

AGENDA
Borrego Water District Board of Directors
Special Meeting
September 16, 2014, 9:00 a.m.
806 Palm Canyon Drive
Borrego Springs, CA 92004

I. OPENING PROCEDURES

- A. Call to Order
- B. Pledge of Allegiance
- C. Roll Call
- D. Approval of Agenda
- E. Comments from Directors and Requests for Future Agenda Items
- F. Comments from the Public and Requests for Future Agenda Items (comments will be limited to 3 minutes)

II. CURRENT BUSINESS MATTERS

- A. Review of solar proposal for Rams Hill Wastewater Treatment Plant (2-26)
- B. Presentation by Jan Naragon on the GWM Stakeholder Interview process (27-28)
- C. Update on 2014 Community Groundwater Management Plan (GWMP) progress
 - Update of State Groundwater Legislation (29-37)
- D. Review of report from the steering committee of Destination Borrego Springs (38-45)
- E. Review of First Amendment to Lease Agreement between Cameron Brothers and Borrego Water District (46-48)
- F. Discussion of Raftelis Utility Rate Study (49-54)
- G. Discussion of Scope of work of USGS for depth quality analysis (55-65)
- H. Discussion of submitted water credit following plans (66-68)
- I. Discussion of potential agenda items for September 24th board meeting

III. CLOSED SESSION

Conference with Legal Counsel – Anticipated Litigation

- A. Significant exposure to litigation pursuant to paragraph (2) of subdivision (d) of Government Code section 54956.9. One potential case.

IV. CLOSING PROCEDURE

The next Regular Meeting of the Board of Directors is scheduled for September 24, 2014 at the Borrego Water District.

8/26/14

Jerry Rolwing
Interim General Manager and Operations Manager
Borrego Water District
806 Palm Canyon Drive
Borrego Springs, CA 92004

Mr. Rolwing:

I have reviewed the proposal from Tandem Solar. It appears to meet with the requirements of the Request for Proposals published the District on July 28, 2014.

The following is a financial summary of the costs in the proposal:

1. Finance under a PPA

- \$0.138/kWh for purchasing power from Tandem under a Power Purchase Agreement (PPA) for the first year
- A 2% escalator (increase) per kWh every year
- Cost for Operation and Maintenance included in the /kWh price
- PPA for 25 years
- The estimated PPA costs over 25 years will be \$695,690.00
- Estimated savings over 25 years, based on 5% escalator in SDG&E prices:
\$626,025.00

Or:

2. Purchase outright at year 1

- \$463,654.00 purchase up front
- \$3,180 per year for Operation and Maintenance with a 2% escalator (\$101,856,35 over 25 years)
- Total cost over 25 years: \$565,510.35
- Estimated savings over 25 years, based on 5% escalator in SDG&E prices:
\$756,204.65

Or:

3. Purchase at the beginning of year seven

- \$0.138/kWh for purchasing power from Tandem under a Power Purchase Agreement (PPA) for the first year
- A 2% escalator (increase) per kWh every year
- Cost for Operation and Maintenance included in the /kWh price for the first six years
- PPA for 6 years
- The estimated PPA cost over 6 years will be \$144,303.00
- The purchase price at year seven will be \$231,827.00
- \$3,581.00 per year for Operation and Maintenance starting at year seven with a 2% escalator (\$81,797 over 19 years)
- Total cost: \$457,928.00
- Estimated savings over 25 years, based on 5% escalator in SDG&E prices:
\$863,788.00

If you have any questions please contact me.

Regards,

David Dale, PE, PLS
Contract Engineer



Proposal for Solar Power Purchase Agreement
Borrego Water District
Waste Water Treatment Plant
Borrego Springs, California

CONFIDENTIAL

August 25, 2014



1.0 PURPOSE & OBJECTIVE

The Borrego Water District (“District”) is a significant power consumer in Borrego Springs, relying on grid-purchased electricity from SDG&E to run its various facilities, including the Waste Water Treatment Plant (“WWTP”) located at 4839-4891 Borrego Springs Rd. With SDG&E steadily increasing the kWh electricity rates charged to the District year after year, the District is seeking a means to minimize its reliance on SDG&E and to achieve both long-term electricity cost savings and cost certainty through the use of solar photovoltaic technology.

Tandem is proposing to develop, design, permit (including any costs for environmental work), fabricate, deliver, install, operate, insure, maintain, and own a 96.0 kW solar facility at the WWTP and to provide the District with a reliable electrical energy source from solar power, at a lower cost than is currently available from SDG&E, for a period of 25 years, via a Power Purchase Agreement (“PPA”).

The proposed solar system would interconnect to the grid under the SDG&E Net Energy Metering (“NEM”) program. Under NEM, the electric energy generated by on-site solar is used to offset the electric energy provided by SDG&E to the District’s WWTP. NEM is the standard program for commercial and residential solar systems in SDG&E territory and in the State of California. **The proposed solar system would generate, on average, 95.8% of the annual electricity demand of the WWTP and, therefore, reduce the net amount of electricity purchased from SDG&E by an equivalent amount.**

In 2013, the rate paid by the District to SDG&E for electricity to power the WWTP averaged 17.7 cents per kWh. Tandem would sell solar-generated electricity to the District at a base rate of 13.8 cents per kWh – an immediate rate savings of 21%. (Additional proposed PPA terms are outlined below).

The PPA structure allows the District to benefit from solar for 25 years without the need for any up-front capital investment. Tandem will grant the District a one-time option to purchase the solar system at the end of Year 6 of the PPA term for a price which is equivalent to 50% of the initial cost of the system.

This proposed solar solution delivers the following benefits to the District:

- ✓ Immediate and long-term electricity cost savings
- ✓ Protection against rising electricity rates
- ✓ Long-term electricity cost certainty
- ✓ Zero capital investment required from the District
- ✓ Maintenance or monitoring of the solar system is included
- ✓ Option for the District to purchase the solar system at the end of Year 6

2.0 SCOPE OF PROJECT

The scope of services provided by Tandem and its construction partner, West Hills Construction (“WHC”) includes all tasks required to design, fabricate, deliver, install, operate, and maintain the PV system for the District. The scope also includes the securing of all permits and approvals from governing agencies and all labor, taxes,



services, permit fees, and equipment necessary to produce a fully operational solar PV system. A detailed explanation of the complete project and delineation of all work tasks to be performed by Tandem and WHC is included below.

2.1 Roles & Responsibilities

(a) Tandem:

- i. Lead Proponent
- ii. Developer/Sponsor
- iii. Project Owner/Investor
- iv. Power Provider (counterparty to the District in the Power Purchase Agreement)
- v. Project Financing
- vi. Environmental clearances/CEQA Compliance
- vii. Major Equipment Procurement (Modules, Inverters, Racking)

(b) WHC:

- i. Detailed System Engineering & Design (designer of record)
- ii. General Contractor of record
- iii. Supply of all equipment, materials, and labor necessary to install the solar PV systems and integrate them with other power sources
- iv. System installation
- v. Electrical interconnections
- vi. Commissioning and acceptance testing
- vii. Operation and Maintenance Manuals and As-Built Drawings

(c) Tandem & WHC

- i. Coordination with SDG&E for Interconnection
- ii. Permitting
- iii. Ongoing Operation & Maintenance of the solar facility

2.2 Detailed Scope:

2.2.1 Design, Engineering, & Permitting

The solar PV system shall be designed and engineered to maximize the solar energy resources, taking into consideration the District's electrical demand and load patterns, proposed installation site, available solar resources, existing site conditions, proposed future site improvements, and other relevant factors. The preliminary system design included in this document was done on this same basis. The following is outlined in Attachment A – System Detail:

1. System description
2. Equipment details and description
3. Preliminary Layout of installation



4. Preliminary Layout of equipment
5. Selection of key equipment
6. Specifications for equipment procurement and installation
7. All engineering associated with structural and mounting details
8. Performance of equipment components, and subsystems
9. Integration of solar PV system with other power sources
10. Electrical grid interconnection requirements
11. Controls, monitors, and instrumentation
12. System performance monitoring

Tandem and WHC have extensive experience in the permitting and interconnection of solar energy facilities in the State of California. Please refer to **Section 10 Contractor References**, below.

2.2.2 Installation

The scope of work provided by Tandem and WHC includes the supply of all equipment, materials, and labor necessary to install the solar PV systems and integrate them with other power sources. All installation work shall be self-performed by WHC, a licensed General Building Contractor and Electrical Contractor in the State of California (CSLB# 578578 – B/C10). The installation team will be comprised of experienced and certified installers, licensed by the State of California, in accordance with state law.

2.2.3 Electrical Interconnections

Tandem/WHC shall supply and install all equipment required to interconnect the solar PV systems to SDG&E distribution system. This includes the fulfillment of all application, studies, and testing procedures to complete the interconnection process. All costs associated with utility interconnection shall be borne by Tandem/WHC.

2.2.4 Commissioning & Acceptance Testing

It is understood and acknowledged that, during the start-up, the District, and/or its independent engineer/consultant, shall observe and verify each aspect of system performance. Tandem/WHC's commissioning and acceptance test services shall include:

- ☐ Start-up the solar PV systems until it achieves the performance requirements.
- Conducting the performance testing over a consecutive twenty-four (24) hour period
- ☐ Conducting the successful delivery of power within thirty (30) days following completion of the system, meeting each benchmark.

2.2.5 Operation and Maintenance Manuals and As-Built Drawings

Tandem shall provide three (3) sets of operation, maintenance, and parts manuals for the solar PV system. The manual shall cover all components, options, and accessories supplied. It shall include maintenance, troubleshooting, and safety precautions specific to the supplied equipment. It shall also delineate responsibilities of Tandem and the District, both during the term of any agreement and after any potential buyout that may be agreed to.



Tandem will provide three (3) sets of as-built drawings including one (1) on CAD. These requirements shall be delivered prior to acceptance of the solar PV system.

2.2.6 Monitoring

Tandem will monitor system performance and provide public education and outreach, as required by the District. Tandem will provide access to real-time system data via ABB’s Plant Viewer platform, a user-friendly browser based monitoring solution. Plant Viewer allows users to track energy produced on a solar power plant in a simple and intuitive fashion. Plant Viewer users can track key energy metrics as well as the energy produced throughout the lifetime of their solar power plant.

Plant Viewer is fully integrated monitoring platform provided by ABB, the manufacturer of the selected solar inverters. The platform monitors, analyzes, and displays historical and live solar electricity generation data. The regularly collected data will reflect, but not be limited to, the following:

- System performance
- System availability
- Average and accumulated output
- Capacity factor
- Degradation
- Cost avoidance
- Weather and environmental data

The data acquisition and monitoring system is designed for turnkey, remote operation. Data shall be transmitted via Internet from the site to a server. Data format shall be coordinated with requirements of SDG&E. The data acquisition system will not require a dedicated or always-on personal computer.

In coordination with the District, Tandem will engage in ongoing community outreach which shall include but not be limited to the following:

- Press releases announcing the various project milestones and completion of the solar facility at the WWTP.
- Organized educational tours of the facility once it is fully constructed and operational
- Public access to online portal where real-time system monitoring data can be viewed by citizens, educators and students.

3.0 WARRANTIES & GUARANTEES

The warranties to be transferred to the District, if the District purchases the PV system, are as follows:

Purchase at completion

Module Warranty: 10-year workmanship, 25-year production



Inverter Warranty: 10 years
Racking Warranty: 20 years
Installation/Workmanship: 3 years

Exercise of Year-7 Purchase Option

Module Warranty: 10-year workmanship, 25-year production
Inverter Warranty: 10 years
Racking Warranty: 20 years

Confirmation of equipment warranties are included in **Attachment A – Project Detail**, in the equipment specifications.

4.0 OPERATION & MAINTENANCE

Tandem will provide a comprehensive onsite operation and maintenance service program for the PV system operations, safety and maintenance activities. **Tandem’s head office is located ½ mile from the District’s WWTP**, which provides an unparalleled advantage in terms of O&M activities and responsiveness to scheduled and unscheduled maintenance requirements.

Tandem’s operation and maintenance service program includes the following:

- Annual on-site system inspection, including:
 - o System testing (operating current of each electrical string)
 - o Routine preventive maintenance
 - o Repair and/or replacement of defective parts (including equipment and labor)
- System performance monitoring and historical data access for customer via secure website. Accessible data will include:
 - o System energy and power production
 - o Ambient temperature
 - o Wind speed
 - o Insolation
- Daily system monitoring by vendor, including:
 - o Reporting of problems to customer
 - o Dispatch of resources for expeditious resolution of problems
- Monthly reports and detailed annual report summarizing system performance, efficiency, downtime (if any) and cost savings.



The price, per year, for operating and maintaining the PV system on the District’s behalf for a twenty five (25) year service term is as follows:

Scheduled Maintenance/Cleaning:	\$1,920
Unscheduled Maintenance:	\$300
<u>Inverter Replacement Reserve:</u>	<u>\$960</u>
TOTAL:	\$3,180/Year

The annual price shall be increased at 2% per year to compensate for inflation over time.

Tandem’s Operation and Maintenance program shall include all required maintenance activities, including warranty repair work and equipment replacement including, but not limited to, inverter replacement in order to keep the system operational and performing to production guarantees.

5.0 INSURANCE

Tandem/WHC shall be responsible for and shall pay for insurance for the project during the time that it is the owner. Insurance shall include, at all times, both general liability (\$2,000,000) and property insurance (\$1,000,000). The District shall be named as additional insured on the policies. If the District opts to purchase the PV system, Tandem/WHC shall no longer be responsible for insurance. In any event, it shall be the responsibility of the District to notify its current insurance policy holder of the proposed solar facility, as required by the terms of its policy.

6.0 PV SYSTEM REMOVAL

Tandem shall bear the sole responsibility of removing the PV system at the end of the twenty five (25) year service term (PPA Term) should the District, in its sole discretion, opt not to purchase the PV system.

7.0 LICENSING/CERTIFICATION

The Contractor, WHC, is a fully licensed and bonded General Building Contractor and Electrical Contractor in the State of California, holding both the Class B and Class C10 licenses.

License #: 578578
Expiration Date: September 30, 2015



License Number	578578	Extract Date	9/24/2016
Business Information	WEST HILLS CONSTRUCTION INC		
Entity	Business Phone Number: (609) 515-8270		
Issue Date	403 JENNS CIRCLE STE 101		
Expire Date	CORONA, CA 92880		
License Status	Corporation		
	09/28/2015		
	ACTIVE		
	This license is current and active. All information below should be reviewed.		
Classifications	CLASSIFICATION	DESCRIPTION	
	B	GENERAL BUILDING CONTRACTOR	
	C10	ELECTRICAL	

Courtesy: CSLB – www.cslb.ca.gov

8.0 CONTRACTOR QUALIFICATION

8.1 Tandem Solar, Inc.

Tandem Solar is an experienced solar developer and integrator, delivering premium solar solutions to Homes, Businesses, Tribal Sovereign Nations and Local Governments throughout Southern California and Arizona. Tandem’s core management team has over 50 years of combined experience in the fields of solar technology, project development, design, installation and operations. With an active equipment wholesale business and our preferred distributor status with leading solar equipment manufacturers, our clients know they are benefitting from some of the most competitive hardware pricing on the market. Tandem Solar is part of the Tandem Group of Companies, which is a fully integrated real estate firm that has been active for over 30 years. Primarily, the Tandem Group operates as a conduit for European investors, and the organization has sourced over 500 million dollars of equity funds in support of its real estate and investment activities, which represents over 1.2 Billion in transactions in North America.

With regards to solar, the Tandem Group is an owner of 4.3 MW of operating solar facilities, with another 10.8 MW in development in both the US and Canada. Tandem’s senior management and director is a team with expertise in the areas of development and construction and asset management and with relationships in all related and supporting disciplines.

Status (private/publicly-held): Private
 Number of employees: 4
 States in which you do business: CA, AZ



Target customers: Commercial, Residential, Government, Tribal Sovereign Nations
Project team profile:

Peter Vogel – Development Project Management

Peter is the President, General Manager and co-founder of Tandem Solar, Inc., a California-based solar developer and integrator based in Borrego Springs, CA and is directly responsible for the successful completion and operation of multiple PV systems in the community of Borrego Springs. Prior to founding Tandem Solar Inc., Peter was the Executive Vice President of Wirsol Solar Canada, a subsidiary of Wirsol AG, at the time one of the 5 largest turnkey solar providers in the world. At Wirsol, Peter was tasked with overseeing the development and financing of 6 500kW+ utility-scale solar PV projects in Ontario, Canada. From 2008-2010, Peter was a Development Associate and Development Project Lead at ROEM Corporation, a San Jose, CA-based real estate developer, successfully overseeing the design, permitting approval and financing of eight new-construction residential and mixed-use projects, valued at over US \$200M. Prior to his tenure at ROEM, Peter served as Director of Marketing at Sundance Development Corporation, a regional homebuilder based in Toronto, Canada. Peter holds a Bachelor’s degree in Business Administration from the University of San Francisco and a Master’s degree in Real Estate Development from the University of Southern California in Los Angeles.

Sean Overbeck – Procurement

Sean is the President and co-founder of Tandem Solar Systems, Inc., the equipment wholesale and distribution sister company of Tandem Solar, Inc., where he oversees the organization’s day-to-day sales and logistics operations. Tandem Solar Systems provides solar equipment procurement services to solar developers and installers throughout North and South America and the Carribean. Previously, Sean was the president of Wirsol Solar Americas, a subsidiary of Wirsol AG, at the time one of the 5 largest turnkey solar providers in the world. Sean led the organizations wholesale and distribution business in the Americas. Prior to his tenure at Wirsol, Sean was Operations Manager at Power One, one of the industry’s leading power electronics manufacturers.

Sean is an energetic management professional versed in business management, finance and sales. Emphasizes process improvement to increase profits and customer satisfaction.

Skill Highlights:

- Business Operations Organization Management
- Leadership/ Communication skills
- Cost Reduction

Professional Experience:

General Manager

Borrego Water District WWTP	8
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February 2014 – Current

Tandem Solar Systems, Inc.

- Developed North American Wholesale business
- Sales Channel development of \$3.0M yearly run rate
- Staffed and managed 6 person support staff

Vice President & General Manager, North America

August 2012 to January 2014

Wirsol Solar Americas - Irvine, CA

- Process Development and Execution
- Mergers and Acquisitions
- Customer Oriented

Accountable for development and growth of North American Wholesale/ Distribution business

Established sales channel of \$2.0M yearly run rate in first year of existence

Worked closely with US solar project development team to create leads, submit quotations, and close agreements. Multiple projects won in first quarter of existence

Created and managed 5 person, commission based sales support staff

Director, Corporate Operations

October 1998 to August 2012

Power-One, Inc. - Camarillo, CA

Managed Global Operations including 4 manufacturing facilities and 5 contract manufacturers
Championed establishment of North American manufacturing facility and transfer of renewable energy products to North America

Developed partnership with contract manufacturer in Canada to satisfy local requirements of manufacturing Spearheaded process improvement project which increased gross margin from 19% to 28% in 9 months

Education

BBA : Business Management, 1999

California State University, Northridge - Northridge, CA, United States



Team leader for the entire Proposal:

Peter Vogel
General Manager
Tandem Solar Inc.

3845 Yaqui Pass Rd.
Borrego Springs, CA 92004

(760) 917-8578
pvogel@tandem-solar.com

Entities, sub-contractors, persons or firms involved in the Proposal and their role/responsibility:

West Hills Construction: design, installation, commissioning, operations and maintenance support

Additional consultants and professionals involved in the Proposal:

n/a

Lead person responsible for each of the entities or firms described above

West Hills Construction: Glenn Cole (contact information below)

8.2 West Hills Construction, Inc.

WHC Company History - Energy

In 2006 we opened an office in Chino, California to begin a focus on the sale, development and implementation of solar and other types of renewable energy to help combat the rising energy costs of our construction clients.

After conducting exhaustive audits of a facility’s energy consumption we then designed unique plans to offset, and in some cases eliminate, their energy bills. Various components are considered to suit a project’s needs, including: Power Conditioning measures, Lighting Retrofits, Green Insulation measures, hybrid HVAC components and retrofits, Photovoltaic installations on the premises, Fuel Cell, Micro-Turbines, Advanced Energy Storage and Wind Turbine solutions.

We quickly found shortcomings with standard photovoltaic technology systems as a total energy solution to our largest clients. So we began the research of base-load and advanced energy storage technologies which allowed us to become an authority in co-generation and battery storage measures.



Once we jumped to a multi-technology layering approach it became clear we had to have a comprehensive knowledge of available and developing commercialized technologies to identify the best solution for any job.

Due to the infancy of the industry we also found a deficiency in available software dedicated to evaluation measures and techniques. We've since employed an in-house software development team to create solutions that integrate engineering, technology and financial aspects of a given installation, from Net Energy Metering Photovoltaic projects to a Transmission Utility Grade Wind farms. With the advent of our proprietary software packages, which are unavailable on the public market, we have become one of the foremost experts in utility rate and tariff analytics.

Economic turbulence came to the construction industry in 2008 in which we witnessed many developers lose work or exit the unstable market altogether. During this time we began pursuing ownership and operation of our own installations and in 2010 completed the first distribution utility grade photovoltaic system in Southern California Edison's territory - a 1MW roof-mounted project on a building we'd previously constructed in 2005 which was then interconnected before executing a PPA under the California Renewable Energy Small Tariff (CREST) program.

This project was our first test site that proved viability for our larger development program we are currently seeking equity investors for. In fact it was so successful that we believe distribution utility grade projects to be more viable and profitable than transmission utility grade projects, which fit within our company history and experience perfectly.

The first SCE CREST site was completed in 2010 by WHC, since then we have completed the third (3rd) and fourth (4th) projects in SCE's CREST program, both being 1.5MW fixed-tilt ground mount systems in Palmdale, CA in 2011, and 2012.

In the same year we were also recognized with an industry prestigious "Inventor of the Month" award by AutoDesk for innovation of design and implementation with a wide-variety of their products. An award that is only granted to twelve companies each year, AutoDesk was impressed with our ability to utilize their product in ways and industries they weren't even aware of. We've since their software, coupled with our own in-house software through the engineering, financial and sales cycle of our projects. This has increased our competitiveness through lean product engineering and development strategies.

In summary, we have developed the best energy division in the nation. By evaluation a project and scenario with an "outside the box" attitude we have catapulted our projects and pipeline three years ahead of anyone in the industry.

With over six years and millions of dollars invested in training and development in these new technologies we have effectively positioned ourselves at the head of the pack in this budding industry. This assertion is further reinforced by our vast construction experience which has proven an invaluable asset when designing projects from the ground up or retrofitting existing buildings with new equipment. The robust knowledge base offers absolute confidence when maintaining any roof structure, roof membranes and ground-mount installations.



Status (private/publicly-held): Private
Number of employees: 78
States in which you do business: CA, OK, AR
Target customers: Commercial, Industrial, Utility, Government
Project team profile: Personnel will be allocated and placed to the job based on availability and current projects under construction. Glenn Cole will be the project manager assigned.

Glenn Cole – Construction Project Management

Glenn has been with West Hills Construction for over 20 years, in that time having performed exceptionally in the roles of both project manager and site superintendent. He has extensive trade experience in electrical, PV, structural and grading and civil. Glenn is currently managing the construction of 11 MW of PV systems and was the lead project manager for several of WHC’s showcase solar projects, including, most recently, Forever 21 (5,072 kW) and the John McLellan VA hospital (1,876 kW).

Team leader (WHC):

Glenn Cole
 Project Manager
 West Hills Construction, Inc. – Energy Division

423 Jenks Circle Suite #101
 Corona, CA 92880

(800) 515-5270 – Office
 (800) 515-5260 – Fax
 glenn@whc.us.com

Identification of each entity, sub-contractor, person or firm involved in the Proposal and their role/responsibility.

Currently, the project has been planned such that WHC would self-perform all work

Identification of the lead person responsible for each of the entities or firms described in above.

West Hills Construction - Glenn Cole



9.0 CONTRACTOR EXPERIENCE

9.1 Average commercial grid-connected PV system size installed during the last five years:

1,344.9 kW (1.34 MW) from a total of 16 systems.

9.2 Total commercial MW of grid-connected PV systems installed under a Power Purchase Agreement.

As the design/build contractor, WHC is not involved in the structuring of the ownership entity nor any power purchase agreement that may exist. Installation/EPC contracts are subject to non-disclosure provisions. The information provided herein has been authorized for release by the project owners for the purposes of a public Request for Proposals/Qualifications. Owners have declined further information being given, including their contact details until such time as a contract is imminent.

9.3 Experience with SDG&E.

WHC has and is currently developing projects under SDG&E's Renewable Market Adjusting Tariff (Re-MAT) Program and has also successfully coordinated with SDG&E's utility scale interconnection departments, specifically with regards to interconnections governed by SDG&E's Wholesale Distribution Open Access Tariff (WDAT). Currently, WHC has over 12MW of development in the SDG&E Re-MAT Program.

9.4 Experience with local government projects.

None. Federal Government projects only.

10.0 CONTRACTOR REFERENCES

installation/EPC contracts are subject to non-disclosure provisions. The information provided herein has been authorized for release by the project owners for the purposes of a public Request for Proposal/Qualifications. All owners have declined further information being given, including their contact details, until such time as a contract is imminent.



Project Name/Location	Role	Description	Type	Owner	Availability	Rating
1 40473 Desert Creek Ln. Rancho Mirage, CA	Design/Build General Contractor	Rooftop, Fixed-Tilt	PV	Antun Barbato	90%+	49.7 kW
2 30801 Agoura Rd. Agoura Hills, CA 91301	Design/Build General Contractor	Rooftop, Fixed-Tilt	PV	Farmers Insurance	90%+	268.8 kW
3 31051 Agoura Rd. Agoura Hills, CA 91363	Design/Build General Contractor	Rooftop, Fixed-Tilt	PV	Farmers Insurance	90%+	168.84 kW
4 301 S. Rose Ave Oxnard, CA 93030	Design/Build General Contractor	Rooftop, Fixed-Tilt	PV	Harry Ross Industries	90%+	924.6 kW
5 8875 Avenue L-8 Palmdale, CA 93550	Design/Build General Contractor	Ground-Mount, Fixed-Tilt	PV	Heliocentric, LLC	90%+	1,719 kW
6 8871 Avenue L-8 Palmdale, CA 93550	Design/Build General Contractor	Ground-Mount, Fixed-Tilt	PV	L-8 Solar Project, LLC	90%+	1,719 kW
7 762 West Cypress San Dimas, CA 91773	Design/Build General Contractor	Ground-Mount, Fixed-Tilt	CPV	McKinley Children's Center	90%+	496 kW
8 921 NE 13th Street Oklahoma City, OK 73104	Design/Build General Contractor	Carport, Fixed-Tilt	PV	Oklahoma City VA Hospital	90%+	900 kW
9 4300 W. Seventh St. Little Rock, AR 72205	Design/Build General Contractor	Carport, Fixed-Tilt	PV	John L. McLellan VA Hospital	90%+	1876 kW
10 14545 Hook Blvd., Victorville, CA 92394	Design/Build General Contractor	Carport, Fixed-Tilt	PV	High Desert Church	90%+	331.2 kW
11 1053 S. Vail Ave., Montebello, CA 90640	Design/Build General Contractor	Rooftop, Fixed-Tilt	PV	Harry Ross Industries	90%+	489.44 kW
12 909 Colon Ave. Wilmington, CA 90744	Design/Build General Contractor	Rooftop, Fixed-Tilt	PV	RLW Developments, LLC	90%+	1470 kW
13 11115 Laurel Canyon Blvd. Los Angeles, CA 91340	Design/Build General Contractor	Rooftop, Fixed-Tilt	PV	RLW Developments, LLC	90%+	509 kW
14 19801-19851 Nordhoff Pl. Chatsworth, CA 91311	Design/Build General Contractor	Rooftop, Fixed-Tilt	PV	MKM Oakdale Solar LLC	90%+	1319 kW
15 3880 N. Mission Road Los Angeles, CA 90031	Design/Build General Contractor	Rooftop, Fixed-Tilt	PV	Forever 21	90%+	5072 kW
16 Avenue P Palmdale, CA 93550	Design/Build General Contractor	Ground-Mount, Single-Axis Tracker	PV	Little Rock Pham Solar, LLC	90%+	4206 kW
AVERAGE kW						1,344.91
TOTAL kW						21,518.58

Tandem/WHC have confirmed that the proposed technology and equipment meets or exceeds all currently applicable and proposed safety and interconnection standards. All equipment components are, at minimum, UL certified, and meet existing facility structural and fire safety requirements. Evidence of safety certifications are provided in the equipment specifications sheets included in **Attachment A – System Detail**.

11.0 POWER PRODUCTION ESTIMATE

Tandem and WHC's engineers have completed the initial system design and power production estimates for the proposed solar facility. Performance estimates were obtained via PVSyst energy modelling software, the industry standard application for this type of analysis. The system design was optimized based on engineering best practices and Tandem and WHC's experience in planning, building and successfully operating solar PV facilities. Estimates for system efficiency and power output (in kilowatt-hours) take into account the specific design of the system (layout and hardware components) as well as historic environmental data.



The estimated annual output of the system is as follows*:

Photovoltaic Potential*:	1,749 kWh/kWp
System Size:	96.0 kWp (DC)
Energy Production:	167,900 kWh/year

**All numbers are Year 1 values unless otherwise noted*

Year 1-4 estimated output is 0.2 % - 1.7% higher than the annual electrical consumption of the WWTP, based on 2013 figures. The reason for this is two-fold:

1. To ensure there is a buffer in production should electrical usage at the WWTP experience an increase.
2. To offset the natural degradation of panels over time and ensure that the majority of power will always be produced by solar, thereby minimizing the District’s exposure to variable SDG&E rates.

12.0 PRICING

PPA Price:	\$0.138/kWh
PPA Term:	25 Years
Escalator:	2% per year
Purchase Option:	District to have option to purchase the system from Tandem at the end of Year 6 of the PPA term
End of Term:	System to be removed by Tandem or purchased by the District for \$1.00
Operation & Maintenance:	Included in PPA (Provided by Tandem)
Design:	Per the layout included in Attachment A
Expected Output:	167,900 kWh/year

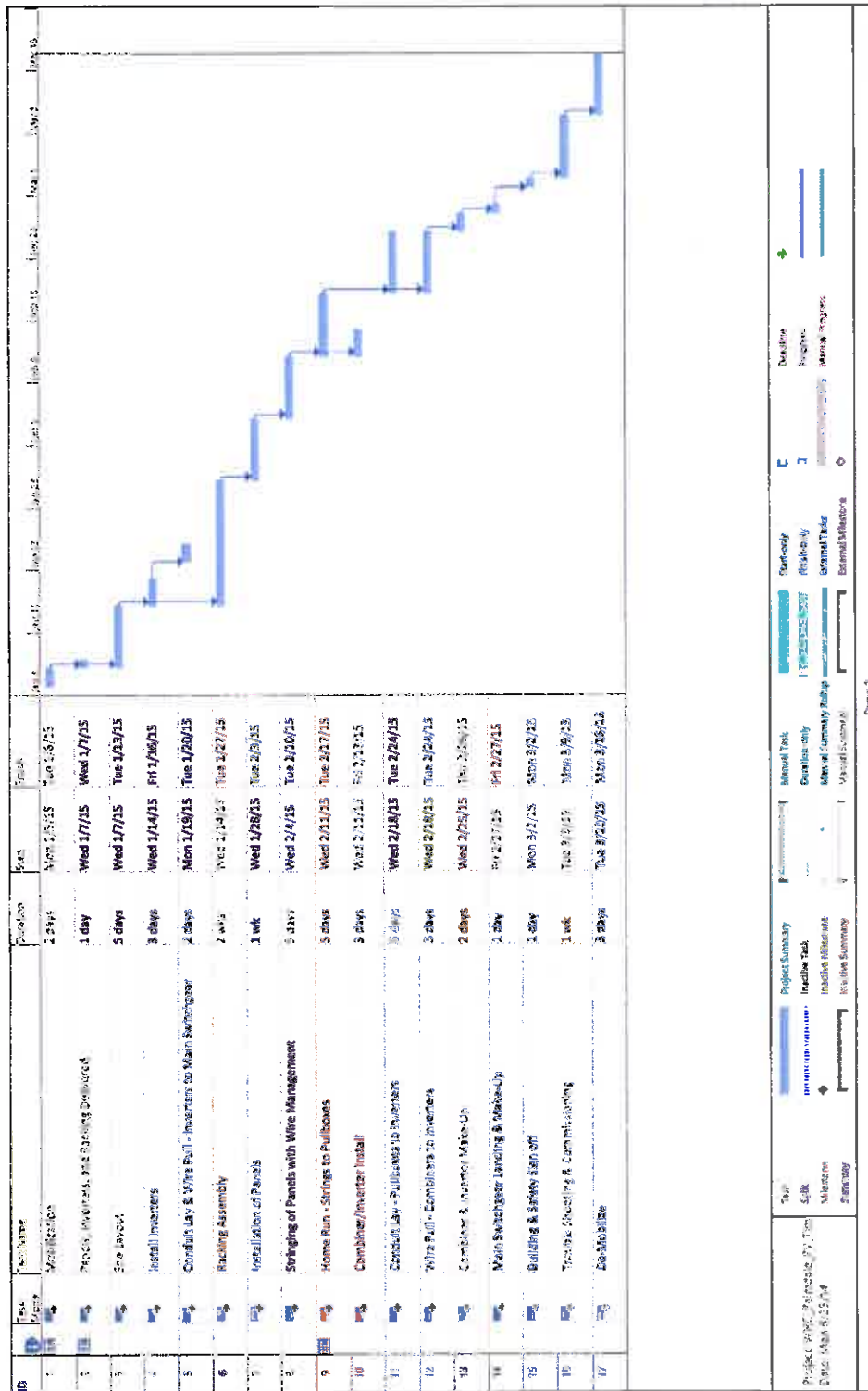


13.0 SCHEDULE

Detailed Design & Planning:	3 Weeks
Permitting:	5 Weeks
Construction Duration:	12 Weeks
<u>Inspections:</u>	<u>2 weeks</u>
Total:	22 weeks

Tandem took the initiative, at its own expense, to retain a consultant to confirm the status of the WWTP property with regards to compliance with the biological requirements of CEQA. This was done in anticipation of what would be necessary to expedite the project should Tandem be selected as the solar provider to the District. The biological survey may only be performed during the spring season.

The project's construction schedule is as follows, with a start date of Jan 5, 2015. The date was selected assuming a one-month timeframe for PPA negotiation and finalization.





14.0 FINANCIAL SUMMARY

Feasibility and costs have been established for the installation of the PV system at the District’s WWTP. Tandem has prepared a system summary detailing the equipment/size, and a sample cash flow analysis detailing expected savings (both kwh and dollar) and potential buyout implications to long-term savings. Tandem acknowledges that the proposed PV system will be located on property owned by the District.

Project Financial Data	
Current Avg. Electricity Rate (per kWh)	\$ 0.177
Annual Electricity Consumption (kWh)	165,040
Est. Annual SDGE Rate Increase	5.00%
System Size (kWp)	96,000
PPA Rate (per kWh)	\$ 0.138
Discount to SDGE Rate (Year 1)	-22.1%
Annual PPA Escalator	2.00%
PPA Term (Years)	25
1 Year Savings	6,589
6 Year Savings	55,460
10 Year Savings	117,391
15 Year Savings	231,110
20 Year Savings	395,895
25 Year Savings	626,025

Figure 1: Annual Electricity Costs (Solar vs. non-Solar)

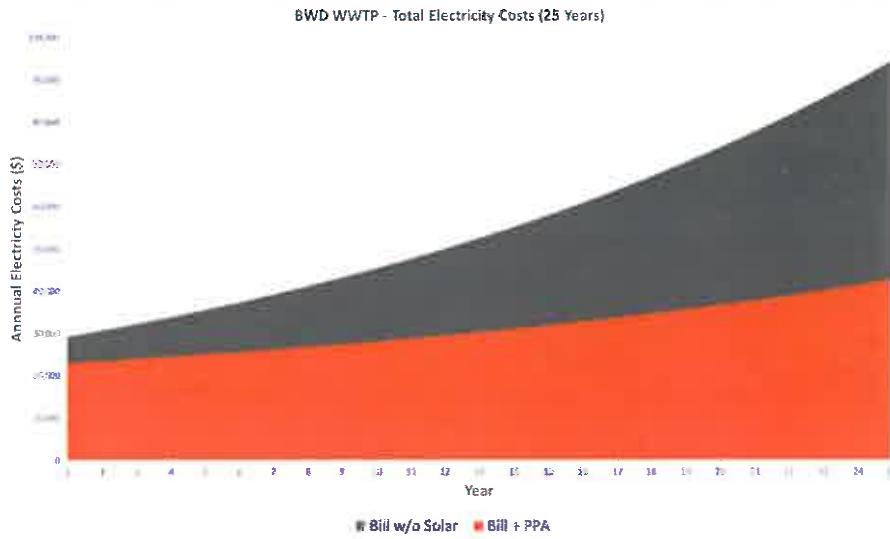




Figure 2: Annual Electricity Costs/Savings (kWh and \$)

Year	Prod. E1	SO2RE Rate	PPA Rate	Rate Savings (%)	Avoided Cost	PPA Payment	Net Savings	Usr.:	System Prod.	% from PV	Bill w/o Solar	Bill + PPA	% Bill Savings
1	167,900	0.177	0.138	-22.1%	29,759	23,170	6,589	165,040	167,900	101.73%	29,252	22,663	22.52%
2	167,061	0.186	0.141	-24.4%	31,091	23,515	7,576	165,040	167,061	101.22%	30,715	23,139	24.66%
3	166,225	0.195	0.144	-26.5%	32,482	23,866	8,616	165,040	166,225	100.72%	32,251	23,634	26.72%
4	165,394	0.205	0.146	-28.6%	33,936	24,221	9,714	165,040	165,394	100.21%	33,863	24,149	28.69%
5	164,567	0.215	0.149	-30.7%	35,454	24,582	10,872	165,040	164,567	99.71%	35,556	24,684	30.58%
6	163,744	0.226	0.152	-32.6%	37,041	24,949	12,092	165,040	163,744	99.21%	37,334	25,242	32.39%
7	162,926	0.238	0.155	-34.6%	38,699	25,320	13,378	165,040	162,926	98.72%	39,201	25,823	34.13%
8	162,111	0.249	0.159	-36.4%	40,430	25,698	14,733	165,040	162,111	98.23%	41,161	26,428	35.79%
9	161,300	0.262	0.162	-38.3%	42,240	26,080	16,159	165,040	161,300	97.73%	43,219	27,060	37.39%
10	160,494	0.275	0.165	-40.0%	44,130	26,469	17,661	165,040	160,494	97.25%	45,380	27,715	38.92%
11	159,691	0.289	0.168	-41.7%	46,105	26,863	19,241	165,040	159,691	96.76%	47,649	28,408	40.38%
12	158,893	0.303	0.172	-43.4%	48,168	27,264	20,904	165,040	158,893	96.28%	50,031	29,127	41.78%
13	158,098	0.318	0.175	-45.0%	50,323	27,670	22,653	165,040	158,098	95.79%	52,533	29,879	43.12%
14	157,308	0.334	0.179	-46.6%	52,575	28,082	24,493	165,040	157,308	95.32%	55,160	30,666	44.40%
15	156,521	0.351	0.182	-48.1%	54,928	28,501	26,427	165,040	156,521	94.84%	57,918	31,490	45.63%
16	155,739	0.368	0.186	-49.6%	57,386	28,925	28,461	165,040	155,739	94.36%	60,813	32,353	46.80%
17	154,960	0.387	0.189	-51.0%	59,954	29,356	30,598	165,040	154,960	93.89%	63,854	33,256	47.92%
18	154,185	0.406	0.193	-52.4%	62,637	29,794	32,843	165,040	154,185	93.42%	67,047	34,203	48.99%
19	153,414	0.427	0.197	-53.8%	65,440	30,238	35,202	165,040	153,414	92.96%	70,399	35,197	50.00%
20	152,647	0.448	0.201	-55.1%	68,369	30,688	37,680	165,040	152,647	92.49%	73,919	36,236	50.98%
21	151,884	0.470	0.205	-56.4%	71,428	31,145	40,283	165,040	151,884	92.03%	77,615	37,332	51.90%
22	151,125	0.494	0.209	-57.6%	74,624	31,610	43,015	165,040	151,125	91.57%	81,496	38,481	52.78%
23	150,369	0.518	0.213	-58.9%	77,964	32,081	45,883	165,040	150,369	91.11%	85,571	39,667	53.62%
24	149,617	0.544	0.218	-60.0%	81,453	32,559	48,894	165,040	149,617	90.66%	89,849	40,955	54.42%
25	148,869	0.572	0.222	-61.2%	85,098	33,044	52,054	165,040	148,869	90.20%	94,342	42,287	55.18%
TOTAL	3,955,044				1,321,715	695,690	626,025	3,300,800	3,955,044	95.86%	1,396,127	770,102	



Figure 3: Buyout Option

Buyout Option			
Avoided Cost	PPA Payment	Net Savings	Purchase
29,759	23,170	6,589	
31,091	23,515	7,576	
32,482	23,866	8,616	
33,936	24,221	9,714	
35,454	24,582	10,872	
37,041	24,949	12,092	(231,827)
38,699		38,699	38,699
40,430		40,430	40,430
42,240		42,240	42,240
44,130		44,130	44,130
46,105		46,105	46,105
48,168		48,168	48,168
50,323		50,323	50,323
52,575		52,575	52,575
54,928		54,928	54,928
57,386		57,386	57,386
59,954		59,954	59,954
62,637		62,637	62,637
65,440		65,440	65,440
68,369		68,369	68,369
71,428		71,428	71,428
74,624		74,624	74,624
77,964		77,964	77,964
81,453		81,453	81,453
85,098		85,098	85,098
931,148	144,304	786,844	499,557
			IRR for BWD
			19.96%
			Payback
			6.5 Years



15.0 ATTACHMENTS

Attachment A – System Detail

Attachment A – System Detail

“One Bucket and 50 Straws”: Community Values and Visions

Prepared for
Borrego Water District Board and Staff

September 16, 2014
Janice R. Natagon, FMS



Community Involvement in Groundwater Management

- Open Board meetings and workshops
- Town Hall meetings
- Farmers’ Market conversation booth
- Borrego Water Coalition
- Values and visions qualitative survey
- Other ways to remove barriers?

Visions and values survey




1. What brought you to the Borrego Valley? What keeps you here?

Water-involved respondents (n=6)	Non-water-involved respondents (n=15)
Environment/Nature/Weather (12)	Family/Home (10)
Family/Home (8)	Economy (8)
Aesthetics (5)	Employment (7)

2. What are the strong points of the community in the Borrego Valley?

Water-involved respondents (n=6)	Non-water-involved respondents (n=15)
Community character/Civic involvement/Tranquility (10)	Community character/Civic involvement/Tranquility (12)
People (not family) (5)	Environment/Nature/Weather (5)
Environment/Nature/Weather (3)	People (not family) (4)

3. What would you like to see in the community in the next 5 years? 20 years?

Water-involved respondents (n=6)	Non-water-involved respondents (n=15)
Economy (9)	Development/Evolution/Balance (17)
Development/Evolution/Balance (8)	Economy (15)
Community character/Involvement/ Agriculture/Tranquility (7)	TIE: Risk/Survival (9) and Governance (9)

4. What do you see as the primary problems or weaknesses in the community?

Water-involved respondents (n=6)	Non-water-involved respondents (n=15)
Perspective/Next generation (5)	Economy (10)
Community character/Involvement/Agriculture/Tranquility (3)	Community character/Involvement/Agriculture/Tranquility (5)
	Community size/People leaving (5)

5. Which issues about water in the Valley concern you the most?

Water-involved respondents (n=6)	Non-water-involved respondents (n=15)
Agriculture (8)	Agriculture (5)
Governance (6)	Governance (5)
Economy (6)	



Summary of findings

- Preservation of community character
- Careful growth and expansion of economy
- No mention of social conflict
- Park versus park
- Suggestion box
- Priming/availability bias
- Language barrier is out there
- Data available for further analysis

In appreciation

- Jerry Rolwing
- Ernie and Debbie Loza
- Kendall's Cafe
- Our gracious survey participants



Questions?

naragon.jr@gmail.com

All: This is being provided because it is a good summary of the Groundwater Legislation. No endorsement of Downey Brand LLP is intended or implied.

DOWNEY BRAND

Related People

- David R. E. Aladjem
- Meredith E. Nikkel
- Kevin M. O'Brien

Related Industries

- Food & Agriculture
- Water Rights & Resources

Related Practices

- Water Law

The New Groundwater Legislation: Opportunities and Challenges

September 2, 2014

Governor Brown is expected in the near future to sign into law a package of legislation that brings comprehensive groundwater regulation to California. The legislation aims to give local agencies the means to manage groundwater basins in a manner that is sustainable over the long-term. The key element of the legislation is the development of "groundwater sustainability plans" by groundwater sustainability agencies (*i.e.*, one or more local public agencies that extract groundwater from the basin). The new legislation grants groundwater sustainability agencies a broad array of new authorities, including the ability to investigate and determine the sustainable yield of a groundwater basin and the authority to limit extractions, impose fees for groundwater management, and enforce the terms of a groundwater sustainability plan. Groundwater basins that are in a state of overdraft will need to develop groundwater sustainability plans by 2020; most of the remaining large basins in California will need to develop such plans by 2022. Where no local agency completes an adequate groundwater sustainability plan in a timely fashion or fails to implement an adopted plan, the new laws give the State Water Resources Control Board the authority to intervene in what the legislation terms a "probationary basin" to develop an "interim plan" for that basin. The new legislation presents water managers, and holders of rights to surface water and groundwater, with a series of new opportunities and challenges.

It is indisputable that, with the exception of the 2009 Comprehensive Water Package, the current groundwater legislation is the most significant set of water reforms to pass the Legislature since at least the Burns-Porter Act in 1960 that authorized the State Water Project. This e-alert provides a brief summary of the new legislation and our initial thoughts on the opportunities and challenges it will create.

The New Laws

The key elements of the legislation have been widely publicized in the media since the passage of the three bills last Friday. (For a good collection of the news stories, see: <http://mavensnotebook.com/2014/08/31/daily-digest-weekend-edition-groundwater-legislation-heads-to-the-governors-desk-conservation-conundrum-water-use-varies-across-the-state-the-drought-the-water-bond-the-bdcp-and-more>.) Here is a brief summary of the key provisions:

Key Principles

Protection of Water Rights. The Brown Administration and the two principal authors of the legislation (Senator Pavley and Assemblymember Dickinson) have, to their credit, consistently stated that nothing in the legislation is intended to change rights to surface water or rights to groundwater. Though

it will not appear in the Water Code itself. section 1(b)(4) of AB 1739 declares that the legislation is intended to respect overlying and other proprietary rights to groundwater, consistent with Water Code section 1200, which generally limits the authority of the State Water Resources Control Board (SWRCB) to surface waters and "subterranean streams flowing through known and definite channels." Similarly, new Water Code section 10720.5(b) says that nothing in the legislation "determines or alters surface water rights or groundwater rights under common law or any provision of law that determines or grants surface water rights." Thus, the stated intent of the legislation is to require local agencies and the SWRCB to respect all rights to surface water and groundwater.

Sustainable Groundwater Management. The thrust of the legislation is to give local agencies the means to manage the groundwater basins upon which they rely in a manner that is sustainable over the long-term. As the bills moved through the Legislature, there was much discussion over what the term "sustainable" really means. From the legislative authors' experience, it means that a groundwater basin must be managed to maintain the "safe yield" of the basin (as defined by existing case law), while also considering the economic, social and environmental effects of limiting groundwater extractions to the safe yield of the basin. This directive is consistent with the way in which many local agencies have been managing groundwater for some time. The legislation, however, gives local agencies greater authority and responsibility.

Groundwater Sustainability Plans

Groundwater Sustainability Plans. A key element of the legislation is the new requirement that groundwater sustainability agencies (i.e., one or more local public agencies that extract groundwater from the basin) develop "groundwater sustainability plans." As a general matter, groundwater basins that have already been adjudicated (chiefly in Southern California) or those agencies that have ongoing and successful groundwater management programs will only need to provide annual reports to the Department of Water Resources demonstrating that the groundwater basin is being managed in a manner that is consistent with the long-term "sustainable yield" (essentially the historical concept of safe yield). Other groundwater basins that are in a state of overdraft will need to develop groundwater sustainability plans by 2020. Most of the remaining non-overdrafted basins will need to develop such plans by 2022. Significantly, the development of groundwater sustainability plans is exempt from the requirements of CEQA. In the opinion of the authors, this exemption will save at least a year in the development of the required plans.

New Local Authorities. One of the criticisms of past groundwater legislation (AB 3030 and SB 1938) has been that these laws did not give local agencies the authority they needed to bring groundwater extractions into balance with the sustainable yield of the basin. The new legislation grants groundwater sustainability agencies a broad array of new authorities, modeled on the specific authorities that the Legislature has in the past granted to specific groundwater management agencies. Such authorities include not only the ability to investigate and determine the sustainable yield of a groundwater basin, but also the ability to limit groundwater extractions, impose fees for groundwater management, and enforce the terms of a groundwater

sustainability plan.

Consideration of Multiple Interests. In developing a groundwater sustainability plan, a groundwater sustainability agency must consider the interests of a variety of different stakeholders, including beneficial users of water, environmental interests, disadvantaged communities, and others. (Water Code section 10723.2). However, after considering those interests and developing a groundwater sustainability plan, any judicial challenges to the plan are treated with the same deferential standard that applies to challenges to a general plan. (Water Code section 10726.6(e)). Thus, the ability of interests that are dissatisfied with the terms of a groundwater sustainability plan to challenge that plan in court will be quite limited. This provision of the law is extremely important; without it, groundwater sustainability plans would likely be tied up in court for years.

Rewarding Sound Management. One of the final amendments to the legislation dealt with the situation where most of a groundwater basin is being managed in a sound manner but some area (perhaps an area outside the boundaries of a local water district) resists the limitations on pumping, or the imposition of charges for the groundwater sustainability plan that are being imposed on the remainder of the basin. In these cases, the legislation now limits the ability of the SWRCB to penalize those portions of the basin that are managing groundwater in a sustainable fashion, and instead directs the "state intervention" to focus on the areas that are resisting sound management. (Water Code section 10735.2(e)).

State Intervention. The Administration has insisted, from the beginning of this effort, that the SWRCB must be able to intervene under certain conditions: (i) no local agency is willing to serve as a groundwater sustainability agency; (ii) the groundwater sustainability agency does not complete a groundwater sustainability plan in a timely fashion; (iii) the groundwater sustainability plan is inadequate, and remains so after a review by the Department of Water Resources and efforts to cure the deficiencies; or (iv) the groundwater sustainability plan is being implemented and simply does not work. There has been general agreement to this set of conditions; the objections have all been to the standards that the SWRCB will use to intervene in what the legislation terms a "probationary basin" and the standards that the SWRCB will apply in developing an "interim plan" for the basin. The late amendment to the bills, contained in section 10735.2(e), that prevents state intervention in areas that are engaged in sustainable groundwater management tempers these concerns to some extent by limiting the SWRCB's authority only to areas that have taken deliberate actions to thwart groundwater management.

Opportunities and Challenges

The new legislation presents water managers and water rights holders with a series of new opportunities and challenges. Here are a few:

Opportunities. From a landowner's perspective, the simple and straightforward language quoted earlier in this e-alert regarding the protection of water rights offers strong evidence that the Legislature – contrary to a chorus of voices that have filled the news media over the past year – fully intends to respect existing water rights and has no desire to

change the current water right system.

From the perspective of local agencies, the legislation offers many water district managers an impressive set of tools that they can use to manage groundwater in a sustainable manner. Prior to this legislation, ambiguity existed as to the authority of local agencies to take specific actions to manage groundwater such as, for example, curtailing groundwater pumping to prevent overdraft. The new groundwater legislation fixes this problem.

Challenges In Developing Groundwater Sustainability Plans. With responsibility comes the challenge of actually developing good groundwater sustainability plans. In many groundwater basins, it has been difficult to develop the political consensus needed to make hard choices about groundwater. After all, the members of local governing boards are often landowners or residents of their respective districts; the last thing that they want to do is to impose hardships on their friends and neighbors. The intent of the legislation is to give local governing boards the right and ability to manage groundwater for their own long-term self-interest, with the threat of state intervention if local agencies fail to act. We are confident that, in the vast majority of cases, local agencies will meet this challenge.

One of the key ways that the State of California can (and hopefully will) ease the challenge of developing sound groundwater management strategies is through the provision of technical and financial assistance to local agencies. Many local agencies are barely able to meet the ongoing demands of providing water service to their ratepayers and landowners; the cost of developing and implementing a thoughtful and comprehensive groundwater sustainability plan in five to seven years will be very significant. The Brown Administration, to its credit, has indicated that the Department of Water Resources will be directed to assist local agencies in developing groundwater sustainability plans, and there is the possibility that funds from Proposition 1 (if it passes) could be used to fund these efforts. However, given the importance of moving quickly toward improved groundwater management, the authors believe that the Brown Administration should seek substantial additional funding to assist local agencies in this effort.

Challenges In Implementing the Legislation. In the authors' view there are four other potential pitfalls in the legislation. First, the legislation is vague about which local agencies will become the groundwater sustainability agency for a particular basin and how multiple agencies will coordinate their efforts. This ambiguity was intentional; there are too many different circumstances across California to legislate a "one-size-fits-all" approach to identifying a groundwater sustainability agency. However, in addition to the challenge within each local agency in determining how best to manage groundwater (discussed above), there is the additional challenge associated with coordinating multiple agencies in large groundwater basins. If the development and implementation of groundwater sustainability plans bogs down, this lack of clarity in the legislation is one likely culprit.

Second, section 10733.2 directs the Department of Water Resources to adopt regulations to evaluate the development and implementation of groundwater sustainability plans, as well as the coordination agreements needed to manage large groundwater basins. That section also directs the Department to evaluate baseline conditions for the availability (or lack of availability) of surface water. The Department is required to adopt these

regulations as emergency regulations, without review or comment by the Office of Administrative Law. Developing regulations that are sufficiently broad to address the variety of groundwater basins in California and yet that provide sufficiently detailed guidance to help local agencies through a very complicated set of technical issues will be quite difficult. Adding to the difficulty is the requirement that the Department issue these regulations by June 1, 2016. The Department would be wise to rely heavily on the experience and expertise of a "blue-ribbon" committee of water managers drawn from across California in developing these regulations. Without that "on the ground" experience, it seems likely that the regulations will interfere with the development of sound groundwater sustainability plans.

Third, as noted above, the legislation attempts to provide for state intervention where local efforts are not successful, consistent with the "light touch" that SWRCB Chair Felicia Marcus has been advocating. However, the language of the legislation is sufficiently broad so as to allow the SWRCB to intervene prematurely. It will be critically important that the SWRCB work cooperatively with local agencies and the Department of Water Resources to develop sustainable groundwater management and not be quick to pull out the regulatory hammer. The SWRCB has been successful in the past in navigating similar terrain – most notably in assisting parties in coming to the so-called "Phase 8 Settlement" relating to the Bay-Delta hearings – and it is to be hoped that the SWRCB can continue to avoid the pitfall of intervening prematurely in groundwater disputes across the state.

Fourth, but perhaps most important, in section 10735.8(b)(1) the legislation grants the SWRCB the authority to impose an interim plan on basins where groundwater extractions result in "significant depletions of interconnected surface waters." On its face, this language seems to be limited to those situations where there is a direct and substantial relationship between surface waters and groundwater and so would be the groundwater equivalent of a "subterranean stream flowing through a known and definite channel." After all, the term "interconnected surface water" is a longstanding term of art in water law, with a series of cases defining the relationship between surface and groundwater. However, the question of what constitutes a "significant depletion" is likely to prove controversial. If the SWRCB were to take the position that any groundwater extraction that causes or contributes to a stream reach being a "losing reach" (i.e., a reach where water in the stream percolates into the ground), then it would effectively assert control over all uses of water in the Central Valley. On the other hand, if the SWRCB were to follow the historic case law on interconnected streams, it would only develop interim plans in the most obvious cases of excessive groundwater extractions, thereby living up to Chair Marcus' promise to intervene with a "light touch." The challenge for the SWRCB and its staff will be, as mentioned above, to not pull out the regulatory hammer before all other avenues have been exhausted.

For more information, please feel free to contact each of us using the contact information accompanying this e-alert.

I had an opportunity to review David Aladjem's analysis of the New Groundwater Legislation yesterday and then had an opportunity to speak with him directly concerning questions that arose in my mind as I read the overview. Below are my questions and an approximation of his answers. Obviously, the legislation is new and its impact yet to be completely understood. But, I was looking for basic information that would help me understand how the Legislation will likely impact the BWC and the District.

1. What agency or political subdivision in the Borrego Basin is recognized under this legislation as being responsible for "managing" a groundwater basin?

a. The District is the current recognized "agency" that would be required to complete a "sustainability plan".

2. Can the District meet its obligation by creating a plan to "manage" the overdraft within its current boundaries?

a. The Legislation applies to "basin zones" and DWR Bulletin 118 defines the Borrego basin as larger than the District's current boundaries. It expands into areas like Ocotillo Wells and into Park areas. While the District can address "management" within its current boundaries, other organizations that have jurisdiction over those areas outside the District would likely join with the District to accomplish a plan that acceptably covers all areas of the "basin". Possibly that would mean cooperation and joint management with the County and potentially the Park as partners to insure that the water issues in the entire basin are addressed.

3. When would the District and its partners be obligated to file their plan for approval?

a. The Borrego Basin is currently defined by CASGEM as a "medium" priority basin. That means a plan must be approved by 2022. If no plan is in place, then the Water Control Board (WCB) can declare the basin "probationary", and after some notice, implement "sustainability" their way. Basically, they come up with a plan and impose it on the basin.

4. What happens if the District completes its plan, but others in the "basin" don't cooperate or join in?

a. The legislation provides for that problem by exempting those organization within the basin who are working to manage their ground water from the "probationary" process. Essentially, if one group within the basin is meeting the obligations of the law and others are not, those who are meeting their obligations get a "pass" for doing what is right.

5. How does this affect our current Ground Water Management Plan rewrite? Under the old system we had two years to get it done and then we were out of compliance?

a. The new replaces the old but doesn't exempt us from completing the old. DWR has until January 2016 to create "regulations" to evaluate the development and implementation of the new "sustainability" plan requirements. Nothing in the Legislation relieves the District from current requirements. Completing the Ground Water Management rewrite is foundational to any plan we would be required to create to meet the obligations of the new legislation.

6. The legislation indicates the State will provide financial and technical assistance to those obligated to create "sustainability plans". Are they going to pay for the creation of the plan for small groups like us?

a. Unlikely, and unknown. DWR and other state organizations that are now tasked with regulating and enforcing the legislation will be first in line to secure funds to complete their new assignments. To date there is no defined "financial support" to be offered to local agencies working to meet the demand of the new legislation. Instead, the local agency has been given the "right" to impose fees to pay for the plan.

7. Do we know what an acceptable plan will entail?

a. Some aspects will depend on the regulations created by DWR, but others are basically as described before – 20 years to sustainability with some flexibility for DWR to allow up to 2 additional 5 years extensions at their discretion; balance of extractions to recharge is defined as the "safe yield"; fees and assessments to pay for implementation to be levied by the "managing" agency; enforcement standards to ensure compliance.

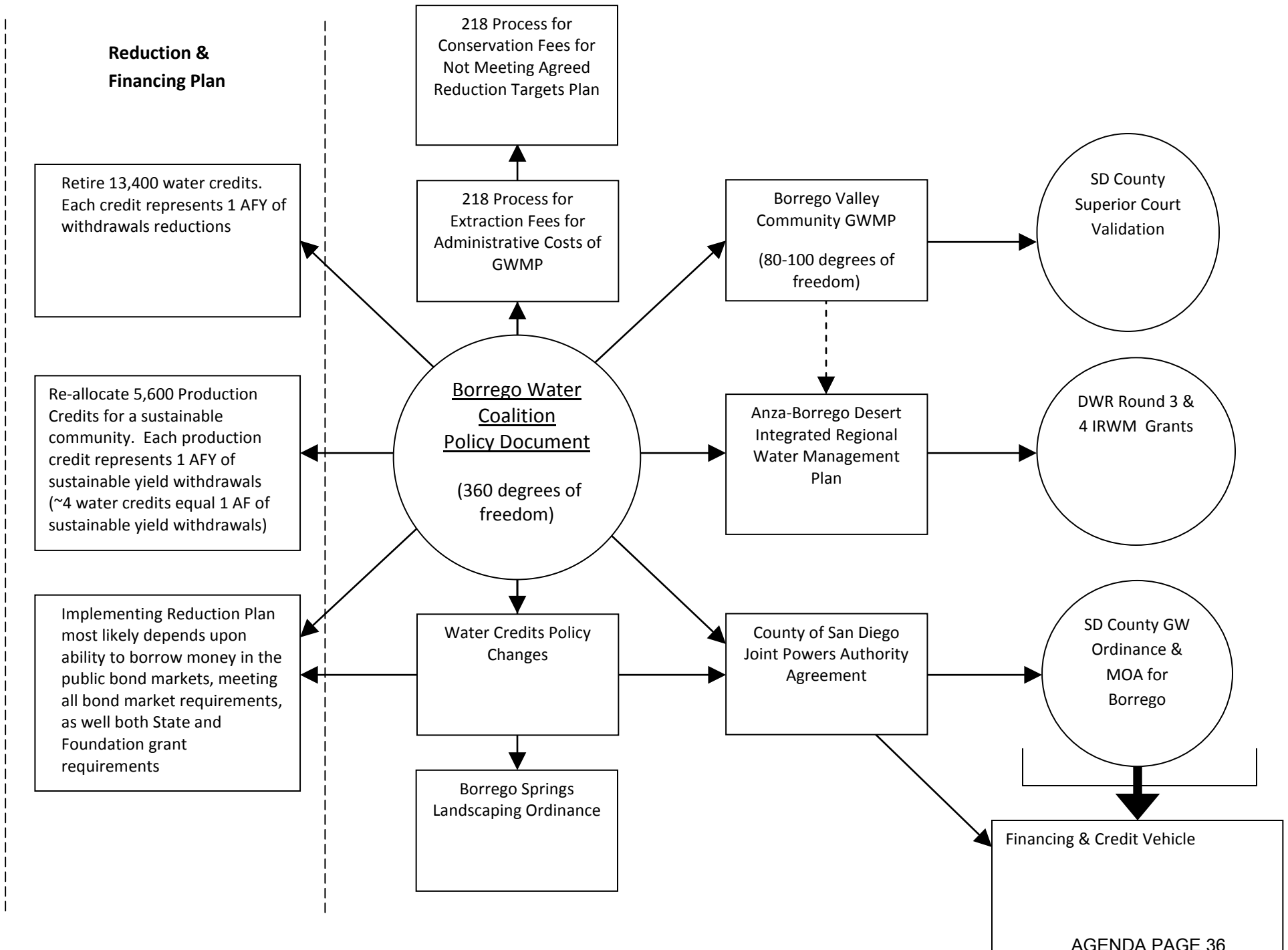
8. Can the "sustainability" plan be challenged?

a. Yes, but as long as the plan is based upon factual reasoning rather than arbitrary or capricious actions, it will withstand the challenge. The Legislation provides for a legal test that "should" make well defined and considered plans defensible.

9. What steps should the community be taking to meet the requirements of the new legislation?

a. Stay our current course: Complete the Ground Water Management Plan rewrite; secure "professional" analysis for the various components of the plan to insure legal defensibility; include as much community stakeholder input as possible and practical; work within the perimeters of the legislations, i.e 20 years, balance of recharge and extractions, established enforcement perimeters, reasoned basis for fee structure and the like.

BASIN MANAGEMENT PLAN OUTPUTS - DRAFT v4-4 For Discussion Only



GWMP PUBLICS

Draft v1.3
For Discussion Only

NOTE: The objective of identifying various publics that will review the GWMP is to assist the drafting of a plan that answers both “what” and “why” this specific plan NOW. Being able to adequately answer these questions helps make the plan defensible when the plan is challenged by those who may believe, for whatever reason, that the proposed plan is inadequate, unfair, arbitrary, and/or capricious.

PUBLICS

CA State Legislature	San Diego County Officials	
SWRCB	Borrego Water Coalition Members & Their Constituencies	
DWR	Borrego Water District Customers	
CA Municipal Finance Authority	Official Community Groups	
Bond Underwriters	Unofficial Community Groups	
Bond Markets	Desert Protective Council	
State Water Bond Administrators	Natural Resources Defense Council	
Private Foundations	Anza Borrego Desert and Colorado Desert Region State Park Officials	
State and Regional Special Interest Groups	Department of Parks and Recreation	

Borrego Valley Stewardship Council Mission Statement

Employing the principles of Geotourism as defined by the National Geographic Society, Borrego Springs seeks to be a model desert community in terms of sound economic planning, beneficial year-round tourism, world-class life-long learning, and exemplary stewardship of our cultural, social, and environmental heritage. Geotourism is defined as tourism that sustains or enhances the geographical character of a place—its environment, culture, aesthetics, heritage, and the well-being of its residents.

Version 3, July 25, 2014

Report of the Interim Steering Committee
of
Destination: Borrego Springs
July 31, 2014

The Interim Steering Committee (ISC) met on seven occasions during the first 90 days following the *Destination: Borrego Springs* event held at the de Anza Country Club on April 11, 2014. The first six, hour-long meetings were via video conference call; and the final two-hour meeting on July 25, 2014 was held in person at the Borrego Springs Chamber of Commerce.

The ISC was charged with synthesizing ideas generated at *Destination: Borrego Springs* into a Mission Statement and a Charter for a Geotourism Stewardship Council tailored for the Borrego Springs region. Additionally, the ISC was charged with considering potential “catalytic projects” that could begin the process of aligning the efforts and energies of members of the Geotourism Stewardship Council. Upon the completion of its work, the ISC would submit its work products--Mission Statement, Charter, potential Catalytic Projects, and this report--to the Plenary Committee of *Destination: Borrego Springs*, and to the community of Borrego Springs at large, for consideration and input.

The ISC grappled with the vagaries of Google Docs and video teleconferencing via Google Hangouts, allowing it to work while its members traveled the country--Idaho, Washington DC, Arkansas, Maine, Nevada, Irvine, Borrego Springs, and San Diego. Although the committee did not feel itself sufficiently proficient with video teleconferencing to warrant broadcasting its sessions to the Plenary as initially considered, the ISC successfully used these tools to execute its charge during the summer season when many activities come to a halt.

Working both online and off, the committee maintained its focus on its three deliverables--Mission Statement, Charter, and catalytic projects; and at each meeting members engaged in detailed consideration of the spirit and the letter of each proposition contained in the Mission Statement and Charter. The committee’s goal was to create foundational documents that reflected the aspirations of the community as expressed at *Destination: Borrego Springs* and that described guiding principles that would lead to fulfilling those aspirations. The committee strove to find the simplest, clearest language possible that could accommodate often divergent points of view.

In working on these document the ISC found Mr. Tourtellot’s description of them helpful: The Mission Statement is a description of the destination at which we aspire to arrive. The Charter describes the guiding stars by which we navigate toward our destination.

The Mission Statement and Charter are published today along with this report. These two documents are not intended to be the “final word” on either subject, but rather reflect the best

efforts of a relatively small group to distill the ideas of the Plenary Committee into documents that can serve as a starting point for conversation for the community at large. Please feel free to share these documents with any and all interested members of the Borrego Springs community.

Given that these documents represent the beginning of a conversation, the ISC hopes to establish several lines of communication by which the ideas contained in the Mission Statement and Charter can be vetted and improved by the efforts of the larger community. The first means of communication is online. In addition to the documents included in this mailing, you will also receive one entitled Plenary Feedback Form. This form provides an online mechanism for anyone to record comments and suggestions, and to engage in an online dialogue if requested.

The second means of communication will be a series of public meetings in which members of the Plenary Committee and the community at large are invited to participate in dialogue regarding the Mission Statement, the Charter, and the proposed catalytic activities of the Stewardship Council. These meetings will be coordinated by the Borrego Springs High School and the UCI Research Center. The meetings at the Research Center are scheduled for the second and fourth weeks in October in an attempt to be convenient for as many returning residents as possible. Exact dates will be forwarded to you in September.

The third line of communication is speaking directly with any member of the ISC. Please feel free to contact any member of the committee with ideas, questions, concerns, etc.

Co-Chairs—Travis Huxman and Jonathan Tourtellot

UCI—Jim Dice / Emily Brooks

TCDC—David Garmon / Lori Paul

CA State Parks—Dick Troy (Ret.)

ABF—Ashley Kvitek / Paige Rogowski

BSCC—Dan Wright / Linda Haddock

BWC—Jim Wermers / Lyle Brecht

Borrego Modern—Bill Lawrence

BSUSD—Martha Deichler / Ann Bogart

Youth Reps—Carolina Magdaleno / Salma Meza

ABDNHA—Betsy Knaak / Mike McElhatton

De Anza CC—Damien Gallardo

Gov't Relations—Nikki Symington

Resource to the committee—Gwenn Marie

Finally, the ISC discussed at length a number of potential catalytic projects the Stewardship Council might consider undertaking. The committee debated the merits and feasibility of a two-weekend Symposium-Festival in April 2015 under the theme of *Desert Living in the 21st Century* and anchored by themes of Renewable Energy and Dark Skies. Given the relatively short time frame, the ISC recommended proceeding with a more modest event,

but still under the theme of *Desert Living in the 21st Century*. The ISC-proposed-April-2015 event would be centered around an interactive symposium at the UCI Research Center focused on Land Use & Governance in the Borrego Valley (e.g. the siting of solar farms in the valley, the siting of 500 kV lines in the Park, the Federal Government's "Fast Track" policy, etc.) and a community-wide tour of the "built environment" led by Borrego Modern.

The ISC also considered the development of a Marketing & Promotion Coalition as an initial activity of the Stewardship Council. Such a Coalition would be charged with marketing and promoting the destination, i.e. "the place," rather than marketing a particular event or a particular business. The initial meeting of the Marketing & Promotion Coalition will take place on September 12, 2014 at 3PM in the ABDNHA Library. All interested community members are invited and encouraged to attend.

As with the foundational documents, any proposed activity of the Stewardship Council is a "work in progress" that will be clarified and improved during the next 90 days by the addition of ideas and suggestions from the larger community. It is the hope of the ISC that conversation about, and responses to, its initial ideas will be far-ranging and will involve all members of the Borrego Community--full time residents, weekenders, and snowbirds.

At the conclusion of this second 90-day period, the Plenary Committee and all interested members of the Borrego community are scheduled to meet on the evening of November 6, 2014 at the UCI Research Center for formal ratification of the Mission Statement and Stewardship Charter.

Your ideas and participation are essential to the success of this endeavor. Please take a moment to review and comment on the work of the Interim Steering Committee. You may add your ideas online, by speaking with a member of the Interim Steering Committee, by participating in face-to-face meetings in October, or all three!

Submitted by:

David Garmon

President, Tubb Canyon Desert Conservancy

Scribe, Interim Steering Committee of the Geotourism Stewardship Council

incredible sense of place, and a gateway to the abundant natural must-see features of southern California.

WHEREAS, the community of Borrego Springs has a diversity of active, effective, and engaged volunteer organizations, State, Federal and County agencies, along with a thriving local business community, fragmented governance constrains collective action and visioning,

WHEREAS, there is a need for a council to link community organizations, focus resources, prioritize activities, engage publics, orient the community toward a sustainable future, define attainable goals, and identify policies of government agencies that foster effective stewarding of Borrego Springs as a sustainable destination for tourists,

WHEREAS, *geotourism* is an all-inclusive approach to planning that focuses not only on the environment and economics, but also on the wealth of Borrego Springs' collective assets, including its position as a gateway to Anza-Borrego Desert State Park,

WHEREAS, the geotourism approach encourages citizens and visitors to take an active role in the activities and policies and activities that support sustainable development, and

WHEREAS, the geotourism approach helps build a sense of place, community identity and pride, stressing the authentic and unique attributes of Borrego Springs,

THE UNDERSIGNED parties to this Geotourism Charter commit to support these general principles that aim to promote, sustain and enhance the geographical character of Borrego Springs—its environment, culture, aesthetics, heritage, and the well-being of its residents and visitors such as:

- I. **Integrity of place:** Enhance the geographical character of Borrego Springs by developing and improving it in ways distinctive to the locale, reflective of its natural and cultural heritage, so as to encourage market differentiation as a tourist destination and inspire cultural pride that broadly impacts the many facets of the community.
- II. **International focus:** Recognize the role that international tourism represents in the travel economy, and thus leverage the principles embodied in many international codes, councils, and charters on conservation, preservation, and planning in order to vision, market, and manage the assets unique to Borrego Springs.

- III. **Market selectivity:** Encourage growth in tourism market segments most likely to appreciate, respect, and disseminate positive information about the distinctive assets of Borrego Springs, the ABDSP, and their unique setting in the western U.S.
- IV. **Market diversity:** Encourage a full range of appropriate food and lodging facilities, so as to appeal to the entire demographic spectrum of the geotourism market, to maximize economic resiliency, and to support year-around economic development over both the short and long term.
- V. **Tourist satisfaction:** Ensure that satisfied, excited geotourists bring new positive vacation stories home and send friends off to engage “the Borrego Springs experience,” thus ensuring continuing and growing tourist demand for Borrego Springs as a fun sustainable destination to visit again and again for longer periods each year.
- VI. **Community involvement:** Base tourism on community resources to the extent possible, encouraging local small businesses and civic groups to build collaborative partnerships to promote and provide a distinctive, authentic visitor experience. Help local businesses develop approaches to tourism that build on the area’s nature, history and culture, including food and drink, artisanry, performance arts, etc.
- VII. **Community benefit and satisfaction:** Encourage micro-to medium-size enterprises and tourism business strategies that emphasize economic and social benefits broadly to Borrego Springs, especially job creation, with clear communication of the destination stewardship policies required to maintain those benefits.
- VIII. **Protection and enhancement of destination appeal:** Encourage businesses to sustain natural habitats, heritage sites, aesthetic appeal, and local culture. Seek profitable and sustainable business models that enhance Borrego Springs. Use persuasion, incentives, and regulatory enforcement by San Diego County, the Borrego Water District and State/Federal regulators, as needed.
- IX. **Land use:** Encourage development that retains a diversity of natural and scenic environments and ensures continued resident and visitor access to the natural desert environment of the Park.
- X. **Conservation of resources:** Encourage businesses to focus on smart water and energy consumption, progressive solid waste and water treatment strategies, and minimize landscaping impacts and nighttime environment impacts. Advertise these measures in a way that attracts the large, environmentally sympathetic tourist

market.

- XI. Planning:** Effectively communicate, vision, and plan as a community to appropriately recognize and respect immediate economic needs without sacrificing long-term character and the geotourism potential of Borrego Springs as a sustainable destination. Strive to diversify the economy so as to enhance the special ambiance and culture that attracts residents and visitors to Borrego Springs.
- XII. Interactive interpretation:** Engage visitors and residents in learning about the place. Encourage residents to show off their natural and cultural heritage, so that tourists gain a richer experience and residents develop pride in their locales.
- XIII. Evaluation:** Establish an evaluation process to be conducted on a regular basis by an independent panel representing all stakeholder interests, and publicize evaluation results so as to guide the Stewardship Council in the successful execution of its mission.

DRAFT V-6, JUL

Cameron Brothers Construction Co., L.P.



10580 PROSPECT AVE., SUITE 200 • SANTEE, CA 92071
PHONE (619) 562-3050 FAX (619) 562-3055

August 5, 2014

Mr. Jerry Rolwing
General Manager
Borrego Water District
P.O. Box 1870
Borrego Springs CA 92004

RE: First Amendment to Lease Agreement

Dear Mr. Rolwing:

Enclosed are two signed copies of the First Amendment to Lease Agreement between Cameron Brothers Construction Co., L.P. and Borrego Water District dated November 1, 2011.

Please sign and return one copy to us, retaining the other copy for your files.

Sincerely,

CAMERON BROTHERS CONSTRUCTION CO., L.P.

Waneta Lee, Vice President

:nl

FIRST AMENDMENT TO LEASE AGREEMENT

THIS FIRST AMENDMENT TO THE LEASE AGREEMENT (the "Lease"), is made and executed this 5th day of August 2014 by and between CAMERON BROTHERS CONSTRUCTION CO., L.P., a California Limited Partnership (the "Landlord") and BORREGO WATER DISTRICT, a public corporation, organized and existing under Division 13 of the Water Code of the State of California and having the powers conferred by the Community Service District Law (the "CSDL") (the "Tenant"). Landlord and Tenant are sometimes referred to herein collectively as the "Parties" and individually as a "Party."

WHEREAS, the Landlord and Tenant are parties to a Lease Agreement dated November 1, 2011 with respect to certain real property situated within the jurisdictional boundaries of the Borrego Water District in the State of California; and

WHEREAS, the Lease is not currently binding upon the Parties' successors; and

WHEREAS, based on changed circumstances following the execution of the Lease Agreement, the Parties now seek to amend the Lease Agreement to add such a provision;

NOW THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto agree to amend the Lease Agreement as follows:

1. Section 12 of the Lease is restated to read as follows:
 12. Assignment, Subletting And Successors. Tenant shall not assign this Lease or any interest therein, nor sublicense or sublet the Premises or any part thereof, without the prior written consent of Landlord. Notwithstanding the foregoing, the Tenant may contract with a third party to operate, improve and/or maintain the Premises, which contract shall not require any prior or further notice, approval or consent. The terms and conditions, covenants, and agreements set forth herein shall apply to and bind the heirs, executors, administrators, assigns and successors of the parties hereto.
2. All other terms and conditions set forth in the Lease Agreement shall continue in full force and effect.
3. Delivery of a signed copy of this First Amendment to the Lease Agreement by e-mail or facsimile shall be legal execution and delivery of the Agreement by the signing party.

LANDLORD: CAMERON BROTHERS CONSTRUCTION CO., L.P.,
a California Limited Partnership

Dated: 8/5/14

By: [Signature]
WANETA LEE

Title: VICE PRESIDENT
WILLIAM CAMERON FAMILY MANAGEMENT
CO., INC., GENERAL PARTNER

TENANT: BORREGO WATER DISTRICT, a public corporation

Dated: _____

By: _____

Title: _____

Scope of Work

The following sections outline the tasks to complete a Water and Wastewater Utility Rate Study (Study) to ensure financial sufficiency for the operations and capital costs of the water and wastewater enterprises, and to ameliorate the District's long-term financial sustainability.

Task 1 – Kick-Off and Data Collection

The kick-off conference call provides a solid foundation for the project and ensures that project participants are in mutual agreement as to the project's approach, work plan, schedule, and the District's priorities. As part of the meeting, RFC will discuss the District's current rates, identify any new customer classes that may be considered as part of update, work with staff to identify and prioritize pricing objectives, develop a framework for the proposed new rate structure, and evaluate the various policy options available for meeting the District's goals and objectives.

The District will provide RFC in a timely manner the data required to conduct the Study for both water and wastewater enterprises as indicated below, preferably in electronic format (Ms Word, Excel or pdf). Several conference calls might be required to discuss and confirm the received data.

Data request list:

1. Financial statements for the last two fiscal years;
2. Debt service schedules;
3. Detailed operating budgets for the past two fiscal years;
4. current water and wastewater rates;
5. Number of water accounts by customer classes and meter sizes for fiscal year end 2013 & 2014;
6. Number of wastewater accounts by customer classes for fiscal year end 2013 & 2014;
7. Total billed water consumption by Tiers for the past two fiscal years;
8. Total wastewater flows by customer classes for the past two fiscal years;
9. Monthly water consumption for each customer for the past two fiscal years with
 - Customer Unique ID, Customer Class, Meter Size, Improvement District Zone
 - Monthly Consumption and Associated Billing Days (or Days of Service)
10. Monthly total water pumped / produced and wastewater treated for each of the previous two fiscal years;
11. Capital Improvement Projects for water and wastewater systems including:
 - Project descriptions
 - Annual project cost, including studies, design, and construction costs
 - Any notes related to priority, importance and timeline of the projects
12. Master Plan for water and wastewater systems, if available.

Meeting(s)/Conference(s): (2) Conference Calls with District Staff to review and collect data

Deliverable(s): Data request list and framework memorandum

Task 2 – Financial Plan Model Development

This task will include the projections of budget items for water, contracted wastewater (ID 2) and wastewater services within ID 1 and ID 5, including annual costs related to the collection system, labor, power, materials, capital expenditures, operating and maintenance (O&M) expenses, reserve contributions, depreciation and debt service, using assumptions based on different economic factors and growth trends.

RFC will develop a forecast of revenue requirements for the next 10-year planning period for water ID 2 and, ID 1 and 5 combined. This will include an estimate of revenues based on current rates, growth in customers and fee levels, as well as other revenues generated from surcharges and other non-operating revenues. Revenue requirements will be projected over the study period considering the current budget, different CIP scenarios, the utilities' existing debt service, other obligations, and current economic trends. RFC will identify funding needs and develop financing options for capital projects over the long planning horizon allowing the District to make timely adjustments to expenses, reserve balances, or the timing of capital projects to smooth rate impacts and maintain financial sustainability and sufficiency. In addition, the financial model will have the ability to examine the financial consequences of different CIP scenarios and cost saving mechanisms in order to help the District to make informed decisions.

RFC will conduct a cash flow analysis/summary to determine the revenue adjustments needed to meet projected revenue requirements for each year of the planning period. The cash flow worksheet in the Model incorporates revenues generated from different sources, expenses needed to maintain the utilities' systems, any transfers in and out of the working cash fund, as well as the coverage needed to meet current and proposed debt service requirements. RFC will also review reserves policies to recommend appropriate reserves balances, such as operating, capital, rate stabilization, etc., consistent with the District's risk management practices and industry standards.

RFC will conduct one web meeting with District's Staff to review and validate inputs for the Model. Feedback from District Staff will be incorporated into the Model before presenting the District Board in the Workshop in Task 3.

Meeting(s)/Conference(s): (2) web-meetings with District Staff to review and finalize Financial Plans

Deliverable(s): Financial Plan Model in Microsoft Office Excel® 2007

Task 3 – Cost of Service Analysis

The cost of service study will be performed based on industry standards and methodologies approved by the American Water Works Association (AWWA) M1 Rate Manual. Mr. Gaur and Mr. Isaac will collectively ensure that the cost of service allocations focus on service functions, appropriately allocate the cost of service (revenue requirements) to the service functions, determine how those services are used by each customer class, and develop the cost allocation components of the models. Cost allocations among customer classes will likely be based on the AWWA-approved Base-Extra Capacity approach which focuses on the different usage patterns (or peaking factors) demonstrated by each customer class.

Based on the revenue requirements identified in Task 2, the cost of service will be allocated to the various cost components, including capacity-related costs, commodity costs, customer costs, pass through component, and other direct and indirect costs consistent with industry standards. The purpose of this task is to allocate the costs associated with the various costs components of each utility to the various customer classes on the basis of the relative responsibility of each. Costs will be allocated based on the determination of units of service for each customer class and

the application of unit costs of service to the respective units. The result is the total cost responsibility required of each customer class in order to maintain the financial stability of the District’s utilities.

Throughout the cost allocation process, RFC will comply with the District’s policy considerations and procedures, as well as current federal, state, and local rules and regulations such as Proposition 218. Although not a law firm, RFC is very familiar with Proposition 218 requirements and its implications on water and wastewater rates. Our Project Team has extensive experience with Proposition 218 and has conducted conference sessions on the matter.

Meeting(s)/Conference(s): Conference Calls with District Staff to review COS

Deliverable(s): Cost of service analysis for utility service

Task 4 – Utility Rate Model Development

Task 4.1 – Calculate Water and Sewer Utility Rates

RFC will develop a Water and Sewer Rate Model with the flexibility to compare the current rate structure with any proposed new rate structure, such as, conservation based rate for the water utility. The models will also have the capability to examine different options to enhance revenue stability while still balancing competing objectives such as affordability for essential needs and signalling conservation. The baseline rate design will maintain the current revenue percentage split between fixed and variable to determine whether to maintain this split or to compare alternative scenarios to this baseline.

To help communicate with customers about the drivers behind any potential rate increases and the rationale behind the proposed rates, the water rates will have several cost components for each tier including water supply costs, the District’s system costs (delivery costs), and peak costs of capital. An example of this type of structuring is the FY 2010 water rates for El Toro Water City, which are shown in the table below. Water supply rates in tiers 1 (indoor allocation) and 2 (outdoor allocation) are associated with low water supply costs, and tiers 3 (50 percent of total allocation) and 4 are based on the cost expanding the supplemental water supply and conservation programs.

Graphical interface showing tier widths and cost component breakdown

Tiers	Current Rates	Proposed Rates				Total
		Water Supply	Delivery	Conservation	Offset	
Tier 1		\$1.86			(\$0.06)	\$1.80
Tier 2	\$1.89	\$1.86	\$0.34			\$2.20
Tier 3	\$1.89	\$3.80	\$0.34	\$0.24		\$4.38
Tier 4	\$1.89	\$5.70		\$0.24		\$5.94
Uniform Rate	\$1.89	\$1.86	\$0.17			\$2.03

Utilizing the Model, RFC will determine the rates required for each tier to collect the required revenues. **RFC will also build-in the capability to conduct various scenario analyses to address different conservation issues such as loss of water supply and different levels of capital funding.** The Dashboard, which displays key variables and results on-screen in real-time, will facilitate discussion for quick consensus building. This has proven to be particularly useful when making presentations to elected officials (e.g. District Board), allowing them to fully appreciate the impacts of their decisions instantly.

Task 4.2 – Perform Customer Impact Analysis

Besides required revenue adjustments, changes to the rate structure itself could also cause “rate shock” to customers. As such, RFC will also determine the potential financial impact on customers that may result from the proposed rate structure. *In our impact analysis graphics we regenerate every bi-monthly bill of each account assuming the new proposed rates were already in place to determine the “true” impact of the new rate structure on District customers.*

The customer impact illustration displayed to the right shows that 64 percent of the customers will see no more than a \$2 increase in their bill.

Meeting(s)/Conference(s): (2) web-meetings with District Staff

Deliverable(s): Draft Water Rate Model in Microsoft Office Excel® 2007 showing calculated proposed rates and customer impact analyses

The overall financial impacts on customers are a tool for stakeholders to make informed decisions regarding different policy options and variables.



TASK 5 – CONNECTION FEES, WATER CREDITS AND MISCELLANEOUS FEE MODEL

TASK 5.1 –Connection Fees and Water Credits

Concurrently with the Utility Rate Studies, RFC will review the District’s current connection fee to determine whether or not updates are required to ensure full cost recover of capital that is necessary to serve growth and if adjustments should be made to the fee methodology. In addition to connection fees, RFC will also review the current rationale of assigning water credits to certain properties that are moving through development approval.

TASK 5.2 –Miscellaneous Fee Model

RFC will develop a model for the District to update its miscellaneous fees (user fees) that are requested by residents/customers for certain services and activities. The principal goal will be to determine the full cost of the services that are provided which will be structured on a time and materials basis. In addition, RFC will establish a series of additional objectives including:

- Calculate the fully-burdened rates (FBHRs) of employees;
- Enhancing fairness and equity;
- Ensuring compliance with State law; and
- Developing an updatable and comprehensive list of fees.



In order to determine the full cost of service, RFC will first calculate the FBHRs of employees whose duties include request for services, such as, (shut-down activities, backflow devices inspections, water service shut-offs, etc.). FBHRs include salary and benefits, overhead expenses, and materials and supplies. RFC will calculate the FBHR of each District Staff member. FBHRs are one of the primary components in determining the “true” cost of providing services to District customers. RFC will develop a model that the District may use moving forward to determine the true cost of services by using the District time estimates and multiplying them by the FBHR of each employee.

Meeting(s)/Conference(s): Conference calls with District to review development fees, water credits, and user fees

Deliverable(s): User Fee Model in Microsoft Office Excel® 2007 and Memorandum regarding Connection Fees / Water Credits

TASK 6 – FINAL REPORT PREPARATION AND PUBLIC HEARING

TASK 6.1 –DRAFT REPORT PREPARATION

The process for developing the proposed rates will be described in a draft report. This draft report will include an executive summary highlighting the major issues and decisions and an overview of operations, CIP, the financial plan and the final rates resulting from the Study. The discussion on rate structure selection from the report will be presented as a comprehensive section on the rate design assumptions and methodologies used to develop the user-rate calculations and financial planning. Comments from District staff will be incorporated into the Report as appropriate, and the Model will be refined to reflect appropriate issues or concerns raised by stakeholders. The report will be submitted to the District and will include appropriate supporting data from the Model to address the requirements of Proposition 218.

TASK 6.1 –PUBLIC HEARING

RFC will prepare presentation materials and handouts summarizing the methodologies and assumptions used in the Study, key findings and results of the Study along with the proposed rates. Finally, RFC will present and be available to answer any questions at the Public Hearing, at which time, the recommended rates will be considered for adoption.

Meeting(s)/Conference(s): One (1) on-site Public Hearing

Deliverable(s): Presentation materials for Public Hearing

Project Fees

We propose to complete the scope of work outlined above and detailed in the following table on a time and materials basis with a “not-to-exceed” cost of **\$39,994**. The following work plan provides a breakdown of the estimated level of effort required for completing each task described and the hourly billing rates for the personnel scheduled to complete the project.

Utility Rate Cost of Service Study
Proposed Hours & Fees

Task	Task Descriptions	Webinars	Meetings	Hours Requirements				Total Fees & Expenses
				SG	HI	FC	Total	
HOURLY RATES				\$235	\$215	\$180		
1	Kick-Off and Data Collection			1	2	4	7	\$1,455
2	Financial Plan Model Development	2	-	6	15	38	59	\$12,065
3	Cost of Service Analysis			2	4	12	18	\$3,670
4	Utility Rate Model Development	2	-	6	8	24	38	\$7,830
5	Connection Fees, Water Credits And Miscellaneous Fee Model			4	6	12	22	\$4,610
6	Final Report and Public Hearing		1.00	7	14	28	49	\$10,364
TOTAL ESTIMATED MEETINGS / HOURS		4	1	26	49	118	193	
PROFESSIONAL FEES				\$6,110	\$10,535	\$21,240	\$37,885	
Total Fees								\$37,885
Total Expenses								\$2,109
TOTAL FEES & EXPENSES								\$39,994

We are proud of the resources and experience that we may offer the District, and we welcome the opportunity to be of assistance on this engagement. Please do not hesitate to contact me if you have any questions or would like to discuss the scope of services in more detail.

Sanjay Gaur, Senior Manager – 201 S. Lake Avenue, Suite 301, Pasadena, CA 91101 / P: 951.595.354 / E: sgaur@raftelis.com

Sincerely,

RAFTELIS FINANCIAL CONSULTANTS, INC.



Sanjay Gaur
Senior Manager

Scope of Work

Use of Vertical Flow and Chemistry Profiles to Determine Vertical Gradients of Groundwater Quality in Support of Groundwater Management Plan Development, Borrego Valley, CA

Michael T. Wright, Claudia Faunt, and Matthew
Landon
U.S. Geological Survey, California Water Science Center

Problem: Groundwater is virtually the sole source of water supply in Borrego Valley, California (fig. 1). Groundwater in the Borrego Valley basin has been developed for agricultural, recreational and municipal uses. Because there is relatively little groundwater recharge in the basin, pumping for anthropogenic purposes have resulted in a groundwater-level declines (Moyle, 1982; Mitten and others, 1988; Henderson, 2001; and Netto, 2001). The recent development and calibration of a three-dimensional (3D) integrated hydrologic flow model, the Borrego Valley Hydrologic Model (BVHM), indicates that water levels are likely to continue decline in the foreseeable future (Faunt and others, in review). Model simulations indicate that if current (2010) stresses on the groundwater basin are constant over a 50-year period, groundwater-level decline will be > 125 ft in the largely agricultural northern portion of the basin and 25 - 125 ft in middle portion of the basin where the majority of municipal pumpage occurs. In the most drastic, but realistic, management scenario where municipal and recreational pumpage are reduced by 50 percent and agricultural pumpage by 40 percent over a 20-year period, water levels are still predicted to decline 25-50 ft in the northern and middle portions of the basin.

As groundwater levels decline, there is the potential to change the distribution of flow from the underlying aquifers to wells. Lowering the water table in shallow aquifers may draw chemical constituents (e.g. nitrate and totals dissolved solids) from anthropogenic sources present near the water table into a well. Declining water levels also cause a decrease in the saturated thickness of shallow aquifers, which may result in a larger proportion of the groundwater withdrawn from a well flowing from aquifers that are deeper and may have poorer water quality. Groundwater from deeper aquifers is typically is older, has been in contact with aquifer materials longer, and can contain more dissolved chemical constituents (e.g. arsenic and fluoride), resulting in the degradation of the water quality.

To ensure long term dependability of groundwater resources in the Borrego Valley, a groundwater management plan will need to consider how water quality will change over time with corresponding declines in water level. Because the vertical distribution groundwater chemistry will likely vary systematically across the basin and little is known about the vertical stratification of water quality in the Borrego Valley basin, measuring detailed profiles of wellbore flow and water quality in select wells will be important for understanding how the quality of groundwater withdrawn from supply wells may change over time. Data from this analysis, used in conjunction with Borrego Valley Hydrologic Model (BVHM) particle-tracking simulations, will provide groundwater managers with the necessary information on expected timing and changes in groundwater quality accompanying water-level declines to be able to make informed groundwater management decisions.

Objectives: The purpose of this work is to determine the vertical distribution of groundwater flow and chemistry within the perforated intervals of selected wells and to use this data with the particle tracking capabilities of the BVHM to simulate changes in the quality of groundwater withdrawn from supply wells associated with declines in groundwater levels. This analysis will provide for the identification of chemical constituents, if any, which may be of concern for the management of usable groundwater resources in the Borrego Valley basin.

Science Plan:

Detailed data collection, analysis, and modeling of the vertical distribution of groundwater flow and chemistry in three wells will be used to inform groundwater managers on potential issues regarding the management of groundwater quality in the Borrego Valley Basin. The primary analyses proposed are: (1) Examine wellbore flow under ambient (unpumped) conditions to determine if groundwater from different aquifer zones is mixing when wells are not being pumped. (2) Determine wellbore flow under pumping conditions to determine which depths of the aquifer system are contributing water and what the relative contributions are. (3) Determine the vertical distribution of water-quality constituents and isotopic tracers in the aquifer systems being tapped. Based on the vertical distribution of constituents, determine what aquifer zones, if any, have chemical concentrations near, or above, health-based or aesthetic water-quality benchmarks. (4) The BVHM will be used in conjunction with the particle tracking program MODPATH to simulate how concentrations of water quality constituents of interest may change over time in groundwater being tapped by production wells in response to declining water levels.

Task 1: Study Design 2015—

The USGS and the Borrego Water District (BWD) shall consult on selecting three production or other suitable wells for measuring profiles of well-bore flow and water quality. Considerations for selecting wells should include: 1). Areal location of a well in the basin. The selected wells should be located in areas where pumping, and water-level decline, is currently the greatest and is likely to remain so in the near future. 2) The depth of the wells. Open intervals of selected wells should penetrate the aquifer system that is being, or will be being, used for groundwater production. For example a well sampled in the northern portion of the basin likely penetrates the upper and middle aquifers and is important for groundwater extraction for irrigation, whereas in the middle portion of the basin the middle and some cases lower aquifer becomes important for domestic and municipal supply. However, wells that sufficiently penetrate all three aquifers, no matter the areal location, would be the most ideal. 3). Pumping water levels should also be considered since setting the temporary well pump above the uppermost well opening will allow for the most robust analysis of well bore flow and vertical stratification of water quality.

Task 2: Collection and interpretation of well-bore flow and chemistry, three production wells in 2015—

Well Bore Flow: well-bore flow data, including fluid temperature, fluid resistivity, and well-bore flow will be collected from the study wells under unpumped conditions using an electromagnetic (EM) flow meter. Prior to data collection, the thickness of any oil that is used to lubricate well pumps and that is floating on the surface of the water column must be measured and possibly removed, if other operational solutions cannot be devised, to avoid contaminating and/or damaging equipment and possibly biasing the data collected. Under some circumstances, it may be possible to work in wells with floating oil. These conditions will have to be assessed on a site by site basis. Costs for removing oil are not included in this proposal.

The EM flow meter has a large dynamic range capable of measuring both unpumped and pumped flows (Newhouse and others, 2005). Fluid temperature and fluid resistivity sensors embedded within the EM flow meter will be used to confirm measurements of unpumped flow. These data will be used to assess redistribution of water having potentially different quality through wells under unpumped conditions. Wellbore flow data will also be collected under pumped conditions using the EM logging tool. The EM flowmeter is typically able to measure flow more accurately than a spinner-type flowmeter, particularly at low flow rates. The velocity measurements will be collected at several different EM flow meter drop rates to check the calibration of the instrument and evaluate the reproducibility of the velocity profile. The velocity profile will be converted to a volumetric flow rate using the cross-sectional area of the wellbore. The flow rates determined from the EM flow meter will be compared to the flow rates measured on the discharge line of the temporary pump using an acoustic flow meter as an additional quality-assurance step.

A temporary pump will be installed by a pump company contracted through the BWD. The well should be pumped at a rate similar to that which would be used under normal or anticipated groundwater pumping rates used for municipal, agricultural and recreation supply. If the temporary pumping rate is less than the expected pumping rate under normal operating conditions, as long as the induced flow under pumped conditions exceeds ambient flow under un-pumped conditions, the relative contributions of flow and contaminants from different depths is expected to be similar to those measured under normal operating conditions with higher flow rates. The effects of different pumping rates on the system can also be assessed using the groundwater flow modeling analysis (see below). These depth-dependent techniques have been used in many wells throughout California (Izbicki and others, 1998; 2003; 2005a; 2005b; 2006; 2008).

Prior to setting the pump it may be prudent to video log the well casing. A video log will confirm the exact location of well openings and their condition. If well openings are compromised by encrustation then the well could be rehabbed, which would be beneficial for well production and obtaining well-bore flow and vertical water quality data that are representative of the aquifer rather than well-specific conditions. The relative cost would be small compared to the cost of removing the dedicated pump and setting a temporary pump in place. The BWD could contract with a well pump company to have this service completed. The USGS can provide the video logging services if needed and a cost for this service would be provided upon request.

Water-quality sampling: Depth-dependent water samples will be collected from the surface discharge and five selected depths within the well will be analyzed for a wide array of constituents as discussed below, except that age-dating parameters may only be collected from the surface discharge and two depths in the well. The depth-dependent samples will be collected by the USGS by installing 2-inch diameter PVC casing in the well to the target depth of the sample and then lowering a submersible pump (Bennett) suitable for sampling for dissolved gases into the PVC pipe. Because the samples will be collected under pumping conditions with the temporary pump intake above or near the top of the perforated interval, there will be upward flow in the well, similar to typical well operating conditions. Consequently, the sample from each depth integrates the contributions of flow and chemistry from all perforated intervals below the sample point. The concentrations of analytes in the aquifer in each depth interval between sampling depths is calculated from the wellbore flow data and measured concentrations in depth-dependent samples using a mixing calculation (Izbicki et al., 1999). Sample depths will be selected based on the flow log. Five sampling depths in the well perforations are planned, which is expected to provide suitable vertical chemical resolution for the perforated intervals of the wells sampled. Samples will be collected and processed by USGS personnel according to the USGS National Field Manual (USGS, variously dated). Sampling equipment will be cleaned before samples are collected at each depth to prevent cross-contamination between

sample points (U.S. Geological Survey, variously dated). Field blanks and replicate samples will be utilized as part of this study to assess the quality of data collection procedures and laboratory results. Approximately 10 percent of the analytical budget within each task has been reserved for quality assurance samples. The nature of samples to be analyzed for quality assurance purposes will vary for each constituent and laboratory to meet project data quality objectives.

Samples will be analyzed for major and minor ions, selected trace elements, and nutrients (table 1) at the USGS National Water Quality Laboratory, Denver, CO. Samples will also be analyzed for the following:

- 1) Field parameters, including dissolved oxygen, specific conductance, pH, and water temperature using calibrated instruments in a flow-through chamber, and hydrogen sulfide using portable instruments, at the well site during well purging;
- 2) Delta oxygen-18 and delta deuterium isotopic values in water ($\delta^{18}\text{O}$ and δD , respectively), to determine the source of groundwater (local recharge versus agricultural return) and also be used in conjunction with age dating tracers to indicate time period of recharge. These samples will be analyzed at the USGS stable isotope laboratory (RSIL) in Reston, VA (table 2);
- 3) $\delta^{18}\text{O}$ and nitrogen-15 ($\delta^{15}\text{N}$) isotopic values of dissolved nitrate (table 2), used to determine sources of nitrate such as from fertilizers used for agricultural versus septic return water. These samples will also be analyzed at USGS RSIL;
- 4) Radiological analysis for gross alpha and beta radiation (table 3) will be done because recent analysis of water quality data in the basin has shown that gross alpha radiation exceeded the California MCL in two wells (10S/05E-36A1 and 10S/6E-15D4S) located in different parts of the Borrego Valley basin (fig.1). These samples will be analyzed at Test America Laboratory which has a contract through the USGS NWQL;
- 5) Groundwater age-dating tracers, tritium (recent recharge), and carbon-14 (old water), to determine the time-since recharge of recent (less than 50 years) and older (greater than 50 to more than 20,000 years before present) groundwater, respectively (table 2); Tritium samples will be analyzed at either the USGS Menlo Park Tritium Laboratory or the University of Miami (UOM) which contracts through the USGS NWQL. Because the Menlo Park laboratory currently has a large backlog of samples, using the UOM laboratory may be necessary to get the results in a timely fashion. Carbon-14 samples will be analyzed at the Woods Hole Oceanographic Institute located in Woods Hole, MA.

Task 3: Model simulation using the BVHM and Modpath particle tracking

Once the vertical stratification of well-bore flow and water quality are known, the BVHM (Faunt and others, in review) can be used to help predict how water quality may change in the basin in response to declining water levels. This task would be done using output from the model coupled with MODPATH particle-tracking software. The flowpaths of groundwater having specified water-quality parameters of interest based on measured data can be tracked (forward or backward) between aquifer zones of origin and well screens with MODPATH. These MODPATH simulations can be used to estimate water-quality conditions being contributed to groundwater withdrawn from supply wells from each of the different aquifer zones, based on the measured well-bore flow and depth-dependent water-quality profiles. By analyzing the distribution of chemical concentrations associated with particles coming from different parts of the aquifer that are withdrawn by pumping wells, and how the particle concentration distributions

change over time as water levels change, the simulations can be used to understand how changes in groundwater levels and groundwater source zones will affect the quality of water withdrawn from wells.

Task 4: Reporting

Study results will be presented to the BWD in interim presentations or written communications as necessary to inform decisions on groundwater management with respect to water quality in the Borrego Valley Basin. Final results of the study will be described in a USGS report series fact sheet. Data from the project will be publically available in the U.S. Geological Survey's on-line data base NWIS-Web (<http://waterdata.usgs.gov/nwis>) and will also be made available on the USGS's Borrego Valley project website (U.S. Geological Survey, in review) that was recently developed for the BWD by the USGS.

Budget: The costs for the project, by task, are shown in the following table, along with a breakdown by major expense category. For studies done with non-federal public agencies, the U.S. Geological Survey has Federal Matching Funds (FMF) to share costs for certain expenses, such as labor and travel, to a maximum of 25 percent of the cost for that expense. These FMF cannot be used to match funds from private entities.

Task	Work	Year	BWD Funds	USGS Federal Matching Funds	Total
1	Study Design	FFY15 ¹			
	Labor		\$7,200	\$2,400	\$9,600
2	Well Bore Flow and Sample Collection	FFY15 ¹			
	Labor		\$43,500	\$14,500	\$58,000
	Travel, vehicles, shipping		\$16,300	\$5,250	\$21,550
	Equipment, supplies, equipment rental		\$31,500	\$3,750	\$35,250
	Laboratory analyses		\$33,700	\$0	\$33,700
	Subtotal		\$125,000	\$23,500	\$148,500
3	Modeling	FFY15 ¹			
	Labor		\$12,375	\$4,125	\$16,500
4	Reporting	FFY16 ²			
	Labor		\$37,125	\$12,375	\$49,500
	Total		\$181,700	\$42,400	\$224,100

¹Federal Fiscal Year 2015 (Oct 1, 2014 - Sept. 30, 2015)

²Federal Fiscal Year 2016 (Oct 1, 2015 - Sept. 30, 2016)

Work Plan: Tasks 1, 2 and 3 will be conducted during Federal Fiscal Year (FFY) 2015 (October 1, 2014 – September 30, 2015). Task 4 is planned for FFY2016 (October 1, 2015 – September 30, 2016), after well bore flow logs, depth dependent water quality and modeling data has been collected.

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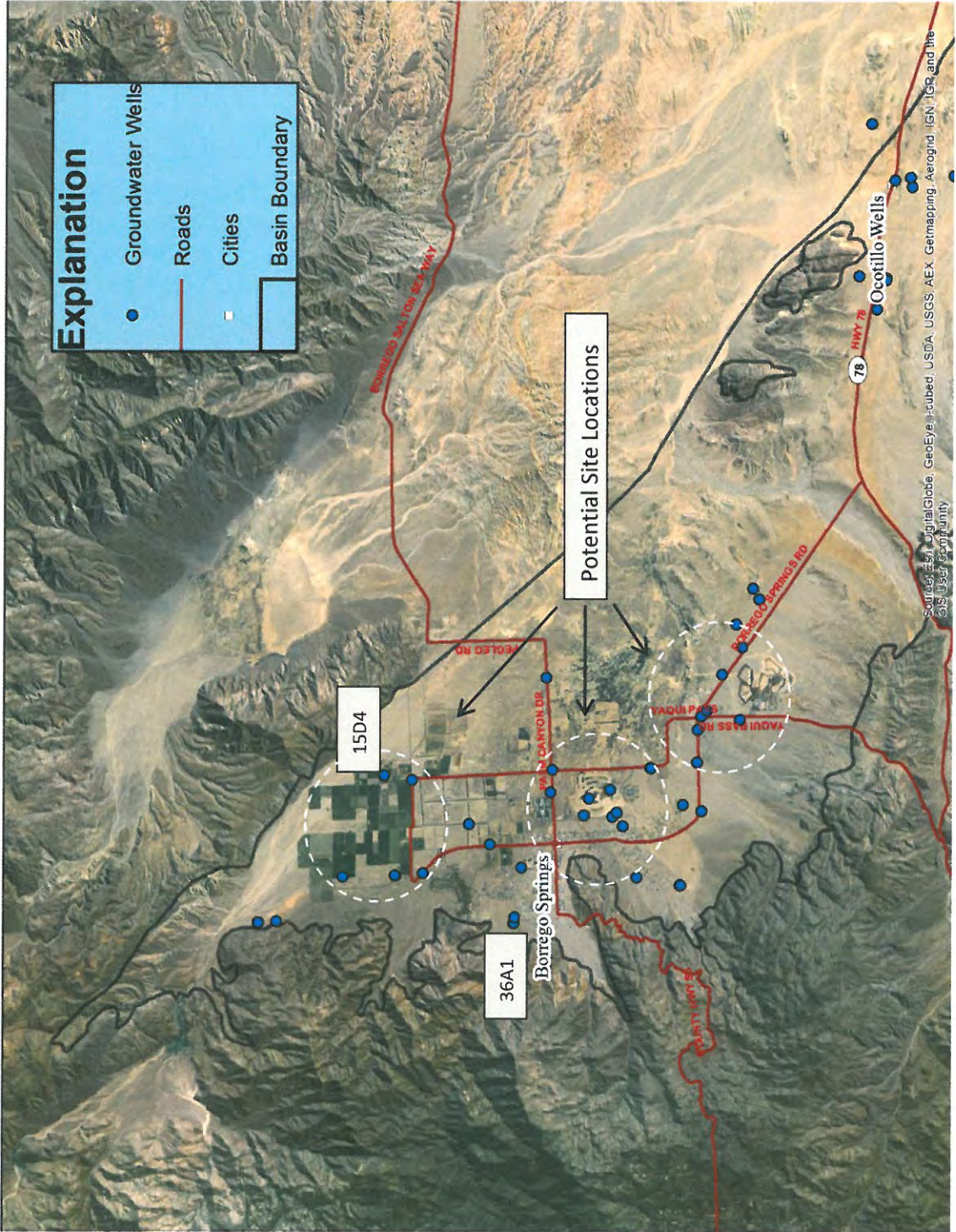


Figure 1. Groundwater wells and potential areas for selecting sites for well bore flow and water chemistry sampling in the Borrego Valley basin.

Table 1. Major and minor ions, trace elements, and nutrients to be measured at selected wells, Borrego Valley, CA.

[milligrams per liter, mg/L; micrograms per liter, µg/L; uS/cm, microsiemen per centimeter; CAS, Chemical Abstracting Service; na, not available]

Constituent ¹	USGS parameter code	CAS number	Reporting level	Reporting units
Alkalinity, laboratory	29801	471-34-1	4.6	mg/L
Aluminum	01106	7429-90-5	2.2	ug/L
Arsenic	01000	7440-38-2	0.10	ug/L
Barium	01005	7440-39-3	0.3	ug/L
Boron	01020	7440-42-8	2.0	ug/L
Bromide	71870	24959-67-9	0.03	mg/L
Calcium	00915	7440-70-2	0.022	mg/L
Chloride	00940	16887-00-6	0.02	mg/L
Chromium	01030	7440-47-3	0.3	ug/
Fluoride	00950	16984-48-8	0.01	mg/L
Iodide	71865	7553-56-2	0.001	mg/L
Iron	01046	7439-89-6	4.0	ug/L
Lithium	01130	7439-93-2	0.1	ug/L
Magnesium	00925	7439-95-4	0.011	mg/L
Manganese	01056	7439-96-5	0.20	ug/L
pH, laboratory	00403	na	0.1	pH
Potassium	00935	7440-09-7	0.03	mg/L
Total Dissolved Solids	70300	na	20	mg/L
Silica	00955	7631-86-9	0.018	mg/L
Sodium	00930	7440-23-5	0.06	mg/L
Specific conductance, laboratory	90095	na	5	uS/cm
Strontium	01080	7440-24-6	0.2	ug/L
Sulfate	00945	14808-79-8	0.02	mg/L
Uranium	22703	7440-61-1	0.014	ug/L
Vanadium	01085	7440-62-2	0.08	ug/L
Nitrogen, nitrite + nitrate	00631	na	0.04	mg/L
Nitrogen, nitrite	00613	14797-65-0	0.001	mg/L

¹U. S. Geological Survey National Water Quality Laboratory, Denver, Colorado

Table 2. Isotopes, groundwater age tracers and reporting information for laboratory analyses.

[The five-digit USGS parameter code is used to uniquely identify a specific constituent or property. Elements: H, hydrogen; O, oxygen; C, carbon; N, nitrogen; Other abbreviations: CAS, Chemical Abstract Service; na, not available; pmc, percent modern carbon; pCi/L, picocuries per liter]

Constituent	USGS parameter code	CAS number	Method Uncertainty	Reporting units
Isotope ratios				
$\delta^2\text{H}$ in water ¹	82082	na	2	per mil
$\delta^{18}\text{O}$ in water ¹	82085	na	0.2	per mil
$\delta^{15}\text{N}$ in nitrate ¹	82690	na	0.2	per mil
$\delta^{18}\text{O}$ in nitrate ¹	63041	na	0.2	per mil
$\delta^{13}\text{C}$ in dissolved inorganic carbon ²	82081	na	0.05	per mil
Age Tracers				
Tritium ³	7000	10028-17-8	1	pCi/L
Carbon-14 ²	49933	14762-75-5	0.0015	pmc
Carbon-14, counting error ²	49934	na	na	pmc

¹ USGS Reston Stable Isotope Laboratory, Reston, Virginia (USGS-RSIL)

² Woods Hole Oceanographic Institute, National Ocean Sciences Accelerator Mass Spectrometry Facility, Woods Hole, Massachusetts

³ USGS Isotope Tracer Laboratory, Menlo Park, California or University of Miami, Miami, Florida

Table 3. Gross alpha and beta radiation to be measured at selected wells, Borrego Valley, CA. [pCi/L, picocuries per liter; CAS, Chemical Abstracting Service]

Constituent ¹	USGS parameter code	CAS number	Reporting level	Reporting units
Gross-alpha radioactivity, 72/hr	62636	12587-46-1	3	pCi/L
Gross-alpha radioactivity, 30/day	62639	12587-46-1	3	pCi/L
Gross-beta radioactivity, 72/hr	62642	12587-47-2	4	pCi/L
Gross-beta radioactivity, 30/day	62645	12587-47-2	4	pCi/L

¹ Test America Laboratories, Richland, WA

The Springs, LLC
PO Box 70
Borrego Springs, CA 92004

August 25, 2014

Borrego Water District
Jerry Rolwing, General Manager

Re: Fallowing Plan

Jerry,

We are moving ahead with the fallowing of Rancho La Curva. This is the 27 acres of lemons located at 550 Henderson Canyon Road, Assessor's parcel No. 140-110-18-00.

The trees will be pushed by bulldozer, then ground up on site. Some of the material will be removed for co-generation fuel, but adequate organic material (chips and leaves) will be left on site to inhibit wind erosion and facilitate natural re-vegetation.

Please call me anytime if you have questions or need further information.

Dan Wright
General Manager
206-948-8268

Center Pivot Palm Grove Fallowing Plan**Parcels: 141-210-04, 141-210-05****Objective(s):**

- Clear land of current plant material located in Blocks A-C, Blocks E-F and Block G
- Stabilize remaining land surfaces with mulched material

1. Timeline

September, 2014 – March, 2016

- a. Shut down flood irrigation to blocks A, B & C.
- b. Remove material from D, E & F

March, 2016 – September, 2016

- a. Cap center pivot well
- b. Remove pivot arm
- c. Remove irrigation
- d. Push remaining material flat
- e. Grind and mulch

2. Land Stabilization

- a. Stabilize the loose soil on property following removal of plants
 - Coverage of land / loose soil with a thin layer (2-3 inches) of mulch to stabilize erodible areas and aid in dust abatement

