



JOSHUA BASIN WATER DISTRICT  
 REGULAR MEETING OF THE CITIZENS ADVISORY COMMITTEE  
 TUESDAY, MAY 14, 2019, AT 6:00 PM  
 61750 CHOLLITA ROAD, JOSHUA TREE, CA 92252

AGENDA

1. CALL TO ORDER
2. PLEDGE OF ALLEGIANCE
3. DETERMINATION OF QUORUM
4. APPROVAL OF AGENDA
5. PUBLIC COMMENTS  
 This public comment portion of this agenda provides an opportunity for the public to address the Committee on items not listed on the agenda that *are of interest to the public at large* and are within the subject matter jurisdiction of this Committee. The Committee is prohibited by law from taking action on matters discussed that are not on the agenda, and no adverse conclusions should be drawn if the Committee does not respond to public comments at this time.
6. CONSENT CALENDAR
  - Approve draft minutes of the Regular CAC meeting of March 12, 2019
7. ORDINANCE NO. 19-10 REDISTRICTING – Receive for information only.
8. CONTRACTING WITH TERRA VERDE ENERGY TO CONDUCT THE NEXT PHASE OF SOLAR FEASIBILITY STUDY – Receive for information only.
9. WELL 14 UPDATE – Receive for information only.
10. CIRP UPDATES – Receive for information only.
11. GENERAL MANAGER REPORT – GM Sauer
12. CONFIRM DATE FOR NEXT CITIZENS ADVISORY COMMITTEE MEETING
  - July 9, 2019, at 6:00 p.m.
13. ADJOURNMENT

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INFORMATION: State your name and have your information prepared and be ready to provide your comments to the Committee. The District is interested and appreciates your comments. A 3-minute time limit will be imposed. Thank you.

Any person with a disability who requires accommodation in order to participate in this meeting should telephone Joshua Basin Water District at (760) 366-8438, at least 48 hours prior to the meeting to make a request for a disability-related accommodation.

JOSHUA BASIN WATER DISTRICT  
Minutes of the  
CITIZENS ADVISORY COMMITTEE  
Tuesday, March 12, 2019  
61750 Chhollita Road, Joshua Tree, CA 92252

**CALL TO ORDER/PLEDGE OF ALLEGIANCE**—Meeting was called to order at 6:00 PM.

**DETERMINATION OF A QUORUM** —

*Present:* Karen Tracy, Karen Morton, Tom Kayne, Shari Long, Jeff Dongvillo, Gayle Austin

*Absent:* *Karyn Sernka*

**STAFF PRESENT**— GM Curt Sauer, AGM of Operations Mark Ban

**GUESTS PRESENT**— Director Luckman, PIO Consultant Kathleen Radnich, Tom Floen

**APPROVAL OF AGENDA**—

Jeff Dongvillo motioned to approve the agenda. Tom Kayne seconded.

MSC (Dongvillo/Kayne) motion carried.

**PUBLIC COMMENT**— None

**CONSENT CALENDAR**—

- Approve draft minutes of the Reguar CAC meeting of January 15, 2019

Tom Kayne motioned to approve the minutes WITH CORRECTIONS: Shari Long's name to be corrected (from "Sheri and Sherri" to "Shari", and Gayle Austin's name be correct from "Gail" to "Gayle".) Karen Tracy also requested that attendance (under Quorum) be restated to clarify who was present vs. absent.

Tom Kayne motioned to approve the agenda. Jeff Dongvillo seconded.

MSC (Kayne/Dongvillo) motion carried.

**EMPLOYEE RECOGNITION AND AWARDS PROGRAM**—GM Sauer explained the Employee Recognition and Awards Program he will be bringing to the Board of Directors on Wednesday. There will be a line item in the budget (\$5,000 proposed.) This amount does not have to be spent, just be made available. Some awards may only be time off or recognition. He plans to implement the program shortly after approved. The committee received this report as information only.

**LOW-INCOME ASSISTANCE PROGRAM AND FUTURE RECOMMENDATIONS**— GM Sauer gave a status report of assistance given to date. Radnich shared outreach efforts. Barely 50% of funds allocated have been awarded. The Committee discussed how to improve the factor of participation. No concensus was reached. GM Sauer asked the Committee to think about the recommendations for the future of the program in the remaining months ahead. Jeff Dongvillo offered to take flyers to the Copper Mt. Mesa's food give away event. The Committee received this report as information only.

**SOLAR PROGRAM UPDATE—** GM Sauer updated the Committee on the potential solar program the District is considering. Director Hund is heading the project at the Board level. Preliminary findings are that the District needs 3.5-7.5 acres of land (minimum) for this project. GM Sauer believes 10-20 acres is more realistic if expansion is factored in. The Committee received this report as information only.

**GENERAL MANAGER'S REPORT—**GM Sauer gave updates on the following:

- Well 14—(update given by AGM Mark Ban) Solutions will be going before the Board at the next meeting. The well is still off line. A process called, "Four Log" will be the last effort made to bring the well back on line and may cost \$200,000-\$300,000.
- New meters—the Board voted to replace our old meters with new ones, but they will not be the smart meters that require towers and send digital messages. We will still need a field service "meter reader" with the new meters. The District will realize a \$1,000,000 savings using these meters than what was budgeted for initially.
- The last two CIRP equipment vehicles are the trucks. They will be arriving tomorrow.
- An update was given on the four proposed development projects facing Joshua Tree. GM Sauer only had new information on the trailer camp, noting that it will require a package treatment plant that we would oversee/operate.
- Other Information—(given by K. Radnich) The newly reorganized MAC may reconvene the 2nd Monday in April (or May, at the latest.) JBWD will be giving an overview of our water situation in JT as an informative presentation to the public. She also reminded the Committee about Water Education Day coming March 31st, Sunday.

**CONFIRM DATE FOR NEXT CITIZENS ADVISORY COMMITTEE MEETING—**

- May 14, 2019 at 6:00 P.M.

**ADJOURNMENT—**

Karen Morton motioned to adjourn the meeting at 7:15 P.M. Jeff Dongvillo seconded. MSC (Morton/Dongvillo) motion carried.

Respectfully,

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Curt Sauer, General Manager

## JOSHUA BASIN WATER DISTRICT

### AGENDA REPORT

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**DATE:** MAY 1, 2019

**TO:** GENERAL MANAGER/BOARD OF DIRECTORS

**FROM:** SPECIAL COUNSEL, JENNIFER FARRELL (RUTAN & TUCKER LLP)

**SUBJECT:** SECOND READING AND ADOPTION OF ORDINANCE ESTABLISHING DISTRICT BASED ELECTIONS

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#### **RECOMMENDED ACTION:**

It is recommended that the Board hold a second reading and adopt an Ordinance of the Board of Directors of the Joshua Basin Water District Establishing and Implementing District Based Elections (Attachment F).

#### **BACKGROUND:**

On December 21, 2018, the District received a letter from Kevin Shenkman, an attorney of the law firm of Shenkman & Hughes threatening to sue the District for alleged violations of the California Voting Rights Act ("CVRA") (Elec. Code §§ 14025-14032) unless the District voluntarily converts to a district-based election system. The CVRA only applies to jurisdictions, like the Joshua Basin Water District, that utilize an at-large election method, where voters of the entire jurisdiction elect each of the members of the Board. Similar letters have been served and lawsuits have been filed in recent years against dozens of cities and other public agencies for alleged CVRA violations, including many nearby cities. Every public agency defendant in the history of the CVRA that has challenged the conversion to district elections has either lost in court or settled/agreed to implement district elections, and been forced to pay at least some portion of the plaintiffs' attorneys' fees and costs. A copy of Mr. Shenkman's letter is attached to this staff report (Attachment A).

The threshold to establish liability under the CVRA is extremely low, and prevailing CVRA plaintiffs are guaranteed to recover their attorneys' fees and costs. As a result, every government defendant in the history of the CVRA that has challenged the conversion to district elections has either lost in court or settled/agreed to implement district elections, and been forced to pay at least some portion of the plaintiffs' attorneys' fees and costs.

Several cities that have extensively litigated CVRA cases have been eventually forced to pay multi-million dollar fee awards.

In order to avoid the potentially significant litigation expenses that are likely to occur if the District retains its at-large election method of election, at the District's February 6, 2019 hearing, the Board adopted Resolution No. 19-994 outlining its intention to transition from at-large to district-based elections, pursuant to Elections Code section 10010(e)(3)(A). (Attachment B.) As stated in that Resolution, the Board took that action in furtherance of the purposes of the CVRA. Pursuant to Elections Code section 10010(a)(1), the Board must now hold two public hearings within a thirty day period (before drawing any draft maps of proposed voting districts) in order to receive public input regarding the composition of the districts. The first public hearing was held on March 13, 2019. The second public hearing was held on March 20, 2019, and the third public hearing was held on April 3, 2019. The fourth public hearing was held on April 10, 2019. This is the fifth hearing.

## DISCUSSION:

- **The California Voting Rights Act**

The CVRA was specifically enacted in 2002 to eliminate several key burden of proof requirements that exist under the federal Voting Rights Act of 1965 ("FVRA") (52 U.S.C. § 10301 *et seq.*) after several jurisdictions in California successfully defended themselves in litigation brought under the FVRA. The intent of the legislature was to facilitate private suits that ultimately force public entities to shift from "at-large" to "district-based" elections.

Specifically, the CVRA removes two elements that must be met in order to establish a violation under the FVRA: (1) the "geographically compact" FVRA precondition (e.g., can a majority-minority district be drawn?), and; (2) the "totality of the circumstances" or "reasonableness" test, whereby the defendant can defeat a lawsuit by demonstrating that certain voting trends – such as racially polarized voting – occur for reasons other than race, or that minority voters are still able to elect their candidate of choice. Under the CVRA, the only "element" a plaintiff must establish is that racially polarized voting occurs in a jurisdiction with at-large elections, without regard for why it might exist. (Elec. Code § 14028.) Despite its removal of key safeguards contained in the FVRA, California courts have held that the CVRA is constitutional. (See, *Sanchez v. City of Modesto* (2006) 145 Cal.App.4th 660.)

Most recently, on February 23, 2018, the U.S. District Court for the Southern District of California dismissed a lawsuit challenging the constitutionality of the CVRA and of the City of Poway's adopted district map. The lawsuit was initiated by the former mayor of Poway, Don Higginson, who alleged that the CVRA and Poway's by district map adopted pursuant thereto violate the equal protection clause of the U.S. Constitution. Higginson sought an order declaring both the CVRA and Poway's map unconstitutional and enjoining their enforcement and use. The Court not only denied Higginson's motion for a preliminary injunction, but also dismissed the case in its entirety based on lack of

standing. (See *Higginson v. Becerra, et al.* (Feb. 23, 2018, No. 17cv2032-WQH-JLB) \_\_\_ F.Supp.\_\_\_.)

Over the relatively short history of the CVRA, plaintiff public agencies have paid over \$15 million to CVRA plaintiff attorneys, including a recent settlement in West Covina for \$220,000. (See Table of Results of CVRA Litigation (Attachment C).) The City of Modesto, which challenged the CVRA's constitutionality, ultimately paid \$3 million to the plaintiffs' attorneys, and the cities of Palmdale and Anaheim, who also aggressively litigated CVRA claims, ultimately paid \$4.5 million and \$1.2 million in attorneys' fees, respectively. These figures do not include the tens of millions of dollars government agency defendants have spent on their own attorneys and associated defense costs. All of the above cities – like all other CVRA defendants – ultimately ended up converting to district elections.

Recognizing the heavy financial burden at-large jurisdictions are now facing, in 2016, the California Legislature amended the Elections Code to simplify the process of converting to district-based elections to provide a “safe harbor” process designed to protect agencies from litigation. (Elec. Code § 10010(e)(3).) If a public entity receives a demand letter, such as the Shenkman letter here, the public entity is given 45 days of protection from litigation to assess its situation. If within that 45 days, the public entity adopts a resolution declaring the Council or Board's intent to transition from at-large to district-based elections, the potential plaintiff is prohibited from filing a CVRA action for an additional 90 day period, during which time the process outlined below must occur. (Elec. Code § 10010(e)(3).)

- **Process For Switching To By-District Elections**

In order to avoid the significant litigation expenses that are likely to occur if the District retains its at-large election method of election, at the Board's February 6, 2019 hearing, the Council adopted Resolution No. 19-994 outlining its intention to transition from at-large to by-district elections, pursuant to Elections Code section 10010(e)(3)(A). (Attachment B.) As a result, no potential plaintiff can file a CVRA lawsuit against the District before May 7, 2019.

Now that the District has adopted a resolution of intent, the first step in the process in the District's conversion from its current at-large method of election to a district-based system is to hold two public hearings to receive public comment regarding the composition of the yet to be formed voting districts. (Elec. Code § 10010(a)(1).) The first public hearing was held on March 13, 2019. The second public hearing was held on March 20, 2019, and the third public hearing was held on April 3, 2019. The fourth public hearing was held on April 10, 2019. This is the fifth hearing.

Based in part on input received at these hearings, the District's districting consultant, National Demographics Corporation (“NDC”), drew several proposed voting district maps. (Attachment E.)

At the Board's previous April 3 and April 10, 2019 meetings, both the Board and the public expressed their desire to proceed with adopting Map 103. If, after conducting the public hearing tonight, the Board still desires to proceed with the adoption of Map 103, it is suggested that the Board continue with the second reading and adoption of an Ordinance of the Board of Directors of the Joshua Basin Water District Establishing and Implementing District Based Elections (Attachment F). If the Board proceeds with the second reading of the Ordinance tonight, the Ordinance will become effective on May 17, 2019.

- **Criteria to be Considered**

While all public input concerning the composition of the District's yet to be formed voting districts should be considered, there are several mandatory criteria that the District will have to comply with when the actual districts are created:

1. Population equality across districts. (Elec. Code § 21601; Gov. Code § 34884 ["The districts shall be as nearly equal in population as may be."].)
2. Race cannot be the "predominant" factor or criteria when drawing districts. (*Shaw v. Reno* (1993) 509 U.S. 630; *Miller v. Johnson* (1995) 515 U.S. 900.)
3. Compliance with the FVRA, which, among other things, prohibits districts that dilute minority voting rights, and encourages a majority-minority district if the minority group is sufficient large and such a district can be drawn without race being the predominant factor. (See, *Bartlett v. Strickland* (2009) 556 U.S. 1.)

Additionally, pursuant to Elections Code section 21601 and Government Code section 34884, the Board *may* consider the following factors when establishing districts (which are not exclusive): (a) topography, (b) geography, (c) cohesiveness, contiguity, integrity, and compactness of territory, and (d) community of interests. The Board may also plan for future growth, avoid head-to-head contests between incumbents (to the extent possible), consider boundaries of other political subdivisions, and consider physical/visual geographical and topographical features (natural and man-made). The Board may choose to include some, all or none of these criteria, or may choose to come up with unique criteria that Board believes is applicable to the District. In addition, members of the community may suggest additional or alternative criteria that the Board may want to consider.

- **Permissible Forms of By District Government**

In addition to the above criteria, the District has several options when it comes to the number of districts permitted. A public entity may adopt an ordinance that requires the members of the legislative body to be elected in five, seven, or nine districts (Gov. Code § 34871(a)); or in four, six, or eight districts, with an elective mayor/president (Gov. Code § 34871(c)). Thus, the District should consider (in conjunction with NDC) the number of districts to be established.

Although permitted by Government Code 34871(c), there is an open legal question as to whether a public entity that adopts a district-based method of election but establishes a separately elected at-large mayoral/presidential office is insulated from liability under the CVRA. The CVRA defines “at-large method of election” to include any method of election “that combines at-large elections with district-based elections.” (Elec. Code § 14026(a)(3).) This definition could arguably include district elections where the mayor/president is separately elected at large. Only an at-large method of election can violate the CVRA. (Elec. Code § 14027.) Accordingly, while many entities have retained their separately elected mayor when facing a CVRA lawsuit and have not been challenged, there is at least an argument that doing so makes the entire method of election “at-large” for the purposes of CVRA.

**ENVIRONMENTAL ANALYSIS:**

This item is not subject to CEQA review.

**CONCLUSION:**

It is recommended that the Board hold a second reading and adopt an Ordinance of the Board of Directors of the Joshua Basin Water District Establishing and Implementing District Based Elections (Attachment F).

**FISCAL IMPACT:**

There is no fiscal impact associated with holding this public hearing.

The fiscal impact of moving forward with the transition to district elections, including the demographic consultant cost (\$8,500), the District’s anticipated legal fees (\$18,000), and the amount likely to be paid to Shenkman under the CVRA safe harbor provision (\$30,000), is estimated to be approximately \$56,500. Additional legal costs could be incurred for additional analysis and public hearings.

**ALTERNATIVE ACTION:**

The Board could provide other direction.



**ORDINANCE NO. 19-10**

**AN ORDINANCE OF THE BOARD OF DIRECTORS OF  
THE JOSHUA BASIN WATER DISTRICT ESTABLISHING  
AND IMPLEMENTING DISTRICT BASED ELECTIONS  
(ELEC. CODE §§ 10010, 10650)**

**WHEREAS**, the Joshua Basin Water District currently elects its members of the Board of Directors using an at-large method of election where candidates may reside in any part of the District and each member of the Board of Directors is elected by the voters of the entire District; and

**WHEREAS**, while the Board of Directors of the Joshua Basin Water District strongly believes that the interests of all of the District's residents have been fully and fairly represented under the District's current at-large method of election, the Board of Directors nonetheless finds that moving to a by-district method of election is in the best interest of the District and its taxpayers because of the status of State law, and the significant litigation costs that could result if the District does not change its method of election; and

**WHEREAS**, under the provisions of California Elections Code, a District that changes from an at-large Board of Directors method of election to a by-district Board of Directors method of election requires a total of five public hearings, which includes at least two public hearings regarding potential voting district boundaries prior to the release and consideration of any draft voting district maps, two public hearings following the release of draft voting district map(s); and a fifth public hearing for the purpose of adopting an ordinance, that includes district maps, in order to transition to district voting; and

**WHEREAS**, at the regular meeting of the Board of Directors of the Joshua Basin Water District held on the 6<sup>th</sup> of February, 2019, the Directors adopted Resolution No. 19-994 that initiated the process of establishing a district based election system and adopted the schedule therefore; and

**WHEREAS**, at the special and regular meetings of the Board of Directors of the Joshua Basin Water District held on the 13<sup>th</sup> and 20<sup>th</sup> of March, 2019, pursuant to California Elections Code Section 10010(a)(1), the Board of Directors held public hearings where the public was invited to provide input regarding the composition of the District's voting districts before any draft maps were drawn, and the Board of Director of the Joshua Basin Water District considered and discussed the same; and

**WHEREAS**, thereafter, at regular and adjourned regular meetings of the Board of Directors of the Joshua Basin Water District held on the 3<sup>rd</sup> and 10<sup>th</sup> of April, 2019, pursuant to California Elections Code Section 10010(a)(2), the Board of Directors held public hearings where the public was invited to provide input regarding the content of the draft maps that had been released at least seven (7) days before each meeting, and the Board of Directors of the Joshua Basin Water District considered and discussed the same; and

**WHEREAS**, at the regular adjourned meeting of the Board of Directors of the Joshua Basin Water District held on the 10th day of April, 2019, after holding a public hearing on the proposal to establish district boundaries and reviewing additional public input, the Board of Directors introduced this Ordinance for a first reading which formally selects voting district map 103, attached hereto; directs that seats for Districts 3, 4 and 5 will be placed on the District's 2020 ballot; and directs that the seats for Districts 1 and 2 will be placed on the 2022 ballot; and

**WHEREAS**, the purpose of this Ordinance is to enact, pursuant to California Elections Code Sections 10010 and 10650, an Ordinance providing for the election of members of the Board of Directors of the Joshua Basin Water District by-district in five single-member districts as reflected in Exhibit A to this Ordinance, in furtherance of the purposes of the California Voting Rights Act of 2001 (Chapter 1.5 (commencing with Section 14025) of Division 14 of the Elections Code) and to implement the guarantees of Section 7 of Article 1 and of Section of Article II of the California Constitution.

**NOW, THEREFORE**, the Board of Directors of the Joshua Basin Water District does hereby ordain as follows:

**SECTION 1.** The foregoing recitals are true and correct.

**SECTION 2.** Transition to District-Based Elections.

The District hereby finds that it will transition from at-large elections to district-based elections, beginning with its next regular election of the Board of Directors.

**SECTION 3.** Establishment of Districts.

The District hereby establishes five Director Districts within the Joshua Basin Water District. The boundaries and identifying number of each district shall be as depicted on the Joshua Basin 2019 Districting Map No. 103, a copy of which is attached hereto as Exhibit "A," and which shall be maintained on file at the District's office.

**SECTION 4.** Election Process.

A. Members of the Board of Directors shall be elected in the electoral districts established by this Ordinance and subsequently reapportioned as provided for by State Law and Section 7 of this Ordinance. Elections shall take place "by district," meaning that one director shall be elected from each district by the voters of that district alone.

B. No term of any member of the Board of Directors that commenced prior to the effective date of this Ordinance shall be affected by the adoption of this Ordinance.

C. A Director elected or appointed to represent a district must reside in that district and be a registered voter in that district. Any candidate for the Board must reside in and be a registered voter in the district in which he or she seeks election at the time the nomination papers are issued.

D. Notwithstanding any other provision of this Ordinance, the Directors in office at the time this Ordinance takes effect shall continue in office until the expiration of the term for which he or she was elected. In the event a vacancy occurs before the expiration of the term of a Director in office at the time this Ordinance takes effect, a person who is appointed or elected by special election to fill such vacancy may reside anywhere in the district.

E. The term of each Director elected to the Board of Directors shall remain four (4) years.

**SECTION 5. Implementation.**

The district based election system shall be implemented, beginning at the next regular election of the Board of Directors, as follows:

A. Members of the Board of Directors shall be elected in Districts 3, 4, and 5 beginning at the next regular election of the Board of Directors in 2020, and every four years thereafter; and

B. Members of the Board of Directors shall be elected in Districts 1 and 2 beginning at the regular election of the Board of Directors held in 2022, and every four years thereafter.

**SECTION 6. Adjustment of Boundaries.**

Pursuant to Elections Code 22000, as may be amended from time to time, the Board of Directors shall adjust the boundaries of any or all of the districts following each decennial federal census to ensure the districts are in compliance with all applicable provisions of law.

**SECTION 7.** If necessary to facilitate the implementation of this Ordinance as determined by the County Registrar of Voters, the Secretary is authorized to make technical adjustments to the district boundaries that do not substantively affect the populations in the districts, the eligibility of candidates, or the residence of elected officials within any district. The Secretary shall consult with the General Manager and District Attorney concerning any technical adjustments deemed necessary and shall endeavor to provide the Board of Directors with 3 days advance notice of any such adjustments required in the implementation of the districts.

**SECTION 8.** In the event at any time in the future the California Voting Rights Act is amended, found to be unconstitutional, or otherwise is no longer applicable to the District, the Board of Directors expressly indicates its intention that the by-district election method be re-examined, and on behalf of itself and all future Board of Directors, expressly reserves its right to repeal or modify this Ordinance.

**SECTION 9.** To the extent the terms and provisions of this Ordinance may be inconsistent or in conflict with the terms or conditions of any prior District ordinance,

motion, resolution, rule or regulation governing the same subject, the terms of this Ordinance shall prevail with respect to the subject matter thereof.

**SECTION 10.** In interpreting this Ordinance or resolving any ambiguity, this Ordinance shall be interpreted in a manner that effectively accomplishes its stated purposes.

**SECTION 11.** If any section, subsection, subdivision, sentence, clause, phrase, or portion of this Ordinance is for any reason held to be invalid or unconstitutional by the decision of any court of competent jurisdiction, then such decision shall not affect the validity of the remaining portions of this Ordinance. The Board of Directors of the Joshua Basin Water District hereby declares the Board would have adopted this Ordinance, and each section, subsection, subdivision, sentence, clause, phrase, or portion thereof, irrespective of the fact that anyone or more sections, subsections, subdivisions, sentences, clauses, phrases, or portions thereof be declared invalid or unconstitutional.

**SECTION 12.** The President shall sign and the Secretary shall attest to the passage of this Ordinance. The Secretary shall cause the same to be published once in the official newspaper within fifteen (15) days after its adoption. This Ordinance shall become effective thirty (30) days from its adoption.

**INTRODUCED** at a regular adjourned meeting of the Board of Directors of the Joshua Basin Water District held on the 10<sup>th</sup> day of April, 2019, and thereafter,

**PASSED AND ADOPTED** at a regular meeting of the Board of Directors of the Joshua Basin Water District held on the \_\_\_ day of \_\_\_\_\_, 2019.

\_\_\_\_\_  
Robert Johnson, President

**ATTEST:**

\_\_\_\_\_  
Curt Sauer, Secretary

**APPROVED AS TO FORM:**

\_\_\_\_\_  
Special Counsel, Rutan & Tucker by Jennifer Farrell, Esq.

I, CURT SAUER, Secretary of the Joshua Basin Water District, do hereby certify that the foregoing Ordinance No. 19-10, was duly adopted and passed by the Board of Directors of the Joshua Basin Water District at a regular meeting thereof held on 17th day of April, 2019, by the following vote:

AYES:  
NOES:  
ABSENT:  
ABSTAIN:

\_\_\_\_\_  
Curt Sauer, Secretary

Joshua Basin - Map 103							
District		1	2	3	4	5	Total
Ideal	Total Pop	1,907	1,887	1,983	1,909	1,836	9,312
	Deviation from ideal	-1	-21	75	1	-52	127
	% Deviation	-0.05%	-1.10%	3.93%	0.03%	-2.73%	6.66%
Total Pop	% Hisp	13%	13%	24%	17%	12%	16%
	% NII White	77%	77%	67%	75%	81%	73%
	% NII Black	3%	4%	4%	4%	2%	3%
	% Asian-American	1%	3%	2%	1%	2%	3%
Citizen Voting Age Pop	Total	1,230	1,452	1,557	1,394	1,104	6,737
	% Hisp	13%	16%	13%	19%	21%	16%
	% NII White	80%	76%	67%	71%	75%	73%
	% NII Black	1%	1%	1%	1%	1%	1%
Voter Registration (Nov 2016)	% Asian/Pac. Isl.	1%	3%	17%	8%	3%	7%
	Total	632	701	986	861	1,058	4,238
	% Latino est.	9%	12%	10%	10%	9%	10%
	% Spanish-Surnamed	8%	11%	9%	9%	8%	9%
	% Asian-Surnamed	1%	1%	1%	1%	1%	1%
	% Filipino-Surnamed	0%	1%	0%	0%	0%	0%
Voter Turnout (Nov 2016)	% NII White est.	84%	81%	84%	83%	87%	85%
	% NII Black	1%	1%	5%	1%	2%	2%
	Total	508	538	785	661	657	3,349
	% Latino est.	8%	11%	9%	9%	8%	9%
	% Spanish-Surnamed	7%	10%	8%	8%	7%	8%
	% Asian-Surnamed	1%	1%	1%	1%	1%	1%
Voter Turnout (Nov 2014)	% Filipino-Surnamed	0%	1%	0%	0%	0%	0%
	% NII White est.	84%	82%	85%	86%	88%	83%
	% NII Black	1%	1%	5%	1%	2%	2%
	Total	275	315	435	331	463	1,820
	% Latino est.	7%	8%	6%	8%	6%	7%
	% Spanish-Surnamed	7%	7%	6%	7%	5%	6%
ACS Pop. Est.	% Asian-Surnamed	1%	1%	1%	0%	1%	1%
	% Filipino-Surnamed	0%	1%	1%	0%	0%	1%
	% NII White est.	83%	83%	82%	88%	93%	87%
	% NII Black est.	2%	2%	10%	1%	0%	3%
	Total	1,712	1,751	1,851	1,729	1,732	8,775
	Age	age 0-19	23%	23%	24%	24%	24%
age 20-60		55%	54%	52%	54%	52%	53%
age 60plus		22%	24%	24%	22%	24%	23%
Immigration	immigrants	6%	6%	11%	8%	11%	9%
	naturalized	39%	51%	79%	62%	79%	66%
Language spoken at home	english	88%	88%	90%	89%	90%	89%
	spanish	9%	8%	6%	8%	6%	7%
	asian-lang	2%	3%	0%	1%	0%	1%
	other lang	1%	1%	3%	2%	3%	2%
Language Fluency	Speaks Eng. "Easier than Very Well"	1%	2%	6%	3%	6%	4%
Education (among those age 25+)	hs-grad	71%	68%	60%	67%	60%	65%
	bachelor	13%	13%	17%	14%	17%	15%
	graduate/degree	7%	7%	9%	8%	9%	8%
Child in Household	child-under18	24%	23%	24%	24%	24%	24%
Per of Pop. Age 16+	employed	47%	43%	37%	43%	37%	42%
	income 0-25k	37%	38%	30%	34%	30%	34%
	income 25-50k	32%	29%	25%	29%	33%	28%
	income 50-75k	13%	15%	16%	13%	16%	14%
	income 75-200k	18%	17%	23%	20%	22%	20%
Housing Stats	income 200k plus	0%	2%	7%	3%	7%	3%
	single family	90%	93%	90%	89%	90%	91%
	multi-family	10%	7%	10%	11%	10%	9%
	owned	44%	43%	48%	48%	48%	46%
	rented	56%	58%	52%	52%	52%	54%

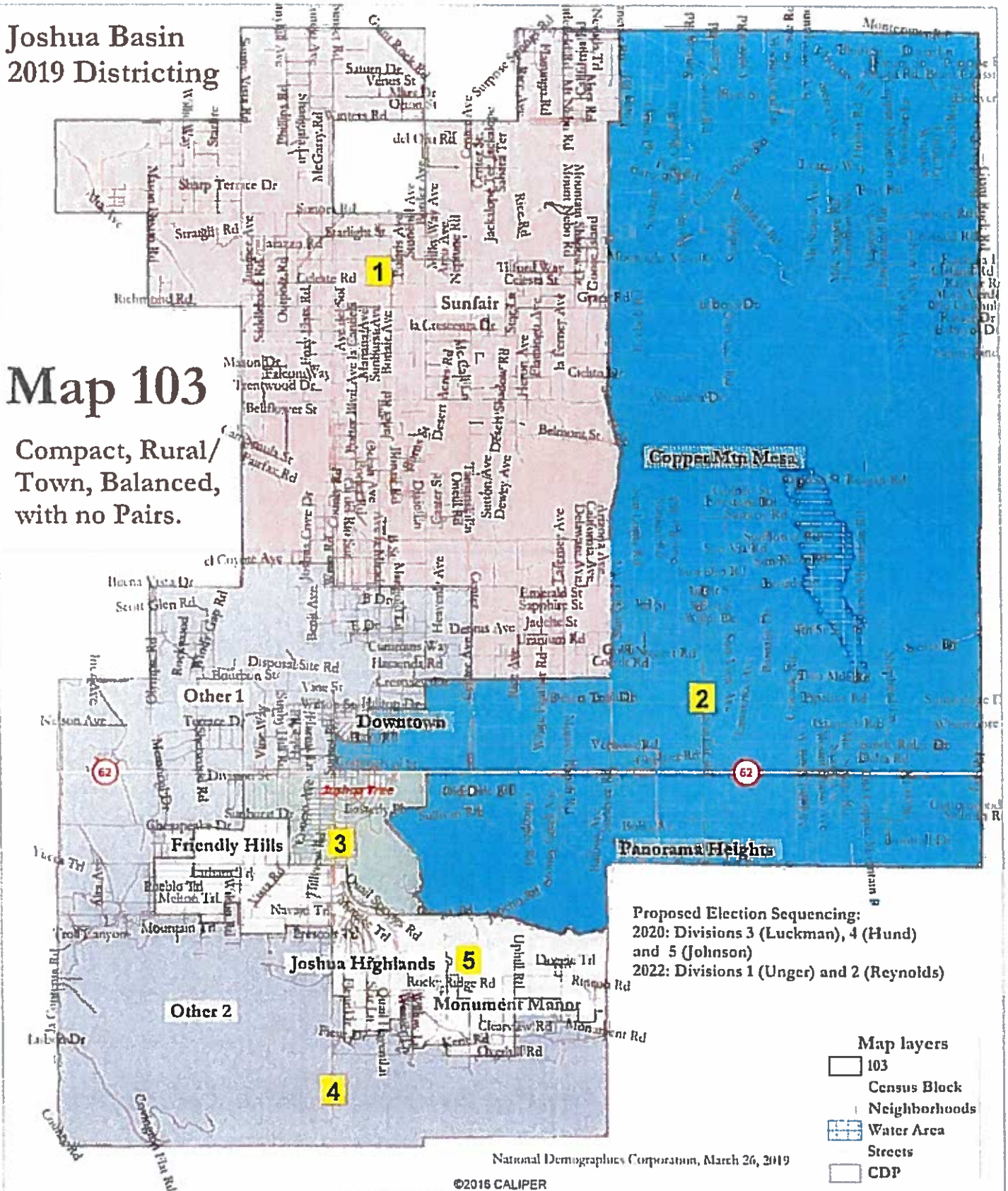
Final population data from the 2010 Decennial Census.  
Surname based Voter Registration and Turnout data from the California Secretary of State Database.  
Latino voter registration and turnout data are Spanish surname counts reported using Census Population Department undercount estimates. NII White and NII Black in percent and turnout counts estimated by NDC. Citizen Voting Age Pop., Age, Immigration, and other data graphics from the 2012-2016 American Community Survey and Special Tabulations § 102 data.



# Joshua Basin 2019 Districting

## Map 103

Compact, Rural/  
Town, Balanced,  
with no Pairs.



JOSHUA BASIN WATER DISTRICT  
MEETING AGENDA REPORT

Report to: Citizens Advisory Committee

May 14, 2019

Prepared by: Curt Sauer

TOPIC: CONTRACTING WITH TERRA VERDE ENERGY TO CONDUCT THE NEXT PHASE OF SOLAR FEASIBILITY STUDY

RECOMMENDATION:

Receive for information only.

ANALYSIS:

In November 2017, the Board directed the General Manager to pursue a grant from the California Energy Commission to examine the feasibility of a solar project to offset electrical pumping cost to produce and distribute water. That report from the CEC was received in May of 2018.

Since the start of this project, we have been working closely with Eastern Municipal Water District, receiving advice and counsel, since that District is a front-runner on Solar for Southern California water districts.

They utilize Terra Verde Energy as their consultant. This company does not build solar projects; rather they serve as a consultant to their client in all phases of determining the best way to install solar projects for maximum benefit to the client. They also coordinate the RFP's and review all submittal to determine the best company to select.

The Eastern Municipal employee responsible for their programs describes Terra Verde as very dedicated to providing a high level of customer service to Eastern. He considers them to be "almost like an employee" of Eastern. Their customer service is excellent, and their knowledge is wide-ranging and in depth.

Following the receipt of the CEC report, in January of 2019, I contacted Terra Verde and asked for their review of the CEC report. Their comments are included with this staff report.

Following the Terra Verde analysis of the CEC report, Mark Ban, Randy Little and I met with Terra Verde on February 14 to discuss next steps. We received their proposal on March 13 (attached).

They will provide a complete analysis to include 1) Data Collection and Site due diligence, 2) Initial Project Feasibility Assessment and Project Economics, 3) Confirm Project Feasibility and Cost-Benefit Analysis, 4) Battery Storage Feasibility, 5) Feasibility Study Final report, as to what is cost-effective, what size project the District actually needs, which RESBCP accounts are available through SCE, where to site the project, what our best path forward would be.

As you can see from the Terra Verde analysis, the CEC study has several deficiencies, from the Terra Verde perspective. However, their expertise in this field far exceeds that of the General Manager or anyone on staff. Therefore, based on Eastern Municipal feedback, I feel their analysis should be taken into consideration.



Concurrently with Terra Verde discussion, we received an inquiry from REC Solar to actually bid on the project. They prepared a proposal for us, which was received in March.

Analysis of the proposal, primarily by AGM Greer indicated that the original numbers used by REC Solar showed a \$6 M savings over the course of 30 years. However, they failed to consider our costs over those 30 years. Considering costs over 30 years, their proposal would result in savings over 30 years of \$3M. Which is a good indicator that Solar will benefit the District long term.

However, further analysis of this one proposal pointed out several discrepancies. There was no mention of how the PPA would be renegotiated after 20 years; omitted comment that placing shade structures at the shop would not be cost effective. There was also no mention of specifics relative to land acquisition, site planning, or the use of Renewable Energy Credits (using California Government Code 4217.12). These are just a few areas of concern Eastern Municipal has advised us to include in an RFP.

Just our initial review of this type of proposal clearly shows that we need to retain an experienced consultant to define the project, coordinate with SCE, handle land acquisition and manage the Request for Proposals. We certainly need at least three bids for a project that could cost up to \$3M.

For example, in Eastern Municipal's latest solar project RFP, which Terra Verde managed for them, bids were received from Strong Hold, NextEra, Tesla, Sullivan, and REC Solar.

Based on our discussions with Terra Verde and the excellent working relationship they have with Eastern Municipal, I recommend we move forward with Terra Verde to complete the Assessment.



February 1, 2019

Curt Sauer  
General Manager  
Joshua Basin Water District  
6175D Chollita Road  
Joshua Tree, CA 92252

Re: Comments on the CEC's Energy Efficiency Study report for Joshua Basin Water District

Dear Curt,

I have reviewed the District's CEC Energy Efficiency Study report and the associated appendices and offer the following observations and comments. Please note, my comments focus primarily on the solar PV system and battery storage analysis. We can comment on the energy efficiency analysis as well but would require additional time to complete an engineering review of the suggested measures and the associated saving analysis.

Comments:

The analysis uses aggregate monthly time-of-use (TOU) energy data for 12 months (Nov 2016 to Oct 2017) for each SCE account/meter to establish baseline consumption profiles and projected EE measure and PV system annual savings. The analysis should have used 15minute interval data for each meter for the 12month consumption period. The use of interval data provides a much higher level of accuracy for baseline profiles and for the basis of estimating net savings.

The report (and analysis) make no mention of SCE's proposed TOU period changes which will be implemented for commercial customers in March 2019. The new peak period definition of 4pm to 9pm has a well-documented negative impact on solar PV systems economics due to reduced NEM credit value (and reduced bill credit value for RES-BCT tariff-based projects). SCE's General Rate Case (GRC) proceedings at the CPUC started in early 2016. So, given the timing of this report, the TOU period changes should have been included in the analysis, and reflected in the savings projections. The proposed changes from SCE's Phase 2 GRC to TOU rates and periods to be implemented in 2019 and 2020 will have an impact on the ROI for existing PV systems, and will also impact system sizing and projected savings for all new solar PV and battery systems going forward.

The report states (Appendix C) the baseline TOU data is fabricated based on "typical historical usage". Meaning the analysis does not use the actual meter data. In addition, net metering credit is based on assumptions, and not on a comparison of the PV system's hourly production profile and the actual (historical) pre-solar interval consumption profile and applicable SCE TOU rate schedules (as described in the preceding comment).

The report (and appendices) do not describe the methodology (calculations) used to determine annual savings values for the proposed solar PV systems; therefore, there is no way to validate the projected annual savings stated in the report. In addition, it appears cumulative savings is based on a 20yr life cycle for the PV systems. The solar panels used in the analysis come with a 25yr power production warranty (standard industry product warranty); thus, the cumulative savings should be based on a 25yr system life.

The analysis uses the average annual cost per kWh for each SCE meter (based on an aggregation of monthly SCE bills) as a basis for calculating gross savings. The industry standard method for calculating solar PV energy cost savings is an "avoided cost calculation" which takes into consideration the pre-solar consumption profile on a 15 minute interval basis, the applicable SCE TOU rate schedule on an hourly basis (including proposed future changes in SCE's TOU rates and periods), the simulated solar production profile on an hourly basis, and the post-solar consumption profile on an hourly basis (which also includes the simulated net metering credit value on an hourly basis).

The report characterizes net metering (NEM) as a "billing device". However, NEM is actually a tariff that is facilitated thru an executed interconnection agreement between the District and SCE. The report also states SCE will provide credit for all excess electricity sent to the grid. NEM credit is limited to offsetting the total annual consumption of the meter that the PV system is interconnected to. Any excess energy beyond the annual billing true-up is either given up to the grid or can be sold to SCE thru a Net Energy Compensation agreement. However, the value of the energy sold to SCE is only a fraction of the value of the NEM credit (which is one of the reasons solar PV systems are typically sized to a percentage of the meter's pre-solar consumption profile).

The report does not include a comparative rate analysis or a post-EE implementation rate optimization analysis (i.e. rate switching based on projected reduced demand to provide enhanced savings potential, if applicable). The report does assume a TOU rate option change to SCE's "R" option for the proposed NEM systems (note: SCE will replace Option R with Option "E" in 2020). However, in many cases if the implementation of solar results in a minor reduction in peak demand the meter could be switched to a more cost-effective base rate, in addition to being on option R (or Option "E" going forward). Example: if a meter is on TOU-GS2-B, and the peak demand is 20kW, and a properly sized PV system interconnected to this meter results in the peak demand dropping to 19kW, the meter could be placed on TOU GS1-R.

The analysis uses PVWatts simulated kWh generation values as the prescribed method of system sizing and annual energy production, which provides only a gross estimate. There are PVWatts hourly generation tables located in the Appendix, however the report does not describe if/how the hourly data is used. Accurate system size projections cannot be performed without the use of hourly production profile data.

The RES-BCT project analysis is incomplete: It does not define a SCE TOU Generating Account rate schedule (and therefore there is no basis for defining the applicable bill credit value). Instead, Appendix C describes a "SCE effective rate" value that is used as a basis to define annual bill credit value. This fabricated rate is substantially inflated compared to an average energy generation component cost for applicable SCE TOU rate schedules. In addition, there is no defined allocation of the annual bill credit value to the benefitting accounts (the portfolio of remote pump station meters) to discern proper system sizing. There is no mention of a SCE meter at the Sunfair Road site, nor any description of an Interconnection strategy to facilitate the project (these elements have a direct impact on project cost and projected savings potential).

The report uses "dual-axis tracking systems" as the basis for the RES-BCT project. These systems are high cost for small capacity applications, and they have a higher cost of maintenance. A better selection would be ground-mount fixed-tilt, or possibly single-axis trackers. These are the most common and best fit system types for this application, and there exists substantial market data on their capital cost and O&M costs. In addition, the PV system sizes proposed at the District's Headquarters and Maintenance Facility are quite small, and thus, have a very high cost per Watt. Another option would be to add the SCE meters at these two sites to the RES-BCT project benefitting account portfolio and forgo consideration for NEM projects at these two sites.

Estimated design/build costs do not include the cost of ownership (O&M and asset management costs); therefore, the projected savings may be overstated. In addition, the PV system cost per Watt figures stated in the appendices do not reflect current market costs.



Roof-top solar PV feasibility assessments require an evaluation of roof structural design and loading calculations, along with review of existing roofing warranties. Roof structure/building structure evaluations appear to be missing from the analysis.

The PPA rates used in the analysis have no stated origin or basis, and do not reflect current market PPA rates for small scale NEM and RES-BCT projects for the PV system types proposed in the report.

The system size estimates for the RES-BCT project in the report and in the Appendix do not agree. The report states a capacity of 630kWdc, and the Appendix states a capacity of 882kWdc (including the PVWatts production estimate).

The Report states that a Solar PV + Battery Storage evaluation was performed but the analysis is missing from the report. Also, the report does not include a comparative pre-solar and post-solar demand profile analysis using interval demand (kW) data which is necessary to discern the cost/benefit of energy storage measures. An accurate assessment cannot be made with aggregated monthly demand data (the report states the analysis is based on annual load profiles). And, the analysis does not use new SCE TOU rates and periods that will be implemented in 2019 and 2020 (with all TOU rates shifting to a peak period of 4pm to 9pm, batteries can mitigate reduced solar PV savings associated with the TOU period shift, under the right circumstances). In addition, the estimated installed costs for battery systems are inflated as compared to current market conditions, and the availability of SGIP incentives (which can offset ~40% of battery costs) is not mentioned.

I hope these comments are helpful, and I look forward to discussing them with you further at your convenience. Please feel free to contact me if you have any questions.

Sincerely,

Kevin Ross | **VP Business Development**  
**TerraVerde Energy**  
520 E. Avenida Pico, #3793  
San Clemente, CA 92673  
949-212-6555  
[Kevin.Ross@terraverde.energy](mailto:Kevin.Ross@terraverde.energy)



March 13, 2019

Curt Sauer  
General Manager  
Joshua Basin Water District  
61750 Chollita Road  
Joshua Tree, CA 92252

Re: Solar PV and Battery Storage Feasibility Assessment Proposal

Dear Mr. Sauer,

Per your request, TerraVerde is pleased to provide the following proposal for Professional Consulting Services for a District-wide feasibility assessment for Solar PV and energy storage implementation. The proposed Scope of Work for assessing technical and financial feasibility of implementing solar PV and/or battery storage systems to support reduced electricity use/cost for Joshua Basin Water District's 18 SCE meters/accounts consists of five (5) phases, and is described below:

- Phase 1: Data Collection and Site Due Diligence**
- Phase 2: Initial Project Feasibility Assessment and Project Economics**
- Phase 3: Confirm Project Feasibility and Cost-Benefit Analysis**
- Phase 4: Battery Storage Feasibility Assessment**
- Phase 5: Feasibility Study Final Report**

Each phase consists of a group of tasks that must be completed to progress to the next phase. Six additional phases following delivery of the final feasibility assessment findings report (tasks associated with project development and owner's rep implementation management services) are not included in this proposal but could be considered by the District following delivery of the feasibility assessment findings report and consideration for further project development.

#### **Phase 1 – Data Collection and Site Due Diligence**

1. Project Kickoff meeting to establish goals, objectives, expectations, communication and data collection protocols, roles/responsibilities, and milestone schedules. Review TerraVerde's RFI list and set expectations for data collection. TerraVerde's Project Manager will meet with designated District staff (and/or facilitate conference calls) on a regular basis during the feasibility study process to review data collection progress/issues, share initial feasibility conclusions, present project development progress reports and schedule updates, discuss questions/issues regarding site logistics/operations and future operations/facility master plans, address any questions/concerns the District may have, and define next steps in the study process. The Project Manager will keep notes for each meeting and distribute to District staff after the meeting. The Project Manager will also provide an updated project schedule and a description of upcoming deliverables in advance of the status meetings/calls.

2. Review site operations, and operating profiles (monthly electricity use/cost for all applicable SCE accounts/meters) and identify initial SCE accounts to include in the project development scope.
3. Acquire and review 12 to 24 months of sequential 15-minute interval electricity use and billing data for all SCE accounts to be evaluated for solar and/or battery storage. Note: This process can be expedited with the use of "UtilityAPI", a 3<sup>rd</sup> party utility data collection service TerraVerde uses to acquire interval consumption & billing data. If necessary, UtilityAPI data will be supplemented with SCE interval data acquired directly from SCE with the District's authorization.
4. Perform QC checks on all data received and prepare data for loading into TerraVerde's energy profile modeling tool.
5. Based on an initial analysis of each meter's interval billing data, perform system sizing for optimal energy use and billing offset (net savings benefit).
6. As applicable, perform site-specific google earth assessment and determine sites for further NEM project consideration (and possible interconnection request submittal). Advise District of early stage projects worthy of consideration.
7. Identify SCE meters to include in the battery storage feasibility analysis (this analysis will consider all JBWD SCE accounts). See battery storage feasibility analysis (Phase 4).
8. Collect and review all available site-specific information for all sites under consideration, including but not limited to: site plans, facilities drawings, parcel maps, easements, as-built electrical designs and single line diagrams, underground utilities diagrams if relevant, civil engineering and geotechnical reports and/or soils tests; and as applicable/available: CEQA study reports and associated mitigation records, Survey data and title reports, FEMA/ACOE flood zone maps and wind zone maps.
9. Visit each site to conduct a thorough audit of electrical infrastructure (capacity and condition), Utility transformers, and site conditions to determine optimum array layout strategies for each site (noting all space constraints, potential sources of shading, orientation, operational constraints, site access points, security fencing, topography, drainage, property zoning status, flood zones (if applicable), utility lines and easements, known underground utilities/pipelines, cell towers, and potential surrounding neighborhood issues/concerns). Use site audit data to update estimated system sizing (kW), and installation cost estimates (and PPA rates). Assemble site audit notes and photos and deliver a copy to the District. Note: this task includes a full review of the District's Sunfair Road parcel for consideration in possible development of a RES-BCT tariff solar PV project\*.
10. Acquire the District's preferences for designated PV array layout area for the sites under consideration (parking lot car ports, ground mount, rooftop, etc.).
11. Perform a bill credit allocation analysis for a RES-BCT project, to determine initial system capacity (kW), and to identify the benefitting accounts portfolio. Share pro-forma results with the District for each tariff analysis.
12. Initiate interconnection evaluation process for a RES-BCT project, if viable, and with District's approval: review SCE DER maps, conduct field audits, create findings report and deliver to the District, prepare and submit SCE pre-application for the proposed RES-BCT project site (District to pay \$300 submittal fee).

\*: SCE's Renewable Energy Self-Generation Bill Credit Transfer tariff (RES-BCT), is a non-NEM, "export energy" tariff that allows public agencies to install a grid-connected renewable energy generation system of up to 5MWs capacity on property owned or leased by the agency, and receive monetary bill credits for the energy generated by the system and sent to the grid. The bill credits can be applied to one or more (up to 50) of the District's SCE accounts/meters (benefitting accounts), and their value is determined by the energy generation portion of the host site's TOU rate schedule.



### **Phase 2 – Initial Project Feasibility Assessment and Project Economics**

1. Using data collected in Task 8, assess site for land use issues, environmental sensitivities, and/or major logistical limitations that may limit or prevent solar PV array layouts and/or installations.
2. Generate solar array location plans and initial layouts to assess area/location constraints, if any, for each site.
3. Run shading analysis for each site under consideration using site audit data and adjust array layout/location assumptions as needed.
4. Based on the results of the initial SCE pre-application interconnection evaluation for a RES-BCT project, generate an interconnection cost estimate. Advise District on any known or suspected impediments to achieving interconnection.
5. As applicable, determine all project approval and/or permit approval authorities, and their project review/approval requirements.
6. Provide guidance on current PV module technologies and provide comparative cost/benefit analysis for differing technology types, as applicable.
7. Generate assumptions for project costs inclusive of: project design/build costs, estimated site preparation, estimated interconnection scope, current market data for labor, equipment, materials, O&M costs, cost of capital and PPA investor internal rates of return (IRRs), and generate expected PPA rates. Include cost estimates and PPA rates in net savings projections (proformas) and review with the District.
8. Provide guidance on project financing and ownership options as required, and provide comparative financial analysis using 25year cash flow proformas for cash purchase vs. District financed (CEC loan program) vs. PPA financing.
9. Provide guidance on system maintenance requirements and costs, and overview of PPA contract requirements, including guidance on system performance guarantee terms/conditions.
10. If applicable, perform cost/benefit comparative analysis of a RES-BCT project net savings benefit vs. long term land lease revenue associated with leasing the District's parcel to a solar project developer.
11. Run full financial model (review all assumptions with District) for each proposed site/project, confirm economic viability using the District's preferred financing options. Deliver analysis results to District (detailed cash flow proformas).

### **Phase 3 - Confirm Project Feasibility and Cost-Benefit Analysis**

1. Confirm PV system sizing for NEM 2.0 projects (and RES-BCT project if applicable) using interval data from Task #3 & 4, and site assessment conclusions. Solicit the District's guidance of relevant energy efficiency projects (planned, or recently installed) and/or Facility Expansion Plans, that may increase or decrease energy consumption in the future and update the analysis inputs as needed.
2. Confirm proposed system generation profile(s) and use the 8760 solar energy generation data tables and most recent (March 2019) TOU rate schedules (UEG components) to confirm bill credit value on an interval basis for a RES-BCT project. Also confirm net metering credit for any NEM 2.0 projects under consideration.
3. Perform a rate optimization analysis to confirm post-solar installation rate tariff changes for any NEM 2.0 projects under consideration using SCE's March 2019 TOU rate schedules.
4. Confirm individual bill credit absorption allocations for the RES-BCT benefitting accounts, if applicable (required for SCE RES-BCT application form).
5. Update array layouts for any sites under consideration that required re-sizing during final analysis.



**Phase 4 - Battery Storage Feasibility Assessment**

1. Perform initial District-wide evaluation of SCE meters/sites using TerraVerde’s 5-element criteria selection process.
2. Perform demand profile analysis using 24 months of 15minute interval data for all meters under consideration (results of task #1).
3. Perform system sizing analysis for standalone battery storage applications for all meters under consideration.
4. Provide guidance to the District on the SGIP program, status of incentive tiers, estimated timing for application submittal, and submittal process requirements.
5. Present initial 10year net savings proformas for cash purchase and Shared Saving Agreement (SSA) financing options to the District. Note: the financial analysis for the standalone battery storage sites will be run and presented as a portfolio of systems with a single 10year cash flow savings pro-forma.
6. Perform a rate optimization analysis for any standalone battery storage sites/meters (based on calculated annual demand reduction and tariff demand threshold rules).
7. Perform demand reduction analysis using SCE’s new (effective March 1, 2019) TOU peak periods for all meters proposed for further energy storage development.
8. Evaluate physical site and interconnection feasibility for selected meters/sites and provide project installation cost estimates.
9. Create a comparative cost-benefit analysis; cash purchase vs. SSA for the selected meters and provide updated Financial Summary report with the results.
10. Create a summary of the findings and conclusions for the Standalone sites and Integrated solar PV sites, and include the summary of findings and conclusions in the final feasibility report.

**Phase 5 – Prepare the Feasibility Assessment Final Report**

1. Prepare the final Feasibility Assessment Findings Report including recommendations for ranking the sites based on the technical and financial feasibility factors confirmed in Phases 3 & 4, and review with the District. The final report to include: site audit findings, energy use/cost analysis results, due diligence summary, feasibility assessments, financial analysis, (individual and aggregated cash flow proformas), and a financial summary including estimated project implementation costs, all assumptions and inputs used in the cash flow proformas, and projected 25year net savings.
2. Meet with the District to review the report and respond to any questions or concerns. Make updates to the report as required, and re-issue to the District.

**Proposal Fee**

TerraVerde’s level-of-effort estimate for the above scope of work (which includes the ACWA member discount of 10% to our standard hourly rate schedule) is: \$34,726. Expenses associated with the project are estimated to be \$1,736 and will be billed separately at cost.

**TerraVerde Hourly Rate Table (basis for level-of-effort estimate)**

<u>Resource Classification</u>	<u>Hourly Rate</u>	<u>ACWA Discounted Rate</u>
Principal, Technical Advisor	\$225	\$203
EVP Structured Finance	\$210	\$189
Engineering Director	\$205	\$185
Sr. Engineer, Project Developer	\$195	\$176





Account Manager	\$190	\$171
Project Manager	\$185	\$167
Energy Engineer / Audit Mgr	\$165	\$149
Energy / Financial Analyst	\$155	\$140
Data Administrator	\$80	\$72

**Deliverables and Billing Milestones**

<u>Description of Billing Milestones &amp; Deliverables</u>	<u>Phase/Task</u>	<u>% of Proposal</u>
Completion of project kickoff meeting and distribution of meeting minutes	Phs 1, Task 1	10%
Completion of data collection, site audits and interconnection assessments	Phs 1, Task 12	15%
Delivery of initial site selections and system sizing analysis	Phs 2, Task 7	15%
Delivery of comparative financial analysis and review session with District	Phs 2, Task 11	25%
Delivery of solar PV array layouts	Phs 3, Task 5	10%
Delivery of battery storage analysis results	Phs 4, Task 10	10%
Delivery of Findings Report and review session with District	Phs 5, Task 2	15%
<b>Total:</b>		<b>100%</b>

As Joshua Basin WD is already aware, TerraVerde is the leading independent renewable energy and energy efficiency consulting firm focused exclusively on California public agencies and is highly experienced in providing the complex feasibility analysis and owner’s rep services required to properly evaluate and implement solar energy and energy storage projects.

We trust the District will find our industry leading experience, analytical capabilities, and knowledge of energy storage and SCE rate tariffs to be an excellent fit for the evaluation of solar PV and battery storage project opportunities. In good faith, TerraVerde is prepared to initiate the analysis tasks with a Letter of Intent (LOI) from the District to enter into a consulting services agreement. If you have any questions, please feel free to contact me.

Sincerely,

Kevin Ross, VP Business Development  
TerraVerde Renewable Partners, LLC  
520 E. Avenida Pico #3793  
San Clemente, CA 92674-9998  
949-212-6555  
[Kevin.Ross@tvrpllc.com](mailto:Kevin.Ross@tvrpllc.com)

JOSHUA BASIN WATER DISTRICT  
MEETING AGENDA REPORT

Report to: Citizens Advisory Committee

May 14, 2019

Prepared by: Mark C. Ban

TOPIC: WELL 14 UPDATE

RECOMMENDATION: Receive for information only

**ANALYSIS:**

Well 14 has been offline since the summer of 2016 when total coliform positive (TCP) samples required the District to stop producing water from the groundwater source. Since 2016, the well has gone through three (3) rehabilitation processes, each of them directed at taking a more aggressive approach toward cleaning and disinfecting the well's casing. Prominent local well companies that included Tri-County Pump and Drill, Layne Christensen and L.O. Lynch, following specifications created by Dudek Engineering, all provided services to the District during this time period with the intent of inactivating the source of the TCP samples. Following each effort, though increasingly more complex, each time the well was sampled upon reinstallation of the equipment, TCP samples would inevitably prevent the well from being placed back online.

To date, \$1,201,940.07 has been spent on the rehabilitation efforts and equipment replacement associated with Well 14 as provided within EXHIBIT "A". Though there are a number of line items, the bulk of the charges are associated with payments made to each of the aforementioned well companies along with construction management and specification development provided by Dudek Engineering. In addition, microbiologist consultation and sample analysis using multiple laboratories to confirm and speciate present bacteria also contributed to a significant number of expenses.

Currently, though the occurrence of TCP samples and heterotrophic plate counts (HPC) have reduced, Well 14 remains offline. Due to its importance, continuing down a path of rehabilitation and disinfection that may or may not yield positive results, could prove detrimental to the District's ability to provide water should District groundwater well(s) 10 and/or 15 experience any operational issues that require them to be offline for any extended length of time. Though the District should begin to move toward increasing its groundwater well inventory to ensure redundancy, Staff's current recommendation focuses on applying an approved treatment technique that would allow Well 14 to be placed back online with the State Water Resources Control Board's (SWRCB) approval. The disinfection process focuses on increasing the time water produced by well 14 is in contact with chlorine before it is conveyed to the distribution system. Essentially, by creating a looped pipe network on-site, chlorine added at the well head is allowed to mix and stay in contact with the water at a controlled dosage which allows the District to achieve what is referred to by the water industry as LOG removal. A LOG is defined as the inactivation of microorganisms expressed as a percentage. In the case of 4-LOG treatment, the District would receive credit for 99.99% inactivation of microorganisms allowing water to be produced under current conditions.

Current estimates to install the infrastructure needed to achieve 4-LOG treatment in the manner explained above are as follows:

<b>Description</b>	<b>Cost (\$)</b>
Piping and appurtenances:	\$200,000.00
Permitting	\$5,000.00
<b>Total:</b>	<b>\$205,000.00</b>

In addition to the installation of the infrastructure needed to achieve 4-LOG treatment, staff is also recommending that additional improvements be made to the facility. The first of these improvements is the addition of an on-site sodium hypochlorite generator which would allow the District to become self-reliant in its need to have chlorine readily available at the well site. Currently, the District requires a chlorine supplier to make deliveries of 12.5% sodium hypochlorite to its well sites. While the installation of these systems at each of the District’s well sites would be optimal, with 4-LOG removal and the proposed treatment technique being centered around the use of chlorine at Well 14, ensuring that the disinfectant is readily available regardless of emergencies or product availability is an important measure to consider. The on-site sodium hypochlorite generator would allow the District to produce its own sodium hypochlorite product at a 0.8% solution which, as an added benefit, falls below hazardous material thresholds when proper attention is given to the amount of storage maintained on-site. This improvement would require the purchase and installation of a fiberglass building to house the generator and protect the produced chlorine from sunlight and other elements that would weaken the chlorine solution and cause premature damage to the equipment.

The second recommended improvement is the replacement of the current motor control center (MCC). The existing MCC dates back to the construction of the well which is decades old. Wiring within the existing MCC is aged and with the repair and addition of equipment throughout the years, wiring schematics have been rendered useless. The cost to identify wiring locations and termination points in order to produce a new set of schematics would cost the District half of what a new MCC costs without addressing wiring and components that need to be replaced. In addition, current MCC technology offers increased motor and component protection which can extend the life of equipment that was replaced as part of past rehabilitation efforts.

With the recommended additional improvements, the total cost of the Project is as follows:

<b>Description</b>	<b>Cost (\$)</b>
Piping and appurtenances (4-LOG):	\$200,000.00
Motor Control Center (MCC)	\$75,000.00
Sodium hypochlorite generator:	\$112,000.00
Fiberglass Building	\$50,000.00
Permitting (4-LOG)	\$5,000.00
<b>Total:</b>	<b>\$442,000.00</b>

The installation of the above infrastructure would be performed by in-house staff using the District’s newly formed Capital Improvement and Replacement Program (CIRP) along with assistance from the District’s Production and Construction & Maintenance departments. Minimal dollars are allocated to outside contractors such as Cla-Val which provides and services the District’s automated control valves. As part of the appurtenances installed, staff also intends to provide future injection points for the potential use of stannous chloride; a solution used to reduce the concentration of chromium-6 concentrations and a likely future treatment technique once a maximum contaminant level (MCL) is established by the SWRCB.

Should the Board concur with Staff's recommendation, next steps would include the preparation of a report to the SWRCB Drinking Water Division to approve the design of the treatment facility and begin their permit issuance process. It is estimated that with Board direction to proceed with this project, approximately 3-4 months would be required to gain the necessary approvals from the SWRCB and begin construction of the project.

JOSHUA BASIN WATER DISTRICT  
MEETING AGENDA REPORT

Report to: Citizens Advisory Committee Members

May 14, 2019

Prepared by: Mark C. Ban

TOPIC: CIRP UPDATES

RECOMMENDATION: Receive for information only.

- 1) All equipment except for a trailer and asphalt spreader has been purchased which we are shooting to wrap up this month.
- 2) RFP's have been released, and proposals received for pipe and materials related to the Saddleback Project. By the time the CAC rolls around, we can say that all the pipe and materials have been ordered.
- 3) During the past week, we conducted interviews for the final three positions with the LEAD and one (1) laborer already hired. We expect to make a formal job offers the week of the 13th with official start dates mid-June. Five positions total were completed for this program (Lead/Equipment Operator, Pipe layer II, Pipe layer I, and two (2) Laborer positions)
- 4) Engineering for the Saddleback Project is complete.
- 5) Environmental Requirements for the project are complete (Categorical Exemption).
- 6) Current capital projects that will be addressed in the upcoming year are as follows:
  - a. Saddleback Watermain Replacement Project (20,000+ water main replacement).
  - b. Well 14 4-LOG Treatment (new treatment technique)
  - c. Meter Replacement Program (900+ meters)