City Council Introduction: **Monday**, February 12, 2007
Public Hearing: **Monday**, February 26, 2007, at **5:30** p.m. Bill No. 07-26

FACTSHEET

TITLE: **CHANGE OF ZONE NO. 07001,** requested by the Public Works & Utilities Department and the Lower Platte South Natural Resources District, to amend Chapter 27.52 of the Lincoln Municipal Code relating to Flood Regulations for Existing Urban Area, by amending Section 27.52.020 to add definitions for 100-Year Flood Elevation, Development Area, Fill, Flood Storage Area or Salt Creek Flood Storage Area, Percentage of Allowable Fill, and Single-Family Residential Building; and by adding a new section numbered 27.52.035 to adopt standards for development within the Salt Creek Flood Storage Areas.

STAFF RECOMMENDATION: Approval, as revised on January 26, 2007.

ASSOCIATED REQUEST: Salt Creek 100-year Floodprone Area and revised Floodway Map (07R-45).

SPONSOR: Planning Department

BOARD/COMMITTEE: Planning Commission
Public Hearing: 01/31/07
Administrative Action: 01/31/07

RECOMMENDATION: Approval, as revised (8-0: Cornelius, Sunderman, Taylor, Strand, Krieser, Carroll, Esseks and Carlson voting 'yes'; Larson absent).

FINDINGS OF FACT:

1. This is a request to amend the floodplain regulations in the zoning ordinance for the existing urban area to include provisions specific to the Salt Creek floodplain from Calvert Street to Superior Street. The proposed regulations reflect the minimum federal and state requirements, which allow a cumulative amount of fill which will raise the flood height by one foot. The use of this approved storage technique will allow the official FEMA mapped floodway to remain within the banks of the existing levees. The submittal letter explaining the proposal is found on p.9-11.

2. Revised text was submitted by the applicants on January 26, 2007, to correct a conflict with the definition for "Single Family Residential Building" and the definition for "Single-Family Dwelling" (See p.12-25).

3. The staff recommendation of approval, as revised on January 26, 2007, is based on the "Analysis" as set forth on p.3, concluding that the proposal is in conformance with the 2030 Lincoln-Lancaster County Comprehensive Plan.

4. The presentation by the proponents and the discussion with the Planning Commission is found on p.5-8. A letter in support from the Board of Directors of the Lower Platte South Natural Resources District is found on p.32.

5. There was no testimony in opposition; however, the record consists of a letter of concern from Ted Ericson (p.33).

6. On January 31, 2007, the Planning Commission agreed with the staff recommendation and voted 8-0 to recommend approval, as revised on January 26, 2007 (Larson absent).

7. This text amendment is submitted in conjunction with the revised floodplain map for Salt Creek (07R-45).

FACTSHEET PREPARED BY: Jean L. Walker **DATE**: February 5, 2007
REVIEWED BY:_____ **DATE**: February 5, 2007
REFERENCE NUMBER: FS\CC\2007\CZ.07001 text

LINCOLN/LANCASTER COUNTY PLANNING STAFF REPORT

for January 31,2007 PLANNING COMMISSION MEETING

PROJECT #: Change of Zone No. 07001

PROPOSAL: Amend Section 27.52, Flood Regulations for Existing Urban Area, to include standards for Salt Creek Flood Storage Areas.

CONCLUSION: This amendment will provide standards to protect the flood storage areas of Salt Creek and is in conformance with the Comprehensive Plan

RECOMMENDATION:	Approval

GENERAL INFORMATION:

LEGAL DESCRIPTION: Section 27.52 L.M.C.

ASSOCIATED APPLICATIONS: Request to Council to recognize Salt Creek 100 year Flood Prone Area as best available information for local flood regulation.

HISTORY: This is the fifth of the continuing update of floodplain mapping in stream reaches. The "Storage areas" were first defined by Corps of Engineer studies in the late 80's but flood storage protection has not been adopted.

COMPREHENSIVE PLAN SPECIFICATIONS:

WATERSHED MANAGEMENT GUIDING PRINCIPLES

Floodplains

In April of 2003, the Mayor's Floodplain Task Force developed policy standards for floodplains that took into consideration the natural functions played by these areas. These policy recommendations have been incorporated into the watershed management strategies included in the Utilities section of the Comprehensive Plan. Many recommendations have also been incorporated into the zoning and subdivision codes.

Environmental Resources

Seek the routine use of "Best Management Practices" in implementing stormwater management policy so that the potential for sedimentation problems are minimized. Further discussion of floodplain and stormwater management considerations and strategies is provided within the Utilities section. Pg 61- 62

✦ Watershed planning will continue in order to be proactive and integrate stewardship principles for land conservation, stream and wetland buffers, better site design, Best Management Practices (BMP), and erosion and sediment control. The natural drainage system can serve multiple benefits, including wildlife habitat and recreation.

✦The community should encourage site designs that are compatible with the natural characteristics of the site, clustering development, minimizing grading and impervious cover, and preserving site hydrology to the maximum extent possible. Naturalized or bioengineered solutions to drainage issues should be used wherever possible.

✦In new growth areas, the City of Lincoln and Lancaster County should have a policy of No

Adverse Impact, with a goal of ensuring that the action of one property owner does not adversely impact the flooding risk for other properties.
✦In concert with the findings of the Mayor's Floodplain Task Force and the assumptions used in crafting this Plan, future urban development will be outside of the floodplain and floodway.
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ANALYSIS:

1. This request is to amend the floodplain regulations for the existing urban area, in Section 27.52 to include provisions specific to the Salt Creek floodplain from Calvert Street to Superior Street. The floodplain is divided into 20 separate "storage areas", with each area assigned a separate percentage of fill that is allowed on any individual development site in that area.

2. If this reach of Salt Creek were mapped in the traditional method, the Flood Way would extend into existing neighborhoods with significant impact to existing land owners. The use of this approved storage technique will allow the official FEMA mapped Flood Way to remain within the banks of the existing levees.

3. These regulations reflect the minimum federal and state requirements, which allow a cumulative amount of filling which will raise the flood height by one foot. The Public Works Director and the NRD General Manager indicate in the letter accompanying the application that there will be continued dialog in the future about more restrictive regulations.

4. This is in conformance with the 2030 Lincoln/Lancaster County Comprehensive Plan.

Prepared by:

Mike DeKalb
441-6370, mdekalb@lincoln.ne.gov
Planner

DATE: January 17, 2007

APPLICANT: Glenn Johnson, General Manager
Lower Platte South NRD
3125 Portia Street
Lincoln, NE 68510
(402) 476-2729

Karl Fredrickson, Director
Public Works and Utilities Department
555 S. 10th Street
Lincoln, NE 68508
(402) 441-7548

CONTACT: Ben Higgins
Public Works and Utilities
901 N 6th Street
Lincoln, NE 68508
441-7589
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CHANGE OF ZONE NO. 07001

PUBLIC HEARING BEFORE PLANNING COMMISSION: January 31, 2007

Members present: Sunderman, Krieser, Esseks, Taylor, Carroll, Cornelius, Strand and Carlson; Larson absent.

Staff recommendation: Approval, as revised on January 26, 2007.

Ex Parte Communications: None.

Additional information for the record: Mike DeKalb of Planning staff submitted a letter from the Lower Platte South NRD in support of the proposed legislation.

Staff presentation: **Mike DeKalb of Planning staff** explained that this is new language to the floodplain regulations of the zoning code which reflects a new approach. If this reach of Salt Creek were mapped in the traditional method, the floodway would extend into existing neighborhoods with significant impact to existing land owners. The use of this approved storage technique will allow the official FEMA mapped floodway to remain within the banks of the existing levees. Staff recommends approval.

Proponents

1. Nicole Fleck-Tooze of Public Works & Utilities and Glenn Johnson of Lower Platte South NRD gave the presentation as the applicants. **Fleck-Tooze** explained that the proposal includes the Salt Creek floodplain mapping update and ordinance changes. This is the fifth floodplain in the Lincoln area where updated mapping has been completed. The city has adopted these mapping updates as the "best available information" for floodplain administration. The Salt Creek Floodplain Study was updated because the old study was at least 20 years old and some of the information was older than that. Technology has changed and a lot of additional information has become available. This updated study is as current and as accurate as possible and is consistent with the Mayor's Floodplain Task Force recommendation that the Salt Creek Floodplain study be updated.

Glenn Johnson further explained that Salt Creek is a little unique because it has a system of levees that run along from Calvert to Superior Street on both sides of the channel, and those levees create a different kind of flooding situation and flood protection. In this case, when the flood waters come up to a certain point, the 100-year flood will overtop the levee with a storage area on either side of the levee that will be filled with some degree with flood waters. The center part is the floodway.

Johnson went on to state that the study took place from Saltillo Road to 98th Street. The floodway part is broken into three different pieces: 1) the southern portion from Saltillo to Calvert is unchannelized, does not have levees and basically goes through Wilderness Park. This

portion is conventional floodplain and the floodway will be regulated by a conventional type method; 2) from Calvert to Superior Street, there is a system of levees; and 3) from Superior to 98th Street we get back to the conventional type of floodplain/floodway with no levee system.

Johnson noted that the levee system approach is consistent with FEMA. It is also consistent with how the map was reviewed in the past. In this case, there are 20 different storage areas along both sides of the Salt Creek levee, being the storage basins that fill up to some extent with water when the 100-year flood would occur. The approach in this study is to keep the floodway (the more restrictive regulatory component) within the levee system and then restrict the amount of fill that could take place in those storage areas (flood fringe). The conventional approach was also studied through the levee system, which showed extensive area on either side of the levee system that would be put into the floodway under the conventional method – shrinking the floodway down to the levee system and restricting the amount of fill that can take place in the storage areas on either side.

Fleck-Tooze explained the proposed amendments to the zoning ordinance, which represents what is required to meet the minimum FEMA regulatory standards in order to make this approach to the floodplain mapping work. It is an alternative to a much wider traditional floodway, and in this alternative each flood storage area is assigned a percent of allowable fill, allowing more flexibility than a traditional floodway approach through this area. The fill allowable is based on total volume between ground surface and 100-year flood height. What is before the Commission today is adoption of the updated maps via local regulations through the ordinance. The formal FEMA adoption process is anticipated, but that won't happen for another year. In the meantime, the applicants are proposing that the map be adopted for local regulation. This is consistent with how other watersheds have been treated. The Council will adopt the updated map along with the companion ordinance.

Fleck-Tooze also advised that there was a very, very extensive public process on this legislation. Surveys were offered to homes and businesses and the information will be provided back to those people. The minor revision to the text submitted on January 26, 2007, addresses a conflict with the definition for single family dwelling.

Concerning the existing levees, Carroll believes that there was discussion over the years that the design and construction was not as adequate as the Corps thought and there might be a failure of some of those levees. Johnson responded, suggesting that there were two issues with the levee system. 1) One of the things unique to Lincoln is that these levees were not built necessarily from scraps. In its history, Salt Creek had been straightened during several decades and the material from the straightening was piled on the side of the channel. Part of the system of levees was simply reshaping and creating the elevation of those bank levees. They functioned very well since 1965 when the first ones were completed. The Corps was concerned because of some dispersive clay. This problem has been addressed all the way through with maintenance operations. Detailed testing has been done and there is no longer a concern. 2) The other concern is the overtopping. The Corps looks at how much freeboard there is at the top of the levee above the 100-year elevation. If you are going to have a certified 100-year flood protection levee system, the top has to be three foot higher than the 100-year floodplain elevation. These levees do not have that additional three feet. It is not that they are failing, but part of the probability analysis because they don't have that freeboard. The levees are structurally sound. They function very well for the limit of the storm from which they can protect.

Strand commented that, as a realtor, she is always concerned when houses get put in floodplains because the value drops. How many houses will be affected and be required to pay flood insurance? Fleck-Tooze did not have a total number of houses – there were areas that came in and others that came out. Surveys were done of those homes on the fringes. Surveys were offered to 526 buildings that were on the fringe, and of those 139 were surveyed. Of those that were surveyed, 76 were out and 63 were in. Fleck-Tooze offered to provide an actual number.

Strand asked for a quick synopsis of the steps a business or homeowner would have to go through if they added onto an existing business or house, etc. Fleck-Tooze advised that if the owner wanted to make some changes, a floodplain permit would be required. If they are going to make a substantial improvement of more than 50% of the property, then they are required to bring that improvement into compliance with the standards. Minor improvements can be done without that change. More substantive improvements would require compliance.

Esseks asked for a restatement of the reasons for the one-foot rise as opposed to, for example, ½ foot. Fleck-Tooze explained that the effort was to bring updated maps with the best available information. Because of the uniqueness of Salt Creek, that effort has resulted with this companion ordinance, which is simply to meet the minimum requirements to allow up to one foot above the floodplain. We have adopted a "no rise" standard, and the task force had also recommended a similar standard for the existing urban area. Within the existing urban area, the Salt Creek floodplain comprised about 60% of the total. The reason this is before the Commission today is simply reflecting the minimum FEMA floodplain standards.

For the non-expert, Esseks wondered what a one-foot rise can do? Fleck-Tooze believes it would be a significant impact. Now that we have this model, we have the ability to answer some of those questions. Johnson further responded, stating that in the new study, we are not seeing significant changes in the 100-year floodplain elevation, so even today that one foot applies. If you don't change the floodplain elevation, this ordinance doesn't really change that risk because you still have the ability today to go in and fill more than the 35 or 45% up to 100%. There is a greater risk out there today because they could literally fill the entire flood storage area, which would most likely result in much more than one foot of rise. The impact is on those structures that were pre-existing before the last floodplain map was done. Ever since that map was put in place, any new structure has their first floor elevated the one foot above. Even with a one foot rise, it still stays right at or slightly below. It is really the existing structures.

Esseks inquired as to how accurate and how predictable the tool is that would be used in allocating the 35% and 40% storage areas. What are we relying upon? **Pat O'Neill with CDM,** project manager of the study's technical analysis, explained that over the last five to six years, FEMA has put together standards and requirements for conducting these studies. Those standards and guidelines were followed. Basically, there is a selection of different types of

computer models and there are very strict standards on the type of topographical data and data on particular structures that are used in the model. The standard models were used to predict or estimate the floodplain elevations.

Esseks wanted confirmation that these processes are professional and can be trusted. O'Neill acknowledged that FEMA's record has not been outstanding; however, he believes the processes used are very defendable. He has practiced in this area for 15 years and this has been the most thorough engineering study that he has been involved with. He believes it is the best tool that is being used by engineers. It is the latest tool that is the most complex and handles the most difficult situations. He is very comfortable with the results.

There was no testimony in opposition.

DeKalb reiterated that the language for the new approach is not in the code today. This legislation adds provisions to the zoning code to be able to utilize this technique.

ACTION BY PLANNING COMMISSION: January 31, 2007

Carroll moved to approve the text amendment, as revised on January 26, 2007, seconded by Sunderman and carried 8-0: Sunderman, Krieser, Esseks, Taylor, Carroll, Cornelius, Strand and Carlson voting 'yes'; Larson absent. This is a recommendation to the City Council.

CITY OF LINCOLN
NEBRASKA

MAYOR COLEEN J. SENG

lincoln.ne.gov

Public Works and Utilities Department
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RECEIVED
JAN 2 2007
LINCOLN CITY/LANCASTER COUNTY
PLANNING DEPARTMENT

January 2, 2007

Marvin Krout, Planning Director
Lincoln-Lancaster Co. Planning Dept.
555 S. 10th Street
Lincoln, NE 68508

Dear Marvin:

Attached is a proposed text change to Chapter 27.52 of the Zoning Ordinance to adopt standards for Salt Creek Flood Storage Areas for Planning Commission review and recommendation to the City Council. **Please schedule this text change on the January 31st Planning Commission agenda.** This text change is necessary as a companion to a resolution to recognize the Salt Creek 100-year Floodprone Area and revised Floodway as the best available information for local flood regulation purposes. The resolution will be introduced to the City Council with the ordinance as a related item.

Floodplain Mapping Update

The Salt Creek mapping update associated with this text change updates the floodplain and floodway extending from approximately ½ mile south of Saltillo Road to the confluence with Stevens Creek. The information has been submitted to the Federal Emergency Management Agency (FEMA) for adoption on the FEMA floodplain maps, but the FEMA maps are not expected to be officially adopted until 2008. This is the fifth of five stream reaches which are part of the same FEMA map update, where more accurate flood hazard information has been generated as part of Lincoln's Cooperating Technical Partnership with FEMA. Updated information for four other stream reaches (Beal Slough, SE Upper Salt Creek, Stevens Creek, and Cardwell Branch) was adopted by the City Council on January 9, 2006. Adoption of the Salt Creek Floodprone Area as best available information will be consistent with the approach on these other watersheds.

Zoning Ordinance Text Change - Standards for Flood Storage Areas

This text change addresses some unique features of the Salt Creek floodplain. If the floodway were mapped in a traditional fashion along Salt Creek, it would extend outside of the levees and into the existing neighborhoods and business areas at some locations. This is significant, because regulations for what can be built in the floodway are much more restrictive than the flood fringe. Due to the circumstances along Salt Creek relating to the levee and Flood Storage Areas, FEMA will allow the floodway to remain along the levee system with the condition that a portion of the flood storage volume in each flood storage area is preserved. (See attached Salt Creek Floodplain Mapping pamphlet for additional information). The companion ordinance is needed to insure that the specified amount of flood storage in each Flood Storage Area is preserved by limiting the percentage of allowable fill.

LINCOLN
The Community of Opportunity

Technical Review

The City, as a Cooperating Technical Partner with FEMA, contracted with a consulting firm to update the floodplain mapping for Salt Creek. The technical floodplain study has been completed in compliance with FEMA's Guidelines and Specifications for Flood Hazard Mapping Partners, certified by a licensed engineer, and submitted to FEMA. FEMA has completed an initial review of the study and map update. In addition, the proposed standards for Salt Creek Flood Storage Areas have been reviewed by FEMA and the Nebraska Department of Natural Resources and found to be satisfactory. Furthermore, the draft technical information was made available to the engineering community beginning in March of 2006, with a technical briefing in May.

Mayor's Floodplain Task Force and Comprehensive Plan

The Salt Creek Floodplain Mapping Update was undertaken largely in response to the recommendations of the Mayor's Floodplain Task Force, which acknowledged the risks and challenges associated with managing the Salt Creek floodplain based upon data that is more than 20 years out of date. This outdated information was recognized to be especially problematic for Salt Creek, because the flood storage areas identified in the early 1980's were never regulated by ordinance. The Task Force specifically recommended "a new, comprehensive floodplain study and FEMA floodplain mapping effort" for Salt Creek.

This text change and the associated map adoption are also in conformance with the Lincoln-Lancaster Co. Comprehensive Plan, including the following two strategies:

> *"Give special consideration to the Salt Creek floodplain from Van Dorn Street to Superior Street where the FEMA Flood Insurance Study recommends preserving flood storage so as not to increase flood heights greater than one foot.*
>
> *Improve the accuracy of floodplain mapping and make it a priority to which specific resources are dedicated. Continue to develop a comprehensive, watershed approach to floodplain mapping."*

Floodplain Standards

While the Floodplain Task Force recommended that No Net Rise/Compensatory Storage standards be adopted for the Existing Urban Area (which incorporates a large portion of Salt Creek), the Task Force also "acknowledged that to accurately and completely address the impacts of alternative floodplain management concepts specifically on Salt Creek would require an extensive study of the of the entire basin with new mapping, new hydrology and new hydraulics..." Accordingly, it is important to note that the currently proposed text change relates strictly to the mapping of the Salt Creek floodplain and regulation in accordance with the minimum state and federal standards. The restriction on percentage of allowable fill by flood storage area assures only that fill in the floodplain will not increase flood heights greater than one foot. After the completion of the Salt Creek mapping update, it is expected that the dialogue will continue regarding the potential for more restrictive flood standards in the Existing Urban Area.

Public Process

The Salt Creek Floodplain Mapping Update has had an extremely extensive public process that began in March of 2005, and included the following:

- 3 open houses
- multiple mailings to property owners, agencies, engineers, neighborhood and business associations, and other interest groups (approx. 12,000 total)
- approximately 30 presentations and meetings with a range of agency and interest groups
- personal contacts
- technical briefing for engineers
- flood insurance seminar
- extensive website with maps and information at lincoln.ne.gov keyword: Salt Creek

In addition, last week, letters were sent to property owners with buildings located at the edge of the floodprone area, offering to conduct a survey of the elevation at no cost as a service to provide certainty about whether the structure is in the floodprone area. This service has also been offered by the City//NRD in other watersheds where floodplain map updates are being completed.

Conclusion

It is anticipated to be a year or more before the FEMA floodplain maps are updated to reflect this technical update. In the meantime, it is critical that we use the best available flood hazard information for Salt Creek for local regulation, just as we have on the other stream reaches in Lincoln for which flood hazard information has been updated. For Salt Creek, this requires a companion text change to address the unique flood storage areas.

Please direct questions regarding this application to Ben Higgins in the Public Works and Utilities Department at 441-7589 or bhiggins@lincoln.ne.gov.

Sincerely,

Karl Fredrickson, Director
Public Works & Utilities Dept.

Glenn Johnson, General Manager
Lower Platte South NRD

cc: Nicole Fleck-Tooze, Ben Higgins - PW/U
Mike Merwick, Dale Stertz, Lana Tolbert - B&S
Marc Wullschleger, Wynn Hjermstad - UD
Lynn Johnson - P&R

Attachments (12 copies):
Proposed Zoning Ordinance Text Change
Salt Creek Floodplain Mapping pamphlet
Salt Creek Floodprone Area map
Salt Creek Flood Storage Area Detail map

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Nicole Tooze/Notes
01/26/2007 11:42 AM

To Jean L Walker/Notes@Notes
cc Michael V Dekalb/Notes@Notes, Lana T Tolbert/Notes@Notes, glenn@lpsnrd.org, bdunnigan@dnr.ne.gov, Benjamin J Higgins/Notes@Notes,
bcc
Subject Proposed Revision to Salt Creek Regulations - CORRECTED

Per Rick Peo, attached please find *corrected* revisions to the proposed ordinance for Salt Creek Flood Storage Areas to address a minor clarification. **This email supersedes the 1/25 email.**

During the review process, Planning and Building and Safety noted a conflict with the definition for Single Family Residential Building and the definition for Single-Family Dwelling already contained within the Zoning Code. The definition was provided in reference to an exemption for non-substantial improvements to single-family dwellings and for structures which are "wet floodproofed" and therefore do not affect flood storage because flood water flows into the structure and is not displaced by the structure.

The revision omits the definition for Single Family Residential Building. It revises Section 27.52.035 (a)(2) to refer instead to "construction and substantial improvements that are allowed to be wet floodproofed as specified in section 27.52.030 (d)...", and revises Section 27.52.035 (a)(3) to refer to Single-Family Dwelling. These revisions eliminate the conflict with the definitions while keeping the intent of the code the same. To distinguish the revisions from the original proposal, all new text changes are highlighted, and new text to be added is also double-underlined.

Questions regarding this revision or the application in general can be directed to me at 441-6173 or ntooze@lincoln.ne.gov.

Sincerely,

Nicole Fleck-Tooze
Public Works & Utilities Dept.

070126_DRAFT_SaltCreekOrdinance.wpd 070126_DRAFT_SaltCreekOrdinance.doc

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CHAPTER 27.52

FLOOD REGULATIONS FOR EXISTING URBAN AREA

Sections:

27.52.010	**Scope of Regulations.**
27.52.020	**Definitions.**
27.52.030	**Standards.**
27.52.035	**Standards for Salt Creek Flood Storage Areas**
27.52.040	**Administration.**
27.52.050	**Permit Procedures.**
27.52.055	**Permit Expiration.**
27.52.060	**Special Permits.**
27.52.070	**Pre-existing Uses.**
27.52.080	**Penalties for Violation.**
27.52.090	**Amendments.**

27.52.010 Scope of Regulations.

The regulations set forth in this chapter, or set forth elsewhere in this title when referred to in this chapter, are known as the Flood Regulations for Existing Urban Area. The regulations shall apply to all lands within the Existing Urban Area in the floodplain or floodprone area within the zoning jurisdiction of the City of Lincoln that are subject to a one percent or greater chance of flooding in any given year. The September 21, 2001 official Flood Insurance Rate Map (FIRM) and Flood Insurance Study (FIS) for Lancaster County, Nebraska and Incorporated Areas and any revisions thereto are hereby adopted by reference and declared to be a part of this Chapter. A copy of the FIRM and FIS are on file in the Department of Building and Safety.

The degree of flood protection required by this Chapter is considered reasonable for regulatory purposes and is based on engineering and scientific methods of study. Larger floods may occur on rare occasions or the flood height may be increased by man-made or natural causes, such as ice jams and bridge openings restricted by debris. Compliance with these regulations does not imply that lands outside a floodplain or floodprone areas or uses within such areas will be free from flooding or flood damage. This Chapter shall not create liability on the part of the City of Lincoln or any officer or employee thereof for any flood damages that may result from reliance on this Chapter or any administrative decision lawfully made thereunder. (Ord. 18662 §1; January 9, 2006: prior Ord. 18359 §1; May 10, 2004).

27.52.020 Definitions.

For the purpose of this chapter, certain terms and words are hereby defined:

100-Year Flood shall mean the flood having a one percent chance of being equaled or exceeded in any given year.

100-Year Flood Elevation shall mean the height of the flood water that would occur during a 100-Year Flood.

Base Flood shall mean the flood having a one percent chance of being equaled or exceeded in any given year.

Basement shall mean any enclosed area having its floor below grade level on all sides.

Development shall mean any man-made change to improved or unimproved real estate, including but not limited to, buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations, or storage of equipment or materials.

Development Area shall mean the entire site of a proposed development or improvement.

Existing manufactured home park or subdivision shall mean a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including, at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed before the effective date of this ordinance.

Existing Urban Area shall mean those areas inside the corporate limits of the City of Lincoln. as well as those areas outside the corporate limits having a zoning designation other than AG Agriculture and AGR Agricultural Residential, on the effective date of this ordinance.

Expansion to an existing manufactured home park or subdivision shall mean the preparation of additional sites by the construction of facilities for serving the lots on which the manufactured homes are to be affixed (including the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads).

FEMA shall mean the Federal Emergency Management Agency.

Fill shall mean soil, buildings, or other material that eliminates flood storage volume in the floodplain.

Flood Insurance Rate Map (FIRM) shall mean the September 21, 2001 Flood Insurance Rate Map and any revisions thereto, on which FEMA has delineated both the areas of special flood hazards and the risk premium zones applicable to the community.

Flood Insurance Study (FIS) shall mean the Flood Insurance Study for Lancaster County, Nebraska and Incorporated Areas published by FEMA in conjunction with the FIRM and containing background data such as base flood discharges and water surface elevations used to prepare the FIRM.

Flood Storage Area, or Salt Creek Flood Storage Area shall mean a portion of the Salt Creek floodprone area that stores floodwaters along the stream reach adjacent to the Salt Creek levee and is assigned a percentage of allowable fill, as shown on the Salt Creek Floodprone Area and Salt Creek Flood Storage Area Detail maps adopted by resolution of the City Council, copies of which are on file with the Department of Building and Safety.

Floodplain shall mean those lands which are subject to a one percent or greater chance of flooding in any given year, as shown on the Flood Insurance Rate Map issued by FEMA for Lancaster County, Nebraska and incorporated areas, as amended. Copies of the said maps shall be on file in the Department of Building and Safety.

Floodprone area shall mean those lands subject to a one percent or greater chance of flooding in any given year, as determined by hydrologic and hydraulic studies completed by the City

or other government agency, or other acceptable source as approved by the City where this is the best available information.

Floodproofing shall mean any combination of structural and nonstructural additions, changes, or adjustments to structures which reduce or eliminate flood damage to real estate or improved real property, water and sanitary facilities, structures and their contents.

Floodway shall mean the channel of a river or other watercourses and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one foot.

Historic structure shall mean any structure that is: (a) listed individually in the National Register of Historic Places (a listing maintained by the Department of the Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register; (b) certified or preliminarily determined by the City of Lincoln, a Certified Local Government (CLG), in consultation with the Nebraska State Historic Preservation Officer (SHPO), as contributing to the historical significance of a locally or nationally designated historic district; (c) individually designated as a Landmark by the City of Lincoln, a CLG, under the provisions of Chapter 27.57 of the Lincoln Municipal Code.

Letter of Map Change (LOMC) shall mean a determination document issued by FEMA that officially revises the FIRM based on updated information, whether improved data or topography changes created by fill placement. Includes Letter of Map Amendment (LOMA), Letter of Map Revision (LOMR), and Letter of Map Revision based on Fill (LOMR-f).

Lowest floor shall mean the lowest floor of the lowest enclosed area (including basement). An unfinished or flood-resistant enclosure, usable solely for parking of vehicles or building access, in an area other than a basement area is not considered a building's lowest floor; provided that such enclosure is not built so as to render the structure in violation of the applicable non-elevation design requirements of this ordinance.

Manufactured home shall mean, for purposes of this chapter, a structure, transportable in one or more sections, which is built on a permanent chassis and is designed for use with or without a permanent foundation when attached to the required utilities. The term "manufactured home" shall not include a "recreational vehicle."

Manufactured home park or subdivision shall mean a parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale.

NAVD shall mean the North American Vertical Datum of 1988.

New construction shall mean structures for which the start of construction commenced on or after the effective date of this ordinance and shall include any subsequent improvements to such structures.

New manufactured home park or subdivision shall mean a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed on or after the effective date of this ordinance.

Non-substantial improvement shall mean any improvement that does not meet the definition of substantial improvement, as defined in this section.

Percentage of allowable fill shall mean the percentage of the volume of flood storage in each Flood Storage Area of Salt Creek that can be allowed to be eliminated without increasing the 100-year flood elevation of Salt Creek by more than one foot.

Qualified engineer shall mean a registered professional engineer who, by reason of training and experience, is considered knowledgeable in hydrology and hydraulics and their application to the flood insurance study and has demonstrated competence to the satisfaction of the Director of Building and Safety.

Recreational vehicle shall mean a vehicle which is:

(1) built on a single chassis;

(2) 400 square feet or less when measured at the largest horizontal projections;

(3) designed to be self-propelled or permanently towable by a light duty truck; and

(4) designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use.

Riverine shall mean relating to, formed by, or resembling a river (including tributaries, streams, brooks, etc.).

[redacted]

Special Flood Hazard Area shall mean the land in the floodplain subject to a one percent or greater chance of flooding in any given year.

Start of construction shall mean either the first placement of permanent construction of a structure on a site, such as the pouring of slabs or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation, or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading, and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footings, piers or foundations or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not as part of the main structure. For a substantial improvement, the actual start of construction shall mean the first alteration of any wall, ceiling, floor, or other structural part of a building, whether or not that alteration affects the external dimension of the building.

Structure shall mean, for floodplain management purposes, a walled and roofed building, including a gas or liquid storage tank, that is principally above ground, as well as a manufactured home.

Substantial damage shall mean damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal to or exceed fifty percent of the market value of the structure before the damage occurred.

Substantial improvement shall mean any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds fifty percent of the market value of the structure before the start of construction of the improvement. Substantial improvement shall include structures which have incurred substantial damage, regardless of the actual repair work performed. The term shall not, however, include either (i) any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications which

have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions, or (ii) any alteration of a historic structure, provided that the alteration will not preclude the structure's continued designation of a historic structure.

Variance shall mean a grant of relief from the terms of a floodplain management regulation, this shall be done by Special Permit in accordance with Section 27.52.060 of this chapter.

Violation shall mean the failure of a structure or other development to be fully compliant with the floodplain management regulations as set forth in this chapter. A structure or other development without the elevation certificate, other certifications, or other evidence of compliance as required is presumed to be in violation until such time as that documentation is provided.

Watershed Master Plan shall mean a plan generated by the City or by the City in cooperation with other agencies, which includes hydrologic and hydraulic modeling for the 100-year event, including 100-year floodplain elevation and limits. (Ord. 18662 §2; January 9, 2006: prior Ord. 18359 §2; May 10, 2004).

27.52.030 Standards.

The following shall be the standards to be followed in connection with the Flood Regulations for the Existing Urban Area:

(a) General Standards:

(1) No development or substantial improvement shall be permitted within the floodway as designated by the Federal Emergency Management Agency (FEMA) or as determined by hydrologic and hydraulic studies completed by the City or other government agency, or other acceptable source as approved by the City, unless the applicant has demonstrated that the proposed development or substantial improvement is in conformance with the provisions of Section 27.52.030(h) below.

(2) In those areas where a floodway has not been designated, no development or substantial improvement may be permitted within the floodplain or floodprone area unless the applicant has demonstrated that the proposed development or substantial improvement, when combined with all other existing and reasonably anticipated developments or substantial improvements, will not increase the water surface elevation of the 100-year flood more than one foot at any location.

An exception to the above shall be permitted provided the applicant has acquired by land rights purchase, flowage easement, or other legal arrangement the right to increase the flood levels on all affected lands greater than one foot (1.0'), and provided that before any permit is issued the applicant submits a FEMA approved Conditional Letter of Map Revision to the Director of Building and Safety. When such encroachment is completed, a FEMA approved Letter of Map Revision must also be provided by the applicant.

(3) Roadway bridges, and other drainage facilities, may have their superstructure submerged or partially submerged below the base flood level, provided that the facility has been designed to resist the hydrostatic and hydrodynamic loads as well as the effects of the buoyancy as certified by a registered professional engineer.

(4) Within the floodplain or floodprone area, all new construction and substantial improvements shall be anchored to prevent flotation, collapse, or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads including the effects of buoyancy; constructed with materials and utility equipment resistant to flood damage; and constructed by methods and practices that minimize flood damage. Electrical, heating, ventilation, plumbing, and air-conditioning

equipment and other service facilities shall be elevated at least one foot above the base flood elevation or designed so as to prevent water from entering or accumulating within the components during conditions of flooding. A registered professional engineer or architect shall certify that these provisions are satisfied.

(5) The location, grade, and floodproofing of all new and replacement water and sanitary sewer systems which are to be extended into or through any portion of the floodplain or floodprone area to serve the proposed development shall first be approved by the city prior to the extension of such utilities into the floodplain.

(6) New or replacement water supply systems and sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into said systems and discharges from said systems into flood waters. Individual disposal systems shall be designed in accordance with the standards set forth in Chapter 24.38 of the Lincoln Municipal Code in order to minimize impairment to them or contamination from them during flooding.

(7) On-site waste disposal systems shall be located to avoid impairment to the system or contamination from such systems during flooding.

(8) The storage or processing of materials that are in time of flooding buoyant, flammable, explosive, or could be injurious to human, animal, or plant life is prohibited.

(9) Storage of other material or equipment may be allowed if not subject to major damage by floods and firmly anchored to prevent flotation or if readily removable from the area within the time available after the issuance of flood warning by appropriate authorities.

(10) Filling, grading, and excavation may be allowed in the floodplain or floodprone area under the following conditions:

(i) Fill shall be protected against erosion and sediment by such measures as rip-rap, vegetative cover, bulkheading, or sedimentation basins as approved by the Director of Building and Safety.

(ii) Any fill to be deposited in the floodplain or floodprone area must be shown by the applicant not to be a detriment to the general public as well as the surrounding land owners.

(iii) Fill materials shall be of a selected type, preferably clean dirt, gravel, or rock no greater than two inches in diameter. The use of decomposing materials, such as wood and other degradables, shall be prohibited. Fill shall be placed in six inch compacted layers. Fill selection and placement shall recognize the effects of saturation from flood waters on slope stability, uniform and differential settlement, and scour potentials.

(iv) Prior to placement of any fill or embankment materials, the land upon which fill is to be placed shall be cleared of debris, snags, stumps, brush, down timber, logs, and other objects. All materials and debris from this clearing shall be removed from the proposed fill and disposed of at approved locations outside the floodplain or floodprone area.

(v) Fill slopes for granular materials shall be no steeper than one vertical on two horizontal unless substantiating data justifying steeper slopes are submitted to the Director of Building and Safety and approved.

(vi) Excavation in the floodplain or floodprone area shall be done so that the land surface is maintained in such a manner that surface waters do not collect and pond unless specifically approved by the Director of Building and Safety.

(b) Residential Construction. All new construction and substantial improvements of residential structures within the floodplain or floodprone area shall have the lowest floor, including basement, elevated at least one foot above the base flood level. Garages and storage buildings used exclusively for the storage of motor vehicles, and storage of other items readily removable in the event of a flood warning may have their lowest floor below flood elevation, provided the building structure is capable of withstanding hydrostatic and hydrodynamic forces caused by the 100-year flood and, further, provided that no utilities are installed in the building except elevated or floodproofed electrical fixtures. If the building is converted to another use, it must be brought into full compliance with the requirements of this title governing such uses.

(c) Nonresidential Construction. All new construction and substantial improvements of commercial, industrial, and other nonresidential structures within the floodplain or floodprone area shall either have the lowest floor, including basement, elevated at least one foot above the base flood level or, together with attendant utility and sanitary facilities, be floodproofed so that below the base flood level plus one foot the structure is watertight in accordance with the performance standards set forth in the city's building code. A registered professional engineer or architect shall develop or review structural design, specifications, and plans for the construction, and shall certify that the design and methods of construction meet the watertight performance standards. The certification shall be provided to the city as set forth in Section 27.52.040 of this chapter.

(d) For all new construction and substantial improvements, fully enclosed areas below the lowest floor that are usable solely for parking of vehicles, building access or storage in an area other than a basement and which are subject to flooding shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must either be certified by a registered professional engineer or architect or must meet or exceed the following minimum criteria:

(1) A minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding shall be provided;

(2) The bottom of all openings shall be no higher than one foot above grade; and

(3) Openings may be equipped with screens, louvers, or other coverings or devices; provided, that they permit the automatic entry and exit of floodwaters.

(e) Manufactured Home Parks and Subdivisions. All manufactured homes shall be located in a manufactured home park or a manufactured home subdivision in accordance with Sections 27.63.120 and 27.63.125 of this title. No manufactured home shall be located in a manufactured home park or subdivision within the floodplain or floodprone area unless the following conditions are met:

(1) New manufactured home parks and subdivisions; expansions; substantial damage. Manufactured homes placed (i) on individual lots within or outside of new manufactured home parks or subdivisions, (ii) on individual lots within an expanded area of an existing manufactured home park or subdivision, or (iii) in an existing manufactured home park or subdivision in which a manufactured home has incurred substantial damage as the result of a flood, shall be elevated on a permanent foundation such that their lowest floor is at least one foot above the base flood elevation and be securely anchored to an adequately anchored foundation system in accordance with the standards to resist floatation, collapse, and lateral movement set forth in subsection (f) below;

(2) Existing manufactured home parks and subdivisions. Manufactured homes to be placed or substantially improved on individual lots in existing manufactured home parks or subdivisions, shall either (i) be elevated on a permanent foundation such that their lowest floor is at least one foot above the base flood elevation or (ii) be supported by reinforced piers or other foundation elements of at least equivalent strength that are no less than three feet in height above grade and be securely anchored to an adequately anchored foundation system in accordance with the standards to resist floatation, collapse, and lateral movement set forth in subsection (f) below.

If the option provided by (ii) above is exercised, the current owner and occupant, and any future buyer, renter, or occupier shall jointly acknowledge in writing that the option of piers as an alternative to placement of the manufactured home one foot above the base flood elevation has been exercised and, therefore, may be subject to flooding. Such acknowledgment shall be filed with the Director of Building and Safety prior to the issuance of hook-up permits to the subject home.

(3) Adequate surface drainage and access for a hauler are provided;

(4) Where manufactured homes are elevated on pilings, lots shall be large enough to permit steps, piling foundations shall be placed in stable soil no more than ten feet apart, and reinforcement shall be provided for pilings more than six feet above the ground level; and

(5) The grade of land for manufactured home parks or subdivisions which are situated within the floodplain or floodprone area shall be raised at least one foot above the base flood elevation.

(f) Manufactured Homes Located Outside of a Manufactured Home Park or Subdivision. Manufactured homes located outside of a manufactured home park or subdivision shall be elevated at least one foot above the base flood elevation or anchored to the elevated foundation to resist flotation, collapse, or lateral movement. Methods of anchoring may include, but are not limited to, use of over-the-top and frame ties to ground anchors;

(1) If over-the-top ties are used, such ties shall be provided at each of the four corners of the manufactured home, with two additional ties per side at intermediate locations except that manufactured homes less than fifty feet in length may provide only one additional tie per side;

(2) Frame ties shall be provided at each corner of the manufactured home with five additional ties per side at intermediate points except that manufactured homes less than fifty feet in length may provide only four additional ties per side;

(3) All components of the anchoring system shall be capable of carrying a force of 4,800 pounds; and

(4) Any additions to the manufactured home shall be similarly anchored.

(g) Recreational Vehicles:

(1) Shall be on the site for fewer than 180 consecutive days;

(2) Shall be fully licensed and ready for highway use (on its wheels or jacking system, is attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached additions); or

(3) Meet the requirements for manufactured homes.

(h) Floodways.

(1) Encroachments into the floodway are prohibited, including fill, new construction, substantial improvements, and other development within the floodway unless certification by a qualified engineer is provided, demonstrating that the proposed encroachment will

not result in any increase in flood levels during occurrence of the base flood discharge along the floodway profile.

An exception to the above shall be permitted provided the applicant has acquired by land rights purchase, flowage easement, or other legal arrangement the right to increase the flood levels on all affected lands, and provided that before any permit is issued the applicant submits a Federal Emergency Management Agency (FEMA) approved Conditional Letter of Map Revision to the Director of Building and Safety. When such encroachment is completed, a FEMA approved Letter of Map Revision must also be provided by the applicant.

(2) If the above provision is satisfied, all new construction and substantial improvements shall comply with all other applicable provisions contained in Section 27.52.030.

(3) The placement of any manufactured home parks and manufactured home subdivisions and the construction of new structures for human habitation within the floodway is prohibited.

(i) AO Zones. Designated AO zones within the floodplain have special flood hazards associated with base flood depths of one to three feet where a clearly defined channel does not exist and where the path of flooding is unpredictable and indeterminate; therefore, the following provisions apply within AO zones:

(1) All new construction and substantial improvements of residential structures shall have the lowest floor (including basement) elevated above the highest adjacent grade at least as high as one foot above the depth number specified in feet on the FIRM (at least two feet if no depth number is specified).

(2) All new construction and substantial improvements of non-residential structures shall:

(i) Have the lowest floor elevated above the highest adjacent grade at least as high as one foot above the depth number specified in feet on the community's FIRM (at least two feet if no depth number is specified), or

(ii) Together with attendant utility and sanitary facilities be completely floodproofed to or above that level so that any space below that level is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy. Such certification shall be provided to the official as set forth in Section 27.52.040(d).

(3) Adequate drainage paths around structures on slopes shall be required in order to guide floodwaters around and away from proposed structures. (Ord. 18662 §3; January 9, 2006: prior Ord. 18403 §1; July 12, 2004: Ord. 18359 §3; May 10, 2004).

27.52.035 Standards for Salt Creek Flood Storage Areas

The following standards apply to the Salt Creek Flood Storage Areas.

(a) No development or improvement shall occur within any Salt Creek flood storage area unless the applicant has demonstrated that the total amount of flood storage volume to be eliminated by the development within the development area does not exceed, on a volumetric basis, the same percentage of allowable fill assigned to that flood storage area. The allowable fill shall be a percentage of the total flood storage volume available in the development area as of the effective date of this ordinance.

(1) For the purposes of the Salt Creek Flood Storage Area standards, the development area may include adjacent or non-adjacent parcels within the same flood storage area. Within a single flood storage area, the allowable fill for an entire development area will be considered on a net basis. Individual parcels within a development area may have an amount of fill that is greater than the percentage of allowable fill assigned to that flood storage area, provided a permanent conservation easement or permanent deed restriction to protect the flood storage is dedicated over another parcel or parcels within the development area, such that the net percentage of fill does not exceed the percentage of allowable fill.

(2) The above requirements for developments and improvements within a flood storage area of Salt Creek shall not apply to [redacted] that are allowed to be wet floodproofed as specified in section 27.52.030 (d) of this chapter. If wet floodproofing is not allowed for the structure as specified in these provisions or the applicant proposes to elevate the structure, then the requirements shall apply.

(3) [redacted] non-substantial improvements shall be exempt from the percentage of allowable fill requirements.

(4) Notwithstanding the requirements of this section, any development or improvement must comply with all other applicable provisions of this chapter.

27.52.040 Administration.

A development permit shall be required in conformance with the provisions of this chapter. All new construction of residential and nonresidential structures or other development, including the placement of manufactured homes, within the floodplain or floodprone area shall hereafter be in full compliance with the terms of this chapter and other applicable regulations. All existing residential and nonresidential structures that are not in compliance with the terms of this chapter shall be required to conform to these terms before substantial improvements can be made. It shall be the duty of the Director of Building and Safety to enforce this chapter. His duties shall include, but not be limited to:

(a) Review all development permits to assure that the permit requirements for this chapter have been satisfied;

(b) Review proposed development to assure that all necessary permits have been obtained from those agencies from which prior approval is required by federal, state or local law, including Section 404 of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1334;

(c) Notify affected adjacent communities and the Nebraska Department of Natural Resources in riverine situations prior to any alteration or relocation of a watercourse, and submit copies of such notifications to FEMA, and assure that the flood-carrying capacity within the altered or relocated portion of any watercourse is maintained;

(d) Require a registered professional engineer or registered professional land surveyor to verify the actual elevation in NAVD 1988 of the lowest floor, including basement, of all new or substantially improved structures and to which the new or substantially improved structures have been floodproofed. The certification of the lowest floor shall be submitted to the Director of Building and Safety at the point of construction when the lowest floor elevation may be established and prior to the erection of the walls of any buildings. Such information shall be recorded and maintained by the Director of Building and Safety;

(e) Where floodproofing is utilized for a particular structure, obtain certification from a registered professional engineer or architect that the floodproofing methods are adequate in accordance with appropriate provisions of the city's building code;

(f) Where interpretation is needed as to the exact location of boundaries of the floodplain or floodprone area; for example, where there appears to be a conflict between a mapped boundary and actual field conditions, obtain the necessary interpretation from appropriate city engineering staff of the Department of Public Works and Utilities;

(g) In Zone A (no base flood elevations determined), require that proposed developments (including proposals for manufactured home parks and subdivisions) greater than either five acres or fifty lots include within such proposals detailed base flood elevation data based on an engineering study performed by a qualified engineer in accordance with FEMA approved methods for generating detailed base flood elevations. This provision shall not apply where the use of the property is not being changed and where there are no physical changes on the site which have the potential to increase the flood hazard.

(h) When base flood elevation data have not been provided on the FEMA Flood Insurance Rate Map, through the provisions in Section 27.52.040(g) above, or in other studies already completed or accepted by the City, obtain, review, and reasonably utilize any base flood elevation and floodway data available from a federal, state, or other source, as criteria for requiring that new construction, substantial improvements, or other developments in the floodplain or floodprone area meet the standards of this chapter. (Ord. 18662 §4; January 9, 2006: prior Ord. 18359 §4; May 10, 2004).

27.52.050 Permit Procedures.

Application for a development permit shall be made to the Director of Building and Safety on forms furnished by him and may include, but not be limited to, the plans drawn to scale showing the nature, location, dimensions, and elevations of the area in question, existing or proposed structures, fill, storage of materials, drainage facilities, and the location of the foregoing. Specifically, the following information is required:

(a) Base flood elevation in NAVD 1988 datum. When utilizing National Geodetic Vertical Datum of 1929 (NGVD 1929) base flood elevations from FEMA floodplain maps, 0.50 feet shall be added to NGVD 1929 to obtain NAVD 1988, unless a more accurate conversion factor using an established conversion program is demonstrated to the satisfaction of the Director of Building and Safety.

(b) Elevation of the lowest floor, including basement, of all structures. All elevations shall be submitted in NAVD 1988.

(c) Elevation to which any nonresidential structure has been floodproofed. All elevations shall be submitted in NAVD 1988.

(d) Documentation and certification from a registered professional engineer or architect that the nonresidential floodproofed structure meets the floodproofing specifications set forth in the city's building code.

(e) Documentation and certification from a registered professional engineer that if the development is in the floodway, that the development will cause no rise in the 100-year flood elevation.

(f) Description of the extent to which any watercourse will be altered or relocated as a result of proposed development.

(g) Limits of floodway and floodplain or floodprone area.

(h) If the permit is for fill or the development of multiple structures, the following additional information is required to be shown on a grading and drainage plan:

(1) A grading plan showing existing and proposed grades, location of channel and hydraulic cross-sections and profiles, with elevations in NAVD 1988 datum.

(2) Hydrologic and hydraulic summary report.

(3) The type and extent of the proposed use or development of the land which is located within the floodplain or floodprone area, along with such information as is necessary to determine the effect flood waters will have on such development and use and the effect such development and use may have upon the flood waters. All such information shall show the location of the proposed use, areas of habitation and employment, including the location, size, and floor elevation of any structures, the location and elevation of all parking areas, and the use, location, and elevations of all open land areas.

(4) The amount of fill material brought into the floodplain or floodprone area from outside the floodplain or floodprone area. (Ord. 18662 §5; January 9, 2006: prior Ord. 18359 §5; May 10, 2004).

27.52.055 Permit Expiration.

Every floodplain permit shall expire and become null and void two years following the date of issuance, regardless of the status of the permitted work. Before such work can be recommenced, a new permit shall be first obtained to do so.

Any permittee holding an unexpired permit may apply for an extension of the time within which work must be completed. The Director of Building and Safety may extend the time for completion of the work for a period not exceeding one year upon the permittee showing that circumstances beyond the control of the permittee have prevented action from being taken to complete the work. No permit shall be extended more than once.

Any permit issued prior to the effective date of this ordinance shall expire and become null and void two years following the effective date of this ordinance, regardless of the status of the permitted work, and may not be extended by the Director of Building and Safety. Before such work can be recommenced, a new permit shall be first obtained to do so. (Ord. 18359 §6; May 10, 2004).

27.52.060 Special Permits.

The City Council of the City of Lincoln may, by special permit, in accordance with provisions set forth in Chapter 27.63 of this title:

(a) Grant variances from the requirements of this chapter which permit construction in a manner otherwise prohibited by this chapter where specific enforcement would result in unnecessary hardship. However, variances shall not be issued by the city within the selected floodway if any increase in flood levels during the base flood discharge would result.

(b) Grant requests for substantial improvements of existing residential and nonresidential structures that are not in conformity with the provisions of this chapter.

(c) Attach certain conditions to the special permit as it deems necessary to further the purposes of this chapter.

In passing upon such special permits, the city council shall consider that permits shall only be issued upon a determination that (i) they are the minimum necessary, considering the flood hazard, to afford relief; (ii) the granting will not result in increased flood heights, additional threats to public safety, extraordinary public expenses, create nuisances, cause fraud on or victimization of the public, or conflict with existing local laws or ordinances; and (iii) the decision is based upon a showing of good and sufficient cause and a reasonable use of land involved.

Any applicant to whom a special permit is granted shall be given a written notice that the cost of flood insurance will be commensurate with the increased risk resulting from the reduced lowest floor elevation. The Director of Building and Safety shall maintain all the records of special permits issued by the city council and report them to FEMA upon request. (Ord. 18359 §7; May 10, 2004).

27.52.070 Pre-existing Uses.

The following pre-existing uses will be allowed in the floodplain:

(a) Continuation of pre-existing uses. The lawful use of a building and premises existing prior to the effective date of this ordinance may be continued although such use does not conform to the provisions hereof; provided, that no expansion, enlargement, change, or alteration shall be made except in conformance with Section 27.52.070(b) below.

(b) Substantial improvements of preexisting uses. No existing building and premises which is not in conformity with the provisions of this chapter shall be substantially improved unless it is done in conformity with the provisions of this chapter. A request for the substantial improvement of a pre-existing use which does not conform to the provisions of this chapter shall be processed through special permit procedures set forth in Section 27.52.060 of this chapter. (Ord. 18359 §8; May 10, 2004).

27.52.080 Penalties for Violation.

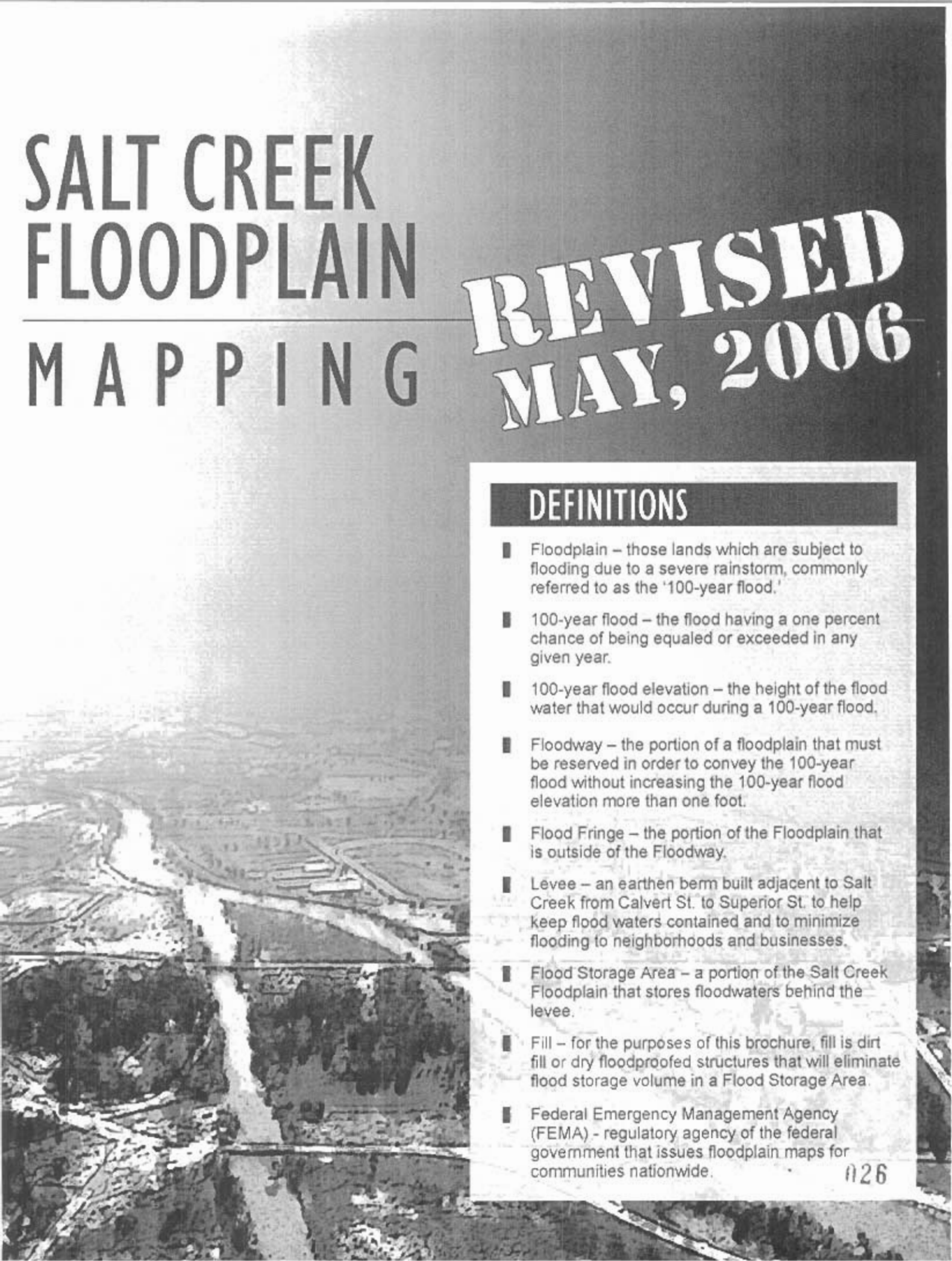
Violation of the provisions of this chapter or failure to comply with any of its requirements shall be punished in accordance with Chapter 27.81. (Ord. 18359 §9; May 10, 2004).

27.52.090 Amendments.

The regulations, restrictions, and boundaries set forth in this chapter may from time to time be amended, supplemented, changed, or appealed to reflect any and all changes in the National Flood Disaster Protection Act of 1973, in accordance with the procedures set forth in Chapter 27.81. The regulations of this chapter are in compliance with the National Flood Insurance Program regulations, as amended, and the 1983 Nebraska Flood Plains Regulations Act. (Ord. 18359 §10; May 10, 2004).

SALT CREEK FLOODPLAIN MAPPING

REVISED MAY, 2006



DEFINITIONS

- Floodplain – those lands which are subject to flooding due to a severe rainstorm, commonly referred to as the '100-year flood.'
- 100-year flood – the flood having a one percent chance of being equaled or exceeded in any given year.
- 100-year flood elevation – the height of the flood water that would occur during a 100-year flood.
- Floodway – the portion of a floodplain that must be reserved in order to convey the 100-year flood without increasing the 100-year flood elevation more than one foot.
- Flood Fringe – the portion of the Floodplain that is outside of the Floodway.
- Levee – an earthen berm built adjacent to Salt Creek from Calvert St. to Superior St. to help keep flood waters contained and to minimize flooding to neighborhoods and businesses.
- Flood Storage Area – a portion of the Salt Creek Floodplain that stores floodwaters behind the levee.
- Fill – for the purposes of this brochure, fill is dirt fill or dry floodproofed structures that will eliminate flood storage volume in a Flood Storage Area.
- Federal Emergency Management Agency (FEMA) - regulatory agency of the federal government that issues floodplain maps for communities nationwide.

INTRODUCTION

Nationwide, floodplain maps for communities are issued by the Federal Emergency Management Agency (FEMA). The purpose of the Salt Creek Floodplain Mapping Update is to produce revised FEMA floodplain maps for Salt Creek, using the latest technology and data available to accurately reflect Salt Creek's floodplain. For more information, see the "Salt Creek Floodplain Mapping Update - Project Overview" fact sheet for the background and overview of this mapping effort.

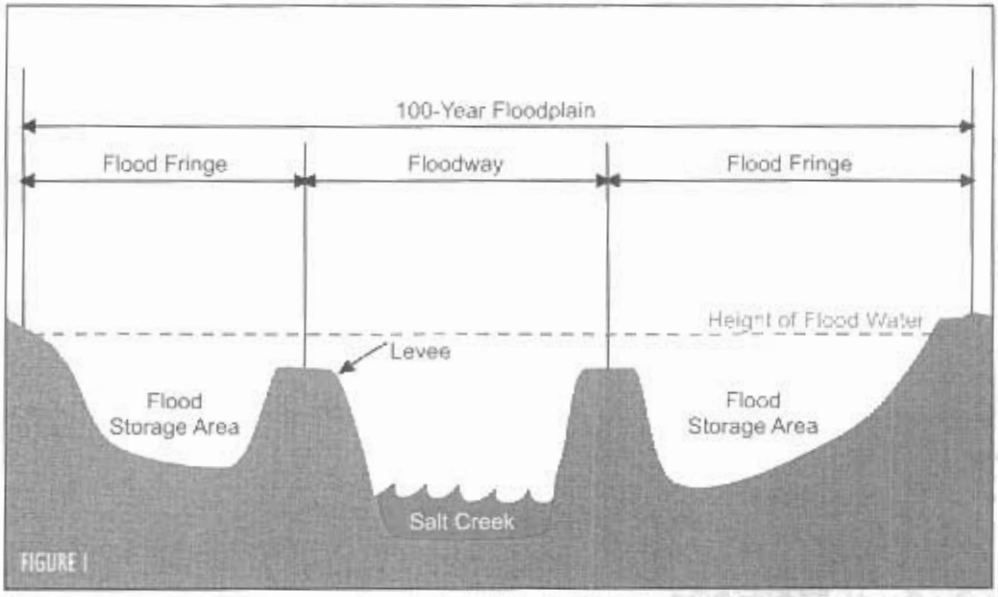


Figure 1 shows a typical cross section of the Salt Creek channel, Flood Storage Areas behind the levee and Floodplain limits.

A portion of Salt Creek that drains through Lincoln is bounded by a levee on both sides extending from near Calvert St. in the south to Superior St. in the north. The levee is an earthen berm built adjacent to Salt Creek in order to help keep flood waters contained and to minimize flooding to neighborhoods and businesses. While the levee effectively contains flood waters produced by many major storms, during an extreme storm, such as the 100-year flood, the water will spill over the top of the levee and spread out into areas behind the levee. These areas are referred to as 'Flood Storage Areas'. FEMA floodplain maps divide the floodplain into the Floodway and Flood Fringe. A Floodway is the portion of a floodplain that must be reserved in order to convey the 100-year flood without increasing the 100-year flood elevation more than one foot.

PROJECT OBJECTIVES

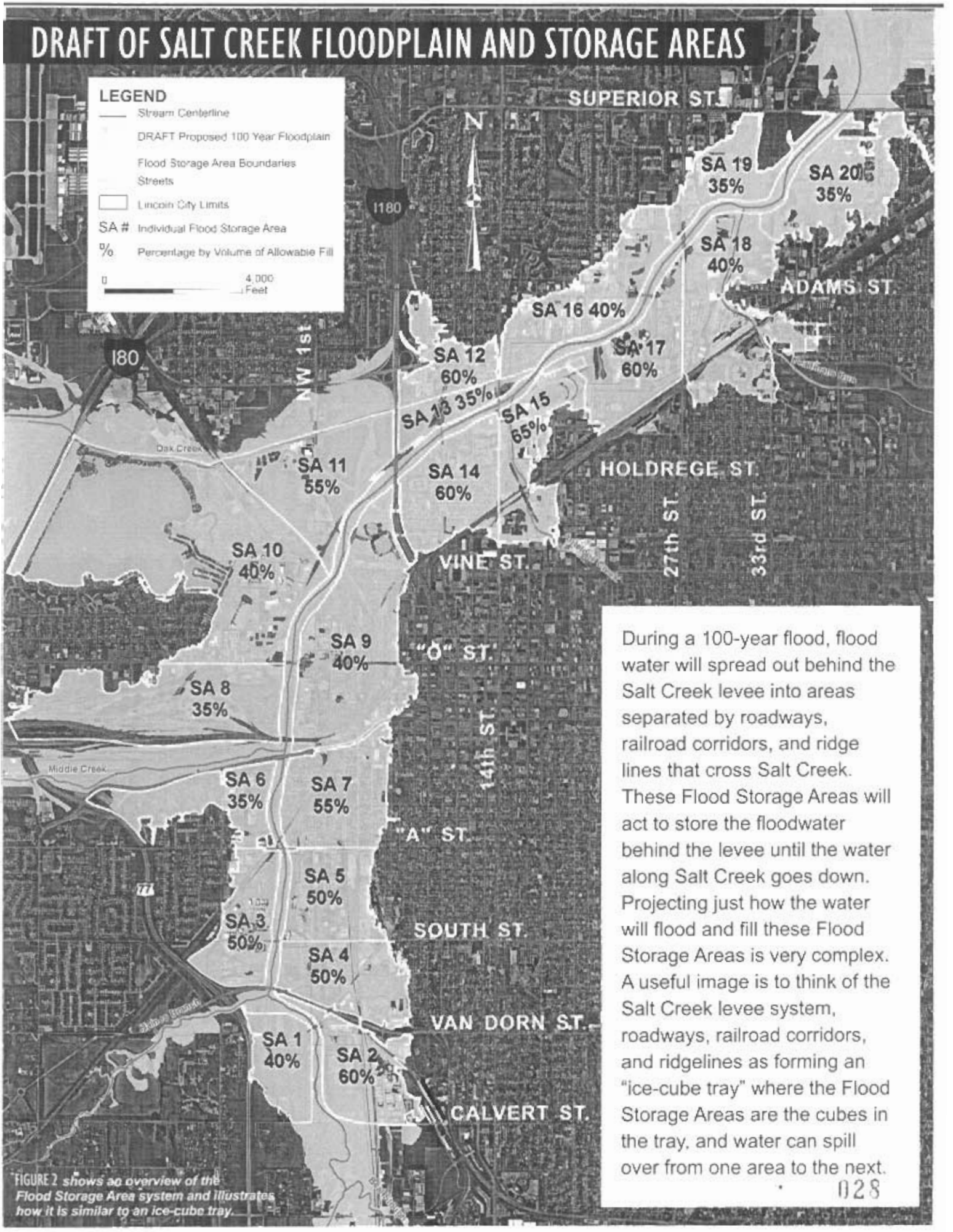
The Salt Creek Floodplain Mapping Update must define both a Floodway and a Flood Fringe to comply with FEMA floodplain mapping standards. Along Salt Creek, if the Floodway is mapped in a traditional fashion, it will extend outside of the levees and into the existing neighborhoods and business areas at some locations. This is significant, because regulations for what can be built in the Floodway are much more restrictive than the Flood Fringe.

Due to the circumstances along Salt Creek relating to the levee and Flood Storage Areas, FEMA will allow the Floodway to remain along the levee system *(as shown in Figure 1)* with the condition that a portion of the flood storage volume in each Flood Storage Area is preserved. A useful way to understand the impact of loss of flood storage is to imagine that the Flood Storage Area during a large storm is like a bathtub filled to the brim with water. When fill or buildings in the Flood Storage Area displaces flood water, the flood waters rise and the displaced water might move onto another property.

One objective of the project is to determine the percentage of flood storage volume in each Flood Storage Area that can be filled or displaced without increasing the 100-year flood height more than one foot. The Flood Storage Areas and associated percentages or 'Percentage of Allowable Fill' are shown in Figure 2.

Preserving the designated flood storage volume by limiting the percentage of allowable fill in the Flood Storage Areas shown in Figure 2 is an alternative to mapping a larger Floodway outside the levee, while still limiting increases to flood heights to less than one foot. More information regarding how the Flood Storag Area standards would work can be found on the back page of this brochure.

DRAFT OF SALT CREEK FLOODPLAIN AND STORAGE AREAS



During a 100-year flood, flood water will spread out behind the Salt Creek levee into areas separated by roadways, railroad corridors, and ridge lines that cross Salt Creek. These Flood Storage Areas will act to store the floodwater behind the levee until the water along Salt Creek goes down. Projecting just how the water will flood and fill these Flood Storage Areas is very complex. A useful image is to think of the Salt Creek levee system, roadways, railroad corridors, and ridgelines as forming an "ice-cube tray" where the Flood Storage Areas are the cubes in the tray, and water can spill over from one area to the next.

FIGURE 2 *shows an overview of the Flood Storage Area system and illustrates how it is similar to an ice-cube tray.*

MAP UPDATE AND REQUIRED ORDINANCE

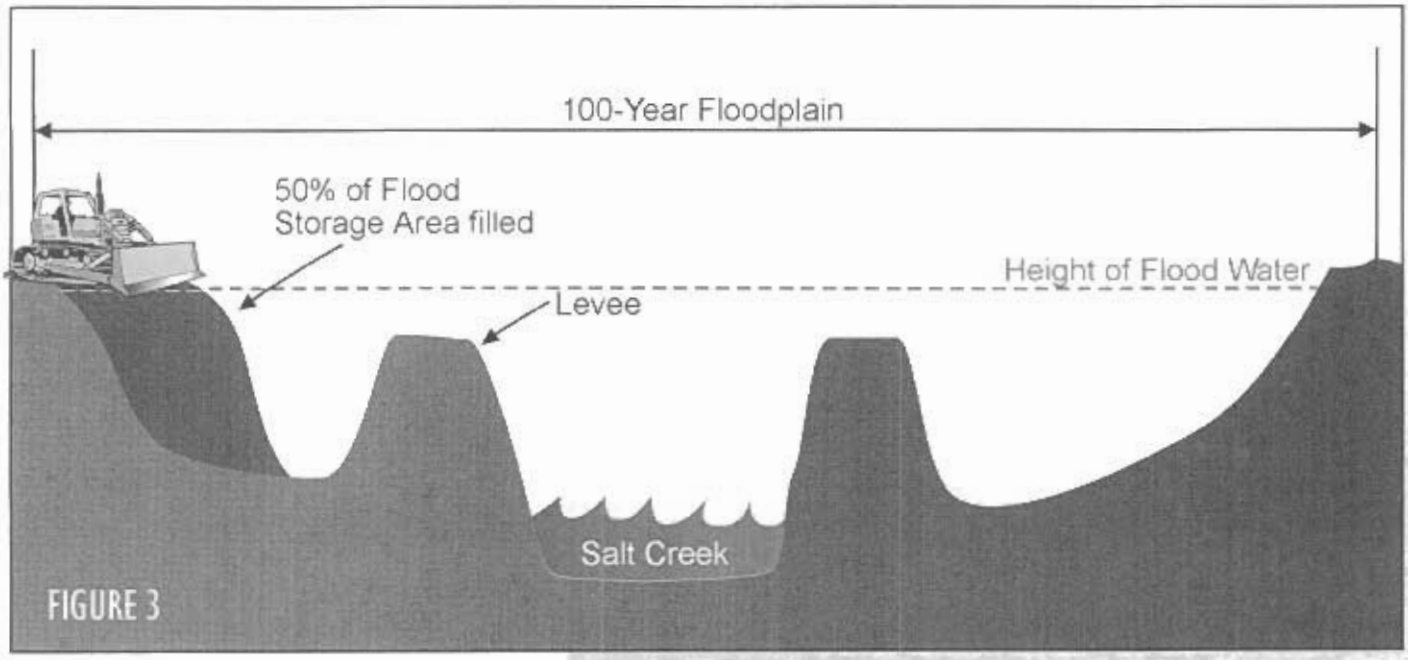


Figure 3 shows how the percentage of allowable fill could be applied in a Flood Storage Area with 50% allowable fill.

Due to the special circumstances along Salt Creek, the recommended approach to meet minimum FEMA standards is to map the Floodway along the levee, and to preserve a certain amount of flood storage in the Flood Fringe *(the Flood Storage Areas)* outside of the levees

Under this mapping approach each Flood Storage Area will have a "Percentage of Allowable Fill" ranging from 35% to 65%. These percentages correspond to the percentage of available flood storage volume that can be filled without causing greater than 1 foot of rise in the 100-year flood height. For example, if a Flood Storage Area is designated for 50% allowable fill, this means that only 50% of the flood storage volume contained within the Flood Storage Area between the ground surface and the 100-year flood height can be filled, and 50% of the flood storage volume must be preserved.

This mapping approach was used by the U.S. Army Corps of Engineers when the Salt Creek floodplain was mapped in the early 1980's. However, at that time, Lincoln was not required by FEMA to adopt an ordinance to protect the Flood Storage Areas identified in that study In order to use this floodplain mapping approach for the Salt Creek Floodplain Mapping Update, the City of Lincoln will be required by FEMA to adopt an ordinance to preserve the specified amount of flood storage in each Flood Storage Area by limiting the percentage of allowable fill as shown in Figure 2 on the previous page. This means that property owners within those Flood Storage Areas would be limited to a percentage of allowable fill as part of a development or building project.

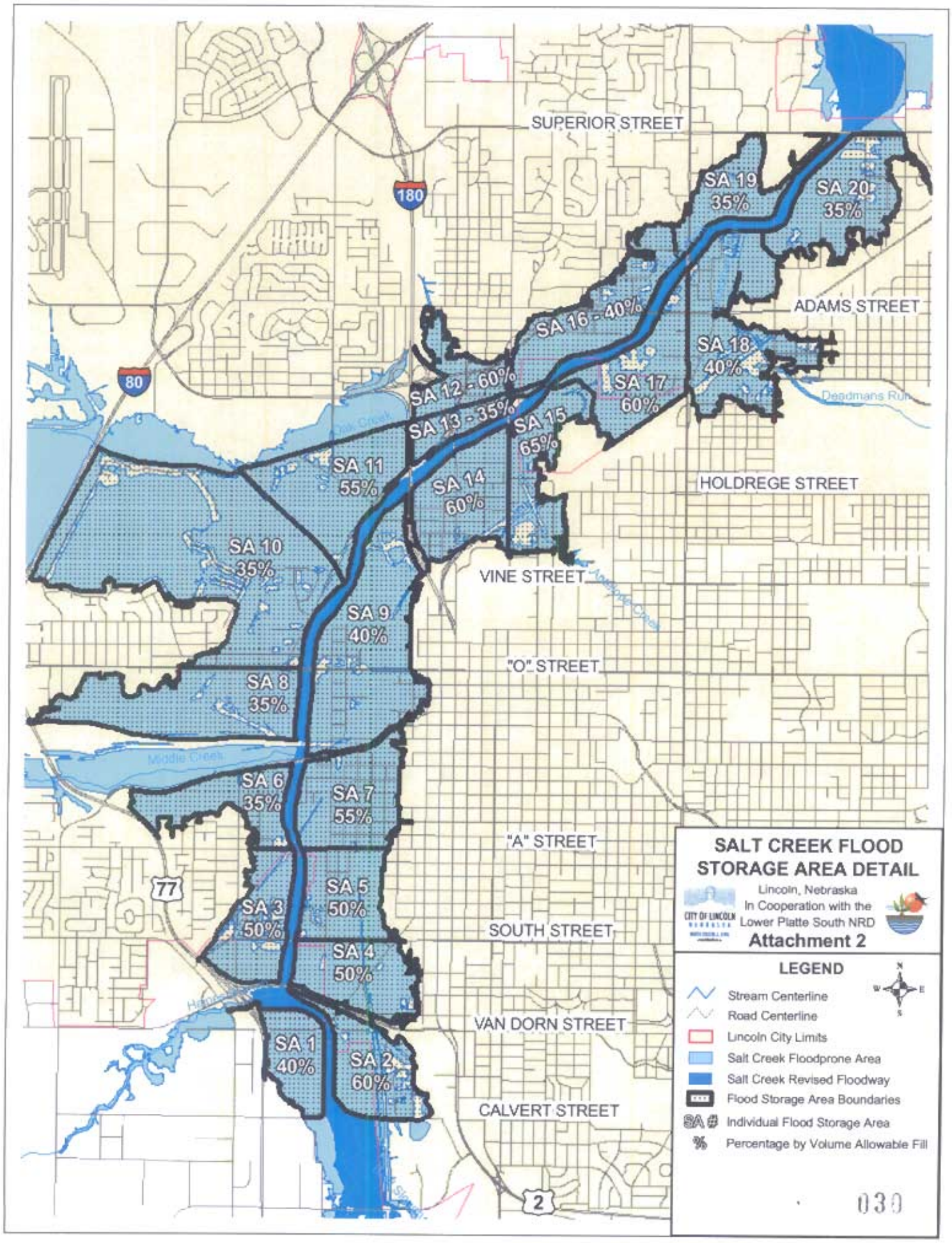
For more information call Watershed Management Division, Public Works and Utilities Department at 441-7701

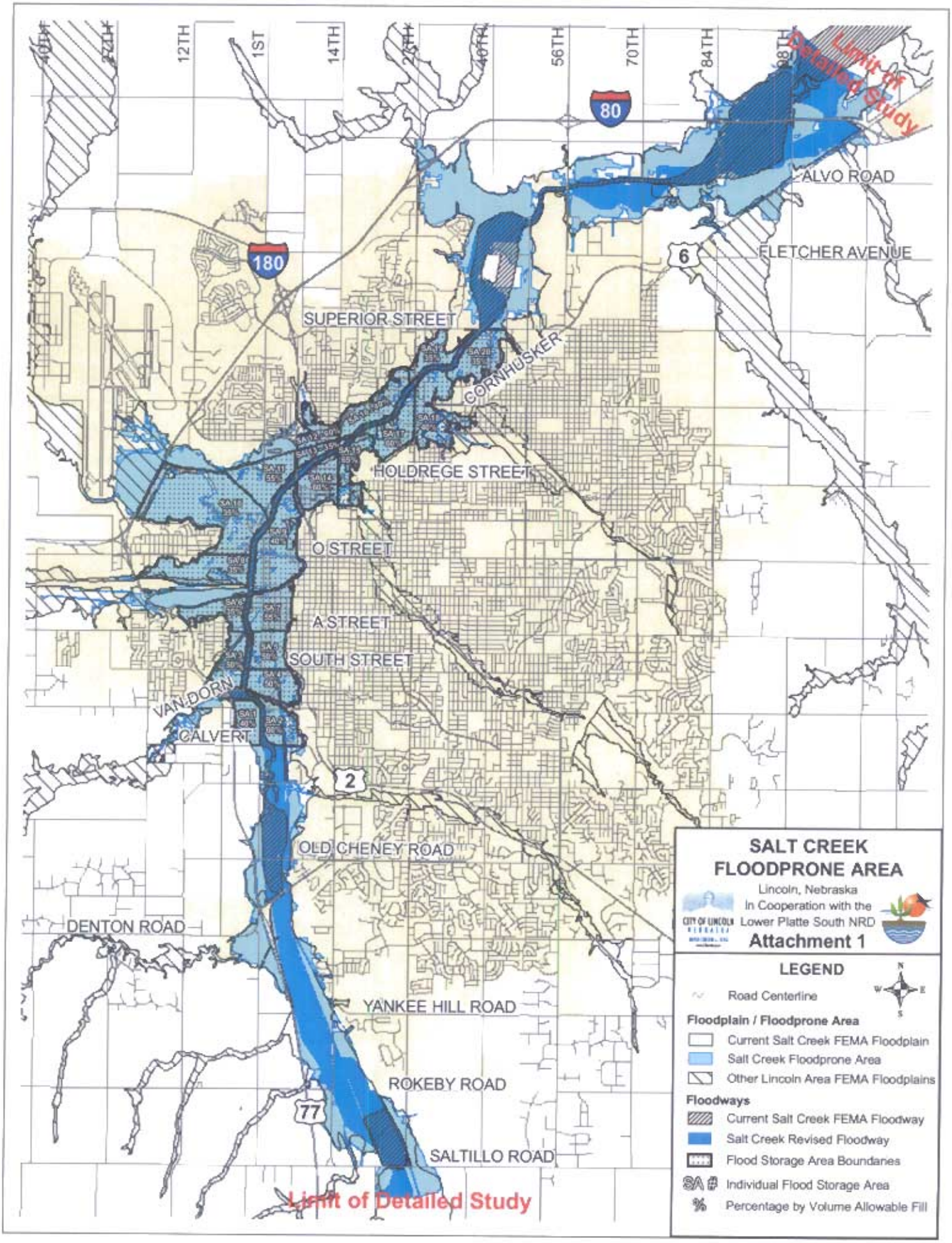
CITY OF LINCOLN
NEBRASKA
MAYOR COLEEN J. SENG
lincoln.ne.gov

Lower Platte South
Natural Resources District

029

Designed by Citizen Information Center 5/2006


SUPERIOR STREET
ADAMS STREET
HOLDREGE STREET
VINE STREET
"O" STREET
"A" STREET
SOUTH STREET
VAN DORN STREET
CALVERT STREET
180
80
77
2
SA 19 35%
SA 20 35%
SA 16 - 40%
SA 18 40%
SA 17 60%
SA 12 - 60%
SA 13 - 35%
SA 15 65%
SA 11 55%
SA 14 60%
SA 10 35%
SA 9 40%
SA 8 35%
SA 6 35%
SA 7 55%
SA 5 50%
SA 3 50%
SA 4 50%
SA 1 40%
SA 2 60%
Deadmans Run
Middle Creek
SALT CREEK FLOOD STORAGE AREA DETAIL
Lincoln, Nebraska
In Cooperation with the Lower Platte South NRD
Attachment 2
LEGEND
Stream Centerline
Road Centerline
Lincoln City Limits
Salt Creek Floodprone Area
Salt Creek Revised Floodway
Flood Storage Area Boundaries
SA # Individual Flood Storage Area
% Percentage by Volume Allowable Fill


SALT CREEK FLOODPRONE AREA
Lincoln, Nebraska
In Cooperation with the Lower Platte South NRD
Attachment 1
LEGEND
Road Centerline
Floodplain / Floodprone Area
Current Salt Creek FEMA Floodplain
Salt Creek Floodprone Area
Other Lincoln Area FEMA Floodplains
Floodways
Current Salt Creek FEMA Floodway
Salt Creek Revised Floodway
Flood Storage Area Boundaries
Individual Flood Storage Area
Percentage by Volume Allowable Fill
Limit of Detailed Study
Limit of Detailed Study
12TH
1ST
14TH
56TH
70TH
84TH
98TH
80
180
6
2
77
ALVO ROAD
FLETCHER AVENUE
SUPERIOR STREET
CORNHUSKER
HOLDREGE STREET
O STREET
A STREET
SOUTH STREET
VAN DORN
CALVERT
OLD CHENEY ROAD
DENTON ROAD
YANKEE HILL ROAD
ROKEBY ROAD
SALTILLO ROAD

SUPPORT

ITEM NO. 2.1: CHANGE OF ZONE NO. 07001
(p.3 - Public Hearing - 1/31/07)

LOWER PLATTE SOUTH
NATURAL RESOURCES DISTRICT

3125 Portia St., Box 83581, Lincoln NE 68501-3581
(402) 476-2729 • FAX (402) 476-6454
www.lpsnrd.org

January 29, 2007

Lincoln City/Lancaster County Planning Commission
555 South 10th Street
Lincoln, NE 68508

Dear Commissioners:

The Board of Directors of the Lower Platte South Natural Resources District, at their meeting on January 17, 2007 adopted a motion to endorse the revised, updated Salt Creek Floodplain Maps and the amendment to the City Zoning Ordinance to adopt standards for development within the Salt Creek Flood Storage Areas. The District has been a partner with the City of Lincoln in the update of these maps and the development of the ordinances.

These new maps include the current landuse in the floodplain, accurate topographic information, updated and refined hydrology and hydraulics and thus represent the most accurate information to help protect the safety of lives and property. The ordinance changes provide the most realistic and reasonable approach in regulating the existing and future floodplain development to maintain the floodway within the Salt Creek Levee system.

The Board of Directors would urge the Planning Commission to adopt a recommendation of approval of the City Zoning Ordinance change as proposed and forward it to the Lincoln City Council.

Sincerely,

Glenn D. Johnson
General Manager

GDJ/gdj

RECEIVED
JAN 30 2007
LINCOLN-LANCASTER COUNTY
PLANNING DEPARTMENT

The Lower Platte South Natural Resources District
Shall Manage the Land and Water Resources of the
District for the Common Good of all People.

Printed on recycled paper

Tedandphyllis72@aol.com
12/03/2006 07:55 PM

To plan@lincoln.ne.gov
cc
bcc
Subject Re: Salt Creek Floodplain Mapping Update

For several months I have been expecting to see a letter concerning a possible change in the status of our property, relative to it's location within the Salt Creek Floodplain. On Saturday the shoe dropped.

The letter, from the City of Lincoln Public Works and Utilities Department indicates that it is being "...sent to properties that have been identified as being within or close ... to Floodprone Areas along Salt Creek that have not previously (been) identified on the FEMA floodplain maps." Eventually this will lead to the property being identified as Floodplain on the FEME maps, sometime in 2008. As a result businesses and home owners not currently designated as being in a Floodplain will be required to obtain flood insurance.

It is unfortunate that our City Leaders and Planning Commission, over the past 20 years, have allowed for development in the current Salt Creek watershed, which has resulted in additional homes and businesses now being part of the FEMA Floodplain. It was obvious that this would eventually happen, given that developers have been required to raise the level of their land in order to build in the Flood Plain. You only have to look at the area between Wal-Mart and Salt Creek, next to Superior Street to see how the land has been raised for development. On average the ground level in this area has been raised a good 3-5 feet.

Where do you think the water will go when it overflows the banks of Salt Creek? Since the ground level is 3-5 feet higher the resulting flood will also be higher and thus, will spread further from Salt Creek, than it did in the past. Much of this area, along Salt Creek could have been part of a Salt Creek flood storage area, but now the ground level is too high. What was once a 100 year Flood is in essence a 50 or 25 Year Flood thanks to the short sighted decisions of our elected officials.

I'm sure the City of Lincoln is not planning on budgeting to cover the cost of Flood Insurance for those of us who will now have to purchase said insurance. Personally I believe they should, given they are the primary reason many of us are now within a Floodprone area.

Regards,

Ted Ericson
4130 N 42nd St Circle