Notice and Agenda of a Workshop of the Yucaipa Sustainable Groundwater Management Agency

Wednesday, November 14, 2018 at 9:30 a.m.

City of Yucaipa, 34272 Yucaipa Boulevard
Yucaipa, California 92399
(909) 797-2489 | www.yucaipasgma.org

I. Call to Order

II. Roll Call

III. Introductions of Board Members and Public Participants

IV. Public Comments At this time, members of the public may address the representatives of the Yucaipa Groundwater Sustainability Agency on matters within its jurisdiction.

V. Review and Approval of Meeting Minutes

A. Meeting Minutes - October 24, 2018

VI. Discussion Items

A. Discussion Regarding Correspondence from the City of Calimesa - Notice of Withdrawal from the Yucaipa - GSA

- Meet and Confer Regarding: (i) Whether the withdrawing Party wishes to seek GSA status for a portion of the Basin underlying the jurisdictional area or service area of the withdrawing Party; (ii) Whether, as a result of the withdrawal, a co-GSA management or other arrangement with the withdrawing Party is necessary to satisfy the requirements of SGMA; and (iii) Any other issues and steps that are necessary to avoid triggering probationary status of the Basin and State Water Board intervention.
- Discussion Regarding Financial Impacts to the Parties
- Discussion Regarding Interim Voting and Quorum
- Discussion Regarding Financial Obligations for Future Participation in the Yucaipa SGMA
- Discussion Regarding Other Related Issues

B. Status Report on the Sustainable Groundwater Management Act Grant Supporting Work by the Yucaipa Sustainable Groundwater Management Agency - Bob Tincher / Tim Kellett

C. Discussion Regarding the Preparation of a Groundwater Sustainability Plan - All

- Scheduled Kick-Off Meeting - Wednesday, November 14, 2018 at 9:30 am
- Discussion Regarding the Workflow for Recommendations made by the Technical Advisory Group to the Board of Directors of the Yucaipa Sustainable Groundwater Management Agency
- Discussion Regarding Data Collection and Compilation of Water Resources
- Discussion Regarding Future Steps for the Preparation of a Groundwater Management Plan
- Discussion Regarding Regular Meeting Date, Time, and Location for the Technical Advisory Group

D. Discussion Regarding Correspondence from the San Gorgonio Pass Water Agency Requesting Modifications to the Yucaipa SGMA Bylaws

VII. Presentation

A. Presentation of the North Bench Water Resources Operation and Maintenance Plan by the City of Yucaipa by Ray Casey and Michael Seal, City of Yucaipa

VIII. Topics for Future Meetings

A. Yucaipa Sustainable Groundwater Management Agency

- Presentation by the United States Geological Survey Groundwater Flow Model - Tentatively Scheduled for January 23, 2019
- Presentation by the City of Yucaipa Regarding the Project Components Necessary to Successfully Complete Stormwater Capture and Recharge Projects
- Discussion Regarding Proposed Amendments to the Yucaipa SGMA Bylaws

B. Technical Advisory Group

- Data Collection and Compilation
- Regular Meeting Dates

IX. Comments by Board of Directors

X. Announcements - Future Meetings

A. Wednesday, January 23, 2019 at 10:00 am - Workshop Meeting

B. Wednesday, February 27, 2019 at 10:00 am - Workshop Meeting

C. Wednesday, March 27, 2019 at 10:00 am - Workshop Meeting

D. Wednesday, April 24, 2019 at 10:00 am - Workshop Meeting

XI. Adjournment

Roll Call - Board of Directors

Purveyors	Present	Primary Representative	Present	Alternative Representative
South Mesa Water Company		David Armstrong		George Jorritsma
South Mountain Water Company		- -		- -
Western Heights Water Company		Mark Iverson		Tim Green
Yucaipa Valley Water District		Joseph Zoba		Jennifer Ares
Municipals				
City of Calimesa		Lori Askew		Bonnie Johnson
City of Redlands		Cecilia Griego		- -
City of Yucaipa		Ray Casey		Fermin Preciado
Regionals				
San Bernardino Valley MWD		Doug Headrick		Bob Tincher
San Gorgonio Pass Water Agency		Jeff Davis		Tom Todd
Stakeholders				
County of Riverside		Steve Horn		Jeff Johnson
County of San Bernardino		Bob Page		- -

* Quorum requires a total of five Purveyor, Municipal, Regional Members

MINUTES OF THE YUCAIPA SUSTAINABLE GROUNDWATER MANAGEMENT AGENCY

October 24, 2018 - 10:00 a.m.
City of Yucaipa, 34272 Yucaipa Boulevard, Yucaipa, California

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I. Call to Order - Chairman Mark Iverson called the meeting to order at 10:00 a.m.

II. Roll Call - The following representatives, as assigned by each Party, attended the meeting:

Purveyors	Present	Primary Representative	Present	Alternative Representative
South Mesa Water Company	✓	David Armstrong		George Jorritsma
South Mountain Water Company				
Western Heights Water Company	✓	Mark Iverson	✓	Tim Green
Yucaipa Valley Water District	✓	Joseph Zoba		Jennifer Ares
Municipals				
City of Calimesa		Lori Askew		Bonnie Johnson
City of Redlands	✓	Cecilia Griego		
City of Yucaipa	✓	Ray Casey	✓	Fermin Preciado
Regionals				
San Bernardino Valley MWD		Doug Headrick	✓	Bob Tincher
San Gorgonio Pass Water Agency	✓	Jeff Davis		
Stakeholders				
County of Riverside		Steve Horn		Jeff Johnson
County of San Bernardino		Bob Page		

A quorum of the Board of Directors was present at the meeting.

Members of the public and other attendees at the meeting included:

- David Duron
- Aaron Jones, San Bernardino Valley Municipal Water District
- Bruce Granlund, Yucaipa Valley Water District
- Lonni Granlund, Yucaipa Valley Water District
- Tim Kellett, San Bernardino Valley Municipal Water District
- Landon Kern, City of Yucaipa
- Bob Knight
- Edwin Lin, Todd Groundwater
- Chris Mann, Yucaipa Valley Water District
- Greg Mendez, United States Geological Survey
- Adan Ortega, Ortega Strategies Group
- Ron Schnabel, Dudek

- Tom Shalhoub, Yucaipa Valley Water District
- Gary Wilson, South Mesa Mutual Water Company

III. Public Comments - There were no public comments.

IV. Review and Approval of Meeting Minutes

A. Approval of Meeting Minutes of September 26, 2018

David Armstrong moved to approve the meeting minutes.

Ray Casey seconded the motion.

Motion to approve the September 26, 2018 minutes of the Yucaipa Sustainable Groundwater Management Agency.	Yes	No	Abstain	Absent
South Mesa Water Company	✓			
South Mountain Water Company				✓
Western Heights Water Company	✓			
Yucaipa Valley Water District	✓			
City of Calimesa				✓
City of Redlands				✓
City of Yucaipa	✓			
San Bernardino Valley Municipal Water District	✓			
San Gorgonio Pass Water Agency	✓			

The Board of Directors approved the motion.

V. Presentation

A. Overview of the Yucaipa Basin Infiltration Testing Study by Edwin Lin, Todd Groundwater

Edwin Lin provided a detailed overview of the infiltration basin study for the Yucaipa Basin area. A copy of the presentation has been attached to the online version of the meeting agenda packet for October 24, 2018.

B. Overview of the U.S. Geological Survey Groundwater Model of the Yucaipa Basin by Greg Mendez, U.S. Geological Survey

Greg Mendez provided a historical overview of the development of the groundwater model for the Yucaipa Basin area. A copy of the presentation has been attached to the online version of the meeting agenda packet for October 24, 2018.

VI. Discussion Items

A. Discussion Regarding Correspondence from the City of Calimesa - Notice of Withdrawal from the Yucaipa - GSA

- Meet and Confer Regarding: (i) Whether the withdrawing Party wishes to seek GSA status for a portion of the Basin underlying the jurisdictional area or service area of the withdrawing Party; (ii) Whether, as a result of the withdrawal, a co-GSA management or other arrangement with the withdrawing Party is necessary to satisfy the requirements of SGMA; and (iii) Any other issues and steps that are necessary to avoid triggering probationary status of the Basin and State Water Board intervention.
- Discussion Regarding Financial Impacts to the Parties
- Discussion Regarding Interim Voting and Quorum
- Discussion Regarding Financial Obligations for Future Participation in the Yucaipa SGMA
- Discussion Regarding Other Related Issues

The board members discussed the written Notice of Withdrawal of the City of Calimesa from Yucaipa GSA dated October 2, 2018.

Following a brief discussion, this item was continued to the Yucaipa SGMA meeting scheduled for November 14, 2018.

B. Status Report on the Sustainable Groundwater Management Act Grant Supporting Work by the Yucaipa Sustainable Groundwater Management Agency - Bob Tincher / Tim Kellett

Following a brief discussion, this item was continued to the Yucaipa SGMA meeting scheduled for November 14, 2018.

C. Discussion Regarding the Preparation of a Groundwater Sustainability Plan - All

- Scheduled Kick-Off Meeting - Wednesday, November 14, 2018 at 9:30 am
- Discussion Regarding the Workflow for Recommendations made by the Technical Advisory Group to the Board of Directors of the Yucaipa Sustainable Groundwater Management Agency
- Discussion Regarding Data Collection and Compilation of Water Resources
- Discussion Regarding Future Steps for the Preparation of a Groundwater Management Plan
- Discussion Regarding Regular Meeting Date, Time, and Location for the Technical Advisory Group

Following a brief discussion, this item was continued to the Yucaipa SGMA meeting scheduled for November 14, 2018.

D. Discussion Regarding Correspondence from the San Gorgonio Pass Water Agency Requesting Modifications to the Yucaipa SGMA Bylaws

Jeff Davis discussed the correspondence from the San Gorgonio Pass Water Agency regarding modifications to the bylaws to allow other representatives from each member agency.

The board members discussed issues and concerns related to having the primary representative be an elected official or consultant.

Following the brief discussion, Jeff Davis moved to modify the second sentence in Section 1.3 of the bylaws by striking "individuals" and inserting the phrase "principal representative".

David Armstrong seconded the motion.

Motion to modify the bylaws as Amendment No. 1 as follows: "The ~~individual~~ principal representative appointed to the Yucaipa-SGMA shall be a senior executive management level employee of each designating Party.".	Yes	No	Abstain	Absent
South Mesa Water Company	✓			
South Mountain Water Company				✓
Western Heights Water Company	✓			
Yucaipa Valley Water District	✓			
City of Calimesa				✓
City of Redlands	✓			
City of Yucaipa	✓			
San Bernardino Valley Municipal Water District	✓			
San Gorgonio Pass Water Agency	✓			

The Board of Directors approved the motion.

VII. Topics for Future Meetings

The meeting participants discussed the topics for future meetings and requested the following items be added to a future meeting agenda:

A. Yucaipa Sustainable Groundwater Management Agency

- Presentation by the United States Geological Survey Groundwater Flow Model - Tentatively Scheduled for January 23, 2019
- Presentation by the City of Yucaipa Regarding the Project Components Necessary to Successfully Complete Stormwater Capture and Recharge Projects
- Discussion Regarding Proposed Amendments to the Yucaipa SGMA Bylaws

B. Technical Advisory Group

- Data Collection and Compilation
- Regular Meeting Dates

VIII. Comments by the Board of Directors - There were no comments from the board members.

IX. Announcements - The next meeting of the Yucaipa Sustainable Groundwater Management Agency will be held on Wednesday, November 14, 2018 at 9:30 a.m.

X. Adjournment - The meeting was adjourned at 12:05 a.m.

City of Calimesa

October 2, 2018

Chairman Iverson and Members -- Yucaipa-GSA
Western Heights Water Company
32352 Avenue D
Yucaipa, Ca. 92399

Re: NOTICE OF WITHDRAWAL OF THE CITY OF CALIMESA FROM YUCAIPA-GSA

Dear CHAIRMAN IVERSON AND MEMBERS OF THE YUCAIPA-GSA.

In accord with the requirements of the Sustainable Groundwater Management Act ("SGMA") as set forth in California Government Code §§ 65350.5 et seq. and California Water Code §§ 1070 et seq., on June 5, 2017, the City Council of the City of Calimesa approved a Memorandum of Agreement (MOA) to form a Groundwater Sustainability Agency (GSA) for the Yucaipa Sub-Basin (Sub-Basin No. 8-02.07)("Yucaipa-GSA"). Members of the GSA include the City of Calimesa ("CALIMESA"), the City of Redlands ("REDLANDS") and the City of Yucaipa ("YUCAIPA"), collectively referred to as the "MUNICIPALITIES" and; South Mesa Water Company ("SOUTH MESA"), South Mountain Water Company ("SOUTH MOUNTAIN"),Western Heights Water Company ("WESTERN HEIGHTS") and Yucaipa Valley Water District ("YVWD"), collectively referred to as the "WATER PURVEYORS"; and, the San Bernardino Valley Municipal Water District ("SAN BERNARDINO VALLEY MUNICIPAL") and the San Gorgonio Pass Water Agency ("SAN GORGONIO"), collectively referred to as the "REGIONALS".

Section IX. B. of the MOA provides that any Party may decide, in its sole discretion, to withdraw from the MOA by providing ninety (90) days written notice to the other Parties.

This NOTICE constitutes CALIMESA's written statement of its intention to withdrawal from the MOA effective 90 days from the date of this NOTICE.

CALIMESA has struggled from the beginning with being a member of the GSA. It was represented to CALIMESA early on, that if CALIMESA was not a full voting member of the GSA, control of the Yucaipa Sub-Basin would revert to the State. Because CALIMESA understands

and recognizes the importance of local control over water resources, CALIMESA agreed to join the GSA. However, CALIMESA, throughout the formation process and since, has consistently expressed its concern regarding the various costs that will be incurred by Yucaipa-GSA. CALIMESA is by far the smallest MUNICIPALITY in the GSA and simply does not have the same financial resources as others in the GSA do. In addition, CALIMESA is frustrated with the apparent lack of due diligence exercised on behalf of the majority of the members when selecting the consultant to Develop the Groundwater Sustainability Plan (GSP).

On August 29, 2018, the GSA recommended contracting with Dudek in the amount of $814,500 for the Development of a GSP. It should be noted that Dudek's original proposal was $1,180,480 but was reduced by $365,980 through subsequent conversations with Dudek. However, the lowest qualified cost proposal was submitted by Todd Groundwater with a projected cost of $477,514. SOUTH MESA and CALIMESA both requested that Todd Groundwater be contacted again to ascertain why there was such a discrepancy in costs between the two proposals. The GSA Board voted down the request to contact Todd Groundwater. There would have been no cost in following up with the lowest qualified cost consultant. It may have permitted full compliance with the SGMA and saved all members a substantial amount of money in the end.

In light of these concerns and the limited financial resources available to CALIMESA for purposes of groundwater management, CALIMESA submits this written statement of withdrawal from the GSA. Under the provisions of the MOA, withdrawal by CALIMESA will "not cause or require the termination of [the] MOA or the existence of the YUCAIPA-GSA with respect to the non-withdrawing Parties." CALIMESA understands the requirement set forth in Section IX. B of the MOA to meet and confer with YUCAIPA-GSA as to various alternatives and options available to CALIMESA to fully comply with the requirements of SGMA during the 90-day notice period. CALIMESA is amenable to meet and confer as required and complete all statutory requirements to assure compliance.

Respectfully,

Bonnie Johnson
City Manager
City of Calimesa

Copies to:

South Mountain Water Company
35 Cajon Street
Redlands Ca. 92373
Attn: Cecilia Griego, Water Resources Specialist

South Mesa Water Company
391 West Avenue L
Calimesa, Ca. 92320
Attn: Dave Armstrong, General Manager

Yucaipa Valley Water District
12770 Second Street
Yucaipa, Ca. 92399
Attn: Joseph Zoba, General Manager

City of Redlands
35 Cajon Street
Redlands, Ca. 92373
Attn: Municipal Utilities and Engineering Director

City of Yucaipa
34272 Yucaipa Blvd.
Yucaipa, Ca. 92399
Attn: Ray Casey, City Manager

San Bernardino Valley Municipal Water District
280 E. Vanderbilt Way
San Bernardino, Ca. 92408
Attn: Douglas Headrick, General Manager

San Gorgonio Pass Water Agency
1210 Beaumont Avenue
Beaumont, Ca. 92223
Attn: Jeff Davis, General Manager and Chief Engineer

County of Riverside
4080 Lemon Street
Riverside, Ca. 92501
Attn: Steve Horn, Senior Mgmt. Analyst, Executive Office

County of San Bernardino
385 N. Arrowhead Avenue
San Bernardino Ca. 92415-0120
Attn: Bob Page, Principal Mgmt. Analyst, Special Projects

Yucaipa SGMA - Agenda Item 6.A.
Wednesday, October 24, 2018

Yucaipa SGMA Member and Cost Share Pursuant to MOA - With the City of Calimesa	Total GSP Cost (Dudek)	Proposition 1 Grant Funding	Member Cost
South Mesa Mutual Water Company	$152,718.75	$111,514.10	$41,204.64
South Mountain Water Company	$152,718.75	$111,514.10	$41,204.64
Western Heights Mutual Water Company	$152,718.75	$111,514.10	$41,204.64
Yucaipa Valley Water District	$152,718.75	$111,514.10	$41,204.64
City of Calimesa	$40,725.00	$29,737.09	$10,987.91
City of Redlands	$40,725.00	$29,737.09	$10,987.91
City of Yucaipa	$40,725.00	$29,737.09	$10,987.91
San Bernardino Valley Municipal Water District	$40,725.00	$29,737.09	$10,987.91
San Gorgonio Pass Water Agency	$40,725.00	$29,737.09	$10,987.91
Total	**$814,500.00**	**$594,741.85**	**$219,758.11**

Yucaipa SGMA Member and Cost Share Pursuant to MOA - Without the City of Calimesa	Total GSP Cost (Dudek)	Proposition 1 Grant Funding	Member Cost
South Mesa Mutual Water Company	$152,718.75	$111,514.10	$41,204.64
South Mountain Water Company	$152,718.75	$111,514.10	$41,204.64
Western Heights Mutual Water Company	$152,718.75	$111,514.10	$41,204.64
Yucaipa Valley Water District	$152,718.75	$111,514.10	$41,204.64
City of Redlands	$50,906.25	$37,171.37	$13,734.88
City of Yucaipa	$50,906.25	$37,171.37	$13,734.88
San Bernardino Valley Municipal Water District	$50,906.25	$37,171.37	$13,734.88
San Gorgonio Pass Water Agency	$50,906.25	$37,171.37	$13,734.88
Total	**$814,500.00**	**$594,741.88**	**$219,758.08**

605 THIRD STREET
ENCINITAS, CALIFORNIA 92024
T 760.942.5147 F 760.632.0164

MEMORANDUM

To:	Tim Kellett, SBVMWD
From:	Steven Stuart, Dudek
Subject:	Request for Digital Data to Support Development of Yucaipa Basin GSP
Date:	October 23, 2018
cc:	
Attachment(s):	

Dudek presents the following list of data requests relating to surface water and groundwater in the Yucaipa Basin. This request is submitted to all participating agencies in the Yucaipa Basin GSA and stakeholders that collect groundwater and surface water data in the Basin. Dudek requests that data be submitted in digital formats (e.g. Excel files, Microsoft Access database, comma-delimited text files, GIS shapefiles, AutoCAD, PDF). Dudek requests that the member agencies provide digital copies of any existing hard copies with data.

Dudek requests that all digital data be received by February 27, 2019. Any data delivered after that date will be set aside for the 5-year update process following submittal of the Groundwater Sustainability Plan.

1. Data Request

A. Information to Develop Plan View Maps and Cross-Sections

Dudek requests the following information to develop plan view maps depicting the current locations of existing wells, surface water gaging stations, spreading basins, groundwater and surface water discharge locations, jurisdictional boundaries of all agencies in the Basin, boundaries of subbasins, land use, land ownership, and water distribution infrastructure.

- Locations of wells surveyed to State Plane Coordinate System Zone 5 (if located in San Bernardino County) and Zone 6 (if located in Riverside County) in feet, and in latitude/longitude coordinates in feet.
- Surveyed elevations of depth-to-water reference points at wells, plus elevations of land surface surveyed to the North American Vertical Datum of 1988 (NAVD88) or National Geodetic Vertical Datum of 1929 (NGVD29) in units of feet.
- GIS coverages (i.e., shapefiles) that include the boundaries of the subbasins, jurisdictional boundaries, water infrastructure and distribution systems (e.g., conveyance pipelines, reservoirs, pumping stations), sanitary sewer systems, treatment plants, treated effluent distribution systems, recycled water distribution systems, imported State Project water distribution systems.
- GIS coverages of land use type and land ownership.

- Digital copies of geologic cross-sections developed by the USGS and others. The digital format may be PDF, but prefer digital formats of actual files creating the cross-sections (e.g., GIS, AutoCAD, etc.).

B. Information to Develop Groundwater Database

i. Well Construction

Well construction details that would include the following information:

- Date constructed
- Total depth of borehole and well casing
- Well casing material
- Screen interval in feet below land surface
- Screen perforations (e.g., wire-wrap with 0.05-inch slots)
- Dedicated pump type, if applicable
- Depth of pump intake
- Lithologic log of well when drilled
- Development log after construction
- Aquifer testing results and analysis, if existing.
- The above information may be provided in well completion reports in PDF format submitted to the well permitting agency (e.g., San Bernardino County Department of Public and/or Environmental Health)

ii. Well Production

- Historical and current production rates on a daily/monthly/annual basis, if applicable.

iii. Groundwater Level Measurements

- Historical groundwater levels measured manually and recorded as depths-to-water measured from a surveyed reference point, or reported as elevations referenced to a vertical datum that must be identified. The method of manually measuring the groundwater level needs to be identified (e.g., airline, electric water level sounder, sonic, etc.). If the groundwater elevations are reported as above mean sea level, the vertical datum is assumed to be NGVD29 unless otherwise stated.
- Historical groundwater levels measured using dedicated pressure transducers. Additional information required if data is provided from pressure transducers includes:
    - Pressure transducer make, model and pressure rating.
    - Whether transducer reading require adjustment for barometric pressure (i.e. vented versus non-vented)
    - Date of deployment

  - Depth setting of pressure transducer (i.e., depth below top of casing of well).
- All water level measurements must include the date and time of measurement, and the condition of the water level in the well at the time of measurement. In other words, was the water level static or dynamic? Dynamic meaning was the water level declining because the well was pumping or rising because the well recently stopped pumping and the water level was recovering.

iv. Groundwater Quality

- Historical and current groundwater quality for all production and monitoring wells. Please provide digital copies of original analytical laboratory reports and/or databases. Any water quality data transferred or copied from an analytical laboratory report to a digital database (e.g., Microsoft Access, Excel) must be accompanied by the original analytical laboratory report.
- Analytical laboratory reports must include copies of the chain-of-custodies documenting the ownership and transfer of samples from collection to laboratory; and must contain Quality Assurance/Quality Control (QA/QC) analyses and assessments.

C. Information to Develop Geological Database

i. Exploratory Borings

- Provide digital records of lithologic logs, downhole geophysical logs, and surface geophysical data previously used in other studies and investigations to characterize the Basin.
- Provide the locations of the exploratory borings in State Plane Coordinates and Latitude/Longitude and land surface elevations.
- Provide information on how the exploratory borings were drilled, borehole diameters, borehole depths, and current condition (e.g., backfilled with bentonite).
- Provide information on depth intervals where soil samples were collected, and the results of testing performed on the samples. Testing may include, for example, grain-size analyses, in situ moisture content, and laboratory analyses for chemical constituents.

D. Information to Develop Surface Water Database

i. Imported Water

- Provide monthly accounting of imported water delivered to the Basin. Identify the source of the imported water, or purveyor (e.g., SBVMWD).
- Provide water quality data of imported water, if available, delivered to the Basin.

- Provide monthly accounting of imported water delivered to spreading basins to artificially recharge the Basin.
- Provide monthly accounting of imported water delivered to other destinations other than spreading basins, and identify the purpose and use of the imported water at the other destinations.
- Provide monthly accounting of any imported water delivered for agricultural uses.

ii. Recycled Water

- Provide monthly accounting of recycled water produced at each treatment facility, and amount served to communities for non-potable use in the Basin.
- Provide monthly accounting of recycled water discharged to each spreading basin to artificially recharge the Basin.
- Provide monthly accounting of recycled water discharged to creeks and/or other destinations other than spreading basins.
- Provide water quality data of recycled water, if available, delivered to the spreading basins or discharged to other surface water bodies.
- Provide monthly accounting of any recycled water used for any agricultural or landscaping uses in the in the Basin including areas of use.

iii. Surface Water

- Provide historical and current stream flow data recorded at gaging stations operated and maintained by agencies in the Basin. Dudek will obtain stream flow data from any gaging stations operated and maintained by the USGS.
- Provide information on the gaging stations: historical operation record, location, and methodology of measuring stream flow.
- Provide historical and current water quality data of surface water collected at sampling points and/or gaging stations.

E. Historical Information

- Any available PDF versions of Basin or Subbasins reports or studies from agencies in the Yucaipa Basin GSA and stakeholders that relate to groundwater conditions, groundwater quality, geology, geophysics, groundwater model, or groundwater uses.
- A list of any Basin or Subbasins reports or studies from agencies in the Yucaipa Basin GSA and stakeholders that relate to groundwater conditions, groundwater quality, geology, geophysics,

groundwater models, or groundwater uses, which are not in electronic (PDF) form. These will be reviewed to determine if copies are needed for the GSP.

Yucaipa Sustainable Groundwater Management Agency Meeting
November 14th, 2018

North Bench Water Resources Operation and Maintenance Plan

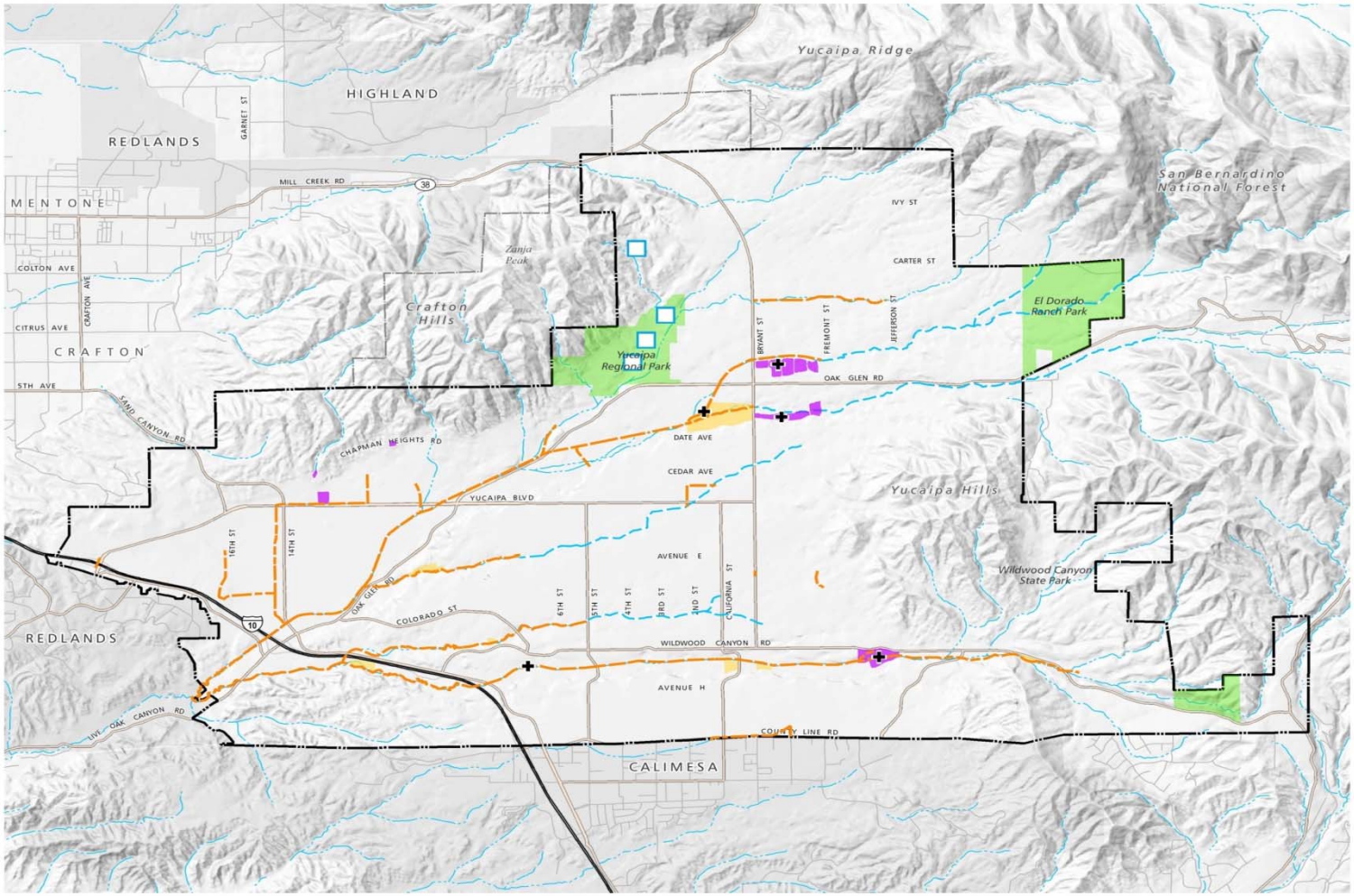


Figure S-2a

DRAINAGE AND RECHARGE FACILITIES

- Potential Groundwater Recharge Facility
- Drainage Channel
- Reservoir
- Existing Drainage Basin
- Proposed Drainage Basin
- Natural Drainage Channel
- Open Space/Park Groundwater Recharge Areas
- City Limits
- Yucaipa Sphere of Influence

Note: Where streams/rivers overlap with the drainage channels, the facilities have been channelized.

YUCAIPA GENERAL PLAN

0 1,000 2,000 3,000 4,000 Feet

PLACEWORKS

Source: USGS NHD 2013; Michael Baker International 2014

6/2/2016

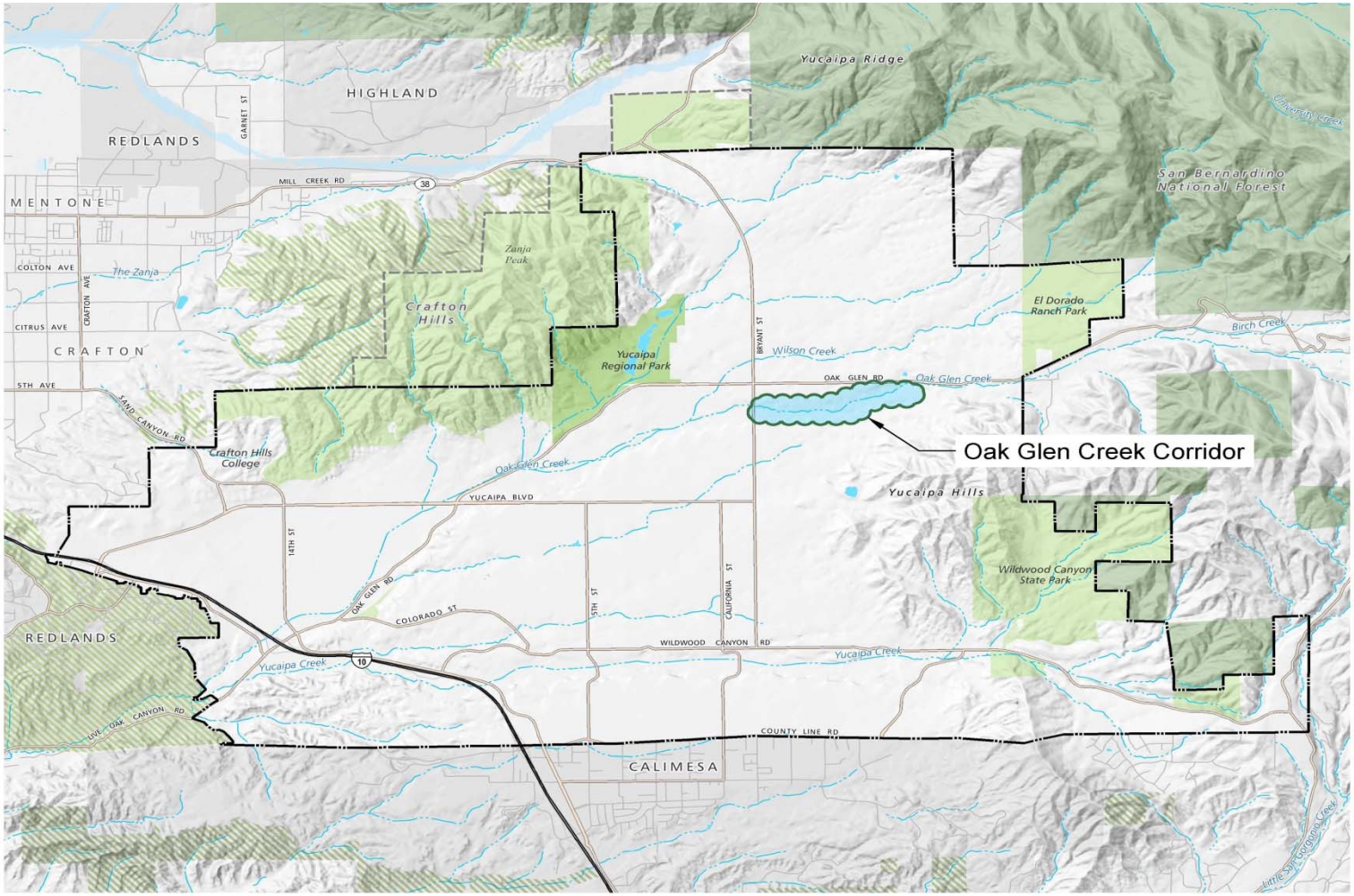


Figure PR-4
NATURAL OPEN SPACE

- City Limits
- Yucaipa Sphere of Influence
- Riverside County Multiple Species Habitat Conservation Lands
- Riverside County Multiple Species Habitat Conservation Lands
- Stream/River
- Open Space Land Designation
- Yucaipa Regional Park
- National Forest

YUCAIPA GENERAL PLAN

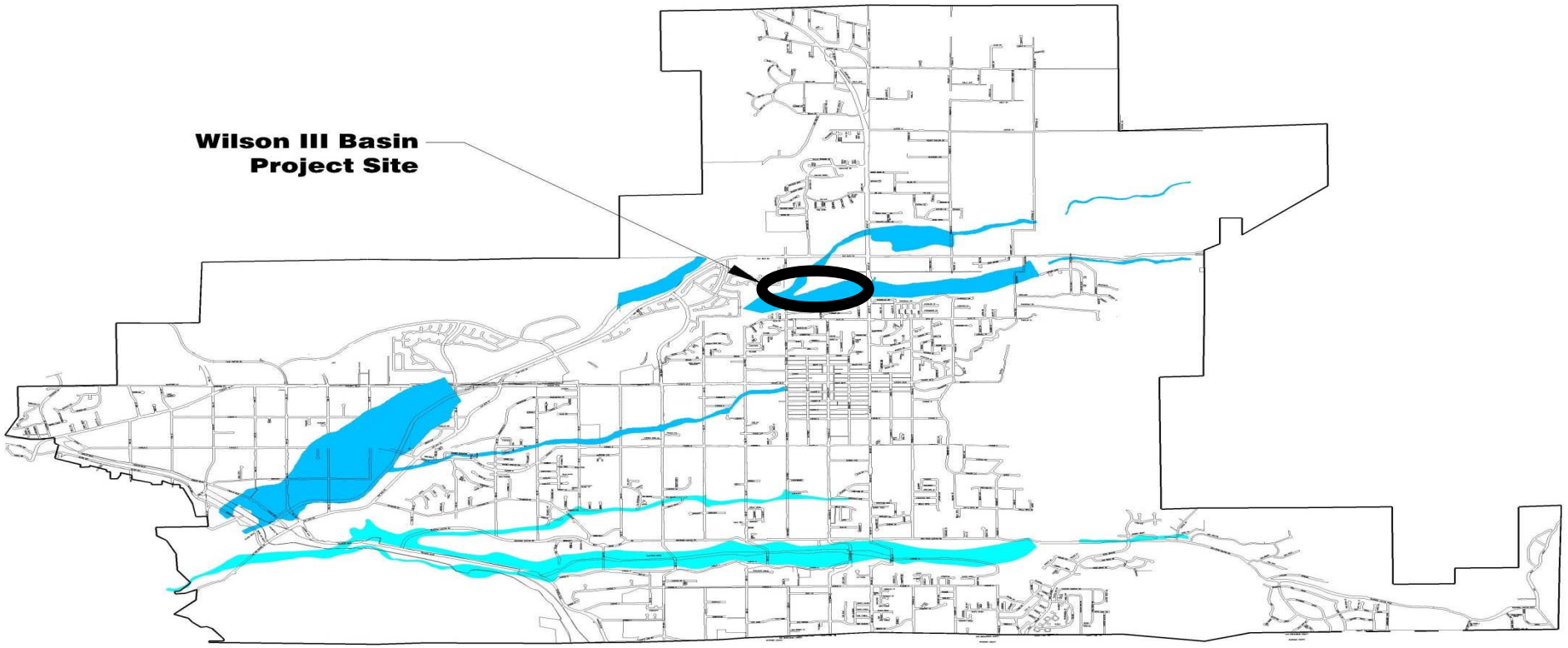
0 1,000 2,000 3,000 4,000 Feet

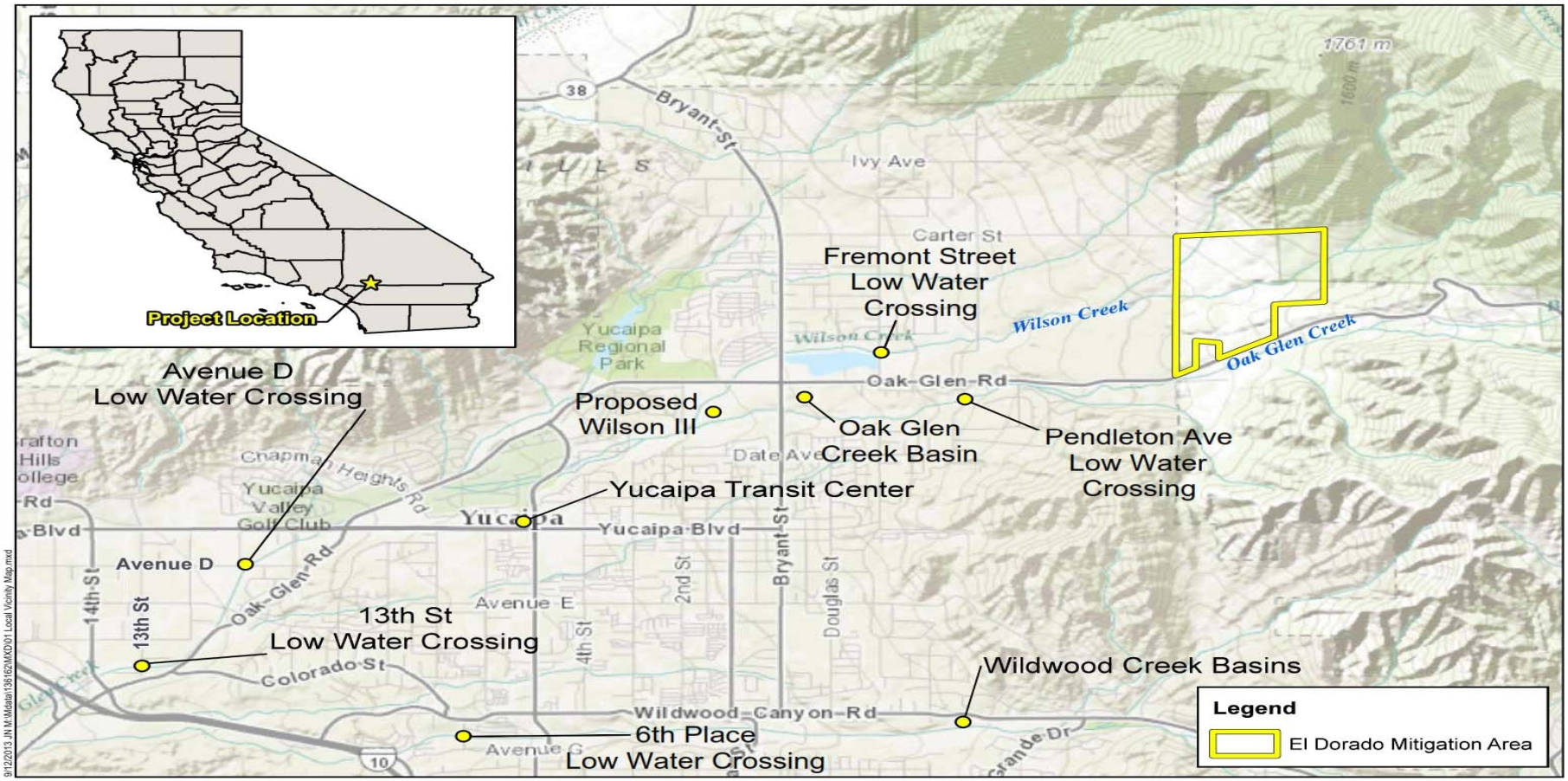
PLACEWORKS

Source: USGS NHD, 2014

6/2/2016

FEMA Flood Mapping

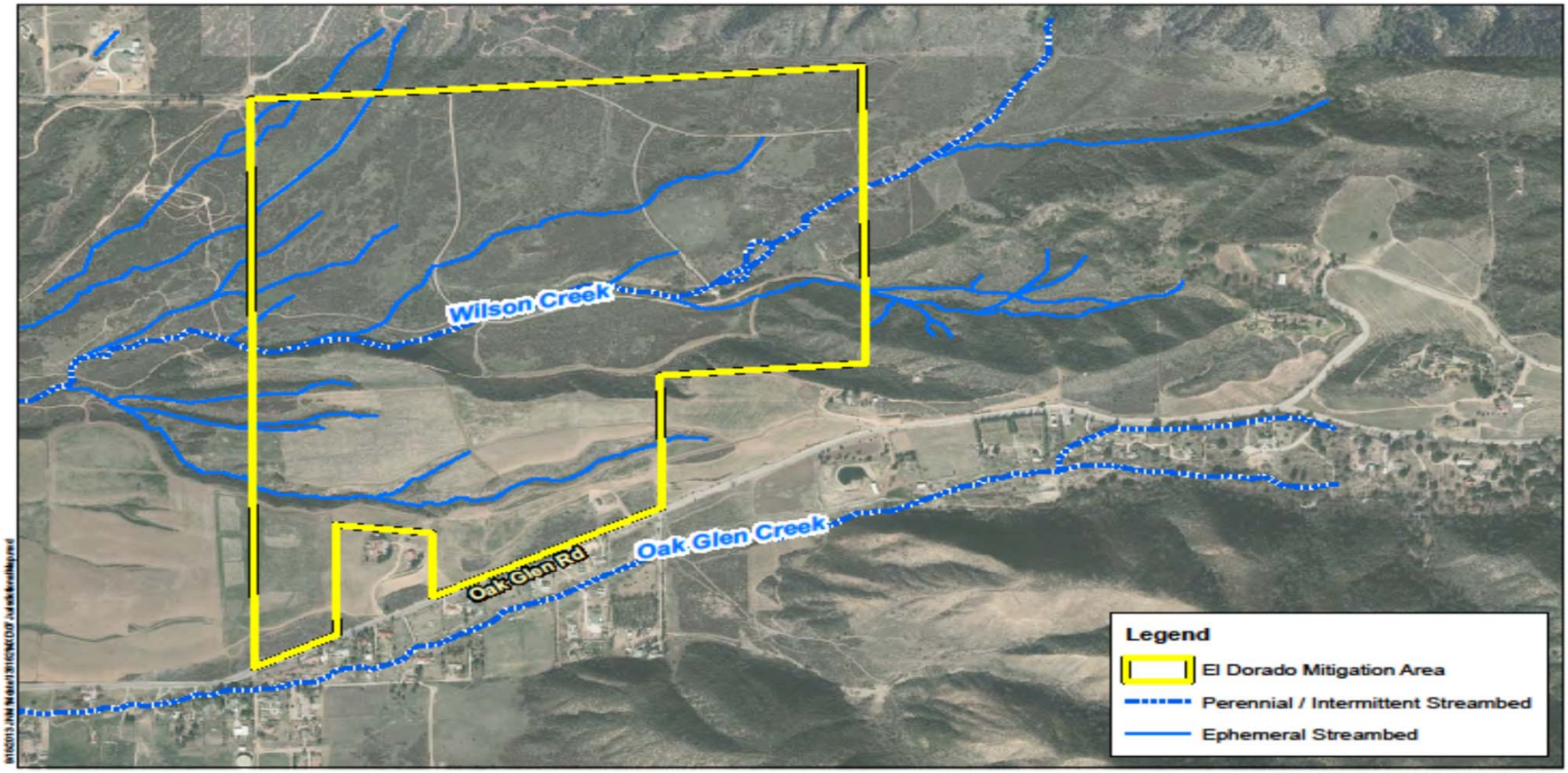




EL DORADO MITIGATION AREA
City of Yucaipa

Location Map

Exhibit 1



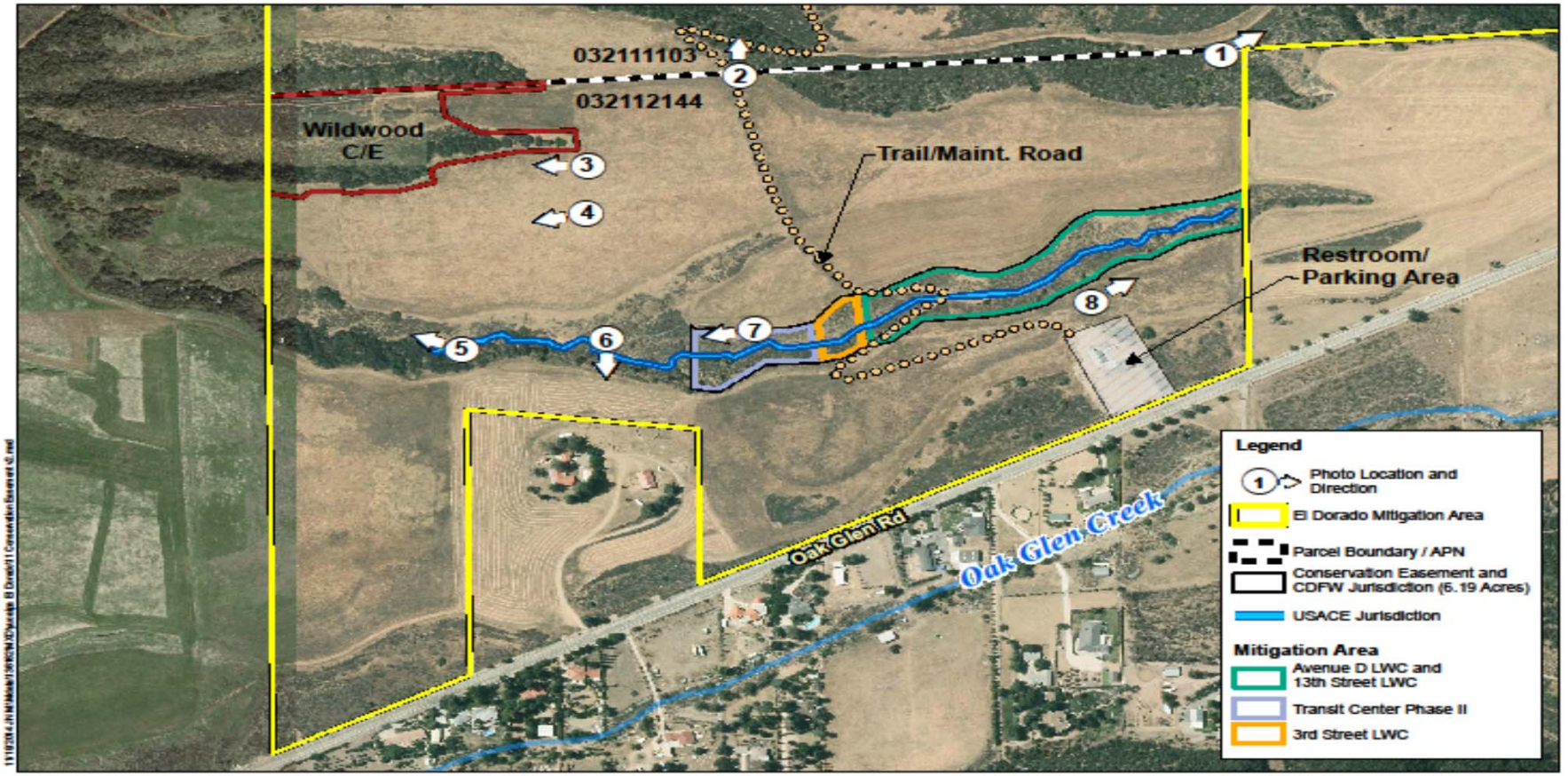
0 500 1,000 2,000 Feet

Source: NRCS Soil Data Mart ca677, Eagle Aerial 2012

EL DORADO MITIGATION AREA
City of Yucaipa

Waters of the U.S.

Exhibit 7



EL DORADO MITIGATION AREA
City of Yucaipa

RVA

0 150 300 600 Feet

Source: Eagle Aerial 2013

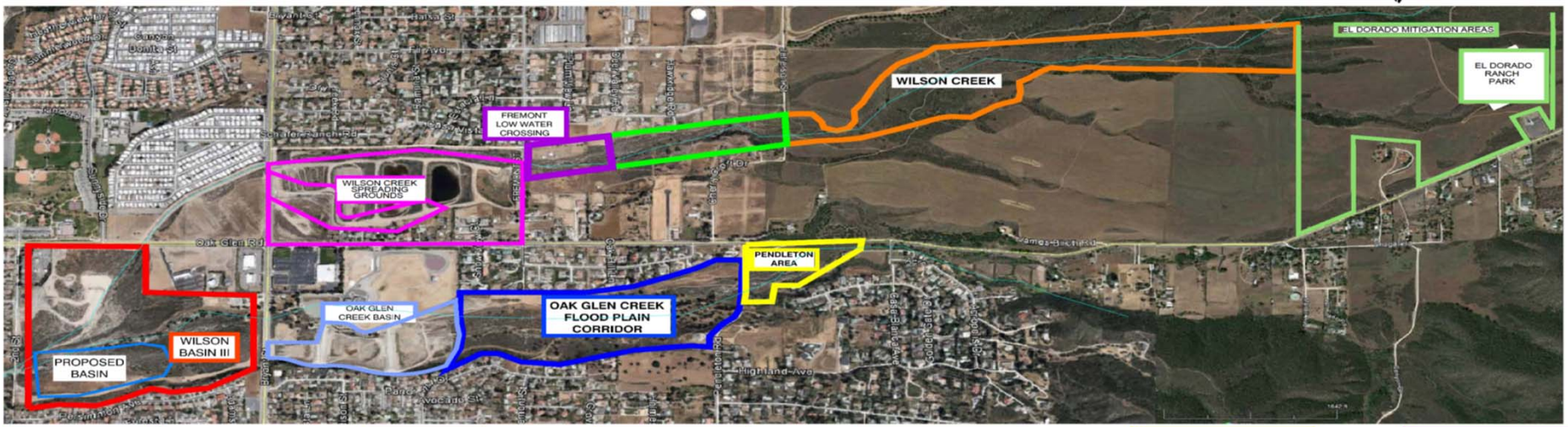
El Dorado Conservation Easement

Exhibit 11

Native Plant Re-Seeding at El Dorado Ranch


15
14
13
12
11

City of Yucaipa
WILSON/OAK GLEN CREEK FLOOD CORRIDOR PROJECTS



WILSON III BASINS PROJECT

OAK GLEN CREEK BASIN

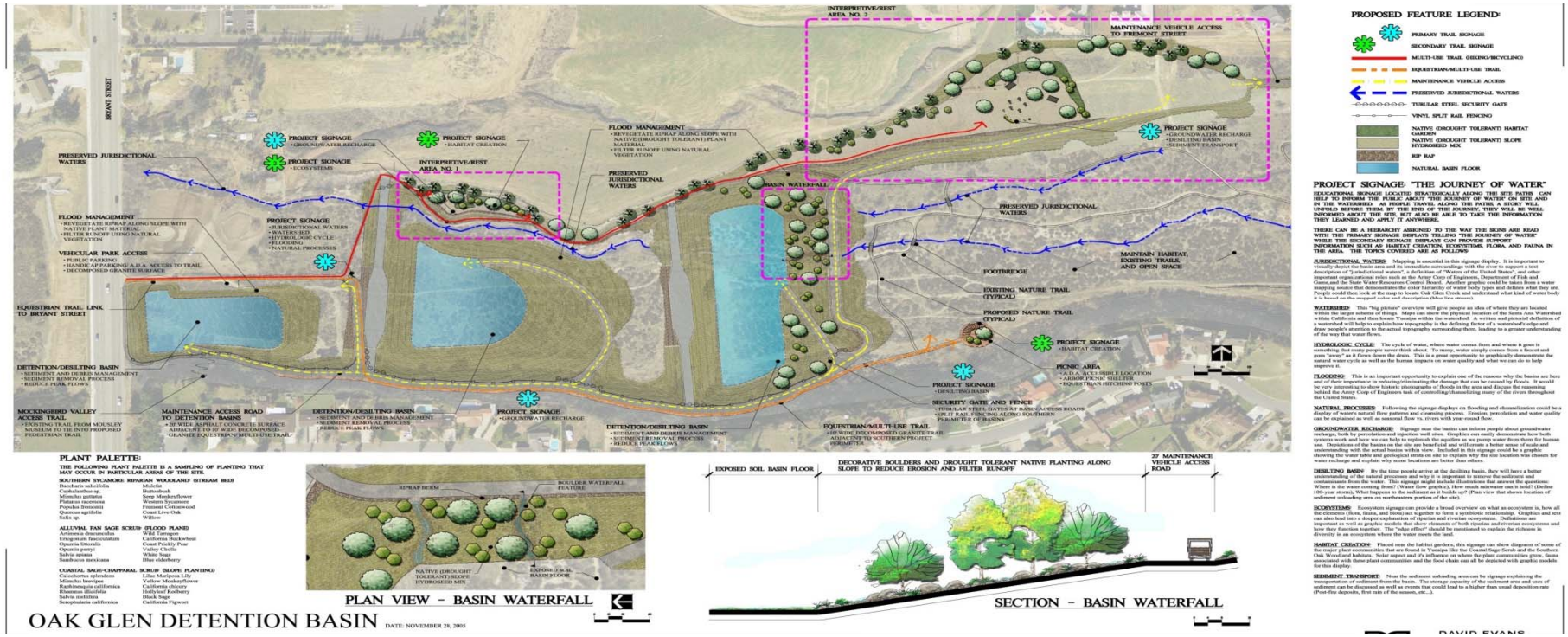
OAK GLEN CREEK CORRIDOR

EL DORADO MITIGATION AREAS

PENDLETON LOW WATER CROSSING

FREMONT LOW WATER CROSSING

Oak Glen Creek/Wilson II Basin



SEGMENT 2

City of Yucaipa Mitigation Plan

FREMONT LOW WATER CROSSING REPLACEMENT
CONCEPTUAL LANDSCAPE PLAN

City of Yucaipa Engineering Department
Yucaipa, CA 92339

Southern Sycamore Riparian Woodland /Alluvial Fan Sage Scrub
Planting Legend

SYMBOL	QTY.	SIZE	BOTANICAL NAME	COMMON NAME	WUCOLS IV WATER USAGE	INTENDED MATURE SIZE (H x W)
	12	24" Box	Plantannus racemosa	Western Sycamore	Mod	80' H, Ø 50'
	18	24" Box	Populus fremontii	Fremont Cottonwood	Mod	80' H, Ø 50'
	9	24" Box	Sambucus Nigra	Blue Elderberry	Low	8' H, Ø 8'

Native Buckwheat Scrub to remain PROTECT IN PLACE

Alluvial Fan Sage Scrub, Revegetated Streambed Hydro-seed

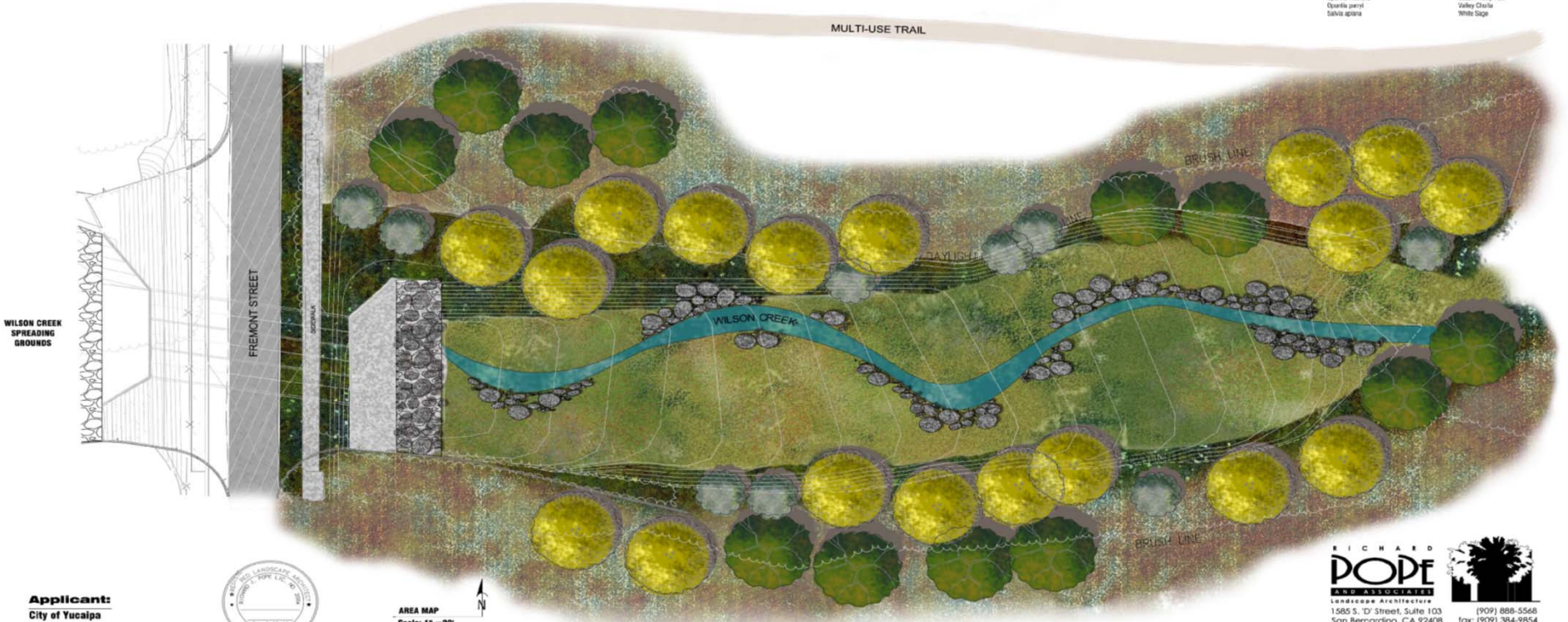
BOTANICAL NAME
Agrostis pallens
Deschampsia cespitosa
Hordeum brachyantherum
Leymus triticoides 'Rio'
Melica imperfecta
Muhlenbergia rigens
Nassella lepida
Nassella pulchra

COMMON NAME
San Diego Bentgrass
Tufted Hairgrass
Meadow Barley
Rio Creeping Wildrye
Coast Melic
Deer Grass
Foothill Needlegrass
Purple Needlegrass

Buckwheat Scrub, Revegetated Slopes Hydro-seed

BOTANICAL NAME
Acmispon glaber
Artemisia californica
Artemisia dracunculus
Encelia californ ca
Encelia farinosa
Eriogonum fasciculatum
Mimulus guttatus
Opuntia littoralis
Opuntia parryi
Salvia apiana

COMMON NAME
Deerweed
California Sagebrush
Wild Tarragon
Coast Sunflower
Brittlebush
California Buckwheat
Seep Monkey Flower
Coast Prickly Pear
Valley Cholla
White Sage



Applicant:
City of Yucaipa
City Engineer: Fermin Preciado
34272 Yucaipa Boulevard
Yucaipa, CA 92399

Job No. 15-05 LKD CKE

AREA MAP
Scale: 1" =20'

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Landscape Architecture
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www.richardpopeandassociates.com
Richard Pope, Landscape Architect CA# 2664

FREMONT LOW WATER CROSSING RECHARGE BASIN

- Project is being awarded for construction on November 14, 2018. (Pending City Council approval).
- Flood Control Permit for the Basin construction valid until 2028. (Includes O & M).
- Resource Agency Permits issued until 2022. Permits will need to be renewed every Five years. (Recharge area is also the onsite restoration area for project impacts).

City of Yucaipa Mitigation Plan

FREMONT WATER CROSSING
•EXISTING NON-NATIVE TREES AND VEGETATION•

City of Yucaipa Engineering Department
Yucaipa, CA 92339

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City of Yucaipa Mitigation Plan

PENDLETON AVENUE AT OAK GLEN CREEK
HABITAT MITIGATION PLAN

City of Yucaipa Engineering Department
Yucaipa, CA 92339

AREA MAP
Scale: 1" = 80'

Southern Sycamore Riparian Woodland /Alluvial Fan Sage Scrub
Planting Legend

SYMBOL	QTY.	SIZE	BOTANICAL NAME	COMMON NAME	WUCOLS IV WATER USAGE	INTENDED MATURE SIZE (H x W)
	46	24" Box	Plantannus racemosa	Western Sycamore	Mod	80' H, Ø 50'
	Existing		Plantannus racemosa	Western Sycamore		
	30	24" Box	Quercus agrifolia	Coast Live Oak	Low	65' H, Ø 65'
	36	24" Box	Sambucus nigra	Blue Elderberry	Low	8' H, Ø 8'
	Existing		Sambucus nigra	Blue Elderberry		
			Native Buckwheat Scrub	PROTECT IN PLACE		
			Native Alluvial Fan Sage Scrub	PROTECT IN PLACE		
			Alluvial Fan Sage Scrub, Revegetated Streambed Hydro-seed	BOTANICAL NAME Agrostis pallens Deschampsia cespitosa Hordeum brachyantherum Leymus triticoides 'Rio' Mollica imperfecta Muhlenbergia rigens Nassella lepida Nassella pulchra	COMMON NAME San Diego Bentgrass Tufted Hairgrass Meadow Barley Rio Creeping Wildrye Coast Mollic Deer Grass Foothill Needlegrass Purple Needlegrass		
			Buckwheat Scrub, Revegetated Slopes Hydro-seed	Acmispon glaber Artemisia californica Artemisia dracunculus Encelia californica Encelia farinosa Eriogonum fasciculatum Mimulus guttatus Opuntia littoralis Opuntia parryi Salvia apiana	Deerweed California Sagebrush Wild Tarragon Coast Sunflower Brittlebush California Buckwheat Seep Monkey Flower Coast Prickly Pear Valley Cholla White Sage		
			STREAM FLOW			

Applicant:
City of Yucaipa
City Engineer: Fermin Preciado
34272 Yucaipa Boulevard
Yucaipa, CA 92399

5/21/2015

Job No. 15-05 LKD CKE

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PENDLETON AVENUE LOW WATER CROSSING RECHARGE BASIN

- Project will be awarded for construction early next year pending Caltrans approval.
- O & M will be performed by the City of Yucaipa (Middle Basin is for recharge/Upper Basin for sediment capture).
- Resource Agency Permits issued until 2022. Permits will need to be renewed every five years.

City of Yucaipa Mitigation Plan

OAK GLEN CREEK FLOOD PLAIN CORRIDOR
•EXISTING TREE LAYOUT•

City of Yucaipa Engineering Department
Yucaipa, CA 92339

Oak Glen Creek Channels

FLOW LINES VARY BY CHANNEL SIZE

Southern Sycamore Riparian Woodland (Stream Bed) Planting Legend

SYMBOL		BOTANICAL NAME	COMMON NAME
	Existing Native trees to remain. Protect in place.	Plantanous racemosa	Western Sycamore
		Quercus dumosa	Scrub Oak
		Sambucus Nigra	Blue Elderberry
	Non-Natives To be removed	Eucalyptus (Species Vary)	

AREA MAP
Scale: 1" = 100' North

Job No. 15-05 LKD CKF

Applicant:
City of Yucaipa
City Engineer: Fermin Preciado
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City of Yucaipa Mitigation Plan

OAK GLEN CREEK FLOOD PLAIN CORRIDOR
•EXISTING NON-NATIVE TREES•

City of Yucaipa Engineering Department
Yucaipa, CA 92339

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Job No. 14-54 CKE 10/20/14

City of Yucaipa Mitigation Plan

OAK GLEN CREEK FLOOD PLAIN CORRIDOR
•PROPOSED MITIGATION WITH NATIVE TREES AND SHRUBS•

City of Yucaipa Engineering Department
Yucaipa, CA 92339

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Job No. 14-54 CKE 10/20/14

Wilson III Basin – Project Site

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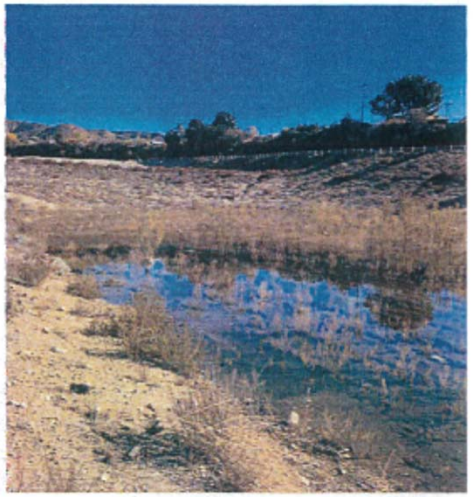
WILSON CREEK PARK PRELIMINARY LANDSCAPE DESIGN | CITY OF YUCAIPA

DESIGN UPDATE 6-2-2017


OAK GLEN CREEK SPECIFIC PLAN
Conceptual Landscape Areas - Phase I
1 Proposed Trail
2 Monument Sign
3 Vegetated Parkway
4 Basin Park/Entry
5 Marsh/Wetlands
6 Vegetated Slope
7 Maintenance Road
8 Lake
9 Restroom
10 Playground
Oak Glen Road
2ND ST
SUNNYSIDE
STREET A
STREET B
STREET C
STREET D
STREET E
STREET F
STREET G
Innovation
Eucalyptus Ave R/W
Bryant Street
Phase 2
0'
150'

WILSON III BASIN PROJECT

- Project will be awarded for construction in 2019
- Flood Control will provide O & M for the Basin
- Resource Agency Permits issued by the end of 2018. Permits will be valid until 2022. Permits for O & M will need to be renewed every five years



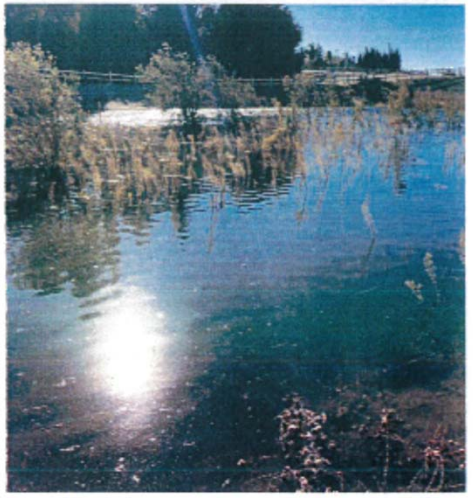


Table 1-1 - Ranking of the Selected Investigation Sites for Potential Artificial Recharge

Area of Investigation	Exploratory Site	Expected Infiltration Rate	Potential Horizontal and/or Vertical Barriers	Nearness to Pipeline	Land Availability	Total Score	Site Recommendation
Wilson Creek and Oak Glen Creek	1	5	5	5	5	20	A
	2	1	2	5	5	13	C[1]
	3	4	5	5	5	19	A
Wildwood Creek	4	5	1	3	5	14	B
	5	5	3	5	4	17	B
	6	5	4	2	3	14	B
Area East of Chicken Hills Fault (see Figure 4)	7	4	1	1	3	9	D
Western Heights	9	1	1	1	3	6	D
Garden Air Creek	10	4	3	3	4	14	B
	11	4	3	5	4	16	B

Notes:
Scale of 1-5, with 1 rated as "Low" and 5 rated as "High" potential for artificial recharge.
Total Score: 18-20 = A, 14-17 = B, 10-13 = C, and 5-9 = D
[1] The score of "C" for Oak Glen Creek Basins may increase if additional investigations confirm that surficial low permeability material can be removed to increase infiltration rates.
Exploratory Site 8 was not included in this investigation due to the likely presence of a subsurface barrier to vertical flow.

A significant benefit to the community over the last 15 years is the ability of a number of detention basin projects, either constructed or in the design stages, to capture and percolate natural storm flows for replenishment of the underground aquifer that is the source of water for the community's residents. It is estimated that in excess of 3,400 acre-feet, or over 1 billion gallons of water, (an acre-foot of water is the amount of water that would cover an acre to a depth of one foot and is approximately 325,000 gallons) will be successfully introduced into the local groundwater supplies in storm water "harvest" alone each year by these projects when they are all completed. The recharge of 1 billion gallons of water is enough water to meet the annual needs of approximately 2,500 average four person-households. For comparison, YVWD's annual water demand is approximately 12,000 acre feet or over 3.9 billion gallons. In addition, due to their proximity several of these projects are in good locations for active recharge with import water and/or recycled water as well.

These projects include:

Project	Project Status	Annual Passive Recharge Capability (Acre Feet)
Oak Glen Creek Basin	Completed in 2009	1,000 to 1,200
Wildwood Creek Basin	Completed in 2011	400 to 600
Wilson III Basin System	Final design and environmental permitting	750
Fremont Street Low Water Crossing Replacement	Environmental Review Pending	300
Pendleton Avenue Low Water Crossing Replacement	Environmental Review Pending	300

Note: With the recent Oak Glen Creek Basins water spreading activities, YVWD reported that the monitoring well located between Basin 2 & 3 (which has always been reported as dry at 330' to the bottom) detected groundwater levels at depths of 278.1 feet and 264.8 feet respectively.

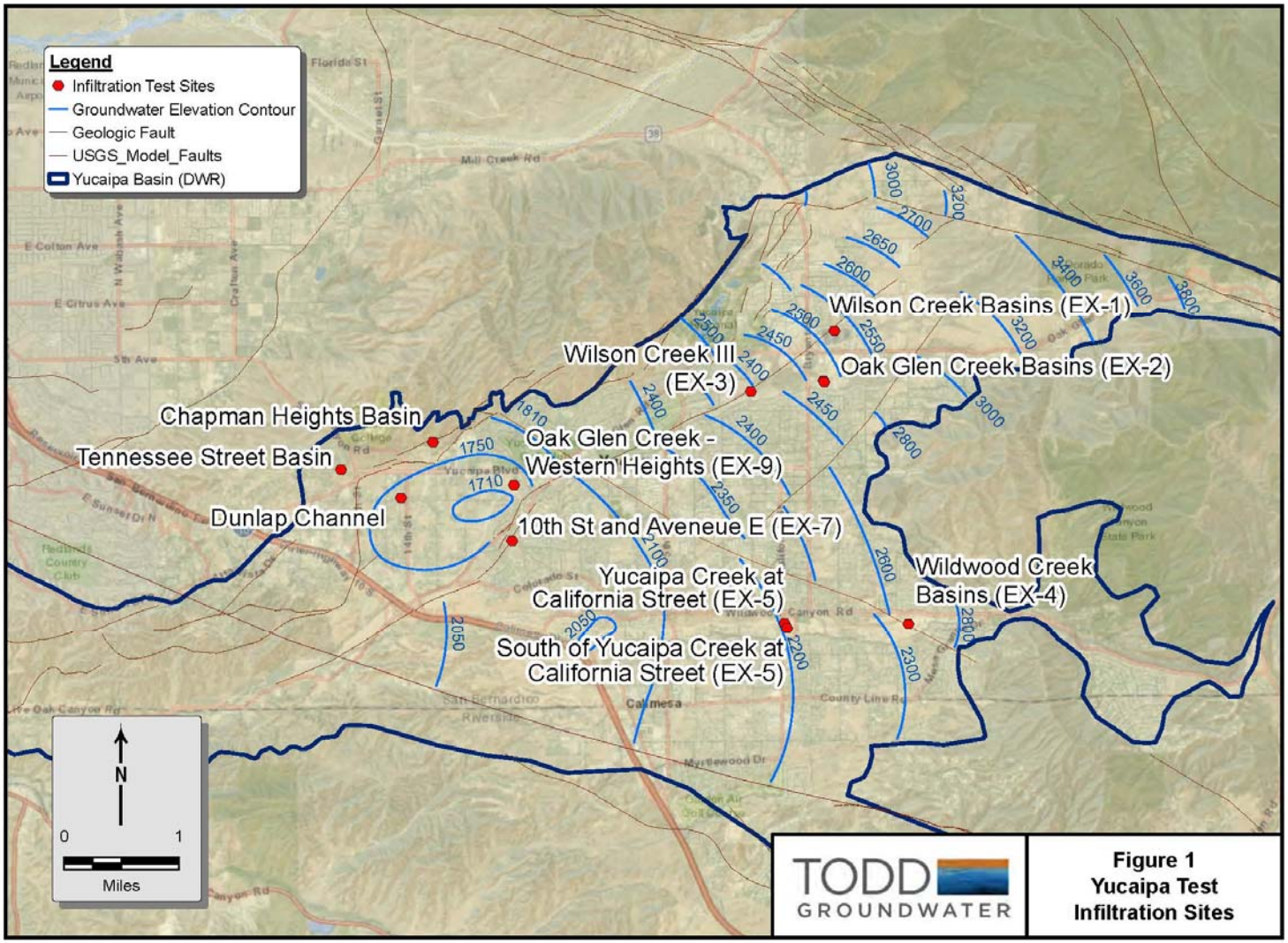


Figure 1
Yucaipa Test Infiltration Sites

Yucaipa Basin Infiltration Test Results

Test Site	Test Start	Test End	Basin Dimensions			Infiltrating Area		Total Water Addded	Infiltration Rate (Constant-Head)				Infiltration Rate (Falling-Head)	
			Length (ft)	Width (ft)	Water Height (ft)	Basin Bottom (ft^2)	Bottom + Walls (ft^2)	Gallons	Low[a]	High[b]	Average	Trend	Low	High
Tennessee Street Basins	7/9/2018	7/23/2018	32	30	2.5	960	1,270	871,782	9.2	12.3	10.8	Rising	9.5	11.1
Dunlap Channel	7/16/2018	7/30/2018	33	30	2.5	990	1,305	22,895	0.1	0.1	0.1	Flat	0.2	0.2
Chapman Heights Basins	7/23/2018	8/6/2018	37	33	2.5	1,221	1,571	974,084	8.8	11.5	10.2	Rising	7.3	9.5
10th Street and Avenue E (EX-7)	7/30/2018	8/13/2018	39	36	2.1	1,404	1,719	1,451,335	12.0	13.4	12.7	Rising	9.8	11.5
Yucaipa Creek at California Street (EX-5)	8/6/2018	8/20/2018	42	21	2.5	882	1,197	270,060	2.9	4.0	3.5	Flat	2.4	3.1
Wilson Creek Basins (EX-1)	8/13/2018	8/27/2018	32	29	3.0	928	1,294	882,120	6.1	8.7	7.4	Falling	5.5	7.4
South of Yucaipa Creek at California Street (EX-5)	8/20/2018	9/3/2018	33	32	3.0	1,056	1,446	1,646,180	13.6	18.5	16.0	Flat	14.5	16.8
Wilson Creek III (EX-3)	8/27/2018	9/10/2018	45	20	2.0	900	1,160	3,426,110	44.8	59.2	52.0	Rising	N/A; too fast	
Oak Glen Creek Basins (EX-2) - Excavated	9/3/2018	9/17/2018	32	32	2.5	1,024	1,344	1,974,600	17.9	24.1	21.0	Flat	19.7	19.7
Wildwood Creek Basins (EX-4)	9/10/2018	9/24/2018	29	28	3.0	812	1,154	4,040,929	32.2	45.8	39.0	Flat	28.3	31.2
Oak Glen Creek Basins (EX-2) - Bermed	9/17/2018	10/1/2018	34	34	1.6	1,156	1,374	639,130	5.2	6.1	5.6	Flat	5.2	6.6
Oak Glen Creek - Western Heights (EX-9)	9/24/2018	10/1/2018	46	20	2.0	920	1,184	50,632	1.2	1.6	1.4	Flat	1.5	1.6

Notes:

a - Low infiltration rate for constant-head test calculated based on infiltrating area equal to basin bottom and sidewalls

b - High infiltration rate for constant-head test calculated based on infiltrating area equal to basin bottom only

Rising Trend = flow rates increased over two-week test period

Flat Trend = flow rates unchanged over two-week test period

Falling Trend = flow rates decreased over two-week test period

Falling-Head Infiltration Rates calculated from measured water level decline based on infiltrating area of basin bottom only