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CHAPTER 2

DESCRIPTION OF ALTERNATIVES AND THE REASONABLY FORESEEABLE DEVELOPMENT SCENARIO

2.1 INTRODUCTION

The RFDS identifies the lands in Arizona that are most suitable for the development of solar and wind energy resources, and estimates the acreage of those lands required to support renewable energy projects that would not only meet but exceed the Arizona RPS of 15 percent renewable energy by 2025.

The National Environmental Policy Act, under which the EIS is being developed, directs the BLM to “study, develop, and describe appropriate alternatives to recommended courses of action in any proposal that involves unresolved conflicts concerning alternative uses of available resources...” (NEPA Section 102(2)(e)). At the heart of the alternative development process is the required development of a range of reasonable alternatives. Public and internal (within BLM) scoping has identified issues that present opportunities for alternative courses of action, while the purpose and need for action provides sideboards for determining “reasonableness.”

This chapter provides the details of the No Action Alternative, which would continue the BLM’s existing policies; six action alternatives, including the BLM’s preferred alternative; and a discussion of alternatives considered but eliminated from detailed analysis.

The end of the chapter includes a summary of the RFDS scenario for renewable energy in Arizona (**Section 2.6**, Summary of the Reasonably Foreseeable Development Scenario). The solar and wind technologies described here are representative of those most likely to be deployed over the next 20 years; however, the described procedures and processes could apply to other land area-based renewable energy technologies (e.g., algae ponds), with additional mitigation requirements developed on a project-by-project basis.

2.2 ALTERNATIVE DEVELOPMENT PROCESS

The BLM proposes to identify REDAs and establish management actions, design features, and land tenure and reuse policies applicable to solar and wind energy development on BLM-administered lands in Arizona. The REDAs would identify where solar and wind energy development is likely to be compatible with resource objectives, and the management actions and design features would bring consistency and efficiency to the BLM's authorization process. In addition, the BLM is proposing to identify a SEZ for utility-scale solar development. This section describes the methods used to develop alternatives to achieve these proposals.

CEQ regulations require including the No Action Alternative (40 CFR 1502.14[d]) even if it does not meet the purpose and need for the proposed action. The No Action Alternative provides a useful baseline for comparison of environmental effects (including cumulative effects) and demonstrates the consequences of not meeting the need for the action. For the RDEP, the No Action Alternative was developed by reviewing and analyzing all of the Arizona RMPs for renewable energy decisions, land disposal parcels and criteria, the granting of authorization for use, occupancy, and development, and the terms and conditions that may apply to development areas.

In addition to the No Action Alternative, six action alternatives were developed. These alternatives are the result of extensive consultation and coordination with the public, tribes, cooperating agencies, and stakeholders (see **Chapter 6**, Consultation and Coordination). All of the action alternatives were developed to meet the purpose and need for the proposed action (**Section 1.2**, Purpose and Need for the RDEP) and to address the planning issues (**Section 1.10**, Key Planning Issues). Additionally, the alternatives incorporate policies, design features, guidance, and direction from the national BLM renewable energy efforts (see **Section 1.4**, The RDEP's Relationship to National and Statewide BLM Policies and Programs), including the Wind PEIS (BLM 2005) and the proposed Solar Energy Program presented in the Draft Solar PEIS, as supplemented.

Identifying lands as REDAs was an iterative process that provided a range of alternatives. Public scoping and collaboration with cooperating agencies and stakeholders revealed that renewable energy development would be best suited on lands that are disturbed and/or have low resource sensitivity. Lands with low resource sensitivity are areas that are unlikely to contain resources protected by statute or policy, that currently do not have special designations or uses, that are unlikely to contain other recognized values, or for which impacts from development cannot be mitigated (for example, groundwater is a sensitive resource in many parts of Arizona; however, the BLM has the authority to require non-consumptive technologies to mitigate the impact). The BLM collected relevant information from BLM datasets, cooperating agencies, stakeholders, universities, and other public sources.

Identification of lands suitable for solar and wind renewable energy development was a collaborative process, involving not only the BLM but cooperating agencies, stakeholders, and the public.

The complete listing of these resource datasets is in **Table 2-1**, Areas with Known Sensitive Resources (Eliminated from REDA Consideration). The data were loaded into a GIS and analyzed to geographically identify low-sensitivity lands that could be suitable for renewable energy development. These lands represent Alternative 1, Maximum REDA.

After defining the Maximum REDA, the BLM looked to the main planning issues to form the themes of the other action alternatives: transmission issues, water issues, disposal/land tenure issues, previously disturbed lands, and load centers. Four of the issue categories – transmission, water, land tenure, and load centers – formed the core of four action alternatives, with the idea for reusing previously disturbed lands being included as an option for all alternatives. Based on these themes, the BLM developed Alternatives 2 through 5 by overlaying issue-specific GIS layers (e.g., existing and proposed transmission corridors) on the Maximum REDA alternative. Alternative 6, the Collaborative-Based Alternative, combines the analysis from the other alternatives to address the planning issues.

While decisions made from this EIS will only apply to BLM-administered public lands, the analysis was conducted statewide regardless of land status to facilitate statewide planning and identify areas for possible partnering between the BLM and other federal or state agencies and private land owners. Unless specifically nominated, the analysis does not include tribal or Department of Defense lands.

In addition to identifying REDAs, the RDEP is serving as a step-down process to the Solar PEIS. As such, the BLM is also proposing to identify the Agua Caliente SEZ to facilitate the development of utility-scale solar projects (see **Figure 2-1**, Proposed Agua Caliente SEZ). The proposed SEZ was developed based on a screening process that included the following criteria: available large contiguous parcels of BLM land (greater than 2,500 acres); proximity to transmission; limited known environmental or cultural constraints; proximity to roads and infrastructure; and adjacent to existing solar developments. All of the lands within and adjacent to the Maximum REDA were reviewed. The Agua Caliente area proved to best meet the criteria. After identification of the proposed SEZ, the BLM solicited the local BLM office (the Yuma Field Office), regional Arizona Game and Fish office, and stakeholder groups for resource information specific to that location. These groups provided information indicating that portions of the SEZ had excellent recreational hunting access and use, cultural resources, and proposed wildlife reintroduction locations. As a result of this input, two smaller SEZ footprints were proposed for consideration. Five of the action alternatives contain either the small, medium, or large proposed SEZ footprint as an element of the alternative; one action alternative does not propose a SEZ.

A Solar Energy Zone (SEZ) is an area of land identified by the BLM, in collaboration with other federal, state, and local agencies or stakeholders, as best suited for large-scale solar energy production (20 MW or greater).

In Arizona, the BLM is proposing two SEZs in the Solar PEIS and one SEZ in this EIS.

**Table 2-1
Areas with Known Sensitive Resources (Eliminated from REDA Consideration)**

Areas with Known Sensitive Resources	Source
BLM Areas of Critical Environmental Concern (ACECs)	BLM 2011b
BLM Backcountry Byways	BLM 2011b
BLM Designated Wilderness and Wilderness Study Areas	BLM 2011b
BLM Lands with wilderness characteristics managed to protect those characteristics	BLM 2011b
BLM Lands with wilderness characteristics not managed to protect those characteristics	BLM 2011b
BLM Visual Resource Management Classes I, II, and III	BLM 2011b
BLM Special Recreation Management Areas	BLM 2011b
BLM ROW exclusion or avoidance areas	BLM 2011b
BLM Herd Management Areas	BLM 2011b
Gila River Terraces (proposed cultural resources ACEC)	BLM 2011b
Designated BLM Utility Corridors	BLM 2011b
National Monuments	BLM 2011b
National Conservation Areas	BLM 2011b
Wild and Scenic Rivers (either eligible or suitable for inclusion in the National Wild and Scenic Rivers System or rivers included in the National Wild and Scenic Rivers System)	BLM 2011b
National Park System units, including Petrified Forest National Park Expansion Area	BLM 2011b, SWReGAP 2011
National Park System National Historic Trails (0.25-mile buffer)	BLM 2011b
Indian Lands	BLM 2011b
Military Lands	BLM 2011b
State Parks	Arizona State Parks 2010
State Wildlife Areas	BLM 2011b
U.S. Fish and Wildlife Service (USFWS) lands	BLM 2011b
The Nature Conservancy conservation easements, Audubon Society land, and private conservation easements	SWReGAP 2011
U.S. Forest Service Designated Wilderness	Forest Service 2010a
U.S. Forest Service Established Research Natural Areas	Forest Service 2010b
U.S. Forest Service Inventoried Roadless Areas	Forest Service 2010c
U.S. Forest Service Heber Wild Horse and Burro area	Forest Service undated
U.S. Forest Service Special Interest Management Areas	Forest Service 2010b
Airports (0.25-mile buffer)	National Atlas 2010
Incorporated cities (except when BLM land is included within boundary of an incorporated city)	ALRIS 2011a

Table 2-1 (continued)
Areas with Known Sensitive Resources (Eliminated from REDA Consideration)

Areas with Known Sensitive Resources	Source
Arizona Game and Fish Department Areas of Conservation Potential, Tiers 4, 5, and 6	AZGFD 2011a
Arizona Game and Fish Department big game habitat, including bighorn sheep, black bear, elk, javelina, mountain lion, mule deer, turkey, white-tailed deer	AZGFD 1988
Special status species, including threatened, endangered, and BLM sensitive species locations	AZGFD 1988
Arizona Game and Fish Department wildlife corridors	AZGFD (undated)
USFWS critical habitat for threatened and endangered species	USFWS 2010
BLM sensitive species habitat	BLM 2011b
Desert tortoise (<i>Gopherus agassizii</i>) Sonoran population habitat categories I, II, and III	BLM 2011b
National Wetland Inventory wetlands	NWI 2010
Waterbodies (lakes, rivers, and dry lakes)	BLM 2011b
Federal Emergency Management Agency 100-year floodplains	FEMA 2010
Areas of high potential for known mineral deposits, metallic mineral districts, Holbrook Basin potash potential	AZGS 2008, Arizona Bureau of Geology and Mineral Technology 1983, Arizona Bureau of Mines 1993
Sensitive fossil resources	BLM 2011b
Severe soils: Clay Springs (runoff medium to rapid and erosion hazard moderate to severe) and Rositas (wind erosion severe if natural surface and cover disturbed)	BLM 2011b, Description of Soil Series 2010
Greater than 5-percent slopes (or greater than 15-percent slopes for areas with wind potential)	USGS 2010, BLM 2011b



Proposed Agua Caliente SEZ



The proposed Agua Caliente Solar Energy Zone (SEZ) Alternatives 1 and 4 were based upon large continuous tracts of BLM-administered land that had limited known environmental constraints, near transmission lines, access roads, and an existing solar development. The proposed Agua Caliente SEZ Alternatives 2 and 6 were based upon avoiding braided channel floodplains, camping areas, mule deer habitat, and wilderness characteristics. The proposed Agua Caliente SEZ Alternative 3 was based upon consolidating development into a small footprint.

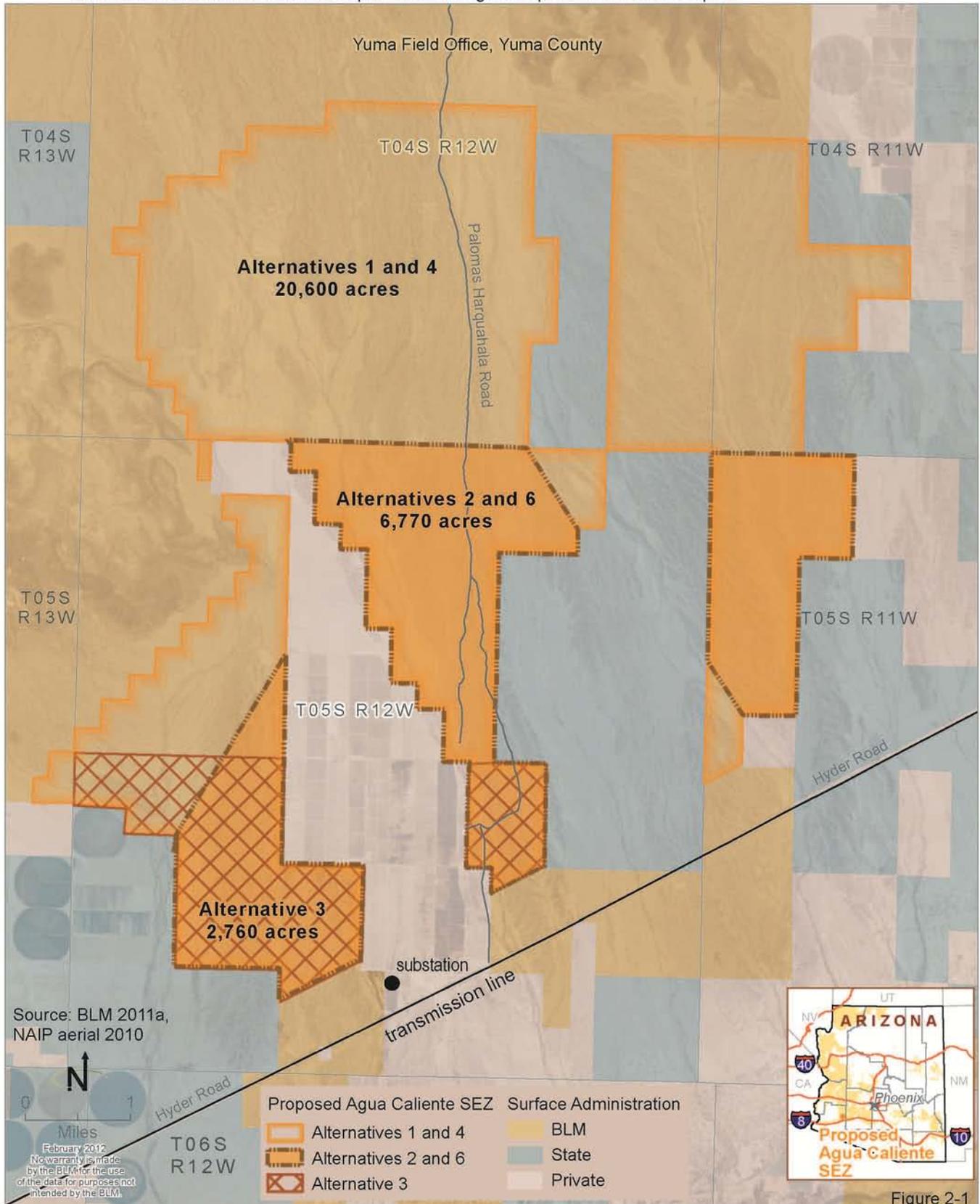


Figure 2-1

2.3 ALTERNATIVES

Decisions in land use plans guide future land management actions and subsequent site-specific implementation decisions. These land use plan decisions establish goals for resource management and the measures needed to achieve these goals (management actions and allowable uses). The alternatives below describe the existing land use plan decisions (No Action Alternative) and proposed changes to land use plans in the action alternatives.

2.3.1 No Action Alternative

Under the No Action Alternative, renewable energy projects would be developed through ROW authorizations and land disposal actions in accordance with the BLM's existing lands and realty policies, existing solar or wind development policies, and existing RMP decisions (see **Figure 2-2**, No Action Alternative). Additionally, the BLM would not identify the Agua Caliente SEZ.⁴

Under this alternative, the BLM would continue to consider applications for development on all BLM-administered lands unless such development is prohibited by law, regulation, or RMP decision. Each BLM RMP has identified areas as ROW avoidance areas, exclusion areas, or available for application. Avoidance areas are those lands that are to be avoided but may be available for location of ROWs with special stipulations; exclusion area would not be available for a ROW application under any circumstances. Available areas would be available for application under the terms and conditions outlined in the respective RMP. BLM-administered lands excluded from renewable energy development include the following:

- National Monuments;
- National Conservation Areas; and
- Wilderness Areas.

Areas administratively excluded from renewable energy development vary by field office and individual RMP decisions, and may include ACECs, National Historic Trail corridors, lands supporting habitat for listed species, and riparian areas. Under the No Action Alternative, none of the Arizona RMPs would be amended and the Yuma RMP decisions would not change.

There are approximately 12.2 million surface acres of BLM-administered land in Arizona. Of the 12.2 million acres of BLM land, approximately 3.2

⁴ Should the Solar PEIS result in a ROD, those decisions would likely result in changes to how utility-scale solar development is authorized on BLM-administered lands in Arizona.



No Action Alternative



Renewable energy projects would be developed through right-of-way authorizations in accordance with existing policies and Resource Management Plan decisions. BLM National Monuments, National Conservation Areas, and Wilderness Areas are legislatively excluded. Wilderness Study Areas and Lands with Wilderness Characteristics are administratively excluded.

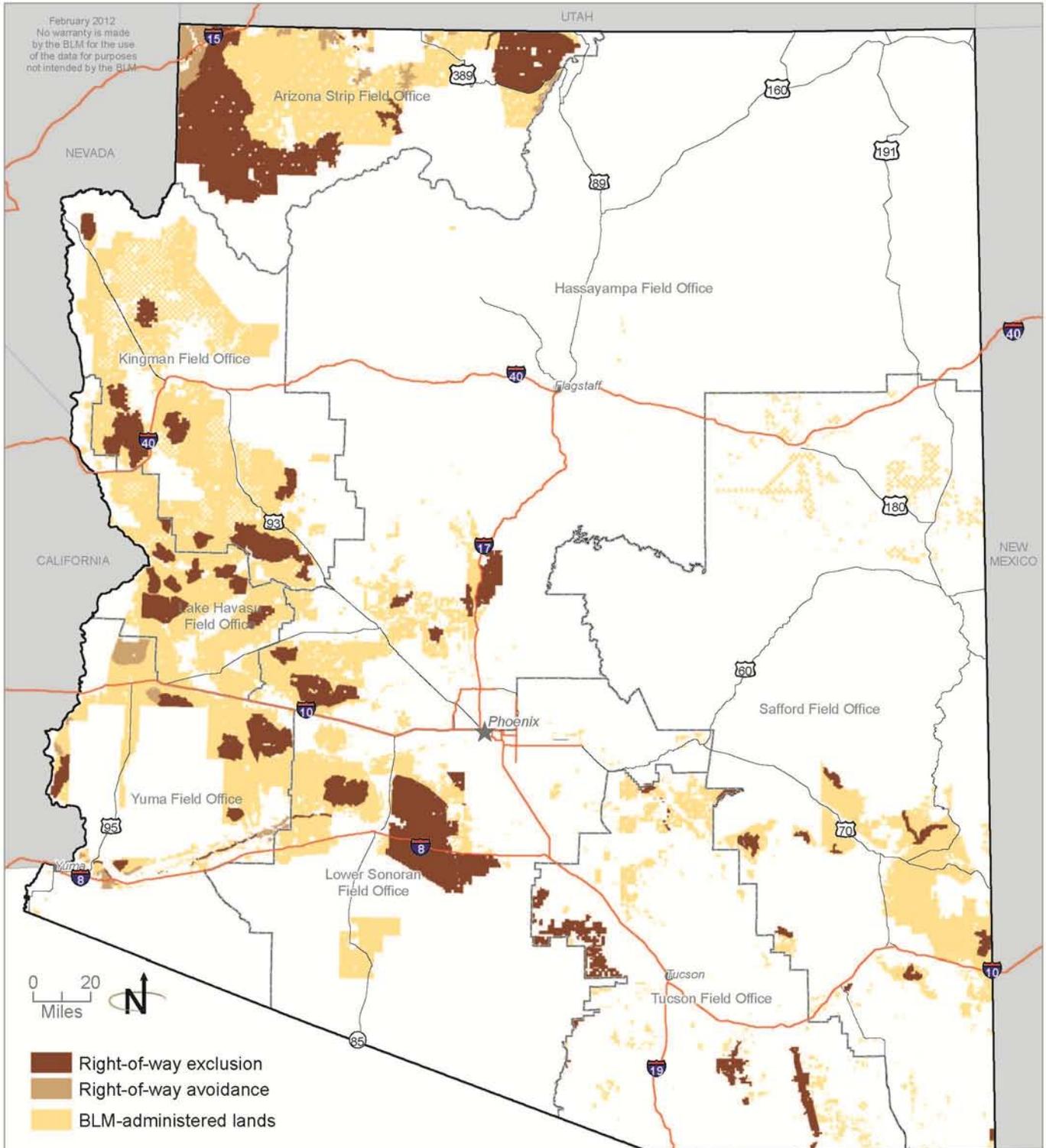


Figure 2-2

million acres are administratively closed to ROW applications, and 8.7 million acres are potentially available for ROW applications (BLM and DOE 2010).

Table 2-2, No Action Alternative: Acres Available and Excluded for ROW Applications, illustrates the amount of available and excluded acreage in existing decisions.

Table 2-2
No Action Alternative: Acres Available and Excluded for ROW Applications

	BLM-Administered Land (acres)
ROW exclusion areas	3,220,200
ROW avoidance areas	271,000
Available for ROW Application ⁵	8,708,800

NEPA analyses for renewable energy development on BLM-administered lands would be prepared on a project-by-project basis. ROW exclusion areas and mitigation measures would be implemented in accordance with existing land use plans. In addition, projects that require land use plan amendments would be processed on an individual basis as needed.

2.3.2 Elements Common to All Action Alternatives

Land use plan decisions for public lands fall into two categories: desired outcomes (commonly described as goals), and allowable (including restricted or prohibited) uses and actions anticipated to achieve desired outcomes. Goals are broad statements of desired outcomes that usually are not quantifiable. Once the goals are established, the BLM identifies allowable uses (land use allocations) and management actions that are anticipated to achieve the goals.

Land use plans must identify uses (allocations) that are allowable, restricted, or prohibited on BLM-administered land. For RDEP, this entails identifying the REDAs. Land use plans must also identify the actions anticipated to achieve the goals, including actions to maintain, restore, or improve land health. These could include proactive measures as well as measures or criteria that would be applied to guide day-to-day activities occurring on BLM-administered land.

⁵ The acreage for available lands was determined by subtracting exclusion and avoidance areas from the estimated total of BLM-administered lands in Arizona. However, it should be noted that avoidance areas may be available for ROWs and would be subject to special stipulations.

The goals, management actions, design features, best management practices, and allocations common to all of the alternatives are described below.

Lands Available for Renewable Energy Development

Lands identified as REDAs would be available for renewable energy application. REDA lands would be subject to existing BLM renewable energy programs' policies and procedures. Because identified REDA lands may meet the requirements of the variance process outlined in the Supplement to the Draft Solar PEIS, incentives such as priority processing would likely apply. REDA lands would be available for multiple uses, including off-highway vehicle (OHV) use, grazing, and recreation as allowed by the appropriate RMP decisions for the area. However, once a renewable energy application is submitted or a development proposed, the primary use of the area would be for renewable energy development.

For lands that have been identified for disposal in a BLM RMP, the BLM may decide to dispose of some of these parcels through land sales or exchanges to support the development of solar energy on a case-by-case basis. The BLM's existing ROW regulations, contained in 43 CFR Part 2800, existing land sale regulations, contained in 43 CFR Parts 2710 and 2711, and existing exchange regulations, contained in 43 CFR Part 2200, provide for these possible procedural approaches. Should the BLM decide to make lands available for disposal, additional land use plan amendments would be required and additional NEPA analysis may be necessary. Depending on the timing of such decisions, these program elements may be included in the ROD for the Solar PEIS or may be issued in separate decision documents.

Identified SEZ lands would be subject to existing solar energy policies and any decisions that result from the Solar PEIS.

Renewable Energy

Goals:

- Ensure the most environmentally responsible development and delivery of renewable energy; and
- Help meet community energy needs, create economic opportunities, and provide good value to the taxpayer.

Objectives:

- Identify disturbed sites, such as brownfields, landfills, abandoned mines, etc., which could be reused for renewable energy development;
- Identify areas with low resource sensitivity to lessen the risk of environmental conflicts;
- Identify areas suitable for development that are adjacent to load centers;

- Identify areas close enough to existing transmission to make it efficient and cost effective to bring the energy on-line;
- Identify areas with enough acreage of public lands to help meet the renewable energy demand (including the Arizona RPS), and provide flexibility for micro-siting and mitigation;
- Identify a SEZ specifically for utility-scale solar energy developments (more than 20 MW) in accordance with national BLM policy and guidance (BLM and DOE 2010, 2011; Solar PEIS); and
- Engage cooperating agencies, tribes and stakeholders in order to obtain broad consensus on the desired future renewable energy footprint in Arizona and to inform renewable energy developers in their siting of projects throughout the state.

Management Actions

Management actions are identified actions that are anticipated to achieve the RDEP's goals and desired outcomes; they include actions to maintain, restore, or improve land health, as well as measures or criteria that will be applied to guide day-to-day activities (e.g., applications) occurring on public lands. Management actions for renewable energy activities are as follows:

Management actions are identified actions that are anticipated to achieve the RDEP's goals and desired outcomes; they include actions to maintain, restore, or improve land health, as well as measures or criteria that will be applied to guide day-to-day activities occurring on public lands.

- Follow all applicable laws, regulations, policies, and guidance, including but not limited to the National Environmental Policy Act, Endangered Species Act, National Historic Preservation Act, and Federal Land Policy and Management Act;
- Conduct consultation with cooperating agencies and stakeholders, including but not limited to military installations, the National Park Service, the Federal Aviation Administration and other federal agencies, federal and state resource management agencies (e.g., Arizona Game and Fish Department, Department of Water Resources, etc.), lease and mining claim holders and grazing permittees, and state, local, and tribal governments;
- Renewable energy development will have first priority over other land uses within REDAs while honoring valid existing rights;
- Renewable energy development applications within the REDAs will have first priority processing over applications located outside of the REDAs; electricity transmission projects related to applications in REDAs will also receive priority processing;

- Require appropriate design features on all renewable energy development projects as described in **Appendix B**, Design Features and Best Management Practices;
- Renewable energy development projects will not be permitted within a designated utility corridor;
- Avoid creating areas that are inaccessible to the public and/or would be difficult to manage. The effect on the manageability and use of public lands around boundaries of renewable energy facilities will be considered during environmental analysis of project applications; and
- Consolidate access and other supporting infrastructure for single projects and for cases in which more than one project is close to another to maximize efficient use of public land.

Design Features

Design features are means, measures, or practices intended to reduce or avoid adverse environmental impacts. The RDEP has a suite of design features, including those from the Wind PEIS ROD and Solar PEIS that would establish the minimum specifications for management of individual renewable energy projects and mitigate adverse impacts; appropriate design features must be incorporated into project-specific Plans of Development (PODs), Plans of Operations, and ROW grants. In general, the design features are accepted practices that are known to be effective when implemented properly at the project level. However, their applicability and overall effectiveness cannot be fully assessed except at the project-specific level when the project location and design are known. The proposed design features are presented in **Appendix B**, Design Features and Best Management Practices, by resource topic and project phase (i.e., siting and design, site characterization, construction, operations, decommissioning).

Many of the design features indicate the need for project-specific plans and studies. The content and applicability of these plans will depend on specific project requirements and locations; however, the design features provide some guidance of what to include in specific plans. The authorizing officer would need to determine the adequacy of such plans before approving a specific project.

Land Tenure

Goal:

- Pursue the disposal of available BLM-administered land within identified REDAs and the acquisition of non-federal lands within areas of high conservation priority to assist in addressing a water issue or adjusting land patterns to meet public needs.

Objective:

- BLM would consider, on a case-by-case basis, disposing of REDA lands currently identified for disposal in existing RMPs. This could be done using a third-party transaction and/or direct exchange for lands with high conservation value.

Management Actions

- Prior to any available disposal parcel being processed, an additional review would be required to consider the possible presence of priority resources that warrant special protection and/or management that would be best achieved by retention in federal ownership (43 CFR 2430). Prior to disposal, all parcels would be reviewed and would not be disposed if they had any of the following conditions:
 - Designated or proposed critical habitat for threatened or endangered plant or animal species;
 - Supported listed or proposed threatened or endangered species such that the disposal would be inconsistent with recovery needs and objectives or would likely affect the recovery of the listed or proposed species;
 - Supported federal candidate species such that the disposal would contribute to the need to list the species as threatened or endangered;
 - Contain other wildlife resource values of interest, such as BLM sensitive species or big game critical and crucial winter range;
 - Exceptions to the four previous criteria could occur if the recipient of the lands would protect the species or critical habitat equally well under the terms or criteria contained in the Endangered Species Act, such as disposal to a nonfederal governmental agency or private organization if conservation purposes for the species would still be achieved and ensured.
 - Contain Sonoran desert tortoise habitat, unless land disposal through an exchange provides greater benefits to desert tortoises;
 - Contain National Register-eligible cultural resources where mitigation and/or data recovery has not occurred prior to patent;
 - Are managed for wilderness characteristics;
 - Are within the Colorado River 100-year floodplain or riparian areas; or

- Would prohibit wild horse and burro free roaming behavior within or between areas inside the herd management area, or would eliminate habitat within the herd management area such that a significant reduction of the appropriate management levels will result.

Given the screening criteria used to identify REDA lands, these conditions are unlikely to be present in most cases.

Land Reuse

Goal:

- Establish sustainable development practices by reusing disturbed lands for renewable energy development.

Objectives:

- For existing ROWs, BLM would encourage concurrent permitted uses for renewable energy development such as installing solar panels to help energize mine facilities; and
- For new renewable energy actions, BLM Arizona would require submission of proposals for retaining existing infrastructure and for rehabilitating, restoring, reclaiming, and remediating the landscape to meet renewable energy design features as part of Plans of Developments, Plans of Operations, and other permitting documentation.

Management Actions:

- Encourage modifying rehabilitation or remediation plans on in-progress or yet-to-be-rehabilitated lands with renewable energy development interest to meet renewable energy design feature standards;
- Incorporate sustainable development and reuse concepts in the design of new projects; and
- Incorporate ongoing community engagement in all planning, development, implementation, and review actions. This would include working with utilities and the ACC to ensure selected sites fit within existing transmission systems and strategic goals.

Remediation

There are no set rules for remediating disturbed sites such as brownfields, landfills, and mining sites; no two sites are alike, and conditions (e.g., level of contamination, economic incentives, etc.) can vary widely depending on location. However, there are some general goals, strategies, and BMPs that can be used effectively for remediating disturbed sites.

Goals:

- Through creative engineering solutions and environmental policies and programs, encourage remediation of previously disturbed lands to help create economic and social benefits, increase tax revenues, and further community development efforts;
- Work with developers to make previously disturbed sites ready to receive renewable energy projects so growth can be directed to those areas where supporting infrastructure already exists; and
- Target environmental benefits of improved water and air quality and vegetation communities for wildlife through use of remediation protocols on previously disturbed sites.

Management Actions:

- Work with developers to formulate a reuse assessment for the selected site. This involves an objective evaluation of opportunities, challenges, and possible implementation strategies. Additionally, a reuse assessment should consider property condition (physical condition, obsolescence, defects, deferred maintenance, etc.), an analysis of the site as a whole (including any building structures and mechanical and electrical systems), safety issues, and environmental issues (e.g., contamination);
- Evaluate a location's compatibility with any BLM, state, county, or municipality goals, planning, zoning, and economics;
- Evaluate the site's context within surrounding communities, properties, other agency lands, and stakeholders;
- Identify economic assets, economic development opportunities, and economic impacts for the site as part of the reuse assessment; and
- Identify possible partnering opportunities for site remediation.

Best Management Practices:

- Conduct public outreach and education to overcome misperceptions and build support for local projects. Conveying information about risk-based cleanup approaches, cost-effective engineering solutions, liability management options, and available funding programs helps generate interest in disturbed land reuse.
- Integrate remediation and reuse with community priorities. Cleanup and reuse can address multiple community concerns such as the need for locally generated clean energy.

Best management practices (BMPs) are practices or a combination of practices that are determined to provide the most effective, environmentally sound, and economically feasible means of managing an activity and mitigating its impacts.

- Coordinate intra- and inter-governmental relations. Reusing and redeveloping disturbed lands is an interest of many traditionally independent government departments; however, the independent agencies also may share a common interest in reuse and redevelopment to find mutually beneficial solutions.
- Conduct all appropriate inquiry and due diligence as part of the site assessment, including reviews of existing records, interviews with previous owners and operators, identifying existing or past signs of contamination, and following American Society for Testing and Materials standards.
- Plan for and, if necessary, conduct sampling and risk assessments as part of the clean-up process.
- When contamination is determined to be an unacceptable risk to public health and the environment or exceeds a standard, then remediation becomes necessary. Write and implement a remediation plan for the site.
- Completion of the site remediation is determined by either the site being ready and available for reuse or beginning the specific renewable energy project construction.

Site cleanup and reuse can be mutually supportive by leveraging infrastructure needs, sharing data, minimizing demolition and earth-moving activities, reusing structures and demolition material, and combining other activities that support timely and cost-effective cleanup and reuse. Early consideration of green remediation opportunities offers the greatest flexibility and likelihood for related practices to be incorporated throughout a project life. While early planning is optimal, green strategies such as engineering optimization can be incorporated at any time during site investigation, remediation, or reuse.

2.3.3 Alternative 1: Maximum REDA

The purpose of this alternative is to maximize opportunities for developing renewable energy while avoiding sensitive resources. It seeks to provide maximum flexibility for locating small- to large-scale projects without consideration of other physical constraints, such as distance to transmission or load. By eliminating known sensitive resources (see **Table 2-1**, Areas with Known Sensitive Resources [Eliminated from REDA Consideration]), this alternative illustrates the areas that have a higher likelihood of fewer resource obstacles to development.

This alternative includes the nominated previously disturbed lands listed in **Appendix C**, Solar and Wind Energy Assessment of Nominated Sites (**Figure 2-3**, Alternative 1: Maximum REDA - Areas Eliminated from Consideration, and **Figure 2-4**, Alternative 1: Maximum REDA on



Alternative 1: Maximum REDA - Areas Eliminated from Consideration



Areas of known resource sensitivity were eliminated from consideration. Please see Table 2-1 and references for full list of sources for sensitive resource areas.

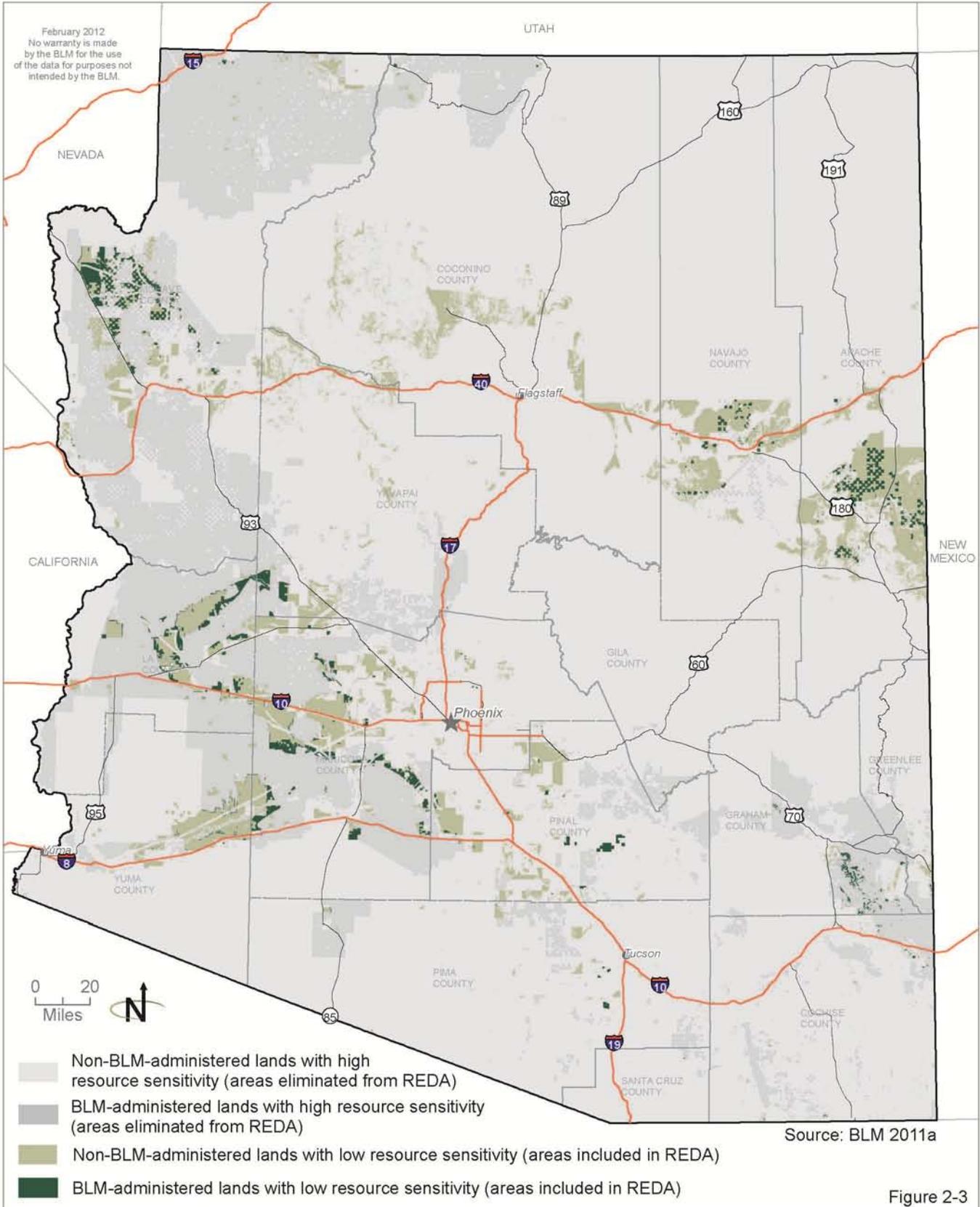


Figure 2-3



Alternative 1: Maximum REDA on BLM-Administered Lands



Alternative 1 includes low resource sensitivity areas, RDEP nominated sites, and proposed Agua Caliente Solar Energy Zone (SEZ).

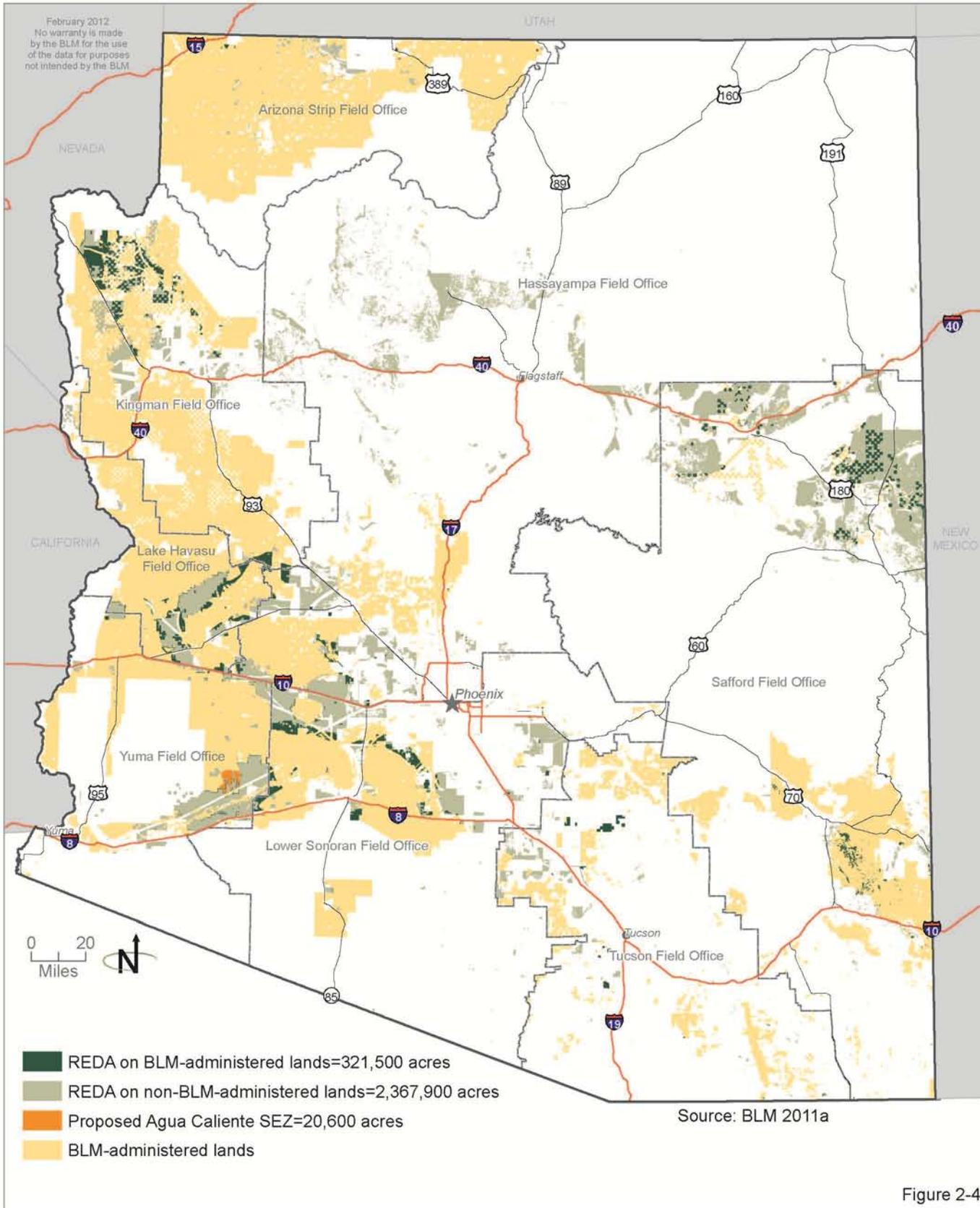


Figure 2-4

BLM-Administered Lands). The BLM available lands, management actions, design features, and BMPs in **Section 2.3.2, Elements Common to All Action Alternatives** would be applied to the BLM-administered lands identified as the Maximum REDA in this alternative.

Table 2-3, Alternative 1: Acres within Maximum REDA and Proposed Agua Caliente SEZ, outlines the number of acres identified as low resource sensitivity areas and RDEP-nominated disturbed sites as distributed across BLM-administered lands and all other non-BLM-administered lands under Alternative 1.

Table 2-3
Alternative 1: Acres within Maximum REDA and Proposed Agua Caliente SEZ

	BLM-Administered Land (acres)	Non-BLM-Administered Land (acres)
REDA (low resource sensitivity areas and RDEP-nominated disturbed sites ⁶)	321,500	2,367,900
Proposed Agua Caliente SEZ	20,600	0
<i>Total</i>	<i>342,100</i>	<i>2,367,900</i>

Agua Caliente Solar Energy Zone

The BLM is proposing to identify the Agua Caliente SEZ. Lands that are identified as a SEZ will be given priority for utility-scale solar energy development. As defined in the Solar PEIS, a SEZ is an area with few impediments to utility-scale production of solar energy where BLM would prioritize solar energy and associated transmission infrastructure development. The DOI and BLM Arizona staff provided initial criteria to guide identification of potential suitable parcels, including lands that:

- Were located near existing transmission with capacity or designated corridors;
- Were located near existing roads and other infrastructure;
- Generally had a slope of 1 to 2 percent or less;
- Contained a large continuous tract of BLM-administered land with a minimum of 2,500 acres;
- Had limited known environmental constraints; and

⁶ Information on specific nominated sites is available in **Appendix C, Solar and Wind Energy Assessment of Nominated Sites**.

- Were near an existing solar development on previously disturbed lands.

Based on these criteria, the proposed Agua Caliente SEZ in **Figure 2-1**, Proposed Agua Caliente SEZ, is the defined analysis area and encompasses 20,600 acres. While the SEZ's boundary may change once analysis is completed, for the purposes of this analysis, the entire 20,600 acres will be analyzed under Alternative 1. The final Agua Caliente SEZ boundary will be defined in the ROD for this EIS. The 20,600 acres for this proposed SEZ footprint is the maximum area available and was based upon large contiguous tracts of BLM-administered land that had limited known environmental constraints, met all of the above-listed criteria, and is large enough to allow for maximum flexibility in micro-siting of a project and any necessary mitigation measures to reduce impacts of multiple projects. Any development of the proposed Agua Caliente SEZ would be required to follow the requirements of the Solar Energy Program from the Solar PEIS and management actions, design features, and BMPs noted in **Section 2.3.2**, Elements Common to All Action Alternatives. Additionally, the BLM would petition the Secretary of the Interior to withdraw 20,600 acres in the proposed Agua Caliente SEZ from settlement, sale, location, or entry under the general land laws, including the mining laws, to protect and preserve the area for future solar energy development.

2.3.4 Alternative 2: Transmission Line and Utility Corridor REDA

This alternative responds to scoping comments that wanted the BLM to find renewable energy facility locations close enough to transmission to make it efficient and cost effective to bring the energy on-line and deliver it to the people who need it. This alternative seeks to reduce environmental impacts by focusing renewable energy development on lands within reasonable proximity to designated utility corridors and existing or certified transmission lines. It was developed in coordination with the ACC and utility companies to determine how far away a renewable energy project could be from an existing transmission line to make it efficient and cost effective. This alternative allows flexibility to practicably locate generation sites at a distance from population utilizing existing and planned transmission.

For this alternative, the BLM started with the Maximum REDA lands (Alternative 1), and then narrowed them further to lands within five miles of an existing or planned transmission line, including: (1) BLM-designated utility corridors, including the West Wide Energy Corridors; (2) existing transmission lines 230 kilovolt (kV) or greater; and (3) reasonably foreseeable proposed transmission lines 230 kV or greater (**Figure 2-5**, Alternative 2: Transmission Line and Utility Corridor REDA - Areas Eliminated from Consideration, and **Figure 2-6**, Alternative 2: Transmission



Alternative 2: Transmission Line and Utility Corridor REDA - Areas Eliminated from Consideration



Alternative 2 eliminates REDA not within 5 miles of existing or certified transmission lines, either side of the outer boundary of designated Arizona BLM Utility Corridors, and designated BLM West Wide Energy Corridors.

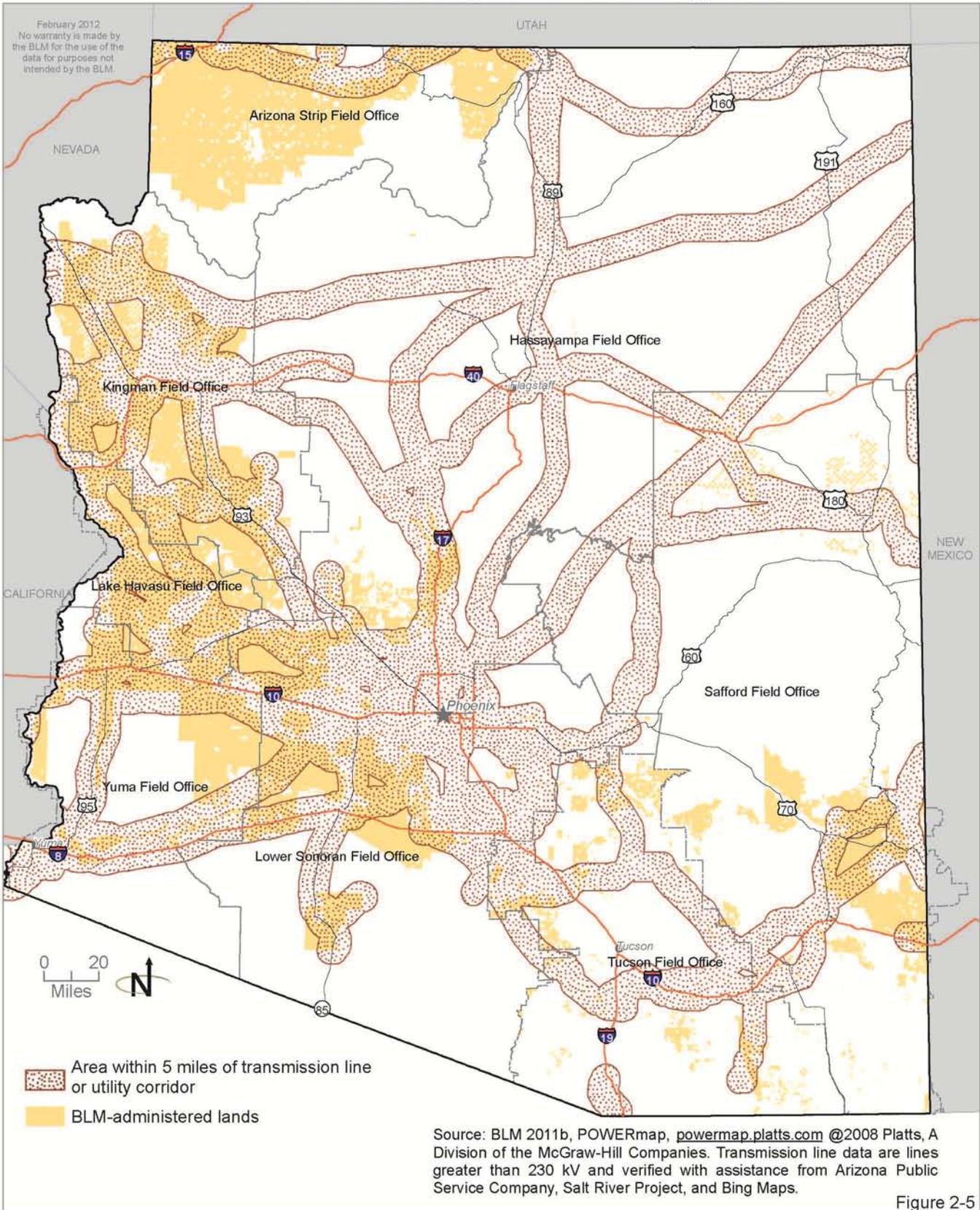


Figure 2-5



Alternative 2: Transmission Line and Utility Corridor REDA on BLM-Administered Lands



Alternative 2 includes low resource sensitivity areas, RDEP nominated sites, and proposed Agua Caliente Solar Energy Zone (SEZ). Alternative 2 also includes REDA within 5 miles of existing or certified transmission lines, either side of the outer boundary of designated Arizona BLM Utility Corridors, and designated BLM West Wide Energy Corridors.

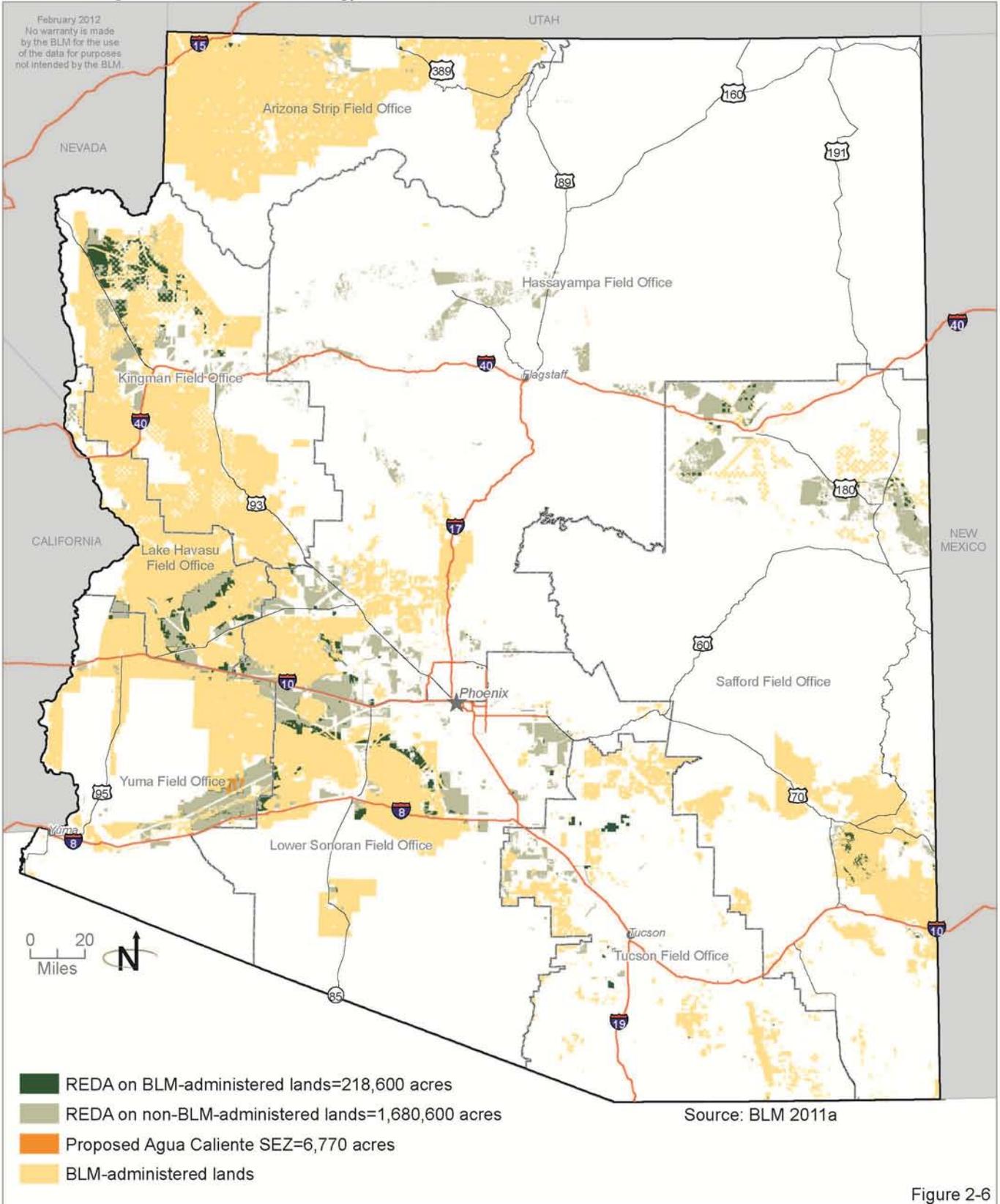


Figure 2-6

Line and Utility Corridor REDA on BLM-Administered Lands). The reasonably foreseeable proposed transmission lines are only those that are certified routes by the ACC. The BLM lands available, management actions, design features, and BMPs spelled out in **Section 2.3.2, Elements Common to All Action Alternatives** would be applied to the BLM-administered lands identified as the Transmission Line and Utility Corridor REDA in this alternative. **Table 2-4, Alternative 2: Acres within Transmission and Utility REDA and Proposed Agua Caliente SEZ**, outlines the number of acres identified as low resource sensitivity areas and RDEP-nominated disturbed sites as distributed across BLM-administered lands and all other, non-BLM-administered lands under Alternative 2.

Table 2-4
Alternative 2: Acres within Transmission and Utility REDA and Proposed Agua Caliente SEZ

	BLM-Administered Land (acres)	Non-BLM-Administered Land (acres)
REDA	218,600	1,680,600
Proposed Agua Caliente SEZ	6,770	0
<i>Total</i>	<i>225,370</i>	<i>1,680,600</i>

Agua Caliente Solar Energy Zone

Under Alternative 2, the footprint of the Agua Caliente SEZ would be reduced to 6,770 acres. This smaller analysis area would meet all of the listed selection criteria noted previously under Alternative 1, but concentrates the development into a smaller footprint. This analysis area fits with the theme for Alternative 2, Transmission and Utility Corridors, namely by emphasizing development in close proximity to the existing and proposed transmission lines, constructed access roads, and existing renewable energy projects. This resulted in removing the northern and western portions of the analysis area as these are further away from transmission, roads and access points, and existing development. This reduced analysis area will be analyzed to determine how well the reduced acreage accommodates flexibility in micro-siting and mitigation. Adjacent generation on private lands may affect logical development units.

As with the larger analysis area, the proposed SEZ's boundary may change once analysis is completed; the final Agua Caliente SEZ boundary would be defined in the RDEP ROD. However, for purposes of analysis, the entire 6,770 acres will be analyzed under Alternative 2. Management of the proposed Agua Caliente SEZ would follow the requirements of the Solar Energy Program from the Solar PEIS and management actions, design

features, and BMPs noted in **Section 2.3.2**, Elements Common to All Action Alternatives. Additionally, the BLM would petition the Secretary of the Interior to withdraw 6,770 acres in the proposed Agua Caliente SEZ from settlement, sale, location, or entry under the general land laws, including the mining laws, to protect and preserve the area for future solar energy development.

2.3.5 Alternative 3: Load Offset REDA

The purpose of Alternative 3 is to reduce disturbance and environmental impacts by keeping energy generation near the point of demand, such as cities, towns, or industrial centers, and to help Arizona meet the following RPS commitments:

- Fifteen (15) percent of energy generation needs to be met by renewable energy sources by 2025;
- Thirty (30) percent of that 15 percent is to come from distributed renewable resources; and
- One-half of the distributed renewable energy requirement is to come from residential applications, and the remaining one-half is to come from non-residential, non-utility applications.

Keeping energy generation near the point of demand will result in the following:

- Offset urban, rural, or industrial demand by serving both large and smaller loads;
- Reduce load required from the larger power grid, thereby allowing routing to other locations using existing transmission;
- Provide opportunities for utility-scale and distributed energy;
- Promote the development of renewable energy industrial parks near Palo Verde Nuclear Generating Station and the town of Gila Bend; and
- Help Arizona meet its RPS commitments.

The BLM considered only those lands identified under Alternative 1 within a 10-mile area around all incorporated cities in Arizona (ALRIS 2011a), a 5-mile area around the Central Arizona Project ROW and known irrigation sources, a 20-mile area around the Palo Verde Nuclear Generating Station, and a 20-mile area around the town of Gila Bend (**Figure 2-7**, Alternative 3: Load Offset REDA - Areas Eliminated from Consideration, and **Figure 2-8**, Alternative 3: Load Offset REDA on BLM-Administered Lands).



Alternative 3: Load Offset REDA - Areas Eliminated from Consideration

Alternative 3 eliminates REDA not within 10 miles of Arizona incorporated cities, not within 5 miles of US Bureau of Reclamation (BOR) Central Arizona Project right-of-way and irrigation pumping sites, and not within 20 miles of Palo Verde Nuclear Power Plant and the town of Gila Bend.

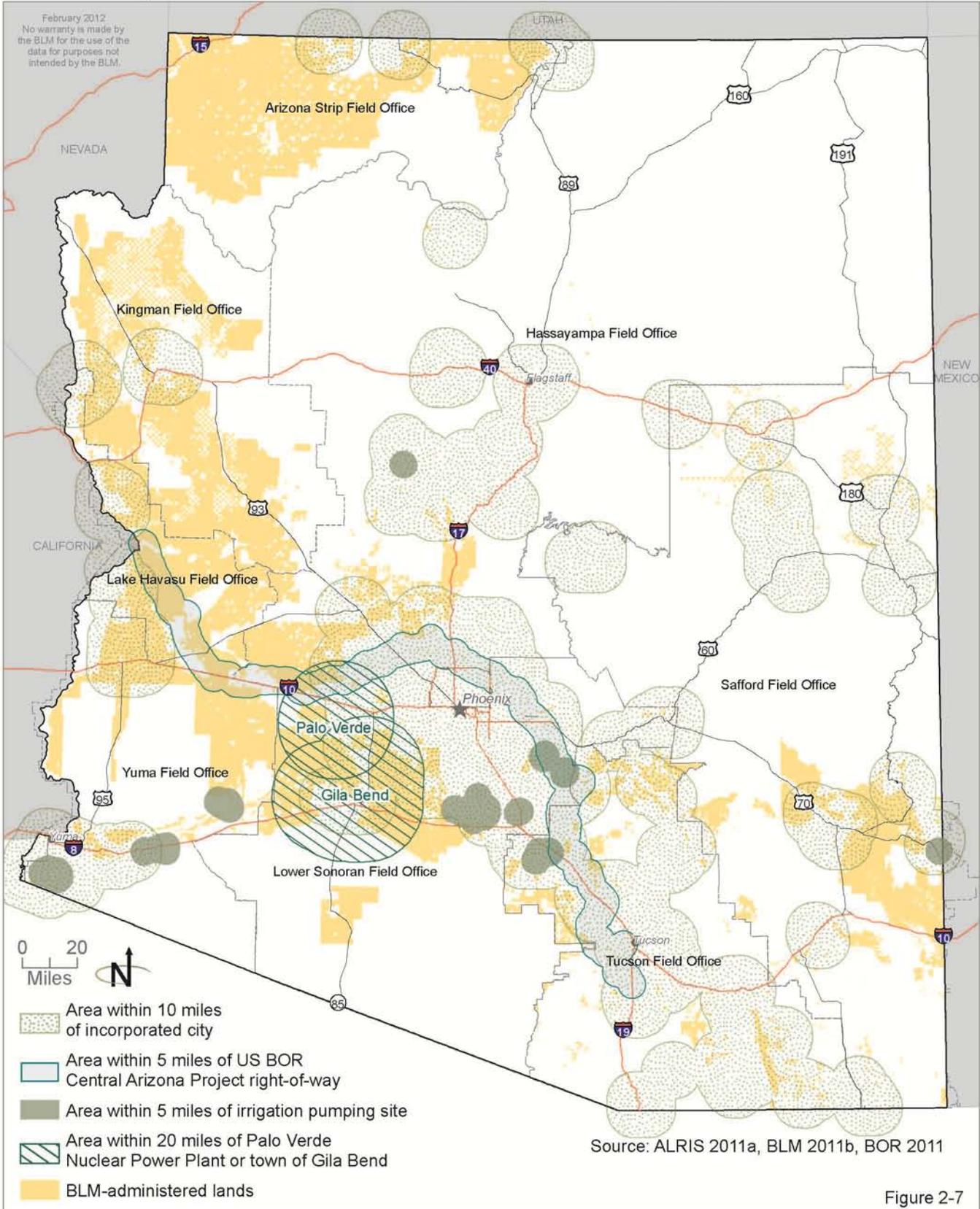


Figure 2-7



Alternative 3: Load Offset REDA on BLM-Administered Lands

Alternative 3 includes low resource sensitivity areas, RDEP nominated sites, and proposed Agua Caliente Solar Energy Zone (SEZ). Alternative 3 also includes REDA within 10 miles of Arizona incorporated cities, 5 miles of US Bureau of Reclamation Central Arizona Project right-of-way and irrigation pumping sites, and 20 miles of Palo Verde Nuclear Power Plant and the town of Gila Bend.

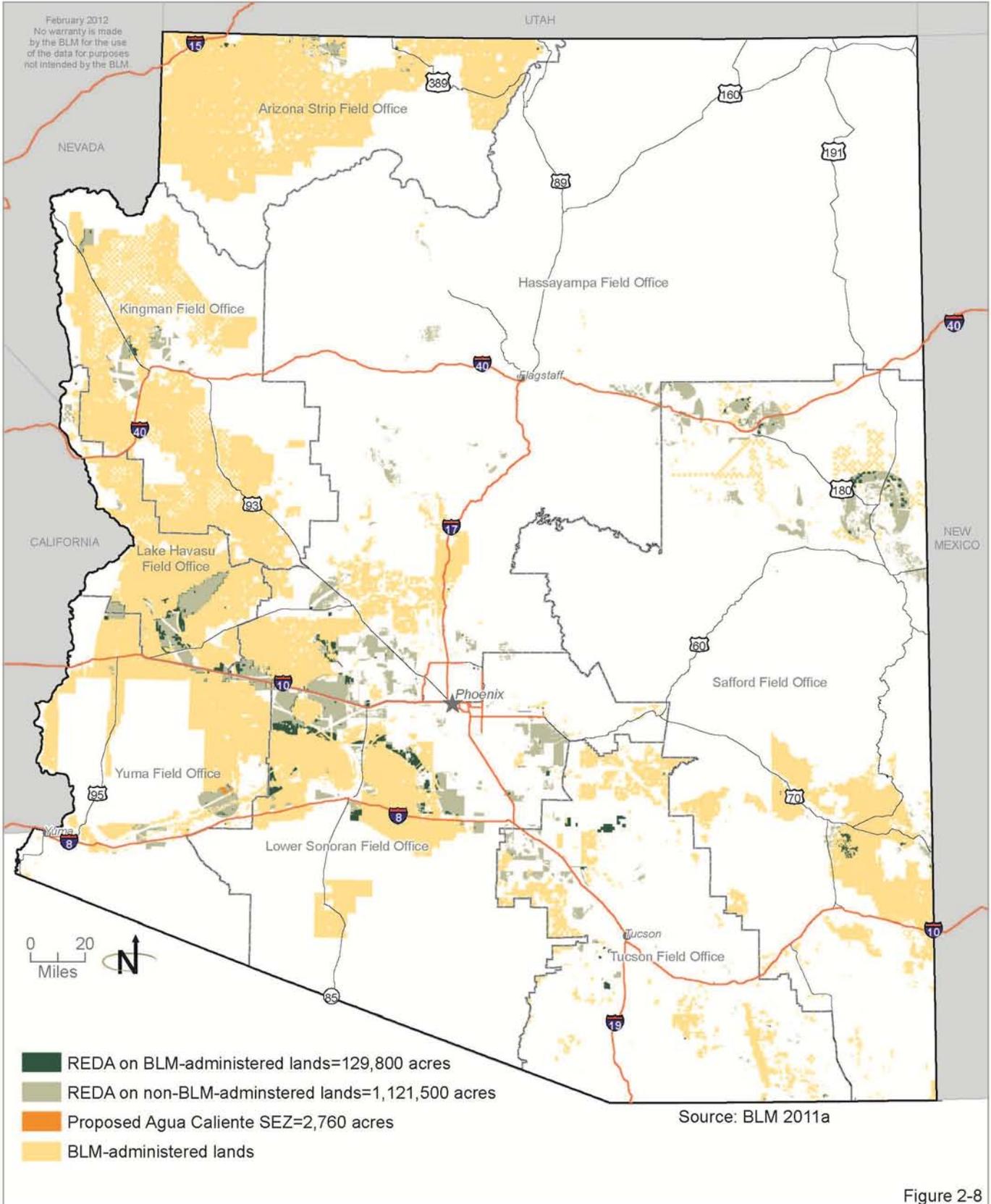


Figure 2-8

Section 2.3.2, Elements Common to All Action Alternatives describes all of the management actions, design features, and BMPs that are included in this alternative. **Table 2-5**, Alternative 3: Acres within Load Offset REDA and Proposed Agua Caliente SEZ, outlines the number of acres identified as low resource sensitivity areas and RDEP-nominated disturbed sites as distributed across BLM-administered lands and all other, non-BLM-administered lands under Alternative 3.

Table 2-5
Alternative 3: Acres within Load Offset REDA and Proposed Agua Caliente SEZ

	BLM-Administered Land (acres)	Non-BLM-Administered Land (acres)
REDA	129,800	1,121,500
Proposed Agua Caliente SEZ	2,760	0
<i>Total</i>	<i>132,560</i>	<i>1,121,500</i>

Agua Caliente Solar Energy Zone

Under Alternative 3, the footprint of the proposed Agua Caliente SEZ would be reduced to 2,760 acres. This smaller analysis area would meet all of the listed selection criteria noted previously under Alternative 1, but concentrates the development into a smaller footprint. The analysis area fits with the theme for Alternative 3 of keeping energy generation close to load centers of the local agricultural lands and nearby communities such as Yuma. As seen on **Figure 2-8**, Alternative 3: Load Offset REDA on BLM-Administered Lands, only the small area in the southwestern portion of the largest proposed SEZ footprint would fall into this alternative. This reduced analysis area will be analyzed to determine how well the reduced acreage accommodates flexibility in micro-siting and mitigation. Adjacent generation on private lands may affect logical development units.

As with the larger analysis areas described for Alternatives 1 and 2, the proposed SEZ's boundary may change once analysis is completed; the final Agua Caliente SEZ boundary would be defined in the RDEP ROD. Management of the proposed Agua Caliente SEZ would follow the requirements of the Solar Energy Program from the Solar PEIS and management actions, design features, and BMPs noted in **Section 2.3.2**, Elements Common to All Action Alternatives. Additionally, the BLM would petition the Secretary of the Interior to withdraw 2,760 acres in the proposed Agua Caliente SEZ from settlement, sale, location, or entry under the general land laws, including the mining laws, to protect and preserve the area for future solar energy development.

2.3.6 Alternative 4: Water Conservation and Protection REDA

The Water Conservation and Protection REDA alternative is intended to respond to public concerns over water availability in Arizona, potential effects on other water users, and how renewable energy facilities will impact water resources. It focuses on avoiding impacts on sensitive surface watersheds, protecting and maintaining groundwater quality and quantity, and reducing consumptive use of water.

Alternative 4 was developed from the Maximum REDA (Alternative 1). While the Maximum REDA (Alternative 1) addresses some water issues, this alternative goes further by proposing water protection zones that provide additional design features to protect water resources in areas with known water supply issues. Specific data used to evaluate and map the water protection zones is presented in **Chapter 3, Affected Environment**.

The water protection zones are described in **Table 2-6, Water Protection Zones** and shown on **Figure 2-9, Alternative 4: Water Conservation and Protection Zones REDA with Proposed Water Resource Protections**, **Figure 2-10, Alternative 4: Water Conservation and Protection REDA on BLM-Administered Lands**, and **Figure 2-11, Alternative 4: Water Conservation and Protection REDA on Non-BLM-Administered Lands**. The BLM management actions, design features, and BMPs in this alternative would be the same as those listed under **Section 2.3.2, Elements Common to All Action Alternatives** with the addition of those design features listed under each zone in **Table 2-6**.

As part of the required water resources mitigation and monitoring plan (see the water design features in **Appendix B, Design Features and Best Management Practices**), applicants could include water conservation and replenishment techniques such as importing water, treating and using brackish water, capturing and using storm water runoff, water retirement, use of recycled or waste water, and vegetation treatments (such as tamarisk removal). **Table 2-7, Alternative 4: Acres within Water Protection Zones for REDAs and the Proposed Agua Caliente SEZ**, outlines the number of acres identified under each zone.

**Table 2-6
Water Protection Zones**

Water Protection Zone 3 (WPZ 3) – Represents the highest level of water resource protections and would apply to basins currently in overdraft that have long-term groundwater sustainability issues at baseline rates of groundwater consumption based on the criteria listed below.

Criteria	Design Features
<ul style="list-style-type: none"> • Groundwater demand exceeds natural recharge AND one or more of the following: <ul style="list-style-type: none"> – Ratio of water demand to water in storage is less than or equal to 1:500 – Mean negative water level change rate is greater than -2 feet per year in one or more sub-basins • San Pedro Priority Watershed to meet management objectives of the San Pedro Riparian National Conservation Area 	<p>All activities subject to applicable features, plus the following (applies only to new water developments):</p> <ul style="list-style-type: none"> • De minimis use only (e.g., drinking water, solar panel washing, etc.) • Annual consumption shall not exceed 55 acre-feet per year

Water Protection Zone 2 (WPZ 2) – Represents a moderate level of water resource protections and would apply to groundwater basins, surface watersheds, and other areas based on the criteria listed below.

Criteria	Design Features
<ul style="list-style-type: none"> • Groundwater demand exceeds natural recharge AND one or more of the following: <ul style="list-style-type: none"> – Ratio of water demand to water in storage is less than or equal to 1:1,000 – Mean negative water level change rate is greater than -0.1 feet per year in one or more sub-basins. • Environmental Protection Agency Sole Source Aquifers • Bureau of Land Management Priority Watersheds 	<p>All activities subject to applicable features, plus the following (applies only to new water developments):</p> <ul style="list-style-type: none"> • Industrial water use limited to dry-cooling technologies

Water Protection Zone 1 (WPZ 1) – No additional levels of protection besides the standard design features as discussed in **Section 2.3.2, Elements Common to All Action Alternatives**. Areas where adequate data is not readily available to evaluate against the criteria would, at a minimum, have Zone 1 protections. Additional protections may be afforded to these areas as specific project applications are received and the areas are further assessed.

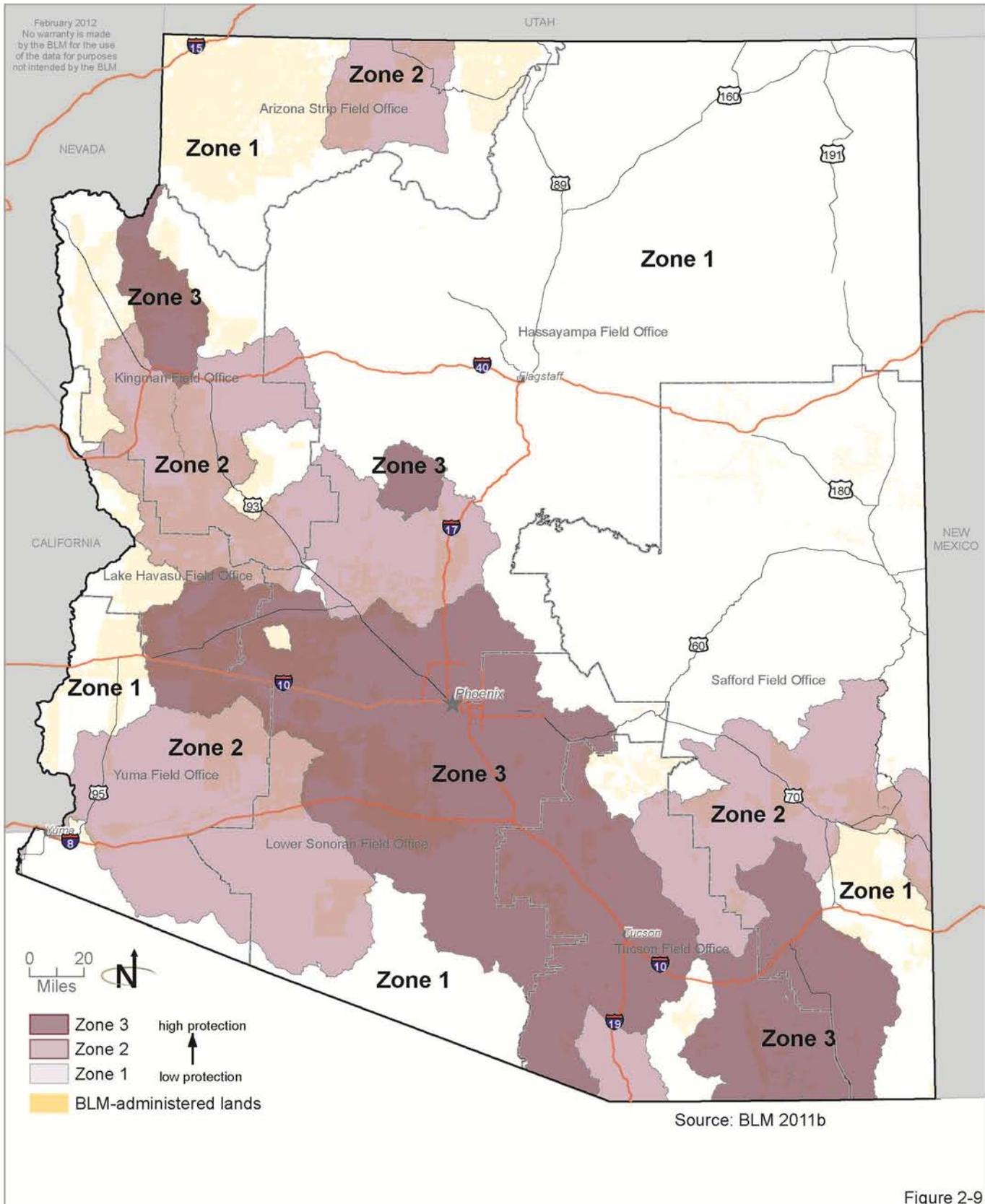
Criteria	Design Features
<ul style="list-style-type: none"> • Groundwater demand less than natural recharge. 	<ul style="list-style-type: none"> • All activities subject to applicable design features as discussed in Section 2.3.2, Elements Common to All Action Alternatives.



Alternative 4: Water Conservation and Protection Zones REDA with Proposed Water Resource Protections



Alternative 4 categorizes REDA into Water Protection Zones of 1, 2, or 3. Zones were created based on information found in Table 2-6.





Alternative 4: Water Conservation and Protection REDA on BLM-Administered Lands



Alternative 4 includes low resource sensitivity areas, RDEP nominated sites, and proposed Agua Caliente Solar Energy Zone (SEZ). Alternative 4 categorizes REDA into Water Protection Zones 1, 2, or 3. Zone 1 affords the least protection and Zone 3 the highest. RDEP nominated sites are considered Zone 1.

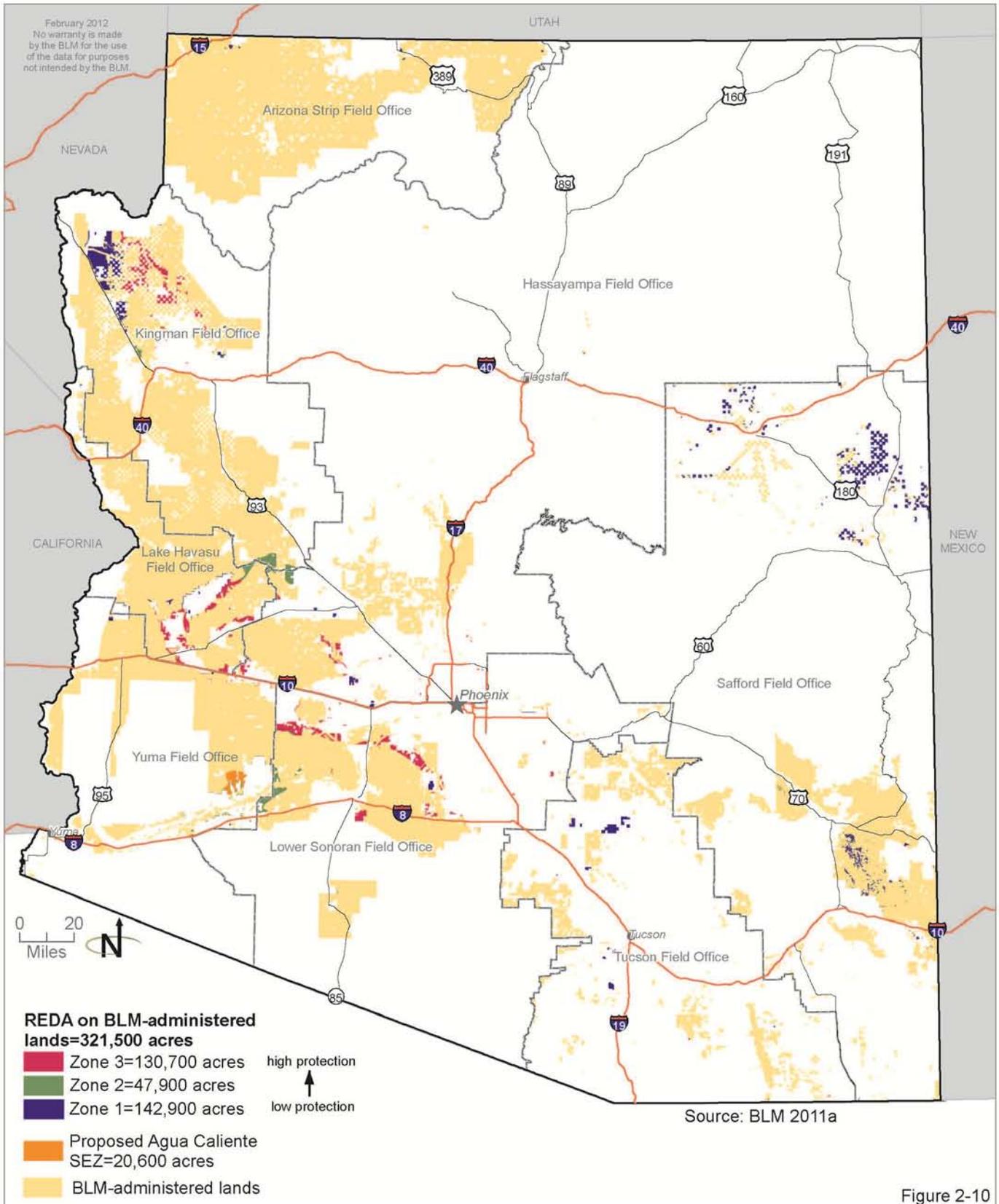


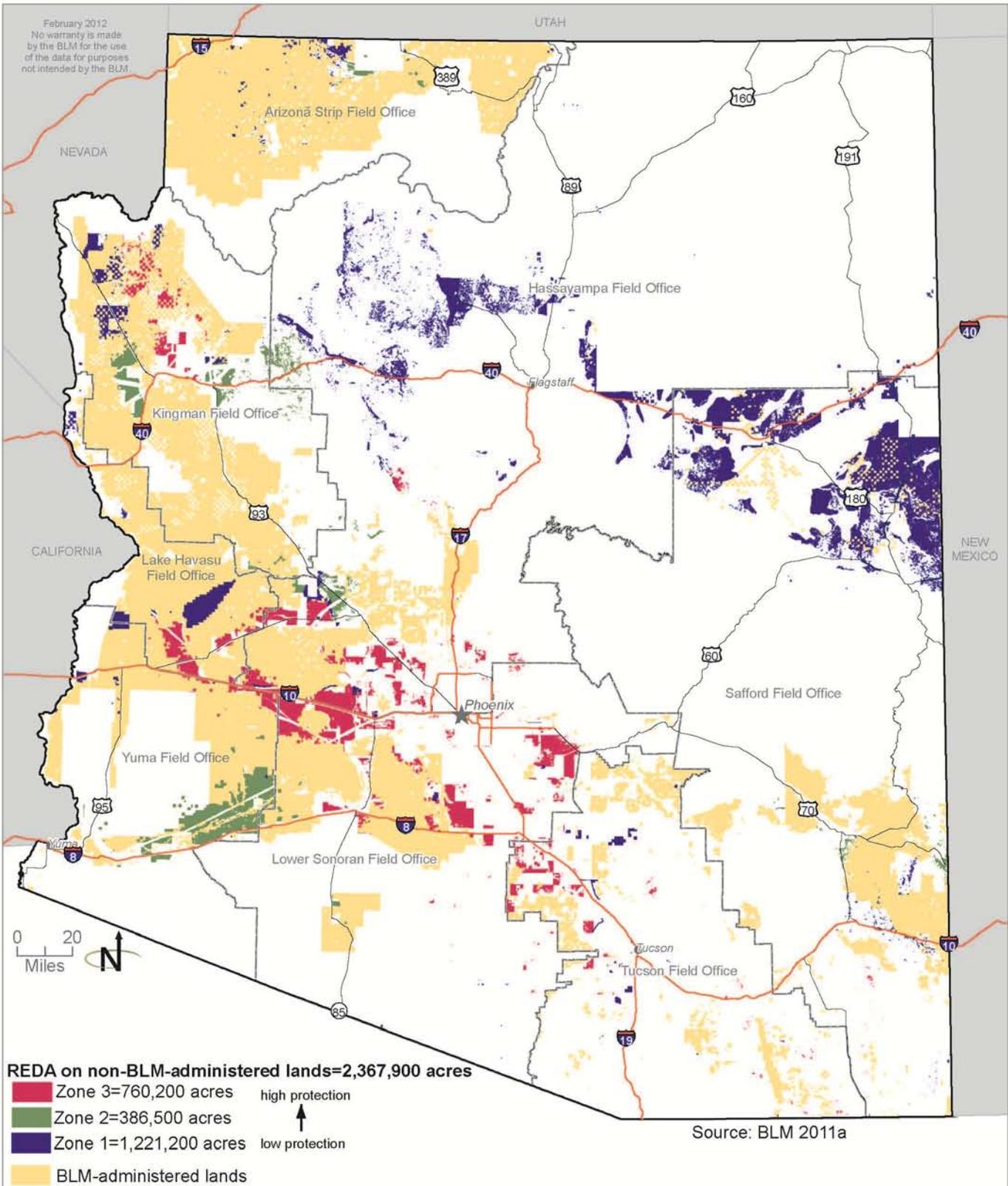
Figure 2-10



Alternative 4: Water Conservation and Protection REDA on Non-BLM-Administered Lands



Alternative 4 categorizes REDA into Water Protection Zones 1, 2, or 3. Zone 1 affords the least protection and Zone 3 the highest. RDEP nominated sites are considered Zone 1.



No decisions will be made on non-BLM-administered lands.

Figure 2-11

Table 2-7
Alternative 4: Acres within Water Protection Zones for REDAs and the
Proposed Agua Caliente SEZ

	BLM-Administered Land (acres)	Non-BLM-Administered Land (acres)
Water Protection Zone 3	130,700	760,200
Water Protection Zone 2	47,900	386,500
Water Protection Zone 1	142,900	1,221,200
<i>Total REDA</i>	<i>321,500</i>	<i>2,367,900</i>
Proposed Agua Caliente SEZ (Water Resource Protection Zone 2)	20,600	0
<i>Total REDA and SEZ</i>	<i>342,100</i>	<i>2,367,900</i>

Agua Caliente Solar Energy Zone

The proposed Agua Caliente SEZ analysis area is the same as described in Alternative 1, Maximum REDA. As the area considered for the REDA in this alternative is the maximum area, the footprint for the proposed SEZ was also kept to the maximum area. The 20,600-acre area was based upon the same criteria noted under Alternative 1 for the proposed Agua Caliente SEZ. Management of the proposed Agua Caliente SEZ would follow the requirements of the Solar Energy Program from the Solar PEIS and management actions, design features, and BMPs noted in **Section 2.3.2**,

Elements Common to All Action Alternatives. Additionally, the proposed SEZ would include the design features noted under Water Protection Zone 2, as described in **Table 2-6**, Water Protection Zones, above. Similar to Alternative 1, the BLM would petition the Secretary of the Interior to withdraw 20,600 acres in the proposed Agua Caliente SEZ from settlement, sale, location, or entry under the general land laws, including the mining laws, to protect and preserve the area for future solar energy development.

2.3.7 Alternative 5: Land Tenure REDA

The Land Tenure REDA alternative meets the purpose and need for the RDEP in planning for environmentally sound renewable energy development on public lands in Arizona by focusing on lands which prior planning processes have concluded are suitable for disposal. These public lands are both within the Maximum REDA (the area identified in Alternative 1) and have been identified as suitable for disposal in existing land use plans. These lands were identified as suitable for general disposal for a number of



Alternative 5: Land Tenure REDA on BLM-Administered Lands



Alternative 5 includes low resource sensitivity areas and RDEP nominated sites. Alternative 5 includes REDA that have lands identified for disposal under land use plans and emphasizes exchange of public lands with renewable energy potential for lands of high conservation potential.

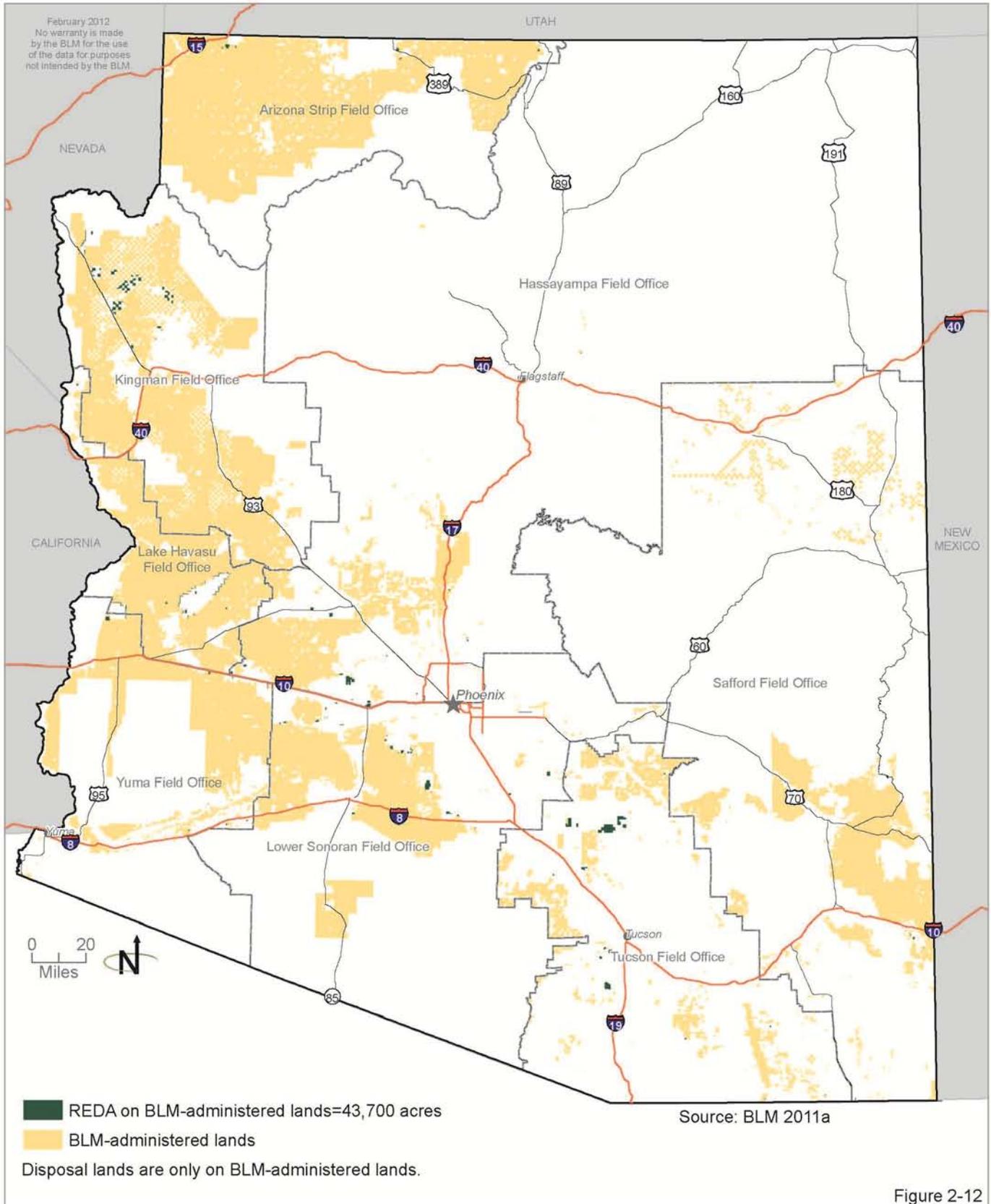


Figure 2-12

reasons, including low resource values, previous disturbance, and isolation from larger blocks of public land, which has made managing them as public lands difficult (see **Figure 2-12**, Alternative 5: Land Tenure REDA on BLM-Administered Lands). This would be an option for any RDEP alternative in addition to being considered as a stand-alone option in Alternative 5: Land Tenure REDA.

With the increased emphasis on renewable energy development, including on public lands, this alternative examines two possible options for these disposal lands:

1. Retain and allocate the areas for renewable energy development. Existing policy requires authorizing renewable energy projects with ROW grants, normally with a term of 30 years. Proposed rule-making at the national level may require competitive grants or leases of public lands for renewable energy development to generate additional revenue.
2. Prioritize the disposal of these lands to renewable energy purposes. Add criteria to favor disposal in a manner that creates additional social and environmental benefits (e.g., assist in addressing a water issue, adjusting land patterns to meet public needs).

Because option 2 proposes disposal of public land tracts that could generate public revenues, the following additional disposal criteria focus on creating additional public benefits to offset potential lost revenues:

- Priority disposal would be considered to entities who offer lands of equivalent value in areas of conservation importance such as national monuments, wilderness areas, or priority watersheds.
- A public interest determination would be made in accordance with Section 206(a) of FLPMA for disposals by exchange in association with a renewable energy project.
- Disposals may be considered at any time during the life of the project, and the facility authorized by a ROW grant would be included on the land patent as an encumbrance.
- Disposals may be conducted through a variety of mechanisms, including exchange or sale, with or without third-party facilitation (43 CFR 2201).

As with the other alternatives, the BLM management actions, design features, and BMPs in this alternative would be the same as those listed under **Section 2.3.2**, Elements Common to All Action Alternatives. Under disposal regulations and policy, lands that have been allocated for disposal

would require additional review and public participation prior to completing any transaction.

Table 2-8, Alternative 5: Acres within Land Tenure REDA and Proposed Agua Caliente SEZ, illustrates the number of acres that have already been identified as suitable for disposal and have low resource sensitivity, are RDEP nominated disturbed sites, or are in proposed SEZs in the Solar PEIS and the RDEP.

Table 2-8
Alternative 5: Acres within Land Tenure REDA and Proposed Agua Caliente SEZ

	BLM-Administered Land (acres)
REDA (BLM disposal lands and Nominated Disturbed Sites)	43,700
Proposed Agua Caliente SEZ	0
<i>Total</i>	<i>43,700</i>

Agua Caliente Solar Energy Zone

This alternative focuses on the BLM-administered lands that were identified in existing RMPs as available for disposal; since the maximum proposed SEZ footprint did not have any areas identified in the Yuma RMP for disposal, there is no SEZ proposed for Alternative 5.

2.3.8 Alternative 6: Collaborative-Based REDA (Preferred Alternative)

While the previous five alternatives each address some of the aspects of renewable energy issues and concerns brought forth during scoping, Alternative 6: Collaborative-Based REDA incorporates all of the concepts, issues, and protections from the other five alternatives into a “blended” alternative. Once the other five alternatives were conceptually developed, the BLM made them available for review by stakeholders, the public, and cooperating agencies. Based on this outreach, the BLM refined the alternatives and developed the Collaborative-Based REDA that includes:

- Areas that are more likely to have fewer resource conflicts that may affect development;
- Areas close enough to transmission to make it efficient and cost effective to bring the energy on-line;
- Energy generation areas near the point of demand, such as cities, towns, or industrial centers; and
- Additional resource protection measures:

- Water resource design features noted in **Table 2-6**, Water Protection Zones; and
- Prioritize the disposal of these lands to renewable energy purposes, and adding criteria to favor disposal in a manner that creates additional social and environmental benefits (see Alternative 5).

This alternative combines the transmission areas and load centers data from Alternatives 2 (Transmission REDA) and 3 (Load Offset REDA). Locating areas close to transmission and load centers provides the context for where electricity demand is and where renewable energy projects may be developed in the future. Resource protection elements were added to these lands, specifically by including the water resource protections (design features) from Alternative 4 to address the water availability concerns, and prioritizing available disposal lands for renewable energy purposes that would favor disposal in a manner that creates additional social and environmental benefits (Alternative 5). **Figure 2-13**, Alternative 6: Collaborative-Based REDA - Areas Eliminated from Consideration, **Figure 2-14**, Alternative 6: Collaborative-Based REDA on BLM-Administered Lands, and **Figure 2-15**, Alternative 6: Collaborative-Based REDA on Non-BLM-Administered Lands give illustration to all of these elements combined to create the Collaborative-Based REDA.

In terms of how the Collaborative-Based REDA would be managed, the management actions, design features, and BMPs in this alternative would be the same as those listed under **Section 2.3.2**, Elements Common to All Action Alternatives and would include the water resource design features from Alternative 4 and prioritize available disposal lands to renewable energy purposes with criteria to favor disposal in a manner that creates additional social and environmental benefits from Alternative 5. **Table 2-9**, Alternative 6: Collaborative-Based REDA and Proposed Agua Caliente SEZ, outlines the number of acres identified as low resource sensitivity areas, RDEP-nominated Disturbed Sites, and Solar PEIS SEZs throughout the state and exclusively on public lands.

Agua Caliente Solar Energy Zone

The proposed Agua Caliente SEZ analysis area is the same as described in Alternative 2, Transmission Line and Utility Corridor REDA. This smaller analysis area would meet all of the listed selection criteria noted previously under Alternative 1, but concentrates the development into a smaller footprint. The analysis area fits with the theme for Alternative 6 of keeping energy generation close to transmission and load centers, while including the additional environmental protections for water resources.



Alternative 6: Collaborative-Based REDA - Areas Eliminated from Consideration



Alternative 6 eliminates REDA that is not within 5 miles of existing or certified transmission lines, either side of the outer boundary of designated Arizona BLM Utility Corridors, designated BLM West Wide Energy Corridors, and US Bureau of Reclamation Central Arizona Project right-of-way and irrigation pumping sites. Additionally, Alternative 6 eliminates REDA not within 10 miles of Arizona incorporated cities and within 20 miles of Palo Verde Nuclear Power Plant and the town of Gila Bend. Alternative 6 also categorizes REDA into Water Protection Zones 1, 2, or 3.

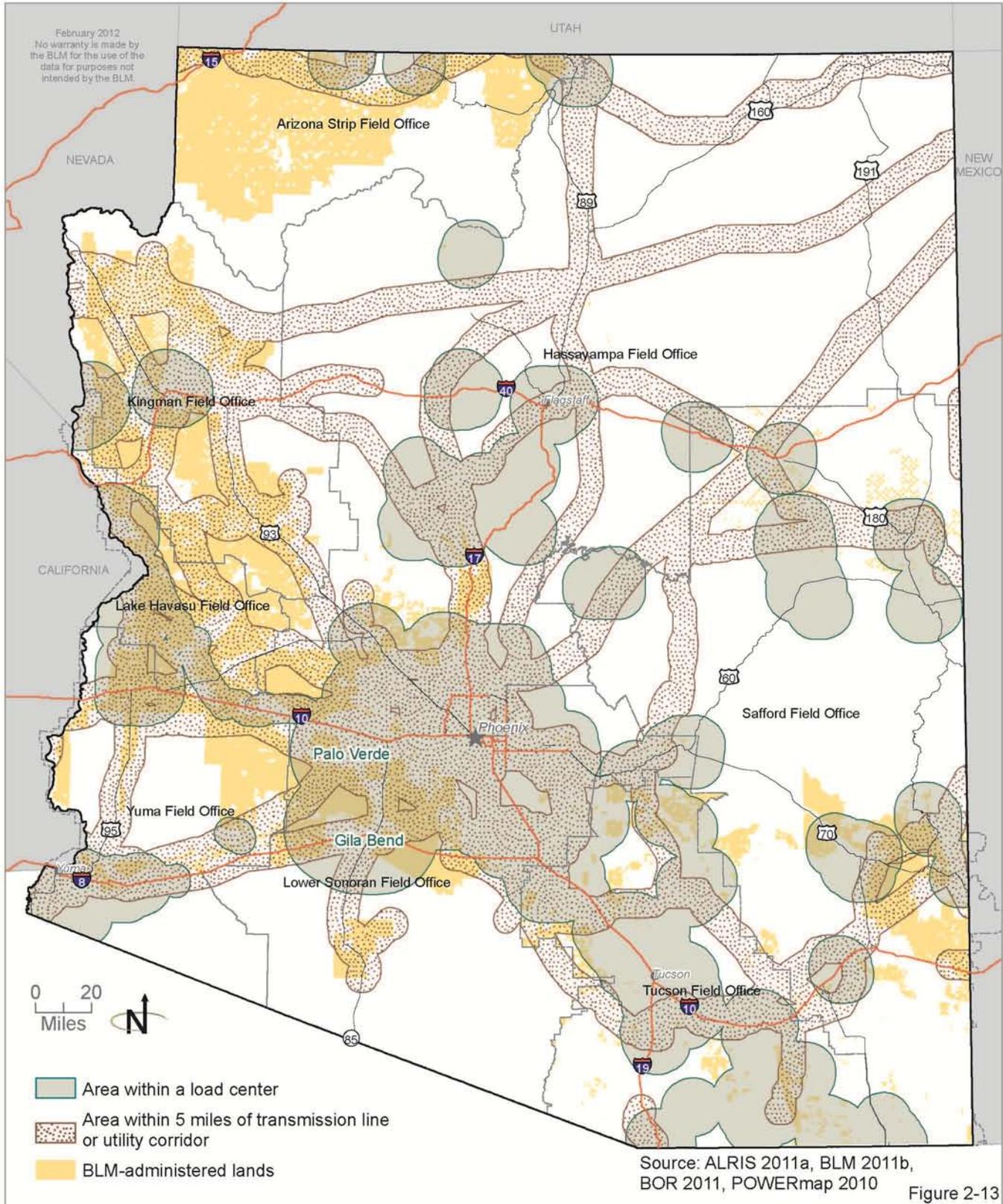


Figure 2-13



Alternative 6: Collaborative-Based REDA on BLM-Administered Lands



Alternative 6 includes REDA within 5 miles of existing or certified transmission lines, either side of the outer boundary of designated Arizona BLM Utility Corridors, designated BLM West Wide Energy Corridors, and US Bureau of Reclamation Central Arizona Project right-of-way and irrigation pumping sites. Additionally, Alternative 6 includes REDA within 10 miles of Arizona incorporated cities and within 20 miles of Palo Verde Nuclear Power Plant and the town of Gila Bend. Alternative 6 also categorizes REDA into Water Protection Zones 1, 2, or 3 with Zone 1 affording the least protection and Zone 3 the highest.

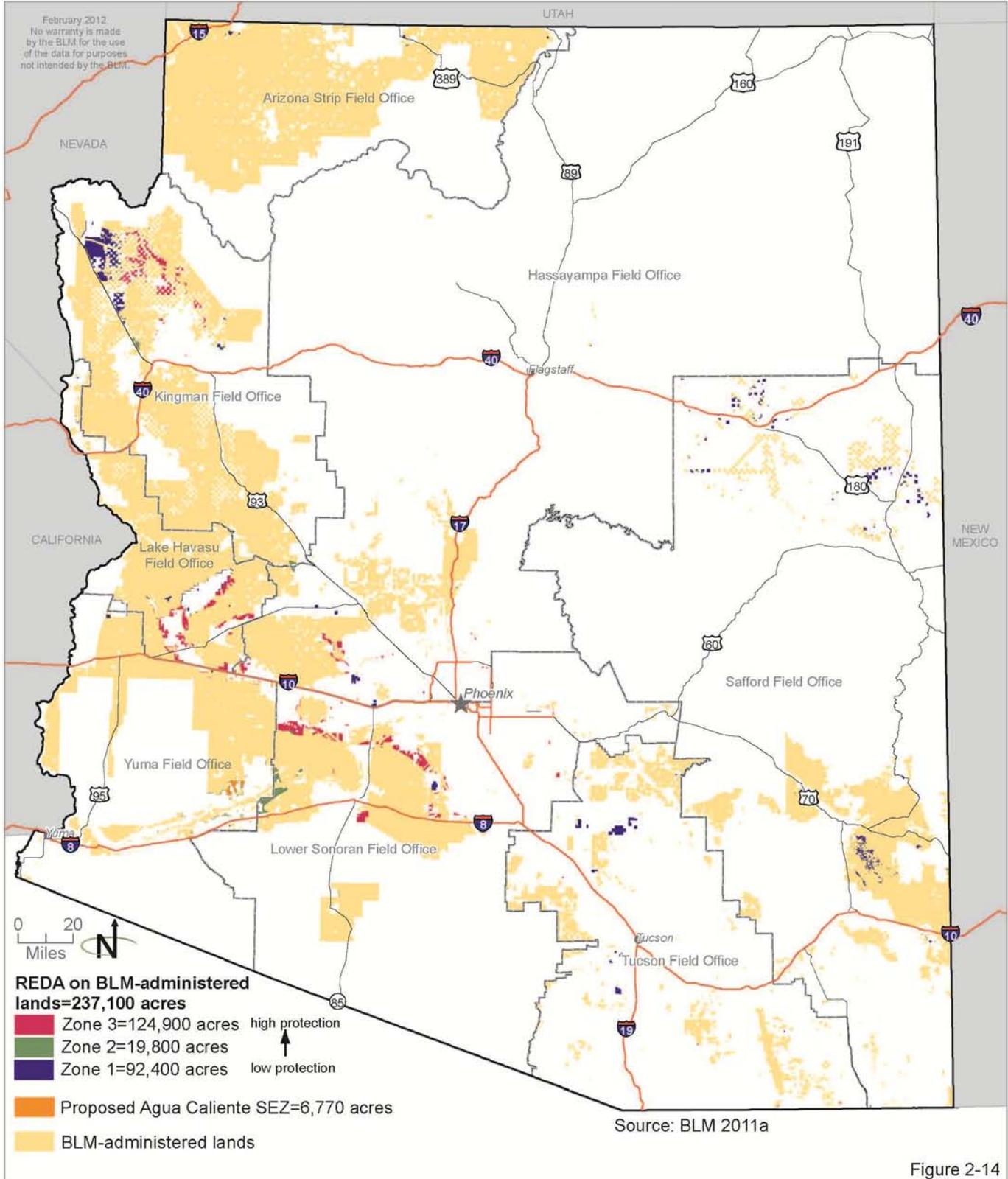


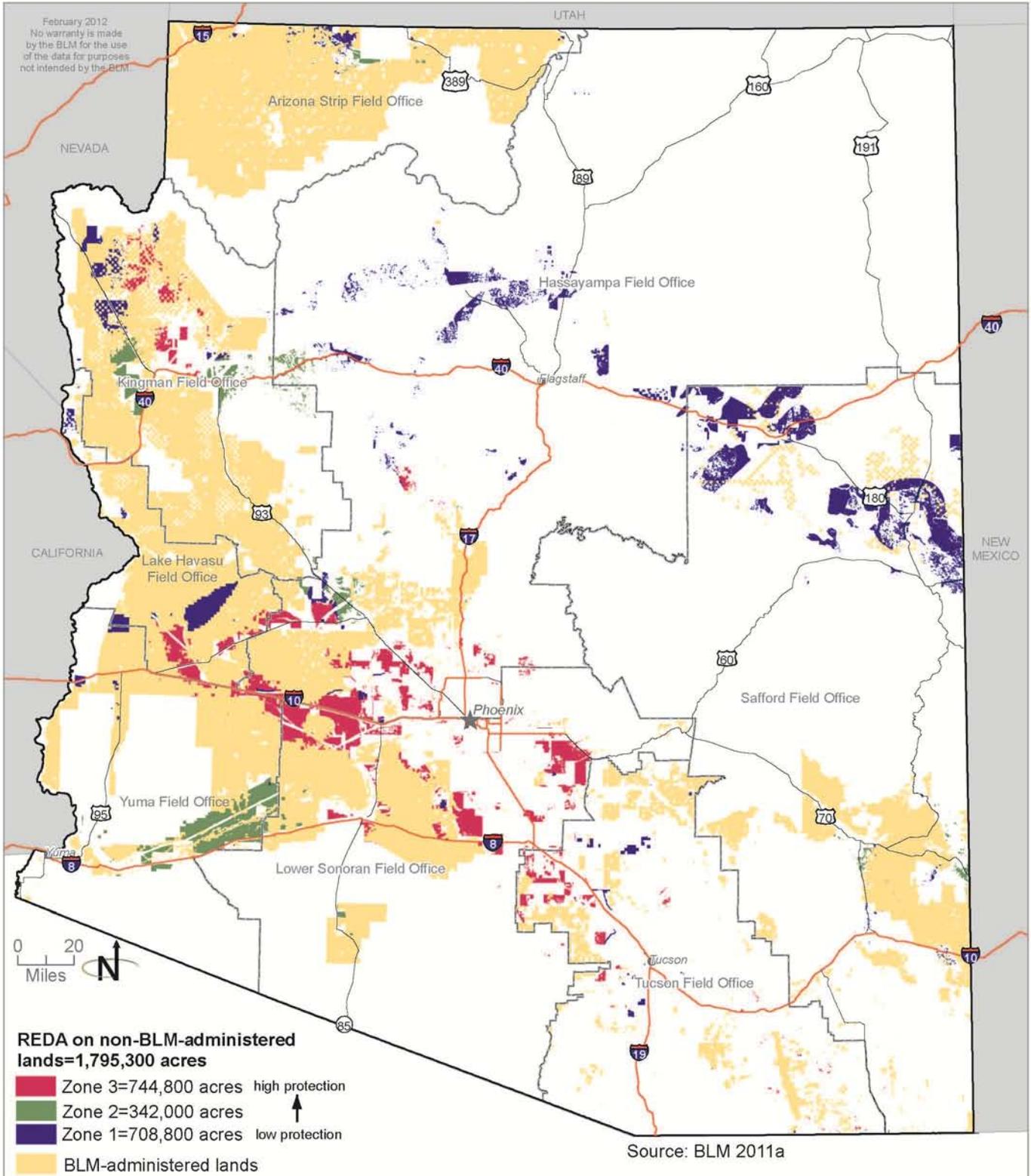
Figure 2-14



Alternative 6: Collaborative-Based REDA on Non-BLM-Administered Lands



Alternative 6 includes REDA within 5 miles of existing or proposed transmission lines, either side of the outer boundary of designated Arizona BLM Utility Corridors, designated BLM West Wide Energy Corridors, and US Bureau of Reclamation Central Arizona Project right-of-way and irrigation pumping sites. Additionally, Alternative 6 includes REDA within 10 miles of Arizona incorporated cities and within 20 miles of Palo Verde Nuclear Power Plant and the town of Gila Bend. Alternative 6 also categorizes REDA into Water Protection Zones 1, 2, or 3 with Zone 1 affording the least protection and Zone 3 the highest.



No decisions will be made on non-BLM-administered lands.

Figure 2-15

Management of the proposed Agua Caliente SEZ would follow the requirements of the Solar Energy Program from the Solar PEIS and management actions, design features, and BMPs noted in **Section 2.3.2**, Elements Common to All Action Alternatives. Additionally, the proposed SEZ would include the design features noted under Water Protection Zone 2, as described in **Table 2-6**, Water Protection Zones. Similar to Alternative 2, the BLM would petition the Secretary of the Interior to withdraw 6,770 acres in the proposed Agua Caliente SEZ from settlement, sale, location, or entry under the general land laws, including the mining laws, to protect and preserve the area for future solar energy development.

Table 2-9
Alternative 6: Collaborative-Based REDA and Proposed Agua Caliente SEZ

	BLM- Administered Land (acres)	Non-BLM- Administered Land (acres)
Alternative 6: Collaborative Alternative	237,100	1,795,300
Proposed Agua Caliente SEZ (Water Resources Protection Zone 2)	6,770	0
Acreage with Resource Protections		
Water Design Features		
Water Protection Zone 3	124,900	744,800
Water Protection Zone 2	19,800	342,000
Water Protection Zone 1	92,400	708,500
Off-site Conservation		
Lands available for disposal	43,700	N/A

Table 2-10, Summary of Acres for Alternatives, gives the number of REDA acres for each alternative as distributed across all lands and public lands.

**Table 2-10
Summary of Acres for Alternatives**

	BLM- Administered Land	Non-BLM- Administered Land	Proposed Agua Caliente SEZ
Alternative 1: Maximum REDA	321,500	2,367,900	20,600
Alternative 2: Transmission Line and Utility Corridor REDA	218,600	1,680,600	6,770
Alternative 3: Load Offset REDA	129,800	1,121,500	2,760
Alternative 4: Water Conservation and Protection REDA	321,500	2,367,900	20,600
Alternative 5: Land Tenure REDA	43,700	N/A	0
Alternative 6: Collaborative-Based REDA	237,100	1,795,300	6,770

2.4 PREFERRED ALTERNATIVE

The BLM has identified Alternative 6: Collaborative-Based REDA as the agency's preferred alternative, because it best meets the following criteria:

- Satisfies statutory requirements (true for all alternatives).
- Reflects what the BLM believes to be the best combination of actions to achieve the stated goals.
- Represents the best solution for the purpose and need as described in **Chapter I**, Introduction.
- Provides the best approach to address the key resource and planning issues.
- Provides resource protection and a viable footprint for energy generation and distribution.
- Includes input from cooperating agencies, collaborating partners, stakeholders, the public, and BLM specialists.

The preferred alternative is the BLM's preliminary preference and does not represent a final BLM decision. The preferred alternative could change between publication of the Draft EIS and Final EIS based on public comments on the Draft EIS, new information, or changes in laws, regulations, or BLM policies. The BLM invites comment on the choice of preferred alternative.

2.5 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED ANALYSIS

The range of alternatives developed for RDEP evolved from the issues ascertained through scoping, public outreach, and collaboration with cooperating agencies. The alternatives address a variety of topics, including reuse of disturbed lands, transmission, distributive and utility-scale energy development, and analysis of BLM and other lands. There are a couple of other alternatives that the BLM considered but eliminated from detailed analysis because they did not meet the stated purpose and need (**Section I.2, Purpose and Need for the RDEP**). These alternatives are summarized below.

Restricting Development to Urban Areas: Suggestions were made to restrict solar and wind energy development to urban areas, such as rooftop solar. The BLM does not have authority to make decisions on non-BLM-administered lands or influence local policies. Likewise, as stated in the purpose and need statement, the BLM needs to identify lands most suitable for renewable energy development. Most BLM lands are located outside of urban areas. While this specific issue has not been incorporated into the EIS as an independent alternative, consideration was given to proximity of available lands to urban areas, load centers, and transmission lines to promote distributive development. Some of the proposed REDAs are located close to urban areas.

Conservation Management: Comments were made to focus an alternative on instituting conservation measures and implementing demand-side management to reduce electrical demand. While this is a viable action to help meet America's energy needs, it does not respond to the purpose and need for agency action in this EIS. In general, conservation initiatives would be designed to reduce energy consumption levels in order to reduce the need for increased electricity generation capacity. Demand-side management would involve specific actions taken by utilities, their regulators, and other entities to induce, influence, or compel consumers to reduce their energy consumption, particularly during periods of peak demand. These efforts are beyond the scope of the BLM's land management responsibilities.

Other Alternatives Considered but Eliminated: Additional comments were brought up regarding very site-specific implementation-level issues. This EIS is a planning document to identify public lands most suitable for renewable energy development. Site-specific implementation-level analysis would be conducted on an application-by-application basis.

2.6 SUMMARY OF THE REASONABLY FORESEEABLE DEVELOPMENT SCENARIO

The RFDS identifies the lands in Arizona that are likely most suitable for the development of solar and wind energy resources, and estimates the acreage of those lands required to support renewable energy projects that would not only meet but exceed the Arizona RPS of 15 percent renewable energy

by 2025. Arizona, given its abundance of solar energy resources, is expected to be a net exporter of renewable energy, and so it is assumed that by 2025 Arizona will generate renewable energy at a level that is twice the amount required by the RPS. In other words, the RFDS estimates that half of the renewable energy generated will stay in-state, while the other half will be exported to neighboring states such as California. The RFDS is neither a planning decision nor the “No Action Alternative” in the EIS; rather, it serves as a technical supporting analysis to be used as a reference. The full RFDS report is available in **Appendix A**, Reasonably Foreseeable Development Scenario for Renewable Energy in Arizona.

The purpose of the RFDS is to inform policy makers, BLM decision makers, the general public, and renewable energy developers. All of the groups have an important role in determining allowable uses on lands and in approving or denying a local project proposal. The RFDS allows them to make comments and decisions on an individual project by taking into account how it would fit into the big-picture, planning-level energy and environmental landscape.

BLM’s responsibility for permitting renewable energy production sites is based on production occurring on BLM-administered lands; BLM has no authority to permit renewable energy development on non-BLM-administered lands. The RFDS focuses on ground-based, commercial-scale renewable energy projects; it is recognized that Arizona has potential for rooftop solar and cogeneration of renewable energy with conventional energy production facilities, but these could occur without BLM involvement and, therefore, are excluded from the analysis. However, the RFDS provides parallel analyses for BLM-administered lands and for non-BLM-administered lands throughout the state.

2.6.1 Findings and Conclusions

The majority of BLM-administered land that is developable for solar energy projects occurs in the western half of Arizona, with smaller areas identified to the east around Safford and smaller scattered parcels throughout the Tucson Field Office and in the northern portion of the Safford Field Office. Large tracts of land with no known technical or regulatory conflicts are identified along Interstates 8 and 10 to the west of Phoenix, and to the north, south, and west of Highway 389.

Relatively few areas of BLM-administered land are considered developable for wind energy projects across Arizona. These areas occur in several locations within the Arizona Strip Field Office in the northwestern corner of the state, west of Kingman near the California border, an area in the northern portion of the Tucson Field Office, and a scattering of areas in the northern portion of the Safford Field Office, south of Highway 40. No BLM-administered lands were found to contain the highest class of wind

resources (Class 7), and only 69 acres were found to contain the second highest class of wind resources (Class 6). Statistics from the RFDS are summarized in **Table 2-11**, Summary of RFDS Results, below.

Table 2-11
Summary of RFDS Results

Land required to produce 1 GW (solar)	8,000 acres
Land required to produce 1 GW (wind)	28,000 acres (10% of which would be disturbed)
Estimated renewable energy output by 2025	28,642 GWh
Estimated utility scale solar energy maximum production by 2025	9.48 GW
2025 wind energy capacity	0.82 GW
2025 land disturbance (solar, statewide)	76,000 acres
2025 land requirement (wind, statewide)	23,000 acres (10% of which would be disturbed)
2025 land disturbance (solar, BLM lands)	12,000 acres
2025 land requirement (wind, BLM lands)	3,600 acres (10% of which would be disturbed)

GW = gigawatt; GWh = gigawatt-hour
1 GW = 1,000 MW

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**Table 2-12
Summary of the Alternatives**

No Action	Alternative 1: Maximum REDA	Alternative 2: Transmission Line and Utility Corridor REDA	Alternative 3: Load Offset REDA	Alternative 4: Water Conservation and Protection REDA	Alternative 5: Land Tenure REDA	Alternative 6: Collaborative-Based REDA
Goals: In accordance with existing BLM Arizona RMPs	Goals: <ul style="list-style-type: none"> Ensure the most environmentally responsible development and delivery of renewable energy that contributes to protecting and enhancing Arizona’s water, wildlife, and other natural resources. Help meet community energy needs, create economic opportunities, and provide good value to the taxpayer 					
Objectives: In accordance with existing BLM Arizona RMPs	Objectives: <ul style="list-style-type: none"> Identify disturbed sites, such as brownfields, landfills, abandoned mines, marginal or impaired agricultural lands, etc., which could be reused for renewable energy development; Identify areas with low resource sensitivity and few environmental conflicts to lessen the risk for environmental conflicts; Identify areas suitable for development that are adjacent to load centers; Identify areas close enough to existing transmission to make it efficient and cost effective to bring the energy on-line; Identify areas with enough acreage of public lands to help meet the renewable energy demand (including the Arizona RPS), and provide flexibility for micro-siting and mitigation; Identify a SEZ specifically for utility-scale solar energy developments (more than 20 MW) in accordance with national BLM policy and guidance (BLM and DOE 2010, 2011; Solar PEIS) and Engage cooperating agencies, tribes, and stakeholders in order to obtain broad consensus on the desired future renewable energy footprint in Arizona and to inform renewable energy developers in their siting of projects throughout the state. 				Objectives: <ul style="list-style-type: none"> Same as Alternatives 1 through 4, plus Dispose of BLM lands within identified REDAs for non-federal lands within areas of high conservation priority 	Objectives: <ul style="list-style-type: none"> Same as Alternative 5
Allocation: SEZ – No existing decision in existing BLM Arizona RMPs	Allocation: Agua Caliente Solar Energy Zone, 20,600 acres	Allocation: Agua Caliente Solar Energy Zone, 6,770 acres	Allocation: Agua Caliente Solar Energy Zone, 2,760 acres	Allocation: Same as Alternative 1	Allocation: None	Allocation: Same as Alternative 2
Allocation: In accordance with existing BLM Arizona RMPs	Allocation: Maximize the area identified for renewable energy development with the fewest constraints. Includes RDEP-nominated sites, low resource sensitivity areas, and SEZs as identified in the Solar PEIS.	Allocation: Reduce environmental impacts by focusing renewable energy development on lands within reasonable proximity to designated utility corridors and existing or certified transmission lines. Includes the Maximum REDA lands narrowed further to only those lands within a 5-mile buffer around: (1) BLM-designated utility corridors; (2) existing transmission lines; and (3) reasonably foreseeable proposed transmission lines.	Allocation: Reduce disturbance and environmental impacts by keeping energy generation near the point of demand. Includes Maximum REDA lands within a 10-mile buffer around all towns, a 5-mile buffer of the U.S. Bureau of Reclamation Central Arizona Project area and center pivot irrigation systems, a 20-mile buffer around Palo Verde, and a 20-mile buffer around the town of Gila Bend.	Allocation: Avoid impacts on sensitive surface watersheds, protecting groundwater quality and quantity, reducing consumptive use of water, without causing environmental, economic, or social consequences. Includes Maximum REDA lands then applied Water Resource Protection Level criteria.	Allocation: Plan for environmentally sound renewable energy development in Arizona and flexibility for off-site conservation by focusing on lands which prior planning processes have identified for disposal due to their low value for public uses, have limited value for retention, and that do not have any known sensitive resources.	Allocation: A blending of four alternatives; incorporating transmission and load offset acreages (Alternatives 2 and 3) and applying the resource protections from Alternatives 3 and 5.

**Table 2-12 (continued)
Summary of the Alternatives**

No Action	Alternative 1: Maximum REDA	Alternative 2: Transmission Line and Utility Corridor REDA	Alternative 3: Load Offset REDA	Alternative 4: Water Conservation and Protection REDA	Alternative 5: Land Tenure REDA	Alternative 6: Collaborative-Based REDA
	Management Actions, Design Features, BMPs: <ul style="list-style-type: none"> • Listed under Section 2.3.2, Elements Common to All Alternatives 		Management Actions, Design Features, BMPs: <ul style="list-style-type: none"> • Listed under Section 2.3.2, Elements Common to All Alternatives 	Management Actions, Design Features, BMPs: <ul style="list-style-type: none"> • Listed under Section 2.3.2, Elements Common to All Alternatives • Limitations listed under each Water Resource Protection Level • Water Resource Mitigation and Monitoring Plan with the addition of water augmentation techniques 	Management Actions, Design Features, BMPs: <ul style="list-style-type: none"> ▪ Listed under Section 2.3.2, Elements Common to All Alternatives • Additional review and consideration of priority resource criteria prior to disposal of land 	Management Actions, Design Features, BMPs: <ul style="list-style-type: none"> • Same as Alternative 4, plus • Actions, Design Features, BMPs from Alternative 5

**Table 2-13
Summary of Environmental Consequences by Alternative**

Resource	No Action	Alternative 1: Maximum REDA	Alternative 2: Transmission Line and Utility Corridor REDA	Alternative 3: Load Offset REDA	Alternative 4: Water Conservation and Protection REDA	Alternative 5: Land Tenure REDA	Alternative 6: Collaborative-Based REDA
Air Quality and Air Quality-related Values	<p>Renewable energy actions would be processed on a case-by-case basis. Indirect impacts include construction- and operations-related emissions. Emissions would be dispersed across the planning area. Operational emissions would not contribute to regional degradation of air quality over the long term.</p> <p>Projects would be dispersed over the entire planning area.</p> <p>Standardized design features and BMPs would not be implemented under this alternative.</p>	<p><u>REDA</u>: No direct impacts from identification of REDA. Indirect impacts include construction- and operations-related emissions. Emissions would be dispersed across the REDA. Emissions would not contribute to regional degradation of air quality over the long term.</p> <p>Projects would be dispersed over the widest area; temporary construction-related impacts could be greatest under this alternative.</p> <p>Design features and BMPs would be implemented to reduce air quality impacts.</p>	<p><u>REDA</u>: Same as Alternative 1; however, as this alternative only includes lands within five miles of existing or certified transmission lines and utility corridors, the distance to connect any proposed developments would be minimized, potentially reducing construction-related impacts.</p> <p>Design features and BMPs would be implemented to reduce air quality impacts.</p>	<p><u>REDA</u>: Same as Alternative 1; however, limiting development to within 10 miles of load centers could encourage development closer to populated areas, resulting in potential localized short-term air quality impacts on sensitive receptors. Development closer to population centers may reduce the miles of dirt access roads required, potentially reducing regional fugitive dust impacts.</p> <p>Design features and BMPs would be implemented to reduce air quality impacts.</p>	<p><u>REDA</u>: Same as Alternative 1. With the additional water resource design features, this alternative may encourage PV solar technology over other forms of solar development, slightly reducing potential operation-related emissions.</p> <p>Design features and BMPs would be implemented to reduce air quality impacts.</p>	<p><u>REDA</u>: Same as Alternative 1; however, this alternative may result in the least amount of development on BLM-administered lands.</p> <p>Design features and BMPs would be implemented to reduce air quality impacts.</p>	<p><u>REDA</u>: Similar to Alternative 2 in that alternative would reduce construction-related impacts by placing REDA closer to transmission lines and utility corridors. Similar to Alternative 3 by encouraging development closer to population centers, resulting in potential short-term air quality impacts on sensitive receptors. Similar to Alternative 4 by slightly reducing potential operation-related emissions.</p> <p>Design features and BMPs would be implemented to reduce air quality impacts.</p>
	N/A	<p><u>Proposed SEZ</u>: Similar to impacts under REDA. The size of the proposed SEZ has the potential to support the largest amount of utility-scale renewable energy development, resulting in localized fugitive dust generation and traffic-related exhaust emissions.</p> <p>Design features and BMPs would be implemented to reduce air quality impacts.</p>	<p><u>Proposed SEZ</u>: Same as Alternative 1. With a smaller footprint, Alternative 2 would likely result in a lesser amount of development within the proposed SEZ; therefore, short-term impacts would be less.</p> <p>Design features and BMPs would be implemented to reduce air quality impacts.</p>	<p><u>Proposed SEZ</u>: Same as Alternative 1. With the smallest footprint, Alternative 3 would likely result in a least amount of development within the proposed SEZ, resulting in the lowest emission levels.</p> <p>Design features and BMPs would be implemented to reduce air quality impacts.</p>	<p><u>Proposed SEZ</u>: Same as described above for REDA above and Alternative 1.</p> <p>Design features and BMPs would be implemented to reduce air quality impacts.</p>	N/A	<p><u>Proposed SEZ</u>: Same as Alternative 2 and Alternative 4.</p> <p>Design features and BMPs would be implemented to reduce air quality impacts.</p>

**Table 2-13 (continued)
Summary of Environmental Consequences by Alternative**

Resource	No Action	Alternative 1: Maximum REDA	Alternative 2: Transmission Line and Utility Corridor REDA	Alternative 3: Load Offset REDA	Alternative 4: Water Conservation and Protection REDA	Alternative 5: Land Tenure REDA	Alternative 6: Collaborative-Based REDA
Greenhouse Gas Emissions and Climate Change	Renewable energy actions would be processed on a case-by-case basis. Primary sources of greenhouse gas (GHG) emissions are from clearing vegetation (releasing sequestered carbon), and emissions from heavy construction equipment and vehicles. Renewable energy facilities provide potential GHG savings in the form of offsetting energy produced by fossil fuel sources, resulting in a reduction of GHG emissions.	<u>REDA</u> : Same as the No Action Alternative; however, with the added goals, objectives, and management actions, there is a greater likelihood for a more substantial reduction in GHG emissions.	<u>REDA</u> : Same as Alternative 1.	<u>REDA</u> : Same as Alternative 1.	<u>REDA</u> : Same as Alternative 1.	<u>REDA</u> : Same as Alternative 1.	<u>REDA</u> : Same as Alternative 1.
	N/A	<u>Proposed SEZ</u> : Same as the REDA, noted above.	<u>Proposed SEZ</u> : Same as Alternative 1.	<u>Proposed SEZ</u> : Same as Alternative 1.	<u>Proposed SEZ</u> : Same as Alternative 1.	N/A	<u>Proposed SEZ</u> : Same as Alternative 1.
Cultural Resources	Renewable energy actions would be processed on a case-by-case basis in accordance with existing land use planning decisions. Anticipated impacts include damage, destruction, discovery, and analysis of cultural resources. However, with the existing requirements for protection of eligible cultural and historic resources, any impact on resources would be avoided or mitigated.	<u>REDA</u> : Types of impacts would be similar to those described in the No Action Alternative. Using the predictive model, approximately 5,403 newly identified sites could occur within the Maximum REDA. It is unlikely that many known NRHP-eligible sites would be affected by development within the REDA. Implementation of the design features and BMPs would reduce the impacts.	<u>REDA</u> : Types of impacts would be similar to those described in the No Action Alternative. Using the predictive model, approximately 3,673 newly identified sites could occur within the REDA. It is unlikely that many known NRHP-eligible sites would be affected by development within the REDA. Implementation of the design features and BMPs would reduce the impacts.	<u>REDA</u> : Types of impacts would be similar to those described in the No Action Alternative. Using the predictive model, approximately 2,182 newly identified sites could occur within the REDA. It is unlikely that many known NRHP-eligible sites would be affected by development within the REDA. Implementation of the design features and BMPs would reduce the impacts.	<u>REDA</u> : Same as Alternative 1.	<u>REDA</u> : Types of impacts would be similar to those described in the No Action Alternative. Using the predictive model, approximately 734 newly identified sites could occur within the REDA. It is unlikely that many known NRHP-eligible sites would be affected by development within the REDA. Implementation of the design features and BMPs would reduce the impacts.	<u>REDA</u> : Types of impacts would be similar to those described in the No Action Alternative. Using the predictive model, approximately 3,985 newly identified sites could occur within the REDA. It is unlikely that many known NRHP-eligible sites would be affected by development within the REDA. Implementation of the design features and BMPs would reduce the impacts.
	N/A	<u>Proposed SEZ</u> : Construction activities have the potential to impact prehistoric resources and historic military-related	<u>Proposed SEZ</u> : The reduction in size of the SEZ would reduce the potential for impacts by eliminating the more-remote areas	<u>Proposed SEZ</u> : Same as Alternative 2; however, with the smaller footprint, any potential development would be closer to the	<u>Proposed SEZ</u> : Same as Alternative 1.	N/A	<u>Proposed SEZ</u> : Same as Alternative 4.

Table 2-13 (continued)
Summary of Environmental Consequences by Alternative

Resource	No Action	Alternative 1: Maximum REDA	Alternative 2: Transmission Line and Utility Corridor REDA	Alternative 3: Load Offset REDA	Alternative 4: Water Conservation and Protection REDA	Alternative 5: Land Tenure REDA	Alternative 6: Collaborative-Based REDA
		resources. Implementation of the design features and BMPs would reduce the impacts.	near mountains and major washes that could contain undisturbed archaeological sites. Implementation of the design features and BMPs would reduce the impacts..	White Wing Ranch.			
Energy and Minerals	<p>Renewable energy would be permitted on a case-by-case basis. If renewable energy facilities were constructed, future leasable mineral activities would be precluded, unless the leasable mineral was accessible via directional drilling technologies.</p> <p>Valid mining claims would preclude solar or wind energy development. If solar or wind developments occur in areas of high locatable mineral potential, there would be impacts on exploration and development.</p> <p>Solar or wind developments would preclude future mining activities for salable mineral materials, but would be negligible due to an abundance of material throughout the planning area.</p>	<p><u>REDA:</u> Impacts on oil, gas, and geothermal resources are anticipated to be negligible due to few resources being present in the REDA and the fact that they could be accessed with directional drilling methods.</p> <p>Metallic mineral districts and areas with high potential of known mineral deposits have been eliminated from the REDA, thereby reducing impacts on these resources from renewable energy developments. Prior to authorizing new energy developments, BLM would identify existing valid mining claims within the project area and determine if it is possible to locate the facility in or close to these areas in such a way as to avoid future adverse effects on mineral development activities.</p> <p>Future saleable mining activities would be precluded in areas with solar and wind energy</p>	<u>REDA:</u> Same as Alternative 1.	<u>REDA:</u> Same as Alternative 1.	<u>REDA:</u> Same as Alternative 1.	<u>REDA:</u> Same as Alternative 1.	<u>REDA:</u> Same as Alternative 1.

Table 2-13 (continued)
Summary of Environmental Consequences by Alternative

Resource	No Action	Alternative 1: Maximum REDA	Alternative 2: Transmission Line and Utility Corridor REDA	Alternative 3: Load Offset REDA	Alternative 4: Water Conservation and Protection REDA	Alternative 5: Land Tenure REDA	Alternative 6: Collaborative-Based REDA
		facility development within the REDA. However, there are numerous available locations in the planning area, so dispersed impacts on salable mineral development would be negligible.					
	N/A	<u>Proposed SEZ</u> : Impacts on leasable, salable, and locatable minerals are expected to be negligible.	<u>Proposed SEZ</u> : Same as Alternative 1.	<u>Proposed SEZ</u> : Same as Alternative 1.	<u>Proposed SEZ</u> : Same as Alternative 1.	N/A	<u>Proposed SEZ</u> : Same as Alternative 1.
Environmental Justice	Renewable energy developments would be permitted on a case-by-case basis. Impacts on environmental justice populations would be assessed on a project-specific basis.	<u>REDA</u> : As the REDA excludes tribal lands, there would be negligible impacts on Native American populations. Should developments occur in Santa Cruz or Yuma Counties, impacts on environmental justice populations may occur.	<u>REDA</u> : Same as Alternative 1.	<u>REDA</u> : Same as Alternative 1.	<u>REDA</u> : Same as Alternative 1.	<u>REDA</u> : Same as Alternative 1.	<u>REDA</u> : Same as Alternative 1.
	N/A	<u>Proposed SEZ</u> : Impacts on environmental justice populations within Yuma County may occur.	<u>Proposed SEZ</u> : Same as Alternative 1.	<u>Proposed SEZ</u> : Same as Alternative 1.	<u>Proposed SEZ</u> : Same as Alternative 1.	N/A	<u>Proposed SEZ</u> : Same as Alternative 1.
Fish and Wildlife	Renewable energy actions would occur on a case-by-case basis and would be assessed based on land use planning decisions. Renewable energy actions would likely result in patchy, fragmented development with an increased likelihood of habitat disturbance and fragmentation of wildlife habitat.	<u>REDA</u> : There would be no direct impacts from identifying a REDA. Indirect impacts would result from implementing the planning decisions and possible future ground-disturbing activities associated with renewable energy developments. By screening out sensitive wildlife areas from consideration, the impacts	<u>REDA</u> : Similar to Alternative 1, except that there would be 96,800 acres in Conservation Potential Category 1, 90,400 acres in Conservation Potential Category 2, and 21,100 acres in Conservation Potential Category 3.	<u>REDA</u> : Similar to Alternative 1, except that there would be 79,900 acres in Conservation Potential Category 1, 18,700 acres in Conservation Potential Category 2, and 15,800 acres in Conservation Potential Category 3.	<u>REDA</u> : Same as Alternative 1.	<u>REDA</u> : Similar to Alternative 1, except that there would be 16,800 acres in Conservation Potential Category 1, 11,200 acres in Conservation Potential Category 2, and 2,200 acres in Conservation Potential Category 3.	<u>REDA</u> : Similar to Alternative 1, except that there would be 103,300 acres in Conservation Potential Category 1, 90,500 acres in Conservation Potential Category 2, and 27,300 acres in Conservation Potential Category 3.

Table 2-13 (continued)
Summary of Environmental Consequences by Alternative

Resource	No Action	Alternative 1: Maximum REDA	Alternative 2: Transmission Line and Utility Corridor REDA	Alternative 3: Load Offset REDA	Alternative 4: Water Conservation and Protection REDA	Alternative 5: Land Tenure REDA	Alternative 6: Collaborative-Based REDA
		<p>would be reduced compared to the No Action Alternative. Development within the REDA would reduce disturbance on lands with high wildlife value and encourage development on previously disturbed lands, reducing habitat fragmentation. Implementation of the design features and BMPs would further reduce the likelihood for impacts.</p> <p>There would be 121,400 acres in Conservation Potential Category 1, 106,700 acres in Conservation Potential Category 2, and 84,100 acres in Conservation Potential Category 3.</p>					
N/A		<p><u>Proposed SEZ:</u> Development would remove and fragment wildlife habitat in the southern portion of the Palomas Plain Wildlife Habitat Area (WHA), resulting in habitat loss and fragmentation. Implementation of the design features would likely reduce these impacts. There would be 19,690 acres in Conservation Potential Category 1, 10 acres in Conservation</p>	<p><u>Proposed SEZ:</u> Similar to Alternative 1, except that with the smaller footprint, less area in the Palomas Plain WHA would be impacted. There would be 6,560 acres in Conservation Potential Category 1, 50 acres in Conservation Potential Category 3, 140 acres in Conservation Potential Category 4, and 10 acres in Conservation Potential Category 5.</p>	<p><u>Proposed SEZ:</u> Similar to Alternative 1, except that with the smallest footprint, the least area in the Palomas Plain WHA would be impacted. There would be 2,600 acres in Conservation Potential Category 1, 50 acres in Conservation Potential Category 3, and 110 acres in Conservation Potential Category 4.</p>	<p><u>Proposed SEZ:</u> Same as Alternative 1.</p>	N/A	<p><u>Proposed SEZ:</u> Same as Alternative 2.</p>

**Table 2-13 (continued)
Summary of Environmental Consequences by Alternative**

Resource	No Action	Alternative 1: Maximum REDA	Alternative 2: Transmission Line and Utility Corridor REDA	Alternative 3: Load Offset REDA	Alternative 4: Water Conservation and Protection REDA	Alternative 5: Land Tenure REDA	Alternative 6: Collaborative-Based REDA
		Potential Category 2, 190 acres in Conservation Potential Category 3, 690 acres in Conservation Potential Category 4, and 20 acres in Conservation Potential Category 5.					
Geology and Seismicity	As most land use plans require consideration or protection of unique geologic resources, there would be negligible impacts as a result of renewable energy developments. If a land use plan did not allow for protection of unique geological resources, there would be a greater risk of construction-related impacts. Indirect impacts would likely result from visual, aural, and atmospheric intrusions into a pristine landscape if developments were to occur close to unique geological resources.	<u>REDA:</u> Impacts would be similar to those described in the No Action Alternative; however, with implementation of the required design features and BMPs, the impacts would be reduced.	<u>REDA:</u> Same as Alternative I.	<u>REDA:</u> Same as Alternative I.	<u>REDA:</u> Same as Alternative I.	<u>REDA:</u> Same as Alternative I.	<u>REDA:</u> Same as Alternative I.
	N/A	<u>Proposed SEZ:</u> There would be negligible impacts.	<u>Proposed SEZ:</u> Same as Alternative I.	<u>Proposed SEZ:</u> Same as Alternative I.	<u>Proposed SEZ:</u> Same as Alternative I.	N/A	<u>Proposed SEZ:</u> Same as Alternative I.
Land Use and Realty	Renewable energy actions would be permitted on a case-by-case basis in conformance with current land use plans. Development could result in fragmented and segregated land uses and access. Developments could occur in areas with high resource sensitivity.	<u>REDA:</u> Full development of the REDA under Alternative I is assumed to involve solar production on 80 percent of the 321,500 acres; at a rate of 8 acres per megawatt, development of the 257,200 acres would result in an estimated electrical capacity of 32.2 GW.	<u>REDA:</u> Similar to Alternative I, except that is assumed to involve solar production on 80 percent of the 218,600 acres; at a rate of 8 acres per megawatt, development of the 174,880 acres would result in an estimated electrical capacity of 21.9 GW.	<u>REDA:</u> Similar to Alternative I, except it is assumed to involve solar production on 80 percent of the 129,800 acres; at a rate of 8 acres per megawatt, development of the 103,840 acres would result in an estimated electrical capacity of 13 GW.	<u>REDA:</u> Same as Alternative I.	<u>REDA:</u> Similar to Alternative I, except it is assumed to involve solar production on 80 percent of the 43,700 acres; at a rate of 8 acres per megawatt, development of the 34,960 acres would result in an estimated electrical capacity of 4.4 GW.	<u>REDA:</u> Similar to Alternative I, except it is assumed to involve solar production on 80 percent of the 237,100 acres; at a rate of 8 acres per megawatt, development of the 189,680 acres would result in an estimated electrical capacity of 23.7 GW.

**Table 2-13 (continued)
Summary of Environmental Consequences by Alternative**

Resource	No Action	Alternative 1: Maximum REDA	Alternative 2: Transmission Line and Utility Corridor REDA	Alternative 3: Load Offset REDA	Alternative 4: Water Conservation and Protection REDA	Alternative 5: Land Tenure REDA	Alternative 6: Collaborative-Based REDA
		<p>Alternative 1 is assumed to involve wind development on 10 percent of lands identified as Class 2 (43,300 acres) and Class 3 (1,400 acres); at a rate of 28 acres per megawatt, development of the 4,700 acres would result in an estimated electrical capacity of 1.6 GW.</p> <p>Depending upon where development occurred within the REDA, access into BLM-administered lands may be altered. The large REDA would provide opportunities to minimize conflicts with public access.</p> <p>It is anticipated that implementing required design features and BMPs would reduce impacts on public uses and access.</p>	<p>Similar to Alternative 1, except that it is assumed to involve wind development on 10 percent of lands identified as Class 2 (28,000 acres); at a rate of 28 acres per megawatt, development of the 2,800 acres would result in an estimated electrical capacity of 1 GW.</p> <p>As this alternative keeps development closer to transmission lines, additional impacts from siting and construction of new lines would be reduced.</p>	<p>Similar to Alternative 1, except that it is assumed to involve wind development on 10 percent of lands identified as Class 2 (2,300 acres); at a rate of 28 acres per megawatt, development of the 230 acres would result in an estimated electrical capacity of 82 MW.</p> <p>As this alternative keeps development closer to load centers, development would be more consistent with surrounding land uses.</p>		<p>Similar to Alternative 1, except that it is assumed to involve wind development on 10 percent of lands identified as Class 2 (4,100 acres); at a rate of 28 acres per megawatt, development of the 410 acres would result in an estimated electrical capacity of 146 MW.</p> <p>Due to the small amount of REDA acreage in this alternative, there would be less flexibility in siting renewable energy facilities and infrastructure, possibly resulting in more land use and access conflicts.</p>	<p>Similar to Alternative 1, except that it is assumed to involve wind development on 10 percent of lands identified as Class 2 (28,100 acres); at a rate of 28 acres per megawatt, development of the 2,810 acres would result in an estimated electrical capacity of 1 GW.</p> <p>As the alternative keeps development closer to load centers and transmission lines, development would be more consistent with surrounding land uses, and additional impacts from siting and construction of new lines would be reduced.</p>
N/A		<p><u>Proposed SEZ:</u> If the proposed SEZ were fully developed, there would be conflicts with existing recreational uses of the area; however, if development were concentrated around existing facilities, impacts would be reduced. Existing access may be altered based on the scale and location of development.</p>	<p><u>Proposed SEZ:</u> Similar to Alternative 1, except that with the smaller footprint there would be less impacts on recreational uses, and necessary transmission connections and access roads would be less due to the boundary of the proposed SEZ being closer to the existing infrastructure.</p>	<p><u>Proposed SEZ:</u> Similar to Alternative 1, except that with the smallest footprint there would be the fewest impacts on recreational uses, and necessary transmission connections and access roads would be less due to the boundary of the proposed SEZ being closer to the existing infrastructure.</p>	<p><u>Proposed SEZ:</u> Same as Alternative 1.</p>	N/A	<p><u>Proposed SEZ:</u> Same as Alternative 2.</p>

**Table 2-13 (continued)
Summary of Environmental Consequences by Alternative**

Resource	No Action	Alternative 1: Maximum REDA	Alternative 2: Transmission Line and Utility Corridor REDA	Alternative 3: Load Offset REDA	Alternative 4: Water Conservation and Protection REDA	Alternative 5: Land Tenure REDA	Alternative 6: Collaborative-Based REDA
		Implementation of the design features and BMPs would reduce impacts by identifying conflicts early in the process and requiring specific measures to maintain public uses and access.					
Livestock Grazing	Renewable energy actions would be permitted on a case-by-case basis in conformance with current land use plan decisions. Project siting would likely result in patchy, fragmented developments across the landscape. Impacts on grazing would be assessed on a project-specific level. Developments would possibly occur in areas with high resource sensitivity.	<u>REDA</u> : The entire REDA has allotted grazing lands, resulting in some decrease in grazing production due to areas being developed for renewable energy facilities. Large-scale solar facilities are an incompatible use with grazing due to the large amounts of acreage that would be taken out of production, resulting in areas becoming unavailable for grazing. Wind development would take fewer acres out of production and would generally be considered a compatible use.	<u>REDA</u> : Same as Alternative 1, except that the REDA has fewer acres; therefore, less area would be taken out of production.	<u>REDA</u> : Same as Alternative 2.	<u>REDA</u> : Same as Alternative 2.	<u>REDA</u> : Same as Alternative 1, except that with this alternative having the least amount of acreage, development would result in the least area being taken out of production.	<u>REDA</u> : Same as Alternative 1.
	N/A	<u>Proposed SEZ</u> : The proposed SEZ is in the Palomas allotment, which has had no grazing in the recent past; therefore, impacts would be negligible.	<u>Proposed SEZ</u> : Same as Alternative 1.	<u>Proposed SEZ</u> : Same as Alternative 1.	<u>Proposed SEZ</u> : Same as Alternative 1.	N/A	<u>Proposed SEZ</u> : Same as Alternative 1.
National Trails	The case-specific studies that would address impacts on National Trails required prior to any issuance of a ROW for renewable energy development would likely prevent many impacts	<u>REDA</u> : Approximately 22,000 acres of BLM-administered land within the REDA occur within 5.25 miles of the three National Trails in the planning area. Application	<u>REDA</u> : Approximately 17,500 acres of BLM-administered land within the REDA occur within 5.25 miles of the three National Trails in the planning area. Application	<u>REDA</u> : Approximately 17,800 acres of BLM-administered land within the REDA occur within 5.25 miles of the three National Trails in the planning area. Application	<u>REDA</u> : Same as Alternative 1.	<u>REDA</u> : Approximately 4,700 acres of BLM-administered land within the REDA occur within 5.25 miles of the three National Trails in the planning area. Application	<u>REDA</u> : Approximately 21,800 acres of BLM-administered land within the REDA occur within 5.25 miles of the three National Trails in the planning area. Application

Table 2-13 (continued)
Summary of Environmental Consequences by Alternative

Resource	No Action	Alternative 1: Maximum REDA	Alternative 2: Transmission Line and Utility Corridor REDA	Alternative 3: Load Offset REDA	Alternative 4: Water Conservation and Protection REDA	Alternative 5: Land Tenure REDA	Alternative 6: Collaborative-Based REDA
	on national scenic and historic trails. However, there would be no comprehensive list of design features or BMPs that would serve as consistent guidance for future renewable energy development, resulting in fragmented and segregated developments.	of the proposed design features and BMPs would reduce impacts on the national and scenic trails, including restricting disturbance within the viewshed of trail segments potentially eligible for listing on the NRHP.	of the proposed design features and BMPs would reduce impacts on the national and scenic trails, including restricting disturbance within the viewshed of trail segments potentially eligible for listing on the NRHP.	of the proposed design features and BMPs would reduce impacts on the national and scenic trails, including restricting disturbance within the viewshed of trail segments potentially eligible for listing on the NRHP.		of the proposed design features and BMPs would reduce impacts on the national and scenic trails, including restricting disturbance within the viewshed of trail segments potentially eligible for listing on the NRHP.	of the proposed design features and BMPs would reduce impacts on the national and scenic trails, including restricting disturbance within the viewshed of trail segments potentially eligible for listing on the NRHP.
	N/A	<u>Proposed SEZ</u> : Depending on the type of technology used, the viewshed of the Juan Bautista de Anza National Historic Trail may be impacted from development within the proposed SEZ (e.g., a PV array would be less intrusive than a CSP tower).	<u>Proposed SEZ</u> : Same as Alternative 1.	<u>Proposed SEZ</u> : Same as Alternative 1.	<u>Proposed SEZ</u> : Same as Alternative 1.	N/A	<u>Proposed SEZ</u> : Same as Alternative 1.
Native American Interests and Heritage Resources	Impacts include direct disturbance of locations associated with traditional beliefs, resource gathering or hunting areas, water sources, ancestral sites, human remains, and trails. Other impacts could result from alternations of visual, aural, and atmospheric aspects of the setting of a place of traditional religious or cultural importance. Compliance with existing laws would reduce these impacts.	<u>REDA</u> : Types of impacts would be similar to those described in the No Action Alternative; however, with the addition of the proposed design features and BMPs, impacts would be reduced or avoided. There may be residual effects, such as permanent loss of some cultural uses or valued qualities of places within traditional tribal territories as a result of renewable energy development.	<u>REDA</u> : Same as Alternative 1.	<u>REDA</u> : Same as Alternative 1.	<u>REDA</u> : Similar to Alternative 1, except that with the additional water design features, there would likely be a reduction in impacts on water resources that Native American tribes consider sacred or culturally important.	<u>REDA</u> : Similar to Alternative 1, except that due to the REDA's small size, if heritage resources were discovered within the REDA, it would be more difficult to move or microsite any proposed development.	<u>REDA</u> : Same as Alternative 4.

Table 2-13 (continued)
Summary of Environmental Consequences by Alternative

Resource	No Action	Alternative 1: Maximum REDA	Alternative 2: Transmission Line and Utility Corridor REDA	Alternative 3: Load Offset REDA	Alternative 4: Water Conservation and Protection REDA	Alternative 5: Land Tenure REDA	Alternative 6: Collaborative-Based REDA
	N/A	<u>Proposed SEZ</u> : The proposed SEZ is within 10 miles of the Sears Point ACEC, a significant Native American heritage site. There may be visual, aural, or atmospheric intrusions on the landscape as a result of development within the SEZ. In addition to the required design features and BMPs that would reduce impacts, continuing consultation with tribes may provide additional mitigations that would further reduce impacts on this area.	<u>Proposed SEZ</u> : Similar to Alternative 1; however, the smaller size of the proposed SEZ would likely eliminate portions of the cultural resources known to occur within the area. Implementation of the design features and BMPs, and continued consultation with tribes would reduce impacts.	<u>Proposed SEZ</u> : Similar to Alternative 1; however, considering that the proposed SEZ is the smallest area proposed, it would eliminate more of the known cultural resources, thereby further reducing impacts. However, if heritage resources were discovered within the area, it would be more difficult to move or microsite any proposed development.	<u>Proposed SEZ</u> : Same as Alternative 1.	N/A	<u>Proposed SEZ</u> : Same as Alternative 2.
Noise	Projects would have short-term and localized noise impacts at the project sites, along area roadways, and along new transmission or generation tie-in routes during construction. No standard list of design features or BMPs would be in place to reduce noise impacts, although permitting for individual projects would require analysis and mitigation of impacts.	<u>REDA</u> : Similar to types of impacts anticipated under the No Action Alternative. This alternative has the most flexibility for siting projects due to its large acreage area. Design features and BMPs would require that individual projects avoid or mitigate noise impacts on sensitive land uses or within sensitive receptor areas.	<u>REDA</u> : Similar to Alternative 1, except that the distance to connect any proposed development to transmission would be minimized, reducing construction-related noise impacts associated with transmission lines.	<u>REDA</u> : Similar to Alternative 1; however, as this alternative encourages development close to load centers and populated areas, there is the potential for short-term noise impacts on sensitive receptors if these receptors were located adjacent to construction activity areas. Design features and BMPs would require that individual projects avoid or mitigate noise impacts on sensitive receptors, thereby reducing impacts.	<u>REDA</u> : Similar to Alternative 1; however, the additional water design features would likely prevent wet cooling technologies, which would encourage PV solar and thus slightly reduce potential operation-related noise emissions.	<u>REDA</u> : Same as Alternative 1.	<u>REDA</u> : Similar to Alternative 2 in area, similar to Alternative 3 in the potential effects on sensitive receptors, and similar to Alternative 4 in prohibiting wet cooling technologies. Design features and BMPs would require that individual projects avoid or mitigate noise impacts within sensitive receptor areas.
	N/A	<u>Proposed SEZ</u> : Given the lack of sensitive receptors in the area around the proposed SEZ, impacts are	<u>Proposed SEZ</u> : Same as Alternative 1.	<u>Proposed SEZ</u> : Same as Alternative 1.	<u>Proposed SEZ</u> : Same as Alternative 1.	N/A	<u>Proposed SEZ</u> : Same as Alternative 1.

**Table 2-13 (continued)
Summary of Environmental Consequences by Alternative**

Resource	No Action	Alternative 1: Maximum REDA	Alternative 2: Transmission Line and Utility Corridor REDA	Alternative 3: Load Offset REDA	Alternative 4: Water Conservation and Protection REDA	Alternative 5: Land Tenure REDA	Alternative 6: Collaborative-Based REDA
		anticipated to be minimal. Application of the required design features and BMPs would further reduce impacts.					
Paleontological Resources	Impacts could include destruction of the resource and loss of valuable scientific information, degradation of near-surface paleontological resources and their stratigraphic context, and human disturbance of near-surface paleontological resources. Mitigation measures would be included on a case-by-case basis.	<u>REDA</u> : Types of impacts would be the same as described under the No Action Alternative. There are 137,900 acres of BLM-administered land assigned to Potential Fossil Yield Classification (PFYC) levels 3, 4, or 5 (Moderate/Undetermined to High Sensitivity). Implementation of the design features and BMPs would reduce the likelihood and severity of impacts.	<u>REDA</u> : Similar to Alternative 1, except that there are 58,400 acres of BLM-administered land assigned to PFYC levels 3, 4, or 5 (Moderate/Undetermined to High Sensitivity). Implementation of the design features and BMPs would reduce the likelihood and severity of impacts.	<u>REDA</u> : Similar to Alternative 1, except that there are 41,300 acres of BLM-administered land assigned to PFYC levels 3, 4, or 5 (Moderate/Undetermined to High Sensitivity). Implementation of the design features and BMPs would reduce the likelihood and severity of impacts.	<u>REDA</u> : Same as Alternative 1.	<u>REDA</u> : Similar to Alternative 1, except that there are 7,900 acres of BLM-administered land assigned to PFYC levels 3, 4, or 5 (Moderate/Undetermined to High Sensitivity). Implementation of the design features and BMPs would reduce the likelihood and severity of impacts.	<u>REDA</u> : Similar to Alternative 1, except that there are 61,500 acres of BLM-administered land assigned to PFYC levels 3, 4, or 5 (Moderate/Undetermined to High Sensitivity). Implementation of the design features and BMPs would reduce the likelihood and severity of impacts.
	N/A	<u>Proposed SEZ</u> : Impacts would be the same as the types described in the No Action Alternative. There are 4,070 acres assigned to PFYC level 3; there are no PFYC level 4 or 5 units. Impacts on potential paleontological deposits would be reduced with the application of the required design features and BMPs.	<u>Proposed SEZ</u> : Same as Alternative 1, except that there are 490 acres assigned to PFYC level 3 and no PFYC level 4 or 5 units.	<u>Proposed SEZ</u> : Same as Alternative 1, except that there are 10 acres assigned to PFYC level 3 and no PFYC level 4 or 5 units.	<u>Proposed SEZ</u> : Same as Alternative 1.	N/A	<u>Proposed SEZ</u> : Same as Alternative 2.
Public Health and Safety	Impacts under the No Action Alternative are expected to be negligible.	<u>REDA</u> : Development of previously disturbed lands that may contain varying levels of contamination may result in the cleanup and securing of these lands, thereby reducing sources of hazardous substances.	<u>REDA</u> : Same as Alternative 1.	<u>REDA</u> : Same as Alternative 1.	<u>REDA</u> : Same as Alternative 1.	<u>REDA</u> : Same as Alternative 1.	<u>REDA</u> : Same as Alternative 1.

Table 2-13 (continued)
Summary of Environmental Consequences by Alternative

Resource	No Action	Alternative 1: Maximum REDA	Alternative 2: Transmission Line and Utility Corridor REDA	Alternative 3: Load Offset REDA	Alternative 4: Water Conservation and Protection REDA	Alternative 5: Land Tenure REDA	Alternative 6: Collaborative-Based REDA
		Implementation of design features and BMPs would likely reduce impacts to negligible levels.					
	N/A	<u>Proposed SEZ</u> : Unexploded ordnance could pose a risk of explosion during ground-disturbing operations. Implementation of design features and BMPs would reduce impacts to negligible levels.	<u>Proposed SEZ</u> : Same as Alternative 1.	<u>Proposed SEZ</u> : Same as Alternative 1.	<u>Proposed SEZ</u> : Same as Alternative 1.	N/A	<u>Proposed SEZ</u> : Same as Alternative 1.
Recreation	Direct impacts would result from fencing solar energy facilities, resulting in the exclusion of the public from areas that once were available for recreational purposes. Wind energy facilities are not usually fenced and may allow limited on-site recreation. Indirect impacts include degradation of the recreation setting characteristics and increased access from the construction of new or improved roads that may be integrated with local trail and road systems.	<u>REDA</u> : There would be greater potential for conflict with recreational opportunities and experiences. Impacts would be mitigated through avoidance of areas with unique or important recreation resources. OHV enthusiasts could potentially retain access to the same number of miles of trails and roads due to integration with new or improved roads from construction.	<u>REDA</u> : Because the REDA would be in close proximity to transmission lines and utility corridors, development would be concentrated in a smaller area, resulting in development becoming more concentrated and impacts on nearby recreation resources becoming more amplified.	<u>REDA</u> : Impact types would be similar to the No Action Alternative; however, by concentrating in areas close to towns, cities, and other load centers, impacts on developed recreation would be more likely than on dispersed recreation.	<u>REDA</u> : Same as Alternative 1.	<u>REDA</u> : Impacts under this alternative would be negligible as the REDA is located on disposal lands not highly valued for recreational resources.	<u>REDA</u> : Impacts would be similar to those described in the No Action Alternative, Alternative 2, and Alternative 3.
	N/A	<u>Proposed SEZ</u> : Locating utility-scale renewable energy developments within the proposed SEZ would result in long-term loss of recreational opportunities and experiences within the Yuma undeveloped special recreation management	<u>Proposed SEZ</u> : Impacts would be similar to Alternative 1; however, as the proposed SEZ is smaller, development would be more concentrated, resulting in fewer conflicts with recreation in the SRMA.	<u>Proposed SEZ</u> : Impacts would be similar to Alternative 1, except that popular hunting areas in the northern area above the proposed SEZ would be preserved, and recreational opportunities and experiences would be	<u>Proposed SEZ</u> : Same as Alternative 1.	N/A	<u>Proposed SEZ</u> : Same as Alternative 2.

Table 2-13 (continued)
Summary of Environmental Consequences by Alternative

Resource	No Action	Alternative 1: Maximum REDA	Alternative 2: Transmission Line and Utility Corridor REDA	Alternative 3: Load Offset REDA	Alternative 4: Water Conservation and Protection REDA	Alternative 5: Land Tenure REDA	Alternative 6: Collaborative-Based REDA
		area (SRMA).		retained.			
Socioeconomics	There could be increased unanticipated impacts from the lack of planning for appropriate land uses, which could alter the character of rural areas and increase the potential for social or economic impacts on local communities.	<u>REDA</u> : The majority of development would not be located adjacent to large population centers. Impacts on local communities during construction could occur should a large number of workers be required to temporarily move to the area, possibly resulting in a strain on housing and service resources. Jobs and related income, tax revenue, and social changes in local communities would differ depending on the location of potential development. With the inclusion of previously disturbed lands and areas with low resource sensitivity, more high-value lands would be available for community use and ecosystem services.	<u>REDA</u> : Similar to Alternative 1.	<u>REDA</u> : Similar to Alternative 1; however, impacts would be concentrated near towns, cities, and other load centers, resulting in a higher likelihood for workers to be drawn from the local employment pool.	<u>REDA</u> : Same as Alternative 1.	<u>REDA</u> : Similar to Alternative 1, except that the REDA is considerably smaller, resulting in less potential for employment opportunities, and related impacts on local and regional economies and social structure.	<u>REDA</u> : Similar to those described in Alternative 1 and Alternative 3.
	N/A	<u>Proposed SEZ</u> : Minimal social and economic impacts immediately surrounding the proposed SEZ. Development would likely require 18 to 40 temporary construction jobs and 2 to 14 permanent operations/maintenance jobs. Workers would likely be drawn from the local region and a large population increase would not be anticipated.	<u>Proposed SEZ</u> : Same as Alternative 1.	<u>Proposed SEZ</u> : Same as Alternative 1.	<u>Proposed SEZ</u> : Same as Alternative 1.	N/A	<u>Proposed SEZ</u> : Same as Alternative 1.

**Table 2-13 (continued)
Summary of Environmental Consequences by Alternative**

Resource	No Action	Alternative 1: Maximum REDA	Alternative 2: Transmission Line and Utility Corridor REDA	Alternative 3: Load Offset REDA	Alternative 4: Water Conservation and Protection REDA	Alternative 5: Land Tenure REDA	Alternative 6: Collaborative-Based REDA
Soil Resources	Impacts could include soil compaction, disruption of biological crusts or desert pavement, and changes in soil erosion or deposition. Erosion could result in decreased soil productivity by carrying away nutrients normally stored in the upper soil horizon. Given the low precipitation and limited vegetation levels in the planning area, soil productivity would be slow to recover. No standard set of design features or BMPs would be available.	<u>REDA</u> : Impacts would be similar to those described in the No Action Alternative, except that the REDA is dominated by Aridisols, which located with sparse vegetative cover and low organic content are susceptible to erosion. However, with the implementation of the required design features and BMPs, impacts would be reduced.	<u>REDA</u> : Same as Alternative 1, except there would be less acreage of Aridisols due to the REDA's smaller overall size.	<u>REDA</u> : Same as Alternative 1, except there would be less acreage of Aridisols due to the REDA's smaller overall size.	<u>REDA</u> : Same as Alternative 1, except there would be less acreage of Aridisols due to the REDA's smaller overall size.	<u>REDA</u> : Same as Alternative 1.	<u>REDA</u> : Same as Alternative 1 and Alternative 4.
	N/A	<u>Proposed SEZ</u> : Soil resources in the proposed SEZ have low to moderate susceptibility to erosion. Site design features and BMPs would limit the potential for impacts on soil resources.	<u>Proposed SEZ</u> : Same as Alternative 1 except that the size of the SEZ is reduced so the scale of impacts would be less.	<u>Proposed SEZ</u> : Same as Alternative 1 except that the size of the SEZ is reduced so the scale of impacts would be less.	<u>Proposed SEZ</u> : Same as Alternative 1.	N/A	<u>Proposed SEZ</u> : Same as Alternative 1 except that the size of the SEZ is reduced so the scale of impacts would be less.
Special Designations	Impacts on congressional designations would be negligible. In administrative designations, where wind and solar energy development is not specifically precluded, field offices would determine if wind and solar energy development would be in conformance with the prescriptions outlined in the relevant land use plan(s).	<u>REDA</u> : Areas with special designations have been eliminated from consideration as a REDA; therefore, direct impacts from potential development in these areas would be negligible. Within five miles of BLM-administered lands within the REDA, there are 19 ACECs, 2 backcountry byways, 2 national conservation areas, 5 national monuments, 5	<u>REDA</u> : Similar to Alternative 1, except that there are 18 ACECs, 2 backcountry byways, 2 national conservation areas, 4 national monuments, 2 national parks, 25 wilderness areas, and 1 WSA within 5 miles of BLM-administered land within the REDA.	<u>REDA</u> : Similar to Alternative 1, except that within 5 miles of BLM-administered lands within the REDA, there are 13 ACECs, 1 backcountry byway, 2 national conservation areas, 4 national monuments, 4 national parks, 19 wilderness areas, and 1 WSA.	<u>REDA</u> : Same as Alternative 1.	<u>REDA</u> : Similar to Alternative 1, except that within 5 miles of BLM-administered lands within the REDA, there are 8 ACECs, 2 national conservation areas, 4 national monuments, 4 national parks, 14 wilderness areas, and 1 WSA.	<u>REDA</u> : Similar to Alternative 1, except that within 5 miles of BLM-administered lands within the REDA, there are there are 18 ACECs, 2 backcountry byways, 2 national conservation areas, 4 national monuments, 4 national parks, 25 wilderness areas, and 1 WSA.

Table 2-13 (continued)
Summary of Environmental Consequences by Alternative

Resource	No Action	Alternative 1: Maximum REDA	Alternative 2: Transmission Line and Utility Corridor REDA	Alternative 3: Load Offset REDA	Alternative 4: Water Conservation and Protection REDA	Alternative 5: Land Tenure REDA	Alternative 6: Collaborative-Based REDA
		national parks, 28 wilderness areas, and 1 Wilderness Study Area (WSA). Solar and wind energy development within the REDA could impact these areas by affecting scenic, cultural, or fish and wildlife resources.					
	N/A	<u>Proposed SEZ</u> : There are no special designations within the proposed SEZ. The Sears Point ACEC may be impacted by solar energy development in the proposed SEZ, as certain types of development would be visible from the ACEC.	<u>Proposed SEZ</u> : Same as Alternative 1.	<u>Proposed SEZ</u> : Same as Alternative 1.	<u>Proposed SEZ</u> : Same as Alternative 1.	N/A	<u>Proposed SEZ</u> : Same as Alternative 1.
Special Status Species	Impacts on special status species would be assessed on a project-specific level, and measures to avoid important habitat and mitigate impacts would be undertaken. In the absence of identifying the REDA, however, solar and wind project development would likely result in patchy, fragmented development with an increased likelihood of habitat disturbance and fragmentation for special status species. In addition, no standard set of design features or BMPs would be developed for protection of special status species.	<u>REDA</u> : The REDA has been designed to minimize impacts on special status species by directing future development to areas where current habitat values are poor or fragmented and potential for special status species occupation is limited, resulting in reduced impacts. While the limited potential for special status species to be injured, killed, or disturbed due to project construction or operations remains, impacts would be minimal due to the exclusion of important	<u>REDA</u> : Similar to Alternative 1. Locating energy development near existing transmission lines and utility corridors would indirectly protect special status species habitat from removal and fragmentation by reducing the need for new habitat disturbance associated with ROW development.	<u>REDA</u> : Same as Alternative 1.	<u>REDA</u> : Similar to Alternative 1. The focus on protection of the groundwater supply in Alternative 4 would benefit special status species by maintaining water available to vegetation, which would therefore maintain wildlife habitats.	<u>REDA</u> : Similar to Alternative 1. Development on lands identified for disposal in existing RMPs would reduce impacts on special status species, as these lands would not have special status species populations or habitats.	<u>REDA</u> : Similar to Alternatives 1, 2, and 3. By combining the protective features of all the alternatives, this alternative would maximize avoidance of special status species habitats and would reduce habitat disturbance and fragmentation.

Table 2-13 (continued)
Summary of Environmental Consequences by Alternative

Resource	No Action	Alternative 1: Maximum REDA	Alternative 2: Transmission Line and Utility Corridor REDA	Alternative 3: Load Offset REDA	Alternative 4: Water Conservation and Protection REDA	Alternative 5: Land Tenure REDA	Alternative 6: Collaborative-Based REDA
		<p>habitat areas and the existing uses of the REDA, which are disturbed sites and do not provide suitable special status species habitat.</p> <p>Application of the required design features and BMPs would further reduce impacts on special status species.</p>					
	N/A	<p><u>Proposed SEZ</u>: No special status species have been recorded within the proposed SEZ; therefore, impacts are anticipated to be minimal.</p> <p>Habitat for several special status species is located within the proposed SEZ. Design features and best management practices would protect habitat from removal associated with solar energy development. Other design features would minimize disturbance caused by construction noise and disruptions during the breeding seasons. These design features would reduce the likelihood for impacts on special status species.</p>	<p><u>Proposed SEZ</u>: Similar to Alternative 1; however, the reduced size eliminates several washes with special status species habitat. As such, there would be fewer impacts on those special status species that rely on riparian and desert wash habitats.</p>	<p><u>Proposed SEZ</u>: Similar to Alternative 1; however, the reduced size avoids all major washes. As such, there would be fewer impacts on those special status species that rely on riparian and desert wash habitats.</p>	<p><u>Proposed SEZ</u>: Same as Alternative 1.</p>	N/A	<p><u>Proposed SEZ</u>: Same as Alternative 2.</p>
Travel Management	Impacts include increased traffic during construction, and reducing, eliminating, or adding access on routes.	<p><u>REDA</u>: Impacts would be similar to those described in the No Action Alternative. More area</p>	<p><u>REDA</u>: Impacts would be similar to those described in the No Action Alternative. However, by</p>	<p><u>REDA</u>: Locating the REDA near cities, towns, and other load centers would likely result in development</p>	<p><u>REDA</u>: Same as Alternative 1.</p>	<p><u>REDA</u>: Under Alternative 5, the REDA would be composed of land identified for disposal in existing</p>	<p><u>REDA</u>: Same as Alternatives 1, 2, and 3.</p>

**Table 2-13 (continued)
Summary of Environmental Consequences by Alternative**

Resource	No Action	Alternative 1: Maximum REDA	Alternative 2: Transmission Line and Utility Corridor REDA	Alternative 3: Load Offset REDA	Alternative 4: Water Conservation and Protection REDA	Alternative 5: Land Tenure REDA	Alternative 6: Collaborative-Based REDA
	Field offices would determine if wind and solar energy development would be in conformance with the travel management decisions in the relevant land use plan(s), but there would not be any guaranteed protection for travel management.	would be available to renewable energy development, resulting in a greater potential for conflict with travel management. However, by implementing the required design features and BMPs, impacts would be negligible.	focusing on utility corridors and areas near transmission lines, which often provide access, development in these areas may conflict with access. Impacts would be mitigated through the use of design features and BMPs.	in areas where roads and trails receive higher use, thereby increasing impacts. Impacts would be most prominent during construction, when more vehicles are needed for transporting equipment and personnel. Design features and BMPs would reduce but not eliminate impacts.		RMPs, which would not include areas highly valued for their access to adjacent lands. As a result, impacts on travel management would be negligible.	
	N/A	<u>Proposed SEZ</u> : Impacts on motorized travel are expected to be negligible as routes in the proposed SEZ are classified as digital linear features or nonmotorized routes and usage is documented as light. Although some routes within the proposed SEZ are classified as nonmotorized routes, impacts on nonmotorized travel are expected to be minor because the routes receive light use.	<u>Proposed SEZ</u> : Similar to Alternative 1.	<u>Proposed SEZ</u> : Similar to Alternative 1.	<u>Proposed SEZ</u> : Similar to Alternative 1.	N/A	<u>Proposed SEZ</u> : Similar to Alternative 1.
Vegetation	The greatest impacts on vegetation are likely to occur during construction, as this phase has the greatest amount of surface-disturbing activities. Vegetation removal would also leave barren areas that would be susceptible to the introduction or spread of noxious weeds and invasive plant species. Other impacts include changes to	<u>REDA</u> : Impacts would be similar to those described in the No Action Alternative. The Sonoran Basin and Range and Mojave Basin and Range are the ecoregions that would be most likely to be affected on BLM-administered lands under Alternative 1. Implementation of the required design features and BMPs would reduce	<u>REDA</u> : Similar to Alternative 1, except that by locating energy development near existing transmission lines and utility corridors, this would reduce the need for vegetation removal associated with new ROW development, thereby indirectly protecting intact vegetation communities.	<u>REDA</u> : Same as Alternative 1. However, as the REDA is a smaller area, the impacts would occur on fewer acres.	<u>REDA</u> : Same as Alternative 1, except that the focus on protection of water resources would maintain water available to vegetation, which would thereby maintain the composition and structure of vegetation communities.	<u>REDA</u> : Same as Alternative 1. However, as the REDA has the smallest area, the impacts would occur on the fewest acres.	<u>REDA</u> : Similar to Alternative 1, except that Alternative 6 reduces impacts on vegetation by combining the protective features of the other action alternatives. This would reduce new vegetation disturbance and removal.

Table 2-13 (continued)
Summary of Environmental Consequences by Alternative

Resource	No Action	Alternative 1: Maximum REDA	Alternative 2: Transmission Line and Utility Corridor REDA	Alternative 3: Load Offset REDA	Alternative 4: Water Conservation and Protection REDA	Alternative 5: Land Tenure REDA	Alternative 6: Collaborative-Based REDA
	plant community composition, plant productivity, and plant health. Without a programmatic approach to solar and wind development, planning for vegetation may be fragmented and segregated, increasing impacts.	impacts on vegetation.					
	N/A	<u>Proposed SEZ</u> : Sonora-Mojave Creosotebush-White Bursage Desert Scrub is the community that would be most likely to be affected in the SEZ. Implementation of the required design features and BMPs would reduce impacts on vegetation.	<u>Proposed SEZ</u> : Same as Alternative 1. However, as the proposed SEZ is smaller, the disturbance could occur over a smaller area.	<u>Proposed SEZ</u> : Same as Alternative 2.	<u>Proposed SEZ</u> : Same as Alternative 1.	N/A	<u>Proposed SEZ</u> : Same as Alternative 2.
Visual Resources	Solar and wind energy development would continue to be authorized on a case-by-case basis. In areas identified as ROW exclusions, solar and wind energy development would not be permitted, thereby protecting the surrounding viewshed. In ROW avoidance areas, solar and wind energy development may be permitted if better locations cannot be found. Under such circumstances, development would still be required to meet the applicable VRM class assigned to the land on which the project would be	<u>REDA</u> : VRM Class I, II, and III lands have been eliminated from consideration as a REDA. There are exceptions, though, where pre-disturbed lands (nominated sites) happen to be located within VRM Class II and III areas. There are 8 nominated sites within VRM Class II that would cover 1,650 acres (less than 1 percent of the total VRM II acreage), and 21 nominated sites within VRM Class III that would cover 20,850 acres (less than 1 percent of the total VRM Class III acreage).	<u>REDA</u> : Similar to Alternative 1. Approximately 13,500 acres of scenic quality B-ranked lands in the foreground/midground distance zone overlap REDA. Table 4-23 , Number and Acres of Sensitive Receptors within Five Miles of the REDA, Alternative 2, shows the number of sensitive receptors and associated acreages within five miles of the REDA.	<u>REDA</u> : Same as Alternative 1. Table 4-24 , Number and Acres of Sensitive Receptors within Five Miles of the REDA, Alternative 3, shows the number of sensitive receptors and associated acreages within five miles of the REDA.	<u>REDA</u> : Same as Alternative 1. However, because more restrictions would be imposed to protect water resources under Alternative 4, development is more likely to be in the form of PV versus CSP, particularly in Zone 3 areas, due to the amount of water required for CSP technology. PV development would generally be less visually obtrusive than CSP development, resulting in less of a visual impact.	<u>REDA</u> : Similar to Alternative 1. Approximately 200 acres of scenic quality B-ranked lands in the foreground/midground distance zone overlap the REDA. Table 4-25 , Number and Acres of Sensitive Receptors within Five Miles of the REDA, Alternative 5, shows the number of sensitive receptors and associated acreages within five miles of the REDA.	<u>REDA</u> : Similar to Alternative 1. Approximately 25,900 acres of scenic quality B-ranked lands in the foreground/midground distance zone overlap REDA. Table 4-26 , Number and Acres of Sensitive Receptors within Five Miles of the REDA, Alternative 6 shows the number of sensitive receptors and associated acreages within five miles of the REDA.

Table 2-13 (continued)
Summary of Environmental Consequences by Alternative

Resource	No Action	Alternative 1: Maximum REDA	Alternative 2: Transmission Line and Utility Corridor REDA	Alternative 3: Load Offset REDA	Alternative 4: Water Conservation and Protection REDA	Alternative 5: Land Tenure REDA	Alternative 6: Collaborative-Based REDA
	developed.	<p>Approximately 35,600 acres of scenic quality B-ranked lands in the foreground/midground distance zone overlap the REDA.</p> <p>Indirect impacts on visual resources would occur if solar or wind energy was developed within the viewshed of these VRM class areas, as such activities would result in a modification of the landscape and may be visible from the adjoining VRM Class I, II or III area.</p> <p>Table 4-21, Number and Acres of Sensitive Receptors within Five Miles of the REDA, Alternatives 1 and 4 shows the number of sensitive receptors and associated acreages within five miles of the REDA.</p>					
	N/A	<p><u>Proposed SEZ</u>: The Yuma Field Office RMP would be amended so that the proposed Agua Caliente SEZ would be managed as VRM Class IV instead of VRM Class III. This would result in a 21,030-acre reduction in VRM Class III areas while increasing VRM Class IV areas by the same amount. Due to existing</p>	<p><u>Proposed SEZ</u>: Same as Alternative 1; however, 6,770 acres would be managed as VRM Class IV instead of VRM Class III.</p>	<p><u>Proposed SEZ</u>: Same as Alternative 1; however, 2,760 acres would be managed as VRM Class IV instead of VRM Class III.</p>	<p><u>Proposed SEZ</u>: Similar to Alternative 1. However, because the proposed SEZ is within the Zone 2 area, more restrictions would be imposed to protect water resources under Alternative 4. As such, development is more likely to be in the form of PV versus CSP technology due to the amount of water</p>	N/A	<p><u>Proposed SEZ</u>: Same as Alternatives 2 and 4.</p>

**Table 2-13 (continued)
Summary of Environmental Consequences by Alternative**

Resource	No Action	Alternative 1: Maximum REDA	Alternative 2: Transmission Line and Utility Corridor REDA	Alternative 3: Load Offset REDA	Alternative 4: Water Conservation and Protection REDA	Alternative 5: Land Tenure REDA	Alternative 6: Collaborative-Based REDA
		and new landscape modifications within the proposed SEZ, it is unknown whether additional solar development would result in changes in the visual quality or sensitivity of the area to an extent that the VRI would change from Class III to Class IV.			required for CSP technology. PV development would generally be less visually obtrusive than CSP technology, resulting in less of a visual impact.		
Water Resources	<p>Renewable energy applications would continue to be processed on a case-by-case basis and would not include design features and BMPs noted in the action alternatives. Without the REDA and the proposed SEZ being identified, applications are likely to occur on areas with sensitive water resources, and impacts are likely to occur on surface and groundwater resources.</p> <p>The grading of renewable energy project sites could impact surface water quality and quantity. Water needs for cooling are a function of the energy technology and size of the energy development site. Potential impacts on water quality would result from spills of hazardous liquids (e.g., oils and lubricants) and other industrial activities.</p>	<p><u>REDA:</u> Alternative 1 eliminated surface waters, wetlands, streams, and floodplains from consideration as REDA. As a result, this alternative would have negligible impacts on surface water resources.</p> <p>Any proposed groundwater-supply extraction wells would be subject to review and approval by the ADWR.</p> <p>Design features and BMPs listed in Appendix B would establish the minimum specifications for management of individual renewable energy projects and mitigate adverse impacts on water resources.</p> <p>Under this alternative, there are 29,600 acres in Active Management Areas</p>	<p><u>REDA:</u> Similar to Alternative 1.</p> <p>Under this alternative, there are 29,600 acres in AMAs and 6,100 acres in BLM Priority Watersheds.</p>	<p><u>REDA:</u> Similar to Alternative 1.</p> <p>Under this alternative, there are 28,700 acres in AMAs and 3,800 acres in BLM Priority Watersheds.</p>	<p><u>REDA:</u> Same as Alternative 1. However, Alternative 4 includes additional water resource protection design features that identify additional protections in Water Resource Protection Zones 2 and 3.</p> <p>Under this alternative, there are 29,600 acres in AMAs and 33,900 acres in BLM Priority Watersheds.</p>	<p><u>REDA:</u> Similar to Alternative 1.</p> <p>Under this alternative, there are 2,300 acres in AMAs and 100 acres in BLM Priority Watersheds.</p>	<p><u>REDA:</u> Similar to Alternatives 1 and 4.</p> <p>Under this alternative, there are 29,600 acres in AMAs and 6,200 acres in BLM Priority Watersheds.</p>

**Table 2-13 (continued)
Summary of Environmental Consequences by Alternative**

Resource	No Action	Alternative 1: Maximum REDA	Alternative 2: Transmission Line and Utility Corridor REDA	Alternative 3: Load Offset REDA	Alternative 4: Water Conservation and Protection REDA	Alternative 5: Land Tenure REDA	Alternative 6: Collaborative-Based REDA
	N/A	<p>(AMAs) and 34,000 acres in BLM Priority Watersheds.</p> <p><u>Proposed SEZ:</u> The 20,600-acre SEZ contains approximately 300 acres of ephemeral washes. Water resources in the proposed SEZ would be impacted by construction, operations, and reclamation activities.</p> <p>Implementing the management actions, design features, and BMPs would effectively avoid or reduce impacts on water resources within the proposed SEZ, but would not provide specific measures to protect the highly vulnerable water resource found in the proposed SEZ.</p>	<p><u>Proposed SEZ:</u> Same as Alternative 1, except that there are 30 acres of ephemeral washes in the 6,770-acre SEZ.</p>	<p><u>Proposed SEZ:</u> Same as Alternative 1, except that there are 20 acres of ephemeral washes in the 2,760-acre SEZ.</p>	<p><u>Proposed SEZ:</u> Impacts would be similar to Alternative 1. Implementing the management actions, design features, BMPs, and the additional water resource design features for Water Protection Zone 2 in the proposed SEZ would reduce impacts on water resources.</p>	N/A	<p><u>Proposed SEZ:</u> Same as Alternatives 2 and 4.</p>
Wild Horses	<p>Impacts on wild horses and burros would be assessed on a project-specific level. Solar and wind project development would likely result in patchy, fragmented development with an increased likelihood of fragmentation of wild horse or burro ranges. In addition, no standard set of design features or BMPs would be developed for protection of wild horses and burros.</p>	<p><u>REDA:</u> All herd management areas (HMAs) have been eliminated from the REDA; therefore, impacts on wild horse and burros would be negligible. There is limited potential for impacts to occur should development occur in a REDA adjacent to a HMA. Under Alternative 1, approximately 64,400 acres of HMAs on BLM-administered lands are within five miles of the REDA. In particular, actions that reduced available water in the surrounding</p>	<p><u>REDA:</u> Similar to Alternative 1. Under this alternative, approximately 43,400 acres of HMAs on BLM-administered lands are within five miles of the REDA.</p>	<p><u>REDA:</u> Similar to Alternative 1. Under this alternative, approximately 43,400 acres of HMAs on BLM-administered lands are within five miles of the REDA. Therefore, the scale of impacts would be reduced.</p>	<p><u>REDA:</u> Similar to Alternative 1. Under this alternative, approximately 2,600 acres of HMAs on BLM-administered lands are within five miles of the REDA. Therefore, the scale of impacts would be reduced.</p>	<p><u>REDA:</u> Same as Alternative 1. Design features that limit the withdrawal of groundwater under this alternative may reduce the potential for impacts on water availability for wild horses and burros in HMAs adjacent to the REDA. Total acres of HMAs within five miles of the REDA are the same as Alternative 1.</p>	<p><u>REDA:</u> Similar to Alternative 1. Under this alternative, approximately 8,300 acres of HMAs on BLM-administered lands are within five miles of the REDA. Therefore, the scale of impacts would be reduced.</p>

**Table 2-13 (continued)
Summary of Environmental Consequences by Alternative**

Resource	No Action	Alternative 1: Maximum REDA	Alternative 2: Transmission Line and Utility Corridor REDA	Alternative 3: Load Offset REDA	Alternative 4: Water Conservation and Protection REDA	Alternative 5: Land Tenure REDA	Alternative 6: Collaborative-Based REDA
		area may impact wild horse and burro herds. Water is a limited resource throughout much of the planning area and may partially dictate the capacity of a habitat to support wild horses and burros.					
	N/A	<u>Proposed SEZ</u> : The proposed SEZ would have negligible impacts on wild horses and burros as it is not within or adjacent to any HMAs.	<u>Proposed SEZ</u> : Same as Alternative 1.	<u>Proposed SEZ</u> : Same as Alternative 1.	<u>Proposed SEZ</u> : Same as Alternative 1.	N/A	<u>Proposed SEZ</u> : Same as Alternative 1.
Wilderness Characteristics	Solar and wind energy development would continue to be authorized through the lands and realty program via a ROW grant. Because solar and wind energy development would diminish wilderness characteristics, it is assumed that such actions would not be permitted on lands managed to maintain these characteristics. As such, wilderness characteristics of these lands would be provided some direct protection from impacts associated with solar and wind energy development. If solar or wind energy development were to occur on lands with wilderness characteristics but not managed to maintain these	<u>REDA</u> : Lands with wilderness characteristics have been eliminated from consideration as a REDA. Therefore, negligible direct impacts on lands with wilderness characteristics are anticipated. However, lands with wilderness characteristics may experience indirect impacts from solar and wind energy development on BLM-administered lands adjacent to or within the viewshed of the eliminated areas similar to those described in the No Action Alternative. 2,300 acres of lands managed to maintain wilderness characteristics are within five miles of the REDA and could be indirectly impacted by solar	<u>REDA</u> : Similar to Alternative 1. 2,300 acres of lands with wilderness characteristics managed to maintain these characteristics are within five miles of the REDA and could be indirectly impacted by solar and wind energy development. Similarly, 49,400 acres of lands with wilderness characteristics but not managed to maintain these characteristics under the applicable RMP are within five miles of the REDA and could also be indirectly impacted.	<u>REDA</u> : Similar to Alternative 1. 2,300 acres of lands with wilderness characteristics managed to maintain these characteristics are within five miles of the REDA and could be indirectly impacted by solar and wind energy development. Similarly, 44,600 acres of lands with wilderness characteristics but not managed to maintain these characteristics under the applicable RMP are within five miles of the REDA and could also be indirectly impacted.	<u>REDA</u> : Same as Alternative 1.	<u>REDA</u> : Similar to Alternative 1. 1,100 acres of lands with wilderness characteristics managed to maintain these characteristics are within five miles of the REDA and could be indirectly impacted by solar and wind energy development. Similarly, 3,400 acres of lands with wilderness characteristics but not managed to maintain these characteristics under the applicable RMP are within five miles of the REDA and could also be indirectly impacted.	<u>REDA</u> : Similar to Alternative 1. 2,300 acres of lands with wilderness characteristics managed to maintain these characteristics are within five miles of the REDA and could be indirectly impacted by solar and wind energy development. Similarly, 61,500 acres of lands with wilderness characteristics but not managed to maintain these characteristics under the applicable RMP are within five miles of the REDA and could also be indirectly impacted.

Table 2-13 (continued)
Summary of Environmental Consequences by Alternative

Resource	No Action	Alternative 1: Maximum REDA	Alternative 2: Transmission Line and Utility Corridor REDA	Alternative 3: Load Offset REDA	Alternative 4: Water Conservation and Protection REDA	Alternative 5: Land Tenure REDA	Alternative 6: Collaborative-Based REDA
	<p>characteristics, the impacts could result in reducing wilderness characteristics in the project area.</p> <p>For all lands with wilderness characteristics, potential impacts from solar and wind development adjacent to or within the viewshed of the lands with wilderness characteristics could include light pollution and visual intrusions. The magnitude of impact would vary by field office and would depend upon RMP decisions, including ROW allocations (e.g., exclusion and avoidance), VRM class, and existing land uses.</p>	<p>and wind energy development. Similarly, 79,700 acres of lands with wilderness characteristics but not managed to maintain these characteristics under the applicable RMP are within five miles of the REDA and could also be indirectly impacted.</p> <p>Implementing the management actions, design features, and BMPs are anticipated to reduce impacts on lands with wilderness characteristics.</p>					
N/A		<p><u>Proposed SEZ:</u> Under Alternative 1, the lands with wilderness characteristics currently managed to maintain these characteristics would continue to be managed to maintain these characteristics.</p> <p>A total of 9,660 acres of land with wilderness characteristics were identified within the proposed SEZ, none of which are being managed to maintain wilderness characteristics. Impacts</p>	<p><u>Proposed SEZ:</u> Similar to Alternative 1, except that 1,700 acres of land managed to maintain wilderness characteristics would be within the proposed Agua Caliente SEZ.</p>	<p><u>Proposed SEZ:</u> Similar to Alternative 1, except that 370 acres of land managed to maintain wilderness characteristics would be within the proposed Agua Caliente SEZ.</p>	<p><u>Proposed SEZ:</u> Same as Alternative 1.</p>	N/A	<p><u>Proposed SEZ:</u> Same as Alternative 2.</p>

Table 2-13 (continued)
Summary of Environmental Consequences by Alternative

Resource	No Action	Alternative 1: Maximum REDA	Alternative 2: Transmission Line and Utility Corridor REDA	Alternative 3: Load Offset REDA	Alternative 4: Water Conservation and Protection REDA	Alternative 5: Land Tenure REDA	Alternative 6: Collaborative-Based REDA
		<p>from solar development on these lands would diminish both the naturalness of the area and opportunities for solitude and primitive or unconfined recreation to the degree that these characteristics may cease to exist in the area, resulting in a reduction in total acres of lands with wilderness characteristics.</p> <p>Implementing the management actions, design features, and BMPs are anticipated to reduce impacts on lands with wilderness characteristics.</p>					