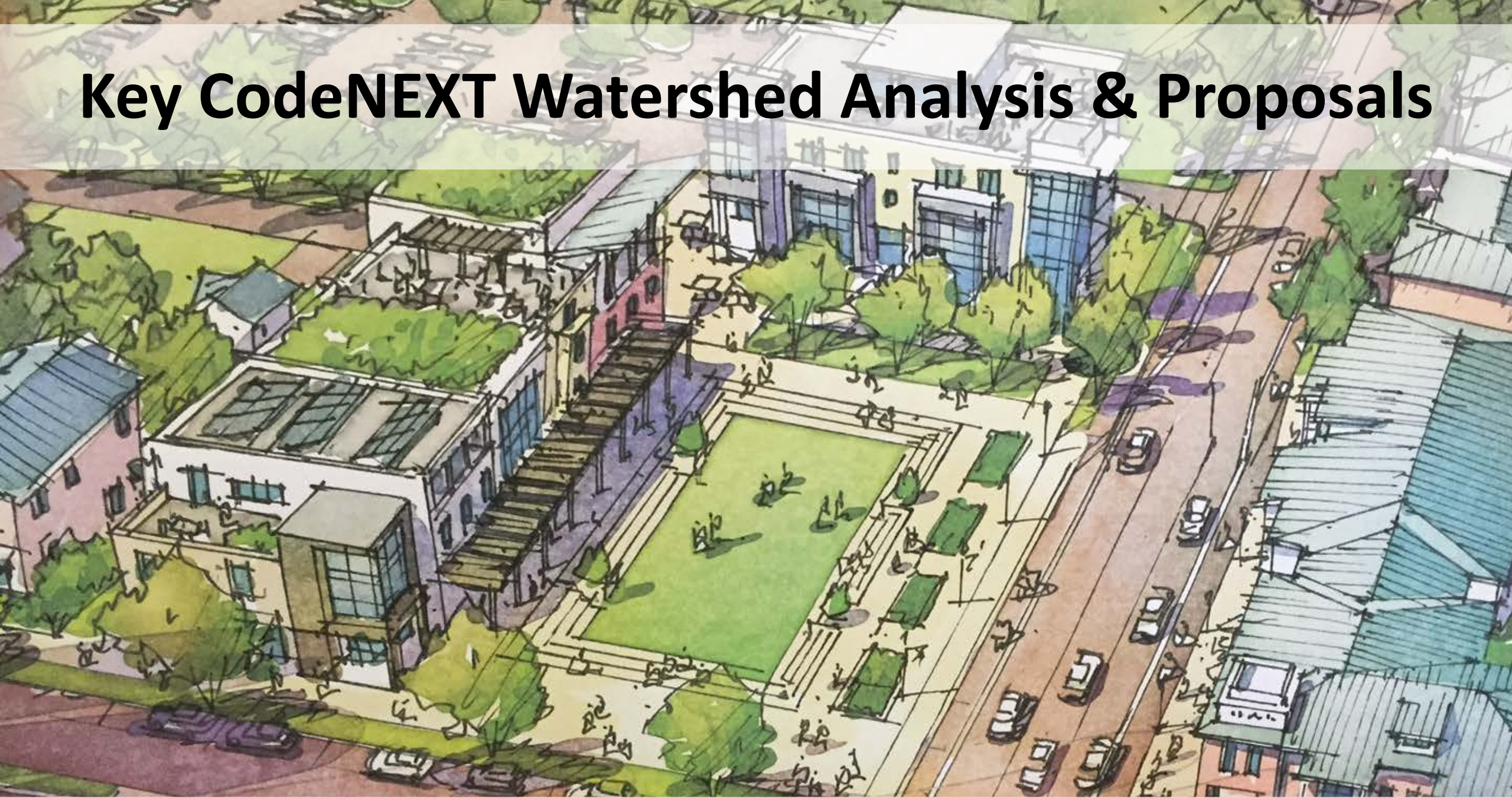


# Key CodeNEXT Watershed Analysis & Proposals



Environmental Commission, October 4, 2017



# Overview of Presentation

- Balancing Austin's priorities
- Impervious cover analysis
- Maintain existing watershed protections
- Flood Mitigation for Redevelopment
- Green Infrastructure /  
Beneficial Use of Stormwater
- Next Steps for Draft 3





An aerial perspective sketch of a city block. The scene includes several multi-story buildings with varied architectural styles, some with flat roofs and others with more complex structures. There are numerous green trees scattered throughout the block, particularly along the streets and in open areas. A wide road with multiple lanes runs diagonally across the lower right portion of the image, with several cars depicted. A large, open green space, possibly a park or a large lawn, is located in the center-left. The overall style is a loose, artistic sketch with visible lines and a limited color palette of greens, browns, and greys.

# Impervious Cover Analysis



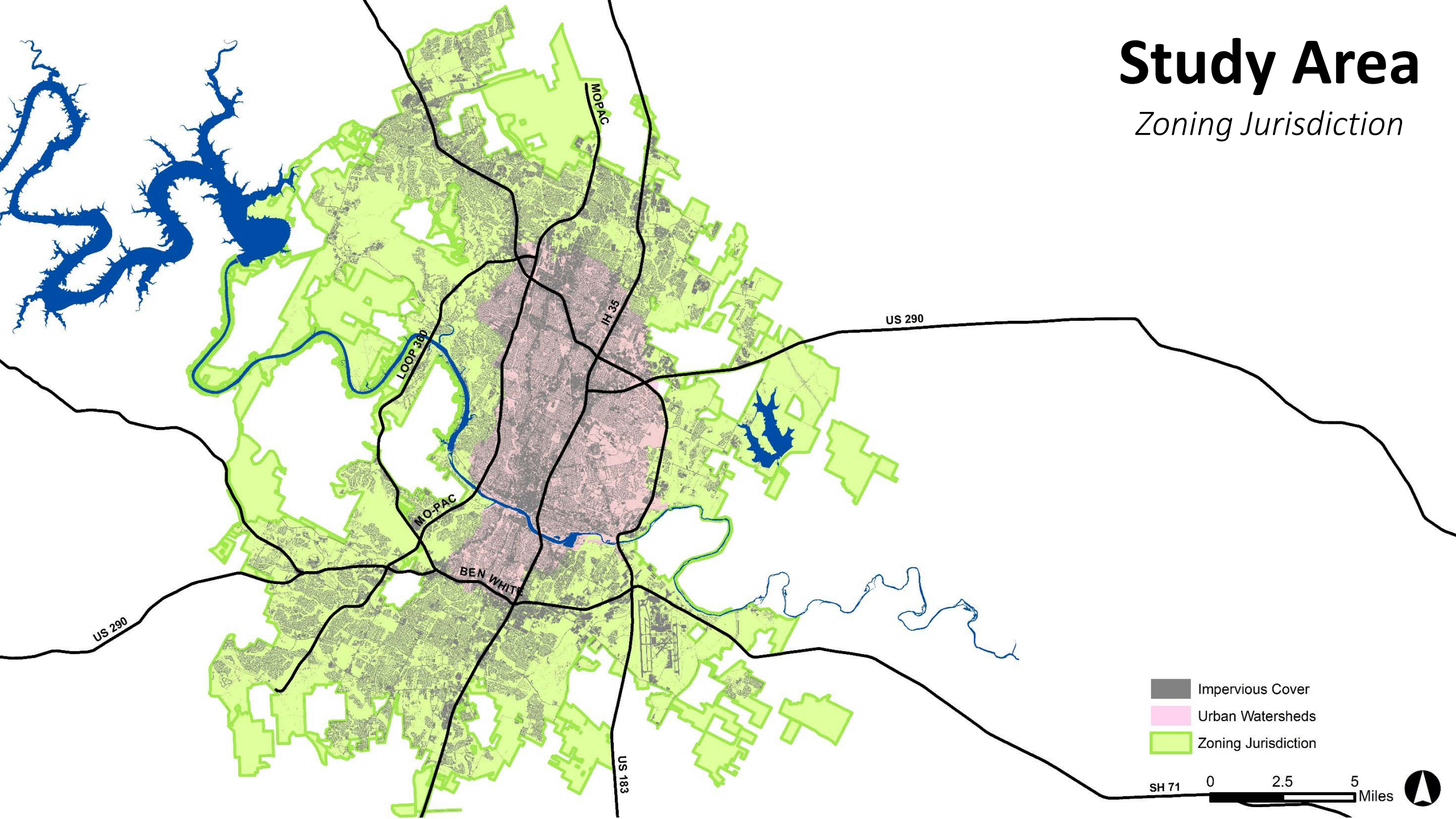
# Purpose of Impervious Cover Analysis

- Compare existing vs. current max. entitlements vs. proposed CodeNEXT max. entitlements
  - 100-year floodplain and drainage infrastructure implications
- Understand areas of change



# Study Area

*Zoning Jurisdiction*





# Impervious Cover Analysis Results (Draft 2)

**DRAFT**

Area	Area Within City Limits (acres)	Existing Impervious Cover (%)	Allowed Maximum Impervious Cover (%)		Difference b/n Current and Proposed Entitlements
			Current LDC	Proposed LDC	
Total	208,668	27%	45.7%	45.2%	-0.57%
Urban Watersheds	38,115	51%	64.3%	63.3%	-0.95%
Likely to Develop/Redevelop	20,245	8%	51.7%	51.6%	-0.05%
Localized Flood Problem Areas	7,297	49%	57.3%	57.0%	-0.31%

Note: This analysis does not account for steep slopes, critical environmental feature setbacks, and protected trees. These protections potentially lower the total amount of impervious cover for any given parcel.



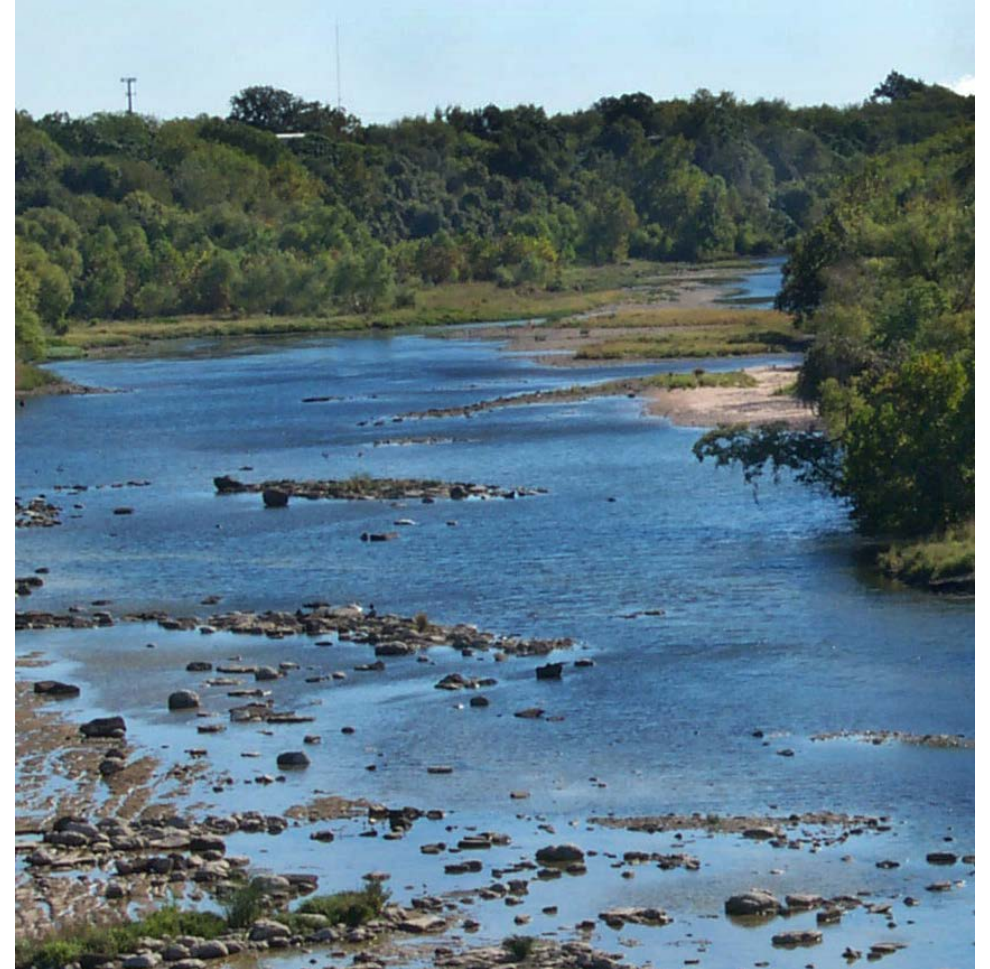
An aerial architectural rendering of a city block. The scene features several modern buildings with large glass windows and flat roofs. A central green space with trees and a small plaza is visible. A street with cars and a sidewalk with trees runs along the right side of the block. The overall style is a colorful, hand-drawn architectural sketch.

# CodeNEXT Proposal



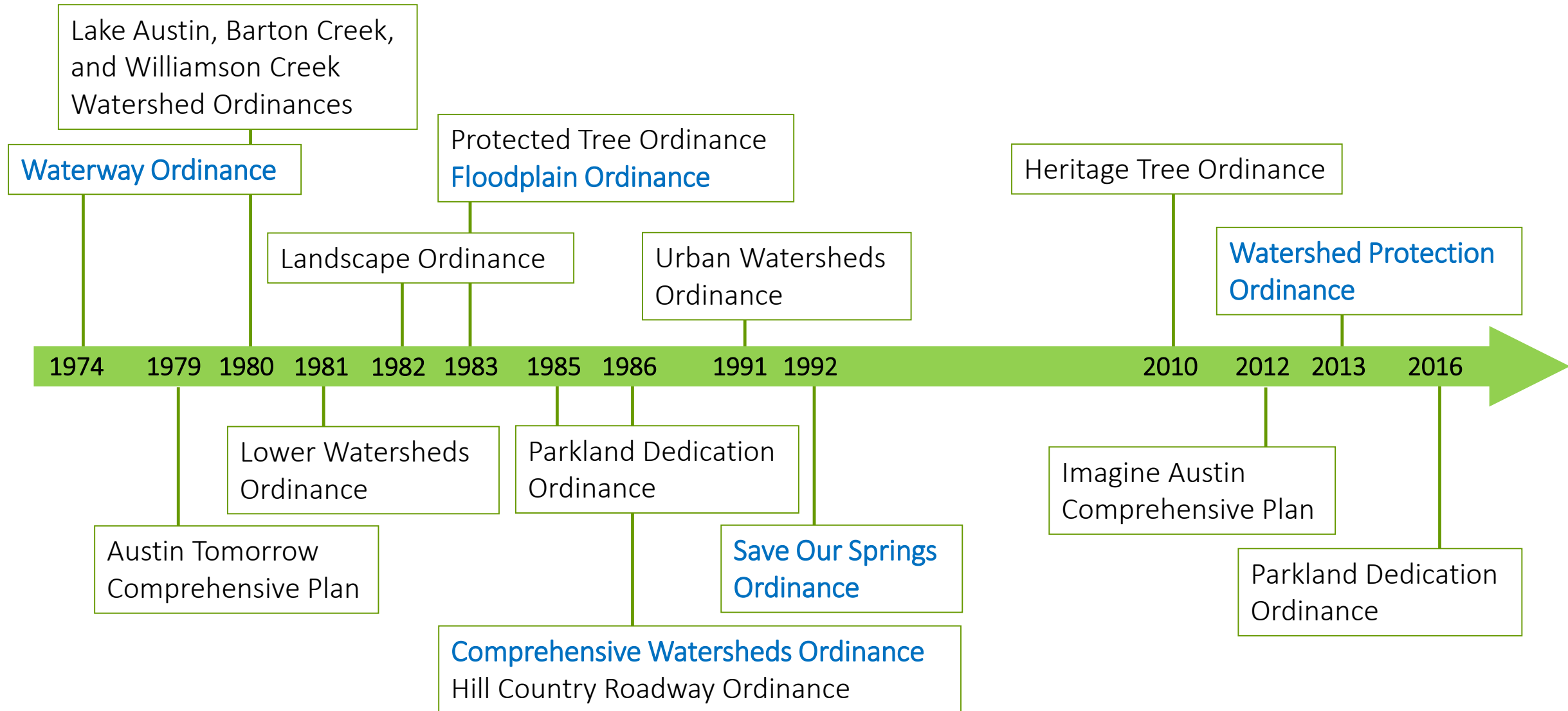
# Maintain Existing Watershed Protections

- CodeNEXT proposes to preserve existing watershed regulations, including:
  - Floodplain protections
  - Drainage standards
  - Stream & lake buffers
  - Watershed impervious cover limits
  - Critical Environmental Features
  - Steep slope protections
  - Cut and fill limits
  - Erosion & sedimentation controls
  - Structural stormwater controls
  - Tree protections





# History of Environmental & Drainage Regulations





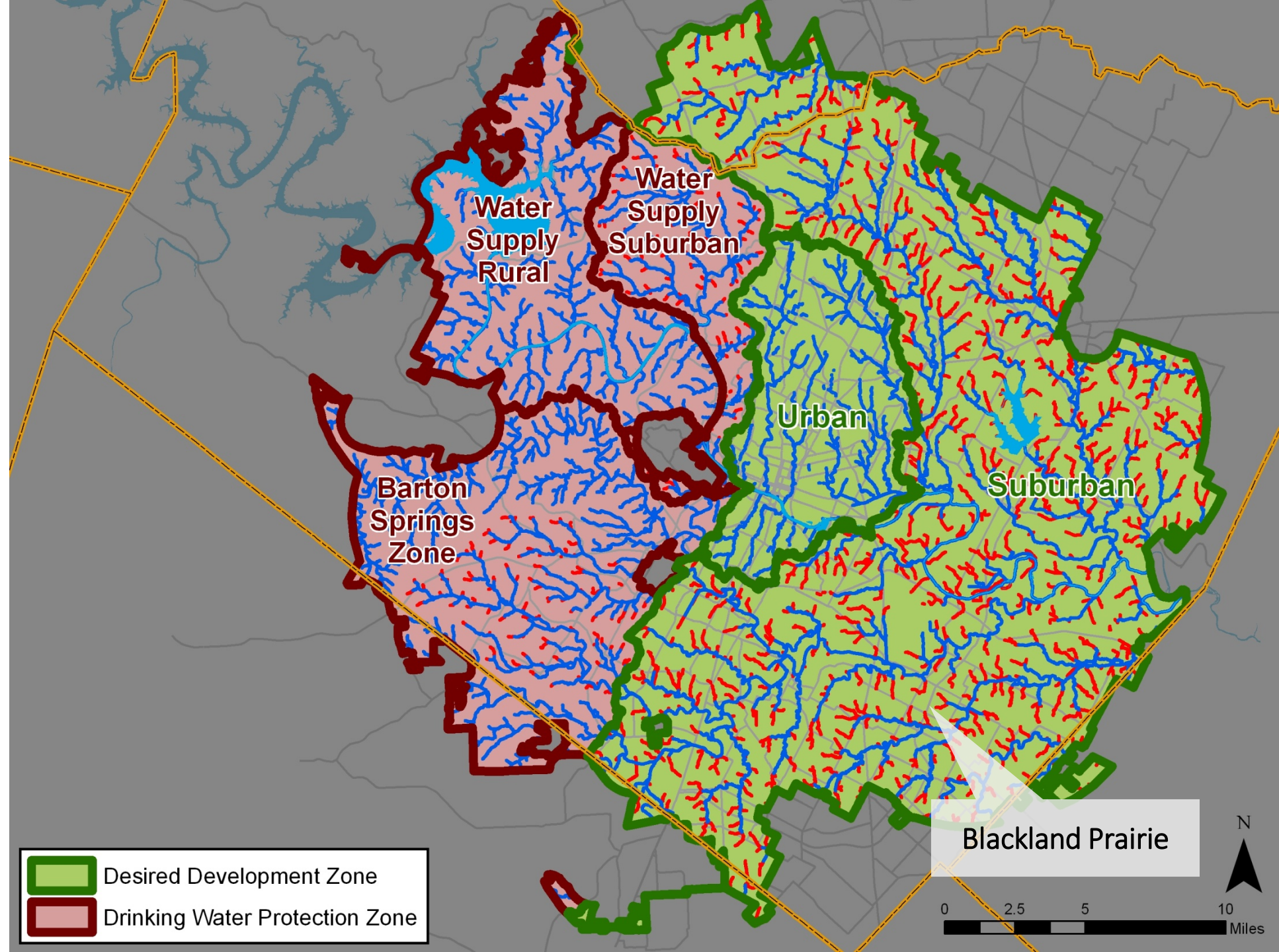
# Existing Watershed Regulations

- CodeNEXT proposes to preserve existing watershed regulations, including:





2013 Watershed Protection Ordinance extended protection to 400 miles of headwaters buffers, increasing protection of eastern Blackland Prairie creeks by 90%





# Watershed Regulations: Flood Mitigation



FloodPro



Layers

Filter Layers...

- ☒ FloodPro
  - ☒ Address
  - ☐ Elevation Certificate
  - ☐ Letter of Map Amendment
  - ☐ Contour
  - ☒ Parcel
  - ☐ Letter of Map Revision
  - ☐ Watershed Boundary
  - ☐ Model Footprint
  - ☐ FEMA Floodplain
  - ☒ Fully Developed Floodplain
  - ☐ Creek Buffers



WPD updates flood models to reflect changing conditions and improved technology



### FLOODPLAIN CHANGES

Is Your Home at Risk?

The City of Austin has completed new floodplain studies that indicate revised flood risks for several Austin watersheds, affecting thousands of properties. You are receiving this notice because we believe your property may be affected. Please keep an eye out for a more detailed letter in the next week.

The City restudies creeks to ensure accurate floodplain maps, which help both the City and the public prepare for flooding. The City has already begun using the new studies to regulate development. However, new FEMA maps will not be used for flood insurance purposes until late 2015.

#### Creeks Studied

- Boggy
- Bull and West Bull
- Carson
- Cottonmouth
- Dry Creek East
- Fort Branch
- Shoal
- Tannehill

#### PUBLIC MEETINGS

**Central Austin**  
Friday, September 20, 1:00 p.m.  
**One Texas Center, Room 325**  
505 Barton Springs Road  
Austin, Texas 78704

**East Austin**  
Monday, September 23, 6:30 p.m.  
**Carver Branch Library**  
1161 Angellina Street  
Austin, Texas 78702

**Northwest Austin**  
Tuesday, September 24, 6:30 p.m.  
**Northwest Recreation Center**  
2913 Northland Drive  
Austin, Texas 78757

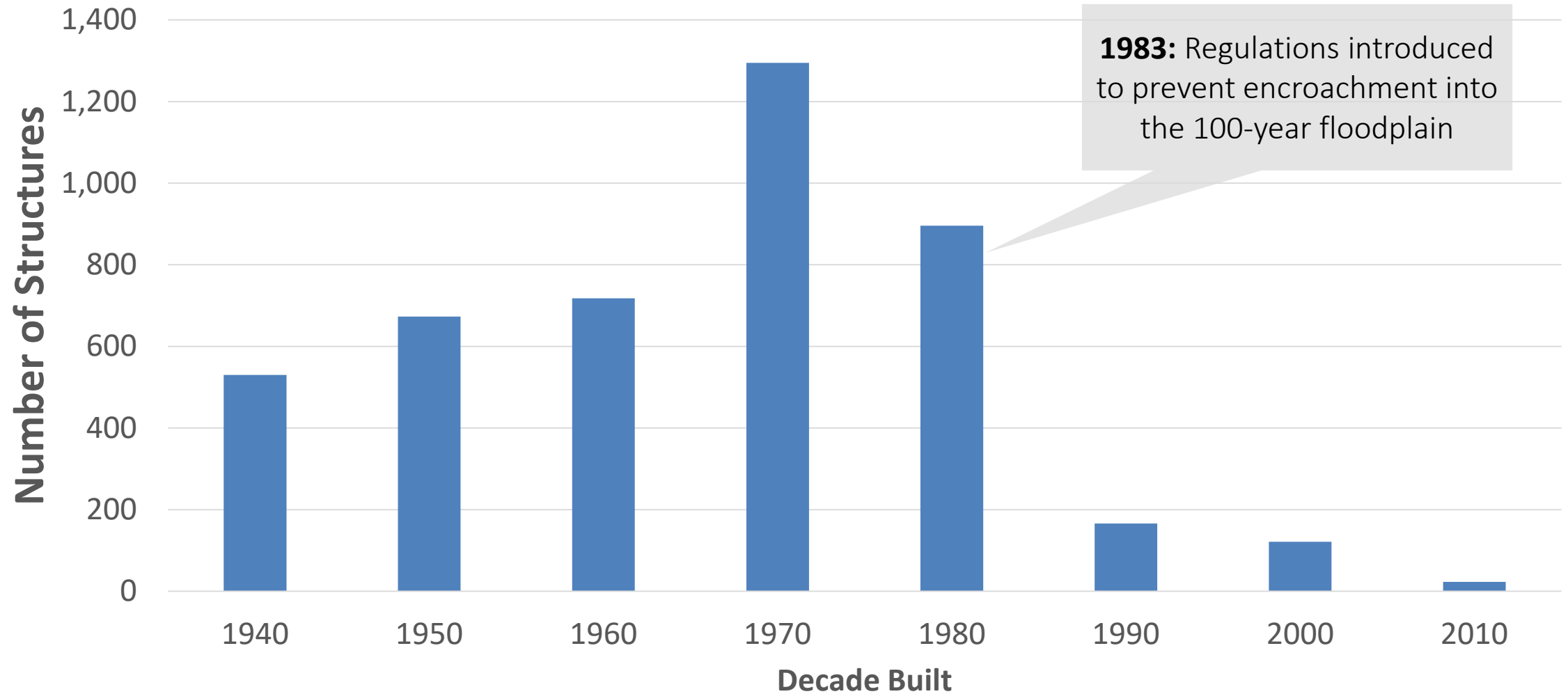
**512-974-2843**  
Para información en español,  
llame al 512-974-2843

[www.austintexas.gov/floodplainchanges](http://www.austintexas.gov/floodplainchanges)

<http://www.austintexas.gov/FloodPro>



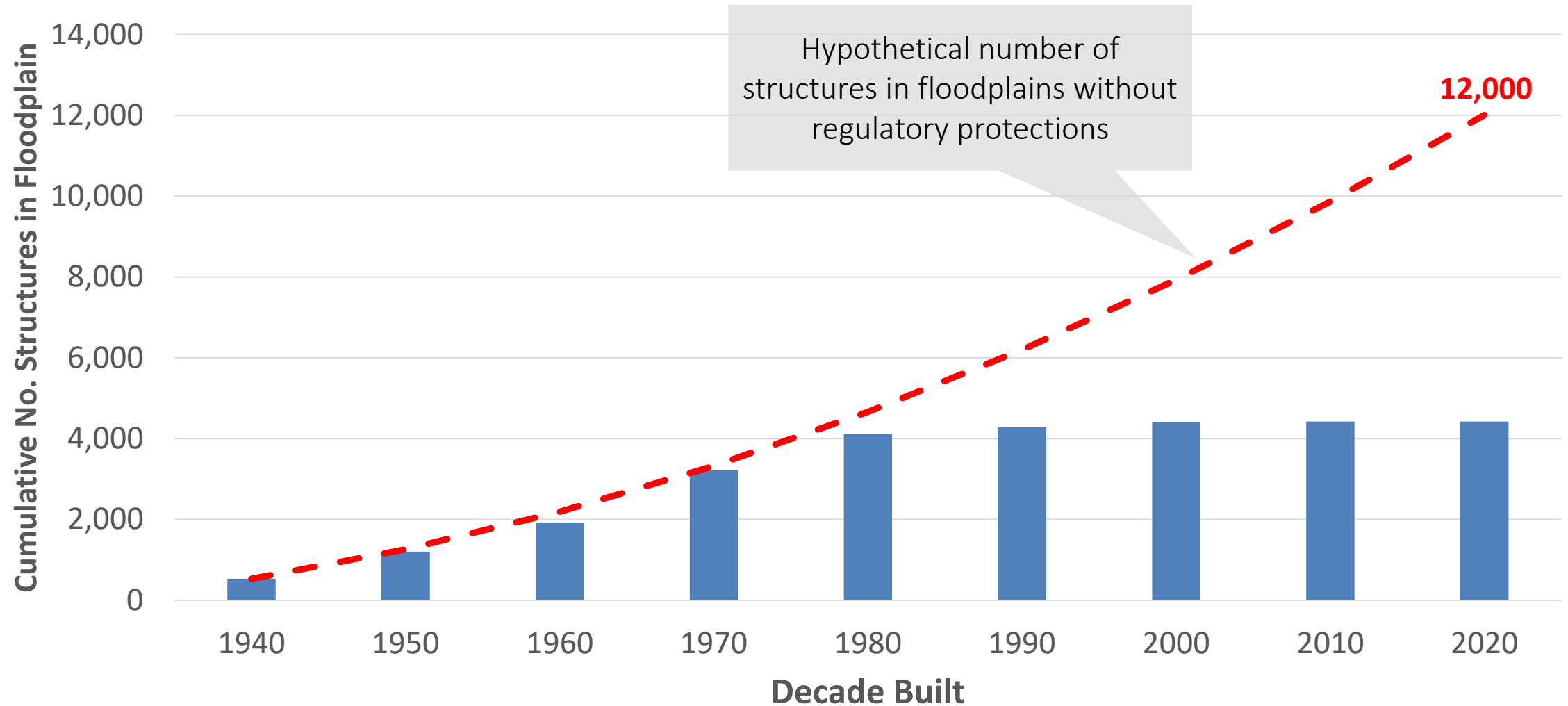
# Watershed Regulations: Flood Mitigation



*Count of structures in the current 100-year floodplain by decade*



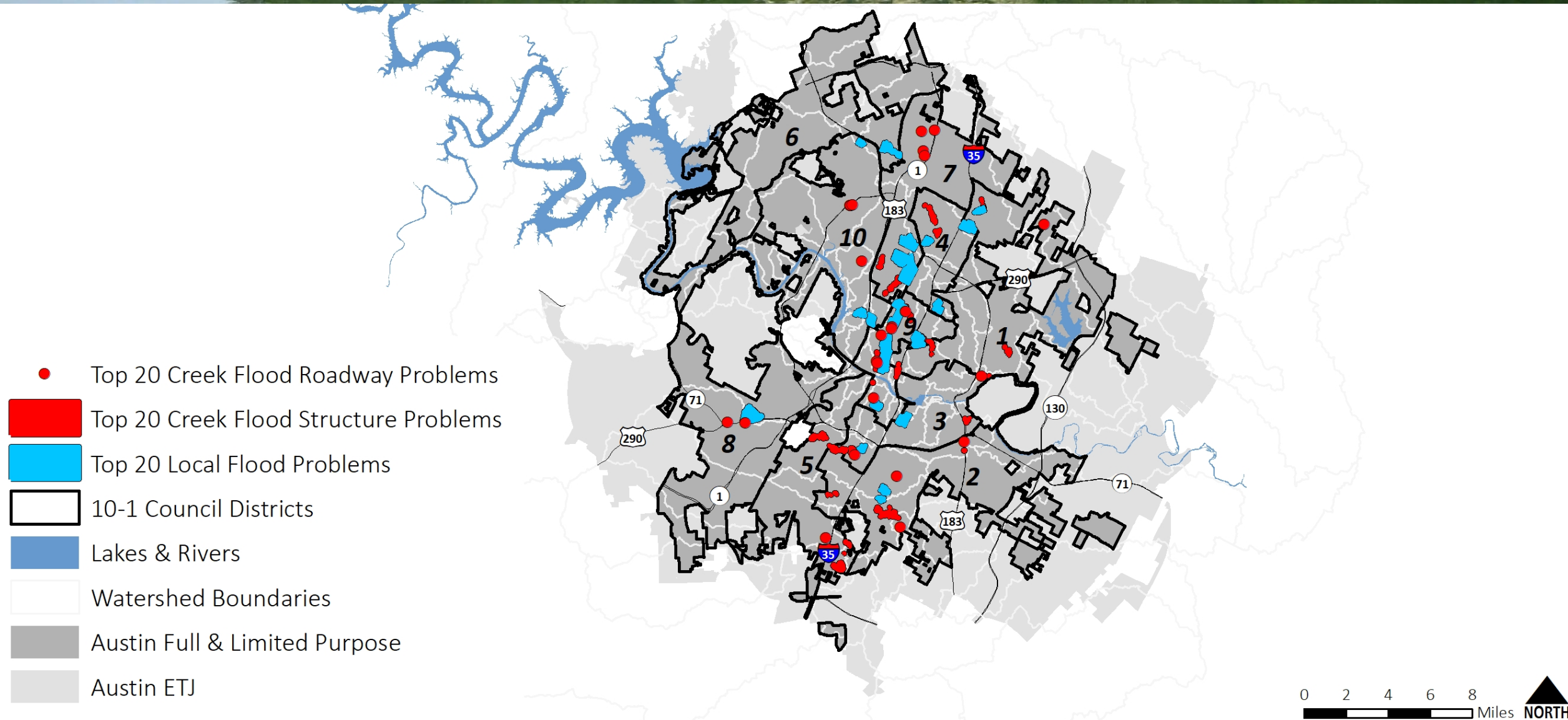
# Watershed Regulations: Flood Mitigation



*Count of structures in the current 100-year floodplain by decade*



# Watershed Challenges: Flood Mitigation





# Watershed Challenges: Flood Mitigation

- Older sites built before drainage regulations were introduced in 1974 lack detention facilities and are often highly impervious
- Runoff from these sites can contribute to downstream flooding and erosion
- Redevelopment in Austin's central core has put even greater pressure on existing infrastructure, which is often aging and undersized





# Watershed Challenges: Flood Mitigation

- Current code requires commercial & multifamily projects and residential subdivisions demonstrate no additional adverse flooding
- Redevelopment projects that do not increase impervious cover or change drainage patterns are generally not required to provide flood mitigation
- As Austin grows and redevelops, key opportunities for improvement are being missed in areas that already experience flooding





# CodeNEXT Proposal: Flood Mitigation for Redevelopment

- Redevelopment to contribute its fair share to address existing drainage issues by accounting for existing impervious cover
- Tools for mitigating flood impacts & reducing peak flows include:
  - Detention
  - Conveyance
  - Regional Stormwater Management Program (RSMP)



*Subsurface Detention*



*Parking Lot Detention*



*Conveyance Upgrades*



*Regional Solutions*



# Example 1: Maria's Taco Express & Walgreens

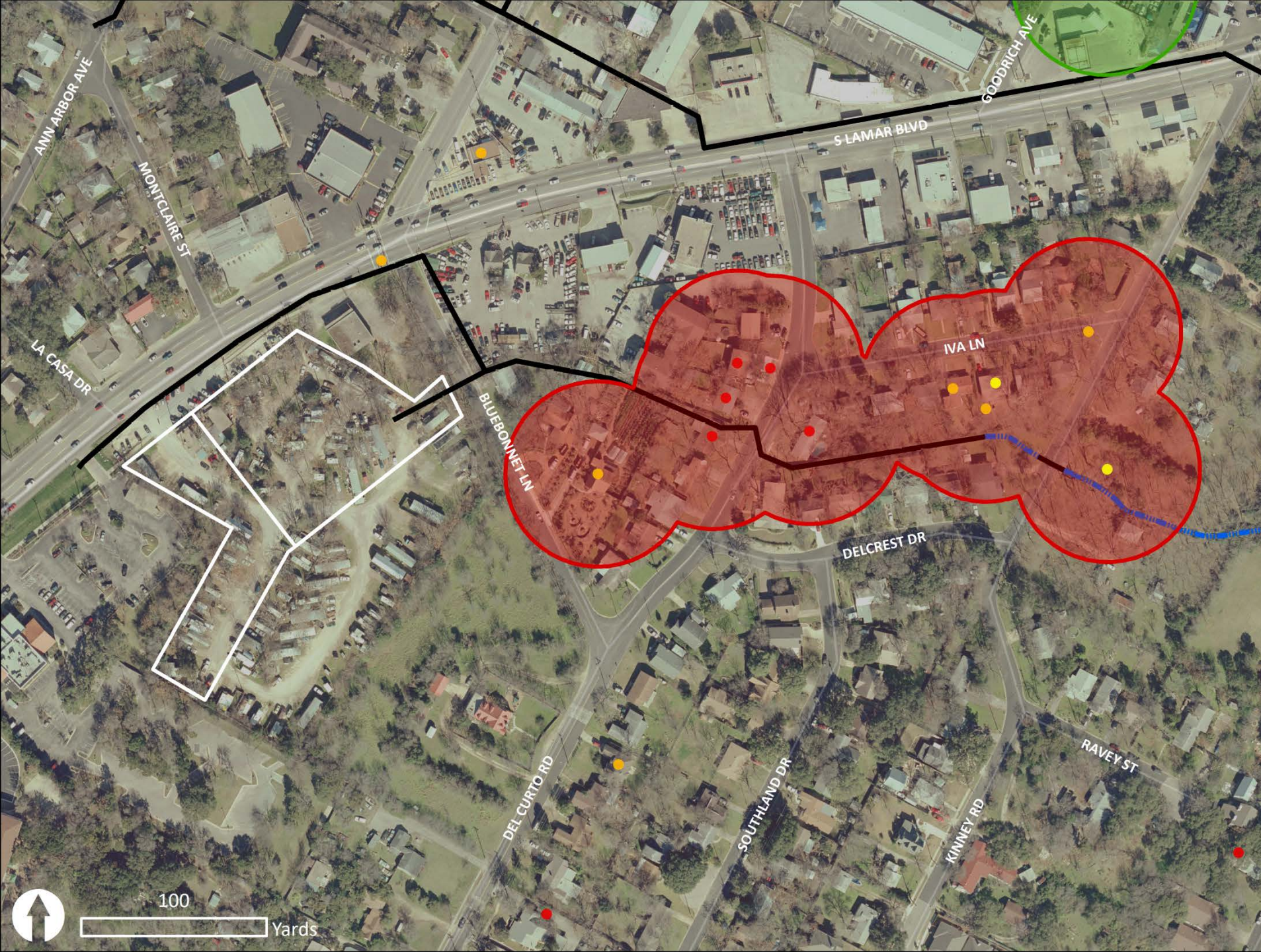
## Original Site

Maria's Taco  
Express & Mobile  
Home Park  
2.9 acres



2003





# Original Site

Localized Flood  
complaint points

2003





# Redevelopment

Maria's Taco  
Express &  
Walgreens

2007



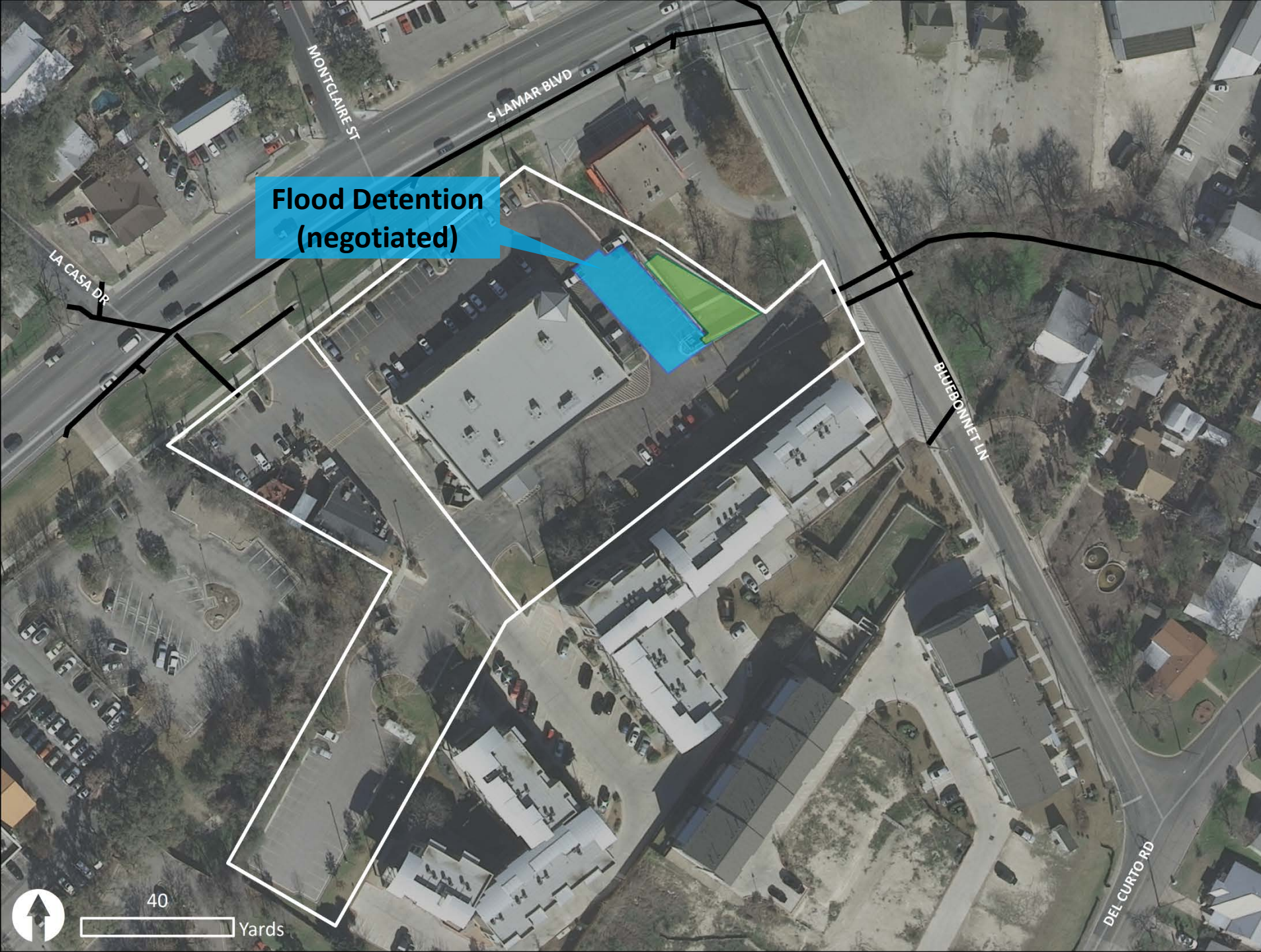


Water Quality  
Pond (per Code)

# Redevelopment

Water quality  
controls (required  
by current code)





# Redevelopment

Added flood detention vault under parking lot



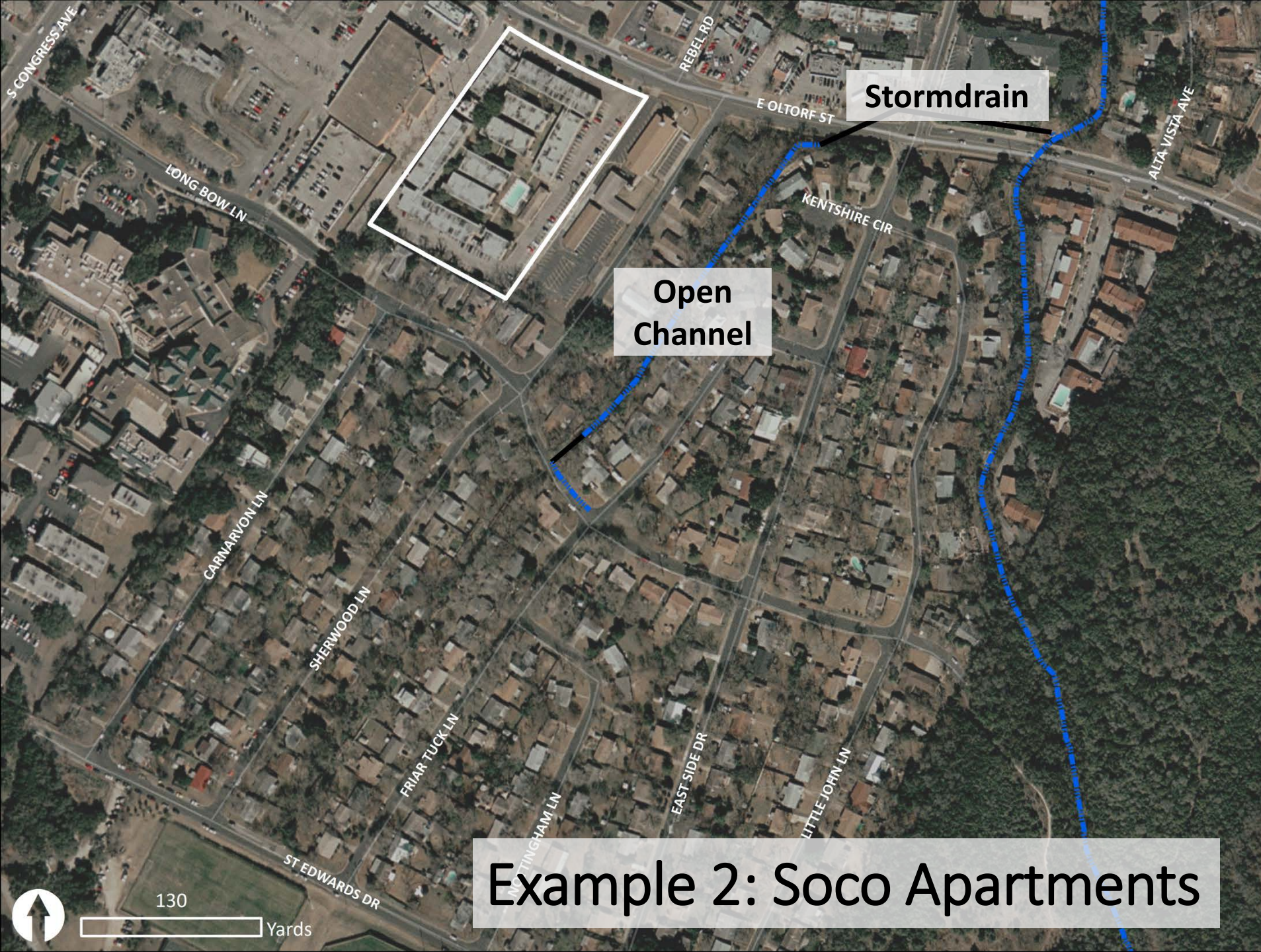


# Redevelopment

Upgraded  
drainage  
infrastructure

2007





## Original Site

Sunnymeade  
Apartments  
3.96 acres

Example 2: Soco Apartments

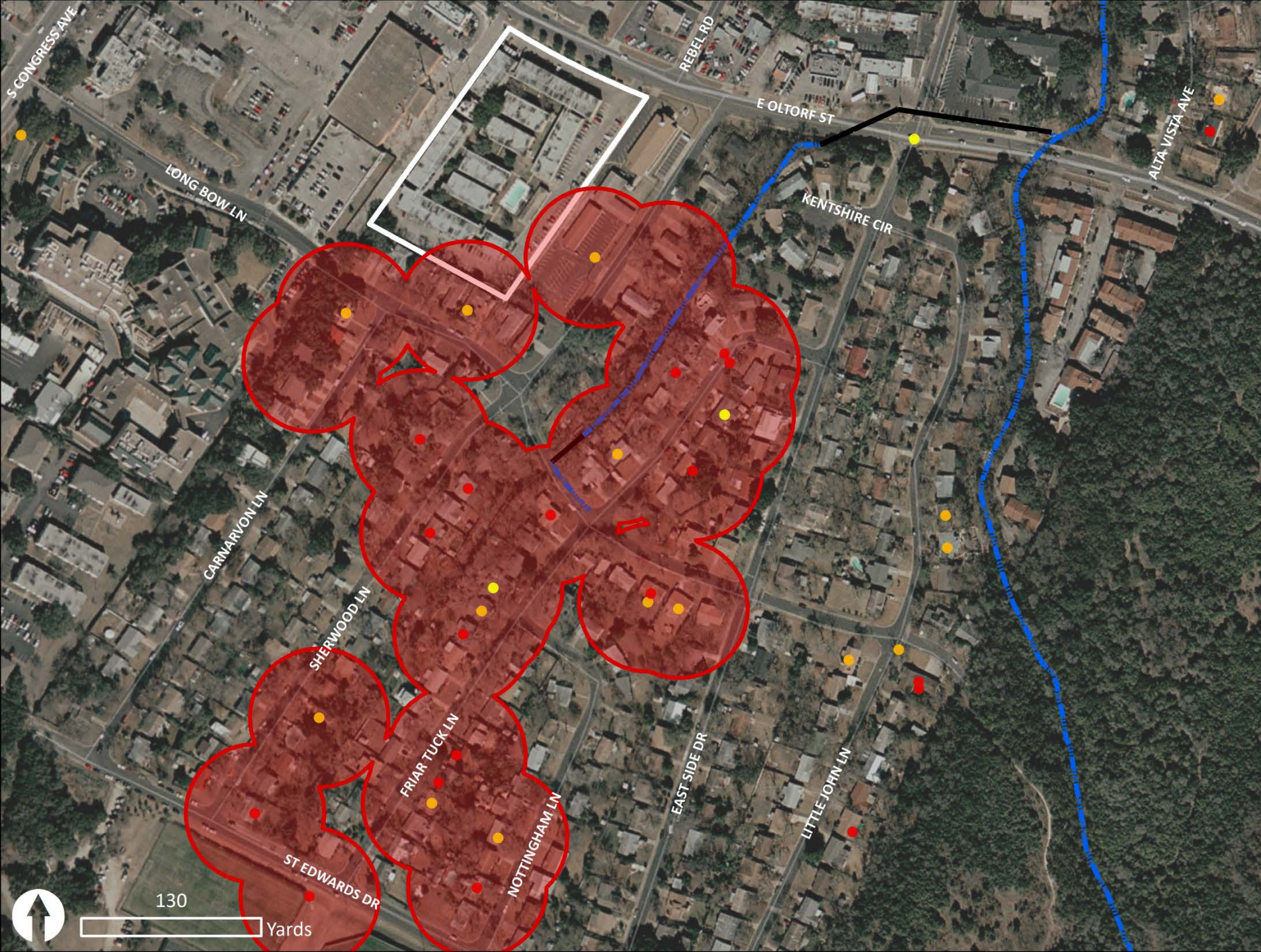


130

Yards

2008





# Original Site

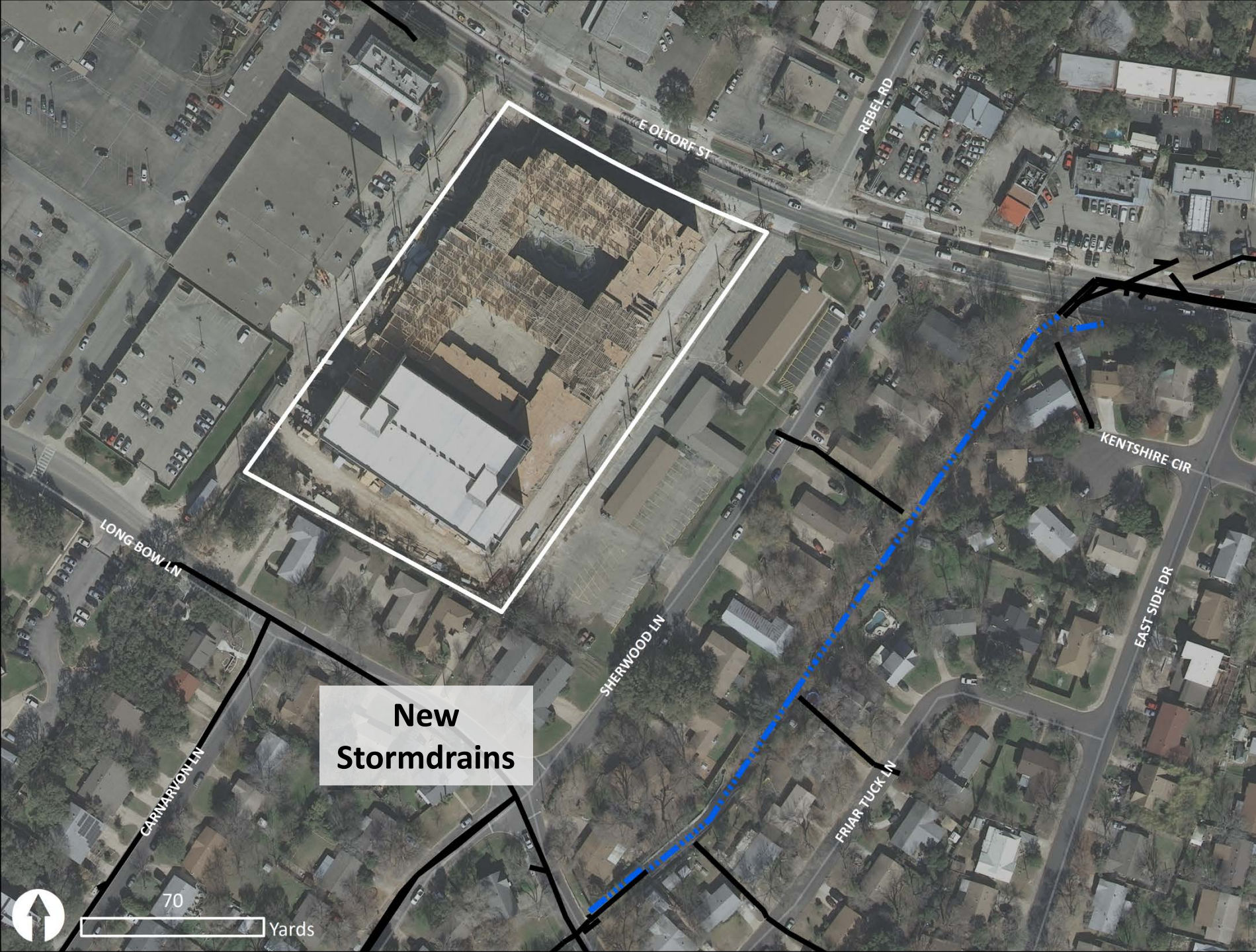
Localized Flood  
complaint points

2008



# Redevelopment

City  
improvements  
with Longbow Ln  
CIP project



New  
Stormdrains

2012



# Original Site

No detention  
required



2008



# Redevelopment

Added flood  
detention  
chambers



Water Quality  
Pond (per Code)

Flood Detention  
(negotiated)





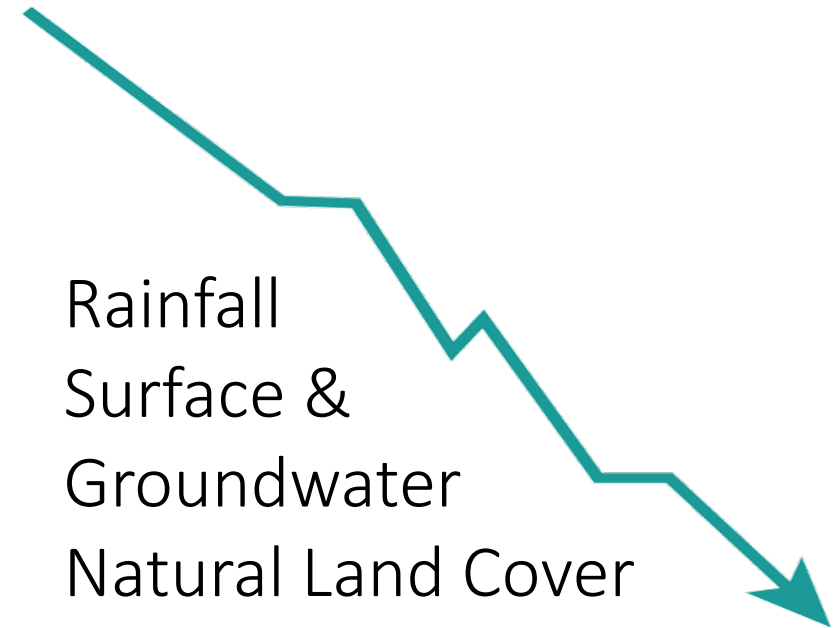
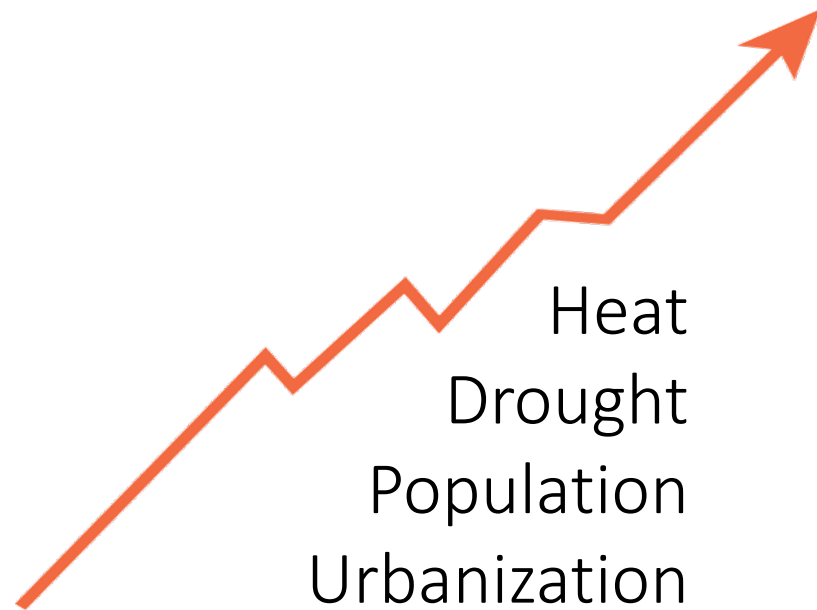


An aerial perspective sketch of a city block. The central focus is a large, multi-story building with a flat roof and several smaller structures attached. To the left of this building is a large, rectangular green space, possibly a park or a sports field, with some trees and a path. To the right is a street with several cars parked and driving. The surrounding area includes other buildings, trees, and parking lots. The overall style is a loose, artistic sketch with a focus on green spaces and urban infrastructure.

# **Green Infrastructure/ Beneficial Use of Stormwater**



# Watershed Challenges and the Need for Water Stewardship



Current requirements for stormwater controls do not significantly address goals of enhancing creek baseflow, sustaining on-site vegetation, and reducing potable water consumption.



# CodeNEXT Proposal: Green Infrastructure & Beneficial Use of Stormwater

- **Infiltrate** to mitigate the impacts of impervious cover
  - Improve stream baseflow
  - Pollutant removal
  - Reduce creek scour and erosion
  - Improve aquatic habitat
  - Enhance recreational values
- **Conserve** potable water indoors and outdoors
- **Green stormwater infrastructure** for resiliency







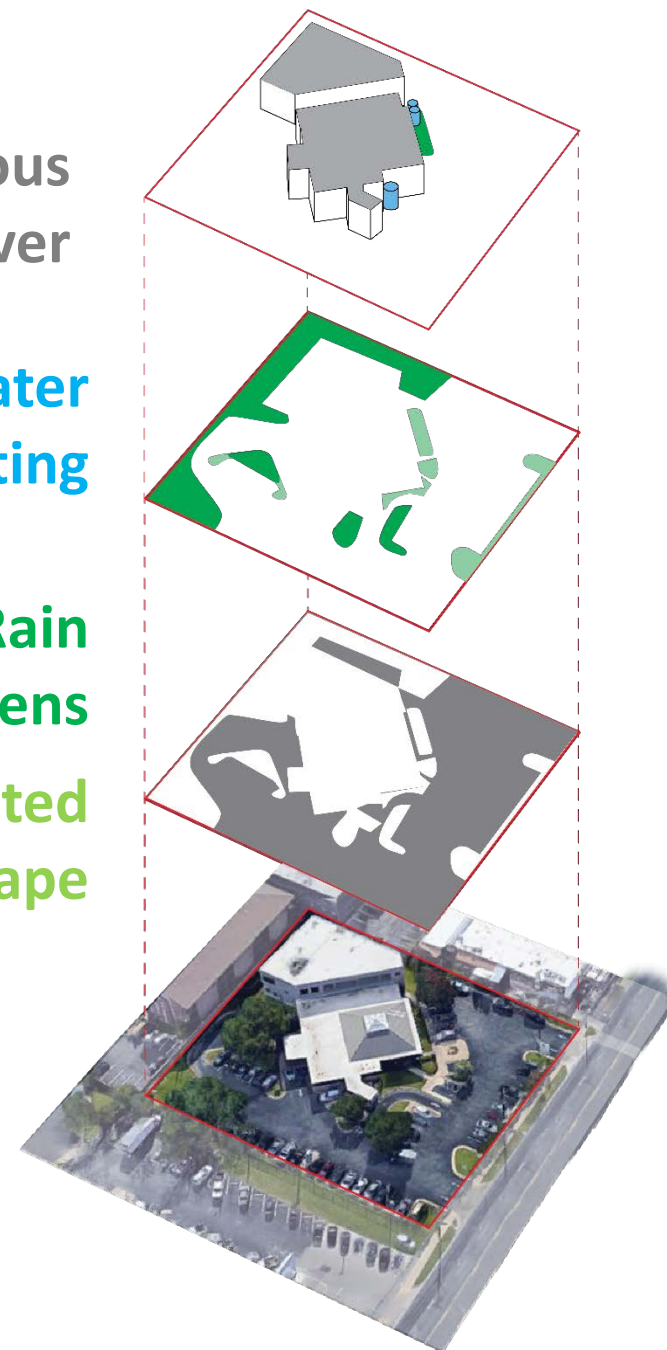
Impervious  
Cover

Rainwater  
Harvesting

Rain  
Gardens

Irrigated  
Landscape

Toilet  
Flushing





An aerial architectural sketch of a city block. The scene features several modern buildings with large glass windows and flat roofs. A central green space with trees and a small plaza is visible. A street with several cars is on the right side. The overall style is a colorful, hand-drawn sketch.

# Next Steps



# Flood Mitigation for Residential Infill and “Missing Middle” Housing

- Seeking to balance affordability goals with avoidance of drainage problems
- Analyses in progress to assess extent and severity of potential impacts
- Opportunity to lessen review burden for missing middle housing
- Assessing potential impacts on City resources & permitting process





# Additional Analyses and Next Steps

- Impervious cover watershed analysis (updated)
- Modeling for estimating creek flood and localized flood impacts:
  - Redevelopment proposal
  - Residential infill
- Missing Middle: drainage & environmental considerations
- Continue work (e.g., capital projects) for existing drainage concerns
- Balance community priorities





# Contact Information

**Matt Hollon**

Watershed Protection Department  
City of Austin

(512) 974-2212

[matt.hollon@austintexas.gov](mailto:matt.hollon@austintexas.gov)