IV.24 DEPARTMENT OF DEFENSE LANDS AND OPERATIONS

IV.24.1 Approach to Impact Analysis

This chapter analyzes how implementation of the Desert Renewable Energy Conservation Plan (DRECP) Bureau of Land Management (BLM) Proposed Land Use Plan Amendment (LUPA) alternatives could potentially impact Department of Defense (DOD) lands, including military bases and operations, airspace operations, and radar facilities. The existing conditions for DOD lands and operations are described in Volume III, Chapter III.24.

This analysis for DOD lands is primarily for typical impacts and does not evaluate site-specific impacts associated with specific projects. Project-specific impacts will be analyzed during the consultation and permitting process and in supplemental California Environmental Quality Act/National Environmental Policy Act documents.

The primary consideration in addressing potential impacts is to identify the extent to which military training routes, military operations areas, and special use airspaces intersect with proposed Development Focus Areas (DFAs) and conservation designations. No renewable energy activities would occur directly on DOD installations under the Proposed LUPA. The analysis focuses on potential future solar, wind, geothermal, and transmission development within the DFAs and their potential for conflicts with military testing and training operations.

IV.24.2 Typical Impacts Common to All Action Alternatives

Development of utility-scale renewable energy facilities can potentially affect military aircraft operations, radar use, and other operations. Numerous military operations areas, military training routes, and special use airspaces are within the LUPA Decision Area. The military airspace in the LUPA Decision Area is intensively used and important to maintaining overall training and readiness for all branches of the military.

Solar photovoltaic projects pose little to no impact on military operations, testing, and training (DOD 2012). In general, only wind turbines and solar power towers present substantial incompatibility issues for DOD operations in the LUPA Decision Area. While wind turbines may be compatible under military training routes and special use airspaces, these projects may require additional review during the siting process. In some cases, geothermal plants may also present incompatibility issues for DOD operations.

Transmission towers and their associated high-voltage lines could pose potential obstruction hazards to aircraft navigation.

IV.24.2.1 Impacts of Renewable Energy and Transmission Development

IV.24.2.1.1 Impacts of Site Characterization

Site characterization, such as installation of permanent meteorological stations, could impact low-altitude military testing and training operations including helicopter low-altitude tactical navigation areas, military operations areas, and military training routes. Few meteorological stations would be required during site characterization activities; therefore, their impacts would be minimal.

IV.24.2.1.2 Impacts of Construction and Decommissioning

No construction or decommissioning of renewable energy developments would occur on DOD lands under any of the alternatives. Construction and decommissioning activities could occur near DOD lands and in military operations areas; however, impacts such as ground disturbance would not be expected to affect either DOD lands or military operations.

IV.24.2.1.3 Impacts of Operations and Maintenance

Glint, a momentary flash of a reflection, and glare, a more prolonged reflection of the sun (e.g., from reflective surfaces at solar facilities near military airfields or flight paths), could adversely affect pilot aircraft control and be potentially hazardous. Reflection of the sun and moon can cause glint and glare; the moon's reflection affects night-vision devices. Distance can lessen the effects of glint and glare. Military exercises should avoid over-flight within 3,000 feet of a concentrated solar facility (ICF 2012).

Solar facilities may use wireless-controlled aiming devices to focus reflected sunlight on collecting towers. Airborne electronic jamming in nearby military operations areas, the effects of which are not fully understood, could cause the mirrors to point in unintended directions, creating potential safety-of-flight or other concerns.

Solar power tower facilities with towers several hundred feet high could also pose a potential obstruction hazard to aircraft navigation. In addition, effects on military ranges at which infrared sensors and weapons are used must also be considered.

Wind energy projects could be in conflict with existing or proposed military testing and training operations. Much of this testing and training requires extensive areas of highly secured air space, such as the R-2508 Complex used by Edwards Air Force Base (EAFB), Naval Air Weapons Station (NAWS) China Lake, and National Training Center, Fort Irwin. The presence of turbines could affect low-altitude military testing and training operations

(e.g., helicopter low-altitude tactical navigation areas, military operations areas, and military training routes).

In addition to being a potential physical obstruction, wind turbines block radar wave transmission, essentially similar to the effects from tall buildings, which could compromise airborne radar testing. Airborne radar testing requires a significant amount of open air space. Wind turbine operation affects testing facilities; effects include detection testing, track testing, ground-moving target testing, target breakout, false alarm testing, and air combat maneuvering.

Turbine blade rotation also creates false returns when attempting to detect and track targets at very low altitudes. This is because radar returns from wind turbines can resemble targets. Radar targets intercept the transmitted radar signals and reflect a portion of that signal back to the radar. Target movement also causes a change in frequency to the radar's transmitted waveform. Wind turbines cause similar types of returns because they are large, highly reflective objects and because the rotating blades cause a change in frequency similar to a target. This could compromise the ability of on-site or nearby security forces to detect a possible attack in a timely manner.

Utility-scale wind turbines, because of their large size, possess a significant radar cross-section at all common radar bands. In addition, the rotating blades of wind turbines create Doppler shifts equivalent to aircraft velocities. Since wind turbines are both stationary and near the surface of the earth, these two effects combine to appear as "clutter" to air defense radar. The amount of clutter produced will increase in direct proportion to the number of turbines within the line of sight of the air defense radar (DOD 2006). A large number of wind turbines spread over a wide sector of coverage for that radar will significantly degrade the ability of that radar to perform its mission.

IV.24.2.2 Impacts of the Ecological and Cultural Conservation and Recreation Designations

BLM manages various land designations to protect ecological, historic, cultural, scenic, scientific, and recreation resources and values. While other land uses are allowed within these areas, other uses must be compatible with the resources and values that the land designation is intended to protect. Uses allowed within the various BLM land designations are not expected to impact DOD lands and operations and are therefore not discussed in this chapter.

Details on allowable uses and their management within National Landscape Conservation System lands are presented in the Proposed LUPA description in Volume II. Details on the goals, objectives, allowable uses, and management actions for each Area of Critical

Environmental Concern and Special Recreation Management Area are presented in the LUPA worksheets in Appendix L.

IV.24.3 Impact Analysis by Alternative

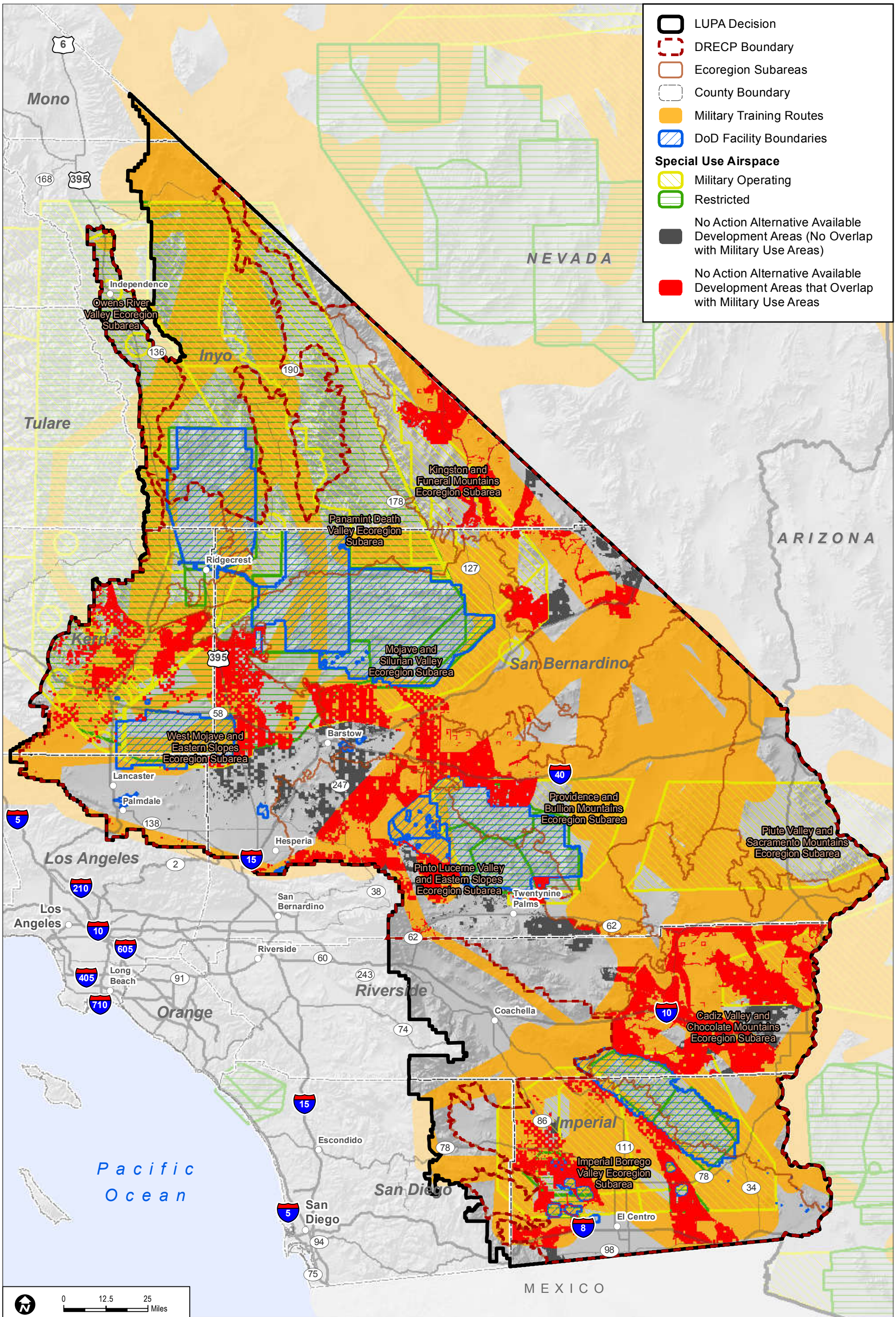
The following sections present impact analysis for the No Action Alternative, the Preferred Alternative, and Alternatives 1 through 4.

IV.24.3.1 No Action Alternative

Under the No Action Alternative, analysis of impacts on DOD operations assumes that renewable energy and transmission development and mitigation for those projects in the LUPA Decision Area would occur on a project-by-project basis, in a pattern consistent with past and ongoing renewable energy and transmission projects. Renewable energy development would continue under existing land use plans, polices and regulations, and potential conflicts with DOD lands and operations, and their mitigation, would be resolved on a case-by-case basis. Solar energy projects would continue as an approved land use within the Solar Energy Zones and Variance Lands approved in the Solar Programmatic EIS (PEIS) Record of Decision.

IV.24.3.1.1 Impacts of Renewable Energy and Transmission Development - No Action Alternative

Under the No Action Alternative, available renewable energy and transmission development areas (with approximated distribution of technology types) that intersect with DOD lands and operations are shown in Table IV.24-1. Lands available for development under this alternative would be scattered throughout the LUPA Decision Area based on existing policy and land classifications. Available development areas that intersect with DOD operations under the No Action Alternative are shown in Figure IV.24-1.



Sources: ESRI (2014); BLM (2015); RECON (2015)

FIGURE IV.24-1

Military Training Routes, Military Operations Areas, Restricted Airspace, and Military Shared Use Areas within Available Development Areas – No Action Alternative

INTENTIONALLY LEFT BLANK

Table IV.24-1
Potential Acres of DOD Operations Impacted by Technology Type – No Action Alternative

DOD Operations	DOD Operations in LUPA Decision Area (acres)	Potential DOD Operations Impacted by Technology Type (acres)			
		Solar	*Wind*	*Geothermal*	*Transmission*
Military Training Routes	12,999,000	75,000	154,000	1,000	27,000
Military Operations Areas	8,438,000	35,000	143,000	1,000	10,000
Special Use Airspace – Restricted	6,919,000	13,000	153,000	200	2,000
Shared Use Area (BLM and DOD)	56,000	0	40	0	0

Note: The following general rounding rules were applied to calculated values: values greater than 1,000 were rounded to the nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore, the subtotals may not sum to the total in the table.

Impact DD-1: Renewable energy and transmission facilities would interfere with DOD lands and operations.

Under the No Action Alternative, wind energy is the primary renewable energy technology to intersect with DOD operations. Most wind development in this alternative would occur near Edwards AFB (see Figure IV.24-1). While wind turbines may be compatible under military training routes and special use airspaces in this area, these projects may warrant additional DOD review during the siting process.

Under the No Action Alternative, solar development and transmission infrastructure could cause similar impacts to those described in Section IV.24.2.1.3. The degree of impact would depend on the location, size, and specific configuration of a project. Most solar and transmission facilities would be located near the Naval Air Facility (NAF) El Centro and several gunnery ranges, including the Chocolate Mountains Aerial Gunnery Range (CMAGR). Solar power tower projects could be obstruction hazards to aircraft navigation, and potential glint and glare from all solar projects could adversely affect pilot aircraft control.

IV.24.3.1.2 Impacts of Ecological and Cultural Conservation and Recreation Designations - No Action Alternative

Existing protected areas and BLM conservation designations provide ongoing conservation. Additional conservation efforts would result from renewable energy or transmission development based on the mitigation requirements imposed, on a project-by-project basis. Protection and conservation areas would have no effect on DOD lands and operations.

IV.24.3.1.3 Impacts of Transmission Outside the DRECP Area

Additional transmission infrastructure would be needed to deliver renewable energy to load centers (areas of high demand) outside the DRECP area. It is assumed that new transmission infrastructure outside the DRECP area would use existing transmission corridors between the DRECP area and existing substations in the more heavily populated areas of the state. The areas outside the DRECP area through which new transmission infrastructure might be constructed include the San Diego, Los Angeles, North Palm Springs–Riverside, and Central Valley areas. These areas are described in Section III.24.4.

New transmission infrastructure in existing transmission corridors outside the DRECP areas would not interfere with any ground operations at DOD facilities. Because transmission infrastructure poses a potential hazard to aircraft, however, their locations and heights are of concern to military pilots. Outside the DRECP area, three DOD facilities with flight operations are near transmission corridors. Marine Corps Air Station (MCAS) Miramar, in the San Diego Area, is at the western end of the corridor that ends at Sycamore Substation, which is situated at the eastern boundary of MCAS. March Air Reserve Base, in the North Palm Springs–Riverside Area, is approximately 9.5 miles northwest of the corridor that ends at Valley Substation. Lemoore Naval Air Station, in the Central Valley, is approximately 18 miles east of the corridor in this area. Each of these corridors has existing high-voltage transmission infrastructure.

Impact DD-1: Renewable energy and transmission facilities would interfere with DOD lands and operations.

Although aircraft operations would occur near corridors outside the DRECP area, these transmission corridors are known to pilots. Additional transmission infrastructure in or adjacent to these corridors would increase the number of lines in the vicinity, but would not be expected to interfere with DOD lands and operations. Flight paths and operating protocols take into account the locations of existing lines, and new transmission in the same corridors would not change the risk factors substantially. The DOD would review all proposed transmission infrastructure that would be developed near its air facilities. The Federal Aviation Administration would require lights and marker balls on towers and conductor spans that it deems a potential hazard to aircraft.

IV.24.3.2 Preferred Alternative

IV.24.3.2.1 Impacts of Renewable Energy and Transmission Development – Preferred Alternative

This section addresses two components of the effects of the Proposed LUPA—the streamlined development of renewable energy and transmission on BLM-managed land under the Proposed LUPA and the impacts of the amended land use plans themselves.

Under the Preferred Alternative, renewable energy and transmission DFAs that intersect with DOD lands and operations are shown in Table IV.24-2. Lands available for development under this alternative would be focused in specific areas within the LUPA Decision Area. DFAs that intersect with DOD operations under the Preferred Alternative are shown in Figure IV.24-2.

Table IV.24-2
Potential Acres of DOD Operations Impacted by Technology Type – Preferred Alternative

DOD Operations	DOD Operations in LUPA Decision Area (acres)	Potential DOD Operations Impacted by Technology Type (acres)			
		Solar	*Wind*	*Geothermal*	*Transmission*
Military Training Routes	12,999,000	25,000	34,000	6,000	11,000
Military Operations Areas	8,438,000	16,000	13,000	5,000	2,000
Special Use Airspace – Restricted	6,919,000	11,000	4,000	2,000	900
Shared Use Area (BLM and DOD)	56,000	0	0	0	0

Note: The following general rounding rules were applied to calculated values: values greater than 1,000 were rounded to the nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore, the subtotals may not sum to the total in the table.

Impact DD-1: Renewable energy and transmission facilities would interfere with DOD lands and operations.

Under the Preferred Alternative, impacts on DOD operations would come from a mix of solar, wind, geothermal, and transmission. Most renewable energy development on BLM-managed lands would be near NAF El Centro and several gunnery ranges, including CMAGR (see Figure IV.24-2). While wind turbines may be compatible under military training routes and special use airspaces in these areas, these projects may warrant additional DOD review during the siting process.

Solar development and transmission infrastructure would also result in impacts, as described in Section IV.24.2.1.3. The degree of impact would depend on the location, size, and specific configuration of projects. Under the Preferred Alternative, solar energy development would occur primarily near Edwards AFB, near CMAGR. Solar photovoltaic development may be compatible with these operations; however, solar thermal energy may also require additional coordination and DOD review during the siting process.

Impacts on Variance Process Lands

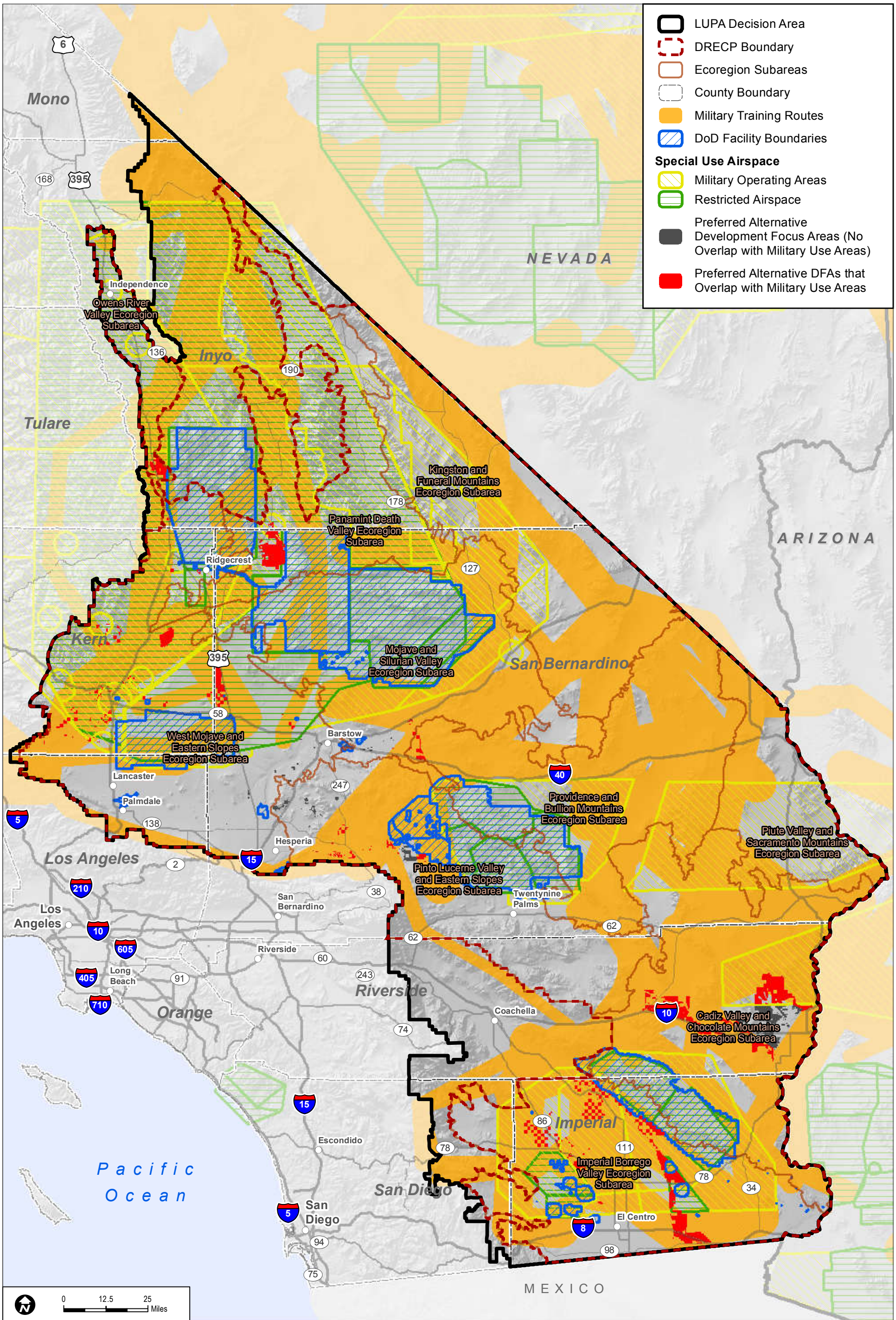
Variance Process Lands represent the BLM Solar PEIS Variance Lands as screened for the Proposed LUPA based on BLM screening criteria. Renewable energy development on Variance Process Lands would not require a BLM LUPA; the environmental review process would be somewhat simpler than if the location were left undesignated. However, all solar, wind, and geothermal energy development applications would have to follow a variance process before BLM would determine whether to continue with processing them (see Volume II, Section II.3.3.3.2 for details on the variance process).

Under the Preferred Alternative, there are 40,100 acres of Variance Process Lands in the LUPA Decision Area. Table IV.24-3 shows the acres of Variance Process Lands that intersect with DOD operations. Development of the Variance Process Lands would have similar impacts on DOD operations as described earlier for impacts of renewable energy and transmission development.

Table IV.24-3
DOD Lands That Intersect With Variance Process Lands – Preferred Alternative

DOD Lands	Variance Process Lands (acres)
Military Training Routes	39,000
Military Operations Areas	38,000
Special Use Airspace – Restricted	10,000
Shared Use Area (BLM and DOD)	0

Note: The following general rounding rules were applied to calculated values: values greater than 1,000 were rounded to the nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore, the subtotals may not sum to the total in the table.



Sources: ESRI (2014); BLM (2015); RECON (2015)

FIGURE IV.24-2

Military Training Routes, Military Operations Areas, Restricted Airspace, and Military Shared Use Areas within Development Focus Areas –Preferred Alternative

INTENTIONALLY LEFT BLANK

Conservation and Management Actions

The conservation strategy for the Preferred Alternative (see Volume II, Section II.3.4) defines specific actions to reduce the impacts of this alternative. The conservation strategy includes specific Conservation and Management Actions (CMAs) for the Preferred Alternative. The CMAs pertinent to DOD lands include specific guidance on DOD review and approval of streamlined projects, as detailed below.

All streamlined projects proposed within the three zones entail varying levels of risk to national security and military operations, testing, and training, and would require DOD review and approval. A DOD matrix identifies potential military operational constraints that could result from the construction and operation of renewable energy activities within DFAs. The matrix identifies potential constraints by renewable energy technology and includes several maps with color codes that depict the extent of the potential constraints (see Appendix J).

- **Red areas** on the maps represent locations where there is a significant likelihood of an unacceptable risk to national security, and the technology identified might impact military operations, testing, and training.
- **Orange areas** represent locations where there is a likelihood of an unacceptable risk to national security, and the technology identified might impact military operations, testing, and training.
- **Yellow areas** represent locations where there is some likelihood of an unacceptable risk to national security, but the technology identified probably will not impact military operations, testing, and training.

Using the following process, proponents of renewable energy activities must first consult with appropriate DOD representatives to ensure the proposed activity will not cause an unacceptable risk to national security.

- For renewable energy activities proposed in red areas, the BLM project proposal review process will not be available unless a letter is obtained from the DOD Siting Clearinghouse stating that military impacts have been mitigated.
- For renewable energy activities proposed in orange or yellow areas, the BLM project proposal review process will be not be available until DOD representatives at the regional level have been consulted and have been provided a minimum of 30 days to assess potential mission impacts. If the regional representatives conclude, within the 30-day period, that there is a significant possibility that a proposed renewable energy activity presents an unacceptable risk to national security, the proposed project

cannot use the BLM project proposal review process unless a letter is obtained from the DOD Siting Clearinghouse stating that military impacts have been mitigated.

Notification to DOD at the regional level for a military impact assessment, and the determination to streamline a project within the LUPA Decision Area, shall follow DOD service level points of contact established by Senate Bill (SB) 1462.

For projects proposed on Variance Process Lands, the following CMA would also apply:

VPL-RE-BIO-3: As part of a renewable energy activity proposal, a proven (e.g., peer reviewed) technology solution to DOD conflicts must be incorporated as a mandatory element.

IV.24.3.2.2 Impacts of Ecological and Cultural Conservation and Recreation Designations – Preferred Alternative

Under the Preferred Alternative, none of the allowed uses within the Proposed LUPA designations would impact DOD lands or operations.

IV.24.3.2.3 Impacts of Transmission Outside the DRECP Area

Additional transmission infrastructure would be needed to deliver renewable energy to load centers (areas of high electricity demand) outside the DRECP area. It is assumed that new transmission infrastructure outside the DRECP area would use existing transmission corridors between the DRECP area and existing substations in the more heavily populated areas of the state. The densely populated areas outside the DRECP area through which new transmission infrastructure might be constructed include the San Diego, Los Angeles, North Palm Springs–Riverside, and Central Valley areas. These areas are further described in Section III.24.4.

New transmission infrastructure in existing transmission corridors outside the DRECP areas would not interfere with any ground operations at DOD facilities. Because transmission infrastructure poses a potential hazard to aircraft, however, their locations and heights concern military pilots. Outside the DRECP area, three DOD facilities with flight operations are near transmission corridors. MCAS Miramar, in the San Diego area, is at the western end of the corridor that ends at Sycamore Substation, which is at the eastern boundary of MCAS. March Air Reserve Base, in the North Palm Springs–Riverside area, is approximately 9.5 miles northwest of the corridor that ends at Valley Substation. Lemoore Naval Air Station, in the Central Valley, is approximately 18 miles east of the transmission corridor in this area. Each of these corridors has existing high-voltage transmission infrastructure.

Impact DD-1: Renewable energy and transmission facilities would interfere with DOD lands and operations.

Although aircraft operations would occur near corridors outside the DRECP area, these transmission corridors are known to pilots. Additional transmission infrastructure in or adjacent to these corridors would increase the number of lines in the vicinity, but would not be expected to interfere with DOD lands and operations. Flight paths and operating protocols take into account the locations of existing infrastructure, and new transmission in the same corridors would not substantially change risk factors. The DOD would review all proposed transmission infrastructure near its air facilities. The Federal Aviation Administration would require lights and marker balls on towers and conductor spans that it deems hazardous to aircraft.

IV.24.3.2.4 Comparison of the Preferred Alternative With the No Action Alternative

This section summarizes the comparison of the Preferred Alternative with the No Action Alternative. The mix of renewable energy facilities under the No Action Alternative and Preferred Alternative is similar, with more wind energy expected under the No Action Alternative and slightly more geothermal under the Preferred Alternative. Potential impacts would be spread over a larger area under the No Action Alternative, but confined to DFAs under the Preferred Alternative. Because of DOD's large-scale use of the LUPA Decision Area, impacts of the No Action Alternative and Preferred Alternative would be similar. The DOD CMAs required under the Preferred Alternative are similar to existing DOD requirements for renewable energy projects and would ensure that specific proposed projects would not compromise DOD's operational mission.

Under the Preferred Alternative, additional CMAs would formalize coordination with DOD and outline potential responses regarding project streamlining under the Proposed LUPA. Overall, adverse impacts on DOD lands and operations would be moderate and CMAs would reduce impacts.

Conservation designation features of the Proposed LUPA would have no impacts on DOD lands under both the No Action Alternative and the Preferred Alternative.

IV.24.3.3 Alternative 1

IV.24.3.3.1 Impacts of Renewable Energy and Transmission Development – Alternative 1

This section addresses two components of the effects of the Proposed LUPA—the streamlined development of renewable energy and transmission on BLM-managed land under the Proposed LUPA and the impacts of the amended land use plans themselves.

Under Alternative 1, renewable energy and transmission DFAs that intersect with DOD lands and operations are shown in Table IV.24-4. Lands available for development under this alternative would be focused in specific areas within the LUPA Decision Area. DFAs that intersect with DOD operations under Alternative 1 are shown in Figure IV.24-3.

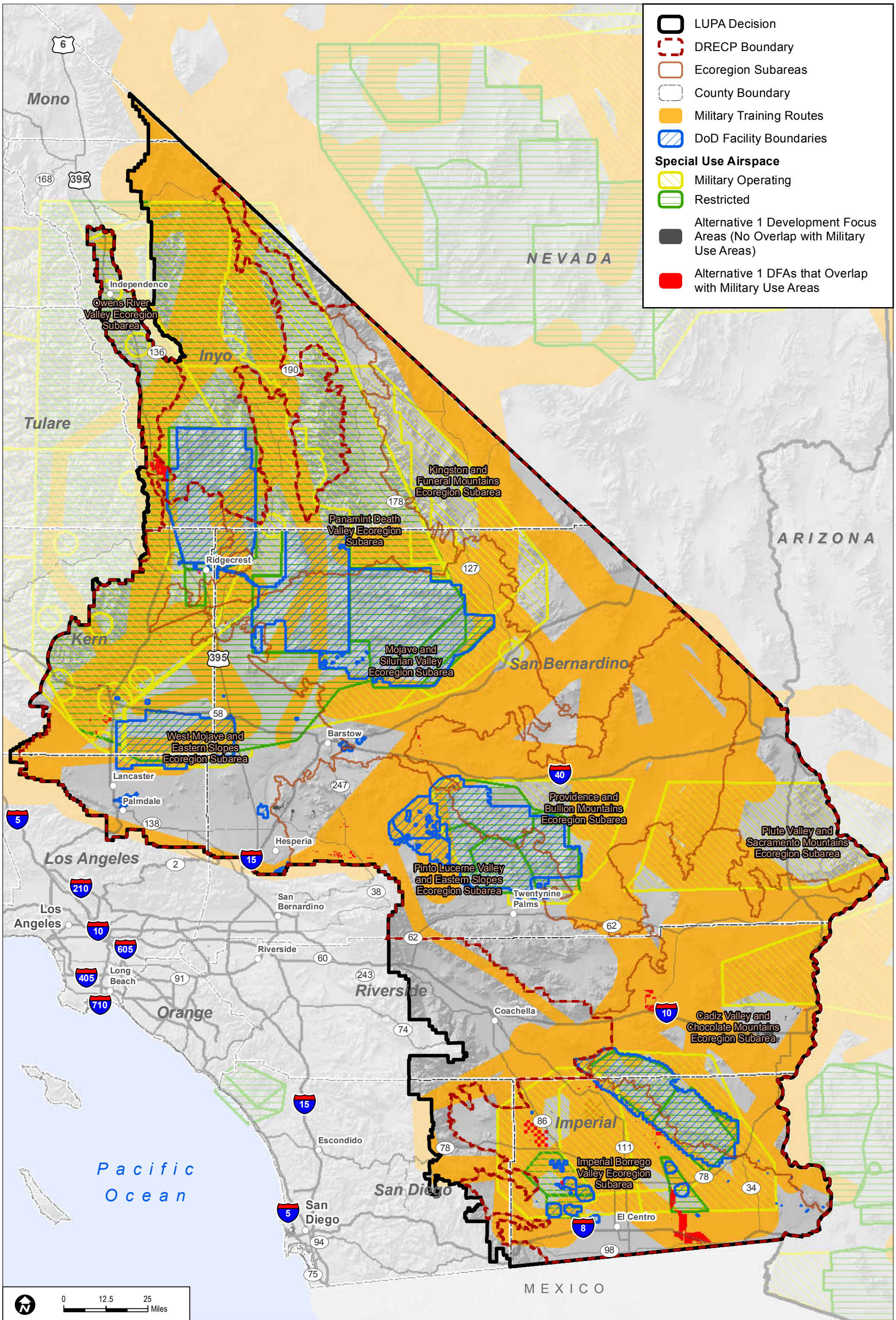
Table IV.24-4
Potential Acres of DOD Operations Impacted by Technology Type – Alternative 1

DOD Operations	DOD Operations in LUPA Decision Area (acres)	Potential DOD Operations Impacted by Technology Type (acres)			
		Solar	*Wind*	*Geothermal*	*Transmission*
Military Training Routes	12,999,000	75,000	17,000	12,000	25,000
Military Operations Areas	8,438,000	55,000	7,000	12,000	13,000
Special Use Airspace – Restricted	6,919,000	20,000	7,000	1,000	3,000
Shared Use Area	56,000	0	0	0	0

Note: The following general rounding rules were applied to calculated values: values greater than 1,000 were rounded to the nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore, the subtotals may not sum to the total in the table.

Impact DD-1: Renewable energy and transmission facilities would interfere with DOD lands and operations.

Under Alternative 1, impacts on DOD operations would be primarily from solar energy and transmission, with some impacts from wind and geothermal (Table IV.24-4). Solar and transmission infrastructure would also result in impacts, as described in Section IV.24.2.1.3. The degree of impact would depend on the location, size, and specific configuration of projects. Under Alternative 1, most renewable energy development on BLM-managed lands would be solar and would occur primarily near Edwards AFB, NAF El Centro, and several gunnery ranges (see Figure IV.24-3).



Sources: ESRI (2014); BLM (2015); RECON (2015)

FIGURE IV.24-3

Military Training Routes, Military Operations Areas, Restricted Airspace, and Military Shared Use Areas within Development Focus Areas –Alternative 1

INTENTIONALLY LEFT BLANK

Wind energy development would occur mostly near Edwards AFB and MCAGCC. While wind turbines may be compatible under military training routes and special use airspaces in this area, these projects may warrant additional DOD review during the siting process.

Impacts on Variance Process Lands

Variance Process Lands represent the BLM Solar PEIS Variance Lands as screened for the Proposed LUPA based on BLM screening criteria. Renewable energy development on Variance Process Lands would not require a BLM LUPA; the environmental review process would be somewhat simpler than if the location were left undesignated. However, all solar, wind, and geothermal energy development applications would have to follow a variance process before BLM would determine whether to continue with processing them (see Volume II, Section II.3.3.3.2 for details on the variance process).

Under Alternative 1, there are 37,000 acres of Variance Process Lands in the LUPA Decision Area. Table IV.24-5 shows the acres of Variance Process Lands that intersect with DOD operations. Development of the Variance Process Lands would have similar impacts on DOD operations as described earlier for impacts of renewable energy and transmission development.

Table IV.24-5
DOD Lands That Intersect With Variance Process Lands –Alternative 1

DOD Lands	Variance Process Lands (acres)
Military Training Routes	24,000
Military Operations Areas	18,000
Special Use Airspace – Restricted	3,000
Shared Use Area (BLM and DOD)	0

Note: The following general rounding rules were applied to calculated values: values greater than 1,000 were rounded to the nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore, the subtotals may not sum to the total in the table.

Conservation and Management Actions

The conservation strategy for Alternative 1 (see Volume II, Section II.4.4) defines specific actions to reduce the impacts of this alternative. The DOD CMAs for Alternative 1 would be the same as for the Preferred Alternative (see Section IV.24.3.2.1).

Notification to DOD at the regional level for a military impact assessment and a determination to streamline a project within the LUPA Decision Area shall follow DOD service level points of contact established by SB 1462.

IV.24.3.3.2 Impacts of Ecological and Cultural Conservation and Recreation Designations – Alternative 1

Under Alternative 1, none of the allowed uses within the Proposed LUPA designations would impact DOD lands or operations.

IV.24.3.3.3 Impacts of Transmission Outside the DRECP Area

The impacts of transmission outside the DRECP area on DOD lands would be the same under all alternatives. These impacts are as described for the Preferred Alternative in Section IV.24.3.2.3.

IV.24.3.3.4 Comparison of Alternative 1 With the Preferred Alternative

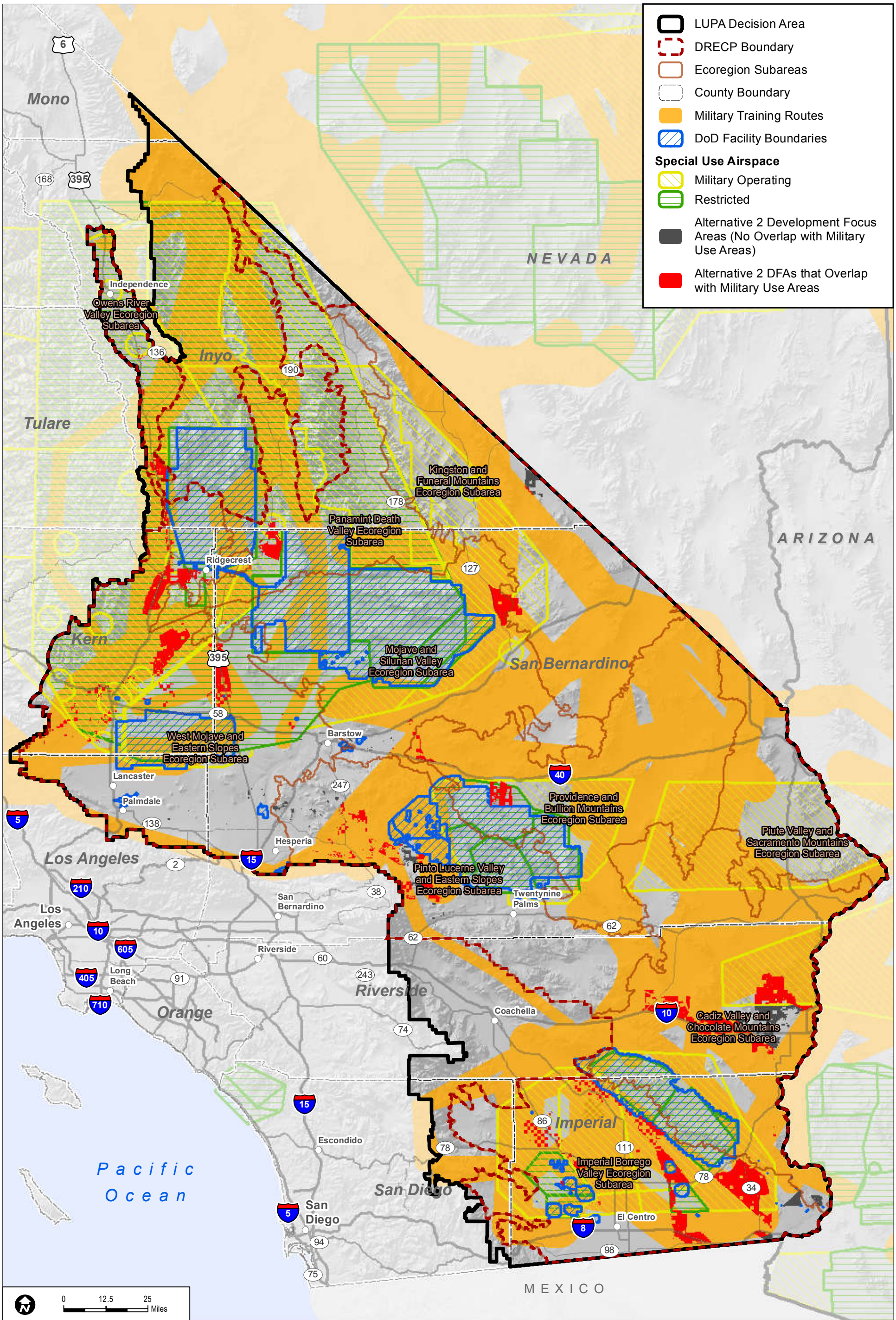
This section summarizes the comparison of Alternative 1 with the Preferred Alternative. The overall amount of DFAs on BLM lands under Alternative 1 would be less than under the Preferred Alternative. Alternative 1 would emphasize more solar and less wind energy development on BLM-managed lands than the mix of technologies under the Preferred Alternative, but the locations of the developments would be similar. Under both alternatives, existing laws and regulations and proposed CMAs to formalize coordination with DOD would ensure that specific proposed projects would not compromise DOD's operational mission.

IV.24.3.4 Alternative 2

IV.24.3.4.1 Impacts of Renewable Energy and Transmission Development – Alternative 2

This section addresses two components of the effects of the Proposed LUPA—the streamlined development of renewable energy and transmission on BLM-managed land under the Proposed LUPA and the impacts of the amended land use plans themselves.

Under Alternative 2, renewable energy and transmission DFAs that intersect with DOD lands and operations are shown in Table IV.24-6. Lands available for development under this alternative would be focused in specific areas within the LUPA Decision Area. DFAs that intersect with DOD operations under Alternative 2 are shown in Figure IV.24-4.



Sources: ESRI (2014); BLM (2015); RECON (2015)

FIGURE IV.24-4

Military Training Routes, Military Operations Areas, Restricted Airspace, and Military Shared Use Areas within Development Focus Areas –Alternative 2

INTENTIONALLY LEFT BLANK

Table IV.24-6
Potential Acres of DOD Operations Impacted by Technology Type – Alternative 2

DOD Operations	DOD Operations in LUPA Decision Area (acres)	Potential DOD Operations Impacted by Technology Type (acres)			
		Solar	*Wind*	*Geothermal*	*Transmission*
Military Training Routes	12,999,000	66,000	166,000	14,000	24,000
Military Operations Areas	8,438,000	44,000	86,000	12,000	10,000
Special Use Airspace – Restricted	6,919,000	25,000	45,000	2,000	2,000
Shared Use Area	56,000	0	0	0	0

Note: The following general rounding rules were applied to calculated values: values greater than 1,000 were rounded to the nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore, the subtotals may not sum to the total in the table.

Impact DD-1: Renewable energy and transmission facilities would interfere with DOD lands and operations.

Under Alternative 2, impacts on DOD operations would come primarily from wind energy and a mix of solar, geothermal, and transmission (see Table IV.24-6). Wind energy development would be located near Edwards AFB and Marine Corps Air Ground Combat Center (MCAGCC). While wind turbines may be compatible under military training routes and special use airspaces in this area, these projects may warrant additional DOD review during the siting process.

Solar and transmission would also result in the impacts described in Section IV.24.2.1.3. The degree of impact would depend on the location, size, and specific configuration of projects. Under Alternative 2, renewable energy development on BLM-managed lands would mostly be wind and solar facilities, located primarily near Edwards AFB, MCAGCC, NAF El Centro, and several gunnery ranges.

Impacts on Variance Process Lands

Variance Process Lands represent the BLM Solar PEIS Variance Lands as screened for the Proposed LUPA based on BLM screening criteria. Renewable energy development on Variance Process Lands would not require a BLM LUPA; the environmental review process would be somewhat simpler than if the location were left undesignated. However, all solar, wind, and geothermal energy development applications would have to follow a variance process before BLM would determine whether to continue with processing them (see Volume II, Section II.3.3.3.2 for details on the variance process).

Under Alternative 2, there are 109,000 acres of Variance Process Lands in the LUPA Decision Area. Table IV.24-7 shows the acres of Variance Process Lands that intersect with DOD operations. Development of the Variance Process Lands would have similar impacts on DOD operations as described earlier for impacts of renewable energy and transmission development.

Table IV.24-7
DOD Lands That Intersect With Variance Process Lands – Alternative 2

DOD Lands	Variance Process Lands (acres)
Military Training Routes	10,000
Military Operations Areas	9,000
Special Use Airspace - Restricted	9,000
Shared Use Area (BLM and DOD)	0

Note: The following general rounding rules were applied to calculated values: values greater than 1,000 were rounded to the nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore, the subtotals may not sum to the total in the table.

Conservation and Management Actions

The conservation strategy for Alternative 2 (see Volume II, Section II.5.4) defines specific actions to reduce the impacts of this alternative. The conservation strategy includes specific CMAs for the Preferred Alternative. The DOD CMAs for Alternative 2 would be the same as for the Preferred Alternative (see Section IV.24.3.3.1).

Notification to DOD at the regional level for a military impact assessment and determination to streamline a project within the LUPA Decision Area shall follow DOD service level points of contact established by SB 1462.

IV.24.3.4.2 Impacts of Ecological and Cultural Conservation and Recreation Designations – Alternative 2

Under Alternative 2, none of the allowed uses within the Proposed LUPA designations would impact DOD lands or operations.

IV.24.3.4.3 Impacts of Transmission Outside the DRECP Area

The impacts of transmission outside the DRECP area on DOD lands would be the same under all alternatives. These impacts are as described for the Preferred Alternative in Section IV.24.3.2.3.

IV.24.3.4.4 Comparison of Alternative 2 With Preferred Alternative

This section summarizes the comparison of Alternative 2 with the Preferred Alternative. The overall amount of DFAs on BLM-managed lands under Alternative 2 would be larger than under the Preferred Alternative. Alternative 2 would emphasize more wind energy and less solar energy development on BLM-managed lands than the mix of technologies under the Preferred Alternative, but the locations of the development would be similar. Under both alternatives, existing laws and regulations and proposed CMAs to formalize coordination with DOD would ensure that specific proposed projects would not compromise DOD's operational mission.

IV.24.3.5 Alternative 3

IV.24.3.5.1 Impacts of Renewable Energy and Transmission Development – Alternative 3

This section addresses two components of the effects of the Proposed LUPA—the streamlined development of renewable energy and transmission on BLM-managed land under the Proposed LUPA and the impacts of the amended land use plans themselves.

Under Alternative 3, renewable energy and transmission DFAs that intersect with DOD lands and operations are shown in Table IV.24-8. Lands available for development under this alternative would be focused in specific areas within the LUPA Decision Area. DFAs that intersect with DOD operations under Alternative 3 are shown in Figure IV.24-5.

Table IV.24-8
Potential Acres of DOD Operations Impacted by Technology Type – Alternative 3

DOD Operations	DOD Operations in LUPA Decision Area (acres)	Potential DOD Operations Impacted by Technology Type (acres)			
		Solar	*Wind*	*Geothermal*	*Transmission*
Military Training Routes	12,999,000	76,000	36,000	13,000	24,000
Military Operations Areas	8,438,000	50,000	11,000	12,000	11,000
Special Use Airspace – Restricted	6,919,000	24,000	12,000	2,000	3,000
Shared Use Area	56,000	0	0	0	0

Note: The following general rounding rules were applied to calculated values: values greater than 1,000 were rounded to the nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore, the subtotals may not sum to the total in the table.

Impact DD-1: Renewable energy and transmission facilities would interfere with DOD lands and operations.

Under Alternative 3, impacts on DOD operations would be primarily from solar energy, with some impacts from wind, geothermal, and transmission (see Table IV.24-8). Solar energy development and transmission would result in the impacts described in Section IV.24.2.1.3. Under Alternative 3, renewable energy development on BLM-managed lands would mostly be solar, though some wind would occur primarily near Edwards AFB, NAF El Centro, and several gunnery ranges. While wind turbines may be compatible under military training routes and special use airspaces in this area, these projects may warrant additional DOD review during the siting process.

Impacts on Variance Process Lands

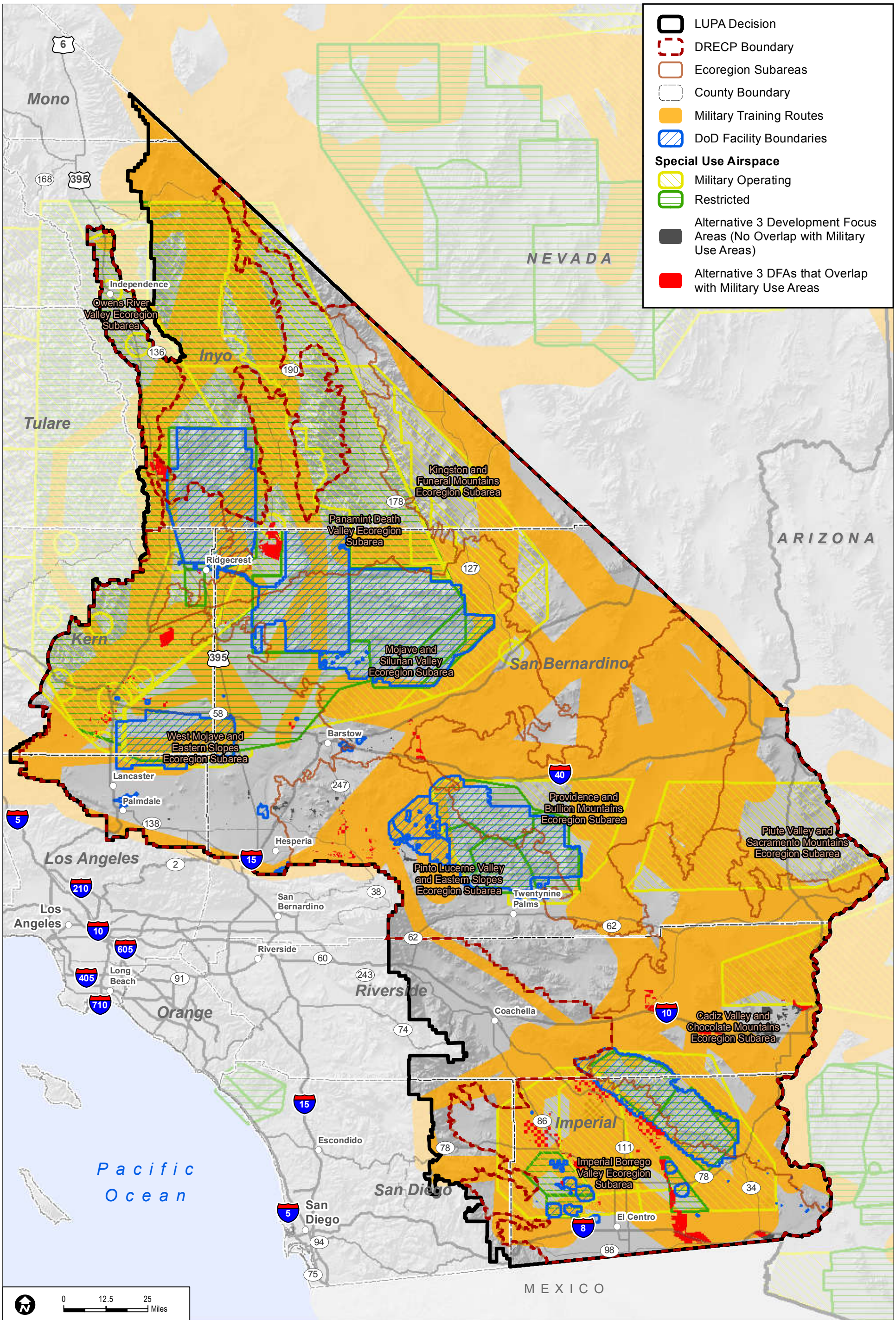
Variance Process Lands represent the BLM Solar PEIS Variance Lands as screened for the Proposed LUPA based on BLM screening criteria. Renewable energy development on Variance Process Lands would not require a BLM LUPA, the environmental review process would be somewhat simpler than if the location were left undesignated. However, all solar, wind, and geothermal energy development applications would have to follow a variance process before BLM would determine whether to continue with processing them (see Volume II, Section II.3.3.3.2 for details on the variance process).

Under Alternative 3, there are 11,000 acres of Variance Process Lands in the LUPA Decision Area. Table IV.24-9 shows the acres of Variance Process Lands that intersect with DOD operations. Development of the Variance Process Lands would have similar impacts on DOD operations as described earlier for impacts of renewable energy and transmission development.

Table IV.24-9
DOD Lands That Intersect With Variance Process Lands – Alternative 3

DOD Lands	Variance Process Lands (acres)
Military Training Routes	4,000
Military Operations Areas	0
Special Use Airspace - Restricted	0
Shared Use Area (BLM and DOD)	0

Note: The following general rounding rules were applied to calculated values: values greater than 1,000 were rounded to the nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore, the subtotals may not sum to the total in the table.



Sources: ESRI (2014); BLM (2015); RECON (2015)

FIGURE IV.24-5

Military Training Routes, Military Operations Areas, Restricted Airspace, and Military Shared Use Areas within Development Focus Areas –Alternative 3

INTENTIONALLY LEFT BLANK

Conservation and Management Actions

The conservation strategy for Alternative 3 (see Volume II, Section II.6.4) defines specific actions to reduce the impacts of this alternative. The conservation strategy includes the definition of specific CMAs for the Preferred Alternative. The DOD CMAs for Alternative 3 would be the same as for the Preferred Alternative (see Section IV.24.3.3.1).

Notification to DOD at the regional level for a military impact assessment and determination to streamline a project within the LUPA Decision Area shall follow DOD service level points of contact established by SB 1462.

IV.24.3.5.2 Impacts of Ecological and Cultural Conservation and Recreation Designations – Alternative 3

Under Alternative 3, none of the allowed uses within the Proposed LUPA designations would impact DOD lands or operations.

IV.24.3.5.3 Impacts of Transmission Outside the DRECP Area

The impacts of transmission outside the DRECP area on DOD lands would be the same under all alternatives. These impacts are as described for the Preferred Alternative in Section IV.24.3.2.3.

IV.24.3.5.4 Comparison of Alternative 3 With the Preferred Alternative

This section summarizes the comparison of Alternative 3 with the Preferred Alternative. The overall amount of DFAs on BLM-managed lands under Alternative 3 would be smaller and more dispersed than under the Preferred Alternative. Alternative 3 would emphasize more solar energy and less wind energy development on BLM-managed lands than the mix of technologies under the Preferred Alternative, but locations of the developments would be similar.

Under both alternatives, existing laws and regulations and the proposed CMAs that formalize coordination with DOD would ensure that specific proposed projects would not compromise DOD's operational mission.

IV.24.3.6 Alternative 4

IV.24.3.6.1 Impacts of Renewable Energy and Transmission Development – Alternative 4

This section addresses two components of the effects of the Proposed LUPA—the streamlined development of renewable energy and transmission on BLM-managed land under the Proposed LUPA and the impacts of the amended land use plans themselves.

Under Alternative 4, renewable energy and transmission DFAs that intersect with DOD lands and operations are shown in Table IV.24-10. Lands available for development under this alternative would be focused in specific areas within the LUPA Decision Area. DFAs that intersect with DOD operations under Alternative 4 are shown in Figure IV.24-6.

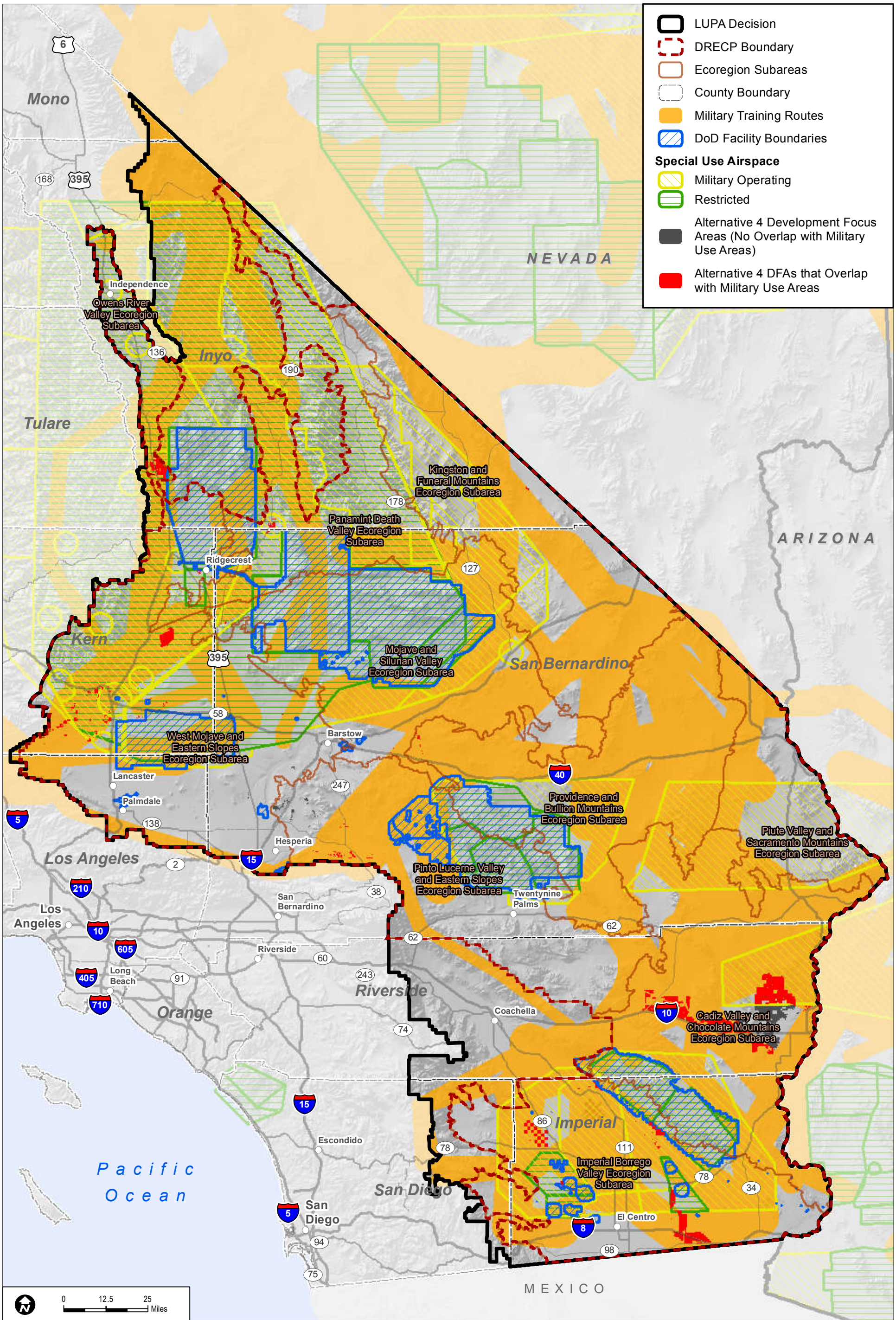
Table IV.24-10
Potential Acres of DOD Operations Impacted by Technology Type – Alternative 4

DOD Operations	DOD Operations in LUPA Decision Area (acres)	Potential DOD Operations Impacted by Technology Type (acres)			
		Solar	*Wind*	*Geothermal*	*Transmission*
Military Training Routes	12,999,000	72,000	73,000	13,000	22,000
Military Operations Areas	8,438,000	44,000	34,000	12,000	6,000
Special Use Airspace – Restricted	6,919,000	16,000	25,000	2,000	2,000
Shared Use Area	56,000	0	0	0	0

Note: The following general rounding rules were applied to calculated values: values greater than 1,000 were rounded to the nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore, the subtotals may not sum to the total in the table.

Impact DD-1: Renewable energy and transmission facilities would interfere with DOD lands and operations.

Under Alternative 4, impacts on DOD operations would come primarily from solar energy, with some impacts from wind, geothermal, and transmission (see Table IV.24-10). Solar energy and transmission facilities would result in impacts similar to those described in Section IV.24.2.1.3. Under Alternative 4, most of the renewable energy development on BLM-managed lands would be solar, although some wind development would occur, primarily near CMAGR.



Sources: ESRI (2014); BLM (2015); RECON (2015)

FIGURE IV.24-6

Military Training Routes, Military Operations Areas, Restricted Airspace, and Military Shared Use Areas within Development Focus Areas –Alternative 4

INTENTIONALLY LEFT BLANK

Impacts on Variance Process Lands

Variance Process Lands represent the BLM Solar PEIS Variance Lands as screened for the Proposed LUPA based on BLM screening criteria. Renewable energy development on Variance Process Lands would not require a BLM LUPA; the environmental review process would be somewhat simpler than if the location were left undesignated. However, all solar, wind, and geothermal energy development applications would have to follow a variance process before BLM would determine whether to continue with processing them (see Volume II, Section II.3.3.3.2 for details on the variance process).

Under Alternative 4, there are 588,000 acres of Variance Process Lands in the LUPA Decision Area. Table IV.24-11 shows the acres of Variance Process Lands that intersect with DOD operations. Development of the Variance Process Lands would have similar impacts on DOD operations as described earlier for impacts of renewable energy and transmission development.

Table IV.24-11
DOD Lands That Intersect With Variance Process Lands – Alternative 4

DOD Land	Variance Process Lands (acres)
Military Training Routes	445,000
Military Operations Areas	234,000
Special Use Airspace – Restricted	65,000
Shared Use Area (BLM and DOD)	0

Note: The following general rounding rules were applied to calculated values: values greater than 1,000 were rounded to the nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore, the subtotals may not sum to the total in the table.

Conservation and Management Actions

The conservation strategy for Alternative 4 (see Volume II, Section II.7.4) defines specific actions to reduce the impacts of this alternative. The conservation strategy includes the definition of specific CMAs for the Preferred Alternative. The DOD CMAs for Alternative 4 would be the same as for the Preferred Alternative (see Section IV.24.3.2.1).

Notification to DOD at the regional level for a military impact assessment and determination to streamline a project within the LUPA Decision Area shall follow DOD service level points of contact established by SB 1462.

IV.24.3.6.2 Impacts of Ecological and Cultural Conservation and Recreation Designations – Alternative 4

Under Alternative 4, none of the allowed uses within the Proposed LUPA designations would impact DOD lands or operations.

IV.24.3.6.3 Impacts of Transmission Outside the DRECP Area

The impacts of transmission outside the DRECP area on DOD lands would be the same under all alternatives. These impacts are as described for the Preferred Alternative in Section IV.24.3.2.3.

IV.24.3.6.4 Comparison of Alternative 4 With the Preferred Alternative

This section summarizes the comparison of Alternative 4 with the Preferred Alternative. The overall amount of DFAs on BLM-managed lands under Alternative 4 would be smaller than under the Preferred Alternative. Alternative 4 would emphasize more solar energy and less wind energy development on BLM-managed lands than the mix of technologies under the Preferred Alternative, but the locations of the developments would be similar.

Under both alternatives, the existing laws and regulations and proposed CMAs to formalize coordination with DOD would ensure that specific proposed projects would not compromise DOD's operational mission.