

4.M Recreational Resources

4.M.1 Introduction

This section describes existing recreational resources within the vicinity of the Project Site and elsewhere in Brisbane. It evaluates the impacts of the Project Site development on existing recreational resources, including impacts on windsurfing in San Francisco Bay. Feasible mitigation measures are identified to reduce significant impacts.

4.M.2 Environmental Setting

Numerous open space and recreational opportunities exist within the Project Site vicinity. Recreational facilities within, adjacent to, and in the vicinity of the Project Site are described below.

City of Brisbane Recreational Resources

The Brisbane Parks and Recreation Department manages the City's system of parks, trails, and recreational facilities within the city limits. The Brisbane Public Works Department helps to maintain the parks.

Parks and Open Spaces

The City owns a number of parks and open space areas, which, along with privately owned open space areas, are identified in **Table 4.M-1** and **Figure 4.M-1**. There are currently 27.9 acres of public parks (including linear parks) and recreational lands within the City exclusive of the school portions of joint school/park sites.

The Open Space Element of the Brisbane General Plan classifies parks available to its residents by size and intended use (City of Brisbane, 1994):

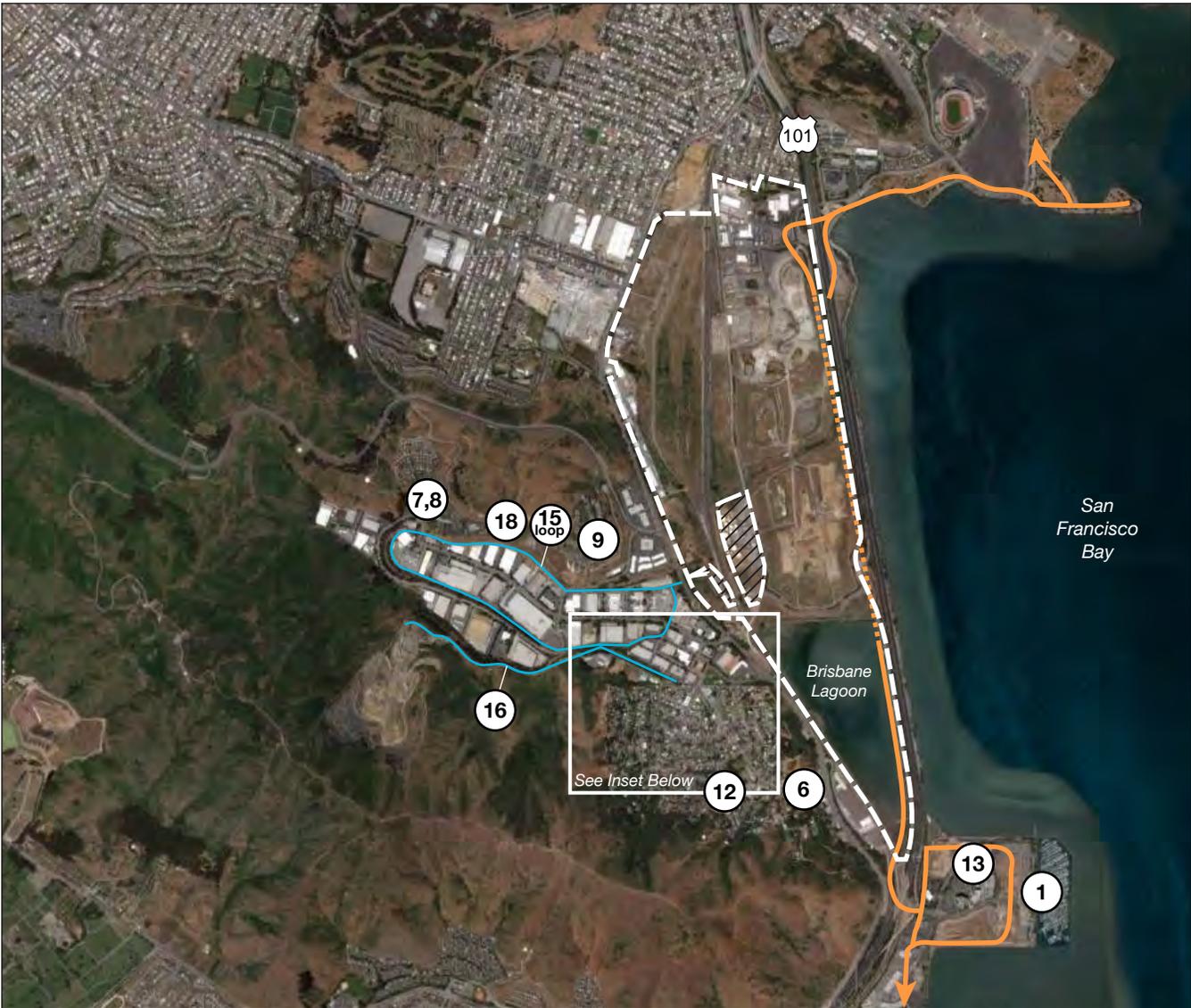
- i. Mini Parks – a small-scale outdoor area for limited public or private uses.
- ii. Neighborhood Parks – a public area of at least 0.5 acre for a range of recreational activities, such as field sports, court and playground games, crafts and picnicking, including school/park facilities.
- iii. Linear Parks – a long, narrow area used for one or more varying modes of recreational travel, such as hiking, biking, and horseback riding, including built or natural corridors, such as utility right of way, fire roads and canyons.
- iv. Community Parks – a public area of at least 2 acres in size serving the residential and business communities, such as outdoor community gathering places or multi-use recreational complexes.
- v. Special Recreational Use – a structure for specialized or single purpose recreational activities.
- vi. Conservancy – an area of protected and managed natural/cultural resources.

The inventory listed in **Table 4.M-1** includes City-owned parks, trails, and other facilities as well as publicly accessible private parks and other nearby recreational resources.

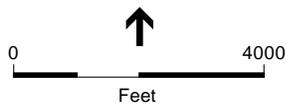
**TABLE 4.M-1
 PARKS SERVING BRISBANE**

Park Classification	Park/Resource Name	Approximate Acreage	Park/Resource Number in Figure 4.M-1
Mini Parks			
Public	Sierra Point Par Course/Picnic Area	0.25	1
	Community Center/Library Park	0.11	2
	Plug Reserve	0.01	3
	Silver Spot Nursery Center Tot Lot (formerly Kids and Things Playground)	0.25	4
	Skateboard Park and Basketball Courts	0.25	5
Private	Joy Condominium Yard Area	0.60	6
	Northeast Ridge Altamar Tot Lot	0.25	7
	Northeast Ridge Altamar Rec. Bldg. Site	0.23	8
	Northeast Ridge Viewpoint Tot Lot/Park and Rec. Bldg.	0.67	9
Total		2.62	
Neighborhood Parks			
Public	Lipman School Fields and Playground	12.30	10
	Brisbane Elementary School Fields	4.89	11
	Firth Park	0.50	12
Total		17.69	
Linear Parks			
Public	Sierra Point Public Access Trails	7.00	13
	Brisbane Bicentennial Walkways	0.37	14
	Crocker Park Recreational Trail	10.00	15
Outside City Limits	Old Quarry Road	9.80	16
Total		27.17	
Community Parks			
Public	The Community Park	2.00	17
	Mission Blue Park	6.50	18
	Community Swimming Pool	0.66	19
Total		9.16	

SOURCE: City of Brisbane, 2001; Carpenter, 2013.



-  Project Site
-  Not a part of Proposed Project
-  Existing Bay Trail
-  Proposed Bay Trail
-  Park Location (Corresponds to Park/Resource Number in Table 4.M-1)



SOURCE: San Francisco Bay Trail Project, 2012; City of Brisbane, 2001; City of Brisbane, 2010; City of Brisbane, 2012; Carpenter, 2013

Brisbane Baylands . 206069
Figure 4.M-1
 Parks Serving Brisbane

Recreational Facilities

The Brisbane Parks and Recreation Department coordinates the use of recreational facilities for Brisbane residents including a teen center, senior center, gymnasium, ball field, community pool, and several activity/community rooms. Brisbane residents are allowed use of Brisbane Elementary School District (Brisbane ESD) baseball and multi-purpose playing fields, the junior high gymnasium, and other properties owned by the Brisbane ESD through a joint use agreement with the City (City of Brisbane, 1994). The Parks and Recreation Department also provides an extensive collection of classes and workshops geared toward all ages in the community.

Table 4.M-2 lists the recreational facilities available for use by the community.

**TABLE 4.M-2
 RECREATIONAL FACILITIES IN BRISBANE**

Name	Location	Operator
Brisbane Elementary School Activity Room and Fields	500 San Bruno Avenue	Brisbane ESD
Community Center	250 Visitacion Avenue	City of Brisbane
Mission Blue Center	475 Mission Blue Drive	City of Brisbane
Brisbane Community Pool	2 Solano Street	City of Brisbane
Lipman Middle School Gym/Field	1 Solano Street	Brisbane ESD
Recreation Activity Room	500 San Bruno Avenue	City of Brisbane
Brisbane Marina/fitness course	400 Sierra Point Parkway	City of Brisbane
Brisbane Senior Center Sunrise Room	2 Visitacion Avenue	City of Brisbane
Brisbane City Teen Center	22 San Bruno Avenue	City of Brisbane

SOURCE: City of Brisbane, 2011.

Other Recreational Resources in the Vicinity

The majority of other recreational resources serving Brisbane are parks functioning as ecological reserves and areas conserved for endangered species.

San Francisco Bay Trail

Portions of the San Francisco Bay Trail serve Brisbane residents. The San Francisco Bay Trail is a planned recreational corridor that, when complete, will encircle San Francisco and San Pablo Bays with a continuous 500-mile network of bicycling and hiking trails. Currently, a paved portion of the trail almost encircles Sierra Point south of the Project Site. The trail extends farther north along the bay side of Brisbane Lagoon, providing pedestrian and bicycle access. To the north of the Project Site, a paved portion of the trail runs along the southern edge of Candlestick Point State Recreation Area. A portion of the trail is planned to extend along the eastern boundary of the Project Site. This portion of the trail, which is currently unimproved, would connect Sierra Point with the trail segment at Candlestick Point State Recreation Area (San Francisco Bay Trail Project, 2011).

San Bruno Mountain State and County Park

San Bruno Mountain State and County Park lies roughly three miles west of the Project Site. The rugged 2,326-acre San Bruno Mountain State and County Park was jointly purchased by San Mateo County and the State of California and is managed by the San Mateo County Department of Parks. Additionally, two areas on the north side of the park, Owl and Buckeye Canyons, are owned by the California Department of Fish and Wildlife. These canyons are approximately 81 acres in combined size and comprise the San Bruno Mountain Ecological Reserve. Both areas are within the San Bruno Mountain Habitat Conservation Plan boundary and consist of permanently protected habitat (City of Brisbane, 2001).

Candlestick Point State Recreation Area

Less than one mile northeast of the Project Site is Candlestick Point State Recreation Area (CPSRA), a 252-acre regional open space. Recreational opportunities include gardening, hiking, jogging, bicycling, bird watching, fishing, and picnicking (California State Parks, 2011). The area also includes a bike path and a fitness course.

CPSRA is also a popular entry point for windsurfing on the Bay and is considered one of the premier windsurfing sites in the San Francisco Bay Area (Thorner, 2008). The windsurfing launch site is located on the shoreline of Candlestick Cove near the southern end of the CPSRA parking lot, a turnaround known as “Windsurf Circle.” According to the San Francisco Boardsailing Association (SFBA), CPSRA is an ideal location for beginning- and intermediate-level windsurfers, because there is very little swell (wave action). These flat-water conditions allow windsurfers to develop skills that are more difficult to master in choppy water. The SFBA provided accumulated GPS tracks that it considers to be representative of the primary sailing area in this area of the Bay (Thorner, 2008). The SFBA considers westerly wind conditions to be generally good for windsurfing at CPSRA, with the best conditions during west-northwest winds (Thorner, 2008). Alternate windsurfing sites such as Crissy Field (San Francisco), Ocean Beach (San Francisco), and Oyster Point (South San Francisco) feature heavy surf, offshore winds, or strong currents – wind and water conditions that are not appropriate for beginners and intermediates.

Both the speed and turbulence of the winds that reach the CPSRA windsurfing area are affected by the topography and features of the lands that lie upwind. Winds that move over Brisbane and San Francisco encounter differing levels of surface roughness and take on different wind speed profiles due to different topography, vegetation, and structures that all act to slow the wind near the ground and create turbulence. However, when those winds reach large areas of smooth, flat surfaces, such as open land or the Bay, wind speeds near the surface of the ground or water will increase and the level of turbulence will decrease. Of particular importance to the CPSRA wind conditions is the topography of the vicinity, which includes the 525-foot-high Visitacion Knob in McLaren Park to the northwest and the ridge that extends from McLaren Park eastward to the 250-foot-high Bayview Hill. In addition to the topography, the extensive low-rise development and US Highway 101 that lie to the west and northwest also affect the prevailing winds that reach the CPSRA windsurfing area, while the minor changes in topography across the Project Site have essentially no effect.

Wind conditions at the CPSRA windsurfing area and vicinity are discussed in more detail under Impact 4.M-3 in Subsection 4.M.4, Impacts and Mitigation Measures. Subsection 4.M.4 discusses the methodologies employed to evaluate impacts on windsurfing areas. See also **Appendix J** of this EIR, which presents modeling results for post-Project wind conditions.

4.M.3 Regulatory Setting

Development within the Project Site boundaries must comply with federal, state, regional, and local regulations. This section of this EIR discusses requirements related to recreational resources to the extent that they will shape the way Project Site development occurs.

Regional Regulations

The San Francisco Bay Trail Plan proposes the development of a regional hiking and bicycling trail around the perimeter of San Francisco and San Pablo Bays. Senate Bill 100, authored by former Senator Bill Lockyer and passed into law in 1987, states that “The Association of Bay Area Governments (ABAG) shall develop and adopt a plan and implementation program, including a financing plan, for a continuous recreational corridor which will extend around the perimeter of San Francisco and San Pablo Bays. The plan shall include a specific route of a bicycling and hiking trail, the relationship of the route to existing park and recreational facilities, and links to existing and proposed public transportation facilities.”

The San Francisco Bay Trail Plan was adopted by ABAG in 1989 and provides for approximately 500 miles of trails to form a “ring around the Bay.” Implementation of roughly half of the total planned length of the Bay Trail has been coordinated by the Bay Trail Project, a nonprofit organization. Currently, the Bay Trail does not extend through the Project Site; it stops at the City of Brisbane/City and County of San Francisco line on the north and starts again at Sierra Point Parkway and Brisbane Lagoon on the south. Bay Trail Project plans show a future extension on the east side of the Project Site between the current north and south termini of the trail.

Local Regulations

City of Brisbane General Plan

Policies and Programs

Policies and programs contained in the Conservation, Recreation and Community Services, Open Space, and Land Use Elements of the Brisbane General Plan pertaining to parks and recreational resources include the following:

Policy 8I: The City shall conduct an on-going effort to identify sites or portions of sites having particular value as open space, wildlife habitat, wetlands, or other environmental qualities that should be preserved and protected. In such cases, the City shall explore the feasibility of acquisition of these areas by the City or by other public or private agencies that are engaged in the ownership and preservation of open space, and, when legally possible, imposing a requirement that such areas be dedicated by the owner to the public for open space purposes.

Policy 81.1: Work to preserve open space lands to protect the natural environment and to provide outdoor educational and recreational opportunities consistent with the sensitivity of the resource.

Policy 82: Encourage the preservation, conservation and restoration of open space to retain existing biotic communities, including rare and endangered species habitat, wetlands, watercourses and woodlands.

Policy 85: Encourage the preservation and conservation of aquatic resources in Brisbane: the Lagoon, the Bayfront and the Marsh.

Program 85a: Seek opportunities to utilize aquatic areas for recreational and educational activities consistent with the sensitivity of the resource.

Policy 86: Provide access to natural areas consistent with the nature of the resource.

Program 86a: Develop and maintain a network of trails and pathways throughout the City to provide appropriate access to open space and to link City trails with County and regional trail systems.

Program 86b: Extend the trail system to include aquatic areas and provide access to public transportation systems.

Program 86c: Examine the potential to extend a pedestrian and bicycle trail between Sierra Point and the Candlestick Recreation Area along the Bay to the east of U.S. 101 in cooperation with regional efforts to obtain the same objective.

Policy 87: Maintain parks and open space to serve the community equivalent to or greater than the acreage/population standards set by the National Recreation and Parks Association.

Program 87a: Use the standards in Table 6 as guidelines for the provision of parks and open space for the community.

Policy 88: Develop parks to maximize passive recreational opportunities.

Policy 89: Work with local employers to preserve open space and to develop outdoor open areas that would benefit employees as well as residents during and after the work day.

Policy 91: Explore the widest range of options for preserving open space lands, including acquisition, dedication, and exactions on development projects.

Policy 96: Condition, as appropriate, new developments to construct, maintain or provide for new recreational facilities, amenities and opportunities.

Policy 132: Recognize the importance of the Brisbane Lagoon and the Levison Marsh as wildlife habitats, valuable community resources and drainage basins, and cooperate with responsible agencies in their conservation.

Policy 331: Maximize opportunities for open space and recreational uses in any land use planning for this subarea [Brisbane Baylands].

Policy 347: Cooperate with other agencies to develop the Bay Trail between Sierra Point and the Candlestick Recreation Area.

Policy 348: Enhance the natural landform and biotic values of Icehouse Hill and preserve its ability to visually screen the Tank Farm.

Policy 349: After the water environment is determined to be safe for public access, develop public water-related passive recreation at the Brisbane Lagoon, with due concern for the preservation and enhancement of the wetlands.

Policy 350: Develop a public pathway and access facilities immediately adjacent to the Lagoon.

Policy 354: Dedicate land area for open space, recreational uses and wetlands restoration, especially around the Lagoon.

Policy 355: Provide in-lieu fees for the acquisition of open space or land dedication in conjunction with development.

Land Use Designations and Open Space Requirements

The Brisbane General Plan designates most of the Project Site as *Planned Development-Trade Commercial*, with the Brisbane Lagoon designated *Marsh/Lagoon/Bayfront*. The Land Use Element of the General Plan requires that *Planned Development-Trade Commercial* areas maintain a minimum of 25 percent of the surface area in open space and/or open area. The Open Space Element defines “open space” as “lands that are essentially unimproved and dedicated or proposed to be dedicated to the public for outdoor recreation and for the preservation of biotic communities.” Aquatic areas that are in whole or part in private ownership, such as Brisbane Lagoon, are not considered Open Space, but are given an aquatic designation denoting the unique nature of each resource. Areas of land that are essentially unimproved and that are in private ownership are called “open areas.”

City of Brisbane Open Space Plan

The *Brisbane Open Space Plan* offers a vision for a comprehensive and integrated open space system for the City and its residents (City of Brisbane, 2001). The Open Space Plan is intended to function as a working tool to guide implementation of the policies and programs of the City of Brisbane General Plan. One of the purposes of the Open Space Plan is to provide (and update annually) a comprehensive map of vacant lands and identify open space potential through the possibility of land acquisition by evaluating natural resources, amenities, and the open space value of parcels. The Open Space Plan presents an analysis of open space resources in six subareas of the city, including the Baylands and Beatty Subareas that encompass the majority of the Project Site.

The Open Space Plan recommends that areas south of the drainage channel and north of Lagoon Way “be maintained in a way that maximizes open area.” It also recommends that Icehouse Hill be kept largely as open area or dedicated open space. The Beatty Subarea is completely developed with the exception of one triangular, 0.51-acre parcel near US Highway 101. The Open Space Plan recommends that this parcel remain an open space/open area.

Recreational Resources Service Standards

A joint committee of the Brisbane Planning Commission and Parks, Beaches, and Recreation Commission conducted a survey of existing and planned parks and open spaces to inform the Open Space Element of the General Plan in 1994. The committee determined that National

Recreation and Parks Association service standards did not adequately account for conditions within Brisbane. Therefore, the Open Space Element, based on the survey findings, adjusted service standards of the National Recreation and Parks Association, and existing conditions at the time the Open Space Element was prepared in 1994, established the following park service standards:

- Combined Mini, Neighborhood, and Linear Parks: 10.5 acres per 1,000 residents
- Community Park: 8.0 acres per 1,000 residents (*1994 General Plan includes Brisbane Community Park (Old County Road) and Northeast Ridge School/Park site.*)
- Conservancy: 66 acres per 1,000 residents (*1994 General Plan includes Owl and Buckeye Canyons, Sierra Point Canyon, Costanos Canyon, Firth Canyon and Northeast Ridge habitat area.*)

These standards are applied only to resident population, and not to local employment population. According to the *Brisbane Open Space Plan (2001)*, parkland in the city exceeded the standards for conservancies and mini, neighborhood, and linear parks but did not meet the standard for community parks.

4.M.4 Impacts and Mitigation Measures

Significance Criteria

The CEQA Guidelines indicate that a project would have a significant effect on the environment if it would:

- Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; or
- Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

In addition, comments were received during the Notice of Preparation/scoping period stating concerns about Project impacts on the windsurfing activities that occur in San Francisco Bay between the Project Site and Candlestick Point. The Project would be considered to have a significant effect if it would:

- Substantially degrade the existing windsurfing recreational resource at CPSRA.

Impact Assessment Methodology

Assessment of Increased Use of Existing Parks and Recreational Facilities

The analysis focuses on how projected growth resulting from the Project Site development could affect the demand for existing parks and recreational facilities. The analysis is based on the housing and resident population projections described in Section 4.K, *Population and Housing*, of this EIR. The analysis considers whether the proposed recreational facilities at the Project Site (see “Assessment of Impacts of Proposed Recreational Facilities” below) would offset the

demand for existing parks and recreational facilities in the vicinity created by development of the Project Site.

Assessment of Impacts of Proposed Recreational Facilities

The analysis considers the environmental impacts of construction of the recreational facilities proposed by the DSP, DSP-V, CPP, and CPP-V scenarios, as described below. Impacts of constructing these facilities and, as needed, mitigation measures and other regulatory requirements, are discussed in Section 4.B, *Air Quality*; Section 4.C, *Biological Resources*; Section 4.E, *Geology, Soils, and Seismicity*; Section 4.G, *Hazards and Hazardous Materials*; Section 4.H, *Hydrology and Water Quality*; Section 4.J, *Noise and Vibration*; and Section 4.N, *Traffic and Circulation*, of this EIR.

Under the DSP, DSP-V, CPP, or CPP-V scenario, some of the recreational facilities, parks, and open space uses developed within the Project Site would be dedicated in fee title to the City of Brisbane or a public open space agency designated by the City, or would have permanent open space easements placed upon them. Other areas would be developed by the primary developer and would remain under private ownership. The DSP and DSP-V scenarios are analyzed together in this section because they include the same amount of residential development and similar levels of non-residential development; additionally, the same recreational amenities are proposed under each scenario. Similarly, impacts related to the CPP and CPP-V scenarios are analyzed together, as neither of them proposes residential development and each proposes the same recreational amenities.

Assessment of Impact on Windsurfing Conditions

Effect of Wind Speed on Water-Related Recreation

Wind speed effects on water-related recreational uses of CPSRA shoreline and Bay vary with the specific use. While there appear to be no specific criteria for minimum wind speeds to support “good” sailing, windsurfing, and the like, wind speeds of 13 miles per hour or more are usually considered desirable for wind-powered activities, such as paragliding and hang-gliding, and apply to windsurfing as well; for highly skilled windsurfers, the more wind in the sailing area, the better. Wind is necessary to launch and land, but if winds at the launch site are too strong, beginning- and intermediate-level windsurfers could find it difficult to do either. Wind direction¹ is also important to windsurfing, in that an adverse wind direction can make it more difficult to launch the board, to reach a desirable sailing area, or to return safely to the launch site.

From the perspective of windsurfers, the presence of existing landforms, vegetation, and buildings that already lie upwind of the windsurfing area represent “surface roughness” that reduces the speed and increases the turbulence of the winds that reach the CPSRA launch site and windsurfing area.

¹ Wind directions used here are identified only by the 16 points of a compass –four cardinal directions (N, E, S, and W), four ordinal directions (NE, SE, SW, and NW), and eight more equal-angle subdivisions (i.e., NNE, ENE, etc.).

Wind Speed

Wind speeds in the windsurfing area are lowest near the shore and highest over open water, farther from shore. Winds in the windsurfing area typically blow from the northwest (NW) and west-northwest (WNW). In this analysis, the wind tunnel measurements of wind speed are reported as wind speed ratios (R-values), each a fraction formed when the slower wind speed near the ground is divided by the speed of the faster, unimpeded winds high overhead. The existing relative wind speed ratios, or R-values, measured near the surface of the Bay within the windsurfing area range from 0.39 to 0.67.

Wind Turbulence

Wind turbulence is a measure of the short-term variability of the wind speed. In this analysis, it is represented by turbulence intensity (TI), which is expressed as a percentage of wind speed. Typically, winds are more turbulent closer to major obstructions and the shore, and winds are less turbulent farther from the shore over open water. The existing TI values near the surface of the Bay within the windsurfing area range from 10 to 31 percent, as measured in the wind tunnel.

Criteria Used

The CEQA Guidelines provide no specific criteria to assess necessary or optimal wind conditions to support windsurfing, and preferences for wind conditions may vary according to the skill level and objectives of the individual windsurfer. However, for the purposes of this analysis, the third criterion listed under “Significance Criteria” above is applied to the CPSRA windsurfing recreational resource as follows: The Project Site development would “substantially degrade” the windsurfing recreational resource if it were to reduce wind speeds to the point where the reductions would adversely affect windsurfing in prime windsurfing areas or substantially impair access to prime windsurfing areas from existing launch sites.

This criterion is appropriately evaluated qualitatively due to the variable nature of wind, the wide range of wind conditions that are suitable for windsurfing, and the relative importance of specific parts of the very large, local windsurfing area. In other words, no one quantitative measure likely would capture a level of overall resource degradation that would apply to the entire shoreline area. Further, this criterion was added to address concerns expressed by the SFBA in response to the Notice of Preparation and, while the response stated a specific concern for increased variability or gustiness in the wind, the SFBA did not specify a critical threshold wind speed or a wind speed reduction that it would consider to cause a significant adverse impact on windsurfing in the CPSRA windsurfing area. Other expressed concerns regarding the possible wind effects of the Project related to the launch site, the sailing area, and general wind conditions, including the requirement for “a strong and steady wind”; none of these factors were associated with quantitative measures.

Wind Tunnel Tests

To determine the effects of Project Site development on windsurfing, wind tunnel tests were conducted to study the changes in wind conditions at the CPSRA windsurfing launch site and in the windsurfing sailing area in San Francisco Bay. This analysis also considers data and analysis from a 2009 wind tunnel test to measure changes in wind conditions in the northern portion of the

windsurfing area due to nearby development at Executive Park. Those wind test results and impact conclusions are reported in the Executive Park Amended Subarea Plan and the Yerby Company and Universal Paragon Corporation Development Projects EIR (City and County of San Francisco, 2010).

The Project test area included a portion of San Francisco Bay, extending south-southwest from the CPSRA launch site. The identified windsurfing sailing area was enclosed within two model test grids comprised of 250-foot squares that extended approximately 7,000 feet from the launch site and covered approximately 280 acres of water surface that included the area identified by the SFBA as the primary sailing area in this part of the Bay (see **Figure 4.M-2**). The study considered five test scenarios: (1) winds under existing development conditions, (2) winds that would occur under the DSP scenario, (3) winds that would occur under the CPP scenario, (4) winds that would occur with cumulative development under the DSP scenario, and (5) winds that would occur with cumulative development under the CPP scenario.²

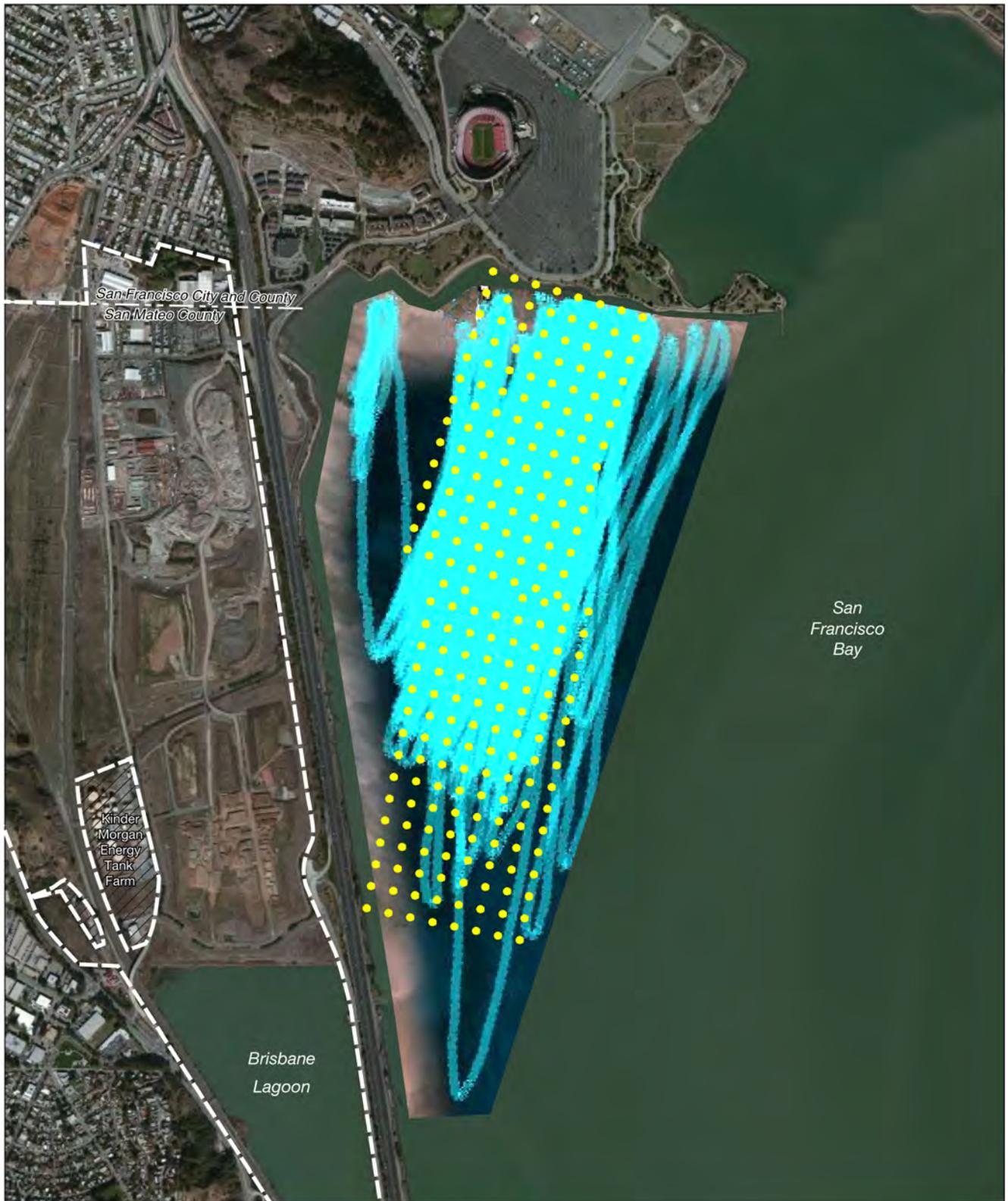
The wind tunnel testing measured wind speed and wind turbulence conditions for each scenario and therefore was able to determine the changes in wind speed and turbulence that would result if the Project Site development were constructed. The wind speed at surface level for each grid location was measured in the wind tunnel, as was the wind speed at a point high above the surface, in undisturbed air. The two speed measurements were formed into a fraction by dividing the speed at surface level by the speed of undisturbed (free-stream) air high above; this fraction expresses the relative speed of the wind, which varies according to the amount of wind resistance caused by each scenario. This fraction is referred to here as an “R-value” or a “wind speed ratio.” The R-value or wind speed ratio is the fraction of wind speed that remains after it is slowed by the roughness of the surface over which the wind passes³; in general, the rougher the surface, the slower the surface wind.

Wind turbulence was also measured at each test point. Considering the geographical relationship of the proposed development to the windsurfing launch and sailing areas, the wind tests focused on the effects of winds from the west (W), west-northwest (WNW), northwest (NW), and west-

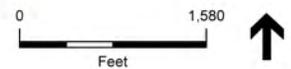
² The only other projects whose effects could possibly combine with the wind effects of the DSP or CPP are limited to (1) large developments with multi-acre areas of buildings more than several stories in height, (2) projects located upwind or cross-wind of the Baylands site, and (3) projects located close enough to the Bay to have a measurable wind effect on the windsurfing area. Therefore, the only projects that meet these criteria are Candlestick Point/Hunters Point, Executive Park, and the Visitacion Valley Mixed Use Project (Schlage Lock site).

³ Due to the methodology of wind tunnel testing and the basic nature of air, the R-values or the calculated percentage changes in wind speed apply uniformly to any wind speed of concern at the site, from the lower speeds to the highest. For example, an R-value of 0.63 indicates a speed that is 63 percent of the “free-stream” speed overhead, regardless of the specific “free-stream” speed – 30 miles per hour (mph), 20 mph, or 10 mph. If the speed of the free-stream wind were to vary, the wind speed at the test measurement point would vary in direct proportion. Also, because the measurements for all scenarios and wind directions are normalized as R-values, they may be directly compared one-to-another to obtain valid measures of the relative effects of one scenario vs. another. This is true among the current wind tunnel test scenarios and also true among the previous wind tunnel test scenarios.

As a result, the plots of R-values in Appendix J also may be converted back to wind speeds over the test grid by assuming a free-stream wind speed and multiplying that speed by the individual grid R-values to obtain surface-level wind speeds. For example, with a free-stream wind speed of 20 mph, the surface-level wind speed at a point with an R-value of 0.60 would be 12 mph. Similarly, if the wind speed is 15 mph at a surface point with an R-value of 0.60, the free-stream wind speed would be 25 mph.



-  Project Site
-  Wind Tunnel Test Point
-  Not a part of Proposed Project
-  Windsurfer GPS tracks (representative of the primary sailing area)



SOURCE: ESA, 2012; Thorne, 2008

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Figure 4.M-2
Study Area with Wind Tunnel Measurement Points

southwest (WSW), the directions for which the Project Site development could affect wind in the windsurfing launch and sailing areas. The analysis presents the conditions that would occur when the wind blows from each of these four directions, informing windsurfers of the relative conditions (wind speed and wind turbulence) they would experience while sailing under each wind.

Resulting changes in wind conditions were then assessed to determine whether these changes could reduce wind speeds to the point where the reductions would substantially impair windsurfing in prime windsurfing areas or substantially impair access to or from those areas from the existing CSPRA launch site.

Plots of the wind test results, including the R-values, percentage change in R-values, and wind turbulence intensity (TI) for existing and Project conditions, are included in Appendix J of this EIR.

Open Space and Recreational Facilities Proposed by DSP and DSP-V Scenarios

As shown in **Table 4.M-3**, both the DSP and DSP-V scenarios would reserve almost 170 acres (roughly 30 percent of the developable land area of the Project Site) for open space and public use areas. These areas would include parks, plazas, linear parks, shared use areas, and preservation of natural features. A variety of parks would provide both passive and active recreational uses.⁴ In addition, approximately 16 acres would consist of planted and paved outdoor spaces such as plazas, courtyards, and gardens. Another 10 acres would be densely planted areas adjacent to Sierra Point Parkway and the Kinder Morgan Energy Tank Farm. Figures 3-11 and 3-12 (in Chapter 3, *Project Description*, of this EIR) show the locations of the major parks and other open spaces proposed by the DSP and DSP-V scenarios, respectively. Parks and open space improvements proposed for the upland area include a linear park known as the Promenade; preservation of the historic roundhouse on the Roundhouse Green; the Central Plaza within the commercial/office district; a campus-style quad plaza; enhancement of wetlands and riparian habitat in Visitacion Creek Park (East and West); the 47-acre South Visitacion Park; preservation of Icehouse Hill; and a new Lagoon Park. The proposed Charter High School would also be used as a shared-use recreational facility.

The DSP and DSP-V scenarios also include 11 acres of perimeter open space referred to as the Lagoon Perimeter. The Lagoon Perimeter is a narrow, undeveloped strip of land that surrounds the lagoon. It extends southward from the northern boundary of the lagoon and directly abuts the railroad right-of-way on the west. The eastern portion of the perimeter is located outside the Project Site. UPC owns four of these 11 acres, while the City of Brisbane owns the remaining seven acres (see Figure 3-8 in Chapter 3, *Project Description*, of this EIR). Descriptions of these proposed parks and open space areas are provided below.

⁴ Active recreation refers to structured individual or team activity that requires the use of special facilities, courses, fields, or equipment, whereas passive recreation refers to activities such as hiking, bird watching, and picnicking that do not require prepared facilities like sports fields or pavilions.

**TABLE 4.M-3
 PARKS AND OPEN SPACE AREAS PROPOSED BY DSP AND DSP-V SCENARIOS**

Park/Open Space	Acres	Type/Key Attributes
The Promenade	4.1	Linear park
Roundhouse Green	3.4	Preservation of historic roundhouse
Central Plaza	2.7	Venue for outdoor events
Triangle Parks	0.3	Gateway to hotel and conference area
The Quad	4.7	Campus-style quad with pathways
Visitation Creek Park (East)	26.0	Wetlands and riparian habitat
Visitation Creek Park (West)	21.2	Wetlands and riparian habitat
South Visitation Park	47.2	Broad open space
Icehouse Hill	31.7	Recreational trails and habitat
Lagoon Park	13.3	Improved public access
Landscape Areas	9.7	Densely planted areas adjacent to Sierra Point Parkway and Tank Farm
Charter High School	5.3	Shared-use facility
Total	169.6	

SOURCE: UPC, 2011.

The Promenade

The Promenade would be the central green space around which the residential neighborhoods of the Roundhouse District would be oriented. The approximately four-acre park would be a linear green adjoining medium- and high-density residential uses. This open space would provide an area for passive and active recreation, with space for smaller recreation facilities such as tennis and basketball courts.

Roundhouse Green

This approximately three-acre site would be located at the southern terminus of the Promenade at the westernmost point of the Baylands adjacent to Bayshore Boulevard. The renovated Roundhouse, which would provide the central focus for the Roundhouse Green, would be a potential location for renewable energy research in addition to exhibit space and cafes. The green would be surrounded by the Roundhouse Circle, with open space to the south and campus research and development (R&D) and residential townhome development to the north. The proposed enhanced Visitation Creek drainage corridor would pass through the center of the green with passive recreation fields and multifunction space making up the remainder of the open space. The Roundhouse Green would serve as a connection between the northern and southern areas on the western portion of the site.

Central Plaza and Triangle Parks

The Central Plaza (approximately 2.7 acres) and the Triangle Parks (0.3 acre) would be located at the entrance to the hotel and convention center area adjacent to Sierra Point Parkway. The Central

Plaza, which is likely to be privately owned, would serve as the main open space for the office uses along the eastern portion of Geneva Avenue. This space would be more urban in character and would be designed for more intensive use and a variety of functions. The Central Plaza would include seating and landscaped areas for community gatherings, public art installations, and other events such as concerts and festivals.

The Quad

Another linear green space, the approximately five-acre Quad would be located in the central-eastern area of the Project Site. The Quad would be formally landscaped with multiuse zones in the center and landscaped areas along the perimeter. Paved pathways would facilitate convenient pedestrian crossing and would align with the adjacent circulation network and/or the entries to surrounding buildings. The Quad would allow for public and semi-public activities, such as food cart vending, special public and private events, and areas for public gathering. It may also accommodate small recreation facilities such as basketball and volleyball courts and multipurpose recreation fields.

Visitacion Creek Park (East)

The eastern portion of Visitacion Creek Park (approximately 26 acres) would extend from the railroad right-of-way in the western portion of the Project Site to the eastern boundary along Sierra Point Parkway. The park would feature a restored tidal channel and wetland area, native scrub and grasslands, and sites for community gardens and groves. This open space area may also include picnic facilities, multiuse paths, trails, overlooks, and interpretive elements. Located at the center of the proposed Project's open space network, this park would be accessible to bicyclists and pedestrians from all directions.

Visitacion Creek Park (West)

Visitacion Creek Park (West) would feature passive wetlands, native plantings, picnic facilities, multiuse paths, trails, overlooks, a small amphitheater, and interpretive features. The park would offer open vistas of San Francisco Bay, Icehouse Hill, and San Bruno Mountain. The western portion of the park would provide sites for community gardens in raised beds, recreational open space, woodlands and meadows featuring native coastal scrub and grassland, and wetlands adjacent to the creek channel.

South Visitacion Park

South Visitacion Park would be an approximately 700-foot-wide open space area located between Visitacion Creek Park (East) on the north and Lagoon Park on the south. This 47-acre park would feature significant vegetative habitat areas and open space connected by a network of trails. The park would also provide seasonal wetlands and bio-detention zones that augment the natural drainage system. Privately owned, publicly accessible baseball fields or golf facilities are potential uses for the southernmost portion of South Visitacion Park.

Icehouse Hill

Icehouse Hill would include more rustic recreational trails that supplement the lower-lying trails that circulate through the tidal and wetland areas. This approximately 30-acre park would include woodlands habitat, as well as native grasslands and chaparral. This area would remain undeveloped in order to serve as a prime location for wildlife habitat and passive observation of the Baylands ecology.

Lagoon Park

This proposed 13.3-acre park would be located along the northern edge of Brisbane Lagoon. A variety of open space uses are proposed to meet the recreational needs of the community and to ensure the protection of habitat resources. Multipurpose recreation fields and meadows would constitute the majority of the park, augmented with trails, picnic tables, boardwalks, viewing platforms, interpretive elements, and native gardens. Parking and restrooms facilities may be included as needed. A key element of this park is the proposed Lagoon Nature/Community Center. This facility would provide community space and programs related to the history and ecology of the Baylands. In addition, a non-motorized craft storage and launching facility may be provided for canoes and kayaks.

Lagoon Perimeter

Although no specific proposals have been made for this area, future recreational facilities could include potential trail enhancements within the City of Brisbane and a contiguous recreational trail loop around the lagoon edge. UPC owns four of the 11 total acres surrounding the lagoon.

Charter High School

The Charter High School Community Use Area is proposed as an open area associated with the charter high school to be located at the base of Icehouse Hill. This approximately 5.3-acre site may offer opportunities for shared-use recreational fields, such as tennis and basketball courts.

San Francisco Bay Trail

An extension of the San Francisco Bay Trail is planned from the northern edge of Brisbane Lagoon to Beatty Road and Alana Way. This segment would tie into the southern end of the “Blue Greenway” portion of the Bay Trail. This segment of the Bay Trail is envisioned as a paved, off-street Class I bicycle path and pedestrian trail developed within a linear greenway along the extension of Sierra Point Parkway that transitions to sidewalks and a combination of Class I and II bicycle facilities on the northern end as Sierra Point Parkway curves away from US Highway 101.

Recreational Facilities Proposed by CPP and CPP-V

Parks and open space areas proposed under the CPP and CPP-V scenarios are described in the *Baylands Public Space Master Plan* (Dangermond, 2009) prepared for the City in conjunction with formulation of the CPP.⁵ This plan would include land reserved for wildlife habitat, public parks, landscaped areas, open areas within development sites, and other passive and active

⁵ The *Baylands Public Space Master Plan* has not been adopted by the City.

recreational uses. Proposed features include a habitat enhancement/open space network that would include marshes, wetlands, Icehouse Hill, and connections to adjacent natural areas, and recreational/public use areas with a community park, group areas, and interpretive center. Additional public/private space use areas would be created to serve as a transition between public space and developed areas. The CPP and CPP-V scenarios also propose commercial recreation opportunities within the open space network, such as bicycle rentals, kayak rentals, and group use areas. Figures 3-13 and 3-14 (in Chapter 3, *Project Description*, of this EIR) show locations of the major parks and other open spaces proposed by the CPP and CPP-V scenarios, respectively. Specific features of the CPP and CPP-V scenarios are described below.

Visitation Creek/Wetlands

Visitation Creek would be maintained and freshwater wetlands and ponds would be created. The creek is planned to border the Project Site for its entire length and would link to all of the major public use features. The creek zone would include water elements throughout its length, beginning with freshwater features and wetlands and descending to brackish and salt water marsh before extending out to San Francisco Bay. A trail element through the length of Visitation Creek is proposed to receive special treatment with trail stops, interpretive features, environmental art, and a connecting bridge over the railroad tracks.

Lagoon and Shoreline

Brisbane Lagoon would provide protected habitat for waterbirds as well as enhanced wetlands along the southerly and northeastern corner of the shore. Due to the presence of contaminated soils, however, modification of the shoreline or human body contact uses are not proposed. An area of enhanced upland habitat north of the lagoon is proposed to buffer the lagoon from active recreational areas. This upland habitat would be designed to maintain views of the lagoon from the roadway.

Icehouse Hill

Icehouse Hill would remain as a natural open space. Non-native invasive plants would be removed and the habitat enhanced for diverse butterfly populations through the planting of different species of host plants. In addition, a pedestrian/equestrian trail would be maintained up to the top of Icehouse Hill. The remainder of the open space/habitat areas would be natural upland habitats. Trails would be extended through these areas.

Charter High School/Community Use Area

The Charter High School/Community Use Area is proposed to include recreation associated with the high school, such as a gymnasium and full-size soccer field.

Group Use Area

The Group Use Area would be located immediately north of Icehouse Hill. The recreational component of this area would be primarily oriented toward organized groups. A concessionaire agreement would be established with the City in order to provide a source of revenue generation that would help support the public space. Picnic and recreational activity services would be

oriented to accommodate corporate picnics and business retreats, as well as large family celebrations and events. This type of operation would provide food services and recreational opportunities such as softball, volleyball, horseshoes, tetherball, croquet, and other group and family-oriented outdoor activities.

Within the Group Use Area, an interpretive center is proposed that would feature topics such as the history of the Baylands. A farm area would include horses and farm animals, a demonstration kitchen, and a fruit and vegetable garden. The center would also be the primary trailhead for access to Icehouse Hill. Management could be provided through either a nonprofit entity or a joint powers agreement with San Mateo County.

Commercial Land Use Area

A commercial development area is proposed to be sited immediately north of the Regional Use Area (see below) with businesses and other services that would complement the group recreation and interpretive center. This commercial development area would also serve the Civic/Cultural Envelope that would be located near the Roundhouse. One possible linkage would be a small children's train connecting the interpretive center, Roundhouse, and picnic areas, which could provide self-supporting revenue generation.

Regional Use Area

The Regional Use Area would be located on the far eastern side of the Project Site and just south of the point where the Visitacion Creek channel connects to the Bay. At approximately 27 acres, this would be the largest of the planned recreational areas and would provide opportunities for activities requiring significant space.

Civic/Cultural Envelope

The Civic/Cultural Envelope would be located near the historic Roundhouse, which is proposed for restoration and reuse as part of the Project Site development. Potential uses include a railroad history exhibit, an outdoor performing art stage or center, indoor meeting spaces or artist studios, a farmers' market, and other retail/commercial uses.

San Francisco Bay Trail

Under the CPP and CPP-V scenarios, the extension of the San Francisco Bay Trail would bisect the east side of the Project Site rather than align with the US Highway 101 frontage road as proposed under the DSP scenario.

Application of City Park Standards

Policy 87 and Program 87a of the Brisbane General Plan Open Space Element set a goal for the amount of parks and open space to be provided to serve city residents. The General Plan standard calls for the development of 10.5 acres of mini, neighborhood, and linear parks per 1,000 residents, along with the development of eight acres of community parks per 1,000 residents. Combined, this results in a standard of 18.5 acres of park per 1,000 residents. However, while a

failure to achieve a desired General Plan goal represents an inconsistency with the General Plan, it does not necessarily result in an adverse physical impact as defined under CEQA.

The Quimby Act (California Government Code Section 66477) authorizes cities to require the dedication of land or payment of fees for park or recreational purposes by ordinance and establishes a standard of 3 to 5 acres of parkland dedication per 1,000 residents, depending on the amount of existing parkland within a jurisdiction. Pursuant to the Quimby Act, the City adopted an implementing ordinance in 1982 (Ordinance 282, contained in Sections 16.24.010-16.24.070 of the Municipal Code) that authorized the City to require Quimby Act dedications to “provide for adequate and appropriate recreational facilities,” defining the amount of land needed by setting a standard of 4.50 acres per 1,000 residents. The dedication requirements of Chapter 16.24 thus reflect the threshold at which new development could cause physical impacts on existing recreational facilities and is therefore used as the significance criterion for impacts on recreational resources. Thus, a standard of 4.50 acres per 1,000 residents was used to determine whether a significant impact would result.

Project Impacts and Mitigation Measures

Impact 4.M-1: Would the Project result in an increase in the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

DSP and DSP-V

The DSP and DSP-V each propose residential, commercial, and R&D development, all of which are likely to increase use of existing parks and recreational facilities. Such demand for recreational facilities would occur over time as specific development projects are constructed and occupied.

At buildout, both the DSP and DSP-V would result in approximately 4,434 new residential units. Using the density assumptions described in Section 4.K, *Population and Housing*, of this EIR, these scenarios would result in approximately 9,888 new residents living within the Project Site.

Moreover, in addition to new residents, the DSP/DSP-V would result in an increase in non-residential employees. Approximately 17,259 non-residential employees under the DSP or 15,256 non-residential employees under the DSP-V would be expected to work at the Project Site at buildout.

Pursuant to the Quimby Act, Section 16.24.030 of the Brisbane Municipal Code established a standard of 4.5 acres of parkland per 1,000 residents. Application of this standard to the DSP or DSP-V scenario would require approximately 44.5 acres of parkland to serve the needs of the 9,888 residents that would be living at the Project Site at buildout. While it is recognized that park needs per 1,000 population refer only to resident populations, it is also recognized that

Impact Significance by Scenario (before Mitigation)			
DSP	DSP-V	CPP	CPP-V
LTS	LTS	LTS	LTS
SU = Significant Unavoidable SM = Significant but Mitigable LTS = Less than Significant - = no impact			

employees within the Project Site would use area parks and recreational facilities. Applying the Quimby Act standard to both Project Site resident and employment population would result in a need for up to 122 acres of parkland under the DSP and DSP-V scenarios.

By comparison, the DSP and DSP-V scenarios provide a total of 133.6 acres of park and recreational land, exclusive of habitat preservation and enhancement areas that would not qualify as park or recreational land. The 133.6 acres of park and recreational land under the DSP and DSP-V scenarios consists of:

- The Promenade: 4.1 acres
- Roundhouse Green: 3.4 acres
- Central Plaza: 2.7 acres
- The Quad: 4.7 acres
- Visitacion Creek Park (West): 21.2 acres
- Visitacion Creek Park (East): 26.0 acres
- South Visitacion Park: 47.2 acres
- Lagoon Park: 13.3 acres
- Lagoon Edge (linear park): 11.0 acres

Although new residents would not be restricted in their use of parkland to new parks and facilities created at the Project Site, these areas would likely be used more frequently than other parks in Brisbane based on proximity and corresponding ease of access. Thus the use of existing parks and recreational facilities by new residents would not result in substantial degradation of such facilities under the DSP or DSP-V scenario.

Conclusion: Development under the DSP and DSP-V scenarios would provide for park and recreational land in excess of that required by the Brisbane Municipal Code, and would therefore not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated. Therefore, this impact would be less than significant under the DSP or DSP-V scenario.⁶ No mitigation is required.

CPP and CPP-V

Under the CPP or CPP-V scenario, no residential units would be constructed; therefore, there would be no resident population within the Project Site, although the employee population would increase. Development under the CPP or CPP-V scenario would result in approximately 14,707 employees or 14,590 employees working at the Project Site, respectively. The CPP or CPP-V scenario would provide more than 300 acres of parks and open space at buildout, with no residential uses on the Project Site. As noted above, standards addressing the amount of parks needed to serve new development refer only to new resident populations. The park standards in the Brisbane General Plan and the Quimby Act are not intended for application to the employment population of a proposed development.

⁶ The issue of consistency with the existing park provision standards of the General Plan is addressed in Section 4.I, *Land Use and Planning Policy*.

While there would be no residents living within the Project Site under the CPP and CPP-V scenarios, it is nevertheless recognized that employees working at the Project Site could use recreation and open spaces in Brisbane during certain times of the day (e.g., lunch breaks) and immediately after work. However, because employees at the Project Site would have limited opportunities to use recreation and open spaces during working hours, they would typically use parks and recreational facilities for informal activities during lunch break and immediately after work, and therefore would tend to use only parks and recreational areas that are in close proximity to their place of work, with the exception of ball fields used for organized team sports (i.e., softball and other athletic leagues). In cases where parks are not in close proximity (walking distance), increases in employment do not affect park use. As a result, increased employment within the Project Site would not be expected to result in the use of existing parks and recreational facilities to a degree that degradation of such facilities would occur. Further, proposed recreational amenities would be available for use by Project Site employees. Therefore, no substantial degradation of recreational facilities would occur under the CPP or CPP-V scenario.

Conclusion: This impact would be less than significant under the CPP or CPP-V scenario. No mitigation is required.

Overall Conclusion

Implementation of Project Site development would result in less-than-significant impacts on parks and recreational facilities under the DSP/DSP-V and CPP/ CPP-V scenarios.

Impact 4.M-2: Would the Project include new recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?

DSP, DSP-V, CPP, and CPP-V

Each of the four development scenarios provides for the construction of new parks and recreational facilities. The construction associated with each scenario would vary depending upon the location, type, and size of the park, open space, or recreation facility proposed. For example, some existing structures on proposed park sites may require demolition or removal. Park sites would generally require clearing of existing vegetation and grading; installation of utilities, including stormwater drainage and water/wastewater lines; installation of hardscape areas for play surfaces, pathways, and parking; and installation of site furnishings and other equipment (e.g., benches, play facilities, fencing, lighting). New structures such as restrooms and picnic shelters would also be constructed. Vegetated areas would also require installation of irrigation systems in some areas.

Construction activities of the proposed parks and recreational facilities have been evaluated as part of the overall Project. The construction of the proposed parks and recreational facilities

Impact Significance by Scenario (before Mitigation)			
DSP	DSP-V	CPP	CPP-V
SM	SM	SM	SM
SU = Significant Unavoidable SM = Significant but Mitigable LTS = Less than Significant - = no impact			

would be phased over time as specific development projects are implemented under the Specific Plan. Due to the time-limited nature of construction, construction-related impacts in any single location would be temporary. The construction impacts of the Project Site development as a whole, including the impacts of new park and recreational facility construction, and, as needed, mitigation measures and other construction-related regulatory requirements, are discussed in Section 4.B, *Air Quality*; Section 4.C, *Biological Resources*; Section 4.E, *Geology, Soils, and Seismicity*; Section 4.G, *Hazards and Hazardous Materials*; Section 4.H, *Hydrology and Water Quality*; Section 4.J, *Noise and Vibration*; and Section 4.N, *Traffic and Circulation*. Construction impacts related to specific projects proposed under the adopted development scenario would be addressed in detail during subsequent project-specific environmental review.

Recreational uses proposed within areas of the Project Site that are contaminated by former land uses (landfill and railyard), and that would require remediation prior to future development activities, would be addressed in Remedial Action Plans. As described in Chapter 3, *Project Description*, of this EIR, the portion of the Project Site west of the Caltrain line is mostly dominated by the former Southern Pacific railyards and the portion of the Project Site east of the Caltrain line is the former Brisbane Landfill site. Remedial Action Plans would prescribe specific remedial actions and risk levels appropriate for areas of the site wherein particular land uses, including parks and open space areas, are proposed. As described in Chapter 3, *Project Description*, of this EIR, implementation of future development projects on the Brisbane Baylands is dependent on cleanup of these properties, and land use decisions resulting from Project development approvals will heavily influence the specific remedial actions required by the appropriate regulatory agencies (San Mateo County Health System Environmental Health Division, Regional Water Quality Control Board, and California Department of Toxic Substances Control). See Section 4.G, *Hazards and Hazardous Materials*, of this EIR, for a detailed discussion of proposed site cleanup actions.

Conclusion: Construction of new recreational facilities on the Project Site, would result in significant environmental impacts. However, the impacts of such facilities proposed as part of Project Site development have been considered throughout this EIR in the analysis of Project-related construction impacts. Mitigation measures proposed in other sections to minimize construction-related impacts are recommended under all proposed development scenarios to reduce the impacts associated with the construction of recreational facilities (see **Mitigation Measures 4.B-2a, 4.B-2b, and 4.B-3** [construction air emissions]; **Mitigation Measures 4.C-1a through 4.C-1c, Mitigation Measures 4.C-2a through 4.C-2c, and Mitigation Measures 4.C-4d and 4.C-4e** [biological resources]; **Mitigation Measures 4.D-2 and 4.D-4** [archaeological resources and human remains]; **Mitigation Measure 4.E-2a** [ground settlement]; **Mitigation Measures 4.G-2a through 4.G-2c and 4.G-2f through 4.G-2h** [hazardous materials]; **Mitigation Measures 4.J-4a and 4.J-4b** [construction period noise]; and **Mitigation Measure 4.N-12** [construction circulation patterns]). Parks and recreational facilities are also included as part of Project Site development. Therefore, operational impacts associated with these facilities – including increases in traffic, air pollutants, and greenhouse gas emissions, noise, and disturbance of biological, hydrologic, and cultural resources – are evaluated as part of the overall analysis of land uses associated with the Project Site development and included in the specific EIR sections cited above.

Conclusion with Mitigation: With implementation of the construction-related mitigation measures listed above, this impact would be less than significant.

Impact 4.M-3: Would the wind effects of the Project result in a substantial degradation of the recreational value of the nearby windsurfing recreational resource south of Candlestick Point State Recreation Area?

DSP and DSP-V

Under the DSP and DSP-V scenarios, new buildings would be constructed on currently vacant land at the Project Site, near the shore of the Bay. These new buildings would increase the effective surface roughness of the site and would decrease the speed of the wind passing over the Project Site. The overall size of the development and proposed buildings would be large enough to cause an adverse wind speed reduction downwind in the CPSRA windsurfing area, but only for winds blowing from the northwest, west-northwest, west, and west-southwest directions. Winds from other directions would not be affected by the Project Site development.

Impact Significance by Scenario (with Mitigation)			
DSP	DSP-V	CPP	CPP-V
LTS	LTS	LTS	LTS
SU = Significant Unavoidable SM = Significant but Mitigable LTS = Less than Significant - = no impact			

Wind Speed

The DSP and DSP-V scenarios would result in wind speed decreases, relative to existing wind speeds, ranging from 5 to 10 percent for all four wind directions described above. Wind speed decreases occur in areas near the shore and in the central portion of the test grid. The largest decreases, of approximately 10 percent, would occur in the central area of the test grid under the DSP and DSP-V for west and west-southwest winds.

Wind speed ratios and the percentage changes in wind speed that would occur under the DSP and DSP-V, by wind direction, are as follows:

- Northwest Wind R-values would range from 0.40 to 0.65. Project wind speed decreases of between five and nine percent would occur in the central area of the test grid and in the southwest quadrant, near the shore.
- West-Northwest Wind R-values would range from 0.39 to 0.65. Project wind speed decreases of between five and nine percent would occur in the central area of the test grid.
- West Wind R-values would range from 0.52 to 0.63. Project wind speed decreases of between 5 and 10 percent would occur in two central areas of the grid, extending outward from the shore. One test point nearest the shore would decrease by 11 percent.
- West-Southwest Wind R-values would range from 0.55 to 0.65. Project wind speed decreases of between 6 and 10 percent would occur in the north-central area of the test grid, with one test point nearest the shore decreasing by 12 percent. There would be no Project changes over the rest of the grid.

Wind Turbulence

The DSP and DSP-V would result in relatively small changes in TI values over most of the study area for all wind directions, with the highest values of turbulence occurring near the shore and lower values occurring downwind. Projected wind turbulence changes, by wind direction, are as follows:

- Northwest Wind TI would range from 11 to 28 percent.
- West-Northwest TI would range from 10 to 31 percent.
- West Wind TI would range from 11 to 23 percent.
- West-Southwest TI would range from 13 to 16 percent.

To understand the magnitudes of the largest of these wind speed changes, it is helpful to consider that a decrease of five percent in wind speed would be a 1 mile-per-hour (mph) decrease from a speed of 20 mph, and a 10 percent decrease would be a 1 mph decrease from a speed of 10 mph.⁷ Speed changes of 1 mph or more occur often as part of the natural variability of the wind. Such a 1-mph speed decrease, whether due to the Project Site development or due to natural variability of the wind, could have a physical consequence only if the wind speed were already at a threshold speed below which any particular windsurfer could not continue sailing. The limiting threshold speed for each individual would vary widely among all windsurfers, depending on their gear and widely varying skill and experience levels, as well as water conditions, so a 1-mph speed decrease in some portion of the sailing area might, at some particular time, affect one windsurfer but not affect others.

Conclusion: These incremental changes in wind speed and turbulence in the launch and sailing areas are expected to be undetectable to most windsurfers who use CPSRA, including beginning and intermediate windsurfers, who are more sensitive to adverse conditions. The changes in wind speed and turbulence would not impair a windsurfer's ability to launch the board, reach and sail in a desirable sailing area, or return safely to the launch site. Regardless of whether wind speed reductions and turbulence increases are detectable, they represent an increment too small to physically degrade the use of this area for windsurfing.

CPP and CPP-V

Wind Speed

Wind speed decreases under the CPP and CPP-V would be between 5 and 10 percent and would occur in areas near the shore and in the central portion of the test grid. The projected wind speed ratios and the percentage changes in wind speed that would occur under the CPP and CPP-V, by wind direction, are as follows:

- Northwest Wind R-values would range from 0.40 to 0.63. Project wind speed decreases of between five and seven percent would occur in the south-central area of the test grid and in the southwest quadrant, both near the shore.

⁷ Due familiarity with the natural variability of wind, even if a 1-mph wind speed decrease in a 10-mph wind were to occur over the span of a minute or two, most people would be unlikely to notice the change.

- West-Northwest Wind R-values would range from 0.39 to 0.65. Project wind speed decreases of 5 to 10 percent would occur in the central area of the test grid.
- West Wind R-values would range from 0.53 to 0.64. Project wind speed decreases of five and eight percent would occur at two test points, while decreases over the remainder of the grid would be four percent or less.
- West-Southwest Wind R-values would range from 0.55 to 0.65. Project decreases of five percent or less would occur over the northern part of the test grid. There would be no Project changes over the rest of the grid.

Wind Turbulence

The CPP and CPP-V would result in relatively small changes in TI values over most of the study area for all wind directions. In general, wind turbulence would increase relative to the existing setting, with the highest values of turbulence occurring near the shore and lower values occurring downwind.

Projected wind turbulence changes, by wind direction, are as follows:

- Northwest Wind TI would range from 11 to 28 percent.
- West-Northwest Wind TI would range from 10 to 31 percent.
- West Wind TI would range from 11 to 19 percent.
- West-Southwest Wind TI would range from 14 to 18 percent.

Conclusion: As noted above, these incremental changes in wind speed and turbulence in the launch and sailing areas are expected to be undetectable to most windsurfers who use CPSRA, including beginning and intermediate windsurfers, who are more sensitive to adverse conditions. The changes in wind speed and turbulence would not impair a windsurfer's ability to launch the board, reach and sail in a desirable sailing area, or return safely to the launch site. Regardless of whether wind speed reductions and turbulence increases are detectable, they represent an increment too small to physically degrade the use of this area for windsurfing.

Overall Conclusion

Project Site development would not reduce wind speeds enough to substantially impair windsurfing in prime windsurfing areas on San Francisco Bay or substantially impair access to or from those areas from the CPSRA launch site. Therefore, this impact would be less than significant under all four development scenarios. No mitigation is required.

References – Recreational Resources

- California State Parks, Candlestick Point State Recreation Area, originally accessed at www.parks.ca.gov/default.asp?page_id=519, June 15, 2011 (content now available online at http://www.parks.ca.gov/?page_id=519, accessed July 3, 2012).
- Carpenter, Nancy, City of Brisbane Parks and Recreation Department, personal communication, April 2, 2013.
- City of Brisbane, *The 1994 General Plan*, adopted June 21, 1994.
- City of Brisbane, *Brisbane Open Space Plan*, August 2001.
- City of Brisbane, City of Brisbane Agenda Report, Meeting of September 13, 2010.
- City of Brisbane, Parks and Recreation Department, www.ci.brisbane.ca.us/visiting/parks-and-trails, originally accessed June 15, 2011 (accessed again July 3, 2012).
- City of Brisbane, Parks and Recreation Commission, *Brisbane Parks and Recreation Commission Action Minutes*, March 14, 2012.
- City and County of San Francisco, Executive Park Amended Subarea Plan and the Yerby Company and Universal Paragon Corporation Development Projects Draft EIR, October 13, 2010.
- The Dangermond Group, *Baylands Public Space Master Plan*, prepared for the City of Brisbane, May 2009.
- San Francisco Bay Trail Project, originally accessed at www.baytrail.abag.ca.gov/index.html, June 17, 2011 (content now available online at <http://baytrail.abag.ca.gov/index.html>, accessed July 3, 2012).
- Thorner, Peter, San Francisco Boardsailing Association, letter dated November 17, 2008.
- Universal Paragon Corporation (UPC), 2011, *Brisbane Baylands Specific Plan*, prepared for the City of Brisbane, California by UPC and Wallace Roberts & Todd, LLC, February 2011.

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