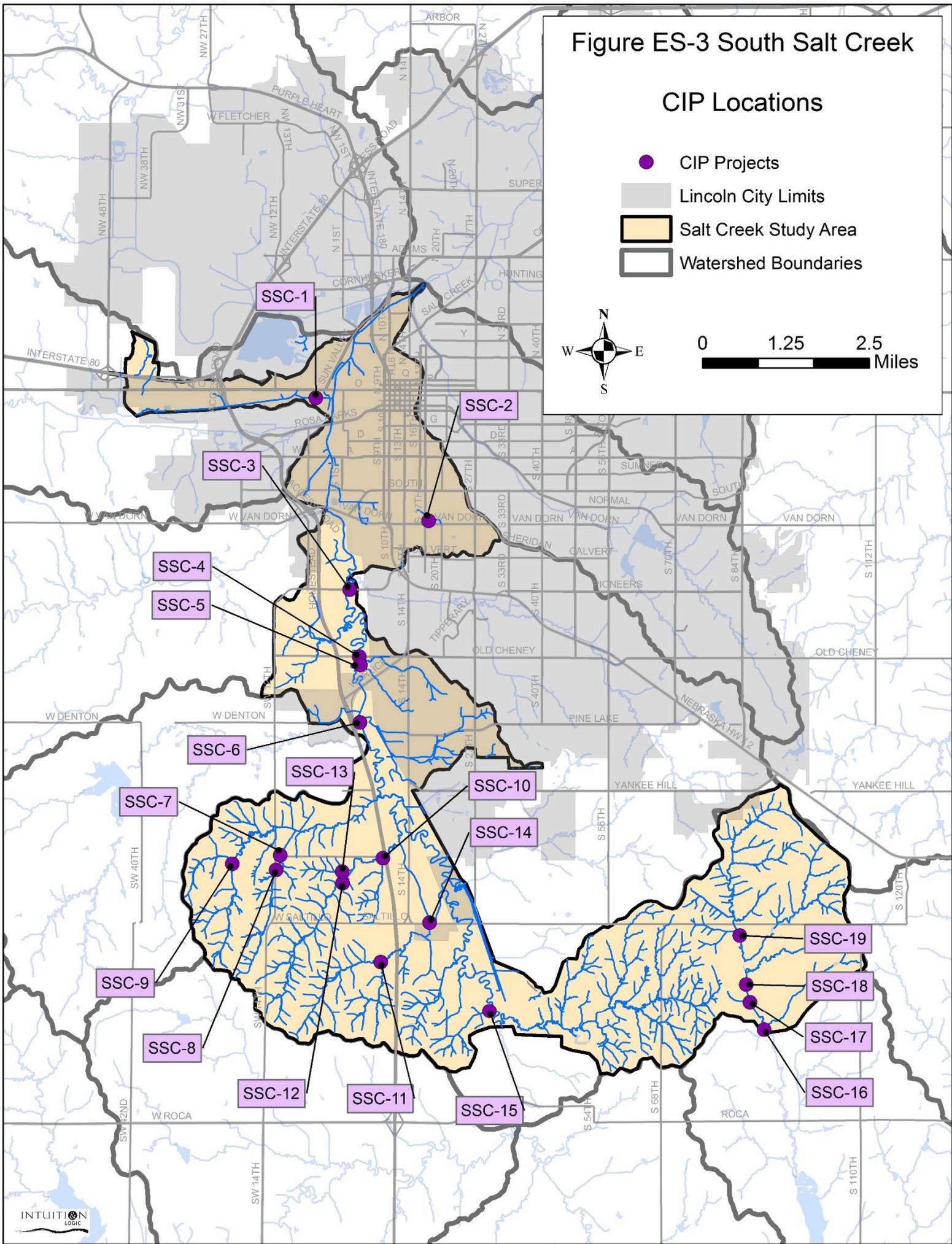
Figure ES-3 South Salt Creek

CIP Locations

- CIP Projects
- ▭ Lincoln City Limits
- ▭ Salt Creek Study Area
- ▭ Watershed Boundaries



0 1.25 2.5 Miles



The recommended projects were categorized using the prioritization categories from the Prioritization Methodology Report for Watershed Master Planning Projects, City of Lincoln, Nebraska, 2006. The prioritization methodology was developed for the City of Lincoln to set priorities and implement projects for watershed master planning each year. The prioritization system contains five major categories including flooding impacts, stream stability, water quality, safety factor, and miscellaneous factors. For each project, a ranking worksheet is used to assign points under each category, with the goal of developing an overall score. The projects with the highest point score are considered a higher priority. Table ES-1 lists the results of the estimated project cost and ranking scores for the 19 projects within the South Salt Creek study area. Further detail on each project, including the problem description and recommendations are found in Section 7 of this Master Plan.

Table ES-1 Project Priority, Rank and Cost

Project ID	Project Description	Priority Score	Project Ranking	Project Cost
SSC-1	Grade Control	200	9	\$239,000
SSC-2	Bank Stabilization and Grade Control	230	4	\$370,000
SSC-3	Grade Control	230	6	\$482,000
SSC-4	Grade Control	230	5	\$437,000
SSC-5	Grade Control	330	1	\$325,000
SSC-6	Grade Control	290	3	\$468,000
SSC-7	Stilling Basin	190	15	\$190,000
SSC-8	Stilling Basin	200	10	\$162,000
SSC-9	Grade Control	190	16	\$105,000
SSC-10	Grade Control	190	18	\$107,000
SSC-11	Grade Control	200	11	\$201,000
SSC-12	Stilling Basin	200	12	\$197,000
SSC-13	Stilling Basin	200	13	\$156,000
SSC-14	Stilling Basin	210	7	\$137,000
SSC-15	Grade Control	195	14	\$129,000
SSC-16	Grade Control	310	2	\$273,000
SSC-17	Grade Control	190	19	\$136,000
SSC-18	Grade Control	210	8	\$78,000
SSC-19	Grade Control	190	17	\$85,000
Total				\$6,698,000

Summary

The South Salt Creek Watershed Master Plan provides the necessary planning tools and improvement projects to address potential stream stability problems in the watershed. This master plan is a reference for the implementation of improvement projects in the Watershed through the City and County Capital Improvement Programs and the NRD's Long Range Implementation Plan, and as a guide for future growth. By using the detailed study information and applying the Master Plan elements described above, multiple goals will be achieved including:

- Long-term stream stability that protects public infrastructure
- Reduction of future impacts to water quality and stream stability
- Preservation of aquatic and riparian habitat
- Preservation of natural resources