



Cave Creek Drainage Master Plan

Public Meeting
July 10, 2007



Presenters

Wayne Anderson, P.E.

Town of Cave Creek

Felicia Terry, P.E., CFM

Flood Control District of Maricopa County

David W. Buras, P.E., L.S.

HDR Engineering, Inc.



Tonight's Agenda

- Drainage Master Plan (DMP) Overview
- Identified Drainage Issues
 - Development impacts to washes
 - Erosion problems
 - Access problems due to flooded roads
- Proposed Elements of the DMP
- Next Steps



Project Team Roles

District – Develop the DMP

Town – Implement the DMP

Public – Provide ideas and feedback



Drainage Master Plan

- Provides recommendations that mitigate identified flood and erosion hazards
- How is a DMP developed?
 - Data collection
 - Drainage, flooding, and erosion problems
 - Alternatives formulation and evaluation
 - Public involvement
- Recommended alternative

Key note: DMP to be used as a tool to manage drainage issues in the area

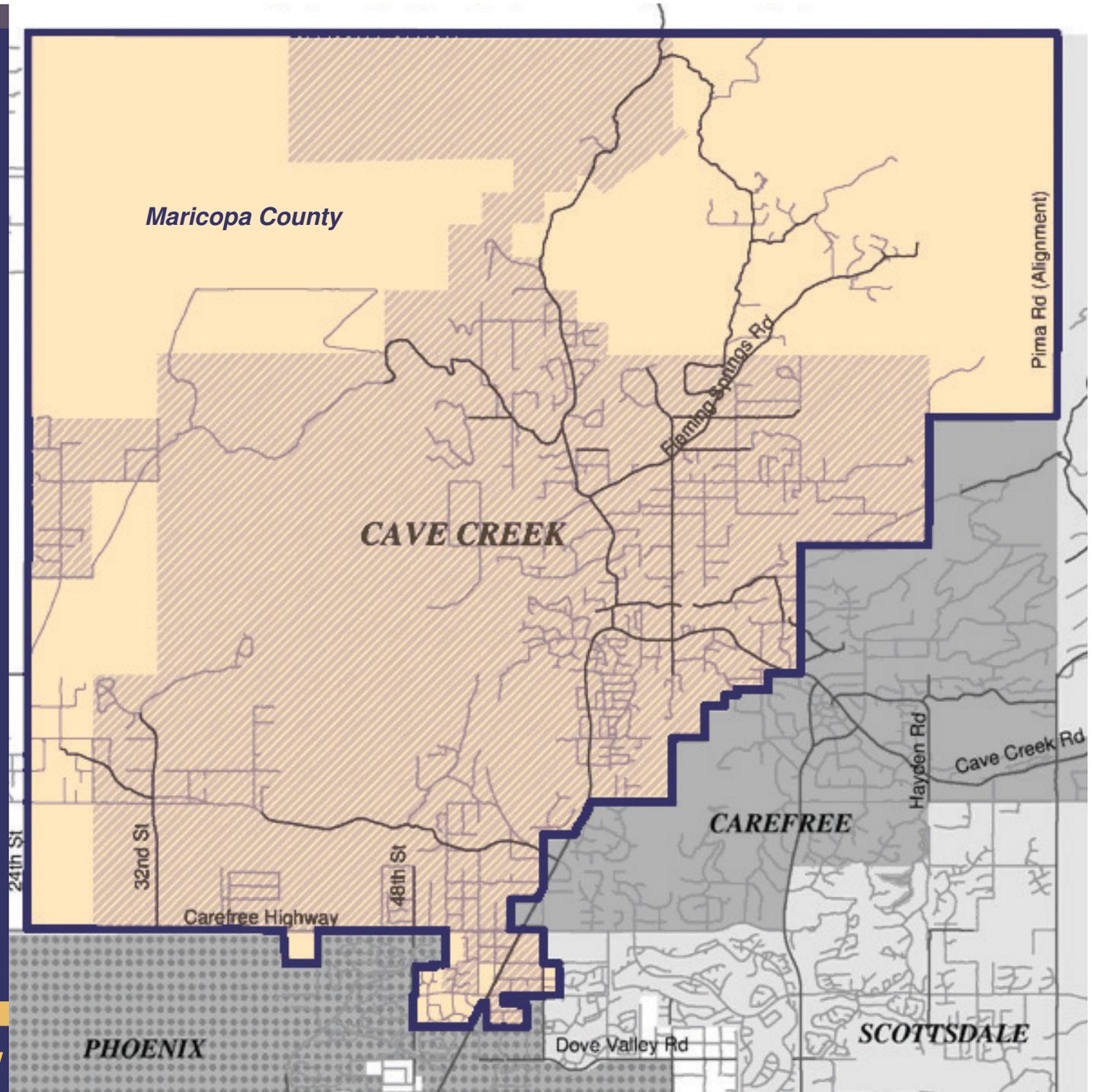


Study Area

Key:

Town of Cave Creek 

Study boundary 



Two DMP Phases

Phase 1

- Identifies flooding hazards
- Develops possible alternatives
- Involves the public

Products

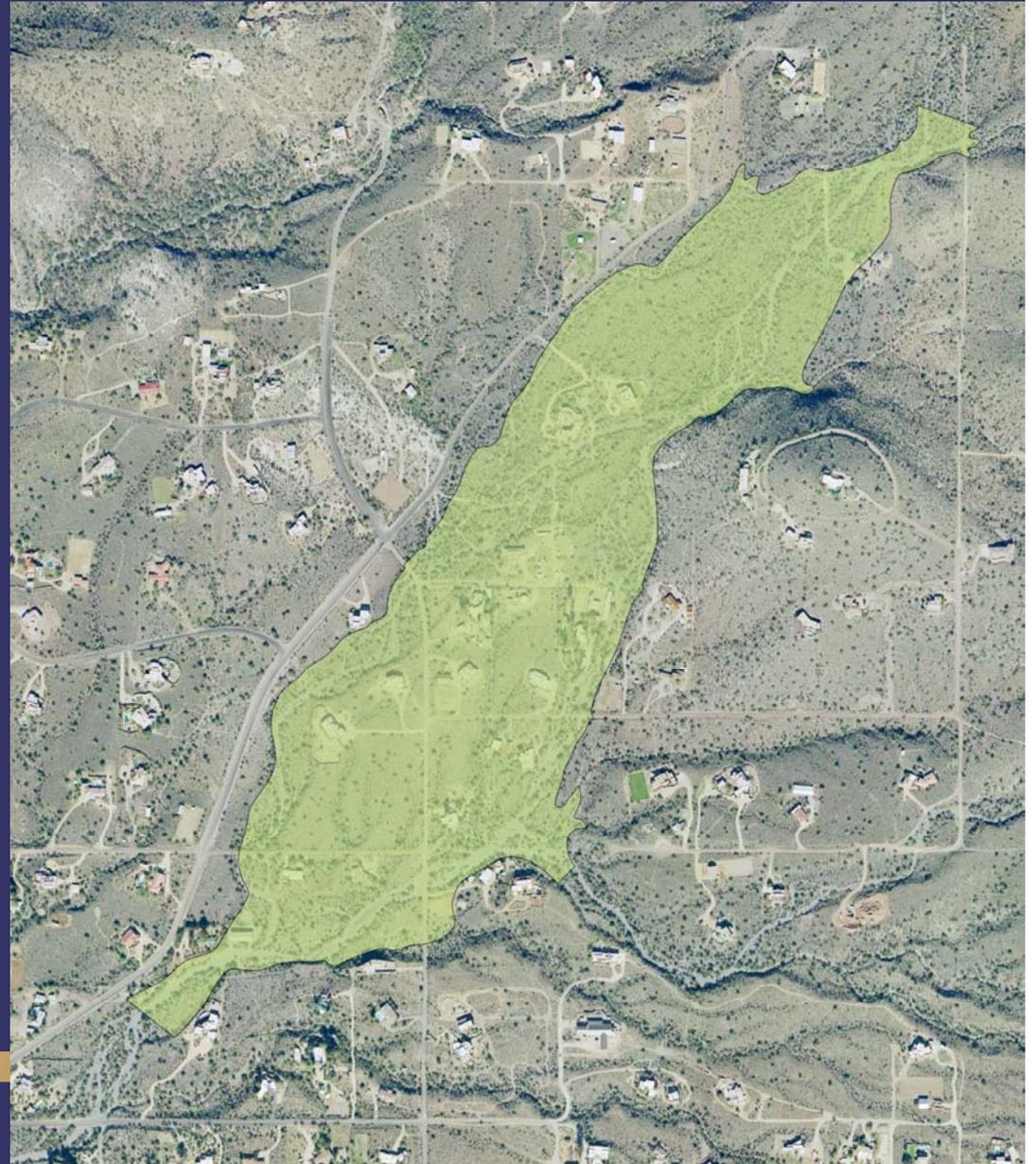
- 2-foot contour mapping
- Flood Response Plan
- Drainage guidelines
- Ocotillo Wash floodplain redelineation



Ocotillo Wash Floodplain Redelineation

Previous Mapping

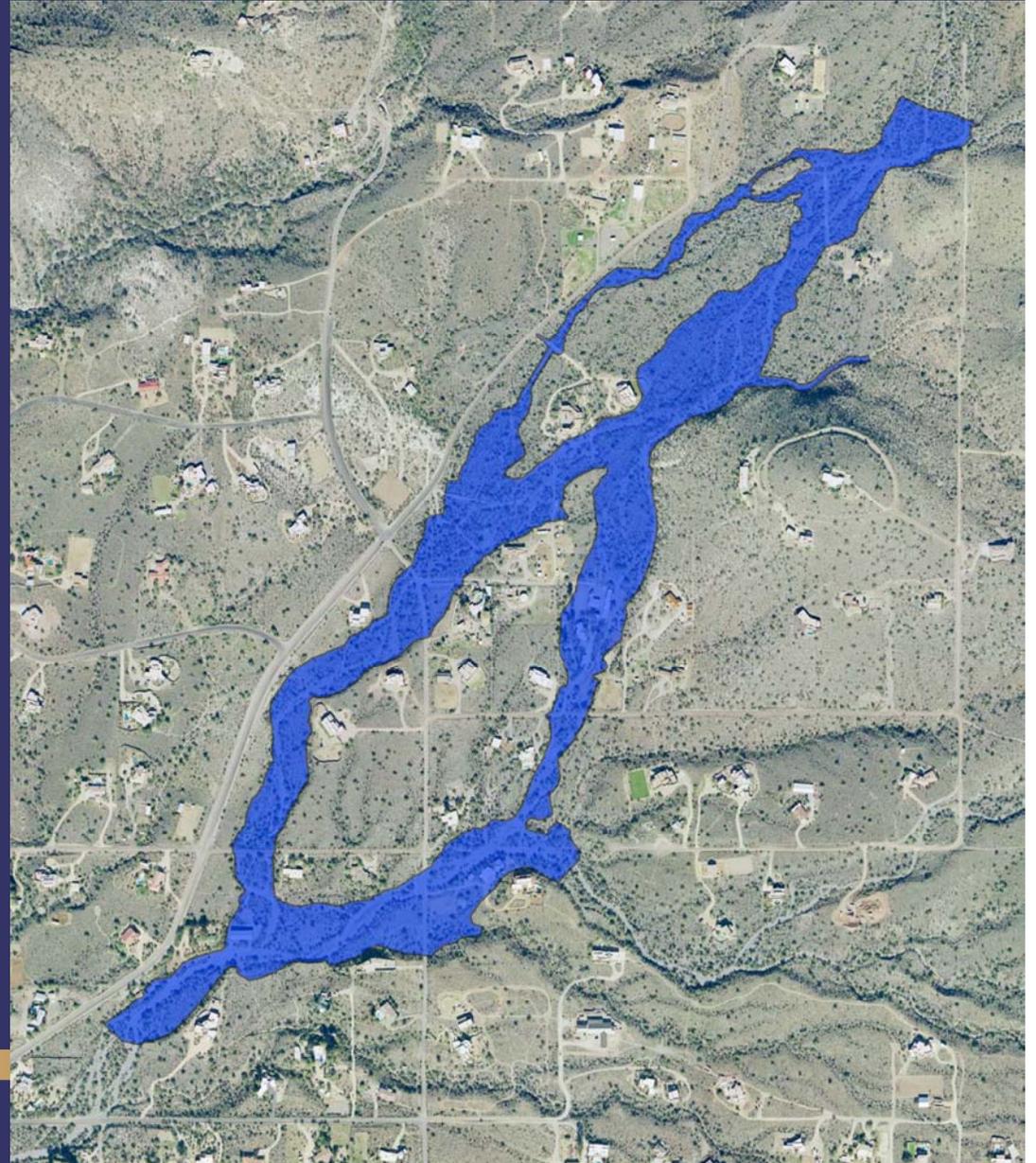
(Zone A)



Ocotillo Wash Floodplain Redelineation

Redelineation

(Zone AE)



DMP Overview

Two DMP Phases (continued)

Phase 2

- Evaluates alternatives
- Recommends a preferred alternative
- Involves the public

Products

- Environmental Overview
- Additional floodplain delineations
- Implementation Plan
- Final Drainage Master Plan



Project Schedule

- Project began in April 2006
- First public meeting in July 2006
- Public workshop in October 2006
- Meeting for Ocotillo Wash residents in May 2007
- Public meeting for draft DMP in July 2007
- Final public meeting in September 2007
- Final DMP to Town in October 2007



Major Drainage Issues

Development impacts to existing washes

- Walls and/or buildings in washes
- Fill dirt or debris in washes

Erosion hazard problems

- Houses constructed too close to eroding bank
- Streambeds eroding; affecting roads

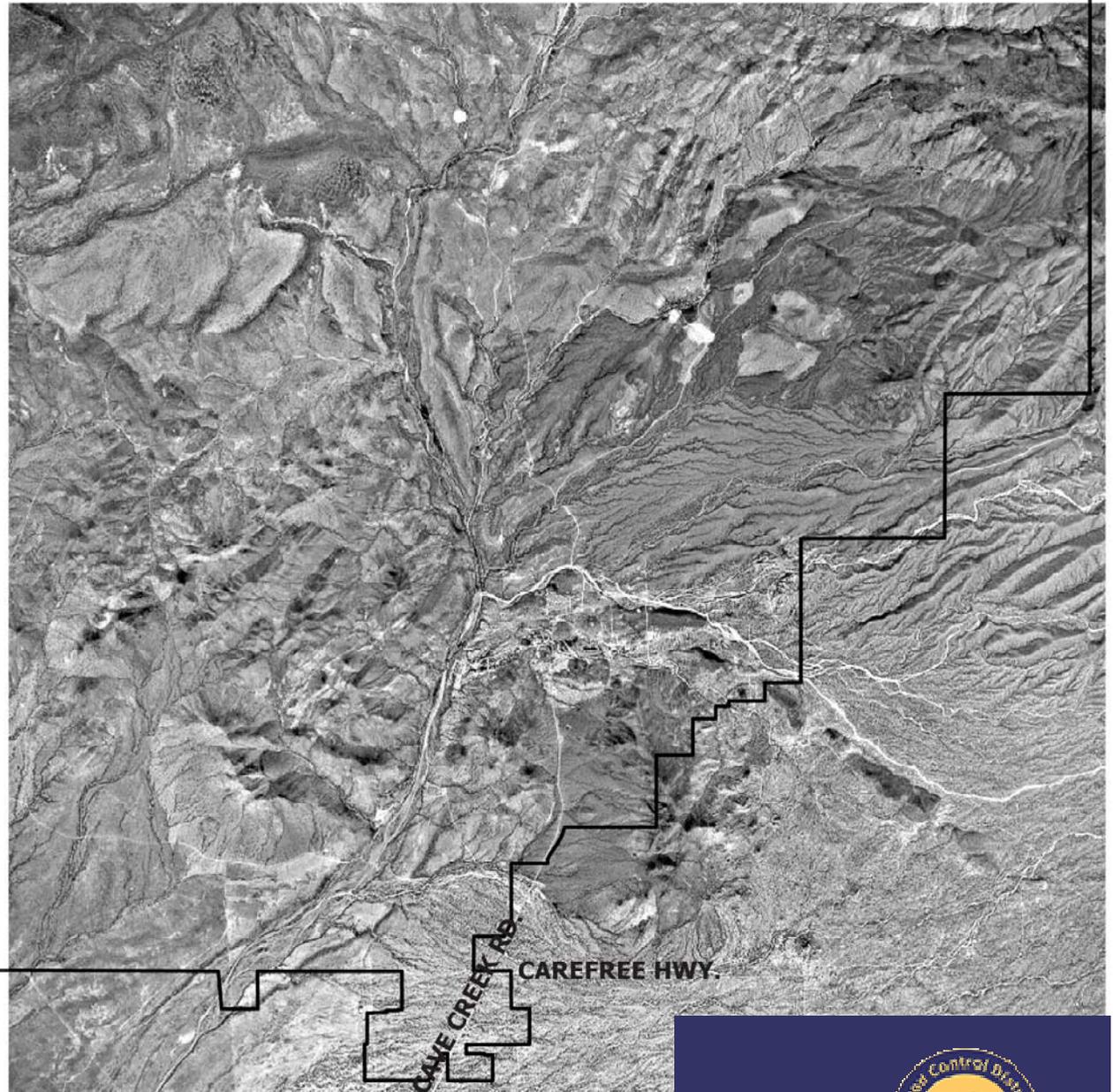
Flooded roads

- No crossing during minor flows—hour(s) delay
- No crossing during major flows—day(s) delay



Study Area in 1953

Washes Impacted

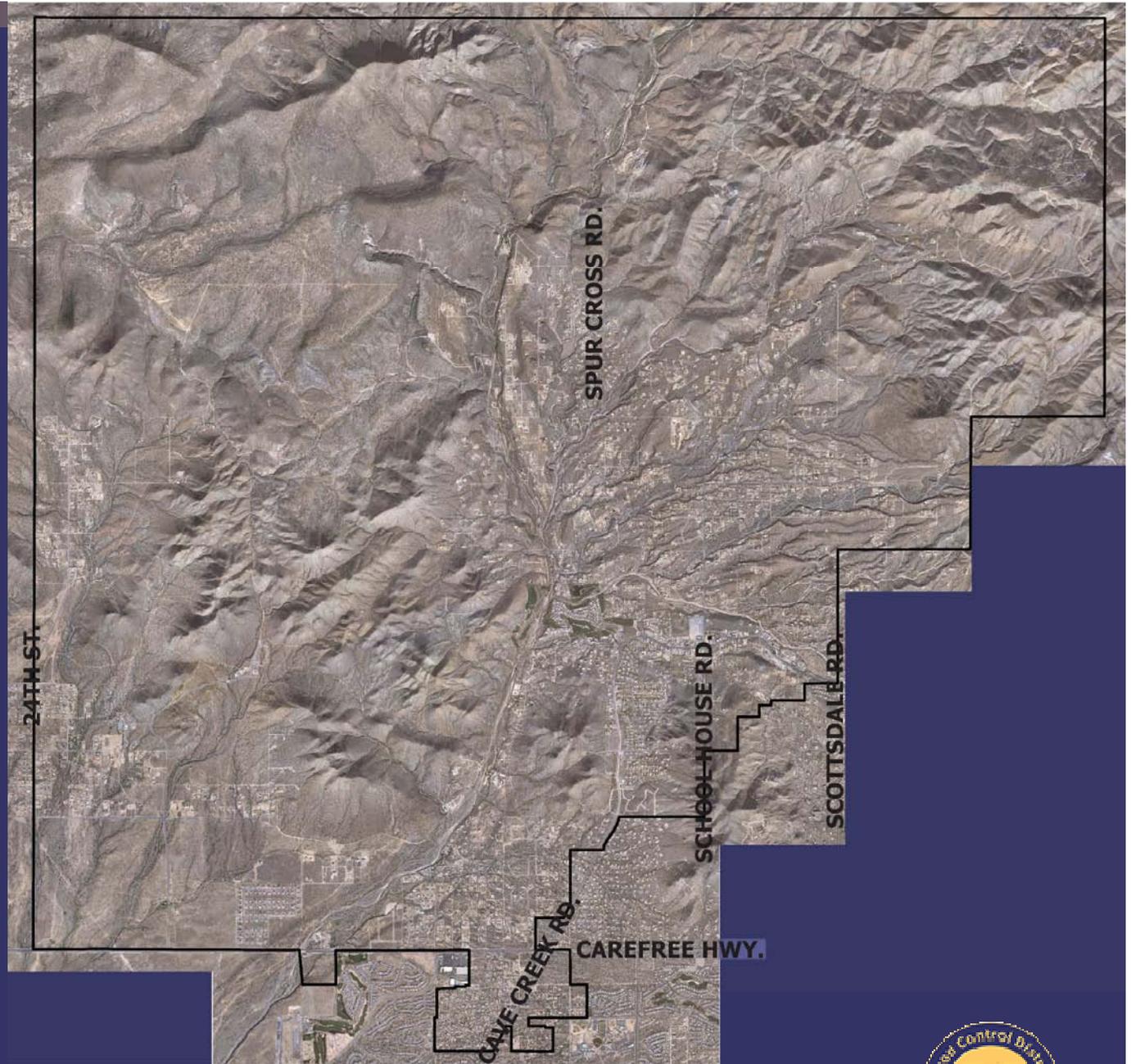


Identified Drainage Issues



Study Area in 2006

Washes Impacted



Identified Drainage Issues



Existing Mapped Floodplains

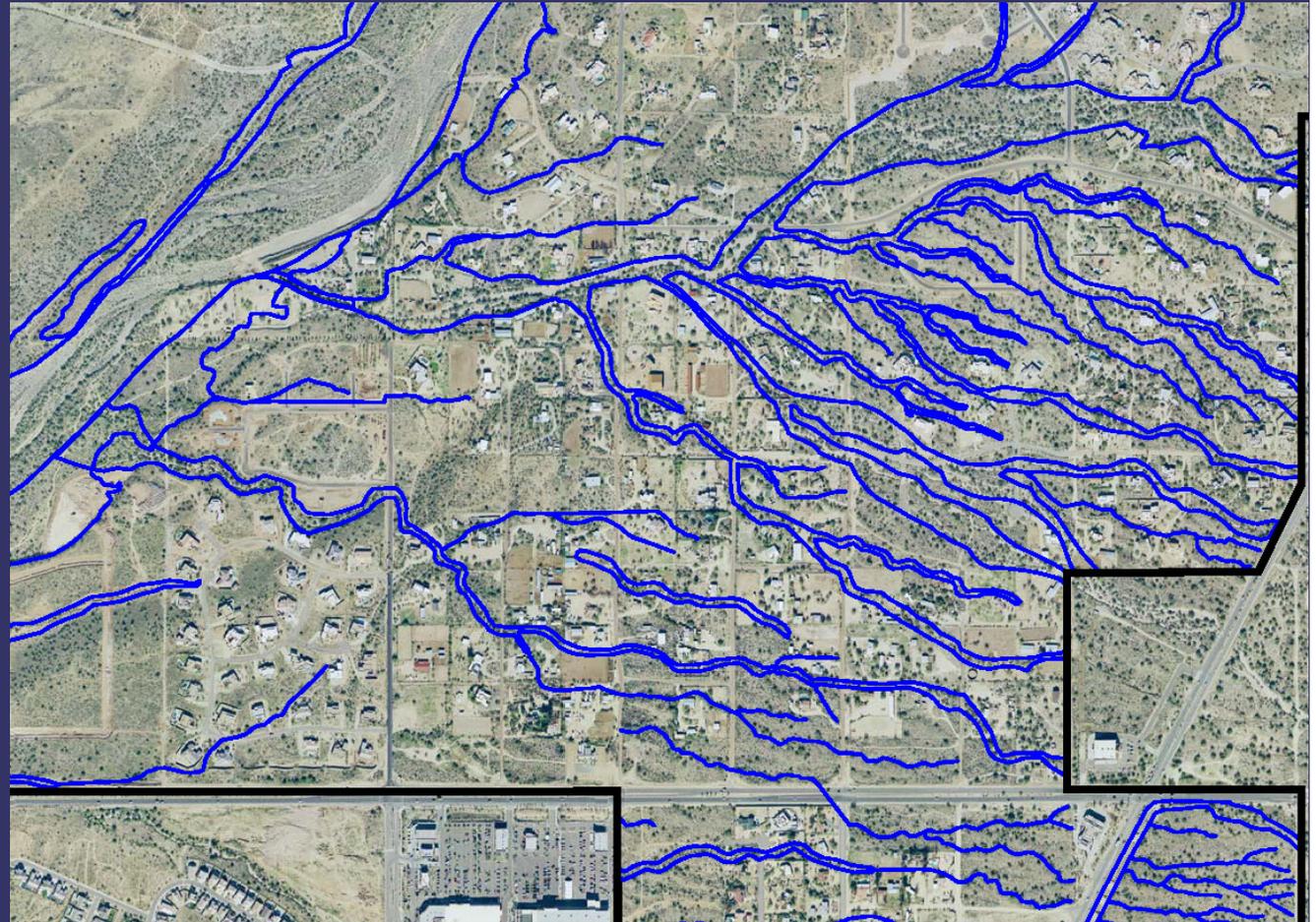
Washes Impacted



Identified Drainage Issues



Typical Development Impacts with Wash Corridors (2006)



Identified Drainage Issues



Erosion Hazard Problems

Stream Alignment in 1953



All historical stream alignments are shown on a recent aerial

Identified Drainage Issues



Erosion Hazard Problems

Stream Alignment in 1962



All historical stream alignments are shown on a recent aerial

Identified Drainage Issues



Erosion Hazard Problems

Stream Alignment in 1977



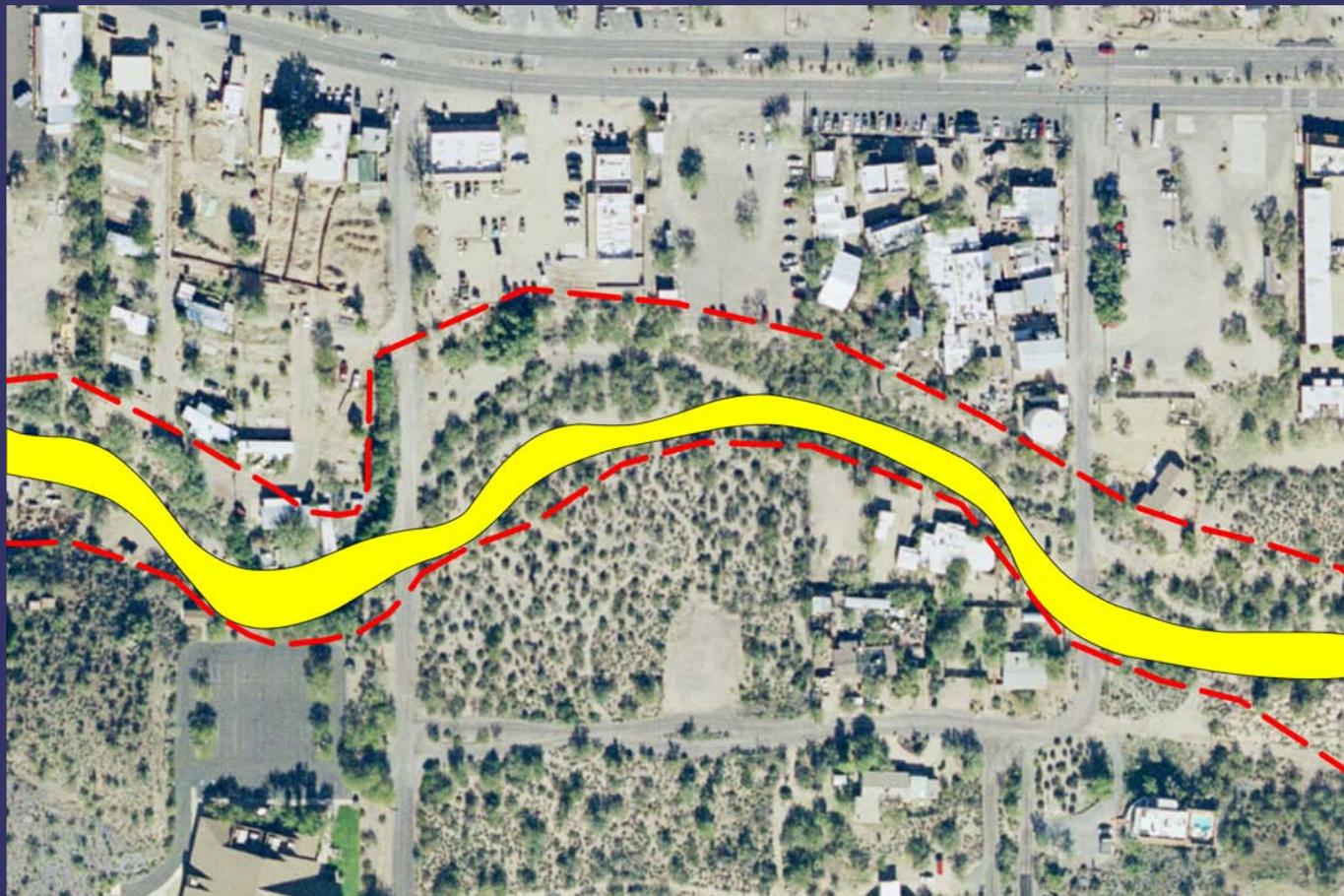
All historical stream alignments are shown on a recent aerial

Identified Drainage Issues



Erosion Hazard Problems

Stream Alignment in 1985



All historical stream alignments are shown on a recent aerial

Identified Drainage Issues



Erosion Hazard Problems

Stream Alignment in 1992



All historical stream alignments are shown on a recent aerial

Identified Drainage Issues



Erosion Hazard Problems

Stream Alignment in 1999



All historical stream alignments are shown on a recent aerial

Identified Drainage Issues



Roads flooded during heavy rainstorms



Identified Drainage Issues



Inaccessible areas due to flooded roads



Identified Drainage Issues



Proposed elements of the DMP that will mitigate these drainage issues



Proposed Elements

Development impacts to washes

- Identify wash corridors
- Additional floodplain mapping
- Drainage guidelines
- Wash obstruction removal
- Floodprone Properties Acquisition Program (FPAP)
- Education program

Erosion hazards

- Identify erosion hazard setbacks
- Drainage guidelines
- Education program

Flooded roads during rainstorms

- Flood Response Plan
- All-weather access
- Education program

Proposed Elements of the DMP



Existing Mapped Floodplains



Proposed Elements of the DMP



Existing Mapped Floodplains

New Floodplain Mapping



Proposed Elements of the DMP



**Existing
Mapped
Floodplains**

**New
Floodplain
Mapping**

**Wash
Corridors**



Proposed Elements of the DMP



Drainage Guidelines

BEST MANAGEMENT PRACTICES

A Construction Guide for Development of
Subdivisions and Individual Lots in the
Town of Cave Creek



Drainage Guidelines

Features

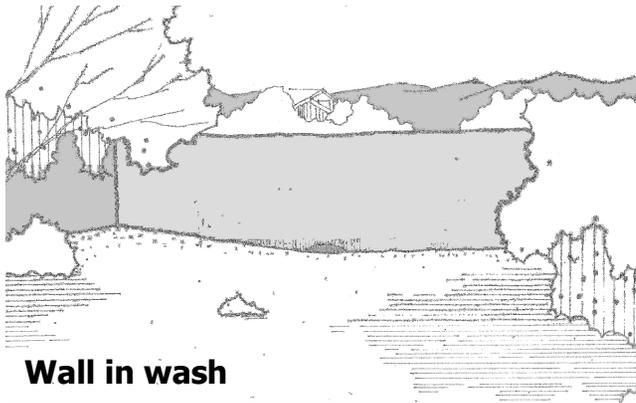
- Guides development to ensure safety
- Preserves integrity of existing washes

Problems Addressed

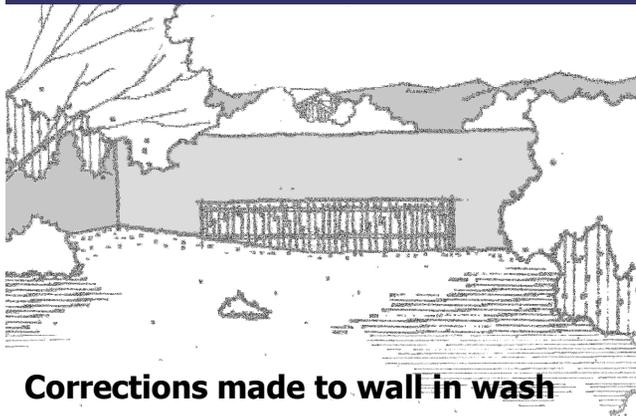
- Development impacts
- Erosion hazards

Proposed Elements of the DMP





Wall in wash



Corrections made to wall in wash



Wash Obstruction Removal

Features

- Allows wash to function naturally
- Minimizes area flooding and ponding
- Helps minimize damage to structures

Problem Addressed

Diverted wash — flooding

Proposed Elements of the DMP





Voluntary Floodprone Properties Acquisition Program (FPAP)

Features

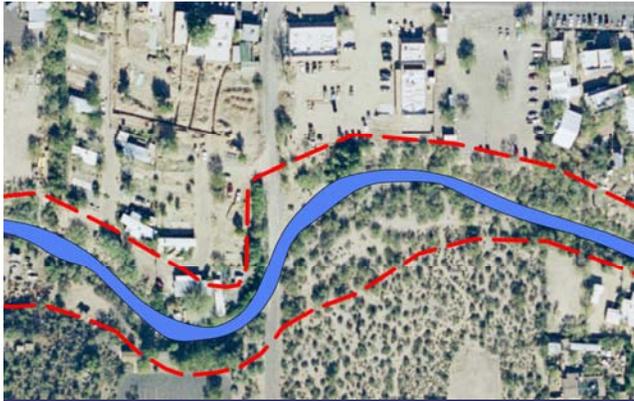
- Homeowners choose to relocate
- Reduced flood losses
- Preserves natural function of washes

Problems Addressed

- Flooding of homes within FEMA floodplains
- Public safety

Proposed Elements of the DMP





Erosion Hazard Setbacks

Features

- Maintains natural environment
- Helps minimize damage to structures

Problems Addressed

- Bank erosion
- Public safety

Proposed Elements of the DMP





Flood Response Plan

Features

- Improves communication between District and Town
- Provides earlier notification
- Identifies road closures
- Helps minimize loss of life

Problem Addressed

Public safety



Proposed Elements of the DMP





All-Weather Access

Features

- Allows emergency response
- Allows access across major washes

Problems Addressed

- No access due to flooded roads
- Public safety

Proposed Elements of the DMP





Proposed Elements of the DMP



Access after 24th Street and Carefree Highway Improvements



Proposed Elements of the DMP



Access after 24th Street and Carefree Highway Improvements

Cave Creek Culvert Improvements



Proposed Elements of the DMP



**Access after
24th Street and
Carefree
Highway
Improvements**

**Cave Creek
Culvert
Improvements**

**All-weather
access on
School House
Road**



Proposed Elements of the DMP



**Access after
24th Street and
Carefree
Highway
Improvements**

**Cave Creek
Culvert
Improvements**

**All-weather
access on
School House
Road**

**All-weather
access on Spur
Cross Road**



Proposed Elements of the DMP





Home Site Map FAQ's Contact Us

Staying Safe During a Storm

Tips to stay safe whether a storm catches you outdoors, indoors

Outdoor Safety

Lightning is attracted to metal and water and tends to strike the tallest object in an area.

- Remember, you are in the lightning strike zone if you hear thunder after seeing lightning.
- Avoid wide open areas such as fields and golf courses
- Stay off hilltops and other high points of land
- Don't stand near trees or tall poles
- Get at least 7 feet away from tall objects
- Avoid metal objects such as golf carts and clubs, lawn mowers, etc.

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Education Program

Problem Addressed

- Public safety

Features

- Educate property owners about potential erosion hazards
- Educate area drivers about not driving in low-water crossings when water is present
- Educate property owners about not diverting water in washes

Proposed Elements of the DMP



Next Steps



Where do we go from here?

- Refine elements of the DMP
- Additional floodplain delineation
- Recommend preferred plan
- Inform the public
- Plan is presented to Town Council for adoption



Questions?



