

Board of Supervisors

June 13, 2019

Request for Zone Change to Add Renewable Energy Combining District and a Use Permit for a Commercial Solar Farm – Continued from 4/30/19

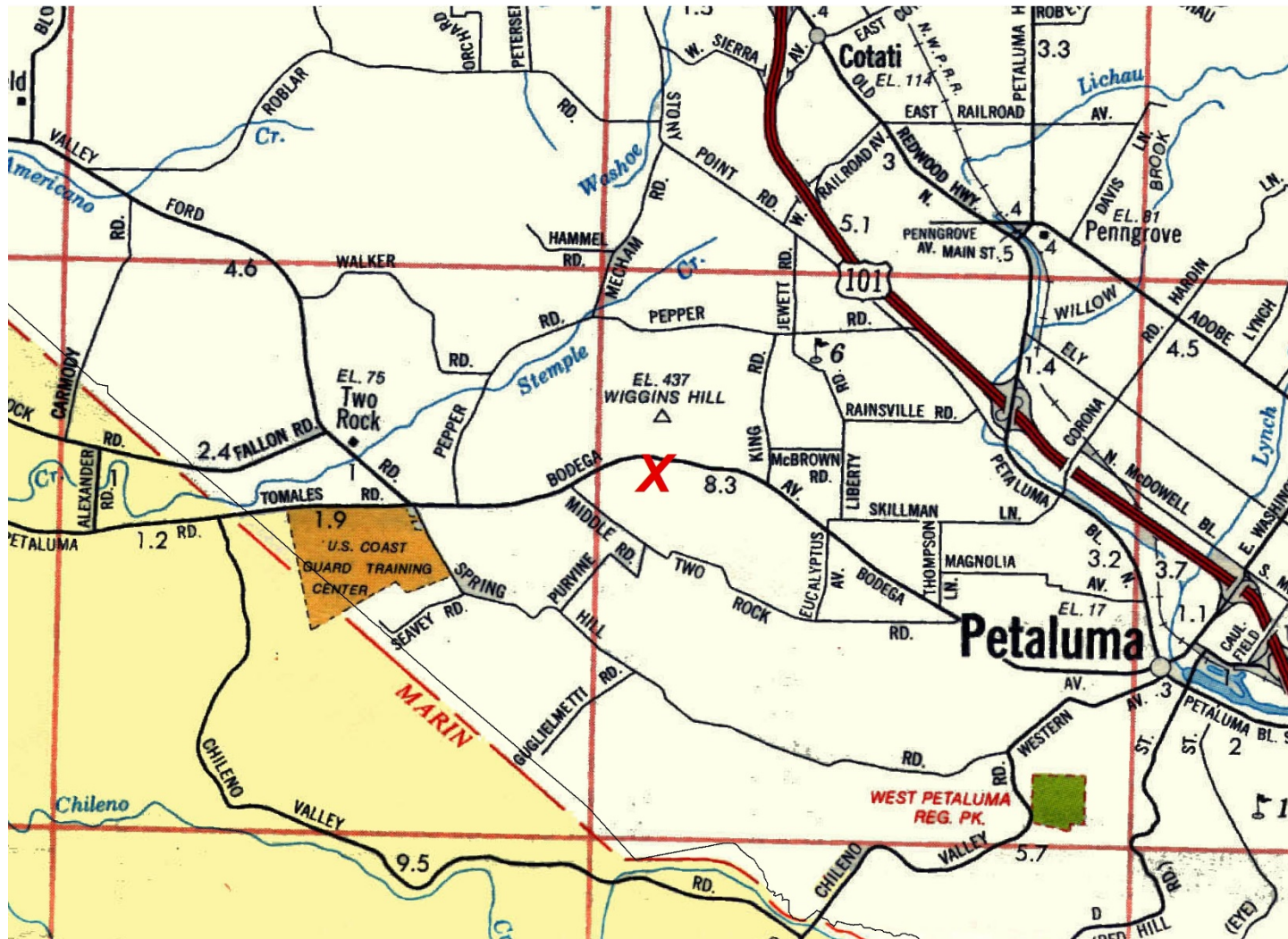
PLP16-0055

June 13, 2019

Brian Keefer



Vicinity Map

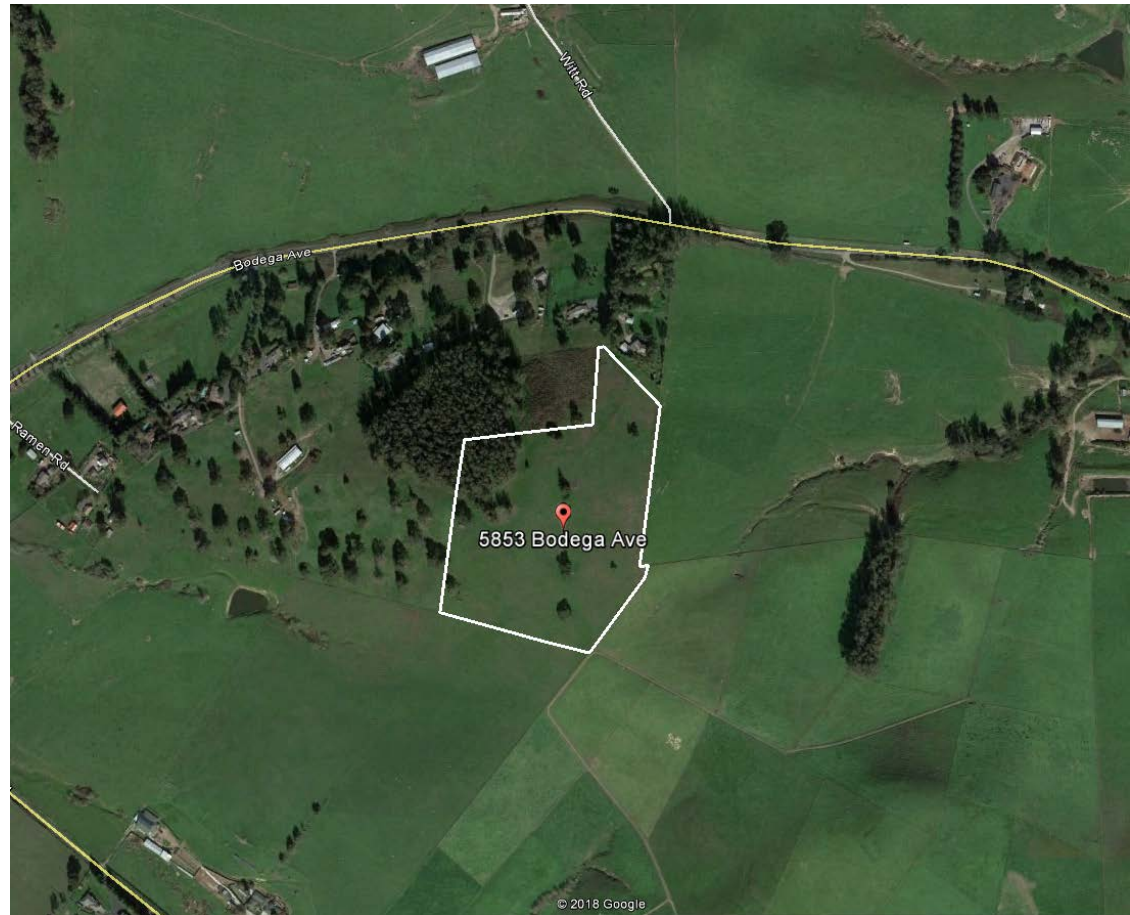


5853 Bodega Ave.

Lot: 25 Acres

**Solar Array
Area: approx.
15 Acres**

**LEA (Land
Extensive Ag.)**



South facing hill



Two 1- Megawatt Zones



Zone 1



Zone 2

Board Requested Supplemental Review

**04/30/2019-
Board
requested
supplemental
information for
06/13/2019
hearing.**

- ☐ Legislative History
- ☐ Potential Overconcentration
- ☐ Agricultural Primary Use
- ☐ Agricultural Compatibility/Project Design

Legislative History: Ord. No. 6046

□ **Sept. 10, 2013 Resolution No. 13-0350:**

- Amends General Plan Open Space and Resource Conservation Element to allow commercial renewable energy systems in agricultural resource areas with limited impacts to agriculture.

□ **Farm Bureau:**

- Supported development of renewable energy systems.
- Encouraged development of facilities on marginally productive or non-productive land.
- Suggested restrictions and review of projects on farmland to preserve agricultural viability.

Legislative History: Ord. No. 6046

□ Ordinance No. 6046:

- Revises Zoning Code to allow renewable energy systems and facilities in designated Zoning Districts.
- RE (Renewable Energy) Combining District
 - Excluded LIA (Land Intensive Agricultural)
 - **Land Extensive Agriculture (LEA), Diverse Agriculture (DA), Resources and Rural Development (RRD)**, Timber Production (TP), General Commercial (C3), Heavy Industrial (M2), or Public Facilities (PF)
- Renewable Energy Systems and Facilities Development Standards (Section 26-88-200).
- Solar Energy Facilities Special Use Standards (Section 26-88-206).

Legislative History: Ord. No. 6046

□ **Commercial Photovoltaic (Solar):**

- Roof-Mounted PV permitted in all zones.

□ **Ground-Mounted Commercial Solar in Agricultural and Resource zones:**

- Minor Commercial Solar (less than 15% of site): Use Permit.
- Commercial Solar (greater than 15% of site): Use Permit required and:
 - LEA and DA parcels: greater than 30% of site – RE Combining District req'd.
 - RRD parcels: greater than 15% of site – RE Combining District req'd.

RE (Renewable Energy) Combining District Criteria for Adoption

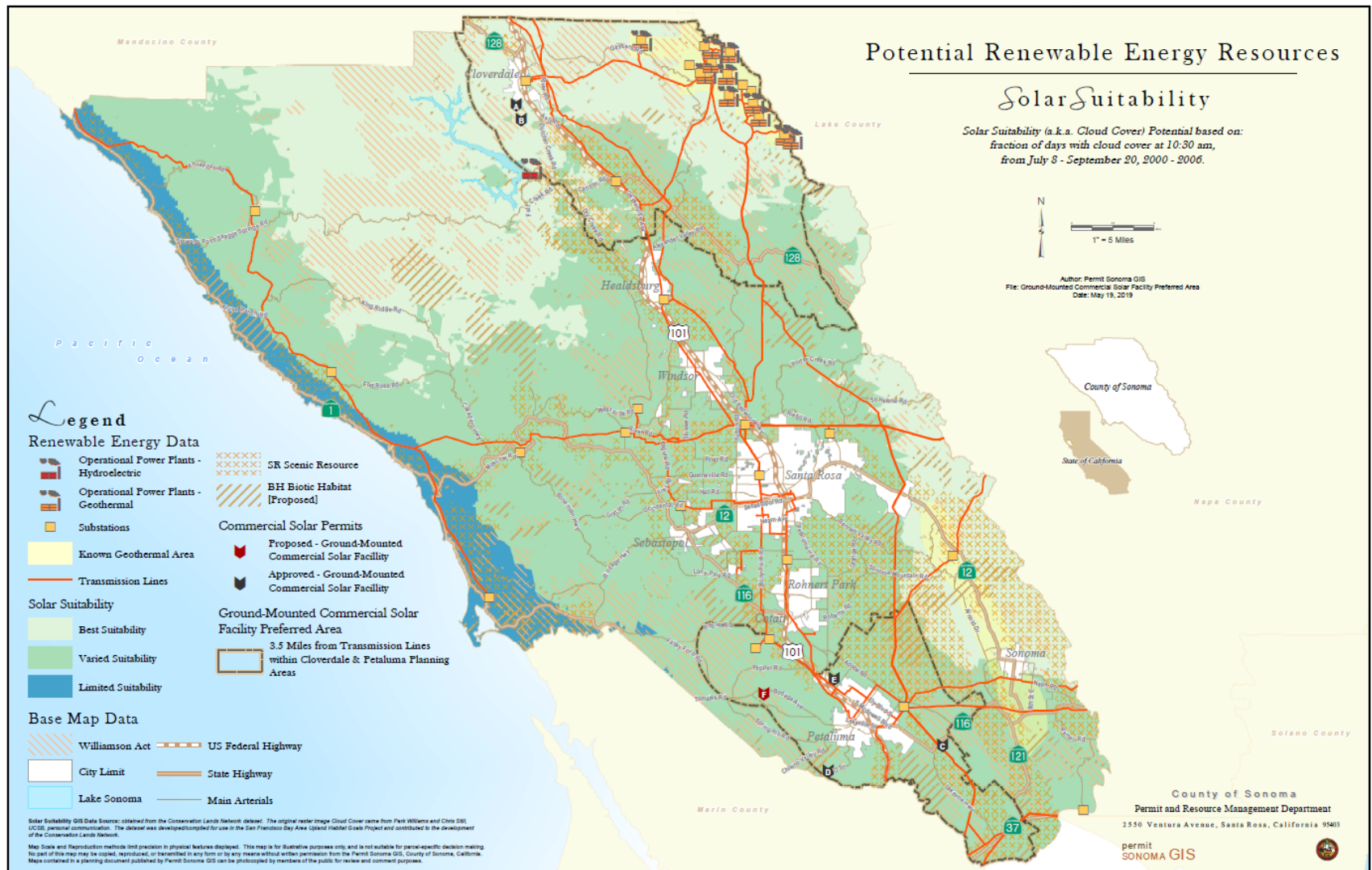
- 1) **No Land Intensive Ag. Zone (LIA); Parcel Land Extensive Ag. (LEA)**
- 2) **No residential zone** including R1, R2, R3, RR, AR or PC, nor within 300 feet of these zones; **Approximately 9/10 mile from residential zone**
- 3) **No land with Williamson Act contract or Open Space or conservation easement** unless specifically allowed under the rules, contract and/or easement; **No WA Contract, OS or Conservation Easement**
- 4) **No public use airport approach zone** (outer or inner safety zones) or the inner turning zones; **Approximately 5 miles away.**
- 5) **No Biotic, Historic, or Scenic (BR), (SR), or (HD) combining zones, and No State designated Important Farmland**, unless a protective easement is provided to ensure protection of the resources; **No BR, SR, or HD, No Important Farmland**
- 6) **Not within 300 feet of an urban service area**, except may be applied to public facility, industrial, and commercially zoned properties. **3 Miles Outside Urban Service Area**

RE (Renewable Energy) Combining District Purpose



- Provides requirement for Board approval, allowing maximum oversight
- Case-by-case consideration of use permits for commercial solar facilities within agricultural zones
- Subject to specific standards of review including agricultural compatibility

Potential for Overconcentration



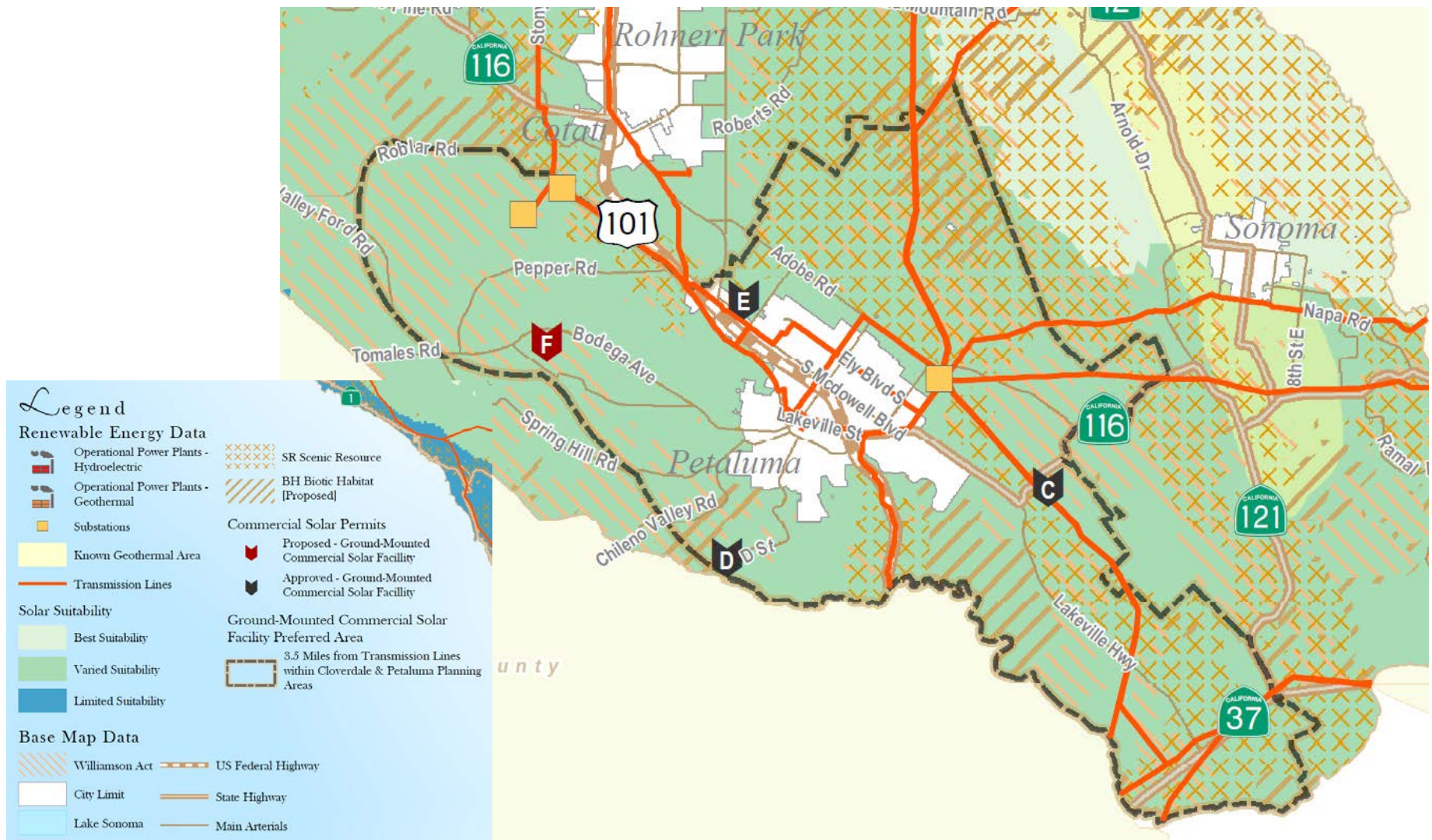
Potential for Overconcentration

Existing Commercial Solar Facilities Use Permits									
Map Symbol	Permit No.	Opened Date	Location	Parcel No.	Base Zone	Williamson Act	Capacity (MW)	Facility Acres	Parcel Acres
Cloverdale Planning Area:									
A	UPE12-0049	08/22/2012	200 Kelly Rd	115-240-018	RRD	N	3	20.00	127.95
B	UPE15-0065	08/06/2015	1255 Hiatt Rd	115-260-023	RRD	Y	1	3.50	375.43
				Cloverdale Planning Area Total:			4	23.50	
Petaluma Planning Area:									
C	UPE15-0057	04/28/2017	520 Stage Gulch Rd	068-020-017	LEA	Y	1	2.80	226.62
D	UPE15-0080	03/13/2018	4990 D St	020-110-007	LEA	N	3	4.00	157.60
E	UPE16-0041	02/27/2019	368 Ely Rd	137-011-025	DA	N	0.844	2.36	20.00
			Petaluma Planning Area Subtotal Existing:				4.844	9.16	
Proposed RE Combining Zone and Use Permit for Commercial Solar Facility									
F	PLP16-0055	N/A	5853 Bodega Ave	022-200-036	LEA	Y	2	15.50	25.00
				Petaluma Planning Area Total:			6.844	24.66	
				Total with project approval:			10.844	48.16	

Cloverdale Planning Area



Petaluma Planning Area



Potential for Overconcentration on Agricultural Parcels

Ground-Mounted Commercial Solar: LEA, DA, and RRD parcels, within 3.5 miles of transmission lines, excluding Important Farmlands

Cloverdale Planning Area		
Total area of permissable land:	118,410	Acres
Total area of commercial solar:	23.5	Acres
Percentage occupied by commercial solar:	0.020%	
Petaluma Planning Area		
Total area of permissable land:	43,035	Acres
Total area of commercial solar:	24.66	Acres
Percentage occupied by commercial solar:	0.057%	
Total Cloverdale and Petaluma Planning Areas		
Total area of permissable land:	161,445	Acres
Total area of commercial solar:	48.16	Acres
Percentage occupied by commercial solar:	0.030%	

Agricultural Primary Use

General Plan Policy Farmland Protections

□ **Resolution No. 13-0350:**

▣ Policy OSRC-15d:

Incorporate energy facility siting policies into the Sonoma County Development Code that would:

*(4) Notwithstanding Policy AR-4a, **consider allowing commercial renewable energy as a primary use facilities on agricultural lands only where a Renewable Energy (RE) Combining District is applied**, when the history of the site demonstrates that it is of low value for agricultural production, and agricultural operations on surrounding agricultural parcels are not compromised, consistent with Policies AR 4d, 4e and 4f.*

Agricultural Primary Use

**Ordinance
No. 6046
Farmland
Protections
for
Commercial
Solar Projects**

- Primary use of the parcel shall remain in agriculture pursuant to General Plan Policy AR-4a.
- A Right to Farm Declaration.
- Agricultural Use Easement.
- No Commercial Solar Facility on mapped Important Farmlands.

Agricultural Primary Use-

PLP16-0055 Agricultural Protection

□ **Code Requirements Incorporated:**

- Right To Farm Declaration
- Agricultural Use Easement

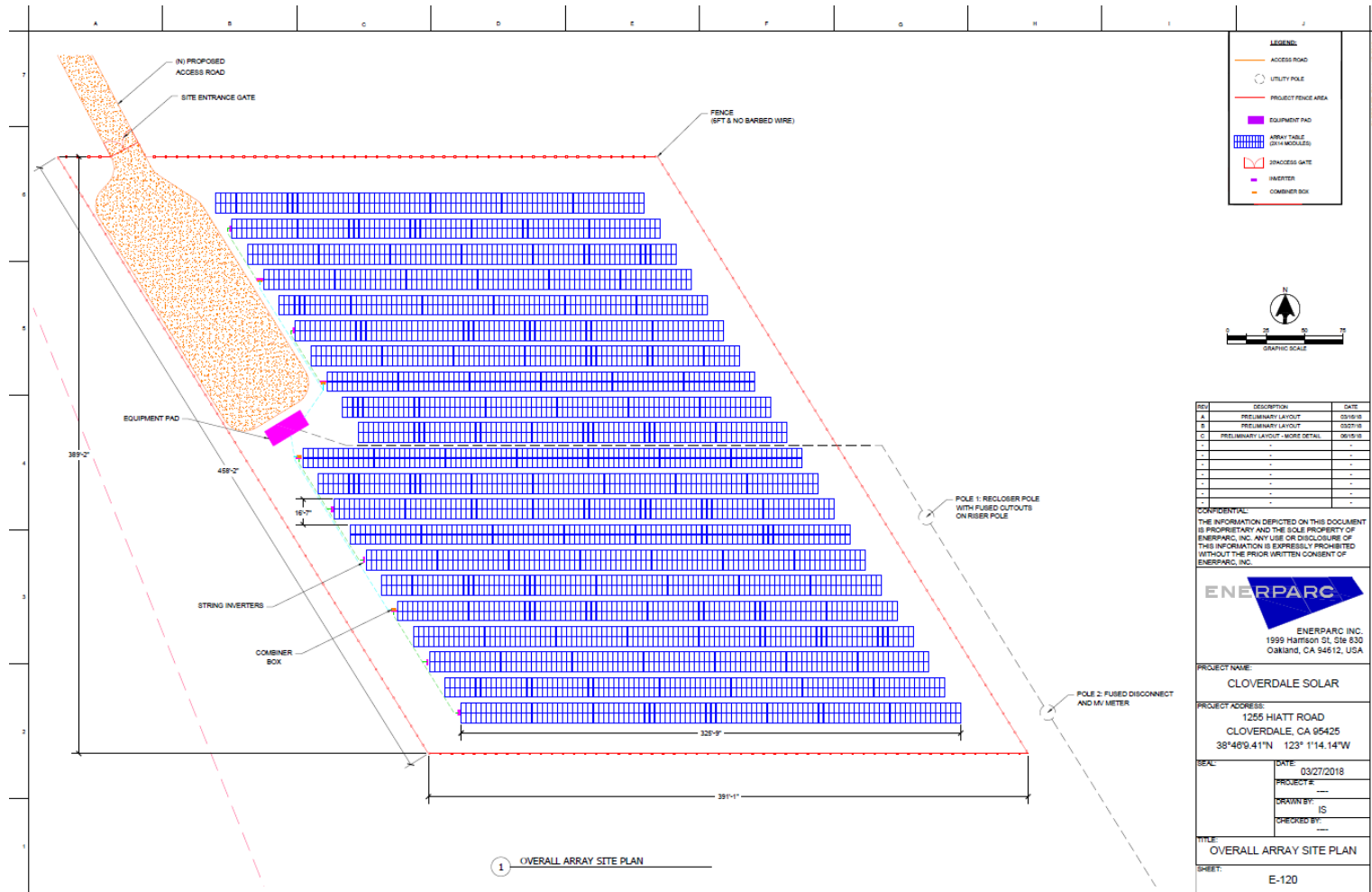
□ **Additional Agricultural Facilitation and Protection:**

- Deed Restriction establishing and continuing agricultural use on property as long as solar facility is on site (Condition of Approval No. 70).
- Long-term grazing lease with sheep farmer.
 - Signed letter of intent.
- Livestock watering trough to facilitate grazing.

Agricultural Primary Use- PLP16-0055 Site Coverage

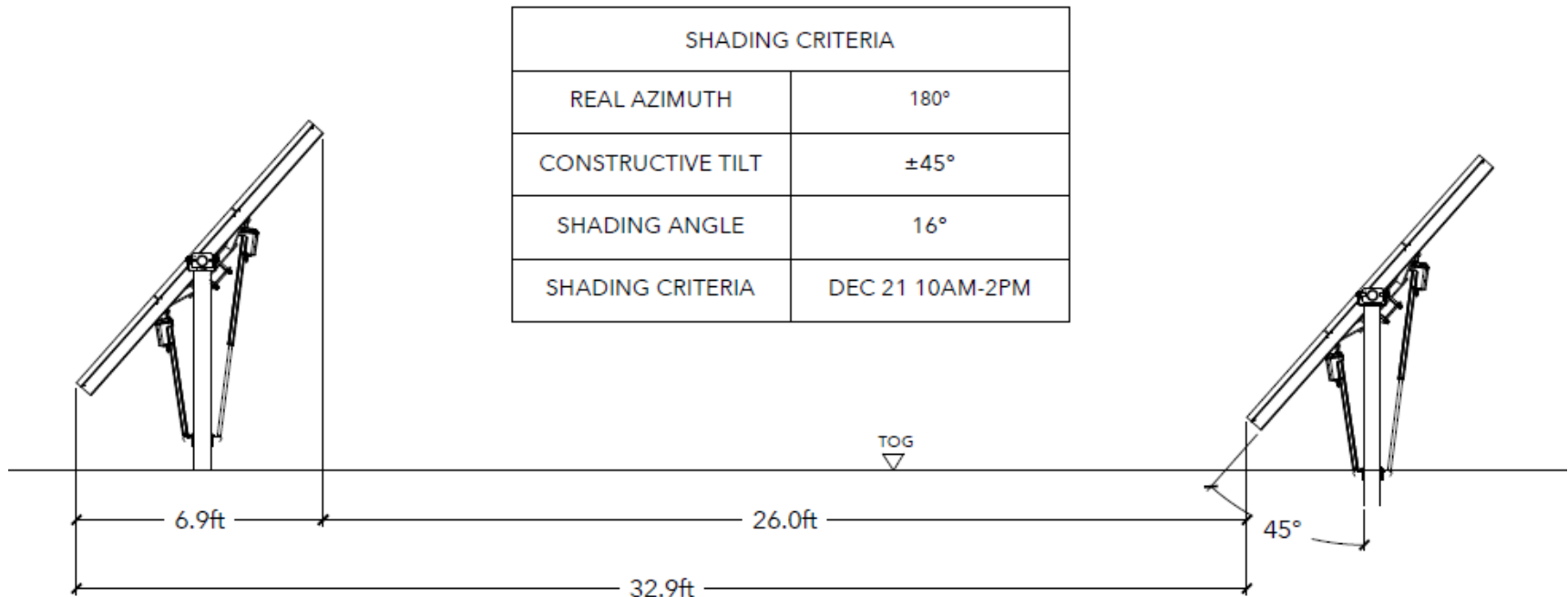
- Solar Facility Area:
 - ▣ Approximately 15.5 acres of 25 acre parcel = 62%.
- Actual Coverage:
 - ▣ Arrays spaced 23-26 feet apart.
 - ▣ 8,064 panels at 20.95 SF per panel = 3.88 acres.
 - ▣ Access roads, switchgear pads = 0.54 acres
 - ▣ 4.42 acres, or 18% of parcel.
- Area removed from grazing:
 - ▣ Access roads, switchgear pads, solar array support posts = 0.61 acres, or 2.44% of parcel.
- Agriculture preserved as primary use.

UPE15-0065 Hiatt Road - arrays closely spaced.



Agricultural Compatibility/Project Design

PLP16-0055 - arrays spaced 23-26 feet apart for maximum solar exposure. Allows grazing between and under arrays.



Agricultural Compatibility/Project Design

Grazing and Solar



Agricultural Compatibility/Project Design

Solar Arrays integrated with pollinator benefitting crops



Agricultural Compatibility/Project Design

FARMING

UMASS PROF SAYS FARMLAND, SOLAR ARRAYS CAN CO-EXIST

🕒 JULY 16, 2014 👤 JGERBER123 💬 LEAVE A COMMENT



Phaedra Ghazi, research assistant, and Stephan Herbert, a Umass professor at the Stockbridge school of Agriculture, bags vegetable samples part of a dual use of land study for agriculture and solar PV. Photo by Carol Lollis.

ERIC GOLDSCHIEDER – Daily Hampshire Gazette – July 15, 2014

- University of Massachusetts Stockbridge School of Agriculture Professor Stephan Herbert:
 - ▣ “We have shown that we can get 90 percent of the yield of a pasture with solar panels compared with not having them as long as we leave enough space between clusters of panels.”
- “Cattle and sheep graze beneath them. The animals also benefit from the shady spots the panels create.” (Goldscheider)

Energy and food together: Under solar panels, crops thrive — Ensia, June 8, 2018 by Frank Jossi

- “Dual-Use” Farms:
 - ▣ Agriculture and Electrical Production — “Agrophotovoltaics” (APV), or “Agrivoltaic”
- “Crops grown underneath the panels required only half the water of those growing out in the open and grew well in the microclimate beneath the panels” (Jossi)

Energy and food together: Under solar panels, crops thrive — Ensia, June 8, 2018 by Frank Jossi

- “The plants seem to love the modulated temperatures.”
 - ▣ University of Arizona School of Geography and Development associate professor Greg Barron-Gafford
- “There are a lot of different ways to design solar arrays that provide significant benefits to agriculture.”
 - ▣ Fresh Energy Center for Pollinators in Energy Director Rob Davis

Los Guilicos Road Commercial Solar Facility with tracking arrays



Summary:

- Resolution No. 13-0350: amended General Plan to allow renewable energy systems in agricultural resource areas.
- Ordinance No. 6046:
 - ▣ RE (Renewable Energy) Combining Zone.
 - ▣ Use and Development Standards for Renewable Energy Facilities.
 - ▣ No LIA (Land Intensive Ag) and agricultural protections.
- No Over-concentration: Commercial Solar only 0.03% of permissible agricultural parcels in desirable areas, no overconcentration.
- Ag Primary Use and Compatible: Proposal maintains agriculture as primary use and successfully integrates commercial solar and agriculture.

Staff & Planning Commission Recommendation



1. Adopt the Mitigated Negative Declaration;
2. Adopt an ordinance for a Zone Change to add the Renewable Energy Combining Zone to the parcel;
3. Grant a Use Permit to Juniper Energy LLC for a 2-megawatt photovoltaic ground-mounted commercial solar facility located at 5853 Bodega Avenue, Petaluma; APN 022-200-036; and
4. Authorize the Chair of the Board to execute the proposed Sales and Use Tax Agreement.

End Presentation

