

Town of Cross Roads

Drainage Criteria

April 17, 2023 Town Council Meeting

Agenda

- Current Criteria and Regulations
- Preliminary Plats
- Final Plats
- Surrounding Community Comparison
- Cost of Undersized Infrastructure

Current Criteria

AND OTHER REGULATIONS

CURRENT CRITERIA

The Town of Cross Roads utilizes Denton County Subdivision Rules and Regulations Drainage Design criteria which establishes:

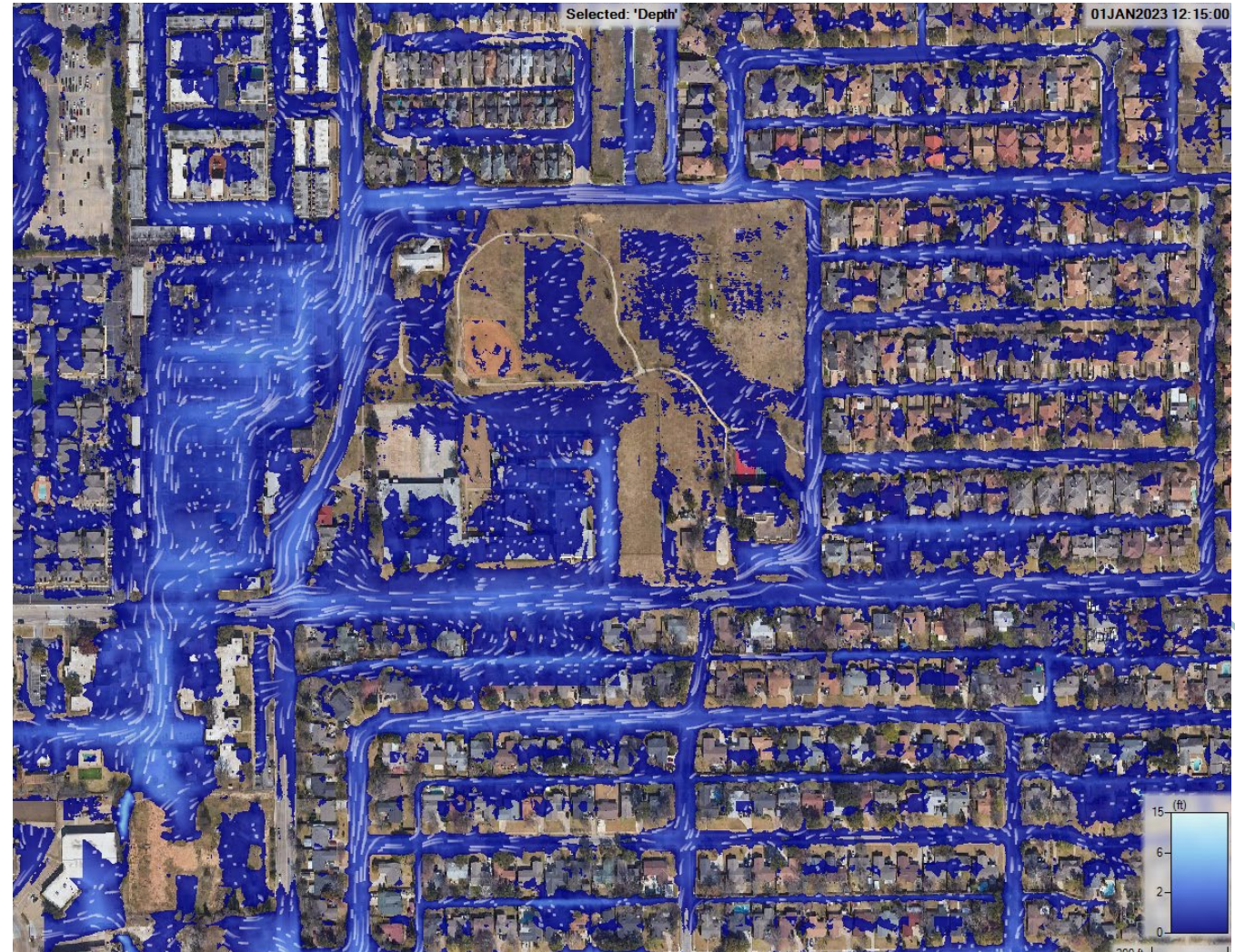
- Design storm events
- Runoff estimation
- Detention requirements
- Ditch and swale design requirements
- Closed conduit hydraulics
- Culvert design
- Downstream assessment requirements



CURRENT CRITERIA

Why is upholding drainage criteria so important?

- Reduce downstream impacts
- Prevent flood damage to private property and public improvements
- Prevent streambank erosion and loss of natural features
- Regional consistency



OTHER REGULATIONS

State and Federal laws also address requirements for drainage design:

- Texas Water Code – Section 11.086
- FEMA
- USACE
- EPA
- TxDOT – when State roadways are involved



Requirements

FOR PRELIMINARY PLATS

PRELIMINARY PLATS

Illustrate and establish that the planned improvements are based in sound engineering judgement and are capable of meeting State, Local, and Federal Law

- Preliminary Drainage Study – meets Texas Water Law
- Defines floodplain boundary (if applicable)
- Considers encumbrances – existing drainage easements, natural channels, USACE regulated waterways etc.
- Establishes need for detention
- Proper detention sizing, location, and outfall characteristics



Requirements

FOR FINAL PLATS

FINAL PLATS

Supported by final signed and sealed engineering plans

- Final Drainage Study – no adverse impacts
- Defines minimum finished floor elevations
- Defines encumbrances
- Dedicates all necessary easements
- Final detention pond design with maintenance agreement
- Requires provision of any and all federal or state permits





Surrounding






COMMUNITY COMPARISON



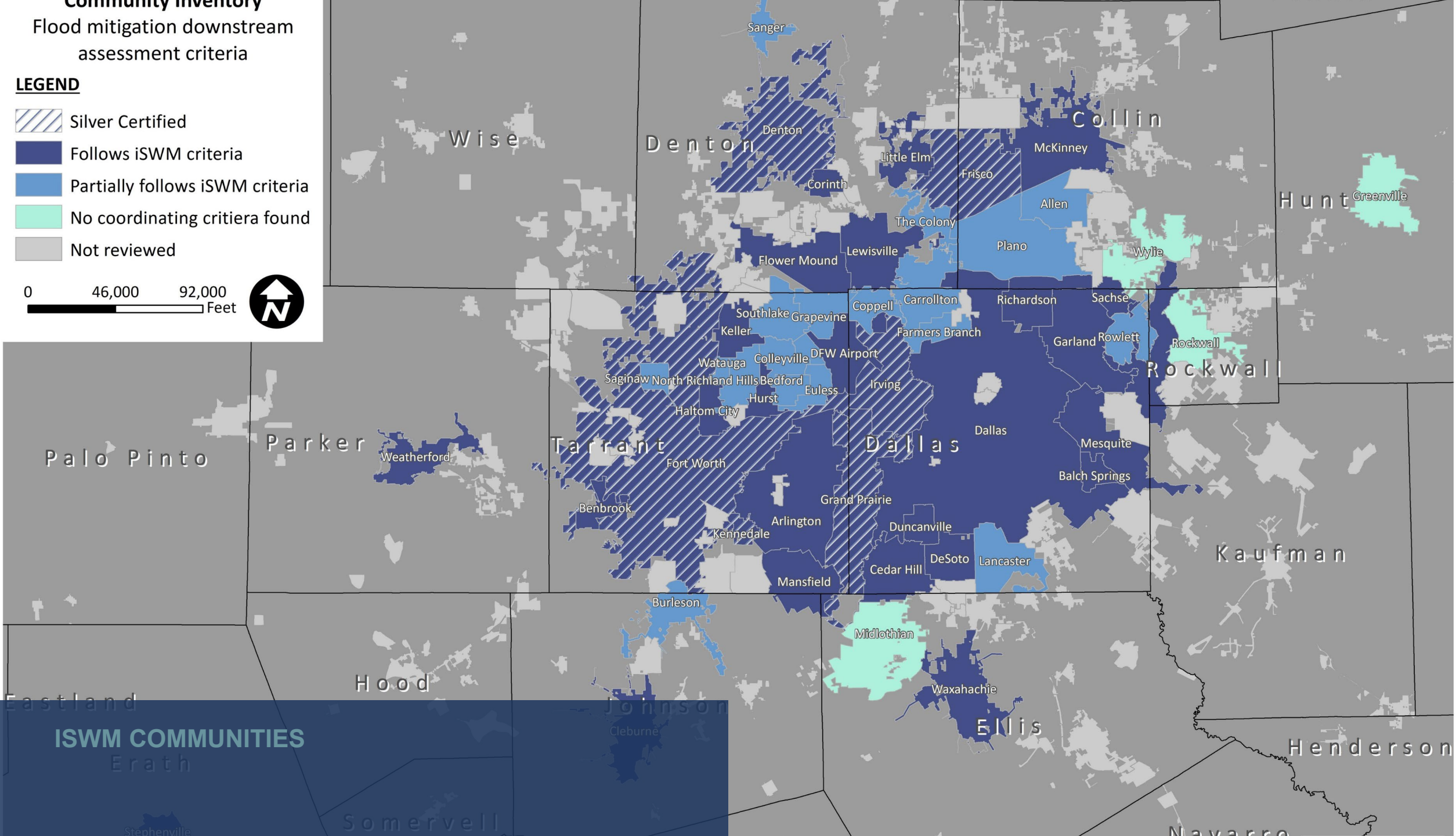
Community inventory

Flood mitigation downstream
assessment criteria

LEGEND

-  Silver Certified
-  Follows iSWM criteria
-  Partially follows iSWM criteria
-  No coordinating critiera found
-  Not reviewed

0 46,000 92,000
Feet





Cost

OF UNDERSIZED INFRASTRUCTURE

COST OF UNDERSIZED INFRASTRUCTURE

Flooding causes more damage in the United States than any other severe weather-related event

1



ROADWAY DAMAGE

Undermining at culverts and undersized ditches

2



STREAMBANK EROSION

Threatens loss of natural features, pipelines, and other structures

3



RESIDENTIAL

Threatens resident homes and businesses.