

FEMA Flood Risk Review & Update

REGION 6 – Austin-Travis Lakes Watershed

Village of The Hills, Texas



Why are we having today's FEMA Flood Risk MAP review meeting?

- FEMA is updating its Flood Insurance Rate Maps (FIRMs) for the Austin-Travis Lakes watershed.
- Some property owners within The Hills are impacted by these updates.
 - Their property *now* intersects, or encroaches on, a Special Flood Hazard Area (SFHA).
- Share the initial findings of the *updated* SFHA and FIRMS with The Hills residents and community leaders.



Purpose of today's FEMA Flood Risk MAP review meeting:

- Review the National Flood Insurance Plan (NFIP) & Flood Insurance Rate Maps (FIRM).
- Review Special Flood Hazard Areas (SHFA) and options for property owners within a SHFA.
- Review the *current* flood study and identify the next steps in the FIRM update process.



What is the National Flood Insurance Program (NFIP)?

- Established with the passage of the National Flood Insurance Act of 1968.
- Agreement between the **community** and the **Federal Government**.
 - With the adoption and enforcement of a floodplain management ordinance to reduce flood risk, the Federal Government will make flood insurance available to the community as a financial protection against flood losses.
- Intended to *reduce* expensive government disaster assistance and *contain* the escalating costs of repairing flood damage to buildings and their contents.



What is a Flood Hazard Map?

- Also called Flood Insurance Rate Maps (FIRMs)

Used by:

- Community Officials
- Lenders
- Insurance Agents
- Homeowners

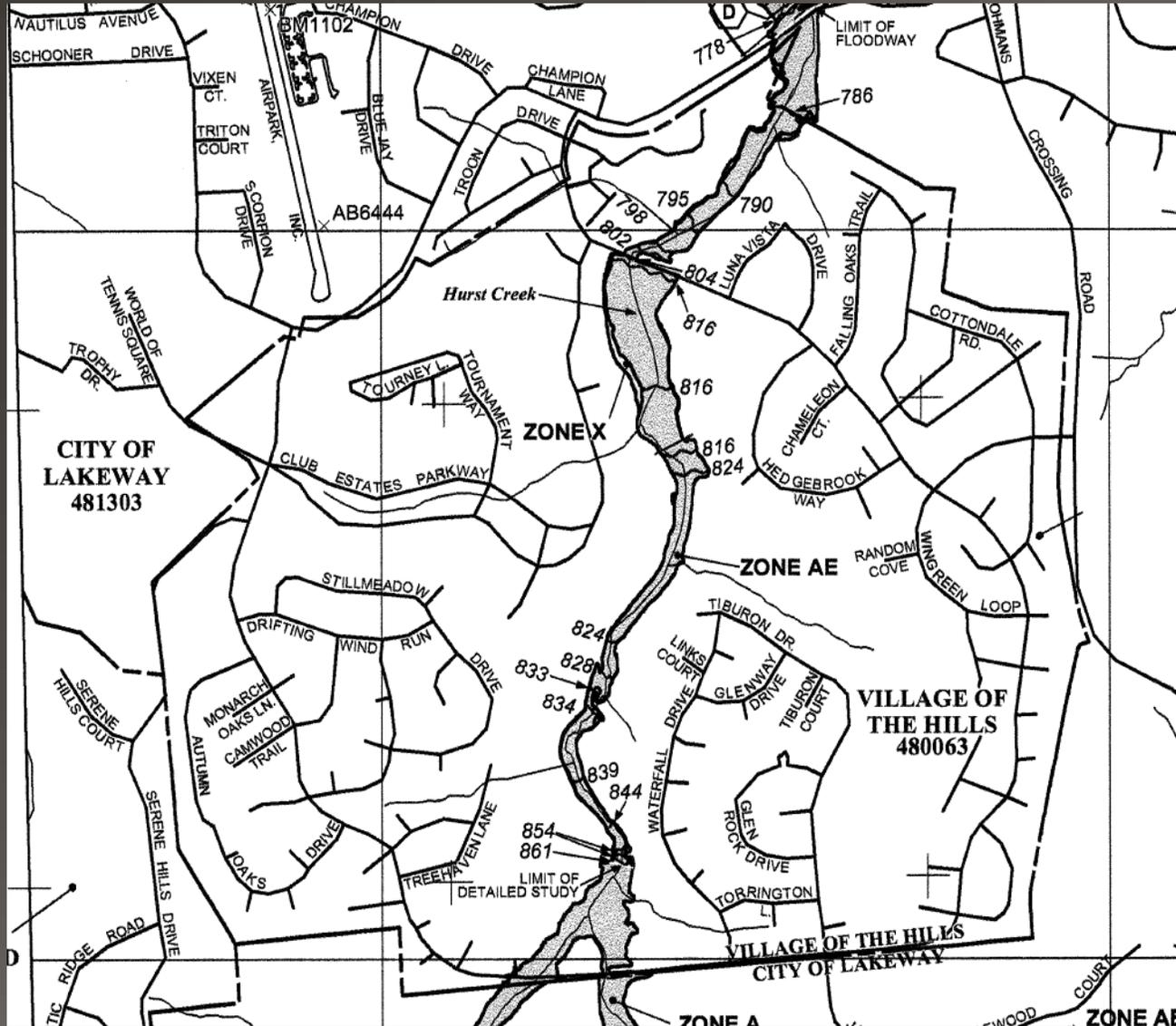
Used for:

- Identifying flood risk
- Making informed floodplain management decisions
- Determine appropriate flood insurance rates

NFIP NATIONAL FLOOD INSURANCE PROGRAM	PANEL 0405H			
	FIRM			
	FLOOD INSURANCE RATE MAP			
	TRAVIS COUNTY,			
	TEXAS			
	AND INCORPORATED AREAS			
	PANEL 405 OF 730			
	(SEE MAP INDEX FOR FIRM PANEL LAYOUT)			
	CONTAINS:			
	<u>COMMUNITY</u>	<u>NUMBER</u>	<u>PANEL</u>	<u>SUFFIX</u>
TRAVIS COUNTY	481026	0405	H	
BEE CAVE, VILLAGE OF	481610	0405	H	
HILLS, VILLAGE OF THE	480063	0405	H	
LAKEWAY, CITY OF	481303	0405	H	
<small>Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.</small>				
		MAP NUMBER 48453C0405H		
		MAP REVISED SEPTEMBER 26, 2008		
Federal Emergency Management Agency				



Village of The Hills FIRM - 2008



NFIP

PANEL 0405H

NATIONAL FLOOD INSURANCE PROGRAM

FIRM FLOOD INSURANCE RATE MAP TRAVIS COUNTY, TEXAS AND INCORPORATED AREAS

PANEL 405 OF 730
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

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MAP NUMBER
48453C0405H
MAP REVISED
SEPTEMBER 26, 2008

Federal Emergency Management Agency



Updating FEMA FIRM Maps – Happening NOW!!!

- Many currently effective maps are **25 to 30 years old**.
- Under its five-year Flood Map Modernization (Map Mod) program, FEMA updated and digitized flood hazard maps Nationwide to provide more accurate assessment of flood risk.
- Make maps more user friendly and accessible (providing digitized FIRMs and online reference portals).



Why are the FIRM Maps Updated?

- Flood risk can, *and does*, change over time.
 - - New development
 - - Changes in levee classification
 - - Environmental changes

Development of once unurbanized areas increases impervious cover, reducing absorption and increasing surface flow.



Image Date: 1996



Hurst Creek
Rain Capture Basin

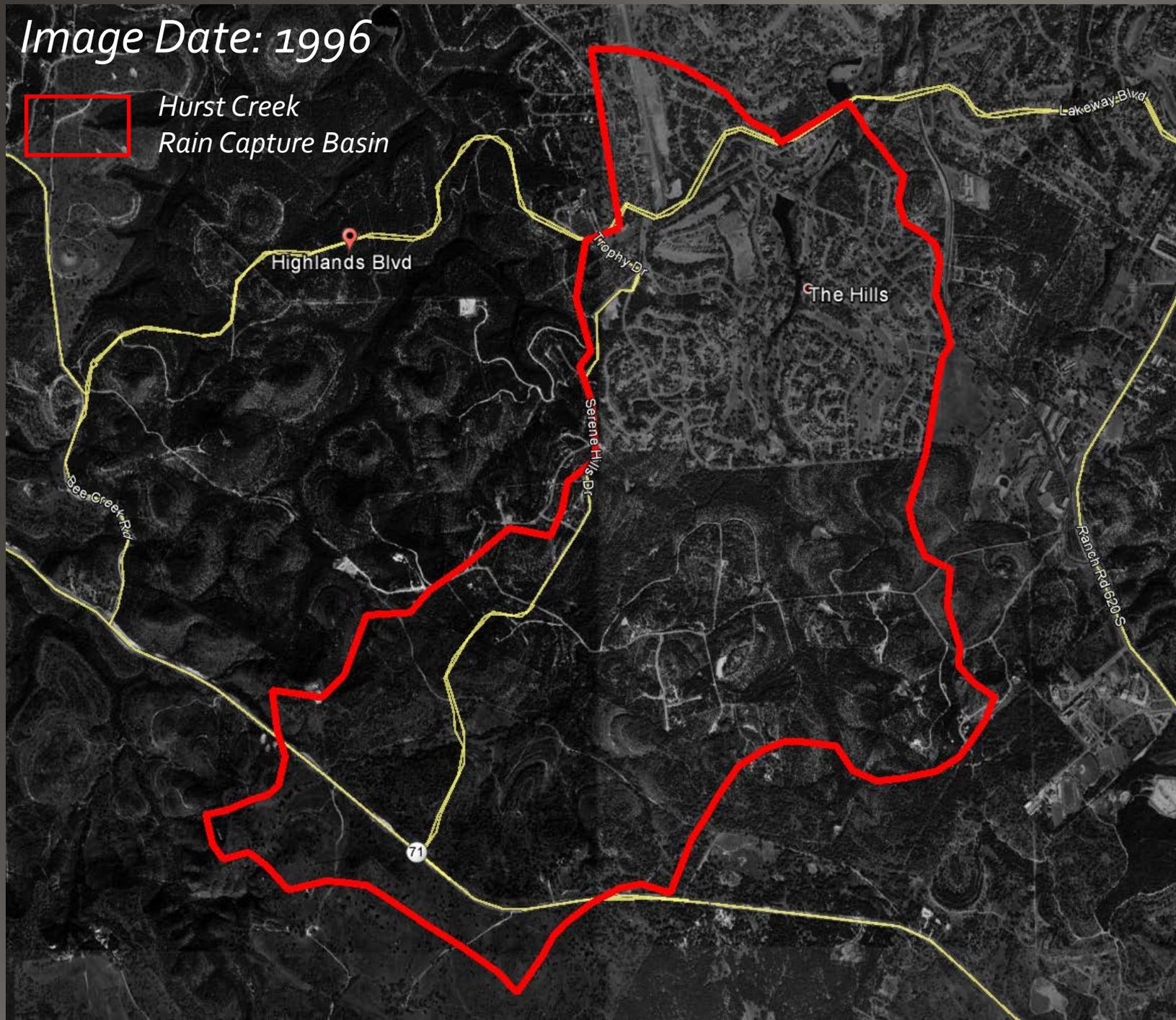
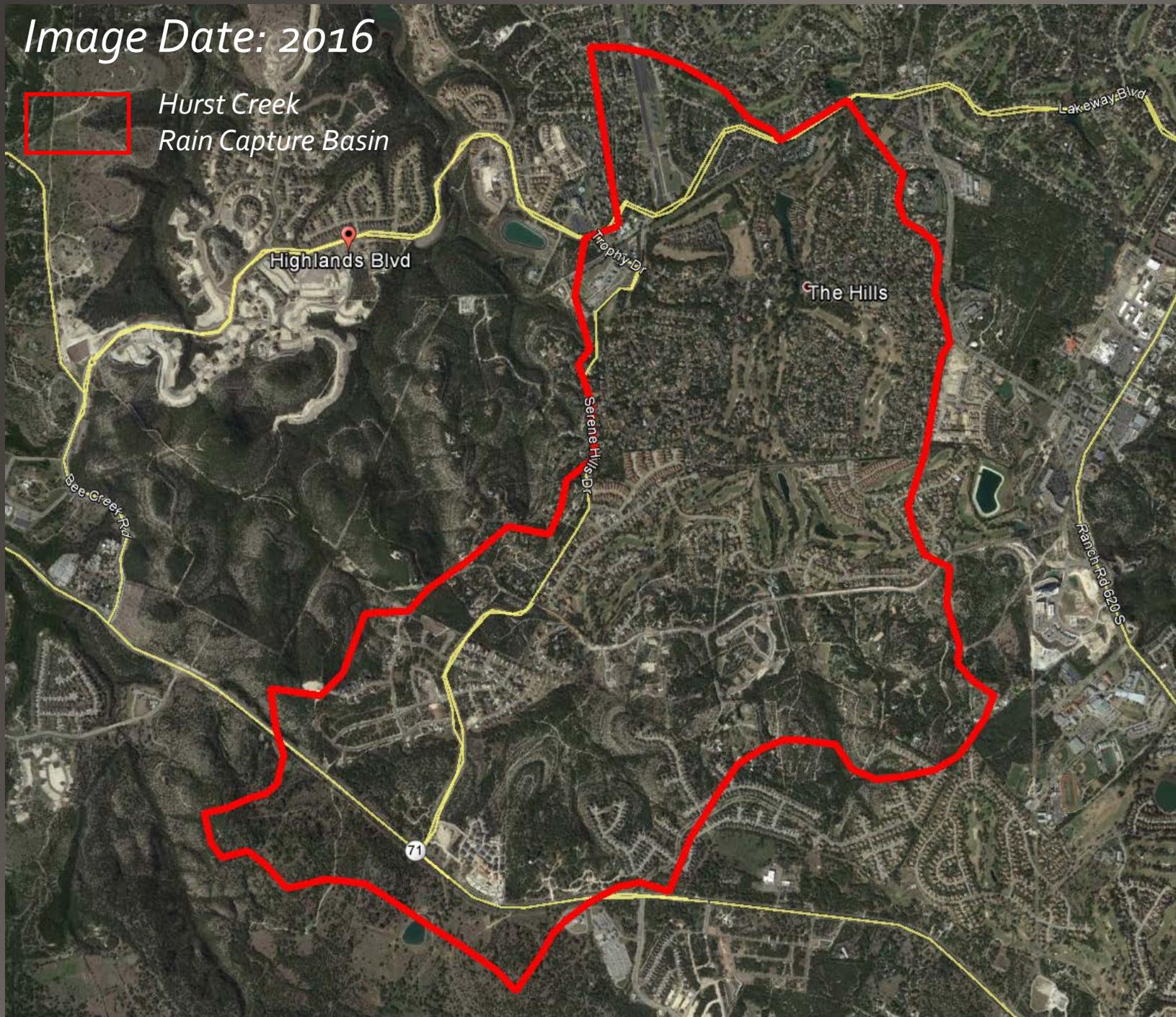


Image Date: 2016



Hurst Creek
Rain Capture Basin



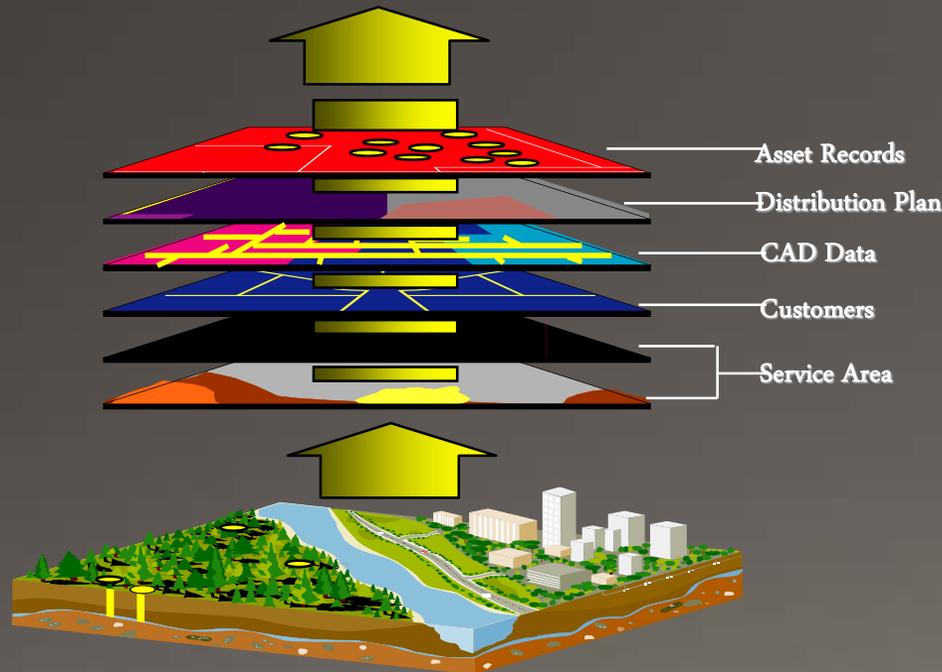
How are the FIRM Maps Updated?

- FEMA uses state-of-the-art analysis methods and **digital engineering** applications to determine flood risks.
- FEMA overlays the flood risk information on detailed topographic mapping based on **Geographic Information System (GIS)** or **Global Positioning System (GPS)** data.



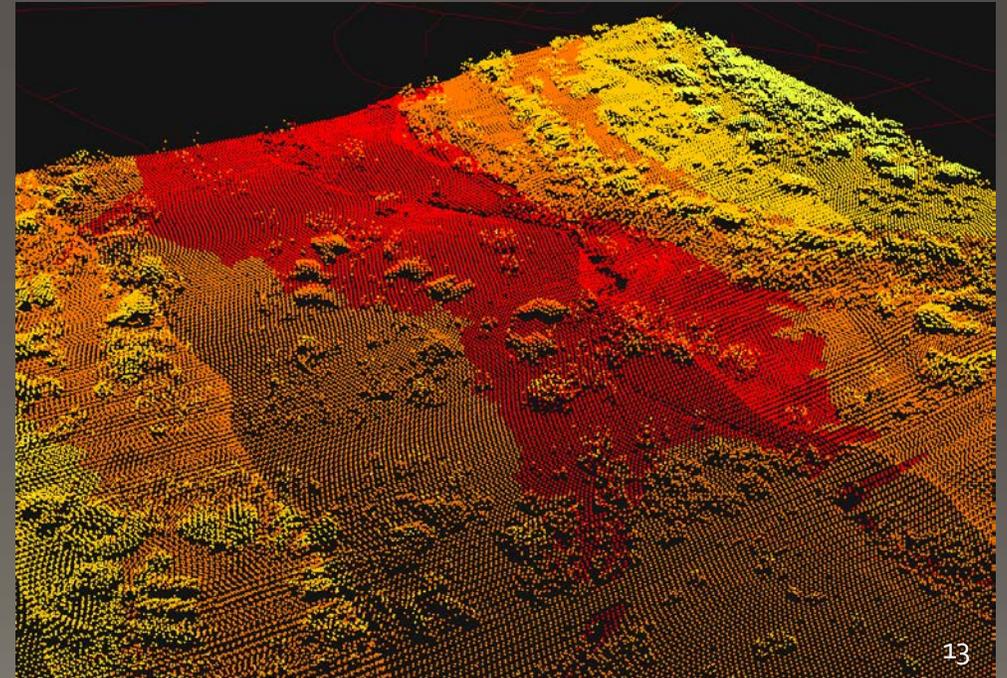
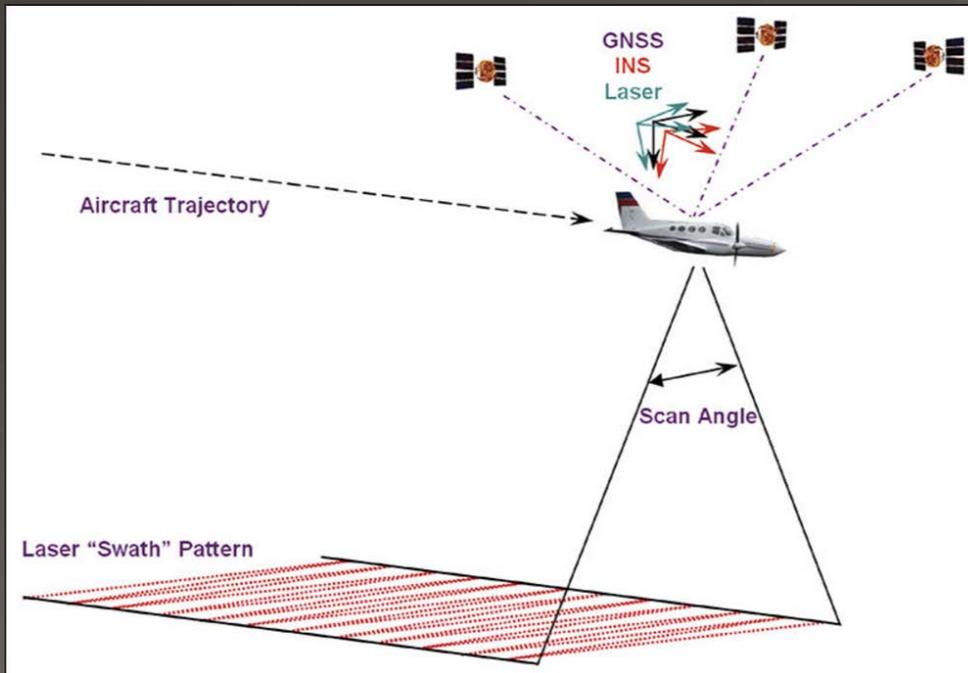
How are the FIRM Maps Updated? (CONT.)

- Geographic Information System (GIS) integrates hardware, software, and data for capturing, managing, analyzing, and displaying all forms of geographically referenced information.



How are the FIRM Maps Updated? (CONT.)

- LiDAR – *Light Detection and Ranging*
 - *Remote Sensing Technique that uses light in the form of a pulsed laser to measure ranges (variable distances) to the Earth.*
 - *Light pulses, combined with other data from the airborne system (GPS), generate precise, three dimensional information about the shape of the Earth and surface characteristics.*



What is Risk MAP?

Risk Mapping, Assessment, and Planning Strategy (Risk MAP)

- Provides Communities with *flood information and tools* they can use to enhance their mitigation plans and better protect its citizens.

Through more accurate flood maps, risk assessment tools, and outreach support, Risk MAP builds on Map Modernization and strengthens local ability to make informed decisions about reducing risk.



What are the outcomes and benefits of Risk MAP?

- Engaged communities making informed decisions
- Increase in accuracy and reliability of products
- Effective risk assessments & mitigation plans
- Communities can more effectively communicate risk



What is a high-risk flood zone?

- Special Flood Hazard Area (SFHA) –
 - A *Delineated* boundary on the FIRM to represent **the area subject to inundation** by the base flood (1% annual chance).
 - The base flood is a flood of a certain size, not just every 100 years!
 - The base flood could occur multiple times in a short period.
 - weather and climate conditions have to happen for this flood to occur.



What is a high-risk flood zone? (CONT.)

- The *area* that will be affected by the base flood is determined by engineering modeling analysis (H&H).
 - Hydrologic Analysis - how much runoff – HEC HMS
 - Hydraulic Analysis - water surface elevation – HEC RAS
- Special Flood Hazard Area (SFHA) –
 - FEMA estimates that structures in designated SFHAs have a **one-in-four chance** of incurring flood damage during the term of a **30-year mortgage**.



How will the new flood hazard maps affect me?

- Flood risk changes over time.

Boundaries might **increase** (include property that was previously low risk) in some areas and **decrease** in others (exclude properties that were previously high risk) – Both impacting community development.

- Homeowners – The most direct impact on an affected homeowner will be changes in flood insurance rates and requirements.

*A Federal flood insurance requirement applies to **structures** in SFHA's that carry a mortgage backed by a Federally regulated lender or servicer.*



How will the new flood hazard maps affect me? (CONT.)

- Homeowners – The most direct impact on an affected homeowner will be changes in flood insurance rates and requirements.

Flood insurance rates are lower in areas of low or moderate-risk, but flooding can still occur in these areas.

FEMA recommends flood insurance coverage, even if it is not required by law or lender.



What is the process when FEMA changes a FIRM?

- FEMA works closely with community officials and uses the best available data to ensure accurate maps.
- FEMA holds meetings with community officials to present, explain, and receive feedback on maps.
- FEMA publishes two (2) notices in local papers to notify officials & property owners that maps are available for inspection.



What is the process when FEMA changes a FIRM?(CONT.)

- After the second notice, a 90-day appeal period begins – Appeals must be received within 90 days along with technical and/ or scientific data to support the appeal claims.
- If FEMA and the community are unable to agree on the resolution of an appeal, the community can request a review by an independent **Scientific Resolution Panel**.



When will the new maps become effective?

- After all appeals are resolved.
- FEMA issues a **Letter of Final Determination (LFD)**.
- New map becomes effective *six months* after the date the LFD is issued.



What will happen if the SFHA for my property changes?

- If you have a mortgage or home equity line of credit – Your lender will likely require you to purchase flood insurance.

If your structure was built in compliance with the FIRM in effect at the time of construction, FEMA's "grandfather" rules may benefit you.

*** If continuous flood insurance coverage has been maintained, before the FIRM becomes "Effective", you will have the option of using the current rating criteria, or have the rate based on the flood zone in effect when the building was originally built. ***



What if my home/business is shown in a high-risk area?

- Because of *scale limitations*, FIRMs cannot reflect every rise in terrain, and some areas of high ground may be included in high-risk areas.

Letter of Map Amendment (LOMA)- allows property owners to request an official FEMA flood zone determination for their property.

- No fee for FEMA to review LOMA request - * Property owner must provide site-specific property information (i.e., elevation certificate & survey).*



What if my home/business is shown in a high-risk area?

- *If* the supported information supports the request, FEMA will issue an official document removing the high-risk designation from the property.
 - The mandatory Federal flood insurance requirement will *no longer apply*.
- A lender *may still* require flood insurance as a condition of the loan, but premiums are lower for *structures* outside the high-risk area.



Flood Insurance Study (FIS) Program - Background Austin-Lake Travis Watershed

- Pre-countywide FIS: H&H from 1978-1988
- First countywide FIS: June 1993
No Updates to H&H
- Revised FIS: 1997, 2000, 2002, 2008, 2014
- Current Effective FIS: January 6, 2016
 - New H&H for Boggy Creek, Bull Creek ,
Carson Creek, Cottonmouth Creek, Dry Creek East,
And Shoal Watershed



Current Flood Risk MAP Study & Update

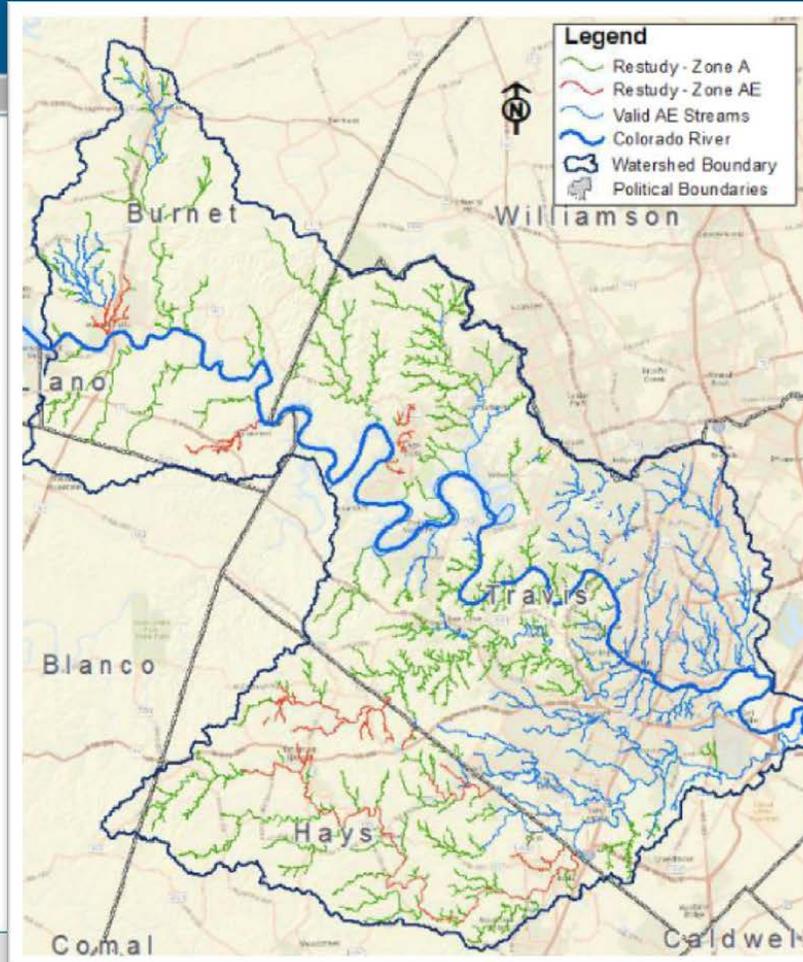
Austin-Travis Lakes Watershed Scope of Work

Completed Discovery, Phase 1:
March-September 2013

Purpose of Discovery: Coordinate with Communities to determine engineering and mapping needs, and identify areas for risk assessment

Project Scope Developed from Discovery:

- **Zone A (Approximate Study)**
 - 677 miles
- **Zone AE (Detailed Study)**
 - 124 miles
 - 90 miles with Floodway



Current Flood Risk MAP Study & Update

Study Background Phase 2: Data Development

■ **Community Meetings**

- **Pre-Kickoff Meeting Webinar:** February 2014
- **Kickoff Meetings:** February 2014
- **Flood Study Update Webinar:** April 2015
- **Pre-Flood Risk Review Webinar:** March 2016
- **Flood Risk Review Meeting:** April 6, 2016

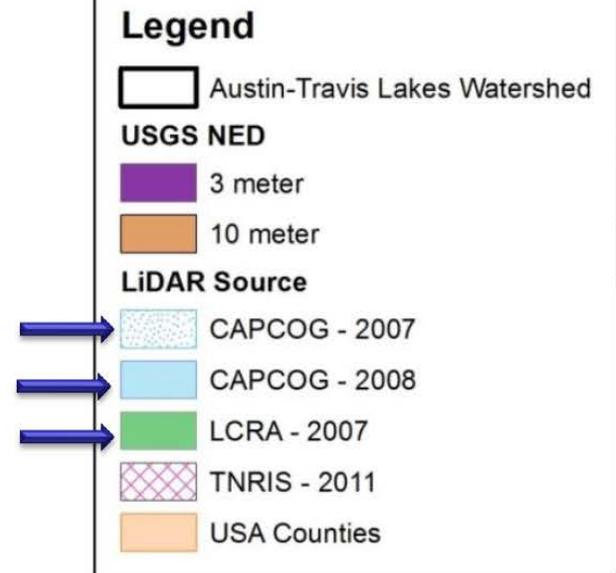
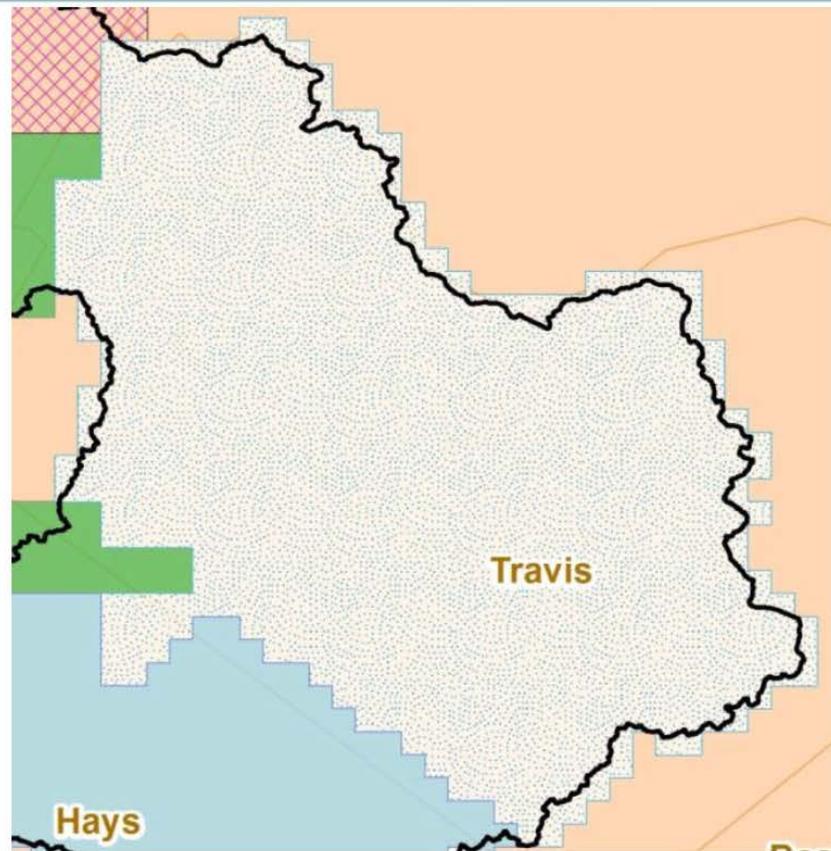
■ **Completed Activities:**

- Topographic Data Development
- Field Survey and Reconnaissance
- Hydrologic Modeling
- Hydraulic Modeling
- Floodplain Mapping



Current Flood Risk MAP Study & Update

Topographic Data Development



Current Flood Risk MAP Study & Update

Data Development Methods

▪ Zone A Study

• Hydrology

- USGS regression equations

• Hydraulics

- HEC-RAS
- Cross-sections generated from LiDAR do not include information below normal water surface
- No structures modeled

• Floodplain Mapping

- Zone A
- No Floodway or Base Flood Elevations
- Model backed with elevations

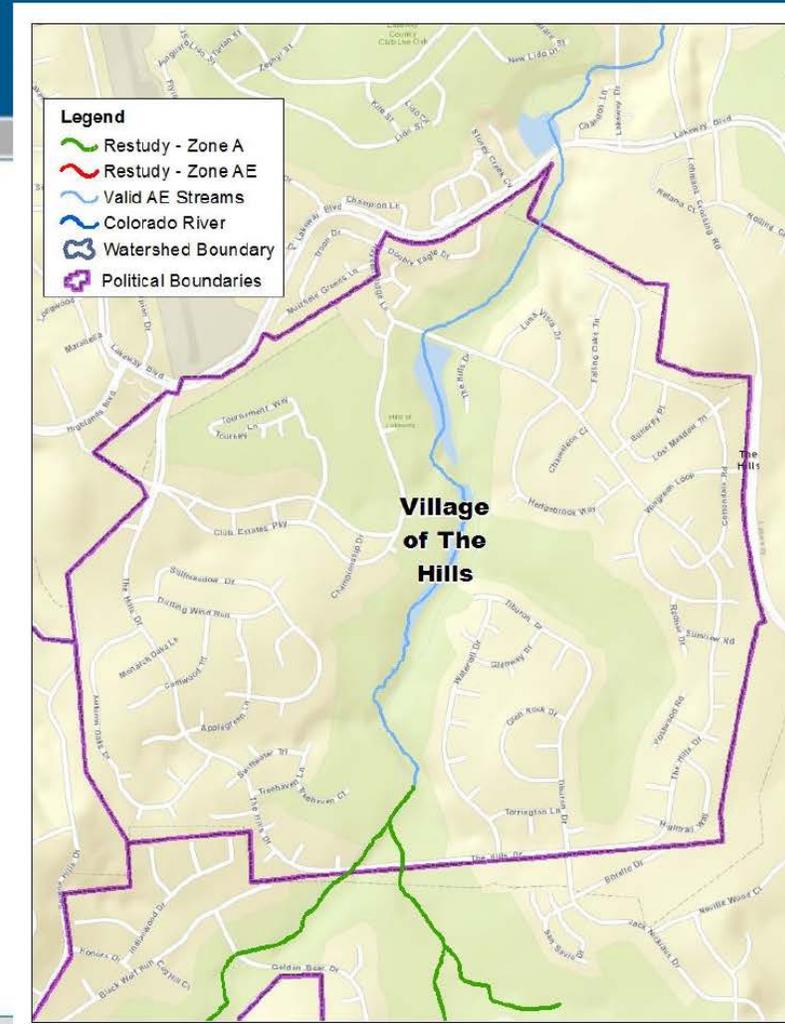


Current Flood Risk MAP Study & Update

Village of The Hills

Streams

-Hurst Creek
Hurst Creek Tributary 1



Current Flood Risk MAP Study & Update

Community's Role

▪ Today:

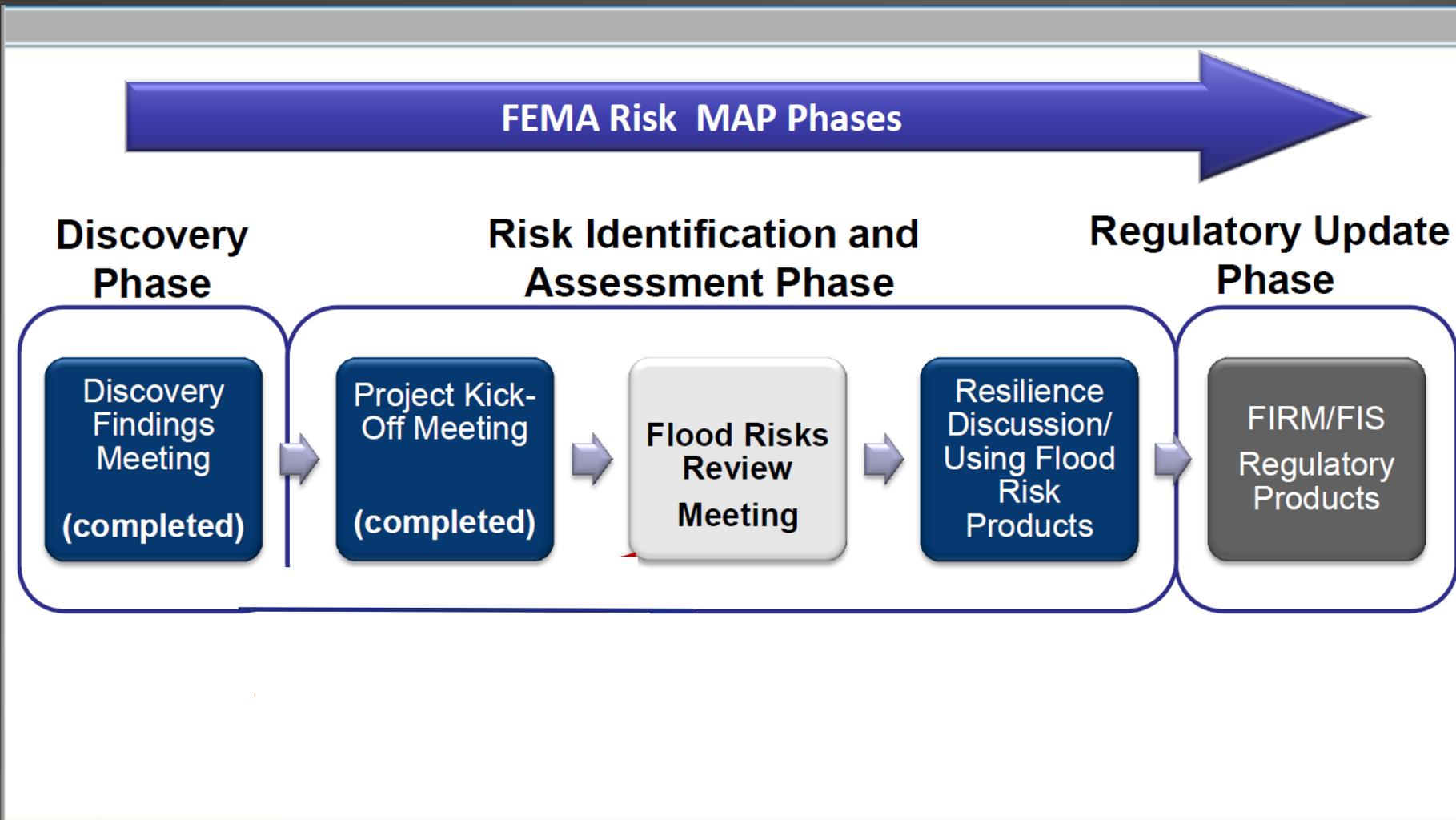
- **Review the workmaps**
 - Any questions or comments?
- **Look at the analysis grids**
 - Any questions on how to use the data?
- **Provide feedback on the study**

▪ Next few weeks:

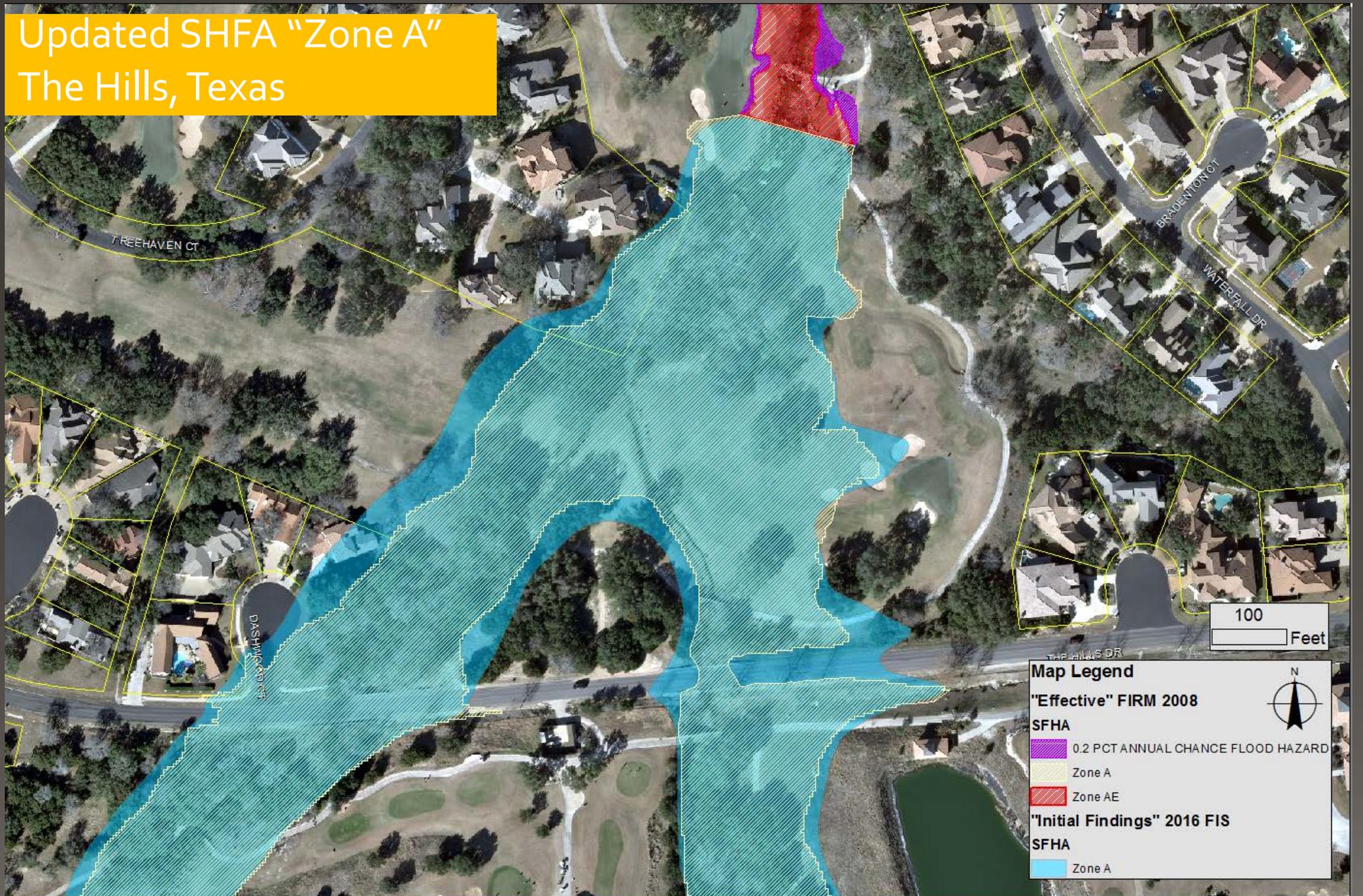
- **Review and interact with the data (on the CD)**
- **Let FEMA know within the next 30 days if you have any questions or concerns**
 - Provide technical data



Current Flood Risk MAP Study & Update



Updated SHFA "Zone A" The Hills, Texas



FEMA Resource Links

National Flood Insurance Program (NFIP)
<https://www.floodsmart.gov/floodsmart/>

Risk MAP Strategy – Region 6
<http://www.riskmap6.com/>

FEMA Flood Map Service Center
<https://msc.fema.gov/portal>

FEMA LOMA Process
<https://www.fema.gov/letter-map-amendment-letter-map-revision-based-fill-process>

