

# Section 5

## Floodplain Management Tools

### 5.1 Introduction

A major component of the Little Salt Creek Master Plan is the incorporation of updated floodplain and floodway boundary maps. Accurate floodplain and floodway boundaries alert present homeowners and businesses of flood hazards as well as provide guidance for future growth and development within the watershed. The creation of the updated floodplain maps follows the specifications and procedures set by the Federal Emergency Management Agency (FEMA).

The current FEMA Little Salt Creek floodplain maps were based on a study performed by HDR completed in February of 1981, with an effective date of September 2001. The previously mapped areas were defined as Zone A and only included the estimated 100-year floodplain boundary. The floodplain maps were updated as part of the present Little Salt Creek Watershed Master Plan study. The modified maps include an updated 100-year floodplain and floodway boundaries as well as the 500-year floodplain boundary. The present study updated the floodplain boundaries in areas that were previously mapped and delineated the boundaries along reaches that were not previously studied. While updating the 100-year floodplain boundary, the data used during the analysis and mapping procedures was accurate enough by FEMA standards to determine the base flood elevations (BFE). This allowed for the areas previously mapped as Zone A to be reclassified as Zone AE. These boundaries will be reflected on the FEMA floodplain maps once it is adopted by the City and FEMA finalizes the Flood Insurance Rate Map Physical Map Revision.

The Little Salt Creek floodplain maps resulting from the present study will be submitted to FEMA for preliminary review and comment. The FEMA review process could take several months to more than a year following the final submittal and will include a public comment period hosted by FEMA. In the interim, the City intends to adopt these newly mapped floodplains for the purposes of regulating the updated floodplain and floodway boundaries (i.e. flood-prone areas). Because such a large portion of the watershed having updated floodplain information is within the County's jurisdiction, it is also recommended that the County adopt the updated information for the purpose of administering the County floodplain regulations.

#### 5.1.1 Floodplain Delineation Process

HEC-GeoRAS Version 4.2.92 was utilized to create the geometric data used for the hydraulic analysis as well as generate the water surface boundaries resulting from the 100-year floodplain and floodway and the 500-year analysis. The resulting water surface profiles were created using RASLOT Version 2.5.

Due to the variability in the timing of the peak flows between the various modeled tributaries, the stream confluences were not simulated with HEC-RAS. Per FEMA

requirements, stream confluences are to be simulated with HEC-RAS only if coincident peaks occur. In order to map the floodplain and stream profiles at stream confluences, a level pool backwater process was performed. Listed in Table 5-1 are the water surface elevations predicted for the main-stem channel for the respective tributary confluence of each stream reach. These elevations were used to create the floodplain boundary at each stream confluence. Each reach can be viewed in larger scale in Figures 5-2 through 5-13.

Approximately 555 additional acres are susceptible to flooding and now identified to be in the floodplain. The Little Salt Creek Watershed's floodplain is now approximately 3,715 acres.

### **5.1.2 Study Floodplain and Floodway Maps**

Figure 5-1 presents an overview map of the entire Little Salt Creek watershed divided into 12 floodplain maps identified as tiles 1 through 12. The study floodplain maps are based on the hydrologic and hydraulic analysis described in Section 3 and Section 4, respectively. Each floodplain map is shown in further detail in Figures 5-2 through 5-13.

Stream profiles for each modeled reach were developed to depict the 10-, 50-, 100-, and 500-year water surface elevations. The stream profiles are located in Appendix M of the report.

**Table 5.1 Little Salt Creek Confluence Level Pool Elevations (NAVD88)**

<i>Reach Name*</i>	<i>10-year</i>	<i>50-year</i>	<i>100-year</i>	<i>500-year</i>
LSC**	1134.73	1136.5	1137.75	1139.03
Tributary 05	1134.84	1136.59	1137.82	1139.12
Tributary 10	1138.06	1141.50	1142.90	1145.70
Tributary 110	1159.63	1160.20	1160.39	1160.83
Tributary 115	1142.94	1145.50	1146.16	1147.74
Tributary 120	1149.97	1151.33	1151.91	1153.14
Tributary 1260	1207.00	1208.70	1209.17	1210.05
Tributary 130	1194.98	1196.15	1196.51	1197.10
Tributary 1415	1215.83	1216.22	1216.37	1216.65
Tributary 145	1167.87	1169.12	1169.80	1170.94
Tributary 15	1139.22	1143.06	1144.15	1146.37
Tributary 150	1196.21	1196.91	1197.23	1197.73
Tributary 160	1178.71	1179.57	1179.99	1180.88
Tributary 170	1202.02	1202.88	1203.22	1203.77
Tributary 20	1148.76	1149.88	1150.54	1151.98
Tributary 210	1195.95	1196.56	1196.85	1197.24
Tributary 215	1166.26	1167.16	1167.52	1168.14
Tributary 220	1166.61	1168.21	1168.88	1169.83
Tributary 2220	1216.27	1217.20	1217.51	1217.99
Tributary 230	1213.33	1213.85	1214.10	1214.50
Tributary 25	1149.74	1151.08	1151.63	1153.01
Tributary 250	1212.99	1213.52	1213.72	1214.10
Tributary 260	1198.62	1199.26	1199.52	1200.06
Tributary 270	1228.93	1229.69	1230.08	1230.73
Tributary 30	1152.68	1154.11	1154.74	1155.98
Tributary 315	1182.97	1183.72	1184.05	1184.61
Tributary 320	1210.34	1211.02	1211.30	1211.77
Tributary 35	1153.93	1155.37	1155.96	1157.16
Tributary 360	1252.36	1253.35	1253.69	1254.37
Tributary 40	1160.62	1161.84	1162.63	1163.99
Tributary 415	1201.41	1202.63	1203.07	1203.75
Tributary 420	1220.92	1221.78	1222.10	1222.60
Tributary 45	1164.80	1168.09	1169.05	1170.48
Tributary 50	1169.57	1171.00	1171.69	1173.10
Tributary 520	1247.99	1248.46	1248.64	1248.94
Tributary 55	1172.49	1173.93	1174.49	1175.69
Tributary 60	1178.71	1179.57	1179.99	1180.88
Tributary 65	1178.71	1179.57	1179.99	1180.88
Tributary 70	1190.46	1191.15	1191.47	1192.09
Tributary 75	1202.35	1203.54	1204.04	1204.98
Tributary 80	1208.83	1210.31	1210.97	1212.09
Tributary 85	1213.30	1215.10	1215.80	1216.99
Tributary 90	1266.35	1268.03	1268.67	1269.87
Tributary 92	1277.78	1279.40	1280.04	1281.28
Tributary 94	1282.30	1283.69	1284.22	1285.25
Tributary 96	1318.77	1319.59	1319.91	1320.51
Tributary 98	1338.03	1338.68	1338.91	1339.33

\* Reach names are shown on Figure 5-1.

\*\* Obtained from the latest Salt Creek hydraulic analysis made available by the City.

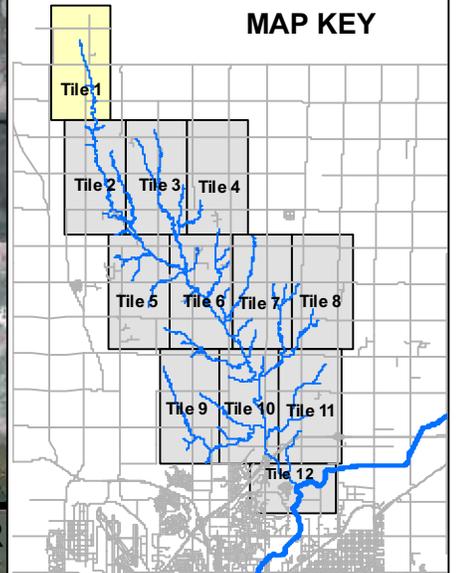


# Little Salt Creek Floodplain Map Updates

-  Little Salt Creek Watershed
-  Existing FEMA Floodplain
-  Floodway
-  Updated Floodprone Area



## MAP KEY



INTUITION  
LOGIC

TILE 1

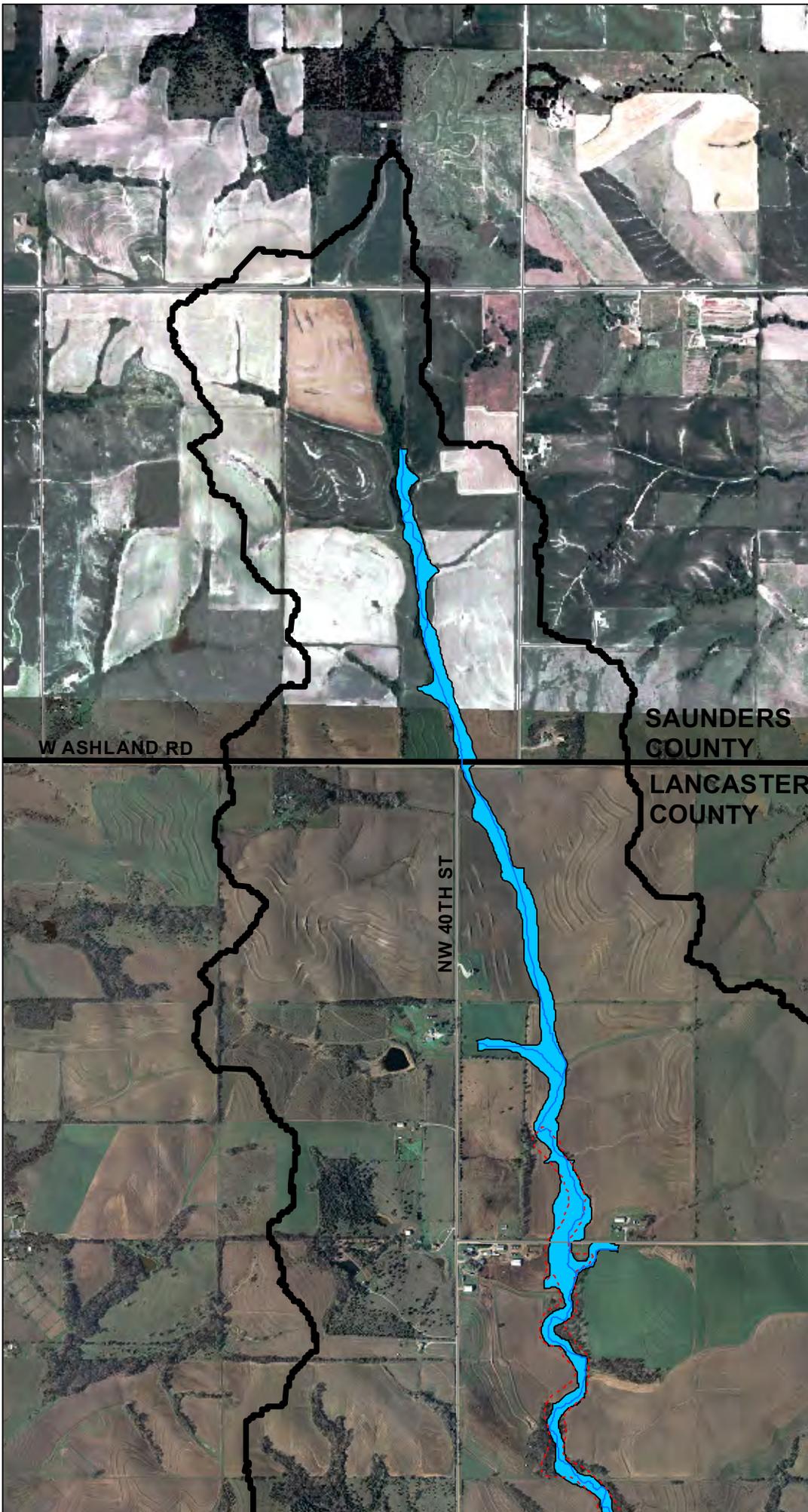


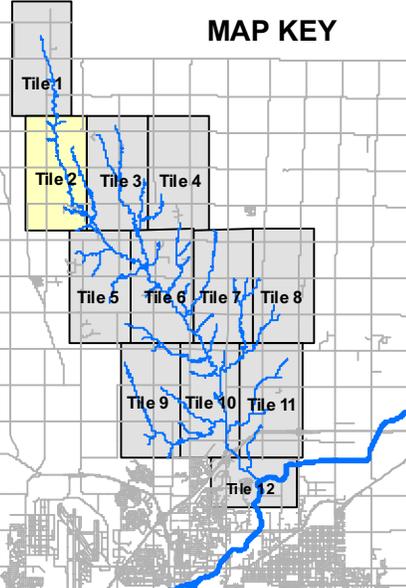
Figure 5-2

# Little Salt Creek Floodplain Map Updates

-  Little Salt Creek Watershed
-  Existing FEMA Floodplain
-  Floodway
-  Updated Floodprone Area



## MAP KEY



INTUITION  
LOGIC

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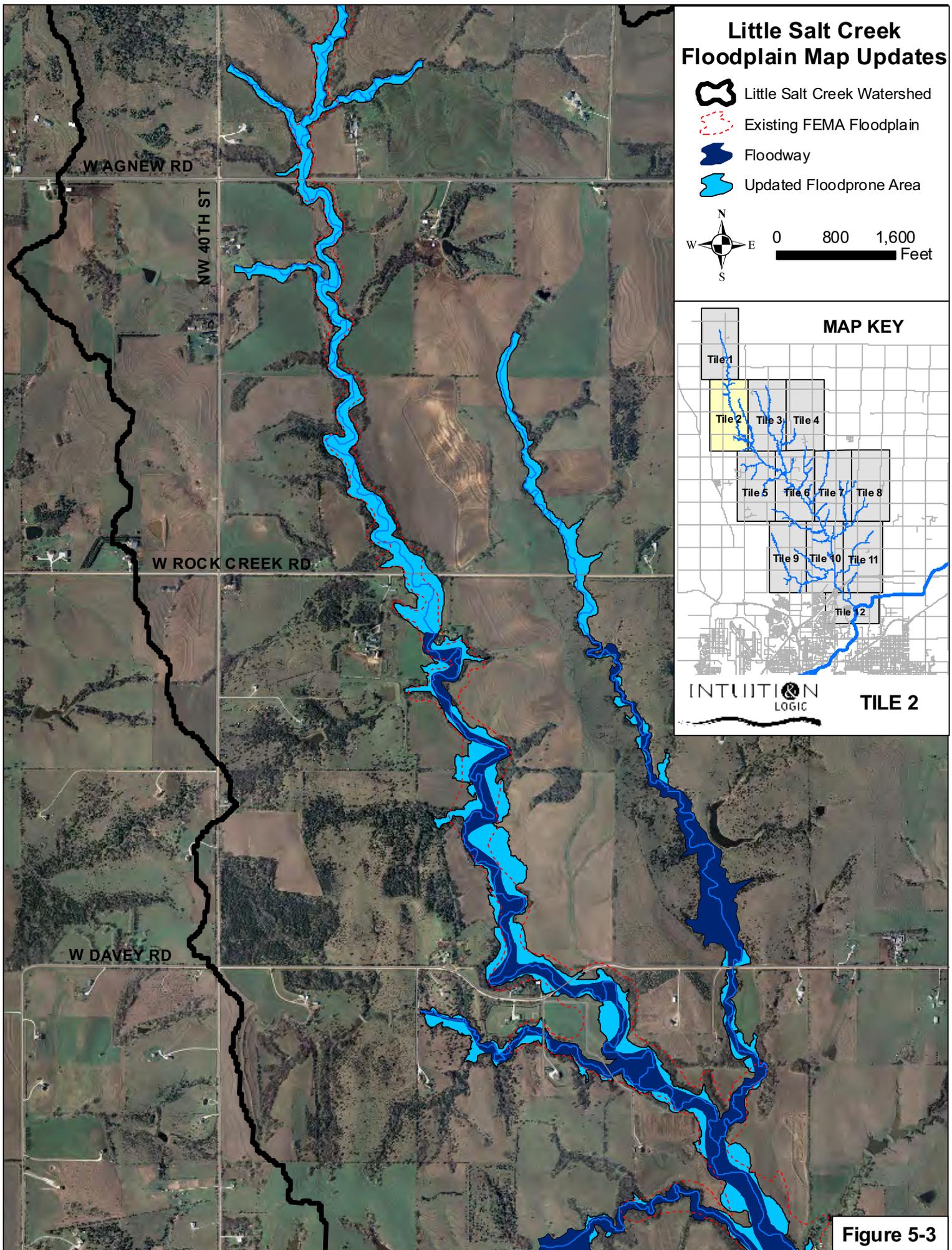
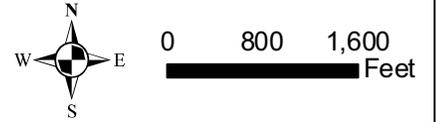


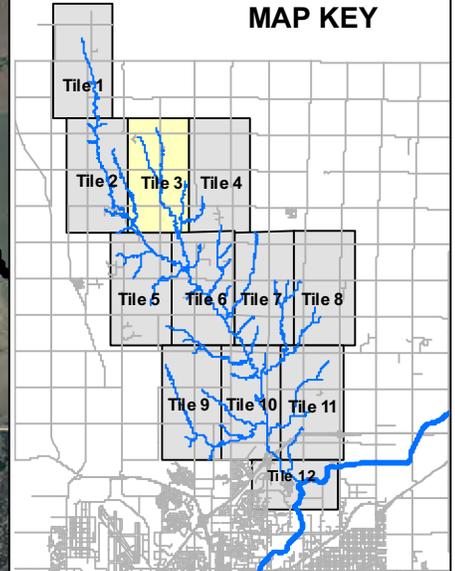
Figure 5-3

# Little Salt Creek Floodplain Map Updates

-  Little Salt Creek Watershed
-  Existing FEMA Floodplain
-  Floodway
-  Updated Floodprone Area



## MAP KEY



INTUITION  
LOGIC

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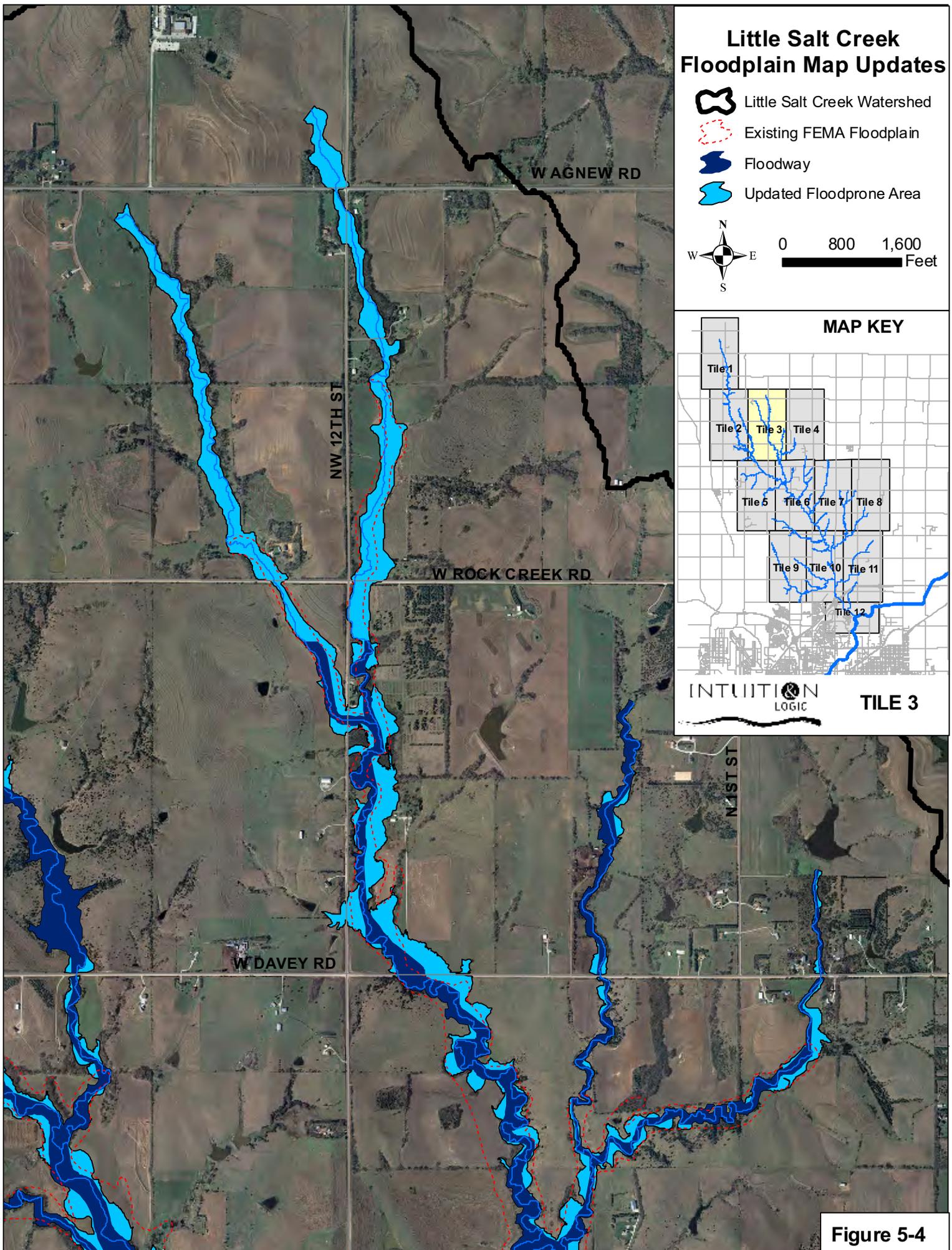
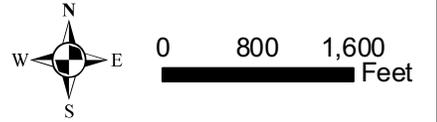


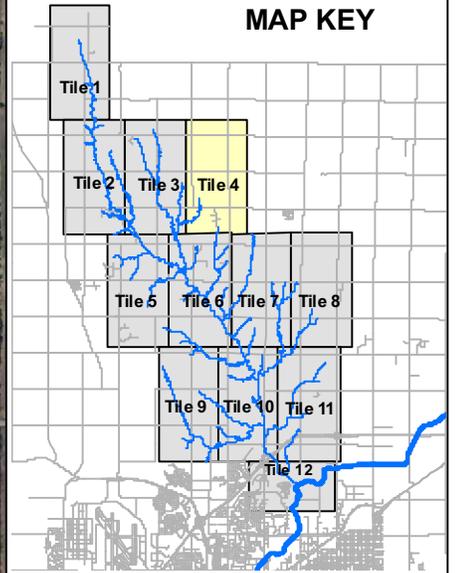
Figure 5-4

# Little Salt Creek Floodplain Map Updates

-  Little Salt Creek Watershed
-  Existing FEMA Floodplain
-  Floodway
-  Updated Floodprone Area



## MAP KEY



INTUITION  
LOGIC

TILE 4

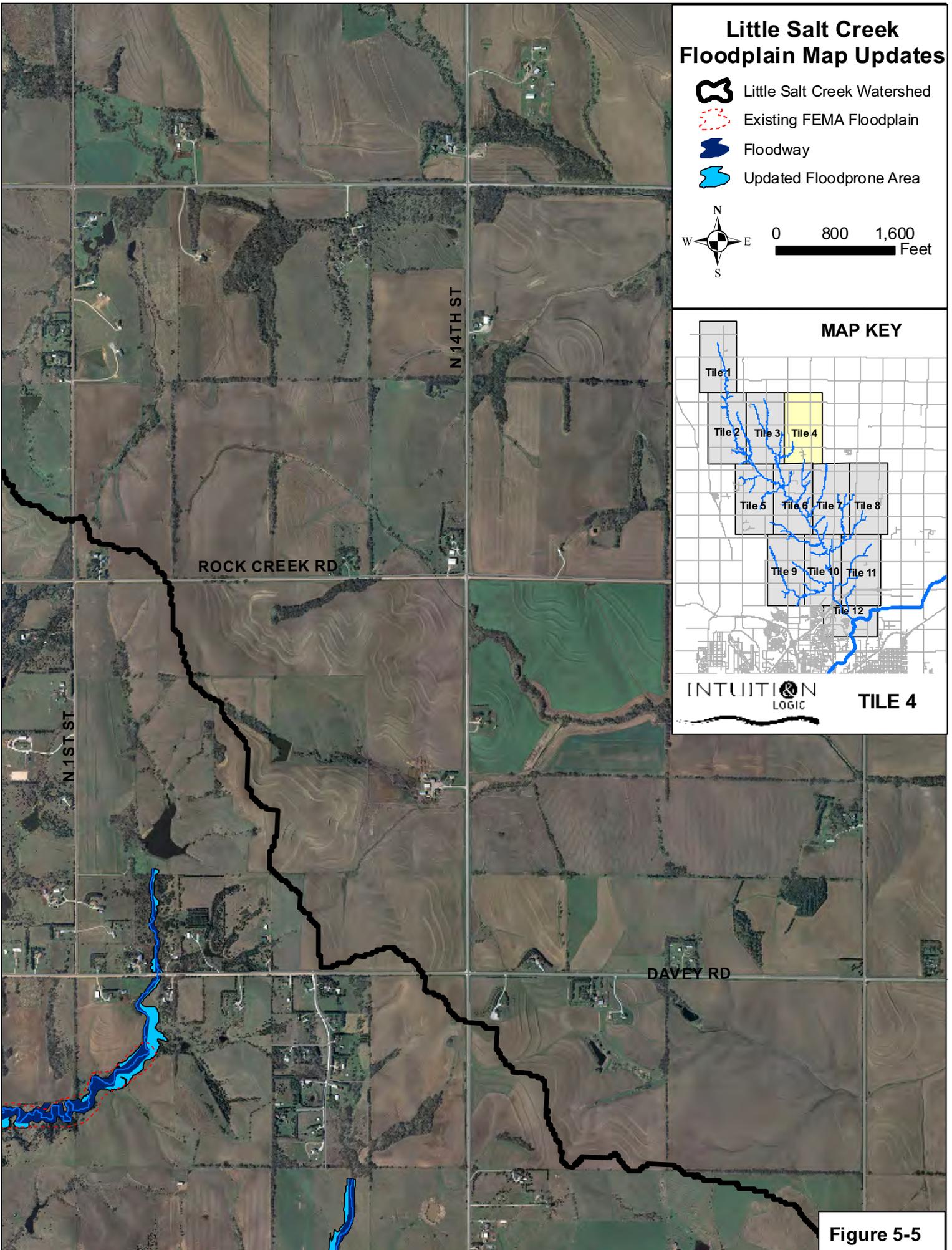
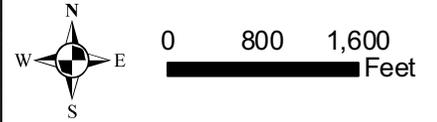


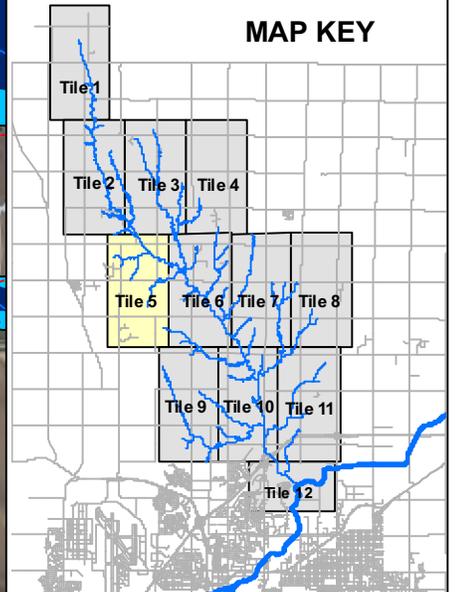
Figure 5-5

# Little Salt Creek Floodplain Map Updates

-  Little Salt Creek Watershed
-  Existing FEMA Floodplain
-  Floodway
-  Updated Floodprone Area



## MAP KEY



INTUITION  
LOGIC

TILE 5

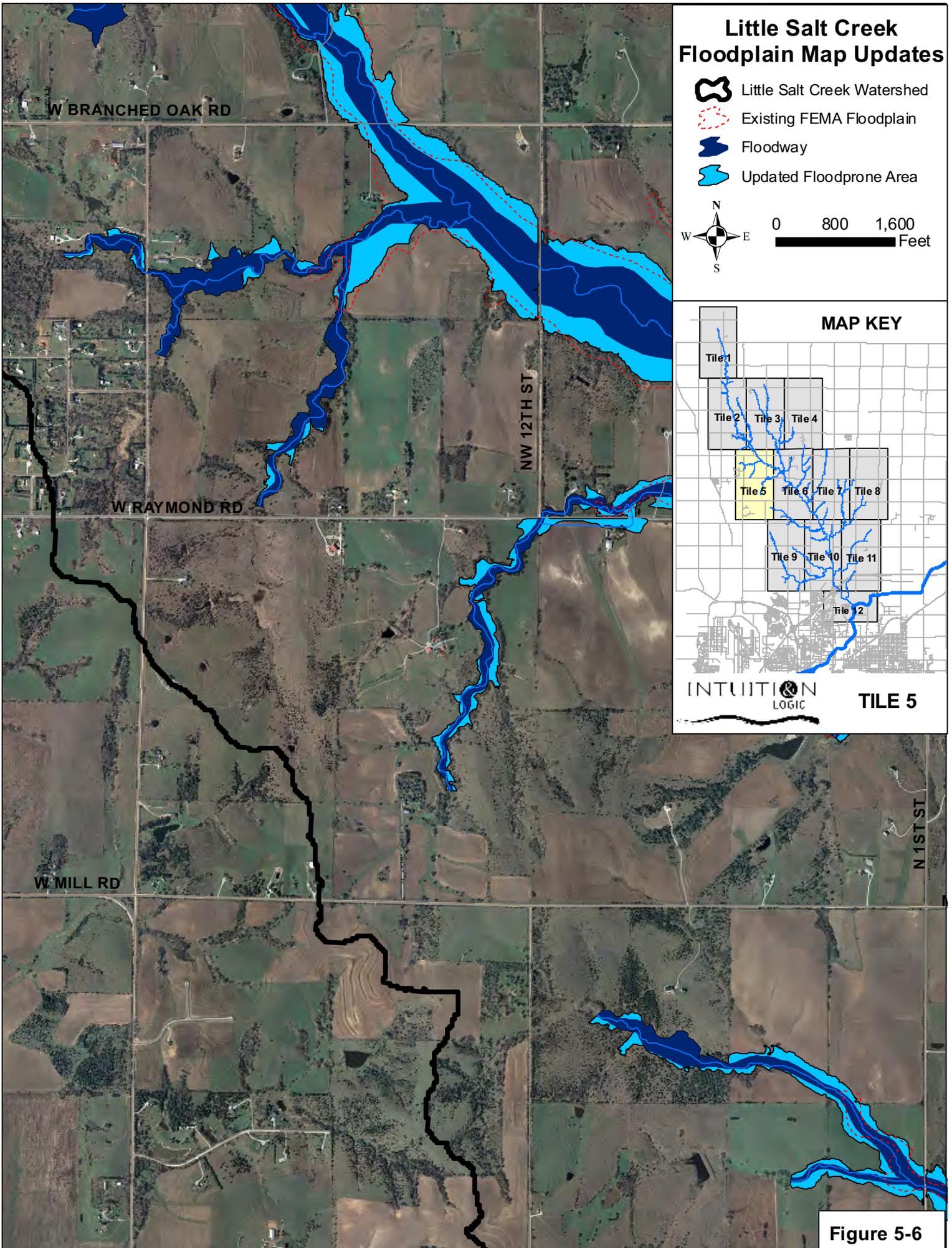
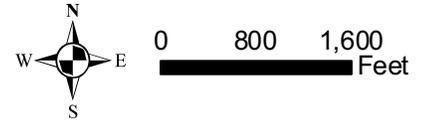


Figure 5-6

# Little Salt Creek Floodplain Map Updates

-  Little Salt Creek Watershed
-  Existing FEMA Floodplain
-  Floodway
-  Updated Floodprone Area



## MAP KEY

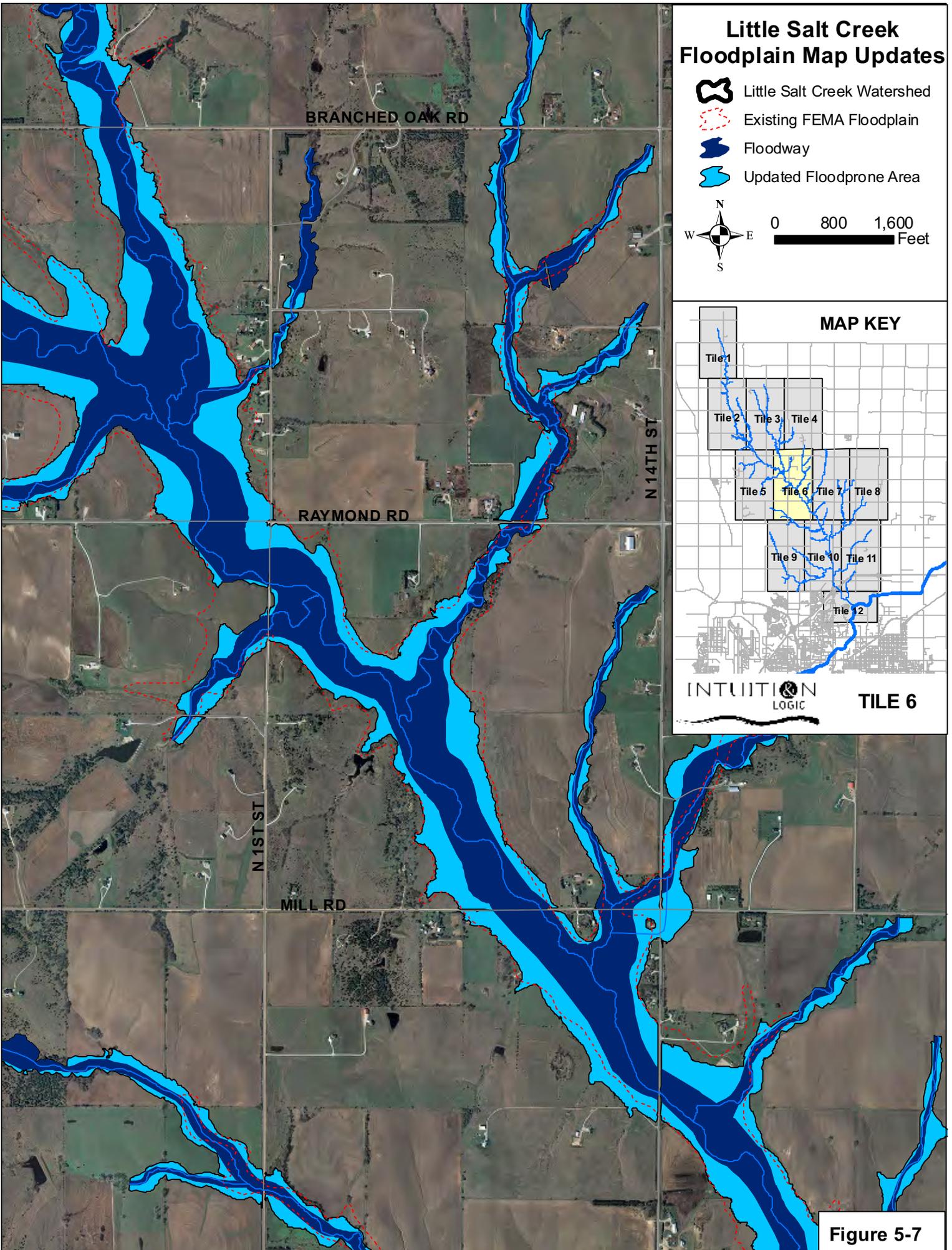
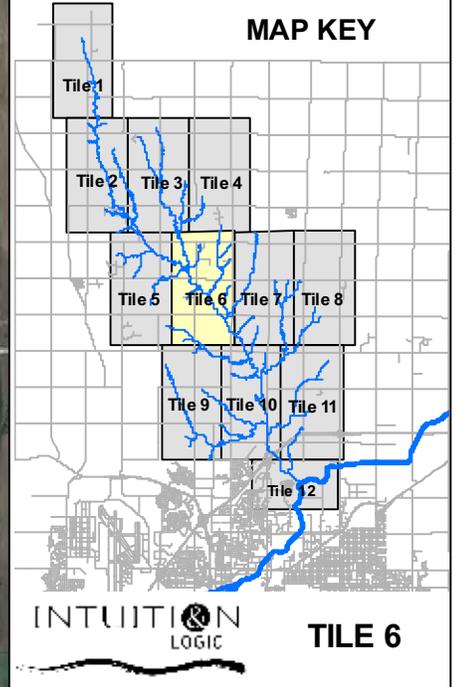


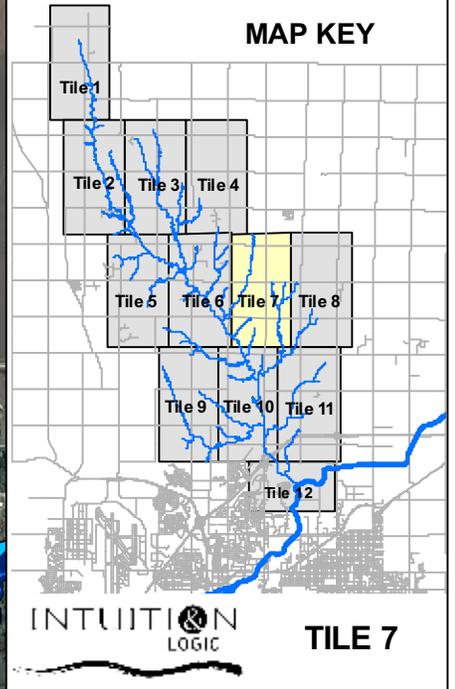
Figure 5-7

# Little Salt Creek Floodplain Map Updates

-  Little Salt Creek Watershed
-  Existing FEMA Floodplain
-  Floodway
-  Updated Floodprone Area



## MAP KEY



TILE 7

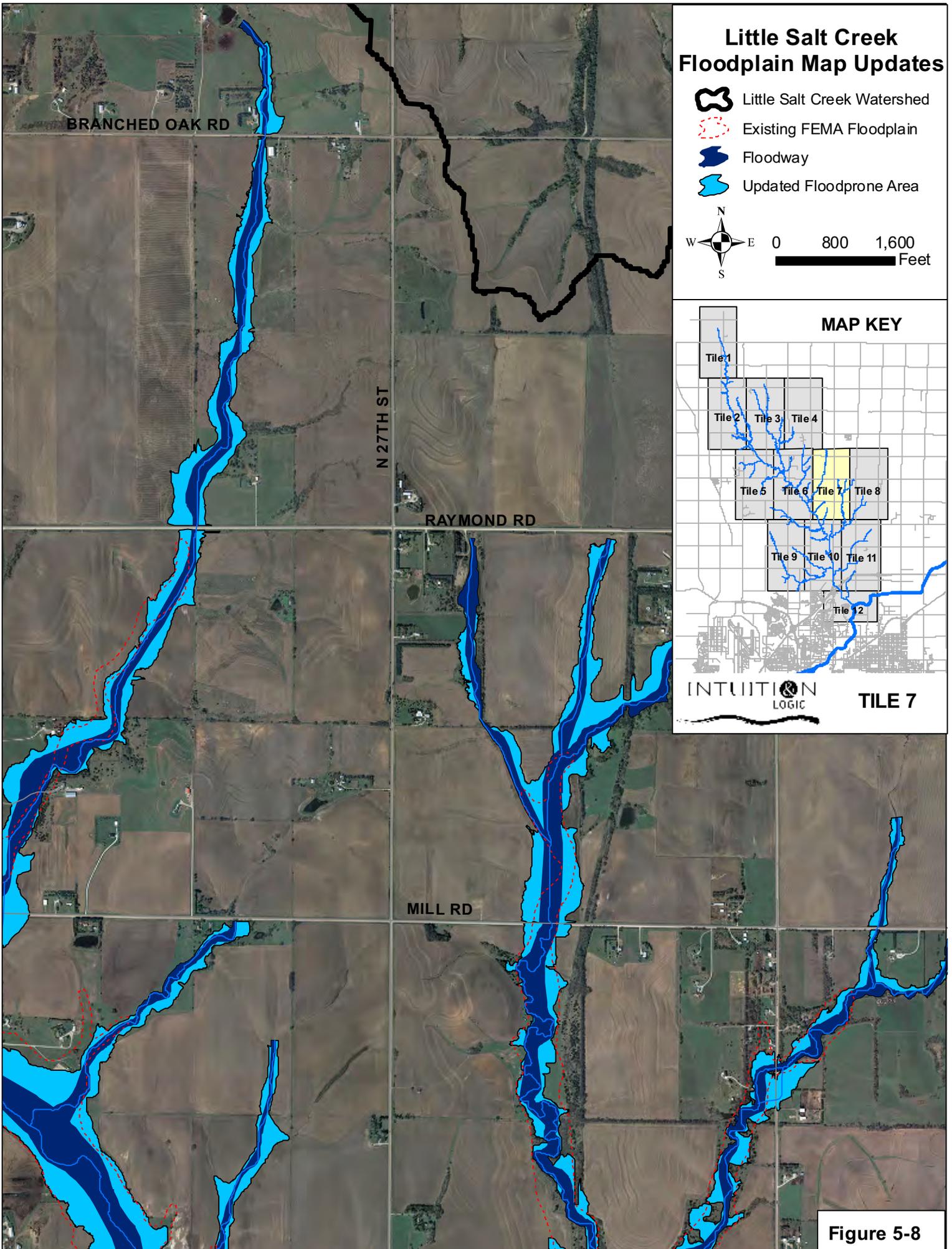


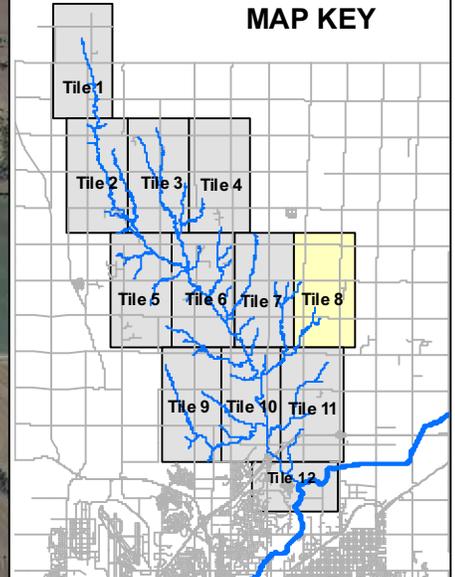
Figure 5-8

# Little Salt Creek Floodplain Map Updates

-  Little Salt Creek Watershed
-  Existing FEMA Floodplain
-  Floodway
-  Updated Floodprone Area



## MAP KEY



INTUITION  
LOGIC

TILE 8

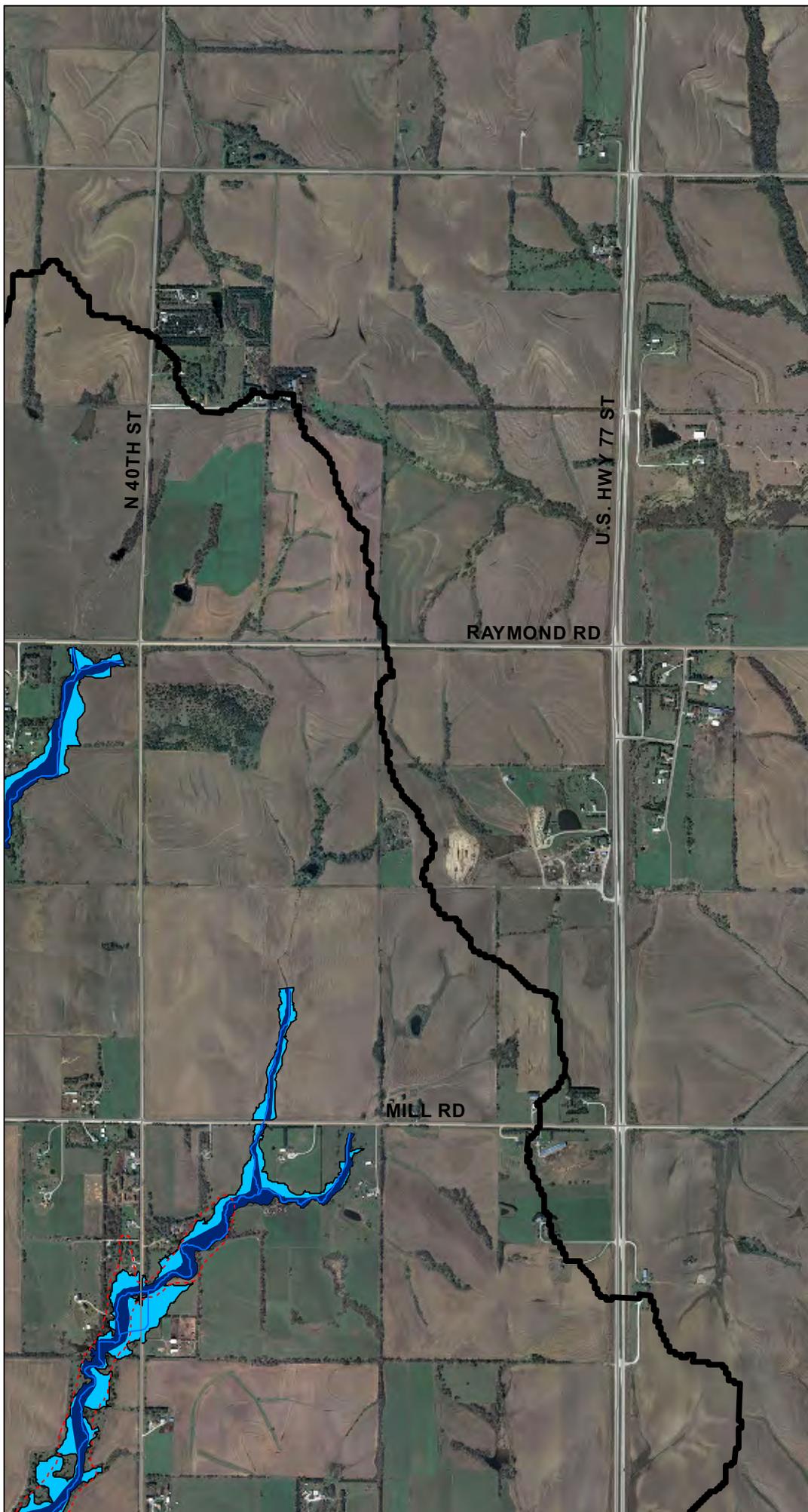
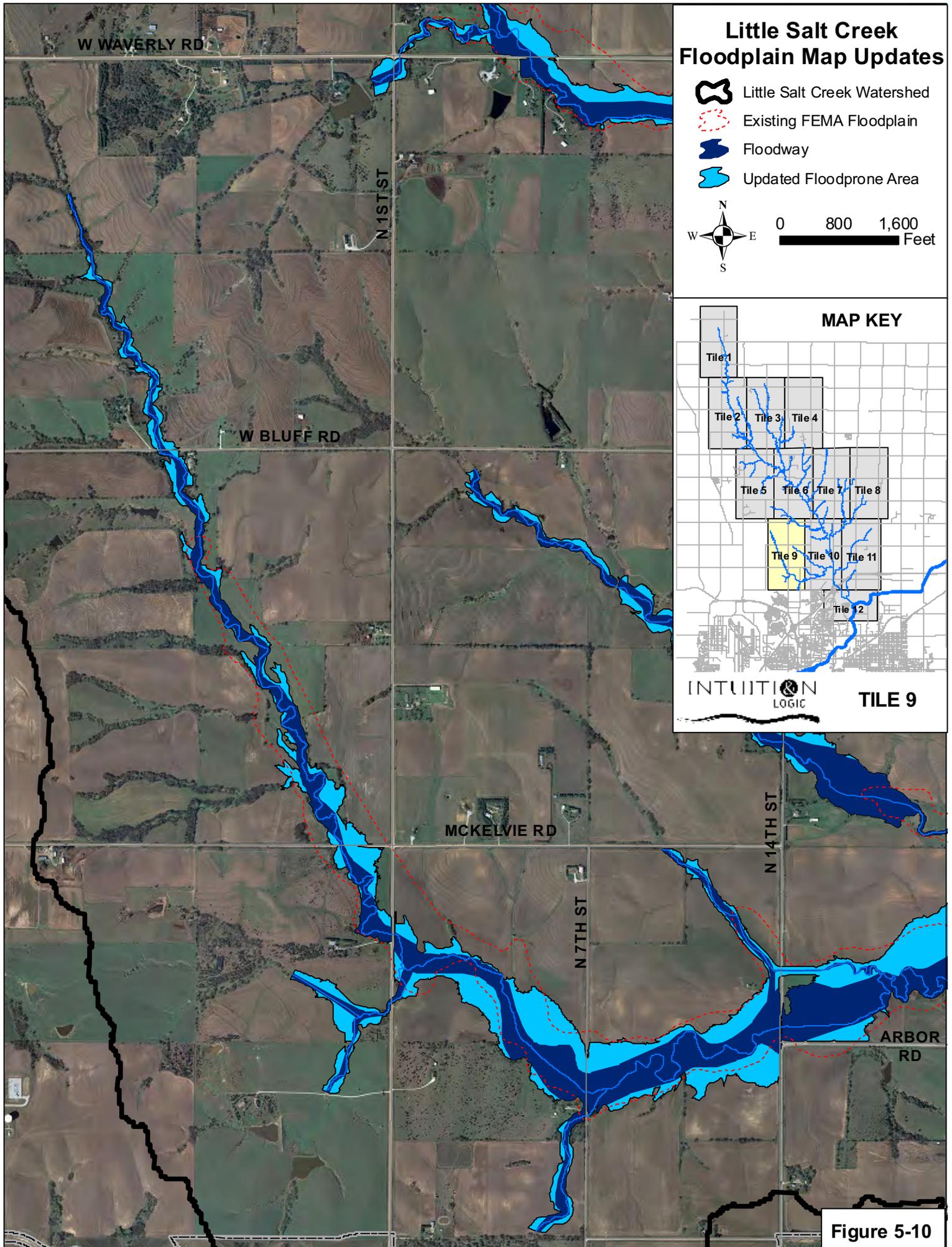


Figure 5-9

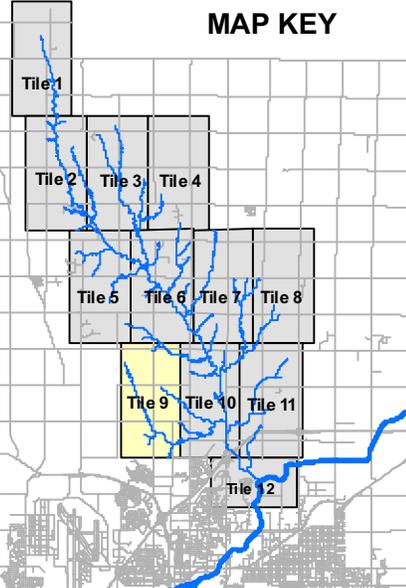


# Little Salt Creek Floodplain Map Updates

-  Little Salt Creek Watershed
-  Existing FEMA Floodplain
-  Floodway
-  Updated Floodprone Area



## MAP KEY



INTUITION LOGIC **TILE 9**

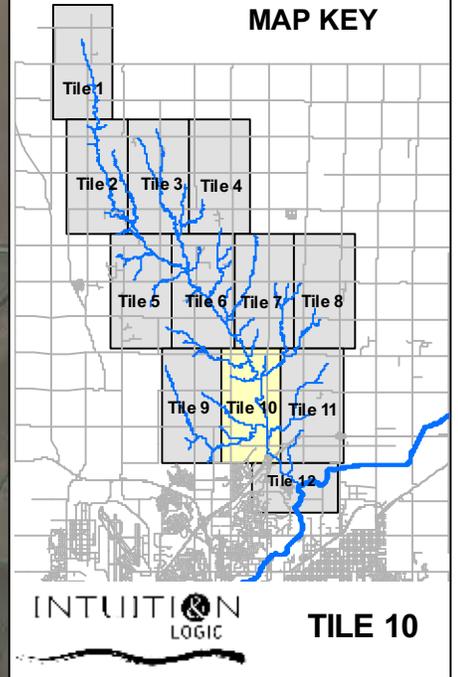
Figure 5-10

# Little Salt Creek Floodplain Map Updates

-  Little Salt Creek Watershed
-  Existing FEMA Floodplain
-  Floodway
-  Updated Floodprone Area



## MAP KEY



INTUITION  
LOGIC

TILE 10

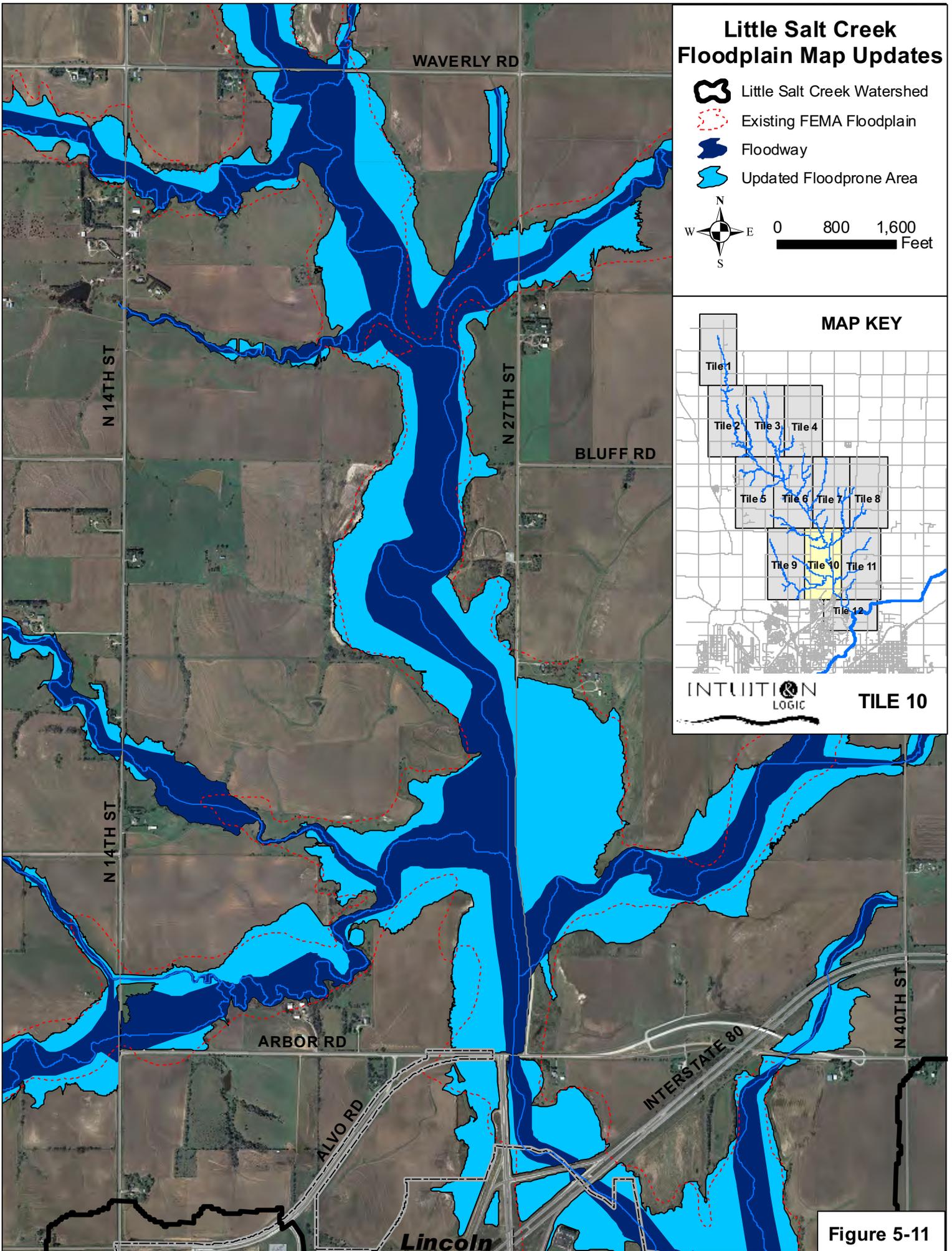


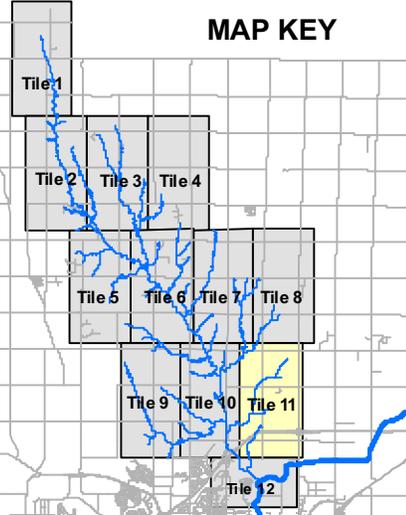
Figure 5-11

# Little Salt Creek Floodplain Map Updates

-  Little Salt Creek Watershed
-  Existing FEMA Floodplain
-  Floodway
-  Updated Floodprone Area



## MAP KEY



INTUITION  
LOGIC

**TILE 11**

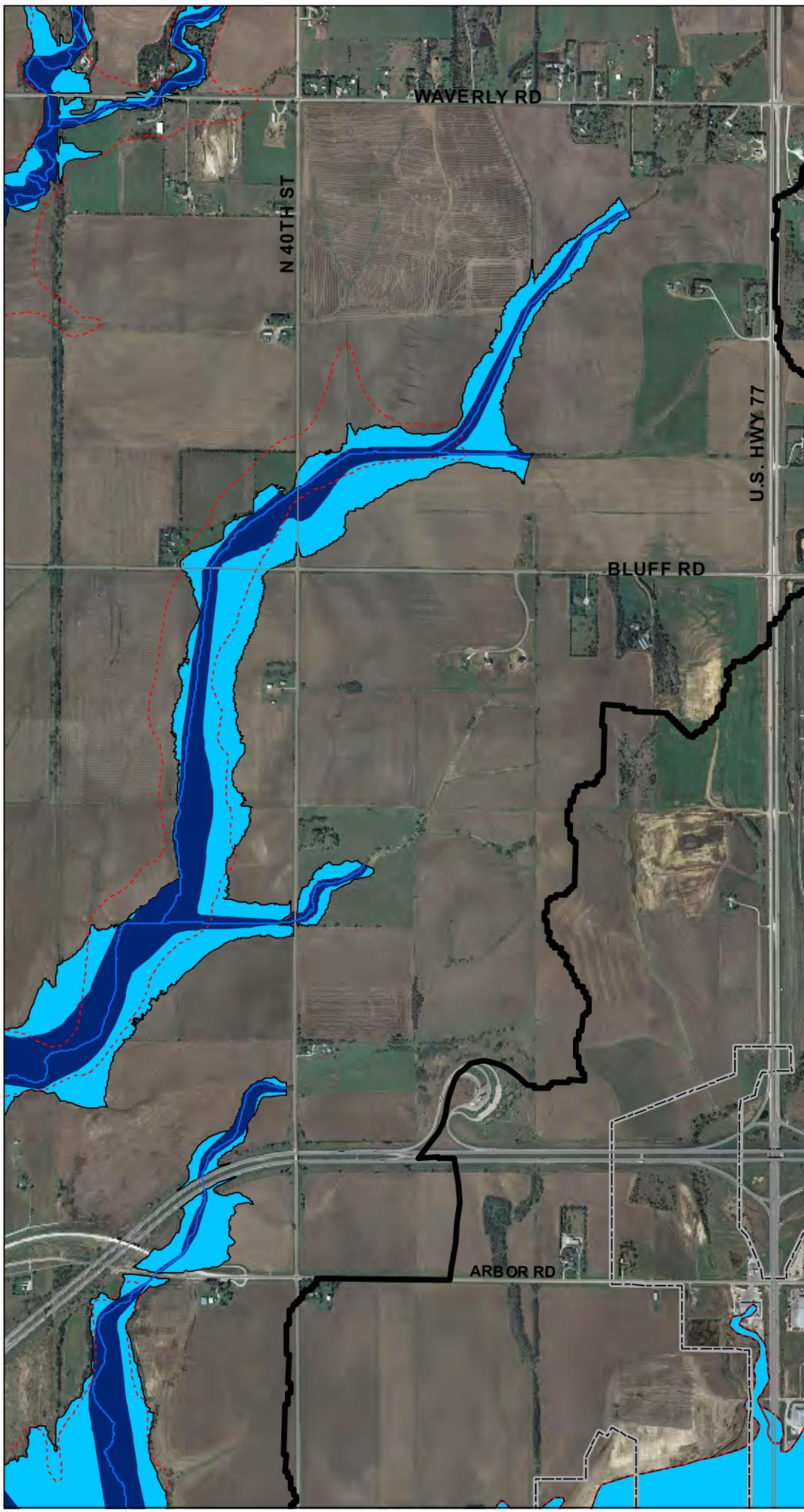


Figure 5-12

# Little Salt Creek Floodplain Map Updates

-  Little Salt Creek Watershed
-  Existing FEMA Floodplain
-  Floodway
-  Updated Floodprone Area



## MAP KEY

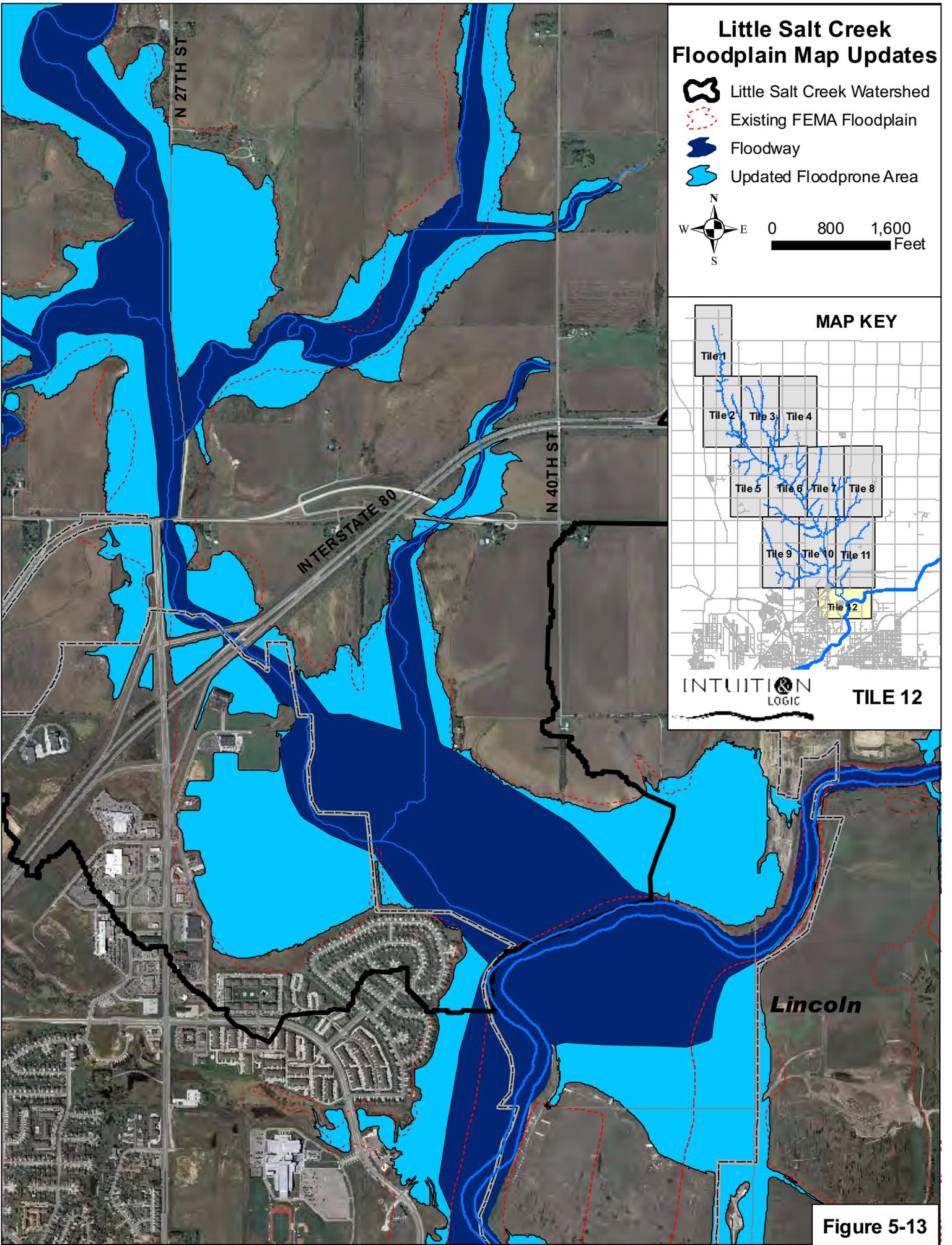
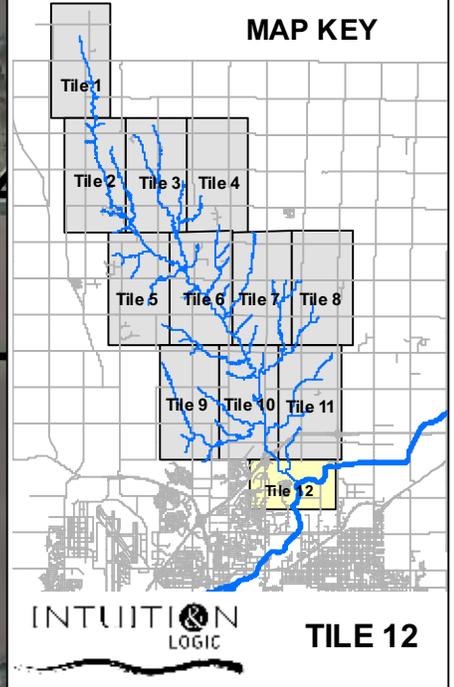


Figure 5-13