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) –Noise, Air Quality, GHG Emissions and Related Policy Issues**

DATE: Meeting of February 16, 2017

Introduction:

Tonight's public hearing focuses on addressing issues related to noise, air quality, greenhouse gas emissions, and related policy issues for the City Council's consideration. These issues were originally scheduled for the January 24, 2107 City Council meeting along with the subject of traffic. While the City council completed its review of the traffic section, the remaining issues were continued for discussion, The staff report contains the same information as the January 24 staff report, excluding the traffic section. Ongoing City Council hearings are organized around specific topics, and the most current City Council hearing schedule is attached for reference.

Discussion:

NOISE

Existing Noise Characteristics

The ambient noise environment of the Baylands is dominated by vehicular traffic on the US 101 freeway and Tunnel Road, and the intermittent rail activity of the Caltrain commuter train. Freeway noise exceeds City noise levels within the eastern portion of the Baylands.

Aircraft flights from San Francisco International Airport (SFO) also contribute to the Baylands noise environment. As evidenced by the high proportion of noise complaints received by SFO from Brisbane residents, single event noise levels from aircraft are a community concern even though Brisbane is outside the 65 dBA noise contour of the airport, which would typically represent an acceptable noise level. Thus, although daily average noise levels meet airport and City standards, single event noise levels represent a nuisance factor within Brisbane.

Noise Impacts

The DSP and DSP-V scenarios propose residential development, which is considered noise-sensitive, as close as 50 feet from the Caltrain tracks. The DSP/DSP-V scenarios also propose hotels just west of US Highway 101 and a school south of Icehouse Hill.

Residential uses closer than 75 feet of the Caltrain tracks would be exposed to noise levels considered normally unacceptable[1] for such uses, while housing between 75 and 150 feet from the Caltrain tracks would be exposed to noise levels considered conditionally acceptable[2]. Therefore, a significant noise impact would occur in locations where residential uses are proposed within 150 feet of the Caltrain tracks in the DSP/DSP-V scenarios.

The 75 dBA noise contour adjacent to the Baylands is located approximately 100 feet from US Highway 101. These noise levels would be considered normally unacceptable for hotel uses, resulting in a significant impact where hotels are proposed within 100 feet of the freeway.

Noise from demolition and construction activities within the Baylands would affect adjacent and nearby existing commercial and residential uses. Existing offsite noise-sensitive uses nearest the proposed demolition and construction activity are the residents of the Northeast Ridge development, residents on San Francisco and Santa Clara Streets in Brisbane and residents on Linda Vista Drive and MacDonald Street in Daly City, and residents on Desmond Street and in the Little Hollywood neighborhood in San Francisco.

Vibration Impacts

Based on Caltrans vibration guidelines addressing architectural damage from groundborne vibration, the potential exists in certain locations of the Baylands that development would exceed safety criteria for the protection of fragile older buildings, as well as for newer buildings and result in a significant impact. Although the Roundhouse is an historic structure that is potentially susceptible to vibration impacts, development surrounding the Roundhouse would involve standard construction equipment and would not likely require high-impact equipment such as pile driving. However, if pile driving were to be necessary for construction of proposed buildings near the Roundhouse, construction-related vibration would be significant if pile driving were to occur within 85 feet of the Roundhouse.

Project site development would also result in the exposure of people to vibration from the approximately 86 Caltrain trains running through the Baylands daily. Steel wheeled/steel rail vehicles can generate vibration impacts up to 200 feet from rail lines for residences or any land

[1] "Normally unacceptable" means that new construction or development should generally be discouraged and that, if new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

[2] "Conditionally acceptable" means that new construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design.

uses where people sleep, such as hotels and hospitals. For institutional land uses, such as schools and churches, the buffer distance to avoid vibration impacts is 120 feet from the right-of-way.

Therefore, given that the DSP and DSP-V scenarios propose to develop residences within 200 feet of the Caltrain station and mainline track, impacts would be significant.

Vibration Mitigation. Mitigation Measure 4.J-2a, which applies only to the DSP/DSP-V scenarios, requires residential development proposed within 200 feet of the mainline track to be designed to meet vibration performance standards in relation to Caltrain operations. Specific measures to achieve the performance standard set in this Mitigation Measure include one or both of:

- Use of vibration isolation techniques such as supporting the new building foundations on elastomer pads similar to bridge bearing pads;
- Installation of vibration wave barriers. Wave barriers would consist of control trenches or sheet piles, which are analogous to controlling noise with sound barrier. The applicability of this technique depends on the characteristics of the vibration waves.

Mitigation Measure 4.J-2b is intended to provide for protection of the Roundhouse from development that would require pile driving or other construction techniques within 85 feet of the Roundhouse, which is the distance at which vibration damage to the Roundhouse could occur. This measure requires a pre-construction assessment of existing subsurface conditions at the development site and the area between that site and the Roundhouse, as evaluation of the structural integrity of the historic structure before a building permit is issued.

If recommended by the pre-construction assessment, groundborne vibration monitoring to detect ground settlement or lateral movement of historic structures will be required. In addition, construction methods such as, but not limited to, underpinning of foundations of potentially affected structures, would be implemented. In the event construction does not meet applicable performance standards for the protection of historic structures, as determined by the City Engineer, all impact work is required to cease until corrective measures (e.g., installation of vibration wave barriers) are implemented to reduce ground movement to acceptable levels.

General Plan Noise Policies

- *Policy 183:* Coordinate land uses and construction conditions to minimize noise impacts of the Caltrain corridor and major highway arterials on adjacent land uses.

Key Noise Issues

Amplification of Noise within Brisbane.

The concern has been raised that the EIR analysis underestimated noise impacts because it did not take Brisbane's topography and unique acoustical characteristics into account. The common perception of sound being louder or amplified in Brisbane is best explained by the effect of the City's terrain on ambient noise and sound propagation. The hillsides surrounding Brisbane tend

to act as a noise barrier for ground-based noise sources,. This tends to reduce background sound levels, and make other sounds more noticeable. In addition, the slope of the valley means that homes in Brisbane, like seats in an amphitheater, have a "good view" of noise sources. The result is that noise in Brisbane propagates more than is typical in a flat community because buildings are less likely to shield noise sources. Thus, noise in Brisbane carries further than it would in communities with rolling topography where hills block the spread of noise or in flat communities where intervening buildings block noise sources. Because the noise model employed in the Draft EIR does not assume any acoustical shielding, the noise levels projected in the EIR are representaitive of noise levels that would be experienced by sensitive receptors in Brisbane.

Pile Driving

The noisiest aspect of construction would be pile driving activities, which may be necessary for the construction of high-rise office or hotel structures, and would generate noise levels of approximately 90 to 105 L_{eq} at a distance of 50 feet. Maximum noise levels from pile driving at Sierra Point were monitored as 91 dBA at a distance of 200 feet. Pile driving and other construction activities would exceed applicable noise standards during construction.

In making its recommendation to the City Council, the Planning Commission noted that the modest increase in Baylands building area it was recommending (net increase of 1-2 million square feet of building area) clustered away from the former landfill would not likely result in substantial pile driving activities. The Commission nevertheless recommended to the City Council all pile driving and/or other extreme noise-generating activities (greater than 90 dBA) be limited to hours between 8:00 a.m. and 4:00 p.m. Monday through Friday, with no extreme noise-generating activity permitted between 12:30 p.m. and 1:30 p.m. weekdays and no extreme noise-generating activities allowed on weekends and holidays. The Commission also recommended that "quiet" pile-driving technology (such as pre-drilling of piles and the use of more than one pile driver to shorten the total pile driving duration) be required where pile driving activities cannot be avoided.

The Commission further recommended that should the Council consider increasing allowable development intensity within the Baylands above the amount recommended by the Commission, additional analyses be undertaken to define additional methods of avoiding pile driving and reducing noise from pile driving activities.

AIR QUALITY

Baylands-related air quality issues focus on mobile (transportation-related) sources of air pollutant emissions, which would be the greatest source of project-related emissions. While emissions standards for vehicles are set at the federal and state levels, the City has an important role in helping achieve air quality standards by defining land use patterns, which affect vehicle miles travelled, transit use, and use of non-motorized modes of travel and the resulting amount of mobile source emissions from those vehicles.

Existing Conditions

The Bay Area Air Quality Management District (BAAQMD) and the California Air Resources Board (CARB) operate a regional air quality monitoring network that measures the ambient concentrations of the seven criteria air pollutants. The nearest air quality monitoring station to

the Baylands is located on Arkansas Street in San Francisco, approximately 4.2 miles northeast of the Baylands.

The Bay Area is in a "non-attainment" status (exceeding applicable state and/or federal air quality standards) for the following air pollutants: Ozone, PM_{10}, and $PM_{2.5}$. Among the pollutants that are regulated, particulates (PM_{10}, $PM_{2.5}$) represent a serious ongoing health hazard. Exceedances of the state PM_{10} standard have routinely occurred in the San Francisco Bay Area, including Brisbane.

Toxic Air Contaminants (TACs) are air pollutants that may lead to serious illness or increased mortality, even when present in relatively low concentrations. TACs do not have ambient air quality standards, but are regulated by BAAQMD using a risk-based approach. This approach uses a health risk assessment to provide quantitative estimates of health risks.[3]

The nearest BAAQMD ambient TAC monitoring station to the Baylands is located at 16th and Arkansas Streets in San Francisco. TAC measurements at this station indicate cancer risks associated with TAC concentrations to be similar to those for the Bay Area as a whole.

Air Quality Impacts

The EIR determined that following its construction, the EIR determined that Baylands development would result in a long-term increase in air pollutant emissions, including reactive organic gases (ROG), nitrogen oxides (NOx), particulates smaller than 10 and 2.5 micrns (PM_{10} and $PM_{2.5}$) from a variety of emissions sources, including onsite area sources (e.g., natural gas combustion for space and water heating, landscape maintenance, use of consumer products, etc.) and mobile on-road sources.

As indicated in the Baylands EIR, Baylands development-related operational emissions of ROG, NOx, PM_{10} and $PM_{2.5}$ would exceed the BAAQMD significance threshold for each of the development scenarios analyzed in the EIR. Impacts would therefore be significant, requiring the implementation of mitigation measures. The health risk assessment prepared for the EIR determined that ongoing activities related to Baylands development would not expose existing sensitive receptors to substantial concentrations of toxic air contaminants or respirable particulate matter ($PM_{2.5}$) or significant cancer risk. Analysis was also undertaken to determine whether persons would be subject to substantial levels of toxic air contaminants (TACs), which may lead to adverse health, as the result of Baylands development. The highest hazard index was determined to be well below the BAAQMD significance threshold.

As noted above, air pollutant emissions would be significant and unavoidable for each of the four proposed development scenarios, even with the implementation of all feasible mitigation measures. Air pollutant emissions could be substantially reduced compared to the proposed development scenarios through implementation of lower intensity alternatives, strengthening the

[3] In general, a health risk assessment is required if BAAQMD concludes that projected emissions of a specific air toxic compound from a proposed new or modified source suggest a potential public health risk, then the applicant is subject to a health risk assessment for the source in question. Such an assessment generally

transit orientation of onsite uses by concentrating development near the Bayshore Caltrain station, and reducing the amount of retail use within the Baylands to that which can be supported by the local community and freeway travelers.

General Plan Air Quality Policies

- *Policy 193:* As a part of land use development analysis, consider the impacts on air resources that will be generated by a project through mobile sources.
- *Policy 203:* Consider issues of stationary emissions in land use planning and project review.

Key Air Quality Issues

Disparity between Air Pollutant Emissions Estimated for the DSP/DSP-V Scenarios and those Estimated for the CPP/CPP-V Scenarios

Objections were raised to the EIR conclusion that the CPP/CPP-V scenarios result in greater air pollution emissions than the DSP/DSP-V. This conclusion is largely the result of mobile vehicular emissions and the greater amount of vehicle miles travelled in the CPP/CPP-V scenarios as compared to the DSP/DSP-V scenarios.

This result occurs for several reasons. First, as discussed in the traffic section of the January 24 2017 staff report, the inclusion of residential development in the DSP/DSP-V scenarios will result in an estimated 5 percent of home to work trips remaining within the Baylands. In addition, approximately 16 percent of "home to other" trips, such as for shopping, are also estimated to remain within the Baylands under the DSP and DSP-V. Together, the trips that would remain within the Baylands provide some reduction in vehicle miles travelled as compared to the CPP/CPP-V scenarios, which provide no housing and therefore no opportunities for trip reduction based on proximity of housing to employment or other destinations. The CPP/CPP-V scenarios also have a greater amount of proposed commercial retail use than the DSP/DSP-V scenarios, which results in greater vehicle miles travelled as the result of the following:

- The larger market area needed to support development of the greater amount of retail use in the CPP/CPP-V scenarios; and
- The absence of residential development within the Baylands reduces internal capture of shopping trips, resulting in average longer trip distances than for the DSP/DSP-V scenarios.

GREENHOUSE GAS EMISSIONS

Increases in greenhouse gas (GHG) concentrations in the earth's atmosphere are believed to be the main cause of human contribution to climate change. Carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O) are the principal GHGs. When concentrations of these gases exceed natural concentrations in the atmosphere, greenhouse effects may be magnified.

evaluates chronic, long-term effects, calculating the increased risk of cancer as a result of exposure to one or

Existing Conditions

GHG emissions are generated by existing Baylands uses. The BAAQMD Bay Area Greenhouse Gas Model estimates GHG emissions associated with the existing 231,400 square feet of industrial uses generate 2,762 metric tons per year of CO_2e (CO_2 equivalent).

Project Impacts

Analysis of GHG emissions conducted for the Draft EIR concluded that GHG emissions from the DSP/DSP-V scenarios would be below BAAQMD's "efficiency threshold[4]" of 4.6 metric tons of CO_2e per service population per year, and the impact would be less-than-significant.

Subsequent to the June 2013 release of the Draft EIR, the BAAQMD updated its GHG emissions model. The Final EIR includes an updated estimation of Baylands development-related GHG emissions based on the latest version of the CalEEMod model[5]. The updated emission inventory is provided as a text revision in Section 4.F, *Greenhouse Gas Emissions*. GHG emissions under the CPP/CPP-V scenarios evaluated based on the latest version of the CalEEMod model are estimated to be 3.2 metric tons per year per service population, and are below the GHG significance threshold. Consequently, the CPP and CPP-V scenarios would have a less than significant GHG emissions impact. Because the Final EIR determined that GHG emissions for the CPP/CPP-V scenarios would, in fact, be less than significant, implementation of Mitigation Measure 4.F-1 was no longer required under CEQA, and was removed from the Final EIR.

Key GHG Issues

Use of the BAAQMD Efficiency Threshold vs. Total GHG Emissions Generated.

Some comments received on the Draft EIR and at Planning Commission hearings stated that the analysis of GHG emissions should have been based on total emissions, rather than the BAAQMD's efficiency threshold. These comments noted that the *total amount* of GHGs that would be emitted by the DSP/DSP-V scenarios would be as much as 50-75 percent more than the GHG emissions of the CPP/CPP-V scenarios.

Although the BAAQMD had considered a *potential* threshold based on total GHG emissions, as a practical matter, such a significance threshold would effectively base significance on the *size* of proposed development projects, rather than the extent of GHG reduction measures being proposed. To focus on the efficiency of proposed developments of all sizes, and provide the

more TACs.

4 The "efficiency threshold" measures CO_2e emissions in relation to service area population (residential + employees), providing the ability to compare the GHG emissions for projects of any size to a single threshold. In this way, small development projects with relatively large GHG emissions could be determined to have significant impacts, while large projects such as General Plans and large-scale development such as the Baylands could be determined to have less than significant impacts based on GHG impacts relative to the size of the project.

5 The California Emissions Estimator Model (CalEEMod) is a statewide land use emissions computer model designed to provide a uniform platform to quantify air pollutant and GHG emissions associated with both construction and operations of a variety of land use projects. The model was developed for the California Air Pollution Control Officers Association (CAPCOA) in association with California air districts.

ability to require GHG emissions mitigation from development projects of all sizes, BAAQMD identified the service population[6]-based efficiency threshold used in the Baylands EIR. In addition, the use of the BAAQMD efficiency threshold provides a direct connection to statewide GHG reduction efforts pursuant to the provisions of AB 32 and SB 375, as well to regional plans such as Plan Bay Area.

Even though GHG emissions impacts were determined to be less than significant, implementation of air quality and energy resources mitigation measures will serve to further reduce GHG emissions from proposed development. In addition, any measures to reduce air pollutant emissions such as those discussed above, as well as measures to increase renewable energy production will serve to reduce GHG emissions.

Sustainability Framework

The Sustainability Framework includes the following performance indicator relevant to GHG emissions reduction:

> Steady year-on-year progress toward greenhouse gas emissions of 0.282 tons CO2e per employee per year for commuting by 2030.

PLANNING COMMISSION RECOMMENDATION

To address traffic and related air quality and GHG issues, the policy framework recommended by the Planning Commission includes the following:

- **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.** By reducing the total amount of development permitted within the Baylands, the effects of future development in relation to air pollutant emissions and projected traffic congestion would be reduced.

- **Maintain a transit orientation for new development, including use of the Baylands to enhance access from Central Brisbane to the Bayshore Caltrain Station and other transit services within the Baylands.** Concentrating development in the northwestern portion of the Baylands would maximize the use of the Bayshore Caltrain station, as well as the potential for use of bicycle and pedestrian travel to and from the station. Additional improvements adjacent to the station to enhance its accessibility are also desirable.

- **Require provision of appropriate infrastructure and site amenities for each increment of development within the Baylands by incorporating specific performance standards into the General Plan.** Specific standards to tie the rate of

6 "Service Population" is an efficiency-based measure used by BAAQMD to estimate the development potential of a general or area plan. Service Population is determined by adding the number of residents to the number of jobs estimated for a proposed project.

future land development to the availability of needed roadway, bicycle, and pedestrian facilities would minimize future increases in area traffic congestion.

- **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 reducing vehicular travel, increasing the use of transit and bicycle/pedestrian modes of transportation, and would also work to reduce emissions of air pollutants and GHGs.

- **Reserve a large portion of the former landfill for renewable energy generation.** Committing a substantial portion of the Baylands to renewable energy generation would reduce burning of fossil fuels needed for electrical generation, and would thereby reduce emissions of air pollutants and GHGs.

Attachments

1. Tentative City Council Baylands Hearing Schedule

John Swiecki, Community Development Director

Clay Holstine, City Manager

Revised (2/06/17) Council Baylands Hearing Schedule

September 29, 2016: Project Overview, EIR Summary, Overview of Planning Commission Recommendation

November 17, 2016: Site Remediation, Title 27 Landfill Closure, and related policy issues

December 15, 2016: Site Remediation, Title 27 Landfill Closure, and related policy issues (continued from November 17, 2016);

January 24, 2017: Traffic, Noise, Air Quality, Greenhouse Gas (GHG) emissions, and related policy issues;

February 16, 2017: Noise, Air Quality, Greenhouse Gas (GHG) emissions, and related policy issues;

February 28, 2017: Water Supply, Public Services and Facilities, and related policy issues;

March 16, 2017: Other environmental issues and related policy issues;

April 2017 (week of 4/24 date TBD): Economics, Development Feasibility, Municipal Cost/Revenue, and related policy issues;

May 18, 2017: Land Use, Planning, and related policy issues

June 15, 2017: Applicant and Community Group Presentations

June/July 2017- TBD: Council deliberations