

Oak Park and Oak Acres Drainage and Flooding

Neighborhood Meeting, March 10, 2015



Flooding on
Oak Boulevard on
October 13, 2013.

Overview for Tonight's Meeting

- ❖ Introductions
- ❖ Project Background
- ❖ Preliminary Engineering Expectations
- ❖ Time for Questions

Introductions

Watershed Protection Department

- ❖ Stephanie Lott, Public Information
- ❖ John Middleton, P.E., Creek Flood Hazard Mitigation
- ❖ Jorge Morales, P.E., Localized Flood Hazard Mitigation

RPS Espey

- ❖ Travis Wilson, P.E.
- ❖ Keith Moody, P.E.

Other City of Austin Representatives

Public Meetings

- ❖ September 2013
- ❖ August 2012

Previous meetings were with Neighborhood Planning and during the annexation process.

Two Types of Flooding

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



Both types of flooding are occurring in this neighborhood.

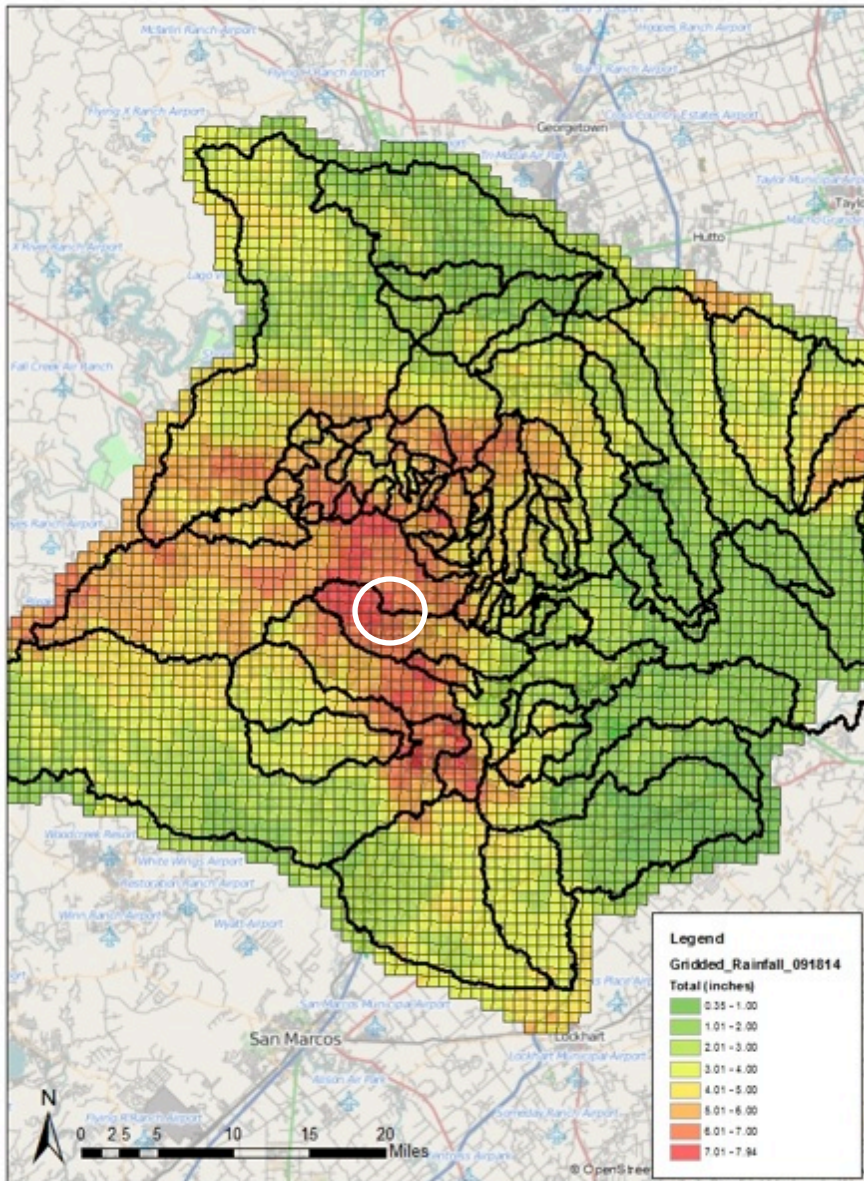
Drainage Patterns



Recent Storms

October 13, 2013

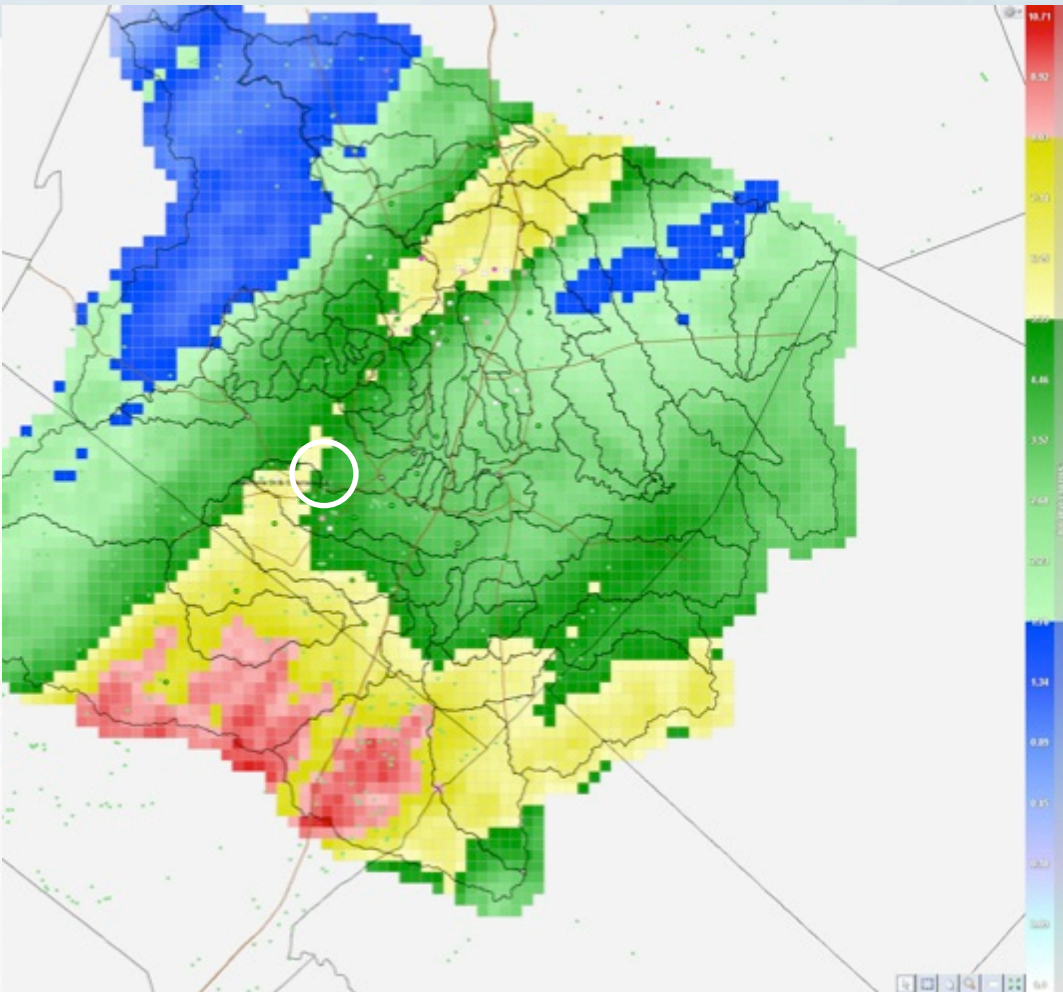
- ❖ 10 inches of rain in 12 hours
- ❖ 100 to 250-year storm (less than 1% chance of occurring in any given year)



Recent Storms

Halloween Flood October 31, 2013

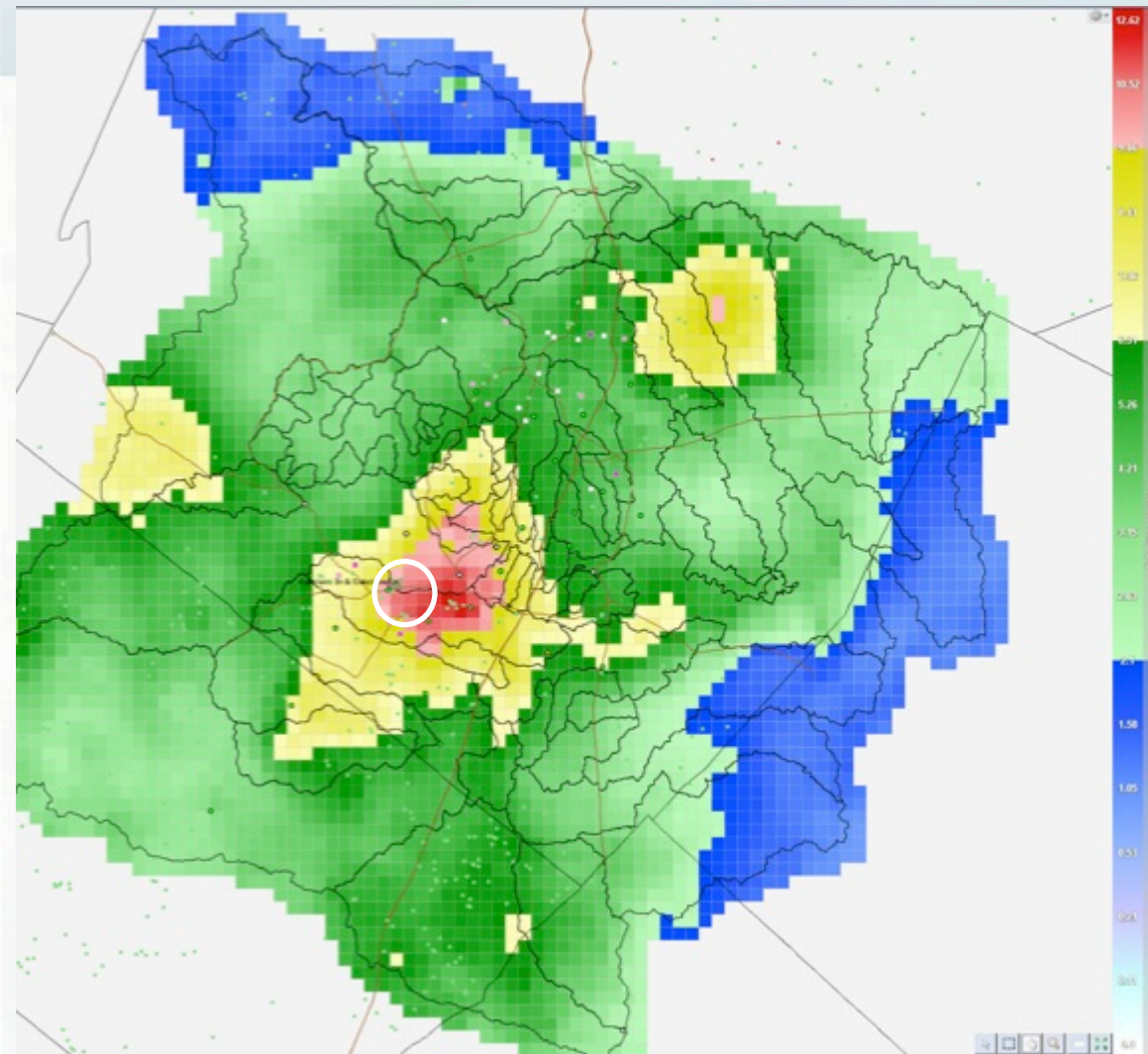
- ❖ 5 to 6 inches of rain in 8 hours
- ❖ 10 to 25-year storm (4 to 10% chance)



Recent Storms

Sept. 18, 2014

- ❖ 6 to 7 inches of rain
- ❖ 10-year storm (10% chance)



Why is it Flooding?

- ❖ Natural topography
- ❖ Floodplain
- ❖ Insufficient infrastructure
 - ❖ Drainage area for subdivision design was underestimated
 - ❖ Storm drain system is 30 years old



Maintenance Activities

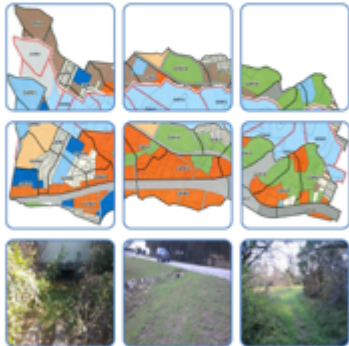
- ❖ Completed over 30 work requests
- ❖ Removed sediment and giant cane
- ❖ Regraded drainage ditches
- ❖ Monitoring creek for periodic vegetation control
- ❖ Replaced inadequate drainage pipes under driveways

Gaines Tributary Watershed Study

RPS

Gaines Tributary Hydrologic and Hydraulic Analysis

Date Submitted: November 2013 (Revised April 2014)
Client: City of Austin Watershed Engineering Division
Project Number: 11005.02



rpsgroup.com

- ❖ Better understand drainage patterns
- ❖ Quantify flow in creeks
- ❖ Can verify future projects will not cause an “adverse impact” downstream
- ❖ Study allows us to move forward with CIP project

Four parts to a Floodplain Study

- ❖ Survey (ground elevations)
- ❖ Hydrology (how much water)
- ❖ Hydraulics (how high is the water)
- ❖ Mapping (where does the water go)

Gaines Tributary – Statistics



- ❖ Drainage Area:
1.0 square miles
- ❖ Tributary Length:
7,920 feet
- ❖ 7 Culvert Crossings

Results for the 100-year Storm

	Gaines Only	100-year Williamson Overflow
Inundation Area (Acres)	52	59
Properties within Floodplain along Gaines Channel	18	25
Properties within Floodplain along Oak Park Tributary	19	19

Gaines Tributary Floodplain Map



Regulation & Permits in the Floodplain



Stricter permit regulations for:

- Building
- Remodeling
- Construction
- Other development

This minimizes the impact of flooding to the community and the development.

How You May Be Affected

- ❖ Development rules (currently in effect)
- ❖ Flood insurance administration (when maps are submitted to FEMA)



Development Rules

- ❖ Increased concrete and “impervious cover” potentially increases flooding
- ❖ City requires new developments to compensate for the impervious cover
- ❖ A pond is the most common way to meet this rule



City of Austin
WATERSHED
PROTECTION

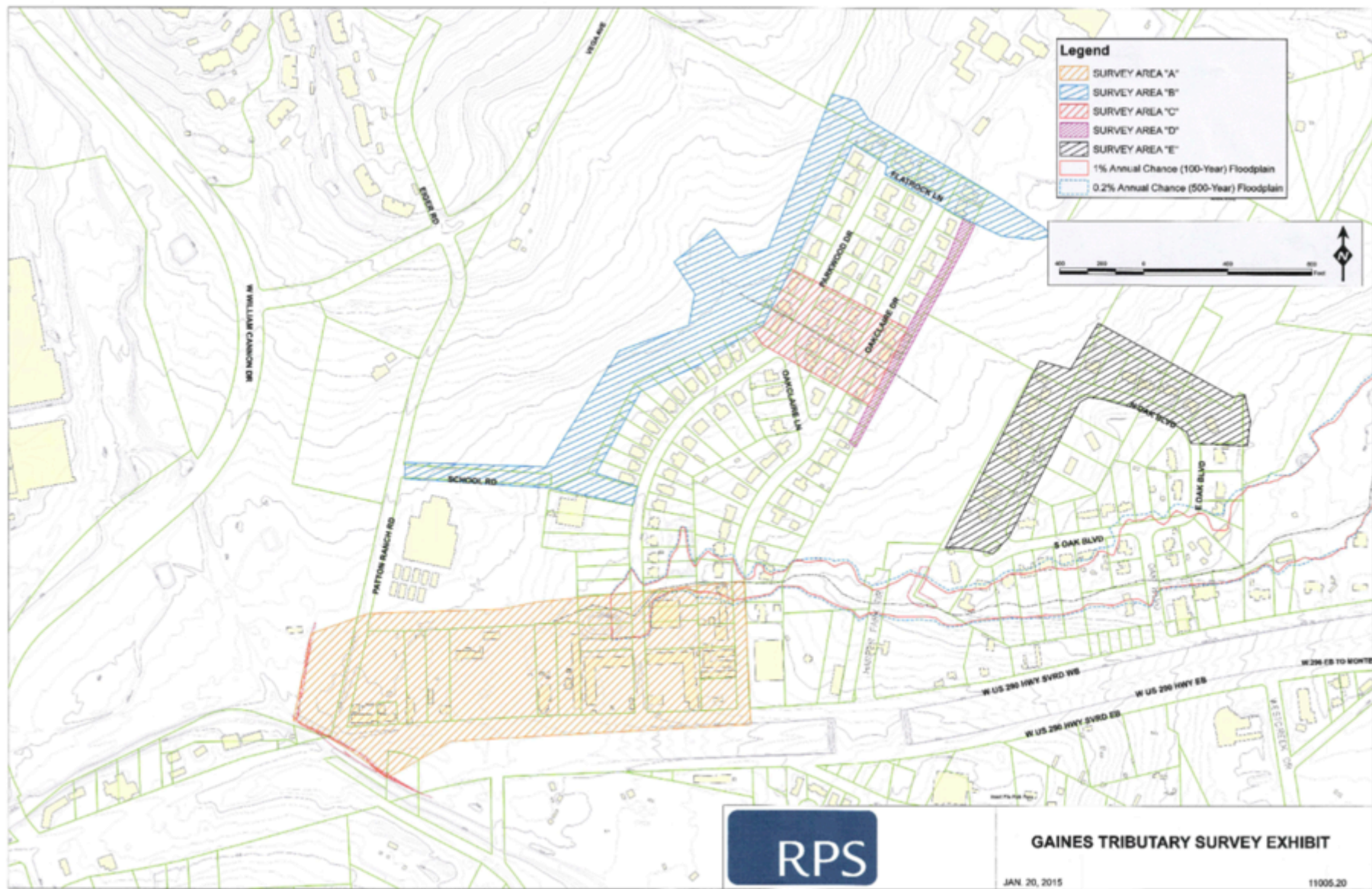
Project Update

- ❖ Contracted with RPS Espey for Preliminary Engineering
- ❖ RPS Espey is familiar with area
- ❖ Has designed multiple flood-related projects for the City
- ❖ Public meeting in future to discuss preliminary engineering findings

Solutions to be Evaluated



- ❖ Storm drain systems
- ❖ Detention ponds
- ❖ Berms
- ❖ Roadway/bridge improvements
- ❖ Channel improvements
- ❖ Rain gardens



Survey Work During Preliminary Engineering

Next Steps

- ❖ Initiate Preliminary Engineering Report
- ❖ St Andrews involvement – meeting, site walk
- ❖ Monitor development in area
- ❖ Coordination with upcoming Williamson and Barton Floodplain studies
- ❖ Coordinate with Oak Hill Parkway (CTRMA/TxDOT)

Typical Project Schedule

- ❖ Preliminary Engineering
1 to 2 years
- ❖ Design and Permitting
2.5 years
- ❖ Construction
1 to 2 years

Questions?

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