CHAPTER 1.0 PROJECT DESCRIPTION, LOCATION, AND ENVIRONMENTAL SETTING

1.1 Project Objectives

The County of San Diego (County) recognizes that significant efforts are currently underway on both the federal and state levels to increase the production of energy from renewable sources, such as wind and solar. With the evolution of wind technology, wind energy has become a viable renewable energy resource. The purpose of the proposed project is to facilitate the development of wind turbines in an effort to help meet the current and future federal and state goals for renewable energy production. Specific objectives for the proposed project are as follows:

1. Facilitate the use of renewable wind energy within the County pursuant to existing and future statewide goals.
2. Maximize the production of energy from renewable wind sources to assist the County in furthering federal goals under Section 211 of the Energy Policy Act of 2005.
3. Reduce the potential for energy shortages and outages by facilitating local energy supply.
4. Streamline and clarify the approval process for the development and operation of small wind turbines.
5. Minimize the potential for land use conflicts that may arise through the development of wind turbines.
6. Allow the development of small wind turbines without a discretionary permit.
7. Allow temporary Meteorological Testing (MET) facilities that comply with the height designator of the zone to be permitted without a discretionary permit.
8. Update regulations for large wind turbines to be consistent with current wind turbine technology and designs.

1.2 Project Location

The proposed project, amendments to the Zoning Ordinance, would apply to properties located in the unincorporated portions of the County over which the County has land use jurisdiction (see Figures 1-1 and 1-2). The County is bounded by the Counties of Orange and Riverside to the north, the County of Imperial to the east, the United States/Mexico international border to the south, and the Pacific Ocean to the west. There are two defined project areas: (1) for Zoning Ordinance amendments related to small wind turbines and MET facilities, the project area includes all properties in the unincorporated County over which the County has jurisdiction, as depicted in Figure 1-3; (2) for Zoning Ordinance amendments related to large wind turbines, the project area is limited to wind resource areas within the unincorporated County, as depicted in Figure 1-4. Areas within the County with the most wind resources are located in the east. These key wind resource areas are depicted in Figure 1-4.

1.3 Environmental Setting

The project area consists of two distinct areas that include wind resource areas (see Figures 1-3 and 1-4). The entire project area is generally a semiarid environment that supports a wide range of habitats and biological communities. These habitats and communities range from grasslands to shrublands to coniferous forests. Additionally, these habitats and communities vary greatly depending on the ecoregion, soils and substrate, elevation, and topography. Terrain within the project area varies from west to east, sloping up from the ocean, transitioning to rolling hills, and then steep mountains that finally give way to flat to gently sloping deserts.

The urban portions of the project area are predominantly in the west, either surrounding the City of San Diego or interspersed between the City of San Diego and the other incorporated areas. Farther east, the land is less developed, with the largest developed area in the eastern portion of the project area being the community of Borrego Springs. The areas that have been developed in the eastern portion of the County have been predominantly developed in a rural fashion, with large lot sizes, agricultural or related uses, and limited infrastructure and service availability.

The baseline for the project is normally the physical condition that exists when the Notice of Preparation (NOP) is published. The NOP for the proposed project was published on September 9, 2010. However, the California Environmental Quality Act (CEQA) Guidelines and applicable case law recognize that the date for establishing an environmental baseline cannot be rigid. Physical environmental conditions vary over time; thus, the use of environmental baselines that differ from the date of the NOP may be appropriate when conducting the environmental analysis. The environmental setting for each environmental issue is further explained under Existing Conditions in the beginning of each section of Chapter 2.0.

Regional access within the project area is provided by Interstates 5, 15, and 805, running north and south throughout the western portion of the project area, and Interstate 8, running east and west throughout the central and southern portions of the project area. Additional access within the project area is provided by State Highways 76, 78, and 94, generally running east and west across the project area, and State Highways 67, 79, and 163, generally running north and south across the project area.

1.4 Project Description

The project is composed of proposed amendments to the County's Zoning Ordinance related to wind turbines and MET facilities. The amendments consist of clarifications, deletions, and revisions to provide an updated set of definitions, procedures, and standards for review and permitting of wind turbines and MET facilities. The proposed project includes allowing a temporary MET facility that complies with the height designator of the zone without a

discretionary permit. The proposed project also includes allowing small wind turbines that meet the definition and specifications of the Zoning Ordinance to be developed without a discretionary permit. Although no land use permits would be required, a Zoning Verification Permit would be required prior to issuance of a building permit to verify that each small wind turbine complies with the definition and specifications of the Zoning Ordinance. Large wind turbines, as defined by the Zoning Ordinance, would continue to be subject to Major Use Permit procedures and requirements, and would require separate project-specific environmental review. Amendments to the Zoning Ordinance related to large wind turbines are proposed to bring development parameters up to date with technological changes that affect design standards of wind turbines, as well as to establish a low frequency C-weighted sound level setback. The proposed Zoning Ordinance amendments are provided as Appendix A to this Environmental Impact Report (EIR). The text in Appendix A is presented in ~~strikeout~~ and/or underline text to indicate deleted or proposed new language, respectively.

The project also includes a General Plan Amendment (GPA) intended to accomplish the following: (1) modify the Boulevard chapter of the Mountain Empire Subregional Plan (Boulevard Community Plan) to allow large wind turbine projects through the Major Use Permit process; and (2) allow small wind turbine projects in the Borrego Springs Community Plan but continue to prohibit large wind turbines in areas where viewsheds would be adversely impacted. The potential environmental effects associated with the GPA are included in the project analyzed in this EIR. The GPA is included as Appendix B to this EIR. The text in Appendix B is presented in ~~strikeout~~ and/or underline text to indicate deleted or proposed new language, respectively.

Background of Wind Energy in the County of San Diego

At both federal and state levels, steps are being taken to increase renewable energy production. At the federal level, the Energy Policy Act of 2005 requires the U.S. Department of Energy to study and report on existing natural energy resources, including wind, in support of renewable energy production (42 U.S.C. 15851). At the state level, California's Renewable Portfolio Standard (RPS) program requires utility providers, including San Diego Gas & Electric (SDG&E), to procure at least 1% of retail sales per year from eligible renewable sources until 20% of overall retail sales are procured from eligible renewable sources. California Executive Order S-3-05 (2005) identified greenhouse gas emission (GHG)–reduction targets for the state, providing the impetus for a potential expansion of the RPS program to include a goal of 33% renewable energy by 2020. Additionally, the California Air Resources Board (CARB) issued the draft Climate Change Scoping Plan in June 2008, and a key component of achieving the GHG targets is that California codify and achieve a 33% RPS by 2020 (CARB 2008). The state has also adopted legislation (Assembly Bill (AB) 45, October 11, 2009) to specifically encourage the use of small wind turbines and limit obstacles to their use. The proposed project would help

facilitate the development of wind turbines, which in turn could provide renewable energy sources to meet state and federal goals.

Within the San Diego region, energy use is responsible for more than 90% of GHG emissions (County of San Diego 2009). At 25%, one of the largest contributors is electric power production (County of San Diego 2009). Currently, the region has one of the largest population centers in the United States with over three million people. As the population continues to grow, it is increasingly important to promote measures for reducing GHG emissions, including exploring ways to increase production of electricity from renewable sources. The National Renewable Energy Laboratory (NREL) geographic information system (GIS) team analyzes data related to renewable energy resources, such as wind energy, to establish which technologies are most viable for particular areas. The County contains several key wind resource areas that are ideal for the development of wind energy (refer to Figure 1-3). Classes of wind power are determined by wind power density, a calculation of the efficacy of wind power at a particular location. There are seven classes total; classes 2 through 7 are mapped and categorized in the figures provided. Areas designated class 3 (fair) or greater are suitable for most utility-scale wind turbine projects, whereas class 2 (marginal) areas are marginal for utility-scale scale projects, but may be suitable in rural areas for small projects. Class 1 areas are generally not suitable and are not depicted in the figures (NREL 2010).

Previous Amendments to the County Zoning Ordinance Related to Wind Energy Systems

Beginning in 1985, several amendments have been made to the County's Zoning Ordinance related to wind turbines. The following is a brief history of these previously approved amendments.

On October 10, 1985, the County adopted Ordinance 6857, which included an amendment to the Zoning Ordinance to add the definition for wind turbines, formerly known as wind energy systems. The definition was later amended by Ordinance 9971, adopted February 25, 2009, to clearly separate the definitions of a MET facility and a wind turbine.

On April 23, 1986, the County adopted Ordinance 7117, which amended the Zoning Ordinance to add definitions for small, medium, large, and non-operational wind turbines. The ordinance also added procedures and standards for review and permitting of these wind turbines.

On February 25, 2009, the County Board of Supervisors held a meeting to discuss additional amendments to the Zoning Ordinance regarding small, medium, and large wind turbines. A portion of these amendments was to remove references to California's AB 1207, which was repealed in 2006. The more comprehensive portion of the amendments consisted of revisions to streamline regulations for wind turbines by developing a two-tiered ordinance to simplify the process and update the definitions and standards. The amendments were initially circulated for

public review in March 2010 as a part of Policy/Ordinance Development (POD) 09-006, the Solar Energy Ordinance (formerly Solar and Wind Energy Ordinance). Sections of the Ordinance POD 09-006 related to wind turbines were later moved to a separate ordinance, POD 10-007, due to the need for further environmental review.

In the interim, County staff proposed minor amendments to allow applicants greater flexibility for the development of small-scale, less-impactive wind turbines with an Administrative Permit under the medium wind turbine provisions as a part of POD 10-007. Specifically, these revisions allow five small-scale wind turbines with an Administrative Permit and add findings to ensure neighborhood compatibility. On September 15, 2010, the County Board of Supervisors adopted these interim amendments for POD 10-007, in addition to the amendment to remove references to AB 1207. The remaining comprehensive amendments for POD 10-007 consist of the proposed project analyzed by this EIR.

1.4.1 Project's Components

The proposed project consists of amendments to the County's Zoning Ordinance that would provide an updated set of procedures and standards for review and permitting of wind turbines. Generally, the proposed project is intended to accomplish the following: (1) update regulations for small and large wind turbines and remove the "Wind Turbine System, Medium" section; (2) allow small wind turbines without a discretionary permit if the proposed wind turbine meets the definition and all requirements listed in Zoning Ordinance Section 6951 and obtains a Zoning Verification Permit prior to issuance of a building permit; (3) create a new renewable energy section of the Zoning Ordinance; (4) continue to require a Major Use Permit for large turbines, including case-by-case review and approval; and (5) allow a temporary MET facility that complies with the height designator of the zone in which the facility is located without requiring a discretionary permit.

For large wind turbines, updates to the regulations are necessary to address advancements in technology that have obviated many of the current provisions, as well as to establish a low-frequency C-weighted sound level setback. Small wind turbines would be allowed without a discretionary permit, but other permits may still be required and other regulations may still apply, including but not limited to Zoning Verification Permits and building permits. Small turbines would also be subject to regulations from other agencies, including those relating to water quality and biology.

- The proposed amendments also include allowing a temporary MET facility that complies with the height designator in the zone in which the facility is located without issuance of an Administrative Permit. For a MET facility to be allowed without an Administrative Permit, the proposed facility would need to be consistent with Section 6123 (b), (d), (e),

(f), (g), (h), and (k) of the County Zoning Ordinance and to comply with the height limit of the zone.

- Section 1110 would add definitions for A-Weighted Sound Level (dBA), Background Sound level (L90), C-Weighted Sound level (dBC), Residual Background Sound Criterion, Nacelle, Ridgeline, Trellis Tower, Wind Turbine Height and Wind Turbine Tower Height, Zoning Verification Permit; would revise definitions of Wind Turbine, Small; Wind Turbine, Large; and Wind Turbine Non-Operational; and would delete the definition of Wind Turbine System, Medium.
- Section 6156.z would move Wind Turbine, Small, regulations to new section 6950.
- Section 6158.b would move Wind Turbine, Small, regulations to new section 6951.
- Section 6862 would update regulations regarding abandoned turbines.
- Sections 6950 and 6951 would remove Wind Turbine System, Medium regulations, and insert new Small Wind Turbine section.
- Section 6951 establishes regulations to allow small wind turbines without a discretionary permit if the proposed wind turbine meets the definition and all requirements listed and obtains a Zoning Verification Permit prior to issuance of a building permit.
- Section 6952 would update regulations related to large turbines including revisions to setback and height, and the establishment of a low-frequency(C-weighted) sound limit.

The proposed amendments to the Zoning Ordinance for each section, as described previously, are included as Appendix A. The proposed amendments are described in further detail, as follows, for small and large wind turbines.

Small Wind Turbine

A small wind turbine is defined as a wind turbine, with or without a tower, which has a rated capacity of not more than 50 kilowatts (kW); is consistent with the requirements of existing Zoning Ordinance Sections 6156 and 6951; and generates electricity primarily for use on the same lot on which the wind turbine is located. These turbines would be allowed as an accessory use in all zones, provided the turbine complies with the Renewable Energy Regulations commencing at Zoning Ordinance Section 6950 and obtains a Zoning Verification Permit prior to issuance of a building permit. Small wind turbine projects would still be subject to specified standards and limitations. Certain limitations have been established to address specific potential environmental effects. These environmental design considerations are listed in Table 1-1. They have also have been incorporated into the Zoning Ordinance language as a part of the proposed project.

Administrative Permit: A small wind turbine project that meets all the requirements in Zoning Ordinance Section 6951 but includes more than three tower-mounted turbines or more than five roof-mounted turbines would need an Administrative Permit. Similarly, if a small turbine is proposed on a property designated as Pre-Approved Mitigation Area within the boundaries of the Multiple Species Conservation Program Subarea Plan, an Administrative Permit would be required. The processing requirements for an Administrative Permit are similar to those for a Major Use Permit. Each application for a small wind turbine will be evaluated for consistency with neighborhood compatibility General Plan policies and environmental impacts as required in the Zoning Ordinance for a Major Use Permit; and conditions could be added to an Administrative Permit to address any site-specific concerns, just as conditions are added to a Major Use Permit. An Administrative Permit requires public notice, as well as an opportunity for the local Community Planning Group to review and provide a recommendation for the project. The permit also requires public notice to property owners within 300 feet and to a minimum of 20 different property owners. The final decision on an Administrative Permit is made by the Director of Planning and Land Use and may be appealed to the Planning Commission.

Site Plan: In some cases, where a project is proposed in certain zoning designations, such as a "B" designator or a Specific Plan area, a Site Plan will be required. A site plan would be subject to CEQA review.

MET Facility

A MET facility is defined as a tower with or without guy wires and any other equipment with a component, such as an anemometer or SODAR device, to measure meteorological phenomena, such as wind speed, wind direction, air pressure, rain, snow, or sun exposure. These facilities may be allowed as a temporary use (three years or less) provided they comply with the height designator in the height schedule of the zone in which the facility is located, in addition to complying with requirements of subsections b, d, e, f, g, h, and k of Section 6123 of the Zoning Ordinance. Any MET facilities that do not meet all the requirements will be subject to an Administrative Permit (see description of Administrative Permit above).

Large Wind Turbine

A large wind turbine is defined as a wind turbine, with or without a tower that has a rated capacity of more than 50 kW, and generates electricity for use on or off the same lot on which the turbine is located. Large wind turbines are classified as a Major Impact Services and Utilities use type. Although the proposed project includes amendments to the standards for large wind turbines, each turbine will continue to require a Major Use Permit and the related case-by-case environmental review. Therefore, a project applicant that proposes to construct a large wind turbine will be required to evaluate the project under the requirements for Major Use Permit. The

project applicant will also be required to complete an Application for an Environmental Initial Study (AEIS). The AEIS application submittal is used by the County to determine the appropriate CEQA document (i.e., Negative Declaration or EIR) that will be required to complete environmental review. This EIR will include environmental review related to the proposed Zoning Ordinance amendment for large wind turbines. However, all future large wind turbines will be evaluated on a case-by-case basis under CEQA during the Major Use Permit application process.

1.4.2 CEQA Assumptions

To determine the potential environmental impacts associated with the development of wind turbines, a review of the areas where both small and large wind turbines would likely be constructed and the ground disturbance required was completed.

Small Turbine(s)

Project Area: The project area for small wind turbines includes the entire unincorporated County, over which the County has land use jurisdiction (see Figure 1-3).

Under the proposed Zoning Ordinance amendment, small wind turbines could be constructed as an "accessory use" in residential, commercial, industrial, agricultural, and specific plan zones. An accessory use is defined in Section 1110 of the Zoning Ordinance as "a use customarily incidental and accessory to the principal use of the land or building site, or to a building or other structure located on the same building site as the accessory use." To calculate potential ground disturbance for the development of small wind turbines (approximately 7,724 acres), the project area was divided into six land use categories based on the General Plan Update land use categories; refer to Table 1-2. Federal lands, state lands, national parks, or any other lands where the County does not have jurisdiction were not included as lands available for small wind turbine development.

Ground Disturbance Analysis: The purpose of a small wind turbine is to generate energy that can be used to provide a reliable power source. These wind turbines would, in general, consist of a single turbine; however, the proposed Zoning Ordinance amendment allows up to three tower-mounted wind turbines or five roof-mounted turbines that meet height limits of the zone to be installed on a single lot without a discretionary permit. However, the cumulative energy output of all small wind turbines on a single lot cannot exceed 50 kW, and the turbines are subject to various development parameters.

To determine the ground disturbance that would be required to construct a small wind turbine that would be allowed under the proposed Zoning Ordinance amendment, a review of the various small wind turbines available on the market was completed. Information was obtained from

contacting manufacturers and reviewing specifications available for wind turbines. Three types of supporting structures could be used for a small wind turbine: guyed tower, monopole tower, and rooftop. A rooftop support structure would not require any ground disturbance.

The size and design of a small wind turbine support structure ultimately depends on several variables, including the wind resource potential, soils, topography, and other various site considerations. To evaluate a worst-case ground disturbance footprint that theoretically could result under the proposed Zoning Ordinance amendment, various construction techniques were considered. The proposed zoning ordinance amendment prohibits the use of guyed wire tower systems. Therefore, from a worst-case perspective, a monopole structure would have the greatest ground disturbance.

The proposed Zoning Ordinance amendment would allow up to three small wind turbines with towers and a combined total output of 50 kW to be constructed on a given lot with a height not to exceed 80 feet with the blade in vertical position. To use a conservative example, for a project that constructs a typical monopole support structure with a height not to exceed 120 feet, a foundation of approximately 21 feet by 21 feet would be required (Burgess, pers. comm. 2011). For a foundation of this size, the area to be excavated would be approximately 21 feet square by 8 feet deep and would remove roughly 61 cubic yards, depending on soil type and various other factors. A small wind turbine with a height of 80 feet would require a smaller foundation size. Although the proposed revisions to the Zoning Ordinance would only allow a maximum of 80 feet, the 120-foot scenario was used to be conservative with our construction assumptions. Therefore, for purposes of this worst-case analysis, a foundation size of approximately 441 square feet and excavation of roughly 61 cubic yards per small wind turbine will be utilized. This amounts to approximately 1,323 square feet of ground disturbance and roughly 183 cubic yards of excavation for three small wind turbines on a property. The proposed Zoning Ordinance amendment would allow up to three wind turbines to be constructed without a discretionary permit, which could have a total disturbed area of 1,323 square feet per lot. A review was completed to determine the number of parcels located on lands under County jurisdiction (project area) and to determine a worst-case ground disturbance that could result in the event three small wind turbines were built on every parcel using a monopole support structure and without obtaining a discretionary permit. Table 1-2 provides a summary of the disturbance area that could result and the number of parcels located within land use designations where wind turbines could be constructed without a discretionary permit. Although the number of parcels has been used to determine a worst-case footprint, several parcels may be located within one lot. Therefore, the ground disturbance represented in Table 1-2 is a very conservative representation of potential disturbance from small wind turbines allowed without a discretionary permit.

It should be noted that the aboveground disturbance that could result does not include design parameters associated with physical wind barriers such as trees, buildings, and bluffs that are

considered on a site-specific basis. Pursuant to the *Permitting Small Wind Turbines* handbook (AWEA 2003), turbines should be elevated so that the bottom tips of their blades pass three times above the tallest upwind barrier, or at least 25 to 30 feet above any physical wind barriers within 300 to 500 feet of the tower or local tree line, whichever is higher.

Level of CEQA Analysis: The proposed amendments related to large wind turbines consist of updated definitions and requirements related to setbacks, height, noise, and locations where large turbines are permissible. All future large turbine projects will be subject to discretionary review and required to obtain a Major Use Permit. As part of the County's discretionary review process, all future large wind turbine projects would be subject to site-specific environmental review under CEQA and would be required to implement measures to minimize environmental impacts to the extent feasible. The proposed project does, however, include reductions in setbacks and increases in allowable height. Therefore, the environmental review completed as part of this EIR is prepared with the understanding that while future large wind turbine projects will be subject to discretionary review and evaluated under CEQA, certain revisions as a part of the Zoning Ordinance update may directly, indirectly, or cumulatively result in significant impacts. It is important to note that this Zoning Ordinance amendment does not propose or approve any wind turbines. Given the lack of any specific proposed wind turbines, the analysis in the EIR must, of necessity, be at a general level.

1.4.3 Technical, Economic, and Environmental Characteristics

The following provides a discussion of the project's technical, economic, and environmental characteristics.

Technical Considerations: Wind turbines come in various sizes and configurations and are built from a wide range of materials. Modern wind turbines fall into two basic categories: horizontal-axis and vertical-axis (see Figure 1-5). The most widely used wind turbines today are horizontal-axis (see Figure 1-6). This is largely because the rotors of vertical-axis wind turbines are located closer to the ground where wind speeds are lower; therefore, these types of systems often require a larger footprint and greater height to produce as much energy as a horizontal-axis turbine. Refer to Figures 1-7a through 1-7d for photos of typical small and large wind turbines.

Generally, a wind turbine consists of a rotor, tower, and nacelle. The rotor consists of wing-shaped blades, usually three total, attached to a hub that connects to the top of the tower. The wing-shaped blades on the rotor harvest the energy from the wind stream. The rotor converts the kinetic energy in the wind to rotational energy transmitted through the drivetrain to the generator. Electricity generated can be connected directly to the load, which is the power consumed by the circuit, or can be transmitted to the utility grid. The tower, which is made from tubular steel, concrete, or steel lattice, supports the rotor and nacelle. The nacelle sits atop the

tower and houses the drivetrain consisting of a gearbox, low- and high-speed shafts, support bearings, the generator, the controller, and the brake (refer to Figure 1-8 for further detail).

There are three types of wind turbine towers, described as follows. (1) Guyed towers are made by narrow, steep pipe and supported by guy wires. The tower is installed on a small poured-concrete pad, and each of the guy wires is also fastened to a concrete footing. One advantage of these towers is their relatively low cost and easy installation. However, because the guy wires extend out far from the tower itself, they require proportionally more land than freestanding wind turbine towers. (2) Lattice towers are made by welded steel. These towers provide a medium cost solution with easy maintenance. However, lattice towers are often perceived as having a greater aesthetic impact and also may contribute to biological impacts by providing potential perching or nesting areas that subject birds to the sweep area of the rotor blades. (3) Monopole towers are a free standing design that has a minimal space requirement. These towers are most often used today. Refer to Figures 1-9a and 1-9b for photos of small wind turbine supporting structures.

Economic Considerations: The proposed project would help facilitate the development of a local energy supply, thereby minimizing the economic and social impacts associated with electrical energy production from non-renewable resources. Energy supplied by wind turbines can help keep dollars spent on electricity in local communities, instead of funds being spent to buy power from elsewhere (AWEA 2010). Particularly in today's society, small wind turbines may provide an attractive investment for rural residential areas with high-quality wind resource potential. Small turbines can provide residents with relief from high energy costs, as well as the ability to contribute to a larger public benefit by reducing demand on utility systems that are currently primarily supplied by fossil fuels. In recent years, centralized fossil fuel plants have left customers vulnerable to power shortages and sharp price increases, specifically in rural areas. The development of large-scale power plants has become riskier, thereby creating the need for more secure and sustainable forms of generation sources, such as wind turbine projects (AWEA 2003). Large wind turbine projects can benefit economies of rural communities by providing a steady income through lease or royalty payments to farmers and other landowners (AWEA 2010). Wind turbines can also reduce "hidden costs" resulting from air pollution and health care.

Environmental Considerations: A goal of the proposed project is to facilitate the use of renewable energy, particularly wind turbines. Wind energy provides a number of environmental benefits, such as reductions in air pollution, GHG emissions, water pollution, and water usage as compared to other sources of energy. However, wind turbines, like other energy technologies, have environmental impacts. To analyze the potential environmental impacts associated with small wind turbines, information was gathered from conversations with several manufacturers, in addition to product literature for a variety of models. Specifically, information was collected from seven leading U.S. wind turbine manufacturers and suppliers for small wind turbine models that are eligible for financial incentives by the California Energy Commission. Information was also

collected from the U.S. Department of Energy's *Small Wind Electric Systems: A U.S. Consumer's Guide*. The following discussion summarizes the research findings and their relation to various environmental considerations.

A small wind turbine has a lifespan of 20 to 30 years. Minimal annual maintenance is required and is most commonly provided by the local dealer or installer through a service and maintenance program. However, if the owners have the expertise, they may elect to provide the annual maintenance service themselves, which mainly consists of checking electrical connections, checking that bearings are adequately lubricated, listening for any unusual noise, and inspecting blades for any damage with a pair of binoculars. Bearing lubrication is one of the most important maintenance requirements because this is the only flammable component of most small wind turbines. Many small wind turbines contain fire suppression equipment installed in the nacelle in case of emergencies. As for other potential fire hazards, all components of the system are protected in the body of the turbine, which is usually made up of nonflammable aluminum or steel. The blades usually consist of a reinforced fiberglass composite that is nonflammable.

Potential fire risks associated with large wind turbines may stem from improperly installed electrical equipment (e.g., technical defects or components in the power electronics; failure of power switches; failure of control electronics; high electrical resistance caused by insufficient contact surface with electrical connections, such as loose connections; insufficient electrical protection; faulty design of equipment; no pole-mounted disconnection switches; inadequate surge protection; inadequate grounding due to incorrect design or improper installation). Fire protection and prevention features, such as smoke detectors, arc-flash sensors, and over-current sensing transducers are included in these turbines. Fire risks are also associated with transformers. Transformers contain cooling oil, which can be ignited by electrical arc. However, transformers utilize fire walls for protection and often have secondary containment to control any oil that could be released.

Typical small turbine systems that are connected to the grid do not require transformers. Ground wires are installed by the dealer or installer; technical specifications for installing and wiring systems are found in the manufacturer's product literature. Although no setback requirements are specified by the dealers, installers, or manufacturers, a general rule of thumb is to ensure that the rotor blades are at least 20 to 30 feet above any obstacle within 300 feet. This general rule is to ensure an adequate flow of wind to the turbine. The rule is not for safety reasons. Also, all small wind turbine projects will be required to meet the development parameters, including setbacks, as specified in the Zoning Ordinance (see Figure 1-10a). Large wind turbine projects must also meet development parameters set forth in the Zoning Ordinance (refer to Figure 1-10b). These setbacks help to reduce potential environmental impacts, such as noise, fire, and land use compatibility.

In compliance with Federal Aviation Administration (FAA) rules (Advisory Circular 70/7460-1K: Obstruction Marking and Lighting), all turbine components, including towers, nacelles, and rotors, are required to be painted or finished using low-reflectivity, neutral white colors if they exceed 200 feet in height. Exterior lighting on turbines would be limited to FAA aviation warning lights, as necessary. The minimum required number of lights would be installed, and the minimum intensity of light would be used to meet FAA standards. These requirements will help minimize aesthetic and biological impacts.

1.5 Intended Uses of the Environmental Impact Report

This EIR is an informational document that will inform public agency decision makers and the public generally about the significant environmental effects of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project. An EIR has been prepared because the proposed wind turbine–related amendments would allow certain small wind turbines without a discretionary permit. The EIR has also been prepared because the proposed Zoning Ordinance amendment would allow MET facilities that do not exceed the height of the zone in which the facility is proposed without a discretionary permit. The EIR also analyzes proposed changes to the regulations for large wind turbines to update the development parameters to be consistent with modern design specifications. Large wind turbines, however, would continue to be reviewed on a case-by-case basis under CEQA through the Major Use Permit process. The EIR analysis also includes the proposed GPA to modify the Boulevard Community Plan to allow large wind turbine projects through the Major Use Permit process, and modify the Borrego Springs Community Plan to allow small wind turbine projects but continue to prohibit large wind turbines in areas where viewsheds would be adversely impacted.

This EIR has been prepared in accordance with the requirements of the *County of San Diego Environmental Impact Report Format and General Content Requirements* (2006), the statute and guidelines of CEQA (Public Resources Code, Section 21000 et seq.), and the California Code of Regulations (CCR) (14 CCR 15000 et seq.). The NOP released for public review in September 2010 and associated comment letters received during the public review period are included as Appendix C to this EIR. The Initial Study prepared for the proposed project is included as Appendix D. This EIR addresses issues identified in the Initial Study and comments received regarding the NOP.

This EIR was made available for review by members of the public and public agencies for 45 days to provide comments "on the sufficiency of the document in identifying and analyzing the possible impacts on the environment and ways in which the significant effects of the project might be avoided or mitigated" as stated in CEQA Guidelines, Section 15204 (14 CCR 15000 et seq.).

As the designated Lead Agency, the County is responsible for preparing this document. The decision to approve the proposed project is within the purview of the County Board of Supervisors. When deciding whether to approve the project, the County will use the information included in this EIR to consider potential impacts on the physical environment associated with the project.

The County will consider written comments received on the EIR in making its decision to certify the EIR as complete and in compliance with CEQA, and also whether to approve or deny the project. Environmental considerations and economic and social factors will be weighed to determine the most appropriate course of action. Subsequent to certification of the EIR, agencies with permitting authority over future wind turbine projects may use the EIR as the basis for their evaluation of environmental effects of the project and approval or denial of applicable permits.

1.5.1 Project Approvals/Permits

If the County approves the proposed project, no other permits or approvals would be required to implement the changes to the Zoning Ordinance. However, specific wind turbine projects that may be proposed under the amended Zoning Ordinance may require other permits and approvals. A list of future discretionary actions/permits that may be required for some of the specific projects developed in accordance with the amended Zoning Ordinance is included in Table 1-3, Matrix of Potential Approvals/Permits. For example, any grading or clearing would require a permit based on the amount of soil to be moved or the vegetation to be cleared.

Building and Demolition Permits. If building or removal of any structure is required in order to construct a wind turbine, future projects may require either a building or a demolition permit. Although these are both ministerial permits, applicants must adhere to all applicable regulations. Exact requirements for building or demolition permits are dependent upon the type of structure proposed.

Grading Permits. The County Grading, Clearing, and Watercourses Ordinance (Grading Ordinance) is contained in Title 8, Division 7 of the Code of Regulatory Ordinances. All wind turbine projects involving grading, clearing, and/or removal of natural vegetation would likely require a grading or clearing permit. Proposed grading activities must meet requirements of the Grading Ordinance, including those regarding sensitive areas, setbacks, and stormwater and dust control standards.

Major Use Permits. All large wind turbine projects will require a Major Use Permit. Each application for a Major Use Permit will be evaluated for neighborhood compatibility, General Plan consistency, and environmental impacts, as required in the Zoning Ordinance, and conditions could be added to address any site-specific concerns.

1.5.2 Related Environmental Review and Consultation Requirements

Pursuant to the CEQA Guidelines (Section 15365), the County prepared an NOP for this EIR. The NOP was publicly circulated for 30 days beginning September 9, 2010. The County held a scoping meeting on September 21, 2010, to provide the responsible agencies with information about the CEQA process and to provide further opportunities to identify environmental issues and alternatives for consideration in the EIR. Public comments received during the NOP scoping process are provided in Appendix C.

1.6 Project Inconsistencies with Applicable Regional and General Plans

Planning documents reviewed for the proposed project include the County's General Plan and ordinances. Other planning documents reviewed for the proposed project include the Regional Air Quality Strategy for the San Diego County Air Pollution Control District, the California Water Quality Control Board (Region 9, San Diego) Basin Plan, County of San Diego Multiple Species Conservation Program, and the Draft North County Multiple Species Conservation Program. In addition, the County has reviewed the Draft Conservation Strategy for the future East County MSCP. No inconsistencies were found.

1.7 List of Past, Present, and Reasonably Anticipated Future Projects in the Project Area

The CEQA Guidelines Section 15355 defines cumulative effects as two or more individual effects, which when considered together are considerable or which compound or increase other environmental impacts. The CEQA Guidelines further state that individual effects may be changes resulting from a single project or a number of separate projects, or the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable future projects. The CEQA Guidelines Section 15130 allows for the use of two alternative methods to determine the scope of projects to analyze cumulative impacts.

List Method: A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency

General Plan Projection Method: A summary of projects contained in an adopted general plan or related planning document, or in a prior environmental document, that have been adopted or certified, which describe or evaluate regional or area-wide conditions contributing to the cumulative impact.

The cumulative analysis conducted for this EIR is based on both the list method and general plan projection method. For projects located outside the control of the agency, such as those located in tribal lands or adjacent counties, the list method is used.

Each environmental issue area within this EIR includes a discussion of potential cumulative impacts based on the methods previously described. The following list of categories serves as the foundation on which the cumulative analysis approach has been based. Within each section, there are a number of specific projects that could be cumulatively considerable, and for each environmental issue area, the categories and example projects are described.

- County of San Diego General Plan Update and associated EIR
- San Diego Air Pollution Control District Regional Air Quality Strategies and portions of the State Implementation Plan that relate to the San Diego air basin
- San Diego Association of Governments Regional Comprehensive Plan
- Private projects not included in the General Plan Update, including GPAs, Specific Plan Amendments, Tentative Maps/Tentative Parcel Maps, and Major Use Permits (see Table 1-4a)
- Tribal Lands List of Projects (see Table 1-4b)Baja California, Mexico, List of Projects (see Table 1-4c)
- Other Projects of Regional Significance (see Table 1-4d). These are regionally significant projects that could affect the project area.

The assessment of potential cumulative impacts involves consideration of the proposed project in combination with the growth in the region. For purposes of the cumulative discussion, the main difference between activities currently allowed under the existing Zoning Ordinance and those proposed under the Zoning Ordinance amendment is that the development of small wind turbines and temporary MET facilities that meet certain requirements would be allowed without a discretionary permit, rather than requiring an Administrative Permit that would entail additional environmental review.

1.8 Growth-Inducing Effects

CEQA requires a discussion of the ways in which a proposed project could induce growth. Growth-inducing impacts are those that foster economic or population growth, or the construction of new development, either directly or indirectly, in the surrounding environment. In addition, the potential for characteristics of the project to encourage or facilitate additional growth that could significantly affect the environment, either individually or cumulatively, must be considered.

The proposed project would encourage renewable energy growth within the County from the development of wind turbines and MET facilities. Although the anticipated growth of the renewable energy industry from the proposed ordinance amendments may create additional jobs, it would not result in substantial economic or population growth. Employment of construction

and operational personnel would most likely be drawn from local populations, creating both temporary and permanent employment in the community. However, the resulting growth-inducing effect from these increased employment opportunities within the County would be minimal. The limited scale of wind turbine construction and operations would have little effect on base employment within the San Diego region.

Additionally, the development of wind turbines and MET facilities would not induce substantial population growth. The proposed Zoning Ordinance amendments do not propose any physical or regulatory changes that would remove a restriction to or encourage population growth in an area including, but not limited to, the following: new or extended infrastructure or public facilities; new commercial or industrial facilities; large-scale residential development; accelerated conversion of homes to commercial or multifamily use; regulatory changes including GPAs encouraging population growth, specific plan amendments, zone reclassifications, or sewer or water annexations; or Local Agency Formation Commission annexation actions. Although the uses supported by wind turbines or MET facilities may expand, residential uses will continue to be allowed in conjunction with those uses. Wind turbines would supplement residential use and would not encourage housing growth in the County. Additionally, the project does not increase density or intensity of land use.

Table 1-1
Environmental Design Considerations – Small Wind Turbine

Issue Area	Environmental Design Considerations
	Small Wind Turbine
Aesthetics	A wind turbine tower that exceeds the height limit of the zone shall be set back from all property lines, private road easements, and public roads by a distance equal to the wind turbine s height or the applicable setback requirements of the zone, whichever is greater.
	The wind turbine height, from existing grade at the base of the tower to the highest point of the turbine blade when in use, may exceed the height limit of the zone in accordance with Section 4620.j, but it shall not exceed 80 feet.
	Tower structure lighting shall be prohibited unless required by law.
	The use of trellis-style towers is prohibited.
	The use of guy wires is prohibited; turbine towers shall be self-supporting.
	Small wind turbines towers are prohibited on ridgelines.
	All power lines connecting turbine towers and/or generators to a structure(s) shall be installed underground.
Cultural	Wind turbines shall be prohibited on all sites listed in the National Register of Historic Places or the California Register of Historical Resources.
Biology	No part of the wind turbine shall be closer than 300 feet or five times the turbine height, whichever is greater, from power transmission towers and lines.
	No part of the wind turbine shall be closer than 300 feet or five times the turbine height, whichever is greater, from blue line watercourse(s) as identified on the United States Geological Survey Topographic Map.
	No part of the wind turbine shall be closer than 300 feet or five times the turbine height, whichever is greater, from significant roost sites for bat species as mapped on the California Natural Diversity Database and San Diego Natural History Museum maps.
	No part of the wind turbine shall be closer than 300 feet or five times the turbine height, whichever is greater, from riparian vegetation as identified on the County Wetland Vegetation Map.
	No part of the wind turbine shall be closer than 300 feet or five times the turbine height, whichever is greater, from recorded open space easement and designated preserve areas
	No part of a wind turbine shall be closer than 4,000 feet from a known golden eagle nest site.
	The area of disturbance for a small wind turbine shall be limited to a 25-foot radius around the base of the tower and an access path to the tower that is a maximum of four feet wide.
	Tower structure lighting shall be prohibited unless required by law.
	The use of trellis-style towers is prohibited.
	The use of guy wires is prohibited; turbine towers shall be self-supporting.
	Small wind turbines towers are prohibited on ridgelines. Small turbines shall not encroach into the airspace above ridgelines.
	A wind turbine tower that exceeds the height limit of the zone shall be set back from all property lines, conservation easements, private road easements, and public roads by a distance equal to the wind turbine height or the applicable setback requirements of the zone, whichever is greater.
	The entire area within 10 feet of the base of a turbine tower shall be cleared of all vegetation and shall be covered with gravel, mulch, or other similar material to prevent the growth of vegetation.
	All power lines connecting turbine towers and/or generators to a structure(s) shall be installed underground.
	Small turbines are allowed on property designated as Pre-Approved Mitigation Area within the boundaries of the Multiple Species Conservation Program Subarea Plan only with an Administrative Permit.

Table 1-1
Environmental Design Considerations – Small Wind Turbine

Issue Area	Environmental Design Considerations
Noise	A small wind turbine shall comply with the sound level limits in the County Noise Ordinance, County Code Section 36.401 et seq.
	The applicant shall provide information specifying the rated capacity of the proposed wind turbine when operating at the proposed location(s) will not exceed 50 kW.
Hazards	Wind turbines shall be equipped with manual and automatic over-speed controls.
	No part of the system shall be closer than 30 feet to any property line. No part of the system when installed at grade shall be closer than 10 feet to any existing structure.
	Wind turbines must also meet fire code setback requirements.
	Wind turbines shall be certified by the California Energy Commission or Approved by the Director of Planning and Development Services.

Table 1-2
Small Wind Turbine Worst-Case Ground Disturbance per County General Plan Update Land Use Designations

Land Use	Number of Parcels[1]	Worst-Case Footprint (square feet)[2]	Ground Disturbance (square feet)	Ground Disturbance (acres)
Village Residential	82,460	1,323	109,094,580	2,504
Semi-Rural Residential	79,680	1,323	105,416,640	2,420
Rural Residential	29,384	1,323	38,875,032	892
Commercial	5,948	1,323	7,869,204	181
Industrial	1,503	1,323	1,988,469	46
Specific Plan Area	55,334	1,323	73,206,882	1,681
Total	186,978	N/A	336,450,807	7,724

Notes:

[1] Parcels include all assessor's parcel numbers (APNs) designated as residential, commercial, industrial, or specific plan land uses as categorized above, which would allow wind turbines as an accessory use without a discretionary permit under the proposed project. Some parcels, however, include site constraints that may preclude the development of up to three wind turbines due to the presence of steep slopes, historic resources, noise ordinance requirements, etc., or that may have insufficient square footage necessary to meet the development parameters.

[2] Worst-case footprint = the development of three typical monopole supporting wind turbine structures with a height not to exceed 120 feet. This was selected as the worst-case scenario because it requires the largest foundation size, at approximately 25 feet by 25 feet per turbine system. However, foundations vary by site and depend on factors such as wind speeds, soil type, overall stability, bearing capacity, etc.

Table 1-3
Matrix of Potential Approvals/Permits

Permit Type/Action	Agency
Project Approval/Certification of EIR	County of San Diego
Grading Permit	County of San Diego
Variance	County of San Diego
Administrative Permit	County of San Diego
Major Use Permit	County of San Diego
Regional General Permit	ACOE
1602 Streambed Alteration Agreement	CDFG
404 Permit Federal Clean Water Act – Dredge and Fill	ACOE
401 Permit Water Quality Certification	RWQCB/SWRCB
Section 7 Consultation or Section 10a Incidental Take Permit	USFWS
General Construction Stormwater Permit	RWQCB
National Pollutant Discharge Elimination System Permit	RWQCB

Notes:
ACOE = U.S. Army Corps of Engineers
RWQCB = Regional Water Quality Control Board
CDFG = California Department of Fish and Game
USFWS = U.S. Fish and Wildlife Service
SWRCB = State Water Resource Control Board

Table 1-4a
Private Projects Not Included in the General Plan Update

Project Name	Required Approvals	Community	Dwelling Units	Acres
Park Alpine (TM 5433)	TM	Alpine	41	117.54
Rancho Nuevo (TM 5475)	TM	Alpine	18	60.14
Mckany (TPM 21044)	TPM	Alpine	4	1.53
Daoud Subdivision (TPM 20832)	TPM	Alpine	3	23.91
West Lilac Farms I & II (TM 5276)	TM	Bonsall	34	92.00
Dabbs (TM 5346)	TM	Bonsall	9	38.37
Merriam Mountains (GPA 04-006) (1)	GPA/SP/TM/REZ	N. County Metro and Bonsall	2700	2,327.00
Brisa Del Mar (TM 5492)	TM	Bonsall	27	206.00
Cunningham (TPM 20788)	TPM	Bonsall	3	26.11
Stehly Caminito Quieto (TPM 20799)	TPM	Bonsall	4	11.69
Tran (TPM 20835)	TPM	Bonsall	5	16.86
Pfaff (TPM 21016)	TPM	Bonsall	2	7.79
Marquart Ranch (TM 5410)	TM	Bonsall	9	44.20
Twin Oaks 4 (TPM 20954)	TPM	Bonsall	4	37.93
Palisades Estates (TM 5158)	TM	Bonsall	38	408.40
Kendall Family Trust (TPM 20849)	TPM	Bonsall	2	5.01
Yaqui Pass (TM 5552)	TM	Borrego Springs	330	534.43
Pine Creek Ranch (TM 5236)	TM	Central Mountain	19	109.08
Pine Valley Park Estates (SP 03-001)	GPA/SP/REZ/TM	Central Mountain	22	38.30
The Slope (TPM 20765)	TPM	Central Mountain	4	35.00
Kenyon (TPM 20857)	TPM	Central Mountain	3	15.88
Shellstrom (TPM 21094)	TPM	Central Mountain	4	23.04
Kemerko (TPM 20716)	TPM	Crest/Dehesa	5	93.10
Walls (TPM 21008)	TPM	Crest/Dehesa	5	72.00
Kearney (TPM 20715)	TPM	Crest/Dehesa	3	13.30
Williams (TPM 20875)	TPM	Crest/Dehesa	2	9.00
Bursztyn (TPM 20840)	TPM	Crest/Dehesa	4	23.52
Woodhead (TPM 20541)	TPM	Crest/Dehesa	4	24.00
Mesquite Trails Ranch (SP 04-004)	SP/TM/MUP	Desert	480	309.51
Borrego Country Club Estates (TM 5487)(1)	TM	Desert	148	172.07
Borrego 50 (TM 5511)(1)	TM	Desert	34	50.09
Borrego Springs Senior Condominiums (TM 5512)	TM	Desert	122	5.24
Yaqui Pass (TPM 5513)(1)	TPM	Desert	72	33.10
Inland Land Development (TM 5528)	TM	Desert	331	136.67

Table 1-4a
Private Projects Not Included in the General Plan Update

Project Name	Required Approvals	Community	Dwelling Units	Acres
Desert Diamond (TPM 21017)	TPM	Desert	5	169.84
Bowen/Jonas (TPM 21027)	TPM	Desert	5	80.00
Henderson Canyon (TPM 21058)	TPM	Desert	4	114.90
Nickerson (TPM 2111)	TPM	Fallbrook	2	0.78
Chandler (TM 5284)	TM	Fallbrook	12	80.00
Passerelle, Campus Park (SP 03-004)(1)	GPA/SPA/REZ/TM	Fallbrook	1,088	500.00
Meadowood (GPA 04-002)	GPA/SP/REZ/TM	Fallbrook	886	390.00
Fallbrook Oaks (GPA 05-006)	GPA/TM/REZ	Fallbrook	18	26.40
Fallbrook Ranch (TM 5532)	TM	Fallbrook	11	41.00
Campus Park West (GPA 05-003)(1)	GPA/SPA/REZ/TM	Fallbrook	355	116.00
Pala Mesa Resort (SPA 03-005)	SPA/TM	Fallbrook	144	181.00
Hoskings Ranch, Genesee Properties (TM 5312)	TM	Jamul/Dulzura	33	1,417.40
Preski/Gonya (TPM 20720)	TPM	Jamul/Dulzura	4	40.33
Pijnenburg (TPM 20778)	TPM	Jamul/Dulzura	5	76.40
Hoskings Ranch Road (TPM 20863)	TPM	Jamul/Dulzura	3	150.27
Skyline Truck Trail (TPM 21028)	TPM	Jamul/Dulzura	5	47.78
Allen (TPM 21045)	TPM	Jamul/Dulzura	2	24.14
Hamilton (TPM 21060)	TPM	Jamul/Dulzura	2	24.29
Renteria (TPM 21107)	TPM	Jamul/Dulzura	4	60.38
Tibbot (TPM 20686)	TPM	Jamul/Dulzura	4	35.51
Robnett (TPM 20726)	TPM	Jamul/Dulzura	5	85.95
Los Coches Development LLC (TM 5306)	TM	Lakeside	73	78.80
Schmidt Project (TM 5434)	TM	Lakeside	4	114.94
Hiel (TPM 20925)	TPM	Lakeside	2	0.71
Parkside Villa (TPM 21048)	TPM	Lakeside	3	0.00
Bradley Avenue (TM 5422)	TM	Lakeside	30	1.25
Lakeside (TPM 20916)	TPM	Lakeside	3	1.21
Harvest Glen (TM 5366)	TM	Mountain Empire	40	284.43
Vaughan (TM 5417)	TM	Mountain Empire	13	81.15
Star Ranch (GPA 05-008)	GPA/SP/REZ/TM	Mountain Empire	460	2,160.00
Potrero Valley Road (TM 5484)	TM	Mountain Empire	8	73.50
Arellano (TPM 20756)	TPM	Mountain Empire	3	17.27
Volli (TPM 20889)	TPM	Mountain Empire	4	40.00
Elder (TPM 20981)	TPM	Mountain Empire	5	109.25

Table 1-4a
Private Projects Not Included in the General Plan Update

Project Name	Required Approvals	Community	Dwelling Units	Acres
Heald Development (TPM 21014)	TPM	Mountain Empire	5	36.00
Davis-Inman (TPM 21081)	TPM	Mountain Empire	4	97.00
Grizzle (TPM 20719)	TPM	Mountain Empire	5	245.00
Bartlett (TPM 20754)	TPM	Mountain Empire	4	164.70
Jacumba Valley Ranch (GPA 06-014)[1]	GPA/SP/REZ/TM	Mountain Empire	2,125	1,216.00
Sugarbush (GPA 05-010)	GPA/SP/REZ/TM	N. County Metro	53	115.50
Kawano Subdivision (TM 5401)	TM	N. County Metro	9	10.27
Pizzuto Property (TPM 20846)	TPM	N. County Metro	3	40.00
Montiel Road Townhomes (GPA 04-007)	GPA/TM	N. County Metro	70	4.86
Rimsa TPM (TPM 21095)	TPM	N. County Metro	2	12.50
Ranchita Subdivision (TM 5516)	TM	North Mountain	13	147.88
Shadow Run Ranch LLC (TM 5223)	TM	Pala/Pauma	46	263.17
Warner Ranch (GPA 06-009)	GPA/SP/TM/REZ/MUP	Pala/Pauma	900	430.00
Donald Jenkins (TPM 21023)	TPM	Pala/Pauma	2	10.35
Pala Pauma (TPM 20611)	TPM	Pala/Pauma	4	54.66
Wexler (TPM 20913)	TPM	Pala/Pauma	4	4.80
Townsend (TPM 20736)	TPM	Pendleton/De Luz	4	20.00
Herod (TPM 21121)	TPM	Potrero	2	37.53
Silvola (TPM 20658)	TPM	Rainbow	3	26.16
M.D.S. Dev. Corp./Deca (TM 4962)	TM	Ramona	30	75.00
Ramona Ridge Estates (TM 5008)	TM	Ramona	25	219.35
Rancho Esquilago (TM 5198)	TM	Ramona	38	147.68
Development Venture (TM 5254)	TM	Ramona	67	327.00
Valley Park Condominiums (TM 5480)	TM	Ramona	62	2.87
Kvaas (TPM 20747)	TPM	Ramona	5	60.00
Neuman (TPM 20962)	TPM	Ramona	4	39.40
Filippini Parcel Map (TPM 20926)	TPM	Ramona	2	9.35
Sunset Vista (TM 5257)	TM	Ramona	7	9.57
Roberts (TM 5267)	TM	Ramona	8	50.62
Ramona (TPM 20466)	TPM	Ramona	2	19.82
Teyssier (TM 5194)	TM	Ramona	37	289.00
Victoria Shangrila (TM 5261)	TM	San Dieguito	38	79.67
Starwood Santa Fe Valley (TM 5556)	TM	San Dieguito	8	10.00
Oakrose Ranch (TM 5204)	TM	San Dieguito	10	39.66
Fuerte Ranch Estates (GPA 03-006)	GPA/REZ/TM	Valle De Oro	40	26.89

Table 1-4a
Private Projects Not Included in the General Plan Update

Project Name	Required Approvals	Community	Dwelling Units	Acres
Spanish Trails (Loranda) (TM 5173)	TM	Valley Center	175	435.39
Brook Forest (GPA 03-008)	GPA/SP/TM	Valley Center	84	225.56
Beauvais/Old Castle (TM 5315)	TM	Valley Center	11	23.16
Rancho Lilac (GPA 04-008)	GPA/SP/REZ/TM/MUP	Valley Center	360	693.49
Castle Creek Condominiums (GPA 06-011)	GPA/SPA/TM/REZ	Valley Center	63	57.79
McNally Road Parcel Map (TPM 21004)	TPM	Valley Center	4	78.30
Sukup (TM 5184)	TM	Valley Center	9	24.62
Garcia T.S.M. (TM 5458)	TM	Valley Center	8	17.40
Calle De Encinas (TPM 20780)	TPM	Valley Center	3	14.39
S.R. Polito Family Partnership LTD (TM 5001)	TM	Valley Center	18	69.20
Crews Development Valley Center Road (TPM 20828)	TPM	Valley Center	4	9.71
Fitzpatrick (TPM 20842)	TPM	Valley Center	4	10.72
Goodnight Ranchos (TPM 21101)	TPM	Valley Center	2	5.00
Hancey TPM (TPM 20999)	TPM	Valley Center	4	14.75

GPA = General Plan Amendment;
MUP = Major Use Permit;
REZ = Rezone;
SP = Specific Plan;
SPA = Specific Plan Amendment;
TM = Tentative Map;
TPM = Tentative Parcel Map
(1) Includes a Commercial or Industrial Component

Table 1-4b
Proposed Projects on Tribal Lands

Project No.	Name	Size
Campo Reservation		
1	Gaming Area Expansion	17,800 square feet (sf)
2	Hotel	150 rooms
3	Hotel (Phase II)	100 rooms
4	RV Parking	80 spaces
5	Bowling Center	16 lanes
6	Entertainment Hall	20,000 sf
7	Casino Admin Office	4,250 sf
8	Restaurant	2,500 sf
9	250 MW Wind Power Generation Facility	4,660-acre study area
Ewiiaapaayp Reservation		
10	Gaming Area	80,500 sf
11	Health Clinic	26,500 sf
Jamul Reservation		
12	Gaming Area	73,469 sf
13	Hotel	400 rooms
14	Event Center	1,200 seats
La Jolla Reservation		
15	Casino	35,000 sf
16	Hotel	150 rooms
Pala Reservation		
17	Gaming Area Expansion	50,500 sf
18	Hotel Expansion	50 rooms
19	Motocross Raceway	Unknown
Pauma and Yuima Reservation		
20	Gaming Area Expansion	41,100 sf
21	Hotel	400 rooms
22	Retail Shops	4,000 sf
23	Event Center	34,000 sf
San Pasqual Reservation		
24	Hotel	161 rooms
25	Outdoor Concert Venue	2,000 seats
Sycuan Reservation		
26	Gaming Area Expansion	140,835 sf
27	Hotel	557 rooms
28	Single Family Homes	74 units
29	Equestrian Center	Unknown
30	RV Park	85 spaces

Table 1-4b
Proposed Projects on Tribal Lands

Project No.	Name	Size
Viejas Reservation		
31	New Casino	100,000 sf
32	Hotel	600 rooms
33	Multiplex Movie Theater	1,000 seats
34	Concert Venue	12,000 seats

Source:
County of San Diego 2011

Table 1-4c
Proposed Projects in Mexico

Project No.	Name	Location	Description
1	Tijuana Sewer Rehabilitation Project	Tijuana	Project to rehabilitate or replace deteriorated sewer pipes in Tijuana
2	Potable Water and Wastewater Master Plan for Tijuana and Playas de Rosarito	Tijuana	Long-term planning strategy for water and wastewater infrastructure in the Tijuana-Playas de Rosarito area. The plan develops and analyzes alternatives for meeting Tijuana's water and wastewater infrastructure needs over the next 20 years.
3	Ensenada Port Development Project	Port of Ensenada	Development of a new container facility on Mexico's Pacific coast in the Port of Ensenada
4	Silicon Border	Mexicali, along U.S.–Mexico international border	Development of a 15-square-mile technology complex for manufacturing of semiconductors and other technology products
5	Toyota Industrial Facility	Tecate	Expansion of existing Toyota-owned industrial facility
6	Dart Container Industrial Facility	Tecate	Construction of a 1.2-million-square-foot industrial facility

Source:
County of San Diego 2011

Table 1-4d
Other Regionally Significant Projects

Name	Location	Description	Project Status
Sol Orchard (Sol Orchard LLC)	Valley Center	Solar Project Major Use Permit 11-027	Approved 8/17/12
Sol Orchard (Sol Orchard LLC)	Ramona	Solar Project Major Use Permit 11-029	Appealed to Board of Supervisors on 10/29/12
Sol Orchard (Sol Orchard LLC)	Alpine	Solar Project Major Use Permit 11-030	Application 8/17/11
Sol Orchard (Sol Orchard LLC)	Cool Valley	Solar Project Administrative Permit 11-032	Application 9/20/11
Sol Orchard (Sol Orchard LLC)	Kitchen Creek	Solar Project Administrative Permit 11-033	Application 9/21/11
Sol Orchard (Sol Orchard LLC)	Santa Ysabel	Solar Project Administrative Permit 11-036	Application 9/23/11
Sol Orchard (Sol Orchard LLC)	Pala Pauma	Solar Project AdministrativePermit 11-037	Application 9/26/11
Soitec	Lan West/Boulevard	Solar Project Major Use Permit 12-002	Application 2/3/12
Soitec	Rugged Solar/ Boulevard	Solar Project Major Use Permit 12-007	Application 5/15/12
Soitec	Tierra Del Sol Boulevard	Solar Project Major Use Permit 12-012	Application 6/15/12
Energia Sierra Juarez Gen-Tie	Boulevard	Transmission Line Major Use Permit 09-008	Approved 8/8/12
Shu'luk	Campo Indian Reservation	Wind Project	Environmental Impact Statement issued October 2012
Ocotillo Express, LLC	Imperial County	Wind Project	Record of Decsion 5/11/12
NRG Solar	Borrego	Solar Project Major Use Permit 10-026	Approved 10/12/11
Eurus Energy	Borrego	Solar Project Major Use Permit 09-014	Approved 1/12/11
Eurus Energy	Borrego	Solar Project Major Use Permit 09-012	Approved 1/12/11
Pacific Wind (Iberdrola)	McCain Valley, Eastern San Diego County	Wind: testing	7/08 – Submitted application to install additional MET towers; applicant advised that they must prepare an Environmental Assessment (EA). 08/08 – Relinquished 1,262.62 acres.
Pacific Wind (Iberdrola)	McCain Valley, Eastern San Diego County	Wind Major Use Permit 09-019	Approved 8/8/12
National Quarries LLC	Eastern San Diego County	Wind: testing and monitoring	MOU/cost recovery signed; monies received. Application complete 4/22/09.

Table 1-4d
Other Regionally Significant Projects

Name	Location	Description	Project Status
National Quarries LLC	Eastern San Diego County	Wind: testing and monitoring	MOU/cost recovery signed; monies received. Application complete 4/22/09.
Replacement of Steam Generators at San Onofre Nuclear Generating Station	San Diego County	Replace the San Onofre Nuclear Generating Station Units 2 and 3 steam generators, establish ratemaking for cost recovery, and address related steam generator replacement issues	Feb 2004
Silvergate Transmission Substation Project	San Diego County	Replace existing 139/69 kV substation (Main Street) with new 230/69 kV substation (Silvergate)	September 2006
Sunrise Powerlink Project	San Diego and Imperial Counties	Construction of a new 90-mile, 500 kV line from Imperial Valley Substation to Central East Substation; construction of 60 miles of new transmission lines from Central East Substation to Peñasquitos Substation	August 2006

Sources:
BLM 2010; County of San Diego 2011

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FIGURE 1-1
Regional Map

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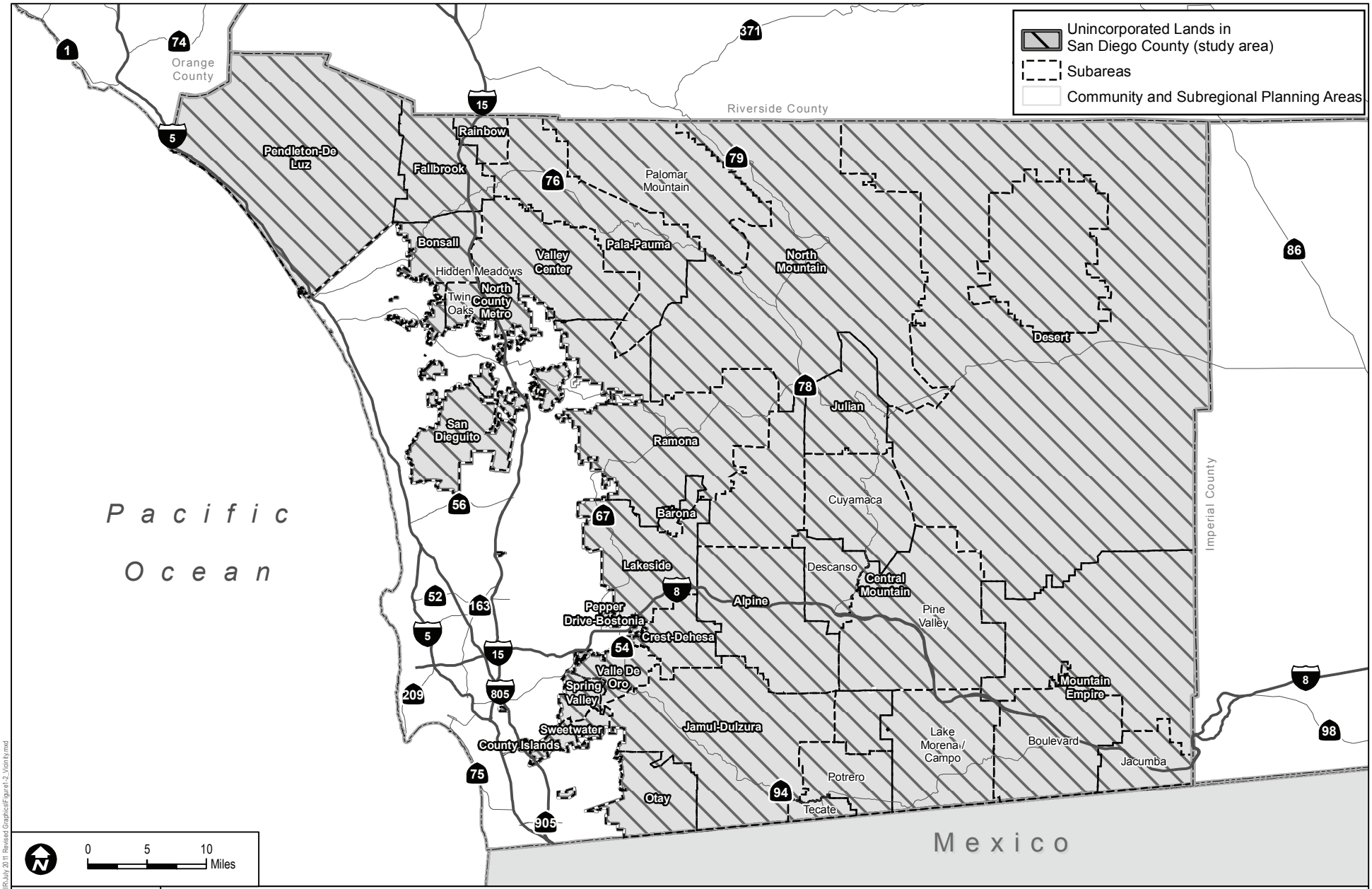

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SOURCE: SanGIS, SANDAG, USGS 7.5-Minute Series Quadrangle.

FIGURE 1-2

Vicinity Map

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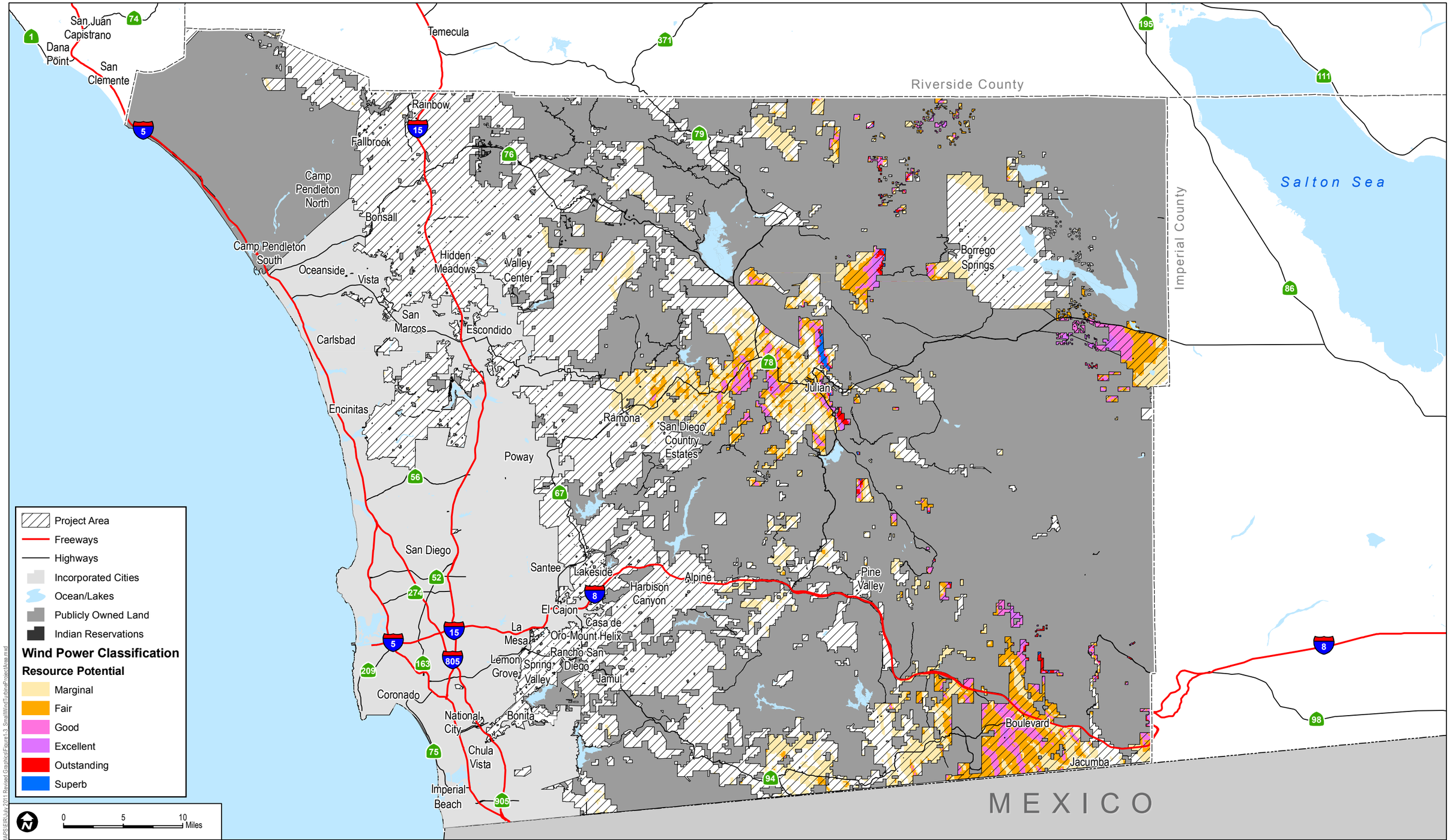

SOURCE: Wind Data: NREL 2009; SanGIS, SANDAG; USGS

FIGURE 1-3

Small Wind Turbine(s) Project Area

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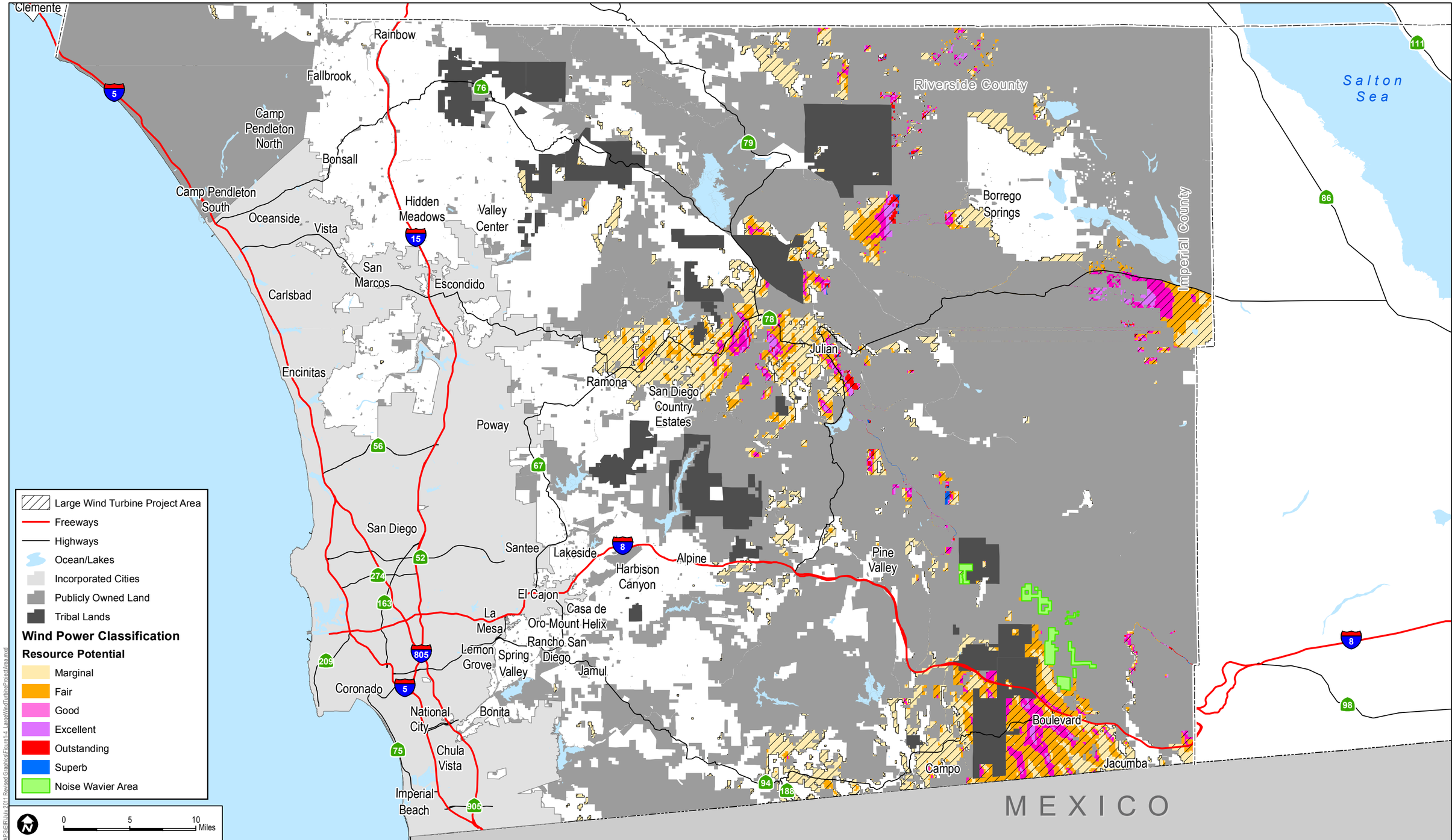

SOURCE: Wind Data: NREL 2009; SanGIS, SANDAG; USGS

FIGURE 1-4

Proposed Wind Resource Map

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Per Section 6952 Large Wind Turbine, b.

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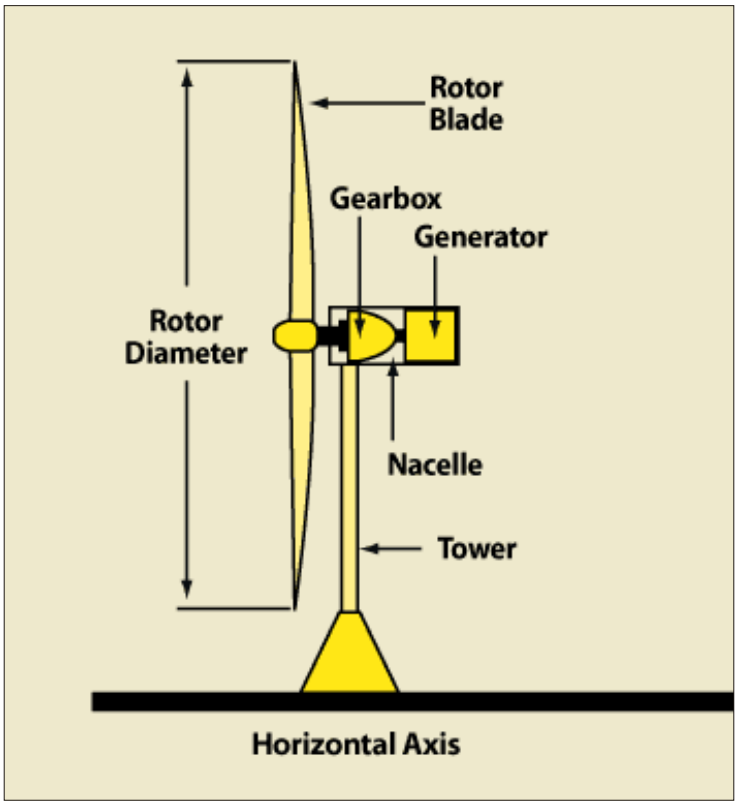

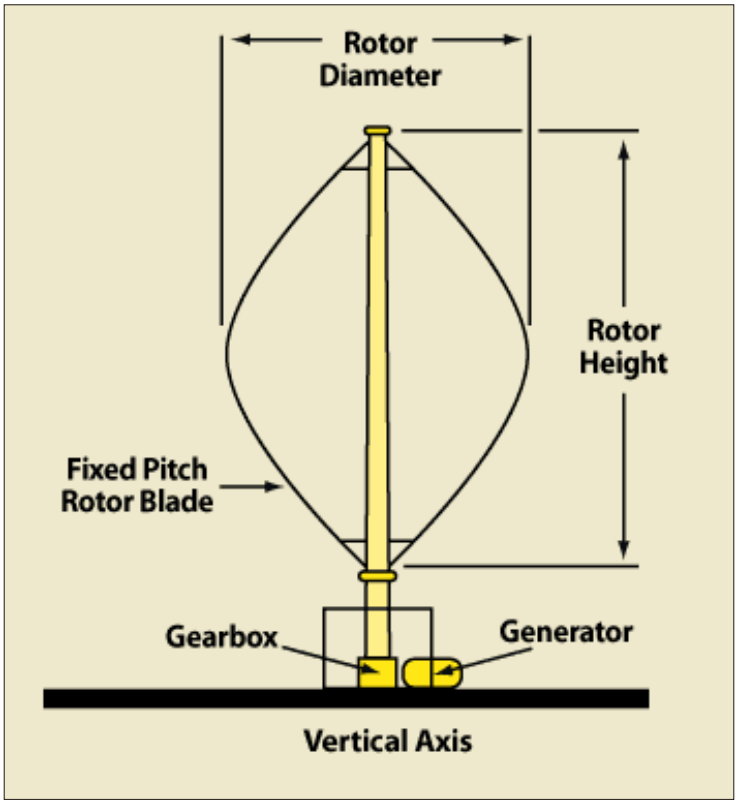

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SOURCE: AWEA 2005

FIGURE 1-5

Typical Horizontal-Axis and Vertical-Axis Wind Turbine

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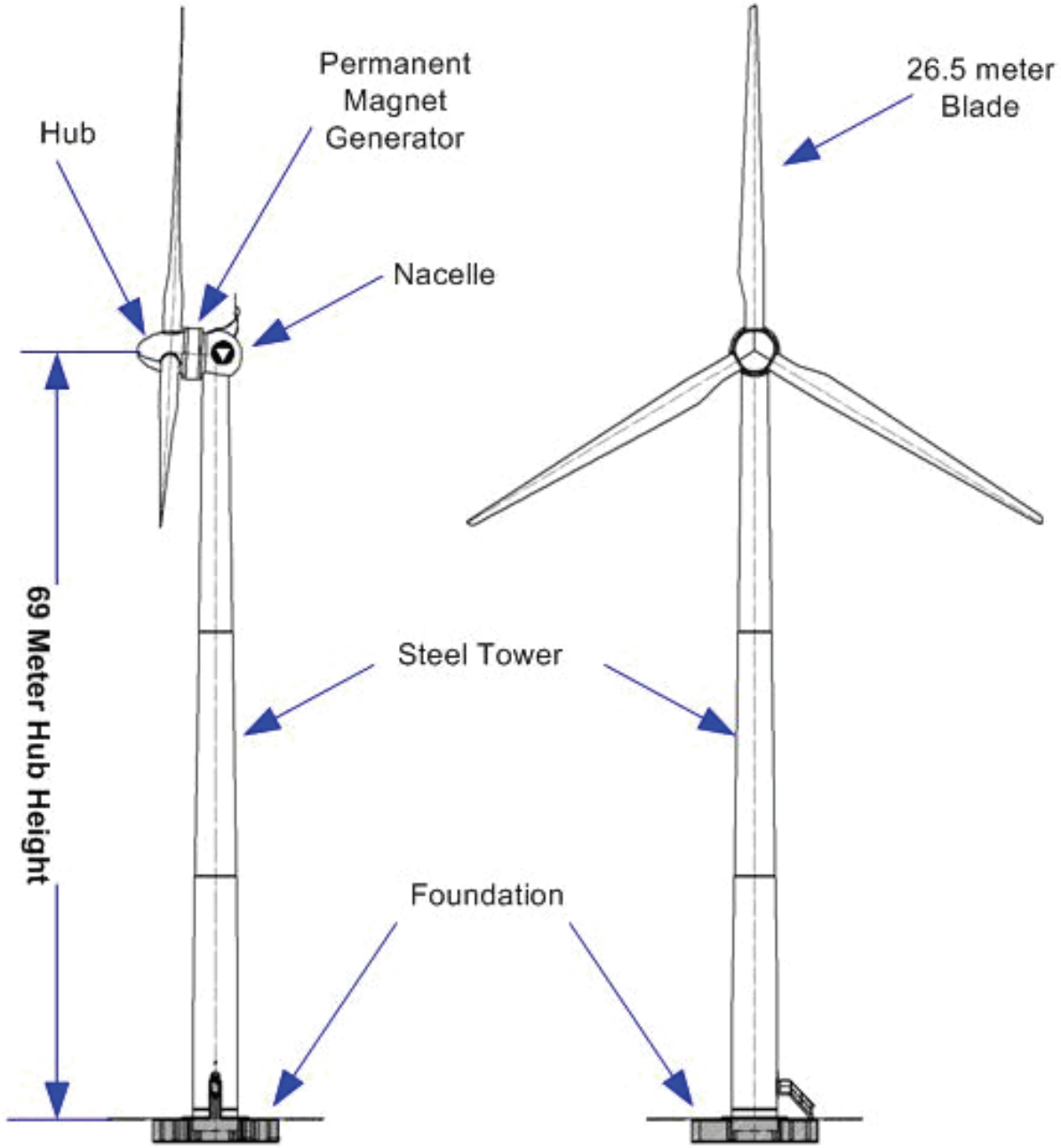

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SOURCE: Dudek 2011

FIGURE 1-6

Typical Schematic for a Wind Turbine

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Roof Mounted Vertical Axis Turbine

Roof Mounted Vertical Axis Turbine

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SOURCE: www.planetarysystems.com

FIGURE 1-7a

Photo of Typical Small Wind Turbine - Vertical Axis

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Roof Mounted Vertical Axis Turbine

Verticle Axis Three Blade Turbine

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SOURCE: www.greenwindsolar.com; www.kedco.com

FIGURE 1-7b

Photo of Typical Small Wind Turbine - Vertical Axis

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Three Blade Wind Turbine

Roof Mounted Five Blade Wind Turbine

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SOURCE: www.bergey.com; www.inhabitat.com

FIGURE 1-7c

Photo of Typical Small Wind Turbine - Horizontal Axis

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Z:\Projects\6281011\MAPDOC\MAPS\EIR\July 2011 Revised Graphics\Figure1-7c_Photo_SmallTurbine.mxd

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SOURCE: Dudek, 5/5/2010, 9/21/2010

FIGURE 1-7d

Photos of Typical Wind Turbine - Large

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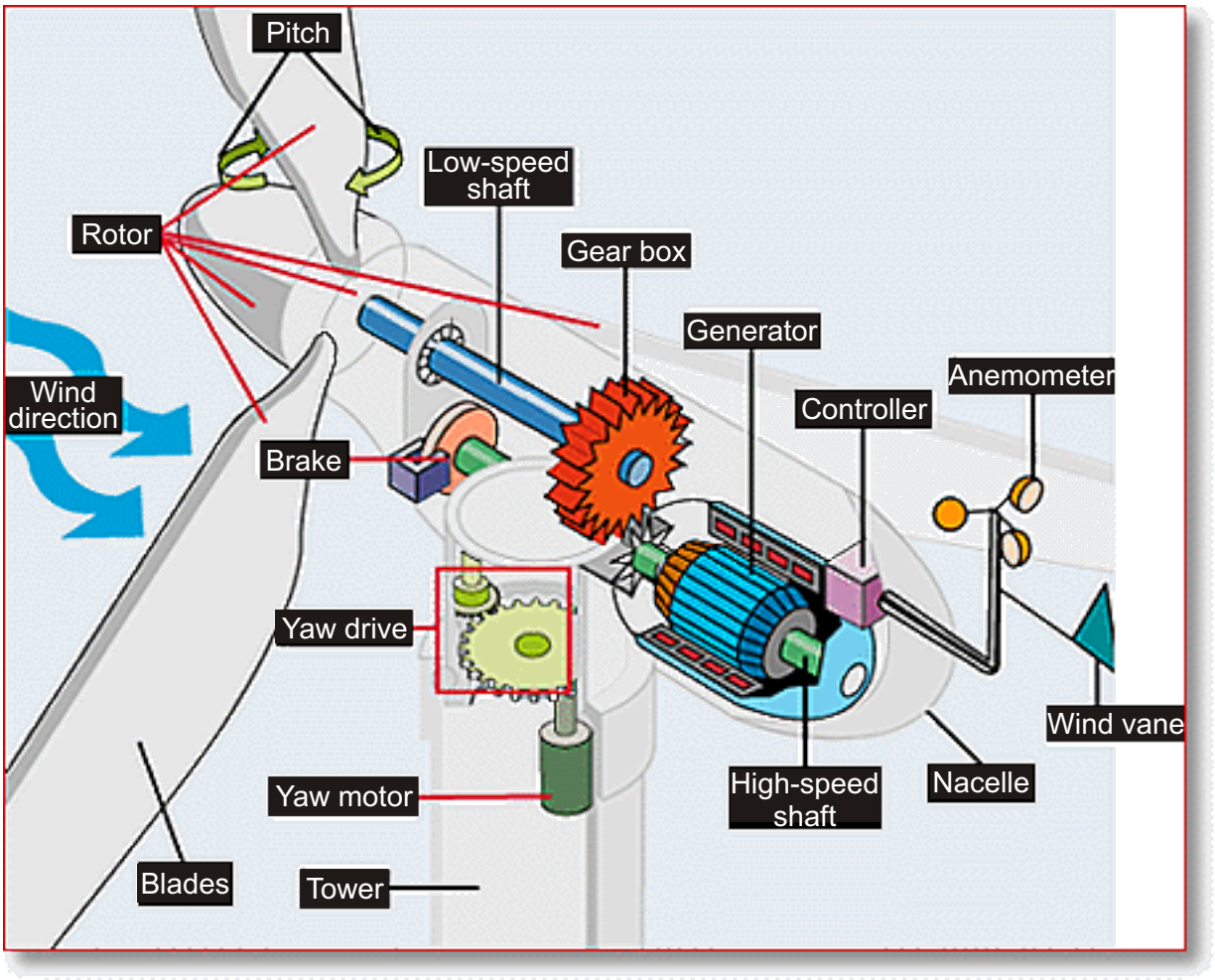

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SOURCE: Research Institute for Sustainable Energy 2010

FIGURE 1-8

Typical Wind Turbine Design

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Monopole Structure

Lattice Tower

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SOURCE: www.motherearthnews.com

FIGURE 1-9a

Photos of Typical Small Wind Turbine System - Supporting Structures

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Guywire Monopole Structure

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SOURCE: www.otherpower.com

FIGURE 1-9b

Photo of Typical Small Wind Turbine - Supporting Structures

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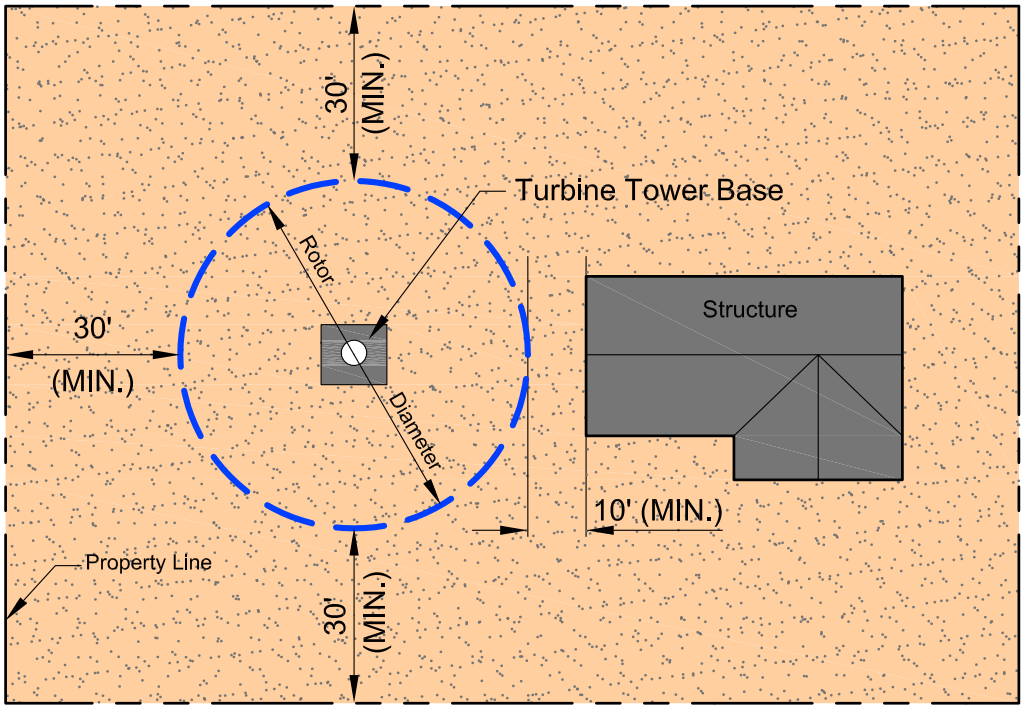
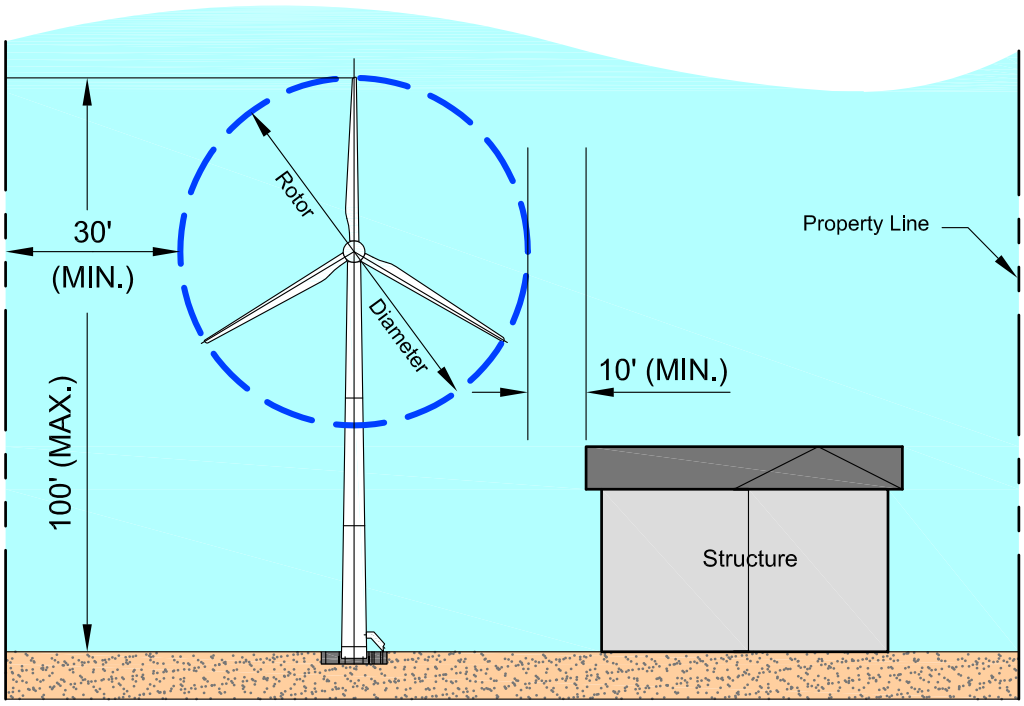


PLAN VIEW

NOT TO SCALE



ELEVATION

NOT TO SCALE

NOTE: Additional setback requirements apply to small wind turbines; refer to Zoning Ordinance Section 6951 (a).

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SOURCE: Prepared by Dudek based on the County of San Diego Zoning Ordinance Amendment dated September 30, 2010

FIGURE 1-10a

Development Parameters for Small Wind Turbine

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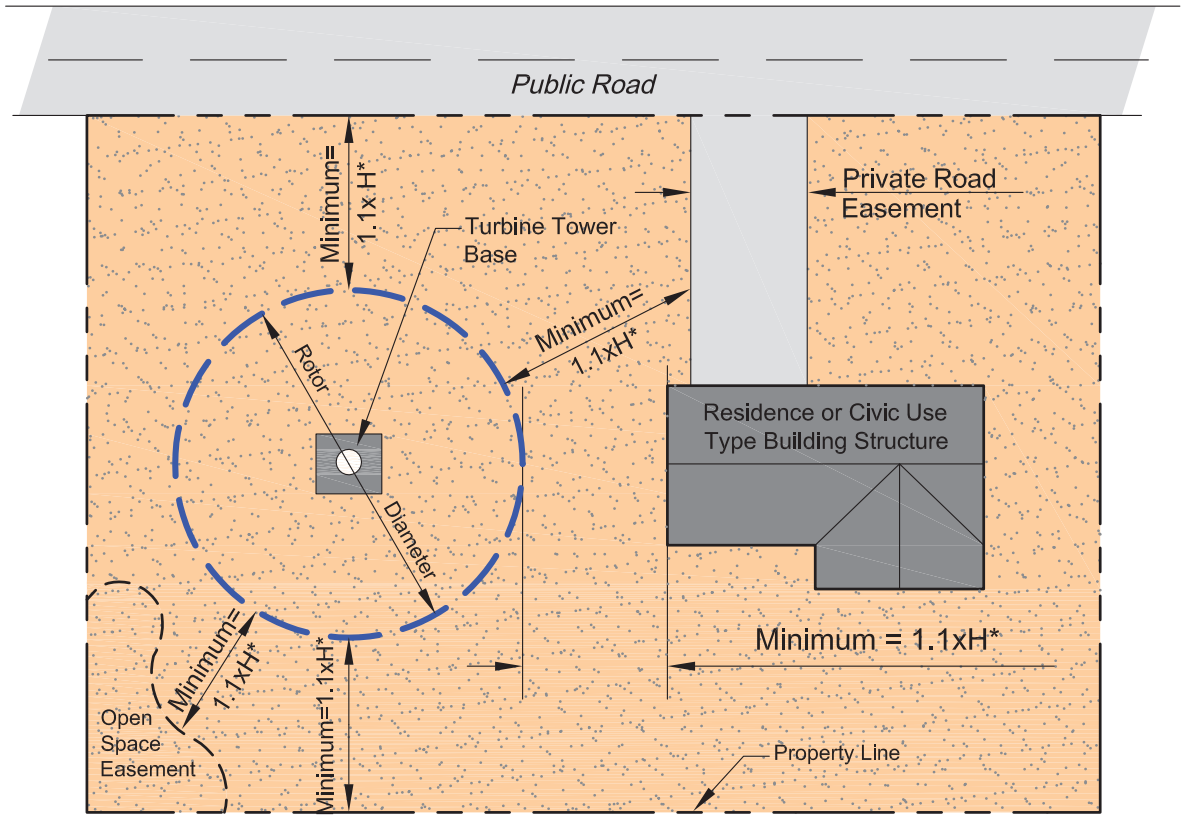
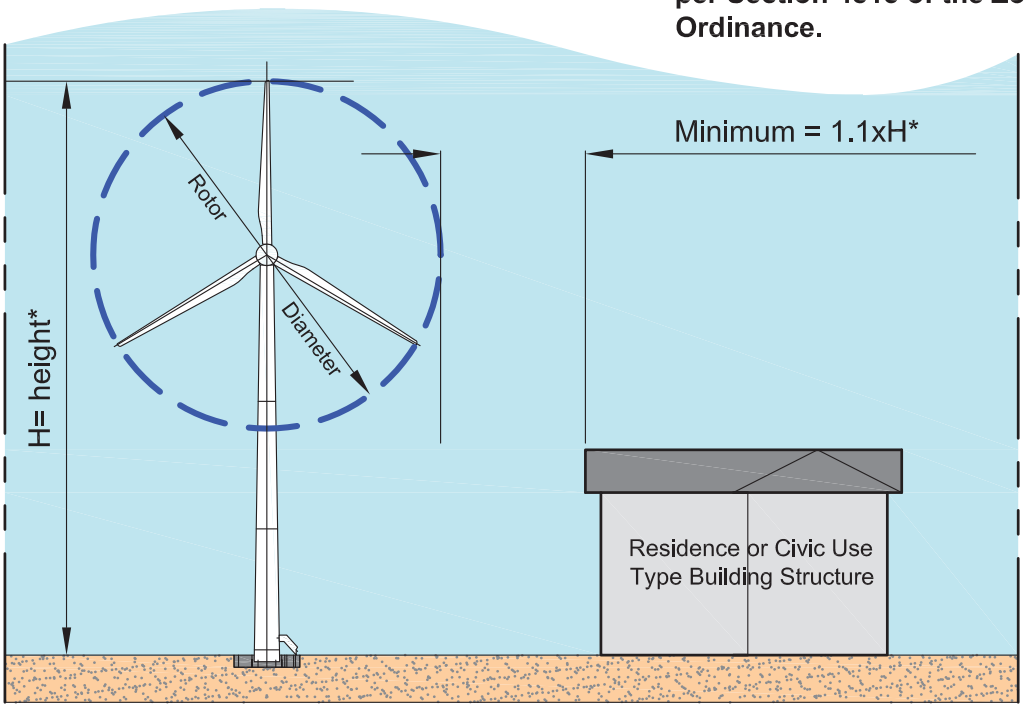


PLAN VIEW

NOT TO SCALE

NOTE: Additional setbacks may be required to meet noise requirements per Section 4813 of the Zoning Ordinance.



ELEVATION

NOT TO SCALE

*Height (H) shall comply with Federal Aviation Administration safety height requirements.

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SOURCE: Prepared by Dudek based on the County of San Diego Zoning Ordinance Amendment dated September 30, 2010

FIGURE 1-10b

Development Parameters for Large Wind Turbine

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