

# SALT CREEK FLOODPLAIN RESILIENCY STUDY

## CLIMATE EVALUATION AND RESILIENCY STANDARDS

### Why use future climate predictions to evaluate resiliency?

Historical data, existing precipitation patterns, and future climate predictions can be used to help understand the potential magnitude of future storm magnitudes and flood discharges. These analyses of the future potential flood hazards can then be used to develop strategies to minimize future flood impacts.

### How are floodplain maps created?

Floodplain designations are established or revised when new and more accurate information becomes available. Flood Insurance Rate Maps (FIRMs) are developed based on statistical analyses of records of streamflow, rainfall, hydrologic and hydraulic analyses, topographic surveys, and information obtained through consultation with the community.

### What is discharge and how is it measured?

Discharge is the volume of water moving down a stream, commonly expressed in cubic feet per second (cfs). In general, stream discharge is computed by multiplying the area of water in a channel cross section by the average velocity of the water in that cross section. (1 cubic foot per second = 450 gallons per minute)

### What is a hydrologic analysis?

An analysis of the rates of precipitation over time, the quantity of water produced, the rate of surface runoff, and the timing of its arrival at a point.

### What is a hydraulic analysis?

An analysis of the movement of water flow in rivers, streams, and storm drain networks.

### What data was used to create the City of Lincoln's "existing" floodplain conditions, which is what is depicted on the current floodplain maps?

Precipitation values derived from U.S. Weather Bureau's Technical Paper No. 40, which dates from 1961, and the associated stream discharges.

### What data is used to create the City of Lincoln's "updated" floodplain conditions?

Precipitation values from the National Oceanic and Atmospheric Administration (NOAA) Atlas 14 Volume 8 and associated stream discharges. This is the most current data set and represents the current flood risks.

### What data is used to create the "future" floodplain conditions?

Future conditions include updated precipitation values from NOAA Atlas 14 along with precipitation changes that are forecasted by climate change and the associated stream discharges, as well as the influences of future land use changes.

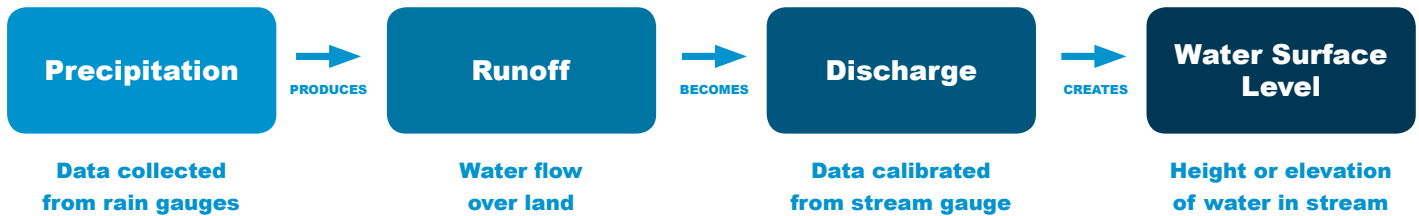
### What is the difference between the "existing" and "updated" floodplain conditions?

The "updated" conditions (NOAA Atlas 14 data) shows that discharges are approximately 12% higher for the one percent annual chance flood and approximately 27% higher for the .2 percent annual chance flood when compared to the "existing" floodplain conditions.

### What is the difference between the "existing" and "future" floodplain conditions?

The "future" conditions shows that discharges are approximately 28% higher for the one percent annual chance flood and approximately 45% higher for the .2 percent annual chance flood when compared to the "existing" floodplain conditions.

# Hydrology and Hydraulic Analysis



## Floodplain Models

