THE SOLAR PEIS AND CALIFORNIA PROPOSED SOLAR ENERGY ZONES

Webcast Presented for the Desert Manager's Group

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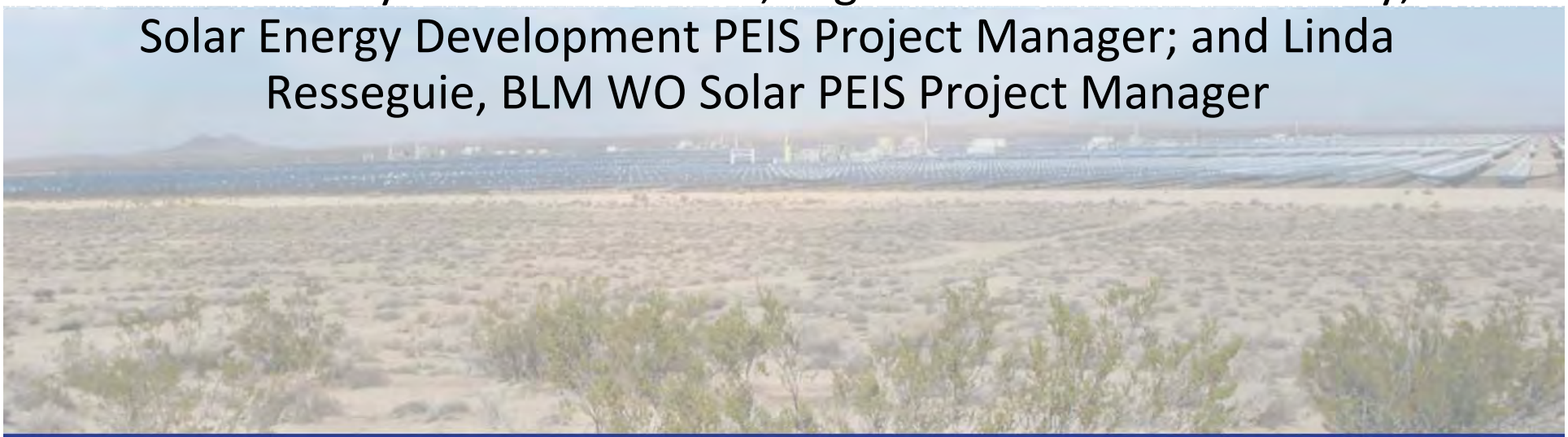


Solar Energy Development PEIS: History and Status

- The co-lead agencies on the PEIS are BLM and DOE. Both agencies are using the PEIS to create a program of policies and required mitigation measures (aka design features) for supported solar projects and related transmission facilities.
- In the PEIS, BLM identifies proposed lands in the six-state study area excluded from, and lands best suited for, utility-scale solar energy development.
- BLM intends to amend land use plans in applicable areas to adopt the new Solar Energy Program and identify lands excluded from and lands available for development.
- The Notice of Availability published on December 17th marked the start of the public comment period, running through March 17th.
- The entire document and related maps and other materials, are available on the project website, http://solareis.anl.gov.

Structure of PEIS:

- **Volume 1 -** Chapter 1: Introduction; Chapter 2: Description of Alternatives and RFDS; Chapter 3: Overview of Solar Energy Power Production Technologies and Agency Processes; Chapter 4: Affected Environment for Six-State Study Area; Chapter 5: Impacts of Solar Energy Development and Potential Mitigation Measures (Includes Impacts of Related Transmission); Chapters 6 and 7: Impacts for BLM's/DOE's Solar Energy Development Alternatives (includes programmatic cumulative impacts); Chapter 14: Consultation and Coordination

- **Volumes 2 – 7 -** Chapters 8-13: Affected Environment and Impact Assessment for Proposed Solar Energy Zones in Arizona (8), California (9), Colorado (10), Nevada (11), New Mexico (12), and Utah (13) (Note: CA has changed from 7 to 9)

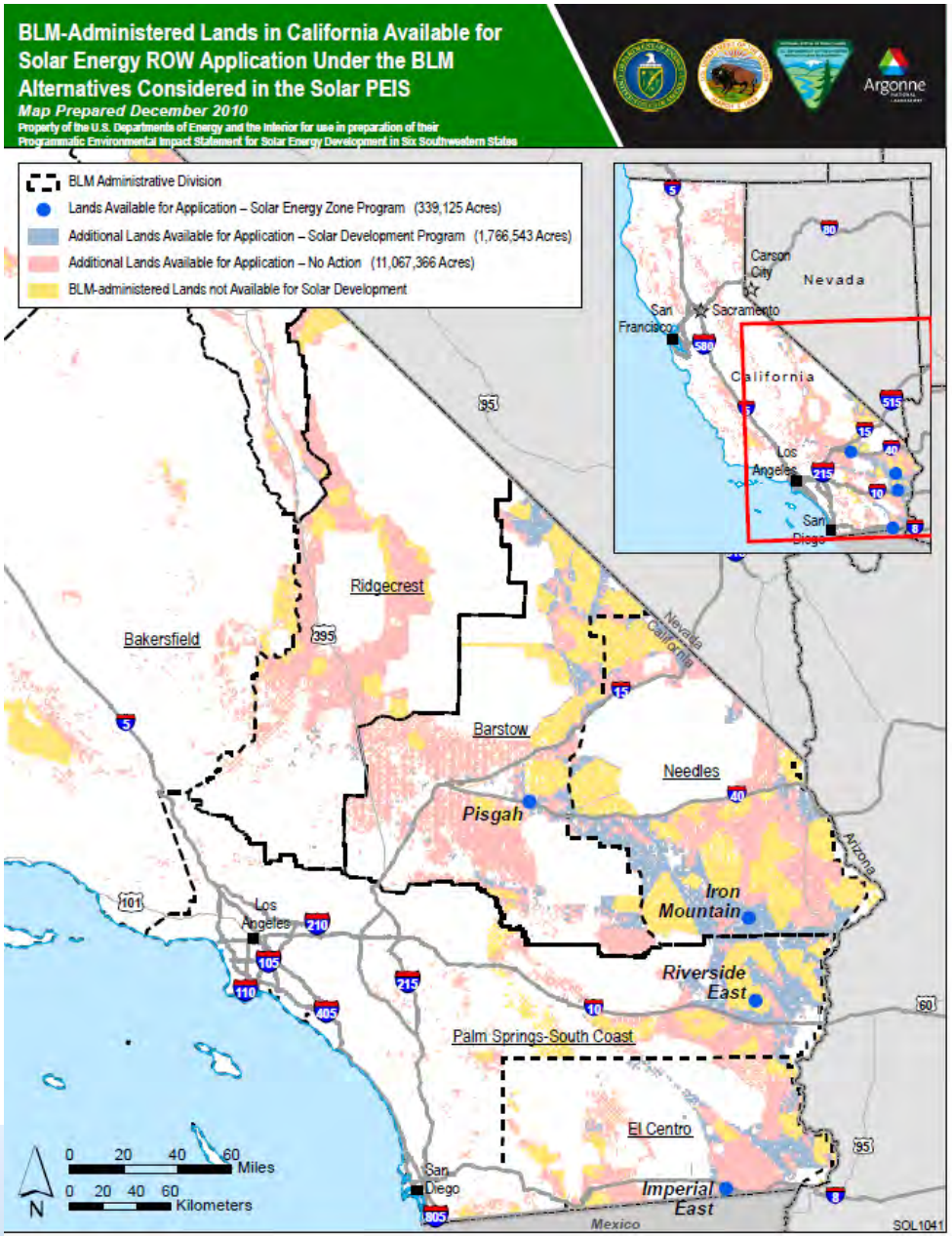
- **Volume 8 - Appendices**

BLM's Solar PEIS Alternatives (Chapter 2)

- BLM's two action alternatives would establish a new Solar Energy Program of right-of-way exclusion areas, policies and required design features:
  - the Solar Energy Development Program Alternative: 22 million acres of land available for application (about 1.8 million acres in CA), prioritizes development in SEZs (total of about 677,400 acres; 339,000 acres in CA)
  - the Solar Energy Zone Program Alternative: only lands within the SEZs available for application
- The No Action Alternative continues use of existing solar energy policies in conformance with applicable land use plans. Solar energy ROW applications could be considered on about 99 million acres of BLM-administered lands (where such use is not specifically prohibited).

Programmatic Cumulative Impacts (Chapter 6)

- Evaluates the impacts of the proposed action in conjunction with past, present, and reasonably foreseeable future actions.
- Other actions assessed include Energy Production and Distribution, Recreation, Minerals Production, Military Operations, and Grazing and Rangeland Management. General trends in population, energy demand, and water availability are also discussed.
- The programmatic cumulative impact assessment is based on the "reasonably foreseeable development scenario" (RFDS). The RFDS was derived from the state RPS requirements, and is 15,421 MW of development on BLM-administered lands and 5,140 MW on other lands over 20 years in CA.


BLM-Administered Lands in California Available for Solar Energy ROW Application Under the BLM Alternatives Considered in the Solar PEIS
Map Prepared December 2010
Property of the U.S. Departments of Energy and the Interior for use in preparation of their Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States
Argonne
BLM Administrative Division
Lands Available for Application – Solar Energy Zone Program (339,125 Acres)
Additional Lands Available for Application – Solar Development Program (1,766,543 Acres)
Additional Lands Available for Application – No Action (11,067,366 Acres)
BLM-administered Lands not Available for Solar Development
Carson City
Nevada
San Francisco
Sacramento
California
Los Angeles
San Diego
Ridgecrest
Bakersfield
Barstow
Needles
Pisgah
Iron Mountain
Riverside East
Palm Springs-South Coast
El Centro
Imperial East
Nevada
California
Arizona
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0 20 40 60 Miles
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Scope of the Analyses for Proposed Solar Energy Zones

- Analyses were as site-specific as possible in order to maximize opportunities for streamlining future project-specific environmental reviews and ROW approvals (i.e., tiering to the PEIS)

- Additional analysis at the project specific level will be required for some areas, for example:
  - Projects which will use groundwater
  - Cultural resource site surveys
  - Special-status species surveys
  - Visual Impacts

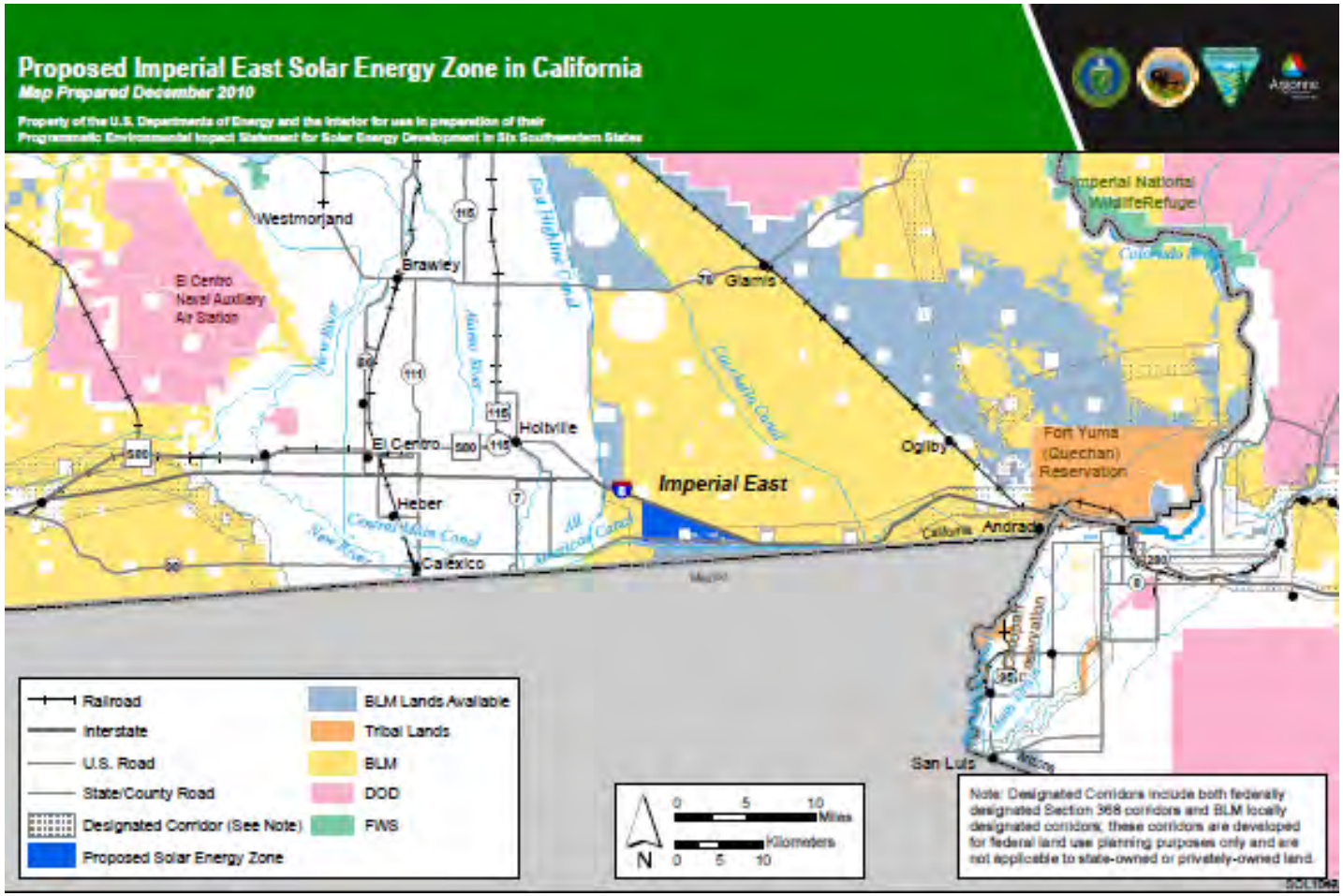
Areas and Resources Addressed in SEZ-Specific Sections

- Background and Summary of Impacts (Summary Table)
- Lands and Realty
- Specially-Designated Areas
- Rangeland Resources (Livestock Grazing and Wild Horses and Burros)
- Recreation
- Military and Civilian Aviation
- Geologic Setting and Soil Resources
- Minerals
- Water Resources (includes Drainages, Floodplains, and Wetlands)
- Vegetation
- Wildlife and Aquatic Biota
- Special Status Species
- Air Quality and Climate
- Visual Resources
- Acoustic Environment
- Paleontological Resources
- Cultural Resources
- Native American Concerns
- Socioeconomics
- Environmental Justice
- Transportation
- Cumulative Impacts

Note that Wildland Fire, Hazardous Materials and Waste, and Health and Safety are addressed in the Programmatic Chapter 5, but do not have SEZ-specific assessment components.

Items of Note for SEZ sections:

- Analysis Assumption for all SEZs is that up to 80% of the land area could be utilized for Solar Facilities over the 20 year study period. The assumption that not all the land would be developed is based on likelihood that some areas will need to be avoided (e.g., for drainages, to provide distance from nearby residences, to exclude valuable habitat areas).
- Assumes that transmission lines and/or new roads would be constructed to the nearest existing transmission line or state or interstate road – but all California SEZs are intersected by transmission lines and roads.
  - Related standard text from SEZ assumptions sections: "At full build-out capacity, it is clear that new transmission lines and/or upgrades of existing transmission lines would be required to bring electricity from the proposed SEZ to load centers; however, at this time the location and size of such new transmission facilities are unknown. Generic impacts of transmission and associated infrastructure construction and of line upgrades for various resources are discussed in Chapter 5. Project-specific analyses would need to identify the specific impacts of new transmission construction and line upgrades for any projects proposed within the SEZ."

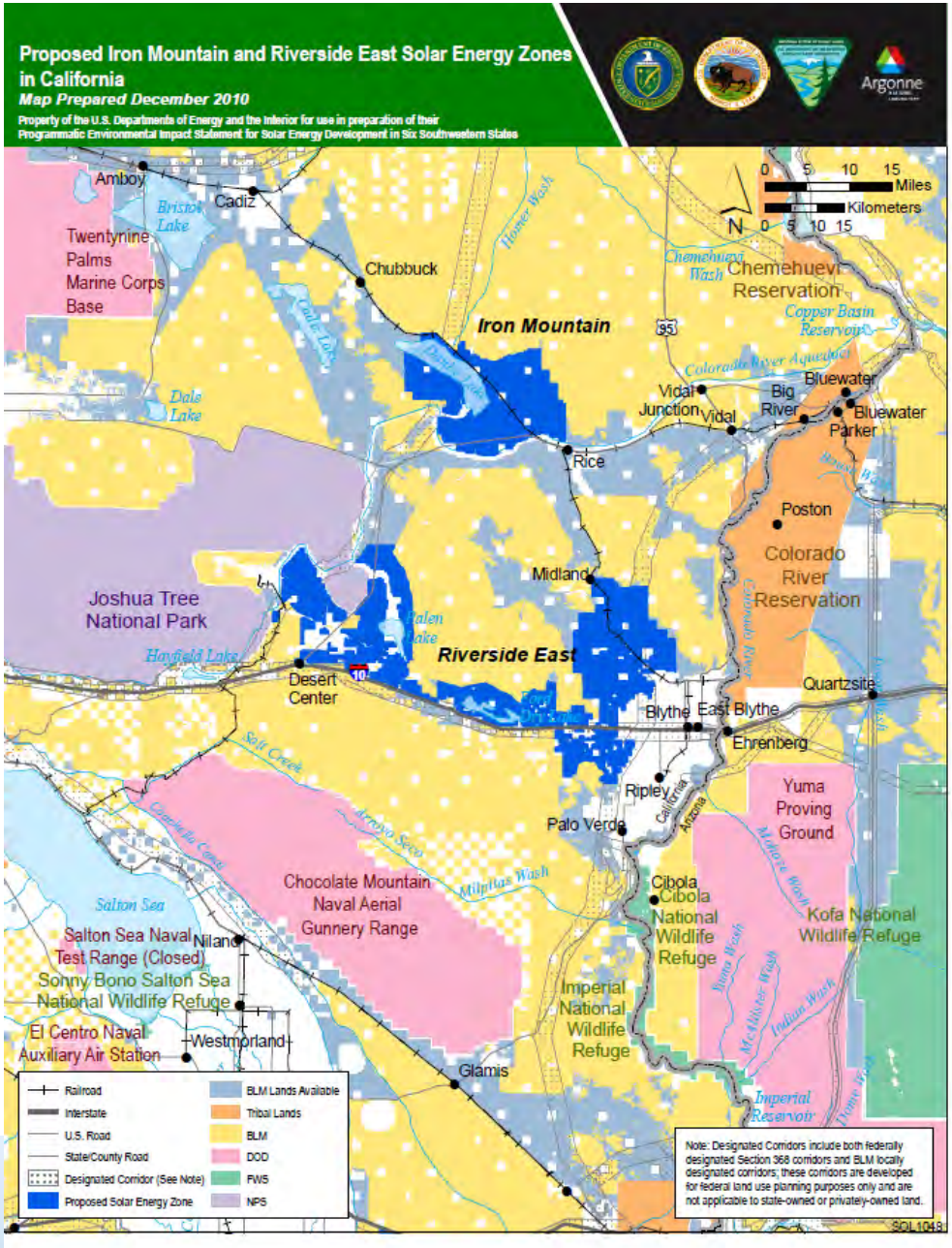


Proposed Imperial Valley East SEZ
(Chapter 9, Volume 3a)

5,722 acres, up to 916 MW

El Centro Field Office, Imperial County

Potential conflicts and impacts Identified in PEIS: Possible conflict with designated corridor; SEZ is in known geothermal resource area; mitigation wetlands located along southern boundary of SEZ; wet-cooling is not feasible; potential impacts to desert bird focal species-if present need to avoid nesting habitat; preserve mule deer access to the All-American Canal; potential presence of 30 special-status species; potential impacts to Yuma clapper rail; possibility of Native American burial sites in the vicinity of the SEZ.



Proposed Iron Mountain SEZ
(Chapter 9, Volume 3a)

106,522 acres, up to 17,043 MW

Needles Field Office, Riverside and San Bernardino Counties

Potential conflicts and impacts Identified in PEIS: Conflict with Danby Lake KSLA (23,000 acres); need to survey for military ordnance during construction; potential for visual impacts to Wilderness Areas could result in restrictions on development in 50,984 acres of the SEZ; potential impacts to desert bird focal species-if present need to avoid nesting habitat; potentially suitable habitat for 43 special-status species; potential impacts to desert tortoise; possibility of Native American burial sites in the vicinity of the SEZ, and also close to the Salt Song Trail.

PEIS recommends no development in KSLA and restricted development near WAs – overall this would result in restricted development in a bit less than 69% of the proposed SEZ (SEE TABLE 6.1-3).

Areas of Proposed Iron Mountain SEZ with possible Development restrictions based on Visual Impacts:

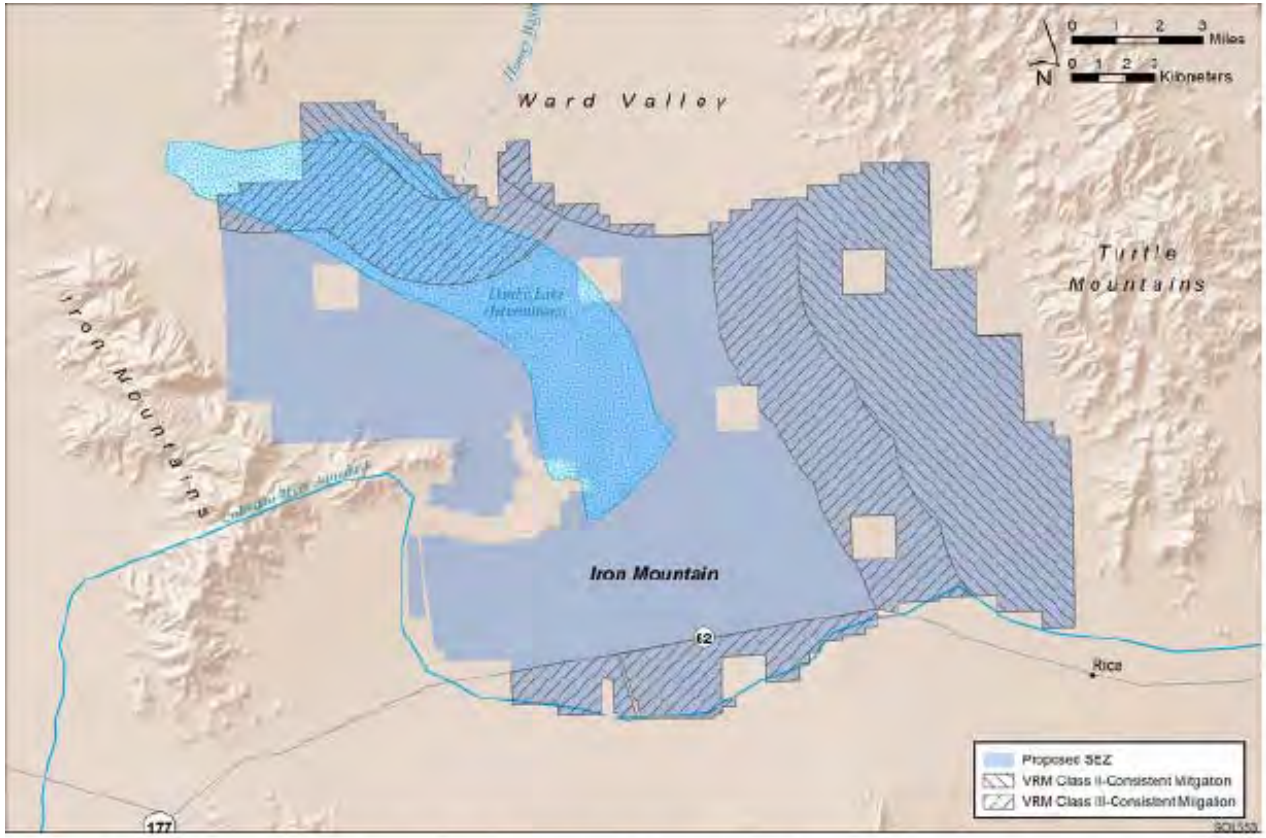
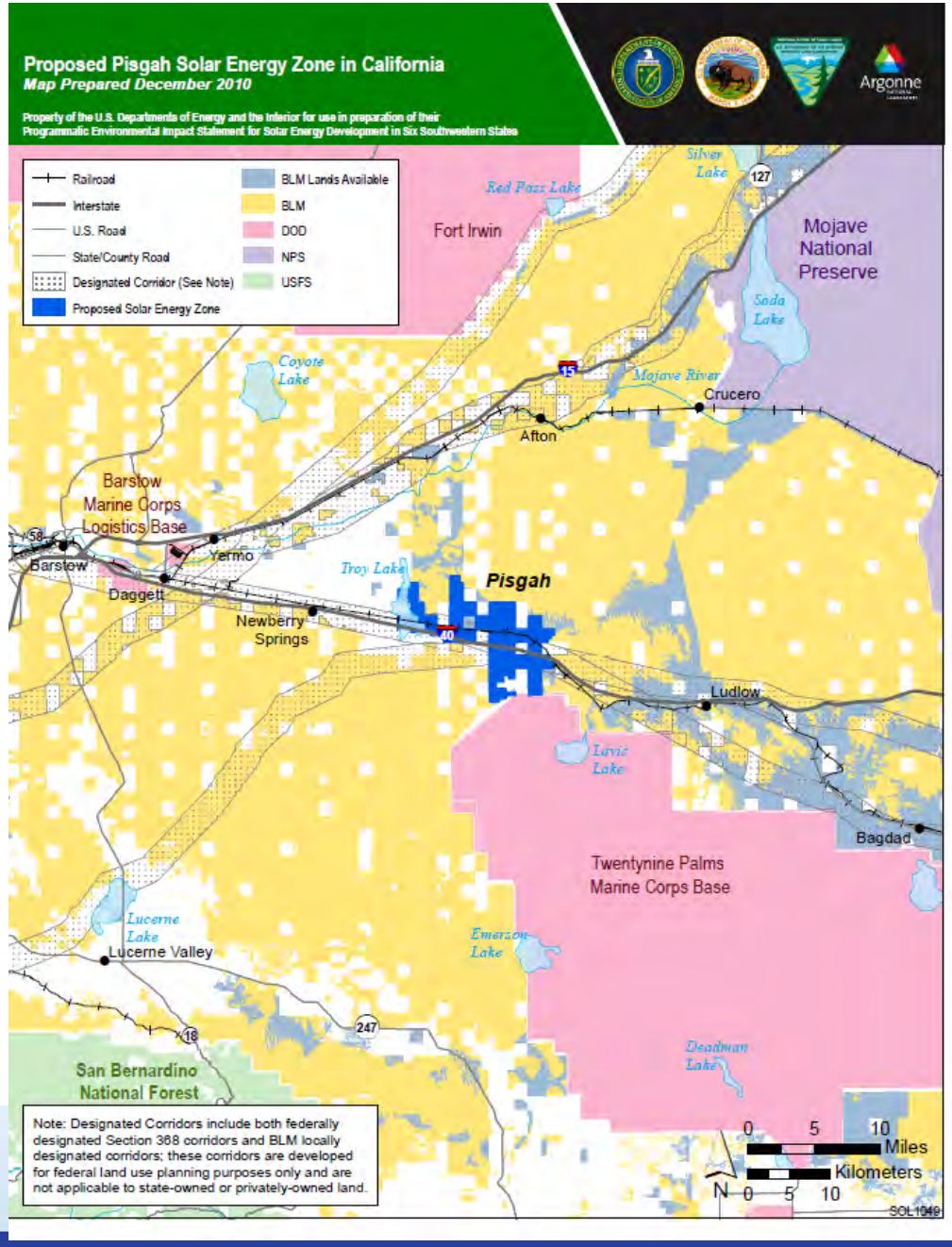


FIGURE 9.2.14.2-17 Areas within the Proposed Iron Mountain SEZ Affected by SEZ-Specific Distance-Based Visual Impact Design Features

Water Use by Technology:

The PEIS estimates that parabolic trough and power tower technologies could generate 1 to 6% of the theoretical maximum power output (based on land size) if wet cooled (170 to 1023 MW), 10 to 40% if dry cooled (1700 to 6820 MW), and 56% (9544 MW) if dish engine facilities. Water use requirements for PV could be met.



Proposed Pisgah SEZ
(Chapter 9, Volume 3b)
23,950 acres, up to 3,832 MW
Barstow Field Office; San Bernardino County

Potential conflicts and impacts Identified in PEIS: Potential for visual impacts to a WA and a WSA could result in restrictions on development in 10,652 acres of the SEZ; 103 mining claims are present within the SEZ, mainly in the area south of I-40; Troy Dry Lake should be avoided; wet cooling is not feasible; potential impacts to desert bird focal species-if present need to avoid nesting habitat; potentially suitable habitat for 54 special-status species; potential impacts to desert tortoise and Mohave tui chub; significant historic and prehistoric sites should be avoided.

PEIS recommends restricted development near WAs and WSAs– overall this would result in restricted development in about 44% of the proposed SEZ (SEE TABLE 6.1-3)

Areas of Proposed Pisgah SEZ with possible development restrictions based on Visual Impacts*:

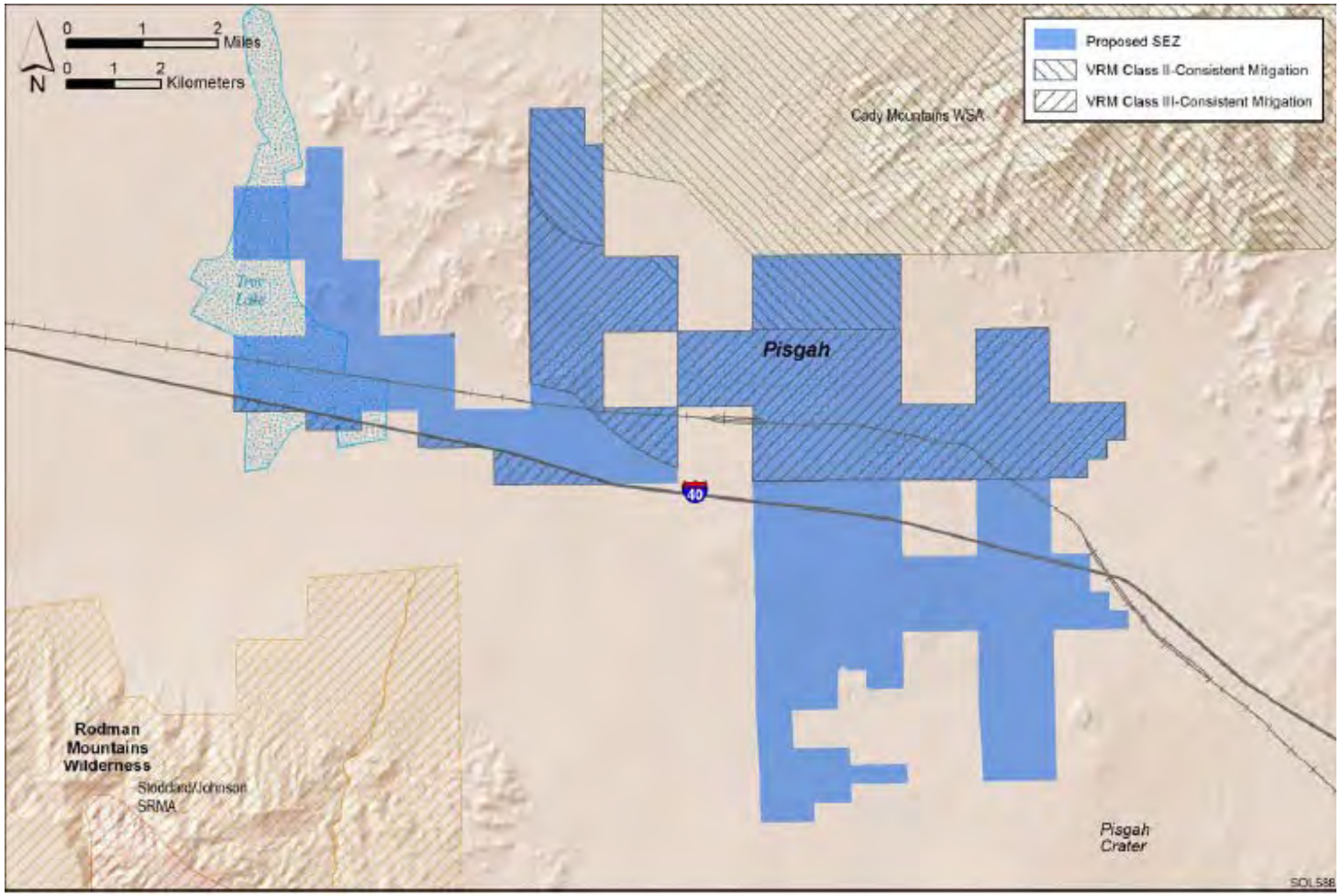
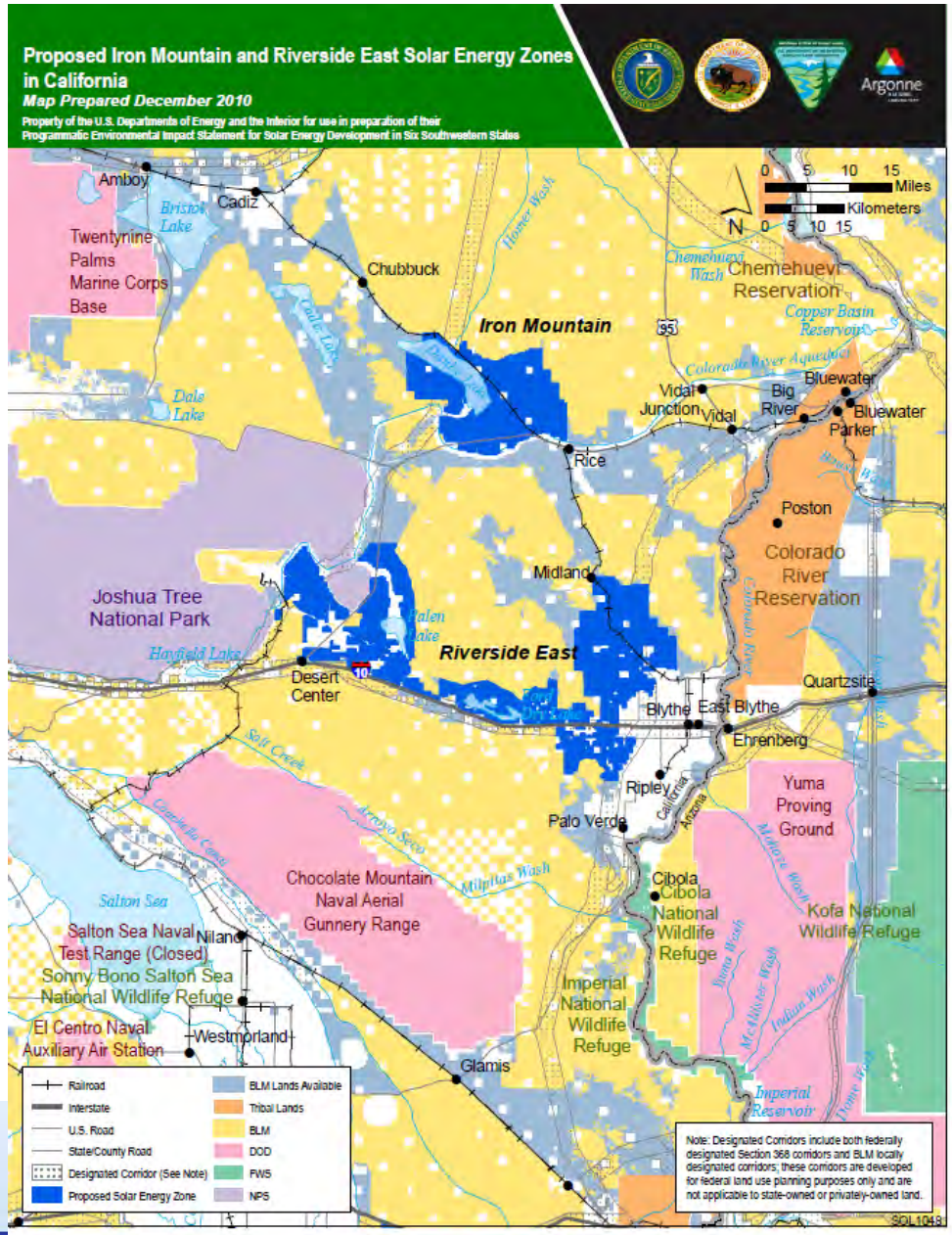


FIGURE 9.3.14.3-1 Areas within the Proposed Pisgah SEZ Affected by Zone-Specific Distance-Based Visual Impact Design Features

* May have additional restrictions based on Fast Track analyses; also mining claims



Proposed Riverside East SEZ
(Chapter 9, Volume 3b)
203,092 acres, up to 32,463 MW
Palm Spring/South Coast Field Office, Riverside County

Potential conflicts and impacts Identified in PEIS: Potential for visual impacts to several WAs and Joshua Tree NP could result in restrictions on development in 99,306 acres of the SEZ; possible impacts to recreational use in Midland Long-term Visitor Center; McCoy Wash, Palen Lake and Ford Dry Lake should be avoided; wet cooling is not feasible; potential impacts to desert bird focal species-if present need to avoid nesting habitat; preserve mule deer access to the Colorado River and the mountains; potentially suitable habitat for 69 special-status species; potential impacts to desert tortoise; significant historic and prehistoric sites should be avoided.

PEIS recommends restricted development near WA and NP, and no development in wetlands – overall this would result in restricted development in about 51% (103,113 acres) of the proposed SEZ. (SEE TABLE 6.1-3)

Areas of Proposed Riverside East SEZ with possible Development restrictions based on Visual Impacts:

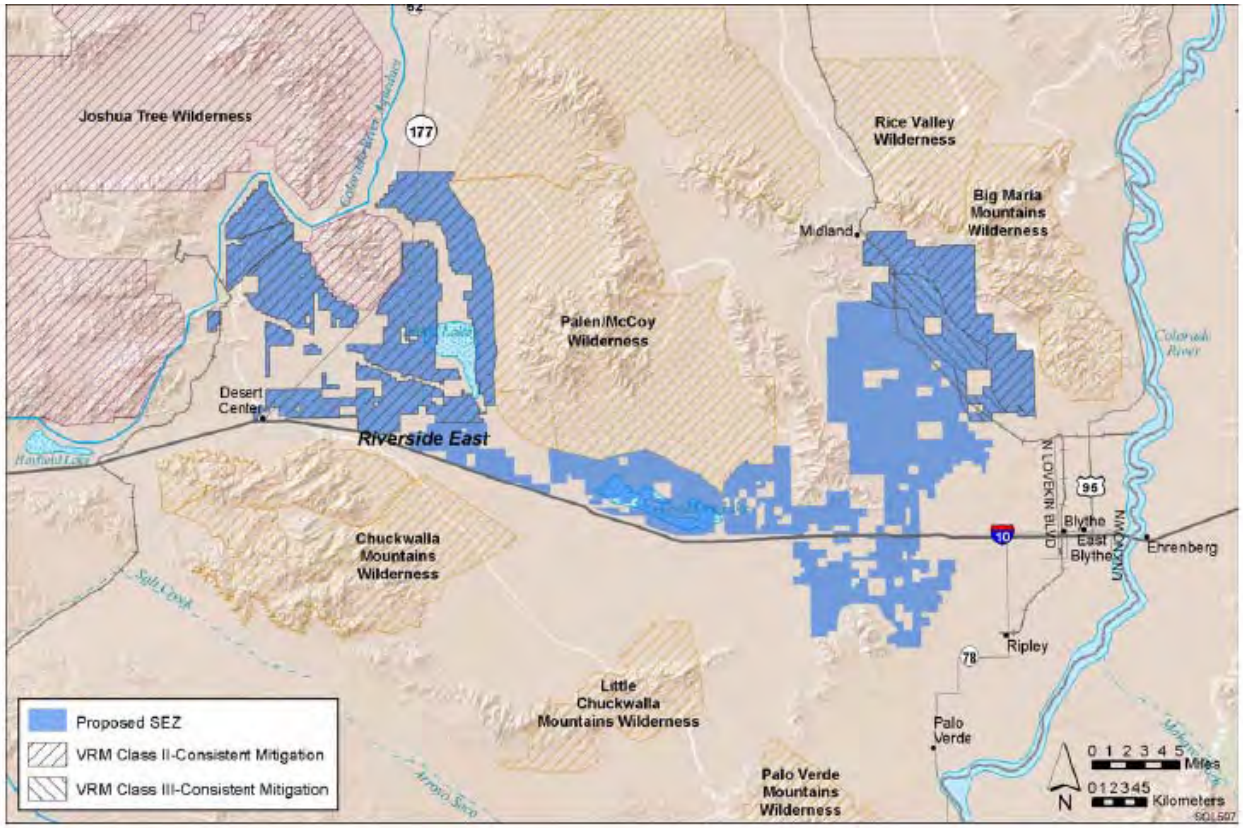


FIGURE 9.4.14.3-1 Areas within the Proposed Riverside East SEZ Affected by SEZ-Specific Distance-Based Visual Impact Design Features

Water Use by Technology:

The PEIS estimates that parabolic trough and power tower technologies could generate 2 to 10% of the theoretical maximum power output (based on land size) if wet cooled (649 to 3246 MW), and 19 to 71% if dry cooled (6168 to 23049 MW. Water use requirements for dish engine and PV facilities could be met.

Cumulative Impacts Assessment for SEZs

- Builds on programmatic RFDS (which projects total of about 20,500 MW development in CA) by providing information on all active solar applications within 50 mi of each SEZ. Considers fast-tracks to be "reasonably foreseeable"
- Also considers other large energy projects (more than 500 acres and using water on a scale similar to utility-scale solar projects)

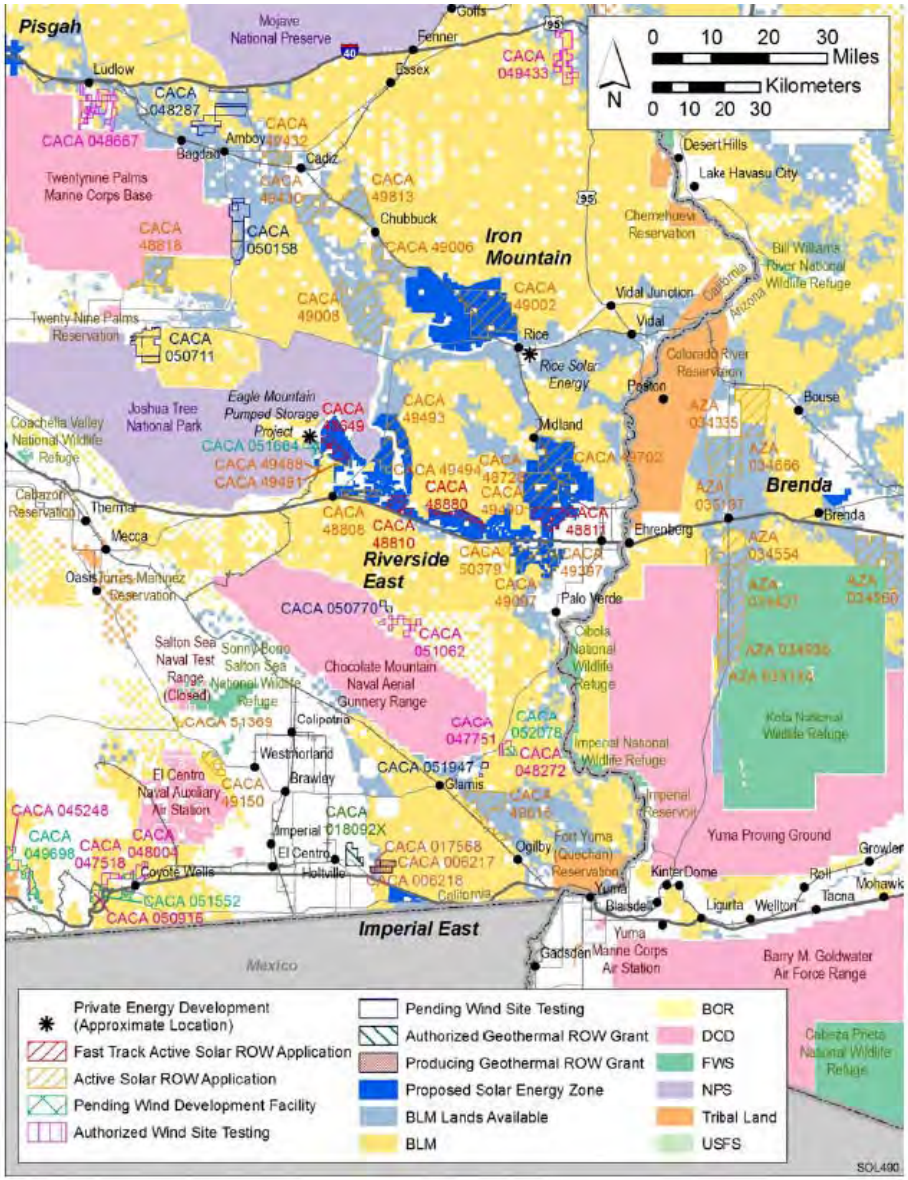


FIGURE 9.4.22.2-1 Location of Renewable Energy Proposals on Public Land within a 50-mi (80-km) Radius of the Proposed Riverside East SEZ

Example Figure from PEIS: Riverside East Cumulative Impacts

DRECP and the Solar PEIS

- DRECP is briefly introduced in Section 1.6.2.3
- DRECP is discussed in detail in Appendix D (Summary of Regional Initiatives and State Plans), Section D.3.4. This section provides a map that overlays DRECP "Starting Point" and Conservation Opportunity Lands on proposed BLM Lands Available and proposed SEZs
- If available, an update of DRECP findings will be included in the Final PEIS