

# Deer Creek Flood Mitigation

March 6, 2017

CH2M

# Problem History

**June 1957 (4.74" in 15 hrs)**

April 1970

April 1973

July 1978

**April 1979 (4.90" in 20 hrs)**

September 1980

June 1981

July 1982

September 1986

July 1991

August 1993

September 1993

May 1995

June 1996

February 1999

May 1995

June 1996

February 1999

June 2000

June 2003

May 2004

July 2004

May 2005

May 2008

**September 2008**

**(Tropical Depression Ike)**

June 2011

June 2013

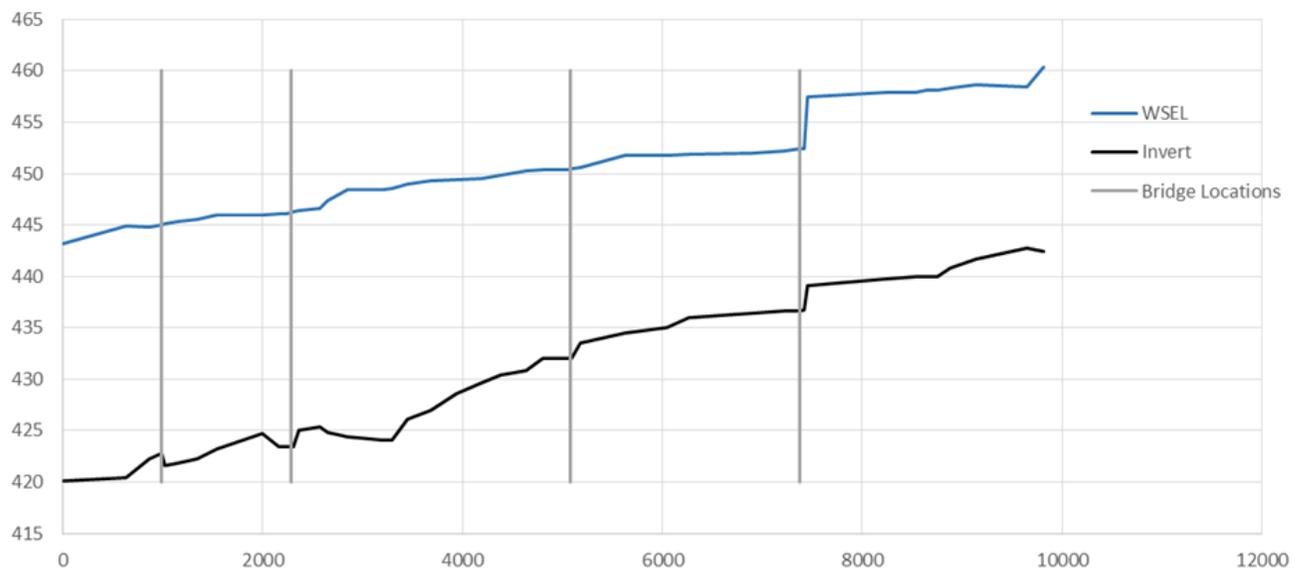
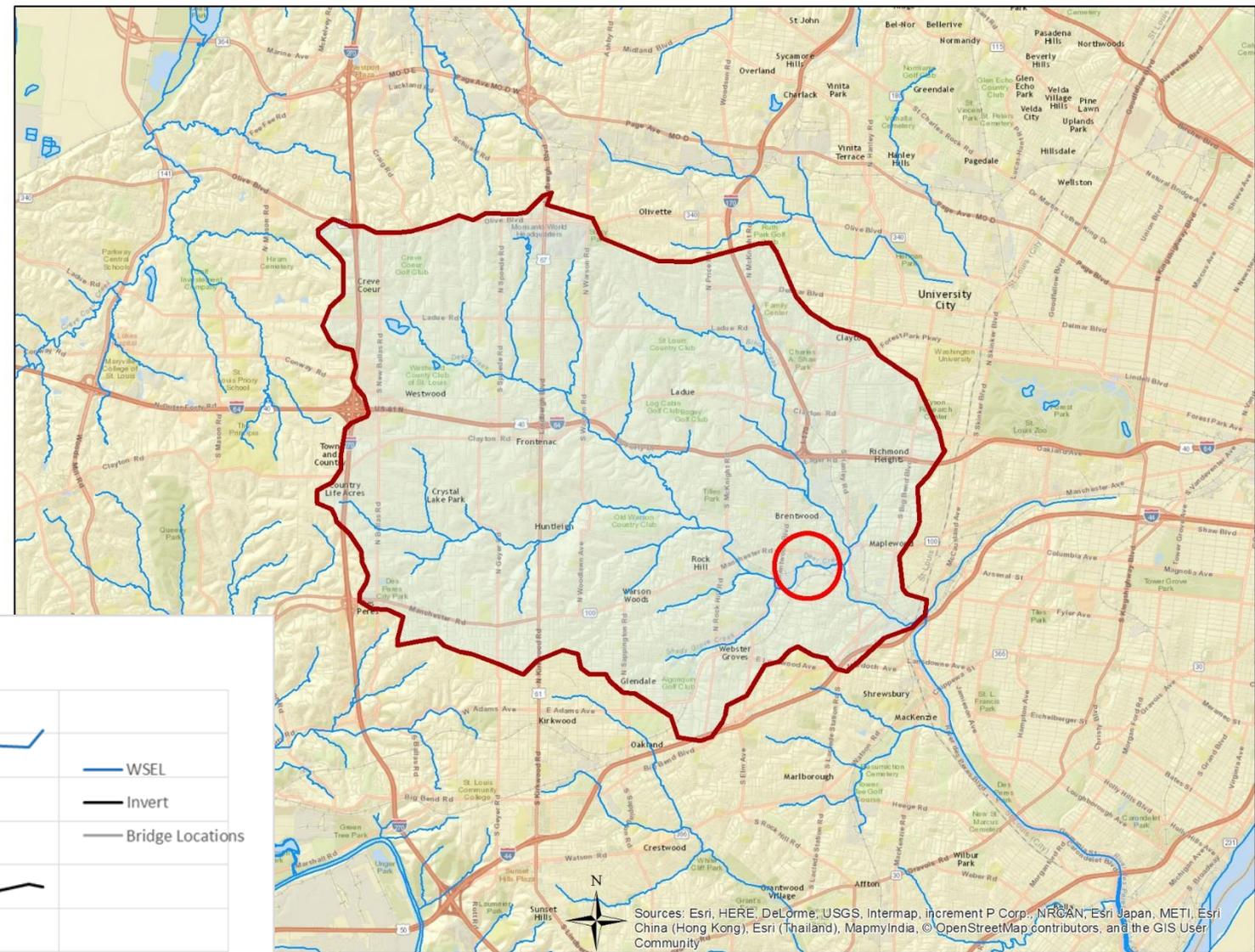
**December 2015**

August 2016



# Causes of Flooding

- Contributing Watershed
  - ~37 Square Miles
  - All or part of 22 Municipalities
- Channel Profile
  - Steep to Flat

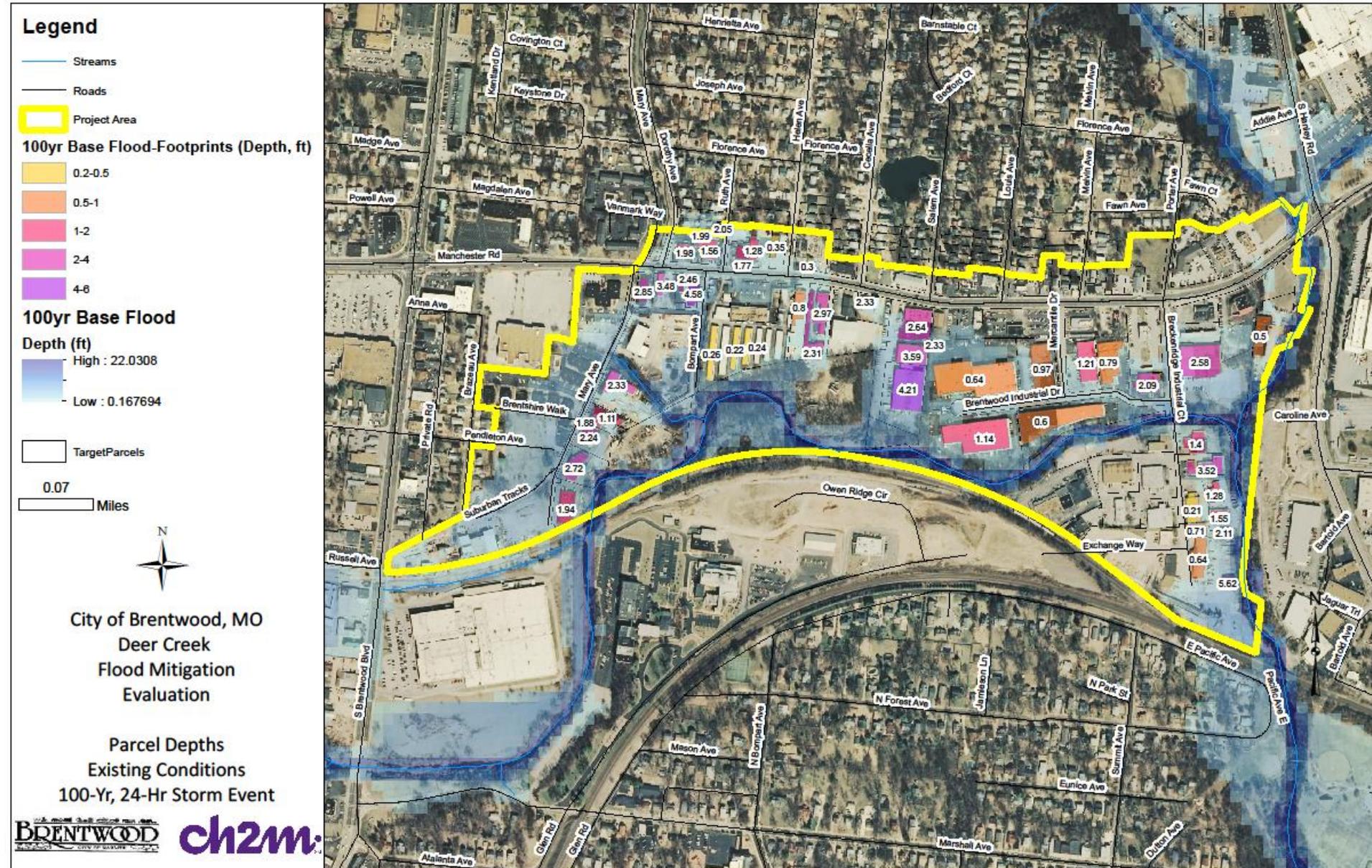


Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

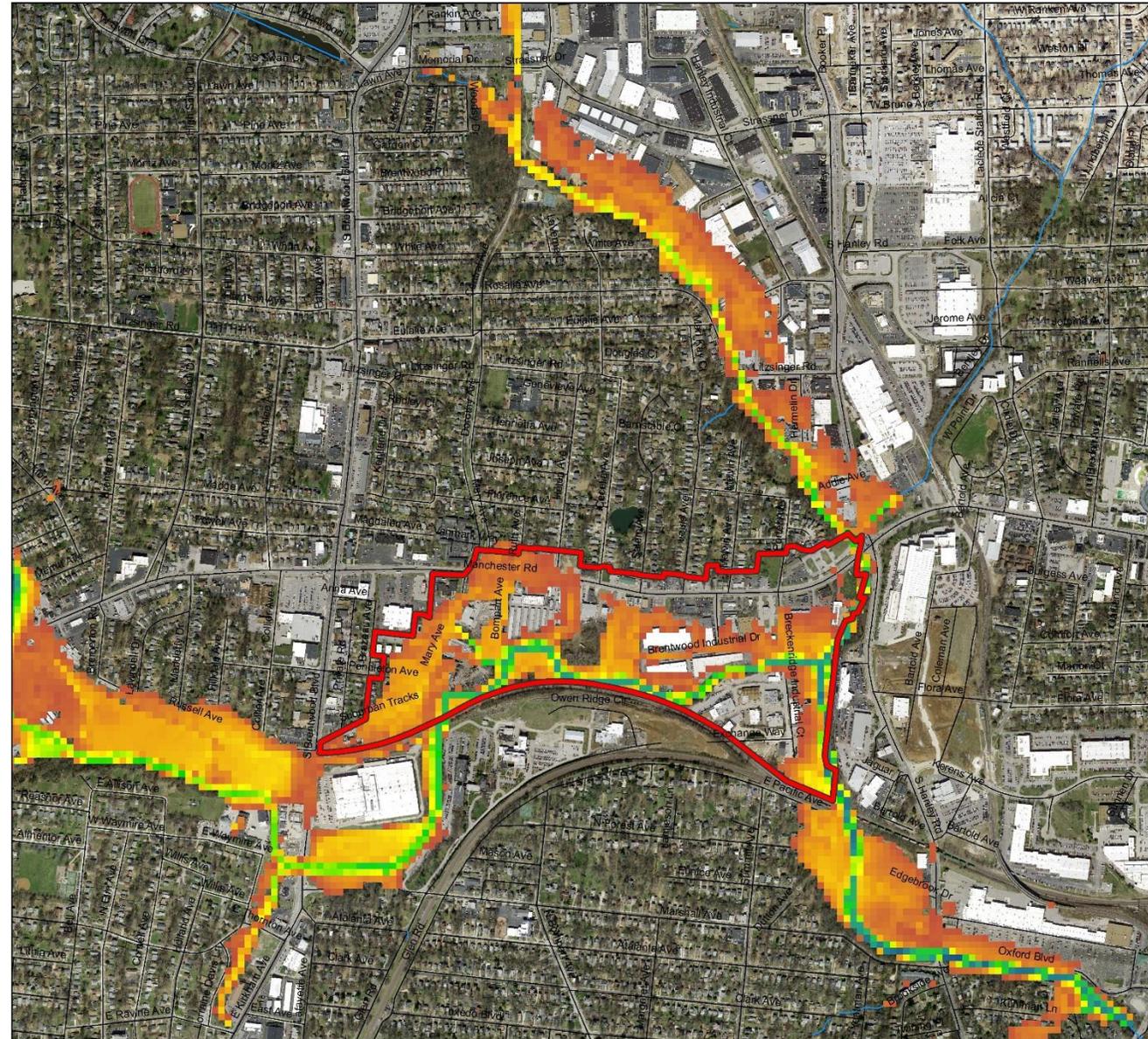
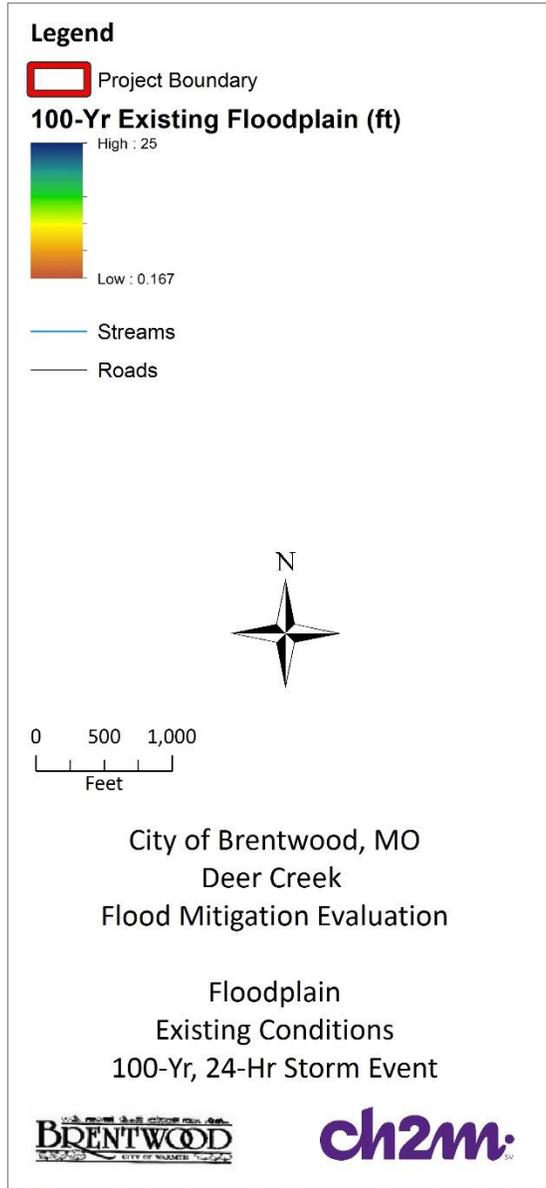
# Problem Definition between Mary Ave, Manchester Road and Hanley

47 Structures flooded by the 100-year storm event

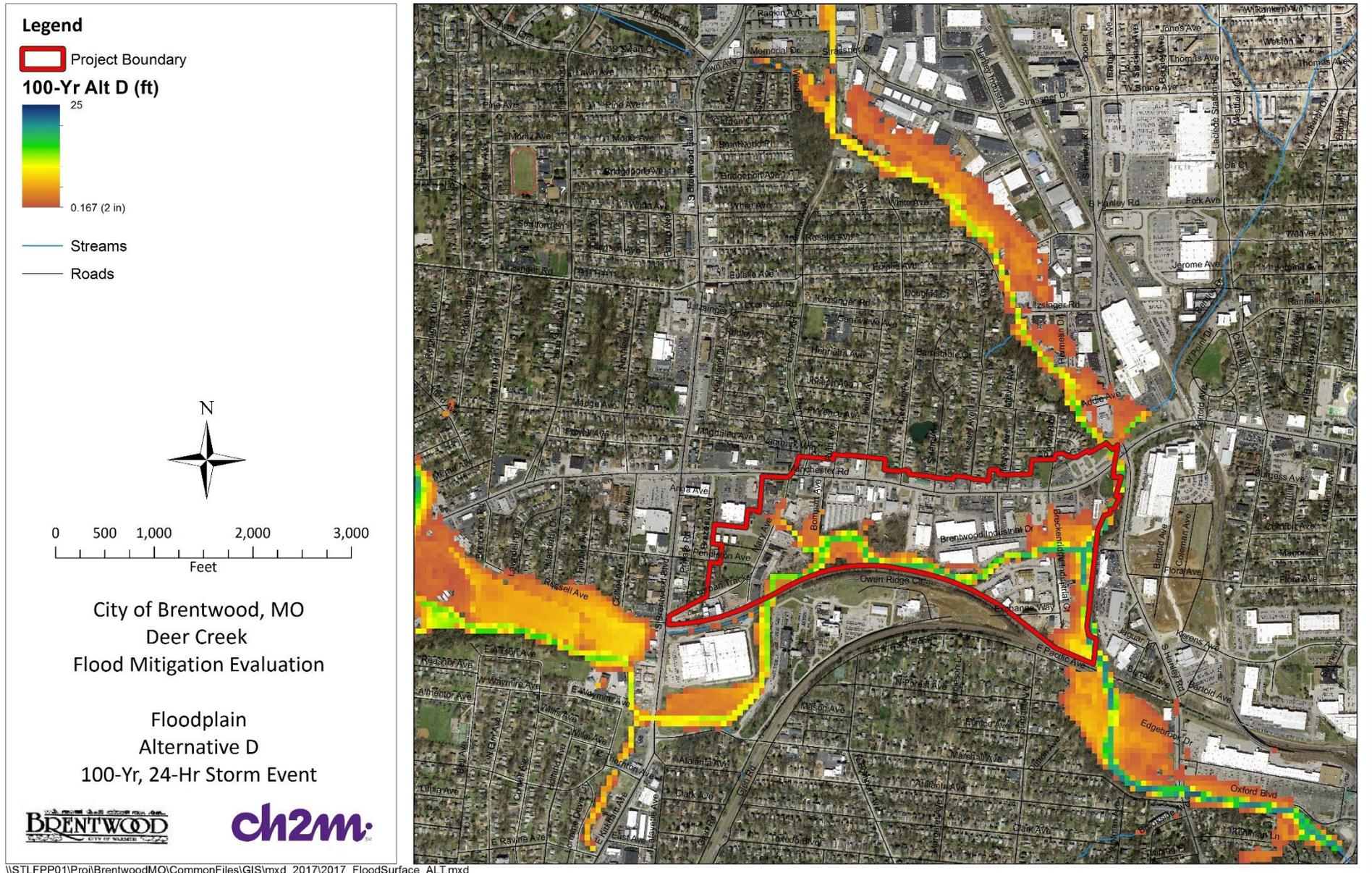
| 100-yr Base Flood |            |           |
|-------------------|------------|-----------|
| Flood Depth       | Structures | Parcels   |
| <0.5'             | 7          | 2         |
| 0.5-1.0           | 7          | 7         |
| 1.0-2.0           | 13         | 18        |
| 2.0-3.0           | 14         | 14        |
| 3.0-4.0           | 3          | 5         |
| 4.0-5.0           | 2          | 7         |
| >5.0              | 1          | 20        |
| <b>TOTAL</b>      | <b>47</b>  | <b>73</b> |



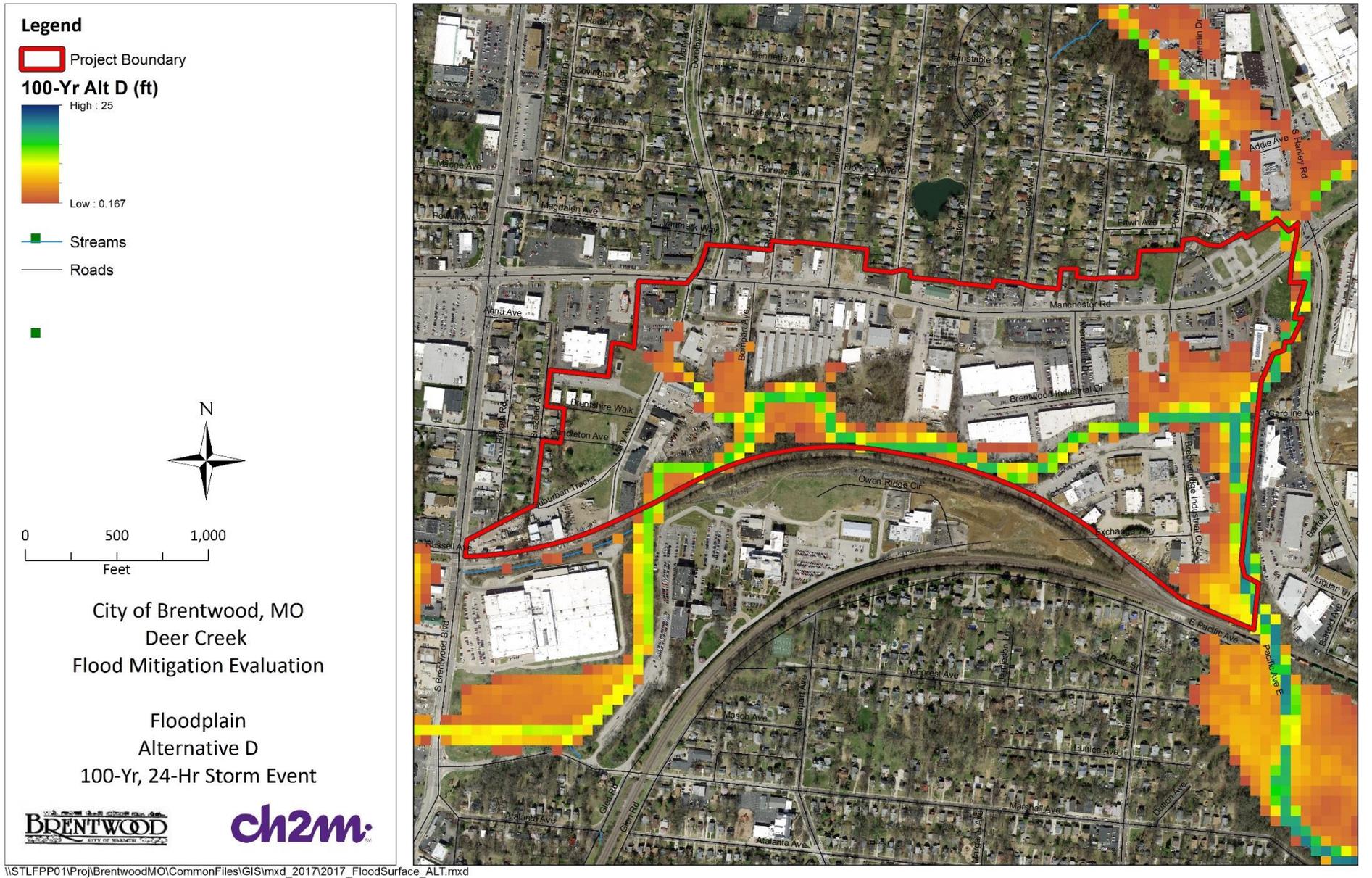
# Overview of Existing Conditions

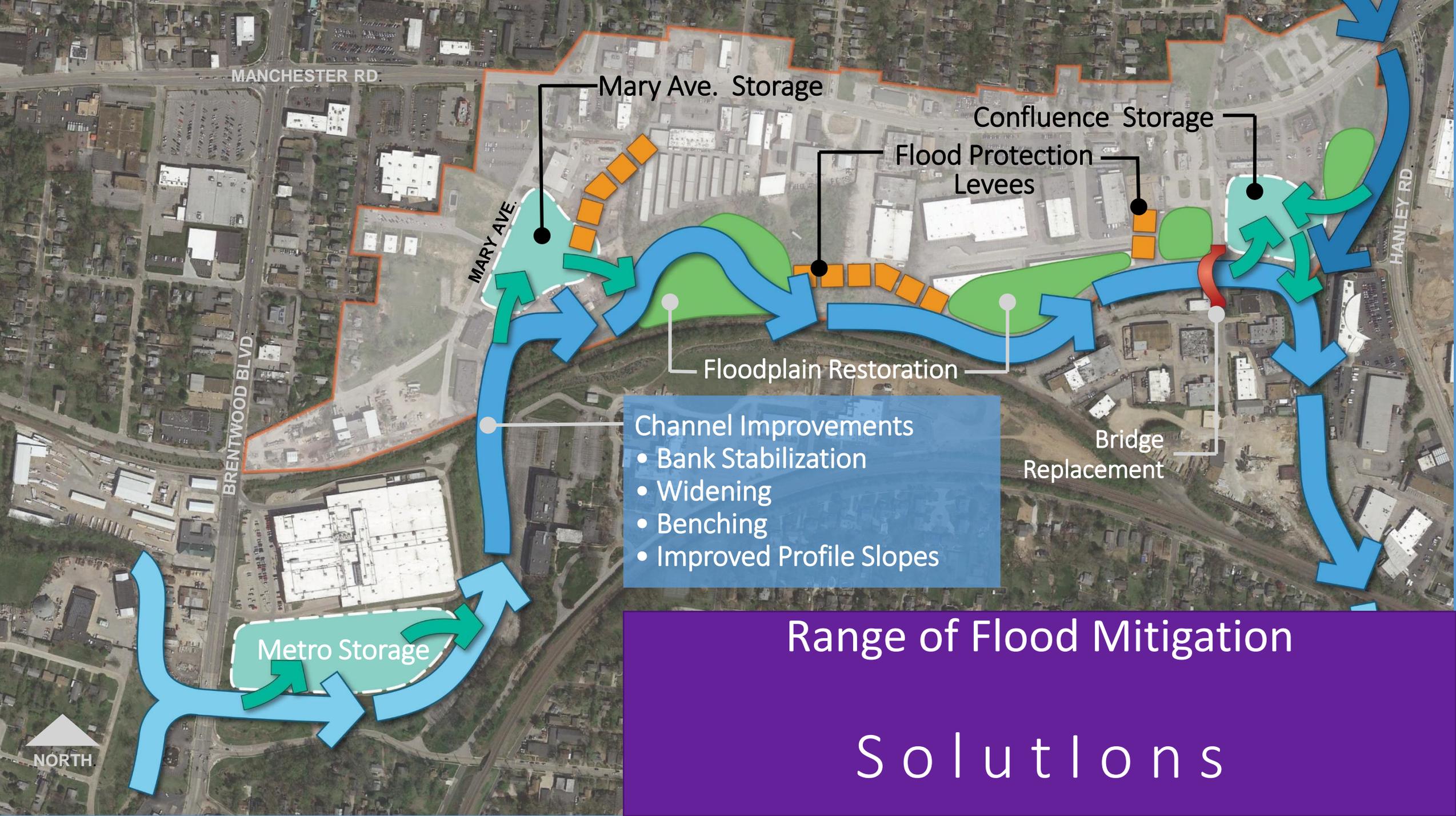


# Overview and Effectiveness of Alternative D



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MANCHESTER RD.

Mary Ave. Storage

Confluence Storage

Flood Protection Levees

MARY AVE.

Floodplain Restoration

Channel Improvements  
• Bank Stabilization  
• Widening  
• Benching  
• Improved Profile Slopes

Bridge Replacement

BRENTWOOD BLVD.

Metro Storage

HANLEY RD.

NORTH

Range of Flood Mitigation Solutions

# Channel Improvements

- Bank Stabilization
- Widening
- Benching
- Improved Profile Slopes





Storage Areas

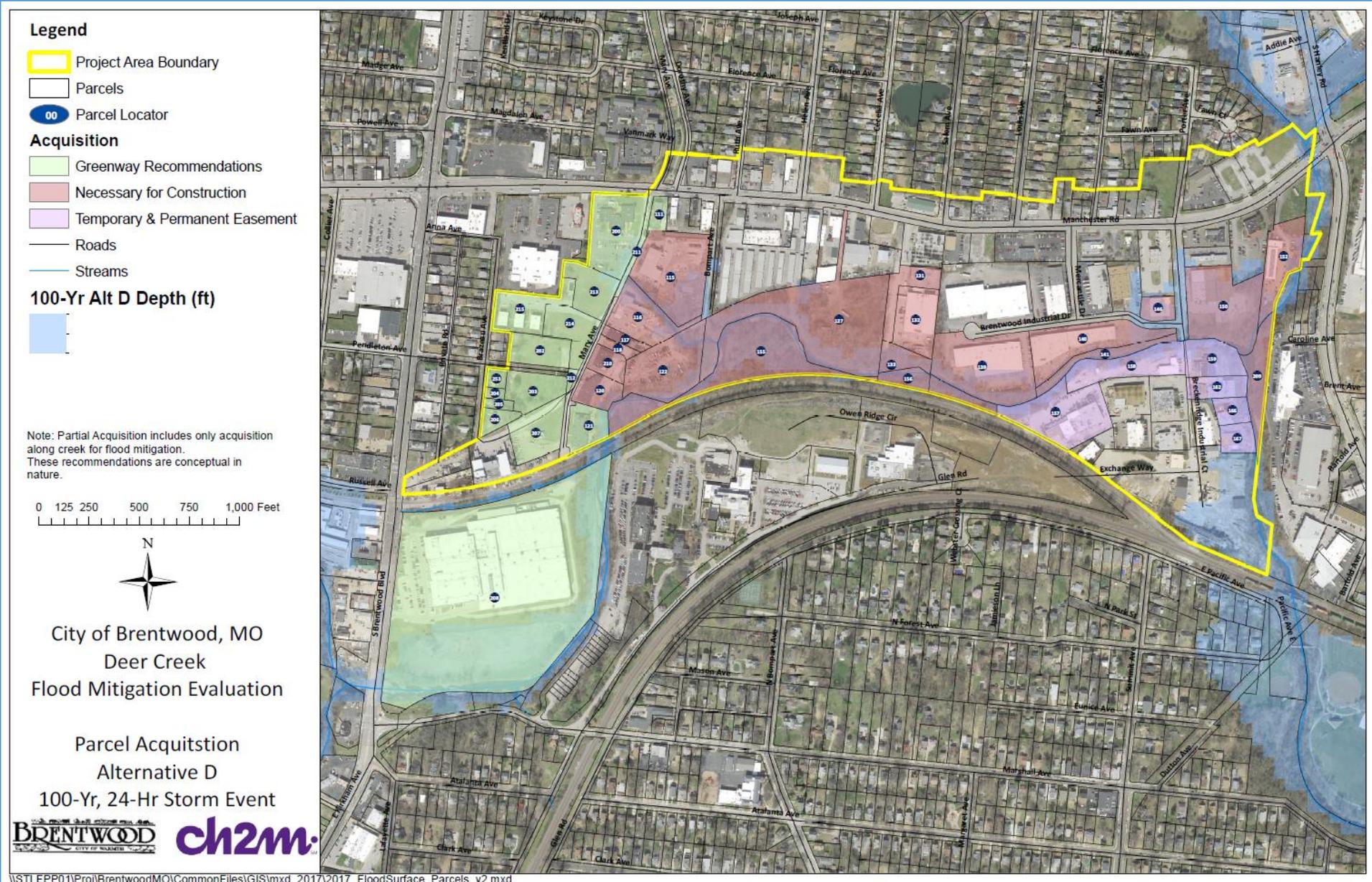


Flood Protection Levee



Floodplain Restoration

# Conceptual Property Acquisition, Supporting Alternative D



Questions?

