

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, Deadman's Run, Little Salt Creek, Southeast Upper Salt Creek (SEUSC), Stevens Creek, Haines Branch, Middle Creek, and South Salt Creek basins. Master plans for Oak Creek, Lynn Creek, and North Salt Creek basins are currently being prepared. Figure ES-1 shows the completed basins in the Comprehensive Watershed Master Plan highlighted in yellow and the basin plans under way highlighted in green.

The Oak Creek Watershed Master Plan (Master Plan) is summarized in this report. The purpose of the Oak Creek Watershed Master Plan is to identify needed CIPs for stream stability. The Master Plan also identifies special or unique areas in the watershed for consideration during the design and construction of the Watershed CIPs.

The Oak 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 Oak Creek Watershed Study Area is approximately 36 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 9 miles in length with a maximum width of about 7 miles. There are approximately 69 miles of open channel within the watershed study area.

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 Engineering, Inc. (I&L), in association with the EA Engineering, Science and Technology, Inc., PBC (EA) and Heartland Center for Leadership Development (HC).

Figure ES-1
Basins

LEGEND

-  Lincoln City Limits
-  Extraterritorial Jurisdictions
-  Current FEMA Floodplain
- Watershed Master Plan Status**
-  Watershed Master Plan Completed
-  No Watershed Master Plan
-  Proposed 2016 Watershed Master Plan

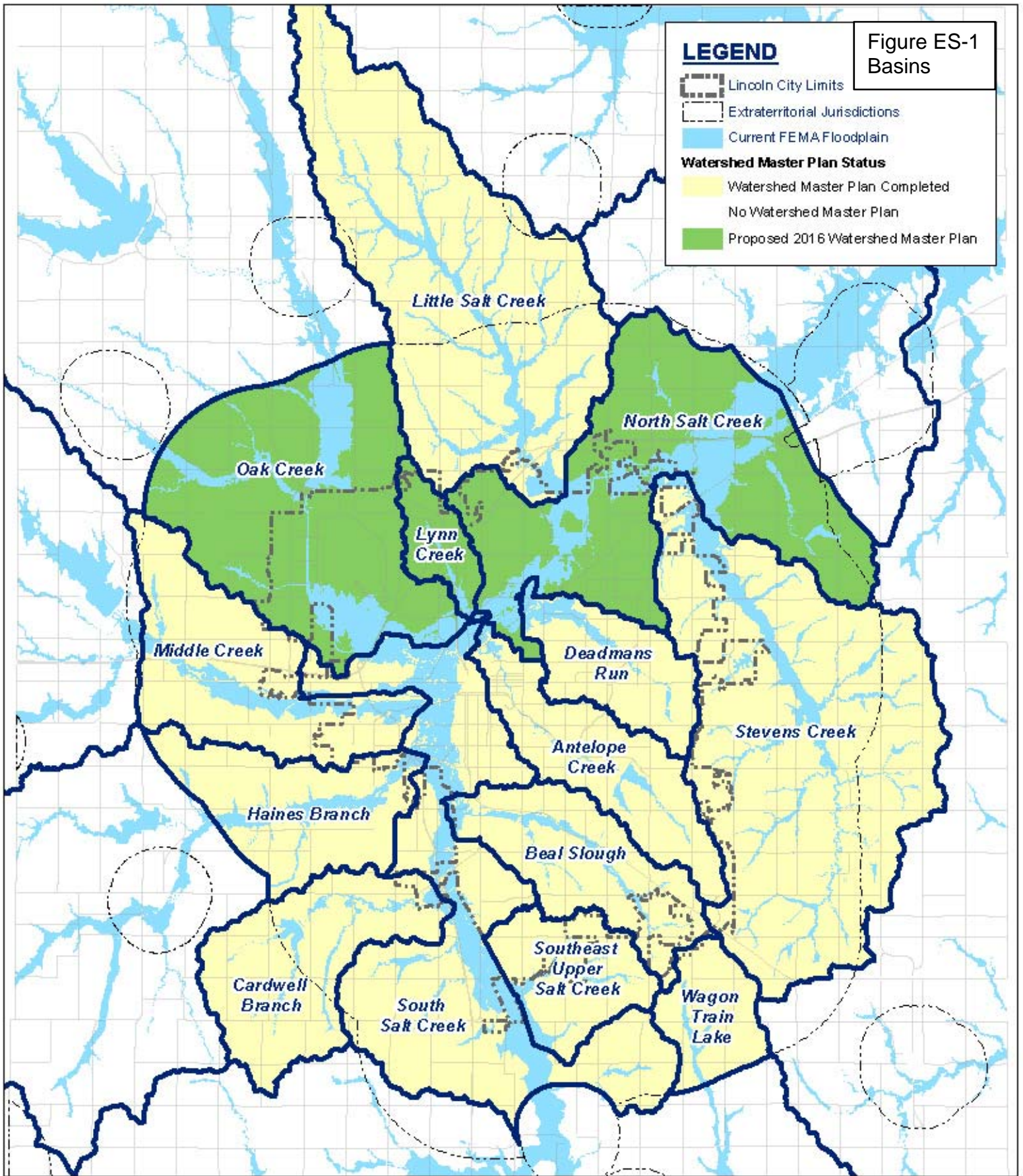


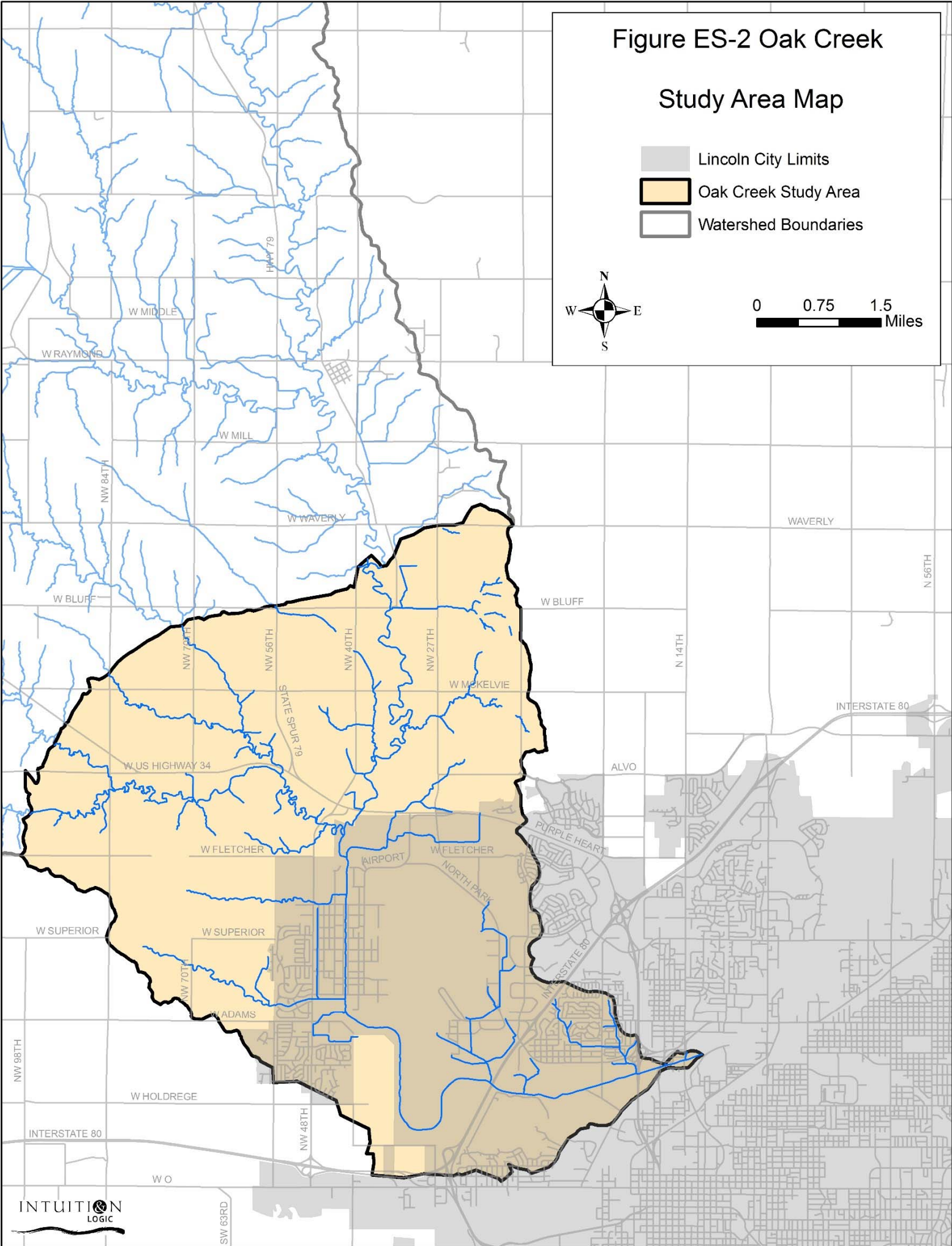
Figure ES-2 Oak Creek

Study Area Map

- Lincoln City Limits
- Oak Creek Study Area
- Watershed Boundaries



0 0.75 1.5 Miles



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:

- Three open houses in April 2017, September 2017 and January 2018
- 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, hydraulics and hydrology, land use and development, stream corridor, 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 4 stream stability capital improvement projects. The general locations of the projects are shown in Figure ES-3, CIP Locations. The dominant process on the Oak Creek main stem is incising, widening and plan form adjustment. The widening and plan form adjustment do not threaten any structures, therefore, no CIPs were developed to address these processes.

Project 1 is a pipe outfall restoration to prevent further undermining of the outfall. Project 2, 3 and 4 are grade control projects to stop channel incision from advancing upstream. These grade controls will hold the profile grade of the channel, thereby reducing the erosion and sediment released. Continued incision can cause erosion and bank failures that could threaten structures.

The total cost for all 4 capital improvement projects is estimated to be approximately \$1.72 million using 2017 material and construction costs. Funding for these Capital Improvement Projects may include, but not be limited to, City stormwater bonds, Lower Platte South Natural Resource District (NRD) funds, and where deemed appropriate by the involved agencies, Lancaster County and Nebraska Department of Transportation (NDOT) funds. Funding for State, Other Agencies, and Private projects are typically the responsibility of the respective entities.

Figure ES-3 Oak Creek

CIP Locations

● CIPs

— Streams

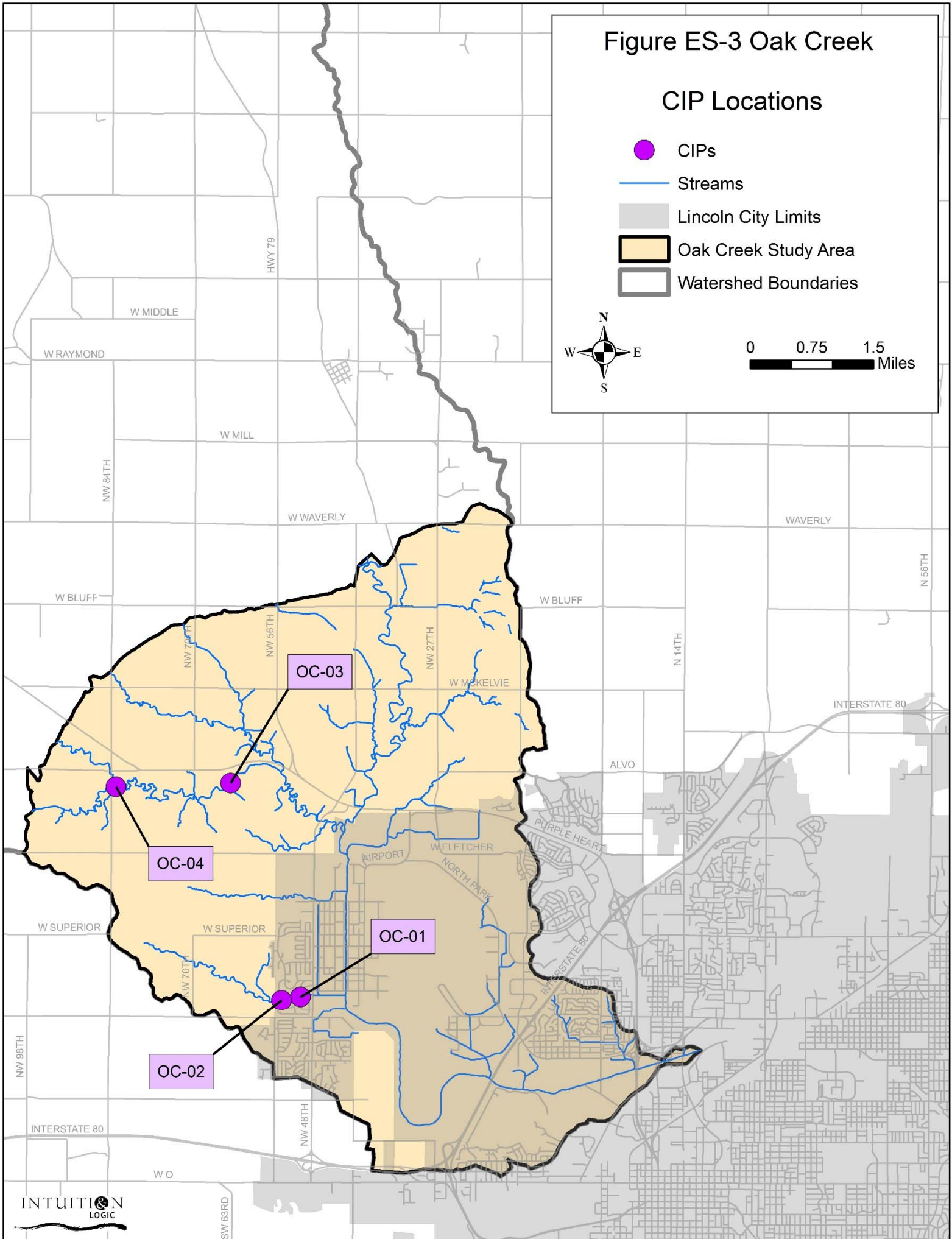
▭ Lincoln City Limits

▭ Oak Creek Study Area

▭ Watershed Boundaries



0 0.75 1.5
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 4 projects within the Oak Creek study area. Further detail on each project, including the problem description and recommendations are found in Section 8 of this Master Plan.

Table ES-1 Project Priority, Rank and Cost

Project Name	Project Type	Priority Score	Project Ranking	Project Cost
OC 01	Pipe Outfall Repair	210	3	\$ 91,000
OC 02	Grade Control	195	4	\$ 80,000
OC 03	Grade Control	310	1	\$ 526,000
OC 04	Grade Control	270	2	\$ 1,023,000
Total				\$ 1,720,000

Summary

The Oak 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 due to urbanization
- Preservation of aquatic and riparian habitat
- Preservation of natural resources and endangered species