

# Oak Knoll Storm Drain Improvement Project

February 27, 2018



# Welcome

## Personnel:

Reem Zoun, PE – Supervising Engineer, WPD

Sara Hartley – Assistant Director, WPD

Annabell Ulary, PE – Engineer, WPD

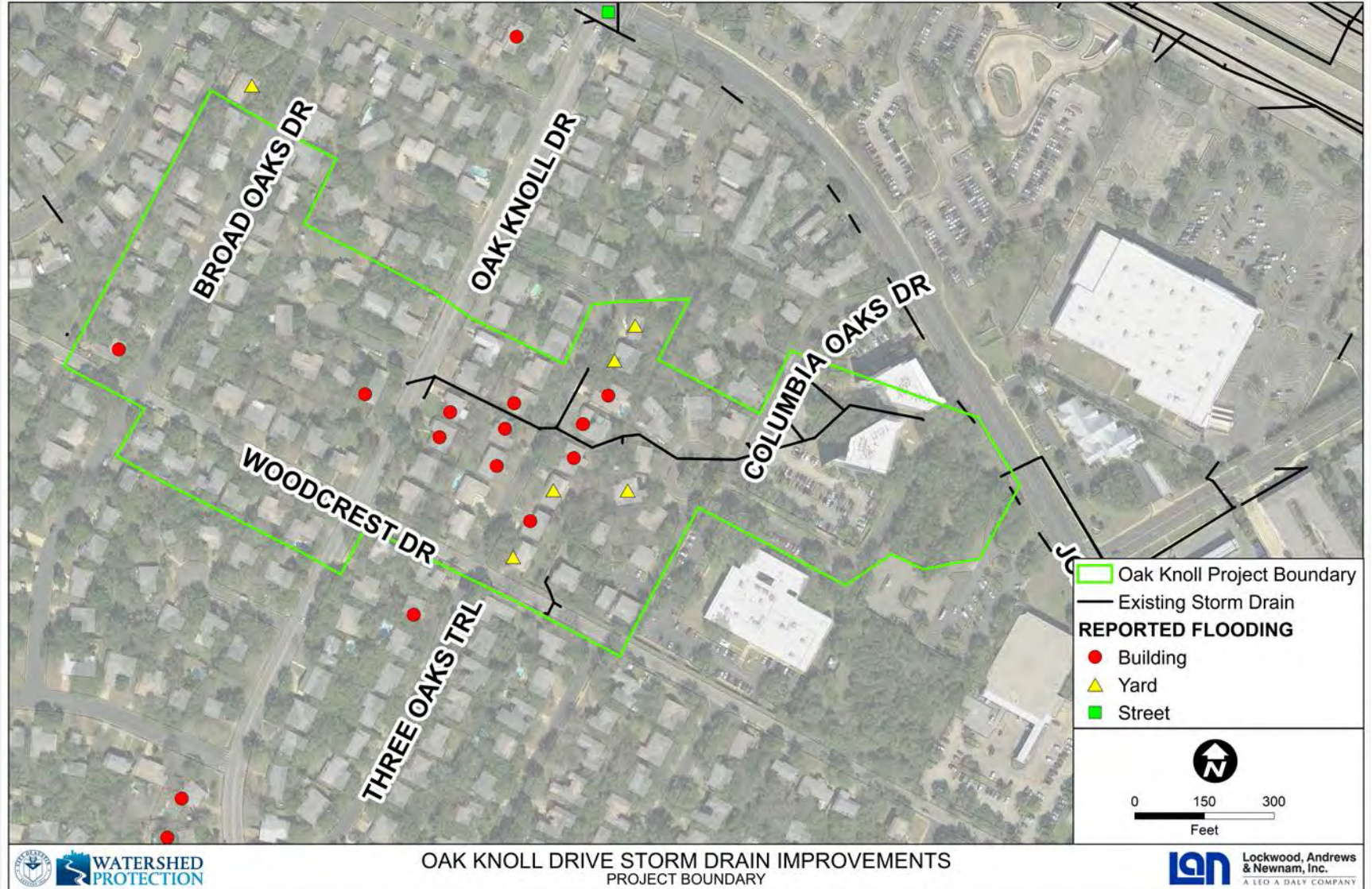
Thuan Nguyen, PE – Project Manager, PWD

Travis Michel, PE – Lockwood, Andrews & Newman, Inc.

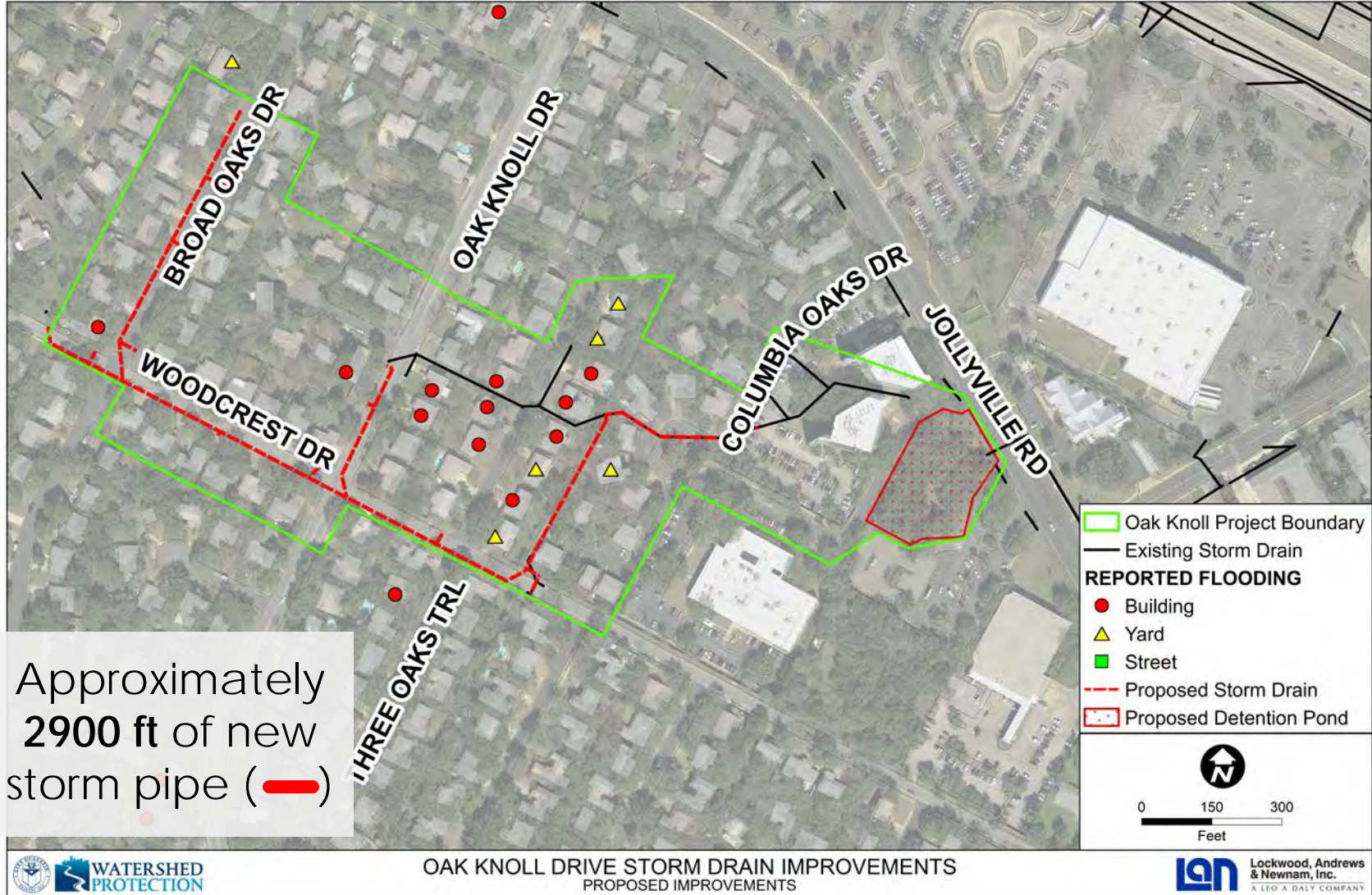


# Introduction

- Oak Knoll Storm Drain Improvement Project
- Local Flood Risk Reduction High Priority
- Flooding Complaints (16):
  - 11 buildings
  - ▲ 5 Yards
- History
- Purpose of this meeting



# Introduction



Approximately  
**2900 ft** of new  
storm pipe (—)

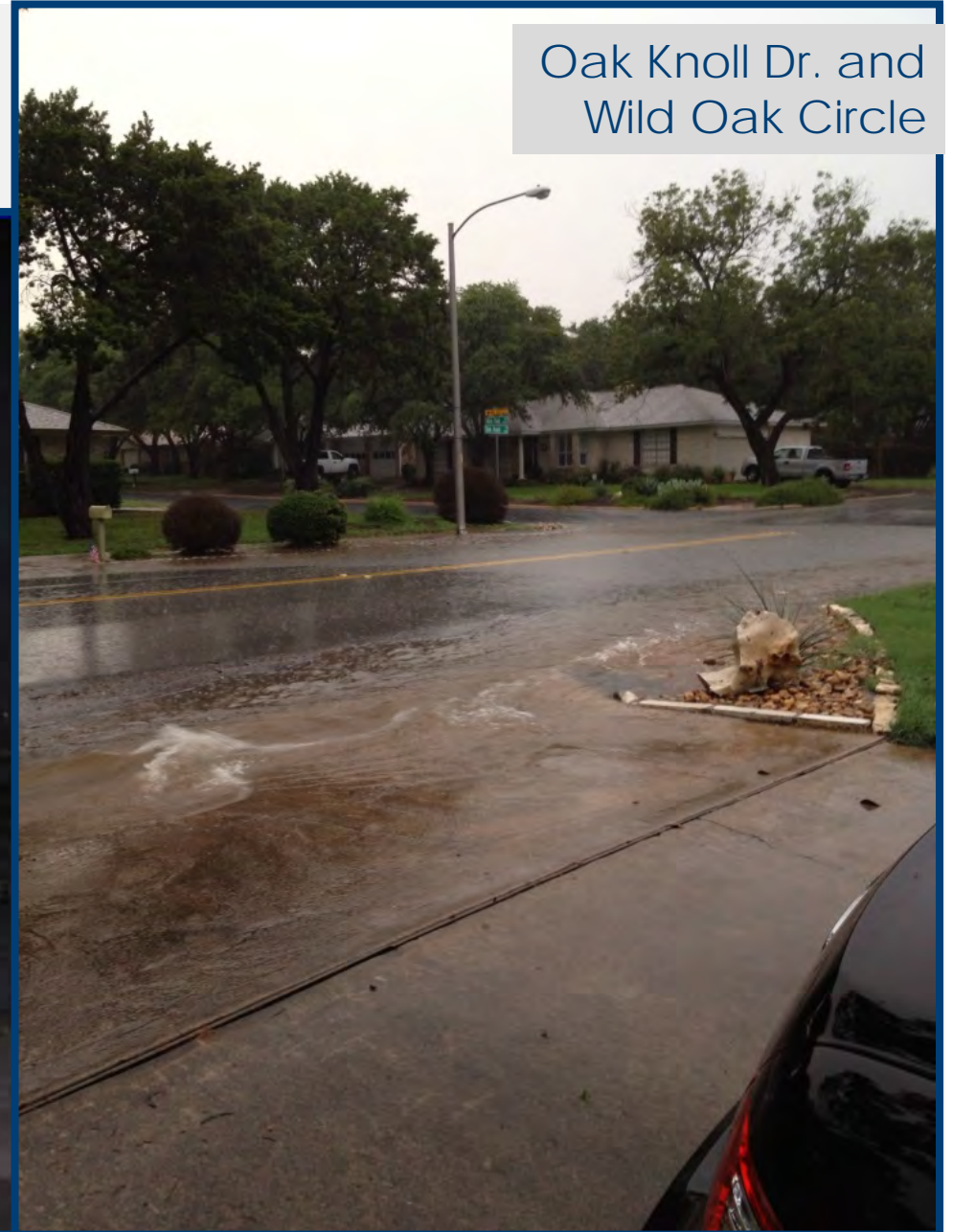


OAK KNOLL DRIVE STORM DRAIN IMPROVEMENTS  
PROPOSED IMPROVEMENTS



# Oak Knoll Storm Drain Improvements

11712 Three Oaks Trl.



Oak Knoll Dr. and  
Wild Oak Circle



# Oak Knoll Storm Drain Improvements

Oak knoll Dr. and Woodcrest Dr.



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WATERSHED PROTECTION DEPARTMENT



# 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**  
Occurs away from creeks.

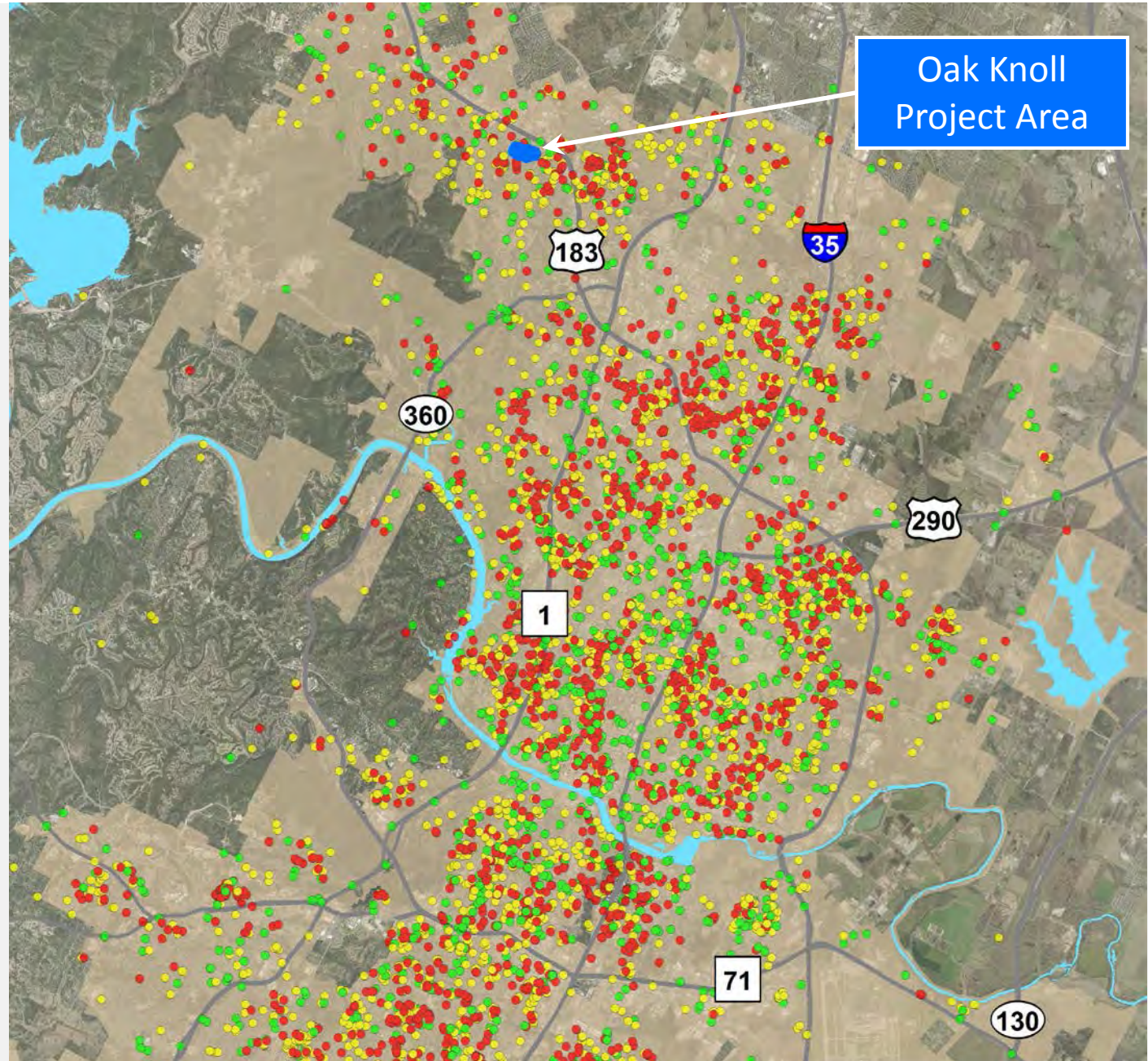
**Creek Flooding** →  
Occurs when a creek rises over its banks.





# Localized Flooding Citywide

- 5,884 Total Complaints
  - 1,995 Buildings
  - 2,409 Yards
  - 1,480 Streets
- Neighborhoods built before the 1980s tend to have more drainage problems
- No quick or easy solution
- Oak Knoll SDI is high priority



# 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.**

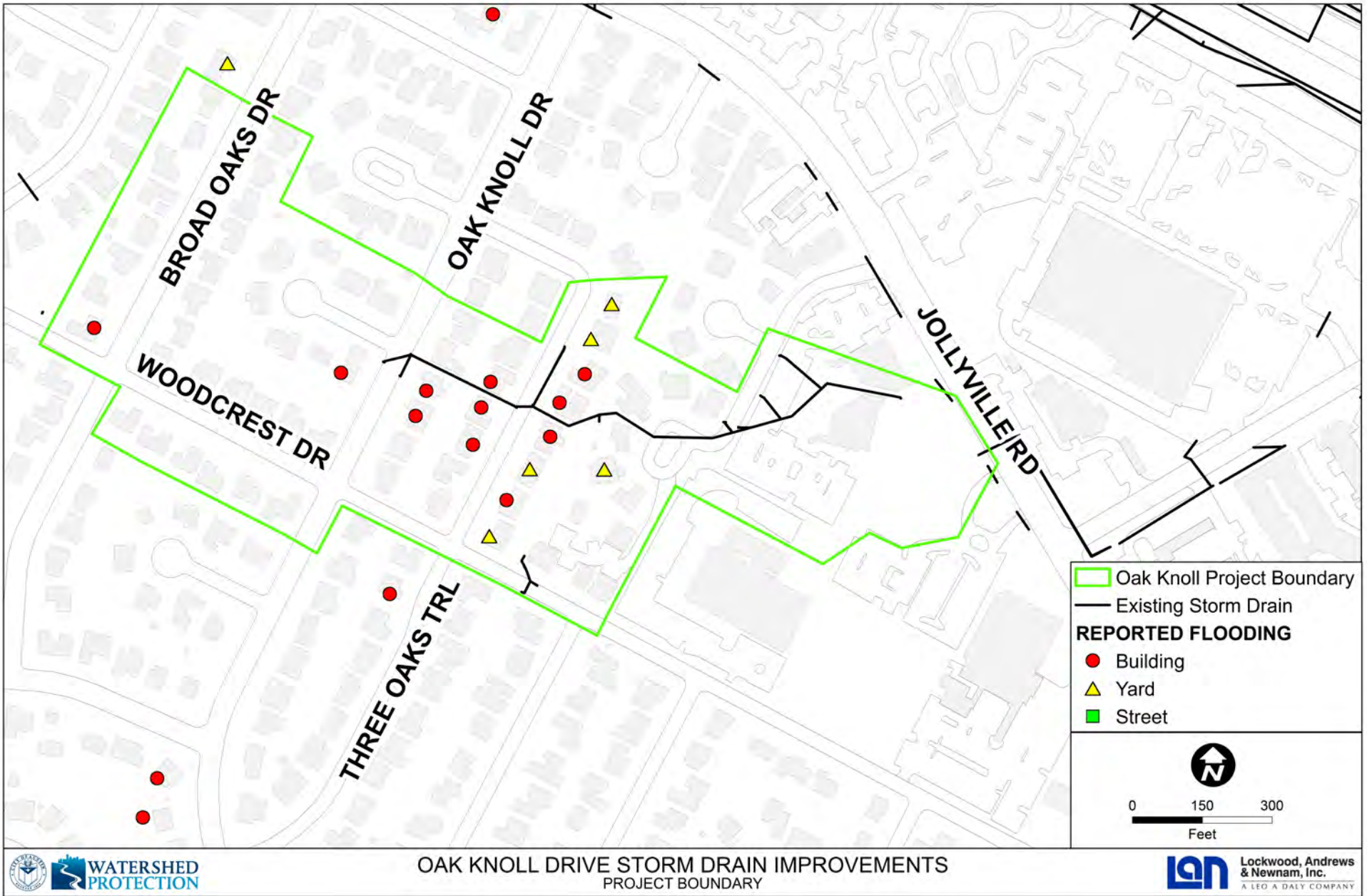


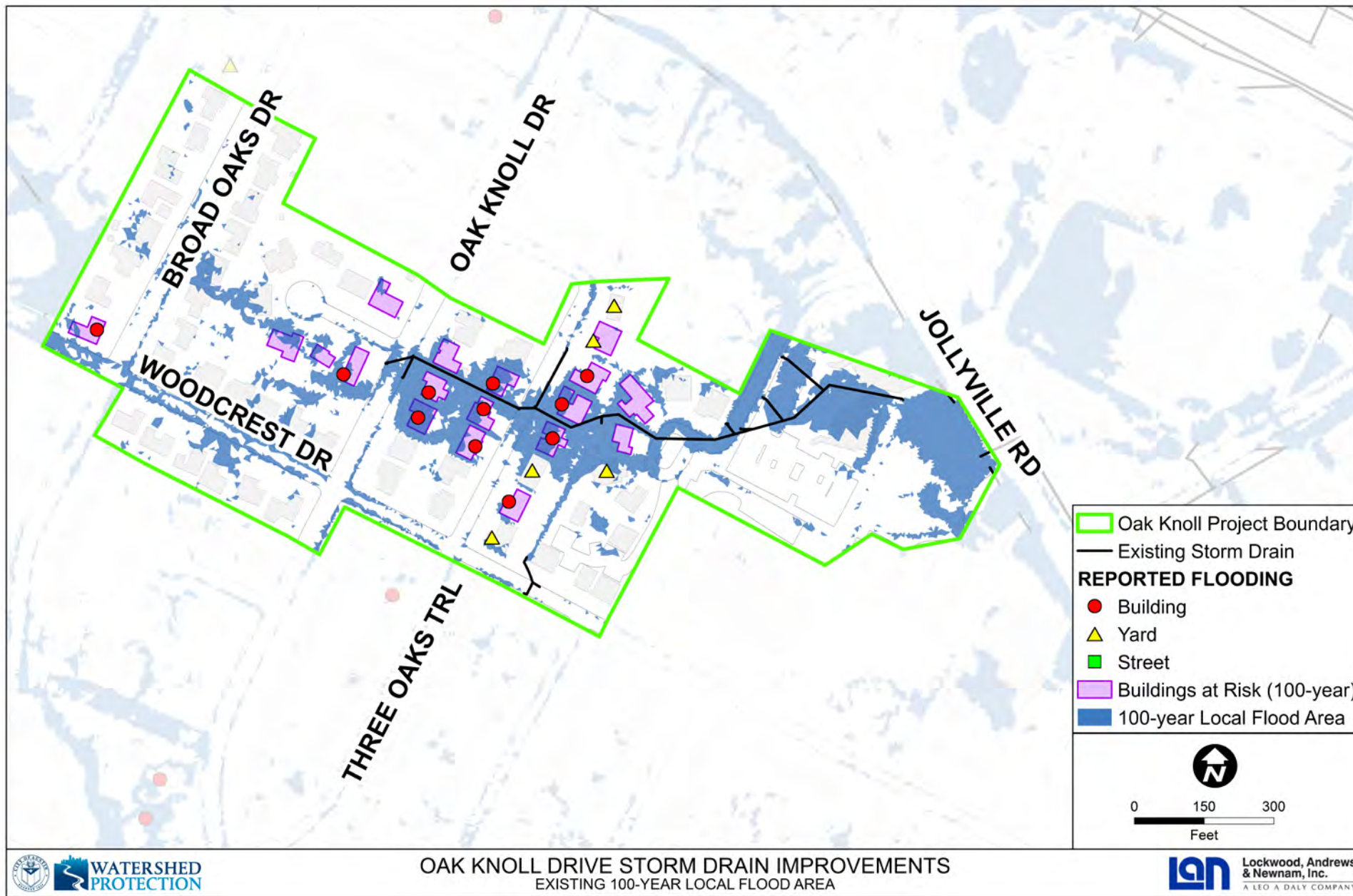
**2. Underground pipes carry the water.**



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







OAK KNOLL DRIVE STORM DRAIN IMPROVEMENTS  
EXISTING 100-YEAR LOCAL FLOOD AREA



# Project Process

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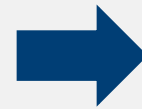
WATERSHED PROTECTION DEPARTMENT



Flooding Complaint



Investigate



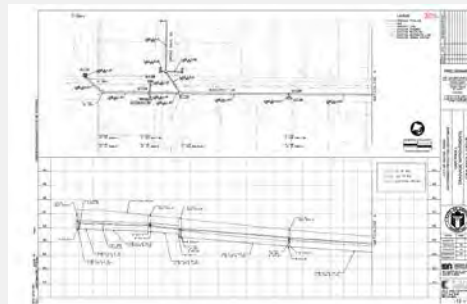
Prioritize



In-House Study



Preliminary Engineering



Design



Construction



# Project History:

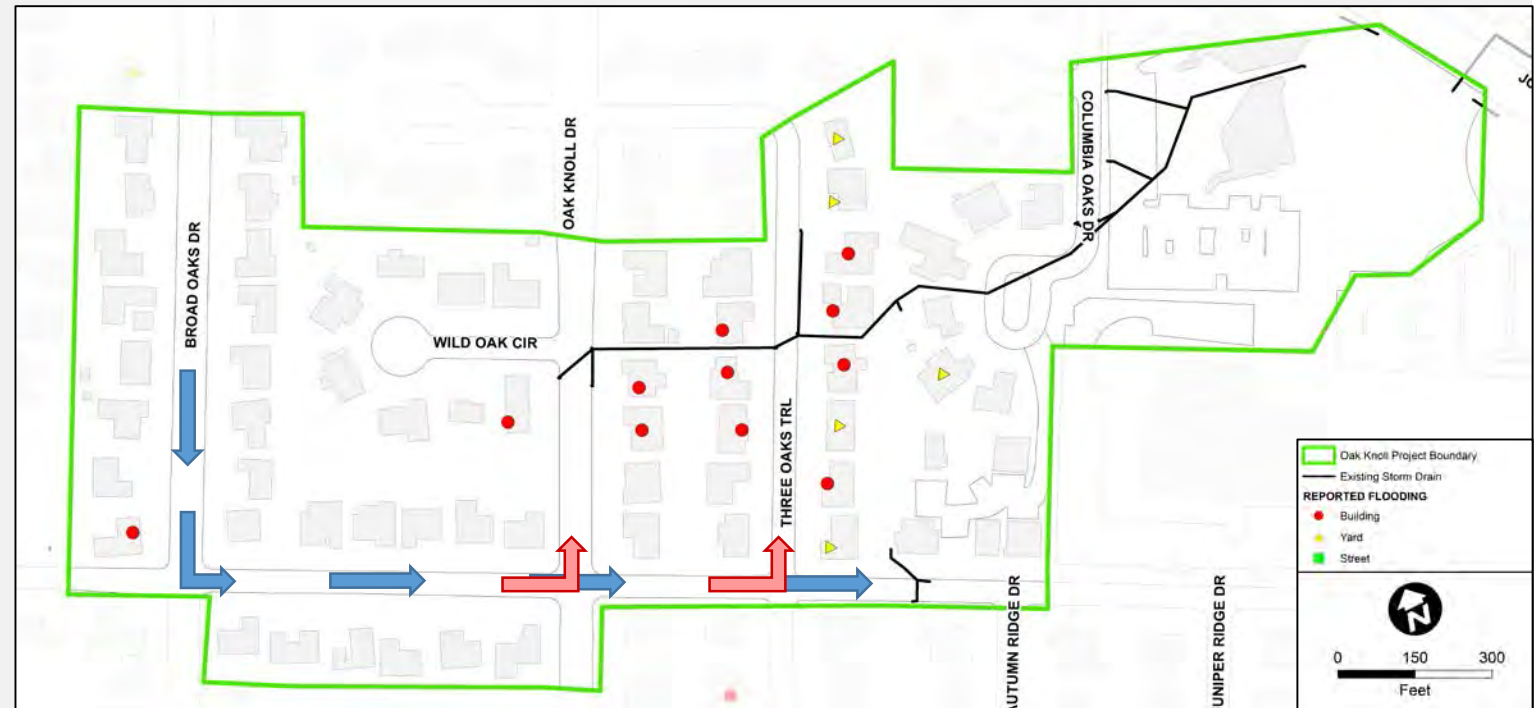
## In-House Study

### Findings

- Storm drain system does not meet current standards
- Flow patterns are not what was originally designed.

### Recommendations

- Proposed 3 small projects.
- Suggested a larger study of the regional drainage issues in the Walnut Creek Watershed.



# Project History:

## Small Scale Improvements

### Valley Gutter

- January 2013
- Across Oak Knoll Dr. at Woodcrest Dr.
- Installed by Street and Bridge Division of Public Works





# Project History:

## Small Scale Improvements

### Oak Knoll Drive Improvements

- June 2014
- Expanded the existing inlet and added a new inlet
- Installed by Watershed Protection



# Project History:

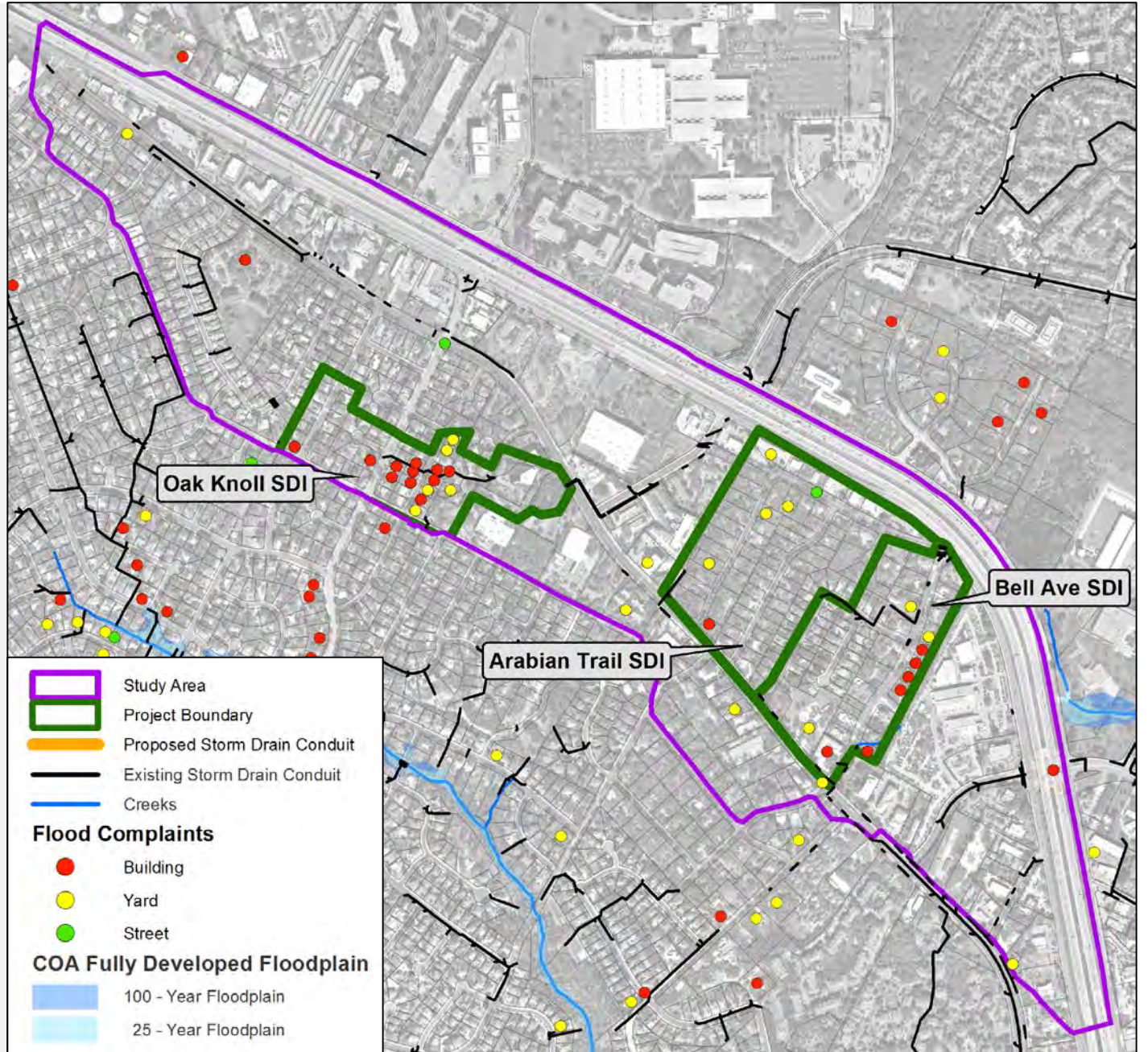
## Small Scale Improvements

### Three Oak Trail Improvements

- June 2016
- Expanding the existing inlet and adding a new inlet
- Installed by Watershed Protection



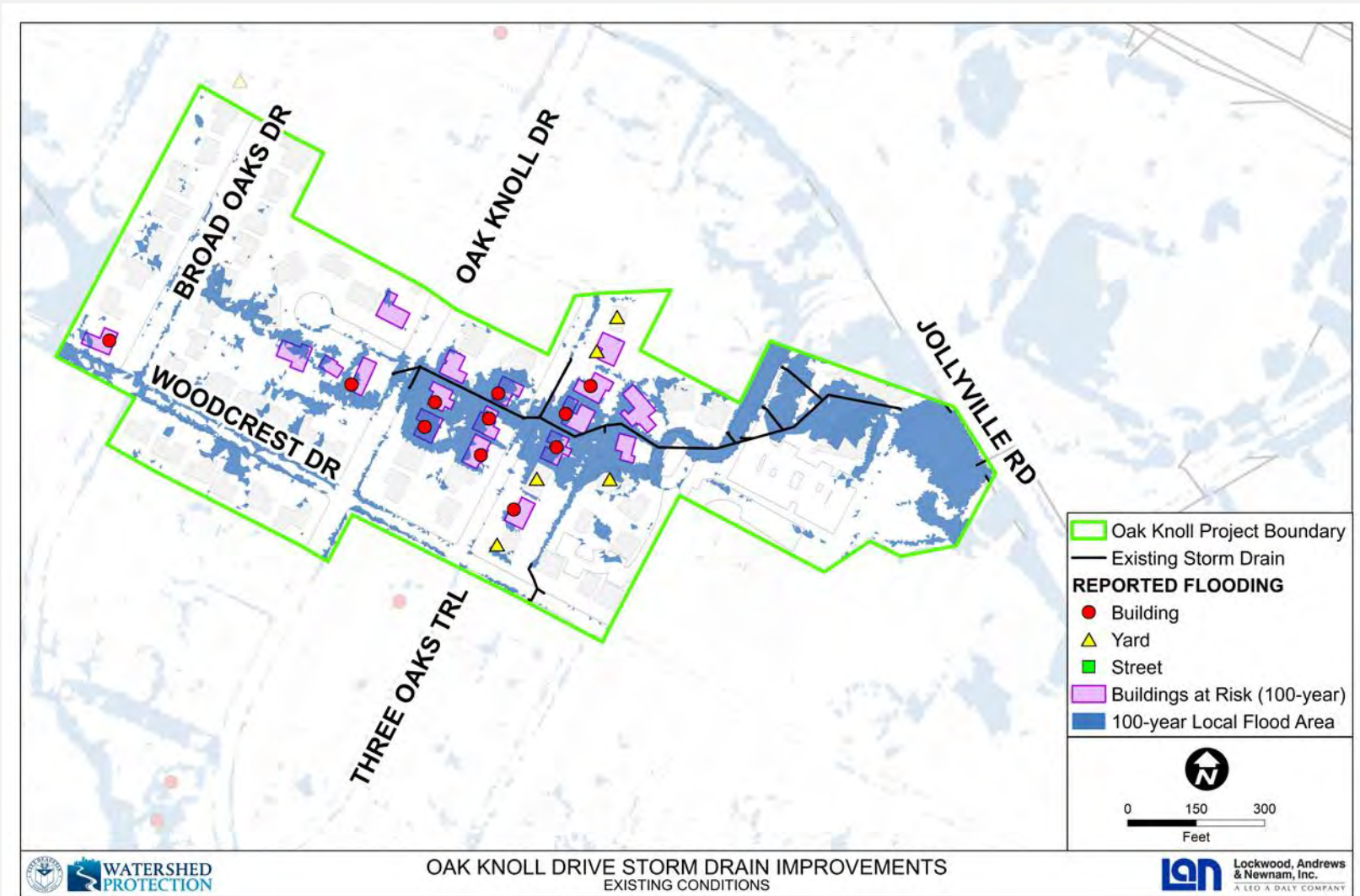
# Preliminary Engineering Report



# Evaluating the Existing Conditions



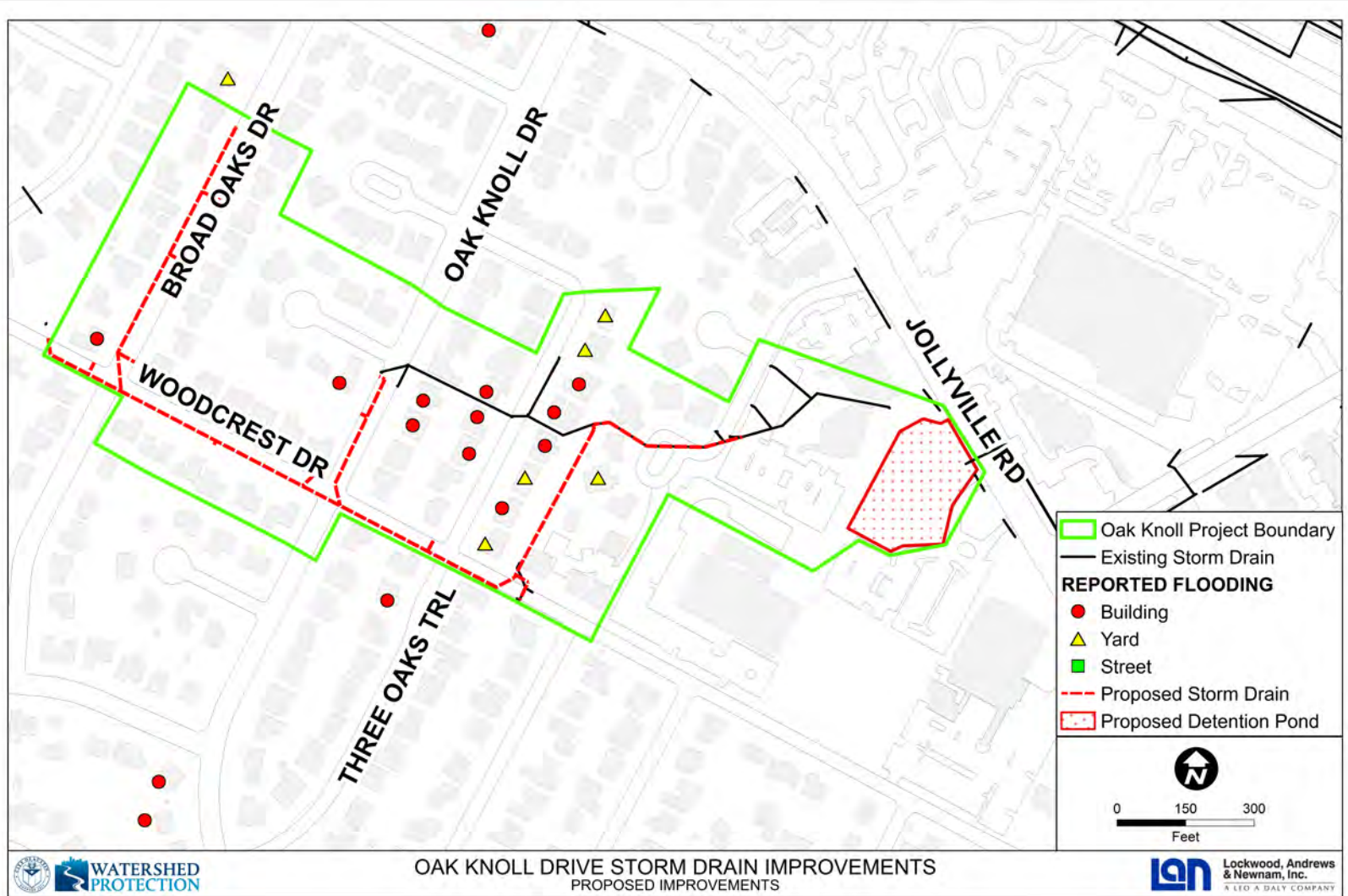
# Evaluating the Existing Conditions



OAK KNOLL DRIVE STORM DRAIN IMPROVEMENTS  
EXISTING CONDITIONS



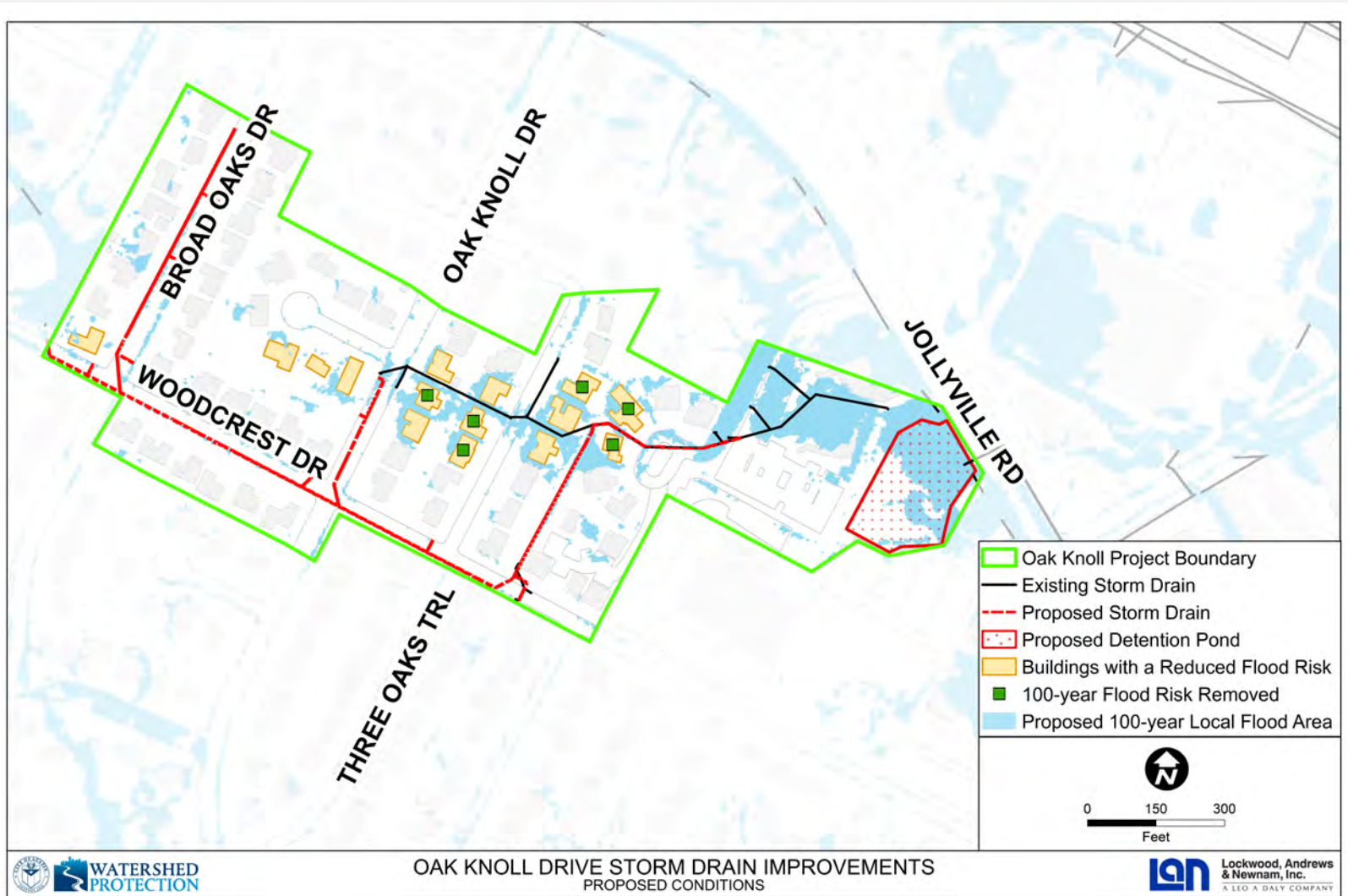
# Proposed Improvements



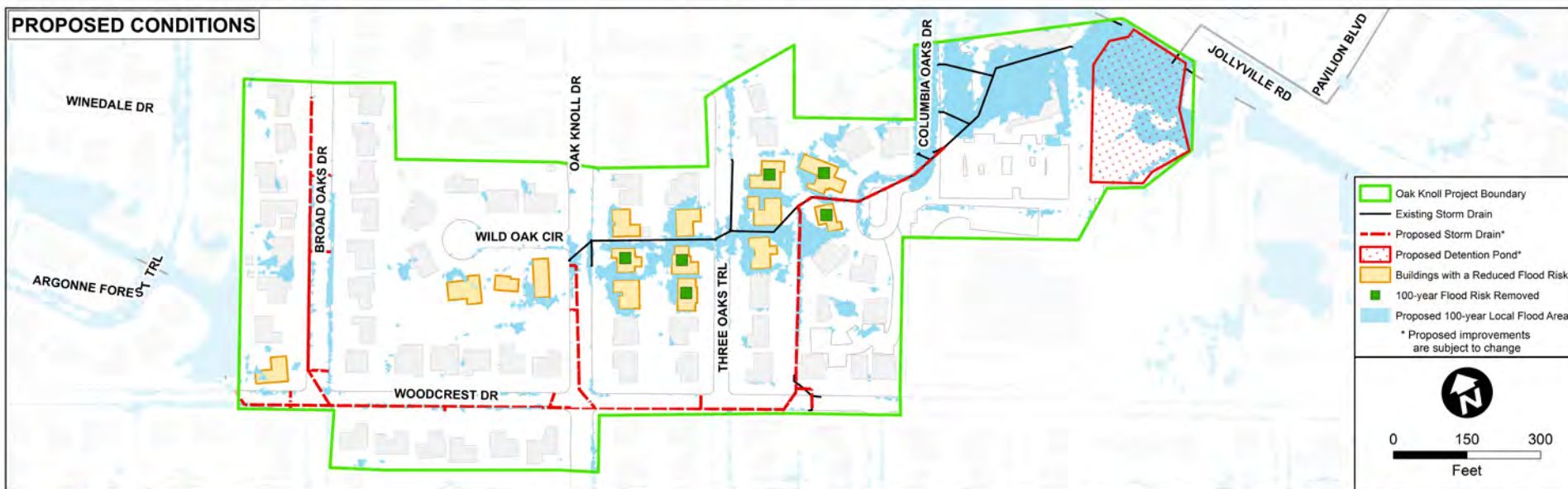
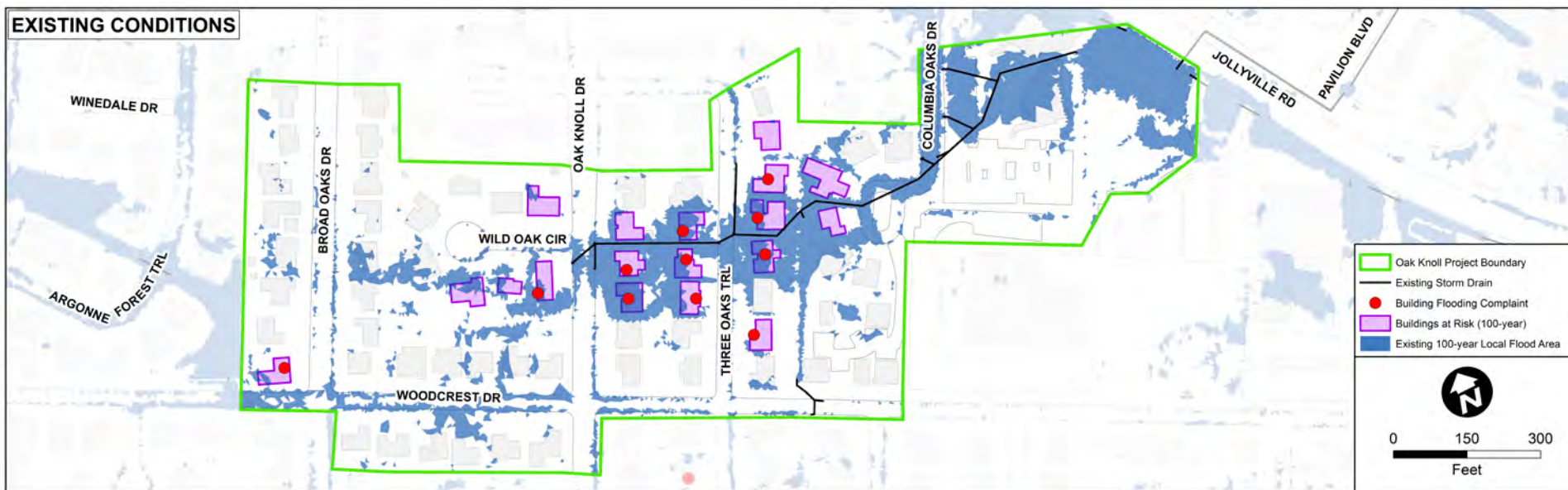
# Proposed Improvements



# Proposed Improvements







OAK KNOLL DRIVE STORM DRAIN IMPROVEMENTS



# Schedule

## Currently in Design

- Fully funded in Late 2020
- Identified in Bond Recommendation

## Public Meetings

- September 17, 2013
- February 27, 2018

## Design and Permitting

- May 2018 to Early 2021

## Easement Acquisition

- Late 2018 to Late 2020

## Construction Begin

- Early 2021



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**Watershed Protection Department**

**OAK KNOLL FLOOD RISK REDUCTION**

The Watershed Protection Department completed the preliminary engineering report on flooding in the area around U.S. Highway 183 and Jollyville Road. The report evaluated possible ways to reduce the risk of flooding in three problem areas.

The type of flooding occurring in this area is known as local flooding. It generally occurs away from creeks in areas where heavy rainfall overwhelms the manmade drainage system of pipes and ditches.

**Preliminary Engineering Report**

A consultant hired by the Watershed Protection Department studied the entire area that drains to the culverts under U.S. Highway 183 near Duval Road. Within this area, the consultant evaluated three problem areas:

1. Oak Knoll Drive
2. Arabian Trail
3. Bell Avenue

**Call 311 To Report Flooding**

**Oak Knoll Storm Drain Improvements**

For each of the areas, the report identified three potential alternatives to reduce the

**TOP CONTENT**

- ★ Grow Green
- ★ Flood Safety
- ★ Floodplain Management and Regulations
- ★ Scoop the Poop
- ★ Watershed Ordinance History

**CONTACT INFO**

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**FloodSmart.gov**

Considering flood insurance? Call your insurance agent to sign up or click on "FloodSmart.gov" above to find out more about risks and costs.

[AustinTexas.gov/Stormdrains](http://AustinTexas.gov/Stormdrains)

Oak Knoll Storm Drain Improvements



# Available Resources

- Check [ATXfloods.com](http://ATXfloods.com) for road closures
- Sign up for [WarnCentralTexas.org](http://WarnCentralTexas.org)
- Report flooding and drainage concerns to 3-1-1
- Consider purchasing flood insurance
- Avoid building in drainage easements
- Email [floodpro@austintexas.gov](mailto:floodpro@austintexas.gov) for information about flood-proofing

The image displays two digital resources for flood management in Austin. The top portion is a screenshot of the **ATXfloods** website, which shows a map of Austin with green and red markers indicating road closure status. A legend titled "Low Water Crossing Status" shows a green dot for "open" and a red dot for "closed". A specific location is highlighted with a red dot and a callout box: "Colton Rd @ Cottonmouth Creek, Travis County, TX, Heavy road damage". The website header includes the ATXfloods logo, the date "Sunny in Central Texas. | 02-03-2016 7:01:44 AM", and a "See all updates" button. The bottom portion shows the **austin 3-1-1** mobile app interface on a smartphone. The app screen features a grid of icons for "New Request", "Recent", "My Requests", "Favorites", "FAQ", and "Reporter". The background of the app interface is a green-tinted image of an Austin street scene with signs for "AUSTIN 312", "DON'T MESS WITH Texas", "MUSIC CAPITAL OF THE WORLD", and "SINCE 1839". Below the app interface, there are buttons for "GET IT FREE ON Google Play" and "FREE DOWNLOAD App Store".



# Questions

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