

Appendix L5

404 (b)(1) Analysis

**U.S. ARMY CORPS OF ENGINEERS
DRAFT 404(B)(1) ALTERNATIVES ANALYSIS
FOR THE OCOTILLO WIND ENERGY FACILITY (OWEF)
Department of the Army File Number: SPL-2009-00971-MBS**

**Corps of Engineers Los Angeles District
Regulatory Division, Carlsbad Field Office
6010 Hidden Valley Road, Suite 105
Carlsbad, California 92011**

Project Contact:
Meris Bantilan-Smith
Project Manager

Meris.Bantilan-Smith@usace.army.mil
760-602-4836

Table of Contents

1.0 INTRODUCTION 4

 1.1 Regulatory Setting 4

 1.2 Basic and Overall Project Purpose..... 6

 1.3 Location..... 7

 1.4 General Description..... 7

 1.5 NEPA Scope of Analysis..... 10

2.0 ALTERNATIVES ANALYSIS..... 11

 2.1 Off-site Alternatives..... 11

 2.3 Practicability of Alternatives..... 14

 2.4 On-site Alternatives..... 17

 2.5 Practicability of On-site Alternatives 22

 2.6 Practicability Analysis Findings and Conclusions..... 28

3.0 EXISTING CONDITIONS..... 30

 3.1 Location and General Description..... 30

 3.2 Physical and Chemical Characteristics of the Aquatic and Upland
 Environment..... 30

 3.3 Biological characteristics of the aquatic environment 35

 3.4 Human use characteristics of the aquatic environment 37

4.0 IMPACTS ANALYSIS 39

 4.1 Impacts to Physical and Chemical Characteristics of the Aquatic and
 Upland Environment..... 39

 4.2 Biological characteristics of the aquatic environment 45

 4.3 Human use characteristics of the aquatic environment 48

 4.4 Determination of Cumulative Effects on Waters of the U.S. 49

5.0 ACTIONS TO MINIMIZE ADVERSE EFFECTS 54

6.0 REFERENCES..... 56

List of Figures

FIGURE 1. LOCATION MAP 5
FIGURE 2. ALTERNATIVE 1 PROJECT AREA PLAN VIEW 9
FIGURE 3. OFF-SITE ALTERNATIVES SITING CRITERIA 13
FIGURE 4. ALTERNATIVE 2 PLAN VIEW 18
FIGURE 5. ALTERNATIVE 3 PLAN VIEW 19
FIGURE 6. ALTERNATIVE 4 PLAN VIEW 20
FIGURE 7. CUMULATIVE EFFECTS GEOGRAPHIC AREA 50

List of Tables

TABLE 1. OWEF PROJECT ALTERNATIVE PROJECT DESIGN COST OF CONSTRUCTION
PER MW 15
TABLE 2. PRACTICABILITY OF ON-SITE ALTERNATIVES INCLUDING COST AND
LOGISTICS CRITERIA 24
TABLE 3. CORPS POTENTIAL NON-WETLAND WATERS OF THE U.S. 30
TABLE 4. CORPS ON-GOING REASONABLY FORESEEABLE PROJECTS 52

Attachments

ATTACHMENT 1. OCOTILLO WIND ENERGY FACILITY PUBLIC NOTICE

1.0 INTRODUCTION

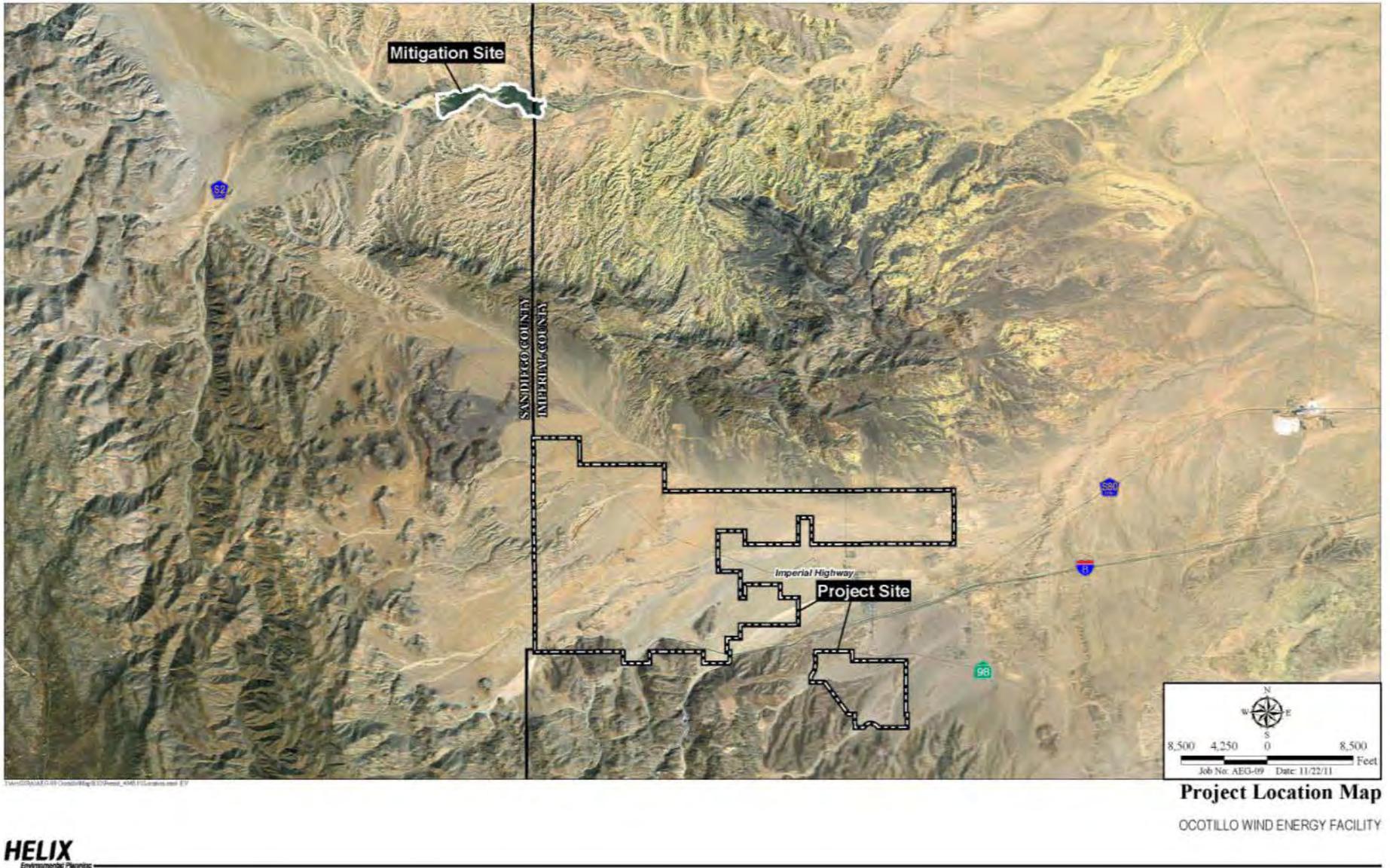
On May 23, 2011, the U.S. Army Corps of Engineers (Corps) received an application from Ocotillo Express LLC (the Applicant) for a Department of the Army (DA) Standard Individual Permit (IP) pursuant to Section 404 of the Clean Water Act (Act) for the Ocotillo Wind Energy Facility (OWEF) Project. The Applicant sought authorization to discharge fill material into 5.57 acres of 239 acres of potential waters of the U.S. supported on the 12,457 acre project site located in Imperial County, California (Latitude 32.74316 N Longitude -116.05473 W). All but 26 acres of the project site occur on federal lands managed by the Department of Interior, Bureau of Land Management (BLM). The 26-acre non-BLM-administered land is a single private parcel, referred to as the Hamilton parcel. The original project envisioned, prior to the submittal of a DA permit application, would have included the installation of 193 wind turbine generators (WTGs) using a combination of 2.3 MW and 3.0 MW turbines capable of generating up to 550 megawatts (MW) of electricity on approximately 12,500 acres of land. To avoid impacts to sensitive environmental and known cultural resources the project was redesigned in consultation with the Corps and BLM resulting in a revised preferred project (Alternative 1) consisting of up to 155-2.3 MW WTGs and generating up to 356 MW of electricity.

The following impact analysis is provided in accordance with Section 404(b)(1) of the Act [40 C.F.R. 230]. To avoid duplication of pertinent information, there are multiple references to sections within BLM's and County of Imperial's Draft Plan Amendment and Draft Environmental Impact Statement/Environmental Impact Report (Draft EIS/EIR). This document is being provided as an appendix to the Final EIS/EIR. This draft 404(b)(1) alternatives analysis may be updated upon further review of the Final EIS/EIR, and any new public comments prior to preparation of the Corps' Record of Decision.

1.1 Regulatory Setting

Any activity requiring an IP pursuant to Section 404 of the Act must undergo an analysis of alternatives in order to identify the Least Environmentally Damaging Practicable Alternative (LEDPA) pursuant to the requirement of the guidelines established by the United States Environmental Protection Agency (EPA), known as the *Section 404(b)(1) Guidelines*. The *Section 404(b)(1) Guidelines* prohibit discharges of dredged or fill material into waters of the U.S. if there is a "practicable alternative to the proposed discharge that would have less impact on the aquatic ecosystem, provided that the alternative does not have other significant environmental consequences" [40 C.F.R. § 230.10(a)]. An alternative is practicable "if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of the overall project purpose" [40 C.F.R. §§ 230.10(a) and 230.3(q)]. "If it is otherwise a practicable alternative, an area not presently *owned* by an Applicant which could reasonably be obtained, utilized, expanded or managed in order to fulfill the basic purpose of the proposed activity may be considered" [40 C.F.R. § 230.10(a)(2)].

Figure 1. Location Map



If the proposed activity would involve a discharge into a special aquatic site such as a wetland, the *Section 404(b)(1) Guidelines* distinguish between those projects that are water dependent and those that are not. A water dependent project is one that requires access to or proximity to or siting within a special aquatic site to achieve its basic purpose, such as a marina. A non-water dependent project is one that does not require access to or proximity to or siting within a special aquatic site to achieve its basic purpose, such as a housing development.

The *Section 404(b)(1) Guidelines* establishes a double rebuttable presumption for non-water dependent projects that propose a discharge of fill into a special aquatic site, such as wetlands. First, it is presumed that there are practicable alternatives to non-water dependent projects, "unless clearly demonstrated otherwise." [40 C.F.R. § 230.10(a)(3).] Second, "where a discharge is proposed for a special aquatic site, all practicable alternatives to the proposed discharge which do not involve a discharge into a special aquatic site are presumed to have less adverse impact on the aquatic ecosystem, unless clearly demonstrated otherwise." [Id.] The thrust of the Guidelines is that Applicants should design proposed projects to meet the overall project purpose while avoiding and minimizing impacts to aquatic environments. This approach is emphasized in a Memorandum of Agreement between the EPA and the Corps Concerning the Determination of Mitigation Under the Clean Water Act Section 404(b)(1) Guidelines (1990) ("MOA") as modified by the Corps and EPA Final Mitigation Rule (33 CFR Parts 325 and 332 and 40 CFR Part 230). The MOA articulates the Guidelines "sequencing" protocol as first, avoiding impacts; second, minimizing impacts; and third, providing practicable compensatory mitigation for unavoidable impacts and no overall net loss of functions and services.

In addition to requiring the identification of the LEDPA, the *Section 404(b)(1) Guidelines* mandate that no discharge of dredged or fill material shall be permitted if it causes or contributes to violations of any applicable State water quality standard, 40 C.F.R. 230.10(b)(1), violates any applicable toxic effluent standard or prohibition, 40 C.F.R. § 230.10(b)(2), jeopardizes the continued existence of any endangered or threatened species (or destroy or adversely modify critical habitat), 40 C.F.R. § 230.10(b)(3), or causes or contributes to significant degradation of waters of the U.S., 40 C.F.R. § 230.10(c).

1.2 Basic and Overall Project Purpose

1.2.1 Basic Project Purpose: The basic project purpose comprises the fundamental, essential, or irreducible purpose of the project, and is used by the Corps to determine whether the Applicant's project is water dependent. The basic project purpose for the Project is "energy production." The basic project purpose is not water dependent. The discharge of fill material is not proposed to occur in any special aquatic sites in the project area. Therefore, the presumption that practicable alternative sites or designs that do not affect special aquatic sites are available does not apply to this assessment.

1.2.2 Overall Project Purpose: The overall project purpose serves as the basis for the Corps 404(b)(1) alternatives analysis and is determined by further defining the basic project purpose in

a manner that more specifically describes the applicant's goals for the project, and which allows a reasonable range of alternatives to be analyzed. The overall project purpose of the Project is to provide a wind energy facility ranging in size from 315 MW to 465 MW in Imperial County, California. The lower limit of 315 MW is based on the Applicant's power purchase agreement (PPA) with the California Public Utilities Commission (CPUC).

1.3 Location

The OWEF project site is located within a 12,457-acre right-of-way boundary (hereafter referred to as the project area), of which all but 26 acres occur on BLM-administered lands, near the town of Ocotillo, Imperial County, California (Figure 1; Latitude 32.74316 N Longitude - 116.05473 W). The northern portion of the project area (Site 1) is generally situated north of Interstate 8 (I-8), from the Imperial/San Diego County border on its western edge, to approximately 1.5 miles northeast of the town of Ocotillo on its eastern edge. County Route S2 bisects the northern project area, and I-8 passes through the southern portion of the northern project area. The southern project area (Site 2) is much smaller than the northern project area and the majority is south of State Route (SR) 98 (Figure 2).

1.4 General Description

The OWEF would be a wind energy generating facility with construction planned to commence immediately upon regulatory approval and authorization. The OWEF would be built in a period of up to 10 months. The OWEF would consist of up to 155 wind turbine generators (WTGs), above and below-ground electrical transmission/collection systems, up to three-262 foot high meteorological towers, project substation and control room, switchyard and control room, access roads, an operation and maintenance (O&M) building, and an observation tower. The dimensions of the proposed WTGs include a hub height of 262 feet and a rotor diameter ranging from 351 to 371 feet. The construction of the wind turbines, access roads, collection lines, and substations would result in the discharge of fill material into waters of the U.S.

Major construction activities at each turbine location would include foundation construction; crane pad construction; wind turbine component unloading and laydown; and turbine erection. Foundations would be excavated, constructed of steel reinforced concrete, and backfilled with native soil. Crane pads would be required to support the crane used during erection and lifting the turbine components into place. Turbine components would arrive to each turbine site by truck. A crane would unload each component and stage the component in a specific pre-determined location within the temporary construction area. The delivery trucks would then move either backward or forward to the nearest vehicle turn-around location.

The OWEF would also include a network of 20-foot-wide permanent roads that would provide access to each WTG location and the O&M building upon completion of construction. The Imperial County Fire Department allowed the 16-foot wide roads provided that a 2-foot compacted earth shoulder is maintained following construction. For the purposes of this Draft

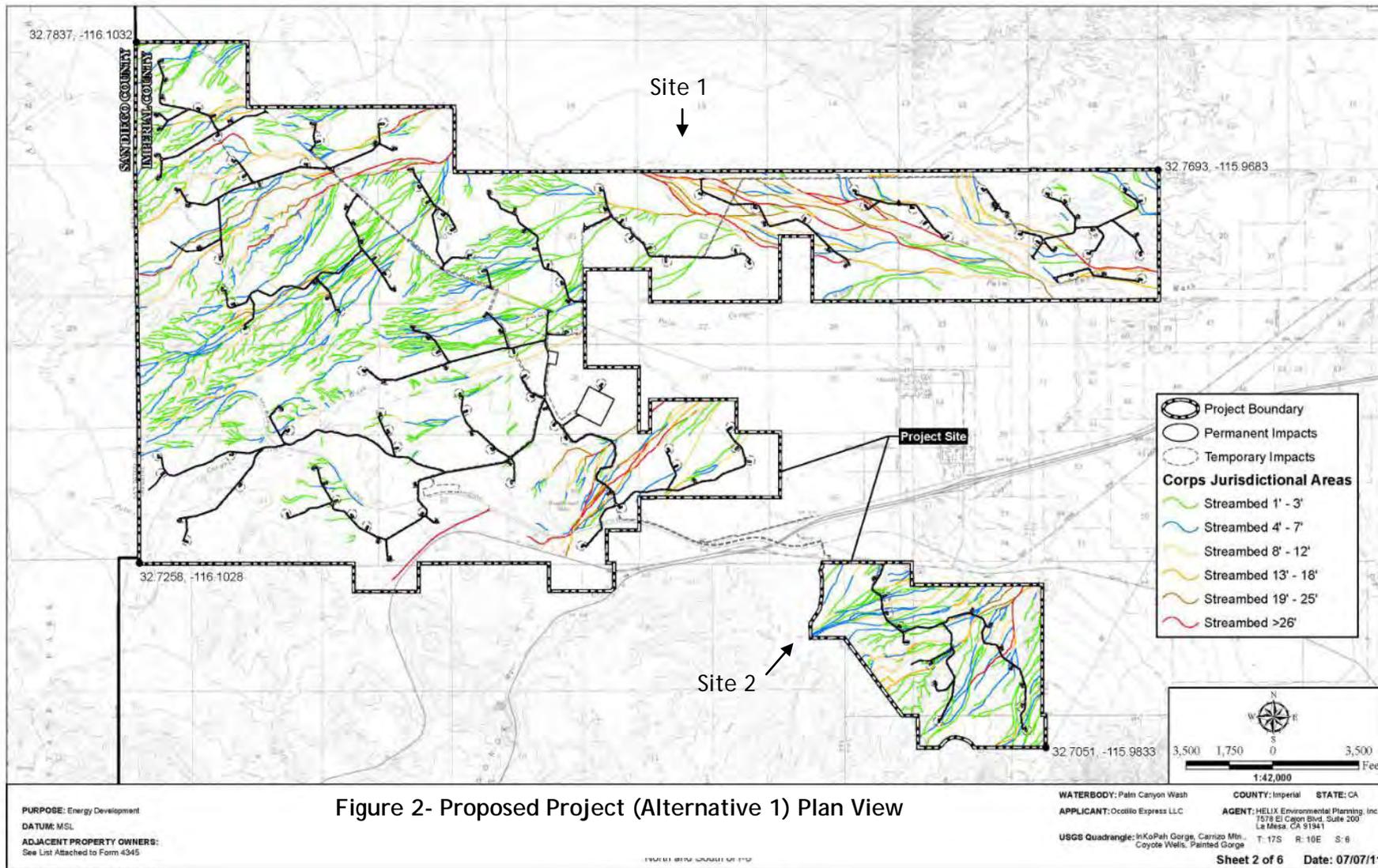
404(b)(1) Alternatives Analysis and calculating potential impacts to waters of the U.S., a 20-foot-wide permanent road width has been assumed. During the course of construction, these access roads would be up to 36 feet in width to facilitate the travel of large tracked cranes. These construction roadways would be graded and compacted for use and the area in excess of the 20-foot permanent roadway would then be de-compacted, stabilized, and revegetated at the conclusion of construction.

In addition to the crane travel paths, the underground collection system would parallel the access road network. The underground collection system would include the construction of twenty-three 34.5 kilovolt (kV) electrical collection system circuits that would connect into a new high voltage main transformer located at the proposed project substation/switchyard. The collection lines connecting one WTG to the next and to the proposed substation would be buried underground adjacent to (generally outside of) the 36-foot-wide construction roadway areas. Construction of the underground collection systems would involve a 2-foot wide trench with a disturbance width of approximately 15-feet, which would be revegetated following construction.

The OWEF would include an approximately 1.8 to 2.5 acre temporary work area at each turbine site. Within the WTG temporary work area, a crane pad is required for supporting the large tower erection crane. Only a portion (0.5 to 1.0 acres) of this temporary work area would include soil disturbance as part of the foundation construction, with the remaining potential impacts being vegetation disturbance. For this impact analysis, the maximum temporary turbine work area is used to calculate potential impacts to waters of the U.S., even though no discharges of fill will occur in the majority of the construction area.

The OWEF would also include a 12-acre batch plant/laydown area immediately south of County Highway (CH) S2 (Imperial Highway) in the central portion of Site 1 and a 10-acre temporary laydown area adjacent to the railroad. The batch plant would be used for preparing and mixing the concrete used for the foundations for the WTGs, the transformers at the substation, the O&M building, and other project facilities.

Figure 2. Alternative 1 Project Area Plan View



1.5 NEPA Scope of Analysis

1.5.1 Factors

(1) Whether or not the regulated activity comprises "merely a link" in a corridor type project. Regulated activities that comprise merely a link in corridor-type projects (e.g., roads or utility lines) typically result in a narrow scope of analysis limited to the specific activity requiring a DA permit unless such a significant portion of the project is located in waters of the U.S. that the Corps' permit bears upon the origin and destination of the project as well as its route. Appendix B, paragraph 7(b)(3). This factor is most obviously relevant to a long-distance pipeline project, electric transmission line project, or highway that crosses waters of the U.S., but is also applicable to the roads and utility lines that serve the applicant's project and cross waters of the U.S. on the project site.

The project's roads and utility crossings together constitute 316.82 acres of disturbance of which 2.79 acres would occur in waters of the U.S. In the Corps' judgment, based on a review of the proposed conceptual site plan, the impacts associated with these crossings do not represent a major portion of the roads or utility lines, nor do they govern the origin, destination, or overall route of those features. Therefore, other factors must be analyzed to assess the extent of federal control and responsibility.

(2) Whether there are aspects of the upland facility in the immediate vicinity of the regulated activity which affect the location and configuration of the regulated activity. There are no aspects of the upland facility in the immediate vicinity of the regulated activity which affect the location and configuration of the regulated activity. Therefore, other factors must be analyzed to assess the extent of federal control and responsibility.

(3) The extent to which the entire Project will be within the Corps jurisdiction. Impacts to potential waters of the U.S. constitute 0.8 percent of the 679.1-acre construction footprint, and proposed discharges of dredged or fill material into waters of the U.S. represent 2.3 percent of all waters of the U.S. in the project area (5.57 acres of the 239 acres). Although the extent to which the entire Project is within Corps jurisdiction is minimal, waters are dispersed throughout the entire project area (Figure 2) and no project development could occur without a DA permit.

(4) The extent of cumulative Federal control and responsibility. Essentially the entire site occurs on BLM lands therefore there is cumulative federal control and responsibility over the construction of the OWEF project.

1.5.2 Determined Scope: Based on factors three and four evaluated above, sufficient Federal control and responsibility exists to warrant expanding the scope of analysis to include the entire Project area.

2.0 ALTERNATIVES ANALYSIS

Under the *Section 404(b)(1) Guidelines*, the Corps must consider a number of factors when making its permit decisions, including whether there are practicable alternatives to the proposed discharge. The Corps is prohibited from issuing a permit for the discharge of dredged or fill material into navigable waters if “there is a practicable alternative to the proposed discharge which would have a less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences.” 40 C.F.R. 230.10(a). An alternative is “practicable” if “it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of the overall project purposes.” 40 C.F.R. 230.10(a)(2).

Although all requirements in Section 230.10 must be met, the introduction to Section 230.10(a) recognizes that the level of analysis required “will vary to reflect the seriousness of the potential for adverse impacts on the aquatic environment posed by specific dredged or fill material discharge activities.” Furthermore, Regulatory Guidance Letter 93-02 reiterates that the Guidelines afford flexibility to adjust the stringency of the alternatives review to reflect the complexity and extent of the discharge activity. The following alternatives analysis for the proposed project is commensurate with the extent of the discharge activity and the potential for adverse impacts on the aquatic environment.

In addition to the 404(b)(1) alternatives analysis, the Corps is required to analyze alternatives pursuant to NEPA. Under NEPA, the range of alternatives is governed by the rule of reason, which provides that a decision document is required to set forth those alternatives necessary to permit a reasoned choice. A decision document must consider a reasonable range of alternatives as defined by the specific facts and circumstances of the proposed action. Alternatives must be feasible and consistent with the statement of purpose and need. If alternatives have been eliminated from detailed study, the decision must briefly discuss the reasons for their elimination. Under NEPA, feasible alternatives must be addressed at the same level of detail as a proposed project. In addition, under NEPA, the alternatives analysis should present the environmental impacts of the proposed project and the alternatives “in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decision maker and the public.” (40 C.F.R. § 1502.14.) The “No Fill Action” alternative (i.e., no activity requiring a Corps permit) must be included among the alternatives analyzed.

2.1 Off-site Alternatives

As required by the *Section 404(b)(1) Guidelines*, the Corps evaluated alternative project sites to determine if there is an alternative site available on which the proposed Project could be constructed that would involve fewer impacts to aquatic resources than the proposed Project and would not have additional concomitant adverse impacts to other sensitive resources such as listed species or cultural resources. Alternative sites were subject to a detailed evaluation of the key siting criteria required for similarly sized wind projects. Input was obtained on

potential alternative locations through discussions with the Energy Commission, the California Independent Systems Operator (CAISO), and the BLM. The “key siting criteria” are described below.

Key siting criteria include:

1. Size: The site must be able to support construction of a comparably sized wind energy facility that meets the Applicant’s PPA as well as the overall project purpose, a minimum of 315 MW and up to 465 MW of energy.
2. Regional Location: The site must be located in an area of “Good” or better winds (i.e. NREL Classes 6 or 7) as defined by the National Renewable Energy Laboratory (NREL) within the County of Imperial, California.
3. The location of the project should be on contiguous lands with high wind potential to maximize operational efficiency.
4. Proximity to Utilities: The site must be located in proximity, less than 10 miles, to high-voltage CAISO transmission lines with adequate capacity and; the site must have ease of access for construction vehicles and proximity to existing roads.
5. Availability: The land must be available for sale or use as a utility-scale wind facility. Alternative sites must be available for purchase and development within a reasonable time frame, less than 2 years (e.g. the number of parcels and landowners contribute to these criteria). Sites for which there is a pending application for use would not be available for development of the proposed project.
6. Constructability: The proposed use should be consistent with existing laws, regulations, and standards such that the activity can be constructed. Sites located within Department of Defense “no fly,” “no build” areas would preclude installation of the proposed project due to height restrictions for low flying aircraft. (i.e., there are large areas surrounding the U.S. Naval Air Facility at El Centro where they fly aircraft at low elevations. These areas have one of three height restrictions; 0-feet, 20-feet, and 20 to 200-feet. Individual WTGs are nearly 400 feet in height; therefore, WTGs can only be constructed in unrestricted areas).

The County was considered in the review of potential off-site alternatives. Two general regions within the County have a “Fair” to “Superb” wind resource, as defined by the NREL and shown on Figure 3. The southwestern corner of the County where the proposed Project is located has a “Good” to “Superb” wind energy resource, and the eastern third of the County has a “Fair” to “Excellent” wind resource. A majority of the wind resource area within the eastern part of the County is located on Department of Defense (DOD) land, and the remainder in the eastern part of the County is located on BLM land scattered with small in-holdings of private land. DOD lands were excluded because siting Criteria #1 was not met. The remainder of this area with “Fair” to “Excellent” wind resources lies within the Chuckwalla Desert Wildlife Management Area of Critical or Environmental Concern (ACEC), and as a result, these areas were excluded because siting Criteria #3 was not met. The southwestern corner of the County is primarily BLM land scattered with small in-holdings of private land. The southwestern-most corner of the County

Figure 3. Off-site Alternatives Siting Criteria

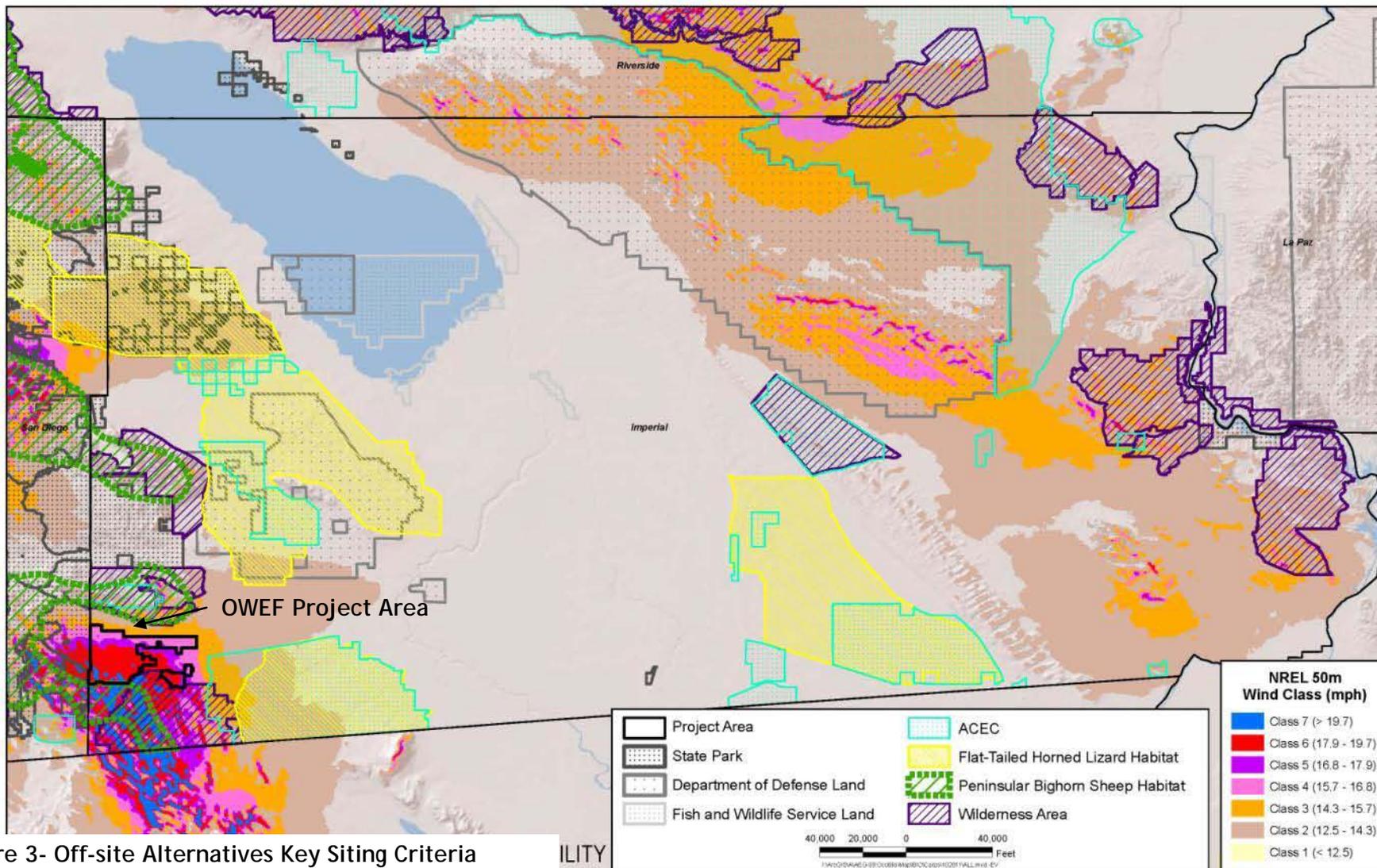


Figure 3- Off-site Alternatives Key Siting Criteria

ILITY

where the wind resource is “Excellent” to “Superb” is within the Jacumba Wilderness and the Yuha Basin Areas of Critical or Environmental Concern, located south and southwest of the project site, respectively, and as a result, these areas were excluded because siting Criteria #3 was not met. Large areas of private land that could accommodate a wind energy facility similar in size to the Proposed Action are located in the central and northwestern portion of the County, where wind resources are “Poor” to “Marginal.” Because there are no wind resources of “Good” or better in these areas siting Criteria #2 was not met.

As noted above, much of the BLM-administered land in the areas with the highest wind energy resource is precluded from development by special designations such as wilderness areas and ACECs (Siting Criteria #3). Many potentially suitable areas outside these designated areas are precluded because they are in use or are proposed for other wind energy projects (Siting Criteria #5).

After a detailed evaluation using all the above siting criteria, no feasible off-site alternatives were identified. Therefore, no off-site alternatives were considered as part of the 404(b)(1) alternatives analysis.

2.3 Practicability of Alternatives

2.3.1 Practicability Criteria: Per 40 C.F.R. 230.10(a)(2) an alternative is “practicable” if “it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of the overall project purpose.” The following criteria were used to screen the practicability of on-site alternatives.

2.3.2 Overall Project Purpose: To be practicable, an alternative must meet the overall project purpose, which is to “provide a wind energy facility ranging in size from 315 MW to 465 MW in Imperial County, California.”

2.3.4 Cost Criteria: Cost practicability was determined by calculating the cost of construction per MW-hour of wind energy generation. Cost practicability is based on fixed costs of construction, variable costs of construction, and the net capacity factor. Fixed costs of construction would be the same for all build alternatives and include construction costs for the 500 kV substation, the O&M building and miscellaneous items. Variable construction costs are primarily based on the size of the project and include costs for roads, WTG foundations, individual turbines, underground collection system, turbine erection, and turbine electrical lines. The cost per turbine is negotiated between the buyer and manufacturer and is based on an agreed upon cost per kW. The net capacity factor is the ratio of the actual output of wind energy over a period of time and its hypothetical maximum output if the facility had operated at full capacity. The net capacity factor is based on site specific wind speed measurement, spatial variation across the site, variation in wind patterns through the year, and the energy curve of the specific turbine. The energy curves provide the correlation between the wind speed and the electricity output of the turbine. To calculate the capacity factor, take the total

amount of energy the facility produced over a period of time (i.e., one year) and divide by the amount of energy the facility would have produced at full capacity. Capacity factors vary greatly depending on the source of energy (i.e. wind versus solar). Typical wind power capacity factors range between 20-40 percent (RERL, 2011).

Table 1 below presents a general estimate of construction costs per MW of energy generated by alternative.

Table 1. OWEF Project Alternative Project Design Cost of Construction per MW

| | Alternative 1 (155 WTGs) | Alternative 2 (193 WTGs) | Alternative 3 (137 WTGs) | Alternative 4 (105 WTGs) |
|--|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| Fixed Construction Costs[†] | \$27,000,000 | \$27,000,000 | \$27,000,000 | \$27,000,000 |
| Variable Construction Costs[†] | \$600,377,000 | \$749,158,000 | \$530,655,800 | \$ 516,957,000 |
| Total Capital Costs | \$627,377,000 | \$776,158,000 | \$557,655,800 | \$543,957,000 |
| Net Capacity Factor | 32% | 32% | 32% | 26% |
| Annual Power Generation (MW-hrs) | 999,341 | 1,244,340 | 888,288 | 717,444 |
| Cost of Construction/MW-hr | \$628 | \$624 | \$631 | \$758 |

† Costs are estimated and are based on near term market prices. Actual construction costs for the wind farm project are dependent on confidential construction and turbine pricing.

To meet the Cost criteria an alternative would not substantially increase the cost of construction per MW-hour of wind energy generation of the OWEF as compared to the proposed Project, Alternative 1.

2.3.5 Technology Criteria: The technology criterion considered whether the candidate turbine is suitable for use in the site-specific wind regime and environmental conditions. Given capital investment, turbine selection should ensure maximum energy production from the site’s wind resource. Turbine suitability is based on the average annual wind speed, turbulence intensity, air density, maximum and minimum temperatures, and maximum gusts, as well as turbine characteristics such as rotor diameter, rotor rpm’s, turbine cut-in and cut-out speed and other elements of turbine design. In order to be practicable, an alternative turbine type (i.e. 2.3 MW versus 3.0 MW turbines) must be demonstrated to be suitable for use and maximizes energy production in the site-specific wind regime. If a technology required to implement an alternative was untested or speculative, the alternative was dropped from further consideration. Finally, an alternative that results in excessive time requirements for exploration or resolution of technological issues would not be practicable.

The BLM analyzed other types of alternative energy projects (Section 2.8.6 of the Draft EIR/EIS 2011) including solar, geothermal, biomass, tidal, and wave energy. However, the 404(b)(1) Guidelines do not require the Corps or applicant to evaluate alternative project types that would not meet the overall project purpose. For example, the Corps would not request a single-family home builder evaluate whether their project would avoid or minimize effects to waters of the U.S. if they were to construct multi-family apartment complex.

2.3.6 Logistics Criteria: In order to be practicable, an alternative should optimize a cost effective layout of WTGs and related necessary infrastructure that minimizes ground disturbance and environmental impacts. Cost effectiveness is determined by evaluating site layout of the wind farm and minimizing the relative variable cost per turbine, which is generally based on length of road and collection cable and maximizing the wind resource. There are a number of logistical considerations that constrain the engineering layout of the proposed action both on and off-site. These constraints include industry and/or regulatory design standards usually having to do with safety and in other cases are driven by design efficiencies having to do with cost controls and/or best engineering practices. These include:

Spacing: To minimize downwind array losses, spacing between turbine rows will need to be at least eight rotor diameters (RD) (808 meters) and 2.0 to 3.5 RD (202 to 353.5 meters) for in-row spacing. Because of this spacing requirement, larger land parcels provide better configuration options to avoid sensitive resources.

Configuration: WTGs will be placed in rows or arrays that best utilize prevailing wind flows across a given site. With the on-site alternatives, these rows or arrays will need to be oriented in a southeast-northwest direction to best utilize prevailing wind flows across the project site.

WTGs must be bundled together in 34.5 kV electrical collection system circuits or generation groups that would connect into a new high voltage main transformer located at the proposed project substation in order to utilize standard utility electrical transformers. The 34.5 kV generation groups contain approximately twelve 2.3 MW WTGs or approximately nine 3 MW WTGs. More than twelve 2.3 MW WTGs or nine 3 MW WTGs requires the start of a new circuit. The ideal configuration is a uniform row of twelve 2.3 MW WTGs or nine 3 MW WTGs.

Isolation: The isolation of WTG groups, removing groups from the site grid layout to accommodate resource or land feature avoidance, has an exponentially greater impact on operational design efficiency and cost relative to that described for standard versus non-standard generator group configurations. In some instances, these factors would render an isolated group of WTGs impracticable due to logistics and cost (related to the cost effectiveness discuss above). Length of utilities would have to be significantly lengthened in order to bundle utility crossings and roads into the fewest possible to return to the main layout grid.

Availability of Wind Turbines: Because the feasibility of the project is dependent upon meeting the project's PPA as well as requirements for completing construction in 2012, a proposed wind turbine model needs to be available within the timeframes needed for construction. WTG models that are not available to the project by spring of 2012 cannot be relied upon for use in a given alternative, and if a given alternative must rely on models not readily available, this would render the alternative not practicable based on Logistics.

2.3.7 Environmental Criteria: To meet the Environmental criteria the alternatives must have similar or fewer impacts to aquatic resources as compared to the proposed project (Alternative 1), and no other significant adverse environmental consequences, such as impacts to federally listed as threatened or endangered species, impacts to vegetative communities, or impacts to historic properties.

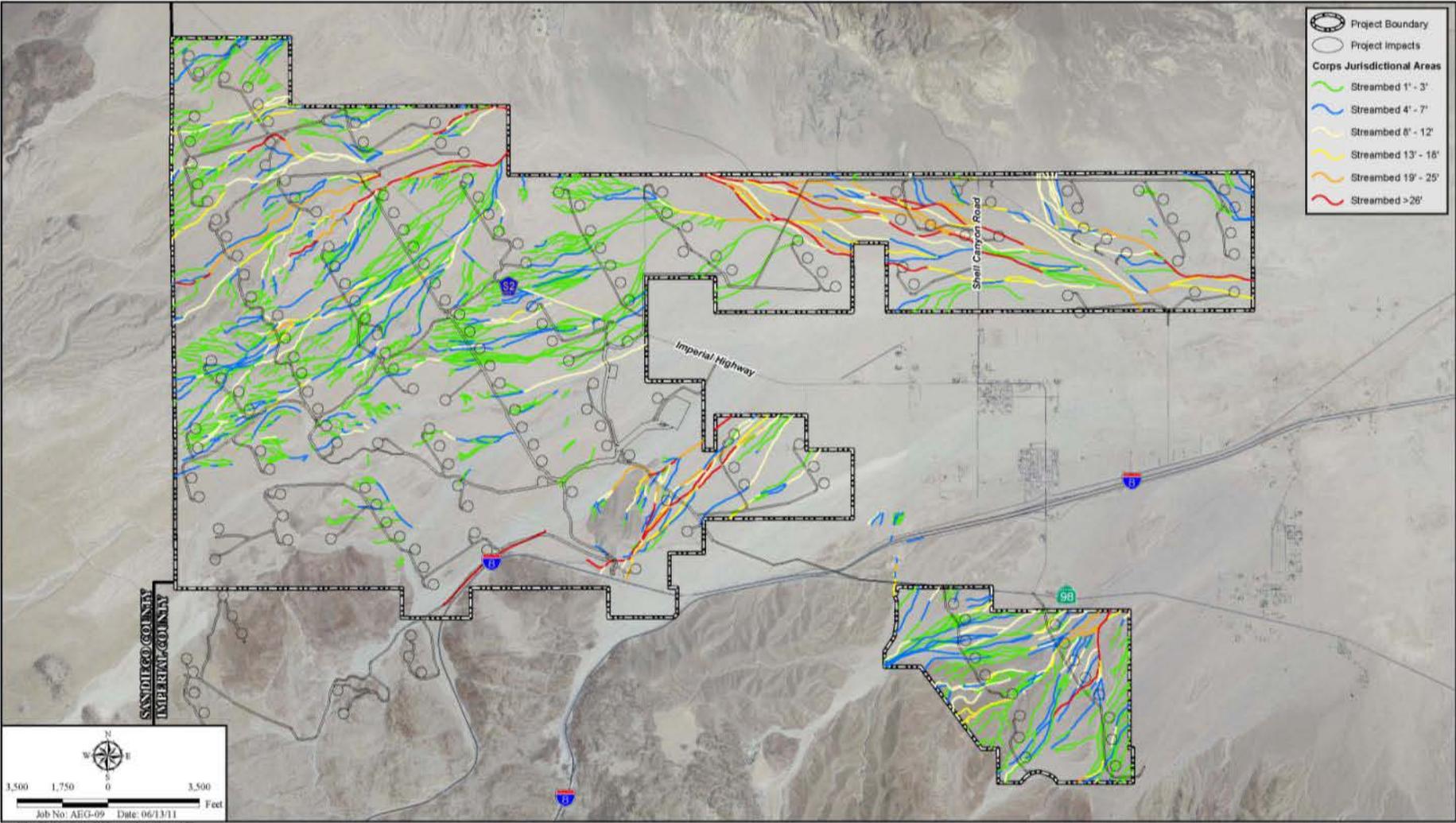
2.4 On-site Alternatives

The Corps evaluated 4 on-site alternatives to the proposed project (Alternative 1): the 193 WTGs Project Alternative (444-MW), Alternative 2; 137 WTGs, Alternative 3; 105 WTGs, Alternative 4; and the No-fill Alternative, Alternative 5. Each of these alternatives was analyzed using practicability screening criteria to help identify the LEDPA. The on-site alternatives are described as follows:

2.4.1 Alternative 1. 155 WTG Project Alternative (356-MW): The proposed project as described in the attached Public Notice would involve the installation of 155 WTGs in the project area and would permanently impact 11,068 linear feet of streambed and temporarily impact 39,108 linear feet of streambed (50,176 linear feet of drainage total), which amounts to approximately 1.35 acres of permanent impacts and 4.22 acres of temporary impacts (5.57 acres total) to non-wetland waters of the U.S (Figure 2).

Alternative 1 was designed to avoid indirect impacts to peninsular bighorn sheep (PBS) and waters of the U.S. The redesign of the originally proposed project (Alternative 2) removed turbines from the southwest corner of Site 1 because of the documented sightings of PBS in the I-8 Island (i.e., the area between the eastbound and westbound lanes of I-8, the northern portion of which is in the Project area). The southwest corner of Site 1 is also rated high in the habitat suitability analysis by Rubin et al. (2009), and the bighorn sheep use the Devil's Canyon crossing under I-8 as a means to access the I-8 Island. The Applicant revised the project site plan to eliminate the 14 wind turbines originally proposed in the southwest corner of Site 1. Once the general site plan was identified, micro-siting of turbines was implemented to further avoid and minimize direct impacts to stream channels greater than 8 feet wide. Furthermore, road crossings were placed at right angles to the extent practicable to minimize indirect impacts to waters of the U.S. associated with erosion.

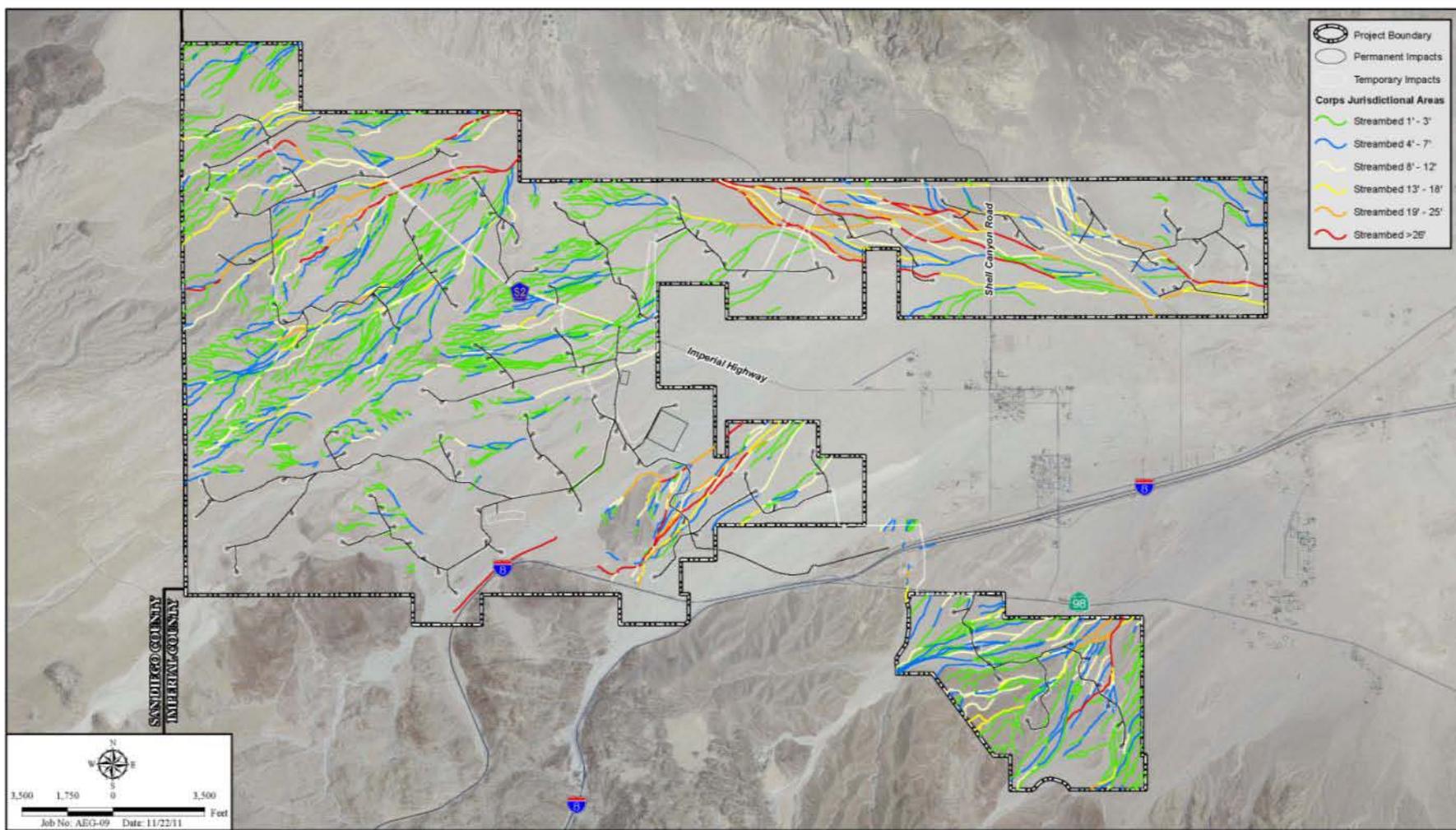
Figure 4. Alternative 2 Plan View



Corps Jurisdictional Delineation/Alternative 2 (193 turbines)

OCOTILLO EXPRESS WIND PROJECT

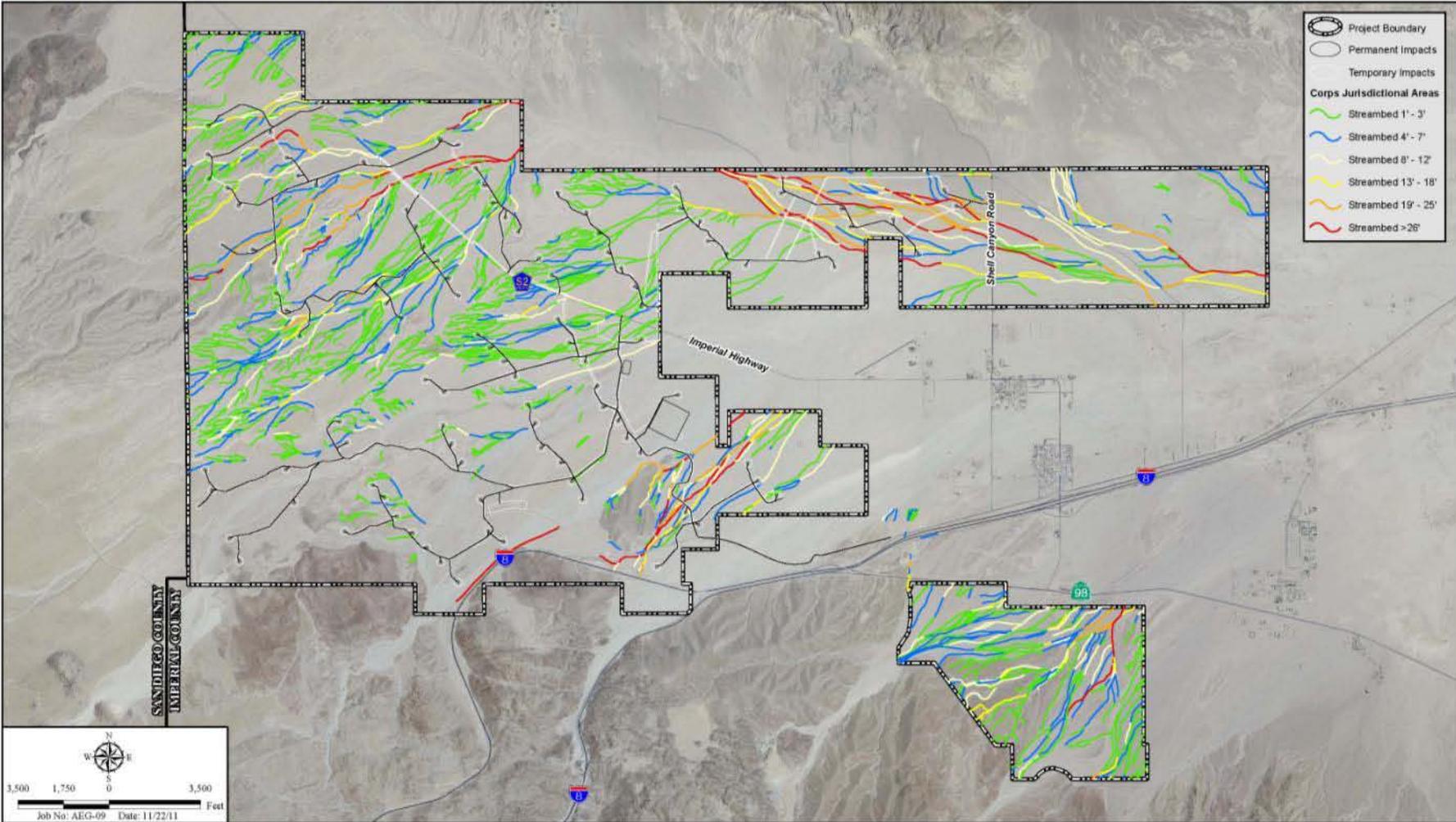
Figure 5. Alternative 3 Plan View



Corps Jurisdictional Delineation/Alternative 3 (137 turbines)

OCOTILLO EXPRESS WIND PROJECT

Figure 6. Alternative 4 Plan View



Corps Jurisdictional Delineation/Alternative 4 (105 turbines)

OCOTILLO EXPRESS WIND PROJECT

Alternative 1 would not result in direct physical impacts to historic properties as all known resources as identified in the 2011 Draft Archaeology Report (Tierra 2011) would be avoided. This alternative would directly impact approximately 664 acres of desert scrub vegetation, consisting of 483 acres of temporary and 181 acres of permanent impacts. For additional information concerning 155 WTG Project Alternative (356-MW) project impacts refer to Table 2-6 of Section 2 of the Draft EIS/EIR.

2.4.2 Alternative 2. 193 WTG Project Alternative (444 MW): This alternative was originally proposed by the Applicant prior to submittal of a DA Permit application and includes 35 more WTGs (193 total) than the proposed project (Alternative 1) and would be comprised of 2.3 MW turbines totaling up to 444 MW. Compared to the proposed project (Alternative 1), approximately half of the additional WTGs would be located in the southwestern portion of the project area, with the remaining WTGs scattered throughout the project area (Figure 4). The general locations of the substation, switchyard, O&M facility, batch plant, temporary laydown yard, and the meteorological towers are the same as Alternative 1.

The 193 WTG Project Alternative would permanently and/or temporarily fill approximately 13.20 acres of jurisdictional waters of the U.S. (Figure 4). Effects of this alternative would include direct impacts to approximately 1,027 acres of vegetation. Adverse direct impacts to cultural resources and/or historic properties would occur with this alternative at 68 turbine locations. To avoid and minimize direct physical impacts to known cultural resources and/or historic properties 38 turbines were removed entirely, and 30 were re-located to avoid the cultural resources, leaving this alternative with 155 turbine locations.

2.4.3 Alternative 3. 137 WTG Project Alternative (315 MW Project): This alternative is conceptually similar to the proposed project (Alternative 1), but with 18 fewer WTGs. The site plan for Alternative 3 is provided in Figure 5. These turbines would be 2.3 MW WTGs. Alternative 3 was developed to evaluate the practicability of further minimizing the proposed project to the maximum extent possible while still meeting the project purpose and the Applicant's PPA. Compared to the proposed project, the turbines eliminated under this alternative include some in the southern portion of Site 2 and northeast portion of Site 1. The locations of the substation, switchyard, O&M facility, batch plant, temporary laydown, and meteorological towers are the same as the Proposed Project. Under this alternative, wind turbines were eliminated to further avoid upland resources in the southwestern portion of the project area. With the increased avoidance of upland resources, waters of the U.S. were also avoided, approximately 0.07 acre of permanent impact.

The 137 WTG Alternative would permanently fill approximately 1.28 acres of jurisdictional waters of the U.S. and would incur 4.03 acres of temporary impacts representing a five percent reduction in impacts to waters compared to Alternative 1 (Figure 5). Like Alternative 1, this Alternative would not result in direct physical impacts to known cultural resources and/or historic properties as all known resources would be avoided (Tierra 2011). This alternative would directly impact approximately 616 acres of desert scrub vegetation, consisting of 447 acres of

temporary impacts and 169 acres of permanent impacts. For additional information concerning 137 WTG Project Alternative (356-MW) project impacts refer to Table 2-6 of Section 2 of the Draft EIS/EIR.

2.4.4. Alternative 4. 105 WTG Project Alternative (315 MW): This alternative is conceptually similar to the Proposed Project (Alternative 1), but with 50 fewer WTGs (105 total), as shown in Figure 6. These turbines would need to be 3 MW turbines as opposed to 2.3 MW turbines in order to ensure the Applicant could meet their PPA of 315 MW. This alternative eliminates all turbines and the meteorological tower from Site 2, several turbines in the northeast portion of Site 1, three turbines near and on the private parcel, and several along the perimeter of the project in the northwest portion of Site 1. The locations of the substation, switchyard, O&M facility, batch plant, temporary laydown yard, and the remaining meteorological towers are the same as the Proposed Project (Alternative 1).

The 105 WTG Alternative would permanently fill approximately 0.90 acre of jurisdictional waters of the U.S. and would incur 2.71 acres of temporary impacts (Figure 6). Alternative 4 would not result in direct physical impacts to known cultural resources and/or historic properties as all known resources would be avoided (Tierra 2011). This alternative would directly impact approximately 496 acres of vegetation, consisting of 355 acres of temporary impacts and 141 acres of permanent impacts. For additional information concerning 105 WTG Project Alternative (356-MW) project impacts refer to Table 2-6 of Section 2 of the Draft EIS/EIR.

2.4.5 Alternative 5. No Fill Alternative: This alternative essentially means that no project approvals would be in effect, and no future development of the project area would occur. This alternative would avoid adverse effects associated with construction of the project and would therefore avoid all waters of the U.S. on-site. The property would remain in its existing condition or would continue to be subject to trash deposition, off-road vehicles, weed infestation from on-going disturbances, and other transient use. The No Fill Alternative requires avoidance of all jurisdictional waters of the U.S. because no DA permit would be issued under this Alternative.

The No Fill Alternative would not be subject to the cost, logistic, or technology criteria because there would be no cost threshold or modification of logistics to evaluate and this alternative would not meet the overall project purpose. Therefore, the No Fill Alternative is not subject to detailed analysis.

2.5 Practicability of On-site Alternatives

At the landscape level, Alternative 1 (155 WTGs) and Alternative 3 (137 WTGs) are conceptually similar. As noted above, Alternative 3 minimizes Alternative 1 to the maximum extent possible while allowing the Applicant to meet their PPA and that utilizes the same technology. Alternative 3 simply removes 18 turbines where it is logistically feasible (i.e., at the end of turbine groups or rows) from the design of Alternative 1 and was not based on the avoidance of

any particular resource. Ultimately, Alternative 3 was considered to evaluate whether any measureable environmental benefit would be realized as compared to the proposed project. Both Alternative 1 and 3 would result in relatively equal or similar impacts to waters of the U.S., known cultural resources, desert scrub vegetation, PBS habitat, flat-tailed horned lizard habitat, and burrowing owls, with differences in most impacts being less than five percent and all being less than ten. Both alternatives include substantial measures to avoid and minimize impacts to waters of the U.S. and upland resources. Under Alternative 3, the 0.07 acre of avoided waters of the U.S. supports marginal to no riparian habitat and provides relatively limited aquatic services in the project area. Additionally, the avoided waters are generally less than three feet in width and exhibit relatively low connectivity with the larger avoided washes, reducing any environmental benefits associated with Alternative 3. Any potential environmental benefits of Alternative 3 are further reduced because, while this alternative results in a minor quantitative reduction in impacts to desert streams, the avoided streams would be indirectly impacted by access roads to other nearby turbines or by rows of turbines and associated road crossings immediately upstream /downstream of the avoided areas. Both alternatives would result in similar direct and indirect impacts to waters of the U.S. and any difference in impacts associated with turbidity, drainage patterns, substrate, vegetative structure, etc. is unlikely to be measureable.

Based on the above information, Alternatives 1 and 3 result in similar levels of avoidance and minimization of impacts to aquatic resources. As stated in the Preamble to the 404(b)(1) Guidelines, where there is no significant or easily identifiable difference in the impact, such as in the case of Alternative 1 and 3, the alternative need not be considered to have “less adverse” impact (Federal Register Volume 45, pp. 85339). Given Alternatives 1 and 3 have very similar impacts to the aquatic environment Alternative 3 is eliminated from further consideration and is not subject to the 404(b)(1) practicability analysis.

Table 2. Practicability of on-site alternatives including cost and logistics criteria

| Practicability Criteria | Alternative 1 | Alternative 2 | Alternative 4 | Alterative 5 |
|--------------------------------|----------------------|---|--|---------------------|
| Project Purpose | 356 MW | 444 MW | 315 MW | 0 |
| Meets Project Purpose | Yes | Yes | Yes | No |
| Cost Criteria | | | | |
| Cost of Construction per MW | \$ 628 | \$ 624 | \$758 | NA |
| Difference compared to Alt 1 | -- | (\$4) | \$130 | NA |
| Meets Cost Criteria | Yes | Yes | No | No |
| Logistics Criteria | | | | |
| Spacing | Yes | Yes | Yes | NA |
| Configuration | Yes | Yes | Yes | NA |
| Isolation | Yes | Yes | Yes | NA |
| Turbine Availability | Yes | Yes | No | NA |
| Meets Logistics Criteria | Yes | Yes | No | No |
| Technology Criteria | | | | |
| Turbine Type | 2.3 MW | 2.3MW | 3.0MW | NA |
| Meets Technology Criteria | Yes | Yes | No | No |
| Environmental Criteria | | | | |
| Permanent Impacts to Waters | 1.35 acres | 13.2 acres (includes permanent and temporary) | 0.90 acre | 0 acre |
| Temporary Impacts to Waters | 4.22 acres | | 2.71 acres | 0 acre |
| Practicable Alternative ? | Yes | Yes | No- Does not satisfy cost, logistics, or technology criteria | No |

2.5.1 Alternative 1. 155 WTG Project Alternative (356 MW):

Overall Project Purpose: Alternative 1 would allow for the generation of 356 MW of wind energy. This alternative would meet the overall project purpose as it would generate between 315 MW and 465-MW of wind energy.

Cost: Alternative 1 would allow for the generation of 356 MW at a cost of construction per MW-hour of \$628. The cost of construction per MW-hour for the 356 MW Project was used to compare costs of construction per MW-hour and determine cost practicability of the alternative project designs. This alternative meets the cost criteria.

Technology: Alternative 1 would utilize 2.3-MW WTGs. The Applicant has conducted an analysis of the site-specific wind resource and has concluded that the Siemens 2.3 -MW turbine is both site-suitable and capable of optimizing energy production due to the excellent fit of its design characteristics to the unique wind resource at the Ocotillo site. Alternative 1 meets the Technology Criteria.

Logistics: Alternative 1 allows for the installation of 155 WTGs that can efficiently be grouped, allowing for the efficient generation and transmission of electricity generated. It allows for the installation of maintenance roads necessary to service each of the WTG groups and to meet necessary safety and security requirements. Utilities can be installed to serve each of the units, and the main facilities complex is located in the center of the project site, providing an efficient location for common facilities. This alternative uses the Siemens 2.3 -MW turbine and this wind turbine is currently available to the project for construction in 2012. This alternative meets the logistics criteria.

Environmental: Alternative 1 would result in 1.35 acres of permanent and 4.22 acres of temporary impacts to waters of the U.S. and would not cause direct physical impact to any known cultural resources or historical properties. This alternative would also directly impact approximately 664 acres of desert scrub vegetation, consisting of 483 acres of temporary and 181 acres of permanent impacts.

2.5.2 Alternative 2. 193 WTG Project Alternative (444 MW):

Overall Project Purpose: Alternative 2 would allow for the generation of 444 MW of wind energy. This alternative would meet the overall project purpose.

Cost: Alternative 2 would allow for the generation of 444 MW at a cost of construction of approximately \$624 per kW. The estimated total construction cost for the 444 MW Project is \$776,158,000. The cost of construction per kW for the 444 MW Project would result in a slight decrease in the cost of construction per kilowatt (kW) of the OWEF as compared to the proposed Project, therefore this alternative meets the cost criteria.

Technology: Alternative 2 would utilize 2.3-MW WTGs. The Siemens 2.3-MW turbine is both site-suitable and capable of optimizing energy production due to the excellent fit of its design characteristics to the unique wind resource at the Ocotillo site. Alternative 2 meets the Technology Criteria.

Logistics: Alternative 2 allows for the installation of 193 WTGs that can efficiently be grouped, allowing for the efficient generation and transmission of electricity generated. It allows for the installation of maintenance roads necessary to service each of the WTG groups and to meet necessary safety and security requirements. Utilities can be installed to serve each of the units, and the main facilities complex is located in the center of the project site, providing an efficient location for common facilities. This alternative uses the Siemens 2.3 -MW turbine and this wind turbine is currently available to the project for construction in 2012. This alternative meets the logistics criteria.

Environmental: Alternative 2 would result in 13.2 acres of impacts to waters of the U.S., including both permanent and temporary. This alternative would have adverse direct impacts to cultural resources. Therefore, Alternative 2 has greater impacts to waters of the U.S. and cultural resources when compared to the proposed project. Alternative 2 does not meet the environmental criteria.

2.5.3 Alternative 4. 105 WTG Project Alternative (315 MW):

Overall Project Purpose: Alternative 4 would allow for the generation of 315 MW of utility grade electricity (unless Logistics criteria discussed below are not met). This represents a reduction of over 12% of wind energy compared to the 356-MW Project. The 315-MW Project would meet the overall project purpose by generating between 315 MW and 465 MW.

Cost: Alternative 4 would allow for the generation of 315 MW of wind energy at a cost of construction per MW-hour of energy produced at \$758. The cost of construction per MW-hour of energy produced for this alternative represents an approximate 21 percent increase in cost of construction per MW-hour of wind energy produced as compared to Alternative 1. A 21 percent increase in the cost of construction per MW-hour of wind energy generated represents a substantial increase; therefore Alternative 4 does not meet the cost criteria.

Technology: The 105 WTG Alternative requires the use of 3.0-MW WTGs to meet the 315 MW minimum required by the applicant's PPA and the overall project purpose.

The Applicant has conducted extensive analysis of the site-specific wind resource and compared candidate turbines for the Project and has concluded that the Siemens 2.3-MW turbine is both site-suitable and capable of optimizing energy production with the current wind turbine layout. In addition, the Siemens 2.3-MW turbines is available to meet the project completion deadlines, has a proven record of reliability, and has demonstrated highly predictable costs associated with construction and maintenance. This turbine is designed for Class 2 wind regimes and is, therefore, well suited for the project site's wind regime.

The Siemens 3-MW turbine, based on further study may prove to be technologically suitable for the project's specific wind regime, turbine spacing, and environmental conditions. To demonstrate suitability, Siemens would need to complete a 3 to 4 month review of the project's wind and environmental data to determine if these turbines can be reliably operated and maintained and therefore warranted.

In addition to analyzing the wind resource (i.e. wind speed and turbulence), Siemens will also evaluate the extreme temperature and normal temperature variation at the project to determine if the mechanical and electrical components can operate effectively under these conditions. As part of early commitment to the 2.3 MW turbine, Siemens had time to study the high temperature and temperature variations at the project site and engineer a "hot weather package" for the tower and turbine nacelle. In contrast, the 3 MW turbine uses different generator, gear, and control technology that prevents the same "hot weather package" used on the 2.3 MW turbine from being used on the 3 MW turbine. In order to study and engineer a hot weather package for the 3 MW turbine, Siemens may need an additional 6 to 9 months. The total estimated time for Siemens to declare the 3 MW turbine suitable is up to 12 months.

The 3 MW turbine has not been demonstrated to be suitable for use nor has it been demonstrated to maximize energy production in the site-specific wind regime. Therefore, this alternative does not meet the technology criteria as the 3 MW turbine is untested, speculative, and would require approximately an additional 12 months to explore and resolve any technological issues.

Logistics: This alternative allows for the installation of WTGs that can efficiently be grouped, allowing for the efficient generation and transmission of electricity generated. It allows for the installation of maintenance roads necessary to service each of the WTG groups and to meet necessary safety and security requirements. Utilities can be installed to serve each of the units, and the main facilities complex is located in the center of the project site, providing an efficient location for common facilities.

The Siemens 3 MW turbine is not available for purchase to meet the 2012 construction deadline due to exhausted supply of these turbines. This would preclude the project from meeting construction timeframes to meet its PPA. Alternative 3 does not meet the Logistics criteria.

Environmental: This alternative would result in direct impacts to 3.61 acres of waters of the U.S., including 0.90 acres of permanent and 2.71 acres of temporary impacts. Furthermore, this alternative design would result in direct impacts to 496.0 acres of vegetation communities (63.0 acres of sensitive communities and 433.0 acres of non-sensitive communities). Direct impacts include 355.2 acres of temporary impacts and 140.8 acres of permanent impacts. Alternative 4 has fewer impacts to upland environmental resources than Alternative 1 and avoids direct physical impacts to cultural resources similar to Alternative 1. However, Alternative 4 would result in fewer impacts to waters of the United States when compared to the proposed project; therefore Alternative 4 meets the Environmental Criteria.

2.5.4 No Fill Alternative

Overall Project Purpose: The No Fill Alternative and No Federal Action Alternative are equivalent for the purposes of this 404(b)(1) alternatives analysis. Waters of the U.S. traverse the entire project area, therefore a utility grade wind energy project could not reasonably be constructed without obtaining a DA permit from the Corps.

Large scale wind technology requires maintenance roads and power transmission lines connecting the individual WTGs. To span over, or directionally bore under, every stream crossing would be impossible. This alternative essentially means that no project approvals for a wind energy facility would be in effect. As such, this alternative would not meet the Overall Project Purpose to provide between 315 and 465 MW of wind energy in Imperial County, California.

Cost: No Project would be built and there would be no cost associated with this Alternative.

Technological: The project would not be built and therefore there would be no technological issues associated with this alternative.

Logistics: The project would not be built and therefore there would be no logistical issues associated with this alternative.

Environmental: This alternative would avoid all impacts associated with construction of the OWEF and operation and would therefore avoid all waters of the U.S. The project area would remain in its existing condition and would continue to be subject to any existing disturbances such as trash deposition, off-road vehicle use, weed encroachment, and other transient use. This alternative would have fewer impacts to aquatic resources than the proposed project, therefore this alternative would meet the Environmental criteria.

2.6 Practicability Analysis Findings and Conclusions

2.6.1 Alternative 1. 155 WTGs (356MW) Project Alternative: This alternative meets the overall project purpose, cost, technology, and logistics criteria. Therefore Alternative 1 is practicable.

2.6.2 Alternative 2. 193 WTGs (444 MW) Project Alternative: This alternative meets the overall project purpose, cost, technology, and logistics criteria and, therefore, is practicable. However, when compared to the proposed project, Alternative 2 results in greater impacts to the aquatic environment and cultural resources and/or historic properties and therefore is not the least environmentally damaging practicable alternative as required by the 404(b)(1) Guidelines.

2.6.3 Alternative 4. 105 WTGs (315 MW) Project Alternative: This alternative meets the overall project purpose and environmental criteria. However, the use of 3 MW turbines is not technologically and logistically feasible because the 3 MW turbine technology is untested and speculative and they would not be available in 2012 which would preclude the project from meeting its obligations under its PPA. This alternative would also not meet the cost criteria as the reduction of turbines in the north- and southeast portions of the project area reduces the net capacity factor and substantially increases the cost of construction per MW-hour by approximately 21 percent. Alternative 4 does not meet the cost, technology, and logistics criteria, therefore it is not practicable and is eliminated from further consideration and analysis.

2.6.4 Alternative 5. No-fill Project Alternative: No-fill Project Alternative would not achieve the overall project purpose. Therefore, this alternative is not practicable and was eliminated from further consideration.

2.6.5 Conclusions: Based on the above practicability analysis there are no less environmentally damaging practicable alternatives to the proposed project. Due to the Applicant's coordination and pre-applicant consultations with the resource agencies to modify OWEF project and avoid and minimize impacts, the Preferred Project Alternative (Alternative 1) is the LEDPA. Impacts of the proposed project alternative (Alternative 1) on the physical, chemical, and biological components of the aquatic environment are presented and discussed in Section 4 of this document.

3.0 EXISTING CONDITIONS

This section describes the existing conditions of the project area.

3.1 Location and General Description

The Project area lies near the town of Ocotillo within the Imperial Region of the Colorado River Regional Water Quality Control Board (RWQCB). The Project area is in the Yuha Desert, which is in the Colorado Desert region of the larger Sonoran Desert. The 7 million-acre Colorado Desert region extends from the border of the higher-elevation Mojave Desert in the north to the Mexican border in the south, and from the Laguna Mountains of the Peninsular Ranges in the west to the Colorado River in the east. The Yuha portion extends from the Jacumba Mountains in the west to the historic West Side Main Canal near the City of El Centro, and from Plaster City in the north to south of Mount Signal in Mexico.

3.2 Physical and Chemical Characteristics of the Aquatic and Upland Environment

3.2.1 Jurisdictional Determination: Jurisdictional waters of the U.S. were defined using a preliminary jurisdictional delineation report. The Corps' Carlsbad Field Office and Cold Region Research Laboratory verified the delineation methods and initial survey results on November 12, 2010. There are no perennial or intermittent streams within the project area, nor are there any wetland waters of the U.S. All delineated aquatic resources within the project area are ephemeral streams. Ephemeral streams in the project area were grouped into 6 categories based on stream width, ranging from 1-3 feet wide to greater than 26 feet wide. A total of 239.16 acres and 1,365,970 linear feet of stream were mapped in the project area (Figure 2).

Table 3. Corps Potential Non-Wetland Waters of the U.S.

| Stream Width (feet) | Area (acres) | Length (feet) |
|---------------------|--------------|---------------|
| 1-3 | 30.12 | 685,351 |
| 4-7 | 33.63 | 291,616 |
| 8-12 | 40.07 | 176,561 |
| 13-18 | 25.74 | 73,494 |
| 19-25 | 32.14 | 64,478 |
| 26< | 77.46 | 74,470 |
| TOTAL | 239.16 | 1,365,970 |

Ephemeral streams in the project area provide beneficial functions and services typical of high quality, low disturbance desert scrub wash systems. Riverine functions are generally categorized into hydrologic, physical, and biologic. Functions performed include, but are not

limited to, groundwater recharge, flood peak attenuation, floodwater storage, sediment trapping and transport, nutrient trapping, and maintenance of wildlife corridors and habitat.

Ephemeral streams provide many of the same ecological and hydrological functions as perennial streams by transporting water, nutrients, and sediment throughout the watershed. When functioning properly, ephemeral streams provide landscape hydrologic connections; stream energy dissipation during high-water flows to reduce erosion and improve water quality; surface and subsurface water storage and exchange; ground-water recharge and discharge; sediment transport, storage, and deposition to aid in floodplain maintenance and development; nutrient storage and cycling; wildlife habitat and migration corridors; support for vegetation communities to help stabilize stream banks and provide wildlife services; and water supply and water-quality filtering. Ephemeral streams move water, nutrients, and sediment throughout the watershed, and provide hydrologic connections both upstream and downstream of the project site. Ephemeral streams provide energy dissipation during peak flows, provide for improved water quality and groundwater recharge, and other biotic and abiotic functions (Levick, et. al. 2008). They can also provide a wide array of ecological functions including forage, cover, nesting, and movement corridors for wildlife.

3.2.2 Physical Substrate: The OWEF project area is an alluvial highland that extends east and northeast from the Jacumba Mountain region towards Imperial Valley near the southern end of the Salton Sea. Soils consist of younger Holocene to Pleistocene age alluvium. The surface soil consists of medium-dense to dense, poorly graded sands with little fines at the surface. The sands become somewhat cemented in the subsurface, while non-cemented poorly graded sands generally become more dense with depth (Draft EIS/EIR). Soils in the project area consist of Beeline, LaPosa, Rositas, Sheephead, and Omstott series.

The Beeline soil series are shallow and very shallow soils formed in mixed alluvium weathered from sandy conglomerate. Beeline soils are found in fan terraces and hills with slopes of 3-45 percent and elevations of 1,400-2,000 feet about mean sea level. LaPosa soil series are moderately deep soils, formed in slope alluvium from schist, granite, gneiss, rhyolite, and eolian deposits. LaPosa soils are found in hills and mountains with slopes of about 10-75 percent, and elevations 400-3,200 feet about mean sea level. Rositas soils are very deep soils formed in sand eolian material. Rositas soils are found in dunes and sand sheets with slopes of 0-30 percent and elevations of 270-2,000 feet above mean sea level. Sheephead soil series are shallow soils, formed in material weathered from mica, schist, gneiss, or granite. Sheephead soils are found in mountainous uplands with slopes of 9-75 percent and elevations of 2,000-7,000 feet above mean sea level. Omstott soil series is a member of the loamy, mixed, nonacid, mesic, shallow, family of typic xerorthents. It is found in gently rolling to steep uplands with elevations of 3,600-5,000 feet above mean sea level.

All five soil series found in the project area are either somewhat excessively drained or well-drained, have medium to rapid runoff potential, and moderate to moderately rapid permeability.

3.2.3 Currents, Circulation or Drainage Patterns: The project area does not support any perennial or intermittent streams, nor does it support wetland waters of the U.S. Numerous ephemeral streams and washes, most notably Palm Canyon Wash, Lava Flow Wash and Meyer Creek, traverse the project area, generally conveying water from the south in the western portion of the site to the northeast in the eastern portion of the site.

Ephemeral streams in the project area are normally dry. They convey water infrequently and only following precipitation events of intensities sufficient to result in flowing water. The rate and amount of runoff which characterizes drainage patterns in the area is determined by many factors, including precipitation and evaporation, infiltration or precipitation, and topography. Rainfall is minimal in this region and long periods of time may pass between rain events. When it does occur, flowing water within the streams is generally activated by summer monsoons that produce short-duration, high-intensity flash flooding. Winter storms typically result in greater rainfall totals on average than the summer monsoons, but they are widespread, low-intensity events that result in little runoff. For example, stream gage records for San Felipe Creek located approximately 24 miles north of the project site indicate that August and September flows are nearly five times higher than the December to February flows. Although the majority of the rainfall occurs during winter, the majority of annual runoff occurs during the summer months of July to September.

3.2.4 Suspended particulates/turbidity: No perennial or intermittent streams are located within the project area, and no water quality data is available for the site. Water quality of surface runoff flows would be dependent on materials picked up on the ground surface, which is currently natural desert. There is no water quality data available for the project area, thus the existing levels of suspended particulates/turbidity that naturally occur in the project area have not been measured. However, the project area is subject to short-term, high intensity rain events. These naturally occurring, unevenly distributed and extreme precipitation events result in temporary increases in suspended particulates and turbidity while water is present and flowing in the streams.

3.2.5 Water Quality (temperature, salinity patterns and other parameters): There is not water quality data for the project area.

The project site lies within Imperial Valley Planning Area of the Colorado River Basin Hydrologic Region, Imperial Subregion of the RWQCB. There are no perennial or intermittent streams on the project site. The closest perennial water feature is the West Side Main Canal, located east of the project site by approximately 12 miles. The closest natural perennial drainage to the project site is the New River, created in the early 1900's when the Colorado River overflowed a dike, and with the Alamo River further east, flowed through the Imperial Valley to form the Salton Sea. Both the New and Alamo Rivers flow from Mexico north to the Salton Sea collecting discharge from Mexican factories, Mexican sewage, and inflow from large and small irrigation canals that feed and drain the agricultural fields of Imperial Valley.

In addition to the major hydrologic features described above, a number of ephemeral washes that typically only convey water in response to precipitation events originate in the mountains north and east of the proposed OWEF site. Myer Creek, which flows in the north-easterly direction, has a drainage area of 21.8 square miles and flows through the community of Ocotillo; there is both commercial and residential development in the Myer Creek floodplain near Ocotillo (Imperial County, 2007). Additionally, Palm Canyon Wash and Lava Flow Wash, as well as various smaller washes, run through the proposed OWEF site flowing southwest to northeast.

Water quality objectives and total maximum daily load (TMDL) requirements for the Imperial Valley Planning Area are described in the Basin Plan for the Colorado River Basin HR, including the New River, Alamo River, and Imperial Valley drains surrounding the project area. The purpose of water quality objectives and requirements described in the Basin Plan is to protect designated Beneficial Uses, which are either consumptive (municipal, industrial, and irrigation) or non-consumptive (recreation and habitat). Designated Beneficial Uses relevant to surface waters in the project area are provided in Table 3.20-2 of the Draft EIS/EIR.

As noted above, no water quality data is available for the project area, however surface waters in Imperial County pass through a salinity gradient of fresh, brackish, and saline. This salinity gradient results from the combined effects of high evaporation rates, high temperatures, low annual rainfall, and leaching of salts from agricultural fields.

3.2.6 Flood Control Functions: Ephemeral streams and desert washes in the project area function to retain and provide a catchment of precipitation during rain events. These ephemeral drainages and washes convey flows to downstream waters during and immediately after precipitation events, thus these desert streams also have flood control functions (Levick *et. al.* 2008).

3.2.7 Storm, wave and erosion buffers: Not Applicable.

3.2.8 Erosion and Accretion Patterns: Erosion and accretion patterns in the project area are primarily affected by drainage patterns. Existing drainage patterns on the proposed OWEF project area are characterized by ephemeral drainages which contain water only after precipitation events sufficient to produce runoff occur (see Section 3.2.3 above). The rate and amount of surface runoff which characterizes drainage patterns and thus erosion and accretion patterns in the area is determined by multiple factors, including: soil type, precipitation, infiltration, vegetative cover, and topography.

- Soils in the project area consist of Beeline, LaPosa, Rositas, Sheephead, and Omstott series. All 5 soil series found in the project area are either somewhat excessively drained or well-drained, have medium to rapid runoff potential, are highly erosive, and moderate to moderately rapid permeability. See Section 3.2.2 above for a complete discussion of existing physical substrate conditions of the project area.

- Precipitation events in the desert are often short-term, high intensity events that can result in localized flooding. Flowing water within the streams is generally activated by summer monsoons that produce short-duration, high-intensity flash flooding. Winter storms typically result in greater rainfall totals on average than the summer monsoons, but they are widespread, low-intensity events that result in little runoff.
- Nineteen vegetation communities were mapped in the project area. Vegetation communities consists primarily of desert scrub, including: allscale scrub, brittle bush scrub, cheesebrush scrub, creosote bush scrub, big galleta brass scrub-steppe, desert agave scrub, mesquite thicket, and Ocotillo tall scrub. For a complete list of vegetation communities occurring in the project area refer to Table 3.18.1 of the Draft EIS/EIR.
- Topography: elevations in the project area range from approximately 1,490 feet above mean sea level (AMSL) in the southwest portion of the Project Area to 300 feet AMSL in the northeast portion of the project area. Elevation generally decreases from west to east.

Much of the project area is part of a large alluvial fan at the base of the Jacumba and Coyote Mountains. Alluvial fans have a general geomorphic form that is cone- or fan-shaped and form when confined streams flow out of the mountains and onto plains and sediment is deposited. As a stream channel leaves a mountain canyon, flow velocity decreases, channel confinement is lost, and water spreads out and sediment carried by the stream is deposited. Alluvial fans are characterized by enhanced deposition, loss in flow confinement, loss of discharge, and channel avulsions (Lichvar et al. 2009).

3.2.9 Aquifer Recharge: The OWEF project area is underlain by Coyote Wells Valley Groundwater Basin and is located within the surface recharge area in the Ocotillo-Coyote Wells Sole Source Aquifer (SSA). Depth to groundwater in the vicinity of the OWEF project area ranges from as much as 300 feet below ground surface (bgs) in the northwestern portion of the site to as little as 45 feet bgs in the southeast portion. The primary recharge to the SSA occurs through percolation of precipitation and ephemeral runoff from the surrounding mountains.

The Coyote Wells Valley Groundwater Basin is a two-layer aquifer system. The upper layer consists of alluvial deposits and the lower layer is composed on Palm Springs and Imperial formations, which have been uplifted in the area east of Ocotillo and are relatively near the ground surface. Recent groundwater monitoring indicates that the amount of water withdrawn by pumping exceeds the amount of water that recharges the Coyote Wells Valley Goundwater Basin.

3.2.10 Baseflow: All waters of the U.S. in the project area are ephemeral. There are no true baseflows associated with these features, although these drainages can support surface flows during and shortly after substantial storm events.

3.2.11 mixing zone, in light of the depth of water at the disposal site; current velocity, direction and variability at the disposal site; degree of turbulence; water column stratification; discharge vessel speed and direction; rate of discharge; dredged material characteristics; number of discharges per unit of time; and any other relevant factors affecting rates and patterns of mixing: Not applicable – the proposed project would not include discharges of dredged material.

3.3 Biological characteristics of the aquatic environment

3.3.1 Special aquatic sites (wetlands, mudflats, coral reefs, pool and riffle areas, vegetated shallows, sanctuaries and refuges, as defined in 40 CFR 230.40-45): There are no special aquatic sites located within the project area.

3.3.2 Fish, crustaceans, mollusks, and other aquatic organisms in the food web: As noted above all waters present in the project area are ephemeral streams. The ephemeral streams on-site are normally dry. They convey water infrequently and only following precipitation events of intensities sufficient to result in flowing water. Rainfall is minimal in this region and long periods of time may pass between rain events. When it does occur, flowing water within the streams is generally activated by summer monsoons that produce short-duration, high-intensity flash flooding. Given their ephemeral and flashy nature, the streams in the project area provide little to no habitat for fish, crustaceans, mollusks, and other aquatic organisms in the project area.

3.3.3 Other Wildlife (breeding, cover, food, travel, general): The majority of the OWEF project area is comprised of desert scrub communities such as brittle bush scrub, creosote bush scrub, teddy bear cholla scrub, white bursage scrub, and Wolf's cholla scrub. Other vegetation communities include smoke tree wash woodland, un-vegetated sand dunes, un-vegetated streambed, and badlands (Draft EIS/EIR).

Several named, dry desert washes cut through the OWEF project area and generally run from west to east: Palm Canyon Wash cuts through the center of Site 1; Meyer Creek Wash cuts through the southern portion of Site 1; a portion of Coyote Wash cuts through the northwest portion of Site 2; and several additional unnamed washes flow throughout the entire project area (Figure 2).

As identified in Section 3.23 of the Draft EIS/EIR a total of 174 animal species were identified during the general and focused zoological surveys within the OWEF project area, and include 34 invertebrate species, 31 reptile species, 86 bird species, and 23 mammal species. Twenty-three other special status animal species observed/detected within the proposed OWEF site

including: flat-tailed horned lizard, rosy boa (*Charina trivirgata*), Cooper's hawk (*Accipiter cooperii*), sharp-shinned hawk (*Accipiter striatus*), golden eagle (*Aquila chrysaetos*), long-eared owl (*Asio otus*), burrowing owl, Brant goose (*Branta bernicla*), ferruginous hawk (*Buteo regalis*), Swainson's hawk (*Buteo swainsoni*), Vaux's Swift (*Chaetura vauxi*), northern harrier (*Circus cyaneus*), yellow warbler (*Dendroica petechia brewsteri*), willow flycatcher (*Empidonax traillii*), merlin (*Falco columbarius*), prairie falcon (*Falco mexicanus*), American peregrine falcon (*Falco peregrinus anatum*), loggerhead shrike (*Lanius ludovicianus*), osprey (*Pandion haliaetus*), Brewer's sparrow (*Spizella breweri*), Le Conte's thrasher (*Toxostoma lecontei*), western mastiff bat (*Eumops perotis californicus*) and American badger (*Taxidea taxus*).

The project area is known to support a variety of wildlife species. Due to the habitat being present, most of the wildlife species listed in Table 3.23.1 of Section 3.23 of the Draft EIS/EIR are present on the project site. Streams in the project area likely provide wildlife habitat and movement corridors for the species listed in Section 3.23 and Appendix D of the Draft EIS/EIR.

Although the ephemeral streams on the project site do not provide the same complexity, structure, and species composition as more mesic riparian systems, arid ephemeral streams provide important structural habitat for a variety of wildlife species, play an important role in the dispersal of both animals and plants, and also shade and stabilize fluvial environments, providing habitat for wildlife (Naiman et al. 1993; Patten 1998). Ephemeral streams in general provide a variety of ecological functions including forage, cover, nesting, and wildlife movement corridors. Because of the relatively higher moisture content in arid and semi-arid region streams, vegetation and wildlife abundance and diversity in and near them is proportionally higher than in the surrounding uplands (Levick, et al. 2008). The ephemeral streams on the project site provide connectivity to the Laguna Mountains and Jacumba Mountains to the west, Coyote Mountains to the north, and desert scrub to the east. The smaller drainages on site likely provide very limited functions of wildlife movement corridors, although the primary stems of Palm Canyon Wash, Meyer Wash and Coyote Wash may serve as wildlife corridors.

3.3.4 Threatened and Endangered Species:

- 1) Listed endangered and/or threatened species or designated critical habitat present on-site:** One federally-listed as endangered species, Peninsular bighorn sheep (*Ovis canadensis nelsoni*; PBS), was observed within the project boundary. Due to this observation the proposed project was redesigned to avoid direct impacts to PBS. PBS were observed in the portion of the I-8 Island within Site 1 during biological surveys for OWEF by HELIX in March and April 2010. No other PBS sightings have been noted during other biological field studies that have been conducted between September 2009 and February 2011.

The PBS location data obtained from the California Department of Fish and Game (CDFG) and the U.S. Fish and Wildlife Service (USFWS) and the HELIX/Western

Tracking Institute preliminary PBS tracking study data indicate a high level of PBS use near the Devil's Canyon undercrossing of I-8 (southwest of the Site 1) and within the I-8 Island, including the portion of the I-8 Island within and directly adjacent to Site 1. The CDFG tracking data also indicate that three PBS lambing sites were used in 2010 within the portion of the I-8 Island within and directly adjacent to Site 1. The 2011 HELIX/Western Tracking Institute PBS study conducted to date indicates that PBS occupation of the project area is limited to the portion of the I-8 Island in the southwest portion of Site 1 (Department of Fish and Game 2011 and Wetland Tracking Institute 2011).

PBS are known to occur to the north, west, and south of the project area. PBS have been observed in the portion of the I-8 Island within and adjacent to Site 1 of the OWEF project area in March and April 2010. Although sheep have never been observed within the current project area proposed for permanent and temporary impact, observations of PBS adjacent to the project site and available suitable habitat, the BLM assumed the site occupied by PBS. There is no designated critical habitat within the project area.

- 2) **Proposed listed endangered and/or threatened species or proposed critical habitat present on-site:** There are no proposed listed endangered and/or threatened species or proposed critical habitat present in the project area.

3.3.5 Biological Availability of possible contaminants in dredged or fill material, considering hydrography in relation to known or anticipated sources of contaminants; results of previous testing of material from the vicinity of the project; known significant sources of persistent pesticides from land runoff or percolation; spill records for petroleum products or designated (Section 311 of the CWA) hazardous substances; other public records of significant introduction of contaminants from industries, municipalities or other sources: No evidence has been discovered to show that military unexploded ordinance, toxic substances, or hazardous waste occur in the OWEF project area.

3.4 Human use characteristics of the aquatic environment

3.4.1 Municipal and private water supplies: The OWEF project area is underlain by Coyote Wells Valley Groundwater Basin and is located within the surface recharge area in the Ocotillo-Coyote Wells Sole Source Aquifer (SSA). Depth to groundwater in the vicinity of the OWEF project area ranges from as much as 300 feet below ground surface (bgs) in the northwestern portion of the site to as little as 45 feet bgs in the southeast portion. The primary recharge to the SSA occurs through percolation of precipitation and ephemeral runoff from the surrounding mountains. The main surface water drainages in the area are Palm Canyon Wash and Coyote Wash (Draft EIS/EIR). The U.S. Geological Survey monitors 20 wells in the areas surrounding the OWEF project area. Monitoring results indicate that groundwater levels have generally

been declining since the 1970s, suggesting that the Coyote Groundwater Basin is in a state of overdraft.

Runoff from ephemeral streams in the project area are not directed to the intake of a municipal or private water supply.

3.4.2 Recreational and commercial fisheries: All waters of the U.S. in the project area and vicinity are ephemeral and do not support opportunities for commercial or recreational fisheries.

3.4.3 Water-related recreation: The Draft EIS/EIR did not identify any water-related recreation in the vicinity of the project area or any water related recreation activities downstream of the project area that would be affected. The nearest water-related recreation is boating, kayaking, fishing, and migratory bird watching at the Salton Sea, which is approximately 30 aerial miles northwest of the project area.

3.4.4 Aesthetics of the aquatic ecosystem: Ephemeral streams on the project site are currently unvegetated or sparsely vegetated with upland species. Ephemeral streams in the project area are typically unaltered or may be disturbed due to use by off-road vehicles.

3.4.5 Parks, national and historical monuments, national seashores, wilderness areas, research sites, and similar preserves: The project area is not located in or near any National Parks, Monuments, Seashores, or research sites. Nearly all of the project area is located within the Yuha Desert Recreation Area. The Proposed OWEF project area is located immediately north of the Jacumba Wilderness, approximately two miles east of the Yuha ACEC, approximately one and one-half miles southwest of Plaster City Off-highway Vehicle Open Area, approximately one mile south of Coyote Mountains Wilderness Area, approximately two miles northeast of Table Mountain Wilderness Study Area, and adjacent to Anza Borrego Desert State Park. The proposed OWEF would potentially be visible from these special land use areas. Currently viewsheds of the proposed OWEF project area from the above listed special designation areas are in general unimpeded, with the exception of I-8 and the Sunrise Power Link. For more information on the above special designations and their associated management goals, refer to Section 3.16, Special Designations, of the Draft EIS/EIR.

4.0 IMPACTS ANALYSIS

4.1 Impacts to Physical and Chemical Characteristics of the Aquatic and Upland Environment

4.1.1 Physical Substrate Impacts: Construction of the 155 WTG alternative is expected to take 10 months to complete. Construction would include clearing, grading, soil excavation, roads, utilities, turbines, O&M building, and other ancillary features. During these activities there would be both permanent and temporary impacts to the physical substrate of waters of the U.S. from dredge and fill activities and construction of permanent structures and facilities. Alternative 1 would permanently impact 1.35 acres of channel substrate (approximately 0.5 percent of all waters of the U.S. within the project area). Temporary impacts to channel substrate would occur in approximately 4.22 acres of waters of the U.S., to facilitate construction of the proposed project facilities. Substrate composition would remain the same as pre-project conditions within waters of the U.S. as no soil would be imported to waters of the U.S. on the project site. The discharge of fill material would minimally alter substrate elevation and contours which may result in temporary changes in water circulation and drainage patterns (discussed below).

Other potential impacts to channel substrate would be from periodic vehicle use crossings of waters of the U.S. via at-grade, unsurfaced crossings, which may compact channel substrate.

Mitigation Measures: To reduce temporary impacts to physical substrate the Applicant would be required to revegetate and restore all temporary impact areas to pre-construction contours. To minimize potential secondary or indirect effects to channel substrate due to scour, the Applicant would construct all road crossings to be at-grade “Arizona” crossings.

Through early coordination the applicant designed the proposed project to avoid impacts to approximately 233.59 acres of non-wetland waters of the U.S. To compensate for unavoidable permanent impacts to 1.35 acres of ephemeral stream substrate the Applicant has proposed to provide compensatory mitigation through the enhancement and restoration of Carrizo Marsh, located immediately north of the project area. For additional, detailed information regarding proposed compensatory mitigation at Carrizo Marsh see Section 5.0 of this document.

Mitigation Measures contained in the Draft EIS/EIR *Water-8*, Flood and Erosion Structure Damage Protection, and *Water-9*, Construction SWPPP Specifications, would ensure adequate control of erosion and sedimentation. Furthermore, the construction of the OWEF would include implementation of recommended BMPs and BLMs Programmatic EIS for Wind Energy Development on BLM-Administered Lands in the Western States. See page 4.14.17 of the draft EIS/EIR for the list of BMPs. Additional conditions of certification to minimize erosion are also detailed in the 401 certification and would be incorporated as Special Conditions of the Corps’ permit decision as necessary to further minimize these potential impacts.

4.1.2 Currents, Circulation or Drainage Patterns Impacts: The proposed Project could directly and indirectly impact water circulation and drainage patterns associated with construction activities that change stream channel surface elevations or that alter the rate and amount of surface runoff. The rate and amount of surface runoff, which characterizes drainage patterns in the project area, is determined by multiple factors including, precipitation and evaporation, infiltration of precipitation, and topography. These factors are discussed below with regard to the proposed project's potential to affect drainage patterns of the project area.

Precipitation and Evaporation: The proposed project would not affect the amount or intensity of precipitation that occurs in the project area. However, the placement of permanent infrastructure could result in localized, minor changes in evapotranspiration. The proposed project would result in permanent impacts to approximately 172 acres including 1.35 acres of waters of the U.S. This constitutes approximately 1.4 percent and 0.01 percent of the overall project area respectively. Given the overall area of the OWEF project site and the relatively small area of permanent impacts, i.e. 0.07 percent of the overall project area, it is reasonable to anticipate that the placement of permanent infrastructure would have a minor effect on ground temperature and thus rates of evapotranspiration across the project area.

Infiltration of precipitation: The proposed project would introduce new, permanent impervious surfaces in the project area, which could affect site-specific infiltration patterns. Creation of new impervious surfaces could interfere with groundwater recharge by reducing the amount of surface area through which precipitation and surface water infiltrates. Increases in impervious surface cover associated with the proposed project would be associated with permanent project infrastructure including concrete WTG foundations, a limited portion of the access roads (the access road to the O&M facility), O&M facility, and structures. Creation of new impervious surfaces could interfere with infiltration by reducing the amount of surface area through which precipitation and surface water percolates to underlying aquifers. Of the permanent impacts throughout the project area, about 2.5 acres would result in new impervious surfaces (1.23 acre O&M facility and paved road, 1.1 acres for WTGs, and 0.12 acre substation and switchyard) in the project area. Given the overall area of the OWEF project and the 0.02 percent increase of new, impervious surfaces in the project area it is reasonable to anticipate that the placement of permanent infrastructure would have a minor effect on infiltration rates across the project area.

Topography: Implementation of the proposed project would require grading and excavation activities associated with turbine foundations and crane pads, batching plant and laydown/parking area, temporary laydown yard, access roads, collector lines, meteorological towers, substation/utility switchyard, O&M facility, and gravel sources. Approximately 573 acres of the total project area would be temporarily disturbed and 172 acres would be permanently disturbed during construction of the proposed project. All temporary impact areas would be restored to preconstruction contours and vegetative conditions. Localized changes in topography would occur, however, the overall topography of the project area would not be significantly altered.

To minimize impacts to drainage patterns, the Applicant designed all permanent road crossings to be low-water “Arizona” crossings. Arizona crossings allow for waters to flow over or through access roads, minimizing potential adverse impacts associated with drainage pattern alterations from road alignments.

Based on the above discussion it is anticipated that any increases in surface water runoff resulting from permanent structures on the project site would be short-term and location-specific, and that such effects would not influence surface runoff in a manner which would adversely alter water circulation and drainage patterns.

Mitigation Measures: In addition to the minimization measures included in the Applicant’s project design, the proposed projects potential to alter the existing drainage patterns of the site would also be minimized through design specification and BMPs. Furthermore, the implementation of Draft EIS/EIR mitigation measures *Water-1*, Demonstration Compliance with water quality permits; *Water-4*, Install pervious and/or high-roughness groundcover; *Water-8*, Flood and Erosion Structure Damage Protection; and *Water-9*, Construction SWPPP specifications; would further avoid and/or minimize adverse impacts to water circulation and drainage patterns as a result of increased rates or amounts of surface runoff.

4.1.3 Suspended particulates; turbidity Impacts: Under the proposed Project, there is a potential for direct and indirect water quality impacts due to increased turbidity to non-wetland waters of the U.S. on-site and downstream water bodies during the grading and construction activities. During construction, the Project site may be subject to potential project-related erosion through the removal of stabilizing vegetation and exposure of erodible materials. Project activities would involve: (1) removal of surface stabilizing features such as vegetation and soil crusts; (2) excavation of existing compacted materials from cut areas; and (3) redeposition of excavated (and/or imported) material as fill. Cleared, un-vegetated, and graded areas exposed to rain and surface runoff could potentially result in increased turbidity in and immediately downstream of the project area. As previously noted, there is no water quality data available for the project area, however the OWEF project area is subject to short-term, high intensity rain events that temporarily increase suspended particulates/turbidity in waters of the U.S. Given the climatic conditions and flashy nature of the streams in the project area it is not expected that the proposed project could substantially increase the suspended particulates/turbidity levels above the amount naturally occurring or result in elevated levels of suspended particulates in the water column for increased lengths of time.

Mitigation Measures: The Applicant designed the project roads and graded pads to allow water to sheet flow across them and return to its existing state. All of the roads and pads would be pervious, allowing for infiltration thus reducing potential impacts from turbidity. Furthermore, the Applicant would be required to restore temporary impact areas to preconstruction contours and conditions, including replanting with native vegetation.

Per the Draft EIS/EIR, site construction would require implementation of recommended BMPs from BLM's Programmatic EIS for Wind Energy Development on BLM-Administered Lands in the Western United States. The BMPs are intended to reduce erosion and sedimentation. For specific BMPs refer to Section 4.14.10 of the Draft EIS/EIR. Mitigation Measures contained in the Draft EIS/EIR *Water-8*, Flood and Erosion Structure Damage Protection, and *Water-9*, Construction SWPPP Specifications, would ensure adequate control of erosion and sedimentation.

Prior to the issuance of a DA permit the Applicant must obtain water quality certification under Section 401 of the Act from the RWQCB. The requirements and conditions of the water quality certification would be included as special conditions of the Corps permit decision as necessary and would further mitigate any adverse impacts to water quality.

4.1.4 Water Quality (temperature, salinity patterns and other parameters) Impacts: The project would not affect salinity gradients.

As noted in Section 3 of this document there is no water quality data available for the project area. However degradation of surface water quality could occur through the effects of sedimentation or through the accidental release of hazardous materials. Potential direct and indirect effects associated with suspended particulates/turbidity as well as mitigation measures are discussed above in Section 4.1.2.

In addition to the potential effects of erosion and sedimentation, the accidental release of toxic materials/chemicals during construction of the proposed project could result in water quality degradation within and downstream of the project area. Potentially hazardous materials that may be used during construction include: diesel fuel, gasoline, lubricant oils, hydraulic fluids, cement slurry, and other chemicals that may be required for the operation of construction vehicles and equipment.

Indirect effects would result from a spill or leak that occurs directly above or within the bed and bank of a flowing stream or waterbody. Surface water in the project area is ephemeral in nature and direct contamination as a result of accidental release is not likely. Indirect contamination of surface waters could occur if hazardous or toxic materials are released into a dry stream bed or wash and is subsequently transported through runoff during a storm event into downstream waters.

Mitigation Measures: In accordance with the Draft EIS/EIR, *Water-1*, *Water-9*, and *Water-10*, the Applicant would be required to develop Construction SWPPP Specifications and an Accidental Spill Control and Environmental Training, which would communicate environmental concerns and appropriate work practices, and establish spill prevention and response measures. The Construction SWPPP specifications would include BMPs intended to reduce erosion and reduce the potential for direct and indirect chemical contamination of surface waters. Furthermore, the Applicant would be required to obtain water quality certification under Section 401 of the Act from the RWQCB prior to the issuance of a DA permit.

4.1.5 Flood Control Functions Impacts: Impacts associated with flood control functions would most likely occur where permanent infrastructure and/or facilities are constructed in or closely adjacent to waters of the U.S., impeding flow conveyance or restricting channels. The proposed OWEF project could affect flood control functions as a result of permanent impacts to 1.35 acres of waters of the U.S. Permanent impacts to waters of the U.S. would primarily be associated with at-grade "Arizona" crossings. The at-grade crossings would not impede or restrict flows and would provide for adequate flood conveyance. Furthermore, none of the permanent infrastructure associated with the OWEF project would be situated within waters of the U.S. Some wind towers would be placed adjacent to waters of the U.S. however it is not likely that flows would be restricted substantially. The proposed OWEF project would provide for adequate flood conveyance and would not impede or restrict flows. Therefore the proposed project would not substantially effect flood control functions of the ephemeral streams and desert washes in the project area.

4.1.6 Storm, Wave and Erosion Buffer Impacts: Not applicable - the OWEF project would not directly or indirectly affect storm, wave and erosion buffers.

4.1.7 Erosion and Accretion Patterns Impacts: Proposed grading and construction activities within the project area could impact existing erosion and accretion patterns by altering the existing drainage patterns (i.e. precipitation, infiltration, topography), soil type, or vegetative cover. Based on the above discussion of currents, circulation, or drainage patterns in Section 4.1.2, the proposed OWEF project would not substantially alter surface drainage patterns in a manner which would adversely alter erosion and accretion patterns.

The proposed project would permanently impact 1.35 acres and temporarily impact 4.22 acres of channel substrate. However, as discussed in Section 4.1.1 of this document, physical substrate impacts, the proposed project would not substantially effect soils in the project area.

Construction of the OWEF would result in direct temporary and permanent impacts to native vegetation. The proposed project would result in permanent impacts to approximately 181 acres and temporary impacts to approximately 483 acres of vegetation communities (Table 4.17-1 of the Draft EIS/EIR). The losses would occur through vegetation clearing, grading, or other surface disturbance. Cleared and graded areas exposed to rain and surface runoff could result in increased erosion and alteration of accretion patterns of the project area and downstream waters as soils in the project area would not be stabilized by the vegetation and their associated root system. The project area is located within an alluvial fan which is characterized by enhanced deposition and channel avulsions. Impacts to erosion and accretion patterns would likely occur during the summer monsoonal season, when the project area is subject to short-duration, high intensity rain events. Given the climatic conditions and flashy nature of the streams in the project area it is not expected that the proposed project would substantially alter erosion or accretion pattern levels from those naturally occurring in the project area.

Mitigation Measures: To minimize impacts to erosion and accretion patterns all temporary impact areas would be revegetated to pre-construction conditions upon completion of construction. Furthermore, the project design has minimized impacts to erosion and accretion patterns by: minimizing the total project footprint (approximately 1.4 percent of the entire project area); implementing drive and crush of vegetation rather than grading to the extent feasible; minimizing impacts to waters of the U.S. by limiting direct impacts to 1.35 acre and avoiding larger/wider stream courses; placing stream crossings at 90 degree angles; restoring temporary impact areas to pre-construction conditions; and implementing BMPs including straw wattles, water bars, covers, and silt fences.

Adverse impacts to erosion and accretion patterns would further be minimized with the implementation of mitigation measures in the Draft EIS/EIR. Mitigation measures *Water-1* and *Water-9* the Applicant would be required to develop construction SWPPP specifications and comply with all water quality permits. The Construction SWPPP would identify a number of erosion and sedimentation control measures that would be implemented as part of the proposed project. These measures include placing check dams, gravel bags, fiber rolls, and silt fence in strategic locations, as well as implementing a number of logistical and schedule requirements to slow down runoff in an effort to prevent erosion and downstream sedimentation during rain events.

4.1.8 Aquifer Recharge Impacts: The OWEF project would affect the Coyote Wells Valley Groundwater Basin if the proposed project would require the withdrawal of water from the basin and/or the proposed project altered the surface permeability such that rates of basin recharge are reduced. Both the withdrawal of water and decrease in surface permeability would exacerbate the current overdraft conditions of the Coyote Wells Valley Groundwater Basin.

The OWEF project would not use groundwater from the Coyote Wells Valley Groundwater Basin to meet the proposed projects construction water requirements. As described in Section 2.1.3.1 of the Draft EIS/EIR, under "Utilities," water for construction would either be purchased from a private well owner near Pine Valley, approximately 50 miles west of the project area, or water would be purchased from the Imperial Irrigation District and transported by truck from canals near Dixieland, approximately 20 miles to the east of the OWEF project area.

The introduction of new impervious surfaces would result in minor site specific alternations to infiltration rates and patterns and therefore could potentially affect the recharge rates of the Coyote Wells Valley Groundwater Basin. New Increases in impervious surface cover associated with the proposed project would be associated with permanent project infrastructure including concrete WTG foundations, a limited portion of the access roads (the access road to the O&M facility), O&M facility, and structures. Creation of new impervious surfaces could interfere with infiltration by reducing the amount of surface area through which precipitation and surface water percolates to underlying aquifers. Of the permanent impacts throughout the project area, about 2.5 acres would result in new impervious surfaces (1.23 acre O&M facility

and paved road, 1.1 acres for WTGs, and 0.12 acre substation and switchyard) in the project area. The applicant has designed the OWEF project to minimize the creation of new impervious surfaces in the project area and has incorporated into their project design the use of permeable materials in the permanent impact areas. Given the overall area of the OWEF project and the relatively small area, 2.5 acres or 0.02 percent of the entire project area, of new, impervious surfaces it is reasonable to anticipate that the placement of permanent infrastructure would not substantially effect aquifer recharge rates.

Mitigation Measures: In addition to the minimizations measures proposed by the Applicant and incorporated into their project design, the implementation of Draft EIS/EIR mitigation measures *Water-1*, demonstration compliance with water quality permits and *Water-4*, install pervious and/or high-roughness groundcover would further avoid and/or minimize any minor impacts of the proposed project to the recharge of the Coyote Wells Valley Groundwater Basin.

4.1.9 Baseflow Impacts: As noted above in Section 3 of this document, all waters of the U.S. in the project area are ephemeral and only convey flows during and immediately after precipitation events. There are no true baseflows associated with waters of the U.S. in the project area, therefore the proposed project is not expected to have any direct or indirect effects to baseflow.

4.1.10 mixing zone, in light of the depth of water at the disposal site; current velocity, direction and variability at the disposal site; degree of turbulence; water column stratification; discharge vessel speed and direction; rate of discharge; dredged material characteristics; number of discharges per unit of time; and any other relevant factors affecting rates and patterns of mixing impacts: The proposed OWEF project would not directly or indirectly affect mixing zone, current velocity, degree of turbulence, water column stratification, rate of discharge, dredged material characteristics, number of discharges per unit of time, and any other relevant factors affecting rates and patterns of mixing impacts.

4.2 Biological characteristics of the aquatic environment

4.2.1 Special aquatic sites (wetlands, mudflats, coral reefs, pool and riffle areas, vegetated shallows, sanctuaries and refuges, as defined in 40 CFR 230.40-45): The OWEF project area does not support any special aquatic sites, therefore the proposed project would not directly or indirectly effect any special aquatic sites.

4.2.2 Fish, crustaceans, mollusks, and other aquatic organisms in the food web Impacts: The proposed project would directly and permanently impact 1.35 acres of waters of the U.S. Temporary impacts to channel substrate would occur in approximately 4.22 acres of waters of the U.S., where necessary to allow for construction of the proposed project facilities. To avoid and minimize impacts to aquatic habitat, all temporary impact areas would be restored to pre-project contours and revegetated, following completion of construction activities in waters of the U.S.

Construction of the OWEF project could reduce habitat function of waters of the U.S. in the project area by altering the physical structure of waters, removing vegetation, altering plant species diversity, percentage of native plant species, or biological structure. Direct and indirect impacts to crustaceans and mollusks would be minor as no fish crustaceans, or mollusks were observed within the project area. Although not documented or observed in the project area, impacts to other aquatic organisms would be caused by changes in water quality or hydrology (currents, circulation, and drainage patterns). No substantial or significant water quality related effects are anticipated as the proposed project would comply with all applicable water quality regulations (Mitigation Measure, *Water-1*). Hydrologically, no substantial impacts to currents, circulation, or drainage patterns are anticipated (see Section 4.1.2). Given the above, the proposed project would not have any substantial direct and indirect effects to fish, crustaceans, mollusks, and other aquatic organisms.

Mitigation Measures: Mitigation measures contained in the Draft EIS/EIR *Water-1*, *Veg-1-d*, and *Veg-2-b*, would ensure that the proposed project complies with all water quality permits, and would further minimize impacts to habitat function by minimizing the invasion of exotic weeds species and requiring the revegetation of temporary impact areas.

4.2.3 Other Wildlife Impacts (breeding, cover, food, travel, general): The proposed OWEF project would permanently impact 1.35 acres and temporarily impact 4.22 acres of waters of the U.S. The proposed project would result in direct and indirect impacts to non-aquatic biological resources, including wildlife, their habitat, and wildlife movement corridors.

The Construction of the OWEF project could have direct effects on non-aquatic wildlife as a result of mortality or habitat loss. Construction activities such as grading, the movement of construction vehicles or heavy equipment, and the installation of OWEF facility components may result in the direct mortality of flat-tailed horned lizard, barefoot banded gecko, rosy boa, and the American badger. The proposed project would also permanently disturb 30.3 acres of occupied flat-tailed horned lizard habitat, 26 acres of burrowing owl foraging habitat, and 181 acres of potential golden eagle foraging habitat. The proposed project could also indirectly effect non-aquatic wildlife as a result of noise, vibration, night lighting, introduction of invasive weed species, and fugitive dust. The permanent and temporary disturbance to the project area can encourage invasive weed species to encroach into the habitat from areas outside the site. Invasive weed species have the potential to outcompete native vegetation and degrade the overall quality of the habitat.

Construction activities could also directly and indirectly impact nesting birds found in and adjacent to the project area through the removal of vegetation, could cause the destruction or abandonment of active nests or the mortality of adults, young, or eggs.

Impacts to other BLM or state listed wildlife are discussed in Section 4.21 and Appendix D of the Draft EIS/EIR. The full list of mitigation measures for wildlife resources is listed on pages 4.21-41 through 4.21-50 of the Draft EIS/EIR.

Mitigation Measures: To avoid direct and indirect effects to non-aquatic wildlife the following mitigation measures would be implemented: *Wild-1a* (compliance monitoring by designated biologist), *Wild-1d* (work area flagging), *Wild-1i* (shield lighting), *Wild-2b* (timing restrictions), *Veg-1d* (invasive plant species control plan), and *Veg-2b* (temporary disturbance restoration). The implementation mitigation measures for wildlife resources as identified in Section 4.21 of the Draft EIS/EIR would reduce adverse direct and indirect impacts to non-aquatic wildlife by requiring seasonal restrictions to avoid direct impacts to migratory birds,

4.2.4 Endangered or Threatened Species: The OWEF proposed project (Alternative 1) could have potential direct and indirect impacts to PBS. The proposed project could physically alter PBS habitat, disrupt PBS behavior by eliminating access to foraging areas, disrupt reproduction or lambing activities, prevent dispersal or intermountain movements, and mortality as a result of collision with construction equipment. These potential impacts are described in detail in Section 4.21 of the Draft EIS/EIR.

Mitigation Measures: Prior to construction the Applicant would provide the permitting agencies with the Bighorn Sheep Mitigation and Monitoring Plan. Mitigation Measure *Wild-1t* requires that a PBS monitor be present if proposed OWEF activities are planned within 300 meters of PBS essential habitat. If PBS are observed within the project area, no construction activities would occur within 300 meters of the sheep until the PBS monitor verified that the sheep have moved to at least 300 meters from planned activities. Mitigation Measure Water 1, would include mitigating impacts to potential waters of the U.S. through the enhancement of Carrizo Marsh on Anza Borrego State Parks in known PBS territory. Mitigation at Carrizo Marsh consisting of riparian enhancement is expected to benefit PBS by restoring historical forage areas that have been lost due to tamarisk invasion. Enhancement efforts are expected to remove tamarisk and restore the drainage and marsh to a condition of native forage for PBS. With implementation of the identified Mitigation Measures and mitigation required by the Service, Alternative 1 is not likely to adversely affect PBS.

4.2.5 Biological Availability of possible contaminants in dredged or fill material, considering hydrography in relation to known or anticipated sources of contaminants; results of previous testing of material from the vicinity of the project; known significant sources of persistent pesticides from land runoff or percolation; spill records for petroleum products or designated (Section 311 of the CWA) hazardous substances; other public records of significant introduction of contaminants from industries, municipalities or other sources: During construction and operation of the OWEF, surface water quality could be affected through the introduction of pollutants such as excess trash, oils, solvents, paints, cleaners, spilled fuel, vehicle fluids, and other construction or industrial site-related contaminants. See general water quality section above for a discussion of potential direct and indirect impacts associated with project construction contaminant availability.

Mitigation Measures: The potential exists for hazardous materials being used in the project area to be released into the desert washes and ephemeral streams that traverse the site; however

mitigation measure *PHS-7* of the Draft EIS/EIR would require hazardous materials use and storage to occur at least 100 feet away from delineated waters of the U.S. to reduce the potential for any spilled materials to enter waters of the U.S. In accordance with Mitigation measures *Water-1, Water-9, and Water-10*, the Applicant would develop Construction SWPPP Specifications and an Accidental spill control and environmental training, which would communicate and establish spill prevention and response measures. The construction SWPPP specifications would include BMPs intended to reduce erosion and reduce potential impacts associated with the creation of polluted runoff.

Given the above mitigation measures, adverse impacts associated with contaminant availability would be less than significant.

4.3 Human use characteristics of the aquatic environment

4.3.1 Municipal and private water supplies: Runoff from ephemeral streams in the project area are not directed to the intake of a municipal or private water supply, therefore the discharge of fill material in the project area would not directly or indirectly affect the quality of water supplies with respect to color, taste, odor, chemical content and suspended particulate concentration.

4.3.2 Recreational or commercial fisheries: The proposed project would have no direct or indirect effects on recreational or commercial fisheries as the project area does not support opportunities for commercial or recreational fisheries.

4.3.3 Water-related recreation: The proposed project would have no direct or indirect effects on water-related recreation as the project area does not support opportunities for water-related recreation.

4.3.4 Aesthetics of the aquatic ecosystem: The proposed project would permanently impact 1.35 acres of the 239 acres of waters of the U.S. in the project area, or less than one percent of waters on site. Temporary impacts to channel substrate would occur in approximately 4.22 acres of waters where necessary to allow for construction of the proposed project facilities. Construction of the proposed project would alter the visual character of the project area as a whole, primarily due to the erection of wind turbines that would be visible to viewers traveling along I-8 and County Route S2. However, visual impacts of the activities proposed within Corps jurisdiction would largely be confined to at grade, Arizona, road crossings. Although the proposed road crossings would remain earthen or pervious they would contrast with existing natural stream banks with vegetation, but are not expected to result in significant adverse impacts to the aesthetic values of waters of the U.S. in the project area overall. For detailed information concerning the direct and indirect impacts of the proposed project to aesthetics, please reference Section 4.18 of the Draft EIS/EIR.

4.3.5 Parks, national and historical monuments, national seashores, wilderness areas, research sites, and similar preserves: The OWEF project area is not located within any parks, national and historical monuments, national seashores, wilderness areas, research sites, or other preserves, therefore the proposed project would not directly affect the above listed areas. However, the proposed project could potentially have indirect effects to the above listed areas as the OWEF project area is located less than 10 miles from an ACEC, national recreation areas, national scenic and historic trail, wilderness areas, and a state park (see Section 3.4 of this document). Temporary, indirect effects include, fugitive dust, noise, and visual disturbance. For a detailed description of the indirect impacts analysis please refer to Section 4.2 (Air Resources), Section 4.9 (Noise), and Section 4.18 (Visual Resources) of the Draft EIS/EIR.

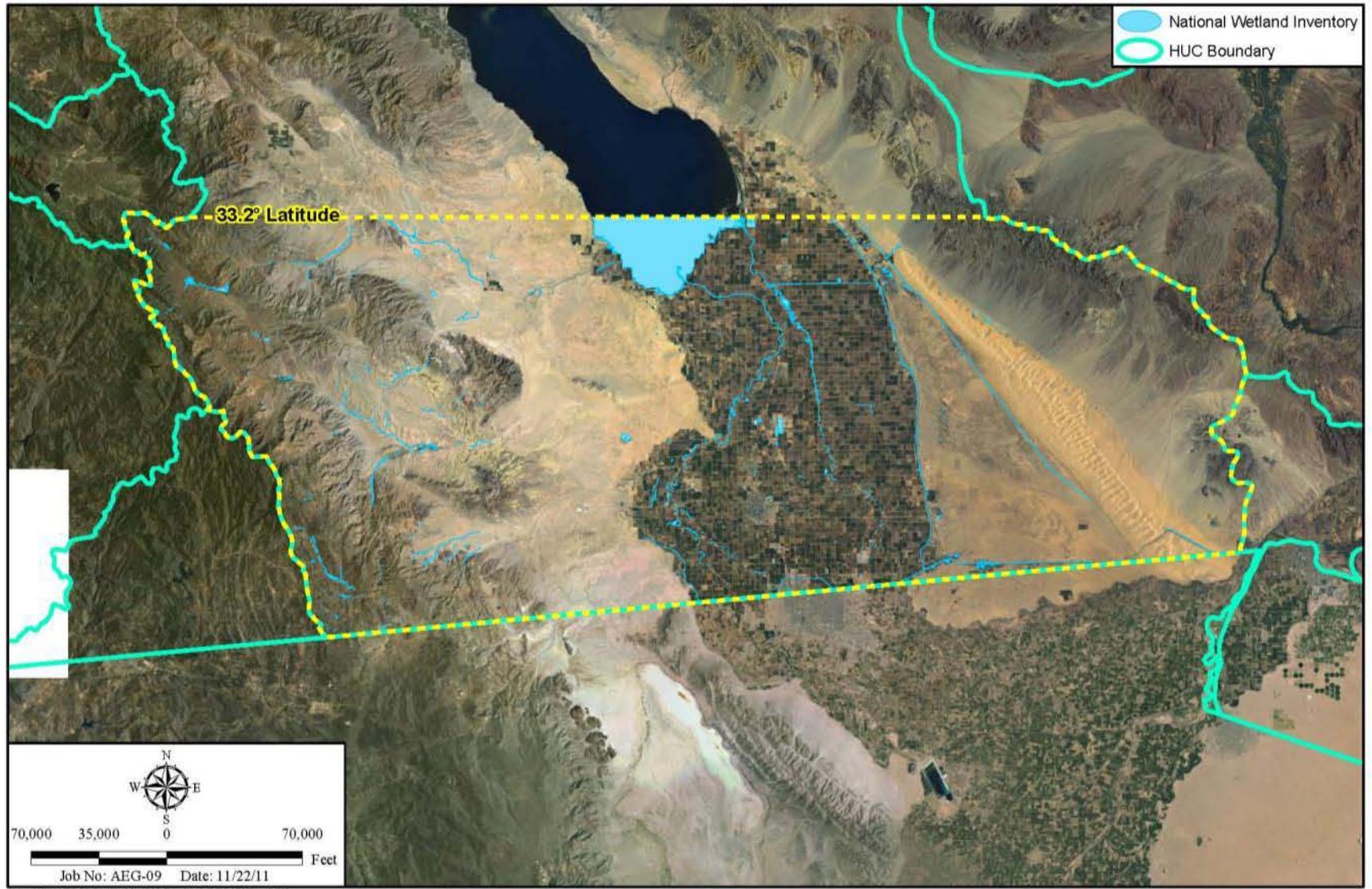
4.4 Determination of Cumulative Effects on Waters of the U.S.

Cumulative effects associated with Alternative 1, 356 MW Project are described in detail in Section 4 of the Draft EIS/EIR. The Draft EIS/EIR determined there would be no cumulative impacts to Climate Change, Cultural Resources, Environmental Justice, Lands and Realty, Mineral Resources, Paleontological Resources, Public Health & Safety, Recreation, Social and Economic Issues, Soil Resources, Transportation and Public Access, Water Resources, and Wildland and Fire Ecology. The Draft EIS/EIR found that cumulative impacts were significant and unavoidable after implementing mitigation measures for visual resources. The Draft EIS/EIR found that with implementation of mitigation measures, cumulative impacts were reduced to less than significant for Air Resources, Noise, Vegetation Impacts, and Wildlife Resources.

4.5.1 Baseline: The Corps geographic scope of analysis for cumulative impacts to waters of the U.S. is the Salton Sea Hydrologic Unit Code (HUC) 8 watershed (18100200) boundaries and south of latitude 33.2 North (Figure 7). The geographic area is comprised of approximately 52,876 acres and 2,359,575 linear feet of waters (includes both wetland and riparian areas; estimated based on U.S. Fish and Wildlife Service National Wetlands Inventory). Twenty-six DA permits for the period 1995 through 2011 were issued. The projection is that authorizations will continue and will likely increase above the current rate as the U.S. economy improves and additional emphasis is placed on alternative energy projects to allow utilities to meet State-required Renewable Portfolio Standards. Natural resource issues of particular concern [from Corps and non-Corps activities] are waters of the U.S. (including wetlands and non-wetlands), water quality degradation, air quality, loss of undeveloped open space and wildlife habitat, and groundwater overdraft.

4.5.2 Context: At the landscape level the proposed project is large compared to other activities that have occurred within the geographic area. However in terms of impacts to waters of the U.S. as well as compared to other reasonably foreseeable projects (Table 4 below and Table 4.1-1 of the Draft EIS/EIR), the proposed project is typical of other activities in the watershed. The Corps reviewed permit actions within the geographic scope by querying the Corps' Regulatory

Figure 7. Cumulative Effects Geographic Area



Salton Sea HUC 8 Watershed Boundary and South of Latitude 33.2° N

Division database (ORM 2) to identify the number and type of permits (IP or general) that have been issued. According to the ORM 2 query the Corps has issued 26 DA permits in the Salton Sea HUC 8 watershed between 1995 and 2010. In general the following activities were authorized: aquatic restoration, linear transportation, maintenance, utility activities, and bank stabilization.

Of the 26 permits issued, four were IPs authorizing more than minimal impacts and 22 were general permits resulting in minimal impacts to waters of the U.S. (authorized under the Corps' nationwide permit (NWP) program or regional general permits (RGP)). The 26 permit actions identified in the ORM 2 query amounted to approximately 75 acres of both permanent and temporary impacts to waters of the U.S. Five of the 26 regulatory actions completed had noted mitigation required in the database. The compensatory mitigation (preservation, enhancement, re-establishment) entered into the database amounted to approximately 255 acres. The proposed OWEF Project would result in the permanent loss of 1.35 acres of waters of the U.S. representing less than a half of a percent increase in impacts to waters of the U.S. within the geographic scope of this analysis.

The OWEF Project would be located in the Yuha Desert of Imperial County in an area characterized by braided, erosive stream channels, flash flooding, alluvial fan conditions, low rainfall, sparse vegetation, and the potential for wind erosion. There are no perennial or intermittent drainages on the project site. Hydrology and the water quality of surface runoff flows would be dependent on materials picked up on the ground surface, which is currently natural desert. The downstream disposition of surface runoff from the site is the desert area west of the Westside Main Canal, possibly the Westside Main Canal itself, local drainage and irrigation ditches west of the Westside Main Canal, the New River, and eventually the Salton Sea. Cumulative impacts to water quality are not anticipated because of the low amount of rainfall received in the region and the irregularity of subsequent flow events, the lack of impervious surfaces in the geographic area, and the type of project (e.g. limited impervious surfaces). Mitigation Measures within the Draft EIS/EIR have been designed to limit the potential adverse effects on hydrology and water quality and ensure that Alternative 1, 356 MW Project Alternative, would comply with applicable regulatory requirements for both construction and post-development surface runoff water quality. These regulatory requirements not only apply to the OWEF Project, but all future projects. Therefore, cumulative impacts on surface water quality of receiving waters from the proposed project and future alternative energy projects in the watershed would be addressed through compliance with the applicable regulatory requirements that are intended to be protective of beneficial uses of the receiving waters.

On-going and reasonably foreseeable permit actions within the geographic area of interest (e.g. those actively engaging the Corps in pre-application meetings) with the Corps are shown in

Table 4. Additional reasonably foreseeable projects are presented in Table 4.1-1 of the Draft EIS/EIR.

Table 4. Corps On-Going Reasonably Foreseeable Projects

| File Number | Project Name | Action |
|-------------|---|-----------------|
| 2009-00140 | Wind Zero Coyote Wells Specific Plan | Pre-Application |
| 2010-00016 | SDG&E East County Substation | NWP |
| 2010-00142 | Species Conservation Habitat | SIP |
| 2010-00461 | Superstition Solar | Pre-Application |
| 2010-00543 | Sonny Bono Restoration Project | Pre-Application |
| 2010-00570 | Imperial Solar Energy Center West | NWP |
| 2010-00645 | Observation Deck Pad in Habitat Ponds, Sonny Bono | Pre-Application |
| 2010-00858 | Niland Solar Project | Pre-Application |
| 2011-00677 | U.S. Gypsum Company Plaster City Pipeline Project | NWP |
| 2011-00748 | Dixieland Solar Project | Pre-Application |

Per the Draft EIS/EIR, Alternative 1 (356 MW Project) would be expected to contribute only a small amount to the cumulative effects related to air resources, noise, vegetation impacts, and wildlife resources because the proposed mitigation measures described below would minimize and offset the project's contributions to the cumulative loss of the above resources. Mitigation Measure Air-1 and Air-3 require the applicant to implement a fugitive dust control plan to mitigate particulate matter emissions during construction and operation. Mitigation Measures Air-2 and Air-4 would mitigate nitrogen oxide emissions. Implementation of Mitigation Measures Noise-1 and Noise-4 would substantially reduce cumulative adverse noise effects as they would require the applicant to limit their hours of construction and notify adjacent residences. Mitigation Measures Veg-2 and Veg-3 would reduce cumulative impacts to vegetation resources to a level less than significant as the applicant would be required to compensate for both permanent and temporary impacts to vegetation. The cumulative loss of

potential foraging habitat for PBS is also expected to be insubstantial and would be mitigated through the enhancement and rehabilitation of foraging habitat within known PBS populations and movement corridors (e.g. Carrizo Creek). Mitigation Measures Wild-1 and Wild-2 would substantially reduce impacts that include but are not limited to: habitat restoration/revegetation/preservation/acquisition, monitoring of wildlife, preconstruction surveys, and time and seasonal restrictions. The contribution of the OWEF to cumulative effects would be less than significant with appropriate levels of compensatory mitigation, when Mitigation Measures identified above are applied.

Based on the above, the proposed project's contribution, in combination with past, present, and reasonably foreseeable projects, to potential cumulative impacts at the watershed level would not be cumulatively significant.

5.0 ACTIONS TO MINIMIZE ADVERSE EFFECTS

5.1 Avoidance

The proposed project would avoid approximately 234 acres of waters of the U.S., approximately 98 percent of all waters of the U.S. in the project area; 11,836 acres of the project area, 95 percent of the total project area; and all known cultural resources.

5.2 Minimization

Through agency coordination and pre-application consultation meetings with the Corps, the Applicant has redesigned the proposed project and therefore has minimized impacts to waters of the U.S. Minimization measures included avoiding to the maximum extent practicable impacts to streams greater than 8 feet wide; reducing the number of turbines from 244 to 155 wind turbines; and redesigning all stream crossings to be at grade crossings. Additionally, the at-grade “Arizona” crossings would be placed at 90 degree angles to avoid indirect adverse impacts related to turbidity, erosion, and scour.

5.3 Compensation

For unavoidable impacts to waters of the U.S. associated with the 155 WTGs Project Alternative (Alternative 1), the applicant proposes to replace the lost functions and services through active wetland and riparian habitat restoration and preservation. The permanent impacts to waters of the U.S. are 1.35 acres and temporary impacts are 4.22 acres. Compensation for impacts to waters of the U.S. and PBS habitats is proposed as off-site restoration of Carrizo Marsh (hereafter referred to as the Marsh). This is an extensive wetland area in Anza Borrego Desert State Park, approximately 5 miles north of the OWEF project site (Figure 1). The marsh has been overtaken by exotic tamarisk species following a flood in 1976, which caused major disturbance to the native vegetation. The proposed mitigation involves removal of tamarisk to allow the natural succession to restore native wetland habitats in the marsh. The Marsh occupies approximately 320 acres of Vallecito Wash where Carrizo Creek bisects the Carrizo Badlands, in the southeastern portion of Anza-Borrego Desert State Park. The Marsh is in on the opposite side of the Coyote Mountains from the OWEF. The OWEF project proposed an off-site mitigation ratio of 6:1 for permanent impacts to waters of the U.S.

The proposed mitigation area currently comprises 4 wetland vegetation communities and 3 upland or wash communities. The marsh is overwhelmingly dominated by tamarisk thicket, with small patches of arrow weed thicket, iodine bush scrub, and American bulrush marsh. Upland and desert wash scrub communities exist in the higher areas and along the perimeter, and include mesquite bosque, alkali goldenbush scrub, and black-stem rabbitbrush scrub.

All mitigation would be located within project limits defined by the current extent of Carrizo Marsh. Restoration would consist of invasive species removal by means of prescribed fire,

mulching, and manual removal¹, followed by hand application of herbicide to tamarisk and other non-native resprouts in the burned and mulched areas of the marsh, and manual removal areas. Prescribed fire is effective for removing large, pure stands of tamarisk such as those covering most of the marsh (Harms & Hiebert 2006), but results in low mortality unless followed by herbicide application to resprouts (Lovich *et al.* 1994). Cut stump methods result in high tamarisk mortality if herbicide is applied immediately after cutting the stem of the plant (Lovich *et al.* 1994). The design details include measures to protect existing patches of native mesquite bosque, as well as to avoid potential disturbance to nesting least Bell's vireo should any be present.

This mitigation approach has been developed with State Parks to meet a watershed-based goal of restoring Carrizo Creek. The State Park has secured over \$750,000 dedicated to tamarisk removal within the Carrizo Creek watershed. The State Park has stated that they would initiate removal in the headwaters of Carrizo Creek and move downstream towards Highway S2 within the next year, prior to implementation of the large scale enhancement and rehabilitation effort by the Applicant in the marsh. The State Park and the Applicant are working diligently to determine the costs of implementing the mitigation, the cost of a long-term non-wasting endowment, and the mechanism with which the marsh would be protected in perpetuity. Should a DA permit be issued, all three requirements would be included in the IP as special conditions that must be met prior to the discharge of fill material into waters of the U.S.

In summary, both direct and indirect effects to waters of the U.S. and PBS would be off-set by the mitigation required by the Corps as part of the 404(b)(1) alternatives analysis as well as the Mitigation Measures required by BLM in the Draft EIS/EIR in accordance with the Clean Water Act Section 404 and 404(b)(1) guidelines and Section 7 of the Endangered Species Act. Furthermore, with the inclusion of the above mitigation measures, the proposed project (Alternative 1) would result in less than significant impacts to the aquatic ecosystem. In consideration of the substantial avoidance and minimization of impacts to waters of the United States, in combination with the proposed compensatory mitigation plan, implementation of the proposed project would result in no net loss of waters of the United States or aquatic resource functions and services in the project area.

¹ May also include herbicide treatment and mulching.

6.0 REFERENCES

- Bureau of Land Management (BLM) and County of Imperial. 2011. Draft Plan Amendment & Draft Environmental Impact Statement/Draft Environmental Impact Report for the Ocotillo Wind Energy Facility. BLM-El Centro Field Office. BLM/CA/ES-2011-15+1793.
- Harms, R.S., and R.D. Hiebert. 2006. Vegetation Response Following Invasive Tamarisk (*Tamarix* spp.) Removal and Implications for Riparian Restoration. *Restoration Ecology* **14**: 461-472.
- Levick, L., J. Fonseca, D. Goodrich, M. Hernandez, D. Semmens, J. Stromberg, R. Leidy, M. Scianni, D. P. Guertin, M. Tluczek, and W. Kepner. 2008. The Ecological and Hydrological Significance of Ephemeral and Intermittent Streams in the Arid and Semi-arid American Southwest. U.S. Environmental Protection Agency and USDA/ARS Southwest Watershed Research Center, EPA/600/R-08/134, ARS/233046, 116 pp.
- Lovich, J.E., T.B. Egan, and R.C. de Gouvenain. 1994. Tamarisk Control on Public Lands in the Desert of Southern California: Two Case Studies. 46th Annual California Weed Conference, California Weed Sciences Society. Pp. 166-177.
- Renewable Energy Research Laboratory (RERL). 2011. Wind Power: Capacity Factor, Intermittency, and What Happens When the Wind Doesn't Blow?. University of Massachusetts at Amherst. Available at: www.ceere.org/rerl/. Accessed on October 7, 2011.
- Rubin, E.S., C.J. Stermer, W.M. Boyce, and S.G. Torres. 2009 Assessment of Predictive Habitat Models for Bighorn Sheep in California's Peninsular Ranges. *Journal of Wildlife Management* **73**(6):859-869.
- Tierra Environmental Services (Tierra). 2011. Draft Archaeological Survey Report for the Ocotillo Express Wind Energy Project, Imperial County, California.

Attachment 1

Ocotillo Wind Energy Facility Public Notice



PUBLIC NOTICE

APPLICATION FOR PERMIT

LOS ANGELES DISTRICT

Public Notice/Application Number: SPL-2009-00971-MBS

Project: Ocotillo Wind Energy Facility Project

Comment Period: August 16, 2011 through September 16, 2011

Project Manager: Meris Bantilan-Smith; 760-602-4836; Meris.Bantilan-Smith@usace.army.mil

Applicant

Ocotillo Express LLC

c/o James Dermody

Pier 1, Bay 3

San Francisco, California 94111

Applicant Contact

Barry Jones

HELIX Environmental Planning, Inc.

7578 El Cajon Boulevard, Suite 200

La Mesa, California 91942

Location

The Ocotillo Wind Energy Facility (OWEF) project site is located within an approximately 12,436-acre right-of-way boundary (hereafter referred to as the project area), of which all but 26 acres occur on Bureau of Land Management (BLM)-administered lands, near the town of Ocotillo, Imperial County, California (Sheet 1; Latitude 32.74316 N Longitude -116.05473 W) . The northern portion of the study area (Site 1) is generally situated north of Interstate 8 (I-8), from the Imperial/San Diego County border on its western edge, to approximately 1.5 miles northeast of the town of Ocotillo on its eastern edge. County Route S2 bisects the northern project area, and I-8 passes through the southern portion of the northern project area. The southern area (Site 2) is much smaller than the northern area and the majority is south of State Route (SR) 98 (Sheet 2).

Activity

The proposed project consists of construction, operations, and maintenance (O&M), and decommissioning of a 465-megawatt (MW) wind energy facility on approximately 12,436-acres, 99.8 percent of which is public land managed by the BLM (Sheets 1-4). The proposed project construction would result in impacts, including permanent and temporary, to approximately 5.57 acres of jurisdictional waters of the United States (U.S.).

Interested parties are hereby notified that an application has been received for a Department of the Army permit for the activity described herein and shown on the attached drawings. Interested parties are invited to provide their views on the proposed work, which will become a part of the record and will be considered in the decision. This permit will be issued or denied under Section 404 of the Clean Water Act (33 U.S.C. 1344). Comments should be mailed to:

U.S. ARMY CORPS OF ENGINEERS, LOS ANGELES DISTRICT
Regulatory Division, Carlsbad Field Office
ATTN: SPL-2009-00971-MBS
6010 Hidden Valley Road, Suite 105
Carlsbad, California 92011

Alternatively, comments can be sent electronically to: Meris.Bantilan-Smith@usace.army.mil

Evaluation Factors

The decision whether to issue a permit will be based on an evaluation of the probable impact including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including the cumulative effects thereof. Factors that will be considered include conservation, economics, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, flood plain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food production and, in general, the needs and welfare of the people. In addition, if the proposal would discharge dredged and/or fill material, the evaluation of the activity will include application of the EPA Guidelines (40 CFR 230) as required by Section 404 (b)(1) of the Clean Water Act.

The Corps of Engineers is soliciting comments from the public; Federal, state, and local agencies and officials; Indian tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers (Corps) to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act (NEPA). Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

Preliminary Review of Selected Factors

EIS Determination- In compliance with the NEPA and California Environmental Quality Act (CEQA), the County of Imperial and Bureau of Land Management (BLM) is currently processing a joint Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the project. The public comment period for the Draft EIS/EIR began on July 8, 2011. The Corps is a federal cooperating agency on the EIS/EIR with the BLM pursuant to the Clean Water Act (CWA), which authorizes the Secretary of the Army, acting through the Corps, to issue permits regulating the discharge of dredged and/or fill material into waters of the U.S.

Water Quality- The applicant is required to obtain water quality certification, under Section 401 of the CWA, from the California Regional Water Quality Control Board. Section 401 requires that any applicant for an individual Section 404 permit provide proof of water quality certification to the Corps prior to permit issuance. For any proposed activity on Tribal land that is subject to Section 404 jurisdiction, the applicant will be required to obtain water quality certification from the U.S. Environmental Protection Agency.

Coastal Zone Management- This project is located outside the coastal zone and preliminary review indicates that it would not affect coastal zone resources. A final determination of whether this project affects coastal zone resources will be made by the Corps, in consultation with the California Coastal Commission, after review of the comments received on this Public Notice.

Cultural Resources- Please refer to Section 3.4 of the Draft EIS/EIR for detailed information on cultural resources associated with OWEF.

Cultural resource surveys and analysis were initiated in September 2010 and are underway. The project's Area of Potential Effects (APE) encompasses 13,200 acres of public land. It also includes a 1 mile buffer to take into account affects to the historic built environment, nearby geographic features and cultural resources of concern that have been raised through tribal consultation. The BLM initiated consultation with the State Historic Preservation Officer (SHPO) on March 22, 2011 to determine the adequacy of the cultural resource survey and evaluation strategy. The Corps will continue to work with the BLM and SHPO to ensure compliance with Section 106 of the National Historic Preservation Act.

Endangered Species- Focused surveys for sensitive plants, Peninsular bighorn sheep (*Ovis canadensis nelsoni*; PBS; Boyce 2010), flat-tailed horned lizard (*Phrynosoma mcallii*; FTHL; HELIX 2010a), barefoot banded gecko (*Coleonyx switaki*; Dugan 2011), raptors (HELIX 2010b), avian species (HELIX 2010c), golden eagle (*Aquila chrysaetos*) nests (Wildlife Research Institute 2011), burrowing owl (*Athene cunicularia*; HELIX 2010d), and bats (Rahn Conservation Consulting 2011) were conducted.

No federally or state listed plant species were observed within the project area.

One federal listed as endangered animal species, PBS, was observed within the project area. PBS was observed in the project area in 2010 and 2011 within the I-8 Island in the southwest portion of Site 1.

No U.S. Fish and Wildlife Service (USFWS) designated critical habitat for PBS occurs within the study area.

Pursuant to Section 7 of the Endangered Species Act of 1973, as amended, BLM in cooperation with the Corps initiated formal consultation with the USFWS on May 25, 2011, as the proposed project may affect PBS.

Public Hearing- Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for public hearing shall state with particularity the reasons for holding a public hearing.

Proposed Activity for Which a Permit is Required

Basic Project Purpose- The basic project purpose comprises the fundamental, essential, or irreducible purpose of the Applicant's proposed project, and is used by the Corps to determine whether the applicant's project is water dependent. The basic project purpose for the proposed project is "energy production." The project is not water dependent.

Overall Project Purpose- The overall project purpose serves as the basis for the Corps' 404(b)(1) alternatives analysis and is determined by further defining the basic project purpose in a manner that more specifically describes the applicant's goals for the project, and which allows a reasonable range of alternatives to be analyzed. The overall project purpose for the proposed project is to provide a wind energy facility ranging in size from approximately 315 MW to 465 MW in Imperial County, California.

Additional Project Information

Baseline information- The project area is located in the Yuha Desert and is a designated BLM Limited Use Area in which all motorized vehicles are restricted to the use of marked, designated routes only. BLM dirt roads exist throughout the project area and off-road vehicle trails crisscross portions of the project area. The U.S. Border Patrol also regularly patrols the project area by vehicle. Despite the above-mentioned usage, the majority of the project area is relatively undisturbed.

The majority of the project area is comprised of desert scrub vegetation communities including but not limited to allscale scrub, brittle bush scrub, cheesebush scrub, creosote bush scrub, teddy bear cholla scrub, and Wolf's cholla scrub.

Wetland delineation studies were conducted by HELIX Environmental Planning, Inc. in October and November 2010. Several named, dry desert washes cut through the project area including Palm Canyon Wash, Meyer Creek Wash, Shell Canyon Wash, and Coyote Wash. In addition to these large desert washes hundreds of unnamed washes cut through the project area. Both the named and unnamed washes convey water for short durations of time, during and immediately following seasonal rain events. The project area supports approximately 239 acres of potential Corps jurisdictional non-wetland waters of the U.S.

Project description- The proposed project consists of construction, O&M, and decommissioning of a 468 MW wind energy facility on approximately 12,436 acres. The construction of the wind turbines, access roads, collection lines, and substations would result in the discharge of fill material into waters of the U.S.

The proposed project would be built in 2 phases, and the construction period of each of the 2 phases is anticipated to be completed over a period of 12 to 15 months. Construction of Phase I is anticipated to commence in December 2011, with the final mechanical completion, commissioning, and electrical testing of Phase I planned to be completed before year-end 2012. Construction of Phase II is anticipated to commence in 2013.

Facilities for the OWEF would consist of up to 155 wind turbine generators (WTGs), above-ground and below-ground electrical transmission/collection systems for collecting the power generated by each WTG, an electrical substation, interconnection switchyard, access roads, 4 meteorological towers, a biological monitoring observation tower, and an O&M building (Sheet 2). The dimensions of proposed WTGs include a hub height of 262 feet and a rotor diameter ranging from 351 to 371 feet.

Major construction activities at each turbine location include foundation construction; crane pad construction; wind turbine component unloading and laydown; and turbine erection. Foundations would be excavated, constructed of steel reinforced concrete, and backfilled with native soil. Crane pads are required to support the crane used during erection and lifting the turbine components into place. Turbine components will arrive to each turbine site by truck. A crane will unload each component and stage the component in a specific pre-determined location within the temporary construction area. The delivery trucks will then move either backward or forward to the nearest vehicle turn-around location.

The proposed project would also include a network of 20-foot-wide permanent roads that would provide access to each WTG location and to the O&M building upon completion of construction. The 20-foot road width may be required by Imperial County Fire Department; however the road width may be reduced to 16 feet during final design. For the purposes of this Public Notice and calculating potential impacts to waters of the U.S., a 20-foot-wide permanent road width has been assumed. During the course of construction, these access roads would be up to 36 feet in width to facilitate the travel of large tracked cranes. These construction roadways would be graded and compacted for use and the area in excess of the 20-foot permanent roadway would then be de-compacted, stabilized, and revegetated at the conclusion of construction.

In addition to the crane travel paths, the underground collection system would parallel the access road network. The underground collection system would include the construction of twenty-three 34.5 kilovolt (kV) electrical collection system circuits that would connect into a new high voltage main transformer located at the proposed project substation/switchyard. The collection lines connecting one WTG to the next and to the proposed substation would be buried underground adjacent to (generally outside of) the 36-foot-wide construction roadway areas. Construction of the underground collection systems would involve a 2-foot wide trench with a disturbance width of approximately 15-feet, which would be revegetated following construction.

The proposed project would include an approximately 400-foot diameter temporary work area at 93 of the 155 WTG sites that would be used for the crane pad, equipment laydown, assembly area for the WTG blades, and other construction related needs. The temporary work area at the remaining 62 WTG sites would be smaller and would be used for the crane pad and space necessary to construct the WTG. Within the WTG temporary work area, a crane pad is required for supporting the large tower erection crane.

The proposed project would also include a 12-acre batch plant/laydown area immediately south of County Highway (CH) S2 (Imperial Highway) in the central portion of Site 1. The batch plant would be used for preparing and mixing the concrete used for the foundations for the WTGs, the transformers at the substation, the O&M building, and other project facilities.

The proposed project as described above would permanently impact 11,068 linear feet of streambed and temporarily impact 39,108 linear feet of streambed (50,176 linear feet of drainage total), which amounts to approximately 1.35 acres of permanent impacts and 4.22 acres of temporary impacts (5.57 acres total) to non-wetland Waters of the U.S. The affected drainages include Palm Canyon Wash, Myer Creek Wash, Shell Canyon Wash, and Coyote Wash. In addition to these named washes, many unnamed and generally smaller washes exist throughout the site.

Proposed Mitigation – The proposed mitigation may change as a result of comments received in response to this public notice, the applicant's response to those comments, and/or the need for the project to comply with the 404(b)(1) Guidelines. In consideration of the above, the proposed mitigation sequence (avoidance/minimization/compensation), as applied to the proposed project is summarized below:

Avoidance: The project as proposed would avoid impacts to approximately 233.59 acres of non-wetland waters of the U.S.

Minimization: Through agency coordination and pre-application consultation meetings with the Corps, the applicant has redesigned the proposed project and therefore has minimized impacts to waters of the U.S. Minimization measures included avoiding to the maximum extent practicable impacts to streams greater than 8 feet wide; reducing the number of turbines from 244 to 155 wind turbines; and redesigning all stream crossings to be at grade crossings.

Compensation: Temporary impacts to 4.22 acres of non-wetland waters of the U.S. will be mitigated through on-site restoration of the temporary impact areas. Should temporary impacts last more than 9 months, the applicant would be required to provide additional off-site mitigation at a 1:1 ratio. To mitigate for permanent impacts to 1.35 acres of non-wetland water of the U.S. the applicant is currently proposing off-site, Permittee responsible mitigation, at a minimum of 1:1 ratio within the project watershed through either creation, restoration or enhancement of wetland or non-wetland waters of the U.S. The applicant is currently working closely with the Corps and other resource agencies to identify an appropriate compensatory mitigation location and finalize compensatory mitigation requirements.

Proposed Special Conditions

No special conditions are currently proposed.

Public Notice Exhibits

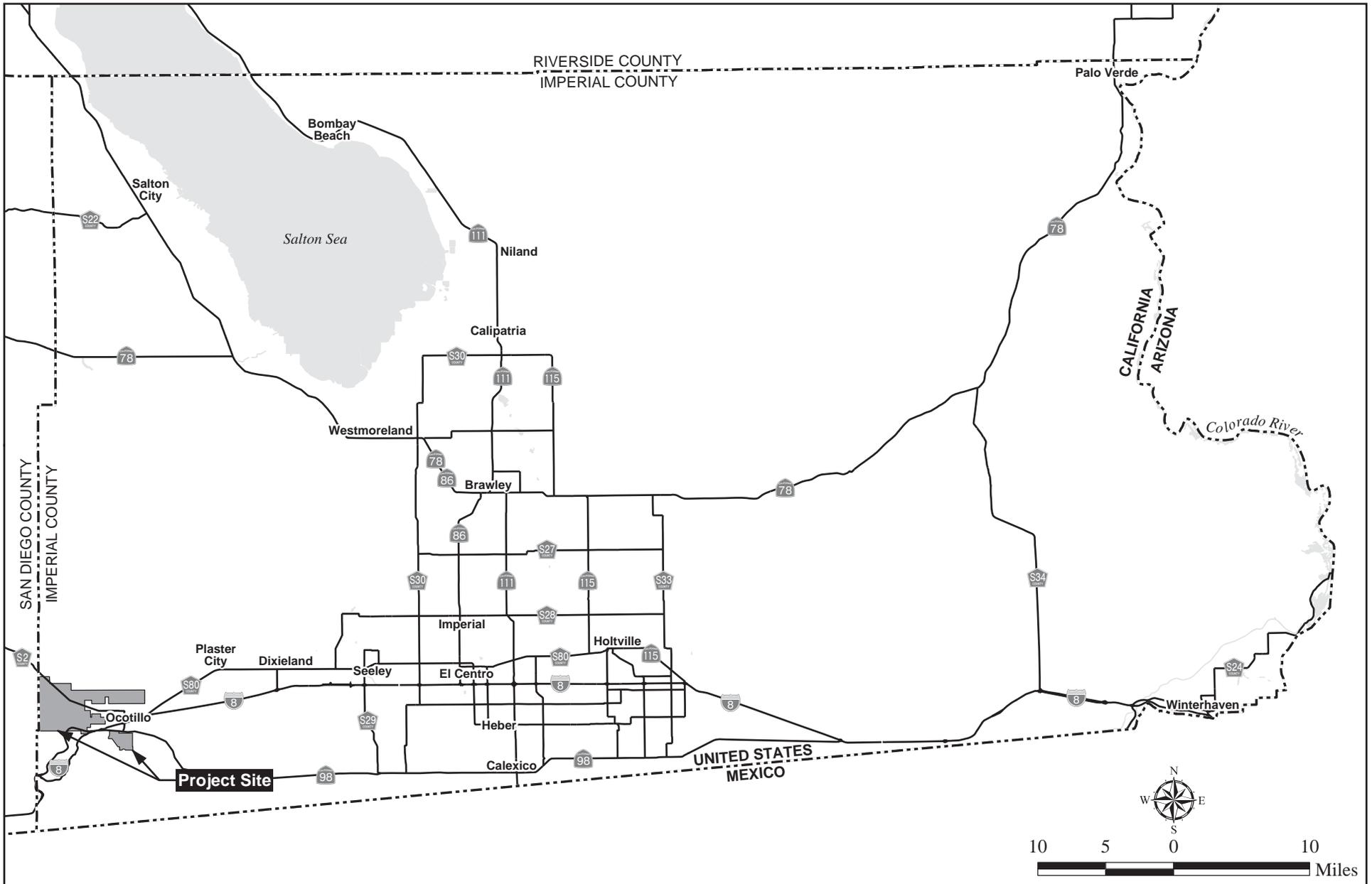
Sheet 1: Vicinity Map

Sheet 2: Plan View Preferred Plan

Sheet 3: Typical Turbine Footing Cross Section

Sheet 4: Typical Road Crossing Cross Section

For additional information please call Meris Bantilan-Smith of my staff at 760-602-4829 or via e-mail at Meris.Bantilan-Smith@usace.army.mil. This public notice is issued by the Chief, Regulatory Division.

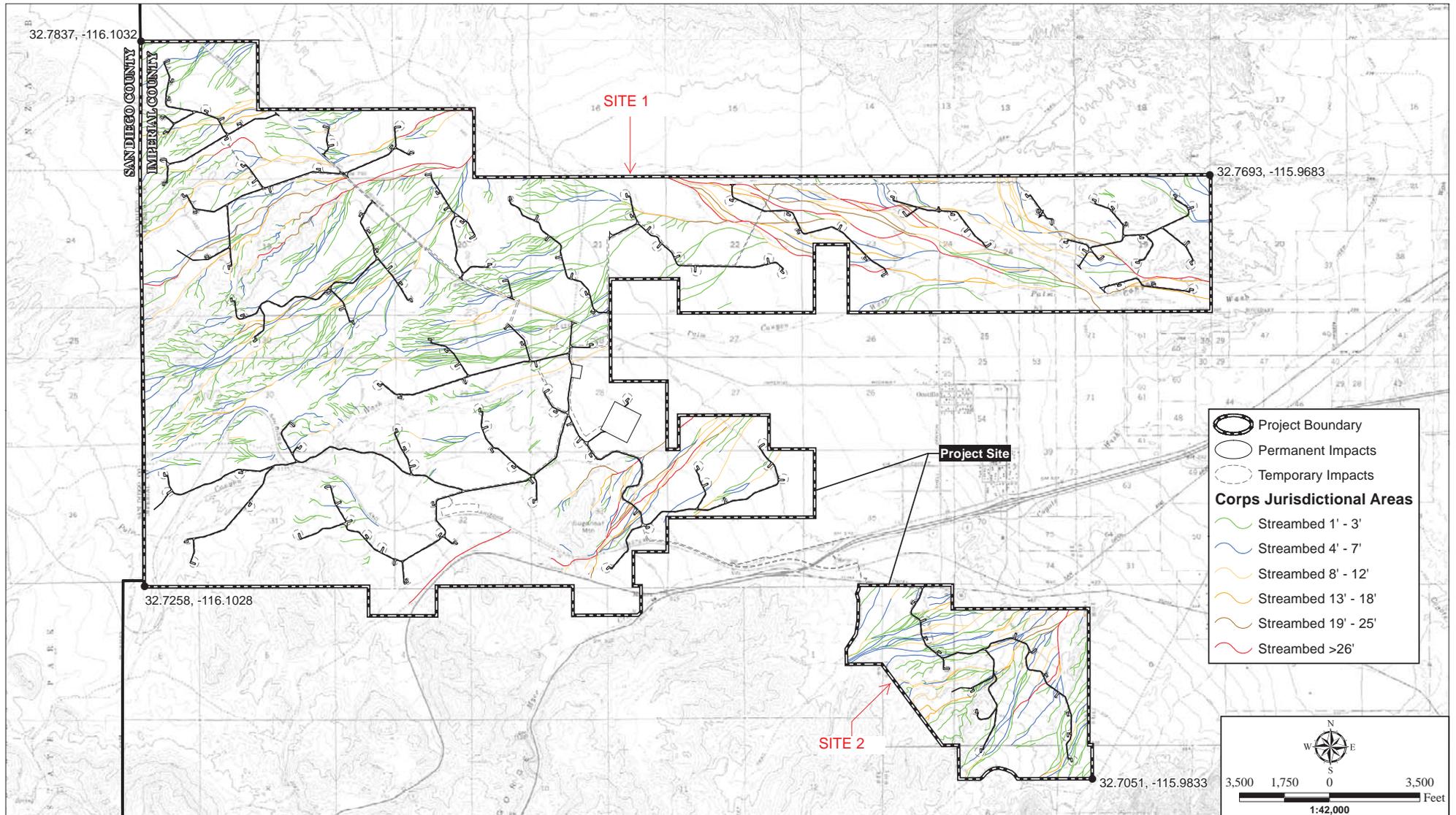


E:\ArcGIS\T\TES-02 Ocotillo\Map\BIO\Permit_404\Fig1_Regional.mxd -EV

Regional Location Map

OCOTILLO WIND ENERGY FACILITY

Figure 1



PURPOSE: Energy Development
DATUM: MSL
ADJACENT PROPERTY OWNERS:
 See List Attached to Form 4345

PLAN VIEW
OCOTILLO WIND ENERGY FACILITY

Southwest Corner of Imperial County
 North and South of I-8

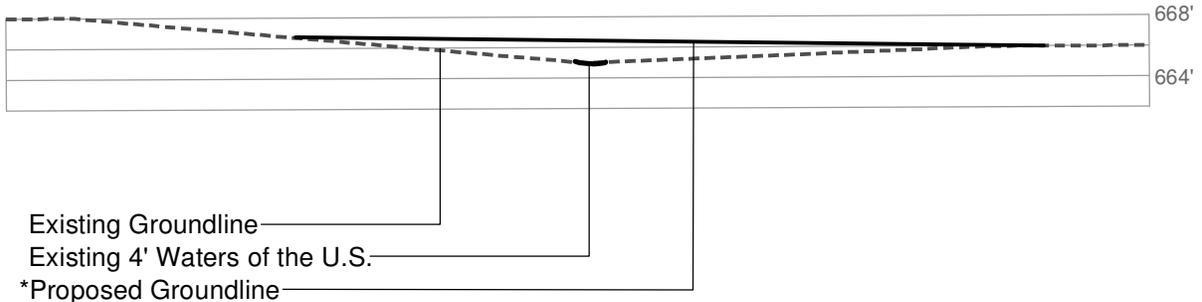
WATERBODY: Palm Canyon Wash
APPLICANT: Ocotillo Express LLC
USGS Quadrangle: InKoPah Gorge, Carrizo Mtn., Coyote Wells, Painted Gorge

COUNTY: Imperial
STATE: CA
AGENT: HELIX Environmental Planning, Inc.
 7578 El Cajon Blvd, Suite 200
 La Mesa, CA 91941

T: 17S R: 10E S: 6

Sheet 2 of 6 **Date: 07/07/11**

E:\ArcGIS\A\EG-09\Ocotillo\Map\B\9\PN\Sheet2_PlanView.mxd -EV



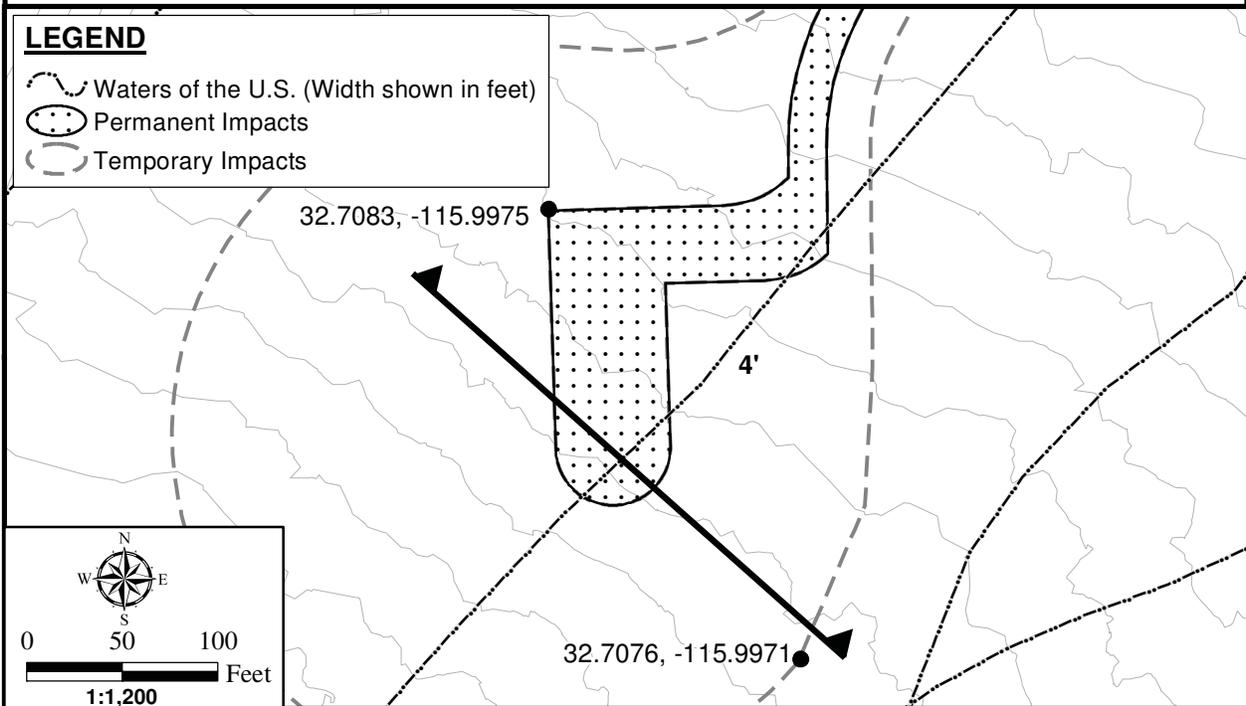
Notes: Turbine footings will only impact 1' to 7' drainages.

*Fill depth and proposed groundline for turbine footing will be based on maintaining positive drainage away from turbine.

Horizontal Scale: 1" = 50'
Vertical Scale: 1" = 12.5'

LEGEND

- Waters of the U.S. (Width shown in feet)
- Permanent Impacts
- Temporary Impacts



PURPOSE: Energy Development

DATUM: MSL

ADJACENT PROPERTY OWNERS:
See List Attached to Form 4345

**TYPICAL TURBINE
FOOTING
CROSS-SECTION
THROUGH WATERS
OF THE U.S.
OCOTILLO WIND
ENERGY FACILITY**

Southwest Corner of Imperial County
North and South of I-8

WATERBODY: Palm Canyon Wash

COUNTY: Imperial **STATE:** CA

APPLICANT: Ocotillo Express LLC

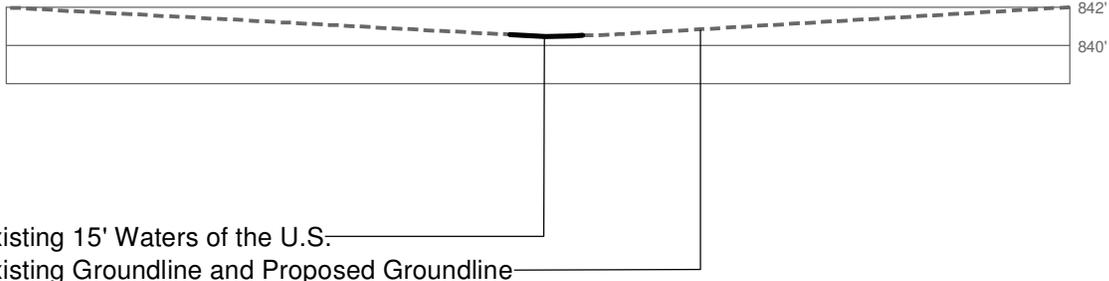
AGENT: HELIX Environmental Planning, Inc.
7578 El Cajon Blvd. Suite 200
La Mesa, CA 91941

USGS Quadrangle: Coyote Wells

T: 17S R: 10E S: 6

Sheet 3 of 6 **Date: 07/07/11**

I:\ArcGIS\A\AEG-09 Ocotillo\Map\B\OPN\Sheet3_FootingCross_section.mxd -EV



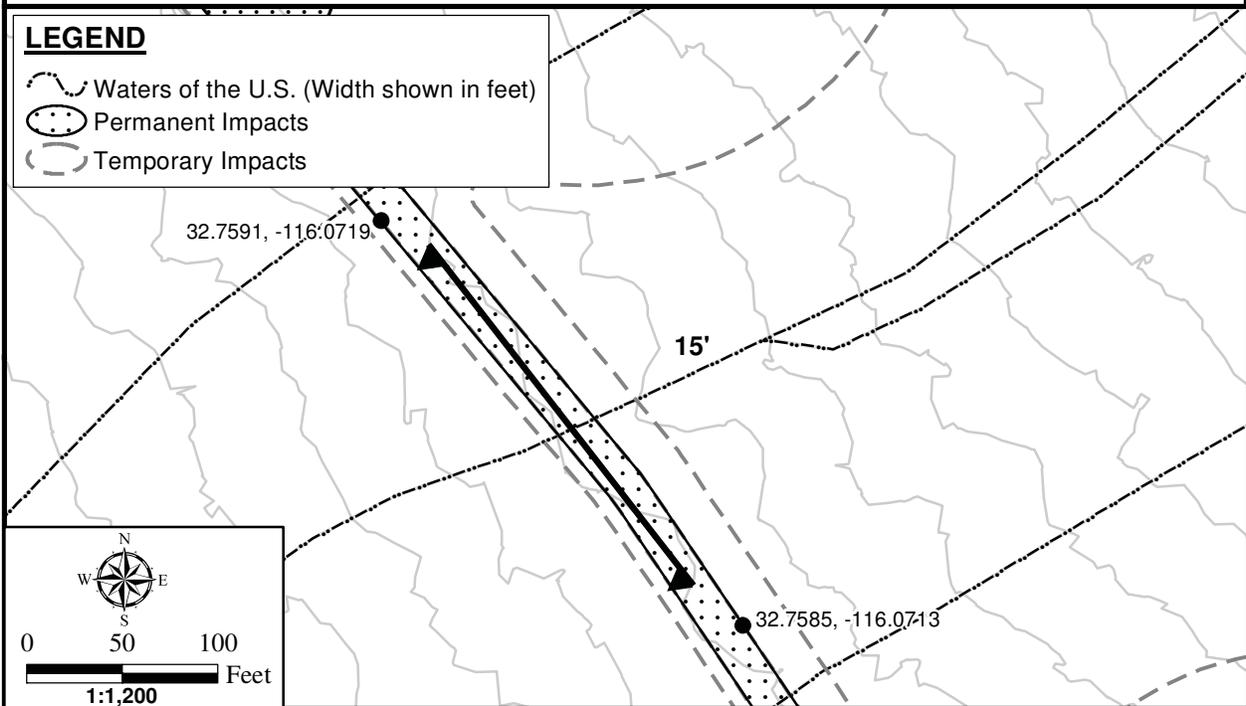
Existing 15' Waters of the U.S.
Existing Groundline and Proposed Groundline

Horizontal Scale: 1" = 40'
Vertical Scale: 1" = 10'

Note: Grading will result in no net change to existing ground line.
Crossings will impact 1' to 75' drainages.

LEGEND

- Waters of the U.S. (Width shown in feet)
- Permanent Impacts
- Temporary Impacts



PURPOSE: Energy Development

DATUM: MSL

ADJACENT PROPERTY OWNERS:
See List Attached to Form 4345

**TYPICAL ROAD CROSSING
CROSS-SECTION
THROUGH WATERS
OF THE U.S.
OCOTILLO WIND
ENERGY FACILITY**

Southwest Corner of Imperial County
North and South of I-8

WATERBODY: Palm Canyon Wash

COUNTY: Imperial **STATE:** CA

APPLICANT: Ocotillo Express LLC

AGENT: HELIX Environmental Planning, Inc.
7578 El Cajon Blvd. Suite 200
La Mesa, CA 91941

USGS Quadrangle: Carrizo Mtn.

LAT: 32.7657 **LONG:** -115.9708

T: 16S **R:** 10E **S:** 19

Sheet 4 of 6 **Date:** 07/07/11

I:\ArcGIS\A\AEG-09 Ocotillo\Map\B\OPN\Sheet4_RoadCross_section.mxd -EV