

SALT CREEK FLOODPLAIN MAPPING

**REVISED
MAY, 2006**

- 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.

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.

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

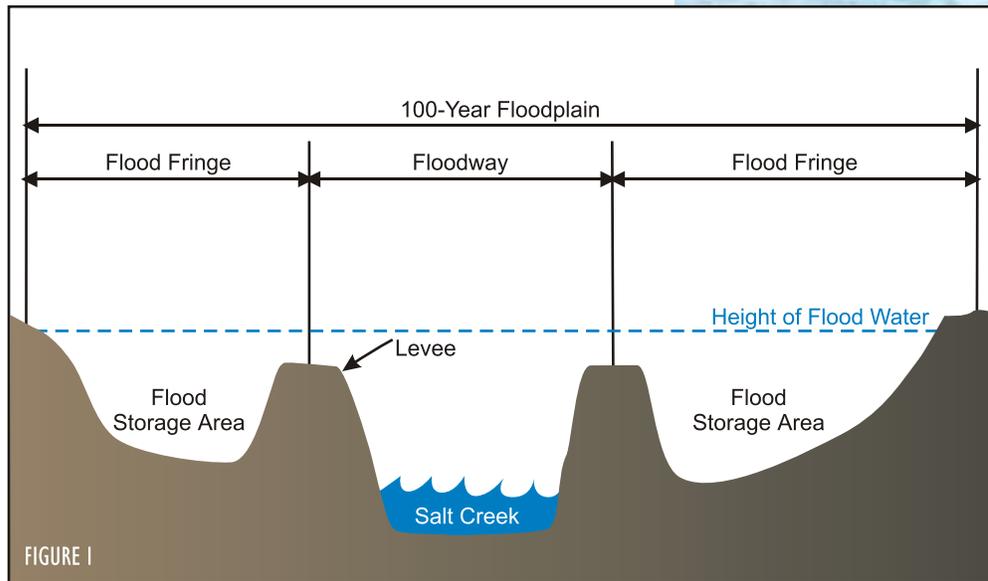


Figure 1 shows a typical cross section of the Salt Creek channel, Flood Storage Areas behind the levee and Floodplain limits.

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.

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 Storage Area standards would work can be found on the back page of this brochure.

DRAFT OF SALT CREEK FLOODPLAIN AND STORAGE AREAS

LEGEND

-  Stream Centerline
-  DRAFT Proposed 100 Year Floodplain
-  Flood Storage Area Boundaries
-  Streets
-  Lincoln City Limits
- SA # Individual Flood Storage Area
- % Percentage by Volume of Allowable Fill

0 4,000 Feet



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

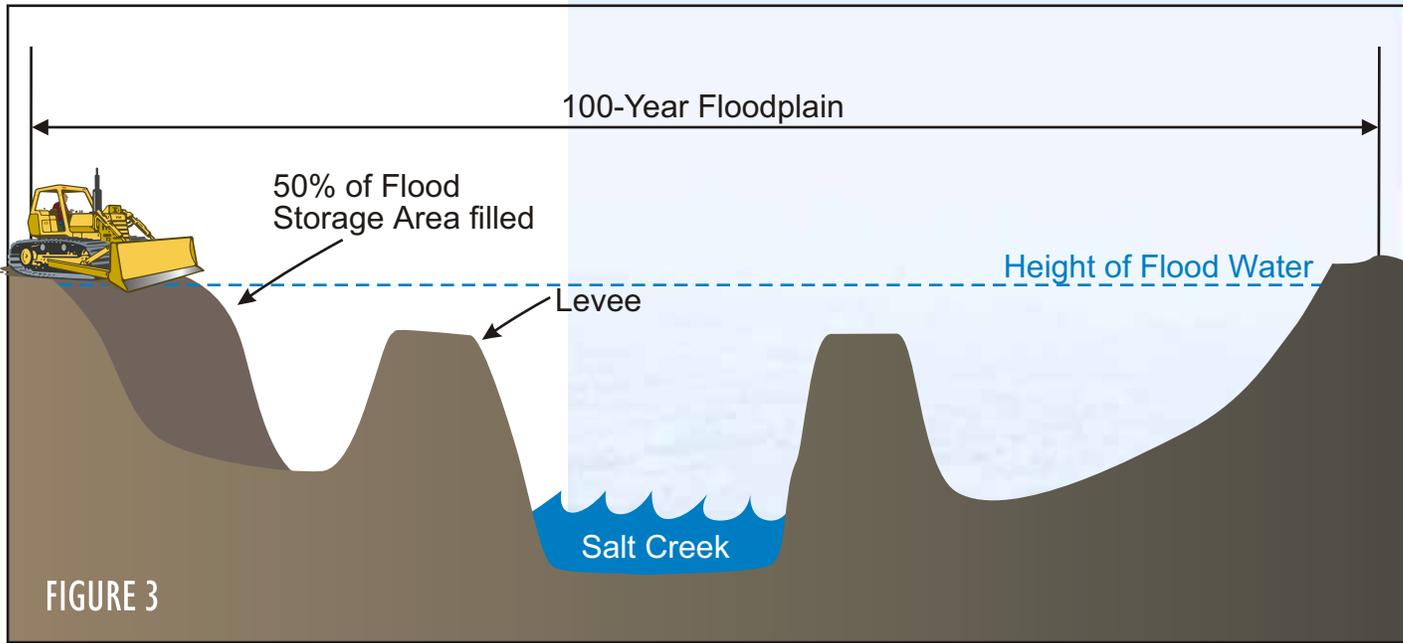


FIGURE 3

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

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

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,
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