

**AV IRWMP First Flood Committee Meeting**  
**Wednesday, June 6, 2012**

Minutes taken by: Brian Dietrick

The first Antelope Valley (AV) Integrated Regional Water Management Plan (IRWMP) 2007 Update Flood committee meeting was held on June 6, 2012, at Palmdale Water District, 2029 E. Avenue Q, Palmdale, CA 93550.

Attendees: Carlyle Workman (Lancaster), Gordon Phair (Palmdale), Amy Frost (EAFB), Matt Knudsen (PWD), Wendy Reed (AV Cons.), Dave Rizzo (AVEK), Wanda Deal (EAFB), Alma Fuentes (LACDPW), Valerie De La Cruz (LACDPW), Youssef Chebabi (LACDPW), Dave Rydman (LACWWD), Stephanie Gann (EAFB), Brian Dietrick (RMC), Tom West (RMC), Bruce Phillips (PACE)

1. Welcome and Introductions

- a. The meeting was opened and led by Brian Dietrick (RMC) ; called to order at 3:05 pm; self-introductions followed, and Brian presented a brief overview of the role of the flood management work in the overall IRWMP updates
- b. Attendees were asked to add contact information to sign-in sheet so that the Contact List and email distribution list can be updated.

2. Prop. 84 discussion

- a. Brian led a brief discussion of Prop. 84 funds and how scoring would include consideration of integrated flood management benefits
- b. Other committee members added that Prop. 84 is used to fund other state initiatives besides IRWM

3. Presentation

- a. Bruce gave a power point presentation and led a discussion of various flood issues relevant to the IRWMP updates; the presentation included the following:
  - i. Integrated Flood Management
  - ii. Statewide Floodplain Planning
  - iii. IFM for Antelope Valley
  - iv. Workshop Forum Discussion
- b. A copy of the presentation is attached to these notes; see for additional detail

4. Open Discussion

- a. Bruce Phillips commented that of 4,000 communities in the U.S., only 20% have implemented Community Rating System (CRS) measures that result in reduced flood insurance rates
- b. Dave Rydman said that a unique issue for AV is that storm/flood waters can provide a needed water supply source; Dave also mentioned that the Littlerock

Dam Sediment Removal Project should be considered in the analysis of integrated flood management for the AV

- c. Wanda Deal commented on some of the issues pertaining to Rosamond Dry Lake from the perspective of EAFB:
  - i. recent surface water study conducted by EAFB collected data on a 4-day, 10 yr. storm in 2010;
    - 1. 1,700 tons of sediment delivered to lakebed
    - 2. Approximations of rainfall reaching Rosamond Dry Lake
      - a. Below 3,000 ft. elevation - 75%
      - b. Between 3,000-4,500 ft. elevation - 10%
      - c. Above 4,500 ft. - very little
  - ii. Rogers Dry Lake is used more frequently
  - iii. EAFB has not determined a volume of surface flow that would be required to provide successful resurfacing of the lakebed soils; nor have they determined how deep the surface flow would need to be or how long it would need to remain in place
  - iv. It could be possible that approximately 14,000 acres of coverage is required on Rosamond Dry Lake to provide resurfacing; depth uncertain
  - v. Surface flows are retained on lakebed and are acted on by wind to create waves that smooth out the sediments on the lakebed surface
  - vi. There is also a biological layer of bacteria, fungi, and algae that form a matrix that acts to prevent the escape of dust
  - vii. Freshwater shrimp live on lakebed and provide food source for birds
  - viii. Alkaline Mariposa Lily is dependent on periodic surface flows; located in West Lancaster and Rosamond; it is a “species of concern” that populates along Amargosa and Cottonwood creeks; grows in “wet meadows” and required sheet flow; West Mojave Plan designates land south of EAFB as conservation area for Alkaline Mariposa Lily
  - ix. Piute wetlands existed before LACSD facilities and effluent discharges in a different configuration; wetlands also need sheet flows
  - x. EAFB had been hoping to develop a flow volume needed for the lakebed; may undertake watershed study at a later date
- d. Wendy Reed commented on storm flows from the perspective of the AV Conservancy:
  - i. storm flows that originate in the upper reaches have a different water quality than other flows, particularly effluent from the LACSD Lancaster water reclamation plant; this water quality has a specific impact on downstream ecology

- ii. The viability of surface flow channels affects the habitats of many species
  - iii. Suggested including geographic information from the National Wetlands Registry designations for wetlands in the AV
- e. Various Flood Committee members from the municipalities, water districts, and LA County commented on localized flood issues:
  - i. Lake Los Angeles has recurrent street flooding
  - ii. Palmdale on 35<sup>th</sup> Street East
  - iii. Amargosa Creek sheet flow below Avenue G
  - iv. Flooding at “rocket site”
  - v. Flooding at Avenue K, 60<sup>th</sup> St. West to 30<sup>th</sup> St. West
- f. Matt Knudson gave a brief description of the Littlerock Dam Sediment project:
  - i. 4,500 AF of storage reduced to 3,500 AF
  - ii. Receives up to 54,000 cubic yards of sediment per year
  - iii. 250,000 - 500,000 cubic yards will be removed
  - iv. Disposal plan is for quarry near Littlerock Wash
- 5. Meeting was adjourned at 4:50 pm.

**ACTION ITEMS:**

1. **Additional flood documents -**
  - a. Committee members to provide additional existing flood-related documents to RMC for inclusion in Existing Flood Documents Matrix
  - b. RMC to continuously update the Matrix and eventually finalize it as an appendix in the updated IRWM Plan
  - c. RMC to continue inquiries to Kern County Planning Department
2. **Localized flood issues -**
  - a. Gordon Phair to provide RMC with list of flood areas in Palmdale after consulting with the stormwater group
  - b. Carlyle Workman to provide RMC with list of flood areas in Lancaster
  - c. LACDPW, Flood Control District to provide RMC with list of flood areas in unincorporated county areas
  - d. RMC to follow up with Kern County
3. **Next Steps:**
  - a. RMC to follow up on Lake Los Angeles flood issues in DAC Committee
  - b. RMC to prepare brief summary of Flood Committee actions to report at next Stakeholder meeting on June 20<sup>th</sup>
  - c. RMC to prepare draft deliverable for “Flood Protection Needs” that will be discussed at the next Flood Committee meeting



# UPDATING THE ANETLOPE VALLEY IRWMP TO ADDRESS FLOOD MANAGEMENT

## FLOOD MANAGEMENT KICKOFF MEETING

Presented By:  
BRIAN DIETRICK, PE  
TOM WEST, PE  
BRUCE M. PHILLIPS, MS, PE

JUNE 6, 2012 | A050



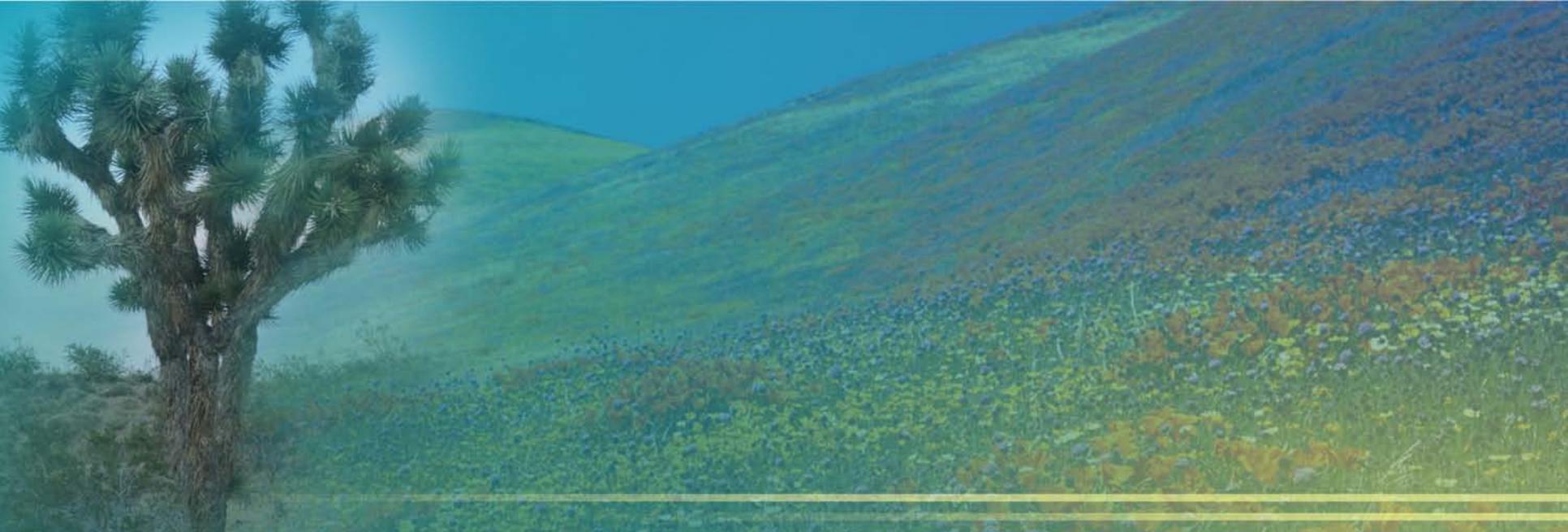
# Presentation Program Outline

**INTEGRATED FLOOD MANAGEMENT**

**STATEWIDE FLOODPLAIN PLANNING**

**IFM FOR ANTELOPE VALLEY**

**WORKSHOP FORUM DISCUSSION**



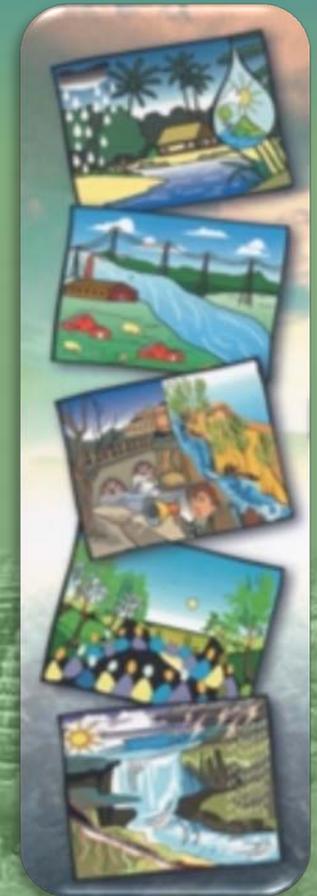
# Integrated Flood Management



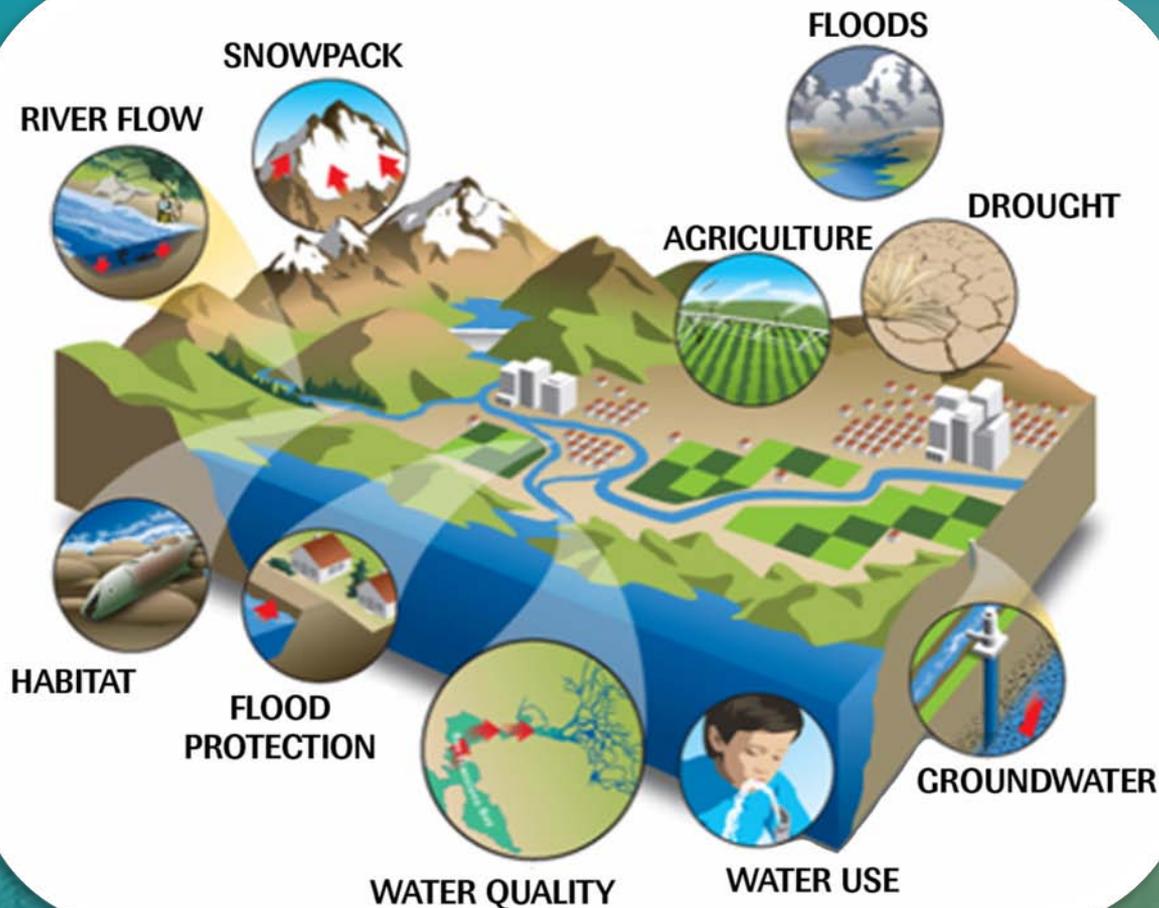
# Integrated Flood Management – Adopting a System Approach

## Holistic approach for dealing with flood risks:

- Interconnection flood management actions within water resources management and land use planning
- Value of coordinating across geographic and agency boundaries
- Need to evaluate opportunities and impacts from a “system” perspective
- Importance of environmental stewardship and sustainability



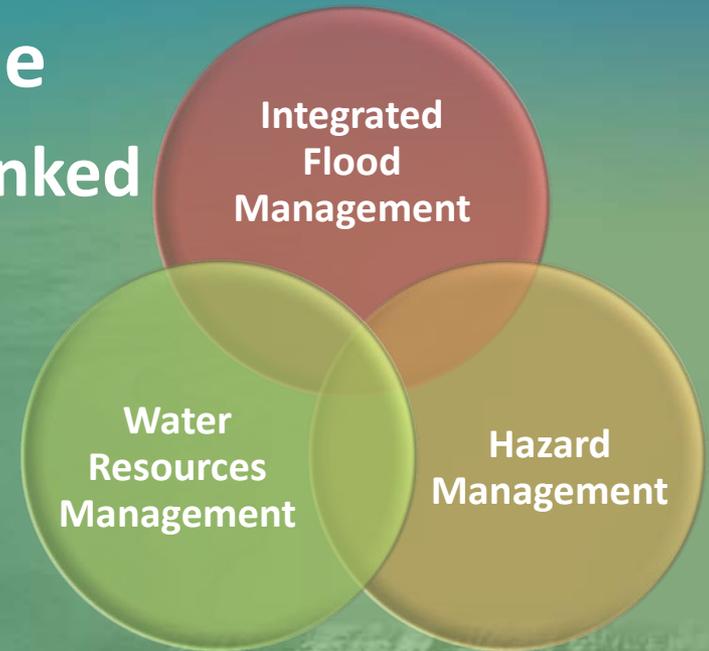
# Integrated Approach Focus on Entire Watershed System



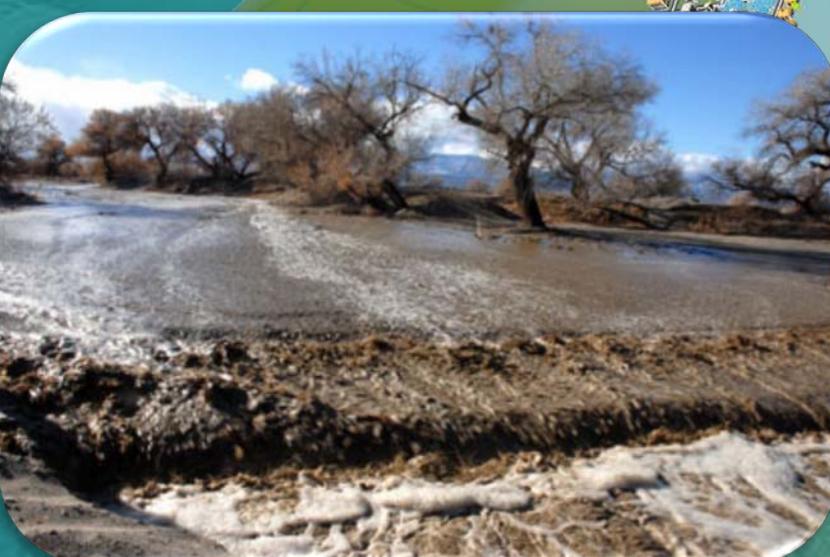
- Entire hydrologic cycle considered
- Watershed system not political boundaries
- Requires effective communication across institutional boundaries

# Integrated Flood Management Principles Guide Approach

- Manage water cycle as a whole
  - Groundwater and floodwater linked resources
  - Sustainability
- Integrate land and water management
  - Water quantity / quality / erosion and deposition
- Adoption of flexible strategies
  - Tailored to different constraints



# Addressing Regional Flood Management Constraints / Issues



# Traditional Flood Protection Approach Inherent Limitations

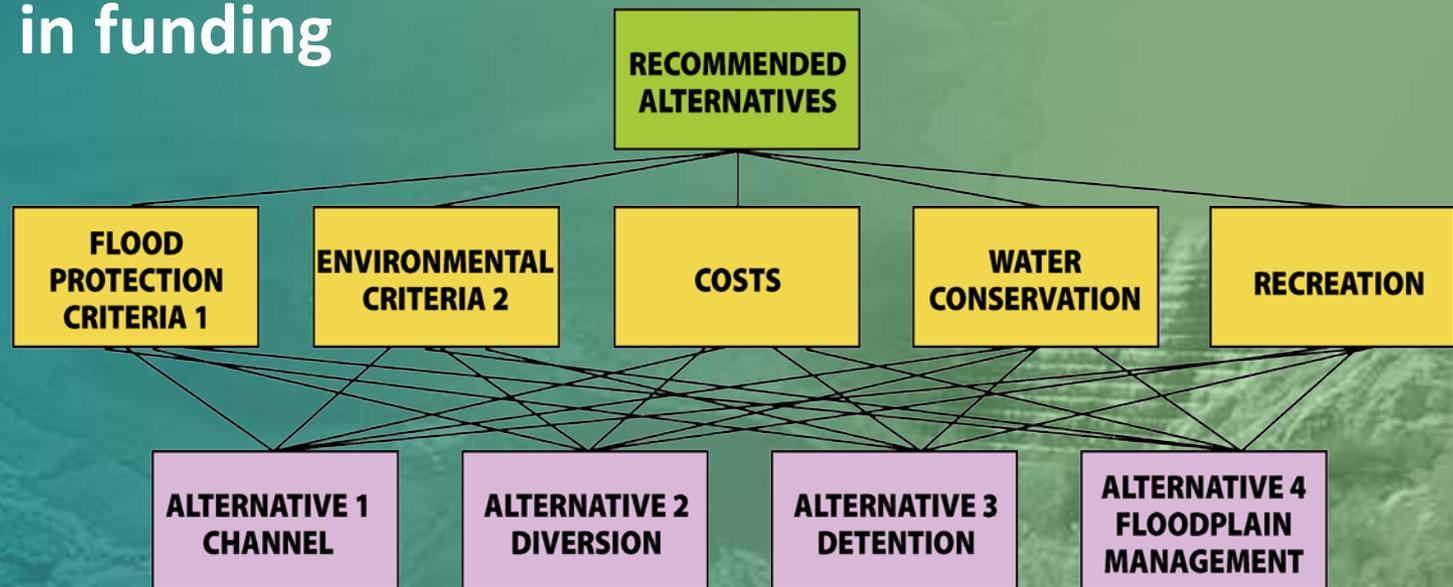
- Single focus on public safety
- Limited by previous land use and development decisions
- No priority given to other water resource benefits
- Little/No stakeholder involvement
- No system-wide approach
- One-time study only, no iterative approach



# Integrated Flood Management

## Combines Water and Flood Benefits

- Flood management cannot be performed separately from decisions on landuse/water supply/safety/envirom
- Watershed plan integrating other water resource programs foundation for focused stakeholder advocacy assists in funding

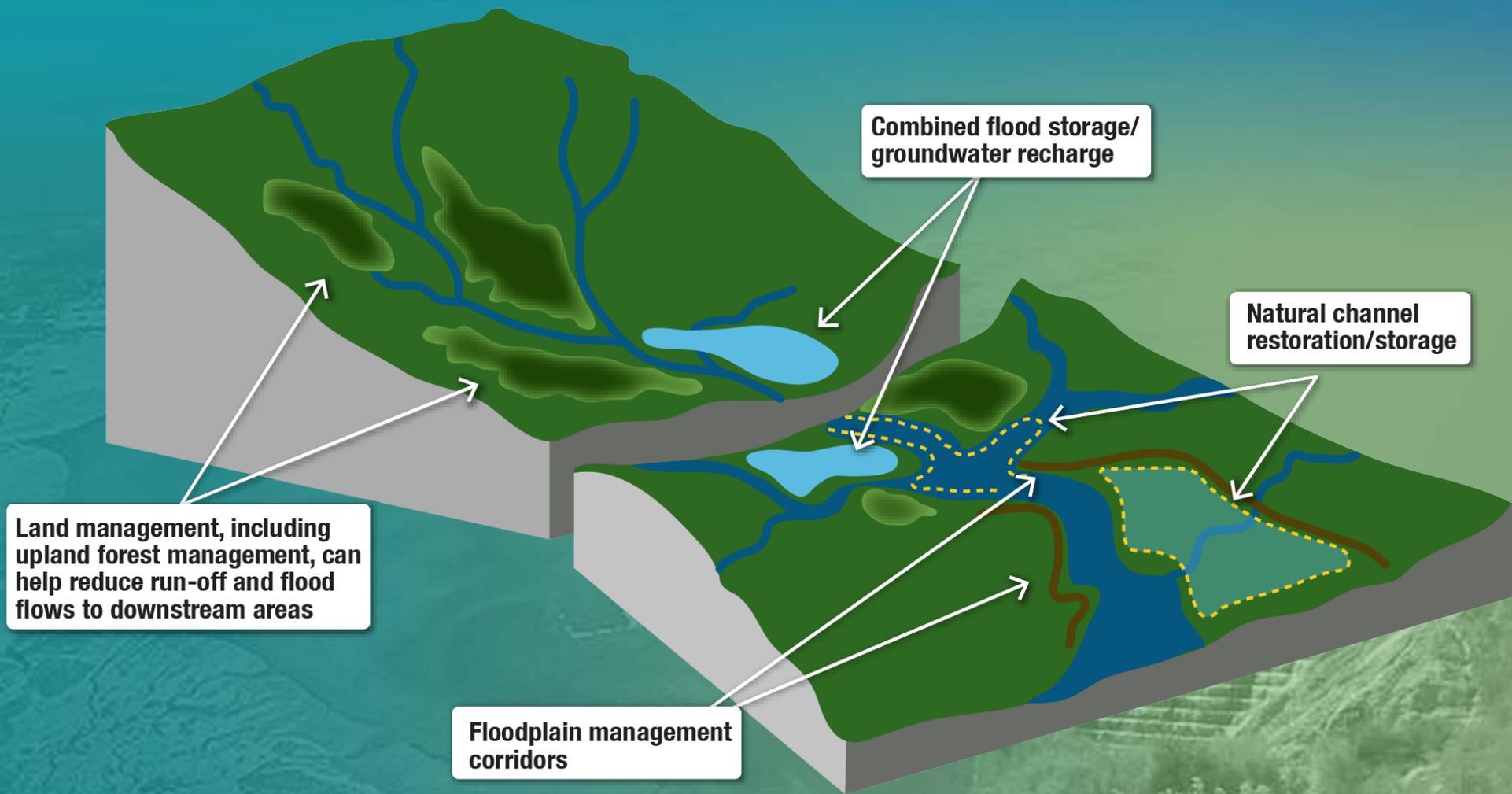


# Advantages of Integrated Flood Management

- Respects the **natural** hydrologic processes
- Focuses on the **cause** of the damage not the symptom
- Considers the **entire watershed** not just local condition
- Includes public **participation** and interagency **coordination**
- Embraces other water resource **protection goals**



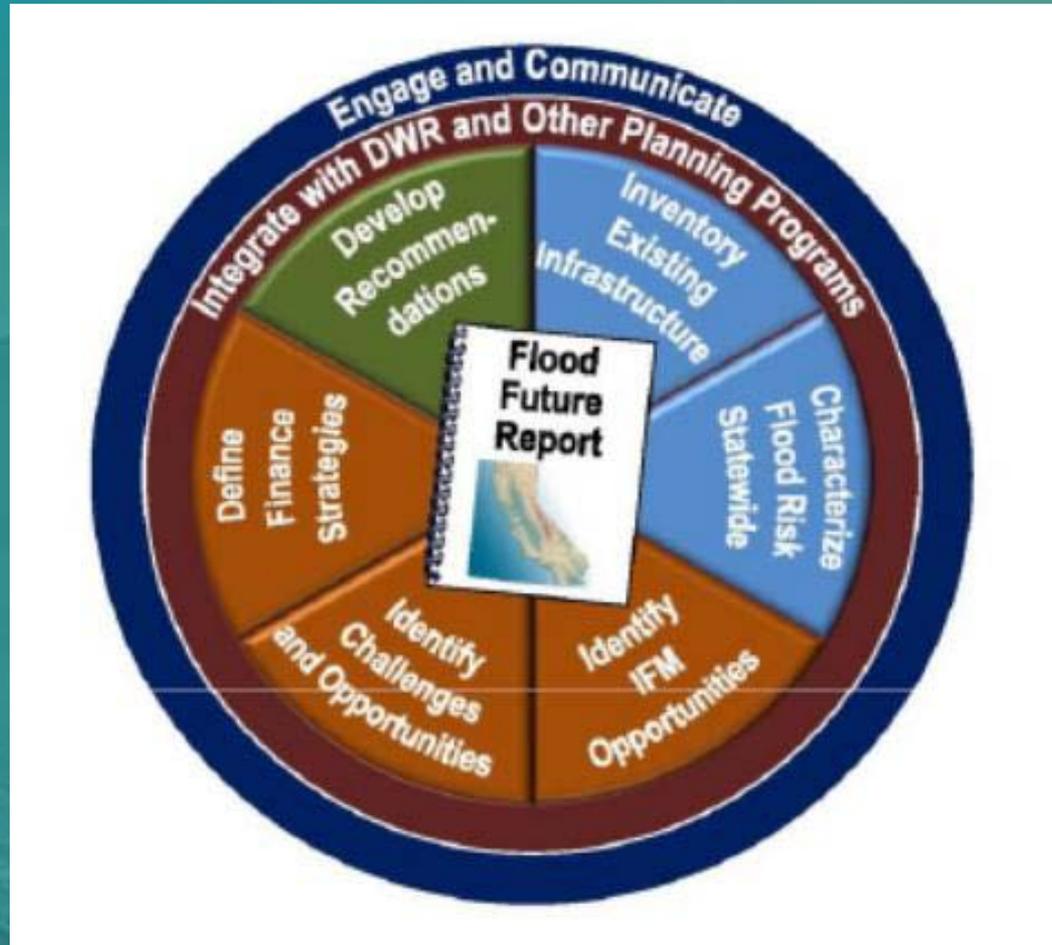
# Common Examples Integrated Flood Management (IFM) Approaches



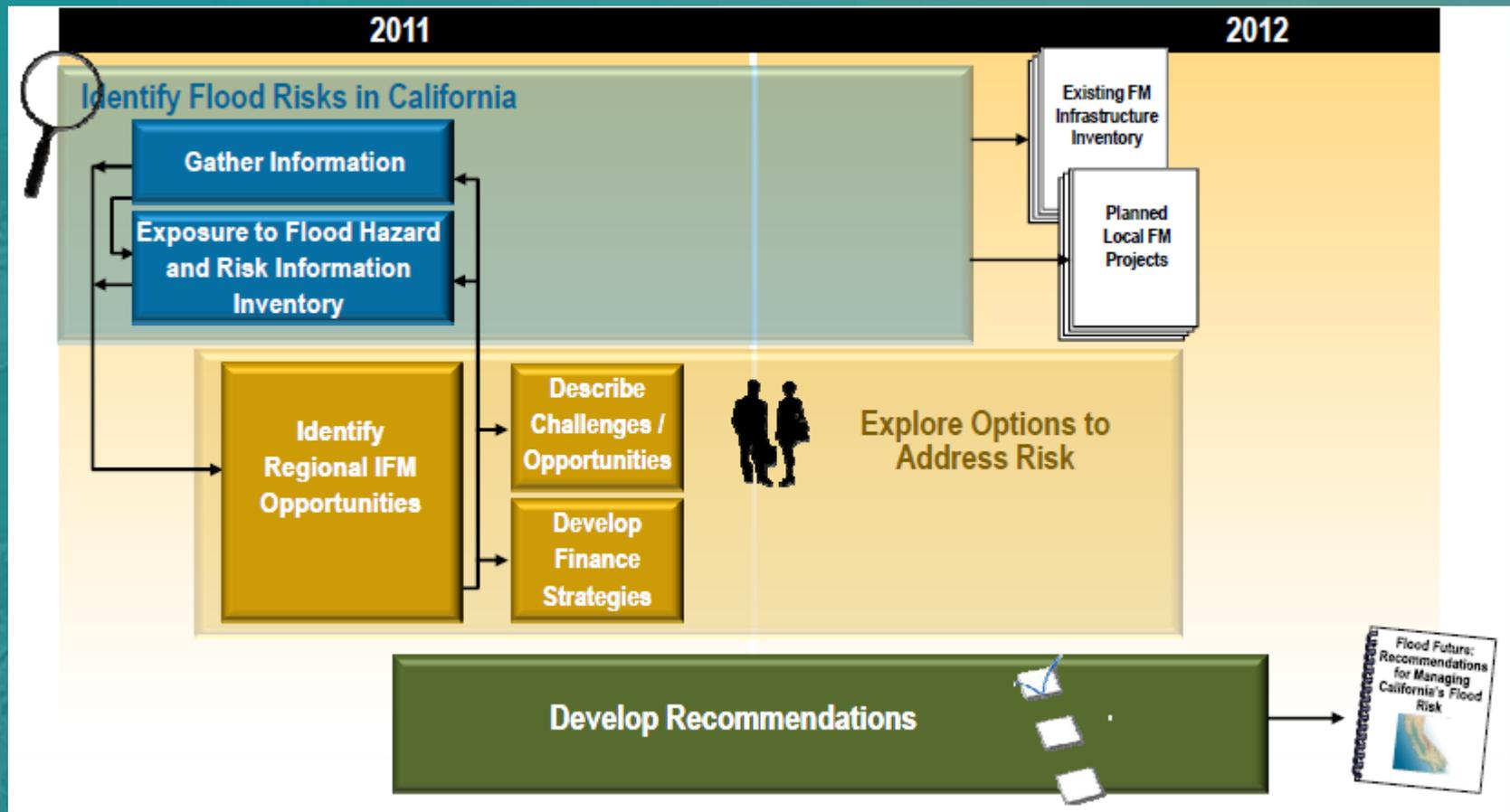


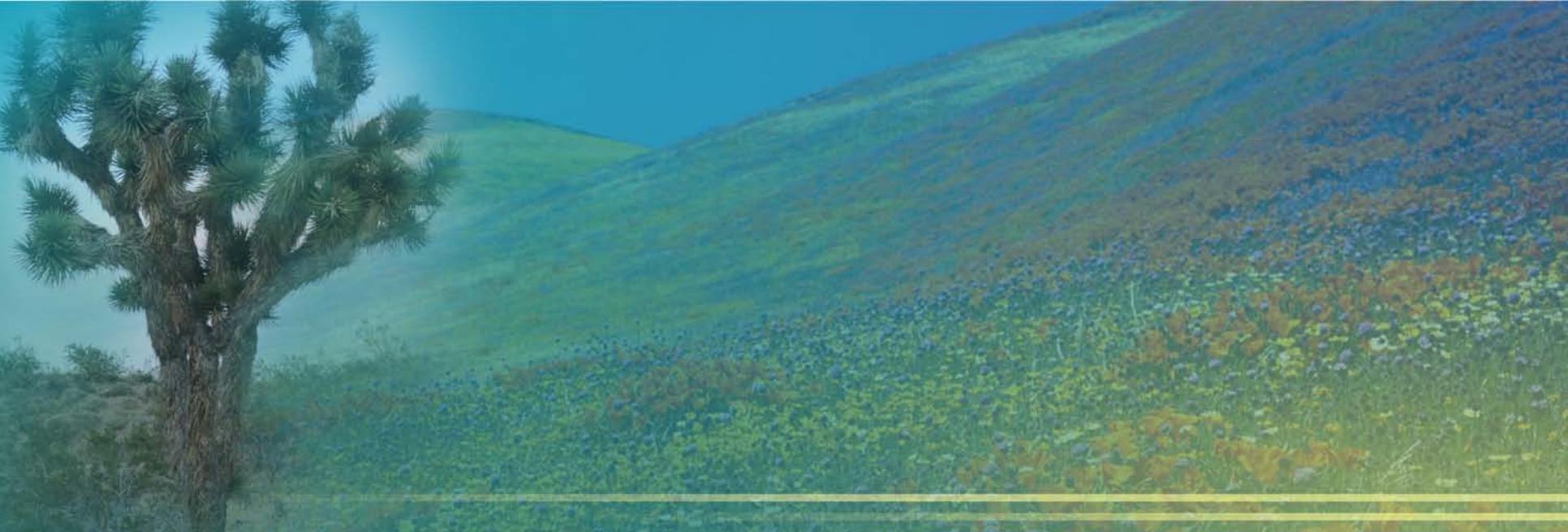
# Statewide Floodplain Management Planning - DWR

# Key Goal of SFMP Program is Aligned with IRWM Study



# Statewide Floodplain Management Planning Study





# Integrated Flood Management for the Antelope Valley





CALIFORNIA  
AQEDUCT

Tehachapi Mountains

LOS ANGELES  
AQEDUCT

California  
City

Mojave

ROGERS  
DRYLAKE

Boron

San Bernardino County

Edwards

ROSAMOND  
DRYLAKE

BUCKHORN  
DRYLAKE

MOVAJE

Kern County

ANTELOPE VALLEY

Los Angeles County

DESERT

FAIRMONT  
RESERVOIR

LAKE  
HUGHES

Lancaster

Palmdale

AMARGOSA  
CREEK

ANAVERDE  
CREEK

LAKE  
PALMDALE

Littlerock

LITTLEROCK  
WASH

LITTLEROCK  
RESERVOIR

BIG ROCK  
WASH

Antelope Valley

Edwards Air Force Base



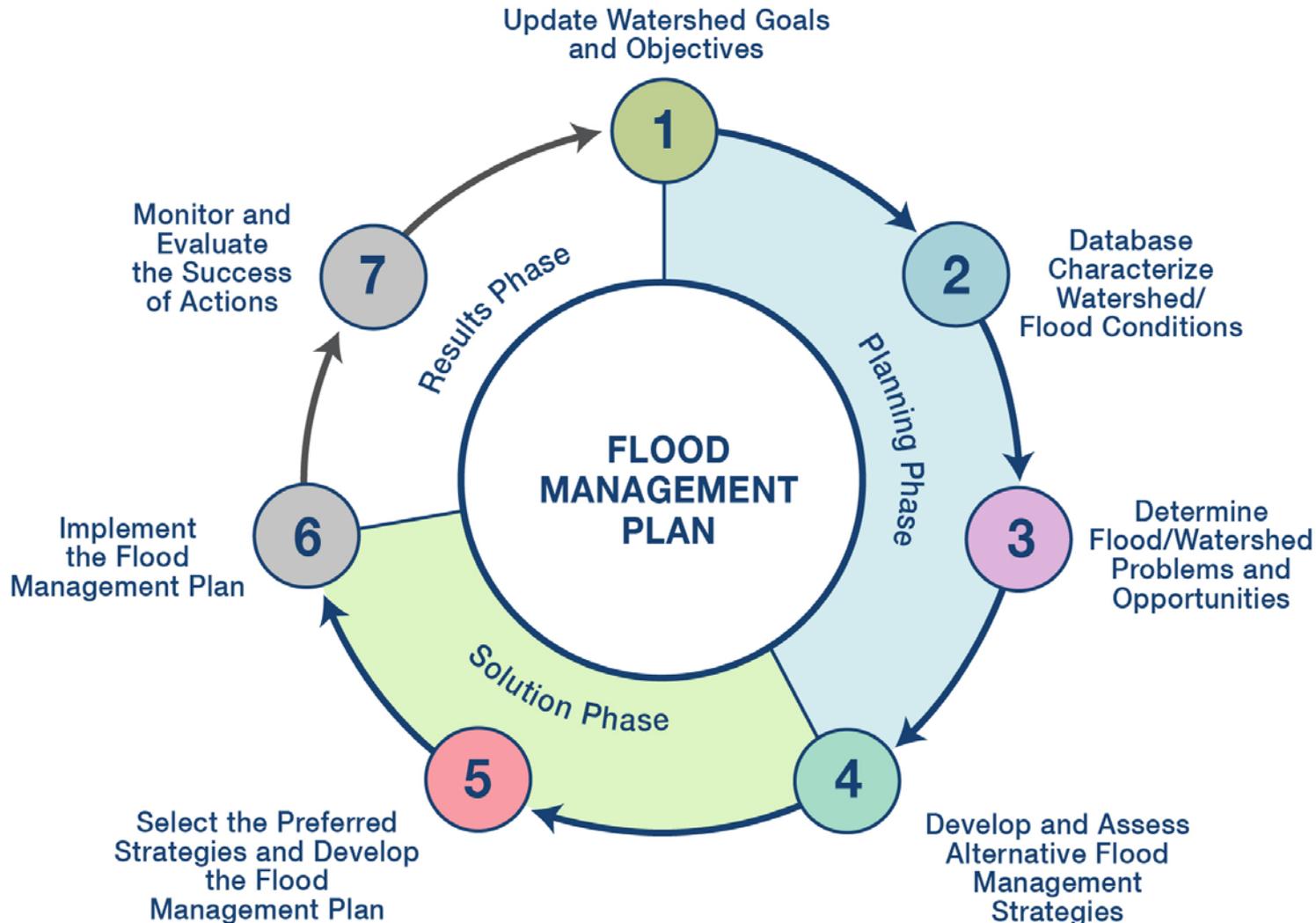
San Gabriel Mountains

# Importance of Integrated Floodplain Management in IRWM Update

- DWR guidelines emphasize importance of integrated flood management (IFM)
- Scoring on recent Prop 84 grant proposal included focus on IFM
- IFM must be addressed in IRWM update to ensure ability to secure maximum funding
- Competitive IFM projects should be incorporated into the IRWM project database



# Watershed Planning Process for Integrated Flood Management Plan



# Subtask 2.3.1: Catalog and Review Existing Flood Management Plans

## Purpose

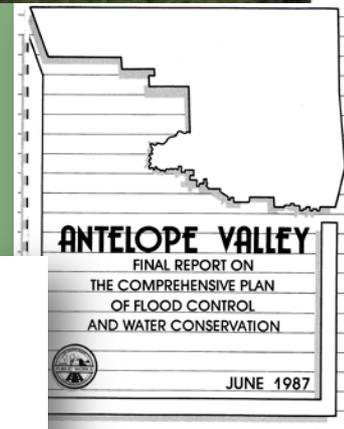
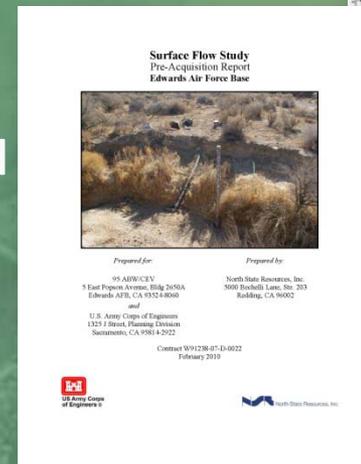
- Assemble a list of all existing flood management plans and related documents to be reviewed by the Flood Management Committee

## Deliverable(s)

- Draft and final flood management matrix on existing plans/documents

## Input Needed from Flood Committee

- Additional documents not listed
- Information on near-term and long-term flood control projects



# Subtask 2.3.2: Document Flood Protection Needs

## Purpose

- Document existing flood protection needs in the AV IRWMP region

## Deliverable(s)

- Draft and final memo of flood protection needs

## Input Needed from Flood Committee

- Participation
- Review of memo



# Understanding Needs / Existing Plans / Constraints

## NEEDS

**Flood Hazards Mapping**

**Key Hot Spots**

**Repetitive Flood Damage Losses**

**Critical Facilities/  
Lifetime**



**Existing Plans**

**Existing Facilities**

**Regulatory Requirements**



## CONSTRAINTS

**Regulatory**

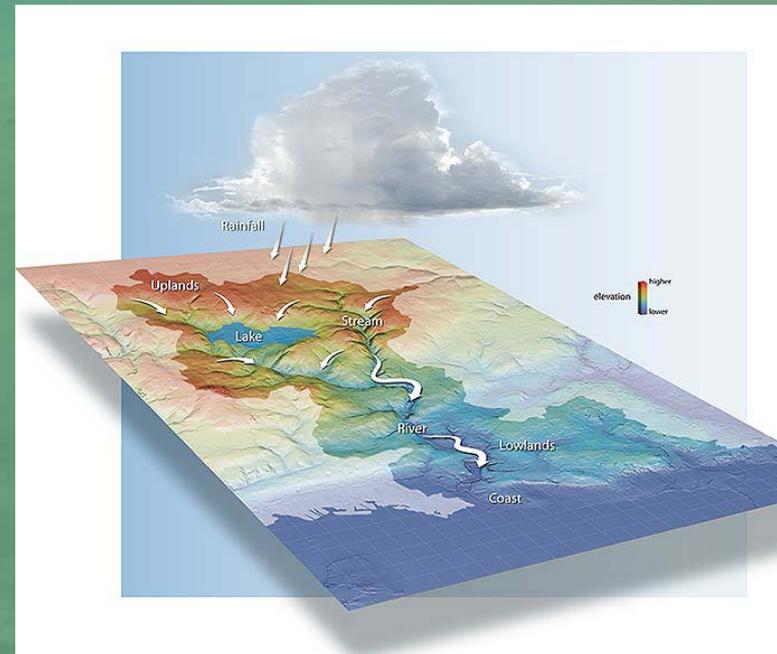
**Stakeholder Conflicts**

**Physical Limitations**

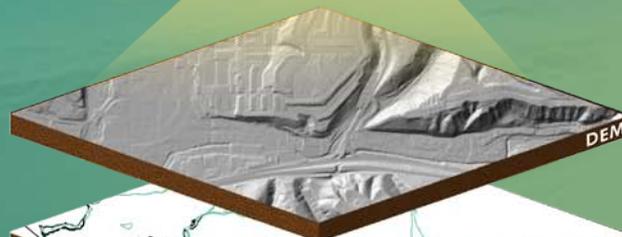
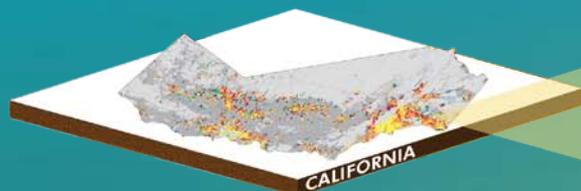
**Environmental Permitting**

# Watershed and Flood hazards understanding

- Understanding actual problems requiring solutions
  - Existing and future flood risk
  - Level of Risks
  - Sources of Flooding
  - Priorities
- Constraints related to flood management
  - Regulatory
  - Physical



# Planning Level Tools for Assessing Level of Risk to Provide Most Benefit



FIT

ASSETS

- GIS Database
- Integrate Flood Hazards and landuses
- Define opportunities and constraints

**"WHAT IF"**  
**SOLUTIONS**

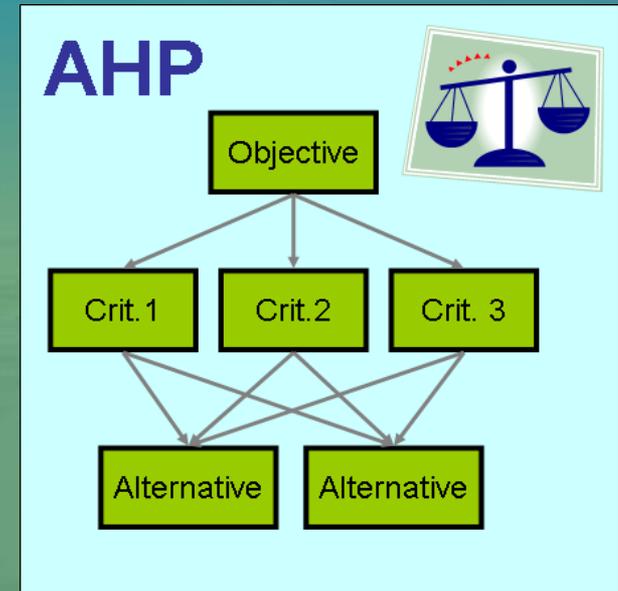
# Subtask 2.3.3: Develop Methodology to Catalog and Prioritize Flood Projects

## Purpose

- Develop methodology to catalog and prioritize flood protection projects

## Deliverable(s)

- Draft and final memo of methodology to prioritize flood protection



## Input Needed from Flood Committee

- Participation
- Review memo

| Target Objective   | Comparison Objectives |               |                    |                    |               |       |            |                   | Simplified Eigen Vector | Normalized Weighting |
|--------------------|-----------------------|---------------|--------------------|--------------------|---------------|-------|------------|-------------------|-------------------------|----------------------|
|                    | Flood Protection      | Water Quality | Water Conservation | Sediment Transport | Environmental | Costs | Recreation | Economic Benefits |                         |                      |
| Flood Protection   | 6                     | 7.8           | 5                  | 4.6                | 8             | 4.8   | 8.8        | 7.4               | 6.364325938             | 13.5%                |
| Water Quality      | 4.2                   | 6             | 6.2                | 5.8                | 7.2           | 6.2   | 8.8        | 7.2               | 6.32550127              | 13.5%                |
| Water Conservation | 7.0                   | 5.8           | 6                  | 6.75               | 7             | 6.25  | 9          | 8                 | 6.906952214             | 14.7%                |
| Sediment Transport | 7.4                   | 6.2           | 5.3                | 6                  | 7.25          | 6     | 9          | 6.5               | 6.617552352             | 14.1%                |
| Environmental      | 4.0                   | 4.8           | 5.0                | 4.8                | 6             | 4.5   | 8.25       | 6.5               | 5.339025425             | 11.4%                |
| Costs              | 7.2                   | 5.8           | 5.8                | 6.0                | 7.5           | 6     | 10.25      | 6.75              | 6.783869223             | 14.4%                |
| Recreation         | 3.2                   | 3.2           | 3.0                | 3.0                | 3.8           | 1.8   | 6          | 3.25              | 3.228165555             | 6.9%                 |
| Economic Benefits  | 4.6                   | 4.8           | 4.0                | 5.5                | 5.5           | 5.3   | 8.75       | 6                 | 5.412375018             | 11.5%                |

# Subtask 2.3.4: Develop a Regional Vision for Multi-Benefit Flood Protection

## Purpose

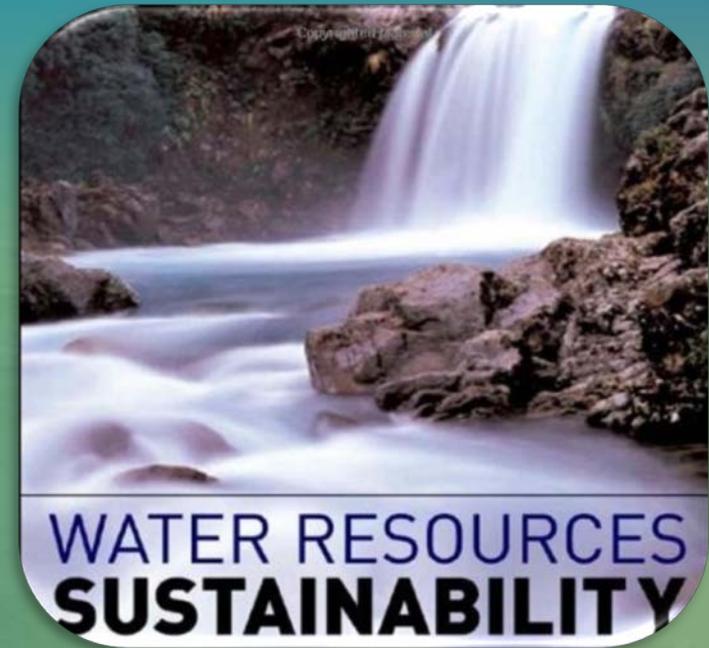
- Develop a regional vision for what, how, and where multi-benefit flood projects shall be developed based on regional needs

## Deliverable(s)

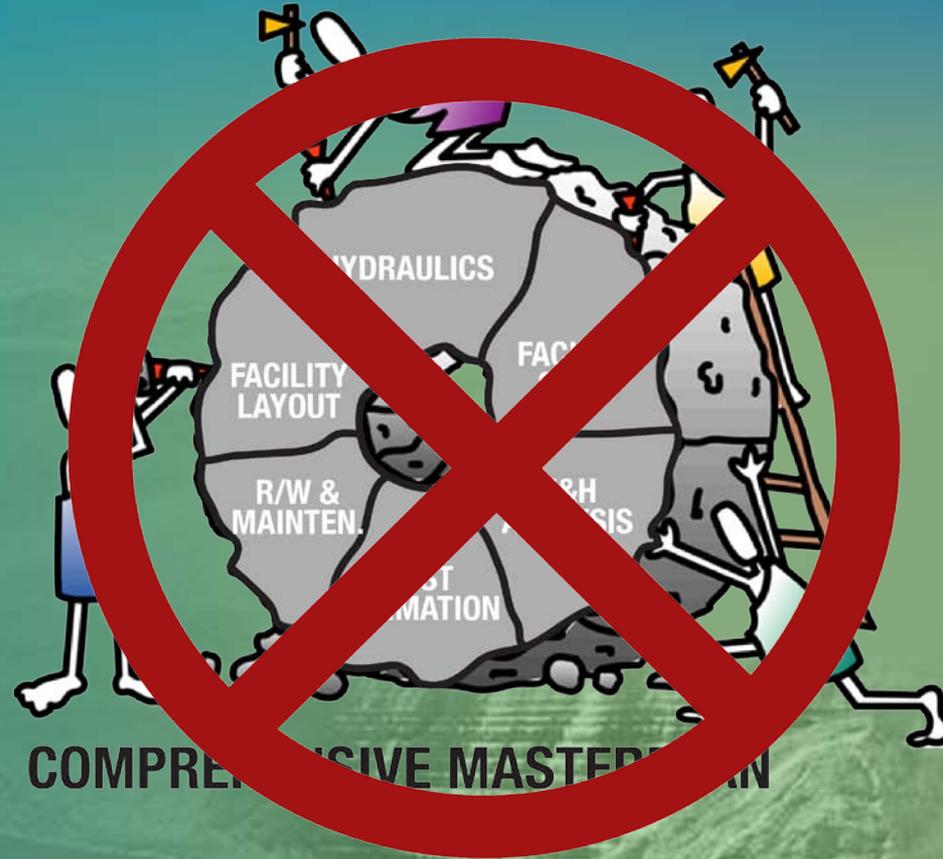
- Draft and final vision for multi-benefit flood protection, project opportunities and institutional and funding arrangements

## Input Needed from Flood Committee

- Participation
- Review of draft vision



# Framework of IFM Watershed Specific Strategies to Develop Projects



# Subtask 2.3.5: Facilitate Regional Participation in NFIP CRS

## Purpose

- Provide memorandum on what residents can do to become involved in the CRS

## Deliverable(s)

- Draft and final memorandum promoting involvement in CRS

## Input Needed from Flood Committee

- Participation
- Review memo



# IFM Requirements in NFIP CRS

- CRS assigns credit points in 18 public information and floodplain management activities (four general areas)
  1. Public Information
    - Elevation certificates, map information service, outreach projects, flood protection information, flood protection assistance
  2. Mapping and Regulations
    - Additional flood data, open space preservation, higher regulatory standards, flood data maintenance, stormwater management
  3. Flood Damage Reduction
    - Floodplain management planning, acquisition and relocation, flood protection, drainage system maintenance
  4. Flood Preparedness
    - Flood warning program, levee safety, dam safety



# Subtask 2.3.6: Facilitate Coordination between Flood Protection Efforts and Stormwater Quality Efforts

## Purpose

- Asses opportunities for coordination of flood control efforts and stormwater quality efforts within the AV IRWMP region

## Deliverable(s)

- Draft and final memo on coordination between flood protection and stormwater quality

## Input Needed from Flood Committee

- Participation
- Review memo

Water Quality



Flood Control



# Subtask 2.3.7: Compile Integrated Flood Management Plan

## Purpose

- Develop a comprehensive Integrated Flood Management Plan for the AV IRWMP Region
- Guidance document for IFM strategies and implementation

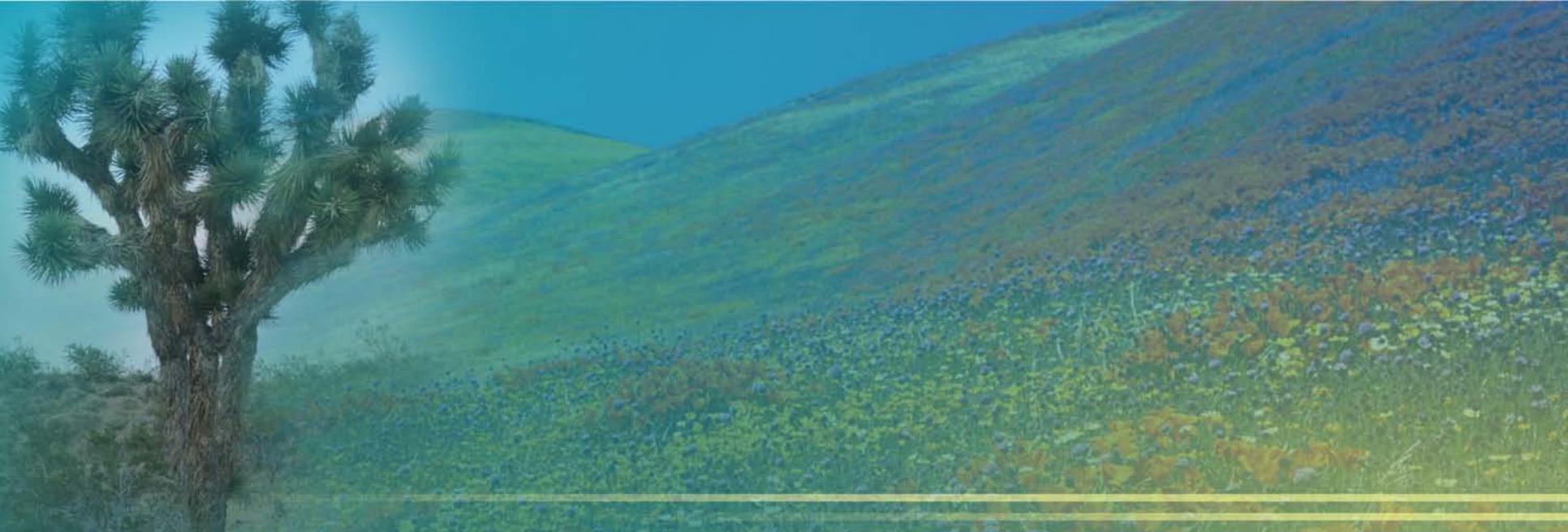
## Deliverable(s)

- Draft and final Flood Management Plan Appendix to the IRWM Plan

## Input Needed from Flood Committee

- Participation
- Review Flood Management Plan

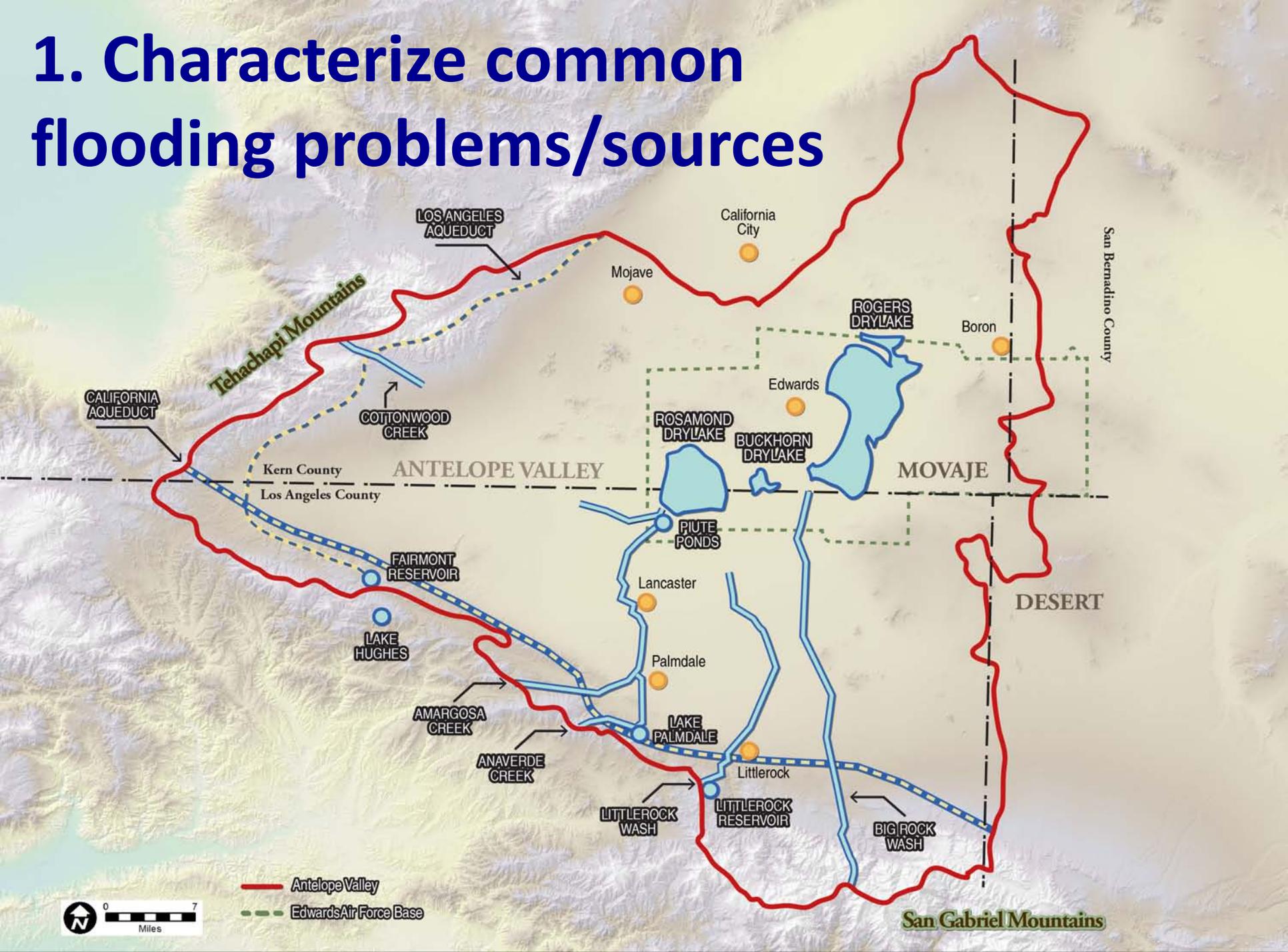




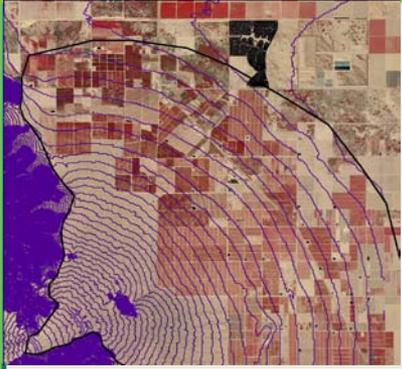
# Workshop Forum Discussion



# 1. Characterize common flooding problems/sources



# Common Watershed Flood Problems / Sources



**ALLUVIAL FAN FLOODING**



**UNDEFINED NATURAL CHANNELS**



**LATERAL FLOODPLAIN EROSION**



**URBAN FLOODING**



**EROSION/SEDIMENT DEPOSITION**



**FLASHY STORM EVENTS**

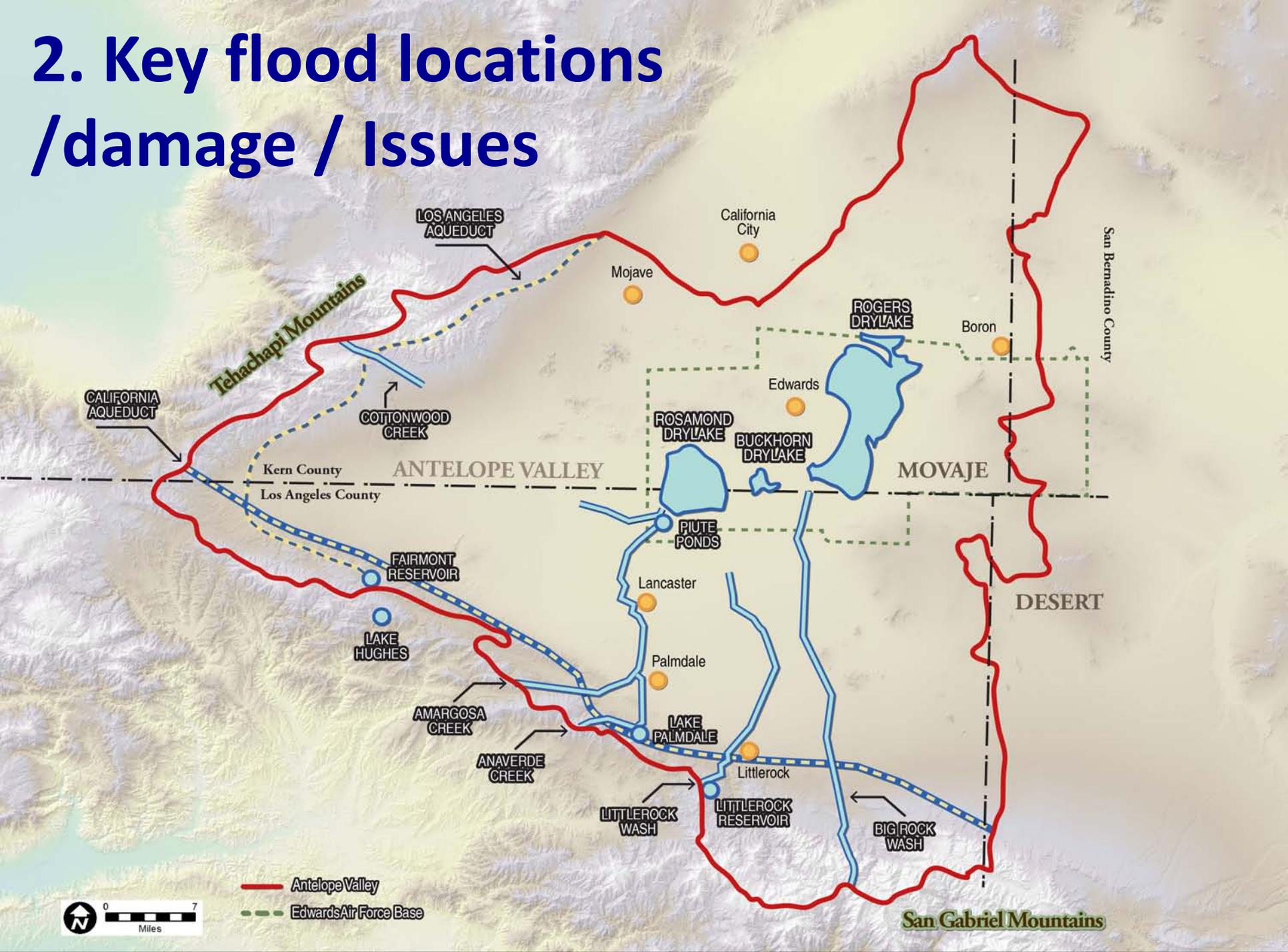


**HYDRAULIC CONVEYANCE CAPACITY**



**LIMITED FLOOD CONTROL FACILITIES**

# 2. Key flood locations /damage / Issues

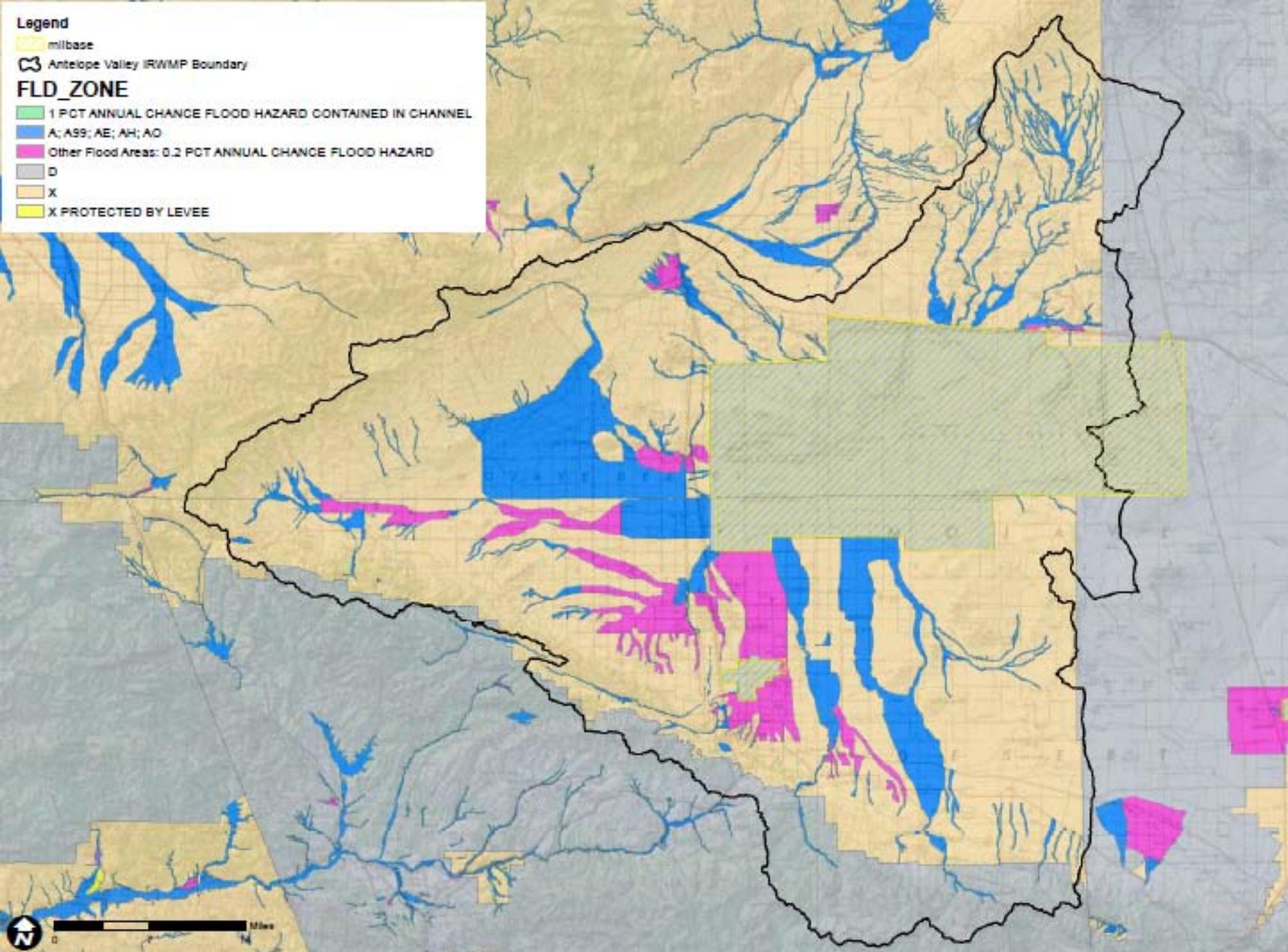


**Legend**

- milbase
- Antelope Valley IRWMP Boundary

**FLD\_ZONE**

- 1 PCT ANNUAL CHANCE FLOOD HAZARD CONTAINED IN CHANNEL
- A; ASS; AE; AH; AO
- Other Flood Areas: 0.2 PCT ANNUAL CHANCE FLOOD HAZARD
- D
- X
- X PROTECTED BY LEVEE



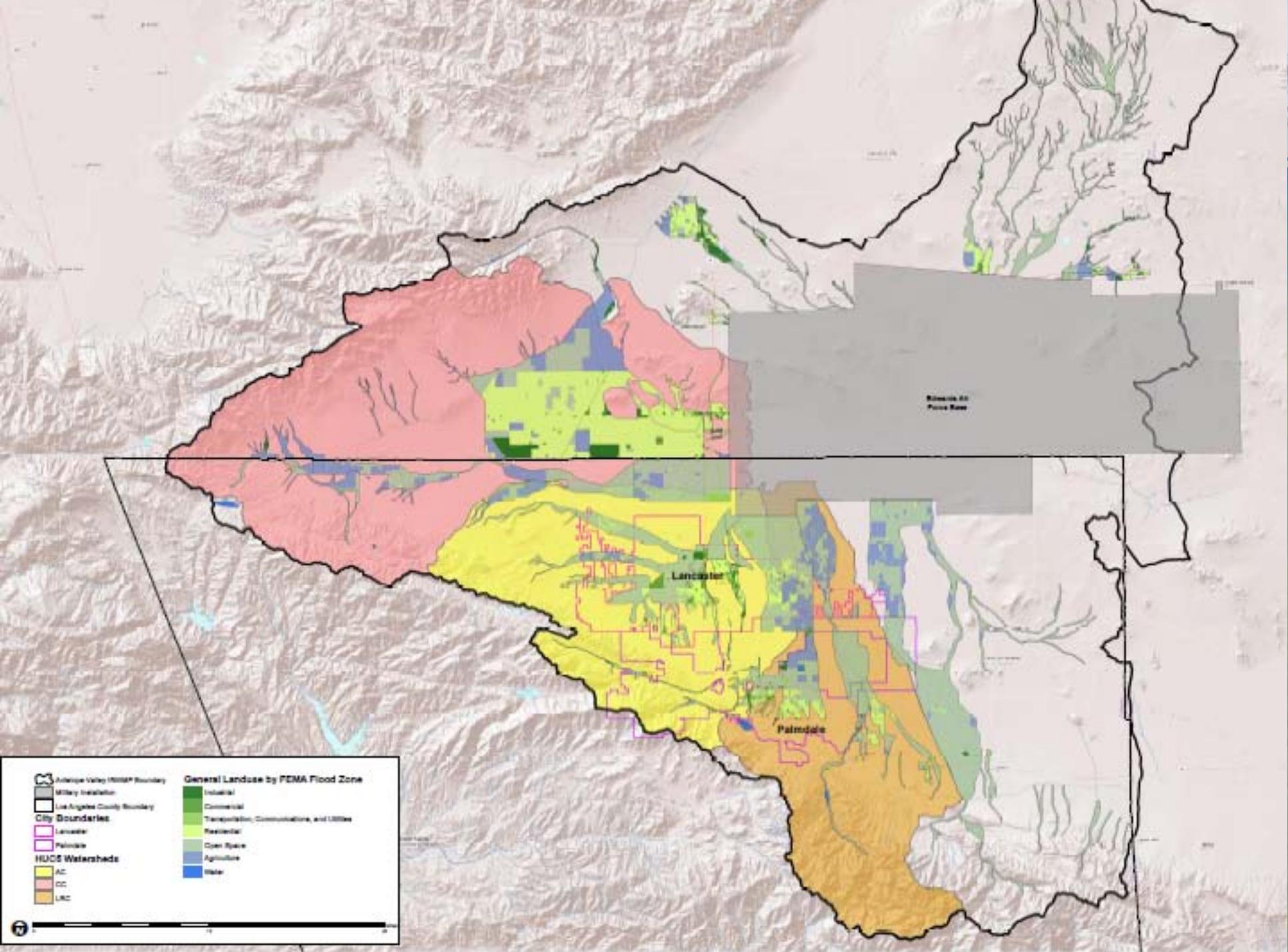
# 3. Discussion of Existing Flood Control Masterplans





# 4. Opportunities /priorities / constraints for flood management





Blowhole #1  
Pond Basin

Lancaster

Palmdale

|                        |                                    |  |   |
|------------------------|------------------------------------|--|---|
|                        | Antelope Valley Watershed Boundary |  | Industrial                                    |
|                        | Military Installation              |  | Commercial                                    |
|                        | Los Angeles County Boundary        |  | Transportation, Communications, and Utilities |
| <b>City Boundaries</b> |                                    |  | Residential                                   |
|                        | Lancaster                          |  | Open Space                                    |
|                        | Palmdale                           |  | Agriculture                                   |
| <b>HUC8 Watersheds</b> |                                    |  | Water   |
|                        | AC                                 |  |   |
|                        | CC                                 |  |   |
|                        | LAC                                |  |   |



# Defining Priorities Existing Flood Risks

| General Landuse                               | Anaverde         | Cottonwood       | Little Rock      |
|---|------------------|------------------|------------------|
| Agriculture                                   | 3,855            | 18,034           | 9,354            |
| Commercial                                    | 1,453            | 1,162            | 713              |
| Industrial                                    | 705              | 3,706            | 242              |
| Open Space                                    | 30,982           | 23,586           | 25,859           |
| Residential                                   | 4,439            | 40,444           | 4,905            |
| Transportation, Communications, and Utilities | 1,314            | 748              | 362              |
| Water   | 18.7             | 19.8             | 460.0            |
| <b>Total</b>                                  | <b>42,769 ac</b> | <b>87,703 ac</b> | <b>41,897 ac</b> |



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