

# Morongo Wash Floodplain Analysis, Channels Design, & CLOMR Preparation

Tract Maps 30539 & 30540, City of Desert Hot Springs, CA

## Client

*A.W. Properties West  
(Current Owner)  
16236 San Dieguito  
Road, Suite 3-10  
Rancho Santa Fe, CA  
92067*

*Alpine Real Property  
Equity Group  
(Previous Owner)  
39755 Berkeley Drive,  
Suite A  
Palm Desert, CA 92211*

## Project Location

*Desert Hot Springs, CA*

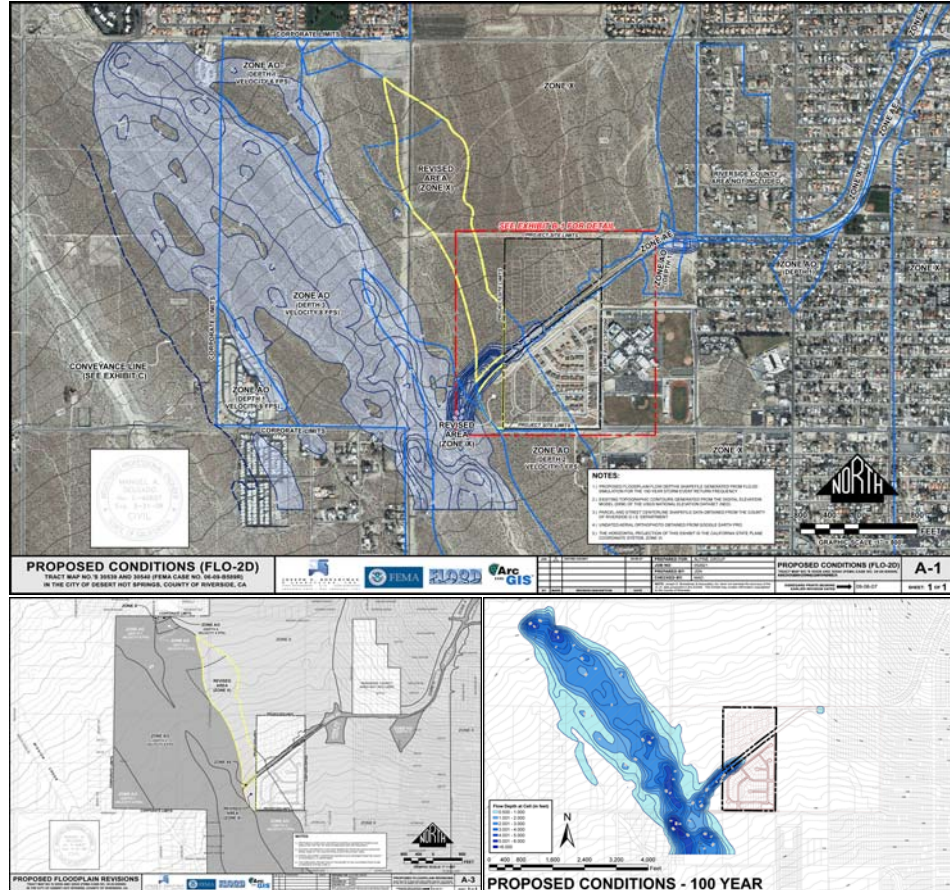
## Contact

*Earl Sterrett  
President  
A.W. Properties West  
858 / 756-7584*

*Carlos Cuevas  
Alpine Real Property  
Equity Group  
760 / 404-1900*

## Project Date

*2006-2007*



JBA utilized the FLO-2D floodplain analysis software application to prepare the FEMA Conditional Letter of Map Revision (CLOMR) for the Tract 30539 and Tract 30540 residential subdivisions in the City of Desert Hot Springs, CA. The analysis was performed for both existing and proposed floodplain conditions and was also used to model the existing

floodplain of the Morongo Wash located to the west of the project site. The U.S. Army Corps of Engineers HEC-6 and HEC-RAS software and JBA's in-house hydraulics software were subsequently used in the design of on-site flood control channels and improvements to the Desert Hot Springs Channel.

## Key Project Staff

Manuel A. Delgado, P.E. – *Project Manager*  
Jesse D. Nash – *FLO-2D/G.I.S. Analyst*



# Master Plan Hydrology Study & Drainage Analysis

## Arbor Ridge Master Plan Development, City of Beaumont, CA

### Client

Proactive Engineering  
Consultants  
1875 California Avenue  
Corona, CA 92881

### Project Location

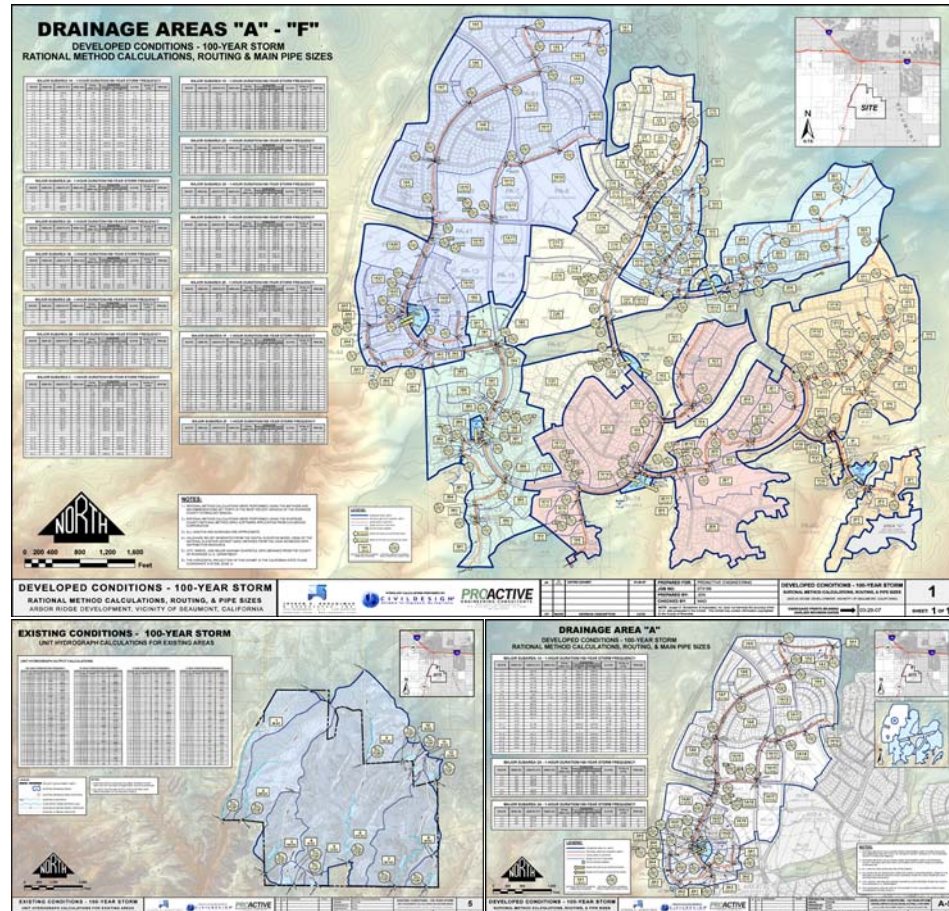
Beaumont, CA

### Contact

Bob Brown, P.E.  
951 / 280-3303

### Project Date

2007



JBA prepared the Hydrology Study & Drainage Analysis for the 180-acre Arbor Ridge Master Plan Development near the City of Beaumont in Riverside County, CA. The completed 150-page Report included all existing and developed Rational Method and Unit Hydrograph calculations, flood control basin

hydrograph routing, preliminary hydraulics calculations, preliminary design and layout of the storm drain system for the entire Master Plan Development, and 50+ GIS-based hydrology/hydraulics exhibits. All calculations were performed using JBA's in-house CivilDesign® software.

### Key Project Staff

Manuel A. Delgado, P.E. – *Project Manager*  
Joseph S.C. Bonadiman, P.E. – *Quality Control/Project Oversight*  
Mike N. Khairy, E.I.T. – *Project Engineer*  
Jesse D. Nash – *G.I.S. Analyst*





# Water Quality Management Master Plan

## Arbor Ridge Master Plan Development, City of Beaumont, CA

### Client

SunCal Companies  
1250 Corona Pointe  
Court, #210  
Corona, CA 92879

### Project Location

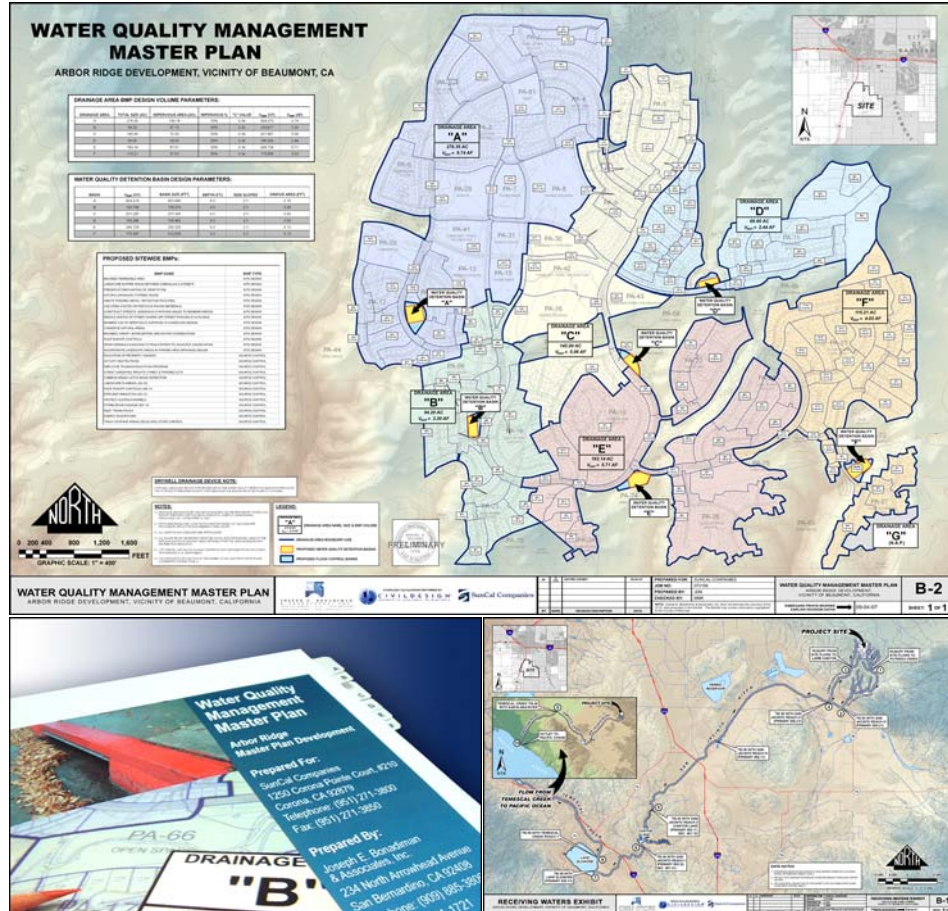
Beaumont, CA

### Contact

Bob Brown, P.E.  
951 / 271-3800

### Project Date

2007



JBA prepared the Water Quality Management Master Plan for the 180-acre Arbor Ridge Master Plan Development near the City of Beaumont in Riverside County, CA. The completed Plan included detailed Best Management Practices (BMP) design, implementation and O&M

specifications, hydrology/hydraulics calculations for stormwater mitigation/treatment measures, and GIS-based reference maps and BMP exhibits. All calculations were performed using JBA's in-house CivilDesign® software.

### Key Project Staff

Manuel A. Delgado, P.E. – *Project Manager*  
Joseph S.C. Bonadiman, P.E. – *Quality Control/Project Oversight*  
Mike N. Khairy, E.I.T. – *Project Engineer*  
Jesse D. Nash – *G.I.S. Analyst*



# Hydrology/Hydraulics Study & Basins Design

## Proposed Quarry Near Big Rock Wash, County of Los Angeles, CA

### Client

Lilburn Corporation  
 1905 Business Center  
 Drive  
 San Bernardino, CA  
 92408

### Project Location

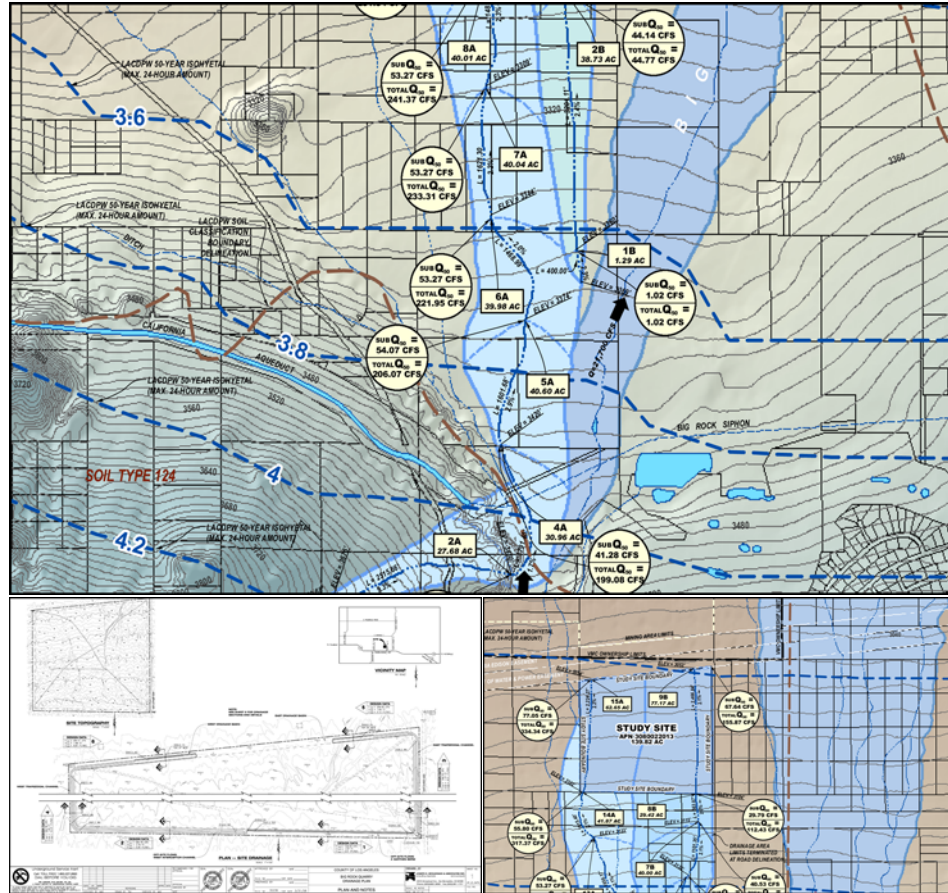
Los Angeles County, CA

### Contact

Cheryl A. Tubbs  
 Vice President of  
 Operations  
 909 / 890-1818

### Project Date

2006-2007



JBA prepared a Hydrology & Hydraulics Study for a proposed quarry near the Big Rock Wash and Pearblossom Highway in Los Angeles County, CA. The Study had to consider several factors, including the Big Rock Wash itself, existing levees, and proposed California Department of Transportation (CalTrans) improvements.

JBA performed all applicable Rational Hydrology Method calculations using its in-house LAR04 (F0608) L.A. County Modified Rational Method software application. These calculations were subsequently used in the design of mitigation measures, including multiple flood control basins to be located near the boundary lines of the project site.

### Key Project Staff

Manuel A. Delgado, P.E. – *Project Manager*  
 Mike N. Khairy, E.I.T. – *Project Engineer*  
 Jesse D. Nash – *G.I.S. Analyst*





# Channel Analysis/LOMR Preparation

City Creek Channel, City of Highland, CA

## Client

*San Bernardino County  
Flood Control District  
(SBCFCD)  
825 East Third Street  
San Bernardino, Ca  
92415*

## Project Location

*Highland, CA*

## Contact

*Joe Collie, P.E.  
909 / 387-2350*

## Completion Date

*1988*



Several hundred acres in the City of Highland, CA were covered by a floodplain as designated by FEMA. A hydrology/hydraulics study of the City Creek Channel was performed, using a peak flow of 30,000 CFS.

Revision (LOMR) was prepared and approved by the County of San Bernardino and the U.S. Army Corps of Engineers. The study resulted in a change to the applicable FEMA FIRM maps, removing the properties in question from the floodplain.

Based on the results of the hydrology/hydraulics study, slope protection measures were engineered, and a Letter of Map

## **Project Staff**

Joseph S.C. Bonadiman, P.E. – *Principle Engineer*  
Dennis W. Jackson, P.E. – *Design Engineer*



# Floodplain Analysis, Channel Design & CLOMR

Tract Map No. 31689, City of Indio, CA

## Client

Regency Homes  
2 Chateau Court  
Rancho Mirage, CA  
92270

## Project Location

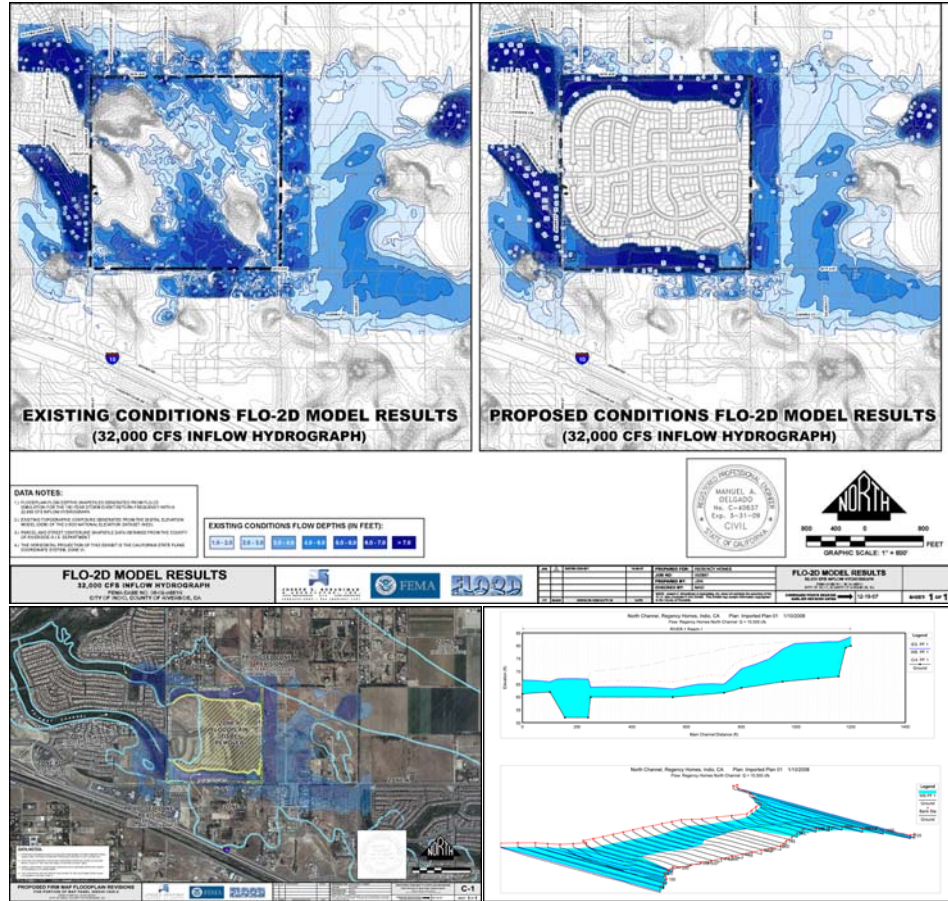
Indio, CA

## Contact

Peter Solomon  
President  
760 / 770-7373

## Project Date

2006-2007



JBA utilized the FLO-2D floodplain analysis software application to prepare the FEMA Conditional Letter of Map Revision (CLOMR) for the Tract 31689 residential subdivision in the City of Indio, CA. The floodplain analysis was performed for both existing and proposed conditions, and was used to aid in the

design of two flood control channels to the north and south of the proposed development. The U.S. Army Corps of Engineers HEC-6 and HEC-RAS software and JBA's in-house hydraulics software were also used in the channel design. The CLOMR was approved in November 2007.

## Key Project Staff

Manuel A. Delgado, P.E. – *Project Manager*  
Joseph S.C. Bonadiman, P.E. – *Quality Control/Project Oversight*  
Jesse D. Nash – *FLO-2D/G.I.S. Analyst*



# Scour Analysis & Hydrology/Hydraulics Study

North Bank of Mill Creek Channel, City of San Bernardino, CA

## Client

*County of San Bernardino  
385 North Arrowhead  
Avenue  
San Bernardino, CA  
92415*

## Project Location

*San Bernardino, CA*

## Contact

*Alan Green  
Deputy County Council  
909 / 387-5288*

## Completion Date

*1996*



A suit was filed against the County of San Bernardino by the owners of a property adjacent to Mill Creek in the City of San Bernardino, CA. The north bank of Mill Creek had eroded and was threatening the plaintiff's property. JBA was retained by the County to determine the historic bank erosion of the channel in addition to a current flood that was the apparent cause of the erosion that was the subject of the lawsuit.

In the performance of the investigation, a scour analysis of the channel was performed, along with a comprehensive hydrology/hydraulics study to determine peak storm flow rates. Remediation options were also determined.

## **Project Staff**

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Joseph S.C. Bonadiman, P.E. – *Principle Engineer*  
Dennis W. Jackson, P.E. – *Project Engineer*  
Edward J. Bonadiman, L.S., – *Project Surveyor*





# Scour Analysis & Slope Protection

Plunge Creek Channel, City of Highland, CA

## Client

*Pulsar Development  
11766 Wilshire  
Boulevard, Suite 400  
Los Angeles, CA 90025*

## Project Location

*Highland, CA*

## Contact

*James De Aguilera*

## Completion Date

*1994*



The Plunge Creek Bridge had to be replaced and the Plunge Creek Channel had to be improved per San Bernardino County Flood Control (SBCFC) requirements. JBA was retained to perform a scour analysis to determine the proper depth of bridge abutments and to engineer necessary slope protection for Plunge Creek.

A hydrology and hydraulics study was also performed utilizing its proprietary in-house software, which has been approved by SBCFC. The scour analysis was performed using the U.S. Army Corps of Engineers HEC-6 software.

## **Project Staff**

Joseph S.C. Bonadiman, P.E. – *Principle Engineer*

Dennis W. Jackson, P.E. – *Project Engineer*





# Water Quality Management Master Plan

## Rancho Los Lagos Master Plan Community, Imperial County, CA

### Client

Moser Ventures, Inc.  
1012 2<sup>nd</sup> Street, Suite 100  
Encinitas, CA 92024

### Project Location

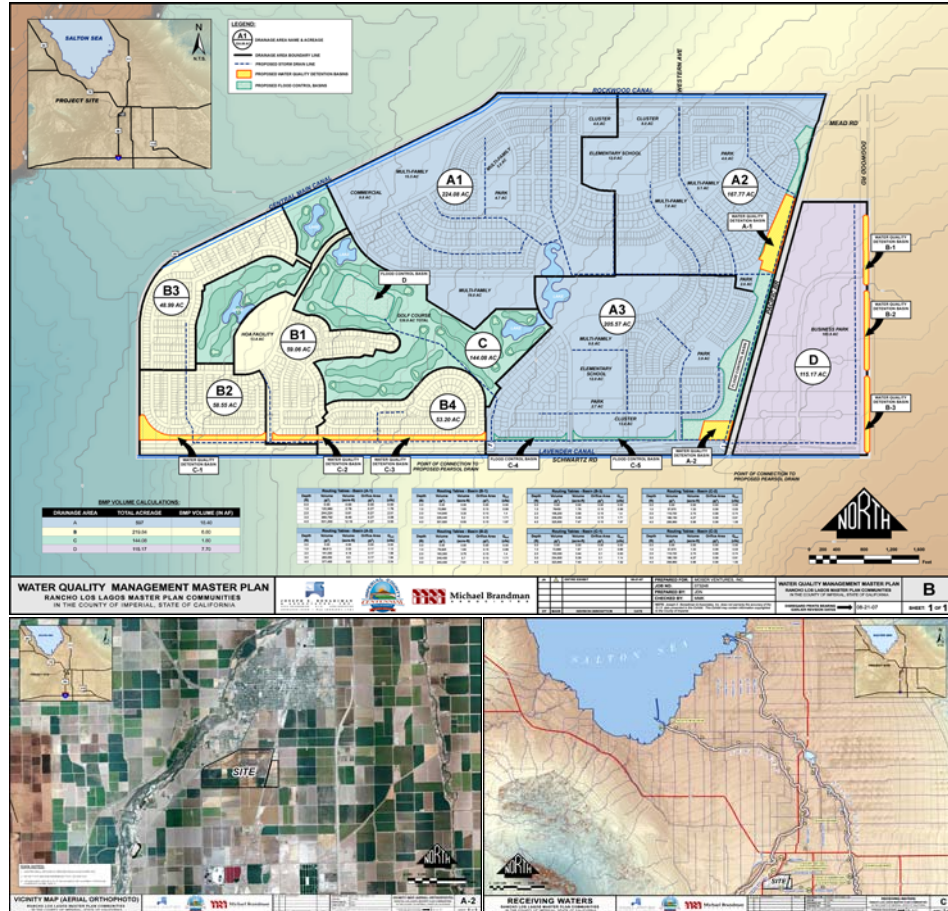
Imperial County, CA

### Contact

Dennis Moser  
President  
760 / 479-1820

### Project Date

2007



JBA prepared the Water Quality Management Master Plan for the 1,076-acre Rancho Los Lagos Mixed-Use Master Plan Development near in Imperial County, CA. The completed Plan included detailed Best Management Practices (BMP) design, implementation and O&M

specifications, hydrology/hydraulics calculations for stormwater mitigation/treatment measures, and GIS-based reference maps and BMP exhibits. All calculations were performed using JBA's in-house CivilDesign® software.

### Key Project Staff

Manuel A. Delgado, P.E. – *Project Manager*  
Joseph S.C. Bonadiman, P.E. – *Quality Control/Project Oversight*  
Mike N. Khairy, E.I.T. – *Project Engineer*  
Jesse D. Nash – *G.I.S. Analyst*



# Floodplain Analysis & Channel Protection/Improvement

## Reche Canyon Channel, City of Colton, CA

### Client

*Coussoulis Management  
341 West 2nd Street  
San Bernardino, CA  
92401*

### Project Location

*Colton, CA*

### Contact

*Nicholas Coussoulis  
909 / 381-0868*

### Completion Date

*1988*



A hydrology study was prepared in relation to a large subdivision development in Reche Canyon. The Reche Canyon Channel ran through the property and needed to be improved. The property in the area in of the channel was in a floodplain as designated by FEMA which required the filing of a study with the Corps of Engineers to remove the area from FEMA's jurisdiction.

A channel had to be constructed with appropriate inlet/outlet structures and a bridge.

### **Project Staff**

Joseph S.C. Bonadiman, P.E.- Principle Engineer  
Dennis W. Jackson, P.E. – Design Engineer





# Scour Analysis & Erosion Protection

Santa Ana River Channel, Colton, CA

## Client

*Bio Grow International  
P.O. Box 1611  
Colton, CA 92324*

## Project Location

*Colton, CA*

## Contact

*Jim Sullivan  
Owner  
909/910-0520*

## Completion Date

*2000*



JBA performed a scour analysis and hydrology/hydraulics study for the Santa Ana River Channel at the Riverside bridge between the Ricks Facility and Riverside Avenue as part of the design of a co-composting facility in Colton, CA. This stretch of the Santa Ana River channel has a calculated 100-year peak flow of 195,000 CFS and velocity of 27 FPS; it was therefore necessary to protect the channel

from erosion and scour. JBA designed the combined protective measures of rip-rap and fabric reinforcement.

## **Project Staff**

Joseph S.C. Bonadiman, P.E. – *Principle Engineer*  
Dennis W. Jackson, P.E. – *Project Engineer*  
Edward J. Bonadiman, P.L.S.. – *Survey Manager*



# Emergency Basin Protective Measures & Repairs

San Bernardino County, CA

## Client

San Bernardino County  
Flood Control District  
825 East Third Street  
San Bernardino, CA  
92415

## Project Location

San Bernardino County,  
CA

## Contact

Jim Borcuk  
909 / 387-7962

## Completion Date

2004



JBA was retained by the San Bernardino County Flood Control District (SBCFCD) to provide engineering design services for emergency protective measures and repairs of various basins throughout San Bernardino County.

For successful completion of this project, SBCFCD and Manuel Delgado were awarded *Honorable Mention for Outstanding Civil Engineering Project of the Year* by the American Society of Civil Engineers (San Bernardino – Riverside Counties Branch).

## Project Staff

Joseph S.C. Bonadiman, P.E. – *Principle Engineer*  
Manuel A. Delgado, P.E. – *Project Manager*  
Dennis W. Jackson, P.E. – *Senior Hydrologist*





# Channel Improvement/Protection

Timber Creek Channel, City of San Bernardino, CA

## Client

*City of San Bernardino  
300 North "D" Street  
San Bernardino, CA  
92418*

## Project Location

*San Bernardino, CA*

## Contact

*Michael W. Grubbs, P.E.  
909 / 384-5179*

## Completion Date

*1999 – Hydrology Study*

*2000-2002- Channel  
Improvement Design*



Channel improvement design was requested by the City of San Bernardino to improve Timber Creek channel from the San Bernardino International Airport (ex Norton AFB) to the Twin Creek Channel.

September-October 1999 - Completed hydrology study for the drainage area including the airport area, and planned commercial/industrial developments draining into Timber Creek.

2000 - 2002 - Prepared channel plans for two channel reaches, 1/4 mile from Twin Creek to Lena Road culvert, and 1/4 mile from Lena Road into the airport area. Obtained San Bernardino County and U.S. Corps of Engineers approval for design of channel and concrete structure connection to the Twin Creek Channel. Designed special geo-fabric lined channel section, and basin, from Lena Road to airport at the request of the City of San Bernardino and Department of Fish and Wildlife.

## Project Staff

Joseph S.C. Bonadiman, P.E. – *Principle Engineer*

Dennis W. Jackson, P.E. – *Design Engineer*

Edward J. Bonadiman, P.L.S.- *Survey Manager*



# Preliminary Hydrology Study

## Victorville Annexation Area, City of Victorville, CA

### Client

A.W. Properties West  
 16236 San Dieguito Road  
 Suite 3-10  
 Rancho Santa Fe, CA  
 92067

### Project Location

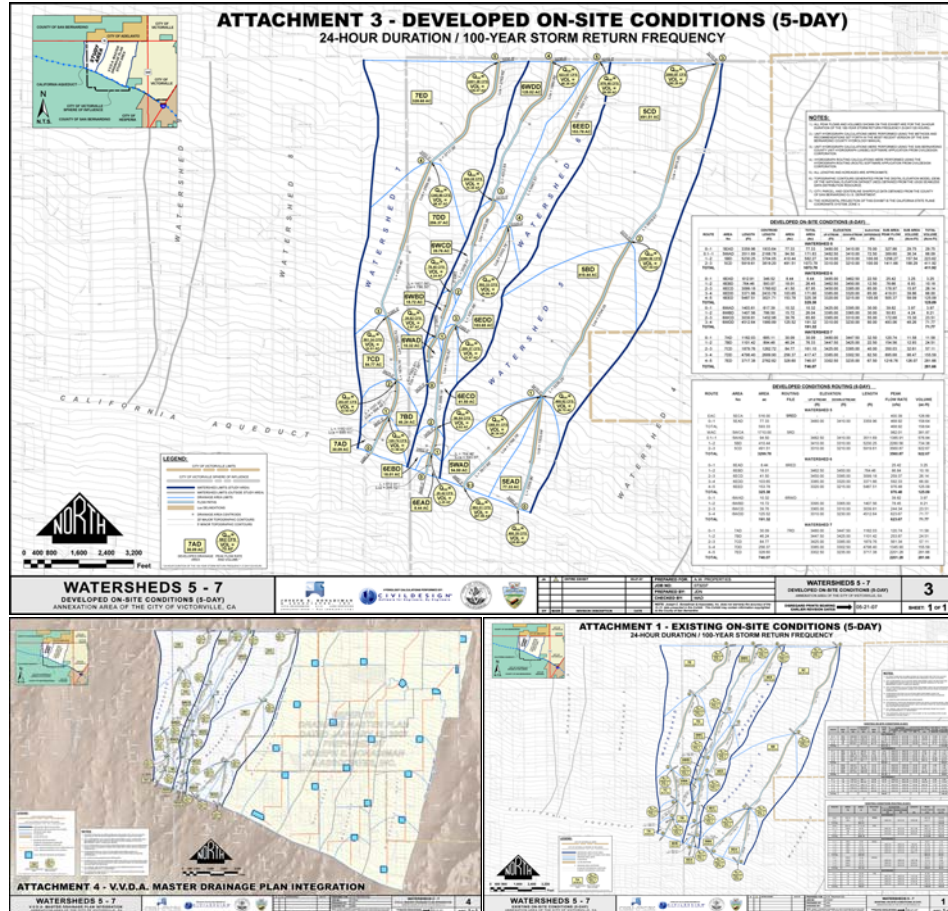
Victorville, CA

### Contact

Earl Sterrett  
 President  
 858 / 756-7584

### Project Date

2007



JBA prepared the Preliminary Hydrology Study for 2,300 acres of the planned Annexation Area of the City of Victorville, CA. The completed Study included all existing and developed hydrology calculations for the Annexation Area,

which lies adjacent to the Master Drainage Plan completed by JBA and is to include numerous future residential developments. All calculations were performed using JBA's in-house CivilDesign® software.

### Key Project Staff

Manuel A. Delgado, P.E. – *Project Manager*  
 Joseph S.C. Bonadiman, P.E. – *Quality Control/Project Oversight*  
 Mike N. Khairy, E.I.T. – *Project Engineer*  
 Jesse D. Nash – *G.I.S. Analyst*





# Drainage Master Plan

Victor Valley Developers Association (VVDA), City of Victorville, CA

## Client

Stantec/VVDA  
3105 East Guasti Road,  
Suite 100  
Ontario, CA 91761

## Project Location

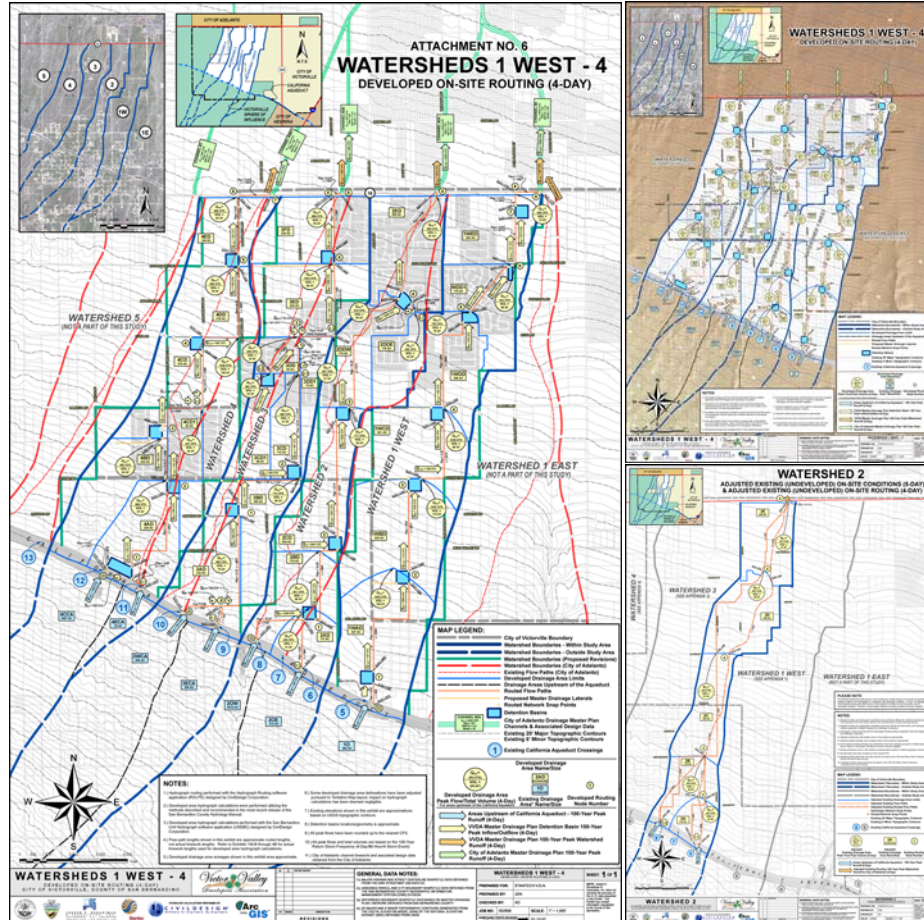
Victorville, CA

## Contact

Ned Araujo, P.E.  
909 / 390-8880

## Project Date

2006-2007



JBA prepared the Drainage Master Plan for 5,100 acres of the Victor Valley Developers Association (VVDA) multi-tract development area in the City of Victorville, CA. The completed Plan included all existing and developed hydrology calculations, flood control basin

hydrograph routing, preliminary hydraulics calculations, preliminary design and layout of the primary storm drain system for the entire area, and 30+ GIS based hydrology/hydraulics exhibits. All calculations were performed using JBA's in-house CivilDesign® software.

## Key Project Staff

Manuel A. Delgado, P.E. – *Project Manager*  
Joseph S.C. Bonadiman, P.E. – *Quality Control/Project Oversight*  
Mike N. Khairy, E.I.T. – *Project Engineer*  
Jesse D. Nash – *G.I.S. Analyst*

