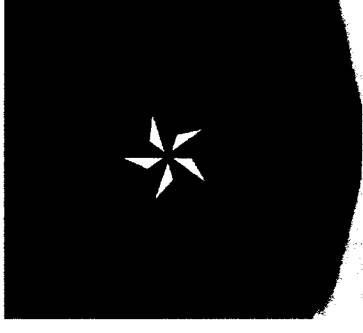


Johnson County

Floodplains and Drainage



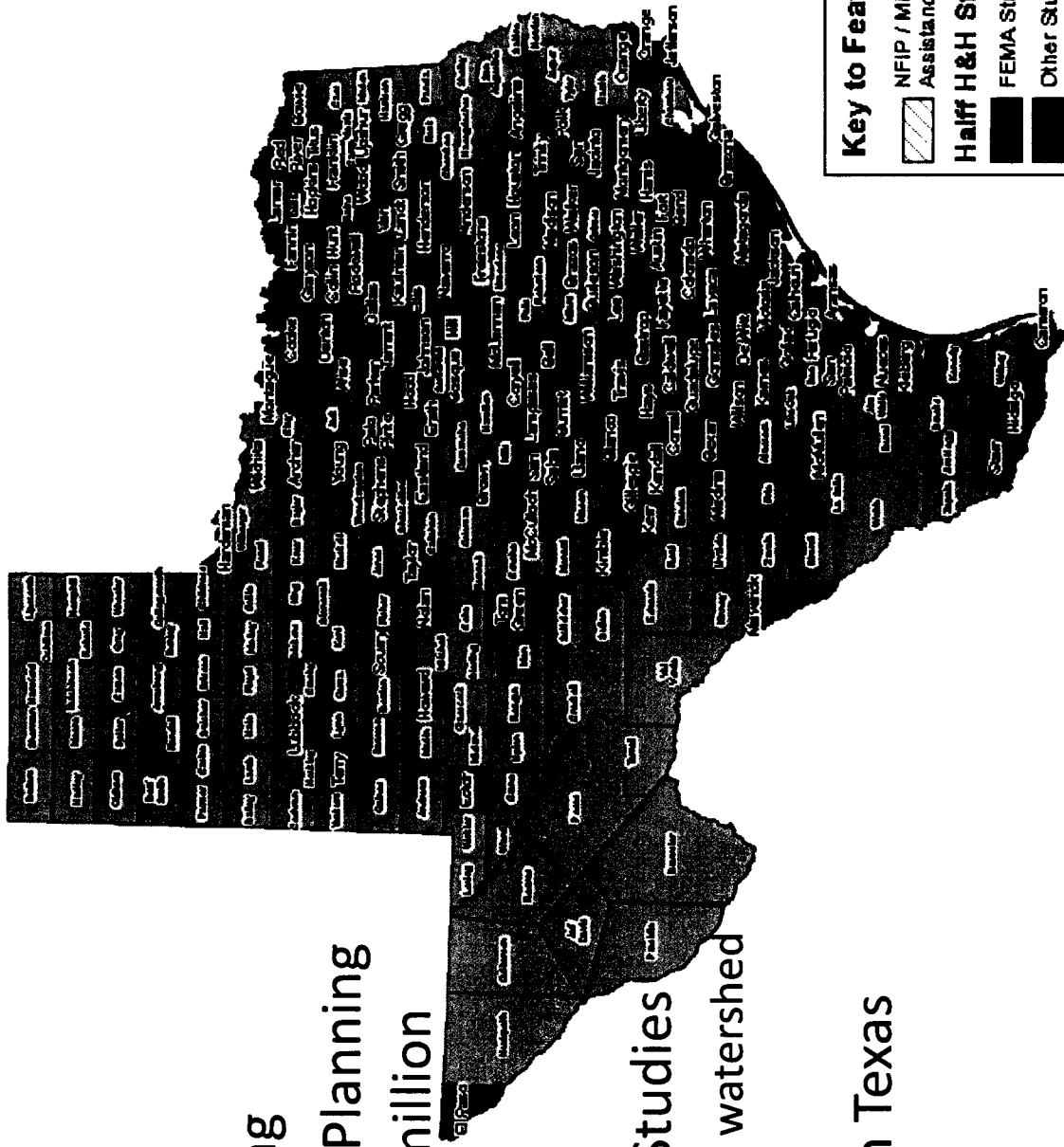
Andrew Ickert, PE, CFM – Vice President
Ben Pylant, PE, CFM – Project Manager



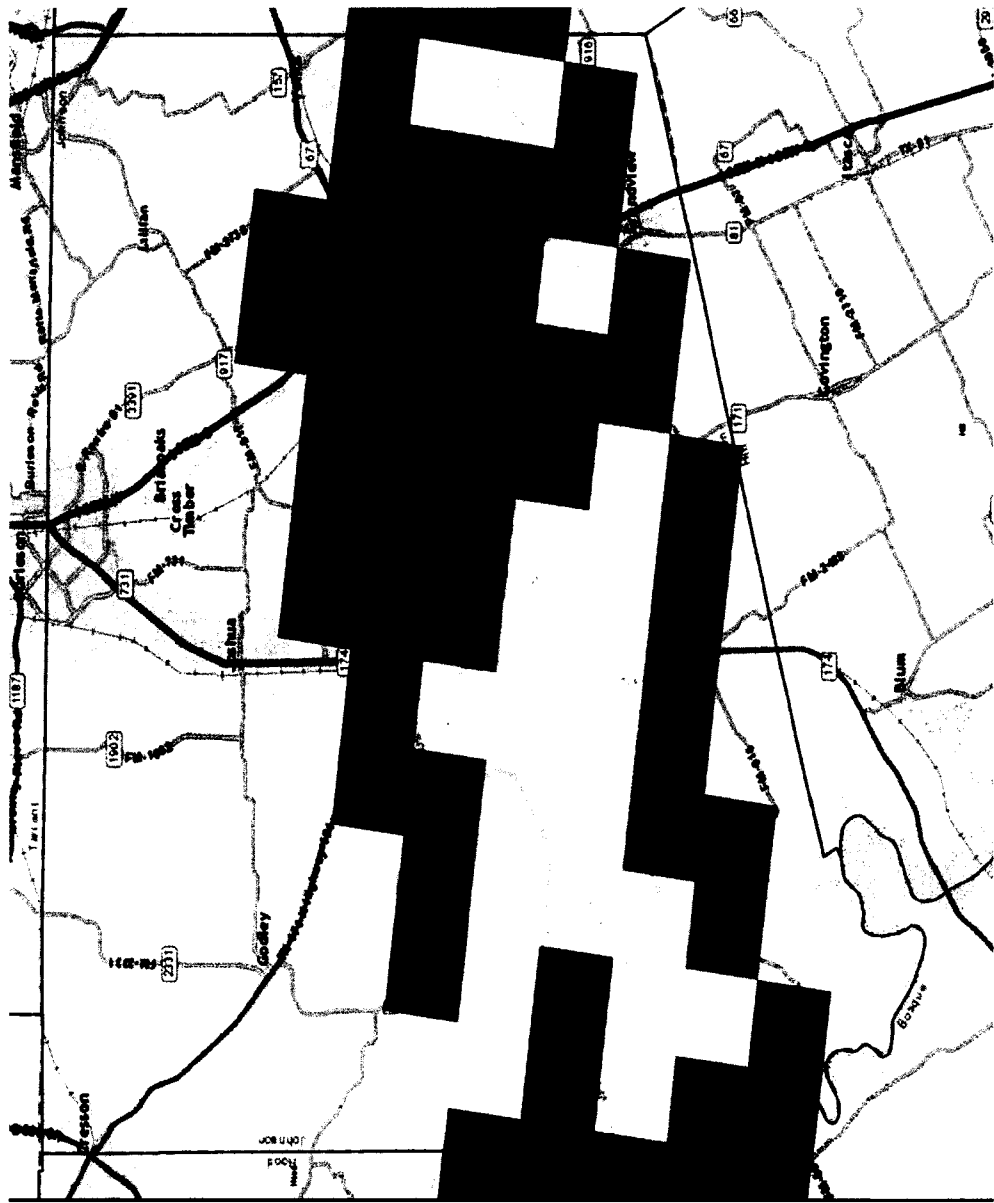
January 2016

HALFF

- 50 Counties FEMA Mapping
- 19 Texas Flood Protection Planning studies totaling over \$12 million
- 40 Communities
 - CAVs
- Hydrologic and Hydraulic Studies
 - Over 40,000 square miles of watershed
 - Over 3,160 stream miles
- 30 dedicated staff in North Texas



April 2015



Legend

3 Hour DDF

Return Period

2-year

5-year

10-year

25-year

50-year

100-year



2015 Johnson County Flooding Incidents Exhibit

Legend

Incidents



Fatality



High Water Rescue



Street Closure

Stream Centerline



Flood Zone



500 Year Floodplain



Approximate Study



Detailed Study



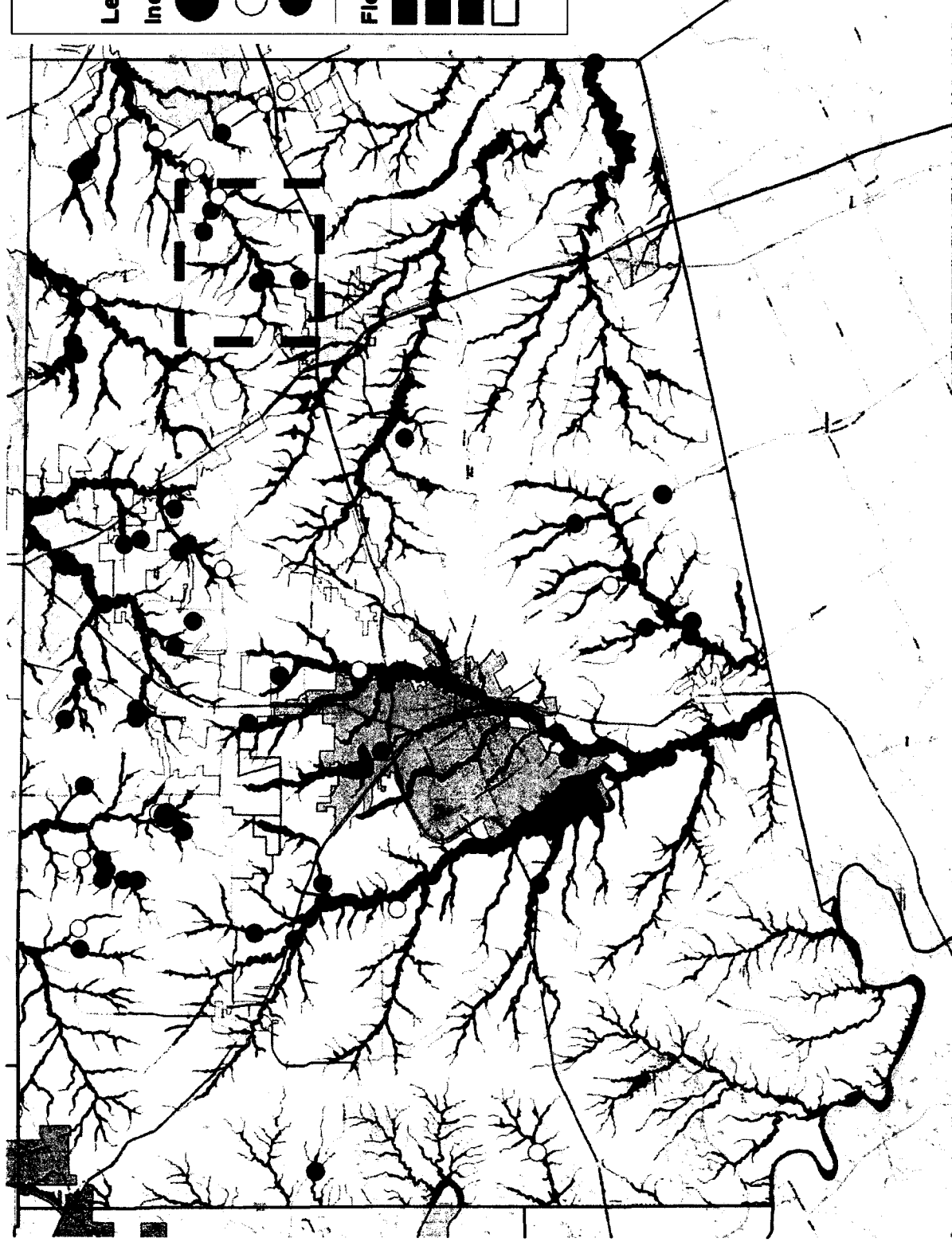
County Boundaries

World Street Map



HALFF

Date: 1/7/2016 N.T.S.



2015 Johnson County Flooding Incidents Exhibit

Legend

Incidents

- Fatality
- High Water Rescue
- Street Closure
- Stream Centerline

Flood Zone

- 500 Year Floodplain
- Approximate Study
- Detailed Study
- County Boundaries
- World Street Map



Date: 1/7/2016 N.T.S.



Map data by HERE DeLorme, USGS, Imagery by Planet P Corp., HERE, ERI, Japan, METI, ERI (China (Hong Kong), ERI (Thailand), TDS, Swisstopo, Mapbox, OpenStreetMap contributors, and the GIS User Community; ERI, HERE, DeLorme, Mapbox, etc.



HALFF

Balancing Act

Overall Responsibilities

- **Cost Effective Construction**
- **Timely Decision Process**
- **Maintain Infrastructure**
- **Balanced Budget**

Floodplains and Drainage

- **Reduce flood risks**
- **Manage life-cycle costs**
- **Reduce liability**
- **FEMA Compliant**

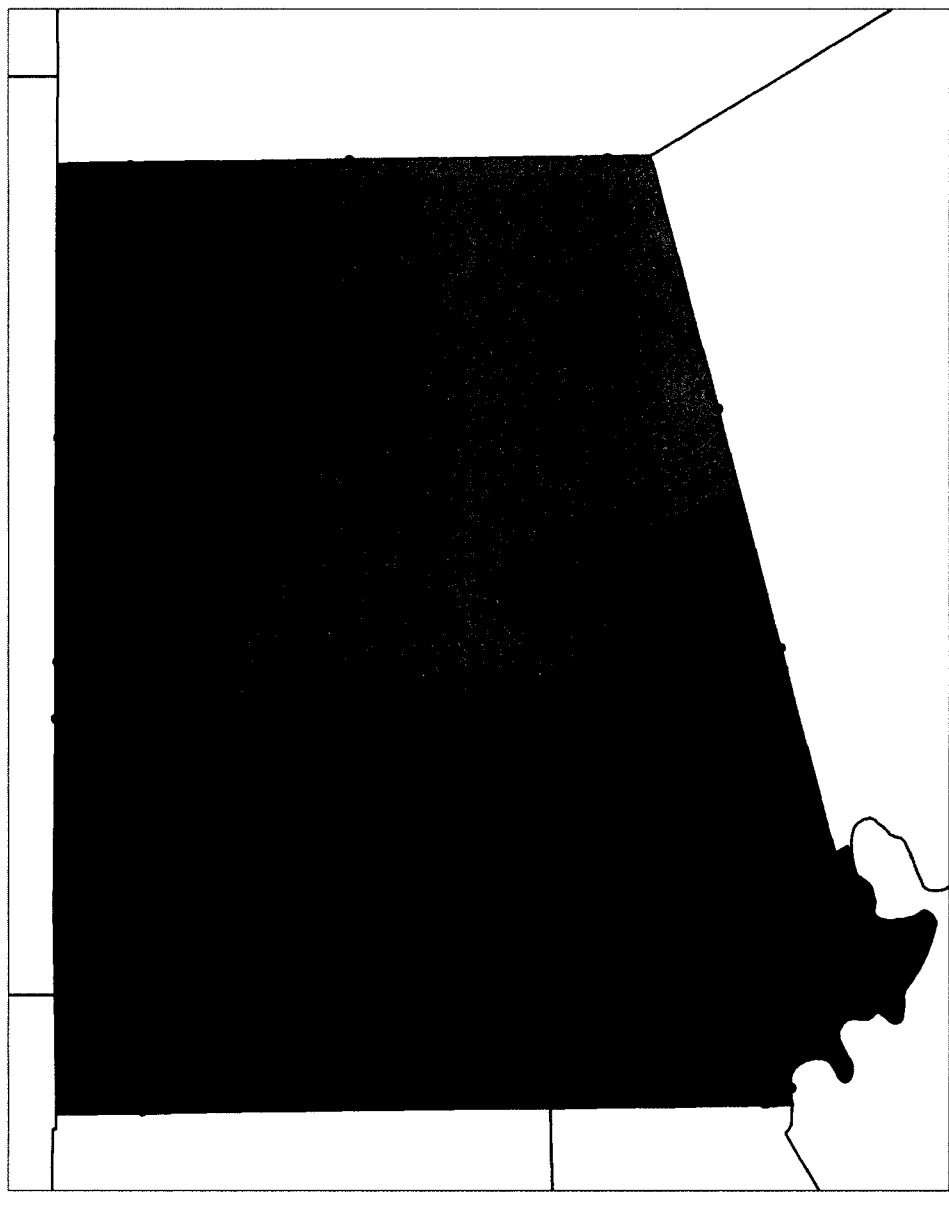
FEMA Requirements

Code of Federal Regulations Title 44 Part 60.3 (b)

Zone A (Approximate) Floodplains

- Notify, in riverine situations, adjacent communities and the State Coordinating Office prior to any alteration or relocation of a watercourse, and submit copies of such notifications to the Administrator;
- Assure that the flood carrying capacity within the altered or relocated portion of any watercourse is maintained;

2016 Johnson County Stream Crossings



1150 Total Stream
Crossings in County

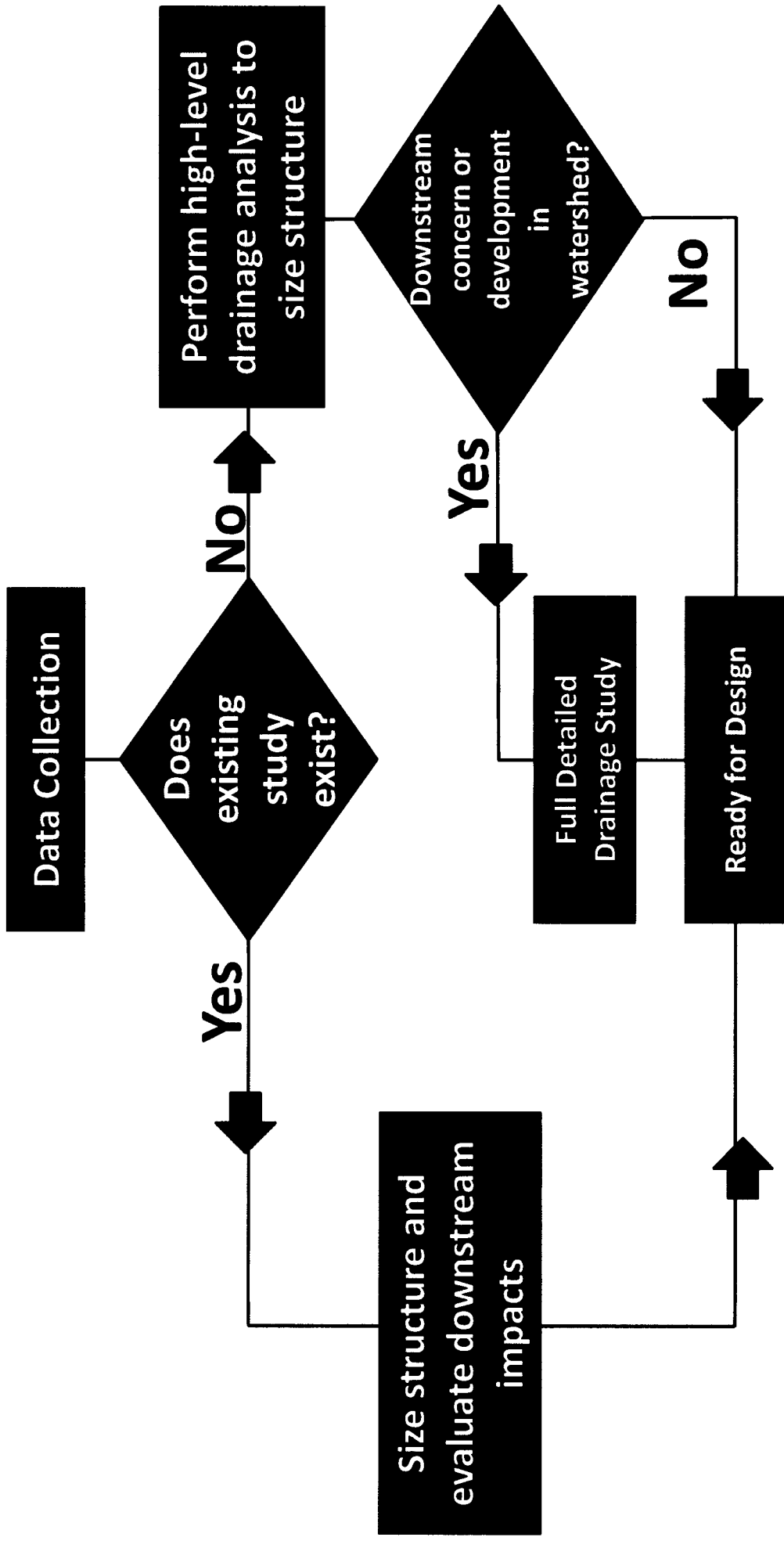
- Precinct 1 – 340 Crossings
- Precinct 2 – 170 Crossings
- Precinct 3 – 240 Crossings
- Precinct 4 – 400 Crossings

Data Collection

- FEMA Data Request
- USACE
- Adjacent communities
- TxDOT
- Halff Studies
 - Mountain Creek
 - Village Creek
 - Ham Creek



Approach for Johnson County



Recommendations

- Inventory all available studies data
- Plan for upcoming roadway priorities
- Perform high-level drainage analysis
- Perform detailed studies when necessary
- Investigate grant opportunities