City of Palmdale

Proposition 1E Stormwater Flood Management Grant Proposals

Upper Amargosa Creek Flood Control, Recharge, and Habitat Restoration Project

April 15, 2011

Attachment 1

Stormwater Flood Management Grant Proposal City of Palmdale Authorization and Eligibility Requirements

Attachment 1 consists of the following items:

- ✓ **Authorization and Eligibility Requirements.** Attachment 1 contains the City's resolution and eligible documentation, Ground Water Management Compliance documentation, and information regarding the projects consistency with the adopted Antelope Valley Integrated Regional Water Management (IRWM) Plan.

Introduction

This attachment contains all authorization and eligibility documentation for the proposed Upper Amargosa Creek Flood Control, Recharge, and Habitat Restoration Project (Amargosa Project) as required under the IRWM Grant Program Guidelines for Stormwater Funding Management Grants (Proposition 1E).

Resolution

The City of Palmdale (City), an accredited agency of the American Public Works Association (APWA),[1] adopted Resolution No. CC 2011-045 authorizing the execution of a master agreement and program supplements for state-funded projects on April 6, 2011. The adopted resolution is provided at the end of this attachment.

Eligible Application Documentation- Local Agency

The City is a local agency eligible for state funding as it is a city of the state of California and has legal authority to enter into a grant agreement with the state of California. The City's charter provides the legal authority under which the City was formed and is authorized to operate and is provided at the end of this attachment. To ensure performance of the project proposal and tracking of grant funds a regional MOU was signed by the Antelope Valley's Regional Water Management Group (RWMG). The adopted regional MOU is provided at the end of this attachment.

Groundwater Management Plan Compliance

The City is a participant of the Antelope Valley Integrated Regional Water Management Plan (IRWMP) that meets the requirements for an AB 3030 Plan. The Antelope Valley IRWMP serves as the Antelope Valley's groundwater management plan for the whole basin. The Antelope Valley IRWMP is provided in Appendix A, and reference to the Groundwater Management Plan can be found on Page 1-24 of the IRWMP.

The Amargosa project consists of multiple proposed improvements, one of which includes expanding the size and capacity of the spreading grounds to increase the natural recharge of the underlying aquifer. This project would positively impact the groundwater basin by recharging groundwater in an area with the lowest regional groundwater levels. The implementation agency for the Amargosa project will be the City.

[1] Accreditation is based on a peer reviewed and approved self-assessment based on the Best Practices Manual as prepared by the APWA. The complete self-assessment represents an agency-wide review of management and operation policies and practices as compared to nationally recognized practices as developed by the APWA. The City's self-assessment covered over 430 best management practices. APWA accreditation is the recognition that the City subscribes to the concept of continuous improvement and has conducted an in-depth self assessment of policies, procedures and practices to achieve conformance with a recognized body of management practices.

Consistency with an Adopted IRWM Plan

The Amargosa project is consistent with the Antelope Valley IRWM Plan and was previously evaluated under Proposition 50. Documentation of the Amargosa project's consistency with the Antelope Valley IRWM Plan can be located in the Proposition 50 application under Table 1-1 on page1-4. Table 1-1 is included below.

CITY OF PALMDALE
LOS ANGELES COUNTY, CALIFORNIA

RESOLUTION NO. CC 2011-043

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF PALMDALE, CALIFORNIA, AUTHORIZATION FOR THE EXECUTION OF A MASTER AGREEMENT AND PROGRAM SUPPLEMENTS FOR STATE-FUNDED TRANSIT PROJECTS

WHEREAS, the City of Palmdale may receive state funding from the California Department of Transportation (Department) now or sometime in the future for transit projects; and

WHEREAS, substantial revisions were made to the programming and funding process for the transportation projects programmed in the State Transportation Improvement Program, by Chapter 622 (SB 45) of the Statutes of 1997; and

WHEREAS, the statutes related to state-funded transit projects require a local or regional implementing agency to execute an agreement with the Department before it can be reimbursed for project expenditures; and

WHEREAS, the Department utilizes Master Agreements for State-Funded Transit Projects, along with associated Program Supplements, for the purpose of administering and reimbursing state transit funds to local agencies; and

WHEREAS, the City of Palmdale wishes to delegate authorization to execute these agreements and any amendments thereto to the Director of Public Works.

NOW, THEREFORE, THE CITY COUNCIL HEREBY FINDS, DETERMINES, AND RESOLVES AS FOLLOWS

SECTION 1: The City of Palmdale agrees to comply with all conditions and requirements set forth in this agreement and applicable statutes, regulations and guidelines for all state-funded transit projects.

SECTION 2: The Director of Public Works is hereby authorized to execute the Master Agreement and all Program Supplements for State-Funded Transit Projects and any Amendments thereto with the California Department of Transportation.

SECTION 3: City staff is authorized and directed to take all appropriate action to ensure that the Master Agreement and all Program Supplement Agreements are processed so as to receive State funds for City transit projects.

SECTION 4: The City Clerk shall certify to the adoption of the resolution.

PASSED, APPROVED, AND ADOPTED this 6th day of April, 2011, by the following vote:

AYES: Ledford, Dispenza, Hofbauer, Lackey, Bettencourt

NOES: None

ABSENT: None ABSTAIN: None

James C. Ledford, Jr., Mayor

Attest:

Rebecca J. Smith
Acting City Clerk

Approve as to form:

Wm. Matthew Ditzhazy
City Attorney

CITY OF PALMDALE

Charter of the City of Palmdale, California 2009

PREAMBLE

WE THE PEOPLE *of the City of Palmdale declare our intent to restore to our community the historic principles of self-governance inherent in the doctrine of home-rule. Sincerely committed to the belief that local government has the closest affinity to the people governed, and firm in the conviction that the economic and fiscal independence of our local government will better serve and promote the health, safety and welfare of all the citizens of this City, we do hereby exercise the express right granted by the Constitution of the State of California to enact and adopt this Charter for the City of Palmdale.*

PASSED, APPROVED and ADOPTED by the voters at the general municipal election of November 3, 2009.

James C. Ledford, Jr., Mayor

Steven D. Hofbauer, Mayor Pro Tem

Laura Bettencourt, Councilmember

Mike Dispenza, Councilmember

Tom Lackey, Councilmember

CITY OF PALMDALE

Charter of the City of Palmdale, California 2009

PREAMBLE

WE THE PEOPLE *of the City of Palmdale declare our intent to restore to our community the historic principles of self-governance inherent in the doctrine of home-rule. Sincerely committed to the belief that local government has the closest affinity to the people governed, and firm in the conviction that the economic and fiscal independence of our local government will better serve and promote the health, safety and welfare of all the citizens of this City, we do hereby exercise the express right granted by the Constitution of the State of California to enact and adopt this Charter for the City of Palmdale.*

ARTICLE 1. MUNICIPAL AFFAIRS

Section 100. Powers of City.
The City shall have full power and authority to adopt, make, exercise and enforce all legislation, laws and regulations and to take all actions relating to municipal affairs, without limitation, which may be lawfully adopted, made, exercised, taken or enforced under the Constitution of the State of California.

Section 101. Municipal Affairs; Generally.
Without limiting in any manner the foregoing power and authority, each of the matters set forth in this Charter are declared to be municipal affairs, consistent with the laws of the State of California. The implementation of each matter uniquely benefits the citizens of the City of Palmdale and addresses peculiarly local concerns within the City of Palmdale. The municipal affairs set forth in this Charter are not intended to be an exclusive list of municipal affairs over which the City Council may govern.

Section 102. General Law Powers
In addition to the power and authority granted by the terms of this Charter and the Constitution of the State of California, the City shall have the power and authority to adopt, make, exercise and enforce all legislation, laws and regulations and to take all actions and to exercise any and all rights, powers, and privileges heretofore or hereafter established, granted or prescribed by any law of the State of California or by any other lawful authority. In the event of any conflict between the provisions of this Charter and the provisions of the general laws of the State of California, the provisions of this Charter shall control.

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CITY OF PALMDALE

Section 103. Incorporation and Succession.
The City shall continue to be a municipal corporation known as the City of Palmdale. The boundaries of the City of Palmdale shall continue as now established until changed in the manner authorized by law. The City shall remain vested with and shall continue to own, have, possess, control and enjoy all property rights and rights of action of every nature and description owned, had, possessed, controlled or enjoyed by it at the time this Charter takes effect, and is hereby declared to be the successor of same. It shall be subject to all debts, obligations and liabilities, which exist against the City at the time this Charter takes effect. All lawful ordinances, resolutions, rules and regulations, or portions thereof, in force at the time this Charter takes effect and not in conflict with or inconsistent herewith, are hereby continued in force until the same have been duly repealed, amended, changed or superseded by proper authority.

ARTICLE 2. FORM OF GOVERNMENT

Section 200. Council-Manager Form of Government.
The municipal government established by this Charter shall be the "Council-Manager" form of government, under which the City Council sets policy and the City Manager will carry out that policy.

ARTICLE 3. FISCAL MATTERS

Section 300. Public Works Contracts.
Except as provided by City ordinance or by agreement approved by the City Council, the City of Palmdale, as a Charter City, is exempt from the provisions of the California Public Contracts Code and from the provisions of any other California statute regulating public contracting and purchasing. The City shall have the power to establish standards, procedures, rules or regulations to regulate all aspects of the bidding, award, contract provisions and requirements and performance of any public works contract, including, but not limited to, the compensation rates to be paid for the performance of such work. The City shall have the power to accept gifts and donations, including donations of material and labor, in the construction of any public works project. The City shall have the power to perform any work of improvement by use of its own forces and is not required to contract for the construction of works of public improvement. The City may also contract with other public agencies for the construction of works of public improvement.

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Section 301. Prevailing Wages.
The provisions of California Labor Code Section 1770 et. Seq. regarding the payment of prevailing wages on public works and related regulations as now existing and as may be amended, are accepted, reaffirmed and made applicable to the City.

Section 302. Purchasing.
The City shall have the power to establish standards, procedures, rules or regulations related to the purchasing of goods, property, or services.

Section 303. Public Financing.
The City shall have the power to establish standards, procedures, rules or regulations related to any public financing.

Section 304. Utilities and Utility Franchises.
The City shall have the power to own, acquire, develop, and/or operate any utility, and to adopt any ordinance providing for the granting of a franchise to any utility not owned by the City that proposes to use or is using City streets, highways or other rights-of-way.

Section 305. Enterprises.
The City shall have the power to lawfully engage in any enterprise deemed necessary to provide revenues for the general fund or any other fund established by the City Council.

ARTICLE 4. REVENUE RETENTION

Section 400. Reductions Prohibited.
All revenues due to, and raised by the City, shall remain within the City of Palmdale for appropriation solely by the City Council. No such revenue shall be subject to subtraction, retention, attachment, withdrawal or any other form of involuntary reduction by any other level of government.

Section 401. Mandates Limited.
No person, whether elected or appointed, acting on behalf of the City, shall be required to implement or give effect to any function which is mandated by any other level of government, unless and until funds sufficient for the performance of such function are provided by such mandating authority.

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CITY OF PALMDALE

ARTICLE 5. LAND USE REGULATION

Section 500. Local Control of Land Use.

The citizens of Palmdale recognize and declare that managing land use and development within the City of Palmdale and ensuring that necessary public facilities are provided to the citizens of the City of Palmdale are quintessential elements of local control and therefore are municipal affairs. The adoption of this Charter recognizes and reaffirms the principles of local land use management and control and affirms the principle that City of Palmdale local land use regulations may be superior to and take precedence over any conflicting general laws of the State of California. The intent of this Charter is to allow the City Council and the voters to exercise the maximum degree of control over land use matters within the City of Palmdale.

ARTICLE 6. ELECTIONS

Section 600. Elections.

The City shall have the power to adopt ordinances establishing procedures, rules or regulations concerning City of Palmdale elections and public officials, including but not limited to, the qualifications and compensation of elected officials, the method, time and requirements to hold elections, to fill vacant offices and for voting by mail. Unless in conflict with ordinances adopted by the City, state law regarding elections shall apply.

ARTICLE 7. FINES AND PENALTIES FOR VIOLATIONS OF CITY ORDINANCES

Section 700. Fines and Penalties.

The City shall have the power to adopt ordinances establishing penalties, fines and forfeitures for violations of the provisions of the Palmdale Municipal Code.

ARTICLE 8. AMENDMENT

Section 800. Amendment to Charter, Revision or Repeal.

This Charter and any of its provisions may be amended by a majority vote of the electors voting on the question. Amendment, revision or repeal may be proposed by initiative or by the governing body, provided, however, that any such amendment or repeal proposed by the governing body, must be voted on at an election held in November, unless the proposed measure is approved by at least four members of the City Council at a regularly scheduled meeting, in which case, the measure may be voted on at a special or any other municipal election.

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CITY OF PALMDALE

ARTICLE 9. INTERPRETATION

Section 900. Construction and Interpretation.
The language contained in this Charter is intended to be permissive rather than exclusive or limiting and shall be liberally and broadly construed in favor of the exercise by the City of its power to govern with respect to any matter that is a municipal affair.

Section 901. Severability.
If any provision of this Charter should be held by a court of competent jurisdiction to be invalid, void or otherwise unenforceable, the remaining provisions shall remain enforceable to the fullest extent permitted by law.

PASSED, APPROVED and ADOPTED by the voters at the general municipal election of November 3, 2009.

James C. Ledford, Jr., Mayor

Steven D. Hofbauer, Mayor Pro Tem

Laura Bettencourt, Councilmember

Mike Dispenza, Councilmember

Tom Lackey, Councilmember

MEMORANDUM OF UNDERSTANDING

THIS MEMORANDUM OF UNDERSTANDING (MOU), made and entered into on this 9th day of January by and between the Antelope Valley-East Kern Water Agency, Palmdale Water District, Quartz Hill Water District, Littlerock Creek Irrigation District, Antelope Valley State Water Contractors Association, City of Palmdale, City of Lancaster, County Sanitation District No. 14 of Los Angeles County, County Sanitation District No. 20 of Los Angeles County, Rosamond Community Services District, and Los Angeles County Waterworks District No. 40, Antelope Valley, hereinafter referred to as "DISTRICT," and in the aggregate hereinafter referred to as "parties":

WITNESSETH

WHEREAS, the parties are designated as a "Regional Water Management Group" under the California Water Code Division 6, Part 2.2, known as the *Integrated Regional Water Management Planning Act of 2002*, hereinafter referred to as "ACT"; and

WHEREAS, Section 10531 of the ACT includes the following declarations:

(a) Water is a valuable natural resource in California and should be managed to ensure the availability of sufficient supplies to meet the State's agricultural, domestic, industrial, and environmental needs. It is the intent of the Legislature to encourage local agencies to work cooperatively to manage their available local and imported water supplies to improve the quality, quantity, and reliability of those supplies.

(b) Improved coordination among local agencies with responsibilities for managing water supplies and additional study of groundwater resources are necessary to maximize the quality and quantity of water available to meet the State's agricultural, domestic, industrial, and environmental needs.

(c) The implementation of the Integrated Regional Water Management Planning Act of 2002 will facilitate the development of integrated regional water management plans, thereby maximizing the quality and quantity of water available to meet the State's water needs by providing a framework for local agencies to integrate programs and projects that protect and enhance regional water supplies.

WHEREAS, Section 10537 of the ACT states that "Regional Water Management Group" means a group in which three or more local public agencies, at least two of which have statutory authority over water supply, participate by means of a joint powers agreement, memorandum of understanding, or other written agreement, as appropriate, that is approved by the governing bodies of those local public agencies; and

WHEREAS, under the ACT, the parties propose to collaboratively prepare an Integrated Regional Water Management Plan for the Antelope Valley, hereinafter referred to as "PLAN," as set forth in this MOU; and

WHEREAS, the study area for the PLAN includes all, or a portion of, the service areas of the Antelope Valley-East Kern Water Agency, Palmdale Water District, Quartz Hill Water District, Littlerock Creek Irrigation District, Antelope Valley State Water Contractors Association, City of Palmdale, City of Lancaster, County Sanitation District No. 14 of Los Angeles County, County Sanitation District No. 20 of Los Angeles County, Rosamond Community Services District, and DISTRICT within the Antelope Valley; and

WHEREAS, the DISTRICT is willing to administer a contract ("CONTRACT") to engage a third-party consultant ("CONSULTANT") to prepare the PLAN, including preparation of a request for proposals, evaluation of CONSULTANT proposals, award of the CONTRACT, and general oversight of the CONTRACT; and

WHEREAS, the Antelope Valley-East Kern Water Agency, Palmdale Water District, Quartz Hill Water District, Littlerock Creek Irrigation District, Antelope Valley State Water Contractors Association, City of Palmdale, City of Lancaster, County Sanitation District No. 14 of Los Angeles County, County Sanitation District No. 20 of Los Angeles County, and Rosamond Community Services District are willing to provide the CONSULTANT with the necessary data to prepare the PLAN and to review and comment on the draft versions of the PLAN; and

WHEREAS, the "CONSULTANT COSTS" for preparation of the PLAN consist of all amounts paid to the CONSULTANT upon completion of the PLAN; and

WHEREAS, the CONSULTANT COSTS are currently estimated to amount to $325,000 with DISTRICT'S share being $60,000, Antelope Valley-East Kern Water Agency's share being $50,000, Palmdale Water District's share being $60,000, Quartz Hill Water District's share being $5,000, Littlerock Creek Irrigation District's share being $5,000, City of Palmdale's share being $50,000, City of Lancaster's share being $45,000, County Sanitation District No. 14 of Los Angeles County's share being $22,500, County Sanitation District No. 20 of Los Angeles County's share being $22,500, and Rosamond Community Services District's share being $5,000, and

100 percent*

WHEREAS, the FINAL PLAN is defined to be the version of the PLAN that is deemed ready for adoption by ~~50 percent of those~~ of the representatives from the DISTRICT, Antelope Valley-East Kern Water Agency, Palmdale Water District, Quartz Hill Water District, Littlerock Creek Irrigation District, Antelope Valley State Water Contractors Association, City of Palmdale, City of Lancaster, County Sanitation District No. 14 of Los Angeles County, County Sanitation District No. 20 of Los Angeles County, and Rosamond Community Services District, where each agency has one representative.

*Exception taken per AVEK Board action on January 09, 2007.

WHEREAS, the ADOPTED PLAN is defined to be the version of the PLAN that is adopted by the governing bodies of at least three or more member agencies to the Regional Water Management Group, two of which have statutory authority over water supply, as evidenced by resolutions substantially similar to the sample included as Exhibit A.

NOW, THEREFORE, in consideration of the mutual benefits to be derived by the parties and of the promises herein contained, it is hereby agreed as follows:

(1) ANTELOPE VALLEY-EAST KERN WATER AGENCY AGREES:

a. To provide and share all necessary and relevant information, data, studies, and/or documentation for the PLAN in its possession as may be requested by the CONSULTANT within thirty (30) calendar days of the request by the CONSULTANT or such information and data, should it be provided at a later date, may not be incorporated in the PLAN due to time constraints.

b. To review and comment on the draft and final versions of technical reports and the draft PLAN within twenty-one (21) calendar days from the date of receipt of said documents from the DISTRICT or Antelope Valley-East Kern Water Agency's comments may not be incorporated in the FINAL PLAN.

c. To present the FINAL PLAN to its governing body for consideration and adoption within forty-five (45) calendar days from the date of receipt of the FINAL PLAN.

d. To provide a contribution in the amount of $50,000 towards the CONSULTANT COSTS collectively shared by the DISTRICT, Antelope Valley-East Kern Water Agency, Palmdale Water District, Quartz Hill Water District, Littlerock Creek Irrigation District, City of Palmdale, City of Lancaster, County Sanitation District No. 14 of Los Angeles County, County Sanitation District No. 20 of Los Angeles County, and Rosamond Community Services District.

e. To deposit the contribution in the amount of $50,000 with the DISTRICT within thirty (30) calendar days of execution of this MOU.

f. To prepare, review, and approve future grant applications for implementation of the ADOPTED PLAN.

(2) PALMDALE WATER DISTRICT AGREES:

a. To provide and share all necessary and relevant information, data, studies, and/or documentation for the PLAN in its possession as may be requested by the CONSULTANT within thirty (30) calendar days of the request by the CONSULTANT or such information and data, should it be provided at a later date, may not be incorporated in the PLAN due to time constraints.

b. To review and comment on the draft and final versions of technical reports and the draft PLAN within twenty-one (21) calendar days from the date of receipt of said documents from the DISTRICT or Palmdale Water District's comments may not be incorporated in the FINAL PLAN.

c. To present the FINAL PLAN to its governing body for consideration and adoption within forty-five (45) calendar days from the date of receipt of the FINAL PLAN.

d. To provide a contribution in the amount of $60,000 towards the CONSULTANT COSTS collectively shared by the DISTRICT, Antelope Valley-East Kern Water Agency, Palmdale Water District, Quartz Hill Water District, Littlerock Creek Irrigation District, City of Palmdale, City of Lancaster, County Sanitation District No. 14 of Los Angeles County, County Sanitation District No. 20 of Los Angeles County, and Rosamond Community Services District.

e. To deposit the contribution in the amount of $60,000 with the DISTRICT within thirty (30) calendar days of execution of this MOU.

f. To prepare, review, and approve future grant applications for implementation of the ADOPTED PLAN.

(3) QUARTZ HILL WATER DISTRICT AGREES:

a. To provide and share all necessary and relevant information, data, studies, and/or documentation for the PLAN in its possession as may be requested by the CONSULTANT within thirty (30) calendar days of the request by the CONSULTANT or such information and data, should it be provided at a later date, may not be incorporated in the PLAN due to time constraints.

b. To review and comment on the draft and final versions of technical reports and the draft PLAN within twenty-one (21) calendar days from the date of receipt of said documents from the DISTRICT or Quartz Hill Water District's comments may not be incorporated in the FINAL PLAN.

c. To present the FINAL PLAN to its governing body for consideration and adoption within forty-five (45) calendar days from the date of receipt of the FINAL PLAN.

d. To provide a contribution in the amount of $5,000 towards the CONSULTANT COSTS collectively shared by the DISTRICT, Antelope Valley-East Kern Water Agency, Palmdale Water District, Quartz Hill Water District, Littlerock Creek Irrigation District, City of Palmdale, City of Lancaster, County Sanitation District No. 14 of Los Angeles County, County Sanitation District No. 20 of Los Angeles County, and Rosamond Community Services District.

e. To deposit the contribution in the amount of $5,000 with the DISTRICT within thirty (30) calendar days of execution of this MOU.

f. To prepare, review, and approve future grant applications for implementation of the ADOPTED PLAN.

(4) LITTLEROCK CREEK IRRIGATION DISTRICT AGREES:

a. To provide and share all necessary and relevant information, data, studies, and/or documentation for the PLAN in its possession as may be requested by the CONSULTANT within thirty (30) calendar days of the request by the CONSULTANT or such information and data, should it be provided at a later date, may not be incorporated in the PLAN due to time constraints.

b. To review and comment on the draft and final versions of technical reports and the draft PLAN within twenty-one (21) calendar days from the date of receipt of said documents from the DISTRICT or Littlerock Creek Irrigation District's comments may not be incorporated in the FINAL PLAN.

c. To present the FINAL PLAN to its governing body for consideration and adoption within forty-five (45) calendar days from the date of receipt of the FINAL PLAN.

d. To provide a contribution in the amount of $5,000 towards the CONSULTANT COSTS collectively shared by the DISTRICT, Antelope Valley-East Kern Water Agency, Palmdale Water District, Quartz Hill Water District, Littlerock Creek Irrigation District, City of Palmdale, City of Lancaster, County Sanitation District No. 14 of Los Angeles County, County Sanitation District No. 20 of Los Angeles County, and Rosamond Community Services District.

e. To deposit the contribution in the amount of $5,000 with the DISTRICT within thirty (30) calendar days of execution of this MOU.

f. To prepare, review, and approve future grant applications for implementation of the ADOPTED PLAN.

(5) ANTELOPE VALLEY STATE WATER CONTRACTORS ASSOCIATION AGREES:

a. To provide and share all necessary and relevant information, data, studies, and/or documentation for the PLAN in its possession as may be requested by the CONSULTANT within thirty (30) calendar days of the request by the CONSULTANT or such information and data, should it be provided at a later date, may not be incorporated in the PLAN due to time constraints.

b. To review and comment on the draft and final versions of technical reports and the draft PLAN within twenty-one (21) calendar days from the date of receipt of said documents from the DISTRICT or Antelope Valley State Water Contractors Association's comments may not be incorporated in the FINAL PLAN.

c. To present the FINAL PLAN to its governing body for consideration and adoption within forty-five (45) calendar days from the date of receipt of the FINAL PLAN.

d. To prepare, review, and approve future grant applications for implementation of the ADOPTED PLAN.

(6) CITY OF PALMDALE AGREES:

a. To provide and share all necessary and relevant information, data, studies, and/or documentation for the PLAN in its possession as may be requested by the CONSULTANT within thirty (30) calendar days of the request by the CONSULTANT or such information and data, should it be provided at a later date, may not be incorporated in the PLAN due to time constraints.

b. To review and comment on the draft and final versions of technical reports and the draft PLAN within twenty-one (21) calendar days from the date of receipt of said documents from the DISTRICT or City of Palmdale's comments may not be incorporated in the FINAL PLAN.

c. To present the FINAL PLAN to its governing body for consideration and adoption within forty-five (45) calendar days from the date of receipt of the FINAL PLAN.

d. To provide a contribution in the amount of $50,000 towards the CONSULTANT COSTS collectively shared by the DISTRICT, Antelope Valley-East Kern Water Agency, Palmdale Water District, Quartz Hill Water District, Littlerock Creek Irrigation District, Cit of Palmdale, City of Lancaster, County Sanitation District No. 14 of Los Angeles County, County Sanitation District No. 20 of Los Angeles County, and Rosamond Community Services District.

e. To deposit the contribution in the amount of $50,000 with the DISTRICT within thirty (30) calendar days of execution of this MOU.

f. To prepare, review, and approve future grant applications for implementation of the ADOPTED PLAN.

(7) CITY OF LANCASTER AGREES:

a. To provide and share all necessary and relevant information, data, studies, and/or documentation for the PLAN in its possession as may be requested by the CONSULTANT within thirty (30) calendar days of the request by the CONSULTANT or such information and data, should it be provided at a later date, may not be incorporated in the PLAN due to time constraints.

b. To review and comment on the draft and final versions of technical reports and the draft PLAN within twenty-one (21) calendar days from the date of receipt of said documents from the DISTRICT or City of Lancaster's comments may not be incorporated in the FINAL PLAN.

c. To present the FINAL PLAN to its governing body for consideration and adoption within forty-five (45) calendar days from the date of receipt of the FINAL PLAN.

d. To provide a contribution in the amount of $45,000 towards the CONSULTANT COSTS collectively shared by the DISTRICT, Antelope Valley-East Kern Water Agency, Palmdale Water District, Quartz Hill Water District, Littlerock Creek Irrigation District, City of Palmdale, City of Lancaster, County Sanitation District No. 14 of Los Angeles County, County Sanitation District No. 20 of Los Angeles County, and Rosamond Community Services District.

e. To deposit the contribution in the amount of $45,000 with the DISTRICT within thirty (30) calendar days of execution of this MOU.

f. To prepare, review, and approve future grant applications for implementation of the ADOPTED PLAN.

(8) COUNTY SANITATION DISTRICT NO. 14 OF LOS ANGELES COUNTY AGREES:

a. To provide and share all necessary and relevant information, data, studies, and/or documentation for the PLAN in its possession as may be requested by the CONSULTANT within thirty (30) calendar days of the request by the CONSULTANT or such information and data, should it be provided at a later date, may not be incorporated in the PLAN due to time constraints.

b. To review and comment on the draft and final versions of technical reports and the draft PLAN within twenty-one (21) calendar days from the date of receipt of said documents from the DISTRICT or County Sanitation District No. 14 of Los Angeles County's comments may not be incorporated in the FINAL PLAN.

c. To present the FINAL PLAN to its governing body for consideration and adoption within forty-five (45) calendar days from the date of receipt of the FINAL PLAN.

d. To provide a contribution in the amount of $22,500 towards the CONSULTANT COSTS collectively shared by the DISTRICT, Antelope Valley-East Kern Water Agency, Palmdale Water District, Quartz Hill Water District, Littlerock Creek Irrigation District, City of Palmdale, City of Lancaster, County Sanitation District No. 14 of Los Angeles County, County Sanitation District No. 20 of Los Angeles County, and Rosamond Community Services District.

e. To deposit the contribution in the amount of $22,500 with the DISTRICT within thirty (30) calendar days of execution of this MOU.

f. To prepare, review, and approve future grant applications for implementation of the ADOPTED PLAN.

(9) COUNTY SANITATION DISTRICT NO. 20 OF LOS ANGELES COUNTY AGREES:

a. To provide and share all necessary and relevant information, data, studies, and/or documentation for the PLAN in its possession as may be requested by the CONSULTANT within thirty (30) calendar days of the request by the CONSULTANT or such information and data, should it be provided at a later date, may not be incorporated in the PLAN due to time constraints.

b. To review and comment on the draft and final versions of technical reports and the draft PLAN within twenty-one (21) calendar days from the date of receipt of said documents from the DISTRICT or County Sanitation District

No. 20 of Los Angeles County's comments may not be incorporated in the FINAL PLAN.

c. To present the FINAL PLAN to its governing body for consideration and adoption within forty-five (45) calendar days from the date of receipt of the FINAL PLAN.

d. To provide a contribution in the amount of $22,500 towards the CONSULTANT COSTS collectively shared by the DISTRICT, Antelope Valley-East Kern Water Agency, Palmdale Water District, Quartz Hill Water District, Littlerock Creek Irrigation District, City of Palmdale, City of Lancaster, County Sanitation District No. 14 of Los Angeles County, County Sanitation District No. 20 of Los Angeles County, and Rosamond Community Services District.

e. To deposit the contribution in the amount of $22,500 with the DISTRICT within thirty (30) calendar days of execution of this MOU.

f. To prepare, review, and approve future grant applications for implementation of the ADOPTED PLAN.

(10) ROSAMOND COMMUNITY SERVICES DISTRICT AGREES:

a. To provide and share all necessary and relevant information, data, studies, and/or documentation for the PLAN in its possession as may be requested by the CONSULTANT within thirty (30) calendar days of the request by the CONSULTANT or such information and data, should it be provided at a later date, may not be incorporated in the PLAN due to time constraints.

b. To review and comment on the draft and final versions of technical reports and the draft PLAN within twenty-one (21) calendar days from the date of receipt of said documents from the DISTRICT or Rosamond Community Services District's comments may not be incorporated in the FINAL PLAN.

c. To present the FINAL PLAN to its governing body for consideration and adoption within forty-five (45) calendar days from the date of receipt of the FINAL PLAN.

d. To provide a contribution in the amount of $5,000 towards the CONSULTANT COSTS collectively shared by the DISTRICT, Antelope Valley-East Kern Water Agency, Palmdale Water District, Quartz Hill Water District, Littlerock Creek Irrigation District, City of Palmdale, City of Lancaster, County Sanitation District No. 14 of Los Angeles County, County Sanitation District No. 20 of Los Angeles County, and Rosamond Community Services District.

e. To deposit the contribution in the amount of $5,000 with the DISTRICT within thirty (30) calendar days of execution of this MOU.

f. To prepare, review, and approve future grant applications for implementation of the ADOPTED PLAN.

(11) DISTRICT AGREES:

a. To administer a CONSULTANT CONTRACT for the PLAN, including preparation of a request for proposals, evaluation of CONSULTANT proposals, award of a CONSULTANT CONTRACT, and oversight of the CONSULTANT services.

b. To facilitate stakeholder meetings.

c. To provide and share all necessary and relevant information, data, studies, and/or documentation for the PLAN in its possession as may be requested by the CONSULTANT within thirty (30) calendar days of the request by the CONSULTANT or such information and data, should it be provided at a later date, may not be incorporated in the PLAN due to time constraints.

d. To provide each agency with copies of the draft and final versions of technical reports and the draft PLAN within seven (7) calendar days from the date of receipt of said documents from the CONSULTANT, and to transmit comments to the CONSULTANT within seven (7) calendar days from the date of receipt of said documents from each agency.

e. To review and comment on the draft and final versions of technical reports and the draft PLAN within twenty-one (21) calendar days from the date of receipt of said documents from the DISTRICT or DISTRICT's comments may not be incorporated in the PLAN.

f. To present the FINAL PLAN to its governing body for consideration and adoption within forty-five (45) calendar days from the date of receipt of the FINAL PLAN.

g. To provide a contribution in the amount of $60,000 towards the CONSULTANT COSTS collectively shared by the DISTRICT, Antelope Valley-East Kern Water Agency, Palmdale Water District, Quartz Hill Water District, Littlerock Creek Irrigation District, City of Palmdale, City of Lancaster, County Sanitation District No. 14 of Los Angeles County, County Sanitation District No. 20 of Los Angeles County, and Rosamond Community Services District.

h. To prepare, review, and approve future grant applications for implementation of the ADOPTED PLAN.

(12) IT IS MUTUALLY UNDERSTOOD AND AGREED AS FOLLOWS:

a. If the governing body of the Antelope Valley-East Kern Water Agency, Palmdale Water District, Quartz Hill Water District, Littlerock Creek Irrigation District, Antelope Valley State Water Contractors Association, City of Palmdale, City of Lancaster, County Sanitation District No. 14 of Los Angeles County, County Sanitation District No. 20 of Los Angeles County, Rosamond Community Services District or DISTRICT does not adopt the PLAN within forty-five (45) calendar days from the date of receipt of the FINAL PLAN, such action or inaction shall constitute withdrawal from the Regional Water Management Group. An agency which withdraws from the Regional Water Management Group may be reinstated when the agency adopts the FINAL PLAN and agrees to any additions and/or amendments to the MOU.

b. Upon completion of the ADOPTED PLAN, the DISTRICT shall prepare a final accounting (the "Accounting") of all final actual CONSULTANT COSTS for review by the Antelope Valley-East Kern Water Agency, Palmdale Water District, Quartz Hill Water District, Littlerock Creek Irrigation District, City of Palmdale, City of Lancaster, County Sanitation District No. 14 of Los Angeles County, County Sanitation District No. 20 of Los Angeles County, and Rosamond Community Services District.

c. If the funds deposited with the DISTRICT exceed the CONSULTANT COSTS, based upon the Accounting, the DISTRICT shall refund the excess funds to the Antelope Valley-East Kern Water Agency, Palmdale Water District, Quartz Hill Water District, Littlerock Creek Irrigation District, City of Palmdale, City of Lancaster, County Sanitation District No. 14 of Los Angeles County, County Sanitation District No. 20 of Los Angeles County, and Rosamond Community Services District in proportion to their contribution towards the CONSULTANT COSTS within sixty (60) days after completion of the PLAN.

d. If the CONSULTANT COSTS exceed the funds deposited with the DISTRICT, the Antelope Valley-East Kern Water Agency,* Palmdale Water District, Quartz Hill Water District, Littlerock Creek Irrigation District, City of Palmdale, City of Lancaster, County Sanitation District No. 14 of Los Angeles County, County Sanitation District No. 20 of Los Angeles County, and Rosamond Community Services District will supplement this MOU to fund the additional portion of the CONSULTANT COSTS in excess of the funds deposited with the DISTRICT in proportion to their original contributions towards the CONSULTANT COSTS.

*Exception taken per AVEK Board action on January 09, 2007.

e. This MOU may be amended or modified only by mutual written consent of all parties.

f. The Regional Water Management Group shall terminate twenty (20) years after the date of execution unless renewed by mutual written consent from all parties prior to expiration.

g. All parties agree to release the DISTRICT of any liability and in connection with all claims arising out of this MOU, including relating to the CONTRACT with the CONSULTANT, and including in connection with any and all claims by third parties relating to the CONSULTANT's work under the CONTRACT and/or any violation or alleged violation of the ACT as a result thereof, including pursuant to Civil Code Section 1542, which states:

> "A general release does not extend to claims which the creditor does not know or suspect to exist in his or her favor at the time of executing the release, which if known by him or her must have materially affected his or her settlement with the debtor."

h. Notwithstanding the foregoing and notwithstanding any provision of law, including as contained in the California Government Code, and including Sections 895 *et. seq.*, therein, any and all liability or expenses (including attorneys' and experts' fees and related costs) to the DISTRICT for claims by third parties or CONSULTANT and injury to third parties or CONSULTANT, arising from or relating to this MOU shall be allocated among the parties on the basis of the percent of contribution required of each party under this MOU. As an example only, the percentage of contribution of Antelope Valley-East Kern Water Agency is 15 percent. Each party shall reimburse the DISTRICT for its allocated share of the costs described herein within thirty (30) calendar days of issuance of an invoice by the DISTRICT. The term "injury" shall have the meaning prescribed by Section 810.8 of the Government Code. This provision shall survive termination of this Agreement.

i. If any provision of this MOU is held, determined or adjudicated to be illegal, void, or unenforceable by a court of competent jurisdiction, the reminder of this MOU shall be given effect to the fullest extent possible.

j. Any correspondence, communication, or contact concerning this MOU shall be directed to the following:

ANTELOPE VALLEY-EAST KERN WATER AGENCY:

Mr. Russell E. Fuller
General Manager
6500 West Avenue N
Palmdale, CA 93551

PALMDALE WATER DISTRICT:

Mr. Dennis LaMoreaux
General Manager
2029 East Avenue Q
Palmdale, CA 93550

QUARTZ HILL WATER DISTRICT:

Mr. Dave Meraz
General Manager
42141 50th Street West
Quartz Hill, CA 93536

LITTLEROCK CREEK IRRIGATION DISTRICT:

Mr. Brad Bones
General Manager
35141 North 87th Street East
Littlerock, CA 93543

ANTELOPE VALLEY STATE WATER CONTRACTORS ASSOCIATION:

Ms. Barbara Hogan
Chairperson
c/o Palmdale Water District
2029 East Avenue Q
Palmdale, CA 93550

CITY OF PALMDALE:

Mr. Leon Swain
Public Works Director
38250 Sierra Highway
Palmdale, CA 93550

CITY OF LANCASTER:

Mr. Randy Williams
Public Works Director
44933 Fern Avenue
Lancaster, CA 93534

COUNTY SANITATION DISTRICT NO. 14 OF LOS ANGELES COUNTY:

Mr. James F. Stahl
Chief Engineer and General Manager
County Sanitation Districts of Los Angeles County
1955 Workman Mill Road
Whittier, CA 90601

COUNTY SANITATION DISTRICT NO. 20 OF LOS ANGELES COUNTY:

Mr. James F. Stahl
Chief Engineer and General Manager
County Sanitation Districts of Los Angeles County
1955 Workman Mill Road
Whittier, CA 90601

ROSAMOND COMMUNITY SERVICES DISTRICT:

Mr. Claud Seal
Assistant General Manager
3179 35th Street
Rosamond, CA 93560

DISTRICT:

Mr. Manuel del Real
Assistant Deputy Director
Waterworks & Sewer Maintenance Division
County of Los Angeles
Department of Public Works
P.O. Box 1460
Alhambra, CA 91802-1460

k. Each person signing this MOU represents to have the necessary power and authority to bind the entity on behalf of which said person is signing and each of the other parties can rely on that representation.

l. This MOU may be executed in counterparts, each counterpart being an integral part of this MOU.

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IN WITNESS WHEREOF, the parties hereto have caused this MOU to be executed by their respective officers, duly authorized, by ANTELOPE VALLEY-EAST KERN WATER AGENCY; and

ANTELOPE VALLEY-EAST KERN
WATER AGENCY

By _____

APPROVED AS TO FORM:

By _____
Legal Counsel

IN WITNESS WHEREOF, the parties hereto have caused this MOU to be executed by their respective officers, duly authorized, by Palmdale Water District; and

Palmdale Water District

By _____
General Manager

APPROVED AS TO FORM:

By _____
Legal Counsel

IN WITNESS WHEREOF, the parties hereto have caused this MOU to be executed by their respective officers, duly authorized, by Quartz Hill Water District; and

Tier No. 3 Level of
Contribution - $5000.00

Quartz Hill Water District

By Dave Meraz
Dave Meraz,
General Manager

APPROVED AS TO FORM:

By
Legal Counsel
Brad Weeks, Esq.

By: Allen D Flick Sr.
Allen Flick, Sr.
Quartz Hill Water District
Board President

Approved at the Regular Board Meeting, held on Thurs., September 14, 2006.

Attested
By: Denise E. Burks
Denise Burks,
Board Secretary

Carried: 4-0

Ayes: P.Powell, J. powell, A. Flick, F. Tymon
Noes: ø

Abstained: ø

Absent: Ben Harrison, Jr.
Passed on 8-7-06

IN WITNESS WHEREOF, the parties hereto have caused this MOU to be executed by their respective officers, duly authorized, by Littlerock Creek Irrigation District; and

Littlerock Creek Irrigation District

By _____
Brad Bones, General Manager

APPROVED AS TO FORM:

By _____
Legal Counsel

IN WITNESS WHEREOF, the parties hereto have caused this MOU to be executed by their respective officers, duly authorized, by ANTELOPE VALLEY STATE WATER CONTRACTORS ASSOCIATION; and

ANTELOPE VALLEY STATE WATER CONTRACTORS ASSOCIATION

By Barbara Hogan
Barbara Hogan

APPROVED AS TO FORM:

By Dawn Lemmon
Legal Counsel

IN WITNESS WHEREOF, the parties hereto have caused this MOU to be executed by their respective officers, duly authorized, by City of Palmdale; and

City of Palmdale

By _____
James C. Ledford
Mayor

APPROVED AS TO FORM:

By _____
Wm. Matthew Ditzhazy
City Attorney

Attest:

By: _____
Victoria L. Hancock, CMC
City Clerk

IN WITNESS WHEREOF, the parties hereto have caused this MOU to be executed by their respective officers, duly authorized, by CITY OF LANCASTER; and

APPROVED BY DEPT. HEAD

CITY OF LANCASTER

By _____
Bishop Henry W. Hearns
Mayor

APPROVED AS TO FORM:

By _____
Legal Counsel

Attest:

_____
City Clerk

IN WITNESS WHEREOF, the parties hereto have caused this MOU to be executed by their respective officers, duly authorized, by County Sanitation District No. 14 of Los Angeles; and

County Sanitation District No. 14
of Los Angeles County

By _____
Chief Engineer and General Manager

ATTEST:

By _____
Secretary to the Board

APPROVED AS TO FORM:

Lewis, Brisbois, Bisgaard, and Smith LLP

By _____
District Counsel

IN WITNESS WHEREOF, the parties hereto have caused this MOU to be executed by their respective officers, duly authorized, by County Sanitation District No. 20 of Los Angeles; and

County Sanitation District No. 20
of Los Angeles County

By _____
Chief Engineer and General Manager

ATTEST:

By _____
Secretary to the Board

APPROVED AS TO FORM:

Lewis, Brisbois, Bisgaard, and Smith LLP

By _____
District Counsel

IN WITNESS WHEREOF, the parties hereto have caused this MOU to be executed by their respective officers, duly authorized, by ROSAMOND COMMUNITY SERVICES DISTRICT; and

ROSAMOND COMMUNITY
SERVICES DISTRICT

By _____

APPROVED AS TO FORM:

By _____
Legal Counsel

IN WITNESS WHEREOF, the parties hereto have caused this MOU to be executed by their respective officers, duly authorized, by DISTRICT.

DISTRICT:

LOS ANGELES COUNTY
WATERWORKS DISTRICT NO. 40

By _____
for Director of Public Works

APPROVED AS TO FORM:

RAYMOND G. FORTNER, JR.
County Counsel

By _____
Deputy

Exhibit A

RESOLUTION OF THE *[governing body of agency]*, ADOPTING THE INTEGRATED REGIONAL WATER MANAGEMENT PLAN FOR THE ANTELOPE VALLEY

WHEREAS, the Antelope Valley-East Kern Water Agency, Palmdale Water District, Quartz Hill Water District, Littlerock Creek Irrigation District, Antelope Valley State Water Contractors Association, City of Palmdale, City of Lancaster, County Sanitation District No. 14 of Los Angeles County, County Sanitation District No. 20 of Los Angeles County, Rosamond Community Services District, and Los Angeles County Waterworks District No. 40, Antelope Valley are designated as a "Regional Water Management Group" under the California Water Code Division 6, Part 2.2, known as the *Integrated Regional Water Management Planning Act of 2002*, hereinafter referred to as "ACT"; and

WHEREAS, under the ACT, the parties collaboratively prepared an Integrated Regional Water Management Plan for the Antelope Valley that meets the requirements of the ACT, hereinafter referred to as "PLAN"; and

WHEREAS, Section 10531 of the ACT includes the following declarations:

(d) Water is a valuable natural resource in California, and should be managed to ensure the availability of sufficient supplies to meet the state's agricultural, domestic, industrial, and environmental needs. It is the intent of the Legislature to encourage local agencies to work cooperatively to manage their available local and imported water supplies to improve the quality, quantity, and reliability of those supplies.

(e) Improved coordination among local agencies with responsibilities for managing water supplies and additional study of groundwater resources are necessary to maximize the quality and quantity of water available to meet the state's agricultural, domestic, industrial, and environmental needs.

(f) The implementation of the Integrated Regional Water Management Planning Act of 2002 will facilitate the development of integrated regional water management plans, thereby maximizing the quality and quantity of water available to meet the state's water needs by providing a framework for local agencies to integrate programs and projects that protect and enhance regional water supplies.

WHEREAS, the adoption of the PLAN will allow the Antelope Valley Region to compete for State grant funding available under Proposition 50, proposed Proposition 84, and other future State and/or Federal grant programs.

NOW, THEREFORE, BE IT RESOLVED, that the *[governing body of agency]*, hereby adopts the PLAN.

The foregoing Resolution was adopted on the____day of_____, 2007, by the *[governing body of agency]*, as the governing body of the *[agency]*.

By _____

APPROVED AS TO FORM:

By _____
Legal Counsel

TABLE 1-1 CONSISTENCY WITH THE ANTELOPE VALLEY IRWM ADOPTED PLAN

		1		2		3		4		5		6		7			
		AV Recycled Water (RW-1)		Water Conservation (WC-1)		GW Recharge (RW-2)		Lancaster WRP (WQ-1)		Littlerock Dam (WI-2)		Palmdale WRP (WQ-3)		Amargosa Recharge (WS-1)		Overall Summary	
WMSA Benefit Type	Planning Target	Quantified Benefit	% of Target	Quantified Benefit	% of Target	Quantified Benefit	% of Target	Quantified Benefit	% of Target	Quantified Benefit	% of Target	Quantified Benefit	% of Target	Quantified Benefit	% of Target	Quantified Benefit	% of Target
Water Supply (AFY)																	
Reduce mismatch of supply and demand in average years	73,600 to 236,800 AFY	3,610 AFY	1.5% to 5%	1,084 AFY	0.5% to 1.4%	0 AFY	0%	potential for 20,100 AFY	0%	1,095 AFY	0.5% to 1.5%	potential for 13,400 AFY	0%	0 AFY	0%	5,789 AFY	2.4% to 15%
Supplement average supply to meet dry year demand	50,600 to 57,400 AFY	0	0%	0	0%	625 AFY	1.1% to 1.2%	0	0%	0	0%	0	0%	25,000 AFY	44% to 50%	25,625 AFY	45% to 51%
Supplement average supply to meet multi-dry demand	0 to 62,000 AFY	0	0%	0	0%	625 AFY	1.1% to 1.2%	0	0%	0	0%	0	0%	25,000 AFY	40% to 100%	25,625 AFY	42% to 100%
Water Quality																	
Increase in recycled water use by 2015 (33%)	13,200 AFY	3,610 AFY	64%	0	0%	125 AFY	1%	potential for 20,100 AFY	0%	0	0%	potential for 13,400 AFY	0%	0	0%	3,735 AFY	28%
Increase in recycled water use by 2025 (66%)	36,300 AFY	3,610 AFY	10%	0	0%	125 AFY	<1%	potential for 20,100 AFY	0%	0	0%	potential for 13,400 AFY	0%	0	0%	3,735 AFY	10%

Attachment 1: Authorization and Eligibility Requirements

WMSA Benefit Type	Planning Target	1 AV Recycled Water (RW-1)		2 Water Conservation (WC-1)		3 GW Recharge (RW-2)		4 Lancaster WRP (WQ-1)		5 Littlerock Dam (WI-2)		6 Palmdale WRP (WQ-3)		7 Amargosa Recharge (WS-1)		Overall Summary	
		Quantified Benefit	% of Target	Quantified Benefit	% of Target	Quantified Benefit	% of Target	Quantified Benefit	% of Target	Quantified Benefit	% of Target	Quantified Benefit	% of Target	Quantified Benefit	% of Target	Quantified Benefit	% of Target
Increase in recycled water use by 2035 (100%)	65,000 AFY	3,610 AFY	6%	0	0%	125 AFY	<1%	potential for 20,100 AFY	0%	0	0%	potential for 13,400 AFY	0%	0	0%	3,735 AFY	5.7%
Environmental Management																	
Open Space & Habitat (acres) by 2015	2,000	0	0%	0	0%	100 acres	5%	0	0%	4.8	<1%	0	0%	25	1.3%	129.8 acres	6.5%
Land Use Management																	
Farmland in rotation (acres)	100,000	unknown	unknown	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Public parks and recreational amenities (acres)	5,000	unknown	unknown	5.65 acres	<1%	0	0%	0	0%	0	0%	0	0%	0	0%	5.65 acres	<1%

Attachment 2

Stormwater Flood Management Grant Proposal
City of Palmdale
Proof of Formal Adoption

Attachment 2 consists of the following items:

- ✓ **Proof of Formal Adoption.** Attachment 2 contains the proof of formal adoption of the Antelope Valley IRWM Plan.

Proof of Formal Adoption

The following resolutions were executed by the Regional Water Management Group as proof of formal adoption of the Integrated Regional Water Management Plan:

- Antelope Valley-East Kern Water Agency Resolution No. R-07-23
- Antelope Valley State Water Contractors Association Resolution No. 08-02 & 08-03
- City of Lancaster Resolution No. 07-221 & 08-02
- City of Palmdale Resolution No. 2008-007
- Los Angeles County Sanitation District Resolution No. 14 & 20
- Littlerock Creek Irrigation District Resolution No. 08-02 & 08-03
- Los Angeles County Waterworks District No. 40
- Palmdale Water District Resolution No. 08-1 & 08-2
- Rosamond Community Services District Resolution No. 2008-10

Copies of these resolutions are provided at the end of this attachment.

RESOLUTION NO. R-07-23

A RESOLUTION OF THE ANTELOPE VALLEY-EAST KERN WATER AGENCY

APPROVING THE PROPOSAL AND DETERMINATION TO ADOPT AN INTEGRATED REGIONAL WATER MANAGEMENT

WHEREAS, the California Water Code Division 6, Part 2.2, known as the Integrated Regional Water Management Planning Act of 2002, hereinafter referred to as "ACT," provides the framework for preparation and adoption of integrated regional water management plans; and

WHEREAS, the Antelope Valley-East Kern Water Agency; Palmdale Water District; Quartz Hill Water District; Littlerock Creek Irrigation District; Antelope Valley State Water Contractors Association; City of Palmdale; City of Lancaster; County Sanitation District No. 14 of Los Angeles County; County Sanitation District No. 20 of Los Angeles County; Rosamond Community Services District; and Los Angeles County Waterworks District No. 40; Antelope Valley, have established a Regional Water Management Group by means of a Memorandum of Understanding in accordance with the ACT; and

WHEREAS, the Regional Water Management Group collaboratively prepared an Integrated Regional Water Management Plan, hereinafter referred to as "PLAN," that meets the requirements of the ACT; and

WHEREAS, the Regional Water Management Group solicited and incorporated input from all interested stakeholders in preparation of the PLAN; and

WHEREAS, the adoption of the PLAN is intended to improve the Antelope Valley's competitiveness for State and Federal funding, including grants from Propositions 50, 84, and 1E for all members of the Regional Water Management Group.

NOW, THEREFORE, BE IT RESOLVED, that the Board of Directors acting as the governing body of the Antelope Valley-East Kern Water Agency, does hereby:

1. Propose to adopt an Integrated Regional Water Management Plan for the Antelope Valley as a member of the Regional Water Management Group; and

2. Determine to adopt and adopt an Integrated Regional Water Management Plan for the Antelope Valley as a member of the Regional Water Management Group.

The foregoing Resolution was adopted on the 8th day of January, 2008, by the **BOARD OF DIRECTORS, as the governing body of the** ANTELOPE VALLEY-EAST KERN WATER AGENCY:

By _____
BOARD PRESIDENT

APPROVED AS TO FORM:

By _____
Legal Counsel

ANTELOPE VALLEY STATE WATER CONTRACTORS ASSOCIATION
RESOLUTION 08-02

RESOLUTION OF THE GOVERNING BOARD OF THE ANTELOPE VALLEY STATE WATER CONTRACTORS ASSOCIATION APPROVING THE PROPOSAL AND DETERMINATION TO ADOPT AN INTEGRATED REGIONAL WATER MANAGEMENT PLAN FOR THE ANTELOPE VALLEY

WHEREAS, the California Water Code Division 6, Part 2.2, known as the Integrated Regional Water Management Planning Act of 2002, hereinafter referred to as "ACT," provides the framework for preparation and adoption of integrated regional water management plans; and

WHEREAS, the Antelope Valley-East Kern Water Agency; Palmdale Water District; Quartz Hill Water District; Littlerock Creek Irrigation District; Antelope Valley State Water Contractors Association; City of Palmdale; City of Lancaster; County Sanitation District No. 14 of Los Angeles County; County Sanitation District No. 20 of Los Angeles County; Rosamond Community Services District; and Los Angeles County Waterworks District No. 40; Antelope Valley, have established a Regional Water Management Group by means of a Memorandum of Understanding in accordance with the ACT; and

WHEREAS, the Regional Water Management Group collaboratively prepared an Integrated Regional Water Management Plan, hereinafter referred to as "PLAN," that meets the requirements of the ACT; and

WHEREAS, the Regional Water Management Group solicited and incorporated input from all interested stakeholders in preparation of the PLAN; and

WHEREAS, the adoption of the PLAN is intended to improve the Antelope Valley's competitiveness for State and Federal funding, including grants from Propositions 50, 84, and 1E for all members of the Regional Water Management Group.

NOW, THEREFORE, BE IT RESOLVED, that the Board of Commissioners of the Antelope Valley State Water Contractors Association does hereby:

1. Propose to adopt an Integrated Regional Water Management Plan for the Antelope Valley as a member of the Regional Water Management Group; and

2. Determine to adopt and adopt an Integrated Regional Water Management Plan for the Antelope Valley as a member of the Regional Water Management Group.

PASSED AND ADOPTED on this 17th day of January, 2008, by the Board of Commissioners, the governing body of the Antelope Valley State Water Contractors Association.

ANTELOPE VALLEY STATE WATER
CONTRACTORS ASSOCIATION

Barbara Hogan,
Chair

ATTEST: ANDY RUTLEDGE
Secretary:

ANTELOPE VALLEY STATE WATER CONTRACTORS ASSOCIATION
RESOLUTION 08-03

RESOLUTION OF THE GOVERNING BOARD OF THE ANTELOPE VALLEY STATE WATER CONTRACTORS ASSOCIATION APPROVING THE PROPOSAL AND DETERMINATION TO ADOPT A GROUNDWATER MANAGEMENT PLAN FOR THE ANTELOPE VALLEY

WHEREAS, the California Water Code Division 6, Part 2.75, known as the Groundwater Management Planning Act, hereinafter referred to as "ACT," provides the framework for preparation and adoption of groundwater management plans in the State; and

WHEREAS, the Antelope Valley-East Kern Water Agency; Palmdale Water District; Quartz Hill Water District; Littlerock Creek Irrigation District; Antelope Valley State Water Contractors Association; City of Palmdale; City of Lancaster; County Sanitation District No. 14 of Los Angeles County; County Sanitation District No. 20 of Los Angeles County; Rosamond Community Services District; and Los Angeles County Waterworks District No. 40; Antelope Valley, have established a Regional Water Management Group by means of a Memorandum of Understanding in accordance with the ACT; and

WHEREAS, the Regional Water Management Group collaboratively prepared a Groundwater Management Plan for the Antelope Valley, hereinafter referred to as "PLAN," that meets the requirements of the ACT; and

WHEREAS, the Regional Water Management Group solicited and incorporated input from all interested stakeholders in preparation of the PLAN; and

WHEREAS, the adoption of the PLAN is intended to improve the Antelope Valley's competitiveness for State and Federal funding, including grants from Propositions 50, 84, and 1E for all members of the Regional Water Management Group.

NOW, THEREFORE, BE IT RESOLVED, that the Board of Commissioners of the Antelope Valley State Water Contractors Association does hereby:

1. Determine to adopt and adopt a Groundwater Management Plan for the Antelope Valley as a member of the Regional Water Management Group.

PASSED AND ADOPTED on this 17th day of January, 2008, by the Board of Commissioners, the governing body of the Antelope Valley State Water Contractors Association.

ANTELOPE VALLEY STATE WATER
CONTRACTORS ASSOCIATION

Barbara Hogan,
Chair

ATTEST: ANDY RUTLEDGE
Secretary:

RESOLUTION NO. 07-221

A RESOLUTION OF THE CITY COUNCIL OF THE
CITY OF LANCASTER, CALIFORNIA,
APPROVING THE PROPOSAL AND DETERMINATION
TO ADOPT AN INTEGRATED REGIONAL WATER MANAGEMENT PLAN.

WHEREAS, the California Water Code Division 6, Part 2.2, known as the Integrated Regional Water Management Planning Act of 2002, hereinafter referred to as "ACT," provides the framework for preparation and adoption of integrated regional water management plans; and

WHEREAS, the Antelope Valley-East Kern Water Agency; Palmdale Water District; Quartz Hill Water District; Littlerock Creek Irrigation District; Antelope Valley State Water Contractors Association; City of Palmdale; City of Lancaster; County Sanitation District No. 14 of Los Angeles County; County Sanitation District No. 20 of Los Angeles County; Rosamond Community Services District; and Los Angeles County Waterworks District No. 40; Antelope Valley, have established a Regional Water Management Group by means of a Memorandum of Understanding in accordance with the ACT; and

WHEREAS, the Regional Water Management Group collaboratively prepared an Integrated Regional Water Management Plan, hereinafter referred to as "PLAN," that meets the requirements of the ACT; and

WHEREAS, the Regional Water Management Group solicited and incorporated input from all interested stakeholders in preparation of the PLAN; and

WHEREAS, the adoption of the PLAN is intended to improve the Antelope Valley's competitiveness for State and Federal funding, including grants from Propositions 50, 84, and 1E for all members of the Regional Water Management Group.

NOW, THEREFORE, BE IT RESOLVED AND ORDERED BY THE CITY COUNCIL OF THE CITY OF LANCASTER, STATE OF CALIFORNIA, THAT:

Section 1. Propose to adopt an Integrated Regional Water Management Plan for the Antelope Valley as a member of the Regional Water Management Group; and

Section 2. Determine to adopt and adopt an Integrated Regional Water Management Plan for the Antelope Valley as a member of the Regional Water Management Group.

PASSED, APPROVED, and ADOPTED this 11th day of December, 2007, by the following vote:

AYES: Council Members: Jeffra, Sileo, Smith, Vice Mayor Visokey, Mayor Hearns

NOES: None

ABSTAIN: None

ABSENT: None

ATTEST:

GERI K. BRYAN, CMC
City Clerk
City of Lancaster

APPROVED:

HENRY W. HEARNS
Mayor
City of Lancaster

STATE OF CALIFORNIA)
COUNTY OF LOS ANGELES) ss
CITY OF LANCASTER)

CERTIFICATION OF RESOLUTION
CITY COUNCIL

I, _____, _____ City of Lancaster, CA, do hereby certify that this is a true and correct copy of the original Resolution No. 07-221, for which the original is on file in my office.

WITNESS MY HAND AND THE SEAL OF THE CITY OF LANCASTER, on this _____ day of _____, _____.

(seal)

RESOLUTION NO. 08-02

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LANCASTER, CALIFORNIA, ADOPTING A GROUNDWATER MANAGEMENT PLAN FOR THE ANTELOPE VALLEY

WHEREAS, California Water Code Division 6, Part 2.2, known as the *Integrated Regional Water Management Planning Act of 2002,* and Division 6, Part 2.75, known as the *Groundwater Management Planning Act,* hereinafter collectively referred to as "ACTS", provide the framework for preparation of integrated regional water management plans and groundwater management plans in the State; and

WHEREAS, the Antelope Valley-East Kern Water Agency, Palmdale Water District, Quartz Hill Water District, Littlerock Creek Irrigation District, Antelope Valley State Water Contractors Association, City of Palmdale, City of Lancaster, County Sanitation District No. 14 of Los Angeles County, County Sanitation District No. 20 of Los Angeles County, Rosamond Community Services District, and Los Angeles County Waterworks District No. 40, Antelope Valley have established a Regional Water Management Group by means of a Memorandum of Understanding in accordance with the ACTS; and

WHEREAS, the Regional Water Management Group collaboratively prepared an Integrated Regional Water Management Plan/Groundwater Management Plan for the Antelope Valley, hereinafter referred to as "PLAN", that meets the requirements of the ACTS ; and

WHEREAS, the Regional Water Management Group solicited and incorporated input from all interested stakeholders; and

WHEREAS, the adoption of the PLAN will improve the Antelope Valley's competitiveness for State and Federal funding including grants from Propositions 50, 84, and 1E.

WHEREAS, the City Council adopted the Integrated Regional Water Management Plan by Resolution No. 07-221 on December 11, 2007; and

WHEREAS, the Groundwater Management Plan requires that two (2) public hearings be held; one indicating intention to prepare the PLAN and the second taking testimony and determining if a majority protest exists; and

WHEREAS, said public hearings were noticed and held in accordance with the ACTS; and

WHEREAS, there was no majority protest.

NOW, THEREFORE, BE IT RESOLVED AND ORDERED BY THE CITY COUNCIL OF THE CITY OF LANCASTER, STATE OF CALIFORNIA, THAT:

Section 1. This City Council hereby adopts the Groundwater Management Plan as a member of the Regional Water Management Group.

PASSED, APPROVED, and ADOPTED this 8th day of January, 2008, by the following vote:

AYES: Council Members: Sileo, Smith, Vice Mayor Visokey, Mayor Hearns

NOES: None

ABSTAIN: None

ABSENT: Council Member: Jeffra

ATTEST:

GERI K. BRYAN, CMC
City Clerk
City of Lancaster

APPROVED:

HENRY W. HEARNS
Mayor
City of Lancaster

STATE OF CALIFORNIA)
COUNTY OF LOS ANGELES) ss
CITY OF LANCASTER)

CERTIFICATION OF RESOLUTION
CITY COUNCIL

I, Britt Avrit, Deputy City Clerk City of Lancaster, CA, do hereby certify that this is a true and correct copy of the original Resolution No. 08-02, for which the original is on file in my office.

WITNESS MY HAND AND THE SEAL OF THE CITY OF LANCASTER, on this 9th day of January, 2008.

(seal)

CITY OF PALMDALE
LOS ANGELES COUNTY, CALIFORNIA

RESOLUTION NO. CC 2008-007

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF PALMDALE, CALIFORNIA APPROVING THE PROPOSAL AND DETERMINATION TO ADOPT AN INTEGRATED REGIONAL WATER MANAGEMENT PLAN AND A GROUNDWATER MANAGEMENT PLAN FOR THE ANTELOPE VALLEY

RECITALS

WHEREAS, California Water Code Division 6, Part 2.2, known as the Integrated Regional Water Management Planning Act of 2002, and Division 6, Part 2.75, known as the Groundwater Management Planning Act, hereinafter collectively referred to as "ACTS", provide the framework for preparation and adoption of Integrated Regional Water Management Plans and Groundwater Management Plans in the state; and

WHEREAS, the Antelope Valley-East Kern Water Agency; Palmdale Water District; Quartz Hill Water District; Littlerock Creek Irrigation District; Antelope Valley State Water Contractors Association; City of Palmdale; City of Lancaster; County Sanitation District No. 14 of Los Angeles County; County Sanitation District No. 20 of Los Angeles County; Rosamond Community Services District; and Los Angeles County Waterworks District No. 40; Antelope Valley, have established a Regional Water Management Group by means of a Memorandum of Understanding in accordance with the ACTS; and

WHEREAS, the Regional Water Management Group collaboratively prepared an Integrated Regional Water Management/Groundwater Management Plan for the Antelope Valley, hereinafter referred to as "PLAN", that collectively meet the requirements of the ACTS; and

WHEREAS, the Regional Water Management Group solicited and incorporated input from all interested stakeholders in preparation of the PLAN; and

WHEREAS, regional collaboration can promote a more efficient, comprehensive, and effective approach to water resource management while being responsive within a regional context to the needs of individual communities and jurisdictions; and

WHEREAS, the PLAN is to prepare to meet the Antelope Valley's future regional need for water supply reliability by evaluating opportunities for water recycling, water conservation, groundwater management, conjunctive use, water transfers, water quality improvement, storm water capture and management, flood management, recreation and public access, and environmental and habitat protection and improvement; and

WHEREAS, the PLAN will foster coordination, collaboration and communication among public agencies in the Antelope Valley and other interested stakeholders to

achieve greater water-use efficiencies, enhance public services, and build public support for vital projects; and

WHEREAS, the adoption of the PLAN will improve the Antelope Valley's competitiveness for State and Federal funding including grants from Propositions 50, 84, and 1E for all members of the Regional Water Management Group; and

WHEREAS, the PLAN is a feasibility and planning study for possible future action and no implementation or project is being adopted, approved, required or funded through the adoption of the PLAN; and

WHEREAS, implementation of the PLAN may not proceed without further discretionary approvals either by the individual public agency or jointly by the group members; and

WHEREAS, adoption of the PLAN, does not legally bind the City of Palmdale to approve or perform any implementation or project. Furthermore, any approval of any project suggested in this PLAN, including, but not limited to the use of recycled water for direct groundwater recharge, will require full environmental and public review.

NOW, THEREFORE, the City Council hereby finds, determines, and resolves as follows:

SECTION 1: The City Council hereby specifically finds that all of the facts set forth in the Recitals and true and correct and constitute the findings of the City Council in this matter.

SECTION 2: The City Council adopts the Final Integrated Regional Water Management/Groundwater Management Plan for the Antelope Valley as a member of the Regional Water Management Group.

SECTION 3: The City Council hereby finds as follows with respect to the Notice of Exemption prepared in connection with Final Integrated Regional Water Management/ Groundwater Management Plan for the Antelope Valley:

(a) Pursuant to the California Environmental Quality Act ("CEQA") and the City's local CEQA Guidelines, City staff determined the project to be exempt from environmental review pursuant to Section 15262 of the California Environmental Quality Act (CEQA) Guidelines, Feasibility and Planning Studies for possible future actions for which no implementation or project has been approved or funded. Thereafter, the City staff provided public notice of the determination and of the intent to find the project exempt from environmental review pursuant to Section 15272 of the CEQA Guidelines.

(b) The City Council has reviewed the Notice of Exemption and, based on the whole record before it, finds that the Notice of Exemption was prepared in compliance with CEQA. The City Council further finds that the Notice of Exemption reflects the independent judgment and analysis of the City Council. Based on these findings, the City Council hereby adopts the Notice of Exemption.

(c) The custodian of records for the Notice of Exemption, and all other materials which constitute the record of proceedings upon which the City Council's decision is based, is the Director of Planning of the City of Palmdale. Those documents are available for public review in the Planning Department of the City of Palmdale located at 38250 Sierra Highway, Palmdale, California 93550, telephone (661) 267-5200.

SECTION 4: City staff is authorized and directed to file a Notice of Exemption under Section 15262 of the California Environmental Quality Act (CEQA) guidelines on behalf of the Regional Water Management Group.

SECTION 5: The City Clerk shall certify to the adoption of this resolution.

PASSED, APPROVED and ADOPTED this 16th day of January, 2008, by the following vote:

AYES: Mayor Ledford and Councilmembers Lackey, Knight, Hofbauer, and Dispenza

NOES: None

ABSENT: None ABSTAIN: None

James C. Ledford, Jr., Mayor

Attest:

Becky Smith, Deputy City Clerk
for Victoria L. Hancock, CMC
City Clerk

Approve as to form:

for Wm. Matthew Ditzhazy
City Attorney

PALMDALE

a place to call home

38300 Sierra Highway

Palmdale, CA 93550-4798

Tel: 661/267-5100

Fax: 661/267-5122

TDD: 661/267-5167

CITY COUNCIL

CLERK'S CERTIFICATE

I, Victoria L. Hancock, CMC, City Clerk of the City of Palmdale, State of California, do hereby certify as follows:

The attached is a full, true and correct copy of Resolution No. CC 2008-007 adopted at the Regular Meeting of the City Council of the City of Palmdale duly held at the regular meeting place thereof, on January 16, 2008, at which meeting all of the members of said City Council had due notice and at which a majority thereof was present.

I further certify that I have carefully compared the same with the original Resolution No. CC 2008-007 on file and of record in my office and that said Resolution CC 2008-007 is a full, true, and correct copy of the original Resolution No. CC 2008-007 adopted at said meeting.

At said meeting, Resolution No. CC 2008-007 was adopted by the following vote:

AYES: Mayor Ledford and Councilmembers Lackey, Knight, Hofbauer, and Dispenza

NOES: None

ABSTAIN: None

ABSENT: None

WITNESS my hand and the seal of the City of Palmdale this 22nd day of January 2008.

Becky Sonnier, Deputy City Clerk
for Victoria L. Hancock, CMC
City Clerk

RESOLUTION OF THE BOARD OF DIRECTORS OF COUNTY SANITATION DISTRICT NO. 14 OF LOS ANGELES COUNTY TO ADOPT AN INTEGRATED REGIONAL WATER MANAGEMENT PLAN FOR THE ANTELOPE VALLEY

WHEREAS, California Water Code Division 6, Part 2.2, known as the *Integrated Regional Water Management Planning Act of 2002* (ACT), provides the framework for preparation of integrated regional water management plans in the State; and

WHEREAS, the Antelope Valley-East Kern Water Agency, Palmdale Water District, Quartz Hill Water District, Littlerock Creek Irrigation District, Antelope Valley State Water Contractors Association, City of Palmdale, City of Lancaster, County Sanitation District No. 14 of Los Angeles County, County Sanitation District No. 20 of Los Angeles County, Rosamond Community Services District, and Los Angeles County Waterworks District No. 40, Antelope Valley have established a Regional Water Management Group by means of a Memorandum of Understanding in accordance with the ACT; and

WHEREAS, the Regional Water Management Group solicited and incorporated input from all interested stakeholders in preparation of the PLAN; and

WHEREAS, the Regional Water Management Group collaboratively prepared an Integrated Regional Water Management Plan for the Antelope Valley (PLAN) that meets the requirements of the ACT; and

WHEREAS, the adoption of the PLAN is intended to improve the Antelope Valley's competitiveness for State and Federal funding including grants from Propositions 50, 84, and 1E.

NOW, THEREFORE, BE IT RESOLVED, that the Board of Directors of County Sanitation District No. 14 of Los Angeles County hereby adopts the Integrated Regional Water Management Plan for the Antelope Valley.

The foregoing Resolution was adopted on the 23rd day of January, 2008, by the Board of Directors as the governing body of County Sanitation District No. 14 of Los Angeles County.

By _____
Chairperson, County Sanitation District
No. 14 of Los Angeles County

JAN 2 3 2008

ATTEST:

By: _____
Secretary to the Boards

APPROVED AS TO FORM:

By _____
Legal Counsel

RESOLUTION OF THE BOARD OF DIRECTORS OF COUNTY SANITATION DISTRICT NO. 20 OF LOS ANGELES COUNTY TO ADOPT AN INTEGRATED REGIONAL WATER MANAGEMENT PLAN FOR THE ANTELOPE VALLEY

WHEREAS, California Water Code Division 6, Part 2.2, known as the *Integrated Regional Water Management Planning Act of 2002* (ACT), provides the framework for preparation of integrated regional water management plans in the State; and

WHEREAS, the Antelope Valley-East Kern Water Agency, Palmdale Water District, Quartz Hill Water District, Littlerock Creek Irrigation District, Antelope Valley State Water Contractors Association, City of Palmdale, City of Lancaster, County Sanitation District No. 14 of Los Angeles County, County Sanitation District No. 20 of Los Angeles County, Rosamond Community Services District, and Los Angeles County Waterworks District No. 40, Antelope Valley have established a Regional Water Management Group by means of a Memorandum of Understanding in accordance with the ACT; and

WHEREAS, the Regional Water Management Group solicited and incorporated input from all interested stakeholders in preparation of the PLAN; and

WHEREAS, the Regional Water Management Group collaboratively prepared an Integrated Regional Water Management Plan for the Antelope Valley (PLAN) that meets the requirements of the ACT; and

WHEREAS, the adoption of the PLAN is intended to improve the Antelope Valley's competitiveness for State and Federal funding including grants from Propositions 50, 84, and 1E.

NOW, THEREFORE, BE IT RESOLVED, that the Board of Directors of County Sanitation District No. 20 of Los Angeles County hereby adopts the Integrated Regional Water Management Plan for the Antelope Valley.

The foregoing Resolution was adopted on the 23rd day of January, 2008, by the Board of Directors as the governing body of County Sanitation District No. 20 of Los Angeles County.

By: _____
Chairperson, County Sanitation District
No. 20 of Los Angeles County

JAN 2 3 2008

ATTEST:

By: _____
Secretary to the Boards

APPROVED AS TO FORM:

By: _____
Legal Counsel

RESOLUTION NO. 08-02

A RESOLUTION OF THE BOARD OF DIRECTORS OF LITTLEROCK CREEK IRRIGATION DISTRICT APPROVING THE PROPOSAL AND DETERMINATION TO ADOPT AN INTEGRATED REGIONAL WATER MANAGEMENT PLAN FOR THE ANTELOPE VALLEY

WHEREAS, the California Water Code Division 6, Part 2.75, known as the Groundwater Management Planning Act, hereinafter referred to as "ACT," provides the framework for preparation and adoption of integrated regional water management plans; and

WHEREAS, the Antelope Valley-East Kern Water Agency; Palmdale Water District; Quartz Hill Water District; Littlerock Creek Irrigation District; Antelope Valley State Water Contractors Association; City of Palmdale; City of Lancaster; County Sanitation District No. 14 of Los Angeles County; County Sanitation District No. 20 of Los Angeles County; Rosamond Community Services District; and Los Angeles County Waterworks District No. 40; Antelope Valley, have established a Regional Water Management Group by means of a Memorandum of Understanding in accordance with the ACT; and

WHEREAS, The Regional Water Management Group collaboratively prepared an Integrated Regional Water Management Plan for the Antelope Valley, hereinafter referred to as "PLAN," that meets the requirements of the ACT; and

WHEREAS, The Regional Water Management Group solicited and incorporated input from all interested stakeholders in preparation of the PLAN; and

WHEREAS, the adoption of the PLAN is intended to improve the Antelope Valley's competitiveness for State and Federal funding, including grants from Proposition 50, 84, and 1E for all members of the Regional Water Management Group.

NOW, THEREFORE, BE IT RESOLVED, that the Board of Directors for the Littlerock Creek Irrigation District, acting as the governing body, does hereby:

1. Propose to adopt an Integrated Regional Water Management Plan for the Antelope Valley as a member of the Regional Water Management Group; and

2. Determine to adopt and adopt an Integrated Regional Water Management Plan for the Antelope Valley as a member of the Regional Water Management Group.

PASSED, APPROVED AND ADOPTED on January 16, 2008.

Les Thibault
President

ATTEST:

Frances Young
Secretary

(SEAL)

RESOLUTION NO. 08-03

A RESOLUTION OF THE BOARD OF DIRECTORS OF LITTLEROCK CREEK IRRIGATION DISTRICT APPROVING THE PROPOSAL AND DETERMINATION TO ADOPT A GROUNDWATER MANAGEMENT PLAN FOR THE ANTELOPE VALLEY

WHEREAS, the California Water Code Division 6, Part 2.75, known as the Groundwater Management Planning Act, hereinafter referred to as "ACT," provides the framework for preparation and adoption of groundwater management plans in the Sate; and

WHEREAS, the Antelope Valley-East Kern Water Agency; Palmdale Water District; Quartz Hill Water District; Littlerock Creek Irrigation District; Antelope Valley State Water Contractors Association; City of Palmdale; City of Lancaster; County Sanitation District No. 14 of Los Angeles County; County Sanitation District No. 20 of Los Angeles County; Rosamond Community Services District; and Los Angeles County Waterworks District No. 40; Antelope Valley, have established a Regional Water Management Group by means of a Memorandum of Understanding in accordance with the ACT; and

WHEREAS, The Regional Water Management Group collaboratively prepared a Groundwater Management Plan for the Antelope Valley, hereinafter referred to as "PLAN," that meets the requirements of the ACT; and

WHEREAS, The Regional Water Management Group solicited and incorporated input from all interested stakeholders in preparation of the PLAN; and

WHEREAS, the adoption of the PLAN is intended to improve the Antelope Valley's competitiveness for State and Federal funding, including grants from Proposition 50, 84, and 1E for all members of the Regional Water Management Group.

NOW, THEREFORE, BE IT RESOLVED, that the Board of Directors for the Littlerock Creek Irrigation District, acting as the governing body, does hereby:

1. Determine to adopt and adopt a Groundwater Management Plan for the Antelope Valley as a member of the Regional Water Management Group.

PASSED, APPROVED AND ADOPTED on Janaury 16, 2008.

Leo Thibault
President

ATTEST:

Francis McCauley
Secretary

(SEAL)

MINUTES OF THE BOARD OF SUPERVISORS
COUNTY OF LOS ANGELES, STATE OF CALIFORNIA

Sachi A. Hamai, Executive Officer
Clerk of the Board of Supervisors
383 Kenneth Hahn Hall of Administration
Los Angeles, California 90012

At its meeting held December 4, 2007 the Board acting as the Governing Body of the Los Angeles County Waterworks District No. 40, Antelope Valley, took the following action:

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At the time and place regularly set, notice having been duly given, the following item was called up:

> Hearing on proposal and determination to adopt an Integrated Regional Water Management Plan and Groundwater Management Plan for the Antelope Valley (5), to provide the framework for local agencies to coordinate programs and projects intended to address regional water supply needs, protect and improve water quality, provide flood management, protect the environment, and establish a data management system to monitor the progress of these objectives; and find that the project is exempt from the California Environmental Quality Act, as further described in the attached letter dated December 4, 2007 from the Chief Executive Officer.

Opportunity was given for interested persons to address the Board. No interested persons addressed the Board. No correspondence was presented.

On motion of Supervisor Knabe, seconded by Supervisor Antonovich, unanimously carried, the hearing was closed and the Board acting as the Governing Body of the Los Angeles County Waterworks District No. 40, Antelope Valley, took the following actions:

1. Made a finding that said action is exempt from the California Environmental Quality Act; and

(Continued on Page 2)

63 (Continued)

2. Determined that no majority protest exists against the adoption of the Groundwater Management Plan; and

3. Adopted the attached resolutions approving the proposal and determination to adopt an Integrated Regional Water Management Plan and the Groundwater Management Plan for the Antelope Valley.

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Attachments

Copies distributed:
Each Supervisor
Auditor-Controller
Chief Executive Officer
County Counsel
Director of Public Works

County of Los Angeles
CHIEF EXECUTIVE OFFICE
713 KENNETH HAHN HALL OF ADMINISTRATION
LOS ANGELES, CALIFORNIA 90012
(213) 974-1101
http://ceo.lacounty.gov

WILLIAM T FUJIOKA
Chief Executive Officer

December 4, 2007

The Honorable Board of Supervisors
County of Los Angeles
383 Kenneth Hahn Hall of Administration
500 West Temple Street
Los Angeles, CA 90012

Dear Supervisors:

DEPARTMENT OF PUBLIC WORKS: LOS ANGELES COUNTY WATERWORKS DISTRICT NO. 40, ANTELOPE VALLEY PUBLIC HEARING FOR ADOPTION OF RESOLUTIONS FOR THE PROPOSAL AND DETERMINATION TO ADOPT AN INTEGRATED REGIONAL WATER MANAGEMENT PLAN AND A GROUNDWATER MANAGEMENT PLAN FOR THE ANTELOPE VALLEY (SUPERVISORIAL DISTRICT 5) (3 VOTES)

IT IS RECOMMENDED THAT YOUR BOARD AFTER THE PUBLIC HEARING ACTING AS THE GOVERNING BODY OF THE LOS ANGELES COUNTY WATERWORKS DISTRICT NO. 40, ANTELOPE VALLEY:

1. Find that the proposed action is exempt from the provisions of the California Environmental Quality Act for the reasons cited in this letter.

2. Consider protests to the adoption of the Groundwater Management Plan and determine whether a majority protest exists. If your Board finds that the protests filed represent more than 50 percent of the assessed value of land within the Los Angeles County Waterworks District No. 40, Antelope Valley, deny adoption of the Groundwater Management Plan and refer the matter back to the Department of Public Works. If there is no majority protest, adopt the resolution for the determination to adopt a Groundwater Management Plan for the Antelope Valley.

3. Adopt the resolution for the proposal and determination to adopt an Integrated Regional Water Management Plan.

PURPOSE/JUSTIFICATION OF RECOMMENDED ACTION

The purpose of these actions is to adopt an Integrated Regional Water Management Plan and a Groundwater Management Plan (Plans) for the Antelope Valley.

The Plans were collaboratively prepared by 11 public agencies, including the Los Angeles County Waterworks District No. 40, Antelope Valley (District) in accordance with State guidelines to address regional water supply needs, protect and improve water quality, provide flood management, protect the environment, and establish a data management system to monitor the progress of these objectives. The adoption of the Plans will improve the Antelope Valley's competitiveness for State and Federal grant funds, including those authorized under Propositions 50, 84, and 1E.

Implementation of Strategic Plan Goals

The Countywide Strategic Plan directs that we provide Fiscal Responsibility (Goal 4) and Community Services (Goal 6) by improving the District's competitiveness for State and Federal grant funds and enhancing the reliability of water supply for the District's customers.

FISCAL IMPACT/FINANCING

There will be no impact to the County General Fund.

FACTS AND PROVISIONS/LEGAL REQUIREMENTS

The Integrated Regional Water Management Planning Act of 2002, as codified in California Water Code §10530 through §10546, provides the framework for preparation and adoption of Integrated Regional Water Management Plans in the State. California Water Code §10541(c) requires publication of a notice of intention to adopt an Integrated Regional Water Management Plan (IRWMP) in accordance with Government Code §6066 if three or more participants in the group propose to adopt the IRWMP. Additionally, California Water Code §10541(d) requires a determination to adopt the IRWMP after holding a public hearing.

The Groundwater Management Act, as codified in California Water Code §10750 through §10756, provides the framework for preparation and adoption of Groundwater Management Plan in the State. California Water Code §10753.5(a) requires that a local agency hold a public hearing to determine to adopt the Groundwater Management Plan. After the public hearing, the local agency shall consider protests to the adoption of the plan and determine whether a majority protest exists. Pursuant to California Water

Code §10753.6(b), the local agency must compare the names and property descriptions on the protests against the property ownership records of the County Assessors. If your Board finds that the protests filed represent more than 50 percent of the assessed value of land within the District, deny adoption of the Groundwater Management Plan and refer the matter back to Public Works. If there is no majority protest, adopt the resolution for the determination to adopt a Groundwater Management Plan for the Antelope Valley.

ENVIRONMENTAL DOCUMENTATION

The proposed action is to adopt plans collaboratively prepared by 11 public agencies including the District, in accordance with State guidelines to address regional water supply needs, protect and improve water quality, provide flood management, protect the environment, and establish a data management system to monitor the progress of these objectives. It involves only feasibility or planning studies for possible future actions, which your Board has not approved, adopted, or funded. The Plans will not have a legally binding effect on later activities and, therefore, their adoption is exempt from the California Environmental Quality Act pursuant to Section 15262 of the California Environmental Quality Act Guidelines.

IMPACT ON CURRENT SERVICES (OR PROJECTS)

The adoption of the Plans will improve the District's competitiveness for State and Federal grant funds to improve the reliability of water supply for the District's customers.

There will be no impact on current County services or projects as a result of this action.

CONCLUSION

Upon approval, please return one adopted copy of this letter and the attached resolutions to the Department of Public Works, Waterworks Division.

Respectfully submitted,

WILLIAM T FUJIOKA
Chief Executive Officer

WTF:DLW
AA:cr

Attachments (2)

c: County Counsel

A RESOLUTION OF THE BOARD OF SUPERVISORS OF THE COUNTY OF LOS ANGELES, CALIFORNIA, ACTING AS THE GOVERNING BODY OF THE LOS ANGELES COUNTY WATERWORKS DISTRICT NO. 40, ANTELOPE VALLEY, APPROVING THE PROPOSAL AND DETERMINATION TO ADOPT A GROUNDWATER MANAGEMENT PLAN FOR THE ANTELOPE VALLEY

WHEREAS, the California Water Code Division 6, Part 2.75, known as the Groundwater Management Planning Act, hereinafter referred to as "ACT," provides the framework for preparation and adoption of groundwater management plans in the State; and

WHEREAS, the Antelope Valley-East Kern Water Agency; Palmdale Water District; Quartz Hill Water District; Littlerock Creek Irrigation District; Antelope Valley State Water Contractors Association; City of Palmdale; City of Lancaster; County Sanitation District No. 14 of Los Angeles County; County Sanitation District No. 20 of Los Angeles County; Rosamond Community Services District; and Los Angeles County Waterworks District No. 40; Antelope Valley, have established a Regional Water Management Group by means of a Memorandum of Understanding in accordance with the ACT; and

WHEREAS, the Regional Water Management Group collaboratively prepared a Groundwater Management Plan for the Antelope Valley, hereinafter referred to as "PLAN," that meets the requirements of the ACT; and

WHEREAS, the Regional Water Management Group solicited and incorporated input from all interested stakeholders in preparation of the PLAN; and

WHEREAS, the adoption of the PLAN is intended to improve the Antelope Valley's competitiveness for State and Federal funding, including grants from Propositions 50, 84, and 1E for all members of the Regional Water Management Group.

NOW, THEREFORE, BE IT RESOLVED, that the Board of Supervisors of the County of Los Angeles, acting as the governing body of Los Angeles County Waterworks District No. 40, Antelope Valley, does hereby:

1. Determine to adopt and adopt a Groundwater Management Plan for the Antelope Valley as a member of the Regional Water Management Group.

The foregoing Resolution was adopted on the 4th day of December, 2007, by the Board of Supervisors of the County of Los Angeles acting as the governing body of the Los Angeles County Waterworks District No. 40, Antelope Valley.

SACHI A. HAMAI
Executive Officer of the
Board of Supervisors of the
County of Los Angeles

By Charlotte R. Bragfield
Deputy

APPROVED AS TO FORM:

RAYMOND G. FORTNER, JR.
County Counsel

By _____
Deputy
Frederick W. Pfaffle

A RESOLUTION OF THE BOARD OF SUPERVISORS OF THE COUNTY OF LOS ANGELES, CALIFORNIA, ACTING AS THE GOVERNING BODY OF THE LOS ANGELES COUNTY WATERWORKS DISTRICT NO. 40, ANTELOPE VALLEY, APPROVING THE PROPOSAL AND DETERMINATION TO ADOPT AN INTEGRATED REGIONAL WATER MANAGEMENT PLAN FOR THE ANTELOPE VALLEY

WHEREAS, the California Water Code Division 6, Part 2.2, known as the Integrated Regional Water Management Planning Act of 2002, hereinafter referred to as "ACT," provides the framework for preparation and adoption of integrated regional water management plans; and

WHEREAS, the Antelope Valley-East Kern Water Agency; Palmdale Water District; Quartz Hill Water District; Littlerock Creek Irrigation District; Antelope Valley State Water Contractors Association; City of Palmdale; City of Lancaster; County Sanitation District No. 14 of Los Angeles County; County Sanitation District No. 20 of Los Angeles County; Rosamond Community Services District; and Los Angeles County Waterworks District No. 40; Antelope Valley, have established a Regional Water Management Group by means of a Memorandum of Understanding in accordance with the ACT; and

WHEREAS, the Regional Water Management Group collaboratively prepared an Integrated Regional Water Management Plan, hereinafter referred to as "PLAN," that meets the requirements of the ACT; and

WHEREAS, the Regional Water Management Group solicited and incorporated input from all interested stakeholders in preparation of the PLAN; and

WHEREAS, the adoption of the PLAN is intended to improve the Antelope Valley's competitiveness for State and Federal funding, including grants from Propositions 50, 84, and 1E for all members of the Regional Water Management Group.

NOW, THEREFORE, BE IT RESOLVED, that the Board of Supervisors of the County of Los Angeles, acting as the governing body of Los Angeles County Waterworks District No. 40, Antelope Valley, does hereby:

1. Propose to adopt an Integrated Regional Water Management Plan for the Antelope Valley as a member of the Regional Water Management Group; and

2. Determine to adopt and adopt an Integrated Regional Water Management Plan for the Antelope Valley as a member of the Regional Water Management Group.

The foregoing Resolution was adopted on the 4TH day of December, 2007, by the Board of Supervisors of the County of Los Angeles acting as the governing body of the Los Angeles County Waterworks District No. 40, Antelope Valley.

SACHI A. HAMAI
Executive Officer of the
Board of Supervisors of the
County of Los Angeles

By Charlotte R. Bradford
Deputy

APPROVED AS TO FORM:

RAYMOND G. FORTNER, JR.
County Counsel

By _____
Deputy
Frederick W. Pfaeffle

PALMDALE WATER DISTRICT
RESOLUTION 08-1

RESOLUTION OF THE GOVERNING BOARD OF THE PALMDALE WATER DISTRICT APPROVING THE PREPARATION OF AND ADOPTING AN INTEGRATED REGIONAL WATER MANAGEMENT PLAN FOR THE ANTELOPE VALLEY

WHEREAS, the California Water Code Division 6, Part 2.2, known as the Integrated Regional Water Management Planning Act of 2002, hereinafter referred to as "ACT," provides the framework for preparation and adoption of integrated regional water management plans; and

WHEREAS, the Antelope Valley-East Kern Water Agency; Palmdale Water District; Quartz Hill Water District; Littlerock Creek Irrigation District; Antelope Valley State Water Contractors Association; City of Palmdale; City of Lancaster; County Sanitation District No. 14 of Los Angeles County; County Sanitation District No. 20 of Los Angeles County; Rosamond Community Services District; and Los Angeles County Waterworks District No. 40; Antelope Valley, have established a Regional Water Management Group by means of a Memorandum of Understanding in accordance with the ACT; and

WHEREAS, the Regional Water Management Group collaboratively prepared an Integrated Regional Water Management Plan, hereinafter referred to as "PLAN," that meets the requirements of the ACT; and

WHEREAS, the Regional Water Management Group solicited and incorporated input from all interested stakeholders in preparation of the PLAN; and

WHEREAS, the adoption of the PLAN is intended to improve the Antelope Valley's competitiveness for State and Federal funding, including grants from Propositions 50, 84, and 1E for all members of the Regional Water Management Group; and

WHEREAS, the adoption of the PLAN is exempt from the California Environmental Quality Act under section 15262 of the guidelines as a project involving only feasibility or planning studies for possible future actions; and

NOW, THEREFORE, BE IT RESOLVED, that the Board of Directors of the Palmdale Water District does hereby:

1. Propose to adopt an Integrated Regional Water Management Plan for the Antelope Valley as a member of the Regional Water Management Group; and

2. Determine to adopt and adopt an Integrated Regional Water Management Plan for the Antelope Valley as a member of the Regional Water Management Group.

PASSED AND ADOPTED on this 23rd day of January, 2008, by the Board of Directors, the governing body of the Palmdale Water District.

PALMDALE WATER DISTRICT

Richard D. Wells,
President

ATTEST: JEFF A. STORM

Assistant Secretary:

PALMDALE WATER DISTRICT
RESOLUTION 08-2

RESOLUTION OF THE GOVERNING BOARD OF THE PALMDALE WATER DISTRICT APPROVING THE PREPARATION OF AND ADOPTING A GROUNDWATER MANAGEMENT PLAN FOR THE ANTELOPE VALLEY

WHEREAS, the California Water Code Division 6, Part 2.75, known as the Groundwater Management Planning Act, hereinafter referred to as "ACT," provides the framework for preparation and adoption of groundwater management plans in the State; and

WHEREAS, the Antelope Valley-East Kern Water Agency; Palmdale Water District; Quartz Hill Water District; Littlerock Creek Irrigation District; Antelope Valley State Water Contractors Association; City of Palmdale; City of Lancaster; County Sanitation District No. 14 of Los Angeles County; County Sanitation District No. 20 of Los Angeles County; Rosamond Community Services District; and Los Angeles County Waterworks District No. 40; Antelope Valley, have established a Regional Water Management Group by means of a Memorandum of Understanding in accordance with the ACT; and

WHEREAS, the Regional Water Management Group collaboratively prepared a Groundwater Management Plan for the Antelope Valley, hereinafter referred to as "PLAN," that meets the requirements of the ACT; and

WHEREAS, the Regional Water Management Group solicited and incorporated input from all interested stakeholders in preparation of the PLAN; and

WHEREAS, the adoption of the PLAN is intended to improve the Antelope Valley's competitiveness for State and Federal funding, including grants from Propositions 50, 84, and 1E for all members of the Regional Water Management Group; and

WHEREAS, the adoption of the PLAN is exempt from the California Environmental Quality Act under section 15262 of the guidelines as a project involving only feasibility or planning studies for possible future actions; and

NOW, THEREFORE, BE IT RESOLVED, that the Board of Directors of the Palmdale Water District does hereby:

1. Determine to adopt and adopt a Groundwater Management Plan for the Antelope Valley as a member of the Regional Water Management Group.

PASSED AND ADOPTED on this 23rd day of January, 2008, by the Board of Directors, the governing body of the Palmdale Water District.

PALMDALE WATER DISTRICT

Richard D. Wells,
President

ATTEST: JEFF A. STORM

Assistant Secretary: _____

ROSAMOND COMMUNITY SERVICES DISTRICT
RESOLUTION NO. 2008-10

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE ROSAMOND COMMUNITY SERVICES DISTRICT APPROVING THE PROPOSAL AND DETERMINATION TO ADOPT AN INTEGRATED REGIONAL WATER MANAGEMENT PLAN

WHEREAS, the California Water Code Division 6, Part 2.2, known as the Integrated Regional Water Management Planning Act of 2002, hereinafter referred to as "ACT," provides the framework for preparation and adoption of integrated regional water management plans; and

WHEREAS, the Antelope Valley-East Kern Water Agency; Palmdale Water District; Quartz Hill Water District; Littlerock Creek Irrigation District; Antelope Valley State Water Contractors Association; City of Palmdale; City of Lancaster; County Sanitation District No. 14 of Los Angeles County; County Sanitation District No. 20 of Los Angeles County; Rosamond Community Services District; and Los Angeles County Waterworks District No. 40; Antelope Valley, have established a Regional Water Management Group by means of a Memorandum of Understanding in accordance with the ACT; and

WHEREAS, the Regional Water Management Group collaboratively prepared an Integrated Regional Water Management Plan, hereinafter referred to as "PLAN," that meets the requirements of the ACT; and

WHEREAS, the Regional Water Management Group solicited and incorporated input from all interested stakeholders in preparation of the PLAN; and

WHEREAS, the adoption of the PLAN is intended to improve the Antelope Valley's competitiveness for State and Federal funding, including grants from Propositions 50, 84, and 1E for all members of the Regional Water Management Group.

NOW, THEREFORE, BE IT RESOLVED, Board of Directors of the Rosamond Community Services District **, does hereby:**

1. Propose to adopt an Integrated Regional Water Management Plan for the Antelope Valley as a member of the Regional Water Management Group; and

2. Determine to adopt and adopt an Integrated Regional Water Management Plan for the Antelope Valley as a member of the Regional Water Management Group.

PASSED AND ADOPTED at the regular meeting of the Board of Directors of the Rosamond Community Services District held this 9th day of January, 2008.

By: _____
President, Board of Directors
Rosamond Community Services District

ATTEST:

By: _____
Secretary, Board of Directors
Rosamond Community Services District

Attachment 3

Stormwater Flood Management Grant Proposal
City of Palmdale
Work Plan

Attachment 3 consists of the following items:

- ✓ **Work Plan.** Attachment 3 contains detailed information regarding the tasks that were and will be performed for the proposed project.

Introduction

The Upper Amargosa Creek Flood Control, Recharge, and Habitat Restoration Project (Amargosa Project) is proposed by the City of Palmdale (City), an accredited agency of the American Public Works Association (APWA)[1]. The Amargosa Project proposes to provide flood protection by confining Amargosa Creek stormwater flows within channel berms that prevent erosion damage to nearby utilities, local streets, and eliminating a public safety hazard. The project also provides the City with additional water supplies from increased groundwater recharge, native habitat restoration, and additional community/park areas within the Amargosa Creek Watershed. The bottom of the channel will remain as a soft, natural surface. An overall view of the Amargosa Project is shown in Figures 3-3 through 3-10.

Flood Protection

The flood protection berms consist of soilcrete embankments between 20th Street West and 25th Street West that will protect both sides of the creek from further erosion and property damage, including:

- 30-inch diameter sewer trunk line near Elizabeth Lake Road
- 24-inch diameter water supply pipe
- 6-inch diameter natural gas pipe
- Future 20th Street Bridge
- Potential safety hazards posed to pedestrians along Amargosa Creek and nearby streets

Some flood protection will also be provided by the recharge facilities, which include diversion structures and spreading basins with a maximum capacity of 100 cubic feet per second (cfs) during storm events. In addition, a 500-foot stormwater conveyance pipe will be constructed to connect the 25th Street West storm culvert directly to the recharge basins to prevent the continued formation of an existing 10-foot deep natural channel that poses an ongoing threat to pedestrians.

Water Supply

The recharge component of the Amargosa Project includes the construction of eight basins (six "off-channel" and two "in-channel") to recharge groundwater within an area of about 20 acres along Amargosa Creek. The project will use two sources of water to recharge the underlying aquifer: 1) untreated State

[1] Accreditation is based on a peer reviewed and approved self-assessment based on the Best Practices Manual as prepared by the APWA. The complete self-assessment represents an agency-wide review of management and operation policies and practices as compared to nationally recognized practices as developed by the APWA. The City's self-assessment covered over 430 best management practices. APWA accreditation is the recognition that the City subscribes to the concept of continuous improvement and has conducted an in-depth self assessment of policies, procedures and practices to achieve conformance with a recognized body of management practices.

Water Project (SWP) water and 2) stormwater runoff from the Amargosa Creek Watershed. The project is ideally located just downstream of the California Aqueduct where only minimal infrastructure would be necessary to convey SWP water from the aqueduct to the recharge basins. Assuming recharge basins would be out of operation during the summer months when SWP water and stormwater would not be available, it is anticipated the project would recharge 14,600 to 53,600 acre-feet per year (AFY) of SWP water depending on available supply, with an average of approximately 24,300 AFY[2]. Stormwater collection and conveyance facilities would be installed to direct existing upslope municipal stormwater flows into the proposed recharge basins in Amargosa Creek. It is anticipated the project will capture and recharge approximately 400 AFY of stormwater, depending on annual precipitation and rainfall patterns.

The proposed recharge improvements include: 1) constructing two small push-up check dams in the Amargosa Creek channel to form in-channel recharge areas that promote recharge by reducing flow velocity and expanding the wetted area; 2) constructing six off-channel recharge basins located between 25th Street West and 20th Street West.

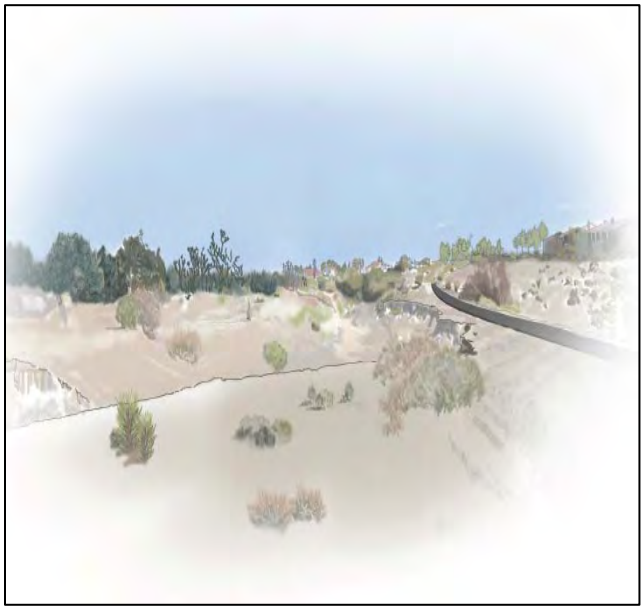
Habitat Restoration and Recreational Open Space

Lastly, the project will integrate the recharge facilities with a proposed Nature Park at Amargosa Creek. The project will restore 25 acres of habitat along Amargosa Creek to reestablish Mojave Desert scrub, native vegetation, and wildlife habitat to enhance the biological environment of the area. The proposed restoration efforts will include: 1) removing trash from the site; 2) planting native plants; 3) installing a temporary irrigation system to establish newly planted vegetation; and 4) removing invasive and non-desirable plant species. The restoration area would serve to educate the public regarding water supply infrastructure, urban watershed issues, and native plants and wildlife. The restoration area will include a bike path and footpaths to encourage public access and will include educational storyboards and placards identifying the types of plants and wildlife that are native to the region. The project will also provide footpaths and bike paths for a safe and direct route to and from local schools for existing pedestrian traffic. Figures 3-2 and 3-3 show artist's renderings of the habitat restoration and public recreation components of the project.

Figure 3-1: Rendering of Habitat Overlook, Education Placard, and Bike Path that will be Implemented as Part of the Amargosa Project

[2] Water Resource Evaluation of Amargosa Creek-Prepared for the City of Palmdale, SAIC, July 2009

Figure 3-2: Rendering of Planned Habitat Enhancement with Native Vegetation



Summary

The overall proposed project improvements include: providing improved flood protection within the Amargosa Creek watershed and reducing flood cost damages, expanding the size and capacity of the natural recharge area, developing and preserving an ephemeral stream habitat, and providing foot and bike paths for public recreation.

Goals and Objectives

The City is a participant in the IRWM Plan and the Amargosa Project is one of the identified priority projects that will aid in meeting the Antelope Valley's IRWM Plan goals and objectives. Table 3-1 highlights the Antelope Valley's IRWM Plan goals (and therefore the Amargosa Project goals) along with the respective objectives designed to achieve these goals.

Table 3-1: Antelope Valley IRWM Plan Goals and Objectives

IRWM Plan Objective		Primary IRWM Plan Goals Implemented by Objective		
		Goal 1: Municipal and industrial (M&I) purveyors reliably provide the quantity and the quality of water that will be demanded by a growing population	Goal 2: Satisfy agricultural users' demand for reliable irrigation water supplies at a reasonable cost	Goal 3: Protect and enhance current water resources (including groundwater) and the other environmental resources within the Antelope Valley Region
A	Provide reliable water supply to meet the Antelope Valley Region's expected demand between now and 2035	●	●	
B	Establish a contingency plan to meet water supply needs of the Antelope Valley Region during a plausible disruption of SWP water deliveries	●	●	
C	Stabilize groundwater levels at current conditions		●	●
D	Provide drinking water that meets customer expectations	●		
E	Protect aquifer from contamination	●		●
F	Protect natural streams and recharge areas from contamination	●		●
G	Maximize beneficial use of recycled water	●		
H	Reduce negative impacts of stormwater, urban runoff, and nuisance water			●
I	Preserve open space and natural habitats that protect and enhance water resources and species in the Antelope Valley Region			●
J	Maintain agricultural land use within the Antelope Valley Region		●	●
K	Meet growing demand for recreational space			●
L	Improve integrated land use planning to support water management	●		●

● IRWM Plan goal targeted by Plan objective

The Amargosa Project will be consistent with ten of twelve Antelope Valley IRWM Plan objectives. Table 3-2 below provides an overview of the Antelope Valley IRWM Plan objectives that are expected to be directly (●) achieved through implementation of the project.

Table 3-2: Contribution to IRWM Plan Objectives

Proposal Projects	Contribution to IRWM Plan Objectives											
	A	B	C	D	E	F	G	H	I	J	K	L
Upper Amargosa Creek Flood Control, Recharge, and Habitat Restoration Project	●	●	●	●	●	●		●	●		●	●

● achieved through implementation of the Project

This project contributes to the Antelope Valley IRWM Plan objectives in the following ways:

- **Objective A** – *Provide a reliable water supply to meet the Antelope Valley Region's expected demand between now and 2035*: by constructing six off-channel and two in-channel recharge basins to protect groundwater levels to continue to meet the region's water supply needs.
- **Objective B** – *Establish a contingency plan to meet water supply needs of the Antelope Valley Region during a plausible disruption of SWP water deliveries*: by storing SWP water and storm water in the underlying aquifer to continue providing a reliable stream of water supply if future SWP disruptions occur.
- **Objective C** – *Stabilize groundwater levels at current conditions*: by recharging the underlying aquifer and increasing groundwater levels in an area that regionally has the lowest groundwater levels.
- **Objective D** – *Provide drinking water that meets customer expectations*: via percolation and recharge of stormwater and SWP water into the underlying aquifer which serves as a portion of the region's drinking water supply portfolio.
- **Objective E** – *Protect aquifer from contamination*: by capturing and recharging the upper aquifer and reducing the overdraft effects from infiltration of arsenic-laden water from the lower aquifer into the upper aquifer.
- **Objective F** – *Protect natural streams and recharge areas from contamination*: by creating a flood control channel, park and recharge area will help secure the creek habitat with fences, basins, and other appurtenances from off-road vehicles, trash dumping, and other habitat destroying activities. The footpaths and bike paths will also provide a safe route to and from the local schools and, in turn, protect the local environment.
- **Objective H** – *Reduce negative impacts of stormwater, urban runoff, and nuisance water*: by channelizing and confining flows within Amargosa Creek to prevent flooding of roads. Additionally, the project will reduce downstream erosion and sedimentation during storm events.
- **Objective I** – *Preserve open space and natural habitats that protect and enhance water resources and species in the Antelope Valley Region*: by designating 25 acres as native habitat and conservation area that would restore previously disturbed habitat by removing non-native vegetation, restoring native Mojave Desert Scrub, riparian vegetation, and wildlife habitat.
- **Objective K** – *Meet growing demand for recreational space*: by creating a 38-acre community nature park within the boundaries of the project site containing multi-use pathways, picnic tables, interpretive plaques, educational opportunities, and habitat enhancement/restoration areas.
- **Objective L** – *Improve integrated land use planning to support water management*: by implementing a project that will adaptively manage multiple local water supply sources such as imported water, stormwater, and groundwater.

In summary, the Amargosa Project's primary objectives include: reducing negative impacts associated with stormwater runoff, reducing erosion and sedimentation, increasing ground water recharge, providing a reliable water supply for future use, enhancing and protecting the environment and local habitat, and creating recreational open space for the local community.

Purpose and Need

The Amargosa Project is primarily needed to prevent flood-induced erosion along Amargosa Creek and reduce flood cost damages to utilities and streets as well as increase water supply reliability, restore native habitat conservation area, and recreational space. With implementation of the project, increased flood protection will reduce the risk of damage to utilities and streets. Additionally, the Antelope Valley's groundwater basin is the most depressed within the heart of the Amargosa Creek; therefore, the project is needed for groundwater recharge to supplement groundwater levels in the underlying aquifer.

The purpose of the project is to channelize a portion of the Amargosa Creek, construct eight recharge basins, and expand habitat protection and recreational space to prevent flood damages, provide a reliable water supply to meet the Antelope Valley Region's future water demand, and provide habitat protection and recreational public space.

Project List/Project Specifics

Table 3-3 provides an abstract of the proposed project, the current status of the project, implementing agencies (as applicable), the site specific geographic location, and the project's function with relation to other stormwater conveyance systems.

Table 3-3: Amargosa Project Specifics

Project	Description	
Upper Amargosa Creek Flood Control, Recharge, and Habitat Restoration Project	*Abstract:*	*The Upper Amargosa Creek Flood Control, Recharge, and Habitat Restoration Project is proposed by the City of Palmdale. The proposed project will improve flood protection within the Amargosa Creek Watershed by confining a portion of the Amargosa Creek within channel berms with a soft bottom. The project will additionally use untreated State Water Project (SWP) water and stormwater to recharge the most depressed area of the largest underlying groundwater aquifer of the Antelope Valley. Lastly, this project will increase the amount of protected natural habitat. The proposed project improvements include: prevent erosion damage by channelizing portions of Amargosa Creek, expanding the size and capacity of the spreading ground of the natural recharge area, and developing and preserving an ephemeral stream habitat.*
	Status:	Pre-design Phase
	Implementing Agency:	City of Palmdale
	Location:	North side of Elizabeth Lake Road between 25th Street West and 20th Street West
	Stormwater Conveyance:	The project will extend stormwater conveyance into the Amargosa Creek recharge basins and create stormwater collection to reduce stormwater flows downstream and reduce the potential flood damage to utilities, homes and businesses.
	State Plan for Flood Control:	Not applicable.

Project Partners

The Amargosa Project is being solely proposed by the City of Palmdale.

Integrated Elements of Project

The project integrates with other Antelope Valley IRWMP projects through meeting the following IRWMP region goals:

- **Goal 1** - Municipal and industrial (M&I) purveyors reliably providing the quantity and the quality of water that will be demanded by a growing population
- **Goal 2** - Satisfying agricultural users' demand for reliable irrigation water supplies at a reasonable cost
- **Goal 3 -** Protecting and enhancing current water resources (including groundwater) and the other environmental resources within the Antelope Valley Region.

Regional and Project Maps

A site map showing the Amargosa Project geographic location along with the Amargosa Creek watershed and Antelope Valley groundwater basin can be found in Figure 3-4. Figure 3-5 contains a map of the project location and all flood protection infrastructure to be constructed as part of the project. Figures 3-6 and 3-7 are maps of the project site and groundwater recharge facilities that will be constructed as part of the project. Figures 3-8 and 3-9 are detailed maps of the proposed Amargosa Creek Nature Park.

Figure 3-33: Amargosa Project Regional Map

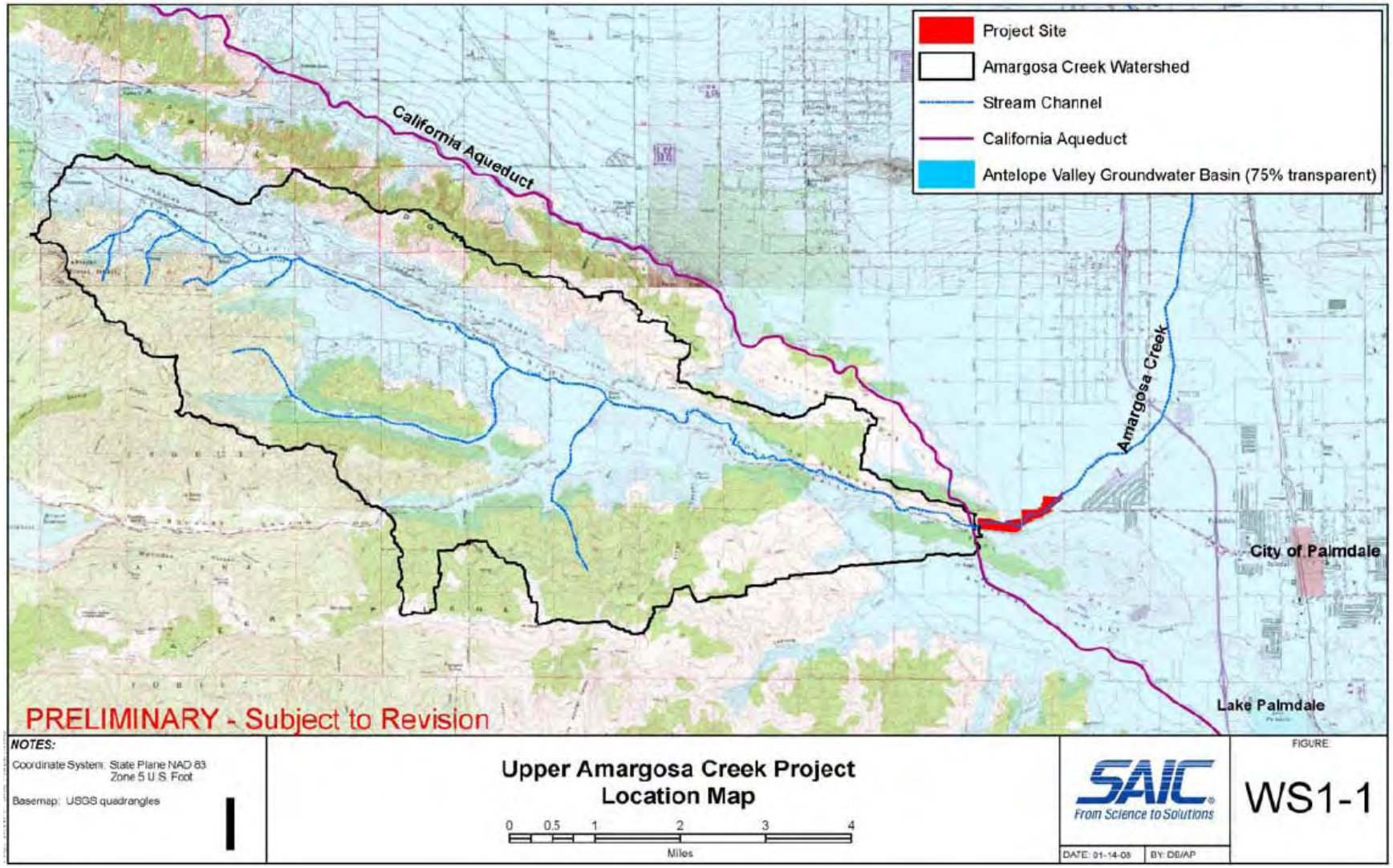


Figure 3-4: Amargosa Project Flood Protection Components

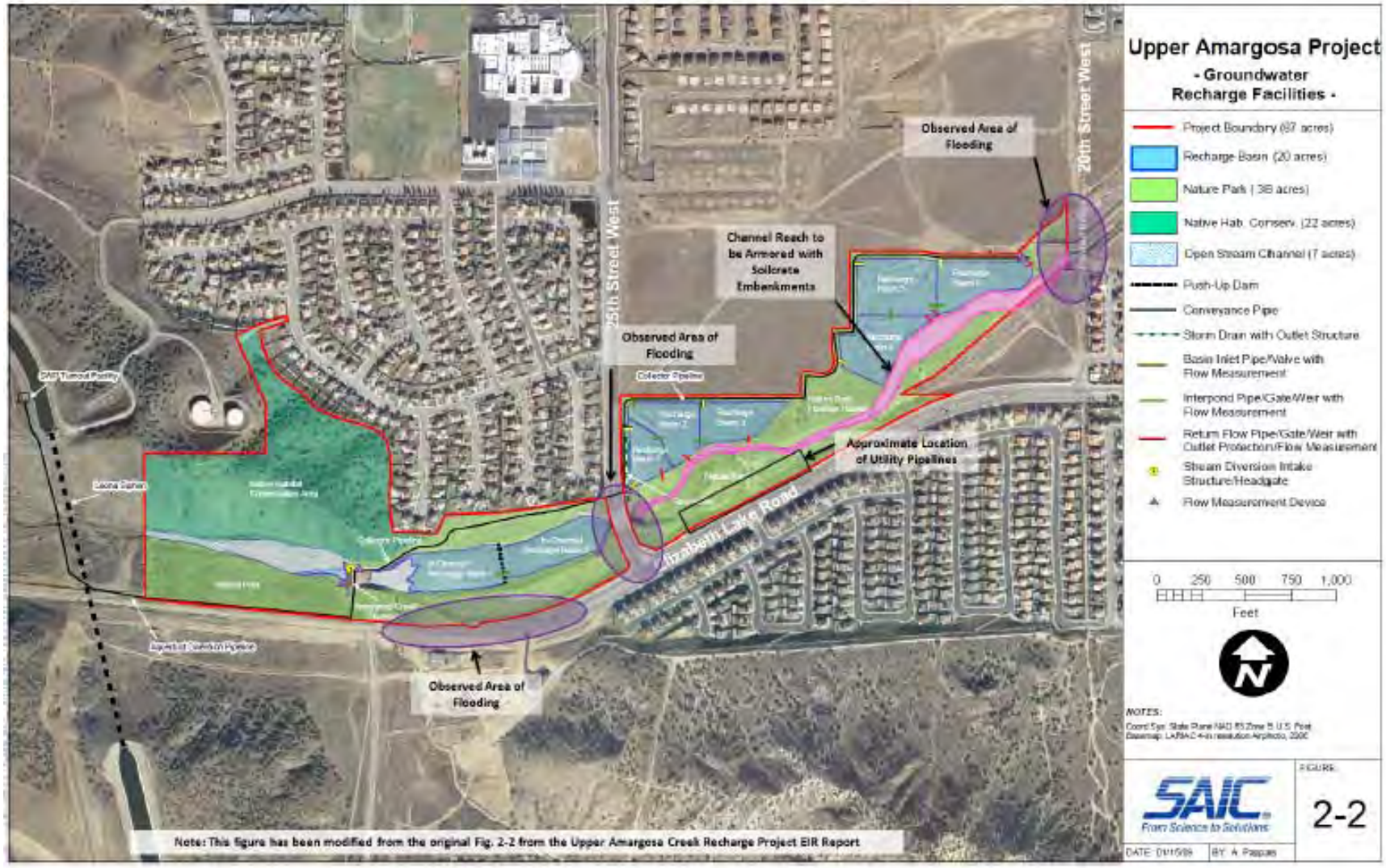
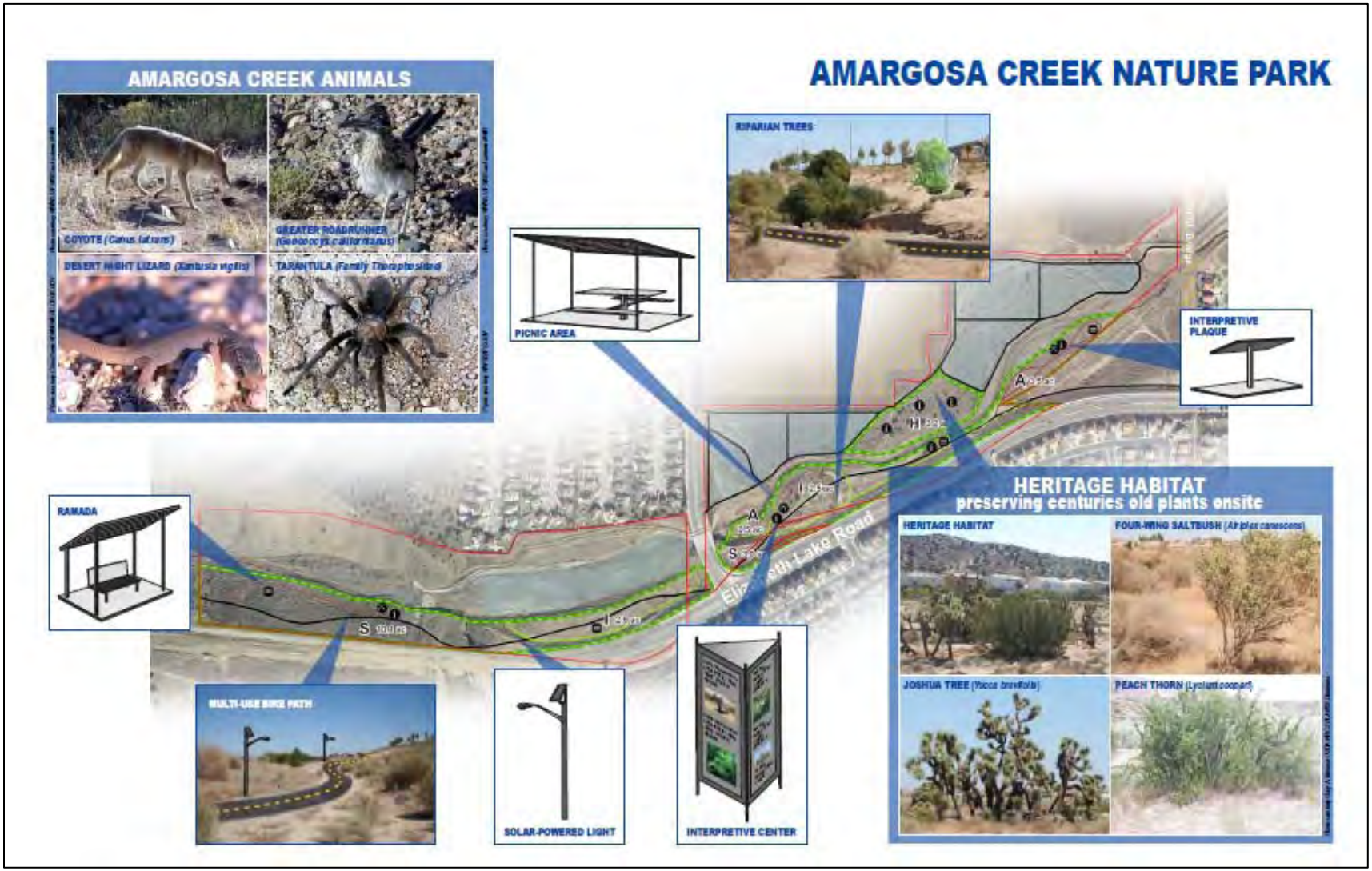


Figure 3-5: Amargosa Project Groundwater Recharge Components

Figure 3-8: Amargosa Project Water Resource Infrastructure

Figure 3-9: Amargosa Creek Nature Park

Figure 3-10: Rendering of Amargosa Creek Nature Park



Completed Work

An environmental impact report (EIR) was completed by Science Applications International Corporation (SAIC) in July 2009 for the Amargosa Project. The EIR found the proposed project and all alternatives, including the no project alternative, would result in unavoidable significant impacts to air quality due to greenhouse gas (GHG) emissions during construction or operation. All other impacts were found to be less than significant, either without the need for mitigation or with the application of appropriate mitigation measures. Any mitigation measures will be implemented as necessary. For further details see *Task 6 Environmental Documentation and Task 10 Environmental Compliance/ Mitigation/ Enhancement* in the Work Plan Tasks below. A copy of the EIR report is attached at the end of this attachment. Additionally, a preliminary concept report, percolation reports, siting studies, and other planning documents have been completed for the Amargosa Project, see Task 4 Assessment and Evaluation.

As of February 2011, the City purchased 15 acres of land necessary for construction of the recharge basins and creating habitat/recreational space. Further details can be found in *Section B – Land Purchase Easement* in the Work Plan Tasks below. The City has also applied for water rights from the State Water Resources Control Board (SWRCB) for the stormwater recharge portion of the project. A copy of the Application to Appropriate Water submitted to the SWRCB is attached at the end of this attachment. Lastly, the City has in place Golden State Labor Compliance, LLC (LCD ID: 2003.00071) as their Labor Compliance Program. Golden State Labor Compliance, LLC will be used for the Amargosa Project.

Existing Data and Studies

Reports and studies that have been completed for the Project are:

- A study titled "*Study of Potential Recharge Sites in the Antelope Valley*" was prepared for the Antelope Valley State Water Contractors Association by Stetson Engineers, Inc. in September 2002
- *Amargosa Creek Percolation Demonstration Report* was prepared by SAIC in July 2007
- *Upper Amargosa Creek Concept Report* was prepared by SAIC in January 2008
- *Upper Amargosa Creek Recharge Project Environmental Impact Report* was prepared by SAIC in July 2009
- *Preliminary 20th Street West-Amargosa Creek Improvements Project Report* was prepared by LAN Engineering (now AECOM) in 2007
- *Water Resources Evaluation of Amargosa Creek* was prepared by SAIC in July 2009
- *Antelope Valley Integrated Regional Water Management Plan*, Proposition 50 Round 2, Step 5 Grant Application was prepared by the City and submitted to DWR in 2008

Project Timing and Phasing

Planning and environmental documentation have been completed for this project. Design is expected to start in 2011 (or once grant funds are awarded) and be completed by September 2012, and construction is anticipated to begin by January 2013. This project is not part of a multi-phased project and will be fully functional without implementation of other projects.

Work Plan Tasks

The following sections outline the specific activities that will be performed to implement the Amargosa Project in the *Stormwater Flood Management Grant Program*.

A. Direct Project Administration Costs

Task 1 – Project Administration:

Project administration includes administration of grant and construction contracts, preparation of reports and plans, coordination of design contracts, and other administrative activities required to complete design and construction. Four City staff members will be designated for project administration: Project Manager, Director of Public Works, Assistant Director of Public Works/City Engineer, and the Utilities Services Manager. This project will be coordinated by a designated Project Manager employed by the City. The project manager will be the point of contact for the project's duration and be responsible for the day-to-day activities of the project and all reporting to the grant agency, and will coordinate with various agencies regarding permitting, environmental, design and construction issues. The Director of Public works will be responsible for negotiating agreements with any partners. The Assistant Director of Public Works/City Engineer is in charge of the program management section [any direct project responsibilities]. The Utilities Services Manager will be responsible for the project design, coordinating with project consultants, agreement coordination, and the operation and maintenance. A detailed breakdown of project labor for each City staff is presented in Table 3-4.

The City will need to negotiate an agreement for establishing the source, quantities, and availability of the SWP water to be recharged, and for funding the implementation items, and for operation and maintenance of the project. This may include preparation of implementation agreements including a Memorandum of Understanding (MOU) or Principles for Agreement with the local entities that have SWP contracts. The Antelope Valley State Water Contractors Association (AVSWCA), as the grant contracting entity, will be the recipient of the grant and act as the grant administrator. The AVSWCA will execute an agreement with the City in order to implement the activities outlined in this proposal. All project administration submittals are listed in Table 3-5.

Table 3-4: Amargosa Project Administration Labor

Project Administration Labor Category	Level of effort (hours)	Status
AFTER September 1, 2011		
Director of Public Works	66	Not started
Assistant Director of Public Works/City Engineer	139	Not started
Utilities Services Manager	972	Not started
Project Manager	734	Not started

Table 3-5: Project Administration Submittals

Project Administration Submittals	Date	Status
AFTER September 1, 2011		
MOU or Principles for Agreement with Local Entities with SWP contracts	Fall 2011	Not started

Task 2 – Labor Compliance Program:

The City hired Golden State Labor Compliance, LLC (LCD ID: 2003.00071) who are approved as a third party labor compliance program provider by the California Department of Industrial Relations. Tables 3-6 and 3-7 provide further details on the labor consulting company and required labor compliance submittals.

Table 3-6: Labor Compliance Program

Labor Category	Status
AFTER September 1, 2011	
Golden State Labor Compliance, LLC	Hired Annually

Table 3-7: Labor Compliance Program Submittals

Labor Compliance Submittals	Date	Status
AFTER September 1, 2011		
Annual Reports	Annually	Not started

Task 3 – Reporting:

The project manager will prepare and submit quarterly and annual progress reports and invoices to the granting agency. The progress reports will describe activities undertaken and accomplishments of each task when milestones are achieved and when any problems are encountered in the performance of the work. A final summary report will be prepared and submitted once the project is completed.

The City will enter into an MOU regarding compliance with Stormwater Flood Management Grant Program requirements and terms of reimbursement payments with the State of California, who would serve as the grantee for the Stormwater Flood Management Grant funding. The MOU between the City and the State of California is anticipated to be completed once grant funding is received in September 2011. Table 3-8 contains a detailed list of all the reporting submittals the City will make to the state.

Table 3-8: List of all Reporting Submittals

Reporting Submittals	Date	Status
AFTER September 1, 2011		
MOU with the City and the State of California	September 2011	Not started
Quarterly, Annual Reports and Invoices	Quarterly	Not started
Final Summary Report at Project Completion	January 2014	Not started

B. Land Purchase Easement

The City purchased 15 acres of Los Angeles County Parcel AIN: 3003-030-018 for a portion of the proposed mitigation and recharge area, see Table 3-9 for further details. The new parcel will be included in the habitat restoration area of the Amargosa Project. The addition of footpaths located near and along 20th Street West, 25th Street West, and Elizabeth Lake Road, will require modifications to the roadways but will not affect right-of-ways along these streets.

Table 3-9: Land Purchases

Land Purchases	Date	Status
BEFORE September 1, 2011		
Land Purchase (AIN: 3003-030-018)	February 2011	Purchase Complete

C. Planning/Design/Engineering/Environmental Documentation

Task 4 – Assessment and Evaluation:

Several technical memoranda covering the Amargosa Project have been produced. These deliverables include design narratives describing the rationale for conceptual engineering design, landscape habitat restoration design, and general project design. Plan view sketches, elevation view sketches, and a table of plant species planned for site-planting zones were included in the technical memoranda. These supporting documents are included in Appendix B of this application.

Planning efforts have also included data collection and field-testing of percolation rates. The data was necessary for sizing of facilities and for construction cost estimates. Data collected included the following:

- **Site topography** - 4-inch resolution Light Detection and Ranging (LIDAR) data in both digital terrain model and digital surface model forms
- **Site Land Use** - 4-inch resolution aerial photo from 2006
- **Precipitation Records** - daily data from ten gauges within a six-mile radius of the Amargosa Creek watershed with complete coverage from the year 1913 forward
- **Surface Water Hydrology** - several United States Geological Survey (USGS) reports and consultant work products have been reviewed and evaluated
- **SWP Supply** - several DWR reports on the availability of SWP supplies historically and projections of future delivery capabilities have been reviewed and evaluated
- **Groundwater Characteristics** - a groundwater percolation test performed on-site, USGS reports, and local boreholes have been reviewed and evaluated.

As part of the project, several reports were completed as well. These reports are listed in **Table 3-10** and summarized below:

- *Study of Potential Recharge Sites in the Antelope Valley,* completed September 2002: This report was completed to determine the preferred groundwater recharge sites in the Antelope Valley. This study was used to determine the recharge sites for the Amargosa Project.
- *Amargosa Creek Percolation Demonstration Report,* completed July 2007: This is a preliminary report of the recharge potential using water percolation near the Amargosa Creek at the 20th Street West Crossing and at the 25th Street West crossing. The report details the results and methodologies used for the percolation demonstration tests.
- *Upper Amargosa Creek Recharge Project Environmental Impact Report (EIR),* completed July 2009: This report discusses environmental resource areas identified in the project's initial study and the project's potential to impact these resources, as required under the CEQA guidelines.
- *Water Resources Evaluation of Amargosa Creek,* prepared completed July 2009: The report evaluates all components of the project and provides detailed descriptions of each project component.
- *20th Street West-Amargosa Creek Improvements Project Report,* completed in 2007: This project report recommends the final CEQA environmental document be approved and provides recommendations on the preferred project alternative.
- *Antelope Valley Integrated Regional Water Management Plan, Proposition 50 Round 2, Step 2 Grant Application,* completed in early 2008: This is an application submitted under Proposition 50

which identifies the key water-related challenges being faced in the Antelope Valley Region along with the projections of how these challenges will change over time.

Table 3-10: List of Studies/Reports Completed

Studies/Reports Completed	Date	Status
BEFORE September 1, 2011		
Study of Potential Recharge Sites in the Antelope Valley	September 2002	Completed
Amargosa Creek Percolation Demonstration Report	July 2007	Completed
Upper Amargosa Creek Recharge Project Environmental Impact Report (EIR)	July 2009	Completed
Water Resources Evaluation of Amargosa Creek	July 2009	Completed
Preliminary 20th Street West-Amargosa Creek Improvements Project Report	April 2007	Completed
Antelope Valley Integrated Regional Water Management Plan, Proposition 50 Round 2, Step 2 Grant Application	January 2008	Completed

Task 5 – Final Design:

A conceptual design report covering the Amargosa project was prepared by SAIC and completed in January 2008. The conceptual design outlines the placement, sizing, and rationale for the flood control elements, planned recharge facilities, riparian habitat restoration areas, and recreational open space. The conceptual design of the recharge facilities includes plan view layouts of primary water collection, conveyance, and storage facilities, inter-basin flow control structures, and general discussion of measurement, operations, and control criteria. The conceptual designs of the Community Park and environmental features describe restoration and enhancement coupled with amenities for public educational and recreational use. The project site covers approximately 75 acres in total, including 20 acres of recharge facilities and 25 acres of habitat restoration. The remaining 30 acre-area includes the Amargosa Creek channel and other open space located north of the creek.

Work on final design plans and specifications will begin in 2011 and is scheduled for completion by September 2012, with interim deliverables proposed as described below. These final design plans will include detailed design criteria for the soilcrete embankments between 20th Street West and 25th Street West. Plans and specifications will be prepared at the 30%, 60%, 90%, and 100% design completion levels. At each stage of completion, the project proponent's staff and outside technical experts will provide technical review and Quality Assurance/Quality Control (QA/QC) of the plans and specifications.

At the 60% design stage, citizen concerns, specified details and construction notes based on 30% plan check comments and other requirements will be identified and incorporated into the design process. Plans will include plan and profile sheets to detail existing utilities, proposed earthen dams layouts, and surveying data. All necessary studies, such as biological assessments, geotechnical investigations, and topographic surveys, will be conducted at this time.

At the 90% design stage, complete design packages will be available for earthen dam construction and operation and permit requirements. A comprehensive copy of the specifications will include front-end documents, technical specifications and details, and special provisions.

Final design and construction documents shall include approved design and specification packages with signatures for construction. Table 3-11 contains a detailed list of all the Amargosa Project submittals that will be made to the state.

Table 3-11: Amargosa Project Design Submittals

Design Submittals	Date	Status
BEFORE September 1, 2011		
Upper Amargosa Creek Concept Report	January 2008	Completed
AFTER September 1, 2011		
30% Design Submittal	November 2011	Not started
60% Design Submittal	February 2012	Not started
90% Design Submittal	June 2012	Not started
100% Design Submittal- Amargosa Project Final Construction Documents	September 2012	Not started

Task 6 – Environmental Documentation:

The Amargosa Project requires compliance with the California Environmental Quality Act (CEQA) as part of the environmental review process and has fulfilled this requirement with the preparation of an EIR, completed in July 2009. The EIR was certified in February 2010 and adopted by the City Council in October 2010. The Site Plan Review (SPR) of the project has yet to be approved. It is anticipated the SPR will be approved by September 2011. Environmental Clearance for the National Environmental Policy Act (NEPA) is not required. Environmental documentation is summarized in Table 3-12.

Table 3-12: Amargosa Project Environmental Documentation

Environmental Documentation	Date	Status
BEFORE September 1, 2011		
Environmental Impact Report (EIR)	July 2009	Complete
Site Plan Review Approval	September 2011	Not yet approved

Task 7 – Permitting:

Permitting information for the Amargosa Project is described in Section G of this attachment.

D. Construction/Implementation

Task 8 – Construction Contracting:

Once the design is complete, and all required permits are procured, the project will be advertised for bidding through standard City procedures. The City will pre-qualify construction contractors using procedures consistent with the Public Contact Code and will hold a pre-bid meeting and respond to questions from contractors. The City will open and review bids for completeness, and award the project to the responsible bidder with the lowest bid in accordance with the Public Contract Code. Once the project has been bid and awarded, the selected contractor will construct the project in accordance with the final plans and specifications. Table 3-13 lists all City construction contracting submittals that will be made to the state.

Table 3-13: Amargosa Project Construction Contracting Submittals

Construction Contracting Submittals	Date	Status
AFTER September 1, 2011		
Complete Contractor Award	January 2013	Not started

Task 9 – Construction/Implementation:

Implementation of this project will occur after initiation of the grant agreement in September 2011.

Materials and/or Design Standards

The Amargosa Project will be designed and constructed in accordance with the appropriate standards, including those from American Society for Testing and Materials (ASTM), American Waterworks Association (AWWA), and other construction industry entities, and appropriate sections of the Health and Safety Code. All California Department of Public Health (CDPH) requirements will be strictly enforced.

Building materials to be used will be in accordance with ASTM, AWWA, and construction industry standards, the Greenbook: Standard Specifications for Public Works Construction, and consistent with the materials used on other regional public works projects.

Construction Tasks

- ***Subtask 9.1 – Mobilization and Site Preparation:***

  Construction will begin with mobilization, which includes moving the required equipment and materials on to the site in preparation for the work scope. The site will be prepared by removing all trash and debris. Non-native brush, trees and plants will be removed from the habitat restoration areas.

- ***Subtask 9.2 – Project Construction:***

  Project construction will include the following:

  - Earthwork: Earthwork includes stripping and stockpiling various types of topsoil, all required excavation and grading, hauling excess material off site, installing water conveyance facilities, installing/constructing soilcrete embankments between 20th Street West and 25th Street West, constructing earthen berms and structures to control flow to the recharge basins, and constructing small earthen dams in the Amargosa channel upstream from 25th Street West.
  - Utilities: This task will include the installation of metering and control of all electrical components.
  - Trees and Shrubs: Native trees, shrubs, and ground cover will be installed as part of this task.
  - Native Plants: Approximately 20,000 native shrubs grown from locally collected seed or cuttings will be planted in the project area; additional areas will be seeded with native species.
  - Pedestrian Paving Surface: A paved pedestrian walkway/bike path will be constructed around the project site.
  - Educational Displays: Installation of approximately ten educational displays depicting Mojave Desert scrub and riparian plants and wildlife, and explaining the challenges of local water resources, water supply infrastructure, channelization projects, recharge projects, and water conservation and recycling projects, among others.

- ***Subtask 9.3 – Performance Testing and Demobilization:***

  A Project Assessment and Evaluation Plan (PAEP) will be prepared to provide a framework for the assessment and evaluation of project performance and to identify measures that can be used to monitor progress towards achieving project goals per the SWRCB PAEP guidance document. Additionally, a Monitoring Plan and Quality Assurance Project Plan will be created to develop monitoring procedures and identify the requirements and criteria for field and laboratory

procedures that are required for the Amargosa Project, as construction of the conveyance pipelines and recharge basins will require monitoring of groundwater and/or surface water. All plans will be completed prior to the start of project construction. Table 3-14 lists all the city construction submittals that will be made to the state.

Table 3-14: Amargosa Project Construction Submittals

Construction Submittals	Date	Status
AFTER September 1, 2011		
Project Assessment and Evaluation Plan	December 2012	Not started
Monitoring Plan	December 2012	Not started
Quality Assurance Project Plan	December 2012	Not started

E. Environmental Compliance/Mitigation/Enhancement

Task 10 – Environmental Compliance/Mitigation/Enhancement:

The EIR found the Amargosa Project and all alternatives, including the no project alternative, would result in unavoidable significant impacts to air quality due to greenhouse gas emissions during construction or operation. Though significant GHG emissions would be associated with the Amargosa Project by virtue of a zero threshold for GHG emissions, there are no feasible mitigation measures to reduce GHG emissions sufficiently that the project would not result in some increase in GHGs. With no measures to monitor, no mitigation monitoring program for air quality related impacts is proposed.

All other impacts are considered less than significant, either without the need for mitigation or with the application of appropriate mitigation measures. The categories for mitigation efforts identified by the EIR are listed below:

- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Hydrology and Water Quality
- Noise

All mitigation measures listed above will be in put in place during project construction. For further details on each of the mitigation measures, see the Amargosa Project EIR, staring on page 28 (included as Appendix B).

F. Construction Administration

Task 11 – Construction Administration:

During construction, all staff members previously listed under *Task 1 - Project Administration* will be responsible for overseeing their responsibilities associated with construction of the project. A detailed breakdown of project labor for each City staff for construction administration is presented in Table 3-15. Additionally, the City will hire a qualified engineering consulting firm for construction management services to serve as the representative at the construction site(s) to provide daily on-site observation, coordinate with contractors, review schedules and invoices, and provide inspection services to ensure construction is in compliance with City Standards and other governing Standards. The Chief Public Works Inspector will ensure testing of materials used for construction, including soils and concrete, is conducted,

and will document all activities. The City will compile the major items in the monthly progress reports into quarterly reports to accompany invoices to the state. Table 3-16 lists all construction administration submittals. The City will require the contractor to submit monthly progress reports to accompany each invoice. Construction administration tasks will include the following tasks:

The Project Manager will:

- Oversee all activities associated with the construction of the project
- Oversee review of all technical data, schedules, invoices, change order items, contractual, and financial information for approval
- Attend construction meetings to provide technical support and coordinate with various agencies regarding permitting, environmental, design and construction issues.

The engineering consulting firm that is hired for construction management services will:

- Serve as the City's representative at the construction site
- Coordinate with contractors and agencies
- Review schedules, change orders and invoices
- Provide inspection services to ensure construction is in compliance with City governing standards
- Review technical information
- Provide clarifications to Request of Information
- Provide recommendations to the city project manager on any technical and construction issues

Table 3-15: Amargosa Project Construction Administration Labor

Labor Category	Level of Effort (Hours)	Status
AFTER September 1, 2011		
Director of Public Works	20	Not started
Assistant Director of Public Works/City Engineer	50	Not started
Utilities Service Manager	200	Not started
Chief Public Works Inspector	937	Not started
Project Manger	258	Not started
Consultant	Lump Sum Estimate	Not started

Table 3-16: Amargosa Project Construction Administration Submittals

Construction Administration Submittals	Date	Status
AFTER September 1, 2011		
Quarterly Construction Reports (Includes contractors monthly progress reports & invoices)	Quarterly	Quarterly during construction
Final Construction Report	May 2013	Not started

G. Other Costs

Permitting:

The Amargosa Project will require a Streambed Alteration Agreement from the California Department of Fish and Game (CDFG) for construction of the two temporary check dams within the creek channel, as well as for the soilcrete embankments proposed to reduce the potential for erosion during storm events.

Other anticipated permit requirements may include a "take" permit from CDFG for any impacts to species listed under the California Endangered Species Act that could be located at the site. A biological survey and wetland delineation will be required during 30% design to determine what species are present at the site and whether the "take" permit is necessary. Should wetlands be identified, the City would need to obtain an Army Corps of Engineers (ACE) 404 permit for purposes of filling in waters of the U.S. and a Regional Water Quality Control Board (RWQCB), Lahontan Region Section 401 Water Quality Certification.

A grading permit will be needed from the City's Department of Public Works Engineering Division for grading conducted at the recharge site.

Early consultations as part of the permit process are underway. Table 3-17 provides a detailed list of all permits that will be required for the Amargosa Project.

Table 3-17: Amargosa Project Permitting Submittals

Permitting Submittals	Approval Date	Status
AFTER September 1, 2011		
Army Corps of Engineers (ACE) Section 404 Permit (potential permit, consultation with ACE will determine if needed)	September 2012	Under Process
California Department of Fish and Game Streambed Alteration Agreement	September 2012	Under Process
Regional Water Quality Control Board , Lahontan Region Section 401 Water Quality Certification	September 2012	Under Process
City Grading Permit	September 2012	Under Process

H. Construction/Implementation Contingency

A construction/implementation contingency task is included for this project to cover the anticipated costs of developing and implementing construction-based mitigation measures anticipated to result from completion of *Task 10 - Environmental Compliance/Mitigation/Enhancement*. In additional, this contingency task includes management of unknown conditions that may be encountered during construction or implementation of the project, such as damage to existing utilities within the right-of-way or unearthing of archaeological resources during ground disturbance, and would also cover unexpected design constraints. It is estimated at approximately 10 percent of the total construction costs for the project.

Attachment 4

Stormwater Flood Management Grant Proposal City of Palmdale Budget

Attachment 4 consists of the following items:

- ✓ **Budget.** Attachment 4 provides a budget estimate for each budget category row of the proposed project.

Introduction

This attachment presents detailed budget information and supporting documentation for the Upper Amargosa Creek Flood Control, Recharge, and Habitat Restoration Project proposa (Amargosa Project). The project proposal offers tremendous investment value to the State for a number of reasons including:

- The proposal provides 52 percent of funding from non-State sources, demonstrating there is a strong commitment from the City to the implementation of this project.
- 100 percent of the grant funding request will be used directly for construction or construction-related activities.

A summary budget for the proposed project is provided in Table 4-1 while Table 4-2 provides a cost breakdown by Work Plan task and sub-task. Tables 4-3 through 4-8 provide detailed budget breakdowns for each of the budget categories. The cost breakdown for each budget is provided for each of the budget categories included in the sample budget provided in Exhibit B of the Proposition 1E IRWM Proposal Solicitation Package and are consistent with the categories included in the Work Plan (provided in Attachment 3) and Schedule (provided in Attachment 5).

Table 4-1: Total Project Budget[1]

	Budget Category	(a) Non-State Share* (Match)	(b) Requested Grant Funding	(c) Other State Funds Being Used	(d) Total	(e) % Funding Match
(a)	Direct Project Administration Costs	$269,760	$0	$0	$269,760	100%
(b)	Land Purchase/Easement	$785,666	$0	0	$785,666	100%
(c)	Planning/Design/Engineering/ Environmental Documentation	$848,964	$0	$0	$848,964	100%
(d)	Construction	$2,806,269	$6,500,000	$0	$9,306,269	30%
(e)	Environmental Compliance/ Mitigation/Enhancement	$864,613	$0	$0	$864,613	100%
(f)	Construction Administration	$377,596	$0	$0	$377,596	100%
(g)	Other Costs (Including Legal Costs, Permitting and Licenses)	$104,000	$0	$0	$104,000	100%
(h)	Construction Contingency	$926,454	$0	$0	$926,454	100%
(i)	**Grand Total**	**$6,983,322**	**$6,500,000**	**$0**	**$13,483,322**	**52%**

** Sources of funding: Non-state share funding sources will include Los Angeles County Waterworks District 40 who will contribute 1/3 of the projects total cost up to $5 million (see letter of support at the end of attachment), and City of Palmdale funds totaling $2,516,030.*

** Land Purchase/Easement costs include a $450,000 waiver of City Impact Fees.*

1. Preliminary cost estimate from 2007 values. All values were converted to 2009 dollar values based upon the update factors shown in the SWFM Guidelines (2007=1.04)

Table 4-2: Cost Breakdown by Work Plan Task and Subtask

Row/Task	Category	Total
Row (a)	Direct Project Administration Costs	**$269,760**
Task 1	*Project Administration*	*$241,967*
Task 2	*Labor Compliance Program*	$27,794
Task 3	*Reporting*	*Included in Task 1*
Row (b)	Land Purchase Easement	**$785,666**
Row (c)	Planning/Design/Engineering/Environmental Documentation	**$848,964**
Task 4	*Assessment and Evaluation*	*$64,587*
Task 5	*Final Design*	*$389,525*
Task 6	*Environmental Documentation*	*$300,000*
Row (d)	Construction	**$9,306,269**
Task 7	*Construction Contracting*	*Included in Task 8*
Task 8	*Construction*	*$9,306,269*
Row (e)	Environmental Compliance/Mitigation/Enhancement	**$864,613**
Task 9	*Environmental Compliance/Mitigation/Enhancement*	*$864,613*
Row (f)	Construction Administration	**$377,596**
Task 10	*Construction Administration*	*$377,596*
Row (g)	Other Costs	**$104,000**
Row (h)	Construction Contingency	**$926,454**
Row (i)	Grand Total	**$13,483,322**

Row (a) Direct Project Administration Costs

Task 1 – Project Administration:

Administration Cost estimate of $241,967 was calculated based on labor costs shown in Table 4-3. These costs account for all project administrative activities and reporting tasks.

Task 2 – Labor Compliance Program:

Labor Compliance Program (LCP) Costs of $27,794 as presented in Table 4-3 was calculated based on an estimated 0.30 percent fee of the project construction costs (not including contingency costs). These allocated costs will be used to contract Golden State Labor Compliance, LLC to implement the LCP.

Task 3 – Reporting:

The project manager will prepare and submit quarterly progress reports and invoices to the State of California. Reporting costs are included under Task 1 Project Administration Costs.

Table 4-3: Row (a) Direct Project Administration Budget

Discipline	Hourly Wage ($/hr)	Number of Hours	Total
Director of Public Works	$197.68	66	$13,047
Assistant Director of Public Works/City Engineer	$149.88	139	$20,834
Utilities Service Manager	$133.79	972	$130,040
Project Manager	$106.33	734	$78,046
Labor Compliance Program	Lump Sum	N/A	$27,794
		Total	**$269,760**

Row (b) Land Purchase/Easement

The City has purchased 15-acres of a Los Angeles County Parcel AIN: 3003-030-018 for the Amargosa Project. The land purchase costs are broken down in Table 4-4.

Table 4-4: Row (b) Land Purchase/Easement Budget

Discipline	Hourly Wage ($/hr)	Number of Hours	Total
Labor			
Director of Public Works	$197.68	10	$1,977
Assistant Director of Public Works/City Engineer	$149.88	17	$2,548
Utilities Service Manager	$133.79	52	$6,957
Consultant	Lump Sum	N/A	$18,184
Land Purchase			
Land Purchase (AIN: 3003-030-018)	Lump Sum	N/A	$306,000
Waiver of City Impact Fees	Lump Sum	N/A	$450,000
		Total	**$785,666**

Row (c) Planning/Design/Engineering/Environmental Documentation

Task 4 – Assessment and Evaluation:

Assessment and evaluation was estimated as $64,587 based on two efforts. The USGS is performing an evaluation of the Amargosa project and the City is providing $25,000 towards the study. Additionally, the City has drilled a monitoring well to determine the recharge capacity of this project. The monitoring well was constructed in March 2011 at a cost of $39,587.

Task 5 – Final Design:

Final design plans and specifications will be prepared at the 30%, 60%, 90%, and final design completion levels. The Agency plans to hire a consultant to perform the design; this is anticipated to cost $389,525. City staff will work with the consultants during the design process. The level of effort for City staff to conduct this work is estimated at $94,904. See Table 4-5 for a detailed cost breakdown.

Task 6 – Environmental Documentation:

An EIR has been prepared for the Amargosa Project, fulfilling the CEQA requirement. The consultant cost to prepare the EIR was $300,000. See Table 4-5 for a detailed cost breakdown.

Table 4-5: Row (c) Planning/Design/Engineering/Environmental Documentation Budget

Discipline	Hourly Wage ($/hr)	Number of Hours	Total
Assessment and Evaluation			
USGS Study	Lump Sum Estimate	N/A	$25,000
Monitoring Well	Lump Sum Estimate	N/A	$39,587
Final Design			
Engineering Consultants	Lump Sum Estimate	N/A	$389,525
Director of Public Works	$197.68	50	$9,884
Assistant Director of Public Works/City Engineer	$149.88	50	$7,494
Utilities Service Manager	$133.79	500	$66,895
Project Manager	$106.33	100	$10,633
CEQA/NEPA Documentation			
Environmental Impact Report (EIR) - SAIC	Lump Sum Estimate	N/A	$300,000
		Total	**$848,964**

Row (d) Construction

Task 7 – Construction Contracting:

Costs to advertise and acquire the construction contractor are estimated to be $2,087. Construction contracting costs are 5% of the total labor costs ($41,734) in Table 4.6. These costs are included in the labor costs under Task 8 Construction.

Task 8 – Construction:

Construction costs are estimated to be $9,306,269. As shown in Table 4-6, costs were broken down by common construction divisions. As the project is at the conceptual design phase, these estimates are from a preliminary engineer's estimate.

- **Equipment and Materials:** *Cost of equipment and materials is $9,264,536*
- **Labor:** *Cost of labor is $41,734*

Table 4-6: Row (d) Construction Costs[1]

Equipment and Materials			
Materials Used	**Unit Costs ($)**	**Number of Units**	**Total**
Mobilization	Lump Sum Estimate	N/A	$200,000
General Requirements	Lump Sum Estimate	N/A	$57,460
Existing Conditions	Lump Sum Estimate	N/A	$274,040
Concrete	$149,396	1	$149,396
Metals	$55,692	1	$55,692
Specialties	$44,200	1	$44,200
Furnishings	$19,448	1	$19,448
Special Construction	$120,224	1	$120,224
Electrical	$442,000	1	$442,000
Earthwork	$2,427,464	1	$2,427,464
Exterior Improvements	$1,153,620	1	$1,153,620
Utilities	$1,562,912	1	$1,562,912
Waterway Construction	$2,758,080	1	$2,758,080
		Subtotal	**$9,264,536**
Labor			
Discipline	**Hourly Wage ($)**	**Number of hours**	**Total**
Director of Public Works	$197.68	11	$2,174
Assistant Director of Public Works/City Engineer	$149.88	14	$2,098
Utilities Service Manager	$133.79	280	$37,461
		Subtotal	**$41,734**
		Total	**$9,306,269**

[1] This cost estimate is based on preliminary engineering estimate only. The numbers are subject to change.

Row (e) Environmental Compliance/Mitigation/Enhancement

Task 9- Environmental Compliance/Mitigation/Enhancement:

Environmental Compliance/Mitigation/Enhancement activities are allocated $864,613. Mitigation costs were determined by using $0.50 per square foot over the 39.7 acres of land that will require mitigation. The allocated costs are to cover all environmental compliance and mitigation activities identified in Attachment 3 Workplan.

Row (f) Construction Administration

Task 10- Construction Administration:

As described in the Work Plan (Attachment 3), City staff will oversee construction related activities and a consultant will be hired to perform construction management services. The Agency's level of effort is estimated to be $169,596 based on the level of effort estimates and the consultant cost is estimated to be $208,000. The total cost for construction administration is estimated to be $377,596. See Table 4-7 for details on the cost estimate.

Table 4-7: Row (f) Construction Administration Costs

Discipline	Hourly Wage ($/hr)	Number of Hours	Total
Director of Public Works	$197.68	20	$3,954
Assistant Director of Public Works/City Engineer	$149.88	50	$7,494
Utilities Service Manager	$133.79	200	$26,757
Chief Public Works Inspector	$110.95	937	$103,958
Project Manager	$106.33	258	$27,433
Consultant	N/A	N/A	$208,000
		Total	**$377,596**

Row (g) Other Costs

Additional costs for permitting are estimated to be $ 104,000. This estimate includes obtaining permits from Army Corps of Engineers, California Dept of Fish and Game, Regional Water Quality Control Board, and City of Palmdale.

Row (h) Construction Contingency

A 10% construction contingency is being allocated to the project based on a percentage of the raw (equipment and materials portion of) construction costs (Task 8). The 10% contingency was selected because the project is at a conceptual level design and is the contingency percentage used by the City on similar projects. The total allocated contingency for the project is $926,454.

Row (i) Grand Total

The grand total of rows (a) through (h) is $13,483,322 as shown in Table 4-8.

Table 4-8: Row (i) Grand Total Costs

Row	Budget Category	Total Costs
(a)	Direct Project Administration Costs	$269,760
(b)	Land Purchase/Easement	$785,666
(c)	Planning/Design/Engineering/ Environmental Documentation	$848,964
(d)	Construction/Implementation	$9,306,269
(e)	Environmental Compliance/ Mitigation/Enhancement	$864,613
(f)	Construction Administration	$377,596
(g)	Other Costs (Includes Permitting)	$104,000
(h)	Construction/Implementation Contingency	$926,454
(i)	**Grand Total**	**$13,483,322**

Attachment 5

Stormwater Flood Management Grant Proposal
City of Palmdale
Schedule

Attachment 5 consists of the following items:

✓ **Work Plan.** Attachment 5 provides a detailed schedule of the proposed project.

Introduction

The Project Proposal offers an attractive schedule in terms of the State realizing the benefits of a potential grant investment. In Particular:

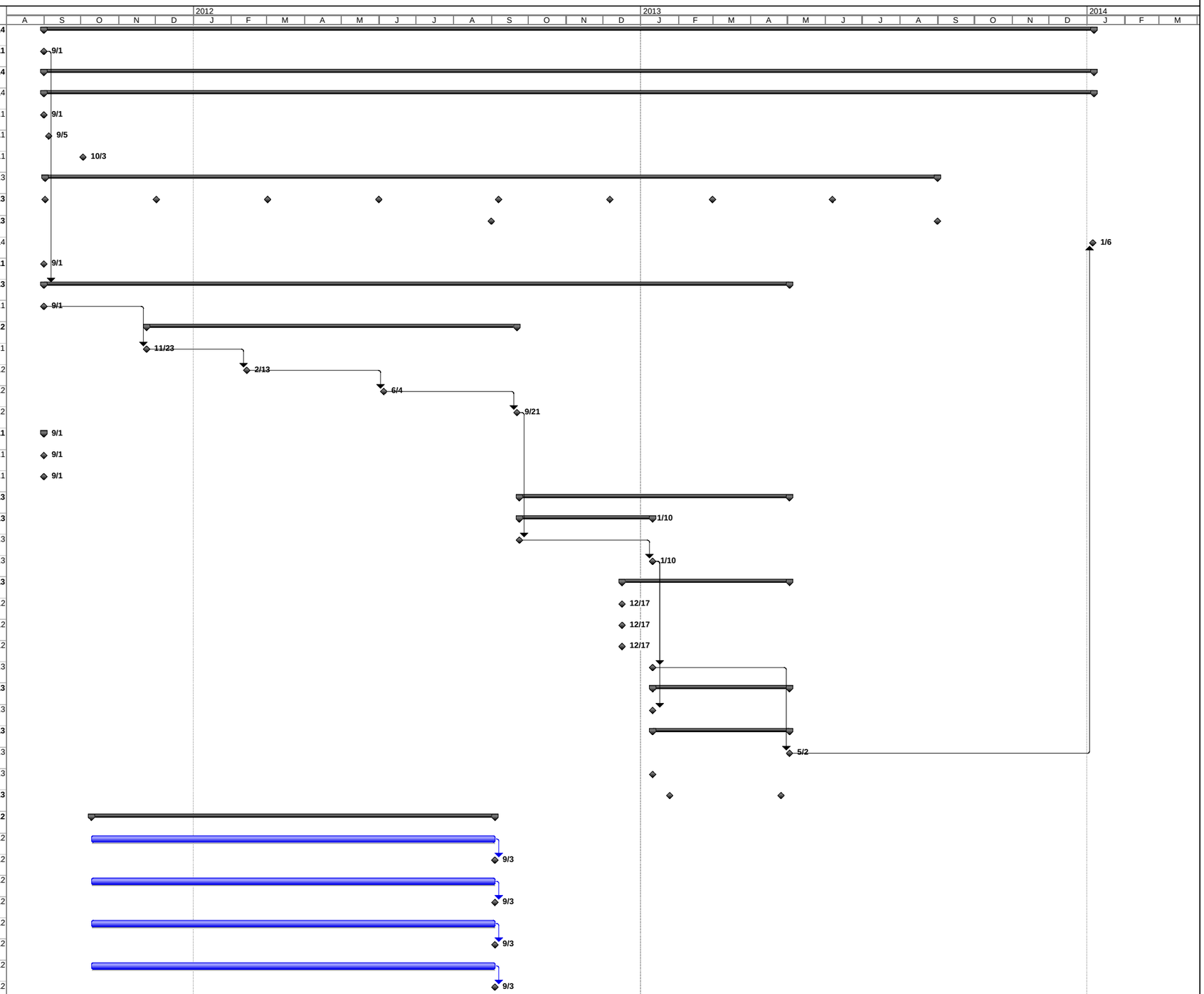
- The planning and environmental documentation has been completed for the Amargosa project
- The project design will be completed within a year of the grant award date of September 1, 2011

Based on review of the project Work Plan (Attachment 3), detailed projects budget (Attachment 4), and the project schedule, the schedule seems reasonable to implement.

Readiness to Proceed

The following schedule provides a detailed summary of all the important milestones for the project's readiness to proceed, including land/right-of-way acquisition, planning (includes assessments and evaluations), design/engineering, environmental documentation, permit acquisition, and bid solicitation.

	ID	Task Name	Start	Finish
	1	**Upper Amargosa Creek Flood Control, Recharge, and Habitat Restoration Project**	**Thu 9/1/11**	**Mon 1/6/14**
	2	**Grant Award Date**	**Thu 9/1/11**	**Thu 9/1/11**
(a)	3	**Row (a) Direct Project Administration**	**Thu 9/1/11**	**Mon 1/6/14**
	4	Project Administration	Thu 9/1/11	Mon 1/6/14
	5	Labor Compliance Program	Thu 9/1/11	Thu 9/1/11
	6	MOU with State of California	Mon 9/5/11	Mon 9/5/11
	7	MOU with Local Entities with SWP Contracts [Need Date]	Mon 10/3/11	Mon 10/3/11
	8	Reporting	Fri 9/2/11	Sun 9/1/13
	9	**Quarterly Reports**	**Fri 9/2/11**	**Fri 6/7/13**
	18	**Annual Reports**	**Sat 9/1/12**	**Sun 9/1/13**
	21	Final Report	Mon 1/6/14	Mon 1/6/14
(b)	22	**Row (b) Land / Right-of-Way Acquisition**	**Thu 9/1/11**	**Thu 9/1/11**
(c)	23	**Row (c) Planning / Design / Engineering / Environmental Documentation**	**Thu 9/1/11**	**Thu 5/2/13**
	24	**Task 4: Assessment and Evaluation**	Thu 9/1/11	Thu 9/1/11
	25	**Task 5: Final Design**	**Wed 11/23/11**	**Fri 9/21/12**
	26	30% Design Submittal	Wed 11/23/11	Wed 11/23/11
	27	60% Design Submittal	Mon 2/13/12	Mon 2/13/12
	28	90% Design Submittal	Mon 6/4/12	Mon 6/4/12
	29	Final (100%) Design Submittal	Fri 9/21/12	Fri 9/21/12
	30	**Task 6: Environmental Documentation**	**Thu 9/1/11**	**Thu 9/1/11**
	31	Environmental Impact Report	Thu 9/1/11	Thu 9/1/11
	32	Site Plan Review Approval	Thu 9/1/11	Thu 9/1/11
(d)	33	**Row (d) Construction / Implementation**	**Mon 9/24/12**	**Thu 5/2/13**
	34	**Task 8: Construction Contracting**	**Mon 9/24/12**	**Thu 1/10/13**
	35	Contractor Procurement Process	Mon 9/24/12	Thu 1/10/13
	36	Complete Contractor Award and Begin Construction	Thu 1/10/13	Thu 1/10/13
	37	**Task 9: Construction**	**Mon 12/17/12**	**Thu 5/2/13**
	38	Project Assessment and Evaluation Plan (PEAP)	Mon 12/17/12	Mon 12/17/12
	39	Monitoring Plan (MP)	Mon 12/17/12	Mon 12/17/12
	40	Quality Assurance Projet Plan (QAPP)	Mon 12/17/12	Mon 12/17/12
	41	Construct Facilities	Fri 1/11/13	Thu 5/2/13
(e)	**42**	**Row (e) Environmental Compliance/ Mitigation/ Enhancement**	**Fri 1/11/13**	**Thu 5/2/13**
	43	Mitigation Measures Implemented from EIR	Fri 1/11/13	Thu 5/2/13
(f)	**44**	**Row (f) Construction Administration**	**Fri 1/11/13**	**Thu 5/2/13**
	45	Submit Final Construction Summary Report	Thu 5/2/13	Thu 5/2/13
	46	Construction Administration Activities	Fri 1/11/13	Thu 5/2/13
	47	**Submit Quarterly Construction Reports**	**Fri 1/25/13**	**Fri 4/26/13**
(g)	**50**	**Row (g) Other**	**Mon 10/10/11**	**Mon 9/3/12**
	51	Prepare ACE Section 404 Permit Application	Mon 10/10/11	Mon 9/3/12
	52	Submit Permit Application	Mon 9/3/12	Mon 9/3/12
	53	Prepare CDFG Streambed Alteration Agreement Application	Mon 10/10/11	Mon 9/3/12
	54	Submit Application	Mon 9/3/12	Mon 9/3/12
	55	Prepare RWQCB, Lahontan Section 401 Water Quality Certification Application	Mon 10/10/11	Mon 9/3/12
	56	Submit Application	Mon 9/3/12	Mon 9/3/12
	57	Prepare City of Palmdale Grading Application	Mon 10/10/11	Mon 9/3/12
	58	Submit Application	Mon 9/3/12	Mon 9/3/12



Project: Upper Amargosa Creek Flood
Date: April 15, 2011

Task | Split | Progress | Milestone | Summary | Project Summary | External Tasks | External Milestone | Deadline

Attachment 6

Stormwater Flood Management Grant Proposal
City of Palmdale
Monitoring, Assessment, and Performance Measures

Attachment 6 consists of the following items:

- ✓ Monitoring, Assessment, and Performance Measures. The purpose of this attachment is to describe the monitoring, assessment, and performance measures that will be used to evaluate the proposed project. These measures will ensure that this proposal meets its intended goals, achieves measurable outcomes, and provides value to the Region and the State of California.

The purpose of this attachment is to provide a discussion of the monitoring system to be used to verify project performance with respect to the project benefits or objectives identified. This attachment will identify data collection and analysis to be used by the proposed project.

This attachment will also discuss how monitoring data will be used to measure the performance in meeting the overall goals and objectives of the Antelope Valley IRWM Plan. The project applicant has prepared a Project Performance Measures Table (included in this attachment) that includes the following:

- Project goals
- Desired outcomes
- Output indicators – measures to effectively track output
- Outcome indicators – measures to evaluate change that is a direct result of the work
- Measurement tools and methods
- Targets – measureable targets that are feasible to meet during the life of the project

The project performance measures will continue to be refined as the project continues to be developed. A Performance Assessment and Evaluation Plan (PAEP) will be completed for the project prior to receipt of grant funds as shown in Attachments 3 and 5. Project benefits are discussed in more detail in Attachments 7, 8 and 9.

Project:
Upper Amargosa Creek Flood Control, Recharge, and Habitat Restoration Project

The Upper Amargosa Creek Flood Control, Recharge, and Habitat Restoration Project (Amargosa Project) will consist of a suite of activities designed to improve flood control, reduce dependence on imported water by stabilizing current groundwater levels (a source of local supply), and protect the environmental habitat. These activities will be executed in order to meet project goals (listed below). Project goals will each have performance measures that will be used to quantify and verify project performance. The performance measures used to quantify and verify project performance are described in the Project Goals and Performance Measures section below and summarized in Table 6-3.

Project Goals and Performance Measures

Improve Flood Control

The project will reduce the risk of flood damage from stormwater erosion in the vicinity of the project. The project will employ soilcrete embankments to channelize the creek and earthen push-up dams to divert stormwater flows to recharge basins and channel modifications that will help control flood damage in the project area. This performance measure is consistent with the AVIRWM Plan objective of reducing

negative impacts of stormwater, urban runoff, and nuisance water, which would be quantified from the reduction in erosion damage from floods and will be monitored as part of this performance measure.

Protect Environmental Habitat

The project will result in the protection and enhancement/restoration of 25 acres of environmental habitat. All of the 25 acres of habitat enhancement/restoration will be located out of channel. This performance measure is consistent with the AV IRWM Plan objective of preserving open space and natural habitat, which would be quantified from the number of acres of habitat protected and will be monitored as part of this performance measure.

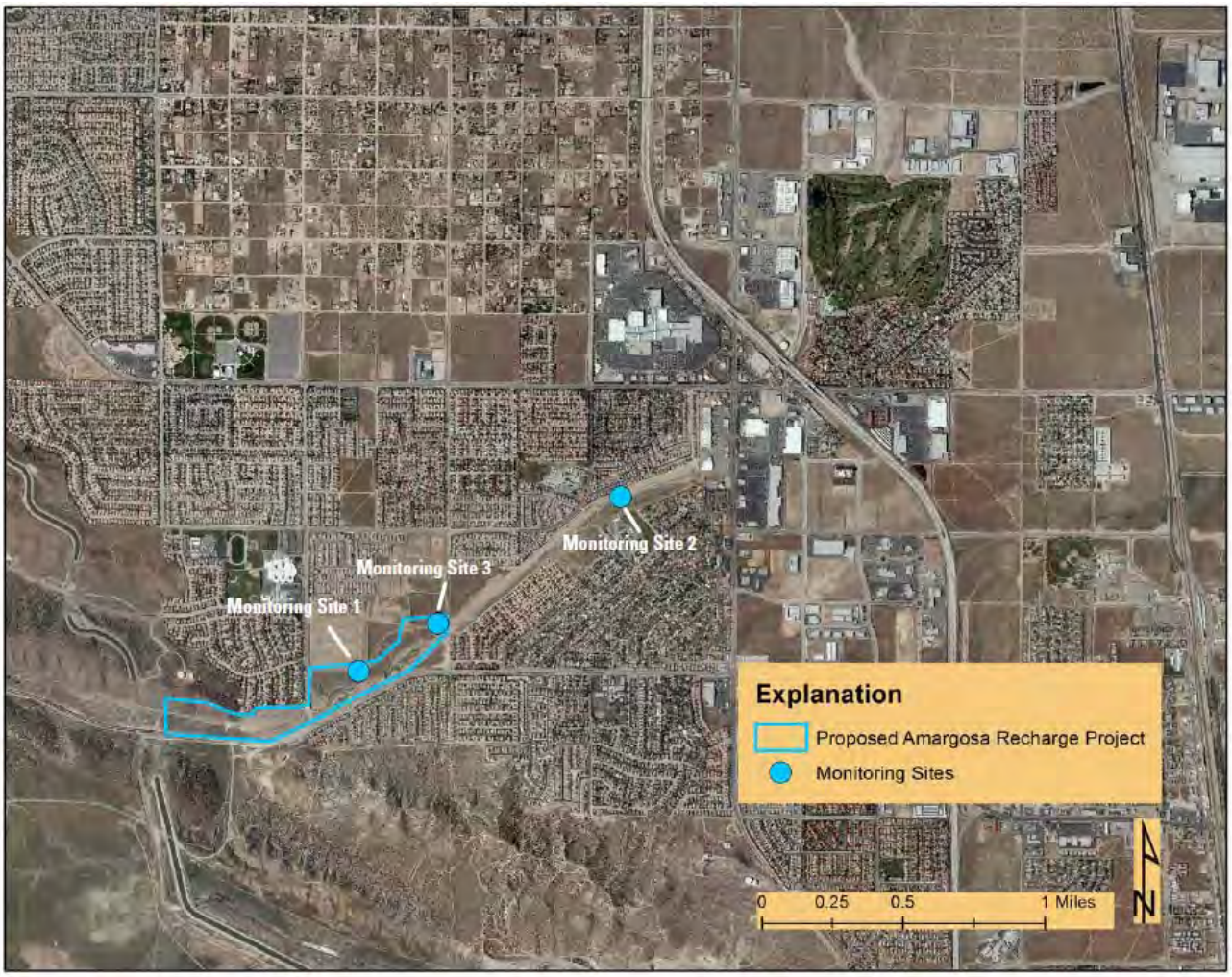
Reduce Dependence on Imported Water

The project will reduce the need for additional imported water entitlement in dry years by increasing recharge in the Region. The project will enable the storage of imported SWP water during the winter and spring when the demand and environmental impacts in the Bay-Delta region are lower. A surplus of water is often available from flood operations in the Bay-Delta region during the winter months. When there is insufficient storage capacity locally for this water, it flows to the ocean or other areas instead of being diverted for beneficial uses. By storing this off-peak water, this project would reduce peak summertime demand on the region's imported water system. The project will help mitigate the effects of dry year shortages in SWP supplies to those purveyors that can pump previously "banked"/recharged water. The reduction in the amount of imported water needed in dry years as a result of the project would be quantified as the amount of recharged water delivered to customers. The reduction in need for additional dry year imported water is assumed to be the delivery of recharged water during dry years. This performance measure is consistent with the AV IRWM Plan objective of reducing mismatch between supply and demand. The reduction in mismatch resulting from this project would be quantified from the recharged water deliveries and will be monitored for this performance measure.

Improve Water Supply Reliability and Stabilize Groundwater Levels at Current Conditions

The project will help replenish valuable groundwater resources in the Amargosa Creek watershed. Recharge of the aquifer will help lower pumping costs, provide more head to existing groundwater wells to increase their yield, help mitigate the risk of subsidence, and prevent upward migration of lower quality groundwater from the deeper aquifer (see below). This performance measure is consistent with the AV IRWM Plan objective of stabilizing groundwater levels to existing conditions. The impact to groundwater levels resulting from this project would be quantified by monitoring groundwater levels at the recharge site as well as total volume recharged and will be monitored as part of this performance measure. Monitoring wells will be used to monitor groundwater levels in the underlying aquifer. Figure 6-1 shows the location of these monitoring wells.

Figure 6-1: Groundwater Monitoring Wells



Improve Water Quality

All water agencies in the area pump water from the upper aquifer; these include the Palmdale Water District, the Los Angeles County Waterworks District No. 40 (LACWWD 40), and over 20 mutual water companies. The lower aquifer contains arsenic, and the arsenic has, so far, mainly been confined to the lower aquifer. However, continued overdraft from the upper aquifer could more readily allow lower aquifer water to migrate into the upper aquifer and result in arsenic in drinking water supplies. Recharging the upper aquifer could help increase pressures thereby reduce the probability that lower aquifer water would migrate upwards. To the extent that pumping can be sustained in the upper aquifer, a decline in drinking water quality due to increased levels of arsenic can be avoided. This performance measure is consistent with the AV IRWMP objective of protecting the aquifer from contamination and will be monitored as part of this performance measure.

Output Indicators

Table 6-1 lists measures to effectively track project output indicators.

Table 6-1: Project Output Indicators

Output Indicators	
Construction of push-up dams to divert flood flows to recharge ponds	This output indicator will be used to track flood control benefit resulting from the project
Construction of soilcrete channel embankments	This output indicator will be used to track flood control benefit resulting from the project
Increase in the number of acres of habitat	This output indicator will be used to track environmental benefit resulting from this project
Reduction in delivery of imported water during dry years	This output indicator will show the impact the project has on the Region's water reliability during dry years.
Deliveries to recharge area	This output indicator will be used to track the actual amount of water recharged as a result of the project
Stable or Rising groundwater levels	This output indicator will be used to verify the project impacts on groundwater levels near the recharge site and the local success of the project

Outcome Indicators

Table 6-2 lists the measures to evaluate change as a direct result of the project work.

Table 6-2: Project Outcome Indicators

Outcome Indicators	
Quantification of number of flood events in the project area	Documenting prior flood events and monitoring the annual amount of erosion damage in the project area will indicate the increase in flood protection resulting from the project
Quantification of habitat protected as a result of the project	This outcome indicator will provide the necessary data needed to determine the environmental benefit resulting from the project by monitoring the area of habitat protected.
Quantification of change in groundwater levels near recharge site	This outcome indicator will provide the data necessary to determine the rise in groundwater levels resulting from the project
Quantification of imported water use avoided as a result of the project in dry years	Monitoring the annual reduction in imported water usage will adequately indicate the amount of local supplies that are being used to offset imported supplies during dry years
Quantification of water recharged as a result of the project	This outcome indicator will provide the actual volume of water recharge in the basin, improving water reliability and local storage.

Table 6-3: Performance Measures Table
Upper Amargosa Creek Flood Control, Recharge, and Habitat Restoration Project

Project Goals	Desired Outcomes	Output Indicators	Outcome Indicators	Measurement Tools and Methods	Targets
Improve Flood Control	Increase flood protection	Construction of soilcrete embankments and push-up dams to divert flood flows into recharge ponds	Quantification of the number of historic flood events and flood erosion damage reduced in project area in future	Record of historic and future flood events and damages from erosion	Reduction in amount of flood damage in project area
Protect environmental habitat	Protection and enhancement of environmental habitat	Increase in acres of habitat	Quantification of habitat protected as a result of the project	Record of historic and future flood events	Reduction in number of floods in project area
Reduce dependence on imported water and improve water supply reliability	Increased local storage and recharge in groundwater basin	Stable or rising groundwater levels Deliveries to recharge areas	Quantification of water recharged as a result of the project	Volume of water recharged at site per flow meters; Monitor change in groundwater levels near recharge site	Withdrawal of up to an average of 25,000 AF of water every ten-years or 125,000 AF over the project lifetime
	Reduced need for additional dry year imported water supplies and/or reduced stress on the Bay Delta	Reduction in delivery of imported water during dry years	Quantification of existing imported water use avoided as a result of the project	Volume of recharged water delivered in lieu of imported water	Reduction in imported water dependence by up to 25,000 AFY in dry years or 125,000 AF over the project lifetime
Stabilize groundwater levels at current conditions	Stable or increased groundwater levels in Basin	Stable or rising groundwater levels	Quantification of water recharged as a result of the project	Volume stormwater collected at recharge area per flow meters; Volume SWP water delivered to recharge area per flow meters	Increased groundwater storage/recharge by 25,000 AF of water every year
			Quantification of change in groundwater levels in Region	Monitor groundwater levels in Basin	Change in groundwater level greater than or equal to 0 using a 10-year moving average
Improve water quality	Protect aquifer from contamination	Stable or rising groundwater levels in upper aquifer; Deliveries to recharge basin	Quantification of water recharged at the site	Volume recharged per site per flow meter; Monitor change in groundwater levels near recharge site	Compliance with arsenic regulations 100% of the time.

Attachment 7

Stormwater Flood Management Grant Proposal
City of Palmdale
Flood Damage Reduction Costs and Benefits

Attachment 7 consists of the following items:

- ✓ **Flood Damage Reduction Costs and Benefits.** Attachment 7 contains detailed information regarding the tasks that were and will be performed for the proposed project.

Introduction

This attachment provides information regarding the flood damage reduction costs and benefits that will be derived from the Amargosa Project. Narrative descriptions of the expected flood protection benefits of the project are presented in this attachment. Quantitative analyses are provided to monetize the benefits in present value terms (2009). Additionally, descriptions of the economic factors that may affect or qualify the amount of economic benefits to be realized are presented.

The Amargosa Project will reduce the risk of flood damage in three ways:

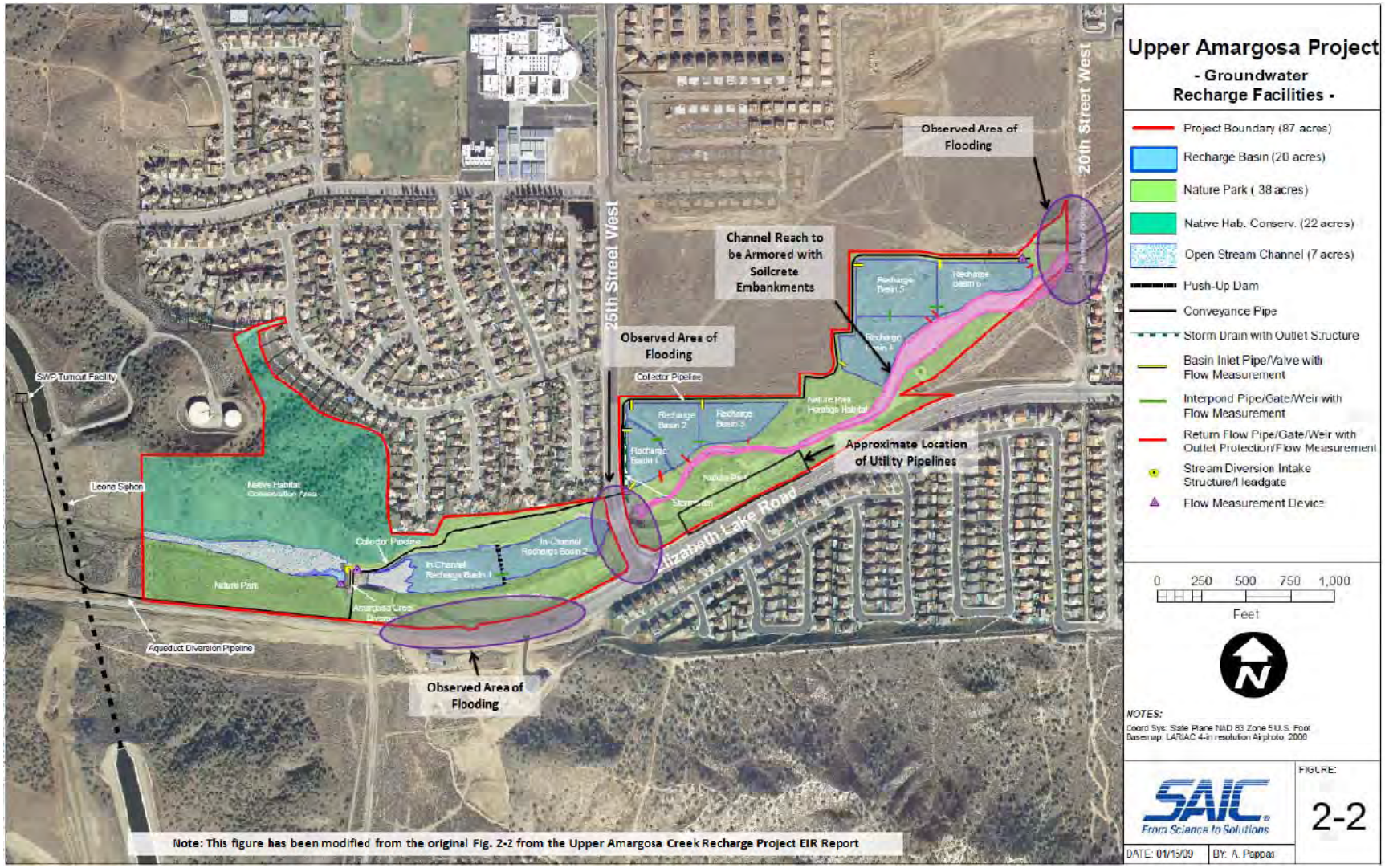
- Protection from erosion damage
- Protection from nearby street flooding
- Removal of public safety hazard

The project reduces the risk of damage from erosion by providing soilcrete embankments between 25th Street West and 20th Street West to protect the channel sides, where washouts and exposure of utility pipes has occurred in the past. The soilcrete embankments also reduce the risk of street flooding in the immediate vicinity by increasing the flow capacity of this same reach of Amargosa Creek (25th Street West to 20th Street West), facilitating the movement of storm flows downstream of 20th Street West and reducing the risk of flooding on Elizabeth Lake Road, 25th Street West, and 20th Street West. Some portion of the flood protection capacity will also be provided by the recharge facilities themselves, which can divert a maximum of 100 cubic feet per second (cfs) to the recharge basins during a storm event. Flows in Amargosa Creek can reach peaks of 2,350 cfs during a 100-year storm event.[1] Finally, the project will provide a public safety benefit from eliminating the natural channel that has formed between the culvert on 25th Street West and Amargosa Creek, an area where pedestrians frequently travel, including school children from Highland High School, Cottonwood Elementary School, Summerwind Elementary School, Juniper Middle School, and Ocotillo Elementary School.

An overview of the Amargosa Project and its flood protection benefits is shown in Figure 7-1.

[1] Water Resources Evaluation of Amargosa Creek, City of Palmdale, July 2009.

Figure 7-1: Amargosa Project Flood Protection Benefits



Project Costs

The total estimated budget for the proposed project is $13,483,322 (see Attachment 4). Administration, Operations and Maintenance costs are anticipated throughout the project lifetime in order to maintain the proposed project. Table 7-1 shows the breakdown of the project costs and its net present value in 2009 dollars.

Table 7-1: Total Project Costs

Phase	Cost
Capital Costs	$13,483,322
O&M and Replacement Costs	$12,455,000
Total project costs	$25,938,322
Total present value of discounted costs ($2009)	$14,463,689

Flood Damage Reduction Costs and Benefits

This Project would provide several flood damage reduction benefits. These benefits are described in detail below and are summarized at the end of the section in Table 7-3.

Avoided Physical Damage

The Amargosa Project reduces the risk of damage from erosion by providing soilcrete embankments between 25th Street West and 20th Street West along the channel sides. Channelization is the process of lining a natural water course to increase flood capacity during storm events, frequently by creating embankments that reduce hydraulic roughness and flow irregularities. The soilcrete embankments proposed for this project are intended to increase flood capacity in this manner.

Soil-cement, or soilcrete, is classified as a chemical stabilization of soil. It is used to improve the bearing capacity, prevent erosion, and/or decrease the permeability of the existing soil. The material normally consists of soil, Portland cement, and water which are uniformly mixed, compacted, finished, and cured in such a manner that the in-place soil-cement mixture forms a dense, uniform mass conforming to the lines, grades, and cross sections of an existing channel. Soils that contain less than 35 percent clay, such as the soils found along the Amargosa Creek, are normally adaptable to this method of stabilization. The cement rate of application ranges from 6 to 12 percent by volume, depending on soil type.

As soilcrete is placed and compacted, the cement hydrates and the mix becomes a structural slab-like material. After curing, it is un-affected by water or by seasonal freeze/thaw cycles.

The City has already constructed soilcrete embankments further downstream in Amargosa Creek between Avenue P and Avenue O-4, as shown in Figure 7-2. Since installation in 2003, these existing soilcrete embankments have effectively prevented erosion in the reaches of Amargosa Creek where they are installed, according to City of Palmdale staff.[2]

[2] Personal communication, Gordon Phair, City of Palmdale, Utilities Service Manager, April 2011

Figure 7-2: Existing Soilcrete Embankments in Amargosa Creek at Avenue O-4 (facing south)

The proposed locations of the soilcrete embankments for the Amargosa Project are shown in Figure 7-1 above. Soilcrete provides protection from erosion in the channel embankments and will prevent the exposure of utility pipes from washouts during storm events.

Protection of Buried Utilities from Erosion

There are three types of buried utilities in the vicinity of the project:

- *Water* - A 24-inch diameter potable water pipe located along the north side of Elizabeth Lake Road in the vicinity of the project; this pipe is owned by Los Angeles County Waterworks District No. 40, Region 34
- *Natural gas* - An 8-inch diameter high-pressure natural gas main located along the north side of Elizabeth Lake Road in the vicinity of the project; this pipe is owned by Southern California Gas Company
- *Sewer* - A sewer trunk line that crosses Amargosa Creek in the vicinity of the project; the trunk line is a 27-inch diameter pipe on the east side of the project and a 30-inch diameter pipe on the west side; the trunk line is owned by Los Angeles County Sanitation Districts

The approximate utility locations are shown above in Figure 7-1.

Buried utilities along Amargosa Creek in this area have already been exposed from storm-induced erosion events in the past. The most recent occurred in early March 2011 when water and gas pipelines were exposed by a storm event, requiring $110,103 in repair costs. The pipelines were exposed at a junction point where sidestream flows entered Amargosa Creek from the south. The exposed pipelines are shown below in Figure 7-3 (the 24-inch water pipe is shown in the background and the 8-inch high-pressure gas line is shown in the foreground).

Figure 7-3: Exposed Gas and Water Pipelines from March 2011 Storm Event

According to City of Palmdale staff, erosion from sidestream flows and from flows in Amargosa Creek occurs during rainfall events every winter in the vicinity of the project. Pipeline exposures similar to the one that occurred in March 2011 are expected to happen approximately every ten years along this reach of Amargosa Creek between 25th Street West and 20th Street West.[3] This analysis assumes that soilcrete embankments will effectively prevent erosion for the 50-year project lifecycle and that utility pipelines will not be exposed or require repair. The analysis also assumes that utility pipelines would continue to require repair approximately every ten years without the project.

Using a repair cost of approximately $110,000 (based on the March 2011 event) and escalating the costs at an assumed inflation rate of 3 percent per year, the total present value of the utility protection benefit is $299,205, as calculated in Table 7-9 at the end of this attachment.

Protection of Streets and Roadways from Flooding

The soilcrete embankments proposed by the Amargosa Project will also provide additional flow capacity for the creek between 25th Street West and 20th Street West, effectively moving more stormwater flows past this reach because of reduced hydraulic roughness and reduced flow irregularities in the channel.

The following sections establish the bases for avoided damages from flooding of streets and roadways in the vicinity of the project.

Frequent Storm Events

Flooding has been observed to occur at the following intervals along nearby streets and roadways according to City of Palmdale staff[4]:

- *Elizabeth Lake Road* – flooding occurs approximately once every five years along a length of approximately 0.1 miles

[3] Personal communication, Gordon Phair, City of Palmdale, Utilities Service Manager. April 2011

[4] Personal communication, Gordon Phair, City of Palmdale, Utilities Service Manager, April 2011

- *25th Street West* – flooding occurs approximately once every year along a length of approximately 0.1 miles, and approximately once every five years along a length of approximately 0.2 miles
- *20th Street West* – flooding occurs approximately once every year along a length of approximately 0.1 miles, and approximately once every five years along a length of approximately 0.2 miles

100-Year Storm Events

Flooding for a 100-year storm event is also projected to cause flooding along these three streets according to the Federal Emergency Management Agency (FEMA) flood inundation maps provided at Floodsmart.gov.[5] As shown in Appendix C, a 100-year storm event is projected to cause flooding along the following lengths of streets and roadways:

- *Elizabeth Lake Road* – approximately 0.5 miles
- *25th Street West* – approximately 0.1 miles
- *20th Street West* – approximately 0.1 miles

These flood events are based on FEMA projections and not on actual, observed events.

This analysis assumes that the soilcrete embankments, and a partial reduction in peak storm flows provided by 100 cfs of diversion capacity, will effectively prevent flooding from a 100-year storm on these three streets for the 50-year project lifecycle. The analysis also assumes that flooding would continue to occur on these three streets if the project is not implemented.

Table 7-2 shows a detailed breakdown of the road inundation assumptions by flooding event.

Table 7-2: Calculation of Avoided Costs of Road/Street Flooding

Road	Miles Inundated	Category	Unit Cost ($/mile inundated)[1]	Total Cost
Once Every Year Flood Event				
Elizabeth Lake Road	0.0	Major Road	$100,000	$0
25th Street West	0.1	Minor Road	$30,000	$3,000
20th Street West	0.1	Unsealed Road	$10,000	$1,000
Five-Year Flood Event				
Elizabeth Lake Road	0.1	Major Road	$100,000	$10,000
25th Street West	0.2	Minor Road	$30,000	$6,000
20th Street West	0.2	Unsealed Road	$10,000	$2,000
100-Year Flood Event				
Elizabeth Lake Road	0.5	Major Road	$100,000	$50,000
25th Street West	0.1	Minor Road	$30,000	$3,000
20th Street West	0.1	Unsealed Road	$10,000	$1,000

1. Cost per mile based on assumptions in DWR's FRAM model
2. Present value of $318,784 is calculated using DWR's FRAM model

Using the Flood Rapid Assessment Model (FRAM) model, the total present value of avoided costs from preventing street flooding is $318,784. Detailed calculations from the FRAM model are shown in Appendix D.

[5] http://www.floodsmart.gov/floodsmart/

Table 7-3: Flood Damage Reduction Benefits Summary

Type of Benefit	Assessment Level	Beneficiaries
Protection of Buried Utilities from Erosion	Quantitative	Local
Protection of Streets and Roadways from Flooding	Quantitative	Local

Summary Distribution of Project Benefits and Identification of Beneficiaries

Table 7-4 summarizes the Project's beneficiaries. Local residents and water customers will benefit from flood protection, increased local supplies, more sustainable management of water supplies, protected quality of groundwater in drinking supplies, enhanced and protected native habitat, increased recreational space, and improved educational opportunities provided in the Nature Park kiosks and signage.

Though the City of Palmdale is not an urban water supplier, the City supports this project as beneficial to the Antelope Valley Region. The regional beneficiaries include other municipalities, communities, water districts, and mutual water companies in the general area. These entities will benefit from reduced groundwater overdraft, avoided dry-year reserve water costs, avoided decline of drinking water supply quality due to arsenic contamination from the lower aquifer, enhanced and protected riparian habitat, and increased education opportunities.

The State of California will benefit from reduced stress on the Bay-Delta during dry years.

Table 7-4: Project Beneficiaries Summary

Benefits	Local*	Regional**	Statewide***
Protection of Buried Utilities from Erosion	✓		
Protection of Streets and Roadways from Flooding	✓		
Protection of Public Safety	✓		
Reduced Groundwater Overdraft	✓	✓	
Avoided Dry-Year Reserve Water Costs	✓	✓	
Avoided Decline of Drinking Water Supply Quality due to Arsenic	✓	✓	
Riparian Habitat Protection and Enhancement	✓	✓	
Increased Water Conservation Education with New Nature Park	✓	✓	
Reduced Stress on Bay-Delta During Dry Years/Seasons			✓

* Includes: City of Palmdale

** Includes: Los Angeles County Water Works District #40, City of Lancaster, Quartz Hill, Rosamond, Antelope Acres, and other surrounding communities

*** Includes: State of California

Project Benefits Timeline Description

The Amargosa Project will provide benefits over an assumed 50-year project lifetime. Benefits from the project will begin accruing as soon as the recharge facilities are constructed in 2013. For additional detail on the timeline for project benefits, see Attachment 5.

Qualitative Benefits Summary

This project will result in a flood benefit, protection to public safety, which could not be quantified. Table 7-5 lists the benefit and gives a qualitative indicator of the likely impact on the overall net benefit from the project.

Table 7-5: Qualitative Benefits Summary

Benefit	Qualitative Indicator
Protection of Public Safety	+

**Direction and magnitude of effects on net benefits

+	Likely to increase net benefits relative to quantified estimates
++	Likely to increase net benefits significantly
"-"	Likely to decrease net benefits
"--"	Likely to decrease net benefits significantly
+/-	Uncertain

Uncertainty of Benefits

Uncertainties relating to the flood reduction benefits of this project are summarized below in Table 7-6. Uncertainties include the inherent unpredictability of rainfall patterns, fluctuations in the availability of imported water, variability in repair frequency for erosion damages, and uncertainty in the regulatory process.

Table 7-6: Uncertainty of Benefits

Benefit or cost category	Likely impact on net benefits	Comment
Protection of Buried Utilities from Erosion	+/-	The uncertainty inherent in this project could have a net positive or negative impact on the benefits. Rainfall/SWP availability could be more or less than predicted. Erosion damages could occur more or less frequently than predicted. Regulatory requirements could evolve in such manner as to be more difficult or more streamlined.
Protection of Streets and Roadways from Flooding	+/-	The uncertainty inherent in this project could have a net positive or negative impact on the benefits. Rainfall/SWP availability could be more or less than predicted. Erosion damages could occur more or less frequently than predicted. Regulatory requirements could evolve in such manner as to be more difficult or more streamlined.

**Direction and magnitude of effects on net benefits

+	Likely to increase net benefits relative to quantified estimates
++	Likely to increase net benefits significantly
"-"	Likely to decrease net benefits
"--"	Likely to decrease net benefits significantly
+/-	Uncertain

Potential Adverse Effects from the Project

Any potential short-term impacts, such as potential harmful effects of removing land from the floodplain, associated with project construction will be mitigated as described in the EIR, in Appendix B. No long-term adverse effects are expected as a result of the proposed project.

Project Benefit Costs Comparison

The total present value of the Project costs, along with monetized and qualitative benefits is provided in Table 7-7.

Table 7-7: Benefit-Cost Analysis Overview

	Present Value ($2009)
Costs – Total Capital and O&M	**$13,483,322**
Monetizable Benefits	
Protection of Buried Utilities from Erosion	$299,205
Protection of Streets and Roadways from Flooding	$318,784
Total Benefits	**$617,989**
Qualitative Benefits	**Qualitative Indicator***
None	-
Total Benefits	
None	**$0**

**Direction and magnitude of effects on net benefits

+	Likely to increase net benefits relative to quantified estimates
++	Likely to increase net benefits significantly
"-"	Likely to decrease net benefits
"--"	Likely to decrease net benefits significantly
+/-	Uncertain

Economic Benefit Tables

Capital costs for the project amount to $14,463,689 in present value terms, as shown in Table 7-8. This includes initial spending starting in 2011 and continuing through 2060. The project lifetime is expected to be 50 years, and annual maintenance costs of $265,000 per year are anticipated once the project is completed, beginning in 2014 to conduct routine maintenance and cleaning operations.

Table 7-8: Amargosa Project Annual Costs

Upper Amargosa Creek Flood Control, Recharge, and Habitat Restoration Project

	Initial Costs	**Operations and Maintenance Costs**						**Discounting Calculations**	
	(a)	**(b)**	**(c)**	**(d)**	**(e)**	**(f)**	**(g)**	**(h)**	**(i)**
Year	**Grand Total Cost**	**Admin.**	**Ops.**	**Maint.**	**Repl.**	**Other**	**Total Costs (a) +…+ (f)**	**Disc. Factor**	**Discounted Costs (g) x (h)**
2009	$0	$0	$0	$0	-	-	$0	1.00	$0
2010	$0	$0	$0	$0	-	-	$0	0.94	$0
2011	$1,747,708	$0	$0	$0	-	-	$1,747,708	0.89	$1,555,454
2012	$7,160,723	$0	$0	$0	-	-	$7,160,723	0.84	$6,012,281
2013	$4,574,891	$0	$0	$0	-	-	$4,574,891	0.79	$3,623,742
2014	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.75	$198,023

Table 7-8: Amargosa Project Annual Costs

Upper Amargosa Creek Flood Control, Recharge, and Habitat Restoration Project

Year	Initial Costs	Operations and Maintenance Costs						Discounting Calculations	
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
	Grand Total Cost	Admin.	Ops.	Maint.	Repl.	Other	Total Costs (a) +…+ (f)	Disc. Factor	Discounted Costs (g) x (h)
2015	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.70	$186,815
2016	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.67	$176,240
2017	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.63	$166,264
2018	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.59	$156,853
2019	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.56	$147,975
2020	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.53	$139,599
2021	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.50	$131,697
2022	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.47	$124,242
2023	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.44	$117,210
2024	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.42	$110,575
2025	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.39	$104,316
2026	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.37	$98,412
2027	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.35	$92,841
2028	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.33	$87,586
2029	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.31	$82,628
2030	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.29	$77,951
2031	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.28	$73,539
2032	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.26	$69,376
2033	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.25	$65,449
2034	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.23	$61,745
2035	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.22	$58,250
2036	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.21	$54,953
2037	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.20	$51,842
2038	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.18	$48,908
2039	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.17	$46,139
2040	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.16	$43,528
2041	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.15	$41,064
2042	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.15	$38,739
2043	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.14	$36,547
2044	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.13	$34,478
2045	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.12	$32,526
2046	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.12	$30,685
2047	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.11	$28,948
2048	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.10	$27,310
2049	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.10	$25,764
2050	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.09	$24,306
2051	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.09	$22,930

Table 7-8: Amargosa Project Annual Costs

Upper Amargosa Creek Flood Control, Recharge, and Habitat Restoration Project

Year	Initial Costs	Operations and Maintenance Costs						Discounting Calculations	
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
	Grand Total Cost	Admin.	Ops.	Maint.	Repl.	Other	Total Costs (a) +…+ (f)	Disc. Factor	Discounted Costs (g) x (h)
2052	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.08	$21,632
2053	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.08	$20,407
2054	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.07	$19,252
2055	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.07	$18,163
2056	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.06	$17,134
2057	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.06	$16,165
2058	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.06	$15,250
2059	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.05	$14,386
2060	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.05	$13,572
Totals	**$13,483,322**	**$2,491,000**	**$4,982,000**	**$4,982,000**	**-**	**-**	**$25,938,322**	**-**	**$14,463,689**
Total Present Value of Discounted Costs (Sum of Column (i)) Transfer to Table 20, column (c), Exhibit F: Proposal Costs and Benefits Summaries									**$14,463,689**

Comments:
All costs are in 2009 dollars.

Table 7-9: Flood Control Benefits: Protection of Buried Utilities from Erosion Only

Upper Amargosa Creek Flood Control, Recharge, and Habitat Restoration Project

Year	*Discounting Calculations for Economic Benefits*		
	(h)Total Annual Benefits	(i) Discount Value	(j) Discounted Benefits [h x i]
2009	$0	1.000	$0
2010	$0	0.943	$0
2011	$110,000	0.890	$97,900
2012	$0	0.840	$0
2013	$0	0.792	$0
2014	$0	0.747	$0
2015	$0	0.705	$0
2016	$0	0.665	$0
2017	$0	0.627	$0
2018	$0	0.592	$0
2019	$0	0.558	$0
2020	$0	0.527	$0
2021	$147,831	0.497	$73,472
2022	$0	0.469	$0
2023	$0	0.442	$0
2024	$0	0.417	$0
2025	$0	0.390	$0
2026	$0	0.371	$0

Year	*Discounting Calculations for Economic Benefits*		
	(h)Total Annual Benefits	**(i) Discount Value**	**(j) Discounted Benefits [h x i]**
2027	$0	0.350	$0
2028	$0	0.331	$0
2029	$0	0.312	$0
2030	$0	0.294	$0
2031	$198,672	0.278	$55,231
2032	$0	0.262	$0
2033	$0	0.247	$0
2034	$0	0.233	$0
2035	$0	0.220	$0
2036	$0	0.207	$0
2037	$0	0.196	$0
2038	$0	0.185	$0
2039	$0	0.174	$0
2040	$0	0.164	$0
2041	$266,999	0.155	$41,385
2042	$0	0.146	$0
2043	$0	0.138	$0
2044	$0	0.130	$0
2045	$0	0.123	$0
2046	$0	0.116	$0
2047	$0	0.109	$0
2048	$0	0.103	$0
2049	$0	0.097	$0
2050	$0	0.092	$0
2051	$358,824	0.087	$31,218
2052	$0	0.082	$0
2053	$0	0.077	$0
2054	$0	0.073	$0
2055	$0	0.069	$0
2056	$0	0.065	$0
2057	$0	0.061	$0
2058	$0	0.058	$0
2059	$0	0.054	$0
2060	$0	0.051	$0
Total	**$1,082,326**		**$299,205**
Total Present Value of Discounted Benefits over Project Life (Monetized Benefits):			**$299,205**
Project Allocation			**100%**
Total Present Value of Discounted Benefits (Monetized Benefits):			**$299,205**

Comments:
All costs are in 2009 dollars. Used repair cost of $110,000 (based on the March 2011 event) and escalated costs at an assumed inflation rate of 3 percent per year.

Table 7-10: Present Value of Flood Control Benefits from Amargosa Project

Upper Amargosa Creek Flood Control, Recharge, and Habitat Restoration Project

(a)	Present value of erosion benefits	$299,205
(b)	Present value of street flooding benefits	$318,784
(e)	**Total**	**$617,989**

Comments:
(1) Table was modified for the Amargosa Project from DWR Table 12 of the PSP SWFM Guidelines
(2) All values are in 2009 dollars.
(3) 6% discount rate

Attachment 8

Stormwater Flood Management Grant Proposal
City of Palmdale
Water Supply Costs and Benefits

Attachment 8 consists of the following items:

- ✓ **Water Supply Costs and Benefits.** Attachment 8 presents water supply costs and benefits estimates for the proposed Amargosa project.

Introduction

This attachment provides information regarding the water supply benefits that will be derived from the Amargosa Project. Narrative descriptions of the expected water supply benefits of the project are presented in this attachment. Where possible, each benefit was quantified and presented in economic terms. Where quantitative analysis was not feasible, a qualitative analysis was provided.

Project Costs

The total estimated budget for the proposed project is $13,483,322 (see Attachment 4). Administration, operations and maintenance costs are anticipated throughout the project lifetime in order to maintain the proposed project. Table 8-1 shows the breakdown of the project costs and its net present value in 2009 dollars. For the detailed breakdown of the annual costs over the 50-year life of the project see Table 8-7 at the end of this attachment.

Table 8-1: Total Project Costs

Phase	Cost
Capital Costs	$13,483,322
O&M and Replacement Costs	$12,455,000
Total project costs	$25,938,322
Total present value of discounted costs ($2009)	$14,463,689

Water Supply Benefits

The Amargosa Project will provide several water supply benefits. These benefits are described in detail below and are summarized in Table 8-2.

Reduced Groundwater Overdraft

The Amargosa Project would help replenish valuable groundwater resources in the Amargosa Creek watershed by providing an additional 25,000 AFY of stormwater and imported water to the local aquifer. Recharge of the underlying aquifer will help lower pumping costs, provide more head to existing groundwater wells to increase their yield, and help mitigate the risk of subsidence. The "upper aquifer" being recharged by this project is known as the Lancaster subunit. This is the principal aquifer supporting Palmdale, Lancaster, Quartz Hill, Antelope Acres, and other surrounding communities.

Groundwater in the Antelope Valley is under stress. Withdrawals are being made at a rate faster than the rate for natural recharge of the aquifers. According to the U.S. Geological Survey (USGS), groundwater

pumping in the Antelope Valley has exceeded recharge every year since the early 1920's (AVIRWMP, 2005). The current amount of overdraft in the Antelope Valley is approximately 50,000 AFY[1]. This approach to groundwater pumping will change in the future, as an adjudication process for establishing groundwater rights in the Antelope Valley Region is currently in progress and will impact how the resource is managed in the future.

Persistent over pumping of an aquifer causes the water table to drop, resulting in subsidence or localized depressions. Potential damages associated with subsidence are known to include loss of storage capacity in the aquifer, contamination of groundwater supplies as a result of fissuring, and structural damage (especially to long, linear structures such as roads, railroad tracks, water lines, and sewer lines)[2]. The USGS estimated that between 1950 and 1993, subsidence in the Antelope Valley, which occurred as a result of the aquifer, exceeded six feet in some areas[3].

The Amargosa Project will help abate these conditions by reducing the groundwater pumping amounts that exceed recharge rates, at least in the short-term until participating agencies request their "banked" supplies be extracted to meet demands. The long-term contribution of the project to stabilizing groundwater levels will depend on the extent to which the local water agencies participate in the banking program and the timing of that use.

If the Amargosa Project is not implemented, the approximately 25,000 AFY of additional stormwater and imported water will not be added to the underlying aquifer (1.25M AF over the 50-year lifespan of the project), and the benefits of temporary overdraft relief and prevention of land subsidence and its associated damage to structures will not be realized.

Avoided Dry-Year Reserve Water Costs

The Amargosa Project will provide a water supply cost savings because it will enable the storage of surplus imported SWP water during the winter and spring when the demand and environmental impacts in the Bay-Delta region are lower. A surplus of water is often available from the Bay-Delta region during the winter months. When there is insufficient storage capacity locally for this water, it is released into the ocean from the Bay-Delta instead of being dedicated to beneficial uses. By storing this less expensive off-peak water, the Amargosa Project would reduce peak summertime and dry-year demand on the region's imported water system and would provide an associated cost savings.

Availability of Article 21 Water

To estimate the avoided water costs from storing surplus imported water, this analysis uses the rate charged by the SWP for wet year Article 21 water and compares it to the likely rate to purchase imported water in a dry year. The DWR *2009 SWP Delivery Reliability Report* indicates that approximately 85,000 AF of Article 21 water is available to contract agencies in an average delivery year, up to a maximum of 850,000 AF for extremely wet years. For 2029 conditions, approximately 60,000 AF of Article 21 water is expected to be available for average years, up to 540,000 AF in wet years.[4]

[1] According to the USGS, groundwater pumping in the Antelope Valley has exceeded recharge every year since the early 1920s, the basin has continued to be in a state of overdraft. Groundwater pumping rates vary from year to year and there is no general consensus on the average annual pumping rate for the Antelope Valley. The rate of agricultural pumping is the largest unknown in assessing pumping rates. Annual natural recharge rate estimates also vary substantially. Although exact groundwater extractions for the entire Region are not available, they can be approximated using assumptions from the 2007 Antelope Valley Integrated Regional Water Management Plan (IRWM Plan). Given the total 2005 water demand of 239,350 AFY identified in the IRWM Plan and subtracting out all other sources of supply (112,193 AFY not including groundwater), the 2005 groundwater pumping rate was 127,157 AFY. Comparing this to the natural recharge range identified in the IRWM Plan (30,300 AFY to 81,400 AFY), yields a potential range for overdraft between 24,350 AFY to 75,466 AFY. Therefore, the average rate of overdraft is used for purposes of this analysis is approximately 50,000 AFY.
[2] Antelope Valley Integrated Regional Water Management Plan, 2007
[3] Antelope Valley Integrated Regional Water Management Plan, 2007
[4] *The State Water Project Delivery Reliability Report 2009*, Department of Water Resources, August 2010

Costs for Wet/Normal Year Article 21 Water

The basic rate for Article 21 water is based on the SWP variable transmission rate which is generally between $10 and $20 per AF delivered. This amount can fluctuate depending on the distance to move the water from the Delta to where it is to be used and the conditions of the California energy market. This analysis assumes the rate is $20 per AF in 2009 and that the cost will increase according to the escalation rates discussed below.

Costs for Dry Year Imported Water

The dry year cost for imported water is based on the Antelope Valley-East Kern Water Agency (AVEK) wholesale water rates that are used for delivery of treated water to Municipal and Industrial (M&I) users. AVEK is the largest of three SWP contractors in the Antelope Valley Region. The 2011 rate is $304/AF for winter months and $374/AF for summer months. The winter season is defined as October-May, and the summer season is defined as June-September. The weighted unit value for 2011 was calculated as such: ((8 x $304) + (4 x $374))/12 = $327/AF.

Avoided Unit Cost Calculations

Using the assumed costs for dry year imported and wet/normal year Article 21 water from above, the avoided cost is calculated as the difference between the wet and dry year imported water costs, minus the cost of pumping the stored water from the aquifer. The average cost to pump groundwater (GW) in the vicinity of the project is estimated at $115/AF in 2009 dollars.[5]

Avoided Unit Costs = (Wet/Normal Year Unit Cost) – (Article 21 Unit Cost) – (Unit Cost to Pump GW)

Escalation of Costs

The costs of the imported water supplies (both wet/normal year and Article 21) are expected to escalate. To estimate the escalation rate for SWP water, projections from the largest SWP contractor in the state, the Metropolitan Water District (MWD), are used. The costs of these supplies are expected to escalate by 6.4 percent in 2012, 6 percent from 2013 to 2020, and 3 percent from 2021 onward[6]. Costs for pumping are escalated using an assumed inflation rate of 3 percent per year.

Groundwater Withdrawal Assumptions

The Antelope Valley IRWM Plan identifies the reserves required to meet a single dry-year regional demand to be 50,600 AFY to 57,450 AFY. This analysis conservatively assumes that water banked in the Amargosa Project can meet approximately half of the reserve need, so the single dry year water withdrawn is assumed to be approximately 25,000 AF.[7] Based on the likely amount of water that is available for recharge from SWP supplies, the likely amount of local Amargosa Creek storm flows available, and projected realistic percolation rates for the project, there is more than enough storage capacity to support 25,000 AF of withdrawals to meet a single dry year supply once per decade.

Total Avoided Water Supply Costs

This analysis assumes that banked water will be used to meet drought needs once per decade over the life of the project. Assuming the first use of dry year reserve is in 2015, the savings in cost of water used as dry-year reserve would be approximately $6.9 million in that year (25,000 AF x $277 per AF). The present value total benefit over the lifetime of the project is $15.7 million. For a detailed breakdown of the calculations over the life of the project see Table 8-8 at the end of this attachment.

[5] *Palmdale Water District Strategic Water Resources Plan*, Evaluation Criteria and Cost Assumptions Guidelines, July 2009.
[6] Metropolitan Water District Water Rate Forecast, 2010
[7] Note that the project is expected to recharge approximately 25,000 AFY of combined imported water and local stormwater. Over the 50-year lifespan of the project, this is approximately 1.25 million AF of additional groundwater supply. Only a portion is assumed to be recovered for supply in this analysis.

If the Amargosa Project is not implemented, the cost savings of $15.7 million over the life of the project will not be realized.

Table 8-2: Water Supply Benefits Summary

Type of Benefit	Assessment Level	Beneficiaries
Reduced groundwater overdraft	Qualitative	Local , Regional
Avoided dry-year reserve water costs	Monetized	Local, Regional

Summary Distribution of Project Benefits and Identification of Beneficiaries

Table 8-3 summarizes the Project's beneficiaries. Local residents and water customers will benefit from flood protection, increased local supplies, more sustainable management of water supplies, protected quality of groundwater in drinking supplies, enhanced and protected native habitat, increased recreational space, and improved educational opportunities provided in the Nature Park kiosks and signage.

Though the City of Palmdale is not an urban water supplier, the City supports this project as beneficial to the Antelope Valley Region. The regional beneficiaries include other municipalities, communities, water districts, and mutual water companies in the general area. These entities will benefit from reduced groundwater overdraft, avoided dry-year reserve water costs, avoided decline of drinking water supply quality due to arsenic contamination from the lower aquifer, enhanced and protected riparian habitat, and increased education opportunities.

The State of California will benefit from reduced stress on the Bay-Delta during dry years.

Table 8-3: Project Beneficiaries Summary

Benefits	Local*	Regional**	Statewide***
Protection of Buried Utilities from Erosion	✓		
Protection of Streets and Roadways from Flooding	✓		
Protection of Public Safety	✓		
Reduced Groundwater Overdraft	✓	✓	
Avoided Dry-Year Reserve Water Costs	✓	✓	
Avoided Decline of Drinking Water Supply Quality due to Arsenic	✓	✓	
Riparian Habitat Protection and Enhancement	✓	✓	
Increased Water Conservation Education with New Nature Park	✓	✓	
Reduced Stress on Bay-Delta During Dry Years/Seasons			✓

* Includes: City of Palmdale
** Includes: Los Angeles County Water Works District #40, City of Lancaster, Quartz Hill, Rosamond, Antelope Acres, and other surrounding communities
*** Includes: State of California

Project Benefits Timeline Description

The Amargosa Project will provide benefits over an assumed 50-year project lifetime. Benefits from the project will begin accruing as soon as the recharge facilities are constructed in 2013. For additional detail on the timeline for project benefits, see Attachment 5.

Qualitative Benefits Summary

The project will result in significant benefits that have been qualitatively assessed. Table 8-4 shows each benefit along with a qualitative indicator of the likely effect of that benefit on net benefits for the Amargosa Project.

Table 8-4: Qualitative Benefits Summary

Benefit	Qualitative Indicator
Reduced Groundwater Overdraft	+

Uncertainty of Benefits

Uncertainties relating to the flood reduction benefits of this project are summarized below in Table 8-5. Uncertainties include the inherent unpredictability of rainfall patterns, fluctuations in the availability of imported water, variability in repair frequency for erosion damages, and uncertainty in the regulatory process.

Table 8-5: Uncertainty of Benefits

Benefit or cost category	Likely impact on net benefits	Comment
Avoided dry-year reserve water costs	+/-	The uncertainty inherent in this project could have a net positive or negative impact on the benefits. Rainfall/SWP availability could be more or less than predicted. Erosion damages could occur more or less frequently than predicted. Regulatory requirements could evolve in such manner as to be more difficult or more streamlined.

**Direction and magnitude of effects on net benefits

+	Likely to increase net benefits relative to quantified estimates
++	Likely to increase net benefits significantly
"-"	Likely to decrease net benefits
"--"	Likely to decrease net benefits significantly
+/-	Uncertain

Potential Adverse Effects from the Project

Any potential short-term impacts, such as potential harmful effects of removing land from the floodplain, associated with project construction will be mitigated as described in the EIR, in Appendix B. No long-term adverse effects are expected as a result of the proposed project.

Project Benefit Costs Comparison

The total present value of the costs for the project, along with monetized and qualitative benefits, is provided in Table 8-6.

Table 8-6: Benefit-Cost Analysis Overview

	Present Value ($2009)
Costs – Total Capital and O&M	$13,483,322
Monetizable Benefits *Avoided dry-year reserve water costs*	$15,725,436
Total Benefits	**$15,725,436**
Qualitative Benefits *Reduced groundwater overdraft* **Total Benefits**	**Qualitative Indicator*** + $0

**Direction and magnitude of effects on net benefits

+	Likely to increase net benefits relative to quantified estimates
++	Likely to increase net benefits significantly
"-"	Likely to decrease net benefits
"--"	Likely to decrease net benefits significantly
+/-	Uncertain

Economic Benefit Tables

Capital costs for the project amount to $14,463,689 in present value terms, as shown in Table 8-7. This includes initial spending starting in 2011 and continuing through 2060. The project lifetime is expected to be 50 years, and annual maintenance costs of $265,000 per year are anticipated once the project is completed, beginning in 2014 to conduct routine maintenance and cleaning operations. The net present value of the water supply benefits is $15,725,436, as shown in Tables 8-8 and 8-9.

Table 8-7: Amargosa Project Annual Costs

Upper Amargosa Creek Flood Control, Recharge, and Habitat Restoration Project

Year	Initial Costs	Operations and Maintenance Costs						Discounting Calculations	
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
	Grand Total Cost	Admin.	Ops.	Maint.	Repl.	Other	Total Costs (a) +…+ (f)	Disc. Factor	Discounted Costs (g) x (h)
2009	$0	$0	$0	$0	-	-	$0	1.00	$0
2010	$0	$0	$0	$0	-	-	$0	0.94	$0
2011	$1,747,708	$0	$0	$0	-	-	$1,747,708	0.89	$1,555,454
2012	$7,160,723	$0	$0	$0	-	-	$7,160,723	0.84	$6,012,281
2013	$4,574,891	$0	$0	$0	-	-	$4,574,891	0.79	$3,623,742
2014	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.75	$198,023
2015	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.70	$186,815
2016	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.67	$176,240
2017	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.63	$166,264
2018	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.59	$156,853
2019	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.56	$147,975
2020	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.53	$139,599
2021	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.50	$131,697
2022	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.47	$124,242
2023	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.44	$117,210
2024	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.42	$110,575

Table 8-7: Amargosa Project Annual Costs

Upper Amargosa Creek Flood Control, Recharge, and Habitat Restoration Project

Year	Initial Costs	Operations and Maintenance Costs						Discounting Calculations	
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
	Grand Total Cost	Admin.	Ops.	Maint.	Repl.	Other	Total Costs (a) +…+ (f)	Disc. Factor	Discounted Costs (g) x (h)
2025	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.39	$104,316
2026	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.37	$98,412
2027	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.35	$92,841
2028	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.33	$87,586
2029	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.31	$82,628
2030	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.29	$77,951
2031	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.28	$73,539
2032	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.26	$69,376
2033	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.25	$65,449
2034	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.23	$61,745
2035	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.22	$58,250
2036	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.21	$54,953
2037	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.20	$51,842
2038	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.18	$48,908
2039	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.17	$46,139
2040	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.16	$43,528
2041	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.15	$41,064
2042	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.15	$38,739
2043	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.14	$36,547
2044	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.13	$34,478
2045	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.12	$32,526
2046	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.12	$30,685
2047	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.11	$28,948
2048	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.10	$27,310
2049	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.10	$25,764
2050	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.09	$24,306
2051	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.09	$22,930
2052	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.08	$21,632
2053	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.08	$20,407
2054	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.07	$19,252
2055	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.07	$18,163
2056	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.06	$17,134
2057	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.06	$16,165
2058	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.06	$15,250
2059	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.05	$14,386
2060	$0	$53,000	$106,000	$106,000	-	-	$265,000	0.05	$13,572
Totals	**$13,483,322**	**$2,491,000**	**$4,982,000**	**$4,982,000**	**-**	**-**	**$25,938,322**	**-**	**$14,463,689**

Table 8-7: Amargosa Project Annual Costs

Upper Amargosa Creek Flood Control, Recharge, and Habitat Restoration Project

Year	Initial Costs	Operations and Maintenance Costs						Discounting Calculations	
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
	Grand Total Cost	Admin.	Ops.	Maint.	Repl.	Other	Total Costs (a) +…+ (f)	Disc. Factor	Discounted Costs (g) x (h)
Total Present Value of Discounted Costs (Sum of Column (i)) Transfer to Table 20, column (c), Exhibit F: Proposal Costs and Benefits Summaries									$14,463,689
Comments: All costs are in 2009 dollars.									

Table 8-8: Annual Water Supply Benefits

Upper Amargosa Creek Flood Control, Recharge, and Habitat Restoration Project

(a) Year	(b) Type of Benefit: Avoided dry year reserve water costs (c) Measure of Benefits [Unit]: Acre Feet							Discounting Calculations for Economic Benefits		
	(d)	(e)	(f)	(g1)	(g2)	(g)	(h)	(h)	(i)	(j)
	W. out Project	W. Project	Change resulting from project [e-d]	Unit value of imported water savings (escalated using MWD projections)	Unit pumping costs (escalated at 3% inflation)	Unit $ value [(g1)-(g2)]	Annual $ value [f x g]	Total annual benefits ($)	Disc. value	Discounted Benefits [h x i]
2009	-	-	0	$256	$115	$141	$0	$0	1.000	$0
2010	-	-	0	$280	$118	$162	$0	$0	0.943	$0
2011	-	-	0	$307	$122	$185	$0	$0	0.890	$0
2012	-	-	0	$327	$126	$201	$0	$0	0.840	$0
2013	-	-	0	$347	$129	$217	$0	$0	0.792	$0
2014	0	0	0	$367	$133	$234	$0	$0	0.747	$0
2015	0	25000	25000	$389	$137	$252	$6,303,629	$6,303,629	0.705	$4,444,059
2016	0	0	0	$413	$141	$271	$0	$0	0.665	$0
2017	0	0	0	$438	$146	$292	$0	$0	0.627	$0
2018	0	0	0	$464	$150	$314	$0	$0	0.592	$0
2019	0	0	0	$492	$155	$337	$0	$0	0.558	$0
2020	0	0	0	$521	$159	$362	$0	$0	0.527	$0
2021	0	0	0	$537	$164	$373	$0	$0	0.497	$0
2022	0	0	0	$553	$169	$384	$0	$0	0.469	$0
2023	0	0	0	$570	$174	$396	$0	**$0**	**0.442**	**$0**
2024	0	0	0	$587	$179	$407	$0	**$0**	**0.417**	**$0**
2025	0	25000	25000	$604	$185	$420	$10,491,431	**$10,491,431**	**0.390**	**$4,091,658**
2026	0	0	0	$622	$190	$432	$0	**$0**	**0.371**	**$0**
2027	0	0	0	$641	$196	$445	$0	**$0**	**0.350**	**$0**
2028	0	0	0	$660	$202	$459	$0	**$0**	**0.331**	**$0**

(a) Year	(b) Type of Benefit: Avoided dry year reserve water costs (c) Measure of Benefits [Unit]: Acre Feet							Discounting Calculations for Economic Benefits		
	(d)	(e)	(f)	(g1)	(g2)	(g)	(h)	(h)	(i)	(j)
	W. out Project	W. Project	Change resulting from project [e-d]	Unit value of imported water savings (escalated using MWD projections)	Unit pumping costs (escalated at 3% inflation)	Unit $ value [(g1)-(g2)]	Annual $ value [f x g]	Total annual benefits ($)	Disc. value	Discounted Benefits [h x i]
2029	0	0	0	$680	$208	$472	$0	**$0**	**0.312**	**$0**
2030	0	0	0	$700	$214	$486	$0	**$0**	**0.294**	**$0**
2031	0	0	0	$721	$220	$501	$0	**$0**	**0.278**	**$0**
2032	0	0	0	$743	$227	$516	$0	**$0**	**0.262**	**$0**
2033	0	0	0	$765	$234	$532	$0	**$0**	**0.247**	**$0**
2034	0	0	0	$788	$241	$548	$0	**$0**	**0.233**	**$0**
2035	0	25,000	25,000	$812	$248	$564	$14,099,606	**$14,099,606**	**0.220**	**$3,101,913**
2036	0	0	0	$836	$255	$581	$0	**$0**	**0.207**	**$0**
2037	0	0	0	$861	$263	$598	$0	**$0**	**0.196**	**$0**
2038	0	0	0	$887	$271	$616	$0	**$0**	**0.185**	**$0**
2039	0	0	0	$914	$279	$635	$0	**$0**	**0.174**	**$0**
2040	0	0	0	$941	$288	$654	$0	**$0**	**0.164**	**$0**
2041	0	0	0	$970	$296	$673	$0	**$0**	**0.155**	**$0**
2042	0	0	0	$999	$305	$694	$0	**$0**	**0.146**	**$0**
2043	0	0	0	$1,029	$314	$714	$0	**$0**	**0.138**	**$0**
2044	0	0	0	$1,059	$324	$736	$0	**$0**	**0.130**	**$0**
2045	0	25,000	25,000	$1,091	$333	$758	$18,948,691	**$18,948,691**	**0.123**	**$2,330,689**
2046	0	0	0	$1,124	$343	$781	$0	**$0**	**0.116**	**$0**
2047	0	0	0	$1,158	$354	$804	$0	**$0**	**0.109**	**$0**
2048	0	0	0	$1,192	$364	$828	$0	**$0**	**0.103**	**$0**
2049	0	0	0	$1,228	$375	$853	$0	**$0**	**0.097**	**$0**
2050	0	0	0	$1,265	$386	$879	$0	**$0**	**0.092**	**$0**
2051	0	0	0	$1,303	$398	$905	$0	**$0**	**0.087**	**$0**
2052	0	0	0	$1,342	$410	$932	$0	**$0**	**0.082**	**$0**
2053	0	0	0	$1,382	$422	$960	$0	**$0**	**0.077**	**$0**
2054	0	0	0	$1,424	$435	$989	$0	**$0**	**0.073**	**$0**
2055	0	25,000	25,000	$1,467	$448	$1,019	$25,465,457	**$25,465,457**	**0.069**	**$1,757,117**
2056	0	0	0	$1,511	$461	$1,049	$0	**$0**	**0.065**	**$0**
2057	0	0	0	$1,556	$475	$1,081	$0	**$0**	**0.061**	**$0**
2058	0	0	0	$1,603	$489	$1,113	$0	**$0**	**0.058**	**$0**
2059	0	0	0	$1,651	$504	$1,146	$0	**$0**	**0.054**	**$0**
2060	0	0	0	$1,700	$519	$1,181	$0	**$0**	**0.051**	**$0**
Total		**$125,000**	**$125,000**	**$45,078**	**$13,995**	**$31,083**	**$75,308,815**	**$75,308,815**		**15,725,436**
Total Present Value of Discounted Benefits over Project Life (Monetized Benefits):										**$15,725,436**
Project Allocation:										**100%**
Total Present Value of Discounted Benefits (Monetized Benefits):										**$15,725,436**

Comments:

(1) Table was modified for the Amargosa Project from DWR Table 15 of the PSP SWFM Guidelines

(2) All values are in 2009 dollars

Table 8-9: Present Value of Water Supply Benefits from Amargosa Project

Upper Amargosa Creek Flood Control, Recharge, and Habitat Restoration Project

(a)	Present value of water supply benefits	$15,725,436
(e)	**Total**	**$15,725,436**

Comments:
(1) Table was modified for the Amargosa Project from DWR Table 18 of the PSP SWFM Guidelines
(2) All values are in 2009 dollars.
(3) 6% discount rate

Attachment 9

Stormwater Flood Management Grant Proposal
City of Palmdale
Water Quality and Other Expected Benefits

Attachment 9 consists of the following items:

- ✓ **Water Quality and Other Expected Benefits.** Attachment 9 contains details on the Amargosa project's water quality and other expected benefits.

Introduction

This attachment provides information regarding the water quality and other expected benefits that will be derived from the Amargosa Project. Narrative descriptions of the expected water quality and other expected benefits of the project are presented in this attachment. In all cases, quantitative analysis was not feasible; therefore this attachment provides complimentary qualitative analyses.

Project Costs

The total estimated budget for the proposed project is $13,483,322 (see Attachment 4). Administration, Operations and Maintenance costs are anticipated throughout the project lifetime, in order to maintain the proposed project. Table 9-1 shows the breakdown of the project costs and its net present value in 2009 dollars.

Table 9-1: Total Project Costs

Phase	Cost
Capital Costs	$13,483,322
O&M and Replacement Costs	$12,455,000
Total project costs	$25,938,322
Total present value of discounted costs ($2009)	$14,463,689

Water Quality Benefits

The Amargosa Project will provide water quality benefits. These benefits are described in detail below and are summarized in Table 9-2.

Avoided Decline of Drinking Water Supply Quality Due to Arsenic

The Amargosa Project will provide approximately 25,000 AF of additional recharged stormwater and imported water over 50 years. This additional recharged water will prevent migration of arsenic from the lower aquifer to the upper aquifer, a source of drinking water for the region.

All water agencies in the area pump water from the upper aquifer. These agencies include Palmdale Water District, the Los Angeles County Water Works District #40, and over 20 mutual water companies. However, arsenic in the lower aquifer combined with continued groundwater pumping of the upper aquifer could result in the draw on the lower aquifer. The draw of lower aquifer water into the upper aquifer would result in arsenic in the local drinking water supply. Through additional recharge the upper aquifer could

help abate the effects of pumping from the upper aquifer. To the extent that pumping can remain in the upper aquifer, a decline in drinking water quality due to increased levels of arsenic can be avoided.

If the Amargosa Project is not implemented, the 25,000 AF of additional recharged water will not be provided and the benefits of preventing arsenic migration from the lower aquifer will not be realized.

Table 9-2: Water Benefits Summary

Type of Benefit	Assessment Level	Beneficiaries
Avoided decline of drinking water supply quality due to arsenic	Qualitative	Local, Regional

Ecosystem Restoration

The Amargosa Project will provide an ecosystem restoration benefit. This benefit is described in detail below and summarized in Table 9-3.

Riparian Habitat Protection and Enhancement

The Amargosa Project will protect and enhance 25 acres of native habitat in the out-of-channel portions of the project area. The City will clean the area of trash, provide additional plants, and install temporary irrigation to promote establishing newly planted areas. In addition, the City will remove invasive and non-desirable plant species. All new plant species to be added to the site will be native to Amargosa Creek.

The site is expected to support a variety of native bird, mammal, reptile, and arthropod species typical of the desert scrub habitats present. Burrowing nocturnal rodent species such a pocket mice and kangaroo rats; lizards, including the Yucca night lizard; as well as a variety of snakes are present. There is currently a high population of cotton tail rabbits, which have left conspicuous browse lines on the fourwing saltbush shrubs. The bed of Amargosa Creek would serve as a movement corridor for a variety of medium-sized mammals, including coyotes. There is no natural habitat for aquatic or amphibious vertebrates. The restored habitat would be expected to support a rich representation of the wildlife typical of Joshua tree woodland and California juniper woodland habitats as well as saltbush habitats. The riparian woodland, although limited in area, would attract additional species including a variety of migratory and resident songbirds.

If the Amargosa Project is not implemented, the 25 acres of native habitat will not be enhanced or protected and the benefits to native species and the community will not be realized.

Figure 9-1: Example of Vegetation and Local Animals Expected at the Nature Park

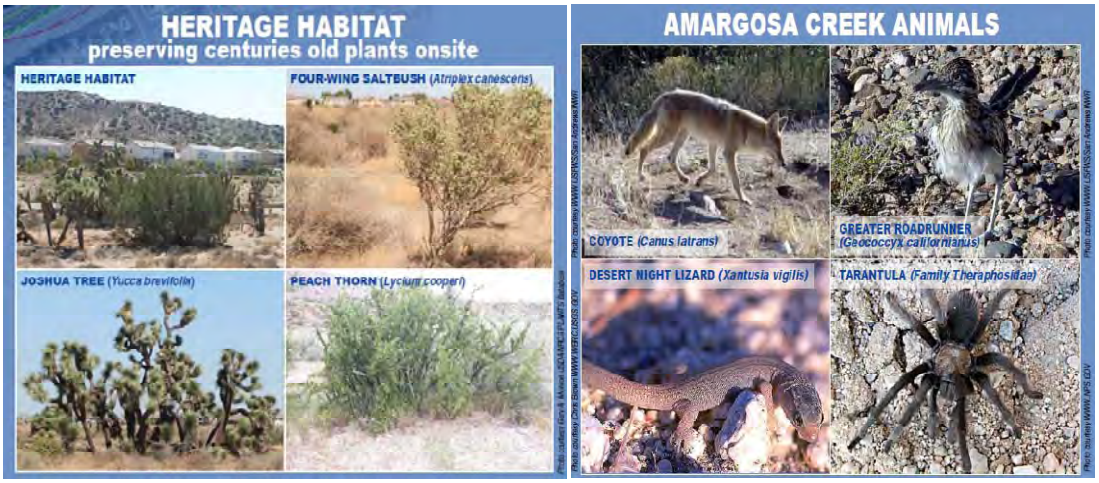


Table 9-3: Ecosystem Restoration Benefits Summary

Type of Benefit	Assessment Level	Beneficiaries
Riparian Habitat Protection and Enhancement	Qualitative	Local, Regional

Recreation and Public Access

The Amargosa Project will provide a recreation and public access benefit. This benefit is described in detail below and summarized in Table 9-4.

Water Conservation Education and Community Recreation

The Amargosa Project will provide a nature park at the recharge facility site that will educate the community about water conservation. The park will be centrally located on the fringe of the urban area, and will be open to the public, with outreach particularly targeting school groups. It will be designed to promote water conservation and will have signs for identification and discussion of native plans and species. Education kiosks will be installed to help promote water conservation. The nature park will have picnic tables and walkways, and a bike path that will connect to existing regional bike paths.

If the Amargosa Project is not implemented, the Nature Park, water conservation education, picnic area, bike paths, and walkways will not be provided and the benefits of these amenities to the community will not be realized.

Figure 9-3: Rendering of Amargosa Creek Nature Park Including Future Education and Community Recreation Structures

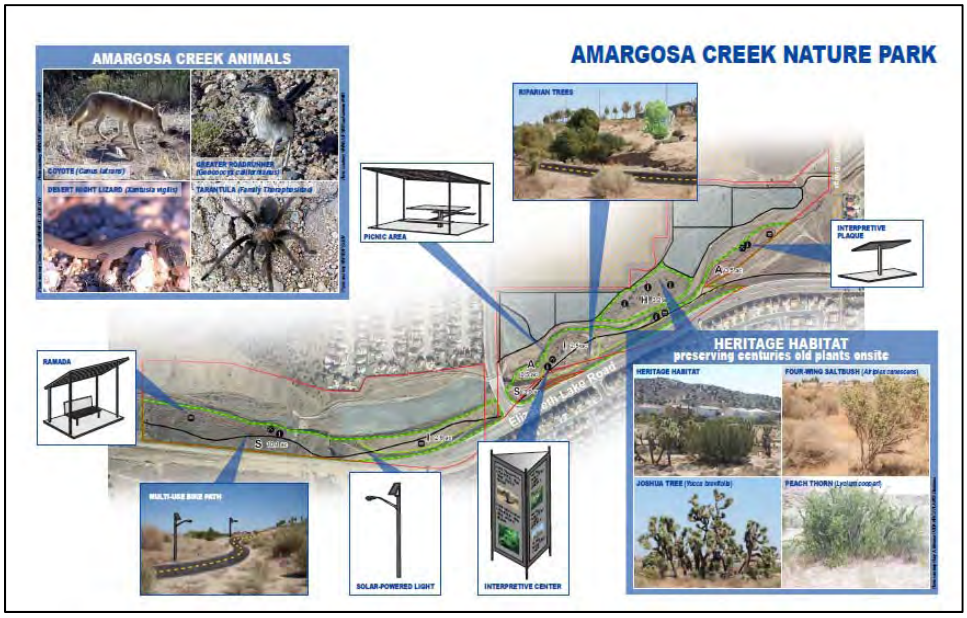


Table 9-4: Recreation and Public Access Benefits Summary

Type of Benefit	Assessment Level	Beneficiaries
Water Conservation Education and Community Recreation	Qualitative	Local, Regional

Other Expected Benefits

The Amargosa Project will provide several other expected benefits. These benefits are described in detail below and summarized in Table 9-5.

Reduced Stress on Bay-Delta During Dry Years/Seasons

The Amargosa Project will offset approximately 25,000 AF of imported water from the Bay-Delta during single dry years. By banking SWP water locally for use during dry years or seasons, the proposed project will help lessen demands on the SWP during critical times. The offset of critical period demands can be left as instream flows in the Bay-Delta, or may offset other diversions that would otherwise reduce flows. Maintaining the Delta's environmental condition is vital to maintaining and improving the viability of the Delta region. Over the 50-year lifespan of the project, this amounts to approximately 125,000 AF of reduced demand on the Bay-Delta during dry seasons.

While salmon runs and wildlife habitat have been improved in recent years, significant problems still exist. The population of certain species of open-water fish, including the delta smelt, has declined dramatically over the past few years. The levee system is aging and concerns about its strength and reliability have escalated since Hurricane Katrina. In addition, water quality problems still exist, and there is little consensus on how to provide management of water resources through storage.

If the Amargosa Project is not implemented, an offset of 125,000 AF of imported water will not be gained and the associated benefits to Bay-Delta levee management, habitats and native species will not be realized.

Aid in Resolving Water Related Conflicts within the Region

In 1999, W.M. Bolthouse Farms, Inc. and Diamond Farming Company initiated lawsuits against various municipal groundwater pumpers within the Antelope Valley, claiming that the ability of agricultural interests to pump groundwater in a cost-effective manner was being impaired due to increased pumping by municipal users[1] . In September 2004, the Los Angeles Department of Public Works filed a cross complaint seeking to quantify the rights to groundwater in the Antelope Valley[2] . These complaints resulted in a process called court adjudication to determine, based on data and studies, the equitable allocation of water rights based on water that is available. The court groundwater adjudication process is still underway in the Antelope Valley.

The Amargosa Project will help resolve the groundwater adjudication by providing opportunities to pumpers to store water for dry years and help recharge the aquifer from its overdraft condition. The adjudication process is aggravated by the overdraft condition of the groundwater aquifer and the project helps to alleviate this overdraft by recharging additional stormwater and imported water during wet years. The project would capture water for beneficial uses which otherwise would have evaporated. Additional groundwater supply benefits all the parties to the adjudication, regardless of disputes over pumping rights.

If the Amargosa Project is not implemented, there will be no additional supply benefits provided to the parties of the adjudication process.

Improved Salt Management at Piute Ponds

The Amargosa Project will allow greater control of salt flushing at Piute Ponds. Piute Ponds is a large freshwater marsh located near the terminal end of Amargosa Creek in the Antelope Valley. It consists of claypan ponds and low sand dunes[3]. Due to the clay laden soils and its location in a closed basin with no outlets to the ocean, evaporation of water at the ponds leaves behind salts that require flushing. Intermittent flows from Amargosa Creek end up at Piute Ponds adding to the problem. Therefore, diverting and recharging stormwater into the underlying aquifer would reduce the volume of salts brought into Piute Ponds and increase salt management control.

If the Amargosa Project is not implemented, there will be no additional flexibility provided to the salt management control efforts at Piute Ponds.

Increased Public Safety

The Amargosa Project would increase the public safety of students that regularly use Amargosa Creek and the surrounding floodplain to reach Highland High School, Cottonwood Elementary School, Summerwind Elementary School, Juniper Middle School, and Ocotillo Elementary School from the nearby neighborhoods to the south. The locations of these schools in relation to the Amargosa Project are shown in Figure 9-4.

[1] Upper Amargosa Creek Recharge Project Environmental Impact Report, SAIC 2009
[2] Upper Amargosa Creek Recharge Project Environmental Impact Report, SAIC 2009
[3] Piute Ponds Site: http://www.piuteponds.com/history.php

Figure 9-4: Public Safety Benefits

At present, storm flows from residential and commercial areas northwest of the project site are conveyed through an existing stormwater culvert beneath 25th Street West into Amargosa Creek, discharging near the northwest corner of the property boundary at 25th Street West. According to City staff, students regularly cross near this location. The discharge from the culvert has formed a natural side-channel up to ten feet deep that extends to Amargosa Creek and poses a public safety hazard for students traveling to and from school.

The Amargosa Project would include a 500-foot stormwater conveyance pipe connected to 25th Street West storm culvert moving storm flows away from the area and directly to Amargosa Creek. The project also includes filling in the natural channel. This would prevent further erosion and protect the public safety of pedestrians in the project site. Additionally, flooding on 25th Street West impacts access to Highland High School however the project would armor the river with soilcrete reducing the risk of flooding on 25th street.

If the Amargosa Project is not implemented, the public safety benefits to pedestrians (including local school children) provided by increased flood control at 25th Street West will not be realized. The Other Benefits provided by the Amargosa Project are summarized below in Table 9-3.

Table 9-5: Other Benefits Summary

Type of Benefit	Assessment Level	Beneficiaries
Reduced stress on Bay-Delta during dry years/seasons	Qualitative	Local, Regional
Aid in resolving water related conflicts within the region	Qualitative	Local, Regional
Improved salt management at Piute Ponds	Qualitative	Local, Regional
Increased public safety	Qualitative	Local, Regional

Summary Distribution of Project Benefits and Identification of Beneficiaries

Table 9-6 summarizes the Project's beneficiaries. Local residents and water customers will benefit from flood protection, increased local supplies, more sustainable management of water supplies, protected quality of groundwater in drinking supplies, enhanced and protected native habitat, increased recreational space, and improved educational opportunities provided in the Nature Park kiosks and signage.

Though the City of Palmdale is not an urban water supplier, the City supports this project as beneficial to the Antelope Valley Region. The regional beneficiaries include other municipalities, communities, water districts, and mutual water companies in the general area. These entities will benefit from reduced groundwater overdraft, avoided dry-year reserve water costs, avoided decline of drinking water supply quality due to arsenic contamination from the lower aquifer, enhanced and protected riparian habitat, and increased education opportunities.

The State of California will benefit from reduced stress on the Bay-Delta during dry years.

Table 9-6: Project Beneficiaries Summary

Benefits	Local*	Regional**	Statewide***
Protection of Buried Utilities from Erosion	✓		
Protection of Streets and Roadways from Flooding	✓		
Protection of Public Safety	✓		
Reduced Groundwater Overdraft	✓	✓	
Avoided Dry-Year Reserve Water Costs	✓	✓	
Avoided Decline of Drinking Water Supply Quality due to Arsenic	✓	✓	
Riparian Habitat Protection and Enhancement	✓	✓	
Increased Water Conservation Education with New Nature Park	✓	✓	
Reduced Stress on Bay-Delta During Dry Years/Seasons			✓

* Includes: City of Palmdale
** Includes: Los Angeles County Water Works District #40, City of Lancaster, Quartz Hill, Rosamond, Antelope Acres, and other surrounding communities
*** Includes: State of California

Project Benefits Timeline Description

The Amargosa Project will provide benefits over an assumed 50-year project lifetime. Benefits from the project will begin accruing as soon as the recharge facilities are constructed in 2013. For additional detail on the timeline for project benefits, see Attachment 5.

Uncertainty of Benefits

Uncertainties relating to the flood reduction benefits of this project are summarized below in Table 9-7. Uncertainties include the inherent unpredictability of rainfall patterns, fluctuations in the availability of imported water, variability in repair frequency for erosion damages, and uncertainty in the regulatory process.

Table 9-7: Uncertainty of Benefits

Benefit or cost category	Likely impact on net benefits	Comment
Aid in resolving water related conflicts within the region	+/-	The uncertainty inherent in this project could have a net positive or negative impact on the benefits. Rainfall/SWP availability could be more or less than predicted. Erosion damages could occur more or less frequently than predicted. Regulatory requirements could evolve in such manner as to be more difficult or more streamlined.

**Direction and magnitude of effects on net benefits

+	Likely to increase net benefits relative to quantified estimates
++	Likely to increase net benefits significantly
"-"	Likely to decrease net benefits
"--"	Likely to decrease net benefits significantly
+/-	Uncertain

Potential Adverse Effects from the Project

Any potential short-term impacts, such as potential harmful effects of removing land from the floodplain, associated with project construction will be mitigated as described in the EIR, in Appendix B. No long-term adverse effects are expected as a result of the proposed project.

Qualitative Benefits Summary

The project will result in many benefits that are not directly related to flood damage reduction costs or water supply. Those benefits include water quality benefits, riparian habitat protection and enhancement, water conservation education and community recreation, reduced stress on Bay-Delta during dry years/seasons, aid in resolving water related conflicts within the region, improved salt management at Piute Ponds, and increased public safety. Table 9-8 lists each benefit and gives a qualitative indicator of the likely impact on the overall net benefit from the project.

Table 9-8 Qualitative Benefits Summary

Benefit	Qualitative Indicator*
Avoided decline of drinking water supply quality due to arsenic	+
Riparian habitat protection and enhancement	++
Water conservation education and community recreation	+
Reduced stress on Bay-Delta during dry years/seasons	+
Aid in resolving water related conflicts within the region	+
Improved salt management at Piute Ponds	+
Increased public safety	+

**Direction and magnitude of effects on net benefits

+	Likely to increase net benefits relative to quantified estimates
++	Likely to increase net benefits significantly
"-"	Likely to decrease net benefits
"--"	Likely to decrease net benefits significantly
+/-	Uncertain

Summary of Project Benefit Costs

The total present value of the project cost, along with monetized and qualitative benefits, is provided in Table 9-9.

Table 9-9: Benefit-Cost Analysis of Water Quality and Other Expected Benefits Overview

	Present Value ($2009)
Costs – Total Capital and O&M	$13,483,322
Monetizable Benefits	
None	N/A
Total Benefits	
None	N/A
Qualitative Benefits	**Qualitative Indicator***
Water Quality	
Avoided decline of drinking water supply quality due to arsenic	+
Other Benefits	
Riparian habitat protection and enhancement	++
Water conservation education and community recreation	+
Reduced stress on Bay-Delta dry years/seasons	+
Aid in resolving water related conflicts within the region	+
Improved salt management at Piute Ponds	+
Increased public safety	+
Total Benefits	$0

**Direction and magnitude of effects on net benefits

+	Likely to increase net benefits relative to quantified estimates
++	Likely to increase net benefits significantly
"-"	Likely to decrease net benefits
"--"	Likely to decrease net benefits significantly
+/-	Uncertain

Economic Benefit Tables

All benefits described in this attachment are qualitatively assessed; therefore there was no quantification of the water quality and other expected benefits.

Attachment 10 — *Stormwater Flood Management Grant Proposal City of Palmdale Costs and Benefits Summary*

Attachment 10 consists of the following items:

- ✓ **Costs and Benefits Summary.** Attachment 10 provides a summary of the overall benefits of the Amargosa Project.

Introduction

This attachment contains an overall estimate of the costs and benefits of the Amargosa project within this SWFM Grant Proposal by providing a summary of the cost benefit information from Attachments 7, 8, and 9. The overall cost-benefit ratio of the Upper Amargosa Creek Flood Protection, Recharge, and Habitat Restoration project is 1.13 .

Table 20 – Proposal Project Costs and Benefits Summary

Project	Agency/ Project Sponsor	Total Present Value Project Costs	Total Present Value Project Benefits				Benefit/ Cost Ratio
			Water Supply	Flood Damage Reduction	Water Quality & Other	Total	
(a)	(b)	(c)	(d)	(e)	(f)	(g) (d) + (e) + (f)	(h) (g)/(c)
Upper Amargosa Creek Flood Protection, Recharge, and Habitat Restoration Project	City of Palmdale	$14,463,689	$15,725,436	$617,989	$0	$16,343,425	1.13

Attachment 11

Stormwater Flood Management Grant Proposal
City of Palmdale
Program Preferences

Attachment 11 consists of the following items:

- ✓ Program Preferences. Attachment 11 contains detailed information on how the proposal will meet the program preferences described in the IRWM Guidelines.

Program Preferences Met by Proposal

The Amargosa Project meets eight out of eight Program Preferences identified in the Proposition 84 & Proposition 1E IRWM Guidelines. This attachment details the specific Program Preferences that are met by the Project, the certainty that the Proposal will meet Resource Management Strategies, the certainty that the Proposal will assist in meeting the Program Preferences, and the breadth and magnitude to which the Program Preferences will be met. Table 11-1, below identifies the Program Preferences which the project will assist in meeting.

Table 11-1: Program Preferences Met by Proposal

Project	Program Preferences							
	(1) Includes Regional Projects or Programs	(2) Integrates Projects within a Hydrologic Region	(3) Resolves Significant Water-Related Conflicts Within Region	(4) Contributes to Attainment of one or more CALFED objectives	(5) Addresses Critical Water Supply or Quality Needs of DAC	(6) Integrates Water Management with Land Use Planning	(7) Eligible for SWFM funding	(8) Addresses Statewide Priorities
Upper Amargosa Creek Flood Control, Recharge, and Habitat Restoration Project	✓	✓	✓	✓	✓	✓	✓	✓

Specific program preference, certainty, breadth and magnitude:

(1) Project includes regional projects and programs:

- Provides regional water supply and conservation benefits by utilizing all SWP water during wet years and preventing this water from being lost to evaporation or to the ocean
- Provides water quality by increasing the water in the upper aquifer and preventing the lower quality water in the lower aquifer from mixing with the upper aquifer

(2) Project integrates projects within an identified Region:

- Project will integrate with the planned future Lower Amargosa Creek Recharge project
- Project will integrate with planned future recycled water recharge projects in Amargosa Creek

(3) Project will help resolve the groundwater adjudication by providing opportunities to pumpers to store water for dry years and help recharge the aquifer from its overdraft condition.

(4) The Project would contribute to the attainment of CALFED objectives by:

- Increasing the flexibility of water systems at the state, federal and local level through improvements in conveyance, storage and water project operation; and
- Development of groundwater storage to boost flexibility and provide additional supplies for agriculture, urban and environmental use.

(5) The Project will help to address critical water supply or quality needs of a disadvantaged community (DAC) by recharging stormwater into the upper Amargosa groundwater aquifer. The the water quality will be improved for about 500,000 people in more than 16 communities, six of which are considered to be disadvantaged according to the State of California definition.[1]

(6) The Project effectively integrates water management with land use planning by combining water supply projects with flood protection facilities, habitat restoration, and recreational open space.

(7) The Project is eligible for Stormwater Flood Management (SWFM) funding because:

- The project is not part of the State Plan Flood Control (SPFC);
- The project is designed to manage stormwater runoff to reduce flood damage;
- The project yields multiple benefits including ecosystem benefits, reduction of in-stream erosion and sedimentation, and groundwater recharge; and
- The project is consistent with the applicable Regional Water Quality Control Plan to manage stormwater runoff to reduce flood damages.

(8) The Project addresses Statewide priorities as detailed in Table 11-2 below.

Table 11-2: Address Statewide Priorities

Project	Assist in Meeting Statewide Priorities							
	Drought Prepared-ness	Use and Reuse Water More Efficiently	Climate Change Response Actions	Expand Environ-mental Stewardship	Practice Integrated Flood Management	Protect Surface Water Quality and Groundwater Quality	Improve Tribal Water and Natural Resources	Ensure Equitable Distribution of Benefits
Upper Amargosa Creek Flood Control, Recharge, and Habitat Restoration Project	✓	✓	✓	✓	✓	✓		✓

[1] The State of California defines a disadvantaged community as a community with an annual median household income (MHI) that is less than 80% of the statewide MHI.

The project addresses seven Statewide Priorities:

- **Drought Preparedness** - by storing water in the ground for drought years when the SWP cannot provide the quantities required for the region.
- **Use and Reuse Water More Efficiently** - by increasing water supply reliability through groundwater recharge of SWP water and stormwater into the underlying aquifer. The Project would increase local supply reliability for the region through replenishment of local groundwater. The project would capture and recharge approximately 400 AFY of stormwater and 14,600 to 53,600 AFY of SWP water.
- **Climate Change Response Actions** - by adapting conjunctive management of multiple local water supply sources such as imported water, stormwater, and groundwater that will also address anticipated climate change impacts to the region.
- **Expand Environmental Stewardship** - by enhancing and restoring the local environment at Amargosa Creek with re-introduction of riparian vegetation, native desert scrub, and other wildlife habitat. The restoration of Amargosa Creek's instream functions and flood management ecosystems will aid in preventing floods and flood cost damages to surrounding property, businesses, and streets. Additionally, educational displays will be placed throughout the project site to provide information on the watershed processes, urban runoff, native habitat, and local biological and water resources to promote environmental stewardship throughout the region.
- **Practice Integrated Flood Management** - by preventing flooding and providing other benefits such as sustainable food and water management system, improved flood protection, and enhancing the floodplain ecosystem through implementation of the project.
- **Protect Surface Water and Groundwater Quality** - by collecting stormwater within Amargosa Creek channel berms and allowing percolation to the groundwater. Within the Antelope Valley groundwater basin, the lower aquifer contains arsenic. Continued overdraft from the upper aquifer could result in vertical migration from the lower aquifer and result in arsenic in drinking water supplies. Recharging the upper aquifer could help reduce the vertical groundwater gradient and thereby reduce potential for arsenic migration. Additionally, collecting stormwater flows in the creek will slow the velocity and cause sediment to drop out of the flow. Amargosa Creek has problems in transporting sediment in high flow situations.
- **Ensure Equitable Distribution of Benefits** - by recharging stormwater and imported water into the upper Amargosa groundwater aquifer, the water quality will be improved for about 500,000 people in more than 16 communities, six of which are considered to be disadvantaged.

Certainty that the Proposal will meet Resource Management Strategies

The Project will implement the following Resource Management Strategies identified in the California Water Plan Update 2009:

- **Flood Risk Management** - by applying multiple strategies that address not only flood management but other water resource issues such as water supply. The project will use a structural approach, channelization, to improve the ability of the Amargosa Creek to convey flood flows and a Land Use Management approach, floodplain restoration, by acquiring land subject to inundation for preserving and restoring the natural ability of an undeveloped floodplain to absorb. Hold, and release floodwaters.
- **Conjunctive Management & Groundwater** - by coordinating the use of both surface water and groundwater resources for providing a reliable source of water and increasing the available water

supply for the region. The Amargosa project will recharge SWP water and stormwater into the underlying aquifer for storage.

- **Ecosystem Restoration** - by restoring and enhancing riparian and floodplain ecosystems at the Amargosa Creek project site. This includes restoring natural communities and vegetation which will reduce ecosystem damages and improve flood management.
- **Recharge Area Protection** - by constructing eight catch basins for recharging groundwater into the local aquifer. Plaques will be placed at the project site to educate visitors on urban stormwater runoff to prevent pollution from entering Amargosa Creek and the groundwater.
- **Watershed Management** - by restoring, sustaining, and enhancing vital watershed functions that will increase and sustain the watershed's ability to provide for the needs of communities that depend on these water resources.

Certainty that the Proposal will meet Program Preferences

The Project has undergone extreme scrutiny during the IRWMP stakeholder process and therefore, there is great certainty the project selected for this proposal will meet the Program Preferences. The project will meet criteria designed to address Proposition 1E requirements and achieve the Antelope Valley IRWMP objectives. The project has the ability to achieve its required benefits, is technically feasible, has secured more than 50% of matching funds, and is implementable within a reasonable length of time after the grant award date.

The existing data and studies that demonstrate the project is technically sound and likely to be implemented are listed below in Table 11-3.

Table 11-3: Existing Data and Studies

Project	Existing Data and Studies
Upper Amargosa Creek Flood Control, Recharge, and Habitat Restoration Project	• A study titled "Study of Potential Recharge Sites in the Antelope Valley" was prepared for the Antelope Valley State Water Contractors Association by Stetson Engineers, Inc. in September 2002; • Amargosa Creek Percolation Demonstration Report was prepared by SAIC in July 2007; • Upper Amargosa Creek Concept Report was prepared by SAIC in January 2008; • Upper Amargosa Creek Recharge Project Environmental Impact Report (EIR) was prepared by SAIC in July 2009; • Preliminary 20th Street West-Amargosa Creek Improvements Project Report was prepared by LAN Engineering (now AECOM) 2007 • Water Resources Evaluation of Amargosa Creek was prepared by SAIC in July 2009; • Antelope Valley Integrated Regional Water Management Plan, Proposition 50 Round 2, Step 5 Grant Application was prepared by the City of Palmdale and submitted in January 2008

Breadth and Magnitude to which Program Preference will be Met

The breadth and magnitude to which the Program Preferences be gauged by the project meeting the IRWM Plan goals, as described in detail in *Attachment 3 - Work Plan*. The IRWM Plan articulated five goals, three of which the project will meet. The goals of the Antelope Valley IRWM Plan are as follows:

- Improve water supply reliability;
- Protect and improve quality of water resources;
- Reduce negative impacts of stormwater, urban runoff, and nuisance water;
- Preserve open space and natural habitats that protect and enhance water resources and species in the Antelope Valley Region;
- Meet growing demand for recreational space and improve integrated land use planning to support water management.

Table 11-4 provides both quantitative and qualitative data on the breadth and magnitude to which the projects meet the IRWM Plan goals.

Table 11-4: Breadth/Magnitude to which Program Preferences will be Met

Project	Breadth/Magnitude to Which Program Preferences Will Be Met	
	Eligible for SWFM funding	Address Statewide Priorities
Upper Amargosa Creek Flood Control, Recharge, and Habitat Restoration Project	• The project will capture and recharge approximately 400 AFY of stormwater • By recharging stormwater and imported water into the upper Amargosa groundwater aquifer, the water quality will be improved for about 500,000 people in more than 16 communities, six of which are considered to be disadvantaged. • By recharging the groundwater it will reduce the vertical groundwater gradient and reduce the potential for arsenic to migrate from the lower to upper aquifer.	• Improved flood protection and flood management by implementing a multi-benefit project that will reduce flood impacts and increase water supplies

Attachment 12

Stormwater Flood Management Grant Proposal
City of Palmdale
AB1420 and Water Meter Compliance Form

Attachment 12 consists of the following items:

- ✓ **AB1420 and Water Meter Compliance Form.** Attachment 12 contains estimates on water quality and other expected benefits.

Introduction

The City is not an urban water supplier and therefore does not require the AB1420 self certification and water meter compliance self certification documents.

Attachment 13

Stormwater Flood Management Grant Proposal City of Palmdale Stormwater Resrources Plan

Attachment 13 consists of the following items:

- ✓ **Stormwater Resources Plan.** Attachment 13 identifies and includes portions of the applicable Plan that demonstrates all of the standards of Part 2.3 (commencing with Section 10560) of Division 6 of the CWC.

Introduction

The City does not have an existing Stormwater Resources Plan, pursuant (commencing with Section 10560) of Division 6 of the Water Code) and did not answer “yes” to Q15 or 16.

Appendix A

Appendix B

Appendix C

Appendix D

Appendix E

Appendix F

Appendix G

Appendix H