

# Section 3

## Master Response

---

### 3.1 INTRODUCTION

---

The Master Response that follows is intended to address a number of comments related to Project effects on wind related recreation that were raised during public review of the Draft EIR and provides information in a comprehensive, easily-located discussion that clarifies and elaborates upon the analysis in the Draft EIR. The Master Response provides information related to the adequacy of the significance threshold; the applicability of Article X, Section 4 of the State constitution to evaluate wind-related recreational impacts; the methodology and techniques used in conducting the technical Wind Study attached as Appendix I to the Draft EIR (Wind Study); the adequacy of the Wind Study to analyze potential wind-related impacts from the Project; the consideration of user groups; the use of alternative wind analysis; the availability of the Draft EIR and related documents for public review; and the alternatives considered in the Wind Study.

### 3.2 MASTER RESPONSE

---

#### **Master Response: Analysis of Wind-Related Recreation Impacts from Implementation of the Project**

---

##### **Adequacy of the Significance Threshold**

As described in California Environmental Quality Act (CEQA) Guidelines Section 15064.7, a significance threshold for a given environmental effect represents the level at which the lead agency finds the effects of the project to be significant; the term may be defined as a quantitative or qualitative standard, or set of criteria, pursuant to which the significance of a given environmental effect may be determined (*Communities for Better Environment v. California Resources Agency* (2002) 103 Cal. App. 4th 98, 110-11). The City, as lead agency, is permitted discretion in establishing significance thresholds and determining how to apply these thresholds in varying settings, so long as it is based on substantial evidence and the application does not foreclose consideration of potentially significant impacts (refer to CEQA Guidelines Section 1504(b) and 15064.7(b)). See *Eureka Citizens for Responsible Gov't v. City of Eureka* (2007) 147 Cal. App. 4th. 357, 375; *Mejia v. City of Los Angeles* (2005) 134 Cal. App. 4th 322, 362.

The City's Bayfront Specific Plan (Specific Plan) established a quantitative Community Wind Standard (Wind Standard) to protect wind-related recreational activities in the Coyote Point area. The Wind Standard states:

The wind reduction caused by a structure shall reduce the wind speeds compared to existing conditions by no more than 10% at irreplaceable windsurfing launching and

landing sites, or reduce wind speed by no more than 10% over large portions of the windsurfing transit routes or primary board sailing areas (refer to page VI-15 of the Specific Plan).

The wind consultant applied the Wind Standard in the technical Wind Study prepared for the Draft EIR to analyze the effects of the Project on wind-related recreation and as discussed in the Draft EIR Section 3.11, Parks and Wind Effects on Recreation at page 3.11-9, the City's significance threshold for impacts to wind-related recreation in the Draft EIR was adapted from the Wind Standard. Thus the Wind Standard provides a basis for the Draft EIR's conclusions concerning wind-related impacts.

The City adopted the Wind Standard as part of an update to the Specific Plan in April 2004 to protect against wind shadow from new development that "would be a material detriment to the utility of Coyote Point Recreation Area and the Bay as an important wind-surfing area."<sup>1</sup> In promulgating this Wind Standard, the City considered potential wind speed reduction and increased turbulence from development of the Anza Point area. However, the technical wind analysis (Specific Plan Wind Study) conducted by Environmental Science Associates (ESA) for the Specific Plan recommended that the City use the reduction of wind speed in establishing a standard to address potential wind effects.<sup>2</sup>

Based on analysis provided by ESA, the Specific Plan Mitigated Negative Declaration (MND) recommended adoption of a Wind Standard as proposed in the Specific Plan Wind Study, concluding that, with the application of the Wind Standard, future development in the Specific Plan area would not have a significant impact on wind conditions or wind-related recreation on the Bay.<sup>3</sup> In doing so, the City determined to focus on reduction in wind speed rather than turbulence as the best proxy for protecting conditions necessary for continued wind-related recreation at Coyote Point, including board sailing. Members of the public were permitted to review and comment on the draft Wind Standard prior to its adoption by the City, as well as the analysis and recommendations included in the Specific Plan Wind Study conducted by ESA. At that time, no comments were made concerning the adequacy of the proposed Wind Standard to protect wind-related recreation adjacent to the Specific Plan area, including Coyote Point Recreation Area. The City then adopted the recommended Wind Standard by incorporating it into the Specific Plan, which is the basis for its use in drafting the significance threshold in the Draft EIR.

The City was within its discretion to rely on expert opinion in adopting the Wind Standard which focuses on reduction in wind speed as opposed to other factors, e.g., turbulence, as the basis for evaluating impacts to wind-related recreation. There are no commonly accepted thresholds for determining significance of turbulence for wind-related recreational activities. Further detailed

---

<sup>1</sup> See *City of Burlingame Mitigated Negative Declaration for Bayfront Specific Plan Update*, adopted April 2003 (herein, the "MND"), and *Wind Effects Considerations, Burlingame Bayshore Area Specific Plan*, Environmental Science Associates, October 2002 (herein, "Study") (both public documents available as part of the administrative record for the MND, and included in this Response to Comments by reference).

<sup>2</sup> Environmental Science Associates, *Wind Effects Considerations – Burlingame Bayfront Specific Area Plan*, October 2002.

<sup>3</sup> *Update of the Burlingame Bayfront Specific Plan, Mitigated Negative Declaration*, December 8, 2003, page 49.

technical information on the nature and complexity of turbulence is provided in Appendix 1 to this Final EIR.

Although turbulence can be measured, the lack of an established standard for ascribing changes in turbulence to an effect on wind-related recreational activities make it a less appropriate and effective method for determining the significance of wind impacts. See, e.g., CEQA Guidelines § 15067.7(a) (a threshold of significance is an identifiable quantitative, qualitative or performance level of a particular environmental effect). Moreover, comments on the Draft EIR do not otherwise provide a standard for determining the significance of changes in turbulence. Some comments suggest that downwind turbulence would occur for a length of up to 20-times the height of a structure placed in a wind field. While this is a rule of thumb, it does not provide a standard for relating the amount or effect of turbulence to the impact on wind-related recreation.

Lead agencies may rely upon standards established in land use documents (such as the Specific Plan) for establishing CEQA thresholds of significance, so long as they do not foreclose consideration of potentially significant impacts in particular circumstances (CEQA Guidelines Section 15064.7(b); *Mira Mar Mobile Community v. City of Oceanside* (2004) 119 Cal. App. 4th 477, 494; *Mejia*, 134 Cal. App. 4th at 362). There is no fair argument that the application of the Wind Standard in the technical wind study conducted for the Draft EIR, and further analysis in the Draft EIR, failed to consider any potentially significant impacts in the circumstances, because, as discussed below, the Wind Standard was created to specifically address impacts to wind-related recreation in vicinity of the Specific Plan area, including Coyote Point. Thus relying on the Wind Standard to analyze wind impacts of the Project was consistent with CEQA requirements.

Furthermore, the significance threshold used in Section 3.11, Parks and Wind Effects on Recreation, of the Draft EIR to evaluate potential impacts to wind-related recreational resources addresses the breadth of recreational uses and the special physical characteristics of Coyote Point Recreation Area. As for breadth of uses, Section 3.11, Parks and Wind Effects on Recreation, of the Draft EIR discusses both advanced board sailing uses of the near-shore area as a transit route to windsurfing areas further into the Bay as well as educational/beginner board sailing uses of the near-shore area, including windsurfing and kite boarding instruction and practice. The Draft EIR concludes on page 3.11-10, that the Project would not cause a significant impact because it “would not substantially affect the primary windsurfing launch sites, transit lanes, or near-shore windsurfing and kite boarding area at Coyote Point Recreation Area.” Further information regarding the extent to which the Draft EIR considers educational/beginner level windsurfing and kite boarding activities in the near-shore area at Coyote Point is provided under Consideration of User Groups, below.

As for the special physical characteristics of Coyote Point Recreation Area and the surrounding Bay for wind-related recreation, the City took this into account when it adopted the Wind Standard that serves as the basis for the significance threshold in the Draft EIR. As discussed previously, to assist it in promulgating the appropriate standard, the City received and considered an expert wind analysis that specifically considered wind for recreational users adjacent to the Project offshore of the Coyote

Point Recreation Area and impacts thereon from development of the Anza Point subarea. The Specific Plan Wind Study was a "focused analysis of the wind record to evaluate the potential effects of proposed bayfront development on recreational board sailing east of the Anza area."<sup>4</sup> The Specific Plan Wind Study acknowledged and took into account that "the waters of the Bay and the regular winds (adjacent to the Specific Plan area) combine to present superior opportunities... for recreational sailing and sail boarding."<sup>5</sup>and that Coyote Point's "status as a prime board surfing area... make[s] protection of that wind resource in the Bay and shoreline east of the Anza Area important."<sup>6</sup> Thus, in adopting the Wind Standard the City knew of and considered the special nature of the Coyote Point area, including the need to protect the primary wind surfing areas, launching and landing sites, or transit lanes adjacent to Coyote Point from substantial impacts resulting from wind shadow created by new development in the Specific Plan area.<sup>7</sup>

### **Applicability of Article X, §4 of the California Constitution**

As discussed at length previously, the City appropriately relied on the Wind Standard as a significance threshold in the Draft EIR, rather than another threshold such as Article X, Section 4 of the State Constitution (Article X, § 4) as suggested by some commentators.

Article X, § 4 states the following:

No individual, partnership, or corporation, claiming or possessing the frontage or tidal lands of a harbor, bay, inlet, estuary, or other navigable water in this State, shall be permitted to exclude the right of way to such water whenever it is required for any public purpose, nor to destroy or obstruct the free navigation of such water; and the Legislature shall enact such laws as will give the most liberal construction to this provision, so that access to the navigable waters of this State shall be always attainable for the people thereof.

There is no basis provided for using this provision of the California Constitution rather than the significance threshold in the Draft EIR for the assessment of potential impacts to wind-related recreational activities that would result from implementation of the Project. Moreover, the basic requirement of Article X, § 4 is the prohibition of impairing the public's right to the shoreline. This requirement is not implicated by the 300 Airport Boulevard Project, because the Project does not impede public access to the shoreline; it would increase the public's ability to access the Bay through improvements to the Eastern Shoreline parcel, and to Sanchez Channel by opening that shoreline to the public.

It is not specifically recreational access or any other type of access to the Bay (or any navigable water) that is protected by Article X, § 4; rather, it is the public's right of access to navigable waters that is

---

<sup>4</sup> Environmental Science Associates, *Wind Effects Considerations – Burlingame Bayfront Specific Area Plan*, October 2002, page 2.

<sup>5</sup> *Id.*, page 4.

<sup>6</sup> *Id.*, page 5.

<sup>7</sup> *Update of the Burlingame Bayfront Specific Plan, Mitigated Negative Declaration*, December 8, 2003, page 49.

protected, so that the public may carry out public purposes (including recreation) on such waters. *Gion v. Santa Cruz* (1970) 2 Cal. 3d 29, 42 (public policy in the California Constitution favors allowing the public access to shoreline areas); *Lane v. City of Redondo Beach* (1975) 49 Cal. App. 2d 251, 256-57 (the object of Article X, § 4 is destroyed if a municipality deprives the public of its right of access to tidelands or navigable waters); *Forestier v. Johnson* (1912) 164 Cal 24 (Article XV, § 2<sup>8</sup> operates as a limitation upon the power of public agencies against disposition of tidelands that would exclude the public's right of way to navigable waters).

Furthermore, in evaluating an action's compliance with Article X, § 4 the necessary inquiry is whether the action stops people from going to the seashore, not what people may do on the waters once they reach it (*Personal Watercraft Coalition v. Marin County Bd. Of Supervisors* (2002) 100 Cal. App. 4th 129, 149 fn 7). Accordingly, the effect of a project on one type of recreational navigation does not, in any real sense, implicate the public's right to access to public waterways protected by Article X, § 4, as some comments suggest. In addition, Article X, §4 does not confer special status to recreational access to the Bay that would require such recreation to be treated differently than other forms of recreation that may be evaluated under CEQA. And, CEQA and relevant jurisprudence provides no basis for the assertion that Bay or other water-borne recreation must be provided heightened scrutiny or analysis.

Moreover, the potential for any impact to a particular type of navigation (recreational windsurfing and kite boarding) is not tantamount to the obstruction of all free navigation as prohibited by Article X, § 4. Article X, § 4 prohibits obstruction or destruction of free navigability in general, not as to specific types of navigation. See, e.g., *People ex rel. Baker v. Mack* (1971) 19 Cal. App. 3d 1040, 1047-48 (the right of the public to use navigable waters is not limited to any particular type of craft); *Personal Watercraft Coalition*, supra, at p. 153 fn 7 (where numerous aquatic uses will remain available to the public, arguments that impacts to one type of navigation is tantamount to a prohibited "foreclosure" of navigation under Article X, § 4 is hyperbole). Courts have upheld local actions affecting, even prohibiting, certain forms of navigation as not running afoul of Article X, § 4 so long as such actions do not operate to preclude or virtually impede all public access to public waterways. *Personal Watercraft Coalition*, supra, at pp. 148-49, citing *People ex rel. Younger v. County of El Dorado* (1979) 96 Cal. App. 3d 403, 406-07. Thus, the suggestion that any possible impact to any one form of free navigation runs afoul of Article X, § 4 is not a correct application of that provision. Nevertheless, the record reflects that the Project does not pose an obstruction to free navigation of the Bay by means of sail or kite board in the Coyote Point area.

Lastly, the comments provide no support for the claim that the Project would obstruct or substantially impair the free flow of wind necessary to successfully perform board sailing activities in the near-shore Coyote Point area. No such "free flow of wind" exists in the near-shore area, as it is currently impacted by the fill and improvements constituting the existing Anza Point area (see page 3.11-2 of the Draft EIR). The Draft EIR appropriately determined, based upon substantial evidence in the record, that although some wind impacts would occur; the Project would not result in significant impacts to

---

<sup>8</sup> Article X, § 4 was initially adopted as Article XV, § 2 to the California Constitution.

wind-related recreational activities in the near-shore area. Any reduction in wind is not the same as the destruction or obstruction of free navigation. As discussed above, the general focus in Article X, § 4 is on actions impeding the public's access to waterways rather than impediments within waterways. See, e.g., *Oakland v. Hogan* (1940) 45 Cal. 2d 858; *San Francisco v. Buddle* (1956) 139 Cal. App. 2d 10. The few cases that have discussed obstruction to navigation focused on physical impediments, for example dams which deprive otherwise navigable waters of sufficient water to permit navigation at all, or other physical impediments to all forms of navigation. See, e.g., *People ex rel. Roberts v. Russ* (1901) 132 Cal 102. The Project poses no such physical impediment to navigation of the Bay in the Coyote Point area.

Thus, Article X, § 4 does not affect the City's analysis of the Project under CEQA, and similarly, the San Francisco Bay Plan and San Francisco Bay Area Water Trail Act have no effect on whether the City has chosen the correct significance threshold for assessing impacts to wind-related recreation although the Bay Plan is discussed in Draft EIR Section 3.2, Land Use, Plans and Policies.

### **Adequacy of the Wind Study and Evaluation of Turbulence**

In review of the Draft EIR a number of comments were submitted that challenged the adequacy and accuracy of the Wind Study conducted for the Project. The following discussion provides further insight into the methods and data used to model the Project's wind-shadow effect, and consideration of changes in wind direction and turbulence.

#### *Baseline Wind Data*

As stated in the Wind Study conducted for the Project, in order to obtain an inventory of existing wind conditions in the study area, data were gathered from the San Francisco Airport (SFO) wind station (see Appendix 1, page 7). The accepted standard for determining wind speed and direction is to take measurements at a height of 10 meters above ground or above nearby obstacles, so that the wind direction is not distorted and the wind speed is neither accelerated nor slowed by local buildings or structures. This standard is met by the SFO wind station (see Appendix 1). While a local wind sensor may be convenient for immediate access to wind conditions, there is no assurance that the local sensor meets the foregoing standard or otherwise provides accurate wind speed and direction information about the "free-stream" winds that pass overhead. The long-term record of these "free stream" winds are used to scale the baseline winds in the wind tunnel, and therefore, accurate data concerning the "free stream" wind is vital to successful wind tunnel modeling. As discussed in Appendix 1, the SFO station, located approximately two miles west northwest of the Project Site, provides a reliable (quality-assured) long-term record of wind speed and direction of these winds, which is critical to the success of the wind tunnel analysis.

Furthermore, wind data from the immediate site vicinity were not required to accurately replicate local wind conditions. For each local wind direction or speed distortion caused by buildings on-site or in the vicinity, that local distortion was replicated in the wind tunnel model since it included those local

buildings. In conclusion, the SFO station overall provides an accurate baseline with which to determine potential Project impacts to wind.

#### *Velocity Limitations of Hot Wire Anemometry*

In order to conduct the Wind Study, a scale model of the 300 Airport Boulevard Project was built and tested at the UC Davis Atmospheric Boundary Layer Wind Tunnel (ABL Wind Tunnel) using an instrument known as a hot-wire anemometer to gather data concerning wind speed and direction. Some comments cite to a study by the Kungliga Tekniska Högskolan (KTH) Royal Institute of Technology concerning the limitations of hot wire anemometry. The KTH Royal Institute of Technology in Sweden has published many technical papers on hot wire anemometry, one or more of which may discuss the limitations of hot-wire anemometers when measuring very low wind velocities, because other physical influences, such as natural convection, can affect the hot wire's accuracy at those very low velocities (see Appendix 1, page 2). This is a well-known phenomenon. *Id.* This limitation is not significant for the study of Project-related wind impacts because the "very low velocities" referred to are orders of magnitude lower than the basic air velocities actually measured at the test points in the wind tunnel (see Appendix 1, page 2). Similarly, the heat sink effect primarily affects wind speeds much less than used in the wind tunnel, and the heat sink effect was not an issue in measuring Project-related wind impacts.

#### *Applicability of Wind Study Results to Range of Wind Speeds*

As described on page 6 of the Wind Study, the analysis measured the Project's effect on wind speed by comparing changes in wind R-values. The R-value measured in the wind tunnel is a ratio between the speed of the wind at a point near the ground relative to the speed of the wind flowing high overhead (see Appendix 1). This ratio remains constant regardless of the relative speed of the wind. That is, the same measured change in R-value applies to the range of full-scale wind speeds.

The analysis in the Draft EIR Wind Study is applicable over the entire range of full-scale winds, including those less than 10 miles per hour, as described in the Wind Study and discussed in further detail in Appendix 1. Furthermore, the physical properties of the air and its motion in the atmosphere are similar over a range of speeds. The flows of the "lighter" and "heavier" winds would experience the same respective change in wind speeds as identified in the Draft EIR Wind Study.

#### *Measurements of Wind Direction and Turbulence*

Although the ABL Wind Tunnel employs a single hot wire anemometer, the test can account for changes in short-term wind direction and wind speed of the type produced by wind interaction with the 300 Airport Boulevard Project. Such directional and speed variations manifest as turbulence (see Appendix 1, page 3). The hot wire anemometer quantifies turbulence by taking a large number of wind velocity readings and accurately measuring the variability between the readings. This variability amongst measurements is caused by short-term variations in wind direction and wind speed, and thus is a measurement of turbulence. The other factor in characterizing the winds in the study area under various existing and future conditions is the ability to correctly simulate the wind flows across the study

area under those different conditions. The ABL Wind Tunnel correctly simulates the flows of the wind across the site, and the hot wire anemometer accurately measures wind speed and quantifies turbulence that would occur under existing, Project, cumulative and alternative development conditions. Thus the ABL Wind Tunnel is capable of correctly simulating the flow of surface winds and the hot wire enables the direct measurements necessary to determine changes in wind speed and to quantify short-term changes in wind direction and wind speed that manifest as wind turbulence.

In response to requests by commentors, data concerning turbulence intensity that were collected at the time of the Wind Study data (on wind speed) are provided in Appendix 2 to the EIR. The data show that the 300 Airport Boulevard Project would have little impact to the majority of the study area. An average increase in turbulence intensity (which is measured in percentage, as discussed in Appendix 1, page 7) over the study area of slightly more than 1 percent (increase from an average of 15.1 percent to 16.4 percent) for the three predominant wind directions for windsurfing and kiteboarding in the study area (west, west-northwest, and northwest). The largest increase in turbulence intensity in any of the wind directions, an increase of 13 percent (from 15 percent to 28 percent), occurred over a very small (less than 1/4 acre) portion of the study area for winds from the northwest direction. The majority of the study area would experience an increase in measured turbulence intensity on the order of 1 to 2 percent at most. Such minimal increases in turbulence intensity would likely not be perceptible to humans and thus would not be a significant impact.

#### *Gusts or Gustiness*

References to the terms gusts or gustiness confuse the technical concept of gust with small-scale variations in wind speed or direction discussed above. As discussed in Appendix 1, page 6, the primary distinction between these is their magnitude and the time-scale over which they occur. Technically defined, gusts are larger wind fluctuations, which are more accurately categorized as changes in weather. Such wind gusts and lulls occur for many reasons and are predominately naturally occurring weather effects, as are the typical longer-term build-up and decrease of wind speed over the course of a typical afternoon and evening. Gusts and longer-term changes in wind speed are not generated by wind passing by objects on the ground, and thus are independent of the 300 Airport Boulevard Project and need not be discussed in the Draft EIR.

#### *Average of Changes in Wind Speeds*

As discussed in the Wind Study and further detailed in Appendix 1, the Draft EIR Wind Study did not average the Project's wind effects over certain daylight hours or otherwise attempt to minimize conclusions concerning wind-related impacts of the Project. As described on page 6 of the Wind Study, the analysis measured the Project's effect on wind speed by comparing changes in wind R-values for each of four predominant wind directions. R-values are not affected by time of day and, therefore, do not require averaging over time of day (Appendix 1, page 1). The R-value is a ratio between the speed of the wind at a point near the ground relative to the speed of the wind flowing high overhead. This ratio remains constant regardless of the time of day and relative speed of the wind. That is, the same

ratio applies to the range of full-scale wind speeds. Thus, the time of day has no effect on the methodology or applicability of the study.

The Wind Study employed averaging to determine an average change in R-values at each measuring station for three of the four predominant winds in the study area, i.e., the west, west-northwest, and northwest (refer to page 6 of the Wind Study). The Wind Study did so based on the fact that these three winds account for 62 percent of winds of all speeds blowing across the study area; the other significant wind direction being to the west-southwest (which is said to be less desirable for windsurfing and kite boarding because it blows offshore and thus excluded from the average but whose results are similar to other three wind directions). Some commenters assert that West winds are not desirable for the same reason (Comment 28.5), but considering the spatial relationship of the Bay and Coyote Point launch areas, sailors can launch in the study area and use westerly winds to be blown back to shore in the area of the Boardsports shop, thus West winds were included in the Wind Study.

These average changes in wind speed were then measured against the Wind Standard, which addresses wind reduction relative to existing conditions as it may affect wind-related recreational activities, but does not address particular wind directions. The City has consistently applied this methodology in performing wind studies for the Anza Point Area for the past 15 years. CEQA provides lead agencies with discretion to review and choose between conflicting scientific methodologies when making determinations of significance concerning particular impacts. Under CEQA, a lead agency's basis for analyzing potentially significant impacts in an EIR is not subject to question based on whether its technical studies are irrefutable or could have been better, only that the technical studies are "sufficiently credible" to be considered as part of the total evidence that supports the lead agency's determinations. See *Eureka Citizens*, 147 Cal. App. 4th at 372, citing *Laurel Heights Improvement Assn v. Regents of Univ. of California* (1988) 47 Cal. 3d 376, 409.

As such, the City properly averaged wind speeds from the west through northwest direction to determine whether the 300 Airport Boulevard Project meets its Wind Standard. Although some comments state that wind from one direction or another is best for boardsailing, the data for wind indicates that no one wind direction is predominant. As discussed above, certain wind directions are more desirable for windsurfing and kite boarding at Coyote Point. The winds that occur at Coyote Point naturally vary in speed and wind direction during the day. The Wind Study summarized the data from the SFO wind station that attest to frequency of winds from various directions. Accordingly, the windsurfers and kite boarders that recreate in the Bay surrounding Coyote Point are likely to experience winds of varying speeds and from the range of directions studied under the Draft EIR rather than wind from one single wind direction and any single speed at any sailing session. Because of this natural variability, the Wind Study's methodology, using average reduction in wind speeds from the range of wind directions most commonly felt in the study area, provides a more accurate result than taking snapshots focused on one particular wind direction. The City is within the discretion provided by CEQA to choose this methodology in the

Draft EIR to analyze compliance with the significance threshold for impacts to wind-related recreation, as it has done for its previous CEQA studies.

Lastly, wind speed data for individual wind directions, which were summarized by the Draft EIR Wind Study, are also provided in Appendix 2, demonstrate that even when measured by individual direction (west, west-northwest and northwest), impacts to wind-related recreation would still be less than significant. These data show that development of the 300 Airport Boulevard Site would result in wind speed reductions of greater than 10 percent would occur over similarly sized, or smaller, and similarly located portions of the study area as when averaged. Thus, even when isolated for particular wind directions of west, west-northwest and northwest, Project-related reductions in wind speed would not be significant.

### **Consideration of User Groups**

Some comments state that the Wind Study inordinately focuses on the study area as a transit route to sailing areas further off-shore into the Bay, or otherwise failed to consider diverse users of the study area. Section 3.11, Parks and Wind Effects on Recreation, of the Draft EIR discusses both educational/beginner board sailing uses of the near-shore area, windsurfing and kite boarding instruction and practice, and advanced board sailing uses of the near-shore area as a transit route to windsurfing areas further into the Bay. Figure 3.11-1 of the Draft EIR shows launch sites and Primary Windsurfing Areas, including the near-shore area. Section 3.11, Parks and Wind Effects on Recreation, of the Draft EIR accounts for existing wind-related recreational uses in the vicinity of the Project site as follows: "less experienced windsurfers and kite boarders remain closer to the shore in order to take advantage of lower wind speeds that provide less challenging conditions. The concessionaire at Coyote Point provides windsurfing and kite boarding lessons in the near-shore area surrounding the primary launch zone. This near-shore area is roughly delineated by Coyote Point shoreline to the south, Airport Boulevard to the west, the end of Airport Boulevard to the north and Coyote Point Parking Lot to the east." Thus, the Draft EIR focuses on both the educational/beginner level users and advanced-level and their respective use areas.

The Draft EIR concludes that the Project would not result in significant impacts to large portions of the near-shore area used by educational/beginner level windsurfers and kite boarders because wind speed reductions of 10 percent or greater are limited to an area slightly smaller than 400 square feet, or approximately 3.6 acres of open water, closest to a portion of the existing Airport Boulevard bulkhead where the greatest wind shadow effects are felt under existing conditions (refer to Figure 3.11-2 on pages 3.11-11 to 3.11-12 of the Draft EIR). This affected area is less than 7.5 percent of the near-shore area studied in the Draft EIR Wind Study, thus not a large or significant portion of a primary board sailing area.

Some comments identify what they consider to be an appropriate area for beginning and intermediate users. While the sizes of these identified areas vary from a larger part of the study area (Comment 28.3) to a considerably smaller area coincident with impacted portions of the study area (Comment 28.7), the results of the Wind Study demonstrate that the large majority of either of these subparts of the

study area would not sustain reductions in wind speeds of greater than 10% in accordance with the Wind Standard.

Thus, the Draft EIR concludes that the Project "would not substantially affect the primary... near-shore windsurfing and kite boarding area at Coyote Point Recreation Area" (page 3.11-11 of the Draft EIR) reflects the breadth of wind-related recreational uses of the Coyote Point Recreation Area, including near-shore educational/beginner users up to advanced-level users. Lastly, although future development of the 350 Airport Boulevard site is uncertain and has not been designed, the Draft EIR concludes that development of this area would not result in significant impacts to wind-related recreation in the near-shore area so long as any proposed development demonstrates that it minimizes potential wind effects in the same manner as the 300 Airport Boulevard Site, through implementation of a wind analysis specific to any development proposed for the 350 Airport Boulevard Site.

### **Alternative Wind Analysis Methods**

As an alternative to the methods employed by the Draft EIR Wind Study to assess potential wind-related impacts of the Project, a computational fluid dynamics (CFD) simulation was provided as a comment to the Draft EIR. CFD is commonly used in such external applications as automobile and aircraft design. It is not usual for this code to be used to simulate external flows around large-scale, three-dimensional structures and surface roughness elements, (e.g., trees and differential terrain), such as is demanded for the Project (Appendix 1, page 6). Further, no evidence as to the appropriateness of the application of CFD simulation to the Project or regarding the accuracy of the results was provided to support the findings of the CFD simulation (Appendix 1, pages 6-7). The alternative analysis also leaves a number of issues unresolved that are important to the result, including:

- **Inputs.** The alternative does not explain its choices for initial and boundary conditions in the calculation. Also, the alternative does not discuss its inputs for physical phenomena such as turbulence which can affect the model's conclusions.
- **Building Shapes.** The building shapes in the model appear to be rectangles, differing from the rounded corners and curved sides of the buildings in the Project analyzed in the Draft EIR. The size and shape of the mechanical penthouses also cannot be determined from the image provided. Sharp-edged rectangles can result in greater wind impact than the rounded-edge buildings of the 300 Airport Boulevard Project buildings.
- **Existing Wind Conditions.** It is not clear what baseline wind conditions in the study area were considered. Because it does not make known its estimate of the baseline wind conditions, it is inadequate to use this model for CEQA purposes of assessing impacts of the Project – the changes between the existing and Project conditions.

As a result, without further information regarding the CFD simulation's consideration of the above-listed factors, the accuracy of the results cannot be assessed (Appendix 1, page 7).

As discussed previously, the City is within its discretion to consider and choose between technical methodologies when analyzing significant impacts. The Wind Study methodology is an appropriate basis for determining significance of wind impacts, and the City is not required to use an alternative assessment and methodology.

### **Public Review**

Detailed technical turbulence data was not included in the Wind Study because the Wind Study focused on wind speeds, as called for in the Wind Standard and related Draft EIR significance threshold for impacts to wind-related recreation. The wind speed data were adequately summarized in the Wind Study attached as Appendix I to the Draft EIR analysis. The City provided requisite public review of this information as used in the Draft EIR.

Nevertheless, in response to requests from commenters San Francisco Board Sailing Association, technical turbulence data collected at the time of the Wind Study was provided, in digital form on January 18, 2012. The data are also attached to this Response to Comments as Appendix 2.

### **Alternatives**

As stated in CEQA Guidelines Section 15126.6, lead agencies must analyze a reasonable range of alternatives to identify ways to reduce or avoid significant environmental effects. An EIR must focus on alternatives that can avoid or substantially lessen a project's significant environmental effects. Because the Draft EIR concluded that the Project would result in less-than-significant impacts to wind-related recreation in the vicinity of the Project, CEQA does not require analysis of less damaging alternatives. As such, the Draft EIR at pages 5-38 to 5-39 drew a qualitative conclusion that the Existing Zoning Alternative would result in lesser wind impacts than the 300 Airport Boulevard Project because of its lesser height, but did not present a quantitative analysis of wind impacts from an existing zoning alternative. Some commenters have stated that the Draft EIR does not result in an "apples-to-apples" comparison between the 300 Airport Boulevard Project and the Existing Zoning Alternative, or that the City prepared an Existing Zoning Alternative designed to maximize its wind impacts so as to present a favorable comparison to the proposed Project. As stated, the Draft EIR and Wind Study include no such model; the Draft EIR only drew qualitative comparison between the alternatives based on their relative heights.

Nevertheless, data from the wind tunnel concerning a model of an Existing Zoning Alternative for the Project was gathered at the time of the wind analysis of the Project and is included in Appendix 2, these data show the Existing Zoning Alternative would have comparable wind impacts to development of the 300 Airport Boulevard Project. The model of the Existing Zoning Alternative was created based on a site plan representation reproduced on page V-27 of the Bayfront Specific Plan. Under CEQA, the lead agency's choice of alternatives is governed by the rule of reason. *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal. 3d 553. In this case, the representation in the Specific Plan would comply with the existing zoning regulations, which would restrict building heights to 30 feet, 40 feet or 50 feet, depending on the location on the site, and also reflects a

project which is below the maximum floor area ratio allowed by the existing zoning. The building heights specified in the zoning would result in a project which covers more of the site area, as is depicted in the Existing Zoning Alternative. This is a reasonable representation of development in the area under existing regulations, and the commenters have provided no evidence that this alternative was unreasonably chosen. The choice of design for the Existing Zoning Alternative, as depicted in the Specific Plan, was within the rule of reason.

Lastly, the comments received on the Draft EIR fail to identify an alternative that should have been studied, except to say that a project of certain square footage (~471,000 sq. ft.) or a "scaled down" version of the proposed 300 Airport Boulevard Project should have been studied. A scaled down version of the Project may not comply with the existing zoning regulations as they relate to setbacks, height and placement of parking. It is not clear from these comments what alternative would have been superior, and without providing a clear additional alternative, the basis on which to perform any necessary further analysis has not been provided.

### **Consideration of Economic and Social Impacts**

The City received a number of comments regarding the potential loss of income should the project result in adverse effects to the wind recreational resources. CEQA requires analysis of physical environmental effects, and does not require analysis of economic or social effects of a proposed action (refer to CEQA Guidelines Section 15064(e) and 15382). A social or economic change that is related to a physical change may, but is not required to be, considered in determining whether the related physical change is significant.

This page intentionally left blank.