5. OCTS Evaluation Areas

This section presents the methodology used to identify areas in the County by levels of constraints for potential renewable energy development and the conclusions of the OCTS. It identifies and spatially illustrates these areas by high renewable energy resource availability, access to infrastructure, and reduced environmental conflicts. Section 5.1 summarizes the detailed analysis provided in Appendix A. Section 5.2 provides the results of the environmental opportunities and constraints analysis, defining those resources that are most likely to dictate where renewable energy can be developed and that are quantifiable. Using this information, Section 5.3 defines the resulting areas and Section 5.4 presents the study's conclusions.

5.1 Summary of the Environmental Resource Analysis

Appendix A provides a detailed analysis of the environmental resources that were used to identify the opportunities and constraints for renewable development in Inyo County. Key quantifiable data was used to map the sensitive resources throughout the county. This data was then used to identify locations that were more or less sensitive based on the available data. The data sources and the findings are summarized below.

Aesthetics. The OCTS maps (see Appendix A, Figure A.1-1) use the designated scenic highways, the 2011 REGPA scenic designation, as well as the federal lands Visual Resource Management classifications to illustrate the most sensitive aesthetic resources in the County. The Death Valley National Park was also identified as a sensitive resource due to its purpose to conserve scenery. Views within 0-1 miles (foreground views) of a sensitive resource, such as a scenic highway were mapped to provide a buffer to the viewers. Views within 1-3 miles (middleground view), were mapped but were found to be less sensitive as the views of development diminish as the distance to them increases. Because commercial-scale renewable energy can be readily viewed from some distance, locations furthest from these sensitive visual resources were identified as potential opportunities and locations near the sensitive resources as potential constraints.

Biological Resources. For the biological resources analysis, categories were selected to serve as proxies for areas of high biological sensitivity. Each category was mapped using publically available data. These categories include:

- Designated critical habitat for species listed under the Endangered Species Act (ESA)
- Available occurrence data for special-status species, including those listed under ESA and California Endangered Species Act
- Sensitive vegetation and habitats, including waters and wetlands
- Migratory and movement corridors for wildlife, including important migratory bird stopovers
- Habitat Conservation Plans (HCPs) and other biological considerations.

Publicly available spatial datasets were obtained from various sources including the CDFW, Inyo County, FWS, CEC, and DataBasin.org. Datasets were grouped according to the biological sensitivity categories identified above and maps were developed to identify the geographic extent of each resource, as applicable (see Appendix A, Figures A.2-1 through A.2-6). The report also identified areas that are off-limits to renewable energy development because they are protected (in full fee or through conservation easements) specifically to preserve habitat or agricultural land. The biological resources data were assessed in terms of sensitivity, and a ranking system was developed that uses a subset of these data

(see Appendix A, Figure A.2-7). The ranking system is intended to roughly identify areas of moderate and low sensitivity for renewable energy development, with respect to biological resources.

Cultural Resources. The OCTS discusses three kinds of cultural resources; prehistoric archaeological, historic archaeological, and built-environment. Ethnographic resources have not yet been identified. Most archaeological cultural resources have a site specific nature. That is, the identification and evaluation of cultural resources can only be accomplished through pedestrian survey of the project area because each and every cultural resource site is unique in its location, preservation of artifacts and features, and extent of its boundaries. However, in order to predict the potential for archaeological cultural resources, the study used available datasets to highlight areas of potential sensitivity, including named streams, water bodies, wetlands and playas/dry lakes; ecotone boundaries[1]; obsidian and Fine-grained Volcanic toolstone sources; and slope. This is because access to water and other natural resources was an important consideration for prehistoric population settlements. The study then used the data sets to map where the individual data overlapped highlighting the areas of the County that are most likely to be sensitive for cultural resources (see Appendix A, Figures A.3-1 and A.3-2). In addition, the historic and built-environment areas were mapped to show sensitive locations (see Appendix A, Figure A.3-3).

The OCTS also considered cultural landscapes, or geographic areas associated with a historic event, activity, or person exhibiting other cultural or aesthetic values. Landscapes are understood and documented by conducting ethnographic research that identifies the contributing elements or attributes of the landscape. Contributing elements can include both cultural and biological resources, climate and landforms, subsistence, religion, economy and the built environment. In Inyo County several Natrive American cultural landscapes have been identified by state agencies, primarily in the southeast corner of the County, in the Panamint Valley, and along the Inyo and White Mountain ranges east of the Owens River Valley. This is not to say that cultural landscapes are not extant in other portions of the County as well, but that thus far these regions are known to have culturally important landscapes. Renewable energy resources may affect cultural landscapes and would be addressed in the programmatic environmental review.

General Plan Amendments have a special relationship to California Indian Tribes, codified as Senate Bill 18, which requires certain protocols for Government-to-Government consultation. Consultation between the County and Tribes is ongoing, and the results are not yet available. The consultation efforts will identify places of cultural significance to the Tribes in Inyo County. Such places may include traditional cultural landscapes, gathering areas, places of ceremony, burial grounds, archaeological sites, landforms, places of zoological or botanical habitat, places of ancestral events in the spiritual past, and more. Ethnographic resources are "variations of natural resources and standard resource types" (http://www.cr.nps.gov/history/online_books/nps28/28chap10.htm, and are identified through consultation and oral interviews with cultural representatives and through historical research.

Geology and Soils. Geologic features were mapped where the data was available (see Appendix A, Figure A.4-1). In addition, the overall geologic stability of the County was researched and considered. As with much of California, Inyo County has an extensive fault system that can result in impacts to sub-surface conditions resulting in liquefaction, seismic settlement or other effects. While the geologic features were mapped and considered, renewable energy development can generally mitigate for seismic concerns through appropriate engineering. Commercial-scale renewable energy development facilities are not themselves habitable structures so are not required to conform to the California Building Code.

[1] An ecotone boundary is the boundary between two different vegetation zones.

Hazards and Hazardous Materials. Siting renewable energy on contaminated land can provide an economically viable reuse for sites with significant cleanup costs or low real estate development demand that would otherwise lay idle, providing additional tax revenue. As part of this study, brownfield sites that have renewable energy potential were mapped using the Rural Desert Southwest Brownfields Coalition data and the EPA Renewable Energy Mapper data. This EPA tool makes it possible to view information about renewable energy potential on federal- and State-identified contaminated lands, landfills, and mine sites. All of EPA's RE-Powering Mapper sites have been designated as viable for off-grid solar PV development. Additionally, of the sites that have been designated as viable for large-scale and/or utility level solar PV and wind development for grid integration, all but one are located within land under County jurisdiction along the Route 395 corridor (see Appendix A, Figure A.5-1).

Hydrology and Water Quality. As described in Appendix A, the study considered the County groundwater basins as well as the surface water (see Appendix A, Figures A.6-1 through A.6-3). Some renewable energy technologies, such as wind and solar PV, have very minimal water requirements while others, such as solar thermal technologies, require more water resources for operational purposes. Groundwater in Inyo County is governed by a number of documents including the 1991 Inyo County/Los Angeles Water Agreement that designates some groundwater basins as On and others as Off. Groundwater basins with an On status provide potential opportunities for siting renewable energy developments with a higher water footprint, such as solar thermal technologies. Because some technologies have very minimal water requirements beyond construction, the groundwater basins were not used as a siting criteria for the REDAs (see Section 5.2). Flood hazard areas were identified and would constrain the amount of renewable energy development potential in such areas.

Land Use. The OCTS considers what land uses within Inyo County would be appropriate for commercial-scale renewable development. Land uses such as public facilities and institutional uses, industrial land uses, airports, and agriculture were identified spatially (see Appendix A, Figure A.7-2). Much of Inyo County is under federal or state jurisdiction. These areas were also mapped to identify sensitive areas under the appropriate jurisdictional land use plan (see Appendix A, Figure A.7-1). Existing land uses, zoning, and regulatory and policy constraints were considered because land use constraints associated with renewable development are typically associated with such concerns.

Mineral Resources. Mineral resources provide both an opportunity and a constraint for renewable energy siting. While siting of renewable energy on active or potential future mine sites must be done carefully to avoid interference with active operations, renewable energy can coincide with mining operations or be a profitable reuse option for former sites. Many existing mines would potentially provide opportunities for development of renewable energy either in conjunction with the active running of the mine or as a potential part of remediation of the mine site (see Appendix A, Figure A.8-1).

Socioeconomic Factors. While socioeconomic factors would not dictate the most appropriate locations for renewable energy, they are important for the County to consider when making policy decisions. County costs vary in the disparate regions due to the relative costs of providing infrastructure and services. The existing level of services in some areas of the County, such as the south and southeast locations, are low compared with other areas such as the Owens Valley. Future renewable energy project development would directly and indirectly result in socioeconomic (employment, etc.) and fiscal (tax and other County revenue) opportunities and constraints.

5.2 Results: Environmental Screening and Infrastructure

Appendix A of this report presents an analysis of environmental resources, identifying the opportunities and constraints of nine technical resources for areas where renewable energy generation could be sited. A

subset of the environmental resources analyzed in Appendix A was then defined as those with most relevance for identifying opportunities and constraints for renewable development. For some resources, no constraints or opportunities were quantifiable such that they would help identify locations where renewable energy development would be most appropriate. For example, while geology would be an important feature to consider when engineering a project, it is not a factor that would affect the County's actions in either precluding or encouraging development. Geologic features such as active faults would be addressed via adequate project-level engineering.

After consideration of all environmental resources and evaluation of potential assessment methodologies, the following resources were selected as being the most valuable for identifying opportunities and constraints for renewable energy development: aesthetics, biological resources, cultural resources and land uses. Also, the location of existing available electric transmission and distribution lines has also been included in the consideration of opportunities and constraints.

The REDA maps (presented in Section 7) and the REDA descriptions in this section are intended to be used together. Based on the opportunities and constraints identified for each of the important resource areas (see Appendix A), the County has been divided into the following three ratings for renewable energy development:

- Least Constrained (identified as blue on maps)
- Moderately Constrained (identified as yellow on maps)
- Areas with the most constrains are not highlighted in a color.

These ratings are applied to each resource. The factors used to determine the ratings are discussed in detail for each resource considered in developing the REDAs.

Aesthetics

The results of the aesthetics analysis are shown on Figure 5-1, Overview of Aesthetics Resources (presented in Section 7) and described below.

Least Constrained. For visual resources, the locations where renewable installations would be less visible were found to be least constrained. Much of the County is designated as visually sensitive so these areas were avoided in this designation.

Moderately Constrained. The Route 395 middleground corridors were considered a potential opportunity for development. While some of the scenic corridors may be sufficiently sensitive such that they would not be appropriate for development, many of the areas may provide opportunities for development at a further distance as with the middleground corridors.

Most Constrained. The locations designated by the BLM as sensitive visual resource management classes, Death Valley National Park, and the locations identified as visually sensitive on the U.S. Forest Service lands were identified as not appropriate for renewable energy development at a large scale. These locations have been designated as having high visual sensitivity and the contrast with renewable energy development would be great.

Biological Resources

The results of the biological resources analysis are shown on Figure 5-2, Overview of Biological Resources. Much of the County has one or more potential constraints for renewable energy development, from a biological resources perspective. Portions of the County have sensitive biological resources that may not

preclude development of renewable energy, but would require biological surveys, permitting, and mitigation.

Least Constrained. Areas with non-native vegetation types, including areas mapped as Barren, Cropland, Irrigated Hayfield, and Urban were identified as potential opportunities for development. Additionally, LADWP Zone I Areas were identified as opportunities for LADWP properties in the Owens Valley because they were screened by LADWP for vegetation types, sensitive wildlife and plant communities, wetland, riparian areas and springs and found to be the best opportunities for renewable energy development.

Moderately Constrained. Areas with moderate biological sensitivity would potentially be available for renewable energy development, but would likely require additional surveys and mitigation, so are not likely to be appropriate for streamlined development.

Most Constrained. Areas that have been identified as having high sensitivity or been identified for preservation for unique biological values would be less available or not open to renewable energy development.

Cultural Resources

Certain classes of cultural resources were evaluated in detail in this study, but were not included as a factor in the development of REDAs because most cultural resources are site specific. There is no available data at the County scale that would allow of prohibit development at specific sites. Figure 5-3 illustrates the locations of potentially sensitive archaeological areas overlain by the 2011 REGPA Overlays for informational purposes. However, without completion of site surveys and interviews with Native Americans, it is not possible to know the specific locations of most cultural resources and it would not be possible to rank these locations. Best management practices, ethnographic studies, and pre-construction surveys to ensure avoidance will be recommended in the Program EIR to reduce any impacts to cultural resources.

In Inyo County several Native American cultural landscapes have been identified by state agencies, primarily in the southeast corner of the County, in the Panamint Valley, and along the Inyo and White Mountain ranges east of the Owens River Valley. This is not to say that cultural landscapes are not extant in other portions of the County as well, but that thus far these regions are known to have culturally important landscapes. Renewable energy resources may affect cultural landscapes and would be addressed in the programmatic environmental review.

Land Use

The OCTS considers what land uses within Inyo County would be appropriate for commercial-scale renewable development. The results of the land use analysis are shown on Figure 5-4.

Least Constrained. Areas currently being used for Agriculture, General Industrial, Heavy Commercial, Light Industrial, or Public Service Facilities would be most appropriate for renewable energy development because they are already disturbed. Some of these areas, such as existing industry, would be available for renewable energy at a smaller scale because of the existing use but would potentially also provide a load center for the renewable energy. Brownfield sites (as identified by EPA) would also be available for development, but any cleanup of potentially contaminated sites would need to be considered. LADWP lands were also identified as appropriate for renewable energy development based on the LADWP Area Narrowing Study performed in 2013.

Moderately Constrained. Locations where the land use would potentially be compatible with renewable energy development were identified. These included areas that were neither disturbed nor protected under a specific policy.

Most Constrained. Renewable energy development would not be appropriate on wilderness and tribal lands (unless proposed by the tribe). For these locations, renewable energy development would be contrary to the purposes for which such lands are used and designated (i.e., areas with natural environment not intended for human use). In Areas of Critical Environmental Concern, renewable energy development may be prohibited or constrained depending on the stipulations the BLM designates for the area.

BLM-administered grazing allotments are also shown on Figure 5-4, but were not used in the ranking system. The BLM management plans provide an overview of acceptable uses in grazing allotments. These plans would need to be considered when proposing renewable energy on grazing allotments. Wind energy may be compatible with grazing whereas solar energy would likely require the removal of the grazing allotment. Prior to any development on such land, the effects to grazing allotments would need to be considered and mitigated.

Energy Infrastructure

The existing County energy infrastructure is shown on Figure 4-1 and discussed in Section 4. Both SCE and LADWP have existing transmission lines that run north-south along the Route 395 corridor and energy developers could also interconnect with the Nevada transmission system. For the use of any of these transmission systems, substantial upgrades would be required. LADWP's existing 230 kV Inyo-Rinaldi Transmission System has capacity for approximately 240 MW of renewable energy at this time. LADWP has stated that the Southern Owens Valley Solar Ranch has a priority position for future interconnection to this existing line. If this project is not completed, this capacity would be potentially available for a different project. For projects located in the southeastern portion of the County, existing transmission would be available via the Nevada transmission system. Upgrades along the Valley Electric Association system would also be required.

For distributed commercial generation some capacity is available in the Bishop area on the SCE distribution system. SCE has stated that in general it considers projects of less than 10 MW as the appropriate size to interconnect with their distribution system.

5.3 Description of OCTS Areas by Constraints

Having established resource-specific opportunities and constraints as described in Section 5.1 (and analyzed in Appendix 6), those data were then used to determine the REDAs throughout the County, as shown on Figure 5-5. The methodology used to determine the REDAs is as follows:

- As a starting point, the entire County is considered potentially available for renewable energy development. This analysis then eliminated all areas that were considered ***challenging for renewable energy development,*** i.e., all areas left unshaded.
- The analysis then identified locations where development could ***potentially be appropriate for renewable energy development***, i.e., locations identified as moderately constrained and identified as yellow for each environmental consideration.

- Locations not eliminated or identified as potentially available for renewable energy development were then identified as likely to be ***open for renewable energy development***, i.e., locations identified as least constrained and identified as blue in Section 5.1.

The analysis identified multiple areas with varying sensitivity levels for each environmental resource. Where sensitivities were conflicting, the most conservative designation (i.e., most protective of the resources) was used for the area. The analysis then included brownfield sites as identified by the U.S. EPA RE-Powering data and the Owens Valley Dry Lake. The EPA RE-Powering data identifies locations that are already disturbed and potentially feasible for renewable development. The LADWP is considering renewable energy development on portions of the Owens Valley Dry Lake as potential mitigation for dust emissions resulting from the Dry Lake.

The 2011 REGPA General Plan Land Use Designation Overlay areas have been included in Figures 5-5a through 5-5o. This is because the County has already performed studies on the 2011 REGPA General Plan Land Use Designation Overlay and there is potential development interest in these locations. However, the OCTS is not limited to these regions and presents areas covering the entire County.

The DRECP Development Focus Areas are also shown on Figures 5-5a through 5-5o. The DRECP Development Focus Areas are locations where renewable energy development would be focused and where renewable projects could receive incidental take permits[2] under the DRECP. The DRECP presented seven alternatives in the *Description and Comparative Evaluation of Draft DRECP Alternatives*, published December 2012. The County Background Report Map 10 illustrates the Draft DRECP Development Focus Areas based on the seven alternatives. The OCTS figures show the Development Focus Areas from Alternative 5 because this alternative had the largest number of acres of Development Focus Areas in Inyo County and would represent the most conservative analysis in the CEQA document.

Overall, as identified within Table 5-2, the OCTS analysis concludes that within the 2011 REGPA overlays, the County has

- Over 93,000 acres of areas most appropriate for renewable development;
- Over 60,000 acres of land potentially appropriate for renewable development; and
- Over 400,000 acres of land least appropriate for renewable development.

Some of the 2011 overlay areas, such as the Chicago Valley, Deep Springs, Fish Lake Valley, and Panamint Valley are identified in this report as ***potentially subject to constraints*** for renewable development because of sensitive biological or visual resources. Other 2011 General Plan Land Use Designation Overlay areas such as Owens Valley, Owens Lake–Keeler, and Charleston View would ***potentially be appropriate*** for renewable energy development.

[2] The Endangered Species Act prohibits the "take" of listed species through direct harm or habitat destruction. In the 1982 ESA amendments, Congress authorized the U.S Fish and Wildlife Service (through the Secretary of the Interior) to issue permits for the "incidental take" of endangered and threatened wildlife species. Thus, permit holders can proceed with an activity that is legal in all other respects, but that results in the "incidental" taking of a listed species.

As can be seen on Figure 5-5, some locations outside of the 2011 REGPA overlay areas would be likely or potentially appropriate for renewable energy development and portions of the DRECP DFAs are located outside of the 2011 REGPA overlay areas. There are over 24,000 of least constrained acres outside of the overlays that would be potentially appropriate for renewable energy development and almost 800,000 of moderately constrained acres outside of the overlays that would be potentially appropriate for renewable energy development. Most of this area is in and around the Owens Valley Route 395 corridor and near the Laws overlay area. However, it should be noted that some of the cultural landscapes overlap with these areas, so they may be less appropriate from a cultural resource perspective.

Table 5-2. REDA Acres by General Plan Land Use Designation Overlay

2011 Overlay Name	Moderately Constrained Acres	Least Constrained Acres
Centennial Flat–Darwin	72,126	0
Charleston View	30,419	0
Chicago Valley	6,453	0
Death Valley Junction	67,664	3
Deep Springs	6,897	0
Fish Lake Valley	13,479	0
Laws	3,064	3,672
Owens Lake–Keeler	0	77,014
Owens Valley	29,568	7,240
Panamint Valley	76,495	0
Pearsonville	7,198	0
Rose Valley	48,226	0
Sandy Valley	3,115	
Tecopa	39	1
Trona	19,530	944
Total	381,234	88,869

The DRECP DFAs coincide with much of the Charleston View overlay area, portions of the Owens Lake-Keeler overlay area, portions of the Owens Valley overlay area, portions of the Pearsonville overlay area, and portions of the Rose Valley overlay area. The DRECP Alternative 5 DFAs cover almost 68,000 acres in Inyo County. There are approximately 4,500 acres of the Development Focus Areas outside of the moderately and least constrained areas that would be potentially appropriate for renewable energy development

5.4 Conclusion

Based on the spatial analysis of the county, there are a total of over 88,000 acres of land in the County 2011 Overlay areas that have the least constraints and over 381,000 acres of land that have moderate constraints that may be appropriate for renewable energy development. The majority of the most or potentially appropriate areas for renewable energy development are located along the Route 395 corridor near existing LADWP and SCE transmission. Some REDAs are located near the Nevada/California border near the Valley Electric Association. As discussed in Section 4.4, both the LADWP and SCE transmission systems would require substantial upgrades to carry large amounts of renewable energy that would be costly and time consuming.

The County could revise the 2011 REGPA overlay areas based on all or some of the information provided in the OCTS and the development focus areas identified in the DRECP. In many instances, this would entail revising the boundaries of REGPA overlay areas but in some instances the County could consider whether to eliminate an overlay area. Because substantial upgrades would be needed to export the energy, the County could work with LADWP, SCE, the Energy Commission, and the CPUC to consider how to encourage upgrades that would be most beneficial to all parties involved.