Section 1
Introduction and Purpose

1.1 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.

The City and NRD have previously adopted watershed master plans for the Beal Slough, Stevens Creek, Cardwell Branch, Deadmans Run and Southeast Upper Salt Creek basins Figure 1-1 shows the basins in the Comprehensive Watershed Master Plan. The Little Salt Creek Watershed Master Plan (Master Plan) is the sixth master planning effort to date and is summarized in this report. The Master Plan for the Little Salt Creek Watershed has been prepared because some near-term growth within the basin is expected as identified in the Lincoln-Lancaster County Comprehensive Plan. The Master Plan also includes the potential impacts to sensitive natural resources, including the saline wetlands and the federally listed endangered species Salt Creek Tiger Beetle.

The Little Salt Creek Watershed is located north of the City of Lincoln with much of the watershed north of I-80 as illustrated in Figure 1-2. The watershed drains approximately 45.8 square miles from the headwaters near just north of West Ashland Road to its confluence with Salt Creek located just southeast of I-80 at 27th Street. The watershed is approximately 14.25 miles in length with a maximum width of about 5.5 miles. The purpose of the Master Plan is to outline long-term planning tools and improvement projects to address water quality, flood management, and stream stability to provide guidance for sustainable urban growth in the watershed.

The project team was lead 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 Heartland Center for Leadership Development (HC), PBS&J, E&A Consulting Group, Inc. (E&A), University of Nebraska (UNL), and Terracon to provide assistance with the planning effort. Figure 1-3 shows the project organizational chart.

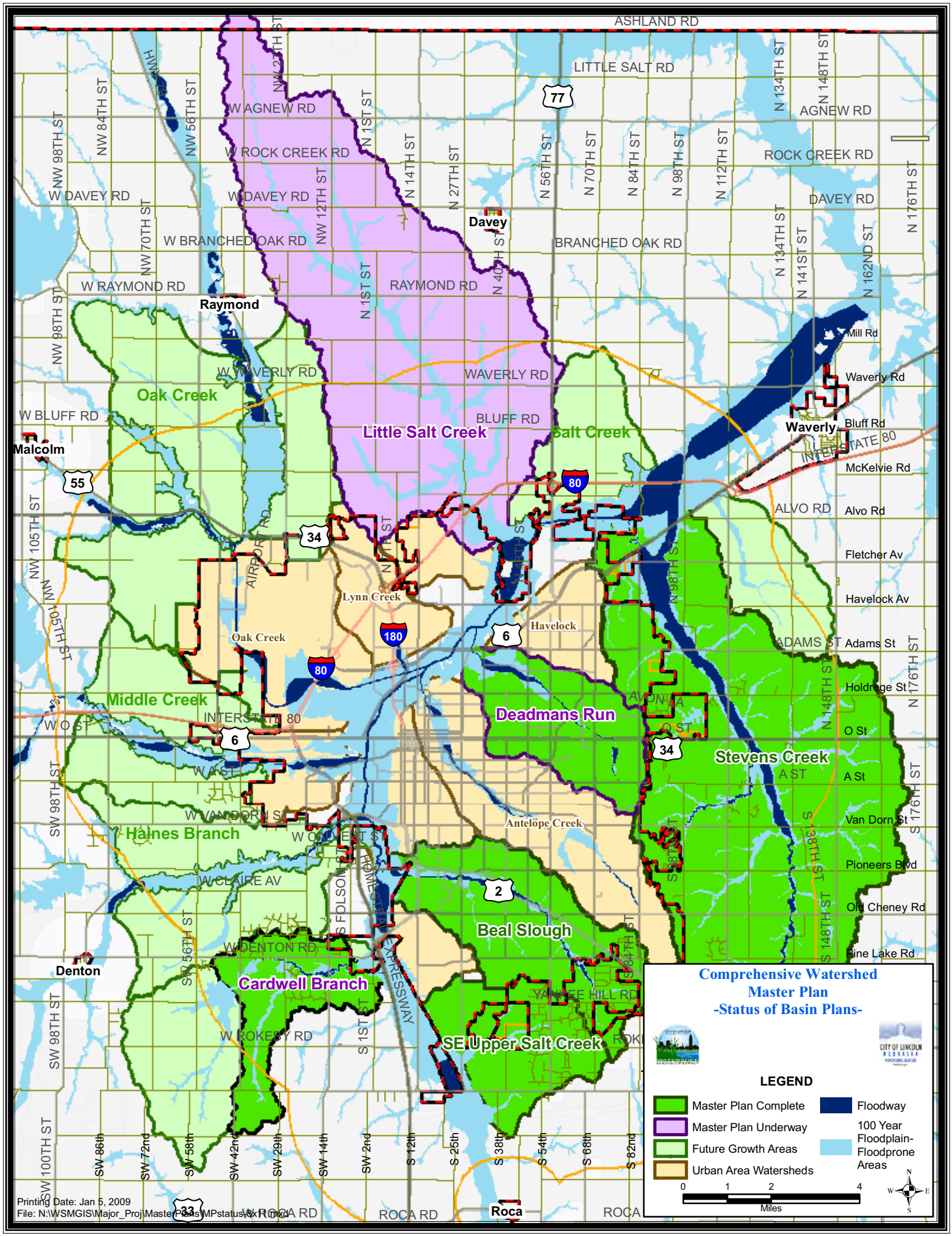
Comprehensive Watershed Master Plan
-Status of Basin Plans-
LEGEND
Master Plan Complete
Master Plan Underway
Future Growth Areas
Urban Area Watersheds
Floodway
100 Year Floodplain-Floodprone Areas
0 1 2 4
Miles
Printing Date: Jan 5, 2009
File: N:\WSMGIS\Major_Proj\MasterPlans\MPstatus4x5.mxd
Little Salt Creek
Salt Creek
Oak Creek
Middle Creek
Haines Branch
Cardwell Branch
Lynn Creek
Oak Creek
Deadmans Run
Stevens Creek
Antelope Creek
Beal Slough
SE Upper Salt Creek
Raymond
Davey
Waverly
Malcolm
Denton
Roca
Havelock
ASHLAND RD
LITTLE SALT RD
AGNEW RD
ROCK CREEK RD
DAVEY RD
BRANCHED OAK RD
RAYMOND RD
WAVERLY RD
BLUFF RD
ALVO RD
ADAMS ST
O ST
A ST
VAN DORN ST
CLAIRE AV
DENTON RD
ROKEBY RD
ROCA RD
YANKEE HILL RD
INTERSTATE 80
Mill Rd
Waverly Rd
Bluff Rd
McKelvie Rd
Alvo Rd
Fletcher Av
Havelock Av
Adams St
Holdrege St
O St
A St
Van Dorn St
Pioneers Blvd
Old Cheney Rd
Pine Lake Rd
77
55
80
34
6
180
2
33

Figure 1-1

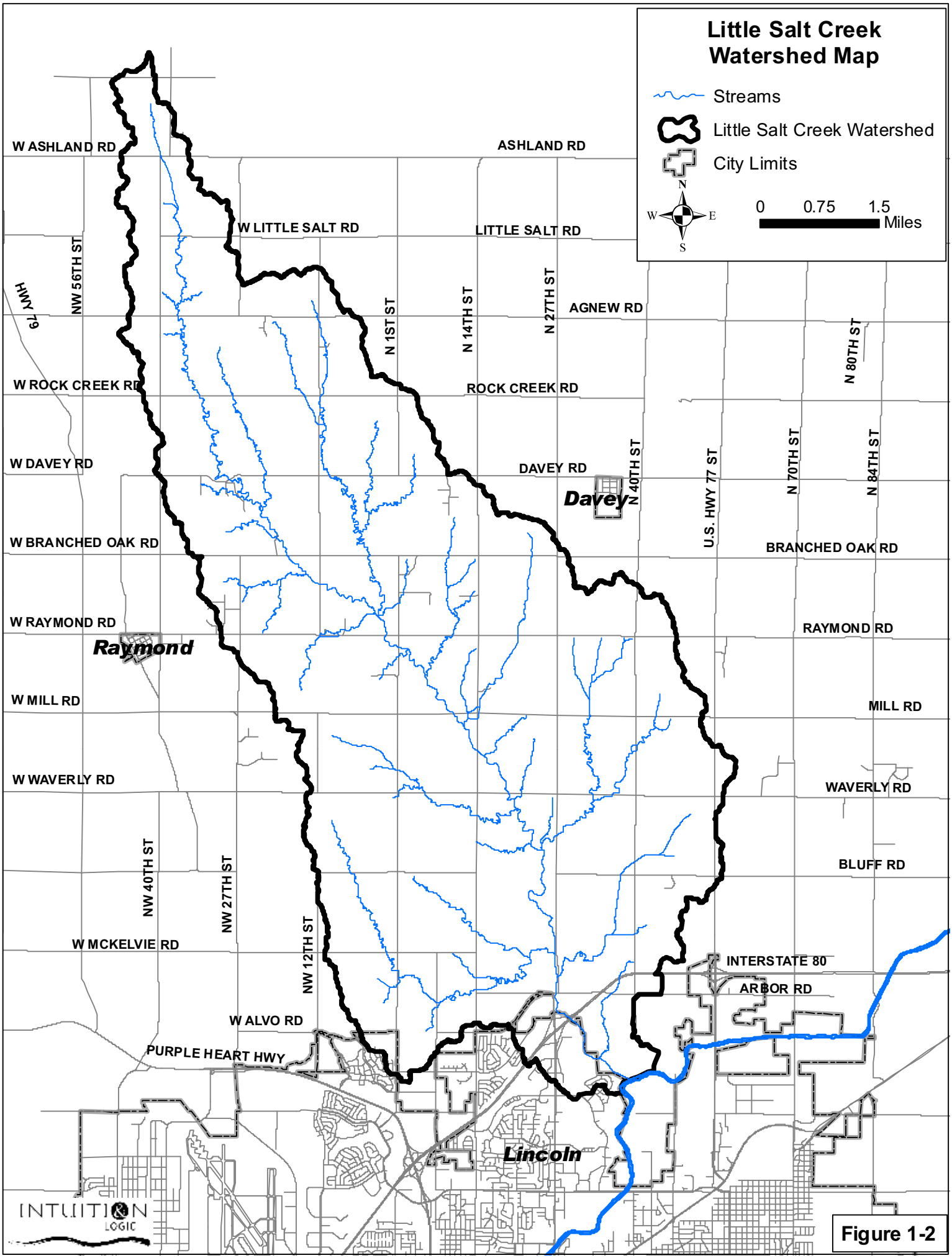
Little Salt Creek Watershed Map
Streams
Little Salt Creek Watershed
City Limits
N
W
E
S
0
0.75
1.5
Miles
W ASHLAND RD
ASHLAND RD
W LITTLE SALT RD
LITTLE SALT RD
NW 56TH ST
HWY 79
N 1ST ST
N 14TH ST
N 27TH ST
AGNEW RD
N 80TH ST
W ROCK CREEK RD
ROCK CREEK RD
W DAVEY RD
DAVEY RD
Davey
N 40TH ST
U.S. HWY 77 ST
N 70TH ST
N 84TH ST
W BRANCHED OAK RD
BRANCHED OAK RD
W RAYMOND RD
RAYMOND RD
Raymond
W MILL RD
MILL RD
W WAVERLY RD
WAVERLY RD
BLUFF RD
NW 40TH ST
NW 27TH ST
NW 12TH ST
W MCKELVIE RD
INTERSTATE 80
ARBOR RD
W ALVO RD
PURPLE HEART HWY
Lincoln
INTUITION LOGIC

Figure 1-2

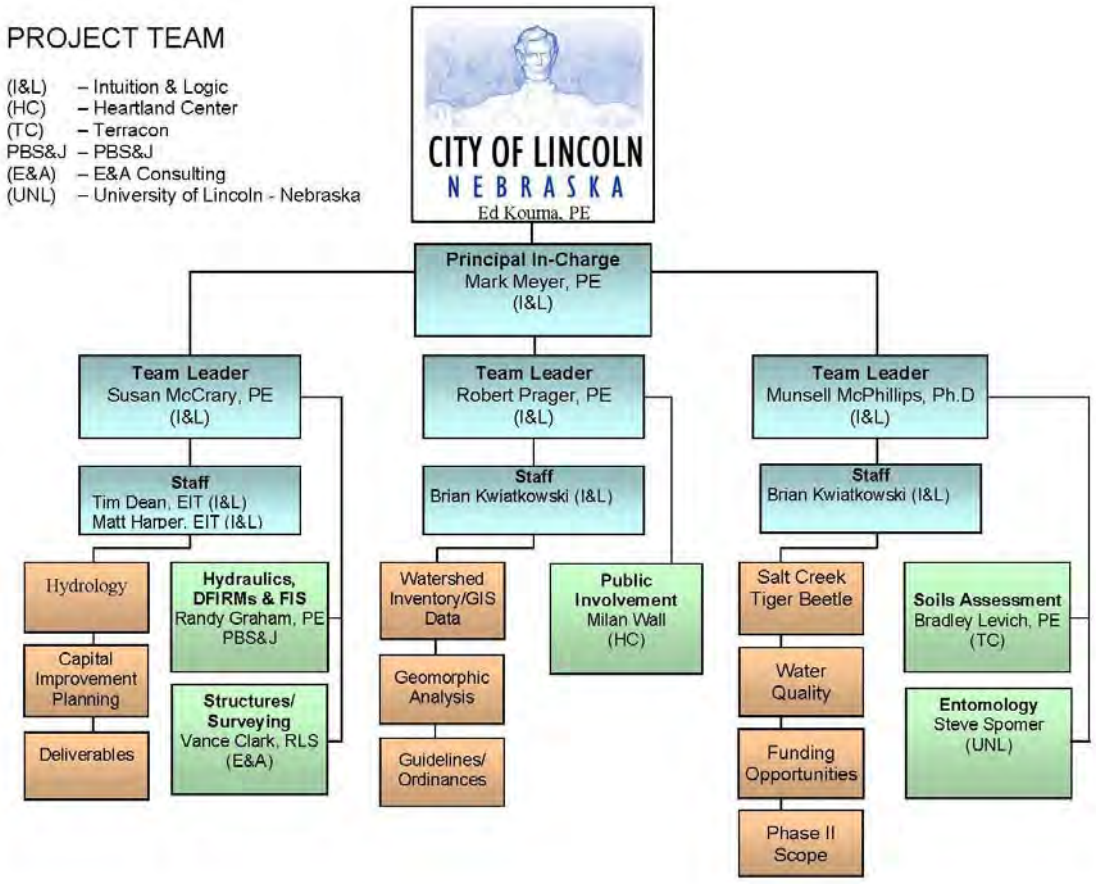

Figure 1-3: Project Organization Chart

1.2 Goals and Objectives

The goal of the study was to develop planning tools and improvement projects to address water quality, flood management, and stream stability and provide guidance for sustainable urban growth in the watershed. While developing the improvements projects, the project team incorporated community input, developed cost-effective improvement solutions, integrated water quality and natural resource components, protected infrastructure, minimized stakeholder impacts, and avoided any recommendation that would cause adverse impacts elsewhere in the watershed. The study included a wide range of services organized into the following major components:

1.2.1 Goals and Criteria

- Update floodplain and floodway maps for the entire Little Salt Creek Watershed using best available data.
- Identification of known problem areas and areas requiring protection.
- Prioritization of problem and/or protection areas based on degree of flooding, erosion, water quality degradation, potential impacts to environmental resources, importance of habitat/resource protection, and location relative to growth tier.

- Develop guidelines and recommendations for future development of the watershed based on master plan findings and best available information regarding environmental resources.
- Identify potential funding sources for future studies and/or implementation of potential BMPs and future capital improvement projects.
- Maintain a proactive stakeholder and public involvement process.
- Foster resource agency coordination.
- Incorporate flexibility into the plan to allow potential BMPs and capital improvements to be modified as more information is made available.

1.2.2 Watershed Inventory

- Collect, compile, and evaluate the data for the basin.

1.2.3 Hydrology and Hydraulics

- Model existing conditions to evaluate stormwater runoff and stream flows throughout the watershed for the 2- 10-, 50-, 100-, and 500-year storm events.
- Model existing and future conditions for the water quality storm event to determine potential impacts from development and assist in the formation of potential water quality BMPs.
- Determine delineations for the 100- and 500-year floodplains and the floodway.
- Prepare Work Maps and Report

1.2.4 Water Quality

- Conduct stream bio-assessments
- Perform limited water quality assessment
- Valuate typical water quality pollutant issues anticipated to arise with future urban development.

1.2.5 Geomorphic

- Conduct geomorphic inventory of the main stem and significant tributaries to Little Salt Creek

1.2.6 Soil Assessment

- Field sample and lab test soil samples from possible locations of dispersive soils to determine soil type.

1.2.7 Structures

- Collect basic hydraulic information on existing hydraulic structures (i.e., culverts, and bridges) that drain at least 150 acres.
- Establish survey control for watershed.

1.2.8 Public Involvement & Facilitation

- Hold open house meetings to disseminate information and solicit feedback from the public.

- Form a Citizens Advisory Committee (CAC) and hold meetings to receive input from various interest groups and elected officials,
- Mail newsletters to watershed residents and stakeholders and provide a website to inform the public about the study and to post preliminary results.

1.2.9 Capital Improvement Projects

- Develop capital improvement projects and watershed best management practices to improve water quality, address stream stability, and reduce flooding.

1.2.10 Potential Guidelines/Ordinances

- Provide recommendations and guidelines based on master plan hydrologic, hydraulic, water quality, and geomorphic analyses.

1.2.11 Technical Advisory Committee (TAC)

- Form a Technical Advisory Committee (TAC) and hold meetings to share and discuss information the Salt Creek Tiger Beetle and other aspects of the Master Plan.

1.3 Public Participation Process

Through each stage of the study, active citizen participation was a key component of the watershed evaluation process. Citizens and property owners were offered a variety of ways to provide input to the study and to contribute to the development of alternative concepts and solutions. Each public involvement activity provided the project team with ideas for presenting and refining its recommendation. The following is a summary of the various components of the public participation process.

1.3.1 Open House Events

Two open house events were held during the study to solicit input, update the public on the status of the study, and to present preliminary results. Both events followed the same general format consisting of formal presentations followed by information stations at which the attendees could inquire more about the study and discuss their concerns with representatives from the project team. The first event was held at Lincoln North Star High School on April 22, 2008, and the second event was held at the Lower Platte South NRD office on February 24, 2009. A summary of both open house events is provided below.

Figure 1-4: Information stations at the public meetings

Approximately 25 citizens participated in the first open house. The first open house was designed to provide an overview of the study, including background information, purpose of the watershed master plan, and study goals and objectives.

Following the formal presentations, participants were encouraged to visit five information stations set up around the room. The five stations addressed the following

major topics: Public Involvement, Interactive Mapping, Floodplain Mapping, Stream Stability and Natural Resources.

Approximately 50 citizens participated in the second open house held on February 24, 2009. The second open house was designed to be a continuation of the first open house. At the second open house, the citizens were provided with an update on the watershed master plan process, a first look at the updated floodprone area, and an overview of the watershed master plan recommendations including capital improvement projects. Following the formal presentations, participants were encouraged to visit six information stations set up around the room. The six stations addressed the following major topics: Public Involvement, Interactive Mapping, Floodplain Mapping, Capital Improvement Projects, Stream Stability and Natural Resources.

1.3.2 Citizen Advisory Committee

An important part of the study was the participation and review process of the Citizen Advisory Committee (CAC). The committee members were selected to represent the interests of watershed residents, farmers, land owners, developers, business owners and more.

Balancing interests, perspectives, geography, and gender resulted in a 16-member group. The CAC included three farmers, six landowners, three developer/business owners, a representative of the Nature Conservatory, and three elected officials representing the City of Lincoln, Lancaster County, and the Lower Platte South NRD. The mission of the committee was to provide review and input on preliminary study results, offer advice and oversight, and to serve as a liaison to the rest of the community. The committee members included Doug Emery, David Grimes, Gary Hellerich, Don Helmuth, Chris Helzer, Larry Hudkins, Merle Jahde, Susan Kuck, Don Linscott, Jack Nagel, Gene Petersen, David Potter, Harold Roper, Dave Sands, Vicky Wheeler, and Mark Whitehead.

The project team held a total of three committee meetings that started in April 2008 and ended in July 2009. The first meeting was held on April 15, 2008, and the second meeting was held on January 29, 2009, and the third meeting was held on May 14, 2009. In addition to the meetings, progress summaries were sent to the CAC members keeping them updated on the project progress. At the last meeting, the draft Capital Improvement Projects (CIP) and Guidelines were given to the CAC members for comment and discussion. A copy of the progress summary documents, meeting minutes, and attendance records are provided in Appendix B.

1.3.3 Website and Newsletter

A series of five newsletters (Watershed News), one postcard and a project website were used to supply information about the study process and Master Plan recommendations. Each newsletter edition, along with the postcard, provided an effective means of informing the public about key aspects of the project. The newsletters were sent to every landowner of record in the Little Salt Creek watershed. See Appendix B for a copy of each Newsletter and Postcard.

The project website was another mechanism used to inform the public about the progress of the study. The website contains general background information, preliminary study results, and handout materials that were distributed at the Advisory Committee meetings and open houses. The website was regularly updated throughout the study process and was used to advertise upcoming events.


WATERSHED NEWS

APRIL 2008

CITY OF LINCOLN NEBRASKA

A Publication Sponsored by the City of Lincoln and the Lower Platte South Natural Resources District (NRD)

LITTLE SALT CREEK WATERSHED MASTER PLAN

Introduction

The City of Lincoln (City) and Lower Platte South Natural Resources District (LPSNRD) staff, as well as other planning and design engineers, are developing the Little Salt Creek Watershed Master Plan. The Little Salt Creek Watershed is located north of the City of Lincoln and flows into Salt Creek just southeast of I-80 at 27th Street. The objective of the study is to develop a master plan that will proactively forecast, evaluate, and manage stormwater quantity and quality, channel stability, maintenance and operations, and financial impacts as well as environmental impacts that are occurring today or are projected to result from future development or other changes in the basin. The master plan will consider potential impacts to unique and sensitive environmental resources in the watershed, including rare saline wetlands, the state-endangered saltwort plant (*Salicornia rubra*) and the Salt Creek Tiger Beetle (*Cicindela nevadica lincolniana*). This project will also include hydraulic and hydrologic modeling to determine flood prone areas. All information gathered will be provided in a Geographic Information System (GIS) format compatible with the City of Lincoln's GIS database.

Little Salt Creek south of Raymond Road

We are beginning Phase I of this multi-phase project. This phase includes:

- A watershed inventory to collect, compile and evaluate existing data about the watershed.
- A geomorphic analysis to determine potential erosion and other stream stability issues along Little Salt Creek and its tributaries.
- Hydrologic and hydraulic models to determine flood prone areas.
- Preliminary identification of Best Management Practices (BMPs) and/or Capital Improvement Projects (CIPs) to address problem areas.
- Prioritization of problem areas based on degree of flooding or erosion, potential impacts to environmental resources, importance of habitat/resource protection, and location relative to the future growth of Lincoln.

Future Phases

Future phases of this project may include the following:

- Revising the FEMA Digital Flood Insurance Rate Maps (DFIRMs) for the area downstream of the 14th Street bridge.
- A limited stream bio-assessment.

(Continued on page 2)

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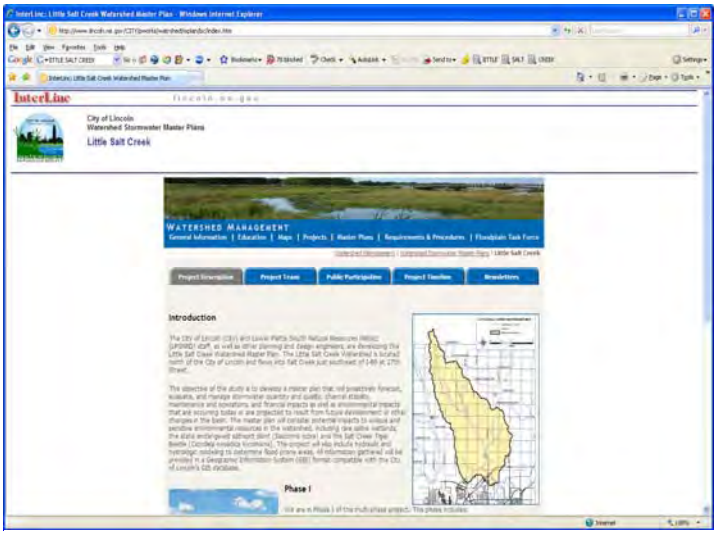
Figure 1-5: April 2008 Issue

1.4 Technical Advisory Committee

Another important part of the watershed study was the technical advice and expertise of the Technical Advisory Committee (TAC). TAC members were selected based on technical knowledge of water resource issues as well as local, state and national standards and trends. The TAC members included four representatives from the University of Nebraska at Lincoln, two representatives from the Lower Platte South Natural Resources District, two representatives from the City of Lincoln, Parks and Recreation, and a representative from the Nebraska Department of Environmental Quality, U.S. Fish and Wildlife Service, Nebraska



http://www.lincoln.ne.gov/city/pworks/watrshed/mplan/lsc/index.htm

Figure 1-6: Website information

Game and Parks Commission, U.S. Army Corps of Engineers, Lancaster County Engineering, and Natural Resource Conservation Service. The committee members included John Bender, Terry Genrich, Thomas Malmstrom, Bob Harms, Tierney Brosius, Edwin Harvey, Leon Higley, Steven Spomer, Ted LaGrange, John Moeschen, Doug Pillard, Dennis Schroeder, Dan Schulz, and Ed Ubben.

The TAC reviewed project elements, findings and recommendations as provided by the project team at four meetings during the course of the study. The meetings were held on April 15, July 17, January 29, and May 14, 2009. TAC members provided comments at the formal meetings and through informal communications between meetings. The TAC members provided key information regarding the Salt Creek Tiger Beetle habitat and what effects certain stream interventions would have on this habitat. They also aided in the natural resource and water quality aspects of the Master Plan by providing existing research information and optimal locations and method for possible projects.

A copy of the progress summary documents, meeting minutes, and attendance records are provided in Appendix B.

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