



Reata Wash Flood Control Study

Public Meeting
Wednesday, May 18, 2016

Welcome! Ground Rules

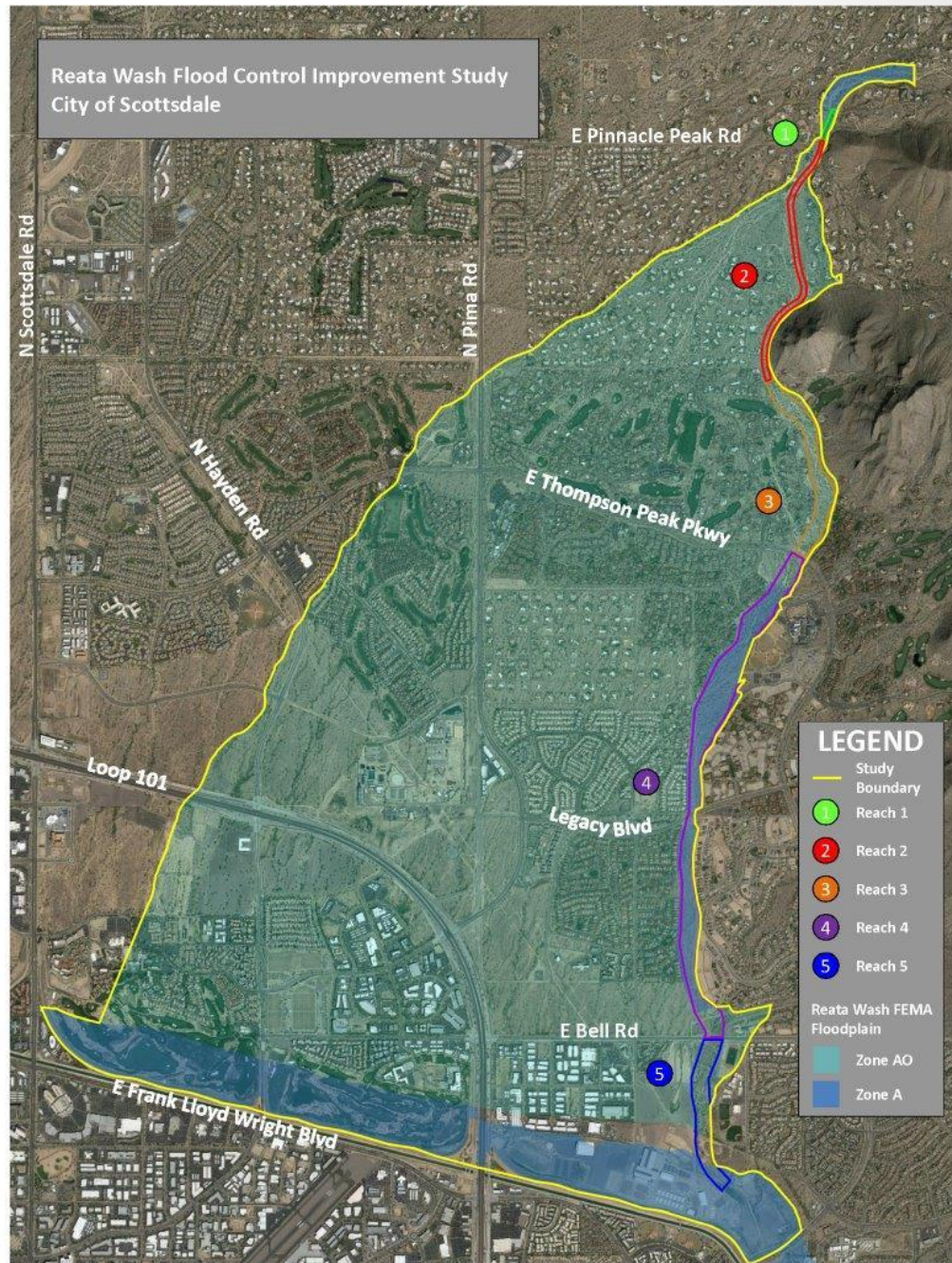
- Be respectful of speakers and other attendees
- Hold all questions/comments until after the presentation
- Silence cell phones
- Q&A session following presentation
 - Question cards available

Tonight's Agenda

- Reata Wash study goals
- Community input received
- Criteria for flood control improvements
- Proposed improvement options
- Next steps
- Questions /open house

Study Area

- Study boundary is Reata Wash FEMA floodplain
- 4,600 structures at risk of flooding
- NOAA revised rainfall data, results in higher flows (13,000 cfs)
 - Need to account for increased flows to meet FEMA criteria for flood protection



Reata Wash Flood Study Goals

Purpose

- Protect residents and property
- Protect community facilities & infrastructure
- Maintain emergency access

How

- Identify existing flood control structures
 - Determine Federal Emergency Management Agency (FEMA) compliance
- Identify potential flood control measures and their cost
- Engage public/seek input

Results

- Recommend solution to Council
 - Reduce risk of flooding
 - Remove or reduce current FEMA floodplain

Update on Local Flooding Events

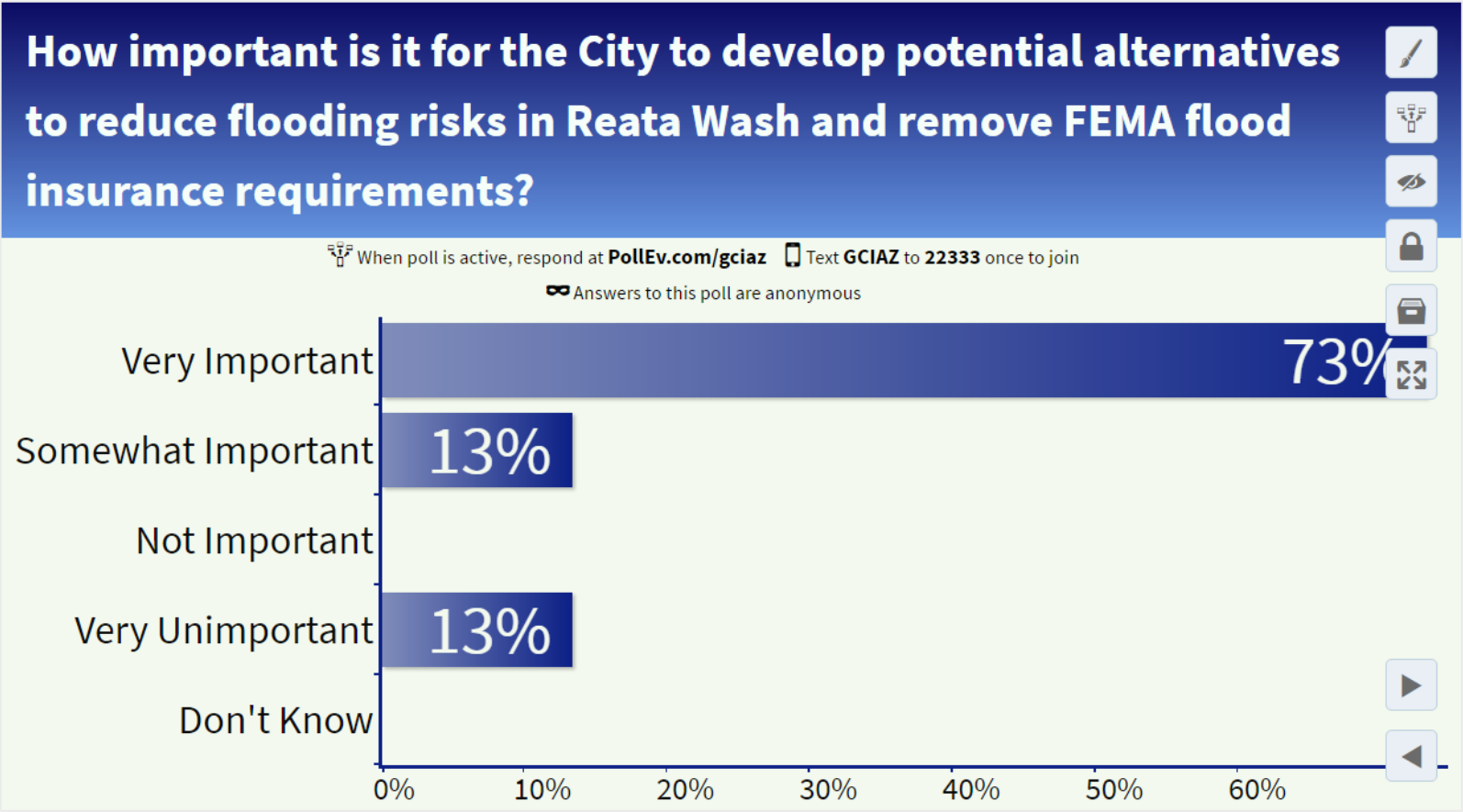
- August and September 2014 storms caused major damage in many areas of Valley that were not in a previously-designated flood hazard area
 - \$17.5 million damage in south Phoenix alone*
 - \$10 million private property, \$7.5 million city infrastructure*
- No 100-year storm events in Reata study area

*Source: City of Phoenix, *South Mountain 2014 Flood Recovery Report*

Community Outreach Conducted to Date

- March 2016 public meeting
- Meetings with homeowners associations and key stakeholders

March Public Meeting Input

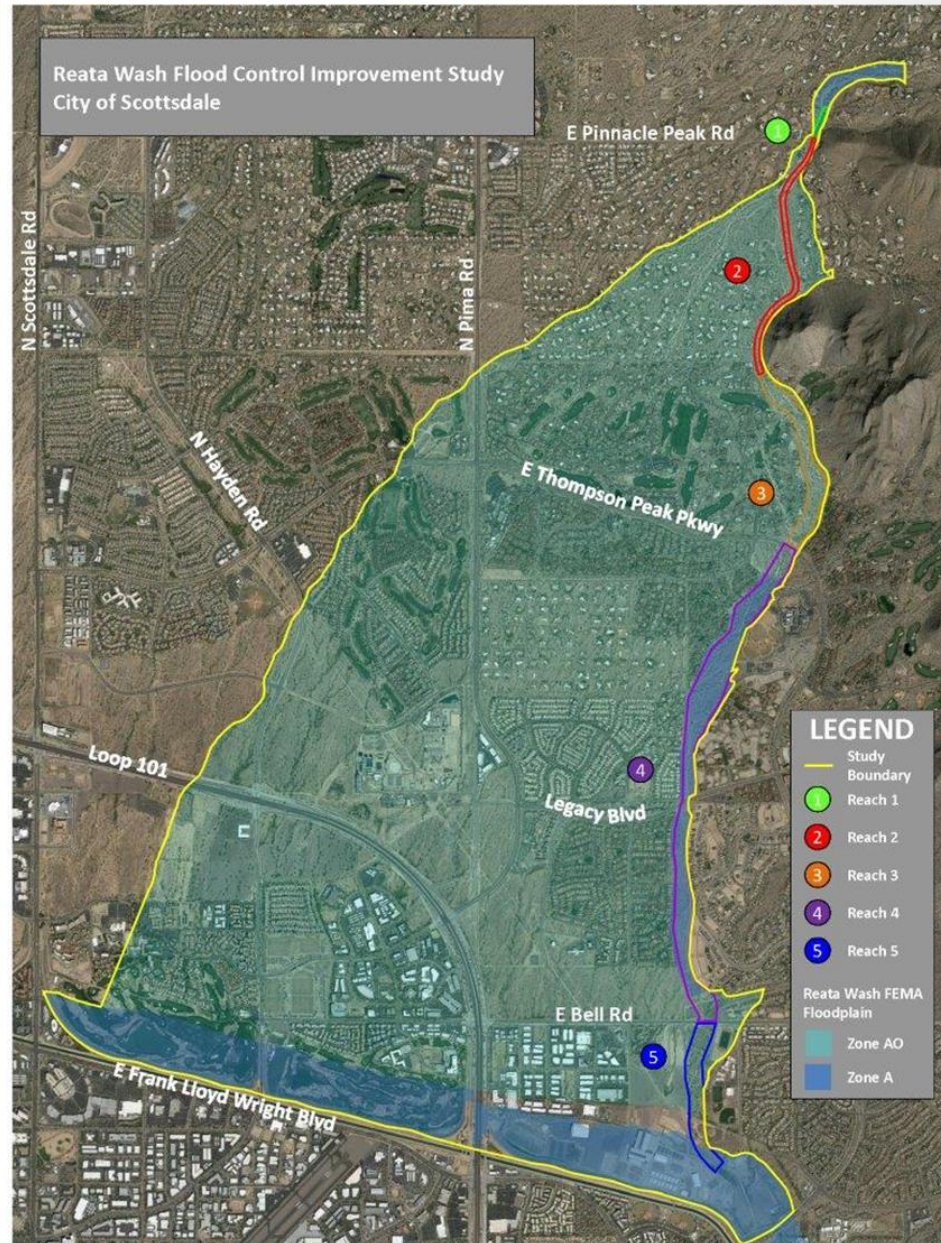


Key Issues Identified by Residents

- Important to reduce flood risk and protect residents and infrastructure
- Eliminating mandated flood insurance
- Concerns about potential project impacts
- Perception flood control not needed
- Costs vs. benefits
- Land use contributing to flooding

Existing Conditions

- More than half the drainage infrastructure is built
 - Existing improved drainage channels in Reaches 3 and 4
 - 4 bridges
- Gaps in drainage infrastructure prevent flood protection
- Divided into 5 reaches to evaluate needs



Comprehensive Solution is Needed

- High volume/velocity of stormwater predicted in large storm
- Unpredictable stormwater flows
- Need to contain stormwater within wash to protect properties
- Cannot be a partial fix
- Solution required to re-delineate FEMA floodplain

Criteria for Improvements

- **Technical criteria**
 - **Comprehensive solution** throughout the drainage corridor
 - **FEMA compliant solution** for reducing flood risks
 - **Maximize acres and properties removed from FEMA floodplain** based on reduced risk
 - Compliant with **environmental requirements**
 - Meet **Flood Control District of Maricopa County (FCDMC) guidelines**

Criteria for Improvements

- **Community criteria**
 - **Minimize adverse private property impacts**
 - **Minimize impacts to wildlife and environment**
 - **Compatible** with character of desert environment
 - **Cost-effective** design that maximizes use of funds
 - **Acceptable** to community

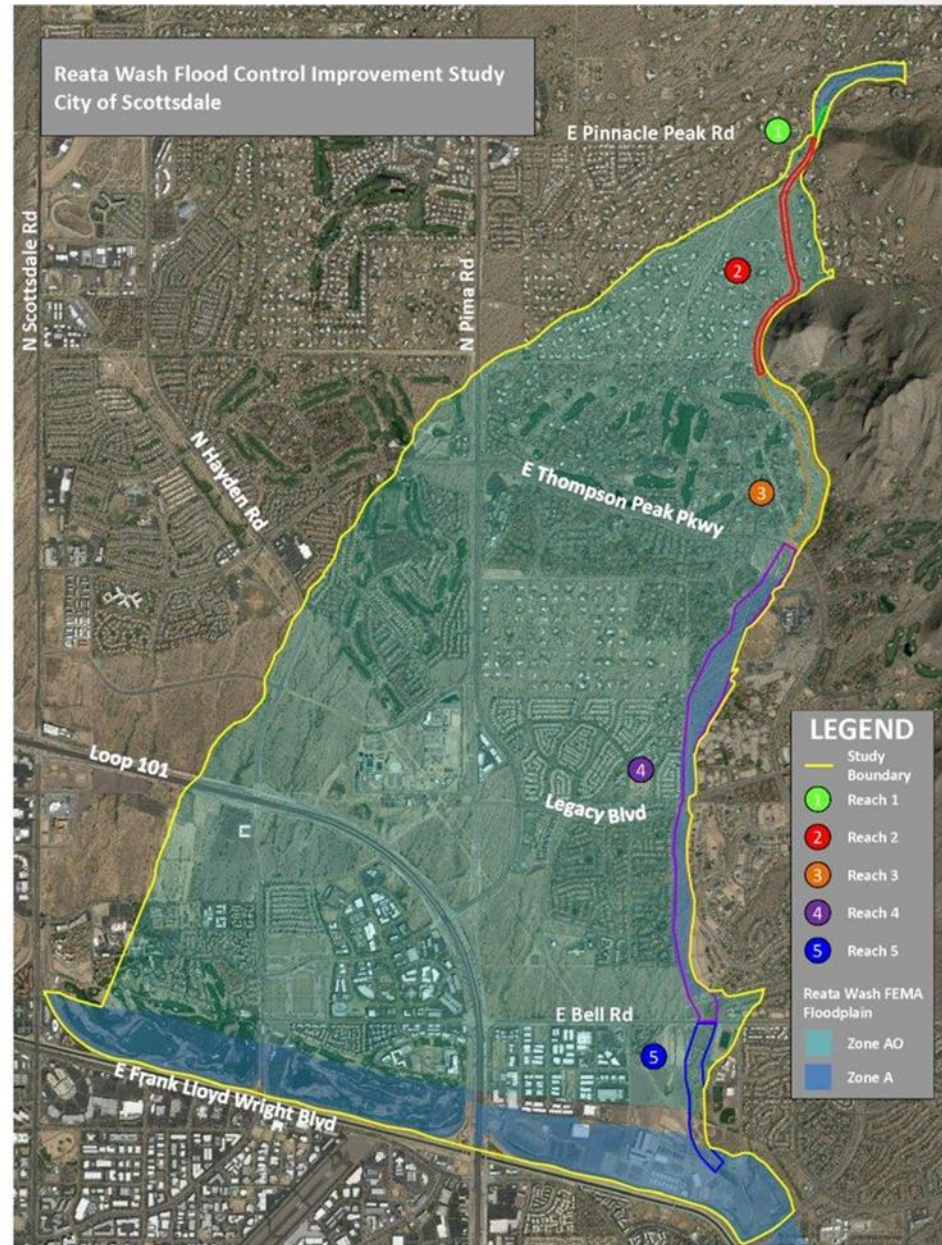
Proposed Improvements

- New conveyance improvements
- Minor improvements to bank protection, floodwalls, levees



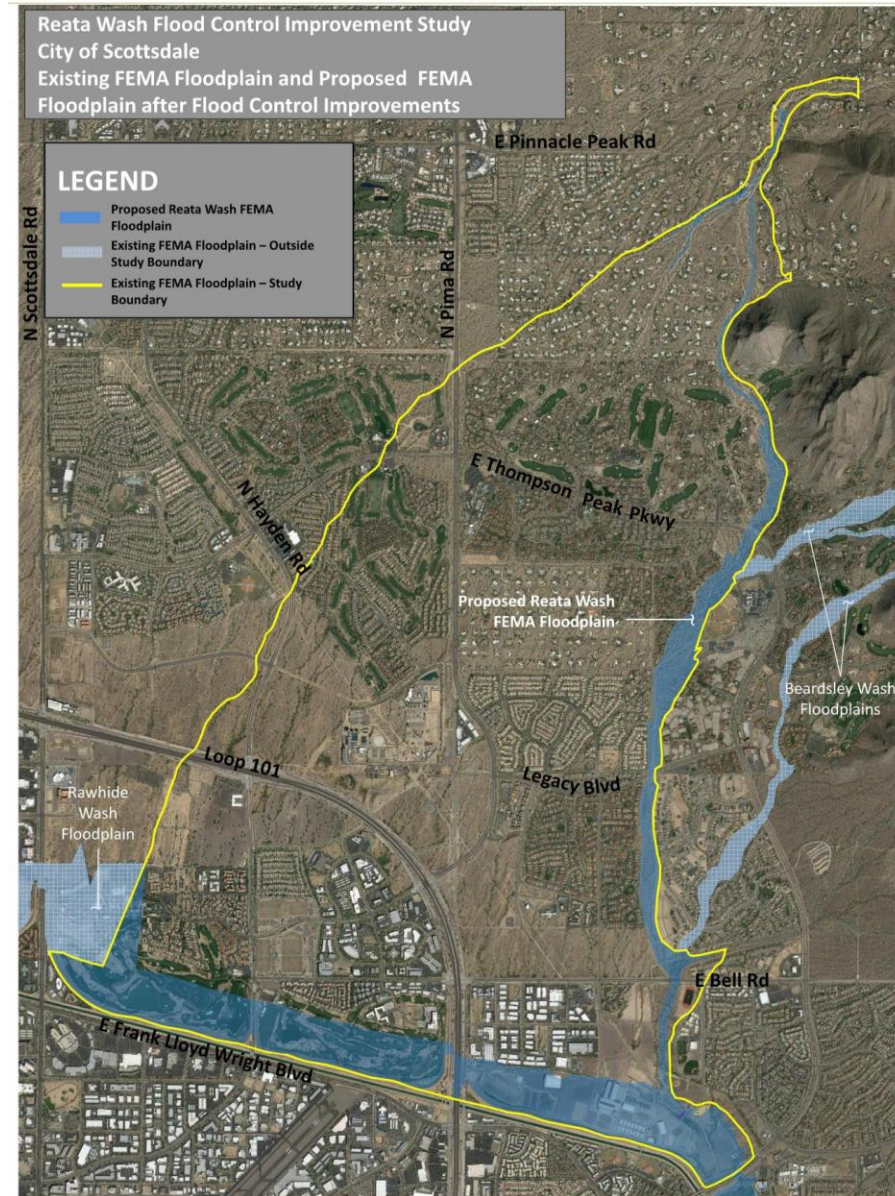
Existing Floodplain

- ~5,200 acres
- ~4,600 structures



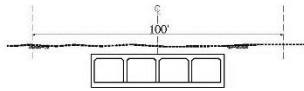
Proposed New Floodplain

- <600 acres
- ~80 structures likely remaining
- Eliminates federal flood insurance requirement for properties no longer in floodplain
- Would receive approval from FEMA on revised floodplain before a project is built

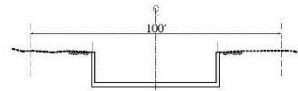


Map includes floodplains outside study area

Typical Conveyance Options



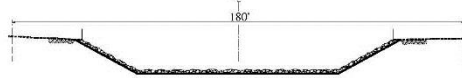
100' Covered Box Culvert Corridor



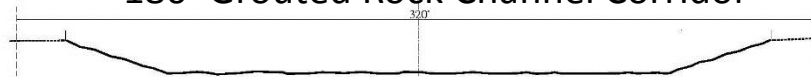
100' U-Channel Corridor



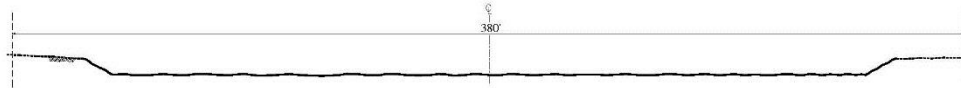
120' Grouted Rock Channel Corridor



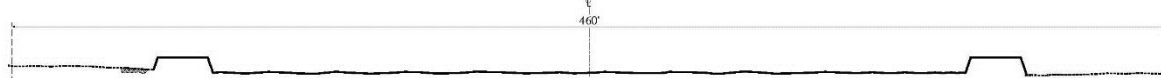
180' Grouted Rock Channel Corridor



320' Earthen Channel Corridor

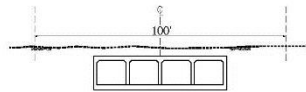


380' Earthen Channel Corridor

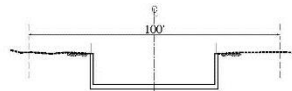


460' Earthen Channel with Levees Corridor

Conveyance Options Being Considered for Reata Wash



100' Covered Box Culvert Corridor



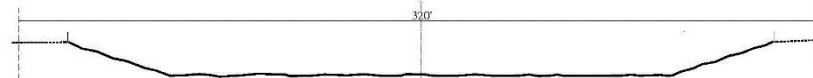
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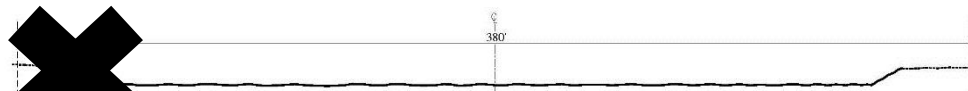
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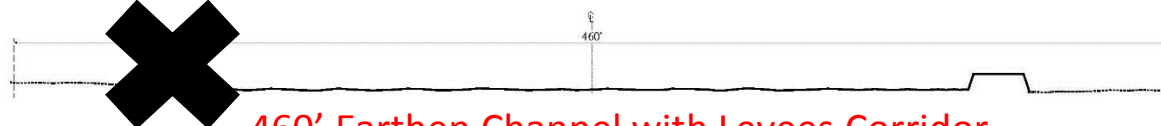
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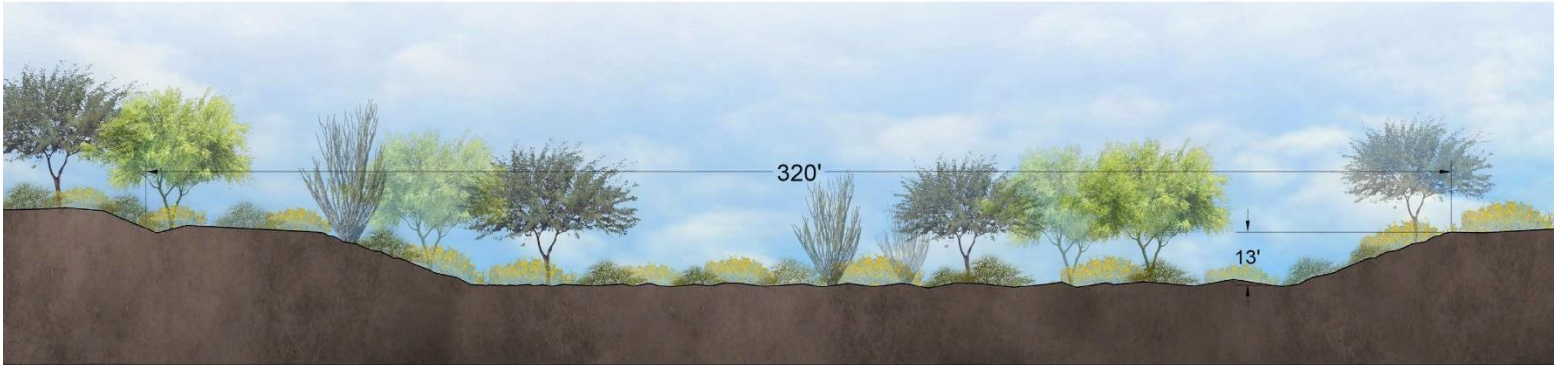
460' Earthen Channel with Levees Corridor

Potential Improvements

- Presenting feasible options for each reach
- These are study-level concepts, not final designs
- Seeking public input on options

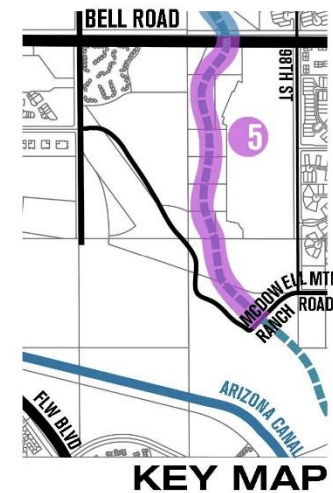
Potential Improvements

REACH 5



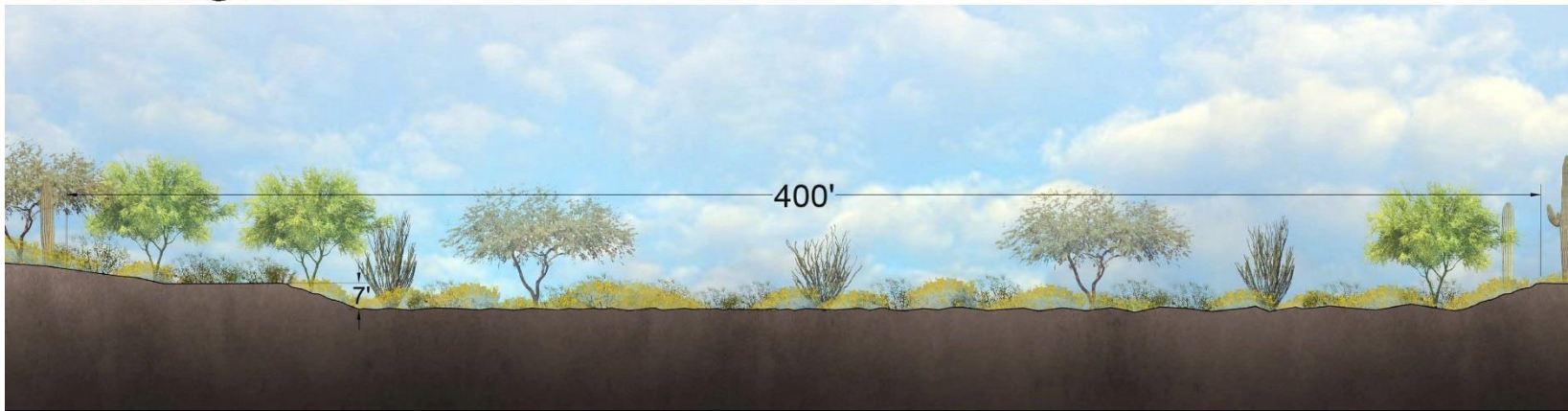
EARTHEN CHANNEL

- No existing improvements
- New conveyance:
 - Earthen channel with buried bank protection
 - Concrete drop structure – energy dissipater
 - Sediment collection basin



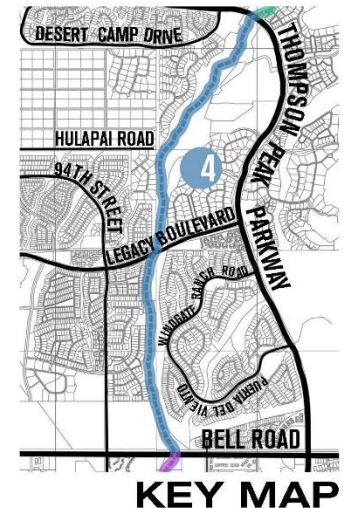
Potential Improvements

REACH 4



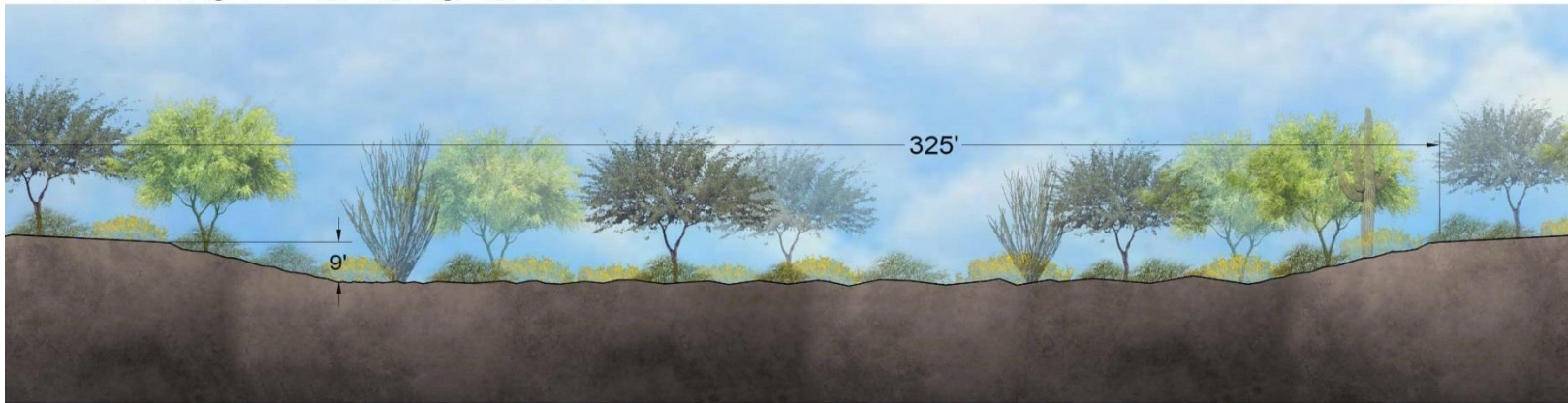
EXISTING EARTHEN CHANNEL

- Minor improvements to existing bank protection and levees needed in some locations to meet FEMA criteria
- Additional field investigation required to verify



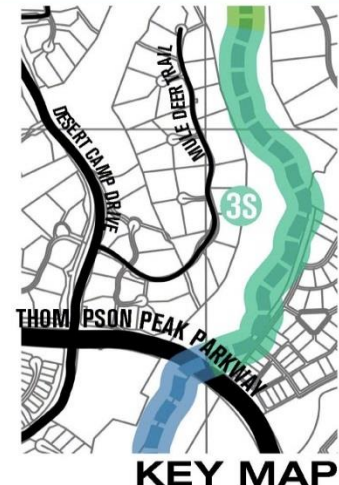
Potential Improvements

REACH 3 SOUTH



EXISTING EARTHEN CHANNEL

- Minor improvements to existing bank protection and levees needed in some locations to meet FEMA criteria
- Additional field investigation required to verify

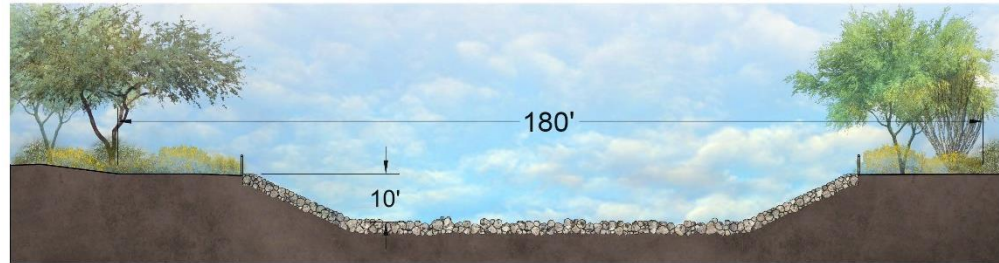


Potential Improvements

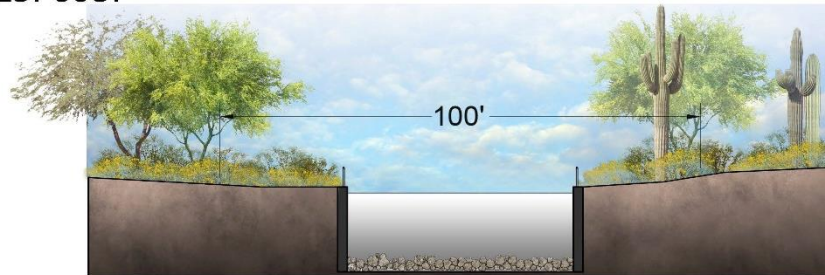
REACH 3 NORTH



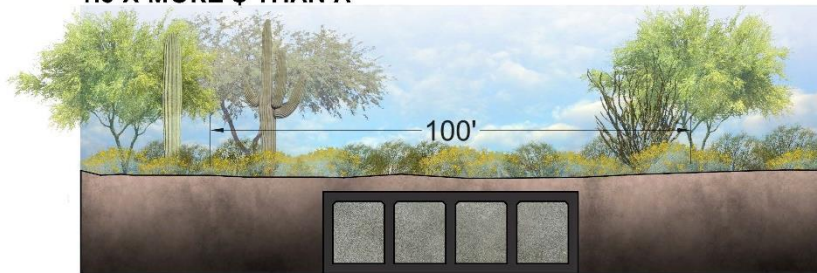
- No existing improvements
- New conveyance
 - 3 options for public's input



OPTION A: GROUTED ROCK CHANNEL
LOWEST COST



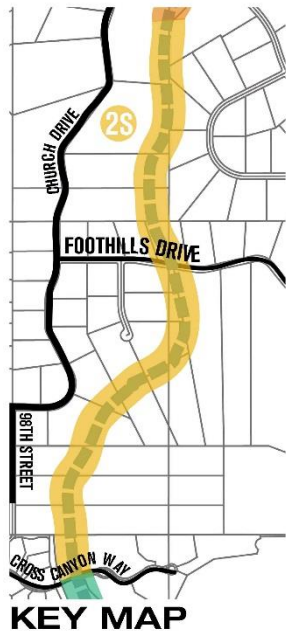
OPTION B: U-CHANNEL
1.6 X MORE \$ THAN A



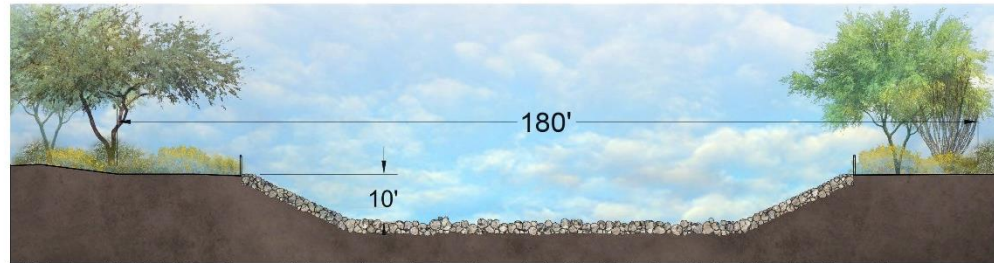
OPTION C: BOX CULVERT
2.3 X MORE \$ THAN A

Potential Improvements

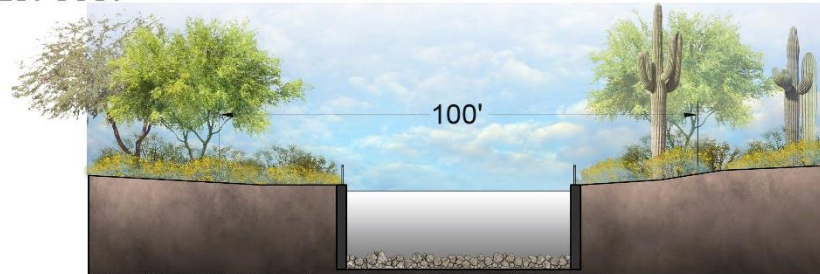
REACH 2 SOUTH



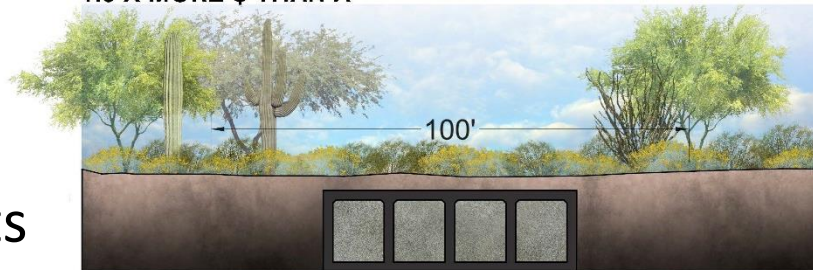
- No existing improvements
- New conveyance
 - 3 options for public's input



OPTION A: GROUTED ROCK CHANNEL
LOWEST COST



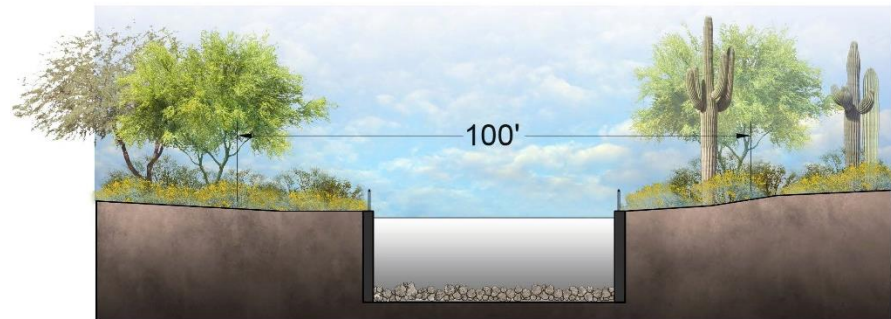
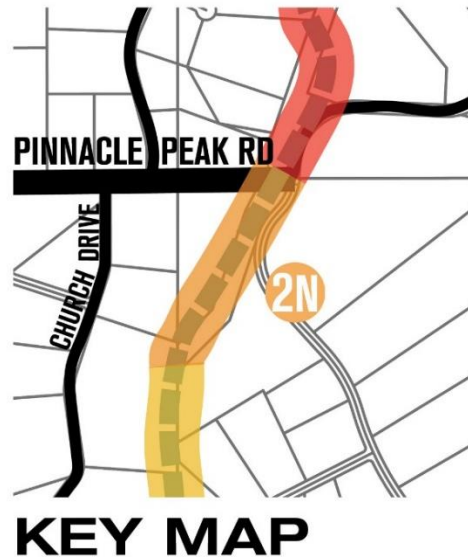
OPTION B: U-CHANNEL
1.6 X MORE \$ THAN A



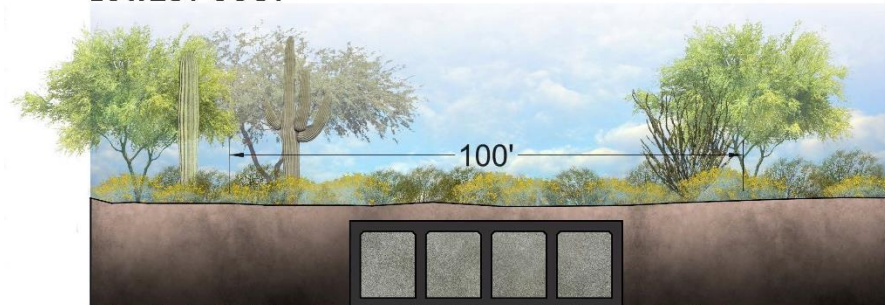
OPTION C: BOX CULVERT
2.3 X MORE \$ THAN A

Potential Improvements

REACH 2 NORTH



OPTION B: U-CHANNEL
LOWEST COST

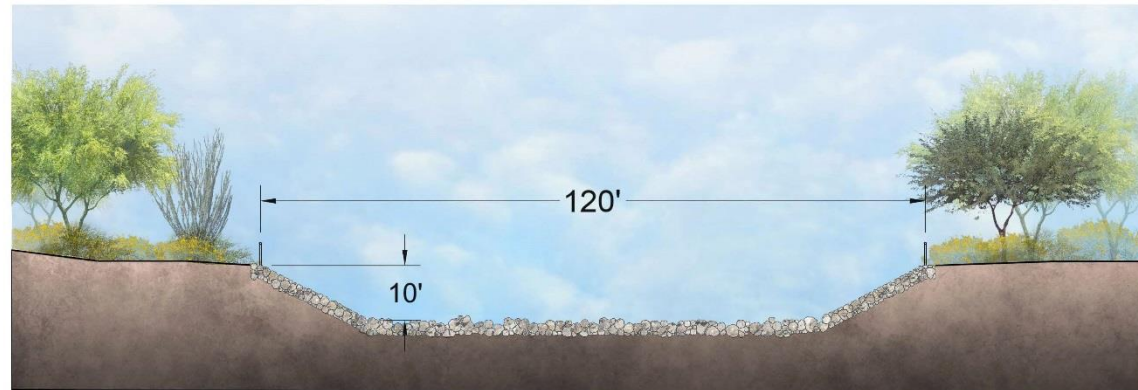
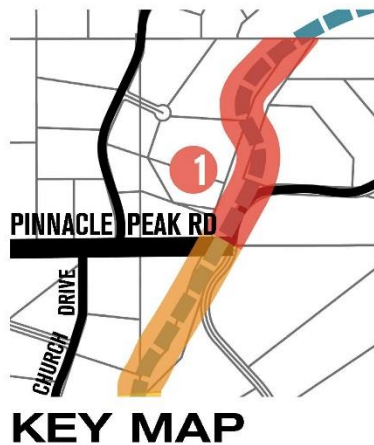


OPTION C: BOX CULVERT
1.5 X MORE \$ THAN B

- No existing improvements
- New conveyance
 - 2 options for public's input

Potential Improvements

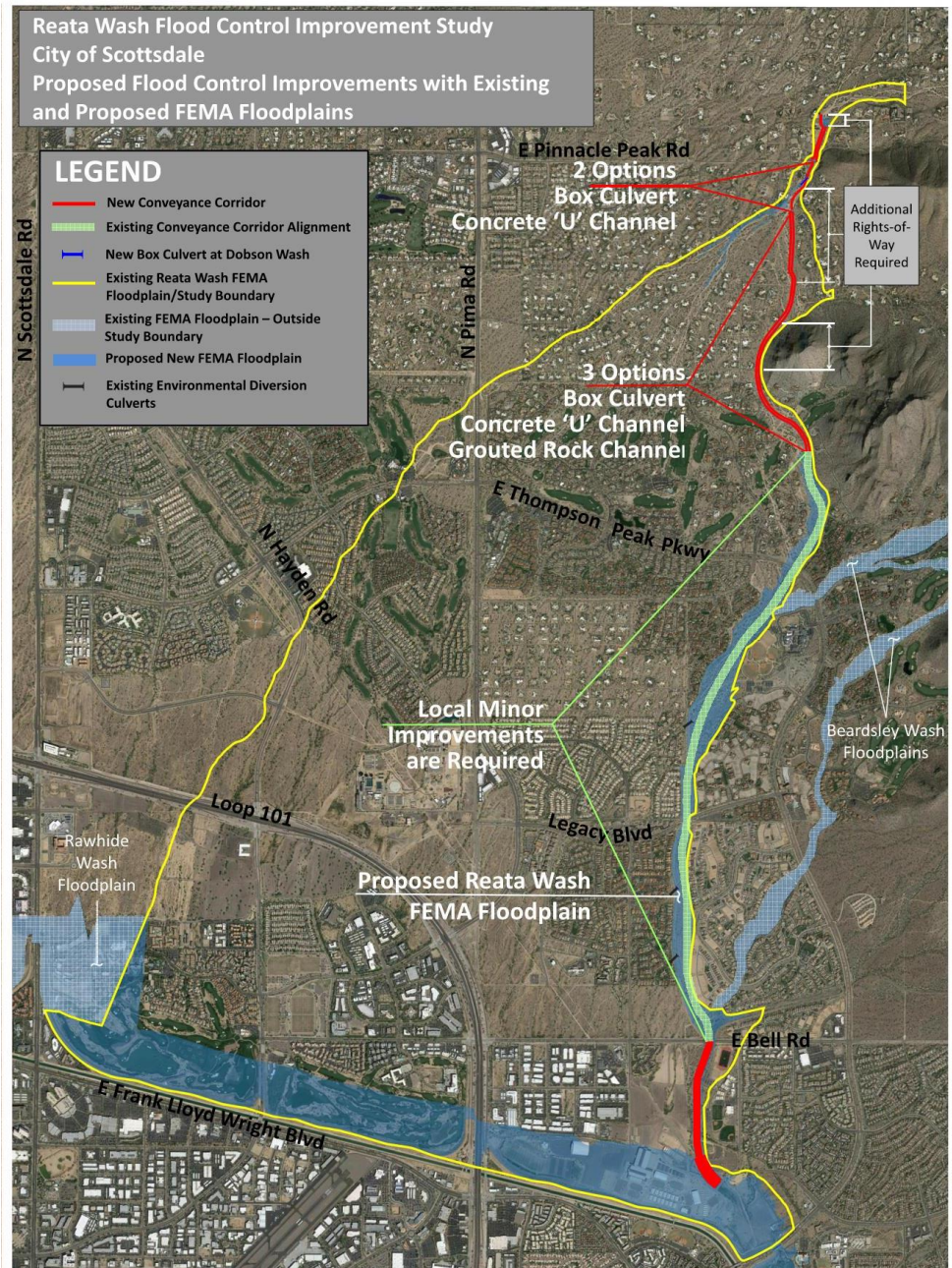
REACH 1



GROUTED ROCK CHANNEL

- Some existing improvements
- New:
 - Grouted Rock Channel
 - Floodwall

Complete Solution



Summary

- Estimated \$47-69 million design and construction cost (not including land acquisition)
 - City will seek County, State, Federal partners
- Benefits
 - Protects thousands of residents from flood risk to life and property
 - Eliminates FEMA flood insurance for most property owners (currently \$1.8 million/year)
 - Reduces City cost to clean up storm damage
 - Improves emergency access in storms

Next Steps

- Complete technical and environmental analysis
- Identify recommended alternative
- Prepare cost/benefit analysis for recommended alternative
- Continue to coordinate with local, state, and federal agencies
- Council consideration/action – late 2016

Questions/Open House

- Remain in the room if you have questions
- Visit open house stations for details, talk with staff
- Complete the evaluation matrix and return tonight



Reata Wash Flood Control Study

Contact Us

- www.scottsdaleaz.gov
 - Search “Reata”
- Project Information Line: 480-312-7328