

SCOTTSDALE CITY COUNCIL
WORK STUDY SESSION MINUTES
THURSDAY, JULY 6, 2017



CITY HALL KIVA
3939 N. DRINKWATER BOULEVARD
SCOTTSDALE, AZ 85251

CALL TO ORDER

Mayor W.J. "Jim" Lane called to order a Work Study Session of the Scottsdale City Council at 5:25 P.M. on Thursday, July 6, 2017, in the City Hall Kiva.

ROLL CALL

Present: Mayor W.J. "Jim" Lane
Vice Mayor Suzanne Klapp
Councilmembers Virginia L. Korte, Kathleen S. Littlefield, Linda Milhaven,
Guy Phillips, and David N. Smith

Also Present: City Manager Jim Thompson, City Attorney Bruce Washburn,
City Treasurer Jeff Nichols, City Auditor Sharron Walker, and City Clerk Carolyn Jagger

PUBLIC COMMENT – Paul Gilbert, representing four homeowners in the flood control study area, expressed concern about the grouted rock channel option. He asked the City to consider installing a covered box culvert in the area adjacent to his clients' properties.

1. Reata Wash Flood Control Improvement Study

Request: Presentation, discussion, and possible direction to staff regarding the results of the Reata Wash Flood Control Improvement Study.

Presenter(s): Daniel Worth, Public Works Director

Staff Contact(s): Daniel Worth, Public Works Director, 480-312-5555, dworth@scottsdaleaz.gov

Public Works Director Dan Worth gave a PowerPoint presentation (attached) on the Reata Wash flood control improvement study.

Staff was directed to move forward with Phase 1 at an estimated cost of \$650,000, which must be brought back to Council for formal approval.

NOTE: MINUTES OF CITY COUNCIL MEETINGS AND WORK STUDY SESSIONS ARE PREPARED IN ACCORDANCE WITH THE PROVISIONS OF ARIZONA REVISED STATUTES. THESE MINUTES ARE INTENDED TO BE AN ACCURATE REFLECTION OF ACTION TAKEN AND DIRECTION GIVEN BY THE CITY COUNCIL AND ARE NOT VERBATIM TRANSCRIPTS. DIGITAL RECORDINGS AND CLOSED CAPTION TRANSCRIPTS OF SCOTTSDALE CITY COUNCIL MEETINGS ARE AVAILABLE ONLINE AND ARE ON FILE IN THE CITY CLERK'S OFFICE.

Councilmembers requested additional, more detailed information on the benefit/cost analyses, assessment versus insurance premium costs, the effectiveness of box culverts, improvement districts, and stormwater utility assessments.

Councilmembers suggested additional public outreach and exploring a brown belt option and a natural catchments option and additional work/options that would lessen the impact on affected parties.

2. Unallocated Reserve Fund Transfer

Request: Presentation, discussion, and possible direction to staff, by City Manager Jim Thompson on his recommendations regarding a transfer from the Unallocated Reserve Fund to the Capital Improvement Project Fund.

Presenter(s): Jim Thompson, City Manager

Staff Contact(s): Jim Thompson, City Manager, 480-312-2811, jthompson@scottsdaleaz.gov

Removed at the request of staff.

ADJOURNMENT

The Work Study Session adjourned at 7:16 P.M.

SUBMITTED BY:



Carolyn Jagger
City Clerk

Officially approved by the City Council on August 28, 2017

C E R T I F I C A T E

I hereby certify that the foregoing Minutes are a true and correct copy of the Minutes of the Work Study of the City Council of Scottsdale, Arizona held on the 6th day of July 2017.

I further certify that the meeting was duly called and held, and that a quorum was present.

DATED this 28th day of August 2017.



Carolyn Jagger, City Clerk

Item 1

City Council Study Session

Reata Wash Flood Control Study

July 6, 2017

Why are we here....?

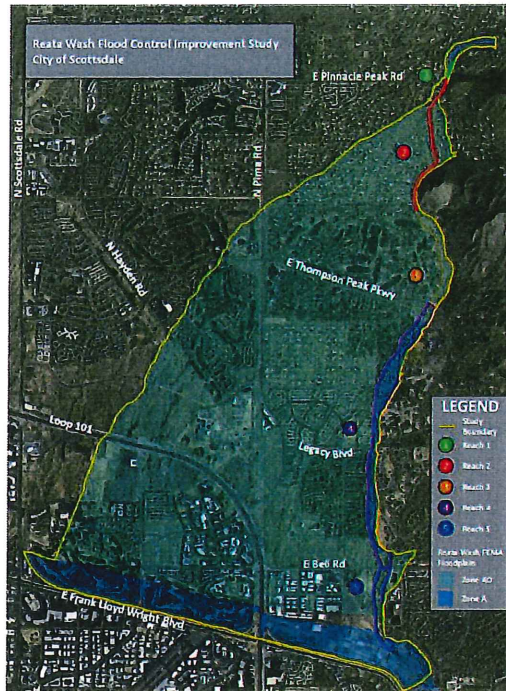
- Present findings of the Reata Wash Flood Control Study
- Discussion and Council direction on options for managing the Reata Wash floodplain

Reata Wash is designated as an AO Floodzone on Flood Insurance Rate Maps.

Spans 5.5 miles and contains approx. 5,200 acres.

Mandatory flood insurance for properties with federally-backed mortgages.

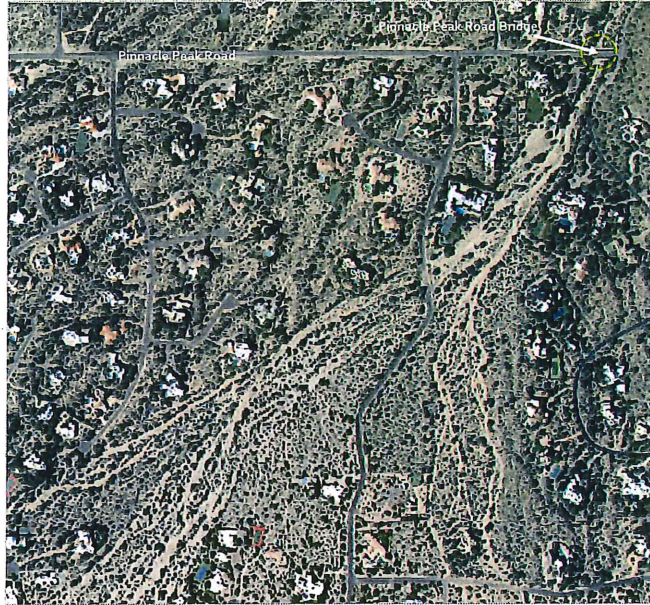
Approximately 4,600 structures within the floodplain boundary.



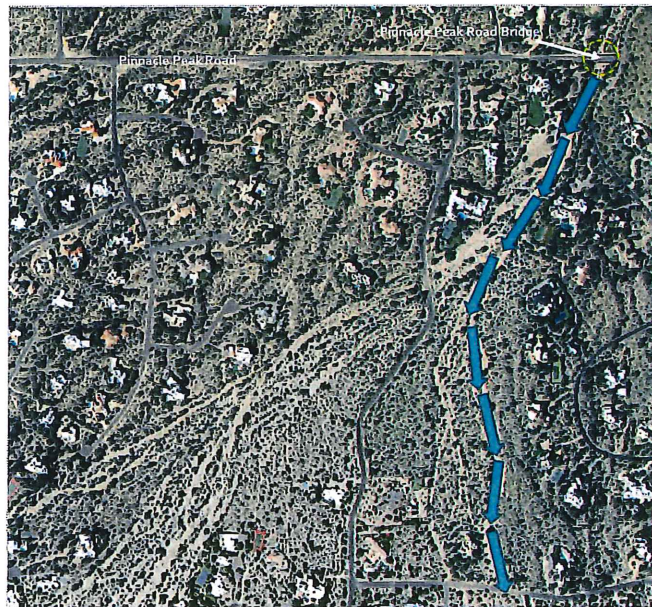
Alluvial Fan Flooding is Unique

- Most waterways in the US are in riverine conditions, where water is contained within a defined channel.
- In alluvial fan conditions, storm water is unpredictable and can “break out” of previously-followed paths and create new and/or reconfigured channels.

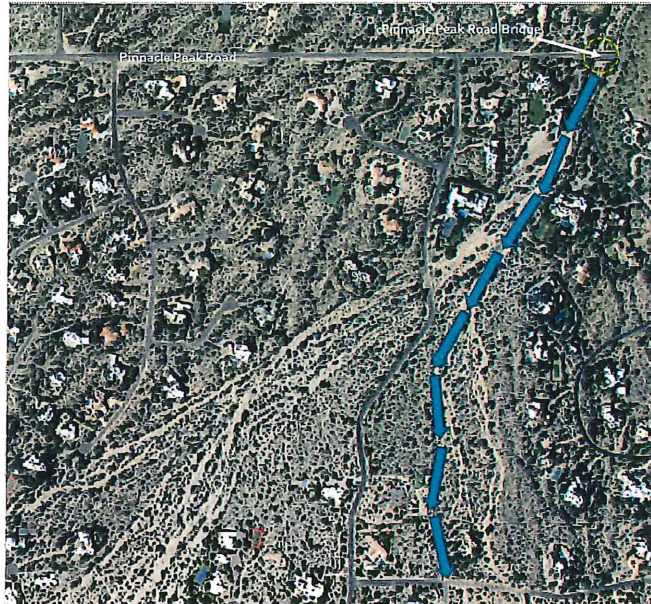
Reata Wash Braided Channels



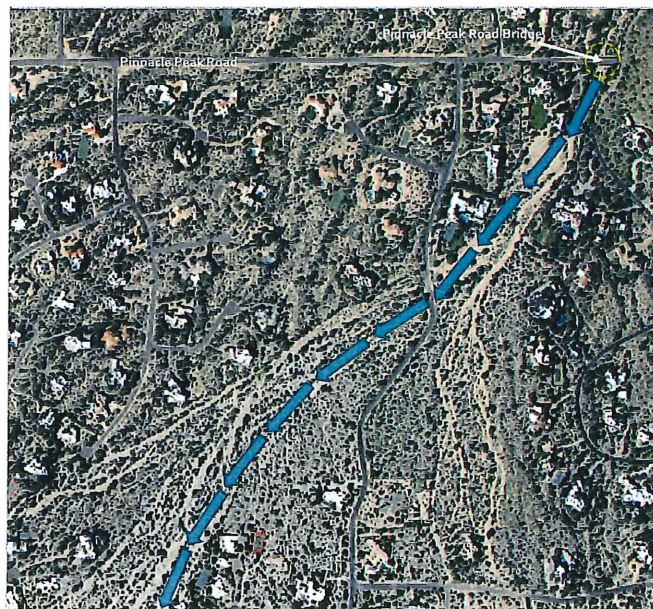
Reata Wash Braided Channels



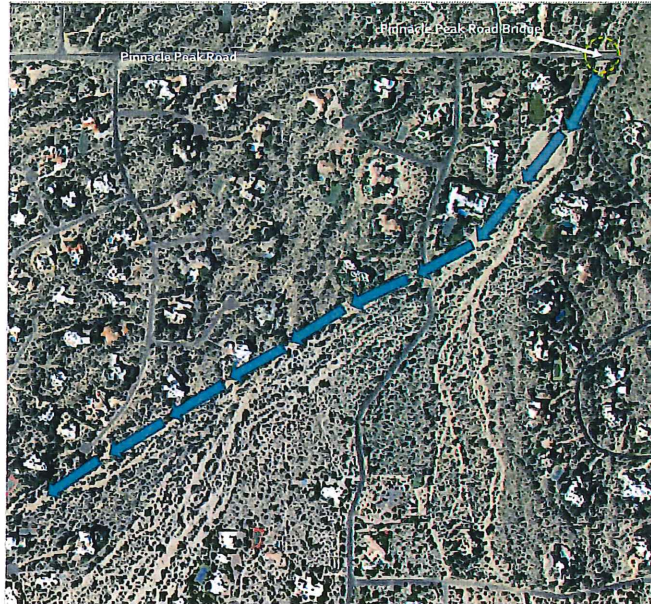
Reata Wash Braided Channels



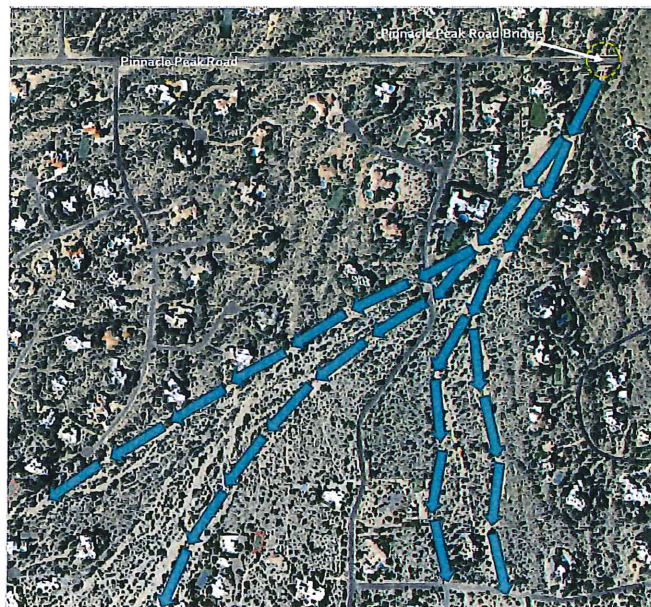
Reata Wash Braided Channels



Reata Wash Braided Channels



Reata Wash Braided Channels



Why Would Flood Control be Considered?

- The risk of flooding is real and the threat to life and property is significant
 - There are approximately 4,600 structures located within the boundary of the Reata Wash
- Rainfall parameters have changed, requiring that we manage 15% more flow at the apex during a 100-year flood than existing drainage facilities are designed for
- Until stormwater is managed at the apex, flow paths will be unpredictable
- Flood insurance doesn't protect against flooding any more than fire insurance protects against fires

Some parts of the Valley experienced 500-year storms in the September 8, 2014 floods. The Reata Wash area rainfall was less than 25-year frequency.

6 Hour Rainfall Return Periods Storm of September 8, 2014

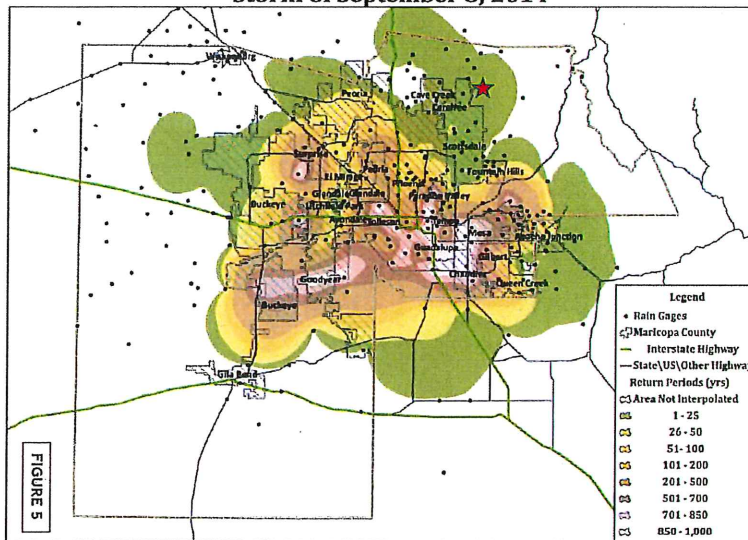


FIGURE 5

What is the Reata Wash Flood Control Study?

- Reata Wash Flood Control Study was approved by City Council on November 12, 2014 (Contract 2014-168-COS)

Purpose of the Study:

- Evaluate existing drainage facilities
- Determine Federal Emergency Management Agency (FEMA) compliance
- Identify potential flood control measures, their costs and potential benefits
- Engage public/seek input on solutions

Status

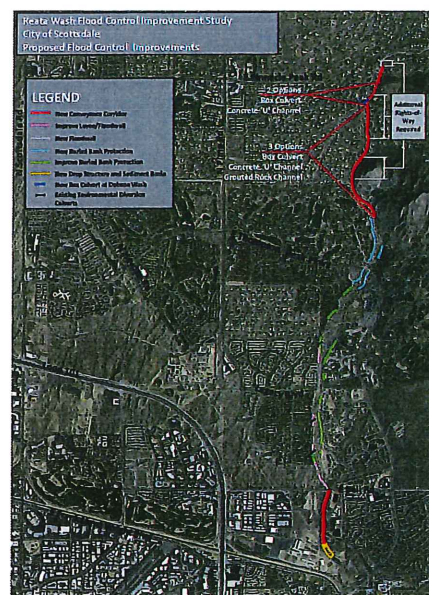
- Consultant has completed the study, including:
 - Conducted public outreach
 - Prepared technical analysis
 - Produced a Design Concept Report identifying alternative solutions that reduce risk of flooding
- Staff has reviewed the Report, prepared recommendations and is seeking direction from City Council on next steps

Criteria for Flood Control Improvements

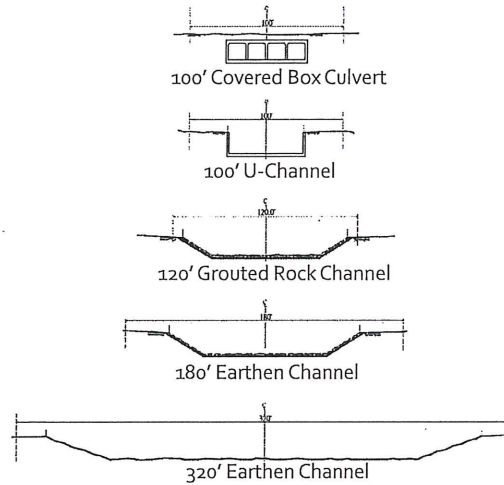
- Comprehensive and FEMA compliant solution throughout the drainage corridor.
- Maximize number of properties removed from FEMA floodplain.
- Minimize adverse impacts to private property.
- Compliant with environmental requirements.
- Compatible with character of desert environment.
- Cost-effective design that maximizes use of taxpayer funds.

Proposed Flood Control Improvements

- New:
 - Conveyance improvements
 - Levee/floodwall
 - Bank protection
 - Sediment basin
 - Dobson Wash culvert (if culvert option is selected)
- Improvements to existing levees and bank protection

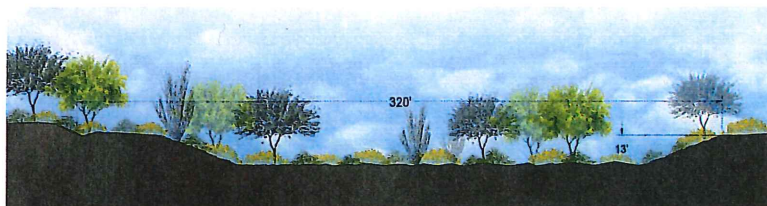


Conveyance Options Considered



Potential Improvements

REACH 5



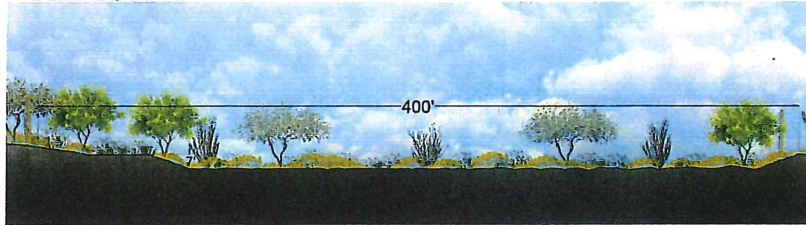
EARTHEN CHANNEL

- Improvements needed along entire reach.
- New earthen channel with buried bank protection.
- New concrete drop structure – energy dissipater.
- New sediment collection basin.
- City-owned land.



Potential Improvements

REACH 4



EXISTING EARTHEN CHANNEL

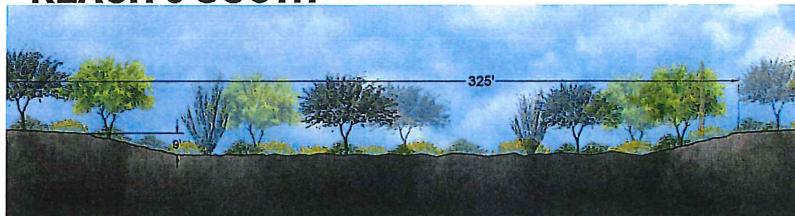
- Additional field investigation needed to determine if existing channel meets FEMA criteria.
- Updates needed to existing Bell Road levee.



KEY MAP

Potential Improvements

REACH 3 SOUTH



EXISTING EARTHEN CHANNEL

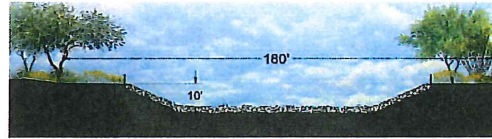
- Additional field investigation needed to determine if existing channel meets FEMA criteria.



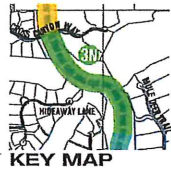
KEY MAP

Potential Improvements

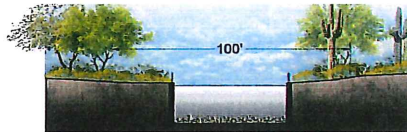
REACH 3 NORTH



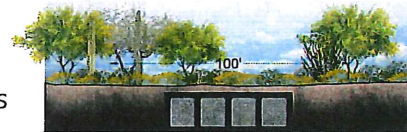
RECOMMENDED OPTION – GROUTED ROCK



KEY MAP



OPTION B: U-CHANNEL

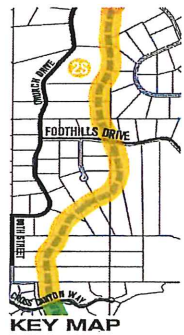


OPTION C: BOX CULVERT

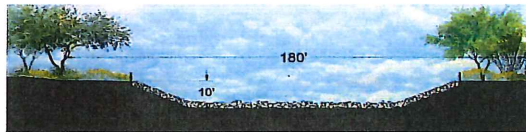
- No existing Improvements

Potential Improvements

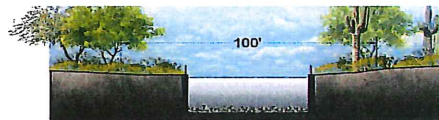
REACH 2 SOUTH



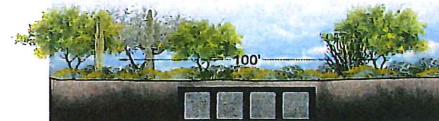
KEY MAP



RECOMMENDED OPTION – GROUTED ROCK



OPTION B: U-CHANNEL

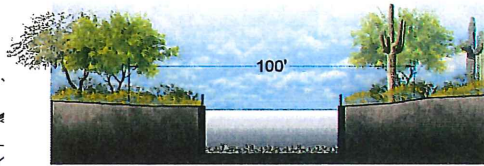
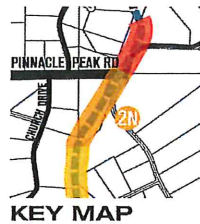


OPTION C: BOX CULVERT

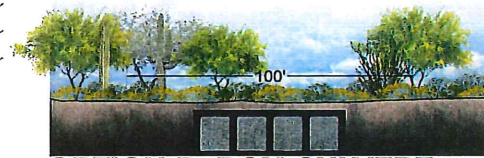
- No existing improvements

Potential Improvements

REACH 2 NORTH



RECOMMENDED OPTION

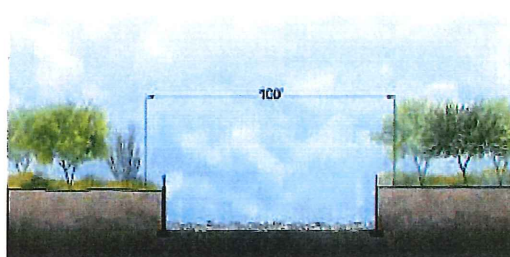


OPTION B: BOX CULVERT

- No existing improvements

Potential Improvements

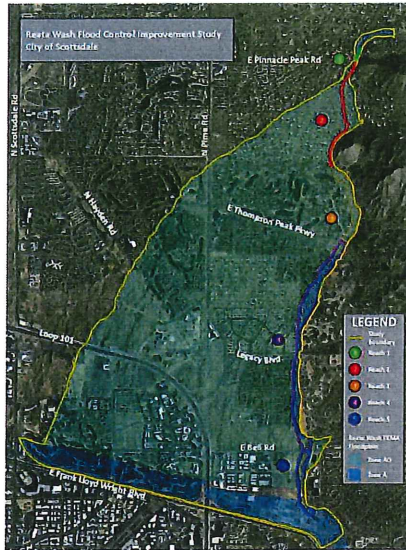
REACH 1



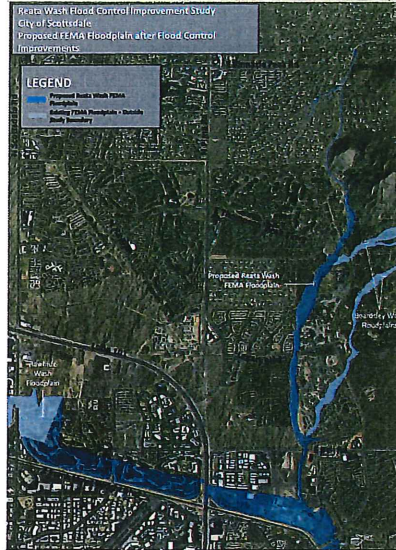
RECOMMENDED SOLUTION:

- No existing improvements
- New U-Channel
- New floodwall

Goals: Protect life and property from flooding, and reduce or eliminate the floodplain designation



Existing Floodplain



Desired Floodplain with Proposed Improvements

Public Input

- 196 people attended two open houses
- A majority indicated support for identifying potential solutions that reduce the risk of flooding
- Other concerns we heard
 - Potential Impacts
 - Perception that flood control is not needed
 - Costs vs. Benefits

Estimated Cost of Improvements

- Construction cost for the recommended option (Option A) is approximately \$45 million. Construction options B and C would cost up to \$68 million.
- If study becomes a project funding would need to be identified.

Possible Funding Alternatives

- Analysis based on recommended alternative: \$45M
- Assume MCFCD pays \$22.5M
- Remaining City share: \$22.5M

Possible Funding Alternatives

- For \$22.5M City share:
 - GO Bonds: Citywide election
 - Equity: Paid by property owners who don't directly benefit
 - Past practice: Used for previous stormwater projects in various parts of City
 - Improvement District: District election
 - Equity: Primary beneficiaries pay
 - Past practice: They are also paying for improvements that benefitted others
- Stormwater utility

Improvement District Alternative

- Estimated FEMA Flood Insurance Premiums:

Type of Structure	Number of Structures	Est. Annual Premium per structure	Est. Total Annual Premium
Commercial	206	\$1,618	\$333,308
Multi-family	229	\$891	\$204,039
Residential (est 70%)	2248	\$537	\$1,207,176
Resort	40	\$1,618	\$64,720
Total:	2723		\$1,809,243

- Annual debt service based on 5% rate and \$22.5M principle: **\$1,805,458**

Estimated Benefits of Improvements

- Increased protection for life and property.
- Flood risk reduced or removed for the structures in the FEMA designated flood hazard area.
- If floodplain removed, up to \$1.8 million reduction in flood insurance premiums
- Reduction in flood damages.
- Reduced public infrastructure repair costs.

Benefit/Cost Analysis

- Numerical expression of the cost effectiveness of a project
- Total benefit is the potential cost of flood damage that would be avoided compared to the cost of the project
- Ratios over 1.0 are considered beneficial projects according to FEMA evaluation criteria
- The improvements proposed have a ratio calculated to be 2.08
- **Benefits - \$3,702,818** **Costs - \$1,779,354**
- Costs include construction, Section 404 permits, land rights (the city has 95.7% of land rights needed) and maintenance costs annualized over 50 years

Benefit/Cost Analysis

- Benefit/Cost Analysis does not include:
 - Costs associated with damage to structures caused by flooding less than 6" in depth
 - Costs associated with multiple flooding events that occur more frequently than 100-year storms
 - Savings on FEMA flood insurance policies no longer required for property owners taken out of the floodplain designation
 - Costs associated with damage to water lines, sewer lines, roads, culverts, utilities (electric, natural gas and cable lines) and privately owned yards, walls and driveways
 - Injury or loss of life

Summary

- Data shows that a 100-year flood within the Reata Wash floodplain could be devastating
- Flooding could result in loss of life, damage to homes, property and utilities as well as impediments to providing emergency services
- Until improvements are completed – including control of storm water flows at the apex – those flows will be uncontained and unpredictable
- The economic benefits of constructing the proposed improvements outweigh the costs by more than 2 to 1.

Request: Direct staff to move forward with Phase 1 of the following:

Phase 1: Advancement of design to 30% stage:

- Preparation and submittal of a Conditional Letter of Map Revision (CLOMR) for approval.
- Refinement of project costs.
- Identification of project funding partners and timing of funding availability.
- Phase 1 Funding Request \$650,000
 - In-lieu funds of \$400,000 existing and available
- Anticipated time of completion is 18-24 months at which time the results will be presented to City Council.

Phase 2: Final Design and Permitting

- Phase 2 will bring the project to a construction-ready stage
- Phase 2 Funding Request \$6M - \$8M