

City of Brisbane

Agenda Report

TO: Honorable Mayor and City Council

FROM: Community Development Director via City Manager

SUBJECT: Brisbane Baylands Planning Applications (Concept Plans, Specific Plan Case SP-01-06, General Plan Amendment Cases GP-01-06/GP-01-10) and related Final Environmental Impact Report (SCH #2006022136) – Energy Resources, Biological Resources, Cultural Resources, Geology and Seismicity, Hydrology and Water Quality, and Related Policy Issues

DATE: Meeting of March 16, 2017

Introduction:

Tonight's public hearing will focus on Energy Resources, Recreation, Biological Resources, Cultural Resources, Geology and Seismicity, and Hydrology. Future hearings will address economic and land use issues. The public hearing schedule is attached for reference purposes.

Discussion:

ENERGY RESOURCES

Key sources of energy consumption related to proposed Baylands development include:

- Construction activities, including site grading, remediation, building construction, and related worker travel and truck hauling;
- Fuel consumption associated with travel to and from the Baylands following construction activities;
- Stationary sources, including heating, cooling, and lighting of buildings; water heating; operation of electrical systems within buildings; parking lot and outdoor lighting; and operation of the proposed onsite recycled water plant.

Given the substantial increase in the level of Baylands development that would occur under any of the four proposed development scenarios, the increase in energy use resulting from the proposed Baylands development also would be substantial. Estimated net energy consumption for each of the four development scenarios analyzed in the EIR is presented below.

**ESTIMATED ELECTRICAL DEMAND AND GENERATION
FOR THE DSP, DSP-V, CPP, AND CPP-V SCENARIOS**

Scenario	Electrical Demand in Megawatt Hours (MWh)	Onsite Renewable Energy Production in Megawatt Hours (MWh)	Onsite Net Energy Consumption/(Generation) in Megawatt Hours (MWh)
DSP	72,000	42,400 (58.9%)	29,600
DSP-V	74,900	42,400 (56.6%)	32,500
CPP	65,800	42,400 (64.4%)	23,400
CPP-V	63,900	51,600 (80.8%)	12,300

SOURCES: BKF, 2011; Arup, 2012; CDM Smith, 2012; ESA, 2013.

As required by CEQA Guidelines Appendix F, the criteria used in the EIR to analyze energy consumption was whether the development scenarios would use energy “in a wasteful manner.” The EIR concluded that each of the development scenarios would consume a large amount of energy. However, given the necessity of site remediation and Title 27 landfill closure, the determination that operational energy consumption following site remediation and construction would be typical of similar uses within the Bay Area, and the anticipated level of onsite electrical generation (ranging from 56.6 percent of demand in the DSP-V scenario to 80.8 percent of demand in the CPP-V scenario), the EIR concluded that energy would not be used “in a wasteful manner.”

Several Draft EIR comments and speakers at Planning Commission hearings suggested that Baylands development should, at a minimum, be “energy neutral” (i.e., generate as much energy and onsite uses would consume), or generate a surplus of energy that could be used to power other areas of the community. Of the scenarios and alternatives analyzed in the EIR, the Renewable Energy Generation Alternative is the only scenario or alternative that would generate more energy than is needed to serve onsite uses.

The Baylands Sustainability Framework sets forth a vision that “all buildings will be energy efficient and will run completely from locally generated renewable energy.” The Framework envisions that the Baylands will “produce its entire annual energy needs, meaning that it will likely produce more than it uses in the summer, feeding power to the nearby community.” The Sustainability Framework does not, however, set a specific performance indicator that Baylands development be energy neutral at all times of the year, stating that, if needed, “off-site local renewable energy capacity will be used.

During all Baylands construction activities, Mitigation Measure 4.P-1 requires construction contractors to implement the following measures to prevent the wasteful or inefficient use of energy during construction:

- Implement work schedules and procedures that minimize equipment idle time and double-handling of material;
- Minimize equipment idling time either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California Airborne Toxic Control Measure Title 13, Section 2485 of California Code of Regulations [CCR]);
- Switch off office equipment and lights when not in use;

- Use solar power sources for road signs and other applicable equipment that will be required at the construction site;
- Design all temporary roads to minimize travel distances; and
- Maintain and properly tune all construction equipment in accordance with manufacturer's specifications. It shall be the contractor's responsibility to ensure that all equipment has been checked by a certified mechanic and determined to be running in proper condition prior to operation.

Brisbane Municipal Code Section 15.80 specifies green building standards for new developments, including meeting a minimum Leadership in Energy and Environmental Design (LEED) "Silver" rating on the Green Building Project Checklist for all new commercial projects over 10,000 square feet and achieving a "green home" rating on the Multi-Family GreenPoint Checklist¹ for any residential developments with 20 or more units. Mitigation Measure 4.P-2a requires that all new buildings within the Baylands that are subject to the provisions of Municipal Code Section 15.80 achieve a LEED Gold rating, rather than the LEED Silver rating now required by the Municipal Code. In addition, all appliances installed within the Project Site as part of original building construction shall be ENERGY STAR rated or equivalent. Mitigation Measure 4.P-2b requires that all street and parking lot lighting be energy efficient light emitting diode (LED) based lighting. Mitigation Measure 4.P-2c requires the CPP/PPP-V scenarios to provide a minimum of 42,000 to 45,000 megawatt hours of renewable energy annually.

The National Renewable Energy Laboratory (NREL), which is part of the U.S. EPA, conducted a study that looked at the feasibility of implementing a solar energy production system within the Baylands. The purpose of U.S. EPA report was to assess the site for a possible PV system installation and estimate the cost, performance, and site impacts of different PV options. The modeled scenarios in the U.S. EPA study did not include available renewable energy incentive programs, and concluded that the economics of "all systems were favorable without these incentives, and their inclusion will only make the economics even better." The NREL study focused on the amount of energy that could be generated and whether the sale of such energy could justify the costs of constructing and operating the renewable energy generation facilities. The study did not address issues of land cost, site remediation or landfill closure costs, or how commitment of a large land area within the Baylands to renewable energy generation might affect costs for development on the balance of the Baylands.

The US EPA study reviewed both the DSP/DSP-V scenarios and the Renewable Energy Generation Alternative. The DSP/DSP-V scenarios include approximately 25 acres dedicated to renewable energy generation, as well as building-integrated and rooftop renewable energy-generating features. According to the study, the DSP/DSP-V scenarios include approximately 24.7 acres appropriate for installation of a ground-mounted PV system and 257.4 acres appropriate for installation of roof-mounted PV. This would allow for installation of a 24- to 28-MW PV system producing approximately 42,000 to 45,000 megawatt hours (MWh) of energy annually. The study also notes that in order for the site to be net-zero (i.e., to generate as much energy as it uses), an approximately 50-MW PV system would have to be installed to offset the energy use of the buildings.

The Planning Commission's recommendation, which incorporates the renewable energy features of the Renewable Energy Generation Alternative, provides for 170 acres of alternative energy uses consisting of a large PV solar farm, small vertical-axis wind turbines, wind turbines placed within development, and rooftop PV solar panels, along with research and development/tech campus facilities adjacent to the Bayshore Caltrain Station, retail uses adjacent to the Roundhouse, and light industrial uses along Industrial Way. Overall, the Planning Commission's recommended land use for the Baylands would generate more energy than needed to serve onsite uses. Such surplus energy could be used to help meet demand within the City of Brisbane as a whole.

RECREATION

Parks

Pursuant to California's "Quimby Act," Brisbane Municipal Code Section 16.24.030 sets forth requirements for provision of parkland by new development. The Quimby Act (Government Code Section 66477) authorizes cities to require dedication of land or payment of fees for park or recreational purposes, 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.

The City adopted an implementing ordinance in 1982 (Ordinance 282, Chapter Sections 16.24 of the Municipal Code) that authorized the City to require Quimby Act dedications to "provide for adequate and appropriate recreational facilities." Municipal Code Section 16.24.020 currently states that "in accordance with the policies and standards for parks and recreation facilities contained in the general plan or applicable specific plan," dedication of parkland or payment of in lieu fees is to be based on 3 acres for each 1,000 population assuming 2.35 persons per proposed dwelling unit. Each of the proposed development scenarios provides adequate park land to meet Municipal Code requirements.

While the Quimby Act and Brisbane Municipal Code refer only to resident populations, the EIR also recognized that Baylands employees may also use area parks and recreational facilities.

Policy 87 and Program 87a of the Brisbane General Plan Open Space Element set an aspirational goal for the amount of parks and open space to be provided as: 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 under CEQA.

As has been noted previously, the City can impose requirements on a Specific Plan that exceed the mitigation that would be required under CEQA to reduce or avoid significant effects. For example, the City can require additional parkland and/or open space beyond the previously noted Quimby Act requirements such as when needed to achieve consistency with its General Plan. In considering the appropriate amount and location of parks and open space, the City Council should consider the function

¹ Build It Green, a nonprofit organization, has developed New Home Construction Green Building Guidelines and a MultiFamily GreenPoint Checklist, based upon the Multi-Family Green Building Guidelines established by the Alameda County Waste Management Authority.

and purpose of open space/park areas, relationship to adjoining uses, and other considerations. Many of these issues were considered in the draft public space plan for the Baylands prepared on behalf of the City by Dangermond Associates in 2009 (see Attachment 1 for Executive Summary and Map). The draft plan and supporting observations and recommendations are attached for reference.

Windsurfing Resources

The Candlestick Point State Recreation Area (CPSRA), located north of the Baylands, is a popular entry point for windsurfing. It is considered one of the premier sites in the San Francisco Bay Area for windsurfers of all skill levels. 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 that may not be appropriate for beginners and intermediates.

Under the each of the proposed development scenarios, the new buildings that would be constructed within the Baylands would increase the effective surface roughness of the Baylands, and would thereby decrease wind speed in the CPSRA windsurfing area. Proposed development would also result in relatively small changes in turbulence within the Bay, with the greatest effects occurring near the shore and lesser effects occurring downwind.

The EIR concluded that the incremental changes in wind speed and turbulence in the launch and sailing areas resulting from Baylands development would be undetectable to most beginning and intermediate windsurfers who are more sensitive to adverse conditions. In addition, the EIR concluded that Baylands development-related changes in wind speed and turbulence would not impair a windsurfer's ability to launch the board, reach and sail a desirable sailing area, or return safely to the launch site. The EIR concluded that anticipated wind speed reductions and turbulence increases from proposed Baylands development would not physically degrade the use of CPSRA for windsurfing.

A large number of comments were received regarding the evaluation of windsurfing resources set forth in the Draft EIR. These comments are largely captured in the comment letters from the Candlestick Preservation Association (CPA) and the San Francisco Boardsailing Association. Responses to comments from these organizations and other interested parties are set forth in Final EIR Master Responses 30 through 34.

Significance Criteria for Evaluating Impacts on Windsurfing Resources. A number of comments questioned the threshold used in the Draft EIR to determine the significance of impacts on windsurfing resources. The comments also included assertions that the City of Brisbane should have formally adopted a threshold to be used in the Draft EIR.

CEQA gives lead agencies discretion to formulate standards of significance for use in an EIR. While CEQA encourages agencies to adopt and publish thresholds of significance for general use (see CEQA Guidelines Section 15064.7(a)), they are not required to do so. In fact, the standards of significance used in an EIR can be based on a number of sources. These include project-specific thresholds of significance, developed by the experts preparing the EIR or through exercise of the lead agency's own judgment. A lead agency may also consider thresholds adopted or recommended by other agencies. (CEQA Guidelines Section 15064.7(c).) For the purpose of evaluating wind impacts of proposed Baylands development, the City considered the thresholds of significance used in similar impact

evaluations prepared under CEQA in the same general geographic area, namely those used to evaluate wind impacts on CPSRA from the Executive Park project in San Francisco and impacts on windsurfing at the Coyote Point Recreation Area caused by waterfront development in Burlingame. Because the impacts on windsurfing in CPSRA are common both to the approved Executive Park project and the Brisbane Baylands development, the City determined that the significance threshold used by San Francisco in its CEQA review of the Executive Park project's wind impacts on CPSRA² would be appropriate for use in evaluating impacts of proposed Baylands development. Therefore, the Draft EIR uses the same threshold as San Francisco used for the Executive Park EIR, as follows:

Baylands development would have a significant impact on recreational windsurfing resources if it would substantially degrade the windsurfing recreational resource by reducing 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."

The detailed reasoning leading to the selection of this threshold is set forth in the Final EIR Master Response 30.

Analysis of Windsurfing Impacts. In its comment letter, the CPA asserts that a significant impact to the CPSRA windsurfing resource would result from Baylands development, and proposes a different threshold of significance, as well as an alternative method of evaluating the impacts of proposed Baylands development. As discussed in Final EIR Master Responses 30 through 34, the City determined the threshold and alternative analysis methodology suggested in the CPA Comment Letter to be less appropriate and useful than the methodology used in the Draft EIR.

Measurements of relative wind speed and turbulence intensity in the wind study prepared for the EIR were based on physical testing in an Atmospheric Boundary Layer Wind Tunnel at UC Davis because it is well documented in the scientific literature that such a wind tunnel can correctly represent wind velocity, wind turbulence, and the power spectrum of the wind near ground level. The wind tunnel used for the Baylands tests was built to simulate near-surface wind flow of the atmospheric boundary layer.

Following the December 1, 2015 presentation of the Candlestick Preservation Association (CPA), the City retained the services of Charles Bennett, Dr. Bruce White, and Dr. C. P. van Dam, who were tasked with reviewing and commenting on CPA's December 1, 2015 presentation, including the presentation by EnviroComp Consulting, as well as EnviroComp Consulting's report. Their report is provided as Attachment 2 to this report. The conclusions of Mr. Bennett, Dr. White and Dr. van Dam are that:

1. The methodologies and standard of care used in the Baylands EIR in relation to windsurfing are the same as have been used in a large number of EIRs prepared to determine the physical effects of proposed development projects on the wind environment throughout the San Francisco Bay Area.
2. The scientific tool used to analyze wind-related impacts in the Baylands EIR was well-established wind tunnel testing. The wind tunnel testing methodology used to evaluate impacts of proposed Baylands development "is a commonly used method, and is widely accepted in the

² City and County of San Francisco, *Draft Environmental Impact Report, Executive Park Amended Subarea Plan and the Yerby Company and Universal Paragon Corporation Development Projects* (San Francisco Case No. 2006.0422E, State Clearinghouse Number 2006102123), October 13, 2010.

scientific community.” The methods used in the wind tunnel analysis were determined by the scale of the model, and are in compliance with similarity criteria required for accurate wind tunnel testing. The wind tunnel testing conducted at UC Davis thus yielded valid results.

3. A review of available scientific literature regarding the efficacy of wind tunnel modeling, although not required for preparation of an EIR, was undertaken in the report by Bennet, White, and van Damm, and validates the use of wind tunnel testing as was undertaken for the Baylands EIR.
4. The wind analysis undertaken for the Baylands, the significance threshold used to determine the significance of impacts, and the way “substantial degradation” of resources were analyzed in the EIR represent appropriate objective standards.
5. The principal conclusion of the EIR that “incremental changes in wind speed and turbulence in the launch and sailing areas are expected to be undetectable to most windsurfers” is supported by the scientific data collected from the wind tunnel tests, and specifically by analyzing changes in wind speed ratios and turbulence intensity.
6. The analysis area used in the EIR was based on Notice of Preparation comments provided by the San Francisco Boardsailing Association, which defined the most critical area for windsurfing.
7. Even with all the advancements in computer simulation of wind patterns over recent decades, accurate computer modelling and simulation of the effects of new development on wind patterns remains a challenging task. To accurately analyze impacts of large-scale development such as Baylands development on windsurfing resources requires both large-scale modeling of atmospheric conditions and micro-scale modeling of the effects of proposed buildings. Both scales have their own specific tools, which are each ill-adapted for the other. To yield scientifically valid results requires “multi-scale simulations,” which cannot be accomplished using currently available modelling packages. No generalized methodology for “multi-scale simulation,” has been validated. To create a computerized model that would accurately evaluate the effects of large-scale development of Baylands development on windsurfing would require use of a modelling package that is not yet commercially available. In addition, once modelling of Baylands area wind, topographic, and development conditions was completed, the only way to validate such a model would be to compare its results to those of wind tunnel testing.

BIOLOGICAL RESOURCES

Existing biological resources within the Baylands include freshwater wetland areas, tidally influenced areas (including the lagoon), and terrestrial habitats dominated by non-native species that typically colonize open, disturbed soils (see Attachment 3). With the exception of the lagoon and Icehouse Hill, the habitats that are present within the Baylands are the result of colonization and in-migration of plants and animals onto fill material placed in San Francisco Bay to facilitate development of the former rail yard, US 101 freeway, and other site development and infrastructure. The habitat features and their distribution are also the result of the settlement of placed fill materials or abandoned building structures that created low-lying areas on the surface of the fill material that could support standing water in sufficient quantities to allow plants to grow, resulting in wetland and other habitat fragments with little or no relationship to other habitats.

Icehouse Hill represents the only portion of the Baylands that retains native terrestrial soils and plants, and supports habitat for special status plants and invertebrates, including the mission blue and callippe butterflies, as well as the host plants needed for their life cycles. Habitats on Icehouse Hill have been degraded as the result of grazing by horses and use for a shooting range. Although in close proximity to San Bruno Mountain, which supports high quality habitat for the butterflies and provides a source population that could theoretically colonize Icehouse Hill, past activities and the lack of a specific management program to enhance potential butterfly habitat on Icehouse Hill for the benefit of the species, has resulted in lower quality habitat conditions. EIR Mitigation Measures 4.C-1a, 4.C-1b, and 4.C-1c provide for protection of native habitat, including host plants for endangered butterflies on Icehouse Hill.

The Brisbane Lagoon, which is tidally influenced, supports open water habitat. During low tide conditions, expanses of mudflats are revealed at the south end of the lagoon and where the Guadalupe channel flows into the north end of the lagoon. Although the lagoon itself is bounded by riprap and fill to accommodate roads and rail lines, the narrow lagoon perimeter between open water and these transportation facilities supports patches of tidal marsh vegetation consistent with what was once found commonly along of the edges of the San Francisco Bay.

Some of the fish and birds using the lagoon are identified as “special status,” and therefore are afforded special protections under State and Federal regulations intended to prevent further population declines. The lagoon does not, however, have sufficient habitat for breeding or rearing of either special status birds such as California brown pelicans, or California clapper rails, or for fish such as salmonids species.

The upland portions of the site are dominated by non-native species typical of disturbed ground, including non-native annual grassland species, with introduced landscaped areas supporting non-native trees (primarily eucalyptus) and ornamental shrubs. Landscaped areas adjacent to freeways and roads are considered low quality wildlife habitat, but the trees can be used for roosting and nesting by bat species and birds such as red-tailed hawks. Non-native annual grasslands are used by burrowing owls or other ground-nesting birds and provide foraging habitat for birds of prey that might be nesting at Baylands or for other species during bi-annual avian migrations. Native upland vegetation types found on the Baylands include coastal scrub and perennial grasslands, but only in limited quantity, confined to relatively small areas on Icehouse Hill in the western portion of the Project Site.

Tidal and freshwater wetlands occur along the edges of existing drainage channels, including the central drainage channel, the banks of Visitation Creek after it crosses under Bayshore Boulevard, and in the former rail yard round house where a man-made circular structure supports ponded water.

Overall, existing Baylands habitats occur as fragments or patches of various sizes that persist around or in spite of past railyard, industrial, landfill, and infrastructure development on the surface of fill materials placed within San Francisco Bay to create the Baylands site. The Baylands Project Site is punctuated by roads, infrastructure, and industrial uses that do not in

most cases afford effective movement corridors or facilitate even local movement of wildlife species.

As a result of required site remediation and Title 27 landfill closure, along with proposed grading for future development, the EIR notes that existing vegetation within the areas subject to such remediation, Title 27 landfill closure, grading, and future development would need to be removed. This would be the case for any land use concept or scenario that would necessitate landfill closure, site remediation or site grading. The EIR identifies this as a significant impact for which mitigation measures are required.

The Final EIR sets forth requirements in Mitigation Measures 4.C-2c, 4.C-4a, and 4.C-4b for implementation of a comprehensive site-wide restoration of native habitats to exceed the quantity and quality of present conditions and to be configured to provide wildlife movement corridors, following site remediation and Title 27 landfill closure and prior to approval of site-specific development projects. Linkages between uplands and wetlands, freshwater and tidal marshes, and the use of contours and ecologically sustainable restoration design to maximize habitat values and accommodate future land uses are also included as requirements in the Final EIR. The EIR specifies that open space and wildlife movement corridors be configured together to optimize the relationships and connections of an integrated ecosystem that accommodates adjacent human uses in a way that minimizes disturbances to areas set aside for plants and wildlife. This requirement applies to all of the scenarios considered in the EIR. The habitat restoration requirements set forth in the above-mentioned mitigation measures could result in the re-configuration of open space areas proposed in the concept plans scenarios to better provide for blocks of contiguous restored habitat and improved opportunity for wildlife movement.

In regard to the Icehouse Hill area, any proposed use of this area for active recreation creates the potential for butterfly habitat disturbance. Mitigation Measures set forth in the Baylands Final EIR provide for mapping and maintaining populations of host plants for the butterfly, require trail construction and hydrology to accommodate the host plants, require signage and information about the plants and butterflies to be provided, and require on-going management of Icehouse Hill to protect it from overuse by horses and to keep hikers confined to any trails which might be established.

The extent of wetland areas identified in Baylands EIR was the subject of numerous comments on the Draft EIR, including questions regarding the (1) timing of wetland surveys and (2) whether the Draft EIR properly reflected wetland areas occurring within the Baylands.

In preparing the Draft EIR, biologists reviewed data collected within the Baylands, including a 2003 wetland delineation, to augment direct reconnaissance-level field surveys undertaken on March 2, 2007; June 20, 2007; April 20, 2011; and April 19, 2013. The extent of wetland habitats shown in the Final EIR is considerably greater than the wetland boundaries contained in the 2003 wetland delineation that is cited in the Draft EIR. This is due to the fact that wetland features are dynamic and, depending on the conditions of the year and the multi-year rainfall pattern in which observations are made, the total wetland area used for the determination of impacts calculations can vary. The formal delineation process used by state and federal

regulatory agencies captures the extent of wetlands at a specific moment in time, typically just prior to project construction. By comparison, the surveys and analysis undertaken for the Baylands EIR provided for a broader consideration of both past and present conditions compared to what was included in the 2003 wetland delineation of the Baylands.

In order to reflect the concerns expressed in comments on the Draft EIR, and in order to recognize variable wetland expressions at the Project Site, biologists mapped the maximum and minimum expressions of wetlands within the Baylands, and identified a midpoint or average wetland area over the 20-year period preceding publication of the Final EIR. The result demonstrates that the wetland habitat boundaries identified in the Draft EIR are in line with the 20-year average wetland expression at the Baylands.

A key finding of the EIR was that each of the four development scenarios would result in significant impacts on biological resources, and that a reconfiguration of development and conservation areas may be needed to mitigate impacts of future development. Thus, Mitigation Measures 4.C-4a and 4.C-4b set forth *performance standards* to protect onsite resources by providing for such a reconfiguration of development and conservation areas through preparation and implementation of:

- A Projectwide Open Space Plan to be prepared by a landscape architect in coordination with a qualified habitat restoration biologist to optimize habitat preservation and ensure avoidance of impacts on wildlife movement; and
- A Marsh Wildlife and Habitat Protection Plan to provide for protection and restoration of wetland habitats within the Baylands.

Although four development scenarios are evaluated in the Draft EIR based on reconnaissance-level surveys, future site-specific development projects would be subject to further environmental evaluation that would provide for more detailed analysis of development details that cannot be known at this time, including the precise footprint of future ground disturbance and development, construction methods and their duration, and the proposed long-term operation of site-specific development. Such subsequent focused biological resources surveys for site-specific development proposals will also provide for evaluation of the natural evolution of habitat types and changing conditions over the long-term buildout of the Baylands Project Site.

CULTURAL RESOURCES

With the exception of Icehouse Hill, the Baylands Project site primarily sits on artificial fill that was placed in San Francisco Bay between 1860 and the 1930's. Due to the disturbed nature of the site, archaeological and paleontological sensitivity are low, and existing cultural resources within the Baylands are primarily related to the historical use of the western portion of the site as a rail yard for the Southern Pacific Railroad.

The western portion of the Project Site is primarily associated with early-20th century railroad development, having served as a rail yard for the Southern Pacific Railroad. The "Bayshore Yard," included a roundhouse and machine and car shops, and was graded to allow for gravity to

propel rail cars through various switches arranging them into trains minimizing the use of switch engines. The only remaining structures from the railyard are the brick Roundhouse, the former Tank and Boiler Shop (currently Lazzari Fuel Company), and the former Visitacion Ice Manufacturing Plant (currently Machine & Equipment, Inc.).

The Roundhouse, with its distinctive semi-circular shape, is identified in the General Plan Conservation Element as an important local cultural resource. The Roundhouse was listed in the National Register of Historic Places in March 2010, and was therefore automatically listed in the California Register of Historical Resources. The Roundhouse is proposed to be restored and reused in each concept plan development scenario.

The Roundhouse building has been severely damaged. The western half of the building is severely fire-damaged, with portions of its roof missing, charred timbers, and missing or broken window frames. The building also shows evidence of deterioration, vandalism, and graffiti, which will continue until the building is fully rehabilitated. EIR Mitigation Measure 4.D-1a calls for development and implementation of a stabilization plan within 90 days of specific plan approval or prior to issuance of the first grading or building permit, whichever occurs first. This is to prevent further deterioration of the building while actual plans for its rehabilitation and reuse may be several years away. Mitigation Measure 4.D-1a also requires preparation and implementation of a rehabilitation plan for the Roundhouse.

The Lazzari Fuel Company building has not been previously identified on any federal, state, or local register of historical resources. This warehouse building, while historically associated with the Southern Pacific Railroad, lacks sufficient historical or architectural significance to be considered individually eligible for listing as a “historical resource” as defined by CEQA due to removal of all nearby associated features and lack of historic physical integrity. It is, nevertheless, proposed to be restored and reused in each of the four concept plan development scenarios.

The Machinery & Equipment Building (Former SPRR Ice Manufacturing Plant) was used as the tank and compressor room. This building is surrounded by, but not a part of, the 733-acre Project Site. The EIR determined that this building is a “historical resource” as defined by CEQA Guidelines.

None of the other buildings within the Project Site, including Recology’s facilities, the warehouses along Industrial Way, or the lumberyard buildings qualify as historical architectural resources under federal or state criteria, nor are they identified in the General Plan as historic resources.

As noted in the EIR, substantial new development is proposed in close proximity to the historic Roundhouse and Machinery & Equipment Building. Such development could affect the character of these buildings’ historic setting if such development is placed too close to the historic structures or if such new development is incompatible in terms of design and development intensity with these historic structures. Thus, Mitigation Measure 4.D-1b sets forth requirements for new development within 50 feet of the Roundhouse and Machinery & Equipment Building to

ensure appropriate setbacks and building materials, heights, and design to protect the integrity of their historic setting.

GEOLOGY AND SEISMICITY

The majority of the Baylands has been heavily modified over the last 100 years, and native soils have been covered with rubble, solid waste, and imported fill. Originally part of San Francisco Bay, the area that now makes up the Baylands was transformed into its present-day condition through progressive filling of tidal marshlands and the resulting eastern advancement of the shoreline to its present location east of US Highway 101. In general, Bayshore Boulevard traces the early Bay shoreline. In the early 1900s, the Southern Pacific Railroad constructed railroad tracks across the Bay. Following the 1906 San Francisco earthquake, the area west of this rail corridor was filled in, primarily with demolition rubble. Icehouse Hill is the only portion of the Project Site with native soils that overlie bedrock.

The Baylands, along with the entire San Francisco Bay Area, is dominated seismically by the active San Andreas fault system. Seismic movement is distributed across a complex system of faults, which include the San Andreas, San Gregorio, Hayward, Rogers Creek, and Calaveras faults, which are all considered active or potentially active and capable of producing significant intensities and durations of groundshaking at the site. Historically, the area has been subject to intense seismic activity, and it will likely be subjected to a high degree of groundshaking in the future from earthquakes generated on active faults in the Bay Area.

The sandy alluvial saturated sediment underlying the Young Bay Mud at the Project Site is relatively dense and cohesive and has the potential to resist liquefaction. Saturated artificial fill and younger sandy deposits within and overlying Young Bay Mud, on the other hand, may be susceptible to liquefaction. However, various geotechnical investigations at the Project Site have confirmed the presence of liquefaction potential in subsurface materials. A 2008 preliminary liquefaction susceptibility analysis of the former railyard area concluded that sandy layers in historic fill and sand within native deposits beneath the area are susceptible to liquefaction and capable of producing up to 8 inches of liquefaction-related settlement.

The potential for ground settlement onsite occurs primarily within the former landfill, where ongoing decomposition of waste material causes settlement as well as consolidation of the underlying Bay Mud.

Bay mud soils exhibit “shrink-swell” behavior, in which soils expand when wet, and contract when drying. Because Bay Mud and other clay-rich deposits are located primarily beneath the groundwater level, they have a relatively low corresponding potential for shrink-swell. However, the depth of these deposits in the former railyard area is somewhat poorly constrained, and in one boring near Icehouse Hill, Bay Mud is located above the groundwater table, suggesting a possible higher shrink-swell potential.

Corrosive subsurface soils may exist in places within the Baylands, and are likely along Bayshore Boulevard, where Bay Mud is present beneath the fill. Landfill waste can also have corrosive properties depending on the chemistry of the leachate. Corrosive soils could have a detrimental effect on concrete and metals. Depending on the degree of corrosivity of subsurface soils, concrete and reinforcing steel in concrete structures and bare-metal structures exposed to these soils could deteriorate, eventually leading to structural failures, unless properly designed to resist such corrosion.

The Baylands is primarily covered with undocumented fill materials, and is at risk of soil erosion. Icehouse Hill is the only portion of the Baylands with native soils that overlie bedrock. Typically, the soil erosion potential is reduced once the soil is graded and covered with concrete, structures, asphalt, or vegetated with landscaping. The area with an increased risk of soil erosion includes the former landfill area, where steeper slopes, exposed/unvegetated soil, and low-lying areas that direct runoff (e.g., unlined drainage ditches, swales, and channels).

Proposed Baylands development would place a substantial number of structures and people in an area expected to experience at least one major earthquake within the next 20 years on a site whose soils would tend to amplify groundshaking in such an earthquake. Geotechnical engineering methods for building design, underground utilities, and roadways (including bridge crossings) in accordance with California Building Code (CBC) requirements have been used throughout the Bay Area in areas where similar challenges of development on thick deposits of Bay Mud and imported fills have been encountered. In addition, impacts from a major seismic event would be further reduced by carrying out the site-specific analyses required by the CBC, and meeting CBC earthquake loading specifications for every structure. This approach of preparing site-specific investigations is standard practice within the geotechnical engineering industry and required by Chapter 18, Section 1803 of the CBC.

The geotechnical report required by EIR Mitigation Measure 4.E-2a would provide site-specific construction requirements addressing grading activities; fill placement; soil corrosivity/expansion/erosion; soils compaction; foundation construction; drainage control; and avoidance of settlement, liquefaction, differential settlement, and seismic hazards. The report would also include stability analyses of final design cut and fill slopes, including requirements to avoid slope failure(s). Final grading plans and associated development elements would be required to be designed and constructed in accordance with the specifications of the final design-level geotechnical investigations, and would be reviewed by the City Engineer prior to the issuance of building permits.

In general, deep foundation systems would be required for most Baylands structures. The site-specific investigations would be used to determine the specific design of the foundation systems required for each structure in its exact proposed location, including specific requirements for construction of deep foundations for structure proposed within the former landfill area. The results of the site-specific investigations would include specifications to ensure that anticipated seismic groundshaking risk hazards are minimized.

Because strong groundshaking could potentially compromise the stability of the final landfill cap that is required by California Code of Regulations, Title 27, pursuant to RWQCB Order 01-041, the final clay cap material over the former landfill must be maintained. If the cap should be breached by any means (differential settlement, construction, plantings³, etc.), adequate restorative measures are required to maintain the integrity of the cap. In addition, the landfill owner is required to comply with Title 27 Section 21130(c), which requires the operator to amend emergency response plans in the event that post-closure land use and/or structures on the site change. This requirement is reflected in Mitigation Measure 4.E-2b, which addresses recovery from damage to future structures and to the landfill itself that may be caused by future earthquakes by requiring a Post-Earthquake Inspection and Corrective Action Plan (Plan) for the site-specific development projects within the former landfill portion of the Project Site to be prepared and implemented in accordance with Title 27 landfill closure requirements as approved by the RWQCB and the San Mateo County Department of Environmental Health prior to issuance of a building permit.

Several comments on the Draft EIR asserted that the EIR did not account for site-specific soils conditions and thereby understated the extent of seismic hazards within the Baylands.

The analysis of seismic and geologic hazards for the Baylands EIR was based on a series of soils and geologic studies prepared to evaluate regional seismicity, as well as conditions within the Baylands Project Site. The EIR provides an overall description of onsite conditions and discloses the hazards that future development projects within the Baylands will face. Because no site-specific development projects are proposed at this time, the EIR cannot evaluate the site-specific soils conditions at any particular development site within the Baylands. Instead, the Baylands EIR represents an early, overall evaluation of proposed Baylands development in relation to soils and geologic hazards intended to direct the planning and design of future site-specific developments. The EIR establishes mitigation requirements future developers must address *before* they undertake detailed site planning, engineering, and design, including detailed site-specific investigations for each future proposed development within the Baylands. These investigations will address soils and geologic conditions at the specific location of and surrounding each proposed building within the Baylands, and would be used to ensure that all buildings within the Baylands meet applicable California Building Code requirements addressing seismic and geologic hazards.

HYDROLOGY AND WATER QUALITY

The Baylands receives stormwater runoff from large upstream areas, resulting in the potential for flooding. In the future, this potential for flooding could be exacerbated by sea level rise. Because of the Project Site's location in relation to the Brisbane Lagoon and San Francisco Bay, water quality considerations are important considerations for the proposed development.

Flooding and Sea Level Rise

³ An adequate landfill cover, in combination with landscaping restrictions would be required to ensure that future landscaping within the landfill foot print would not breach the cap.

Flood Insurance Rate Maps prepared by FEMA for San Mateo County in 2013 show only areas along Visitacion Creek and between Bayshore Boulevard and Industrial Way within the 100-year flood hazard area. An analysis completed for the Brisbane Storm Drainage Master Plan in 2003 identifies additional low-lying areas that may be flooded during a 100-year storm event between Bayshore Boulevard and the railroad tracks, along with lands along Bayshore Boulevard.

Both Visitacion Creek and Brisbane Lagoon are directly connected to San Francisco Bay, and are influenced by tidal conditions on the Bay. Historically, flooding in areas affected by tides was evaluated based on the assumption that the probability of an infrequent high tide coinciding with an infrequent storm event would not warrant combining the two events. However, the City's Storm Drainage Master Plan correlated peak discharge and tidal records in the San Francisco Bay and indicated that storm surges, driven by the low atmospheric pressures and strong onshore winds, make significantly higher than average tides likely during extreme wet weather conditions.

Tidal conditions can restrict outflow along Visitacion Creek from the Levinson Overflow Area (the off-channel detention basin located at the northwest corner of Main Street and Bayshore Boulevard), and higher tides can contribute to flooding along Bayshore Boulevard. A potential future rise in sea level could exacerbate this condition. According to maps compiled by BCDC, a projected rise in sea level of 16 inches would not affect the Project Site outside of Brisbane Lagoon. However, a projected sea level rise of 55 inches would inundate areas near the Roundhouse and along Visitacion Creek under current topographic conditions.

The capacity of the existing stormwater system is currently exceeded during large storm events in which runoff floods low-lying areas within the Baylands. Under current conditions, substantial improvements would be required to accommodate the 100-year peak storm event within drainage systems and streets with tidal flow and 100 years of estimated sea level rise.

According to the conceptual grading plan for the Baylands (see Appendix B of the EIR), development of the Baylands would re-grade the low-lying areas by adding fill materials so that the site would be more resilient to flooding and sea level rise. The mounded elevation of the former landfill has already raised the area out of the projected 55-inch sea level rise flood zone. Site grading would also provide additional soil to be imported to the former railyard area to protect the upland portions of the site from flooding and sea level rise (see Attachment 4). Lower-lying areas are proposed as part of the site's open space network, along with substantial landscaped areas to provide areas for stormwater filtration under each of the development scenario. In addition, as required by EIR Mitigation Measure 4.H-8, development would require compliance with BCDC's Bay Plan policies related to sea level rise for areas located within their jurisdiction.

In considering the impacts of potential flooding within the Baylands, the EIR has identified the need not only to protect future uses from flooding during a 100-year storm event, but also to recognize that the effects of 100 years of projected sea level rise will increase flood hazards within the site. Thus, Mitigation Measures 4.H-4a, 4.H-4b, and 4.H-4c require systemwide

drainage improvements to accommodate increased runoff in accordance with City requirements and to correct known existing deficiencies.

Storm drainage collection facilities will be required to convey the peak flow rate from a 25-year storm event entirely within the underground piping system, and to accommodate the 100-year peak storm within the piping system and streets such that building finished floor elevations are located a minimum of 1-foot above the 100-year storm event water elevation with tidal flow and 100 years of estimated sea level rise. Mitigation Measure 4.H-4c specifically requires conveyance improvements to existing Visitacion Creek that would extend it further west of Tunnel Road to the Roundhouse area as approved by the City and in accordance with Army Corps of Engineers and California Department of Fish and Wildlife requirements. Improvements to tidal portions of Visitacion Creek would be made in accordance with requirements stipulated in permits from the BCDC.

Water Quality

Surface water quality data has been collected since 2002 from various locations within the Baylands, including stormwater outfalls, surface seeps along the waterways, and in receiving waters at Brisbane Lagoon. Four indicator water quality parameters are currently being monitored, including pH, total suspended solids, specific conductance (a measure of how well water can conduct an electrical current), and oil and grease. Most of the pH values for the stormwater sampling locations are well within normal ranges, while a few samples exceed the maximum contaminant level and United States EPA Parameter Benchmarks. Total suspended solids concentrations generally exceed the U.S. EPA Parameter Benchmark, and the specific conductance data generally exceeds its maximum contaminant level, which would be expected given connectivity and tidal influence of the southern part of San Francisco Bay.

Baylands development activities would expose surface soils to runoff from initial demolition and site clearing until grading, excavation, and remediation activities are completed and ground cover (landscaping, hardscape, paving, buildings) is established. If not managed properly, runoff from exposed ground would cause erosion and increased sedimentation and pollutants in stormwater. The potential for chemical releases is present at most construction sites given the types of materials used, including fuels, oils, paints, and solvents. Because of contaminants within surface soils within the Baylands, erosion could also result in release of those contaminants. Once released, these substances could be transported to the Bay in stormwater runoff, causing an incremental reduction in water quality.

The construction of some buildings, utilities, and infrastructure may require excavation to depths that would encounter shallow groundwater, and require temporary pumping to enable construction. Although groundwater is currently being remediated, the extracted groundwater could contain constituents that, without proper handling procedures, could expose workers to adverse effects or result in water quality degradation. Such dewatering activities would be subject to site-specific NPDES permit requirements that prohibit discharge of contaminated

groundwater. In addition, General Construction permit requirements also contain measures to protect water quality.

Following construction, new development would result in greater vehicular use of roadways, which would lead to the accumulation and release of petroleum hydrocarbons, lubricants, sediments, and metals (generated by the wear of automobile parts). Nonpoint source pollutants would be washed by rainwater from rooftops and landscaped areas into onsite and local drainage networks or infiltrate into the ground. Potential nonpoint source pollutants include products used in landscaping (e.g., pesticides, herbicides and fertilizers); oil, grease, and heavy metals from automobiles; and petroleum hydrocarbons from fuels.

Protection of Lagoon Water Quality

A number of comments on the Draft EIR expressed concern for water quality within the lagoon, and requested water quality studies of the lagoon, both in regard to current conditions and because the Brisbane Baylands Specific Plan prepared by the applicant for the DSP/DSP-V scenarios indicated that recreational activities would be permitted within the lagoon.

Concerns were also expressed in EIR comments and Planning Commission hearings that the EIR should have analyzed ways to improve water quality in the lagoon. However, because the water quality of the lagoon is an existing condition, i.e., not a result of the proposed project, there is no basis in CEQA for the EIR to require mitigation. CEQA does not require projects to mitigate for pre-existing conditions. In addition, the combination of mitigation measures aimed at restoring riparian habitat adjacent to the lagoon and prohibitions on construction activities encroaching into the lagoon would prevent expansion of existing recreational uses of the lagoon and avoid any impact of proposed new Baylands development on the lagoon. The combination of site remediation, implementation of construction best management practices, and requirements for pre-treatment of runoff from developed areas will result in improved surface and groundwater discharges from the Baylands to the lagoon. Additional provisions for improving water quality in the lagoon could be incorporated into General Plan policies for the Baylands Subarea.

To address water quality issues, the EIR (through Mitigation Measures 4.G-2d, 4.H-1a, and 4.H-1c) requires that site-specific development projects comply with NPDES General Construction Permit, the statewide General Permit for Discharges of Storm Water Associated with Construction Activities and shall prepare and implement a Stormwater Pollution Prevention Plan. Site-specific development projects will also be required to comply with the City's Regional Stormwater Permit Order No. 2011-0083 Provision C.3. These provisions require implementation of an Erosion and Sediment Control Plan and Final Stormwater Management Plan in accordance with the most recent NPDES C.3 requirements to be reviewed and approved by the City Engineer. These plans would detail best management practices to be employed to mitigate water quality impacts during and after site construction. The Stormwater Management Plan would provide operations and maintenance guidelines to mitigate potential water quality degradation of runoff from all portions of the completed development, and are required to clearly identify the funding sources for required ongoing maintenance.

Mitigation Measure 4.H-1b requires compliance with any site-specific NPDES permit requirements for dewatering activities, as administered by the RWQCB. Discharge of the groundwater generated during dewatering to the sanitary sewer or storm drain system would be permitted with authorization of and required permits from the applicable regulatory agencies, including the Bayshore Sanitary District and/or the RWQCB.

Mitigation Measure 4.H-5 requires implementation of an integrated pest management plan, subject to City review and approval, to set forth a preventative, long-term, low toxicity program to control pests. The plan is required to set forth guidelines for landscape and building maintenance with the emphasis on minimizing the use of pesticides while controlling pests within the Baylands.

PLANNING COMMISSION RECOMMENDATION

To address energy resources, recreation, biological resources, cultural resources, geology and seismicity, and hydrology and water quality issues, the policy framework recommended by the Planning Commission includes the following:

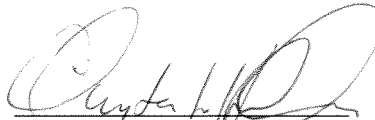
- **Incorporate the following provisions into the General Plan.**
 - **Reduce the total amount of development to be permitted within the Baylands to provide for a maximum 1-2 million square foot net increase in building area.** Maintaining this maximum increase in building area within the Baylands would:
 - Provide for development of commercial-scale renewable energy generation facilities, including ground-mounted and building-mounted solar facilities and small wind turbine installations. The result would be net energy generation within the Baylands.
 - Substantially reduce potential impacts on windsurfing resources.
 - Reduce the number of buildings and people onsite subject to geologic and seismic hazards.
 - **Protect key habitat areas, including the Brisbane Lagoon and potential habitat areas adjacent to it, Icehouse Hill, and wetlands.** Water-based recreational use of the lagoon or other uses that would disturb aquatic habitats would not be permitted. In addition, a Projectwide Open Space Plan and a Marsh Wildlife and Habitat Protection Plan would be prepared to optimize habitat preservation, protect and restore wetland habitats, and ensure avoidance of impacts on wildlife movement.
 - **Restore the Roundhouse, provide opportunities for rail-related and educational uses at the Roundhouse, and maintain compatible development adjacent to it.** As noted in the EIR, there is an immediate need to provide for stabilization of the Roundhouse and prevent further deterioration. Preparation and implementation of stabilization and restoration plans are currently tied to approval of a specific plan for the Baylands.

- **Ensure that the Baylands site is safe for the future uses approved for development by the City in relation to seismic and geologic hazards, as well as flooding, including hazards related to sea level rise.** Specific requirements set forth in the Baylands EIR in relation to site-specific geologic and soils studies prior to site development would be incorporated into the General Plan. The flood protection performance standards cited above would also be incorporated into the General Plan along with policies related to sea level rise. Such sea level rise policies would give priority to natural solutions (e.g., management retreat) to protect development within the Baylands over manufactured solutions (e.g., levees).
- **Ensure that phasing of development within the Baylands is based on specific milestones for development in relation to provision of parks and environmental site mitigation (e.g., open space dedication, habitat restoration, trails).** Specific standards to tie the rate of future land development to the implementation of required biological resources mitigation would be incorporated into the General Plan. Such standards would also ensure the availability of needed parks and recreational amenities within the Baylands not only at buildout, but throughout the site development process.
- **Incorporate applicable provisions of the Brisbane Baylands Sustainability Framework into the General Plan.** Incorporating relevant provisions of the Sustainability Framework into the General Plan would strengthen existing General Plan policies aimed at conservation of energy, biological, and cultural resources within the Baylands.
- **Prior to certification of the EIR for the Brisbane Baylands, the following modifications should be undertaken:**
 - Add a requirement that biological resources surveys be undertaken during the spring prior to site remediation and grading to update existing conditions information.

Attachments

1. Executive Summary and Map, Baylands Public Space Plan, Dangermond Associates, 2009
2. *Use of Wind Tunnel Testing and Limitations on the Use of Computer Models for Analysis of Baylands Impacts on Windsurfing Resources*, Charles Bennett, Dr. Bruce White, and Dr. C. P. van Dam, 2016
3. Baylands Biological Habitats
4. Baylands Flooding and Sea Level Rise
5. Baylands Hearing Schedule


 John Swiecki, Community Development Director


 Clay Holstine, City Manager