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STAFF REPORT: MATERIAL AMENDMENT

Amendment Application No.: **5-08-251-A3**

Applicant: **Los Angeles Unified School District**

Project Location: 3210 South Alma, San Pedro, City of Los Angeles

Description of Amendment No. 3: Installation of six 12kW 50-foot high vertical axis wind turbines to provide an alternate energy source for a new high school.

Description of Original Coastal Development Permit: Construction of an 810 seat high school, with 30 classrooms, administrative buildings, gymnasium, library, food service, multi-purpose room, amphitheater, sports fields, swimming pool, and 113 surface parking spaces. In addition, the project will include up to 36 electric generating wind turbines, a green roof system and photovoltaic panels (As approved, the permit was conditioned to exclude the 36 wind turbines from the permit and allowed the applicant to submit a future amendment once biological data was collected).

SUMMARY OF STAFF RECOMMENDATION:

The LAUSD is proposing to install six vertical axis wind turbines to provide an alternative energy source to the previously approved high school. The proposed project raises concerns with the potential impact to birds and bats. The concern with the wind turbines is that birds may fly into the rotating blades and be injured or killed. This bird strike concern has been raised in similar past cases before the Commission of proposed wind turbines. The standard of review is the Coastal Act. Staff is recommending **Approval** of the proposed coastal development permit amendment with special conditions to mitigate the potential adverse impact to birds and bats. The special conditions include 1) compliance with the conditions of the original permit; 2) submittal of a bird strike monitoring plan; 3) implementation of quarterly bird surveys for a period of two years; 4)

future redesign or removal of obsolete turbines; 5) compliance with all conditions of the permit; and 6) submittal of final plans showing the location and design of the wind turbines.

There has been opposition to the construction and future operation of the school, approved under the original permit, from residents in the area; however, the Southcoast District office has not received any letters in opposition to the wind turbines.

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EXHIBITS

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Exhibit 2—Location Map
Exhibit 3—Site Plan
Exhibit 4—Vertical Axis Wind Turbine diagram
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PRIOR AMENDMENTS

Description of Amendment No. 2: Construct solar panel canopies, measuring a maximum height of 13 1/2 feet, over previously approved parking lots located in the southwest and northeast corners of the property; and increase the height of a chain link fence to 20 feet adjacent to the athletic fields along the baseball field's first base side and along the southern property line for public safety.

Description of Amendment No. 1: Construct a building pad consisting of approximately 4,000 cubic yards of grading (fill) within a .44 acre area adjacent to the existing Barlow-Saxton Battery in order to relocate a World War II Radar Building that was originally planned to be located at the Fort MacArthur Museum.

PROCEDURAL NOTE

The Commission's regulations provide for referral of permit amendment requests to the Commission if:

1) The Executive Director determines that the proposed amendment is a material change,

2) Objection is made to the Executive Director's determination of immateriality, or

3) The proposed amendment affects conditions required for the purpose of protecting a coastal resource or coastal access.

If the applicant or objector so requests, the Commission shall make an independent determination as to whether the proposed amendment is material. 14 Cal. Admin. Code 13166.

The project is a substantial change from that previously approved. Therefore, pursuant to Section 13166 of the Commission's regulations, the Executive Director is referring this application to the Commission.

I. MOTION AND RESOLUTION

Motion:

I move that the Commission approve the proposed amendment to Coastal Development Permit No. 5-08-251 pursuant to the staff recommendation.

Staff recommends a **YES** vote. Passage of this motion will result in approval of the amendment as conditioned and adoption of the following resolution and findings. The motion passes only by affirmative vote of a majority of the Commissioners present.

Resolution:

The Commission hereby approves the coastal development permit amendment on the ground that the development as amended and subject to conditions, will be in conformity with the policies of Chapter 3 of the Coastal Act and will not prejudice the ability of the local government having jurisdiction over the area to prepare a Local Coastal Program conforming to the provisions of Chapter 3. Approval of the permit amendment complies

with the California Environmental Quality Act because either 1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the amended development on the environment, or 2) there are no feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the amended development on the environment.

II. STANDARD CONDITIONS

This permit is granted subject to the following standard conditions:

1. **Notice of Receipt and Acknowledgment.** The permit is not valid and development shall not commence until a copy of the permit, signed by the permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.

2. **Expiration.** If development has not commenced, the permit will expire two years from the date this permit is reported to the Commission. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.

3. **Interpretation**. Any questions of intent or interpretation of any condition will be resolved by the Executive Director or the Commission.

4. **Assignment.** The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.

5. **Terms and Conditions Run with the Land.** These terms and conditions shall be perpetual, and it is the intention of the Commission and the permittee to bind all future owners and possessors of the subject property to the terms and conditions.

III. SPECIAL CONDITIONS

This permit is granted subject to the following special conditions:

1. **Conditions Imposed Under Original Permit**. Unless specifically altered by this amendment, all regular and special conditions attached to Coastal Development Permit No. 5-08-251 and/or amendments thereto shall remain in effect. If the specifications of any plans approved to comply with permit 5-08-251 are inconsistent with either the project description submitted with this amendment or the conditions imposed by this amendment, the applicant shall submit new plans to the Commission, for the review and approval of the Executive Director, that are consistent with the terms and conditions of this permit as modified by this amendment 5-08-251-A3.

2. **Bird Strike Research Plan.** PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT**,** the applicant shall submit to the Executive Director for review and approval two copies of a bird strike research plan. The bird strike research plan shall provide for, at minimum, the following:

   (a) Daily inspection of the wind turbine for a period of one year from the date of the start of operation. "Date of the start of operation" shall mean the earliest date upon which any one turbine is operating such that it is engaged in any rotational movement for any period of time. Any injured or dead birds identified shall be photo documented, collected, and identified as to genus and species by a qualified ornithological expert. Any injured native birds, including both resident and migratory birds, found shall be taken to either the International Bird Rescue or South Bay Wildlife Rehab center, or any other qualified wildlife center, for potential rehabilitation. Each inspection shall also include inspection of the wind turbines and the surrounding ground area for any evidence of bird strike (e.g., feathers, bones, etc.) even if no injured or dead birds are found, where such evidence shall be documented, including with photographs, and potential bird strike impacts quantified as much as possible based on the evidence collected

   (b) At least once every month following the installation and operation of the wind turbines, the applicant shall provide a copy of all documentation materials associated with the daily inspections to the Executive Director and appropriate staff at the California Department of Fish and Game (CDFG) and U.S. Fish and Wildlife Service (USFWS), and shall inform the Executive Director, CDFG and USFWS staff immediately upon identifying any injured and/or dead birds. If the Executive Director determines that the wind turbines are having significant adverse impacts to birds in the area due to injuries and/or deaths caused by the wind turbines, the wind turbines shall be halted immediately.

   (c) The applicant agrees, by acceptance of this permit, that upon the Executive Director's determination and transmittal to applicant that the wind turbines are having significant adverse impacts to birds in the area, it will immediately, upon receipt of such transmittal, halt the wind turbines operation until the CDFG, USFWS and the Commission identify the proper course of action. The course of action may include the permanent discontinuance of the wind turbines. Based on the course of action identified by the agencies, the Executive Director shall determine if an amendment to this permit is required

3. **Bird Survey.** The applicant shall conduct quarterly bird surveys, consistent with the Avifauna Monitoring and Management Plan for Proposed Wind Turbines Los Angeles Unified School District South Region High School #15, dated June 2011, for a period of two years following the date of the start of operation of the wind turbines, to determine type and number of birds using the project site and/or flying above the project site, how the site is being used once the facilities are in operation, and identify any potential impacts.

4. **Future Redesign.** PRIOR TO THE ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall agree in writing that where future technological advances would allow for reduced potential for bird strikes from the proposed wind turbines, the applicant shall make those modifications which would reduce the impacts of the proposed facility. In addition, the applicant agrees that if, in the future, the facility is no longer needed, or the number of operational turbines is reduced, the applicant shall abandon the non-operational

turbines and be responsible for removal of all permanent structures and restoration of the site as needed to re-establish the area consistent with the character of the surrounding area. Before performing any work in response to the requirements of this condition, the applicant shall contact the Executive Director of the California Coastal Commission to determine if an amendment to this coastal development permit or a new coastal development permit is necessary.

5. **Permit Compliance.** All development must occur in strict compliance with the proposal as set forth in the application, subject to any special conditions imposed herein. Any deviation from the approved plans must be submitted for review by the Executive Director to determine whether an amendment to this coastal development permit is necessary pursuant to the requirements of the Coastal Act and the California Code of Regulations.

6. **Final Plans.** PRIOR TO THE ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit, for the review and approval of the Executive Director, final project plans showing the location and design of the six wind turbines that substantially comply with the site plan as generally depicted in E**xhibit No. 3** to this permit.

IV. FINDINGS AND DECLARATIONS

A. PROJECT DESCRIPTION

The applicant, Los Angeles Unified School District, proposes to amend a previously issued Coastal Development Permit (CDP) granted to the Los Angeles Unified School District (LAUSD) to construct a new high school and related facilities. The proposed amendment would allow the installation of six 12kW 50-foot high vertical axis wind turbines to provide an alternate energy source for the new high school.

The proposed amendment originally included a total of 36 turbines, which were also included in the Environmental Impact Report ((*Final Environmental Impact Report, South Region High School No. 15*, November 2008) that was prepared for the school project; however, during the school's construction plan review, the Division of State Architecture (DSA) required additional spacing between each turbine (two times the length of each turbine). Therefore, due to the spacing requirement, the number of turbines was reduced to six to adequately fit the site and comply with DSA requirements.

The applicant has selected a vertical axis wind turbine (Falcon 12kW or similar) for use on the site (see **Exhibit No. 4 & 5**). The turbines will be single posts extending to a maximum height of 50 feet, with 20 foot blade lengths, and each set in a concrete post foundation. Most large turbines are horizontal axis and consist of a tower with a large propeller type blade. Vertical axis turbines are primarily smaller and often used in urban settings and appear more like large egg-beaters. The turbines will not include lights or guy wires. All utility wiring will be located below grade.

The new high school was approved by the Commission in 2009 and is currently under construction and nearing completion. The high school is a 107,627 square foot facility providing 810 seats, with

30 classrooms, 77 full and part-time faculty and staff members, administrative buildings, gymnasium, library, food service, multi-purpose room, amphitheater, sports fields, swimming pool, and 193 surface parking spaces. The school will be developed as a green demonstration project with an original goal of 75-100% energy self-sufficient; however, because of the reduction in the number of originally proposed turbines from 36 down to 6, energy production will be reduced to approximately 83%. The 6 proposed wind turbines are estimated to produce approximately 4% (60,849 Kw hours/year) of the school's total energy demand (the originally proposed 36 wind turbines were projected to produce approximately 24% (365,095 Kw hours/year) of the school's total energy demand. Photovoltaic panels, that have previously been approved for the school, are projected to produce approximately 79% (1,185,000 Kw hours/year) of the energy demand.

The project site is located in the San Pedro community of the City of Los Angeles, at 3200 South Alma Street, on the southeast corner of 30th Street and South Alma Street, and is bounded on the north by West 30th Street, on the east by Cabrillo Street, on the south by West 36th Street, and on the west by South Alma Street (see **Exhibit No. 1, 2 and 3**). The project site is approximately 1/2 of a mile from Paseo del Mar, which is the first public road paralleling the coastal bluffs.

The site is located on the Fort MacArthur Upper Reservation. Fort MacArthur was an active military base from 1910 to 1975. Historical uses of the site consisted of fixed and mobile artillery batteries and various structures for housing, training, administration, and other activities. The Upper Reservation occupies 111 acres, 47 acres of which are currently owned and used by LAUSD. Current uses on the 47 acres include the Angels Gate Continuation High School, which currently has 51 students in three modular classrooms; the Wilmington/San Pedro Early Education and Skills Center; American Red Cross; an auto repair facility; Point Fermin Outdoor Education Center (CDP No. 5-04-392); Marine Mammal Rescue Center (CDP No. 5-91-252); and the Marine Oiled Bird Center. The continuation high school and education and skill center will be relocated to the adjacent Marine Mammal Rescue and International Bird Rescue centers.

The remaining 64 acres of the Upper Reservation are currently owned by the City of Los Angeles Department of Recreation and Parks. Facilities within this portion of the Upper Reservation include: the Angels Gate Cultural Center; the Korean Bell of Friendship Monument; the Battery Osgood-Farley Historical Museum; various recreational facilities; and a youth hostel. The area outside and surrounding the Upper Reservation area is developed with single-family and multi-family residences.

B. BIOLOGICAL RESOURCES

Section 30230:

> *Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.*

Section 30231:

> *The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.*

Section 30240 of the Coastal Act states in part:

> *(a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.*
>
> *(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.*

Section 30250(a):

> *New residential, commercial, or industrial development, except as otherwise provided in this division, shall be located…where it will not have significant adverse effects, either individually or cumulatively, on coastal resources.*

The Coastal Act requires protection of marine resources and coastal resources in general, extending to coastal wildlife, wildlife corridors, and migratory birds, even for areas that may not meet the definition of sensitive habitat. The issue that the proposed project raises is the potential impact the proposed wind turbines may have on the various bird species that migrate through the San Pedro area, and resident bird species within the area such that the bird species may fly into its rotating blades and be injured or killed. This issue is common to turbine cases, as the best place for capturing wind is by definition generally the same place where wind is strongest. This bird strike concern has been raised in past similar cases before the Commission, most recently in 2011 in Santa Cruz County on top of the Santa Cruz Municipal Wharf headquarters building. In that case, the Commission approved a coastal development permit for a similar turbine design that was proposed for a pilot study to evaluate the viability of renewable energy technologies on the site. The Commission conditioned the project to include monitoring and reporting to address concerns related to the potential bird strike issue and other issues.[1]

The issue that the proposed project raises is the potential impact the proposed wind turbines may have on the various bird species that migrate through the San Pedro area, and resident bird species within the area. There have been many studies and reports that indicate that wind turbines can pose

[1] Coastal Development Permit 3-10-061 (UC Santa Cruz/City of Santa Cruz), March 2011.

a problem for birds and cause mortalities among these birds.[2] According to these reports wind turbines can have detrimental impacts on birds, bats, and other wildlife through: (1) collision mortality, (2) loss or degradation of habitat, or (3) disturbance or displacement of habitat. Based on information in the EIR (*Final Environmental Impact Report, South Region High School No. 15,* November 2008) and data from the preliminarily fieldwork at the site, only collision mortality is anticipated to have any potential impacts.

The United States Fish and Wildlife Service (USFWS) has issued interim guidance documentation for siting wind turbines and reducing impacts to avian species and has established a protocol to conduct a site evaluation and wildlife use surveys for use in developing a wind turbine project while reducing the avian risk. Consistent with the USFWS guidelines, the California Energy Commission (CEC), in coordination with the California Department of Fish and Game (CDFG) has issued wind project guidelines for reducing impacts to birds and bats (California Energy Commission, *California Guidelines for Reducing Impacts to Birds and Bats from Wind Energy Development, 2007*). The CEC guidelines for wind turbines recommends a one-year pre-permitting survey to document how birds use the area; types of birds, number of birds; and flight patterns. All of these variables, including the design, location, and number of the wind turbines, can affect the potential impact the wind turbines could have on avian species. According to the applicant, these guidelines have been used in designing and siting the wind turbines and has been reviewed by CDFG.

The proposed project site is located on a hill near the southern edge of the Palos Verdes Peninsula, less than .5 miles from the shoreline. Because of the location, this project site may include areas that migratory avian species typically use in large numbers at specific times during the year, and according to the EIR, potential impact to avian species may vary through the year and direct impacts to migratory avian species in general may be possible as populations increase temporally and spatially. The potential for impacts is also dependent on the number of turbines, heights, configuration, environmental conditions, and species specific avoidance behavior.

The school site consists of approximately 28.5 acres. Of the 28 acres, 12.88 acres, or 45% of the site, is developed with buildings, roads, pads, storage areas, utilities, and other infrastructure associated with the former military use and with the current educational uses. The remaining non-developed area of 15.6 acres consists of ruderal and ornamental plantings. According to the EIR, the existing landscape is dominated by non-native annual and biennial herbs, non-native grasses, and ornamental plant species. These areas have been historically and currently been maintained through periodic mowing and trimming.

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[2] Literature examples: (1) *Effects of Wind Turbines on Birds and Bats in Northeast Wisconsin*; Robert W. Howe, William Evans, and Amy T. Wolf, November 2002; (2) *Hearing and the Avoidance of Wind Turbines*, R. Dooling Ph.D., University of Maryland College Park, Maryland, June 2002; (3) *Wind Energy and Birds/Bats Workshop: Understanding and Resolving Bird and Bat Impacts*, Washington, DC., May 18-19, 2004; BHE Environmental. 2010. (4) *Post-construction bird and bat mortality study Cedar Ridge wind farm Fond du Lac County, Wisconsin,* Interim Report prepared for Wisconsin Power and Light and submitted to Wisconsin Public Service Commission; (5) *Assessment and prediction of bird and bat mortality at wind energy facilities in the southeastern United States*. Final Report. Tennessee Valley Authority, Knoxville, Tennessee, Nicholson, C.P., J. R.D. Tankersley, J.K. Fiedler, and N.S. Nicholas. 2005.

Plant and mammal surveys have been conducted on and surrounding the project site. According to the EIR, no endangered, threatened or sensitive species were found on the project site or in the surrounding area, and are not anticipated due to the history of development on the site and lack of suitable habitat. However, the project site is located along the Pacific Flyway. The Pacific Flyway is the path that migratory birds follow along the Pacific Coast during their annual migrations. Millions of shorebirds and waterfowl travel between northern breeding grounds and southern wintering sites. The Pacific Flyway originates in Western Alaska, around the Yukon River Delta, and extends as far south as Latin America. The peak periods for bird migration through southern California are March through May and August through October.

Both migratory shorebirds and neotropical songbirds either come to this general area to breed or pass through here on their way to other locations. Wetlands and coastal bays are stopover sites for resting and feeding birds. According to reports, a list of approximately 340 species of birds that have been seen at or near Ken Malloy Harbor Regional Park (located approximately 5 miles north of the project site) has been compiled from a variety of sources (Heindel, 2000). This list was cross-checked with a list of neotropical migrant birds (Rappole, 1995) to identify the migrant species that are likely to fly in the vicinity of the area. Exhibit No. 9 provides a list of birds likely to be found in the area.

Although no specific studies on migrant species composition, number of migrants, and migrant flight patterns (temporal and spatial) are available for the harbor area, approximately 100,000 to 1,000,000 birds use the Seal Beach area, which is approximately 20 miles to the south, as a major stopover (Caltrans technical report; *LA-47/Vicent Thomas Br. Lighting, Natural Environment Study Memo*, May 2003).

The EIR states that due to the long history of disturbances and on-going maintenance practices that have modified the landscape and reduced the habitat value, direct impacts to individual birds resulting from collisions with wind turbine blades would be expected to be very low in this local environment. In reference to a study on bird mortality and wind turbines (The Effect of Avoidance Rates on Bird Mortality Predictions made by Wind Turbine Collision Risk Models, Chamberlain, DE., Rehfisch, M.R., Fox, A.D. Desholm, M. & Anthony, S, 2006), the EIR includes the following:

> "*Where terrestrial birds, as well as water birds, can be shown to migrate in very low densities, the local collision risk can be considered very much lower than in cases where large densities of birds migrate at turbine height through a proposed site*."

The CEC guidelines for wind turbines recommends a one-year pre-permitting survey to document how birds use the area; types of birds, number of birds; and flight patterns. All of these variables, including the design, location, and number of the wind turbines, can affect the potential impact the wind turbines could have on avian species. The applicant has prepared an *Avifauna Monitoring and Management Plan* (June 2011) and conducted a pre-construction avian survey (*South Region High School No. 15 Proposed Wind Turbine Year 1 Biology Monitoring Report: Planning Period*, by ICF International, September 2011) consistent with the CEC guidelines. The bird survey was conducted by a qualified biologist, Kurt F. Campbell, from May 10, 2009 through May 2, 2010, along with bat surveys between September 2009 and June 2011. California Coastal Commission's ecologist, Dr. Jonna Engel, along with other professionals and wildlife agencies, were initially involved with working with the consultants in developing the survey protocol.

According to the report, native bird species detected were strongly dominated by American crow (*Corvus brachyrhynchos)* and House finch (*Carpodacus mexicanus*). These two species accounted for approximately 56% of all individual birds detected during the counts. Brewer's blackbird (*Euphagus cyanocephalus),* western gull (*Larus occidentalis*) and mourning dove (*Zenaida macroura*), each compose roughly 5% to 8% of the total bird count. Below this level are another 49 species detected at an average rate of 2.7 individuals per count or less.

Sixteen of the bird species detected were either raptors (birds of prey) or water birds such as ducks, herons, and gulls. Together they comprise nearly 10% of the bird count; however, more than half of this total is from a single species, western gull.

No evidence was found that any water birds utilize the project site for roosting or nesting. A variety of water bird species occurred in transit over the site, usually at altitudes well above 50 feet. In addition, small to moderate numbers of gulls, dominated by western gulls, flew lower over the site and occasionally landed on buildings and other man-made structures.

Raptor use of the site is moderate. During the monitoring period one to three individuals of two species, red-tailed hawk (*Buteo jamaicensis*) and American kestrel (*Falco sparverius*) frequented the area but were almost never observed actively foraging on the South Region High School No. 15 site, or with prey. Cooper's hawk *(Accipiter coopen)* was also somewhat regular in occurrence and was usually seen either overflying the site or hunting on the periphery of the school area. According to the study, there is reasonable potential that these three species nest around the site, perhaps in tall neighboring trees, but probably do not nest directly on the South Region High School No. 15 site in light of the ongoing construction and lack of potential nest sites at this time (there were no observed nests on the project site or surrounding area).

The brown pelican (*Pelecanus occidentalis*) and peregrine falcon (*Falco peregrinus*) were also observed near the project site. Both species were listed in the past under both the California Endangered Species Act (CESA} and the federal Endangered Species Act (ESA), but have been delisted under both acts in the last few years due to well-documented population recoveries both statewide and nationwide. Nonetheless, these bird species, and other bird species native in the coastal zone, are considered coastal resources and, as such, the proposed new development must be located where it will not have significant adverse effects, either individually or cumulatively, on these bird species

The bat surveys indicated that bat activity is very limited on the project site. There were three bat detections recorded acoustically on two nights during the survey period.

In summary, based on the collected data, the report states:

> *Based on the data gathered so far, the species richness of the site would be very low for an undisturbed, coastal natural community, such as coastal sage scrub or riparian vegetation, in this landscape position. However, given the site surroundings of long-established residential areas and recreational parklands,*

> *along with the ongoing construction at the site during the period, bird activity and diversity appears to be at expected levels.*

Furthermore:

> *the data shows no indication the site is part of (1) any focused Neotropical migratory bird stopover site, (2) a high use bat roosting, nesting or foraging area, (3) a focused corridor for raptors or other birds or bats at altitudes relevant to the turbines. Data thus far on large birds detected at the site, within 50 feet altitude, appear to reflect non-critical use by modest numbers of resident individuals of common species. More than half of all large bird detections are for a single, resident species of gull. Similarly, most large birds detected are either transiting above 50 feet altitude or indicate the presence of a few individual. Resident gulls habituated to the adjacent marine mammal and bird rescue facilities.*

The biological report concludes that the baseline data gathered to date shows no indication that the proposed turbines pose any significant threat to native birds or bats. Furthermore, noise levels generated by the turbines is expected to be approximately 32dB within 9 feet of the turbines according to the manufacture's technical specifications. Sixty decibels (60 dB) is a widely used threshold for projects involving heavy equipment in areas supporting sensitive bird species. This threshold criterion is used by many agencies and consultants as the noise threshold, above which, birds may be adversely impacted. The 60 dB criterion stems from taking average ambient environment noise measurements and determining at what noise level, beyond that measured in the natural environment, would one expect to see adverse effects on avian vocal communication.[3] And while this criterion is valuable as a starting point for it is conservative and protective, ambient environment noise levels must also be analyzed and figured into the decibel thresholds applied to projects on a case by case basis. While all projects have specific and unique circumstances, those with the potential to adversely impact sensitive bird species due to increased noise levels must minimize those noise impacts to the maximum extent possible.

As stated, the project site is a developed site and the surrounding area is developed with residential development and, according to the bird survey, there were no observed sensitive bird species at the project site. According to the EIR, the ambient noise levels at the school property range from 39 db to 70 db. Moreover, once the school is in operation with classes, student activities, and sport field activities, the ambient noise levels are estimated to be approximately 50 db to 70db. Therefore, the expected noise generation of 32db is below the existing and projected notice levels at the project site, and well below 60db, and is not expected to have an adverse impact on birds or bats.

The California Coastal Commission's ecologist, Dr. Engel, has reviewed the bird survey data and concurs with the report's overall conclusion; however, the report states that the available information neither addresses surrounding areas of the larger peninsula, nor provides a basis to make a detailed projection of bird or bat use of the area once the new school and turbines

[3] Op. Cit. Dooling & Popper 2007

are operational and well established. Avian and bat activity in the surrounding areas could potentially move into the project site after the school and turbines are in operation which could have a detrimental impact on birds and bats. Therefore, without an understanding of bird and bat populations and activity in the surrounding area it is difficult to predict how the site will be utilized by birds and bats in the future. To address this potential change in bird activity and potential hazard, the *Avifauna Monitoring and Management Plan* recommends that continued monitoring is necessary.

The Commission supports the use of alternative energy and the District's proposed energy self-sufficient project with the use of wind and solar power, but also believes that such efforts are not necessarily environmentally benign in all cases, and that such projects can raise significant questions regarding protecting wildlife.

Although there is a dearth of literature on the effects of small-scale vertical axis wind turbines on birds, such as the ones proposed by this project, there is a significant body of literature on bird strikes related to large-scale wind farms and large horizontal axis (i.e., propeller) turbines, and the impacts of such structures on birds. Based on this body of knowledge, wind turbines in general have developed the reputation of being dangerous to avian wildlife. Much of this reputation comes from documentation associated with large utility, or commercial wind farms, such as the Altamont Pass wind farm (well inland of both the coastal zone and the Bay Area in Northern California) where 5,500 wind turbines, mainly large horizontal axis machines (i.e., propellers), have caused significant bird kills over the years. Design elements that typically contribute to verified bird kills include tall (100-300 feet) turbines sited within migratory routes, including where topography and air currents 'funnel' birds into turbines; turbines with long blades and/or high speeds that have a high " motion smear"[4] factor, which are difficult for birds to perceive; certain types of mounted lighting which attract migrating birds; tower designs with lattice and bracing that raptors can perch in, and are then struck by the large, slow-moving blades upon takeoff; guy wires used to stabilize turbine towers, which are difficult for birds to see; utility lines overhead instead of trenched; and close spacing of turbines, creating a barrier for migration and feeding activity.[5] Although birds are well known to have exceptionally keen vision and generally avoid flying into fast-moving, highly visible objects, such as wind-whipped tree branches, they have been known to collide with various objects, such as highly reflective surfaces, structures that are within migratory heights and obscured by low clouds or fog or when they contain bright lights that confuse birds, and structures that are located in valleys or on ridgelines where air currents may direct birds into the structures, particularly at night.

[4] As an object moves across the retina with increasing speed, it becomes progressively blurred; this phenomenon is known as "motion smear" or "motion blur". *Minimization of Motion Smear: Reducing Avian Collisions with Wind Turbines*, by W. Hodos, A. Potocki, T. Storm, and M. Gaffney, Department of Psychology, University of Maryland, August 2003.

[5] See, for example, City of Berkeley, Office of Energy and Sustainable Development. "Wind Turbine Background, Project Scope, and Environmental Review for the Shorebird Nature Center Southwest Wind Power Small Wind Turbine Beta Test Project." March 7, 2006.

Although it is possible that birds may die in higher numbers overall due to collisions with other structures,[6] it is clear from the literature that large horizontal axis wind turbines as a category result in a significant amount of bird and bat mortality. And although there have been some who have hypothesized that smaller wind turbines, including those not within the normal height range of migrating birds, might be safer for birds,[7] there is currently a lack of research-backed data that can clearly demonstrate the relative bird safety of smaller units, such as that proposed in this case. The lack of such studies has made it difficult for the Commission and other decision-makers to clearly understand potential bird strike issues in relation to objective data and analysis. While it is assumed by some that small-scale vertical axis wind turbines, such as those proposed by this project, do not lead to the type of significant bird strike problems associated with larger-scale horizontal wind turbines, and while this assumption makes sense given the relative difference in scale generally between the two types, this assumption is difficult to verify at this time absent relevant data regarding bird strikes and small-scale vertical axis wind turbines.

The proposed project provides an excellent opportunity to collect data to better inform the Commission and others in the future regarding the potential for bird strike injuries and fatalities due to the installation of small-scale vertical axis wind turbines. As long as the permit is structured to clearly collect and synthesize relevant data, and as long as it is also structured to be most protective of the birds and bats to minimize any potential for bird strikes, the proposed project can avoid significant resource impacts consistent with the Coastal Act and at the same time provide useful data for the Commission on the bird strike issue. Thus, although the Commission does not believe that the wind turbines in this case are likely to lead to significant bird injury and mortality, the Commission also cannot conclusively state this to be the case. Dr. Jonna Engel, has reviewed the proposed project, and based on the selected design, location, historical use of the site, lack of suitable habitat, developed nature of the site, and the avian data provided by the applicant, is supportive of the proposed project with appropriate monitoring. Furthermore, the California Department of Fish and Game, during the EIR process, reviewed the school project and turbines and supports the project with appropriate mitigation per the CEC guidelines, such as bird and bat surveys and mortality surveys. As such, with appropriate conditions, described below, the Commission can find the proposed project consistent with the Coastal Act.

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[6] For example, a 2001 study by the National Wind Coordinating Committee compared various forms of avian mortality in the United States and found that avian collision mortality associated with wind turbines is lower than collision deaths related to other human structures, like buildings and windows, communication towers, vehicles, and power lines (see: The National Wind Coordinating Committee. Avian Collisions with Wind Turbines: A Study of Existing Studies and Comparisons to Other Sources of Avian Collision Mortality in the United States. August 2001. Available at: http://www.west-inc.com/reports/avian_collisions.pdf). This report concluded that even if wind turbines were quite numerous (e.g., 1 million turbines), they would likely cause no more than a few percent of all bird collision deaths related to human structures.

[7] For example, a 2001 California Audubon Society letter supporting small-scale wind turbines concluded these units would not lead to a significant threat to bird populations because they are much smaller than the Altamont Pass variety, and not generally within the normal height range of migrating birds (see: John McCaull, Legislative Director, National Audubon Society – California. Letter to Assemblyman John Longville in Support of AB 1207. July 17, 2001). More recently, both the Massachusetts chapter of the Audubon Society in Newburyport and the Audubon National Wildlife Refuge in Coleharbor, North Dakota have added or will be adding single- use vertical axis wind turbines to their facilities (see: Katie Farrell, "Mass Audubon seeks OK for wind turbine," Newburyport News, July 31, 2009 and James E. Ducey, "New Facility at Audubon Refuge to be Energy Efficient and Bird-Safe," July 6, 2009, www.bloggernews.net/121474 and http://wildbirdsbroadcasting.blogspot.com.).

Specifically, Special Conditions No. 1 require the applicant to comply with all previous conditions that have not been changed by this permit. **Special Condition No. 2** requires submittal of a bird strike research plan (Plan). This Plan will require daily inspection of the turbines and surrounding area for a period of one year to identify any dead or injured bird(s) and to report this data to the Executive Director, CDFG, and USFWS on a regular basis. If at any time the Executive Director, or CDFG pr USFWS, determines that the wind turbines are having a significant adverse impact on birds, the wind turbines shall be turned off immediately until the Coastal Commission, CDFG, and the USFW are notified and an appropriate course of action is identified by the three agencies. The course of action may include the permanent discontinuance of the wind turbines. Based on the course of action identified by the agencies, the Executive Director shall determine if an amendment to this permit is necessary. **Special Condition No. 3**, requires a quarterly bird survey to be conducted for a two year period to determine bird use, frequency of use and identify any potential impacts.

Special Condition No. 4 requires that if new technology is developed that would reduce the potential impact to birds, the applicant will incorporate the new technology into the design. Futhremore, if in the future the applicant decides to reduce the operation of the wind turbines, or some or all become obsolete, the applicant shall remove those turbines from the site to reduce the potential impact to birds.

Special Condition No. 5 requires the applicant to comply with the project as approved by this permit, and any deviation from the approved plans must be submitted for review by the Executive Director to determine whether an amendment to this coastal development permit is necessary pursuant to the requirements of the Coastal Act and the California Code of Regulations. **Special Condition No. 6** requires the applicant to submit final plans showing the location and design of the wind turbines. As conditioned, the proposed project can be found consistent with Coastal Act Sections 30230, 30231, 30240, and 30250 as discussed in these findings.

C. VISUAL RESOURCES

Section 30250 of the Coastal Act states in part that:

> *(a) New residential, commercial, or industrial development, except as otherwise provided in this division, shall be located within, contiguous with, or in close proximity to, existing developed areas able to accommodate it or, where such areas are not able to accommodate it, in other areas with adequate public services and where it will not have significant adverse effects, either individually or cumulatively, on coastal resources.*

Section 30251 of the Coastal Act states in part that:

> *The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural landforms, to be visually compatible with the character surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas.*

The approved school consisted of 10 buildings ranging from 1 to 3 stories, with a maximum height of 43 feet on a hilly area that generally slopes to the south and west towards the Pacific Ocean. Due to past development, the project area is generally flat with terraces created throughout the area to accommodate building areas and roads. The proposed development consists of six 50-foot high wind turbines located along the north and eastern portion of the school site. The six turbines will be located within three groups to the north and east of the 10 school buildings and sports field. The three areas are located above the terraced school site, situated approximately 10 to 15 feet above the building grade elevation of the school building site.

The surrounding area is developed with low-density residential housing with open space recreational areas composing parts of Angels Gate Park to the southeast. Multi-family residential housing is located just north of the proposed site and along the east side of Gaffey Street.

Because the site sits on a hill and is higher in elevation than the surrounding area, views out to the ocean are available from the site; however, these views are from the school property which is restricted to school use only. There are no designed viewing areas on the site where the public is free to access for coastal viewing.

To the east of the property is the City of Los Angeles' Angel's Gate Park and Korean Bell. The area is designated as a viewsite in the San Pedro Coastal Zone Specific Plan; however views from the park are to the south out toward the ocean and away from the school site and proposed turbine locations (see **Exhibit No. 6**). The proposed turbines will be located to the northwest of the park and not within the sightlines provided at the park.

Views to the site from Paseo del Mar, which parallels the coastal bluffs and is approximately ½ mile from the school site, are generally blocked by existing development between the project site and the public areas along the coastal bluffs. Views that are available to the site from Paseo del Mar are limited and restricted to a few two lane residential streets that run perpendicular from Paseo del Mar to the site. Furthermore, public coastal views to and along the ocean from Paseo del Mar and other public streets are along the coast and out to the ocean, as opposed to inland where the project is located. The turbines will be visible from boats that are out in the ocean, as one moves further out to sea and away from the 100 foot bluffs and hillside residences. However, because of the distance and the developed nature of the surrounding area, the turbines will not have a significant impact on visual resources along the ocean and scenic coastal areas.

Therefore, due to the distance and location of the proposed school from the coastal bluffs and public viewing areas along the coast, and existing intervening development, the proposed project will not have a significant impact to public coastal views from any public viewing areas. The Commission, therefore, finds that the proposed project will be compatible with the character and scale of the surrounding uses and with Sections 30240, 30250 and 30251of the Coastal Act.

D. LOCAL COASTAL PROGRAM

Section 30604(a) of the Coastal Act states that:

> Prior to certification of the Local Coastal Program, a Coastal Development Permit shall be issued if the issuing agency, or the Commission on appeal, finds that the proposed development is in conformity with the provisions of Chapter 3 (commencing with Section 30200) of this division and that the permitted development will not prejudice the ability of the local government to prepare a Local Coastal Program that is in conformity with the provisions of Chapter 3 (commencing with Section 30200).

On September 12, 1990, the Commission certified, with suggested modifications, the land use plan portion of the San Pedro segment of the City of Los Angeles' Local Coastal Program. The certified LUP contains polices to guide the types, locations and intensity of future development in the San Pedro coastal zone. The Upper Reservation and the White Point Reservation were excluded from certification at the time because the property was previously owned by the Federal government and the City did not have adequate time to plan for and include a master plan for these two areas.

The Commission finds it can approve the development as conditioned. The proposed development is consistent with the policies of the certified LUP. As conditioned the project will not adversely impact coastal resources or access. The Commission, therefore, finds that the project as conditioned will be consistent with the Chapter 3 policies of the Coastal Act and will not prejudice the ability of the City to prepare Land Use Plan policies for the area (deferred area) and a Local Coastal Program implementation program consistent with the policies of Chapter 3 of the Coastal Act as required by Section 30604(a).

E. CALIFORNIA ENVIRONMENTAL QUALITY ACT.

The applicant is the lead agency for the purposes of California Environmental Quality Act (CEQA) review. The applicant certified an environmental impact report for the project. The EIR includes mitigation measures to address potential impacts created by the proposed development and included a few significant unavoidable environmental impacts, as listed below:

- Aesthetic impacts related to massing and height of the wind turbines,
- Short-term construction-related air quality impacts
- Cultural resources impacts
- Noise impacts associated with crowd noise from proposed bleachers
- Pedestrian safety impacts related to sidewalk improvements.

Section 13096 of the Commission's administrative regulations requires Commission approval of Coastal Development Permit applications to be supported by a finding showing the application, as conditioned by any conditions of approval, to be consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Section 21080.5(d)(2)(i) of CEQA prohibits a proposed development from being approved if there are feasible alternatives or feasible mitigation measures available, which would substantially lessen any significant adverse impact which the activity may have on the environment.

The proposed project, as conditioned, is consistent with the applicable polices of the Coastal Act. There are no feasible alternatives or mitigation measures available, which would substantially lessen any significant adverse impact, which the activity may have on the environment. Therefore, the proposed project is found consistent with CEQA and the policies of the Coastal Act.

APPENDIX

Substantive Documents:

1. *Final Environmental Impact Report, South Regional High School No. 15*, November 2008.
2. *Avifauna Monitoring and Management Plan for Proposed Wind Turbines Los Angeles Unified School District South Region High School #15,* ICF Jones & Stokes, dated June 2011.
3. *California Guidelines for Reducing Impacts to Birds and Bats from Wind Energy Development,* California Energy Commission, 2007.
4. *The Ecology of Migrant Birds: A Neotropical Perspective*, By John H. Rappole, 1995
5. Caltrans technical report; *LA-47/Vicent Thomas Br. Lighting, Natural Environment Study Memo*, May 2003.
6. *The Effect of Avoidance Rates on Bird Mortality Predictions made by Wind Turbine Collision Risk Models*, Chamberlain, DE., Rehfisch, M.R., Fox, A.D. Desholm, M. & Anthony, S, 2006.
7. San Pedro certified Land Use Plan, 1990, segment of the City of Los Angeles' Local Coastal Program.

RECEIVED
South Coast Region

CALIFORNIA COASTAL COMMISSION

EXHIBIT NO. 1

Application Number
5-08-251-A3

Vicinity Map

California Coastal Commission

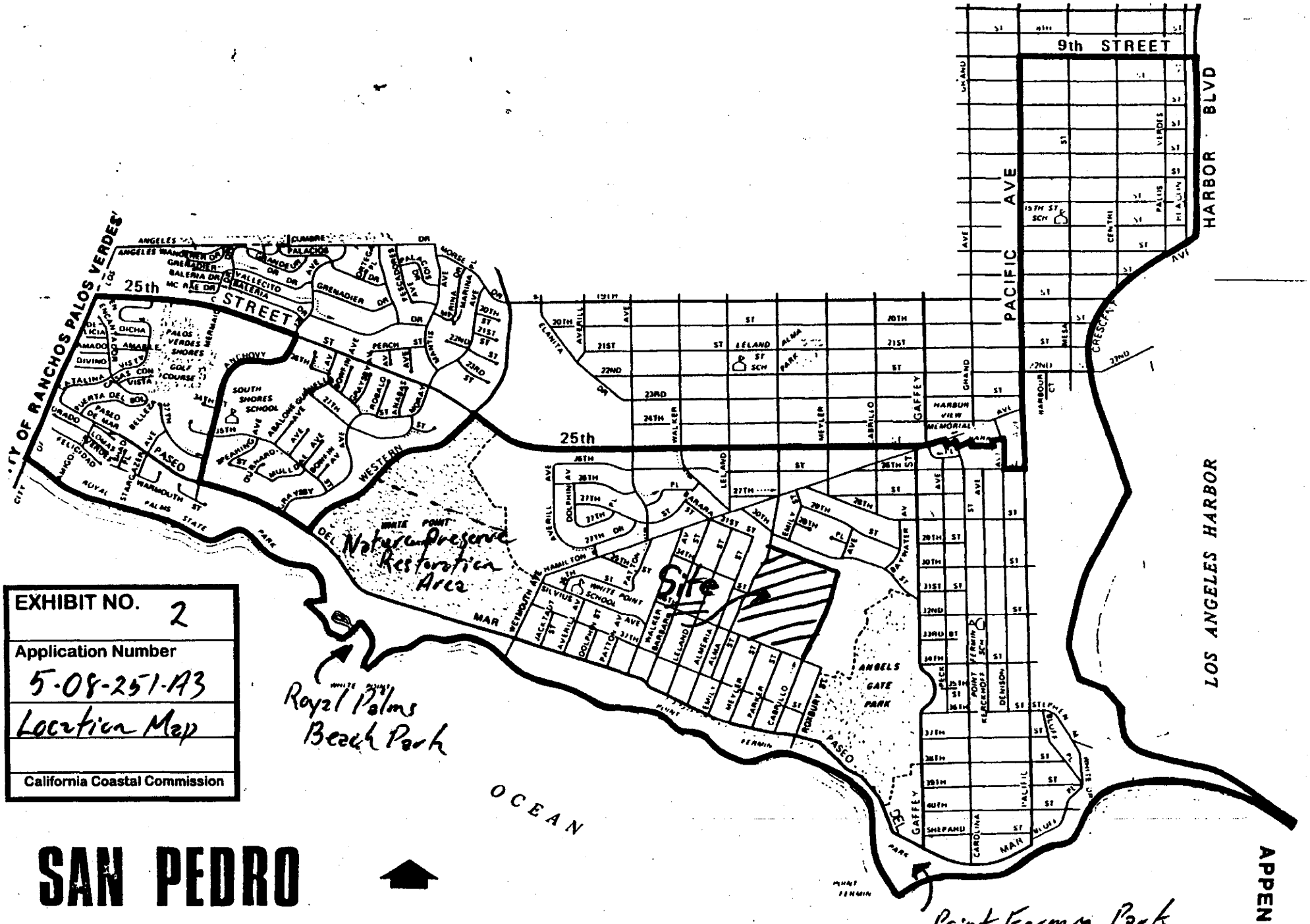
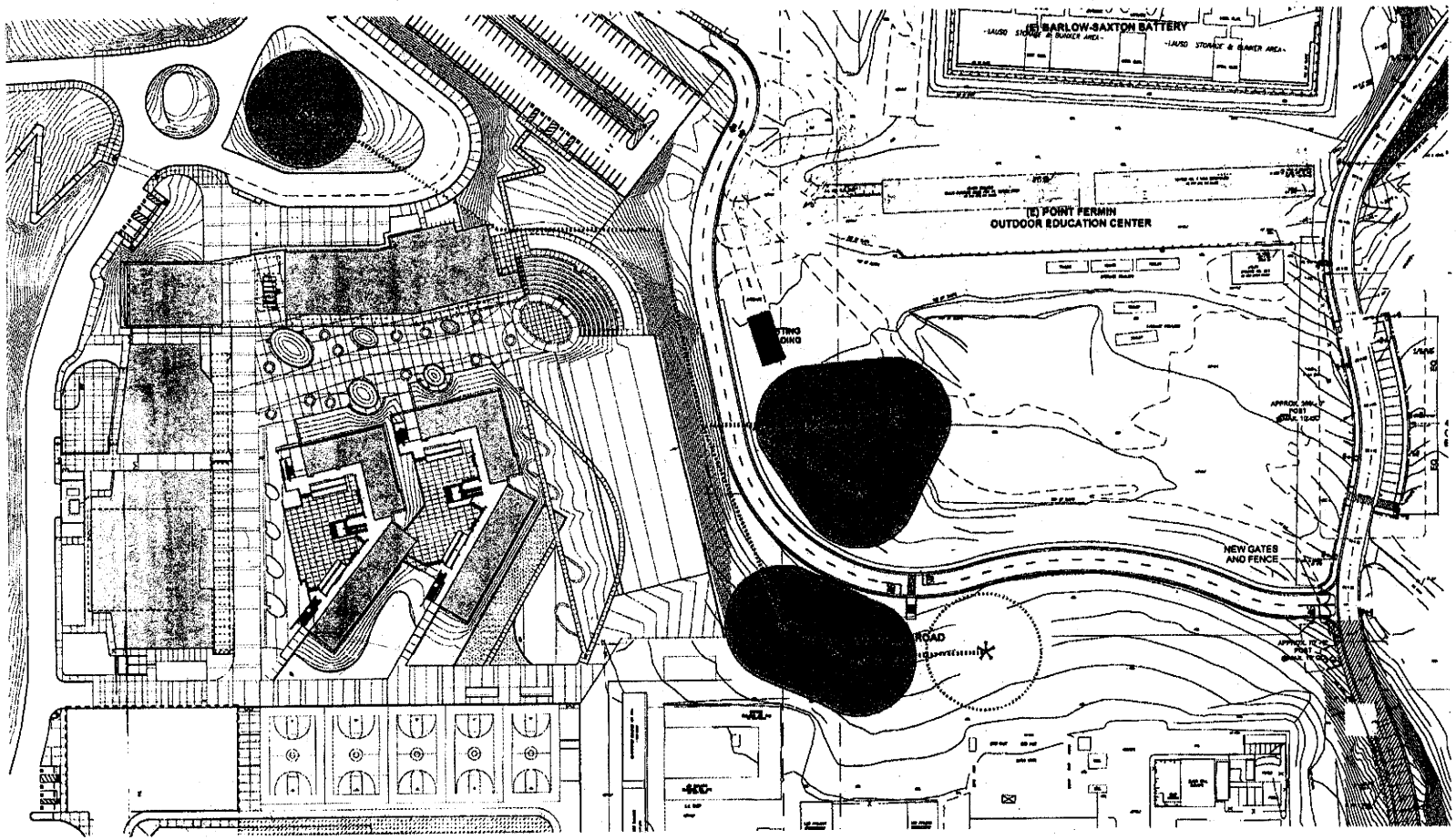


EXHIBIT NO. 2
Application Number
5-08-251-A3
Location Map
California Coastal Commission

SAN PEDRO SPECIFIC PLAN AREA



TURBINE LAYOUT
OPTION 2

0 40' 80'

TURBINE
FENCE AREA
ALT. LOCATION
(E) CONDUITS
(N) CONDUITS

EXHIBIT NO. 3

Application Number

5-08-251-A3

Site Plan

California Coastal Commission

Falcon Series

Vertical Axis Wind Turbines

WEPOWER

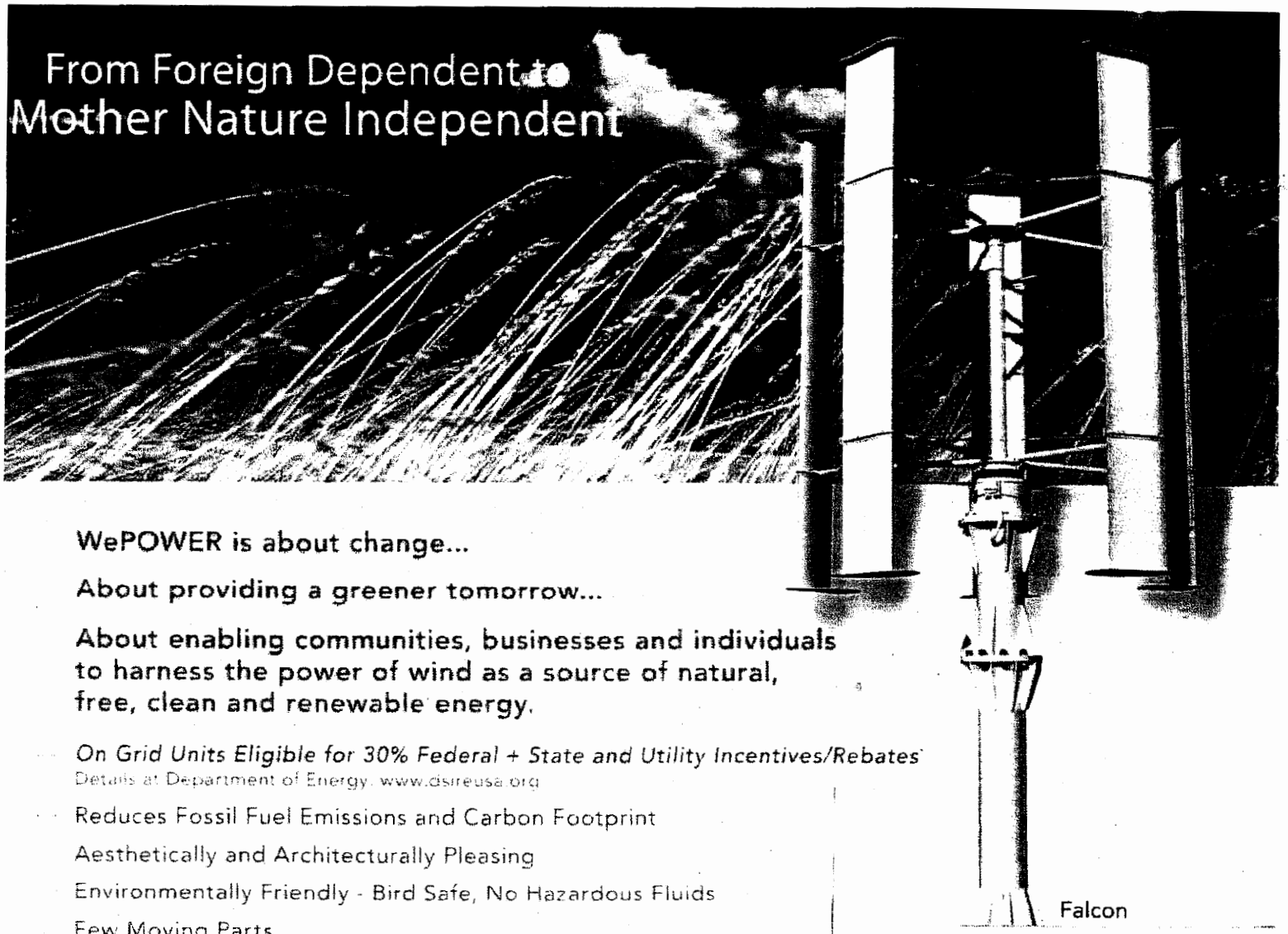


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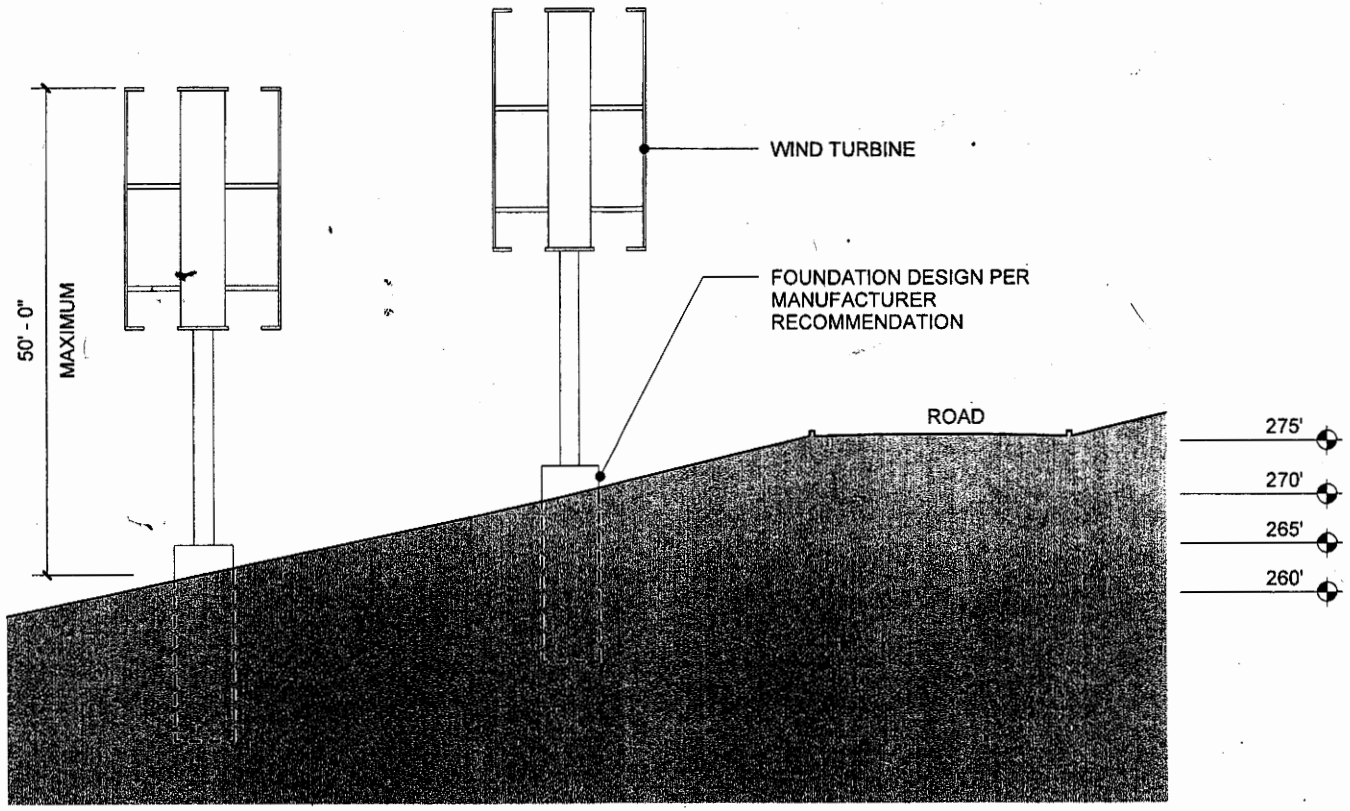
EXHIBIT NO. 4
Application Number
5-08-251-A3
Vertical Axis Wind Turbine
California Coastal Commission



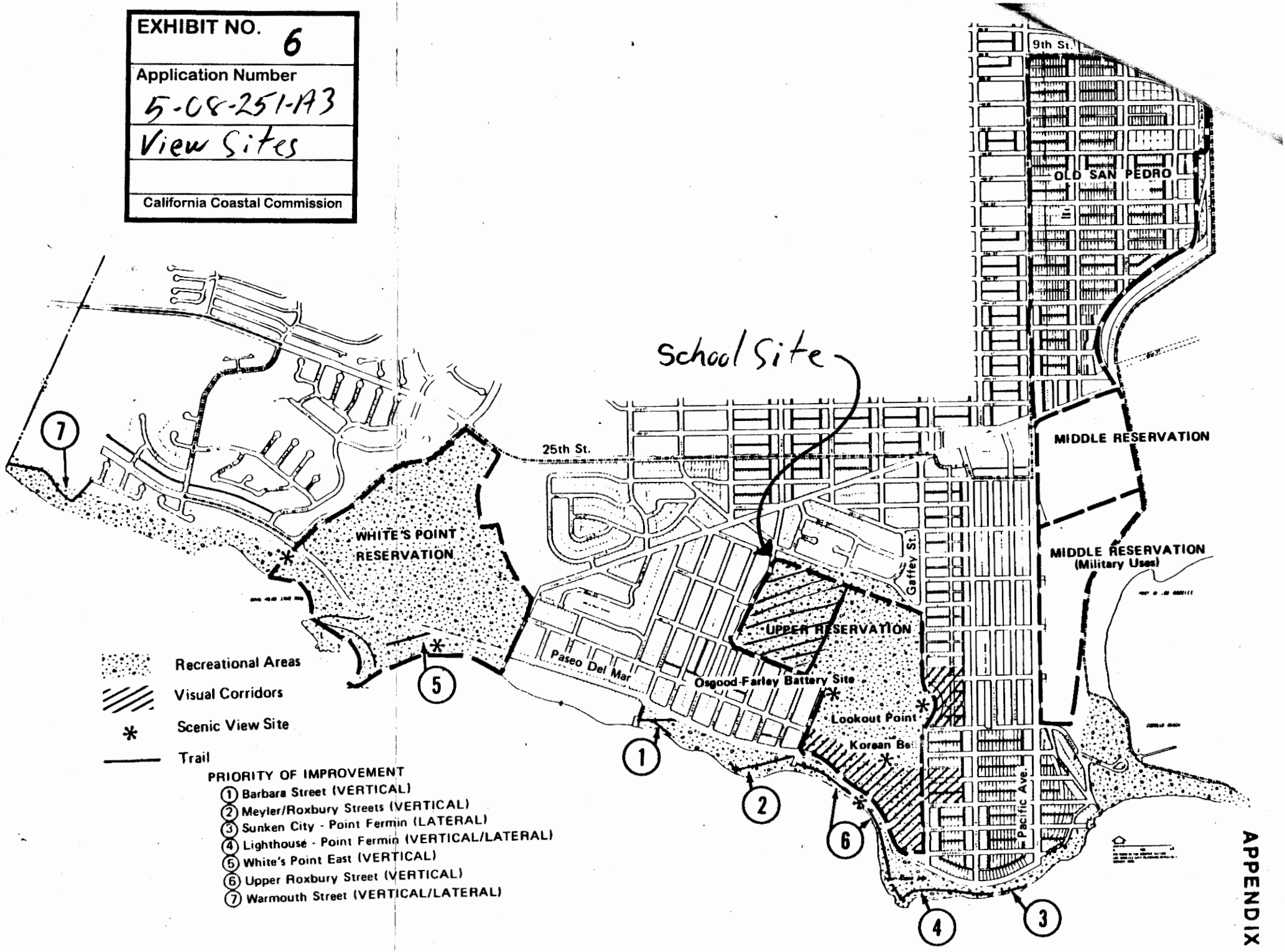
1 SECTION
1/16" = 1'-0"

EXHIBIT NO. 6

Application Number
5-08-251-A3

View Sites

California Coastal Commission



SAN PEDRO SPECIFIC PLAN

APPENDIX C