APPENDIX C
LA COUNTY PLANNING RENEWABLE ENERGY TECHNOLOGY SCREENING ANALYSIS

Appendix C: LA County Planning Renewable Energy Technology Screening Analysis

Contents

Overview

This document describes the GIS methodology used by LA County Planning to conduct the suitability analysis as referenced in the Technical Study. The purpose of this appendix is to provide the reader a general sense of how LA County Planning performed the suitability analysis.

Definitions

- **Environmentally Sensitive Site** (as proposed in the ordinance): An environmentally sensitive site includes: sites identified in the California Protected Areas Database, Critical Habitat, Farmland, Flood Hazard Zones, Floodways, Hazardous Waste Sites, and Wetlands.

  For a brief description and citation of each layer, please see the 'Data Sources / Environmentally Sensitive layers' section below.

- **Sensitive Use** (as defined in Title 22, 22.14.190): As defined in Title 22, these are sites in which people are likely to be. For the purpose of this analysis, these sites include: Adult Care Facilities, Child Care sites, Hospitals, Parks, Preschools and Early Learning Care Sites, Residential Uses, Retirement Communities, Schools, and Shelters.

  For a brief description and citation of each layer, please see the 'Data Sources / Sensitive Use layers' section below.

Data Sources

Environmentally Sensitive Area layers

- **California Protected Areas Database (CPAD)** - contains data on land owned in fee by governments, non-profits and some private entities that are protected for open space purposes. Data includes all such areas in California, from small urban parks to large national parks and forests, mostly aligned to assessor parcel boundaries.

  Source:

  > Greeninfo Network (2024). Protected Areas Database (CPAD) (2024b Units), Downloaded March 18, 2025. www.calands.org

- **Critical Habitat** - When a species is proposed for listing as endangered or threatened under the Endangered Species Act, the U.S. Fish and Wildlife Service must consider whether there are areas of habitat believed to be essential the species' conservation. Those areas may be proposed for designation as "critical habitat." Critical habitat is a term defined and used in the Act. It is a specific geographic area(s) that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. Critical habitat may include an area that is not currently occupied by the species but that will be needed for its recovery. An area is designated as "critical habitat" after the Service publishes a proposed Federal regulation in the Federal Register and receives and considers public comments on the proposal. The final boundaries of the critical habitat are also published in the Federal Register. Critical habitat are areas considered essential for the conservation of a listed species. Federal agencies are required to consult with the U.S. Fish and Wildlife Service on actions they carry out, fund, or authorize to ensure that their actions will not destroy or adversely modify critical habitat. These areas provide notice to the public and land managers of the

importance of these areas to the conservation of a listed species. Special protections and/or restrictions are possible in areas where Federal funding, permits, licenses, authorizations, or actions occur or are required.

Source:

U.S. Fish and Wildlife Service. Final Critical Habitat Features. Downloaded January 7, 2026. https://services.arcgis.com/QVENGdaPbd4LUkLV/ArcGIS/rest/services/USFWS_Critical_Habitat/FeatureServer/0

- **Farmland** - The Farmland Mapping and Monitoring Program (FMMP) provides data to decision makers for use in planning for the present and future use of California's agricultural land resources. The data is a current inventory of agricultural resources. This data is for general planning purposes and has a minimum mapping unit of ten acres. Data was queried to include only the Prime Farmland, and Farmland of Statewide Importance categories.

Source:

California Department of Conservation (ver 2020). Downloaded April 29, 2025. https://www.conservation.ca.gov/dlrp/fmmp/Pages/LosAngeles.aspx

- **Flood Hazard Zones** - The Federal Emergency Management Agency (FEMA) creates and provides authoritative data related to flood insurance. Using that data, the Los Angeles County Department of Public Works has developed a public-facing web viewer for accessing flood zone information in the County of Los Angeles (Flood Zone Determination Website). Data was queried to only include "1% Annual Chance of Flood" (formerly known as a 100-year flood plain).

Source:

Federal Emergency Management Agency (FEMA). Flood Hazard Zones (June 2021). https://www.fema.gov/flood-maps/national-flood-hazard-layer

- **Floodway** – These are regulatory floodways managed by Public Works.

Source:

Los Angeles County Department of Public Works

- **Hazardous Waste Sites** - Hazardous waste management facilities receive hazardous waste for treatment, storage or disposal. These facilities are often referred to as treatment, storage and disposal facilities, or TSDFs. This data was downloaded from the 'Envirostor Public Data Export' hosted on ArcGIS Online on 4/17/25. The data was further processed to create a polygon layer using Assessor parcels that the downloaded points were within. Some QC and research had to be done to assign the point to the proper parcel, and some of the points were removed as they fell outside of an unincorporated area.

Source:

California Department of Toxic Substances Control (DTSC). Envirostor Public Data Export. Downloaded April 17, 2025. https://maps.arcgis.com/home/item.html?id=aaa6a5dcf4d349ac8fd7b8e58e88f974

- **Wetlands** - Represents the extent, approximate location and type of wetlands and deepwater habitats in the United States and its Territories. The National Wetlands Inventory (NWI) was established by the U.S. Fish and Wildlife Service (Service) to conduct a nationwide inventory of U.S. wetlands to provide biologists, land management planners and others with information on the distribution and type of

wetlands. To do this, the NWI developed a wetland classification system that is now the official wetland classification system for the Service and the federal standard for wetland classification (61 FR 39465). The NWI also developed techniques for mapping and recording the inventory findings.

Source:

> U.S. Fish and Wildlife Service. CA_Wetlands. Downloaded April 17, 2025.
> https://www.fws.gov/program/national-wetlands-inventory/download-state-wetlands-data

Sensitive Use Layers

- **Adult Care Facilities** – Adult residential facilities licensed by the state of CA. Geocoded from a list of addresses against the Countywide Address Management System (CAMS).

  Sources:

  > State of CA Department of Social Services. Adult Residential and Daycare. Downloaded June 2023.
  > https://www.ccld.dss.ca.gov/carefacilitysearch/?rewrite=downloaddata

  > County of Los Angeles Enterprise GIS. Countywide Address Management System (CAMS).
  > https://cams-lacounty.hub.arcgis.com/

- **Child Care** – Licensed day care centers located in public, religious, and/or commercial facilities. Licensed home-based day care centers are not included for privacy concerns. Geocoded from a list of addresses against the Countywide Address Management System (CAMS).

  Sources:

  > State of CA Department of Social Services. Adult Residential and Daycare. Downloaded June 2023.
  > https://www.ccld.dss.ca.gov/carefacilitysearch/?rewrite=downloaddata

  > County of Los Angeles Enterprise GIS. Countywide Address Management System (CAMS).
  > https://cams-lacounty.hub.arcgis.com/

- **Hospitals** – Parcel polygons of hospitals.

  Source:

  > Southern California Association of Governments (SCAG). 2017 – internal database

- **Parks** – Local parks identified by the Los Angeles County Parks Needs Assessment, an internal Jessica's Law analysis, and the California Protected Areas database. Data currency spans the years 2017 – 2023.

  Sources:

  > LA County Parks and Recreation. Park Needs Assessment (2016).
  > https://lacountyparkneeds.org/pna-home/

  > Greeninfo Network (2023). Protected Areas Database (CPAD) (2023b Units), Downloaded March 18, 2025. www.calands.org

  > LA County Regional Planning, internal 'Jessica's Law' analysis (2017)

- **Preschools and Early Learning Care Sites** - This layer contains the site locations that provide childcare and early learning services in California. These childcare and development programs are overseen by the California Department of Education and include the California State Preschool, Center Based Child Care, General Migrant Child Care and Handicapped Programs. Data current as of April 2025.

Source:

> State of CA Department of Education, Early Learning and Care sites. NOTE: Downloaded on April 2025 from DOE Open Data site (https://data-cdegis.opendata.arcgis.com/), however, as of 1/22/2026, it appears to be no longer posted.

- **Residential Use** – Residential uses as coded in the Assessor parcels for Los Angeles County.

   Source:

   > Los Angeles County Assessor Office. Parcels. Extracted, June 2022. https://data.lacounty.gov/documents/4d67b154ae614d219c58535659128e71/about

- **Retirement Communities** – Mapped uses as coded in the Assessor parcels for Los Angeles County (Homes for the Aged and Others).

   Source:

   > Los Angeles County Assessor Office. Parcels. Extracted, June 2022. https://data.lacounty.gov/documents/4d67b154ae614d219c58535659128e71/about

- **Schools** - Primary and secondary schools, adult education, colleges and universities. Includes public, charter, and private schools with enrollment where available. Data current for 2023-24 school year. This is a point and polygon layer, and within unincorporated areas, parcel boundaries were generated where there was a school point (note – this is from an older set of data).

   Sources:

   > Department of Education, California Public Schools 2024-2025 (points only). https://data-cdegis.opendata.arcgis.com/datasets/CDEGIS::california-public-schools-2024-25/about

   > Department of Education, California Public Schools 2020-2021 (points appended to unincorporated parcel polygons), internal database (no longer available on open data)

   > Los Angeles County Assessor Office. Parcels. Extracted, July 2022. https://data.lacounty.gov/documents/4d67b154ae614d219c58535659128e71/about

- **Shelters** – This is a collaborative project of the Los Angeles County Chief Executive Office and the departments of Internal Services and Regional Planning to map out the following shelter types: Supportive Housing (current, and in the pipeline), Interim Housing (current and in the pipeline), and Winter Shelters. Data current as of 2022 / 2023.

   Source:

   > Los Angeles Homeless Services Authority & Los Angeles County Enterprise GIS. Data is not publicly available.

Other Exclusions

These layers identify sites with biological and environmental resources, or sites with existing development not considered suitable for development with renewable energy projects. The layers were applied as exclusion in the suitability analysis. Note that not all exclusions apply to all project types.

- **Antelope Valley Regional Investment Strategies (AV RCIS) –** As defined by the California Department of Fish and Wildlife (https://wildlife.ca.gov/Conservation/Planning/Regional-Conservation/RCIS), a RCIS can use a variety of existing information, including research and recovery plans for species and natural resources as well as projected development plans, to assess the area's existing conditions. A

RCIS also includes guidance for the types and locations of conservation and mitigation projects that would provide ecological benefits to the area based on its existing conditions. The document for Antelope Valley from November 2021 can be downloaded from the following site: https://nrm.dfg.ca.gov/documents/ContextDocs.aspx?cat=Advance-Mitigation. Data from the following figures were downloaded and combined in the suitability analysis, and they denote 'exclusion areas' for certain Renewable Energy Project types:

– Figure 2-11: Natural Communities of Conservation Importance in the Antelope Valley RCIS Area. Filtered out vegetation data based on species identified in this map.

Source:

Aerial Information Systems (AIS) and the California Department of Fish and Wildlife (CDFW) Vegetation Classification and Mapping Program (VegCAMP). Vegetation – Mojave Desert for DRECP – Final [ds735] (current as of April 30, 2024), downloaded on August 21, 2025 at: https://www.arcgis.com/home/item.html?id=b0bfdd792823452185c62719fa9eb638

– Figure 2-19: Protected Areas in the Antelope Valley RCIS Area. Several of the mapped areas are also in the California Protected Areas Database (CPAD), so the identified 'Areas of Critical Environmental Concern (ACEC) were downloaded.

Source:

U.S. Department of the Interior, Bureau of Land Management (BLM). Areas of Critical Environmental Concern (current as of March 11, 2025), downloaded on July 28, 2025 at: https://gbp-blm-egis.hub.arcgis.com/datasets/BLM-EGIS::blm-ca-drecp-acec-polygons/about

– Figure 3-24: Joshua Tree High Conservation Value Habitat (Desert Species Group). Filtered data on the following: 'Conservation Value and Terrestrial Intactness is High' and 'Conservation Value = Moderate and Terrestrial Intactness is High'.

Source:

Conservation Biology Institute. Draft Antelope Valley – (Desert) Conservation Attributes Model Version 2 (current as of February 13, 2017), downloaded on July 25, 2025 at: https://databasin.org/datasets/2c98b2da09ce4e539591c43e92a0f760/ (NOTE: Access to this Data Basin item must be submitted to Conservation Biology Institute).

- **Fire Hazards** – These are areas based on fuel loading, slope, fire weather, and other relevant factors including areas where winds have been identified by the Office of the State Fire Marshal as a major cause of wildfire spread. Data was queried to only show Very High Fire Hazards.

Source:

California Department of Forestry and Fire Prevention (CAL FIRE). Fire Hazard Severity Zones (current as of August 21, 2025). Downloaded June 9, 2025. https://osfm.fire.ca.gov/what-we-do/community-wildfire-preparedness-and-mitigation/fire-hazard-severity-zones

- **Mobile home Parks** – A list of mobile home parks maintained by the State of CA Housing and Community Development (HCD) (http://www.hcd.ca.gov/) was cross-referenced with a layer of countywide land use types ("Land Types") maintained by Los Angeles County. The tabular data from HCD was combined with the Land Types layer to generate boundaries of these properties.

Source:

Los Angeles County Internal Services Department – Enterprise GIS. Land Types (current as of November 6, 2017).
https://maps.arcgis.com/home/item.html?id=2a8cfee9e794418299a0a7bffb8a91bc

- **Parcels owned by Federal, State, and City agencies** – This information comes from the live LA County Assessor parcel dataset that is updated weekly. A query was carried out on the Owner Name field to get a subset of ownership by non-County agencies. Note that private inholdings within Federal and State lands are considered unincorporated lands subject to LA County Planning jurisdiction; private inholdings remained in the dataset and were analyzed as part of the suitability study.

Source:

Los Angeles County Assessor Office. Parcels (with tax roll attributes).
https://data.lacounty.gov/documents/4d67b154ae614d219c58535659128e71/about (Note: this open data parcel link does not include the detailed tax roll attributes with ownership information)

- **Puente Hills Landfill / Rose Hills Cemetery** - These sites contain lots that met the zoning criteria for some renewable energy project types but were determined to be inappropriate for development and were excluded from the suitability analysis. Parcel ownership information was used to delineate these areas, and for the Puente Hills Landfill boundary, maps from the "Puente Hills Landfill Park Implementation Plan" were also used (https://parks.lacounty.gov/phlandfillpark/).

Source:

Los Angeles County Assessor Office. Parcels (with tax roll attributes).
https://data.lacounty.gov/documents/4d67b154ae614d219c58535659128e71/about (Note: this open data parcel link does not include the detailed tax roll attributes with ownership information)

- **Significant Ecological Areas –** These are officially designated areas within LA County with irreplaceable biological resources.

Source:

Department of Regional Planning. Significant Ecological Areas. https://egis-lacounty.hub.arcgis.com/datasets/lacounty::significant-ecological-area-sea/about

Additional Environmental Considerations/ Resource Potential Layers

These layers were used to identify sites that may be particularly suitable for development with a renewable energy project type. Note that not all layers apply to all project types.

- **Brownfields** - Properties where expansion, redevelopment or reuse may be complicated by the presence or potential presence of a hazardous substance, pollutant or contaminant. Brownfield sites were exported from the Environmental Protection Agency's Facility Registry Service (https://www.epa.gov/frs) as points within unincorporated areas. These points were moved to their appropriate parcels and then spatially joined to the parcels to create a polygon layer.

Sources:

Environmental Protection Agency. FRS_INTERESTS_ACRES. Downloaded on March 18, 2025.
https://services.arcgis.com/cJ9YHowT8TU7DUyn/arcgis/rest/services/FRS_INTERESTS_ACRES/FeatureServer/0

Los Angeles County Assessor Office. Parcels.
https://data.lacounty.gov/documents/4d67b154ae614d219c58535659128e71/about

- **Electric Substations** - The California Energy Commission (CEC) Electric Substation geospatial data layer has been created to display the locations of substations in California. It contains point features representing transmission substations and some distribution substations in California. These substations are fed by electric transmission lines and are used to step-up and step-down the voltage of electricity being carried by the lines, or simply to connect together various lines and maintain reliability of supply. These substations can be located on the surface within fenced enclosures, within special purpose buildings, on rooftops (in urban environments), or underground. A substation feature is also used to represent a location where one transmission line "taps" into another. When used in association with the CEC Power Plant and CEC Electric Transmission Lines geospatial data layers, viewers can analyze the geographic relationships with the substation across utilities, counties and state.

  Source:

  California Energy Commission. California Power Plants. Downloaded on March 23, 2025.
  https://cecgis-caenergy.opendata.arcgis.com/datasets/4a702cd67be24ae7ab8173423a768e1b_0/explore

- **Oil Wells** – A web mapping service from the Geologic Energy Management Division (CalGEM) was used to query out Idle, Plugged, and Unknown oil well statuses. More information about well status and the database is available at this link: https://www.conservation.ca.gov/calgem/Pages/WellFinder.aspx. Queried points were downloaded from this service and used to select parcels that contain them. These 'oil well' parcels were used in the bonus point analysis.

  Sources:

  State of CA, Department of Conservation, Geologic Energy Management Division. Wells.
  Downloaded on November 21, 2025.
  https://gis.conservation.ca.gov/server/rest/services/WellSTAR/Wells/MapServer/0.

  Los Angeles County Assessor Office. Parcels.
  https://data.lacounty.gov/documents/4d67b154ae614d219c58535659128e71/about

- **SB 35 – Disadvantaged Communities** – These are communities that are identified in the CalEnviroScreen 4.0 dataset (https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40). These are census tracts that have the highest statewide impact from the proximity of polluting uses and their proximity to sensitive populations, and other negative socio-economic indicators.

  Source:

  California Environmental Protection Agency (Cal EPA) – Office of Environmental Health Hazard
  Assessment (OEHHA). SB 535 ArcGIS Geodatabase (May 2022).
  https://oehha.ca.gov/calenviroscreen/sb535

- **Solar Resource Potential Areas** - Solar resource and photovoltaic (PV) generation potential were derived from high-resolution global datasets produced by Solargis. Long-term solar availability at each location was described using global horizontal irradiation (GHI), measured in kilowatt hours per square meter (kWh/m²), which represents the combined direct and diffuse sunlight received by a horizontal surface. Although GHI enables comparison of natural solar conditions across regions, it is influenced by local environmental factors and does not fully capture the actual PV generation potential. To address this, the analysis estimates practical PV output (PVOUT) by incorporating temperature effects, system configuration, shading, soiling, and terrain or land-use constraints. Practical potential is assessed across

three levels—no constraints (Level 0), exclusion of unsuitable or technically restricted land (Level 1), and additional regulatory limitations (Level 2)—and then used to examine spatial and seasonal variations in PVOUT. lar resource and photovoltaic (PV) production potential were derived from high-resolution global datasets produced by Solargis. Long-term solar availability at each location was first described using global horizontal irradiation (GHI), a metric expressing the combined direct and diffuse sunlight received by a horizontal surface. While GHI helps compare natural solar conditions across regions, it is influenced by local environmental factors and does not fully capture real PV generation capability. Therefore, the study focuses on estimating practical PV output (PVOUT) by accounting for temperature effects, system configuration, shading, soiling, and land-use or terrain restrictions. Practical potential is evaluated in three stages—no constraints (Level 0), exclusion of unsuitable land and technical barriers (Level 1), and additional regulatory or environmental limitations (Level 2)—followed by an assessment of spatial and seasonal patterns in PVOUT.

Source:

World Bank. Global PV Power Potential by Country. Downloaded on December 2, 2025. https://globalsolaratlas.info/global-pv-potential-study

■ **Transmission Lines** - The California Energy Commission (CEC) Electric Transmission Line geospatial data layer has been created to illustrate electric transmission in California. When used in association with the other energy related geospatial data layers, viewers can analyze the geographic relationships with the electric transmission across the state. The transmission line data is used to:

- Support the CEC Transmission Planning;
- Support the CEC electric system analysis in California;
- Enhance electric transmission communication among California electric stakeholders;
- Support CEC's illustrations of electric infrastructure

Source:

California Energy Commission. California Electric Transmission Lines. Downloaded on March 23, 2025. https://www.arcgis.com/home/item.html?id=260b4513acdb4a3a8e4d64e69fc84fee

■ **Vacant Parcels** – Unincorporated parcels that have been identified by the Assessor as Vacant (letter 'V' in the fourth character of the UseCode.

Source:

Los Angeles County Assessor Office. Parcels. https://data.lacounty.gov/documents/4d67b154ae614d219c58535659128e71/about

■ **Wind Resource Potential Areas** - This dataset contains modeled annual average wind speeds at 30 and 150 meters above ground level for the years 2007–2013. The data originate from the National Renewable Energy Laboratory's (NREL) WIND Toolkit, developed by NREL (operated by the Alliance for Sustainable Energy, LLC for the U.S. Department of Energy).

Source:

National Renewable Energy Laboratory (NREL). Wind Integration National Dataset Toolkits. Data published 2015. https://www.nlr.gov/grid/wind-toolkit

■ **Zoning** – This is the GIS representation of zoning for unincorporated areas as established by Division 3 of the County Code – Title 22 (Planning and Zoning). This layer was used to query out the criteria for

the different renewable energy projects as identified in the 'Siting Considerations' section below. Also, Specific Plan categories that were equivalent to the Zoning categories used were also included.

Sources:

Department of Regional Planning. Zoning (L.A. County Unincorporated). https://egis-lacounty.hub.arcgis.com/datasets/lacounty::zoning-l-a-county-unincorporated/about

Department of Regional Planning. Specific Plans (Unincorporated Areas). https://egis-lacounty.hub.arcgis.com/datasets/lacounty::specific-plans-unincorporated-areas/about

Additional Layers

- **CAISO Renewable Energy Resource Regions –** Statewide layer used for energy planning and modeling. Note that the boundaries of this layer were modified to conform to the LA County boundary.

Source:

California Energy Commission. Solar RESOLVE Regions. Downloaded 12/2/2025 from https://cecgis-caenergy.opendata.arcgis.com/datasets/CAEnergy::solar-resolve-regions/about

GIS Process

Inventory of Layers for Analysis

Prior to GIS analysis, the various layers needed to map out the resource areas and potential siting of projects were published as a web mapping application as shown in Figure 1 below. This helped facilitate discussions between staff and our consulting team to identify the layers needed for the analysis and begin to think about the criteria needed for future renewable energy sites as it relates to the updated ordinance.

Figure 1 – Web Mapping Application that shows resource areas, electricity infrastructure, potential zoning categories for future projects, etc.
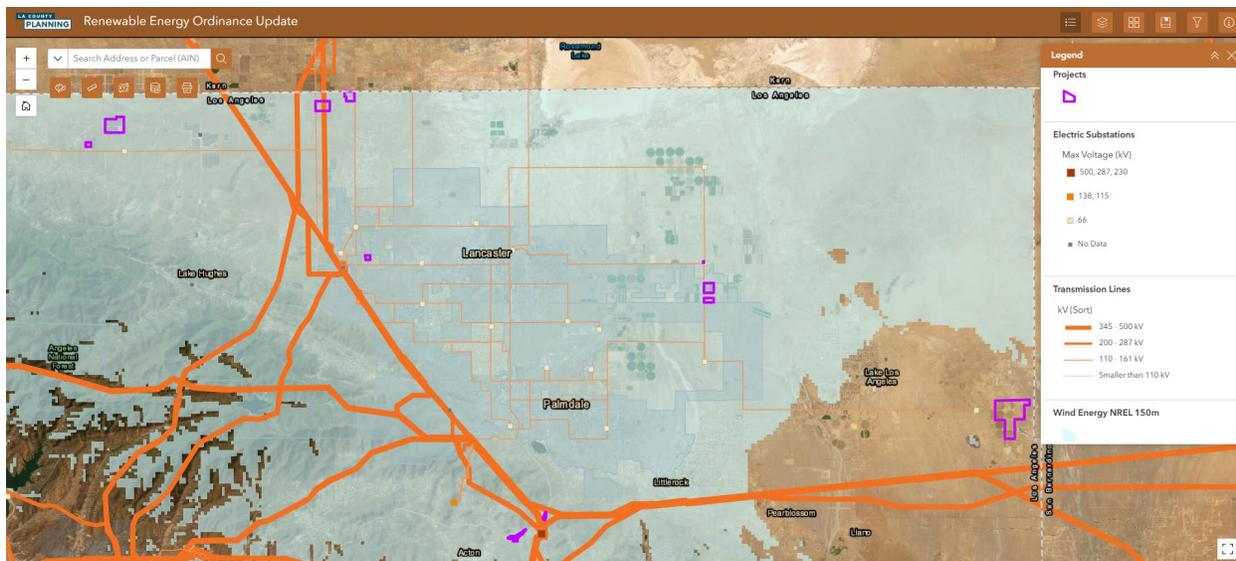
For the main GIS processing, ArcGIS Pro (versions 3.4.3 – 3.5.2) was used. Using the web mapping application shown above in Figure 1, as a guide, data layers and map services were identified. An ArcGIS Pro project was set up to first pull in all the datasets needed to run the analysis, and to organize the data into groups (Figure 2).

*Figure 2* – *ArcGIS Pro data organization*
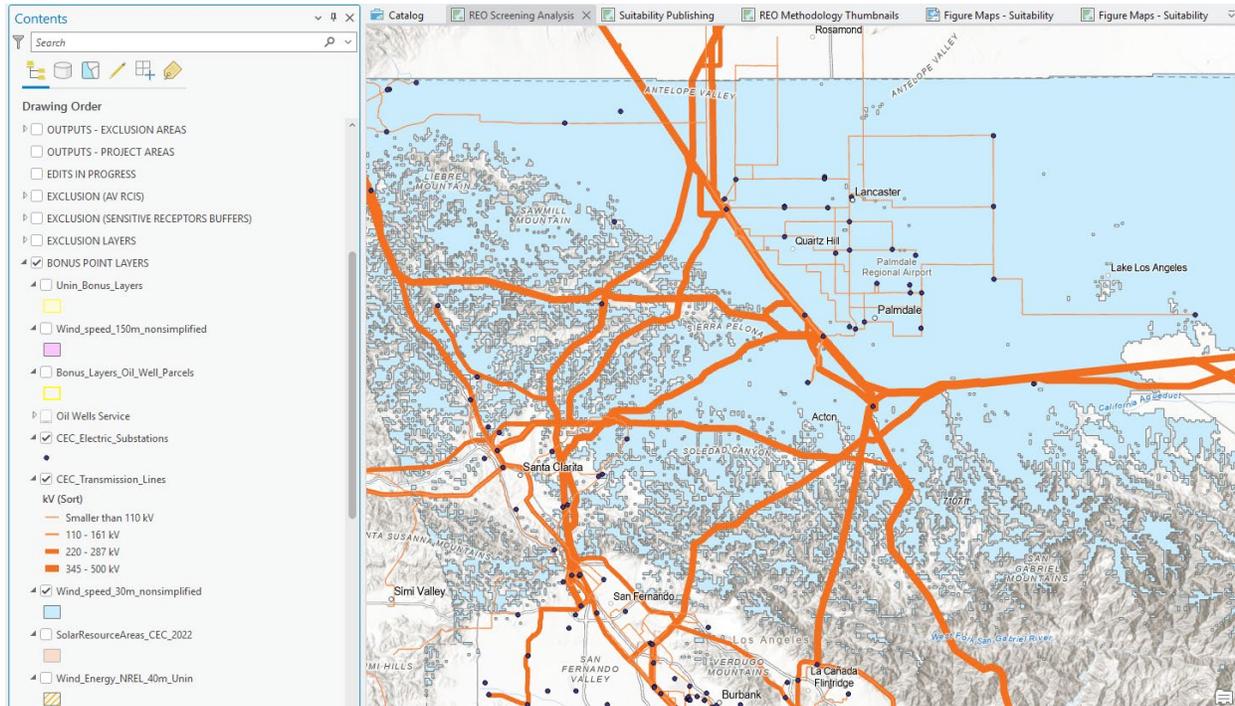
GIS Analysis Tools

The main tools used in the processing of the data are as follows (thumbnail illustrations are from Esri's Help documentation):

Buffer (multiple rings) – to create multiple buffers from one feature into one, aggregated dataset. The proximity buffers from the transmission data is an example of this.

INPUT   OUTPUT
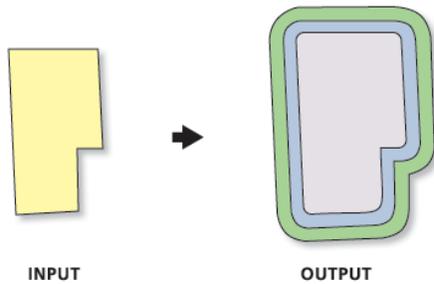
**Clip** – to retain only the data within the overall unincorporated study area, and the various study areas for each project type.

INPUT   CLIP FEATURE   OUTPUT
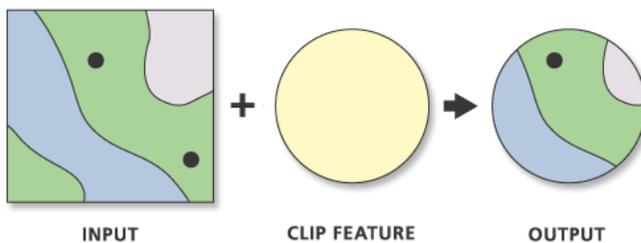
Dissolve – this essentially aggregates a data layer based on common attributes. For example, a combined dataset can contain multiple layers that have the same suitability score. The combined array of polygons are combined based on all the ones that have the same score, simplifying the data.


INPUT   OUTPUT
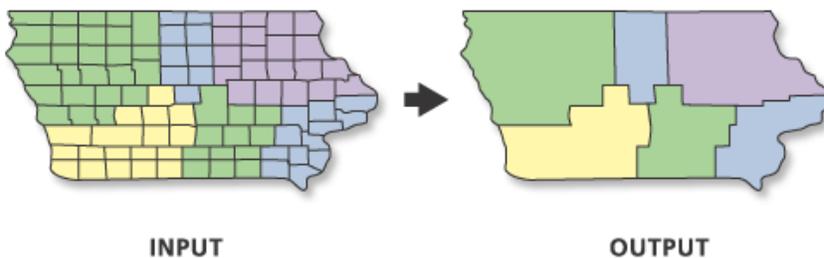
Merge – to combine many layers together to produce an output that can be further processed. This produces a combined dataset which can also contain overlapping polygons.
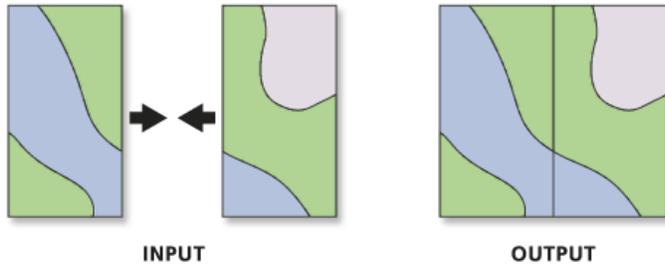
Intersect – this combines two layers together, and the output is where the two layers overlap each other.
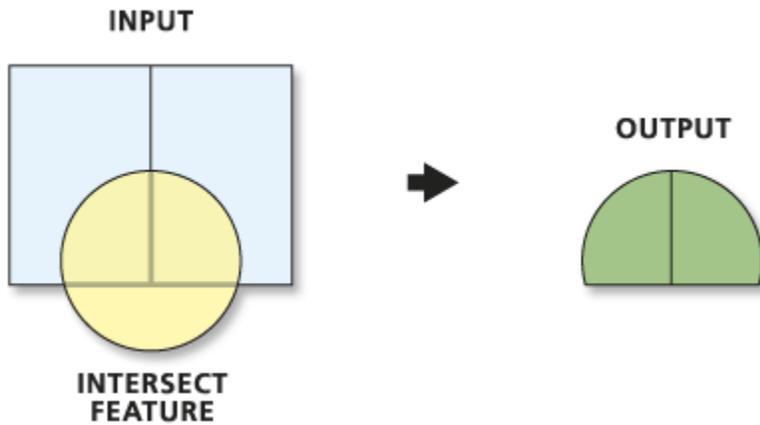
Union – this is like the 'Merge' tool as it combines many layers together, but it also produces an intersection between all the combined layers. This was used to arrive at the final cumulative suitability scoring.
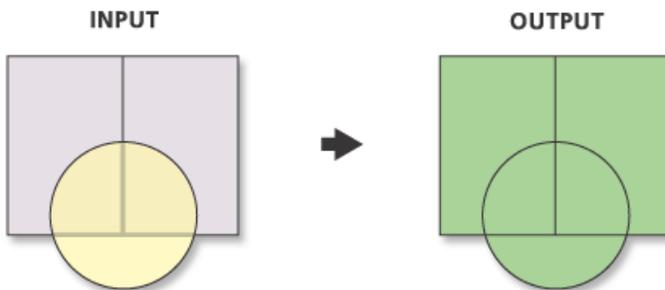
Renewable Energy Technology Screening Analysis

Overview

GIS layers representing the siting considerations, constraints, and bonus areas were processed to create the suitability layers.

Since there were many different processes that needed to be done in each phase of the project, ModelBuilder in ArcGIS Pro was utilized for each. With this tool, a series of processes can be linked

together, and they can be re-run at any time. This was advantageous since, throughout the development of the ordinance, there were changes to some of the criteria, and these made multiple iterations of the suitability analysis.

Siting Considerations

Siting criteria were defined for each project type as summarized in Table 1 below. For a discussion of the considerations for each project type, refer to section 4.4.1 - Approach to Renewable Energy Technology Screening, of the Technical Study.

Table 1. Siting Criteria

Project Type	Zones Allowed*	Minimum Parcel Size	Exclusions	Buffer
BESS				
≤500 MWh	A-2, C-M, M-1, M-1.5, M-2, IT	4 acres	SEA, VHFSZ, AV RCIS, PH / RH / MH**	
>500 MWh	A-2, C-M, M-1, M-1.5, M-2, IT	4 acres	Environmentally Sensitive Sites, SEA, VHFHSZ, AV RCIS, PH / RH / MH**	300 ft from Sensitive Uses
Solar				
Utility-Scale Ground Mounted	A-2, C-M, M-1, M-1.5, M-2, IT	-	SEA, AV RCIS	
Wind				
≤ 100 kw	R-1, R-2, R-3, R-4, R-5, R-A, A-1, A-2, O-S	1 acre	-	
> 101 kw to 1MW	A-2	1 acre	-	

* For all the zoning categories, the equivalent Specific Plan categories were also included.
** PH/RH/MH: Zones where renewable energy would be allowed in the Puente Hills Landfill, Rio Hondo College, Rose Hills Cemetery and mobile home Parks are excluded.

The first step in the suitability analysis was to identify the potential project area for each project type using the Zoning layers (and their equivalent Specific Plan categories); the layers were queried out for each of the project type. Figure 3 below shows the query for BESS and utility-scale ground-mounted solar.

Figure 3 – illustration of zoning queries used for various project types
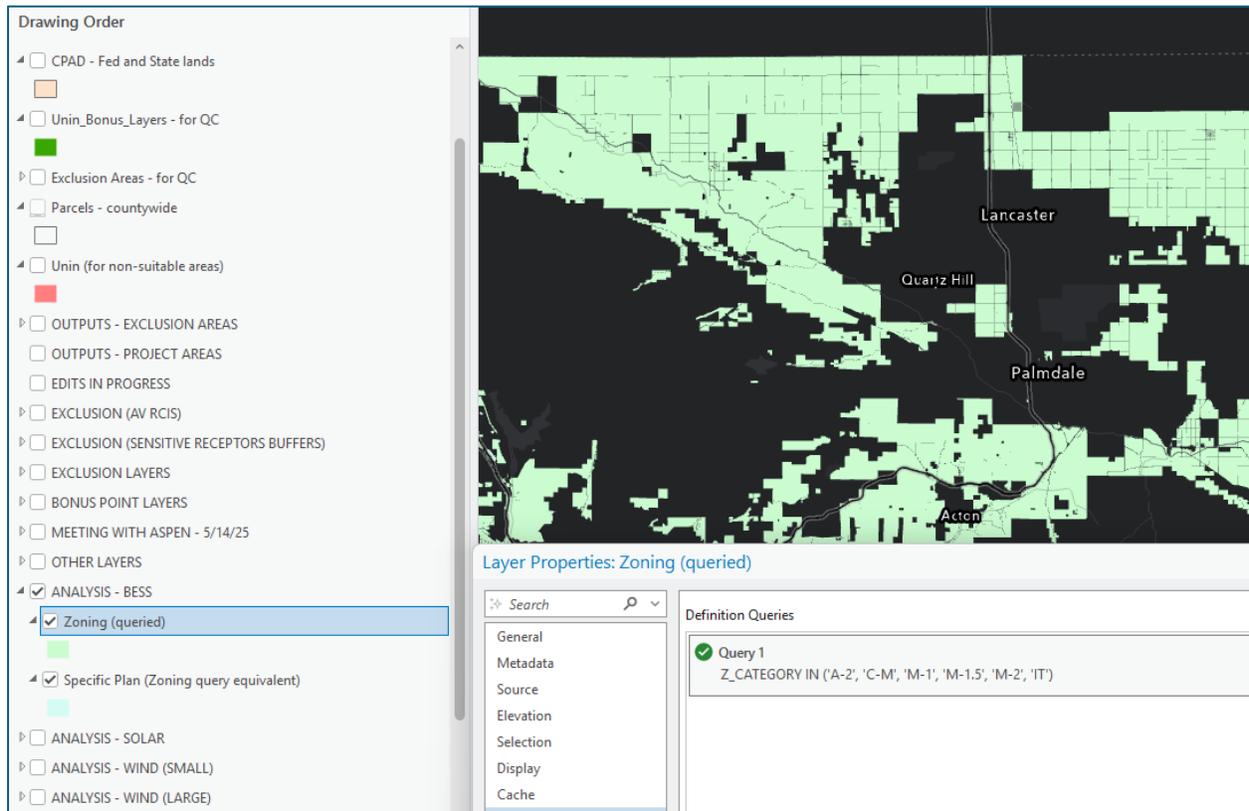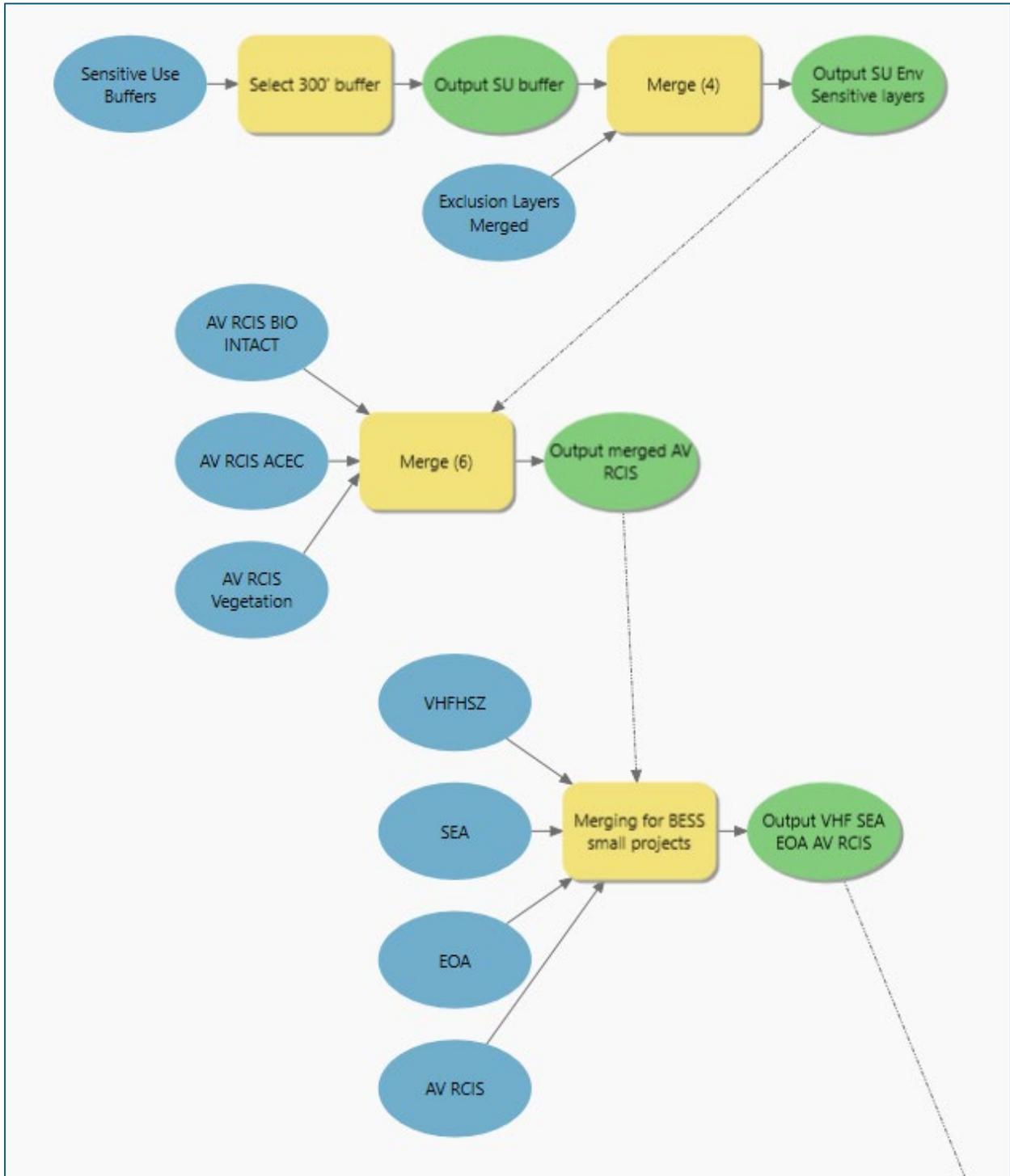

Exclusion Areas

The Summary of Criteria table shows the variety of exclusions that were associated with each project type, and they are illustrated below.

Environmental Exclusions

Environmental and hazard exclusion areas defined in Table 1 were excluded as applicable in the final suitability area for each project type. A GIS model was created to prep the exclusion layers for each project type as shown in Figures 4 and 5 below. Throughout the development of the project, some of these combinations changed, so the models were re-configured and re-run to generate updated data layers.

Please reference the 'Data Sources' section above for more information on the data sources and queries used for the analysis.

*Figure 4 – Example of how ModelBuilder is used to combine layers*

Figure 5 – *Environmentally Sensitive layers combined*

Sensitive Use Buffer Exclusions

As defined in the 'Sensitive Use' section above, these points and polygons are mapped out as shown in Figure 6 below. The extent of the sensitive use layer included incorporated areas within 500 feet from an unincorporated boundary in order to ensure sensitive receptors adjacent to unincorporated areas were considered. For project types that excluded sensitive uses, a 300-foot buffer (Figure 7 below) from the sensitive receptor property boundary (or point) was applied.

Figure 6 – Sensitive Uses
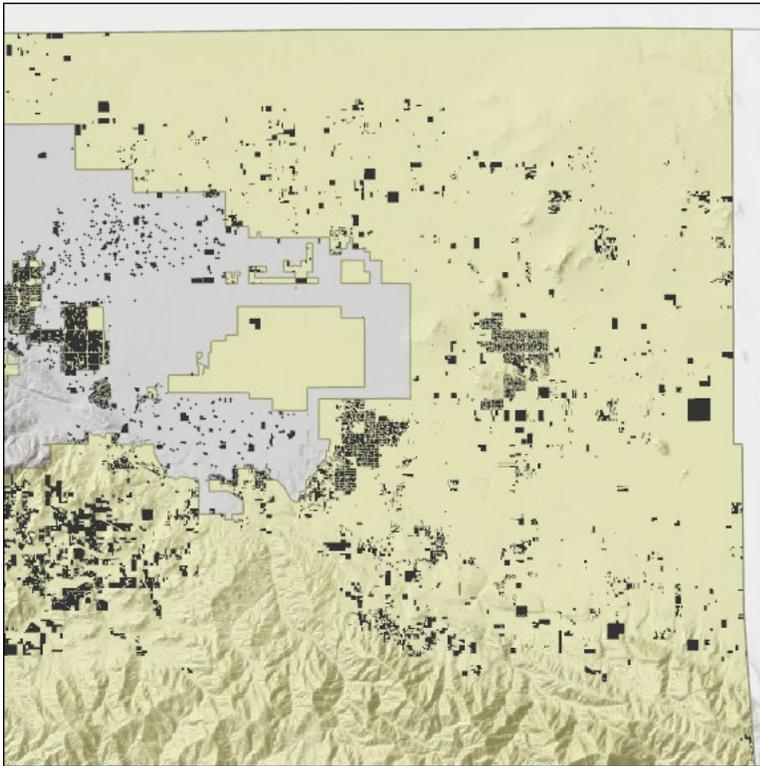
Figure 7 – 300' buffer from the sensitive uses
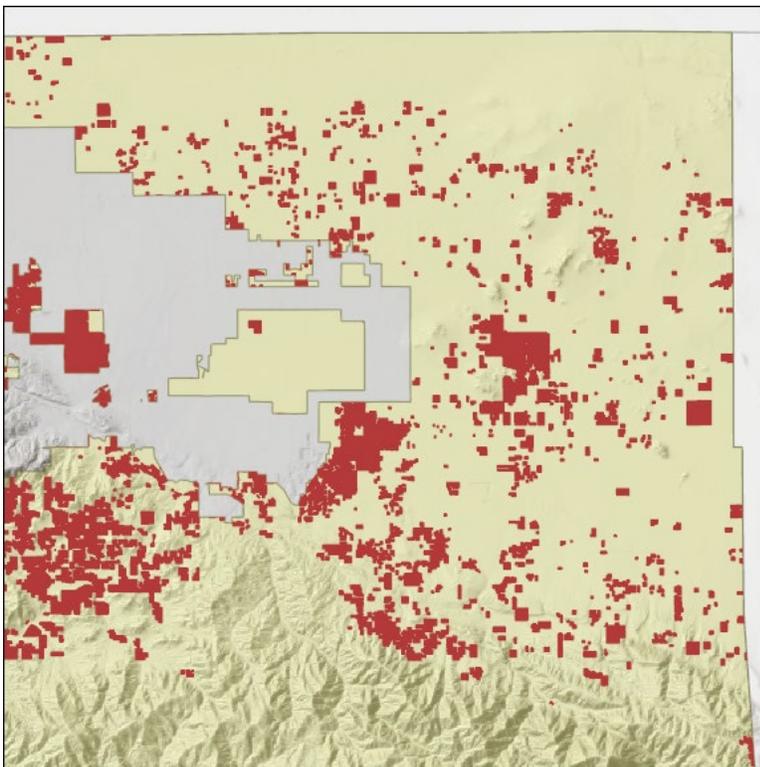
Resource Potential and Additional Environmental Considerations

Parcels that were identified from the analysis above were further evaluated to determine if they are within each respective technology's resource potential and if they met one or more of the environmental considerations listed below:

- Within 5 miles of a transmission line or substation (For BESS projects, this is considered the resource potential area. BESS projects would also have to meet one of the remaining three environmental considerations)

- On an existing vacant parcel or brownfield site, or idle oil well site

- Not in an SB 535 Disadvantaged Community

- 500 ft or more from the nearest sensitive use

In the GIS Analysis, the considerations were combined into one layer and were considered along with the resource potential areas for each project type.

Suitability Analysis Process

Figure 8 illustrates the general process for clipping, erasing, and intersecting layers together. The starting area for each project type was the applicable zoning categories. Corresponding exclusion areas were then erased from the layer. If there was a parcel size limitation, parcels that did not meet the size threshold were erased. In the second row of images below, the 'Initial Result' illustrates the results from this overlay analysis. The resource potential and environmental considerations layer was then combined with the 'Initial Result'.

The example for BESS (< 500MWh) in Figure 8 below, illustrates the general process. A baseline area of applicable zoning was generated first. Then, the environmental exclusions and parcels under 4 acres were removed using the 'erase' process, creating an initial result of potentially suitable areas. The initial result was combined with the resource potential and environmental considerations layer using the intersect tool. Sites that are 'more suitable' are shown in green because they are within a resource potential area AND are within one of the remaining three environmental considerations layers. All remaining sites are coded as 'suitable' in yellow.

Figure 8 – General process of suitability coding using BESS as an example
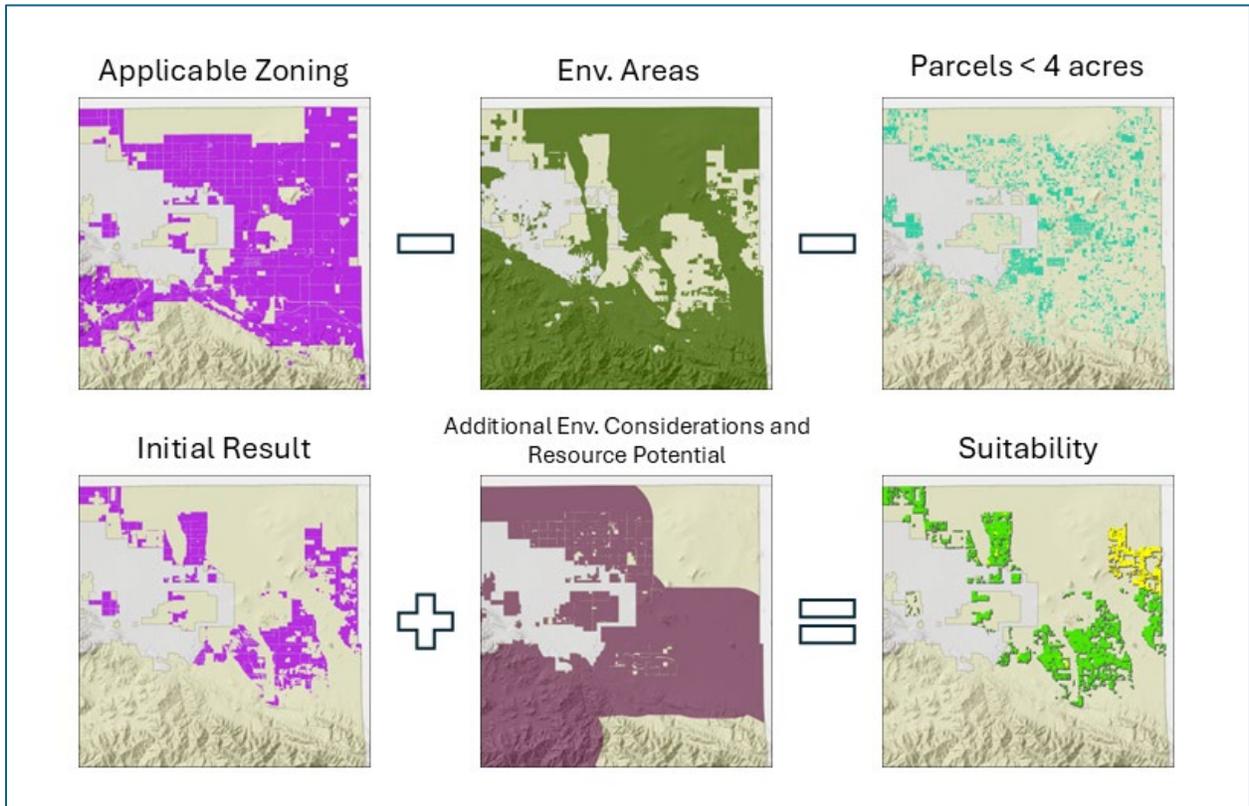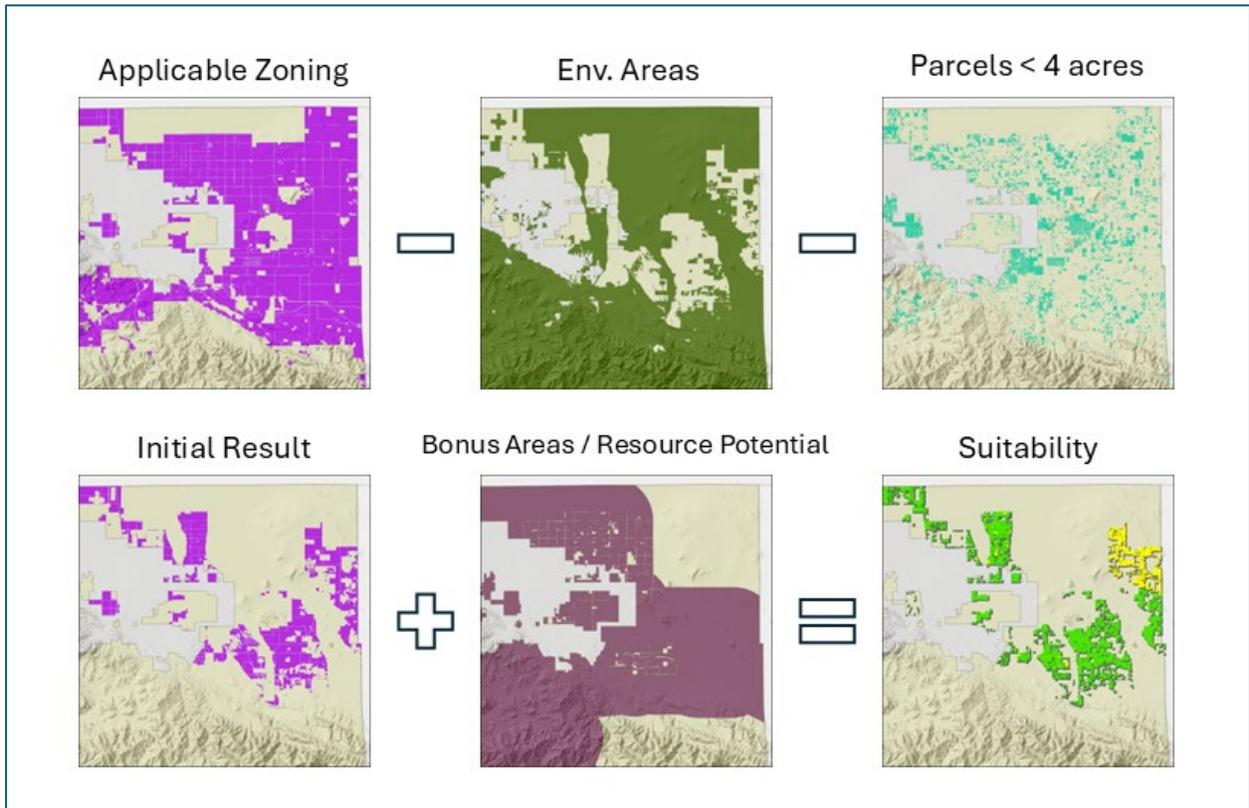
More Suitable qualifications by project type

In order to be coded as 'more suitable', a project type had to meet the base requirements from Table 1, be in the applicable resource potential area, and be within a bonus point layer. Below is a list of what went into the coding of this category type by project:

- **BESS projects** – Within 5 miles of a transmission line or substation AND any one of the remaining three environmental considerations listed in 'Resource Potential and Additional Environmental Considerations.'

- **Solar projects** – Within a Solar Resource Potential area AND any one of the four considerations listed in 'Resource Potential and Additional Environmental Considerations.'

- **Wind (small-scale; up to 1 MW)** – Within a Wind Resource Potential area (4 m/s at 30 m) AND any one of the four considerations listed in 'Resource Potential and Additional Environmental Considerations.'

Quantification of Results

Statewide renewable energy development goals are established by CAISO; regional development targets are identified for each of CAISO's Renewable Energy Resource Region. LA County overlaps three CAISO Renewable Energy Resource Regions: (1) "Greater Tehachapi," (2) "Greater Kramer," and (3) "Greater LA Metro." To interpret the results of the suitability mapping, staff was interested in comparing the total suitable acreage by project type to CAISO's target development goals.

Using ModelBuilder in ArcGIS Pro, a process was set up to go through each of the suitability output layers and intersect each of them with the CAISO Renewable Energy Resource Region. Acreage was first calculated for each CAISO region for unincorporated areas only. It was then intersected with each of the suitability outputs. With this intersected layer, acreage could be summarized by both suitability category and CAISO region.

Interpretations of Results

The suitability analysis process was an iterative one. As mentioned in the Overview section above, models were built to run the analysis with certain criteria inputs. These were viewable to staff with an internal web mapping application as shown in Figure 9 below. Staff and management reviewed the results and made modifications to the criteria inputs or suggested additional areas to exclude from the analysis (for example, Mobile Home Parks). The models were modified with the changed criteria and re-run to produce another output. A side-by-side comparison app was created so that the current suitability output could be compared to the previous one as shown in Figure 10 below.

Figure 9 – this app allows for viewing the suitability outputs of each project type. As the user zooms in, imagery will display
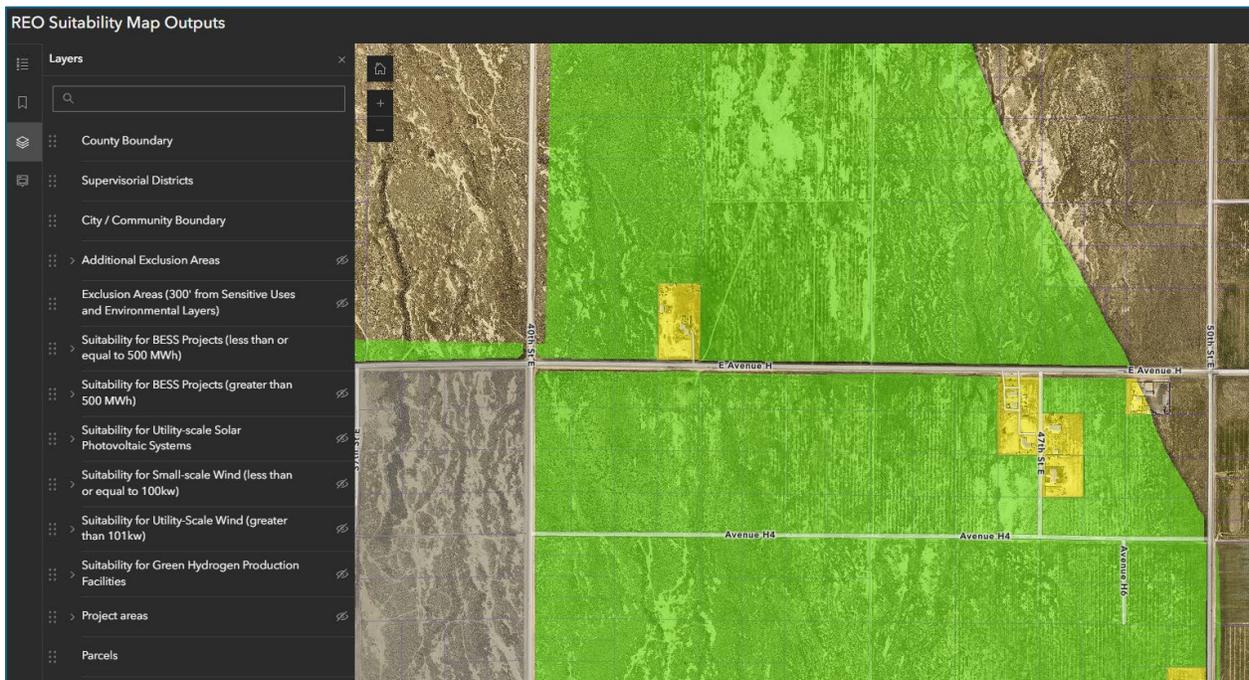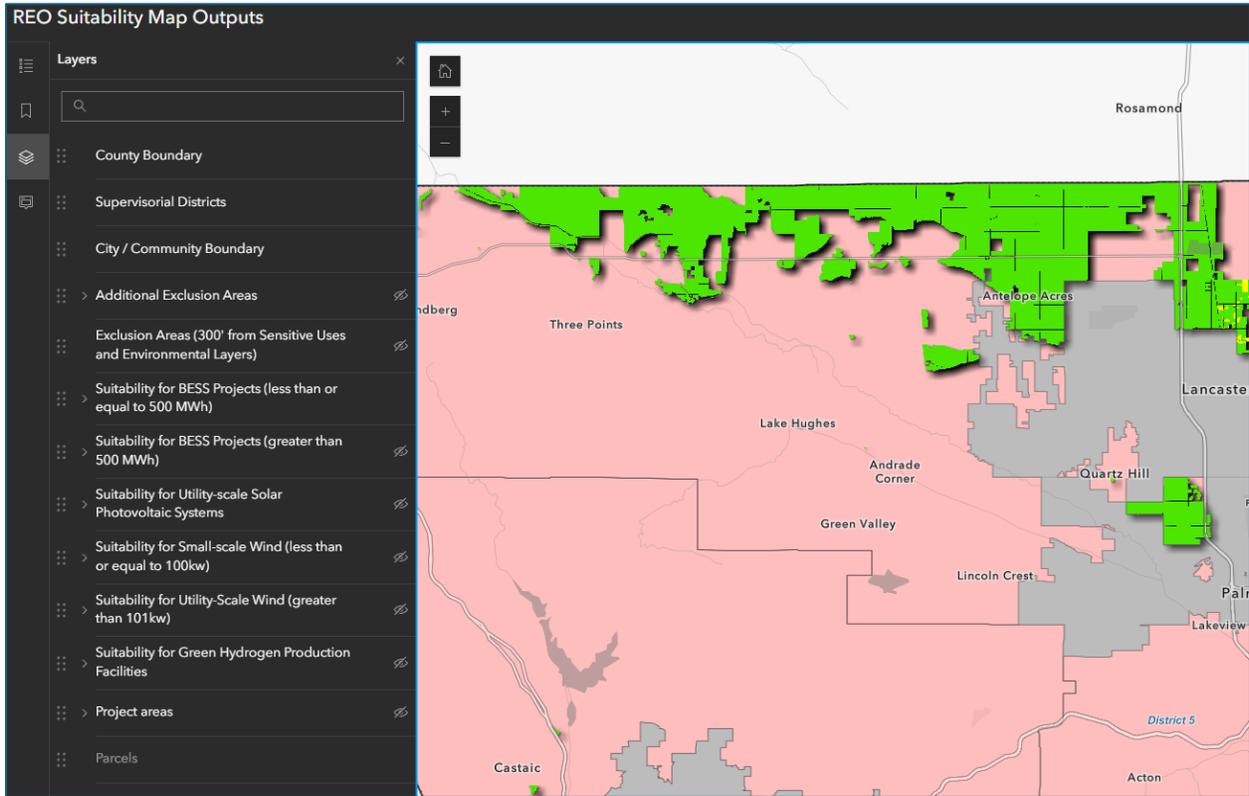
Figure 10a – comparison app allowed for the visualization of the current and previous suitability versions as the suitability criteria were being developed.
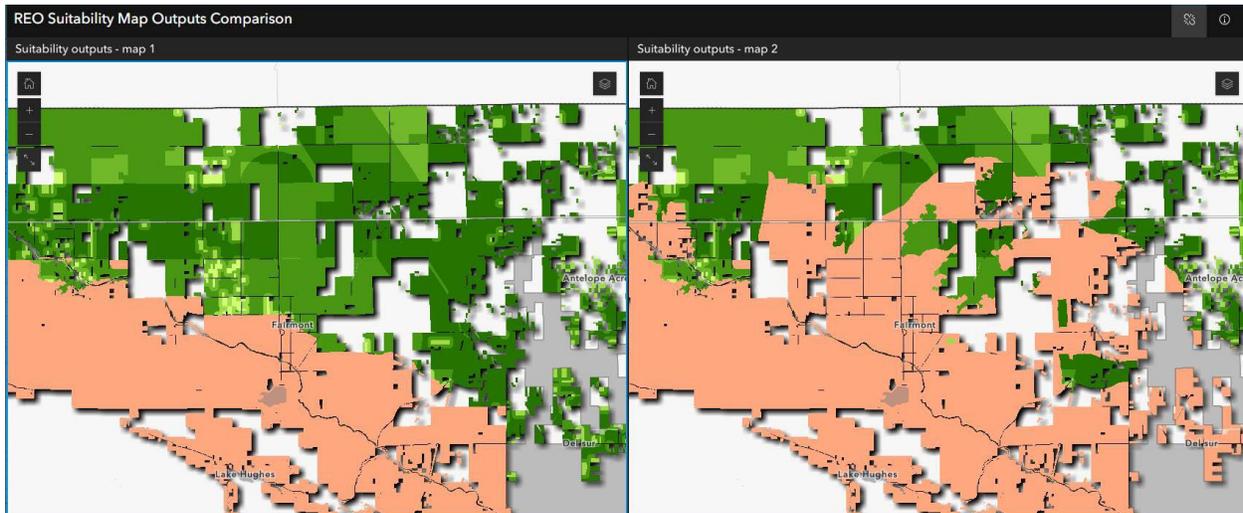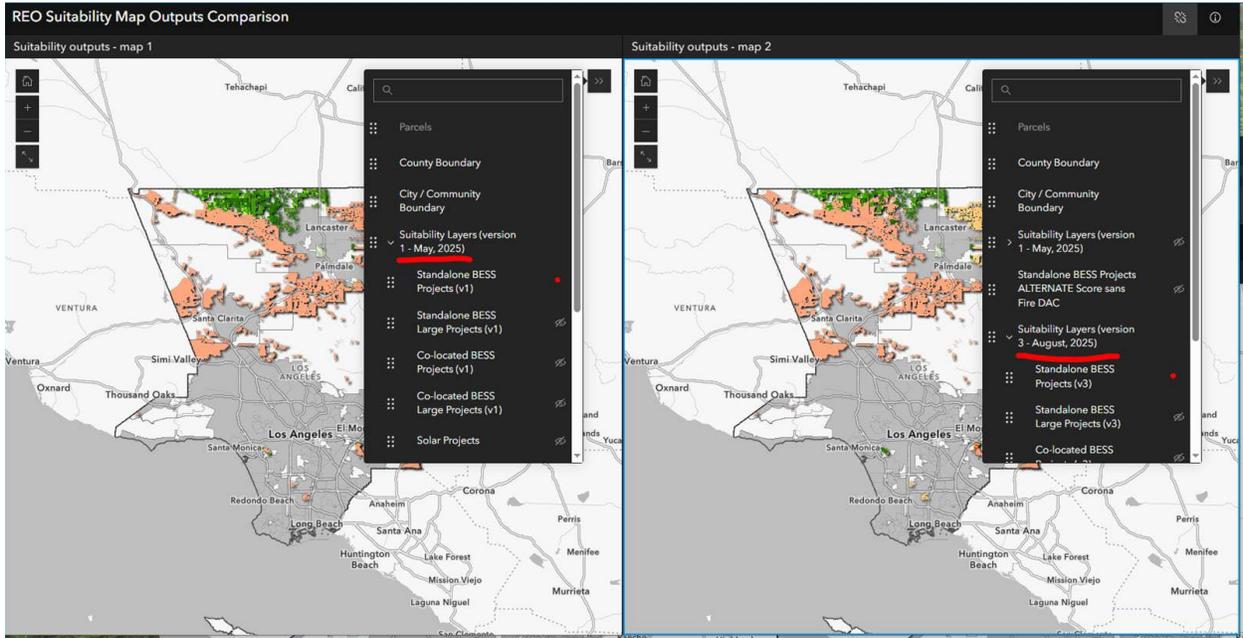
Figure 10b – *the comparison app can also be used to compare two different project types. In this case, small-scale wind (left) is being compared to utility-scale wind (right).*