

# Adobe Dam\Desert Hills\Apache Wash Area Drainage Master Plan: Friends of Daisy Mountain Trails

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# Presentation Agenda



Background



Goal & Objectives



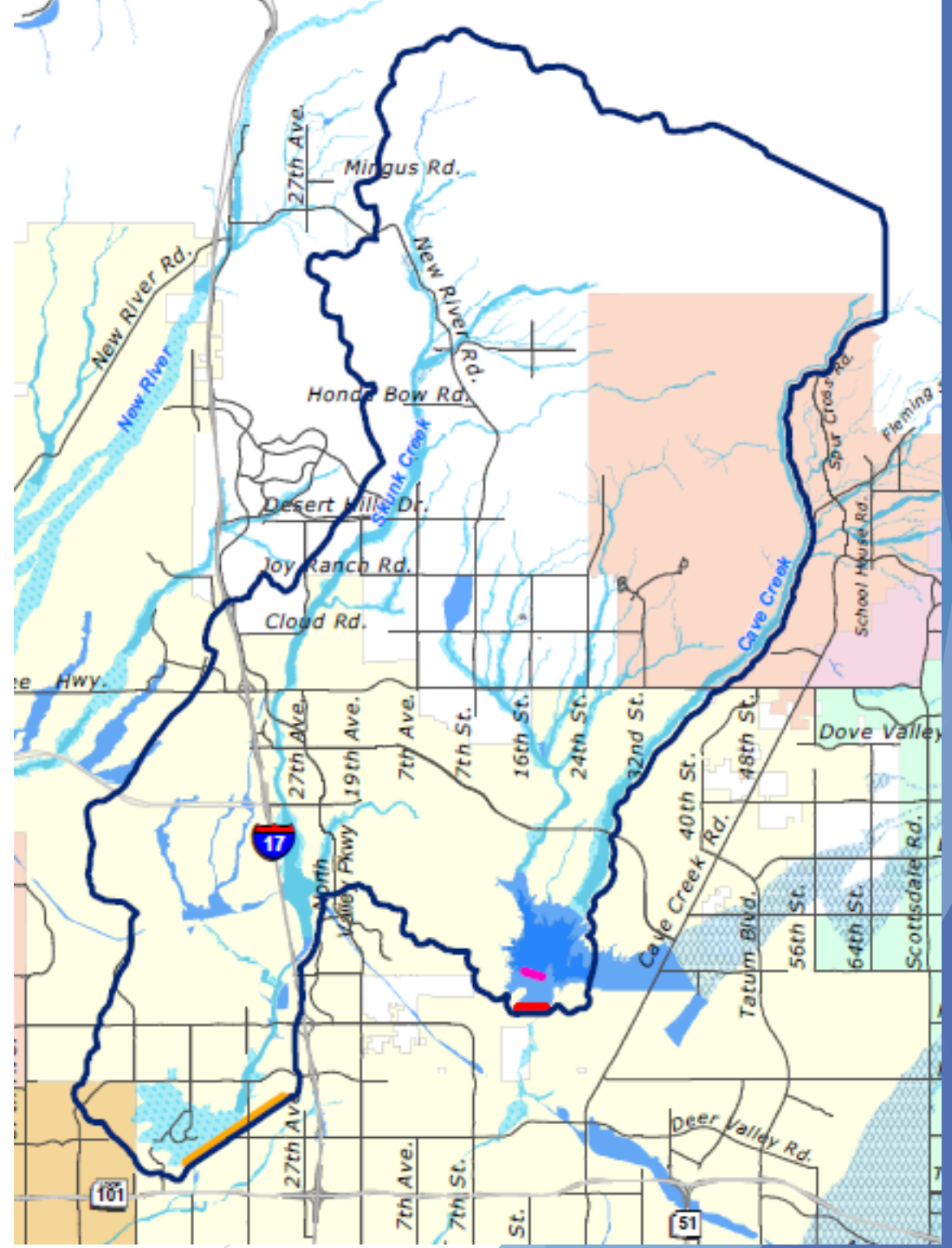
End Products



Next Steps

# Study Area

- 140 square miles
- Jurisdictions
  - City of Phoenix
  - Unincorporated County
  - Town of Cave Creek
- Land Ownership
  - 42% Private
  - 34% State Trust Land
  - 15% Tonto National Forest
  - 8% County Parks
- Floodplains
  - 11% within a mapped floodplain
  - Riverine
  - Ponding

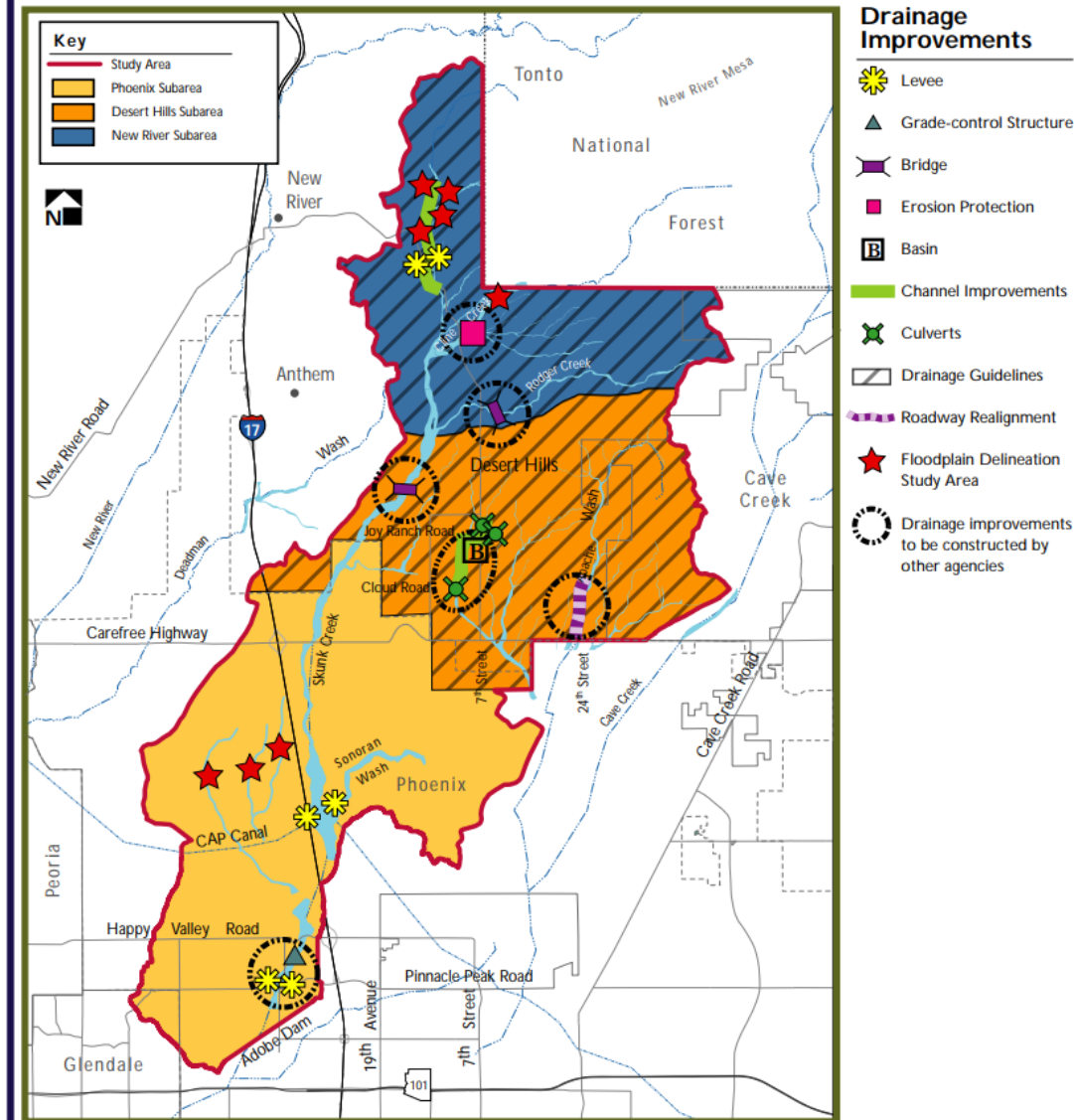


# Previous studies

- Cave Creek WCMP 2001
- Skunk Creek WCMP 2002
- Adobe Dam/Desert Hills ADMP 2004
- End Results
  - Recommended Structural Mitigation Measures
  - Floodplain Delineations
  - Voluntary Buy-outs



## Recommended Alternative





# Reasons for Updated Study

- Significant growth & other changes to the watershed
- New flood events: 2007, 2010, & 2014
- New technology



Skunk Creek at Dixileta Dr., photo courtesy of ABC 15 News



# Goals & Objectives

# Goal: Reduce the flood risks for residents and the community

- Identify the flooding hazards and risks
  - Data collection
  - Modeling
- Identify problem areas
  - Not all flooding creates problems





# Goal: Reduce the flood risks for residents and the community

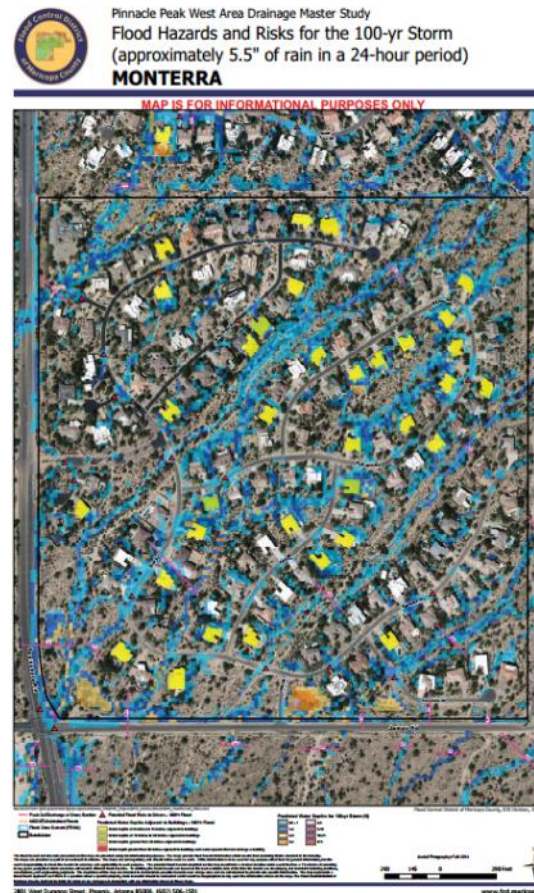
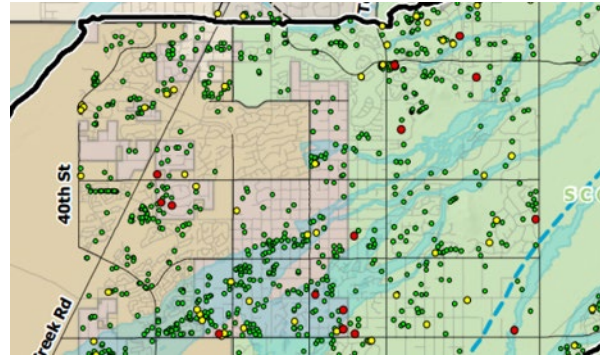
- Develop solutions to mitigate the flood hazards and reduce the risks
  - Structural
    - Channels, basins, levees, and storm drains
    - Focus on “100-year” storm
    - Strive for solutions that accommodate water infiltration (i.e., green infrastructure)
  - Non-structural
    - Floodplain delineation
    - Regulatory
    - Voluntary buy-outs





# Goal: Reduce the flood risks for residents and the community

- Increase public awareness of flood risk
  - Risk awareness inherently reduces risks
  - Public outreach & meetings
  - Develop maps and other resources



## ESTIMATED COST OF FLOODING IN A 2,000 SQ. FT. HOUSE



FLOOD DAMAGE COST DATA PROVIDED BY: FLOODSMART.GOV, NATIONAL FLOOD INSURANCE PROGRAM. COSTS ARE APPROXIMATE AND CUMULATIVE [2014]



# End Products



# Comprehensive Hydrology & Hydraulic Model

- **Grids**

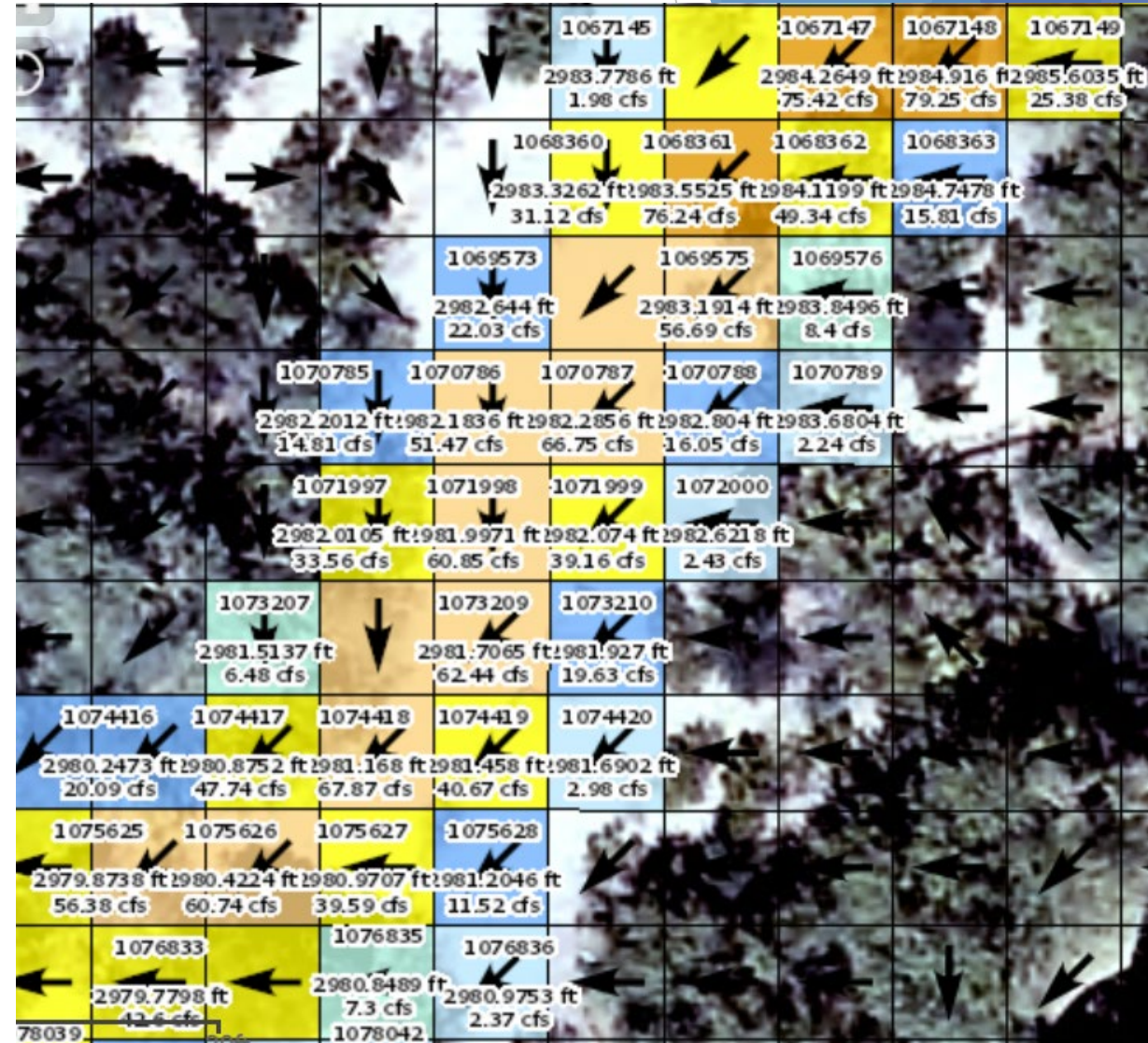
- Study area is divided into 15' x 15' squares
- Over 16 million grids
- Water depths
- Velocities
- Flows & flow direction

- **Models**

- Can be revised & updated
- Use for Design & Planning new development and infrastructure

- **End Users**

- Cities
- Engineers
- Homeowners





# Identified Hazard & Risks

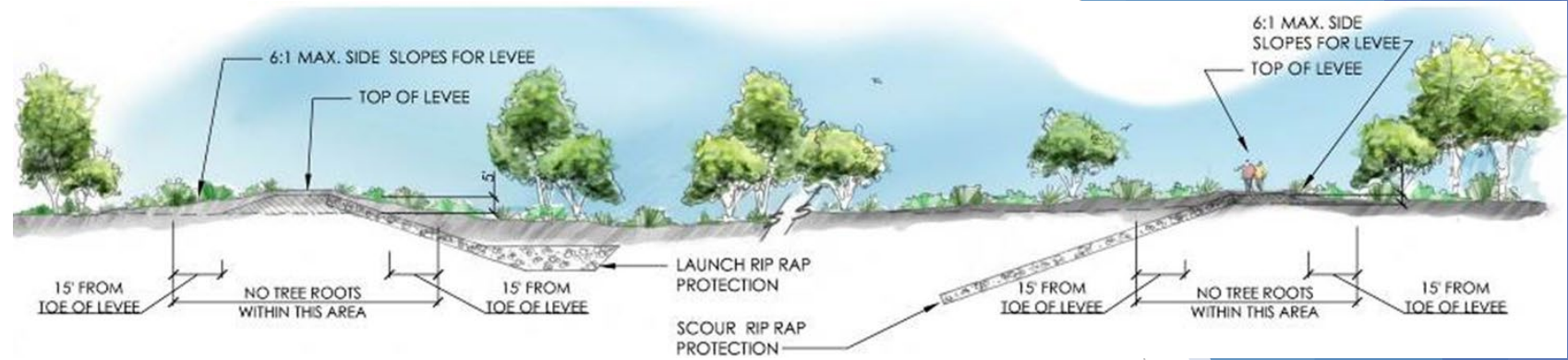
- Houses, buildings, and undeveloped areas with high flood risk
  - 30% of all flood insurance claims are outside of mapped floodplains
- Hazardous road crossings
  - Reinforces what residents likely know
  - Repetition helps risk awareness
- High erosion and sediment deposition hazards
  - Cities, utilities, and homeowners can use for planning





# Solutions & Recommendations

- Regional structural solutions
  - Large areas
  - Benefits vs cost
- Local solutions
- Solutions for individual property owners



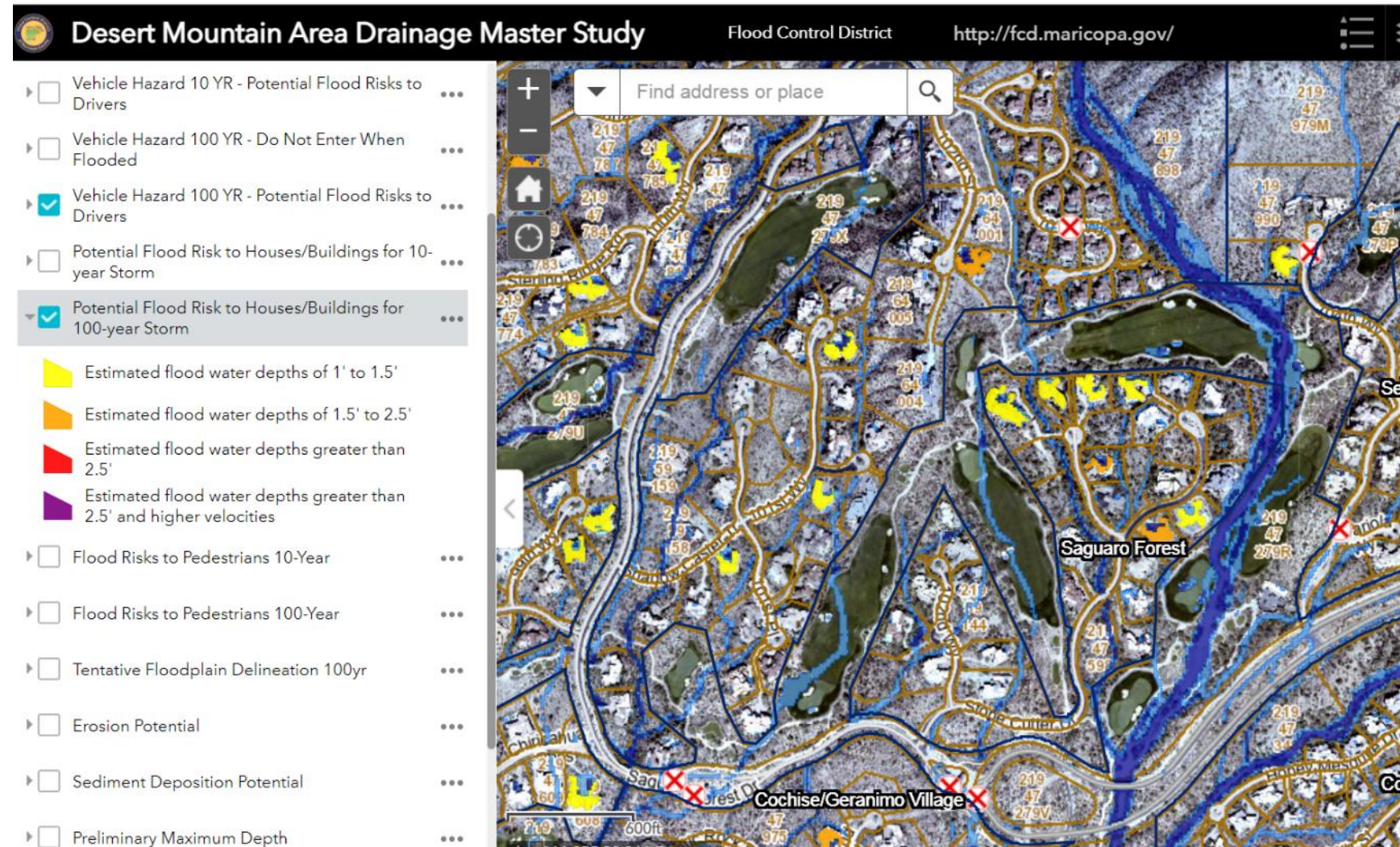
DL DISTRICT OF MARICOPA COUNTY & CITY OF SCOTTSDALE





# Other Potential End Products:

- Online map for the public
  - Accessible way to view identified flood hazards and risks
  - Searchable by address





# Next Steps

- Data collection: Ongoing
  - Need photos, videos, or other info related to flooding incidences
- Stakeholder Coordination & Public Outreach: Ongoing & throughout study
- Detailed Model Results: Summer 2022
- Problem Identification: Fall 2022
- Solutions & End of Study: Winter 2022/2023



# Take Away Messages

- Solutions will include structural & non-structural solutions to reduce flood risk
- Increasing the public's awareness of flood risk is an important part of FCD's flood risk reduction goal
  - Awareness inherently reduces risks
  - Provide solutions for homeowners to reduce their flood risk
- FCD's studies can provide a lot of useful end products & information for developers, cities, and engineers



# Questions?



Skunk Creek at Dixileta Dr., photo courtesy of ABC 15 News



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