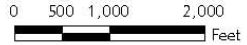
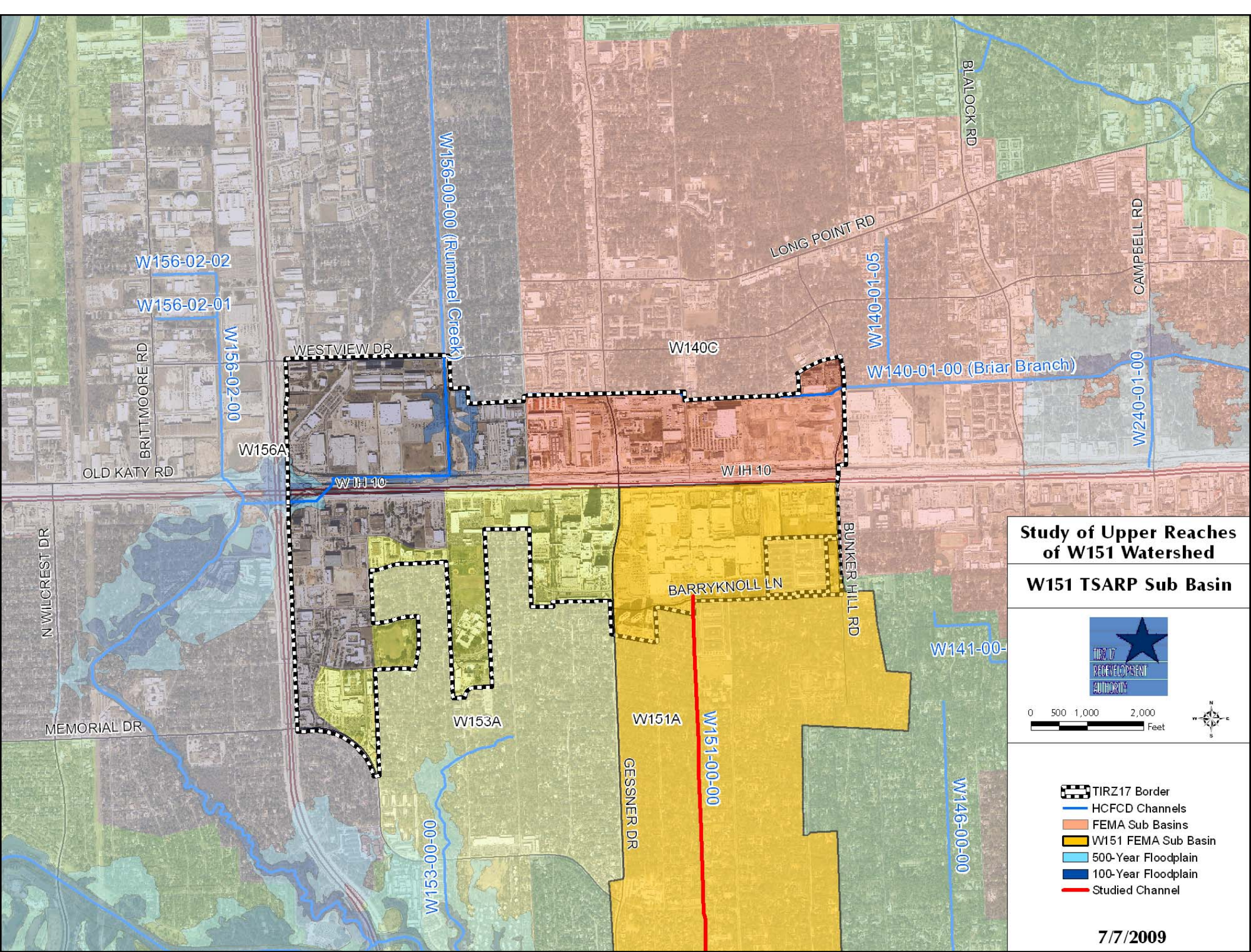


**Study of Upper Reaches
of W151 Watershed
FEMA Drainage Areas
for Major Channels**



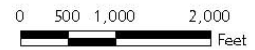
-  TIRZ17 Border
-  HCFCF Channels
-  FEMA Sub Basins
-  500-Year Floodplain
-  100-Year Floodplain

7/7/2009



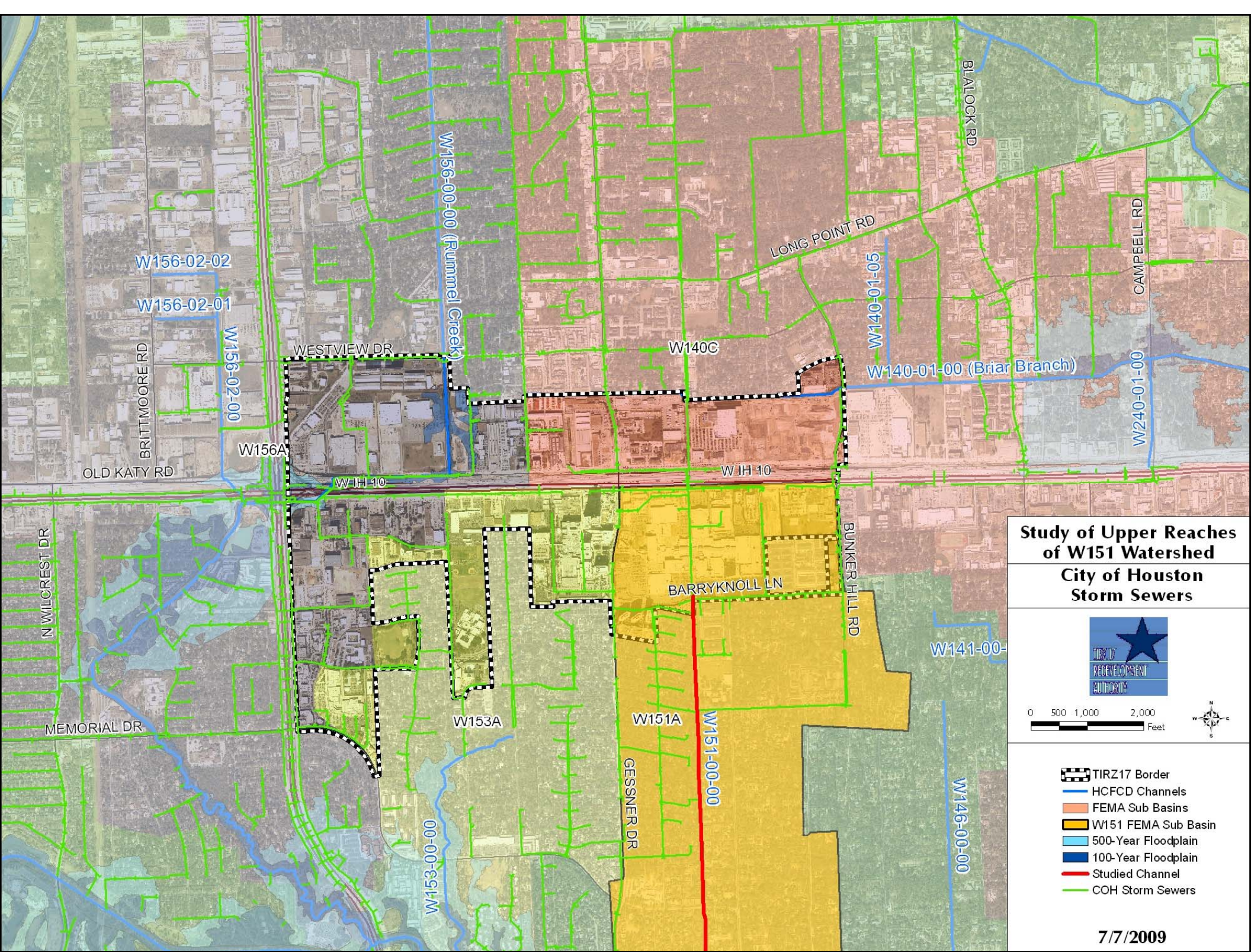
Study of Upper Reaches of W151 Watershed

W151 TSARP Sub Basin

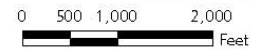


-  TIRZ17 Border
-  HCFC channels
-  FEMA Sub Basins
-  W151 FEMA Sub Basin
-  500-Year Floodplain
-  100-Year Floodplain
-  Studied Channel

7/7/2009

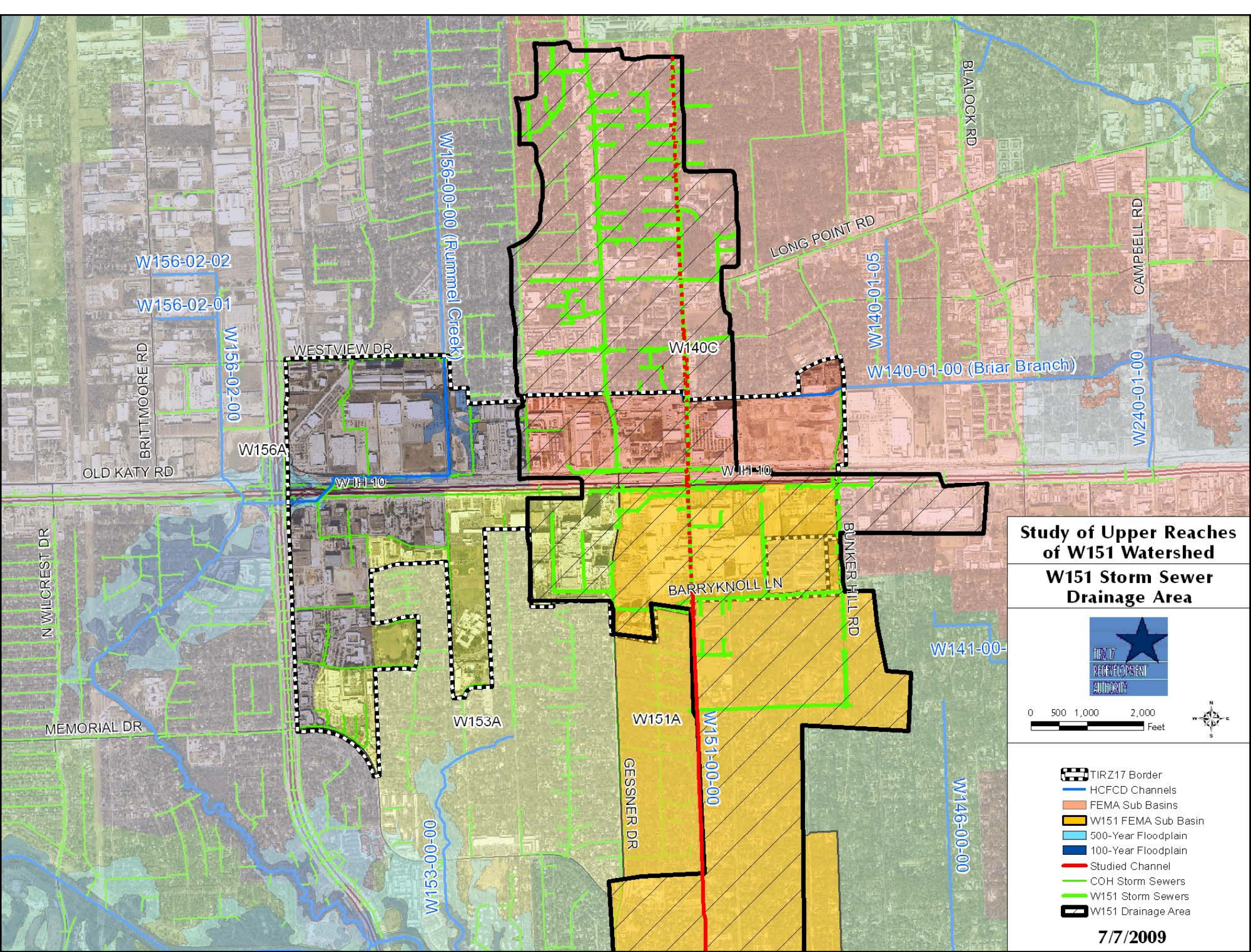


**Study of Upper Reaches
of W151 Watershed
City of Houston
Storm Sewers**



-  TIRZ17 Border
-  HCFC D Channels
-  FEMA Sub Basins
-  W151 FEMA Sub Basin
-  500-Year Floodplain
-  100-Year Floodplain
-  Studied Channel
-  COH Storm Sewers

7/7/2009

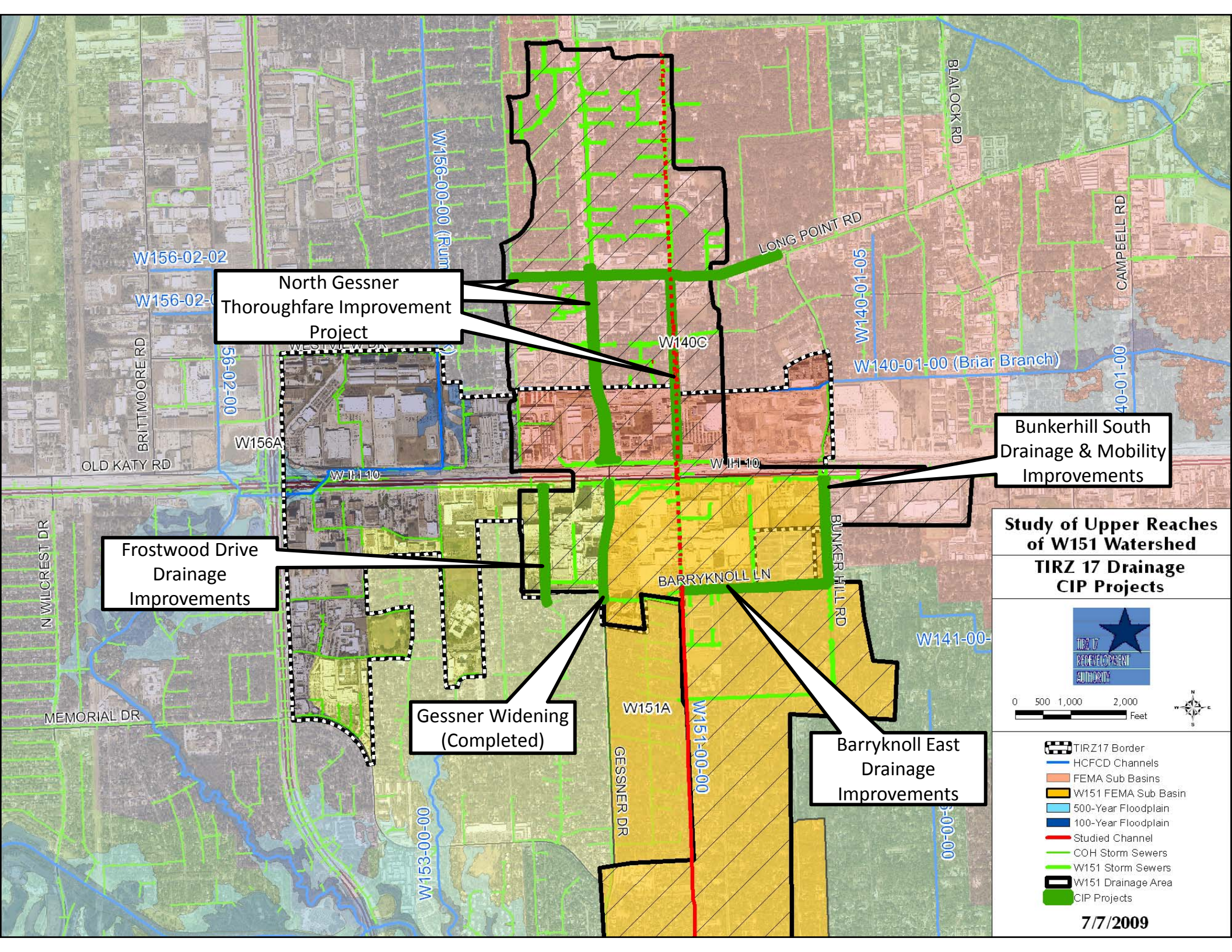


**Study of Upper Reaches
of W151 Watershed
W151 Storm Sewer
Drainage Area**



- TIRZ17 Border
- HCFCD Channels
- FEMA Sub Basins
- W151 FEMA Sub Basin
- 500-Year Floodplain
- 100-Year Floodplain
- Studied Channel
- COH Storm Sewers
- W151 Storm Sewers
- W151 Drainage Area

7/7/2009



North Gessner Thoroughfare Improvement Project

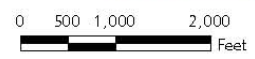
Bunkerhill South Drainage & Mobility Improvements

**Study of Upper Reaches of W151 Watershed
TIRZ 17 Drainage CIP Projects**

Frostwood Drive Drainage Improvements

Gessner Widening (Completed)

Barryknoll East Drainage Improvements



- TIRZ17 Border
- HCFCD Channels
- FEMA Sub Basins
- W151 FEMA Sub Basin
- 500-Year Floodplain
- 100-Year Floodplain
- Studied Channel
- COH Storm Sewers
- W151 Storm Sewers
- W151 Drainage Area
- CIP Projects

7/7/2009

Summary of HCFCD W151 Study

- **Objective:** Reduce structural flooding in W151 watershed
- **How:** Lower Water Surface Elevation in W151
- **Study 1:** Conceptual Report Completed October 2004
- **Study 2:** Feasibility Study – Anticipated to be released this month

Study of Upper Reaches
of W151 Watershed
W151 Storm Sewer
Drainage Area



- W151 Storm Sewer
- W151 Storm Sewer
- W151 Storm Sewer
- W151 Storm Sewer
- W151 Storm Sewer
- W151 Storm Sewer
- W151 Storm Sewer
- W151 Storm Sewer

7/7/2009

Summary of HCFCD W151 Study

- **Components Addressed :**

- Channel Improvements
- Detention (Purpose: To mitigate impacts from channel improvements on Buffalo Bayou)
- Storm Sewer Trunk Line Improvements

- **Components Not Addressed:**

- Improvements North of IH-10
- Local Drainage Issues
- Overland Sheetflow (2D)

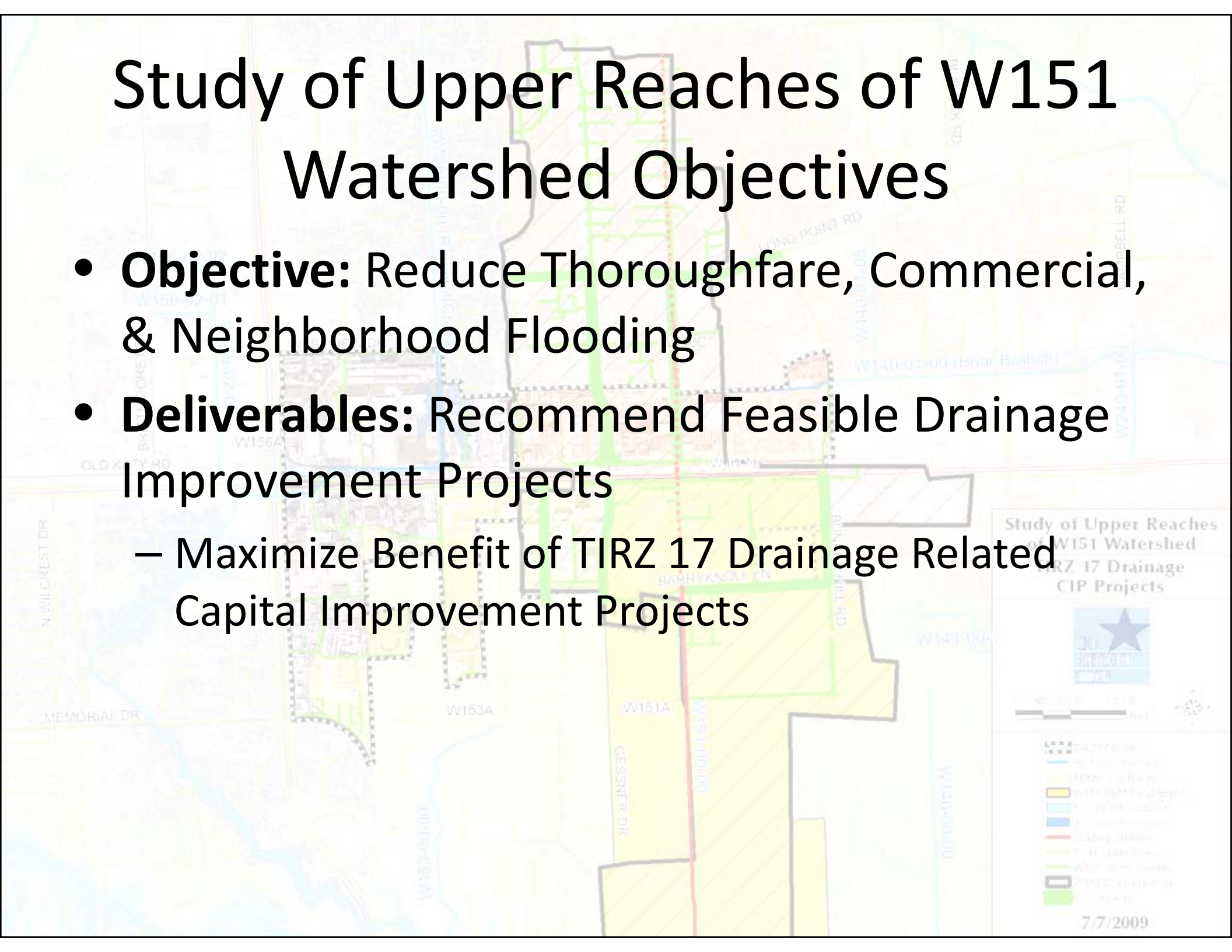
Study of Upper Reaches
of W151 Watershed
W151 Storm Sewer
Drainage Area



7/7/2009

Study of Upper Reaches of W151 Watershed Objectives

- **Objective:** Reduce Thoroughfare, Commercial, & Neighborhood Flooding
- **Deliverables:** Recommend Feasible Drainage Improvement Projects
 - Maximize Benefit of TIRZ 17 Drainage Related Capital Improvement Projects



Summary of Proposed Scope

- Study Components
 - Explore Agency Partnering Opportunities
 - Leverage HCFCO W151 Effort
 - Address Local Drainage Issues
 - Extend HCFCO Model Extents (North & South of IH-10)
 - Includes 4 CIP Projects (North & South of IH-10)
 - Includes Neighborhoods outside TIRZ 17
 - Includes Portion of Briar Branch Watershed
 - Dynamic Modeling
 - Storm Sewers
 - Overland Sheet Flow (2D)
 - New Detailed Topography
 - 9 times the detail as 2002 data

Study of Upper Reaches
of W151 Watershed
TIRZ 17 Drainage
CIP Projects

