

Pre-Council Meeting  
Little Salt Creek Watershed Master Plan  
September 14, 2009

Meeting Began at: 1:34 p.m.

Meeting Ended at: 2:00 p.m.

City Council Members Present: Doug Emery, John Spatz, Eugene Carroll, Jayne Snyder,  
Jon Camp (arrived at 1:42 p.m.)

City Council Members Absent: Jonathan Cook, Adam Hornung

Others Present: Public Works & Utilities: Nicole Fleck-Tooze, Ed Kouma, Ben Higgins;  
Planning: Mike DeKalb; City Attorney: Judge John Hendry;  
Lower Platte South NRD: Paul Zillig

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## INTRODUCTION:

Doug Emery called the meeting to order stating that this Pre-Council is about the “Little Salt Creek Watershed Master Plan”.

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## PRESENTATION:

### Nicole Fleck-Tooze

We want to give a briefing on two resolutions that are being introduced today and will have public hearing next week relating to the Little Salt Creek Watershed.

(Attachment ‘A’ - Slide 2) We have an ongoing effort and partnership with the Lower Platte South Natural Resources District to produce watershed master plans working basin by basin throughout the City and future growth areas. We have completed five master plans so far and those have all been adopted as approved subarea plans within the Comprehensive Plan. We are looking at having a unified watershed master plan for the City and future growth areas and each one of these would have a major public input component as well, which Ed Kouma will talk more about relating to the Little Salt Creek specifically.

### Ed Kouma

(Attachment ‘A’ - Slide 3) The Little Salt Creek Watershed Master Plan, like the other master plans, had goals and objectives. The goals specifically were to provide long-term planning tools and improvement projects for water quality, flood management, and stream stability, and through this provide guidance for sustainable urban growth.

(Attachment ‘A’ - Slide 4) The major study components of the Little Salt Creek Watershed Master Plan are shown on this slide. Public Involvement and Floodplain Mapping were two key issues. We provided updated floodplain maps through this study. The others you can see listed there are the remaining components of the study.

(Attachment ‘A’ - Slide 5) The Little Salt Creek Watershed lies just north of the City of Lincoln. It extends up to just beyond the Lancaster County line. You can see there that it encompasses 45.8 square miles, there were 86 miles of stream reviewed and studied in this study, and 81 bridge/culvert structures identified.

(Attachment 'A' - Slide 6) The characteristics of the basin are that the basin is primarily agricultural, it's a rural watershed. There is expected limited development projected over the next 30 years. The streams in this basin are incising, which means the stream beds are cutting in deeper. The water quality of the basin is considered to be poor. There are several areas of erosive soils in the basin which are susceptible to erosion. There are quite a few saline wetlands and seeps and some of these are identified to be Salt Creek Tiger Beetle habitats.

(Attachment 'A' - Slide 7) Floodplain Mapping: The floodprone areas and the floodway are identified in these maps.

(Attachment 'A' - Slide 8) Floodplain Mapping: This is one tile from the study. I put it up as an example, as you can see in the insert the entire basin was cut into twelve tiles and in the report itself each tile is shown separately. On this map you can get an idea of the existing floodplain boundaries. The current accepted FEMA floodplain boundary is in a red dotted line. In some places it follows very closely to the new updated floodplain maps and in other places you can see where the new map is more refined. The more detail shows where it has been refined encompassing some new areas and excluding some old areas in different places. This updated mapping was mapped for each major tributary to the point where there was 150 acres of drainage area and it was terminated at that point.

(Attachment 'A' - Slide 9 & 10) Through the study 18 capital improvement projects were identified. The first 10 were grade controls at bridges, and projects 11 - 18 are stilling basin projects that exist at outfalls of culverts. All of these are grade control or stream control projects. All 18 are listed in your handout and they are in the report which is available to the public on our website.

(Attachment 'A' - Slide 11) Other recommendations were made in the study and these were consistent with other watershed master plans that have been done. Stormwater BMPs (Best Management Practices) are recommended in new development. In the Little Salt Creek Watershed a recommendation is made to test for dispersive soils before allowing new development to see if we are in an area of those highly erodible soils. The conservation culvert design is recommended, and that is shown in the picture with the yellow dotted outline. This shows that one of these tubes of this multiple tube culvert is set lower. It is recommended that that idea be used in any new culverts that are put in and to place that lower elevation tube where the stream is naturally trying to find its way. Streams find a natural course down the stream bed and that is true at bridges and if all the tubes are at the same level they tend to stilt in the ones that are not in the natural path of the stream. So that is a simple thing that can be designed into future upgrades. We are also recommending that the floodprone areas that have resulted from this study be adopted as the best available information.

(Attachment 'A' - Slide 12) Other improvement recommendations involve the bridges and culverts, and natural resources such as the threatened and endangered Salt Creek Tiger Beetle and the Salt Wort plant. Regarding the riparian corridors, it is recommended that they could be improved using existing programs for improving the wooded areas. Programs already exist to provide trees to landowners in that area. A recommendation for improvement of water quality is also included.

(Attachment 'A' - Slide 13 & 14) We went through an extensive public process that involved two open house events, six mailings, and two advisory committees were formed to assist the study team in this project. This all went smoothly and I believe much valuable information was gleaned from the committees. The project website has been on our City website since the beginning of the project and it is available to the public for all

the details. That would be at [lincoln.ne.gov](http://lincoln.ne.gov) and the keyword is “watershed”. You can either go to the drop down menu under Master Plans or go to the Featured Sites and the master plan is available there.

Nicole Fleck-Tooze

(Attachment ‘A’ - Slide 15) You have two items before you next week for public hearing. The first item is the Comprehensive Plan Amendment and that amendment would do two things. It would first add the Little Salt Creek Watershed Master Plan to the list of approved sub-area plans and watershed studies.

John Spatz: You said it was on first reading?

Nicole Fleck-Tooze: It is on first reading as a resolution, so it should show up today as item 48 on your agenda.

Nicole Fleck-Tooze

(Attachment ‘A’ - Slide 15 continued) This would then follow those five other watershed plans that I referenced earlier as having already been adopted into the Comprehensive Plan. The second component is also consistent with those plans where we would be amending the Future Land Use map to ensure that certain land uses are consistent with the updated floodprone area and floodway.

(Attachment ‘A’ - Slide 16 &17 and Attachment ‘B’- two-sided) I did pass out a handout of the two maps I’m about to show you, it’s two-sided. The first is the current Future Land Use Plan for the Little Salt Creek Watershed. We are primarily looking at three different land uses for the majority of the watershed. The Agricultural land use, the dark green is the Environmental Resources land use, and in beige is the Agricultural Stream Corridor. Those two are the predominant land uses right along that stream corridor. If you take a look at the proposed Future Land Use Plan, what we have done is to just simply make it consistent with that updated floodprone area map to reflect in particular within the Ag Stream Corridor and the Environmental Resources land use that updated floodprone area information. That is also consistent with how we treated other watershed plans.

John Spatz: What did you say the beige was again?

Nicole Fleck-Tooze: The beige is called Agricultural Stream Corridor. Generally that follows the boundary of the floodprone area. In other watersheds, the green that is the Environmental Resources typically follows the floodway. The floodway is usually narrower within that floodprone area, but because of the saline wetlands, the Salt Creek Tiger Beetle habitat, and other vary unique resources within this watershed, that designation even on the existing map is already a little bit broader than the floodway.

Jayne Snyder: So on the bottom of this map (Attachment ‘B’), what is black is really green, and what is gray is really beige?

Nicole Fleck-Tooze: Yes, that is right.

Jon Camp: Without flipping back and forth between A and B (Attachment ‘B’), could you point out for us or highlight the significant changes from current to proposed?

Nicole Fleck-Tooze: If you look at the tributaries from the current and the proposed we have some extension of those land uses where we have mapped the floodprone area and floodway. In greater detail I also wanted to explain on this next slide (Attachment 'A' - Slide 18); and how we went about updating this. The proposed Future Land Use Plan updates that Agricultural Stream Corridor, which is shown in the beige, and your Environmental Resources to reflect that updated floodprone and floodway information. That is the same approach that has been used in other watershed areas. As I mentioned a majority of this watershed has an Agricultural land use designation but there are a couple of areas where we are updating the map to reflect changes to more urban type land uses.

The criteria we used was consistent with other watersheds. Where there was already urban zoning in place, no changes were made to the future land use designation. Where there was not urban zoning in place, then changes were made to make sure the two were consistent. The examples here are two areas where updated floodprone or floodway data extended slightly into the industrial area and into commercial land use designation. Both of those areas are still zoned for agricultural land use. By contrast, there is an area on the southeast corner of I-80 and North 27<sup>th</sup> Street where we had both the commercial land use designation and it also already had its commercial zoning, so no changes were made to that land use designation because it was continuing to reflect that current zoning. There was one last area where we had a change in an Urban Residential land use designation to reflect those floodprone boundaries as well, and that area is currently not zoned for Urban Residential, it is still in Agricultural land use. That was the protocol that was followed and it's consistent with the changes that have been made in other watersheds where we made those changes recently. Does that answer your question?

Jon Camp: That did and I have a second question if I may. With these changes that are being proposed, they obviously affect some land use in agricultural areas. What types of feedback have you had from landowners there, any concerns expressed that this might limit their future utilization of the property or when they transition into say a commercial use as the City grows. Could you elaborate on those?

Nicole Fleck-Tooze: To the best of my knowledge we have not received any concerns in that regard. We did several mailings to property owners throughout the watershed planning process and gathered feedback at open houses and some of our advisory committee members were also property owners. And we didn't have any concerns voiced at the Planning Commission either.

Jon Camp: In the official view of what you presented it looks like there aren't any major changes here; would it be fair to make a statement that perhaps acreage-wise it's not a lot or do you have any idea of the land mass that might have been affected in totality?

Nicole Fleck-Tooze: That would probably be the same land area as our total increase in floodplain area acres. Ed, do you happen to have that?

Ed Kouma: Acres in the previously mapped floodplain was 3,160 acres. The currently mapped floodplain shows 3,560 acres. So there is a difference of 400 acres.

Jon Camp: About two-thirds of a section.

Nicole Fleck-Tooze: That sounds about right, and those are primarily in those upper reaches of the tributaries that haven't been previously mapped.

Nicole Fleck-Tooze

(Attachment 'A' - Slide 19) The next item that you have on your agenda before you next week is currently listed as item 49, and that's the resolution for adopting that updated floodprone area information. So there are two separate pieces, one is adopting the actual master plan which is used as a guide as we move forward; and then this second piece would be the resolution where will actually adopt that floodprone area information for use in a regulatory capacity. What it does is to formally recognize that best available information for local regulatory purposes. As a reminder, our FEMA map is currently over 30 years out of date. While we have submitted the information to FEMA, as is typical we are expecting quite a delay in between now that we have the updated information and when it is expected to be shown on the FEMA map. We are expecting it might take about two years before the FEMA maps are updated to reflect that information.

John Spatz: So on item 49 what we are doing is approving from the City Council's perspective what we are submitting to FEMA?

Nicole Fleck-Tooze: What you are doing is formally adopting what has already been submitted to FEMA to regulate locally until such time as the FEMA maps are adopted. So it would be similar to six other stream reaches where we have already done the same thing.

John Spatz: So item 49 gives the local authority over a certain jurisdiction or certain area, in hopes that FEMA will in a couple years adopt the same area?

Nicole Fleck-Tooze: Yes. Typically if FEMA makes any changes they are fairly minor. We have walked through all of FEMA's guidelines and specifications in developing the information.

John Spatz: I really appreciate that explanation. I really do.

Nicole Fleck-Tooze

(Attachment 'A' - Slide 20 and Attachment 'C') This is the map and it is an attachment to that resolution. This would be the map adopting that updated information. This is the 3-mile jurisdiction, so this would be Lincoln's jurisdiction within the watershed. Primarily where you see blue peeking through under the gray, those are the areas of new updated floodprone information. You can see that primarily on the tributaries, and some refinement also in the main steam of Little Salt Creek. This resolution would also adopt this detailed information for the floodway shown in dark gray that was not previously mapped for Little Salt Creek, protecting that conveyance area along the stream channel.

(Attachment 'A' - Slide 21) For the resolution for the updated floodway information, as I mentioned we used the FEMA specifications to develop that floodplain mapping. Until we adopt the FEMA information what we need to do is use the information where it is more restrictive than the FEMA maps. Unfortunately we cannot be less restrictive than the FEMA maps until they get their side of it updated. Ultimately, there are some areas where we show coming out of the floodplain with our update. Our recommendation is that it is the best technical information regarding flood hazards to protect future homes and businesses in the watershed. It also assures that those areas conform with the flood standards.

Jon Camp: As we continue to update and granted this is a 30-year update, but with a better understanding today of floods, and having retention, detention facilities, and so forth, are we making progress so that in some cases we are really not increasing the floodprone area or flood areas and working within the standards we ask developments to adhere to?

Nicole Fleck-Tooze: Absolutely, we are. Between our stormwater detention standards and then certainly in our New Growth Areas, our standards for offsetting impacts to flood storage and making sure we don't have an increase in the flood elevation should most certainly prevent major changes in that flood boundary in the future in those New Growth Areas. In the Existing Urban Area we still have the minimum federal standards and we might continue to see some changes. Part of our change comes from impact that has happened to the floodplain and part of it comes from having much better technical data and floodplain models. So I don't think in the future you will be seeing nearly as great of changes where we have updated these maps.

Jon Camp: I think from our standpoint, as the City expands it would be helpful that new property owners that might purchase, that they can rely on this and that we don't have concerns expressed down the road that why didn't you tell us this was a floodprone area. That they have a fairly good idea of satisfaction that it is whatever it is designated as.

Jane Snyder: The area that is out of the 3-mile for the City of Lincoln, will that have to be approved by not only the NRD but the County, is that what happens?

Nicole Fleck-Tooze: It will. As a matter of fact, tomorrow the County Board will have a public hearing on these similar items before them to adopt those same floodprone areas and adopt the watershed master plan that will apply in that portion that is outside the 3-mile jurisdiction.

Jane Snyder: My other question, you may or may not be able to answer today. I've heard various reports about Antelope Valley and how it has brought some properties out of the floodplain and out of floodprone and so as because of that saved them some flood insurance. Do we have any data on that or is that the NRD that would have that?

Nicole Fleck-Tooze: We can certainly get that information. That was part of the original study that was done. We do have Paul Zillig here from the NRD if you want to add anything to that?

Paul Zillig: We are still in the process of going through that change in the floodplain and getting the final information.

Jayne Snyder: That would be really good information to have, not only for us but for the public when they are looking at the Antelope Valley and trying to weigh what benefits it might have for the citizens because if nothing else the reduction in the flood insurance for their properties.

Nicole Fleck-Tooze: Absolutely. We will take a look and see what has already been prepared in that regard.

John Spatz: There was a case a few years ago in the Supreme Court that Judge Hendry probably remembers where it created a link between surface water and ground water, created it legally. When we are studying these floodplain watershed issues, are we looking at the ground water as well? Is that part of this, the impacts of the ground water?

Nicole Fleck-Tooze: It is primarily not a part of this. We are really looking at runoff or hydrology of the surface. I guess the caveat to that is that in this watershed because there are so many links between the ground water and saline wetland areas we have certainly consulted with the University and with a number of other natural resource agencies to make sure that we are not ignoring that connection, its just really beyond the scope of study for stormwater. So we've tried to acknowledge that sensitivity and connection in this watershed without getting sort of off track in terms of our scope. I think part of that Supreme Court decision had to do with where there was an inter-connectedness to the wetlands designation and so again its related but a little bit tangential to our study.

(Attachment 'A' - Slide 22) So these are just as a reference, the map that I showed you in the beginning to the other watersheds where we already adopted master plans and updated floodprone area information. The five that you see there in green are all five for which we have adopted watershed master plans like this one in the past. We have also done some floodprone mapping that has been adopted locally for Salt Creek where we didn't have a master plan but we had that updated floodprone area information. We are just looking at a consistent sort of process for Little Salt Creek. As I mentioned, this goes before the County Board tomorrow for public hearing primarily because such a large portion of the watershed is in the County jurisdiction and then it would be before you next Monday for public hearing. We do have staff here from the NRD, Paul Zillig; Mike DeKalb here from Planning; and other Watershed staff for any questions that you have.

Eugene Carroll: Going back to the project rankings, can you describe how you rank the projects and are there any critical ones? I noticed that they are all in the southern end where they are starting to be ranked 1, 2, and 3.

Ed Kouma: There is process that has been developed by the City to prioritize the projects. It was a process set up to be consistent from one basin to the next. That prioritization process was incorporated as each one of these projects were developed and the 18 highest priority ones where on that list (Attachment 'A' - Slide 9 & 10).

Eugene Carroll: Are any critical that need to be repaired soon? As I said the 1, 2, and 3 are on the southern end of the watershed.

Ed Kouma: The recommendation has been that as the County develops improvements to bridges (most of these are at road crossings), these projects would be incorporated along with their road improvements.

Nicole Fleck-Tooze: Certainly those few highest priority projects are shown that way because we feel that there is systemic erosion in the stream channel and we would certainly consider them to be a high priority. We are just trying to strike a balance between making sure they are prioritized and seeking out opportunities for that collaborative effort.

Eugene Carroll: But nothing critical as far as cause of flooding until maybe a road project happens and then that's when it is repaired.

Nicole Fleck-Tooze: Right. The majority of these are addressing more the erosive types of issues, rather than the flooding issues.

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**CLOSING:**

Doug Emery closed the meeting by thanking those giving the presentation.

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**ATTACHMENTS:**

Attachment 'A' – Slide Show Presentation (Little Salt Creek Watershed Master Plan)

Attachment 'B' – Maps showing Current Future Land Use Plan and Proposed Future Land Use Plan

Attachment 'C' – Map showing Little Salt Creek Floodprone Areas

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Prepared By: Chris Koll, Public Works & Utilities

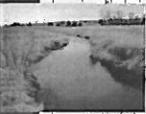
## Little Salt Creek Watershed Master Plan

*City Council Briefing  
September 14, 2009*

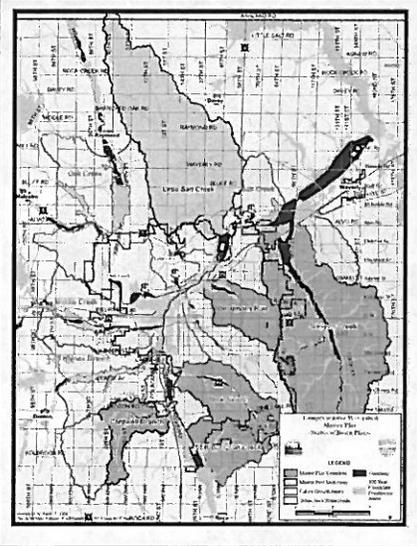




## Watershed Master Planning

- **City/NRD Planning Effort**
- **Watershed Master Plans Completed**
  - Beal Slough
  - SE Upper Salt Creek
  - Steven's Creek
  - Cardwell Branch
  - Deadman's Run
- **Overall Goals**
  - Unified Master Plan
  - Integrate Public Input



## Little Salt Creek Watershed Master Plan *Goals & Objectives*

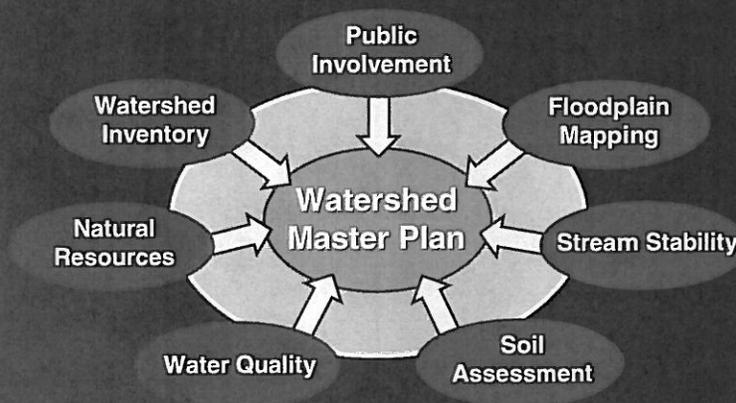
### Goals:

- Long-term planning tools and improvement projects for water quality, flood management, stream stability
- Guidance for sustainable urban growth

### Study Objectives

- Public involvement
- Floodplain map updates
- Address flooding, erosion, water quality
- Consider environmental resources
- Recommendations for future development

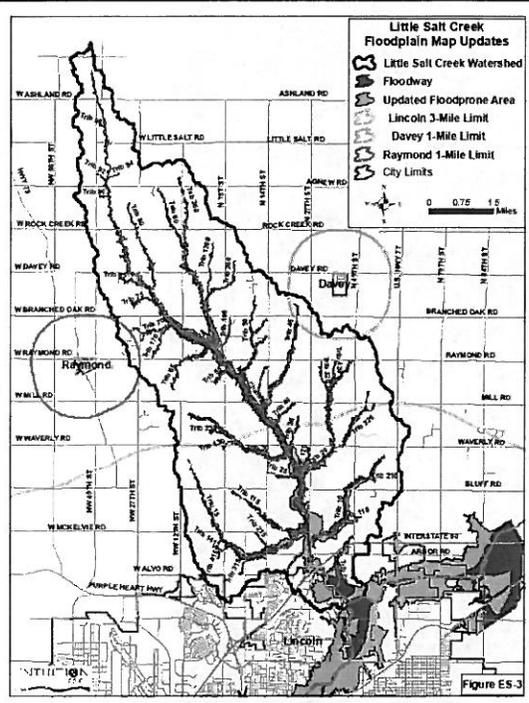
## Little Salt Creek Watershed Master Plan *Major Study Components*





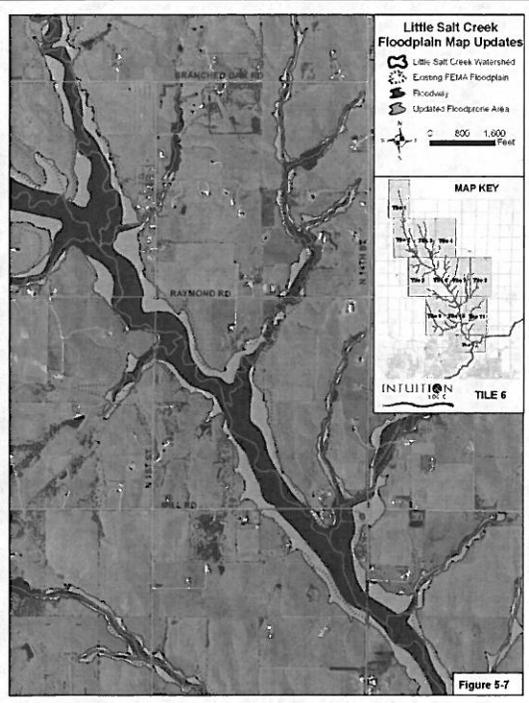
# Floodplain Mapping

*Floodprone Area and Floodway Map Update*



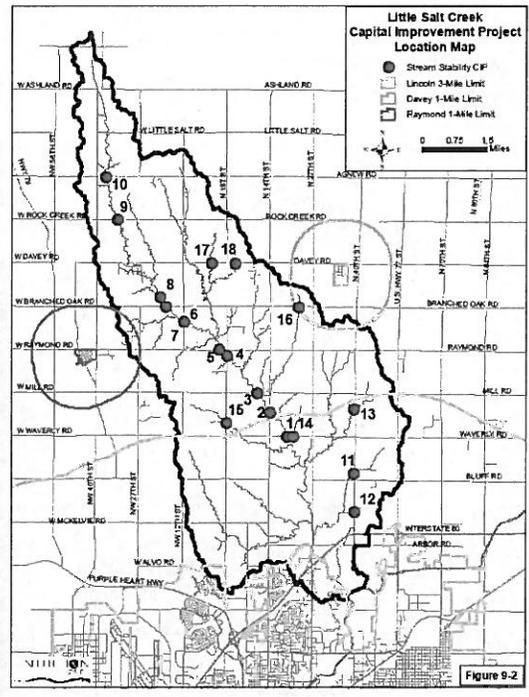
# Floodplain Mapping

*Best Available Information*



## Capital Improvement Projects

- 18 Stream Stability Projects
  - Projects 1 – 10: Grade Control At Bridge
  - Projects 11 – 18: Stilling Basin At Outfall



## Capital Improvement Projects

Project No.	Project Name	Classification	Priority Score	Project Ranking	Project Cost
1	Grade Control Main Stem, Waverly Road Bridge	Secondary	255	3	\$95,000
2	Grade Control Main Stem, North 14 <sup>th</sup> Street Bridge	Secondary	260	1	\$113,000
3	Grade Control Main Stem, Mill Road Bridge	Secondary	250	7	\$91,000
4	Grade Control Main Stem, North 1st Street Bridge	Secondary	255	4	\$110,000
5	Grade Control Main Stem, W Raymond Road Bridge	Secondary	260	2	\$115,000
6	Grade Control Main Stem, NW 12th Street Bridge	Secondary	240	8	\$91,000
7	Grade Control Main Stem, W Branched Oak Road Bridge	Secondary	255	5	\$71,000
8	Grade Control Main Stem, N 19th Street Bridge	Secondary	240	9	\$84,000
9	Grade Control Main Stem, W Rock Creek Road Bridge	Secondary	240	10	\$78,000
10	Grade Control Main Stem, W Agnew Road Bridge	Secondary	255	6	\$69,000
11	Stilling Basin at N 40 <sup>th</sup> Street Culvert Outfall, Tributary 10	Secondary	105	11	\$78,000
12	Stilling Basin at N 40 <sup>th</sup> Street Culvert Outfall, Tributary 110	Secondary	95	14	\$77,000
13	Stilling Basin at N 40 <sup>th</sup> Street Culvert Outfall, Tributary 220	Secondary	100	13	\$67,000
14	Stilling Basin at Waverly Road Culvert Outfall, Tributary 35	Secondary	90	15	\$75,000
15	Stilling Basin at N 1 <sup>st</sup> Street Culvert Outfall, Tributary 30	Secondary	100	12	\$85,000
16	Stilling Basin at Branched Oak Road Culvert Outfall, Tributary 45	Secondary	85	16	\$95,000
17	Stilling Basin at W Davy Road Culvert Outfall, Tributary 1260	Secondary	80	17	\$113,000
18	Stilling Basin at Davy Road Culvert Outfall, Tributary 260	Secondary	80	18	\$85,000
<b>Total =</b>					<b>\$1,591,000</b>

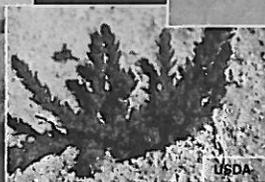
## Drainage Criteria Recommendations

- Stormwater BMPs
- Dispersive Soils Testing
- Conservation Culvert Design
- Adopt Flood Prone Areas as Best Available



## Other Improvement Recommendations

- Bridges and Culverts
- Natural Resources
- Riparian Corridor
- Water Quality



## Public Process

- **Open House Events**
  - April 22, 2008
  - February 24, 2009
- **Mailings**
  - Letter to floodplain properties
  - 5 news letters and 1 postcard to all in basin
- **Citizen Advisory Committee**
  - 16 member group met 3 times
- **Technical Advisory Committee**
  - 14 member group met 4 times
- **Project Website**

## Little Salt Creek Watershed Master Plan Project Website

lincoln.ne.gov - keyword: watershed

The screenshot shows a web browser window displaying the website for the City of Lincoln's Watershed Management. The page has a navigation bar with links for 'General Information', 'Education', 'Maps', 'Projects', 'Master Plans', 'Requirements & Procedures', and 'Monitoring'. The 'Master Plans' dropdown menu is open, showing a list of watershed master plans, with 'DRAFT Little Salt Creek Watershed Master Plan' highlighted. To the right, a 'FEATURED SITES' section lists several documents, with 'November 2008 Proposed FEMA Floodplain Map' and 'Draft Little Salt Creek Floodplain Update' highlighted by red arrows. The main content area includes a title 'WATERSHED MANAGEMENT' and a paragraph explaining the city's stormwater management goals.

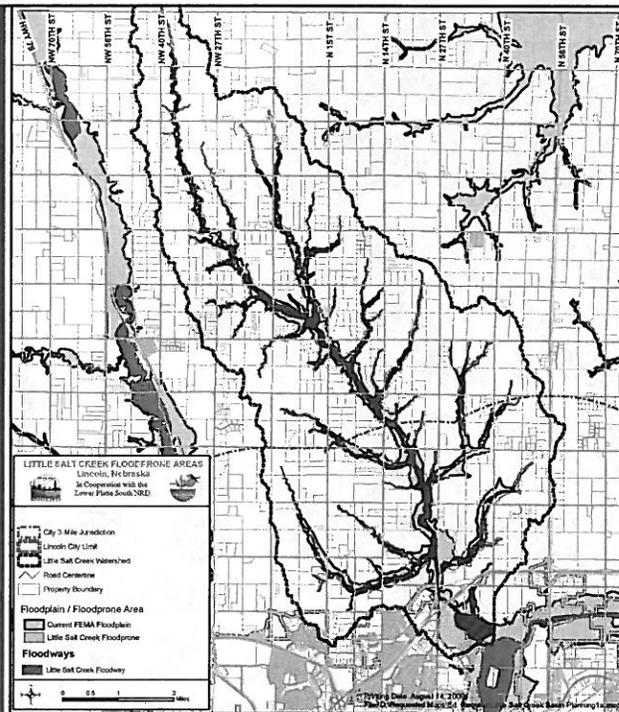




## Items Before City Council on 9/21/09

- 2<sup>nd</sup> Item, 09R-162: Resolution for Updated Floodprone Area Information
  - Formally recognize updated Floodprone Area and Floodway as best available information for local regulatory purposes
  - Current FEMA map 30+ years out-of-date, includes no detailed flood information
  - FEMA map update anticipated to take 2 years

### Floodprone Areas Little Salt Creek Watershed

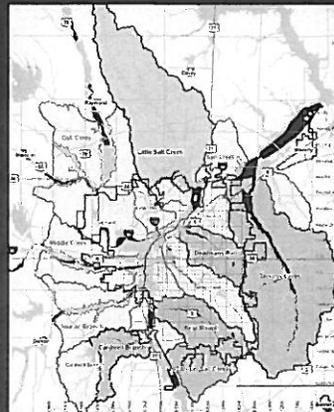


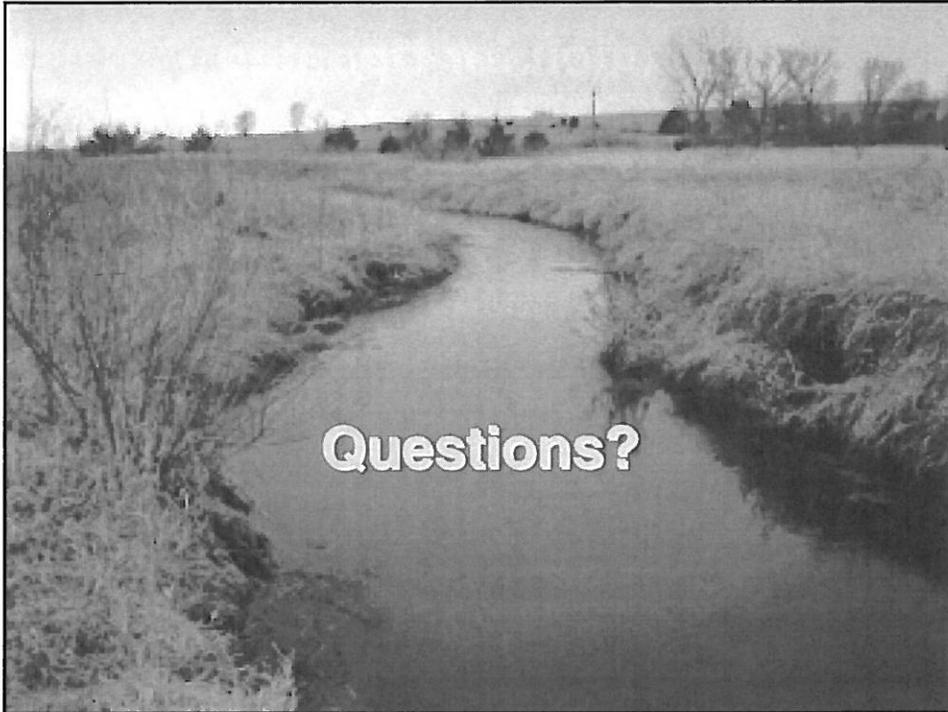
## Resolution for Updated Flood Information

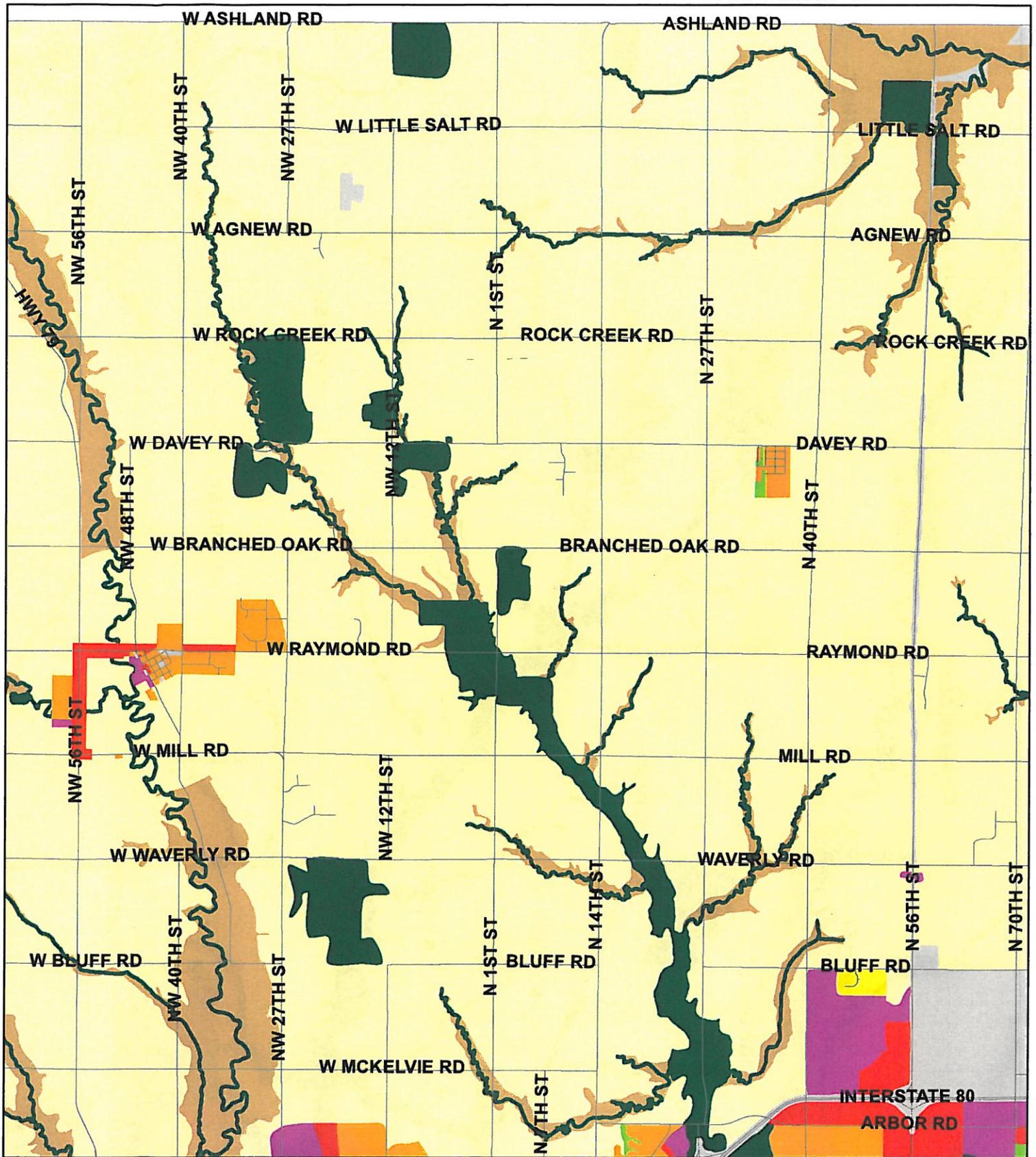
- FEMA specifications used for mapping
- Updated info will be used where more restrictive than FEMA
- Best technical info regarding flood hazards to protect future homes and businesses
- Assures development conforms with Flood Standards

## Resolution for Updated Flood Information

- Consistent with local adoption of flood information for 6 other streams:
  - Beal Slough
  - SE Upper Salt Creek
  - Stevens Creek
  - Cardwell Branch
  - Salt Creek
  - Deadmans Run







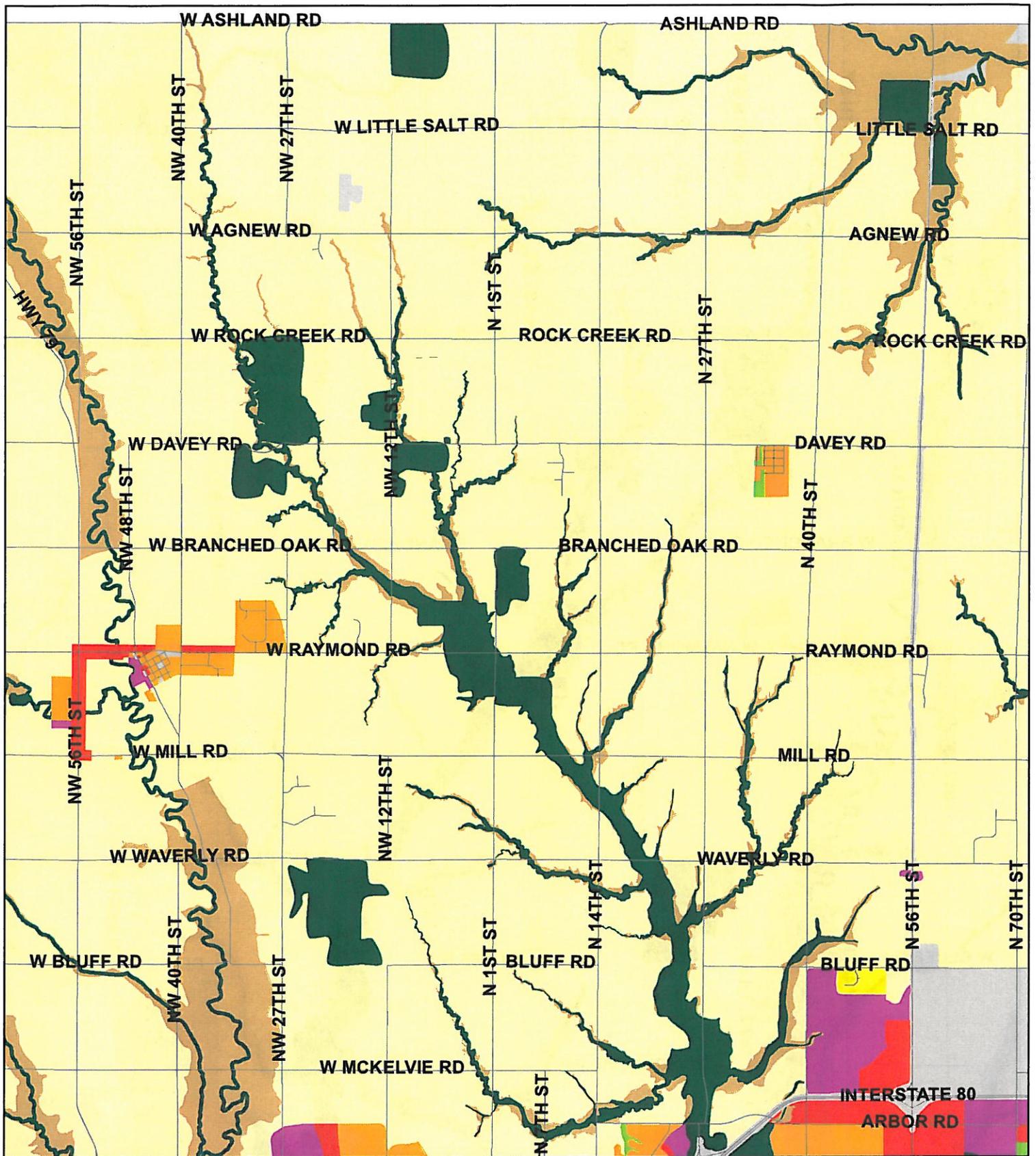
**CPA09006 (Map B)**  
**Current Future Land Use Plan**  
**As Approved In The 2030 Comprehensive Plan**

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- Environmental Resources
- Ag Stream Corridor

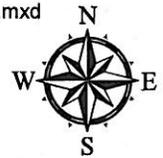


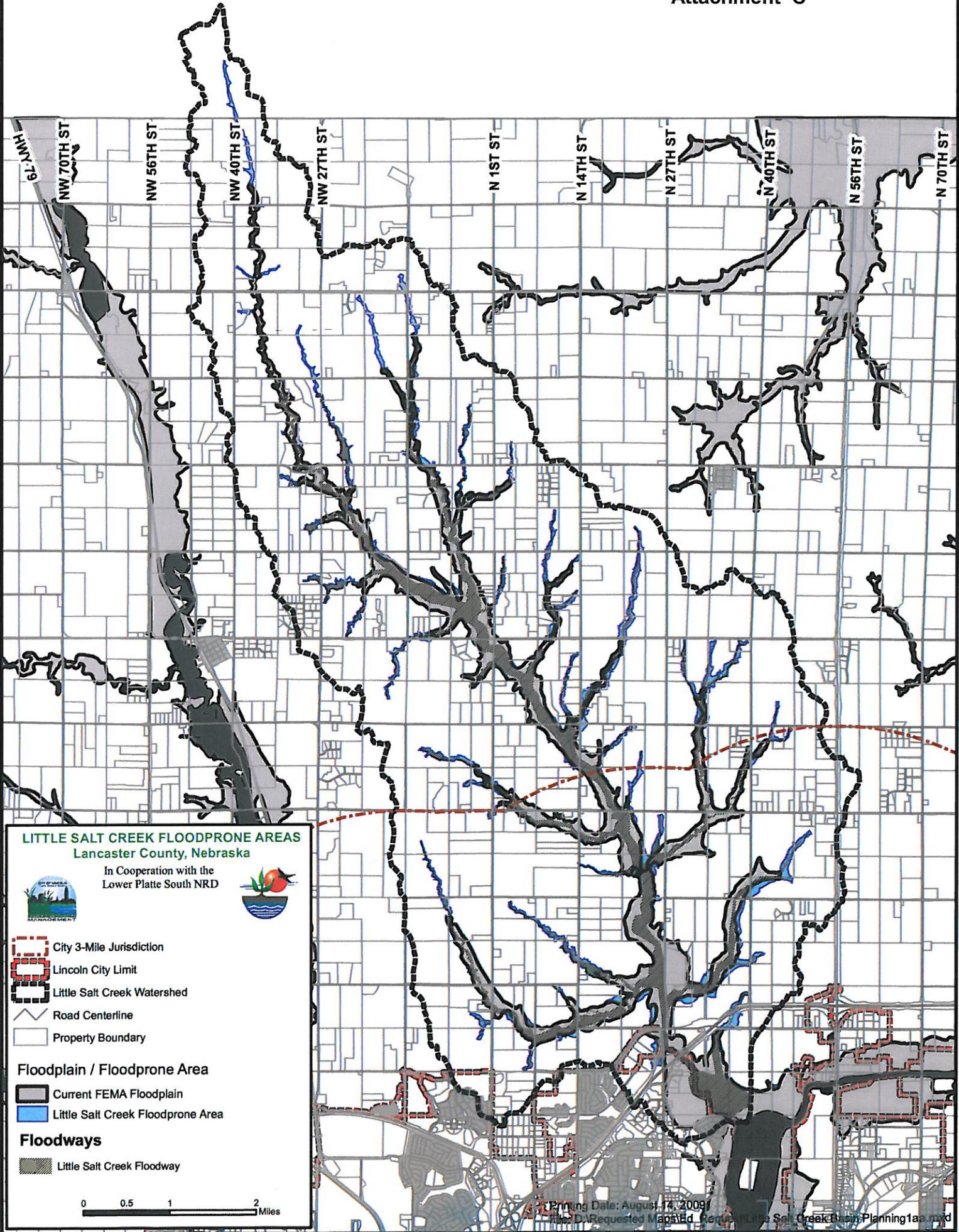


**CPA09006 (Map A)**  
**Proposed Future Land Use Plan**  
**Reflecting Little Salt Creek Floodprone Data**

- Environmental Resources
- Ag Stream Corridor

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**LITTLE SALT CREEK FLOODPRONE AREAS**  
 Lancaster County, Nebraska

In Cooperation with the  
 Lower Platte South NRD



- City 3-Mile Jurisdiction
- Lincoln City Limit
- Little Salt Creek Watershed
- Road Centerline
- Property Boundary

**Floodplain / Floodprone Area**

- Current FEMA Floodplain
- Little Salt Creek Floodprone Area

**Floodways**

- Little Salt Creek Floodway

