

IMPERIAL COUNTY RENEWABLE ENERGY AND TRANSMISSION ELEMENT UPDATE COMMUNITY MEETINGS

JUNE 19, 2014

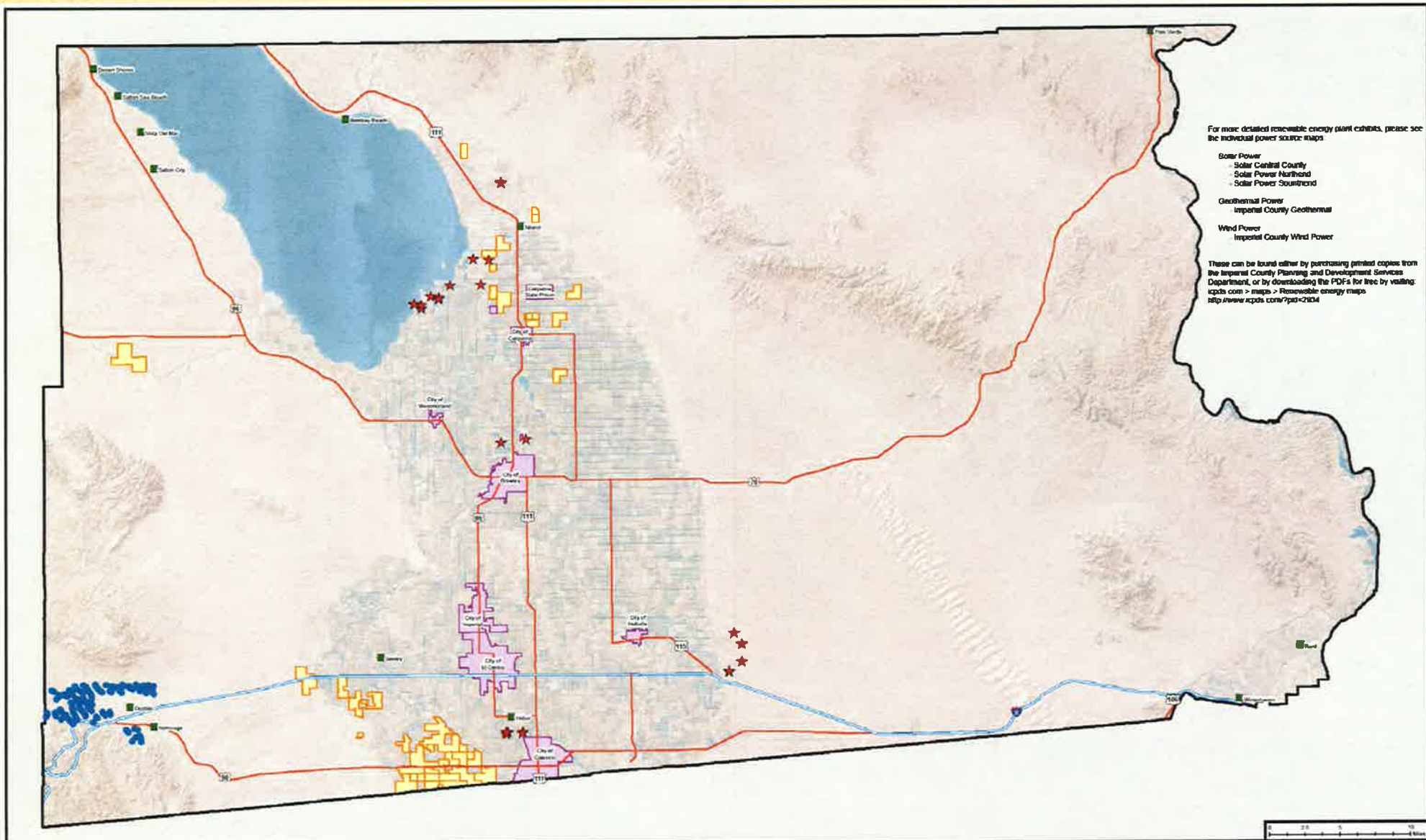


MEETING PURPOSE & AGENDA OVERVIEW

- ✗ History of Renewable Energy in Imperial County
- ✗ Goals and Objectives
- ✗ Environmental Baseline Studies
- ✗ Methodology
- ✗ Project Process and Milestones
- ✗ Group Discussion

IMPERIAL COUNTY PROJECTS

- 36 CUPs submitted for Solar, Geothermal, Wind and Ethanol Projects (25 CUPs approved)
- 26 EIRs; 7 MNDs; 2 NDs and 1 TBD (to be determined)
- Major issues include land use, agriculture, biology and cultural resources
- 2,271.70 MWs Approved
- Solar on 21,933.65 acres of agricultural land



Imperial County Renewable Energy Power Plant Locations Index

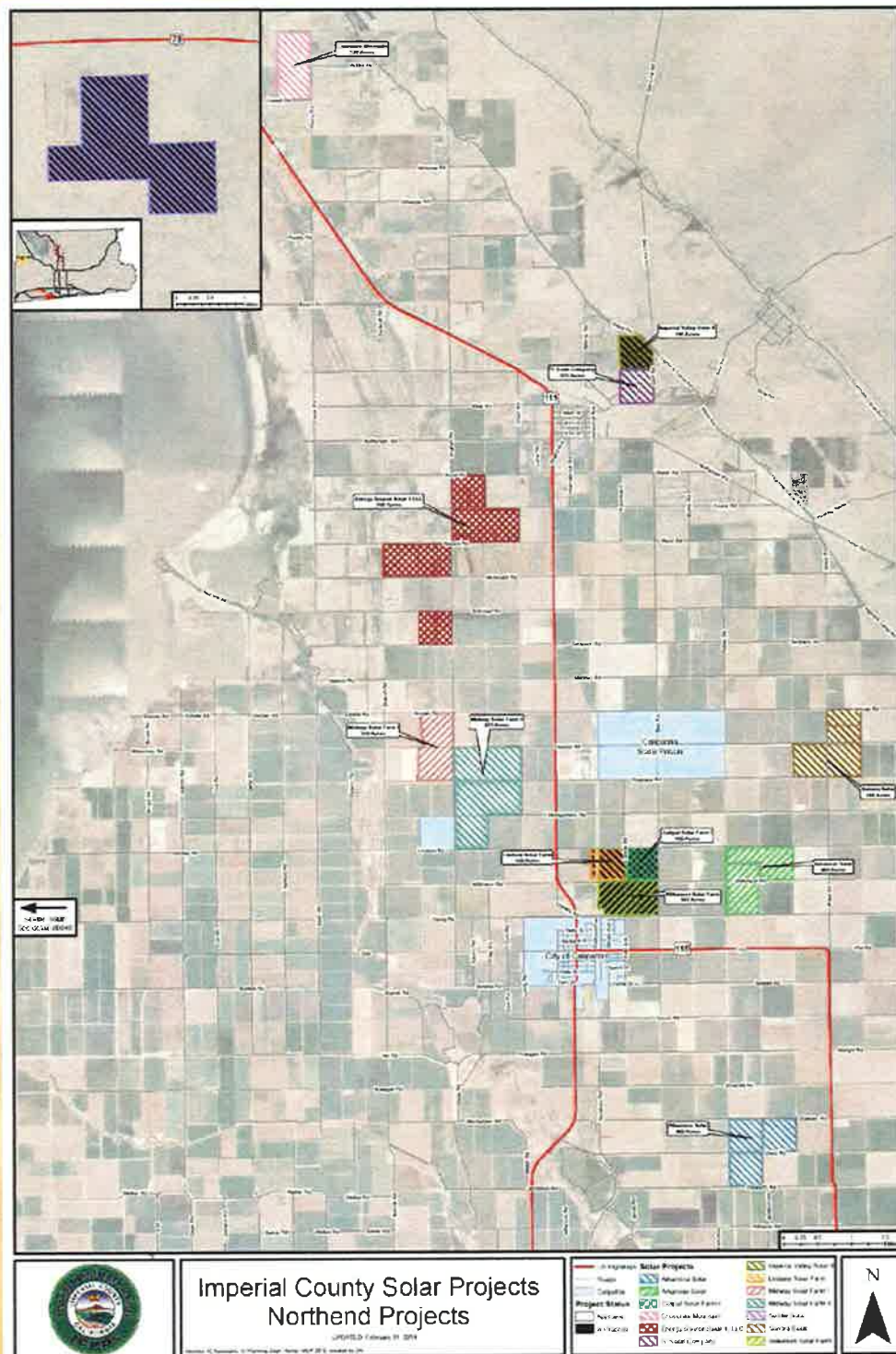
UPDATED: November 1, 2013

Revised: IC Resources, IC Planning Dept. April 2012 created by DNL

— US Highways
— Interstate
— Cities
— Solar Farms

■ Town Sites
★ Geothermal Plants
● Wind Turbines

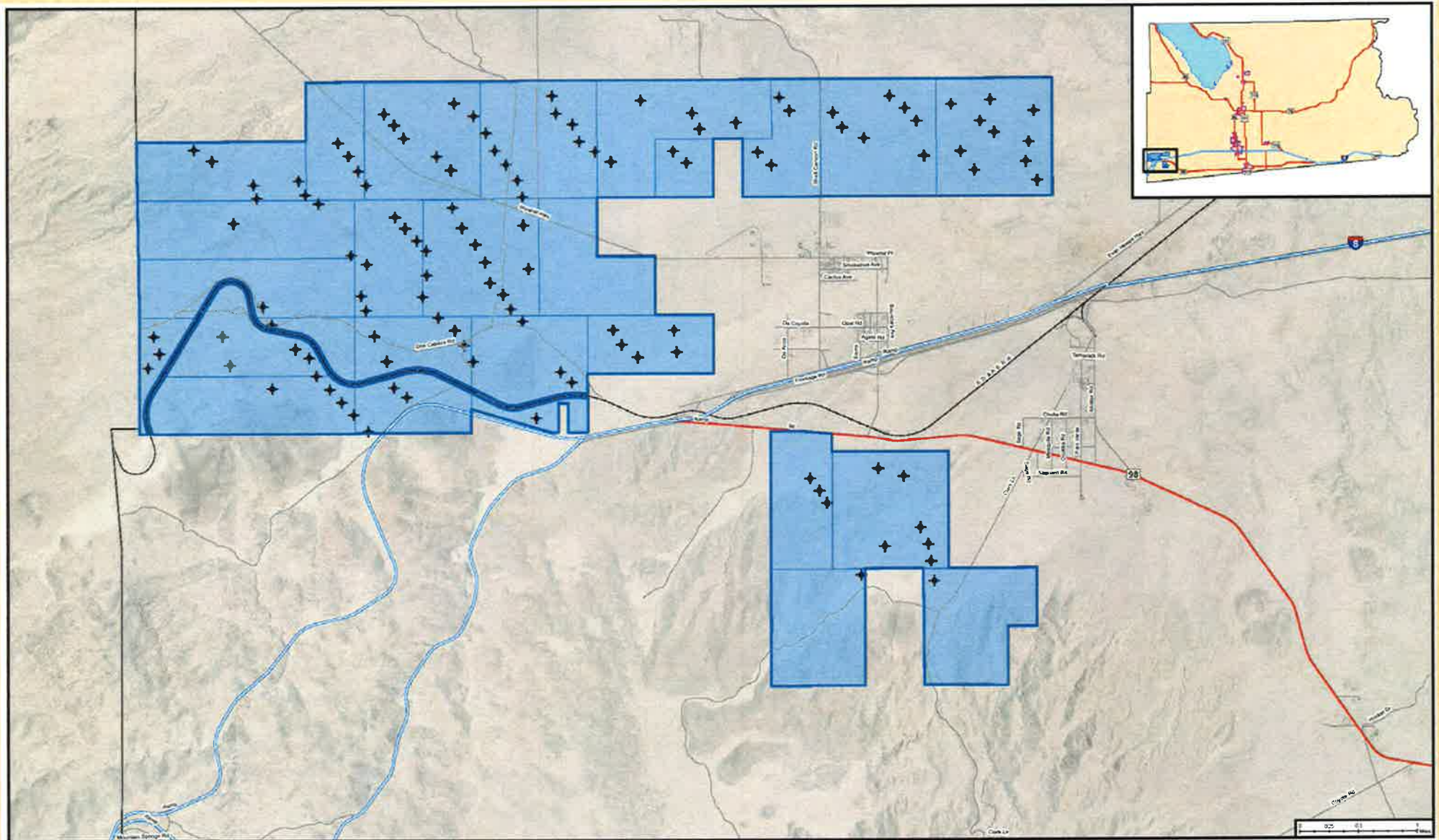






1171281E11 October 20, 2013





Imperial County Wind Farm Project Pattern Energy, Ocotillo Express Wind Farm

UPDATED: October 31, 2013

Source: CAExpress.com, Planning Dept. Aerial, NAD 83, 2010, created by DE

- | | |
|-------------|------------------|
| US Highways | Wind Turbines |
| Interstate | Ocotillo Express |
| Roads | County Boundary |
| Railroad | |



GOALS AND OBJECTIVES

- Update the Geothermal/Alternative Energy and Transmission Element
- Develop Implementing Ordinances
- Assure General Plan Internal Consistency
- Provide CEQA Documentation
- Implement Stakeholder Public Outreach Program

KEY TASKS – RENEWABLE ENERGY ELEMENT

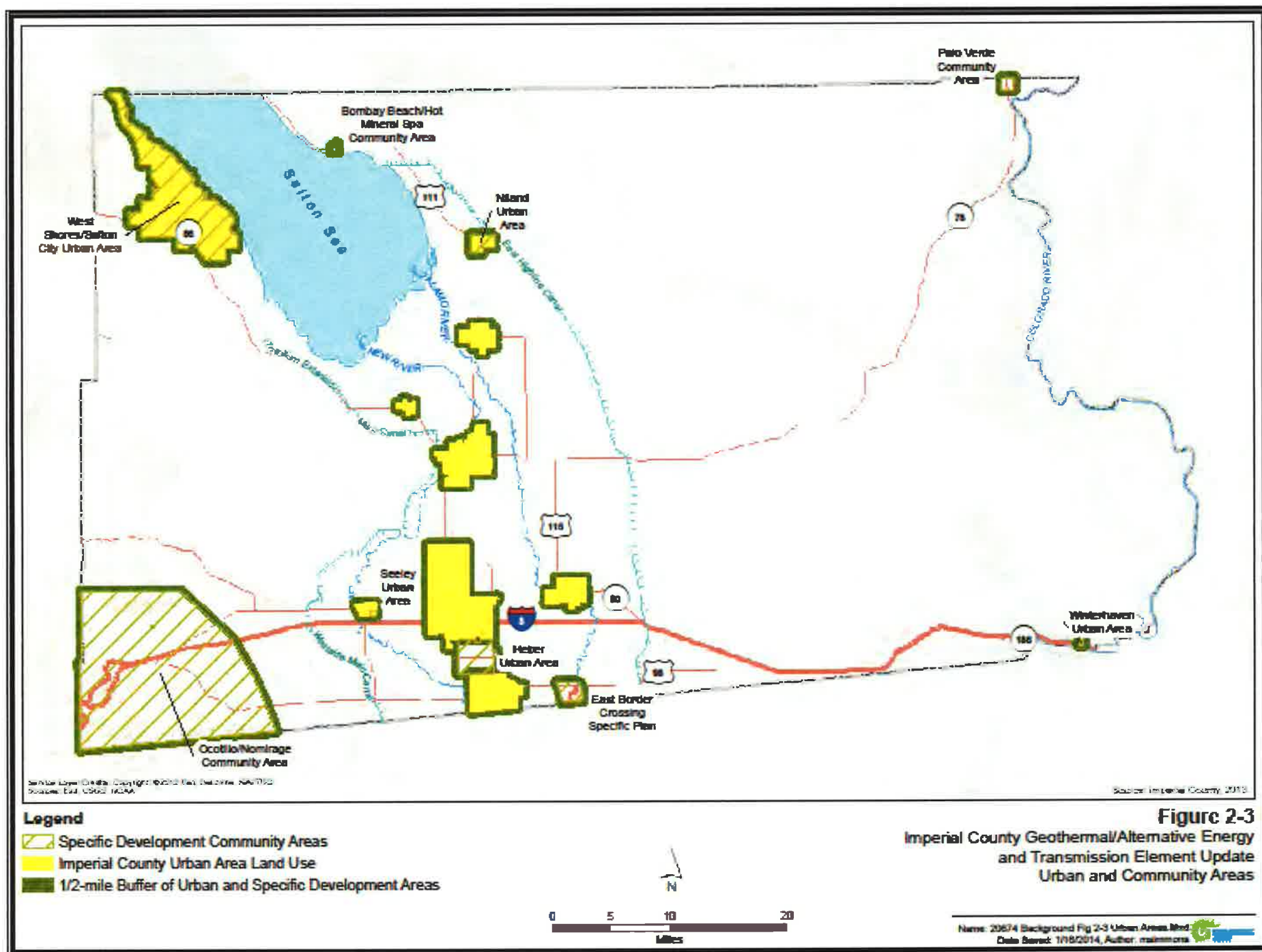
- **Develop Baseline Studies**
- **Review Renewable Energy Strategies**
- **Review Renewable Energy Legislation and Policies**
- **Develop Revised General Plan Element and Implementing Ordinances**
- **Prepare Adequate CEQA Document**

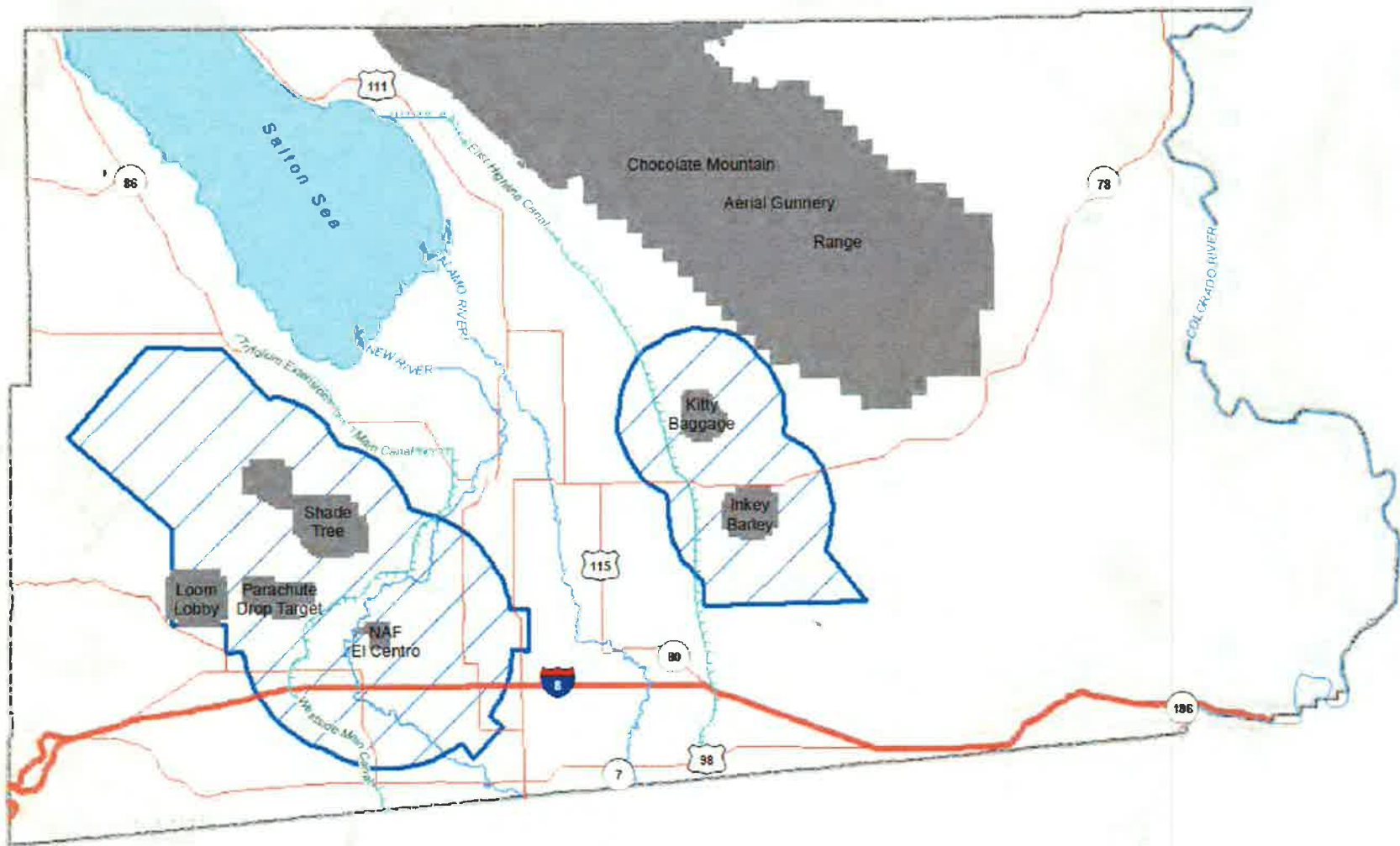
BASELINE ENVIRONMENTAL STUDY

- Aesthetics and Glare
- Agricultural Resources
- Air Quality
- Biological Resources
- Cultural/Archeological Resources
- Geology/Soils
- Greenhouse Gas Emissions/Climate Change
- Hazards and Hazardous Materials
- Health Risk Assessment
- Hydrology/Water Quality
- Land Use
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation/ Circulation
- Utilities and Services
- Potential Renewable Energy Generation Suitability Areas

IMPORTANT ENVIRONMENTAL CHARACTERISTICS

- **Land Use**
 - Community & Urban Areas + ½ -mile
- **Military Facilities and Operations**
 - Military Influence Areas
- **Agricultural Resources**
 - Prime & Statewide Important Farmland
- **Biological Resources**
 - Agency Designated Sensitive Habitats
- **Aesthetic & Visual Resources**
 - Maintenance of Visual Quality as High Value
- **Recreation**
 - Local, State and Federal Parks & Recreation Areas





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Sources: Esri, USGS, NOAA

Source: DataBasi, 2013

Legend

Military Influence Areas

Includes:

- Range Military Compatibility Area
- Inner Horizontal Surface Subzone = 150 ft
- Conical Surface Subzone = 20 ft to 1 ft
- Outer Horizontal Surface Subzone = 500 ft
- Approach-Departure Clearance Surface Subzone = 50 ft to 1 ft

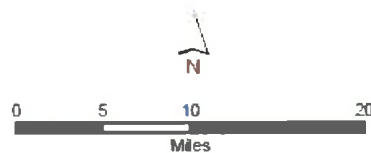


Figure 2-4
Imperial County Geothermal/Alternative Energy
and Transmission Element Update
Military Influence Areas

Name: 20674 Background Fig X-2 Military Areas Mxd
Date Saved: 3/10/2014, Author: msimmons





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Source: Esri, USGS, NOAA

Source: California Department of Conservation, 2010

Legend

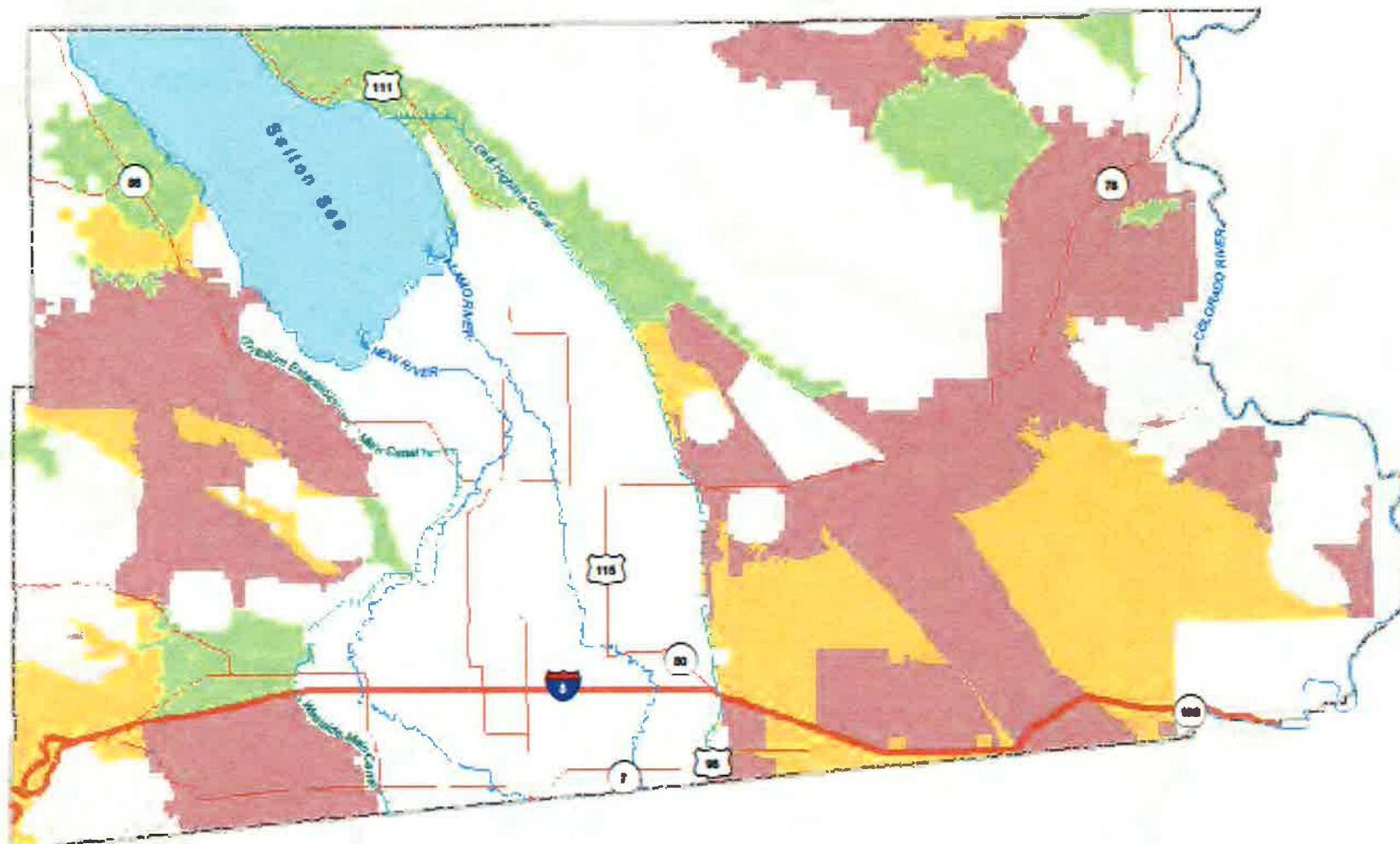
- | | |
|--------------------------------------|-----------------------------|
| Prime Farmland (P) | Urban and Built-up Land (D) |
| Farmland of Statewide Importance (S) | Other Land (X) |
| Unique Farmland (U) | Water |
| Farmland of Local Importance (L) | |



Figure 3-1
Imperial County Geothermal/Alternative Energy
and Transmission Element Update
State of California Farmlands of Significance

Notes: 2004 Background Fig 3-1 State Farmlands of Significance
Data Source: 1/10/2014, Author: maimmons





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Source: Chae, Inc. and the BLM Ridgecrest Field Office, 2012

Figure 15-2
Imperial County Geothermal/Alternative Energy
and Transmission Element Update
VRI Sensitivity Level Ratings for BLM-managed Lands

Legend

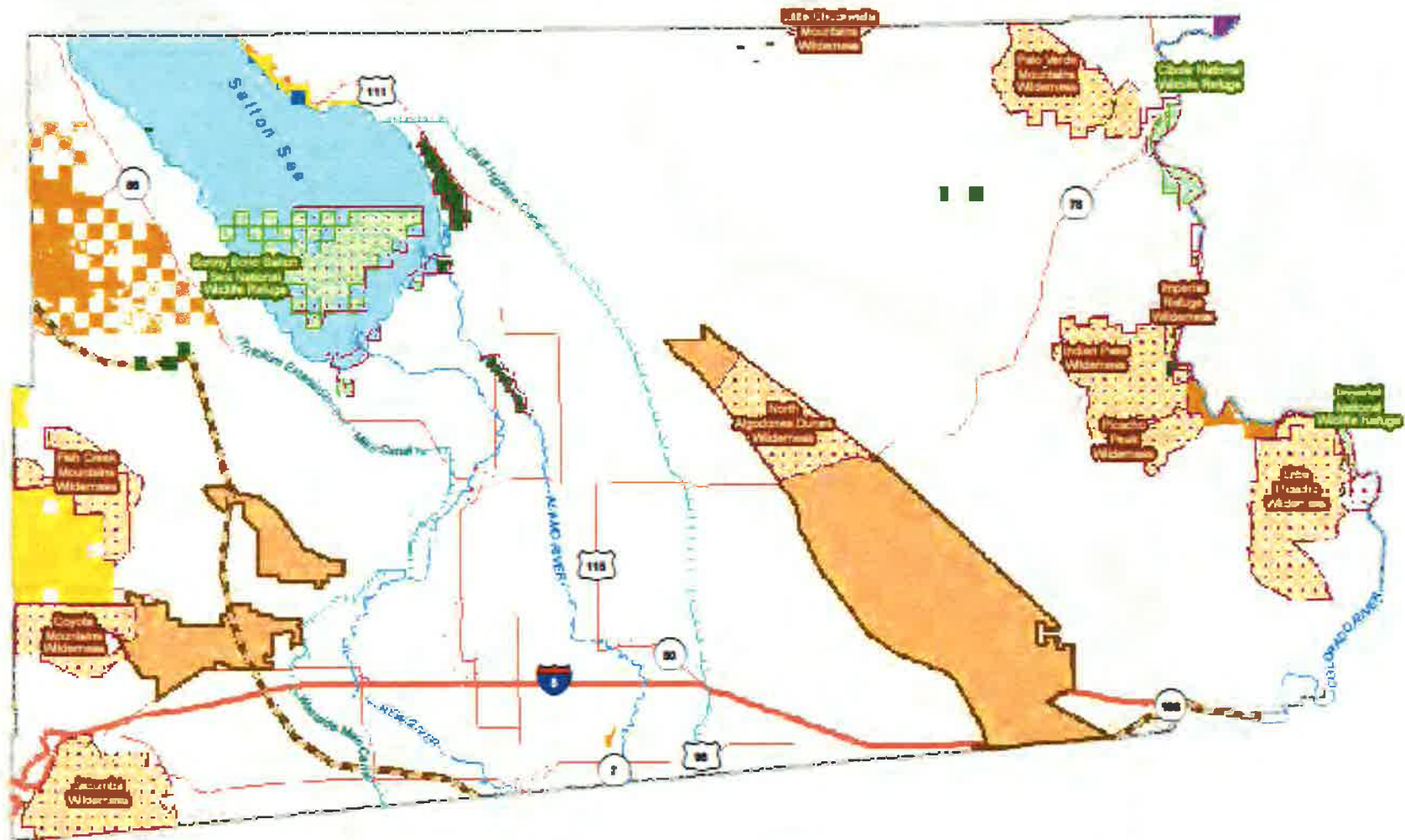
Overall Rating

- Maintenance of Visual Quality has High Value
- Maintenance of Visual Quality has Moderate Value
- Maintenance of Visual Quality has Low Value



Nov. 2014 Background Fig 15-2 VRI Sensitivity Map
Data Source: 1/15/2014, Author: [unintelligible]





Source: U.S. Fish & Wildlife Service, 2010; U.S. Forest Service, 2006.

Source: U.S. Fish & Wildlife Service, 2010; U.S. Forest Service, 2006.

Legend

- | | | |
|--------------------------|----------------------------------|---|
| City Park | Regional Park | U.S. Fish & Wildlife Service National Wildlife Refuge |
| County Park | State Park | BLM NLCS Wilderness Areas |
| National Recreation Area | State Recreation Area | CDFW Wildlife Areas & Ecological Reserves |
| Park | Federal Off-highway Vehicle Area | USGS Wilderness & Wildlife Areas |
| | Documented Recreational Trails | |

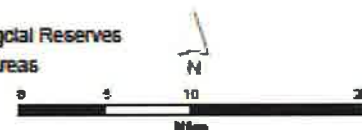


Figure 16-3
Imperial County Geothermal/Alternative Energy
and Transmission Element Update
Parks and Recreation Areas

Notes: 20074 Background Fig 16-3 Parks and Rec.Mxd
Date Saved: 1/16/2014, Author: masonm

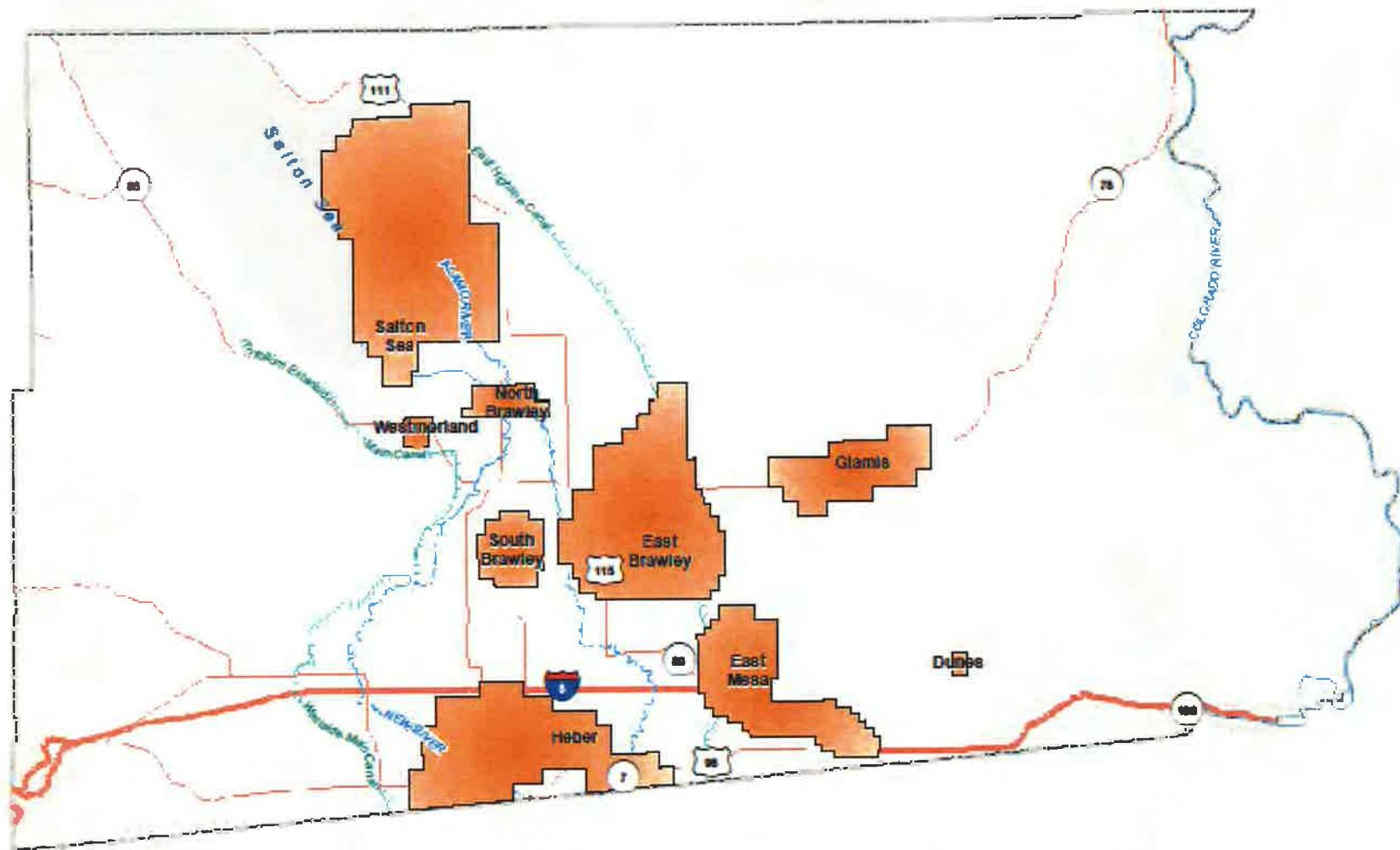
TYPES OF ENERGY PRODUCTION

- Geothermal
- Wind
- Solar
- Concentrated Solar
- Deep Solar Pond
- Hyper-Saline Brine Pond
- Biofuels



IDENTIFY ENERGY PRODUCTION SUITABILITY AREAS

- 1) Highly Suitable
- 2) Suitable
- 3) Potentially Suitable
- 4) Unsuitable
- 5) Highly Unsuitable



Source: U.S. Geological Survey, 2000. Data from the National Geothermal Data System (NGDS).

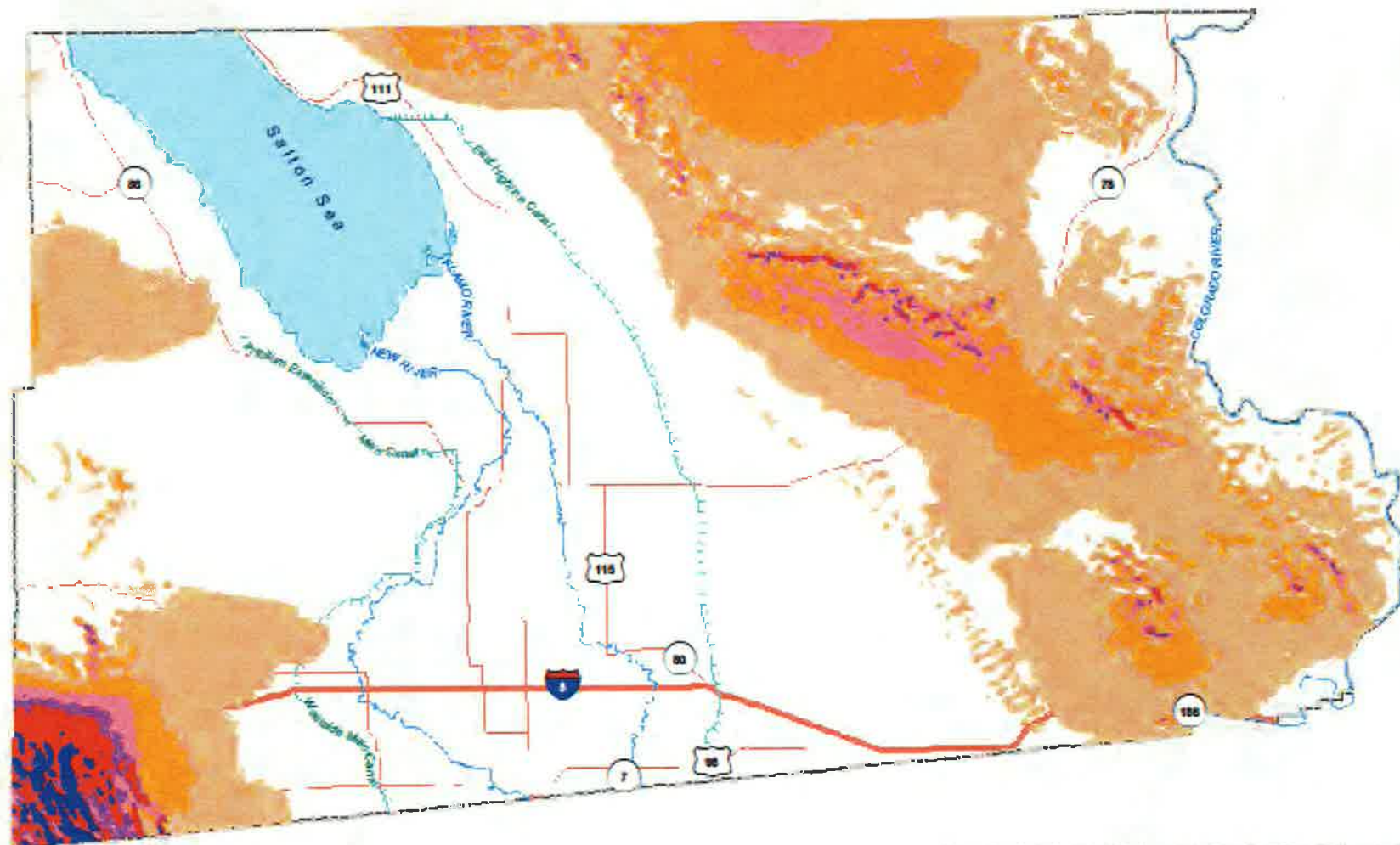
Source: GEO-HEAT CENTER, Oregon Institute of Technology, 2001.

Legend

Known Geothermal Resource Area

Figure 2-4
Imperial County Geothermal/Alternative Energy
and Transmission Element Update
Known Geothermal Resource Areas

Notes: 20074 Background Fig 2-4 KGRA.Mxd
Data Source: 1/10/2014, Author: msmith@ucsf.edu



Source: Layer Credits: Copyright 2010 Esri, DeLorme, NAVTEQ, Swire, Esri, NOAA, NOAA

Source: Direct solar resource values were derived from raster data (2012) obtained from NREL. Harris, R., P. Inghram, K. Moore, M. Kottick, C. Olson, R. George and P. Vignola (2002). A New Operational Satellite-to-Irradiance Model. Solar Energy

Legend

Wind Power Class

1	4
2	5
3	6
	7

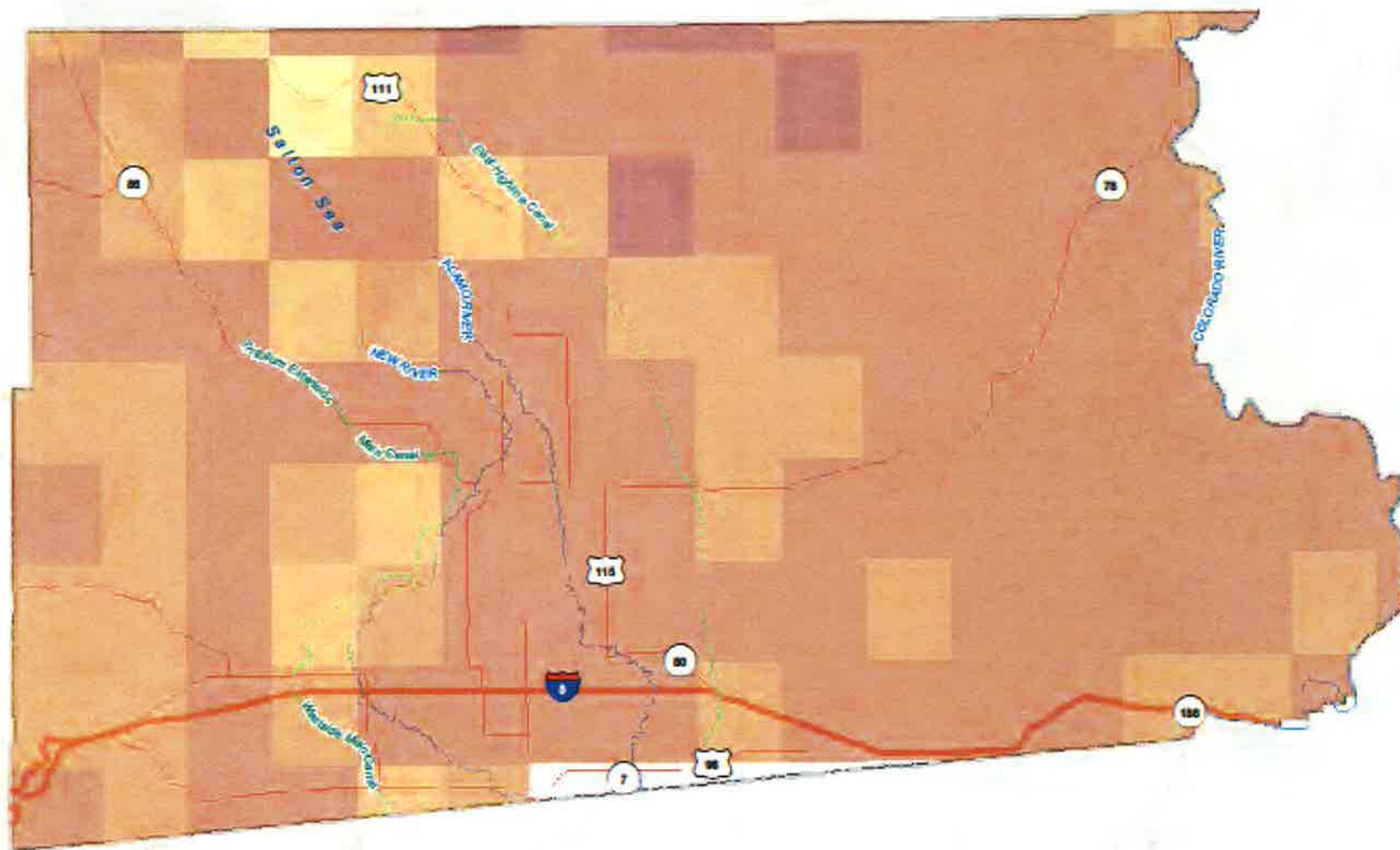
Power Class Resource Potential 50m Wind Power Density (W/m²)

1	Poor	0 - 200
2	Marginal	200 - 300
3	Fair	300 - 400
4	Good	400 - 500
5	Excellent	500 - 600
6	Outstanding	600 - 800
7	Superb	> 800



Figure 2-6
Imperial County Geothermal/Alternative Energy
and Transmission Element Update
Wind Resource Potential

Version: 20174 Background Fig 2-6 Wind Potential Map
Data Saved: 1/10/2014, Author: mmsmms



Service Layer Credits: Copyright © 2014 Esri, DeLorme, NAVTEQ, Swisstopo, Esri, USGS, NOAA

Source: Direct solar resource values were derived from Perez data (2012), obtained from NREL. Perez, R., F. Inchausti, K. Moore, M. Kasten, G. Chen, R. George and F. Vignola (2002): A New Operational Satellite-to-Measurement Model: Solar Energy

Legend

Annual DNI (kWh/sq.m/day)	7.1 - 7.5
5.9 - 6.0	7.6 - 8.0
6.1 - 6.5	8.1 - 8.5
6.6 - 7.0	



Figure 2-7
Imperial County Geothermal/Alternative Energy
and Transmission Element Update
Solar - Clear Sky Direct Normal (DNI)

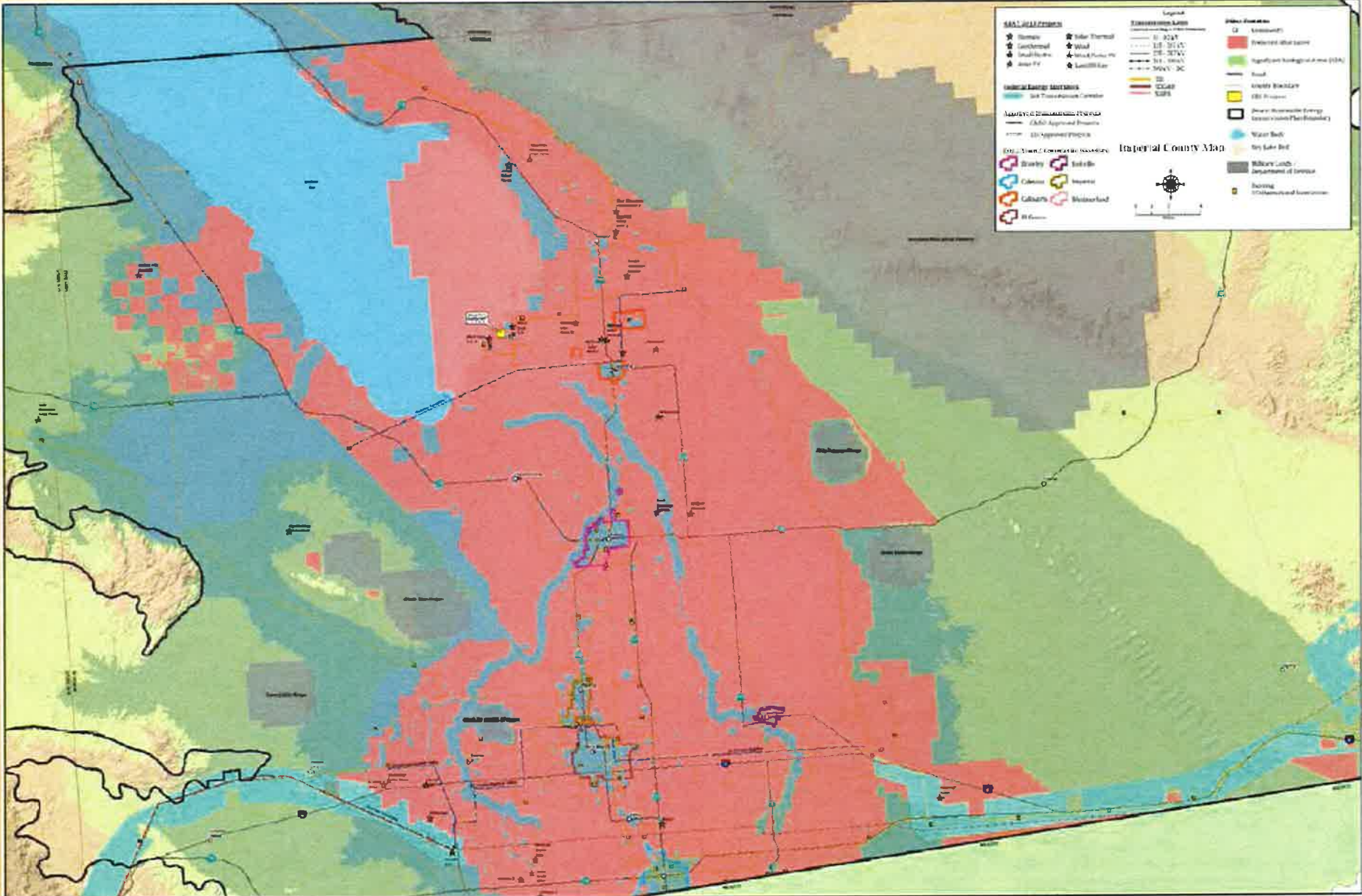
Notes: 20674 Background Fig 2-7 Solar Potential Map
Date Served: 1/10/2014, Author: maimmons



DRECP PLANNING AREA



WATERWAY COMMUNITY DRECK AFTERMATH





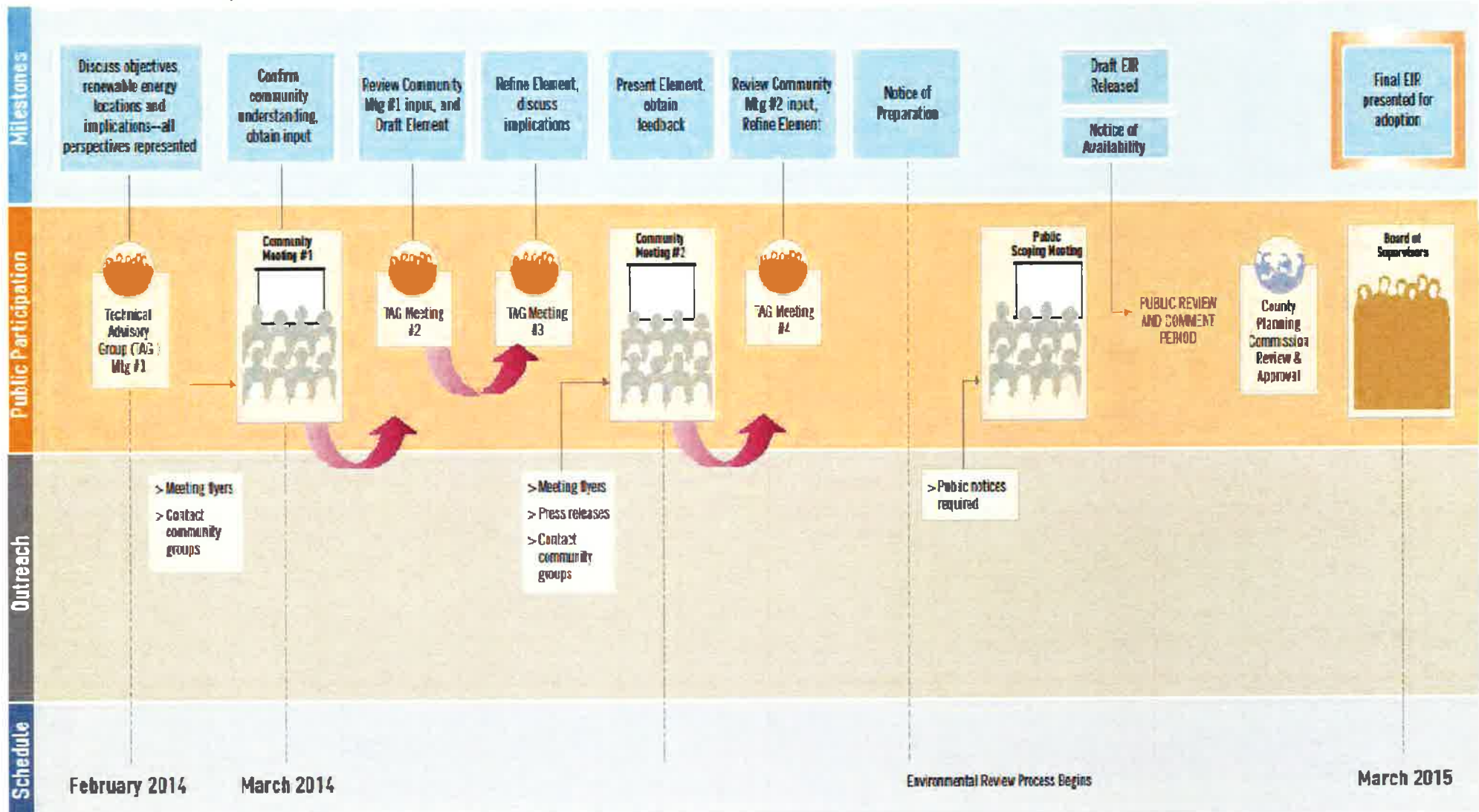
County of Imperial Update of Geothermal/Renewable Energy and Transmission Element and Potential General Plan Review/Update and EIR



*Preserving Agriculture & the Natural Habitat
Providing Renewable Energy & Economic Development Opportunities*

DRAFT

The Public Participation Process:



NEXT STEPS

- **Public Outreach Program**
- **Finalize Baseline Environmental Study**
- **Confirm Renewable Energy Generation Strategies**
- **Prepare Draft Geothermal/Alternative Energy and Transmission Element with Implementing Ordinances**
- **Complete CEQA Environmental Document**