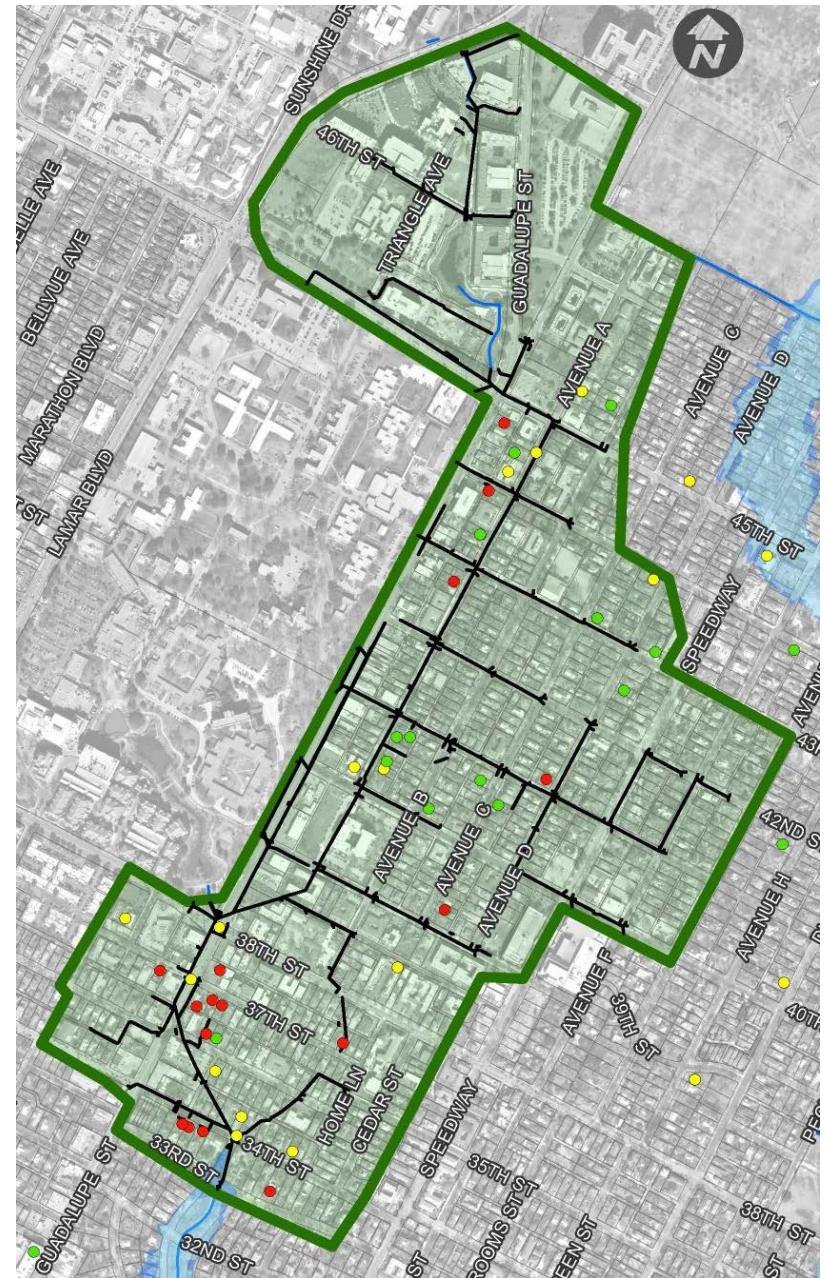


Guadalupe Street Storm Drain Improvements Project

Introduction

- Welcome
- Personnel
- Guadalupe Storm Drain Improvements project
 - LFRR Rank #5
 - Flooding Complaints
 - 16 Buildings
 - 14 Yards
 - 13 Streets
- Background
- Purpose of Meeting



— Existing Storm Drain Conduit

Avenue A (May 2015)



Avenue A (May 2015)



Avenue A (June 2015)



30th/Funston (May 2015)

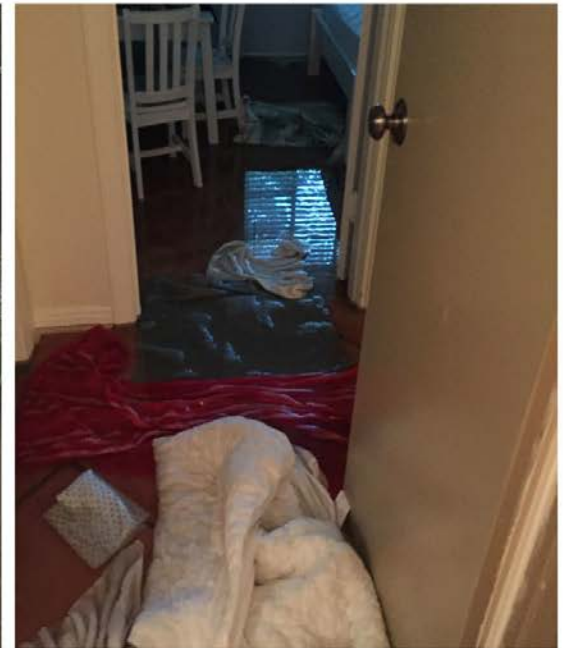
Residence Front Door Facing 30th St



Residence Front Yard at 30th St.



Residence Interior - Up to 4 Inches of Water



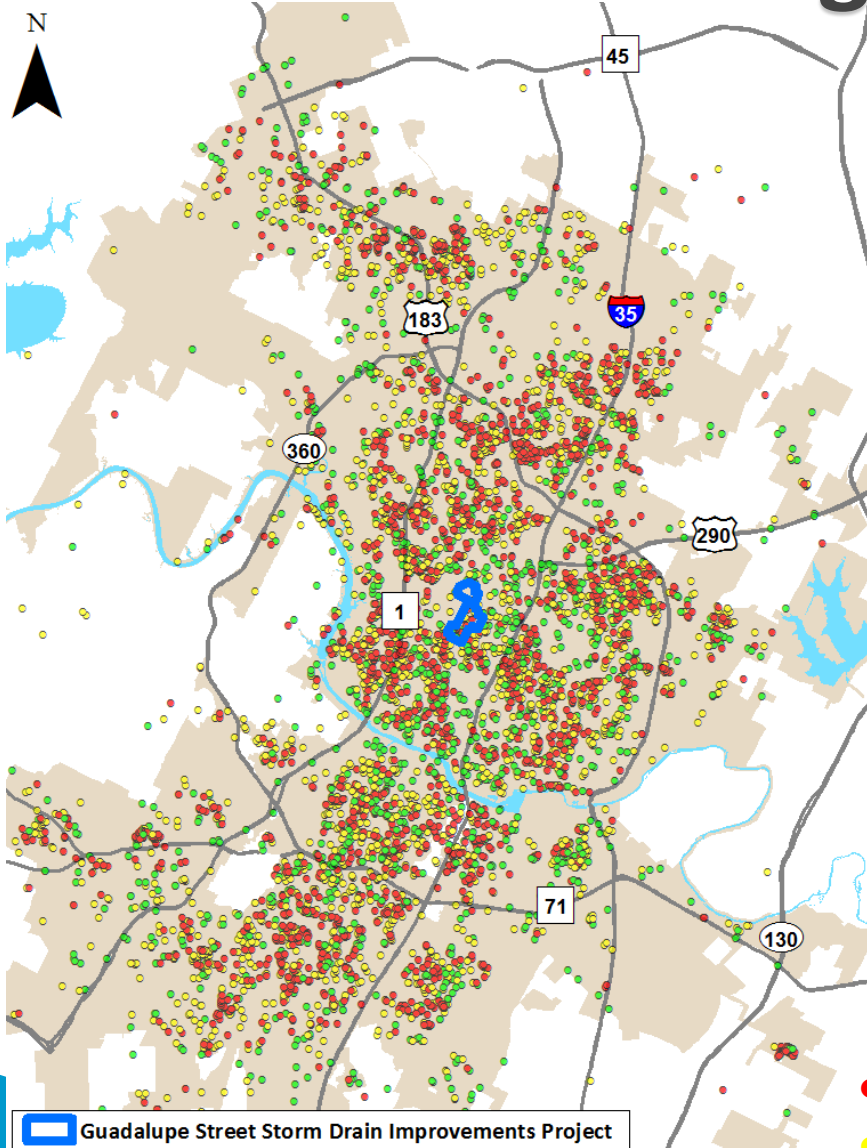
Two Types of Flooding

Flooding happens due to a combination of intense rainfall and inadequate capacity of our drainage system

- **Creek Flooding:** Occurs when a creek rises over its banks.
- **Localized Flooding:** Occurs away from creeks.



Localized Flooding Citywide



Dots represent reports of localized flooding or related complaints: 5,884 total.

- Neighborhoods built before the 1980s tend to have more drainage problems.
- No easy or quick solution.
- Guadalupe St. SDI ranks #5

- 1,995 Buildings
- 2,409 Yards
- 1,480 Streets

What is a Storm Drain System?

- System of streets, ditches, pipes and culverts
- Drains rainfall from streets to nearby creek
- Inlets are placed along curb to catch rainfall
- Streets should drain in most storms.



Components of a Storm Drain System

1. Inlets and curbs capture rain water.



2. Underground pipes carry the water.



3. Rain water is released into a creek at the outfall. Sometimes it goes to a water quality or detention pond first.



Schedule

- Preliminary Engineering
 - Public Meetings
 - October 26, 2017- gather information
 - Fall 2018- present improvement options

- Design

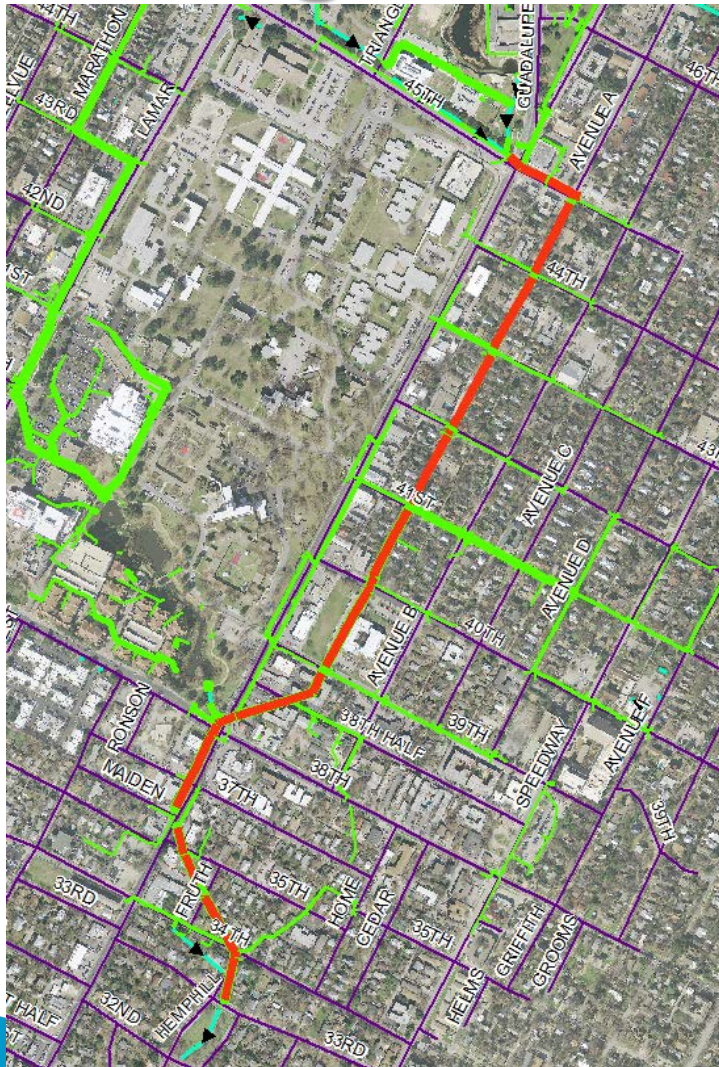
- Construction

AustinTexas.gov/stormdrains

- Guadalupe Street Storm Drain Improvements

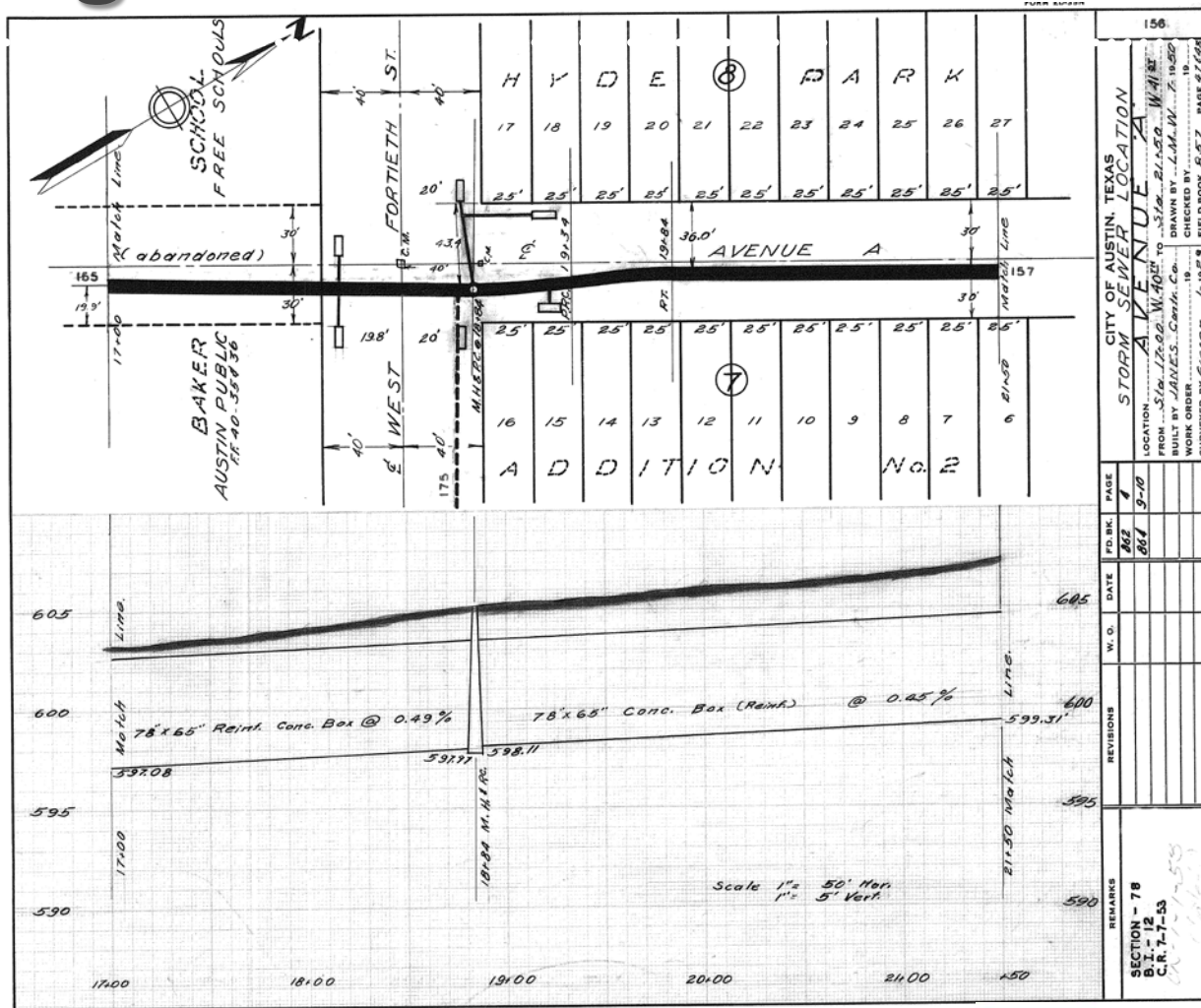
The screenshot shows the City of Austin website for the Guadalupe Street Storm Drain Improvements project. The page is titled "Watershed Protection Department" and "GUADALUPE STREET STORM DRAIN IMPROVEMENTS". It includes a navigation menu on the left with links to Home, About, Services, Programs, Divisions, FAQ, Education, Projects, and Codes and Regulations. The main content area features a "Public Meeting" announcement for October 26, 2017, at the Griffin School. Below this is an "Overview" section explaining local flooding and a map of the project area. The map shows a green-outlined area on Guadalupe Street with various markers. To the right of the map is a "TOP CONTENT" section with links to "Grow Green", "Flood Safety", "Floodplain Management and Regulations", "Scoop the Poop", and "Watershed Ordinance History". Below that is an "UPCOMING EVENTS" section for the public meeting on Oct. 26, 2017, and a "CONTACT INFO" section for Retekia McKay, Engineer C. At the bottom right, there are several utility-related links: "FloodSmart.gov", "ATXfloods" (with a "Road Closures due to Flooding" button), "Warn Central Texas" (with a "Sign up for Flood Alerts" button), and "ATX Hydromat" (with a "Rainfall and Creek Level Data" button).

Existing Storm Drain

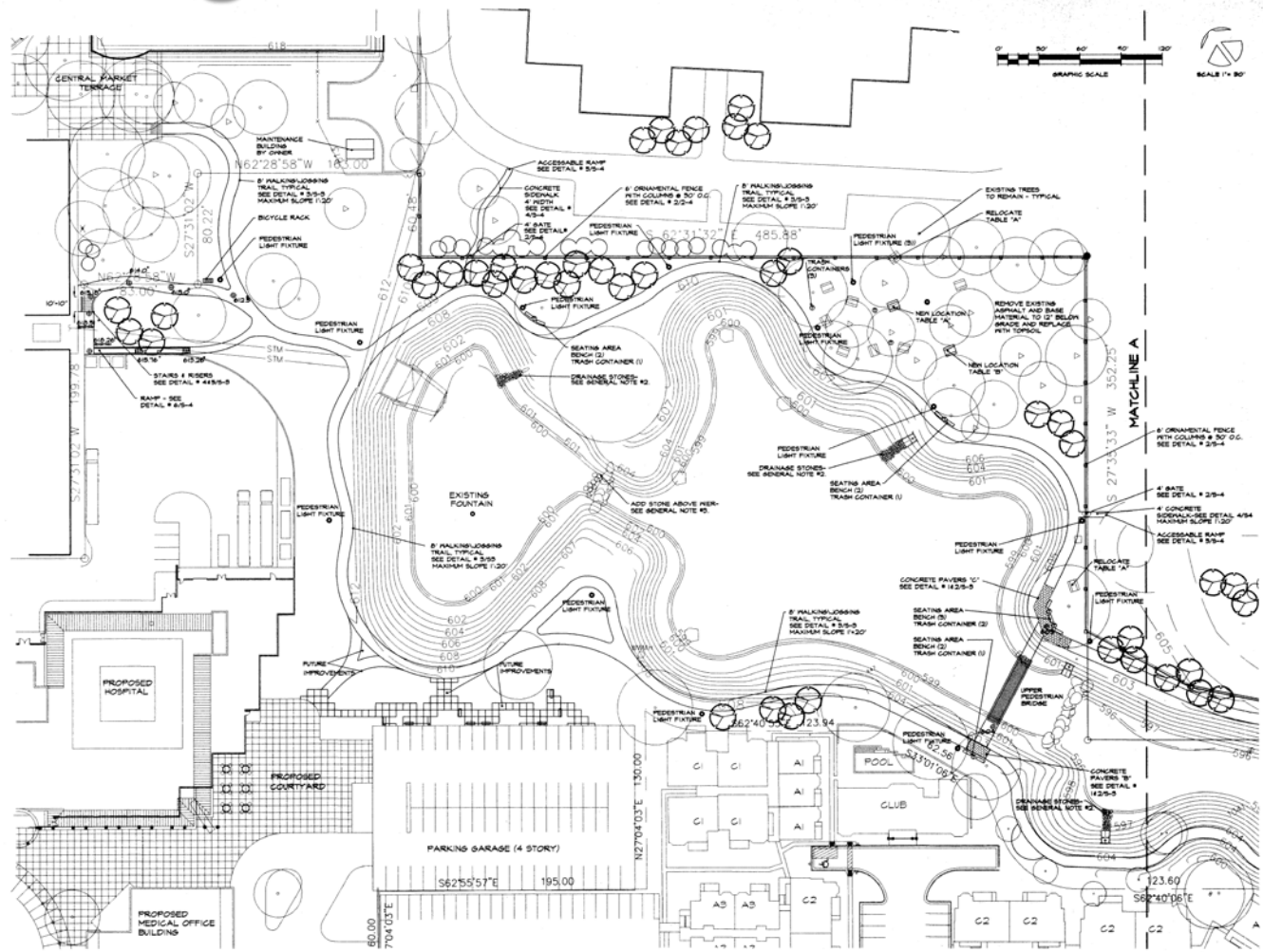



- Main storm system built in 1928
- Generally follows Avenue A to Hemphill Branch
- Size varies from 48 inch pipe to 9 ft x 5 ft box
- Triangle Pond designed in 2004
- Central Park Pond designed in 1993

Existing Storm Drain



Existing Storm Drain





RBLA
Rusi Bragg, ASLA
Landscape Architect

303 Red Oak Road
Austin, Texas 78746
PH: 512.452.1234
TX: 512.452.1234

Landscape Development

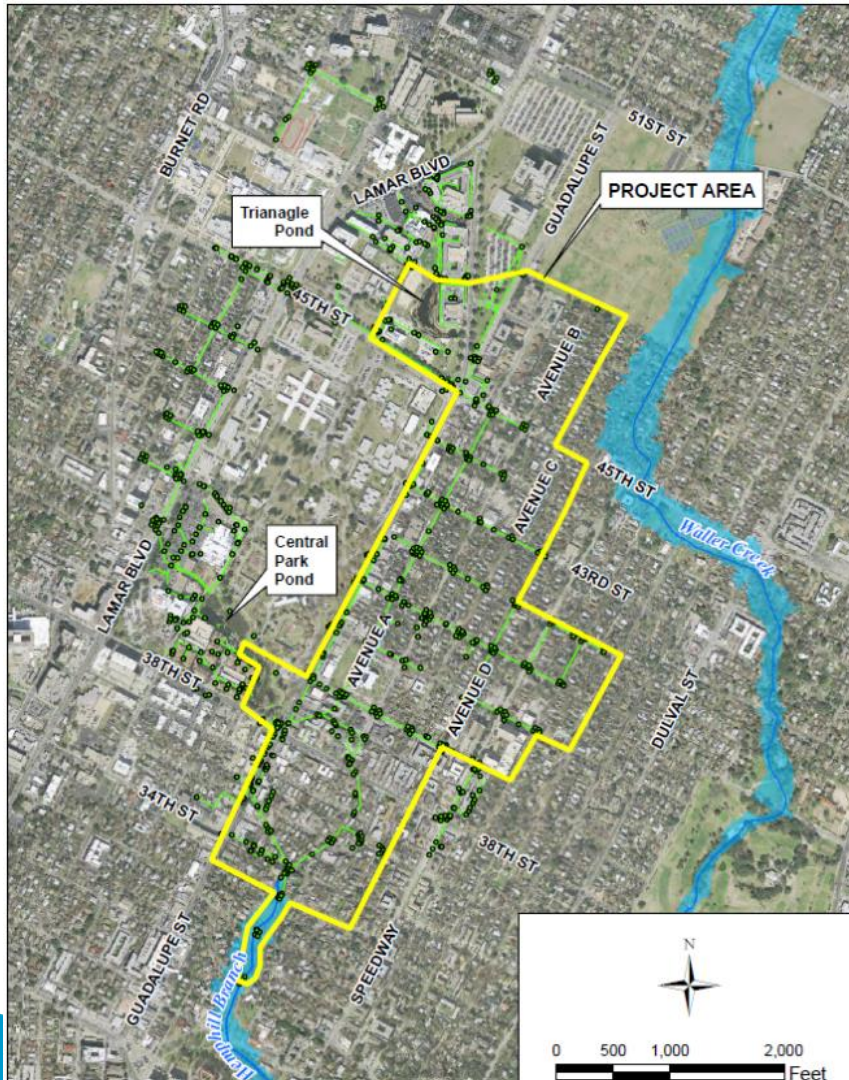
CENTRAL PARK

Quadraile at West 38th Street, Austin, Texas
OWNER: State of Texas, Central Land Office, 104884R
DEVELOPER: West 38th Street Limited, Austin, Texas

DRAWN BY	RBLA
DATE	FEB 4, 1997
REVISIONS	

PROJECT NO.	4419
SHEET TITLE	SITE PLAN 'A'
SHEET NO.	30 OF 34

Project Overview



- Collect Data
- Model Existing Flood Conditions
- Develop Alternatives

Collect Data



- Historical Rainfall
- FEMA Floodplains
- LiDAR
- Best Available Models
- As-built Drawings
- Storm Drain TV Inspections
- Field Visits

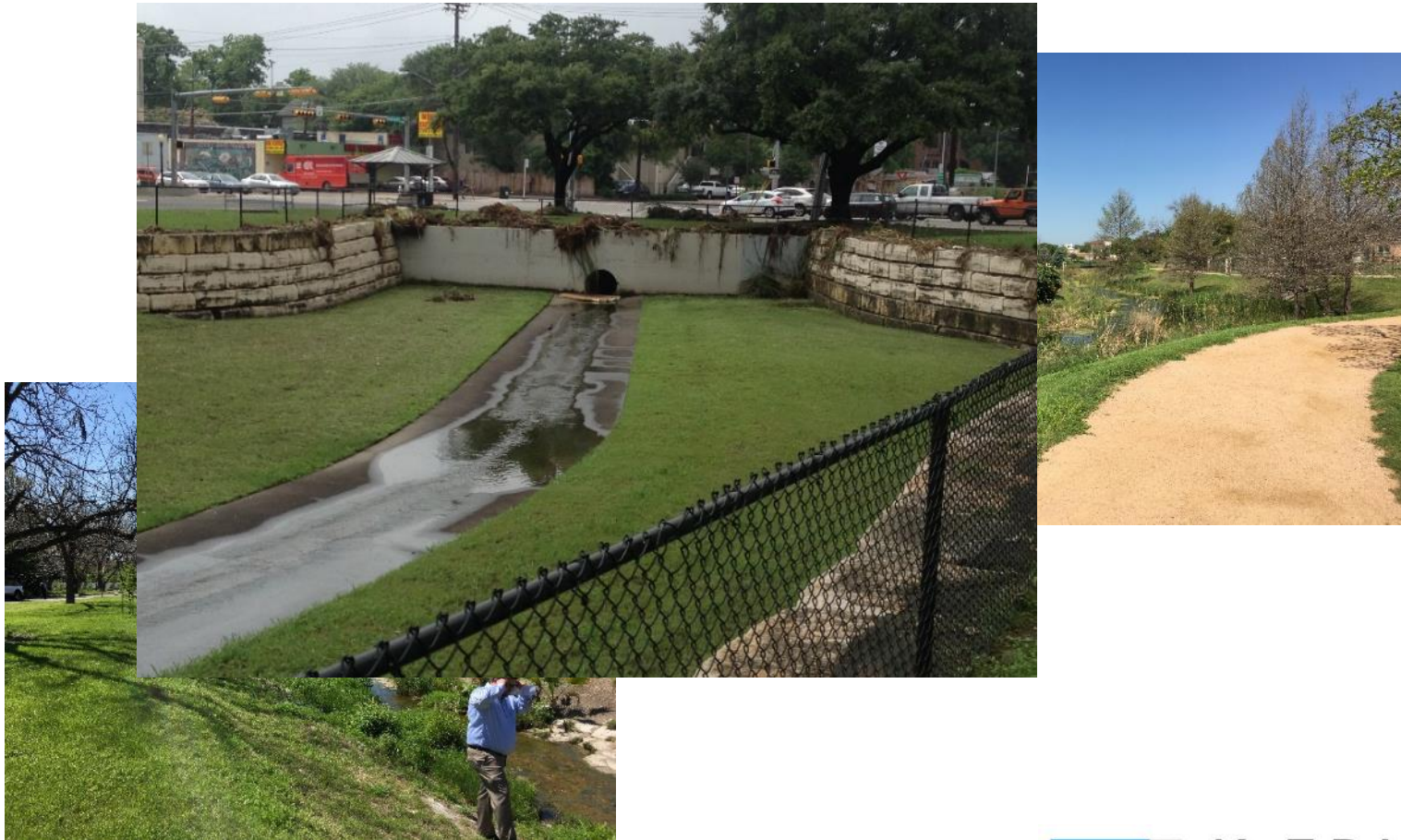
Collect Data



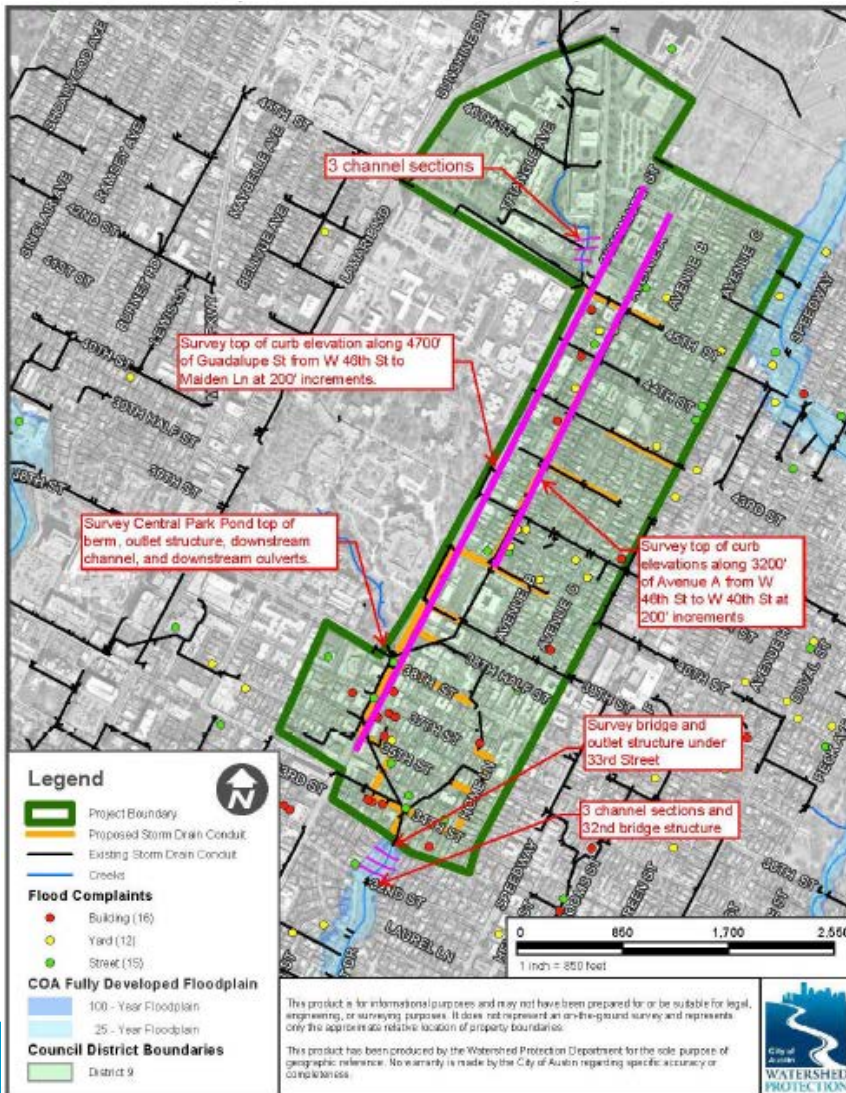
Collect Data



Collect Data

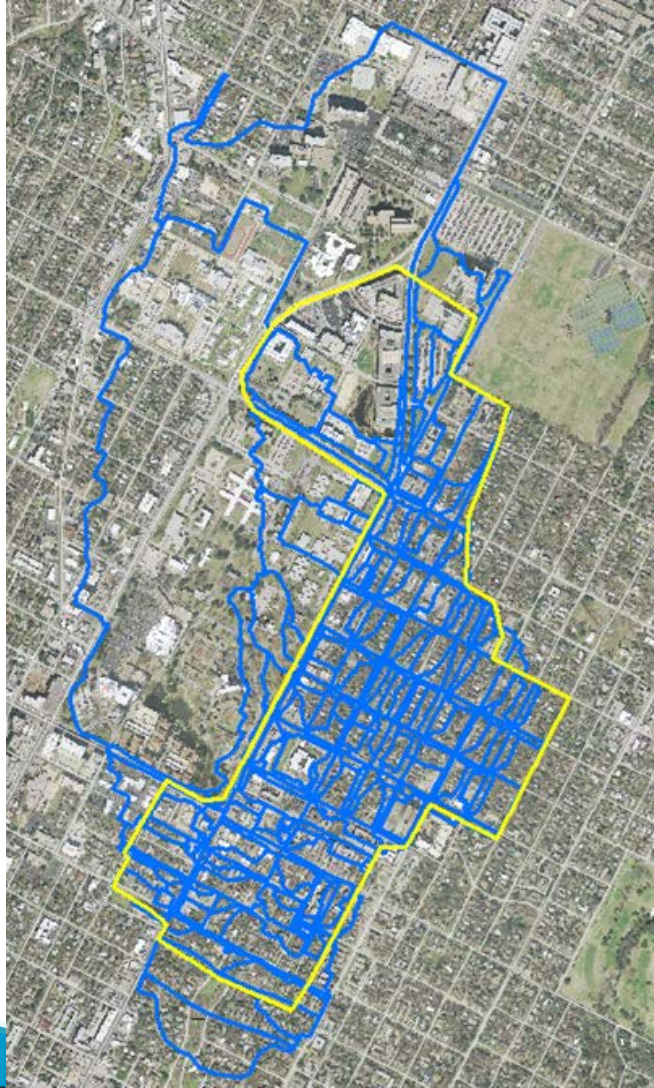


Collect Data



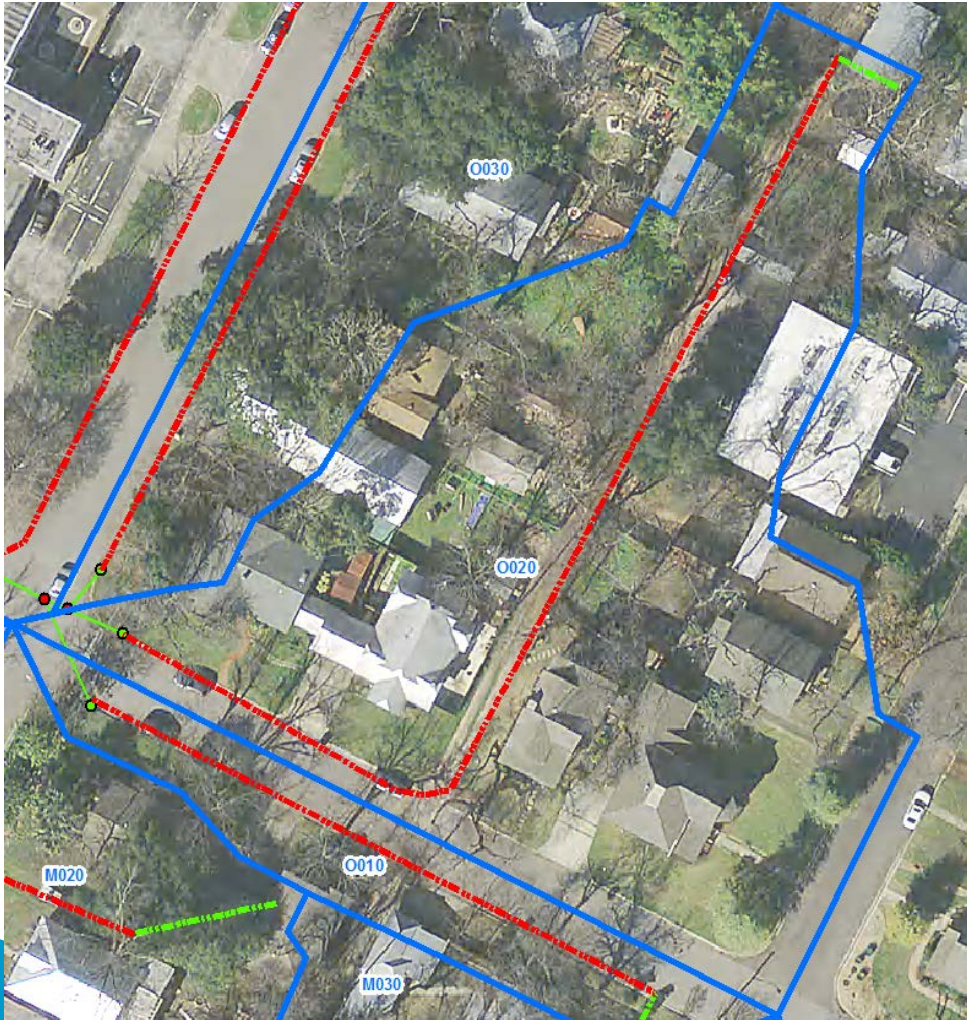
- Field Survey
 - Curb/Gutter elevations
 - Roadway crown elevations
 - Bridges/channels
 - Detention ponds

Model Existing Flood Conditions



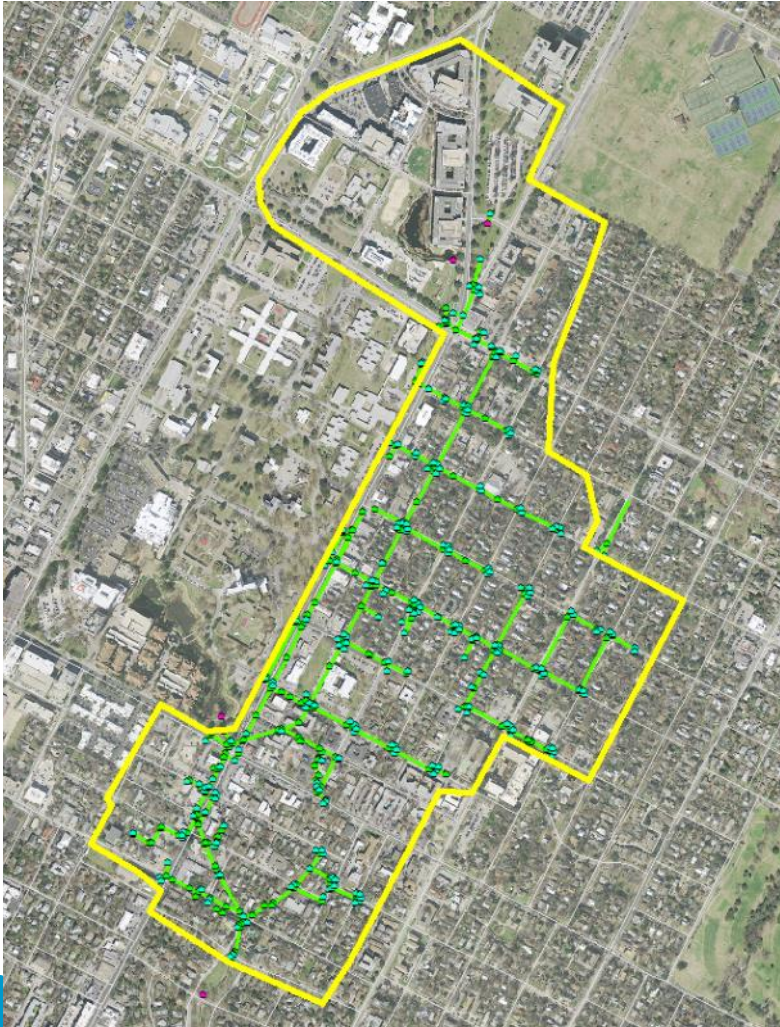
- Hydrology
 - How much water?
- 241 Inlets Within Project
 - Drainage area Delineations
 - Time of concentration
 - Infiltration
 - Rainfall depths
- Model **how much** runoff and **when** it peaks

Model Existing Flood Conditions



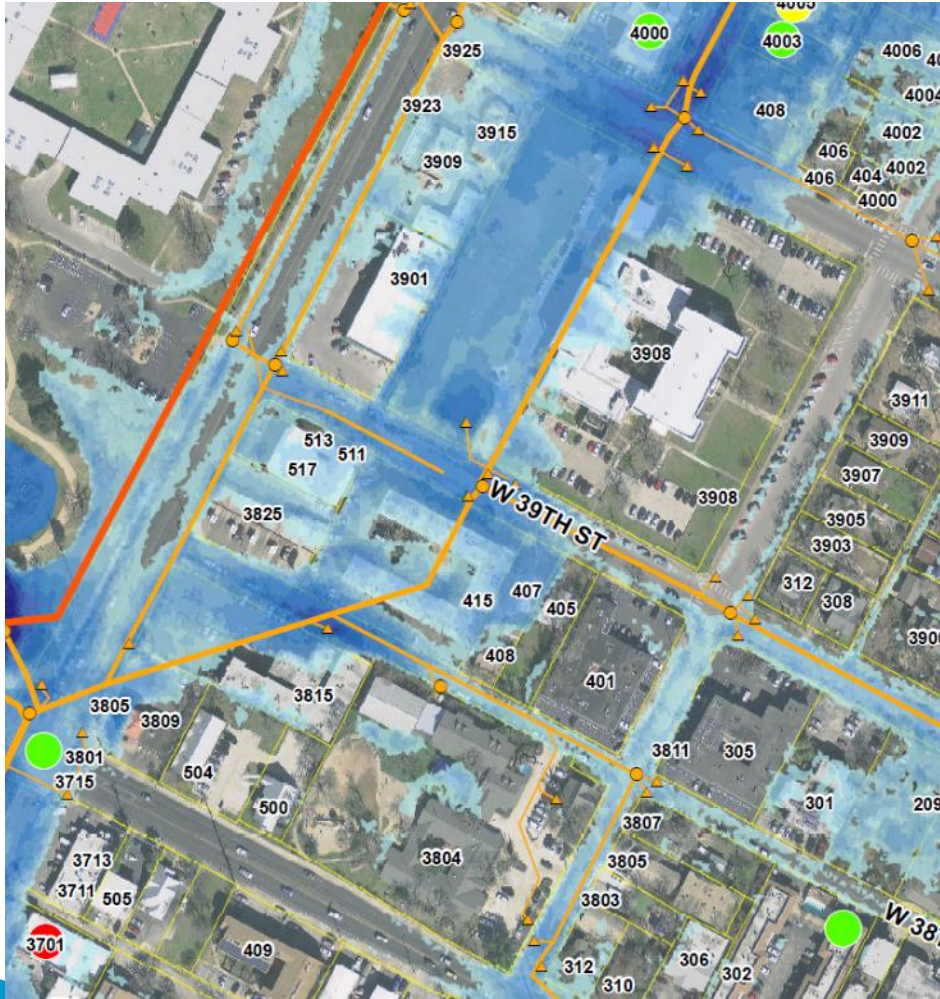
- Hydrology
 - How much water?
- 241 Inlets Within Project
 - Drainage area Delineations
 - Time of concentration
 - Infiltration
 - Rainfall depths
- Model **how much** runoff and **when** it peaks

Model Existing Flood Conditions



- Hydraulics
 - How deep is water?
- Storm drain networks
 - Inlets, manholes, pipe sizes, etc.
- Various ponds
 - Hold back and store water
- Model runoff **depths** and **extents** on ground surface

Model Existing Flood Conditions



Preliminary

- Combine hydrology + hydraulics
- Simulate historic events
 - July 18, 2014
 - Memorial Day 2015
 - Halloween 2015
- Calibrate/validate results
 - Compare against high water mark data
- Revise models

Model Existing Flood Conditions



Combine hydrology + hydraulics

Simulate historic events

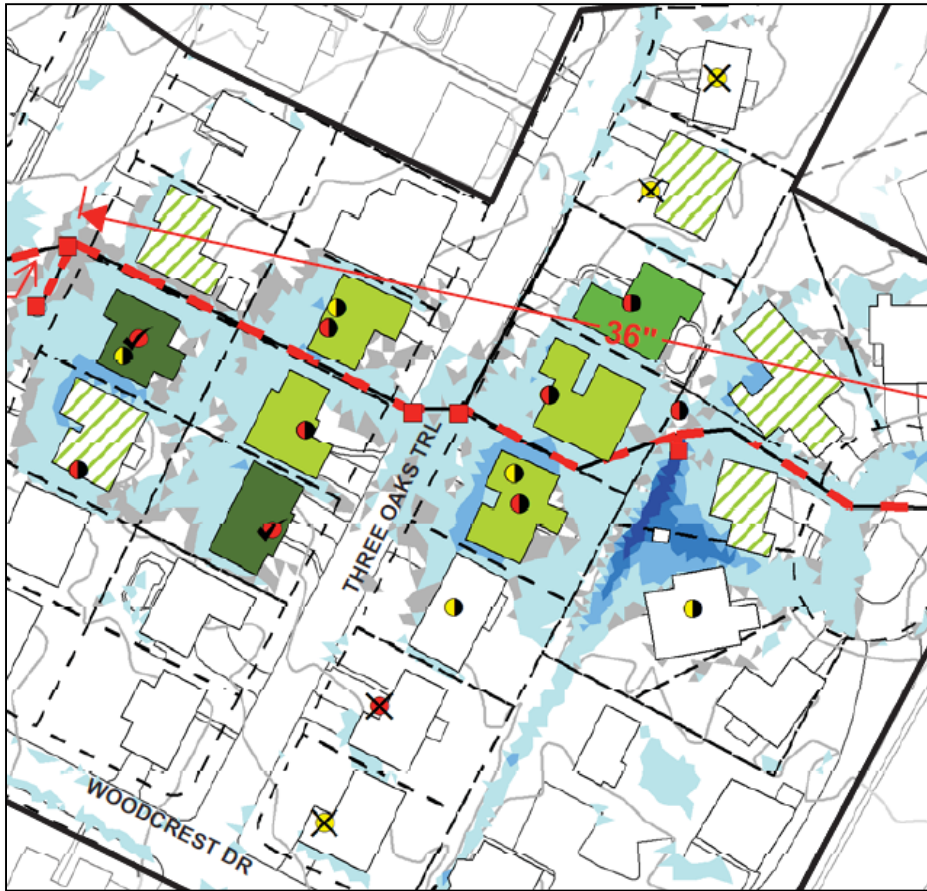
- July 18, 2014
- Memorial Day 2015
- Halloween 2015

Calibrate/validate results

- Compare against high water mark data

Revise models

Develop Solution Alternatives



Example Project

- Simulate potential solutions to reduce flooding
 - Pond improvements
 - Storm Drain improvements
 - Street improvements
 - Channel improvements
 - Inlet improvements
- Optimize solutions based on benefit and cost

Available Resources

- Consider purchasing flood insurance
- Report flooding and drainage concerns to 3-1-1
- Avoid building in drainage easements
- Email floodpro@austintexas.gov for information about flood-proofing
- Check ATXfloods.com for road closures
- Sign up for WarnCentralTexas.org & ATXfloods.com alerts



Informing us
just got easier.
Get the app.



Public Input

- We Need Your Input
 - Flooding photos / videos
 - High water mark accounts
 - Stories of flooding
 - Areas, homes, yards, streets that flood
 - When?
 - How long does it stay flooded?
 - How much rain does it take?

[www.austintexas.gov/
online-form/flooding-
information-form](http://www.austintexas.gov/online-form/flooding-information-form)



Questions

Reem J. Zoun, PE, MS, CFM

Supervising Engineer

Watershed Protection Department, City of Austin

P: (512) 974-3354

reem.zoun@austintexas.gov

Rebeka L. McKay, PE, CFM

Engineer C

Watershed Protection Department, City of Austin

(512) 974-3353

Rebeka.McKay@austintexas.gov