City Council Introduction: November 24, 2014
Public Hearing: **December 8, 2014, 3:00 p.m.**

Bill No.14R-298

FACTSHEET

TITLE: COMPREHENSIVE PLAN AMENDMENT NO. 14007
(Middle Creek Watershed Master Plan)

BOARD/COMMITTEE: Planning Commission

APPLICANT: Director of Planning, at the request of the Watershed Management Division of the Public Works & Utilities Department

RECOMMENDATION: Approval (8-0: Scheer, Beecham, Cornelius, Corr, Harris, Hove, Lust and Weber voting 'yes'; Sunderman absent).

STAFF RECOMMENDATION: Approval

OTHER DEPARTMENTS AFFECTED: None

SPONSOR: Planning Department

OPPONENTS: None

REASON FOR LEGISLATION:

To amend the 2040 Lincoln/Lancaster County Comprehensive Plan to add the Middle Creek Watershed Master Plan to the list of approved subarea plans and to the list of adopted watershed studies.

DISCUSSION / FINDINGS OF FACT:

1. This proposed comprehensive plan amendment adds the "Middle Creek Watershed Master Plan" (as set forth in the South Salt Creek Tributaries Study) to the list of approved subarea plans and to the list of adopted watershed studies in the 2040 Lincoln-Lancaster County Comprehensive Plan. The proposed amendments are found on p.4. The Executive Summary and maps from the study report are found on p.8-13.

2. This comprehensive plan amendment was heard before the Planning Commission in association with Comprehensive Plan Amendment No. 14005 (South Salt Creek Watershed Master Plan) and Comprehensive Plan Amendment No. 14006 (Haines Branch Watershed Master Plan).

3. The staff recommendation of approval is based upon the "Analysis" as set forth on p.3-4, concluding that the amendments to the Energy & Utilities chapter and the Plan Realization chapter are in conformance with the goals of the 2040 Comprehensive Plan. The staff presentation is found on p.6-7.

4. There was no testimony in opposition.

5. On October 29, 2014, the Planning Commission agreed with the staff recommendation and voted 8-0 to recommend approval (Sunderman absent).

6. On October 29, 2014, the Planning Commission also voted 8-0 to recommend approval of the associated Comprehensive Plan Amendment No. 14005 (Bill #14R-296) and Comprehensive Plan Amendment No. 14006 (Bill #14R-297).

7. The Lancaster County Board of Commissioners is scheduled to have public hearing and action on this comprehensive plan amendment on Tuesday, November 25, 2014, at 10:30 a.m.

FACTSHEET PREPARED BY: Jean Preister, Administrative Officer **DATE:** November 17, 2014

REVIEWED BY: David R. Cary Acting Director of Planning **DATE:** November 17, 2014

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LINCOLN /LANCASTER COUNTY PLANNING STAFF REPORT
for October 29, 2014 Planning Commission Meeting

PROJECT #: ***Comprehensive Plan Amendments*** #14005/14006/***14007***

PROPOSAL: Amend the 2040 Lincoln/Lancaster County Comprehensive Plan to amend language on Page 11.13 in the Energy & Utilities chapter, Page12.16 in the Plan Realization chapter to reflect the South Salt Creek (CPA #14005), Haines Branch (CPA #14006), and ***Middle Creek*** (CPA #14007) ***Watershed Master Plan***s.

CONCLUSION: The amendments to the Energy & Utilities chapter and Plan Realization chapter are in conformance with the goals of the 2040 Lincoln-Lancaster County Comprehensive Plan.

RECOMMENDATION:	Approval of the proposed amendments

GENERAL INFORMATION:

COMPREHENSIVE PLAN SPECIFICATIONS: The 2040 Comprehensive Plan states the following (in part) about floodplains and watershed plans:

Floodplains
This feature refers to land that is susceptible to flooding or that has flood prone soils. Approximately 13.8% of Lancaster County is covered by floodplains. Floodplains provide multiple benefits to both the natural (flood storage, habitat, water quality) and built (recreation, public health and safety, economic) environments. The overriding policy for the floodplain is a "No Adverse Impact" policy for the City and County, which means that the community has a goal of insuring that the action of one property owner does not adversely impact the flooding risk for other properties. Pg. 3.9

Riparian Areas
This feature refers to spaces immediately adjacent to water courses on each side of a stream. They are most often located in the floodplain. They frequently contain a large amount of woody vegetation. Riparian areas can serve as linear connections between natural and built areas, as well as boundaries and edges to a variety of adjacent land uses. They offer numerous benefits including flood storage, stormwater conveyance, wildlife habitat, recreation, visual appeal, and shaded areas. Pg. 3.9

Floodplain and Stormwater Management
Local floodplain and stormwater management responsibility is shared by the City of Lincoln, which assumes care of the tributaries and storm drain system, and the Lower Platte South Natural Resources District (LPSNRD), which maintains the main stream channels. Both the City of Lincoln and Lancaster County participate in the National Flood Insurance Program administered by the Federal Emergency Management Agency (FEMA). Pg. 11.12

Water quality from stormwater is managed under the Federal Clean Water Act. The National Pollutant Discharge Elimination System (NPDES) program addresses non-agricultural sources of stormwater discharge This program is administered in the State by the Nebraska Department of Environmental Quality (NDEQ). Pg. 11.12

Comprehensive Watershed Management Pg. 11.12-11.13
The City of Lincoln Watershed Management program combines previously separate floodplain and stormwater management initiatives. This approach recognizes that floodplains, tributaries, and upland areas are all part of a comprehensive, integrated watershed system. A comprehensive approach to watershed planning is crucial as development expands into new basins around the Lincoln city limits and as redevelopment occurs within the existing urban area. A comprehensive watershed management program needs to incorporate a range of strategies including land use planning, conservation efforts, appropriate standards for floodplains and stormwater, flood warning system development/expansion, stream stabilization, stormwater storage basins, and other structural flood control efforts.

As part of the overall watershed management program, the City, in cooperation with the LPSNRD, is developing a unified master watershed management plan. This plan will provide information and computer models to aid in analyzing stormwater management alternatives. Individual Watershed Master Plans for six watersheds in Lincoln and the surrounding area have already been completed and are adopted as subarea plans in this document (see "Plan Realization" chapter). These plans are formulated in cooperation with other local, state and federal agencies. Ideally, additional watershed master plans are completed and adopted prior to urban development occurring within a new basin. This allows projects and recommendations in the master plan to be considered during the review of specific development proposals.

Master planning and the performance and adequacy of stormwater storage basins and other measures to prevent increases in peak flows will require continued assessment with the growth of the City. Upstream detention facilities are critical to preventing further increases to the floodplain, and if properly designed also help to reduce pollutant loads to downstream water bodies. Detention facilities should be identified and developed in a manner that incorporates water quality best management practices and causes minimal adverse impact to existing residential, agricultural and other land uses.

Floodplain Management
The overriding policy for the floodplain is a "No Adverse Impact" policy for the City and County, which means that the community has a goal of insuring that the action of one property owner does not adversely impact the flooding risk for other properties. The majority of the strategies below relate back to and support this umbrella concept. The No Adverse Impact concept is supported by the "Map 1.3: Growth Tiers with Priority Areas" which designates the majority of floodplain areas outside of the existing urban area as Green Space, Environmental Resources, and Agricultural Stream Corridors. This supports the opportunity to reduce the risk of flood damage to life and property and to preserve the important functions of floodplains. This concept is more explicitly supported by the Salt Creek Flood Storage Area Standards and the Flood Regulations for New Growth Areas which protect flood storage in the areas with greatest risk for impacts. While regulations to support the No Adverse Impact concept have not been fully adopted throughout the "Existing Urban Area" or in the County's jurisdiction, goals and strategies in this plan support minimizing impacts to the floodplain in all circumstances. Pg. 11.13

Strategies for Watershed Management Pg. 11.13-11.14

- Designate areas for future urban development outside of floodplain and floodway to avoid introducing new development to flood risks and to preserve the important functions of the floodplain.
- Create a stormwater utility, as a division of the Public Works and Utilities Department, to provide for a steady revenue source as well as an organizational structure to address the growing needs of the stormwater and watershed management system.
- Develop and utilize watershed plans during the review and evaluation of proposed developments and as a guide in the preparation of future capital improvement projects; unify individual plans into a Watershed Management Master Plan for Lincoln and future growth areas.
- Utilize naturalized approaches or bioengineered solutions to drainage issues wherever possible, and use public projects as an opportunity to set positive examples. Seek opportunities for "Best Management Practices" (e.g. Rain to Recreation, Rain Gardens, etc) that reduce flood damages, protect water quality and natural areas, while providing for recreational and educational opportunities so as to realize multiple benefits.
- Seek broad public participation in the location and design of specific watershed management projects, and evaluate the relative benefits as they relate to flood hazard reduction, water quality, channel integrity, natural character, bridges, culverts, and existing public and private structures.
- Continue to develop a comprehensive, watershed approach to floodplain mapping and to improve the accuracy by making it a priority to which specific resources are dedicated.

Subarea Planning. The Comprehensive Plan provides broad guidance for achieving the community's stated Vision. Putting details to the Plan takes additional effort. One means of doing this is through the preparation of subarea plans. Subarea plans offer greater details about the intended future of an area of the community — including land uses, infrastructure requirements, and development policies and standards. Many of these subarea plans are prepared by the City-County Planning Department, while some are prepared by other agencies and departments. Pg. 12.16

ANALYSIS:

This proposal to amend the Comprehensive Plan is to reflect the South Salt Creek, Haines Branch, and Middle Creek Watershed Master Plans in the text. The full report of the three watershed master plans can be found at www.lincoln.ne.gov (Key word watershed) under "Master Plans" then "South Tributaries Watershed Study".

The South Salt Creek Watershed Master Plan includes some built-out portions of Lincoln including some of the oldest neighborhoods such as Downtown, North Bottoms, South Salt Creek, and Near South. The plan extends along West O Street and includes areas of newer

development including Lincoln Southwest High School and South Pointe. The area also includes a vast area southwest, south, and southeast of the current city limits. The majority of the Haines Branch Watershed Master Plan is outside of the city. The Middle Creek Watershed Master Plan includes a few areas that are already developed in west Lincoln, but the majority of the land is outside of the city.

SUMMARY:
The proposed amendment:

1. Updates the number of completed watershed master plans on page 11.13 of the Energy & Utilities Chapter.

2. Updates the list of adopted subarea plans on page 12.16 of the Plan Realization Chapter.

PROPOSED AMENDMENTS:
Amend the 2040 Lincoln-Lancaster County Comprehensive Plan as follows:

Page 11.13:
As part of the overall watershed management program, the City, in cooperation with the LPSNRD, is developing a unified master watershed management plan. This plan will provide information and computer models to aid in analyzing stormwater management alternatives. Individual Watershed Master Plans for ~~six~~ ten watersheds in Lincoln and the surrounding area have already been completed and are adopted as subarea plans in this document (see "Plan Realization" chapter). These plans are formulated in cooperation with other local, state and federal agencies. Ideally, additional watershed master plans are completed and adopted prior to urban development occurring within a new basin. This allows projects and recommendations in the master plan to be considered during the review of specific development proposals.

Page 12.16:
Watershed Master Plans:

- Beal Slough Stormwater Master Plan, May, 2000~~.~~
- Southeast Upper Salt Creek Watershed Stormwater Master Plan, 2003~~.~~
- Stevens Creek Watershed Master Plan, 2005
- Cardwell Branch Watershed Master Plan, 2007
- Deadmans Run Watershed Master Plan, 2007
- Little Salt Creek Watershed Master Plan, 2009
- Antelope Creek Watershed Basin Management Plan, 2012
- South Salt Creek Watershed Master Plan, 2014
- Haines Branch Watershed Master Plan, 2014
- ***Middle Creek Watershed Master Plan, 2014***

Prepared by:

Brandon M. Garrett, AICP
Planner
402-441-6373 or bgarrett@lincoln.ne.gov

DATE: October 20, 2014

APPLICANT/ CONTACT:

Ben Higgins
Public Works and Utilities
555 S. 10th Street, Ste. 203
402-441-7589

COMPREHENSIVE PLAN AMENDMENT NO. 14005, COMPREHENSIVE PLAN AMENDMENT NO. 14006 and COMPREHENSIVE PLAN AMENDMENT NO. 14007

PUBLIC HEARING BEFORE PLANNING COMMISSION: October 29, 2014

Members present: Weber, Beecham, Cornelius, Corr, Harris, Scheer, Hove and Lust; Sunderman absent.

Staff recommendation: Approval.

There were no ex parte communications disclosed.

Staff presentation: **Jared Nelson of the Watershed Management Division of Public Works & Utilities** presented the three Watershed Master Plans. The current and proposed master plans include Haines Branch, Middle Creek and the South Salt Creek Tributaries, which is a continuation of efforts they have been doing for the last decade. A consultant was hired and they have gone through a good public involvement process.

Nelson explained that this is a joint effort between the City, the County and the Lower Platte South NRD, with the funding partly from the NRD as well. The studies generally cut off the three watersheds around the extraterritorial jurisdiction (ETA) of the City. He pointed out that the entire watershed of Haines Branch goes out into Seward County and Saline County, but for purposes of this watershed master plan, the area has been trimmed off at the City's ETA .

Nelson advised that some of the components involved in the process included public involvement, review of the assets and the features in the special areas; and getting out in the field to assess the streams and do a lot of field work. The consultants actually walked a lot of the stream miles, including all of the main channels and some of the tributaries that flow into the main channel; they took pictures; and they documented their findings noticed in the field. They walked 28 miles in Haines Branch, 34 miles in Middle Creek and 78 miles in South Salt Creek. This resulted in very good data. A lot of the focus was geomorphic analysis, i.e. the studying of the streams and how they evolve.

Nelson also advised that the public involvement included two public meetings and three newsletters were sent to residents, businesses, homeowners associations, etc. The premise of the master plans is to come up with capital improvement projects. These master plans are just added to the list. All of the capital improvement projects are stream stability projects. He believes that most people will agree that these are good projects.

Nelson shared a synopsis of the capital improvement projects including a priority ranking system and the estimated costs. The stream stability projects include grade control, bank stabilization and stilling basins.

Today's action will add these studies to the Comprehensive Plan. These plans have been approved by the Lower Platte South NRD and the next step will be to proceed to the County Board and City Council.

Harris asked Nelson to explain the term "ETA". Nelson stated that it is the "extraterritorial jurisdiction" of the City, which is a 3-mile buffer around the City limits.

Responding to a questions asked by Lust about the priority ranking and scores, Nelson explained that the scoring system used includes flooding, safety impacts, and infrastructure that is threatened, so all of the different master plans are scored the same way so that they can be ranked all together collectively.

There was no testimony in opposition.

COMPREHENSIVE PLAN AMENDMENT NO. 14005
ACTION BY PLANNING COMMISSION: October 29, 2014

Beecham moved approval, seconded by Scheer.

Lust stated that she appreciates all of the work that has gone into these master plans and the detailed work in giving priority for these projects.

Motion for approval carried 8-0: Weber, Beecham, Cornelius, Corr, Harris, Scheer, Hove and Lust voting 'yes'; Sunderman absent. This is a recommendation to the Lancaster County Board of Commissioners and the Lincoln City Council.

COMPREHENSIVE PLAN AMENDMENT NO. 14006
ACTION BY PLANNING COMMISSION: October 29, 2014

Cornelius moved approval, seconded by Hove and carried 8-0: Weber, Beecham, Cornelius, Corr, Harris, Scheer, Hove and Lust voting 'yes'; Sunderman absent. This is a recommendation to the Lancaster County Board of Commissioners and the Lincoln City Council.

COMPREHENSIVE PLAN AMENDMENT NO. 14007
ACTION BY PLANNING COMMISSION: October 29, 2014

Cornelius moved approval, seconded by Scheer and carried 8-0: Weber, Beecham, Cornelius, Corr, Harris, Scheer, Hove and Lust voting 'yes'; Sunderman absent. This is a recommendation to the Lancaster County Board of Commissioners and the Lincoln City Council.

Executive Summary

Introduction

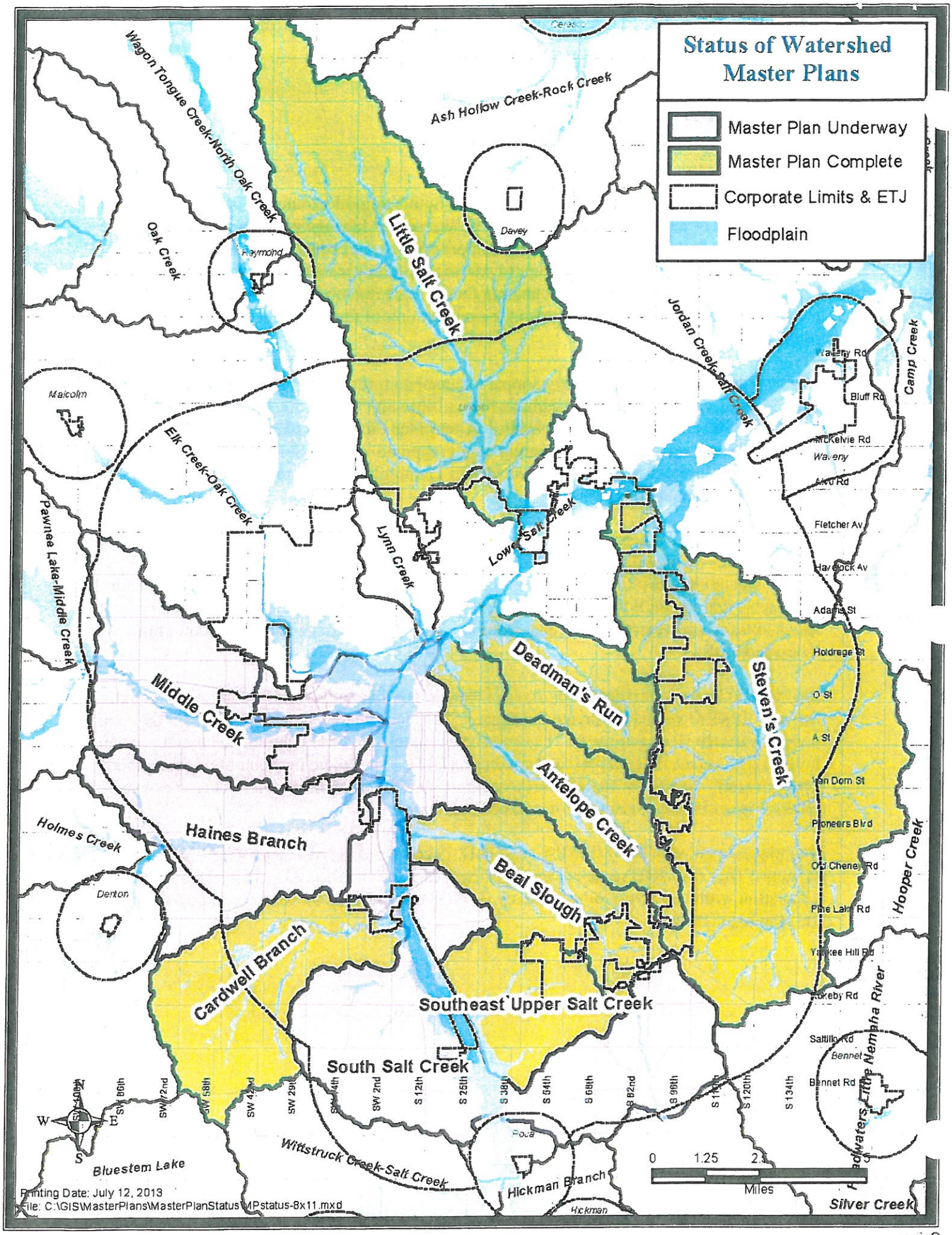
The City of Lincoln (City) and the Lower Platte South Natural Resources District (NRD) are in the process of developing a Comprehensive Watershed Management Plan for the City of Lincoln and its future growth areas. This comprehensive watershed plan is being developed basin by basin, through the completion 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 Middle Creek Watershed Master Plan (Master Plan) is summarized in this report. The purpose of the Middle 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 Middle 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 Middle Creek Watershed Study Area is approximately 19 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 7 miles in length with a maximum width of about 6 miles. There are over 81 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 (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
Wagon Tongue Creek-North Oak Creek
Ash Hollow Creek-Rock Creek
Oak Creek
Raymond
Davey
Little Salt Creek
Jordan Creek-Salt Creek
Camp Creek
Malcolm
Elk Creek-Oak Creek
Pawnee Lake-Middle Creek
Lynn Creek
Lower Salt Creek
Deadman's Run
Steven's Creek
Middle Creek
Antelope Creek
Haines Branch
Holmes Creek
Beal Slough
Hooper Creek
Denton
Cardwell Branch
Southeast Upper Salt Creek
South Salt Creek
Little Nemaha River
Bluestem Lake
Wittstruck Creek-Salt Creek
Hickman Branch
Silver Creek
Waverly Rd
Bluff Rd
McKelvie Rd
Waverly
Fletcher Av
Havelock Av
Adams St
Holdrege St
O St
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Van Dorn St
Pioneers Blvd
Old Cheney Rd
Pine Lake Rd
Yankee Hill Rd
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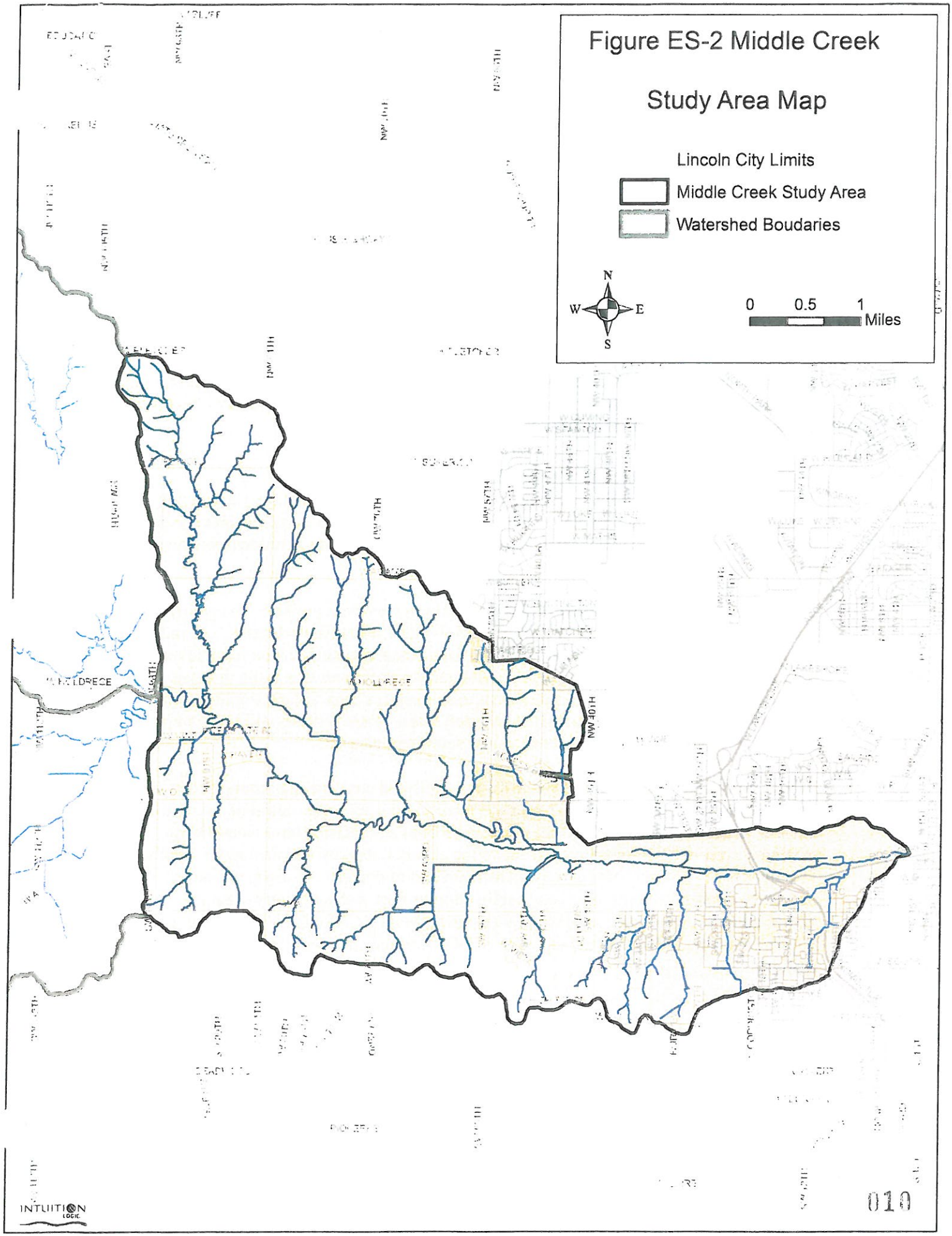
Figure ES-2 Middle Creek
Study Area Map
Lincoln City Limits
Middle Creek Study Area
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Public Participation

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 7 stream stability capital improvement projects. The general locations of the projects are shown in Figure ES-3, CIP Locations. Projects 1, 2, 5 and 7 are grade controls along the main stem and tributaries to stop channel incision from advancing upstream. Continued incision can cause erosion and bank failures that could threaten structures. Sediment released from incision and subsequent bank failures could threaten property and natural resources along the channel. These grade controls will hold the profile grade of the channel, reducing the erosion and sediment released.

Project 3 involves replacing the CMP culvert outfalls and constructing scour protection at each location to stop the erosion. Project 6 is a stilling basins at the outfall of an existing culverts in the 7400 block of W O St. Channel erosion and incision have caused eight existing culvert outfalls to be perched above the channel, thereby threatening the stability of the culverts. The stilling basin at the downstream end of culvert will dissipate energy and protect the outfall. Project 4 is a bank stabilization project with associated channel modification to stop erosion along a tributary and protect S Coddington Ave. Several projects will be joint City, NRD, County and State (NDOR) project and will need participation of all entities.

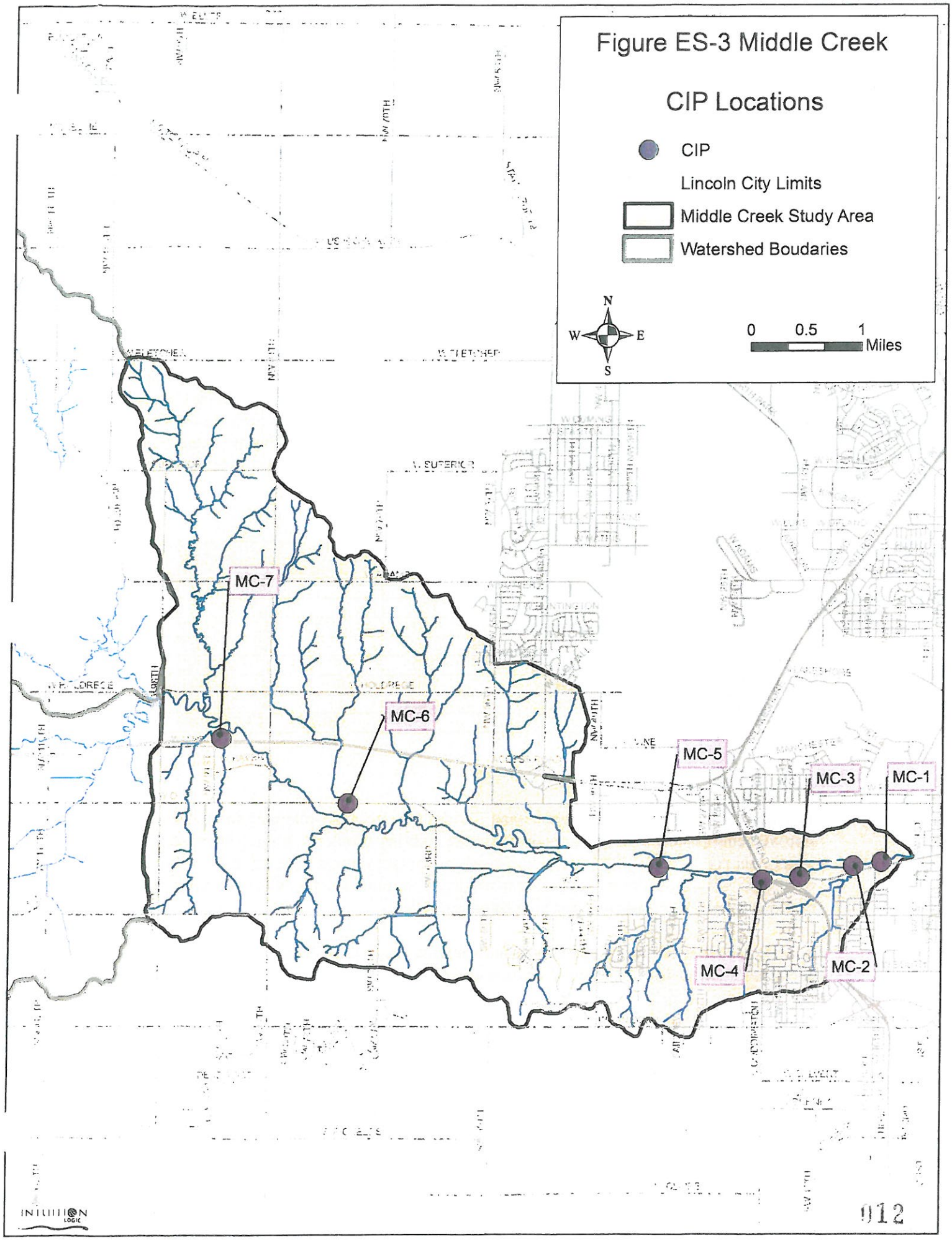
Figure ES-3 Middle Creek
CIP Locations
CIP
Lincoln City Limits
Middle Creek Study Area
Watershed Boudaries
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INTUITION LOGIC

The total cost for all 7 capital improvement projects is estimated to be approximately $1.7 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 quality as CIP Projects because they do not typically qualify for public funding.

The recommended projects were ranked 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. 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 7 projects within the Middle 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 Name	Project Type	Priority Score	Project Ranking	Project Cost
MC 1	Grade Control	220	2	$ 146,000
MC 2	Grade Control	195	7	$ 87,000
MC 3	Pipe Outfall Erosion Control	220	4	$ 129,000
MC 4	Bank Stabilization	250	3	$ 175,000
MC 5	Grade Control	210	5	$ 590,000
MC 6	Stilling Basin	200	6	$ 287,000
MC 7	Grade Control	240	1	$ 297,000
			Total	$ 1,711,000

Summary

The Middle 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