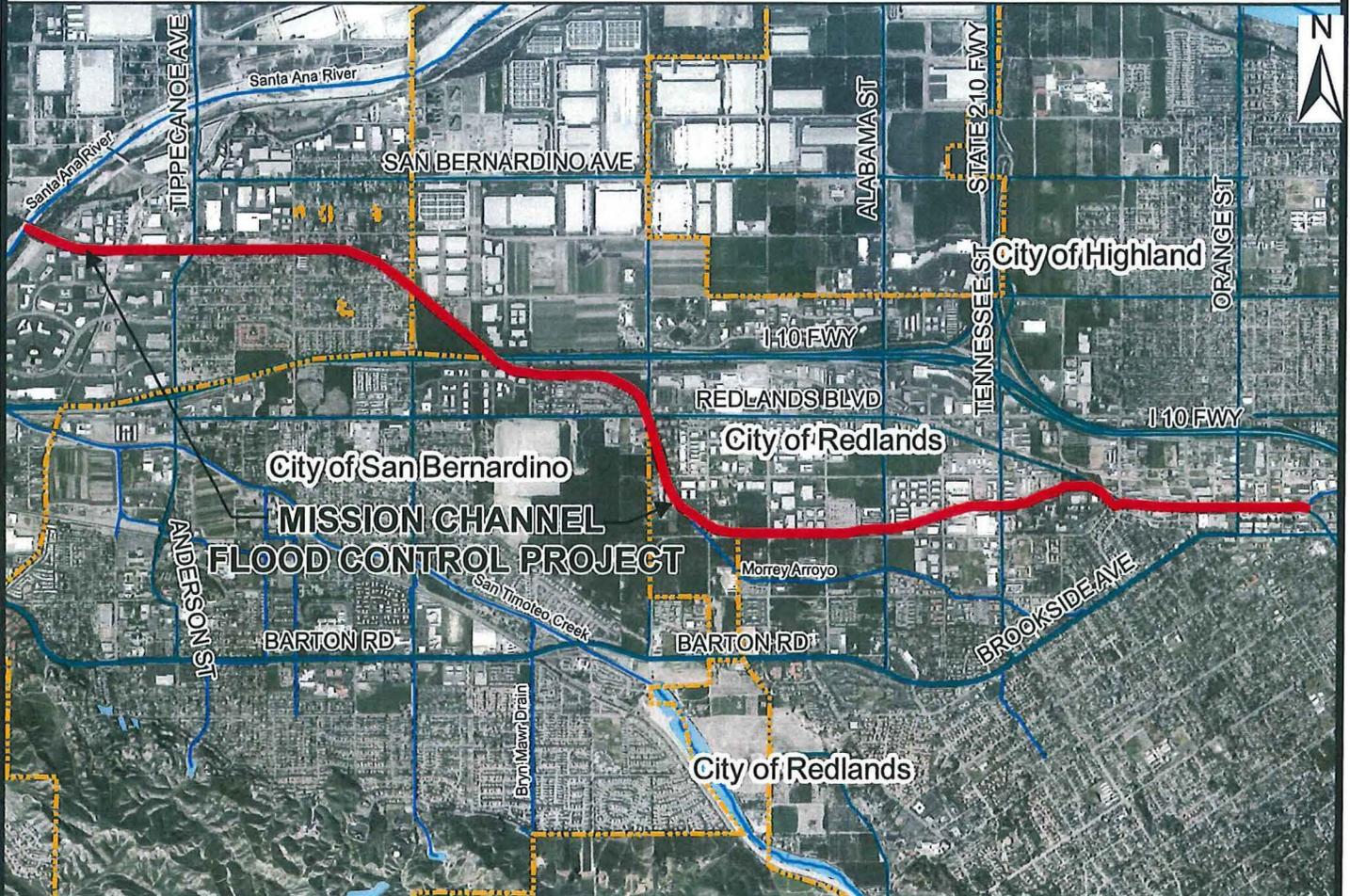


Proposal to:

U.S. Army Corps of Engineers  
Attn: CECWCE Lisa Kiefel  
441 G. Street NW.,  
Washington, DC 23014-1000

Mission Zanja Drainage Area  
Proposed Feasibility Study



4,000 2,000 0 4,000 Feet

**Legend**

- City Boundaries
- Major Roads
- Channels



- Project Sponsors:
- City of San Bernardino
  - City of Loma Linda
  - City of Redlands



San Bernardino County Flood Control District





**Department of Public Works**  
Environmental & Construction • Flood Control  
Operations • Solid Waste Management  
Surveyor • Transportation

Gerry Newcombe  
Director

November 25, 2014

U.S. Army Corps of Engineers  
441 'G' Street NW  
Washington, DC 20314-1000

Attn: CECW-CE  
Lisa Kiefel

Dear Ms. Kiefel:

The San Bernardino County Flood Control District, San Bernardino County, State of California, is pleased to submit the proposed Mission-Zanja Drainage Area for your consideration as a feasibility phase study.

The communities within this proposed feasibility study area include some which are disadvantaged in nature and also can experience significant flash flooding from a varied terrain. These flows pass through the Cities of Redlands, Loma Linda, San Bernardino and unincorporated areas of the County of San Bernardino. We would appreciate the opportunity to partner with U.S. Army Corps of Engineers to conduct this most needed feasibility study.

Thank you for your consideration.

Respectfully yours,

A handwritten signature in blue ink that reads "Kevin Blakeslee".

**KEVIN BLAKESLEE, P.E.**  
Deputy Director, Flood Control

KB:KCE:DL:dja

Enclosure

**BOARD OF SUPERVISORS**

ROBERT A. LOVINGOOD  
First District

JANICE RUTHERFORD  
Chair, Second District

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Third District

GARY C. OVITT  
Vice Chair, Fourth District

JOSIE GONZALES  
Fifth District

GREGORY C. DEVEREAUX  
Chief Executive Officer

## MISSION-ZANJA DRAINAGE AREA

The San Bernardino County Flood Control District (District), San Bernardino County, California has been working with the US Army Corps of Engineers since the 1940's to provide flood protection for the inhabitants of the County of San Bernardino. Our goal is to continue to search for projects that include elements of protection for the community and areas of habitat enhancement that will improve the safety the quality of life for local residents.

To that end, our goal is to partner with the Corps in a *Feasibility Study* for the Mission-Zanja Drainage Area. This study would have implications for the Cities of Redlands, Loma Linda, San Bernardino and unincorporated areas of San Bernardino County.

### PROPOSED PROJECT: MISSION-ZANJA DRAINAGE AREA FEASIBILITY STUDY

The Mission-Zanja Channel (Channel) is located in the western portion of the City of Redlands and the eastern portion of the City of San Bernardino. An existing Channel passes through the City of Redlands, along the northwestern perimeter of the City of Loma Linda, the southerly portion of the City of San Bernardino and a portion of unincorporated area of San Bernardino County. Portions of this channel within the drainage area are antiquated and pre-date the year 1900. The Channel receives runoff from a watershed of approximately nineteen thousand six hundred forty seven (19,647) acres. The Channel is approximately 5 miles long and passes through highly urbanized areas of the Cities of Loma Linda, Redlands and San Bernardino, portions of which are economically disadvantaged communities, consisting of both residential and commercial properties. The Channel is partly rectangular with reinforced concrete; however, much of it exists as earthen segments and rail and wire revetment. Improvement of this facility will provide flood protection to the many residences and businesses along the Mission-Zanja Corridor. Improvements will also increase flood protection for transportation infrastructure, which includes railroads and local roads such as California Street, Redlands Boulevard, Tippecanoe Avenue, local utility corridors, and et.al.

### PURPOSE:

Our desire is to pursue an insightful study to obtain data and presumably to assist in the design of protection alternatives to alleviate the flood issues throughout the watershed and provide environmental enhancements where possible.

#### LOCAL SUPPORT:

Given the periodic flooding issues that affect the infrastructure described above the interested parties include the City of San Bernardino, City of Loma Linda, City of Redlands and unincorporated San Bernardino County. All entities will have benefit of a *Feasibility Study* in this particular drainage.

The non-monetary benefits to the community include obvious safety concerns with the intense 'flash flood' nature of the storm events that occur and disrupt travel and utilities within all three cities. Within the floodplain and flow-path are two high schools and four elementary schools, which are concerns to the cities. Direct access to local medical facilities is potentially impacted, including a planned Veterans Administrating facility under construction near the channel in Loma Linda.

In addition, monetary benefits in this area include vast economic activity with railroad and trucking industries associated with nationwide commercial warehousing facilities, recently developed in this area. It becomes critical to our District to provide protection to insure employment and economic continuity for the region. Since much of the downstream end of this study area has only interim improvements we have the opportunity to update the system to include some environmental enhancements in selected areas. With the closing of Norton Air Force Base in 1994, the economy has struggled to gain a strong footing. This study and alternatives will provide a potential for improvements to keep much of our floodplain within a defined limit.

#### FINANCIAL CAPABILITY:

The San Bernardino County Flood Control District funds projects through local tax assessments to improve regional systems for the benefit of the public, regardless of the jurisdiction, and has the financial capability to provide funding for the local share portion. We have provided letters of support from local cities and continue to pursue other options for those cities to participate monetarily as the study alternatives are developed. Cost estimate and letters of support are included in this report.

Thank you for the opportunity to submit for this most needed *Feasibility Study* on Mission-Zanja Drainage Area.

## **MISSION ZANJA DRAINAGE AREA / FEASIBILITY STUDY ESTIMATE**

HYDROLOGY:	350,000
HYDRAULICS:	200,000
ENVIRONMENTAL:	125,000
RIGHTS-OF-WAY:	150,000
PROJECT COORDINATION:	250,000
PLAN FORMULATION:	200,000
PRELIMINARY PLANS:	120,000
TOTAL:	1,395,000



City of  
**REDLANDS**

Incorporated 1888  
Municipal Utilities & Engineering Department  
35 Cajon Street, Suite 15A  
Redlands, CA 92373  
909-798-7698

Chris Diggs  
Interim Director

Mike Pool  
Interim City Engineer

November 25, 2014

U.S. Army Corps of Engineers  
441 'G' Street NW  
Washington, DC 20314-1000

Attn: CECW-CE  
Lisa Kiefel

Subject: Proposed Feasibility Study for Mission-Zanja/Morey Arroyo Drainage Area

Dear Ms. Kiefel,

The City of Redlands supports the San Bernardino County Flood Control District and their proposal to the U.S. Army Corps of Engineers for a feasibility study of the Mission Zanja/Morey Arroyo Drainage Area.

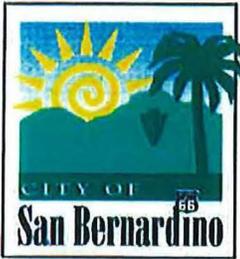
The City has a population of 69,900 residents within the San Bernardino Valley, and is situated along and within many watercourses. When flooded, these watercourses can impact a large portion of our historic downtown areas, commercial centers, and major transportation corridors. In addition to the habitat and recreational benefits presented by the area to be studied, we are also acutely aware of the destructive nature of these watercourses, which have caused significant damage in the past to public and private properties.

Because of the reasons listed, the City supports the County Flood's proposal for a Feasibility Study on the Mission-Zanja/Morey Arroyo Drainage area. We expect to participate and provide information to the study to support further planning and CIP improvements to our area.

Sincerely,

Chris Diggs  
Interim Director  
Municipal Utilities and Engineering Department

Cc: San Bernardino County Flood Control District/Ken Eke, P.E.



**CITY OF SAN BERNARDINO**  
**PUBLIC WORKS DEPARTMENT**

*Tony Frossard – DIRECTOR*  
*300 North "D" Street*  
*San Bernardino, CA 92418-0001*  
*909.384.5140*

November 24, 2014

U.S. Army Corps of Engineers  
441 "G" Street NW  
Washington, DC 20314-1000

Attn: CECW-CE  
Lisa Kiefel

**RE: Feasibility Study on Mission/Zanja Drainage Area**

Dear Ms. Kiefel,

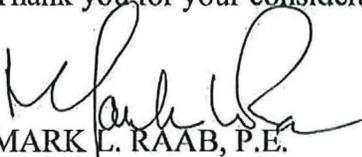
The City of San Bernardino is a city with a population of 211,000 people within the San Bernardino Valley and situated along and within many watercourses of great significance to the local residents. In addition to the habitat and recreation benefits that present themselves, we are also acutely aware of the destructive nature of these watercourses and the "flashy" nature of storms in this area that subject our City and others to damages and costs to both public and private facilities.

These drainage and water courses impact a large portion of our historic areas, commercial centers, major transportation corridors (railways and automotive/trucking), and utilities as well as the local residents that reside in and around them.

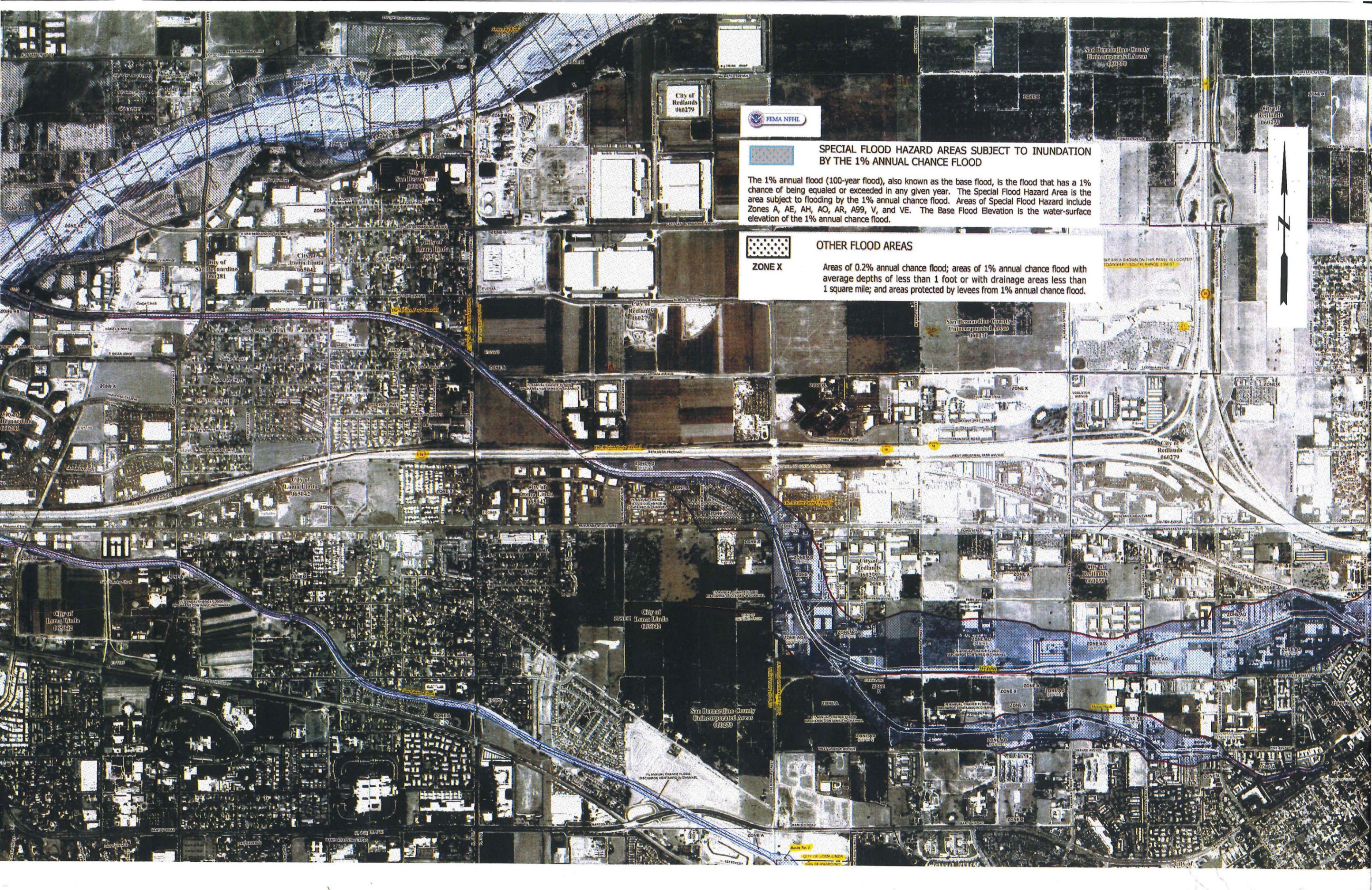
We are writing to express our support for San Bernardino County Flood Control District and their proposal to the U.S. Army Corps of Engineers for a Feasibility Study of Mission/Zanja Drainage Area from the Foothills to the confluence with Warm Creek Channel. We expect to participate and provide information to the study to support further planning and CIP improvements to our area.

The City of San Bernardino wholeheartedly supports this proposal for a Feasibility Study on Mission/Zanja Drainage Area.

Thank you for your consideration.

  
MARK L. RAAB, P.E.  
Principal Engineer

cc: Ken Eke, P.E., Flood Control Operations Division Chief  
County of San Bernardino, Department of Public Works  
821 E. Third Street, Room 108, San Bernardino, CA 92415-0835



### SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.



### OTHER FLOOD AREAS

**ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.



MAP AREA SHOWN ON THIS PANEL IS LOCATED IN QUAD SHEET SOUTH RANGE 3 WEST

City of Redlands 060279

City of Redlands 060279

City of San Bernardino 061281

City of Homebush 065042

City of Redlands 060279

City of Redlands 060279

City of Redlands 060279

City of Redlands 060279

San Bernardino County Unincorporated Areas 060250

City of Redlands 060279

City of Redlands 060279

City of Homebush 065042

San Bernardino County Unincorporated Areas 060250

City of Homebush 065042

City of Redlands 060279

