

450-2832017-002

Agenda Item **No. 5(i)**
Meeting of October 17, 2017

INFORMATIONAL MEMORANDUM

TO: Community Investment and Infrastructure Commissioners

FROM: Nadia Sesay, Executive Director

SUBJECT: Candlestick Point Retail Center Garage Status: Transmittal of Information on Air Quality Issues

EXECUTIVE SUMMARY

At the meeting on October 17, 2017, staff will provide information on the status of the garage proposed for the future Candlestick Retail Center, a project that will include 635,000 square feet of retail in an outdoor shopping center setting, over 1600 units of market rate and affordable housing, open space, a film arts center, and other neighborhood serving features (the "Project"). The Project is being developed through a partnership of FivePoint, the master developer of the Hunters Point Shipyard Phase II and Candlestick Point Project, and Macerich, which develops and operates shopping and retail centers nationally, together the "Developer".

Members of the community, particularly in the Bayview Hill neighborhood, have expressed concerns over the garage for the retail portion of the Project, and as a result, the Developer engaged in a significant redesign of the Project. Staff is in the early stages of reviewing the revised design and anticipates bringing the schematic design for Commission consideration in Spring 2018.

One of the concerns expressed by some community members has been over potential air quality impacts of the parking garage. The Developer has worked with their air quality and environmental consultant to study that issue in particular and has provided the attached memo that will be used in ongoing community outreach about the issue (Attachment A).

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(Originated by Sally Oerth, Deputy Director)



Nadia Sesay
Executive Director

Attachment A: Candlestick Retail Center Garage Air Quality Summary Memo

From: Michael Keinath, Principal – Ramboll Environ

Date: October 2nd, 2017

Re: Candlestick Retail Center Air Quality Summary Memo

Revisiting Community Air Quality Concerns from Parking Garage and Entry

In the 2010 *Environmental Impact Review (EIR)* for the Candlestick Point Retail Center, we evaluated the concentration of microscopic fine particulates¹ (or PM_{2.5}) that could reach nearby homes due to anticipated traffic on the section of Arellious Walker Drive to be built between Gilman Avenue and Harney Way.

- All vehicles with fuel combustion engines produce fine particulates, so PM_{2.5} is used as a prime indicator of traffic pollution.
- Due to its microscopic size, PM_{2.5} is respirable, which means it can be inhaled and passed into the bloodstream. PM_{2.5} exposure causes inflammation leading to respiratory and cardiovascular health effects.
- The airborne concentration of PM_{2.5} is a standard for evaluating health risks from traffic.



Subsequent to the EIR, garage entry points were designed and announced at community meetings. Representatives of the Bayview Hill Neighborhood Association and other community members objected to the above ground parking structure and the planned primary entrance on Arellious Walker Drive, for the following reasons:

1. The Bayview Hill has a unique microclimate with swirling wind currents that will “extend the impact of exhaust” back into the existing community.
2. The EIR did not include impacts of the primary garage entry location on Arellious Walker Drive, as the Developer was not required at that time to have selected the entry location.
3. The 94124 zip code that includes Bayview Hill already has significant air pollution and is classified as a CARE community by the Bay Area Air Quality Management District, so should not be burdened with additional pollution sources.

¹ PM_{2.5} is respirable fine particulate matter with diameter of 2.5 micrometers or smaller.

As a result of the concerns expressed by the community, the Developer (Five Point) revised the parking garage design and established multiple entry locations. The Developer shared the revised plan in a community meeting in April 2017. Below we summarize the three areas of response.

Microclimate of the Bayview Hill Neighborhood

To characterize the neighborhood's microclimate, we used AERMOD, an air dispersion model developed and recommended by the US Environmental Protection Agency. AERMOD estimates how air and emissions from vehicles on roadways are most likely to be dispersed to adjacent residences.

- AERMOD requires wind data (wind speed and direction) to model air dispersion. We used actual wind data collected at the Hunters Point Meteorological Station of the Shipyard, installed and operated by the Bay Area Air Quality Management District (BAAQMD) over a year-long period (10/1/02-9/30/03).



- AERMOD also uses topographical data from the US Geologic Survey (USGS) to make sure the hills and valleys of the City are accurately mapped, as the terrain represents a separate influence on localized wind patterns.
- AERMOD combines the wind, topographical data and distances travelled to model how air and its contaminants are dispersed in a neighborhood.

Microclimate visualized: In creating the 2010 EIR we developed animation of our microclimate modeling for Bayview Hill. In summary, despite some evidence of short-term multi-directional wind currents, we can conclude that the net wind direction over each day will disperse air and its contaminants towards the Bay, in a predominantly East direction.

Environmental Impacts of Original Parking Garage Design on Bayview Hill Neighbors

Queuing means the line of vehicles waiting to enter an area, in this case, the underground parking garage. Of note, all queuing has been designed to occur inside of the garage at peak traffic for the mall. Congestion from queuing at the entrance to the garage was not explicitly evaluated in the 2010 EIR because the primary entrance to the garage had not yet been selected.

In the 2010 EIR analysis, estimated traffic volume of 25,300 vehicles per day was anticipated on the planned Arellano Walker Drive street section between Gilman and Harney.

- Based on that estimated traffic volume, the maximum estimated PM_{2.5} concentration at residences on Bayview Hill would be 0.056 micrograms per cubic meter (µg/m³).

To create a comparison with other health-protective air quality standards, we offer the 2014 Air Pollutant Exposure Zone (APEZ) model generated for San Francisco Health Code Article 38, which dictates when proposed buildings are required to use enhanced ventilation filtration to protect future residents against fine particulates.

- For the Bayview Hunters Point zip code 94124, the APEZ included all property parcels with modeled PM_{2.5} exposure greater than or equal to 9.0 µg/m³ as requiring Article 38 protections.
- Therefore, we can see that 0.056 µg/m³ of particulate matter is a very small concentration relative to the 9.0 µg/m³ PM_{2.5} concentration risk level established by City policy.

Also, the SF 9.0 µg/m³ PM_{2.5} standard is more protective than CA & Federal PM_{2.5} standards:

	California ARB Standard PM _{2.5}	Federal EPA Standard PM _{2.5}
Annual Average	12 µg/m ³	15.0 µg/m ³
24-Hour Average	-----	35 µg/m ³

Reassessing Environmental Impact of Reduced Size Parking Garage on Bayview Hill Neighbors

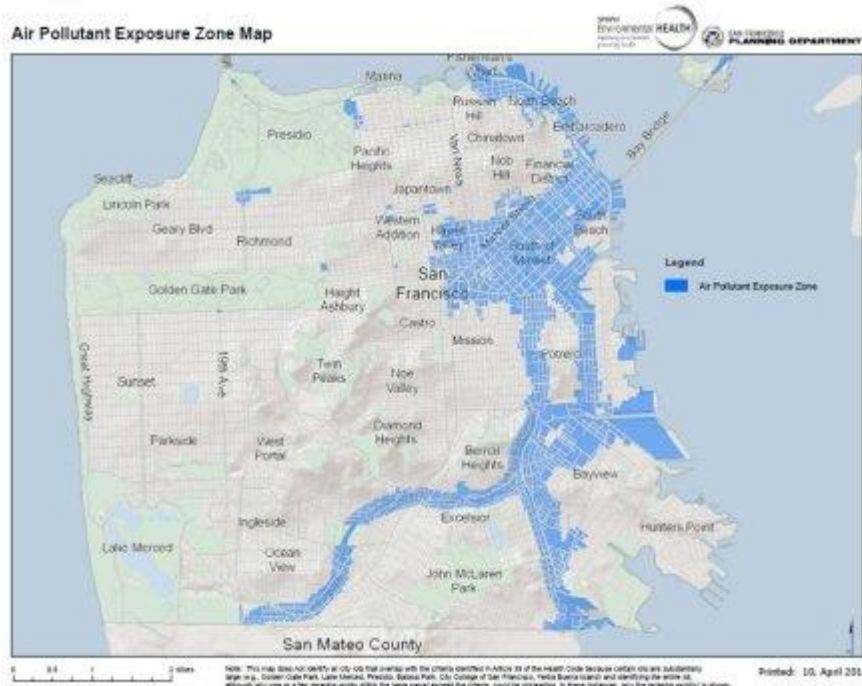
As of April 2017, the Project Developer redesigned the parking structure for the Candlestick Point from having one large garage with a single entrance on Arellio Walker Drive to proposing two parking structures with five entrances. One entrance remains on Arellio Walker Drive, and has been moved 75 feet further distance from existing residents. The other four entrances are on commercial roads away from existing residences. These additional options for entering the parking structure reduce the demand on the Arellio Walker Drive entrance and hence pull a portion of the vehicle traffic away from existing residences.

- **Less traffic volume and shorter queue at entry:** Traffic engineers² have analyzed traffic data for the revised parking garage design, finding that there will be a reduction in traffic volume by about 10% on the section of Arellio Walker Drive within the Retail Center, compared to the original design, or 22,770 vehicles/day.
- **Less health risks to nearby residents:** Based on that estimated 10% reduction in traffic volume, the maximum estimated PM_{2.5} concentration at residences on Bayview Hill would be 0.050 micrograms per cubic meter (µg/m³), a bit lower than the prior maximum estimated concentration of 0.056 µg/m³.

² Fehr and Peers' July 18, 2017 memorandum.

Bayview Hill and 94124 CARE Community Background Pollution

The San Francisco Planning Department, in conjunction with the Department of Public Health (DPH) and the Bay Area Air Quality Management District (BAAQMD), in 2014 issued a citywide model of stationary, area and mobile source carcinogen and particulate matter air pollutants in order to designate areas of the City as the Air Pollutant Exposure Zone



(APEZ).

- The Bay Area Air Quality Management District (BAAQMD) identified areas with cumulative impacts from air pollution in the Bay Area in a 2014 published report.³
- Based on the Health Vulnerability scores of that analysis, five San Francisco zip codes, including the Bayview Hunters Point zip code 94124, used a more stringent threshold to designate which property parcels would be included in the APEZ.⁴
- This health-protective feature of the APEZ was intended to protect residents of the top-fifth of Bay Area zip codes where hospital discharges (morbidity) and premature deaths (mortality) associated with air pollution indicated greater health impacts.

Bayview Hill is not part of the Air Pollutant Exposure Zone: The property parcels of zip code 94124 designated as part of the Air Pollutant Exposure Zone (APEZ) are very close to Freeways 101 and 280, located on the west side of 3rd Street. Because Bayview Hill is far enough away from the freeways and other busy roadways, it has better air quality. The background PM_{2.5} concentration modeled for Bayview Hill is similar to that modeled for other San Francisco neighborhoods without busy roadways.

³ <http://www.baaqmd.gov/plans-and-climate/community-air-risk-evaluation-care-program/documents>

⁴ One criteria to qualify as an APEZ, the background PM_{2.5} concentration needs to be above 10 µg/m³. However, for the Bayview neighborhood, a more stringent and health protective standard of 9 µg/m³ was applied.



Summary

Subsequent to the 2010 EIR, the Project Developer located the primary garage entrance on a yet-to-be-built section of Arellious Walker Drive. When the Bayview Hill Neighborhood Association expressed its concerns about that location, the Project Developer listened and responded by:

- Reducing the total number of Retail Parking spaces by 300, to approximately 1700.
- Relocating the remaining 700 garage spaces into the above grade garage adjacent to the Film Arts Center, the side of the Retail Center most distant to Bayview Hill residences.
- Relocating the Arellious Walker garage entrance 75 feet south of its original planned location, to provide greater distance from Bayview Hill residences.
- Placing an additional four underground garage entries further away from Bayview Hill residences.

These design revisions led to a 10% reduction in vehicular traffic on Arellious Walker relative to the 2010 EIR baseline. As a consequence, the maximum estimated $PM_{2.5}$ concentration at residences on Bayview Hill will be exceedingly less than the health-protective $PM_{2.5}$ concentration used to create the 2014 Air Pollutant Exposure Zone and SF Health Code Article 38 enhanced ventilation mandates.