FIRSTCARBON SOLUTIONS™

Memorandum

Date: June 29, 2020

To: Jennifer Cruz, Senior Planner

From: Mary Bean, Project Director

Subject: Response to May 27, 2020, Adams Broadwell Joseph & Cardozo Letter

INTRODUCTION

Project Overview

The Del Hombre Apartments Project (project) includes the development of a 284-unit six-story podium apartment community on a 2.37-acre site located in central Contra Costa County and adjacent to the Pleasant Hill/Contra Costa Centre Bay Area Rapid Transit (BART) Station in unincorporated Walnut Creek.[1] The site is located within and surrounded by unincorporated Contra Costa County land. The project will require approval of a General Plan Amendment from Multiple-Family Residential-Very High Density (MV) to Multiple-Family Residential-Very High Special Density (MS), a rezoning of the property from Single-Family Residential (R-15) and Planned Unit District (P-1) to Planned Unit District (P-1), a minor subdivision, and a Final Development Plan to allow the construction of the apartments including variances to the lot size for rezoning a less than 5-acre property to P-1 and setback from a public road, and an exception from Title 9 for drainage requirements. The project also includes the improvements to roads, demolition of the existing residential buildings, the removal of approximately 161 trees, and grading of approximately 29,000 cubic yards.

This project was evaluated in a Draft Environmental Impact Report (DEIR) to identify potential environmental impacts of the proposed Del Hombre Apartments Project. The DEIR was released for public review on September 10, 2019 and was available for public review and comment for a period of 60 days, through November 15, 2019. A public hearing to receive comments on the DEIR was held before the Zoning Administrator on October 7, 2019. The County published the Final EIR (FEIR) on May 15, 2020, that included comprehensive responses to comments received during the public comment period.

[1] The project site is 2.4 gross acres and 2.37 net acres.

Background

Contra Costa County held a Planning Commission Hearing on the project and the EIR (State Clearinghouse No. 2018102067) on May 27, 2020. During that meeting, on behalf of Contra Costa Residents for Responsible Development, Aaron Messing, a representative from Adams Broadwell Joseph & Cardozo (ABJC) provided comments on the project as well as the FEIR. In conjunction with those comments, ABJC submitted a comment letter to the County. FirstCarbon Solutions (FCS) addresses these comments related to greenhouse gas emissions and air quality in detail below.

RESPONSES TO COMMENTS

I. Greenhouse Gases

A. The EIR uses incorrect and unsupported GHG thresholds to support its GHG analysis

The comment letter identifies two main concerns related to the greenhouse gas (GHG) emission thresholds used to assess the project's impacts under Impact GHG-1. These concerns are summarized and addressed below.

Concern 1 of 2) *The EIR fails to support the use of its GHG threshold with any evidence, except for the vague statement in the Final EIR (FEIR) that this is the "substantial progress threshold." Without substantial evidence justifying the County's use of the 2030 threshold, the EIR cannot be approved as satisfying CEQA's requirement of disclosure and analysis.*[2]

As noted on page 3.7-42 of the DEIR, the thresholds of significance provided in the 2017 Bay Area Air Quality Management District (BAAQMD) California Environmental Quality Act (CEQA) Guidelines were established based on meeting the 2020 GHG targets set forth in Assembly Bill (AB) 32. AB 32 targets are based on 2020 GHG reduction goals. The 2017 BAAQMD CEQA Guidelines contain the following thresholds for GHG emissions:[3]

> For land use development projects (including residential, commercial, industrial, and public land uses and facilities), the threshold is (1) compliance with a Qualified GHG Reduction Strategy; or (2) annual emissions less than 1,100 metric tons per year of carbon dioxide equivalent (CO_2e); or (3) 4.6 metric tons CO_2e/service population/year (residents + employees).

As the project would be developed and become operational post-2020, it is appropriate to identify thresholds that address post-2020 GHG reduction targets. This was noted in the DEIR and reaffirmed in the FEIR. The 2017 Scoping Plan[4] provides an intermediate target that is intended to achieve reasonable

---

[2] Adams Broadwell Joseph & Cordozo (on behalf of Contra Costa Residents for Responsible Development). 2020. Comments on the Del Hombre Project for the May 27, 2020, Contract Costa County Planning Commission (Agenda Items #2-5), page 4.
[3] Bay Area Air Quality Management District (BAAQMD). 2017. California Environmental Quality Act Air Quality Guidelines. May.
[4] California Air Resources Board (ARB). 2017. California's 2017 Climate Change Scoping Plan. November.

progress towards goals for 2050 under Executive Order S-3-05. The BAAQMD had not updated their recommended GHG emissions thresholds to address target reductions past year 2020, at the time the DEIR or FEIR were published. However, consistent with current State directives, the updated target identified and addressed in the DEIR requires an additional 40 percent reduction in GHG emissions by year 2030. Applied to the BAAQMD quantitative thresholds based on 2020 AB 32 GHG reduction goals, this would equate to 660 metric tons (MT) carbon dioxide equivalent (CO_2e) per year by year 2030 or 2.6 MT CO_2e per year per service population (SP) by year 2030.[5]

The GHG analysis for the project (summarized in Impact GHG-1 of the DEIR) assessed emissions for the operational years of 2022 and 2030. As noted in both the DEIR and FEIR, the total project emissions in these years were analyzed against the 2020 BAAQMD efficiency threshold of 4.6 MT CO_2e/SP/year and the projected 2030 efficiency threshold of 2.6 MT CO_2e/SP/year. The project's estimated GHG emissions for the 2022 operational year were shown because 2022 is used as the operational year throughout the DEIR. Given that BAAQMD's most current and formally adopted thresholds include the 4.6 MT CO_2e/SP/year, it is appropriate that the DEIR compare the project's full buildout emissions in 2022 against an appliable adopted threshold. The DEIR and FEIR both note the 4.6 MT CO_2e/SP/year threshold is one of the three GHG thresholds recommended in the 2017 BAAQMD CEQA Guidelines. The 2017 BAAQMD CEQA Guidelines provides substantial evidence to support the use of the 4.6 MT CO_2e/SP/year threshold. Although the reference to 2017 BAAQMD CEQA Guidelines was included in the DEIR; the DEIR and the FEIR clearly identify that the buildout year assumed for the project (2022) would be beyond the target year (2020) for which the AB 32 Scoping Plan established the 4.6 MT CO_2e/SP/year threshold. To further address this issue, the project's emissions in year 2030 were compared against the projected 2030 efficiency threshold of 2.6 MT CO_2e/SP/year.

The DEIR and FEIR contain substantial supporting evidence for use of the 2.6 MT CO_2e/SP/year. As described in detail above and noted in the DEIR and the FEIR, the projected efficiency threshold of 2.6 MT CO_2e/SP/year was based on the existing 4.6 MT CO_2e/SP/year adopted BAAQMD threshold and adjusted to reflect Senate Bill 32 (SB 32) 2030 GHG reduction goals. Below is an excerpt from page 3.7-42 of the DEIR.

> BAAQMD's project-level significance threshold for operational GHG generation was deemed appropriate to use when determining the project's potential GHG impacts. The thresholds suggested by BAAQMD are as follows:
>
> - Compliance with a Qualified GHG Reduction Strategy, or
> - 1,100 MT CO2e per year, or
> - 4.6 MT CO2e per service population (employees plus residents) per year.

[5] Association of Environmental Professionals (AEP). 2016. Final White Paper Beyond 2020 and Newhall: A Field Guide to New CEQA Greenhouse Gas Thresholds and Climate Action Plan Targets for California. Website: https://califaep.org/docs/AEP-2016_Final_White_Paper.pdf. Accessed January 21, 2020.

> It should be noted that the BAAQMD's thresholds of significance was established based on meeting the 2020 GHG targets set forth in the AB 32 Scoping Plan. For developments that would occur beyond 2020, the service population threshold of significance was adjusted to a "substantial progress" threshold that was calculated based on the SB 32 target of 40 percent below 1990 levels and the forecasted 2030 service population.

In addition, California Executive Order B-30-15 (which established the GHG emissions reduction target of 40 percent below 1990 levels by 2030) and SB 32 (which gave the California Air Resources Board [ARB] the statutory responsibility to include the 2030 target previously contained in Executive Order B-30-15 in the 2017 Scoping Plan Update) are described in the Section 3.7.3 -Regulatory Framework of Section 3.7, Greenhouse Gas Emissions, of the DEIR. The FEIR reaffirms the use of the 2.6 MT CO_2e/SP/year threshold and restates some of the supporting evidence for the threshold provided in the DEIR. Although a detailed calculation and in-depth explanation for how the 4.6 MT CO_2e/SP/year threshold was adjusted to reflect the SB 32 target of 40 percent below 1990 levels and the forecasted 2030 service population, the DEIR and FEIR justified the selection of the 2.6 MT CO_2e/SP/year with substantial evidence. More details on the specifics of how the BAAQMD's 4.6 MT CO_2e/SP/year threshold of significance was adjusted to a "substantial progress" threshold that was calculated based on the SB 32 target of 40 percent below 1990 levels and the forecasted 2030 service population can be found in the "Final White Paper Beyond 2020 and Newhall: A Field Guide to New CEQA Greenhouse Gas Thresholds and Climate Action Plan Targets for California."[6]

Concern 2 of 2) *The FEIR relies on the BAAQMD's significance threshold of 4.6 MT CO_2e/service population (SP) to evaluate 2022 GHG emissions from the project. There are two problems with this use: first, the BAAQMD advises agencies not to rely on its GHG thresholds as the District [BAAQMD] is in the process of updating them. Further, assuming it is still valid, it is valid only until 2020. The project will not be operational until 2022 and probably will not be fully occupied until several years later.*[7]

As described in the DEIR, further addressed in responses to comments in the FEIR, and explained above in the response to Concern 1 of 2, the project's generation of GHG emissions were analyzed against the 2020 BAAQMD efficiency threshold of 4.6 MT CO_2e/SP/year for the 2022 operational year and the projected 2030 efficiency threshold of 2.6 MT CO_2e/SP/year for the 2030 operational year. Consistent with the rest of the CEQA document, emissions at full buildout were shown in the 2022 operational year. Assessing emissions at full buildout in the earliest year of operations represents a reasonably worst-case scenario, as emissions are expected to decrease over time for the same activities because of improvements in technology and more stringent regulatory requirements.

---

[6] Association of Environmental Professionals (AEP). 2016. Final White Paper Beyond 2020 and Newhall: A Field Guide to New CEQA Greenhouse Gas Thresholds and Climate Action Plan Targets for California. Website: https://califaep.org/docs/AEP-2016_Final_White_Paper.pdf. Accessed January 21, 2020.

[7] Adams Broadwell Joseph & Cordozo (on behalf of Contra Costa Residents for Responsible Development). 2020. Comments on the Del Hombre Project for the May 27, 2020, Contract Costa County Planning Commission (Agenda Items #2 -5), Exhibit A, page 9.

As described in the DEIR, the FEIR, and the response to Concern 1 of 2 above, the thresholds provided in the 2017 BAAQMD CEQA Guidelines are the most current and formally adopted thresholds available. In numerous comment letters and other correspondence with the BAAQMD on the issue, the BAAQMD is merely recommending that CEQA documents address post-2020 GHG reduction targets for projects proposed to be developed and become operational post-2020. Although the BAAQMD has stated that they are in the process of updating their thresholds, they have yet to publish updated recommended thresholds at the time the GHG analysis for the EIR was completed or at the time of writing of this Memorandum. As described above, post-2020 GHG reduction goals were addressed in Impact GHG-1 by evaluating project emissions for the 2030 scenario against the projected 2030 efficiency threshold of 2.6 MT CO_2e/SP/year for the 2030 operational year. For disclosure purposes, emissions for full project buildout in the 2022 operational year were also included and compared against the 4.6 MT CO_2e/SP/year threshold. The regulations that have gone into effect as a result of the State's and the County's effort to meet the AB 32 2020 GHG reduction goal would remain in effect in the year the project's emissions were assessed in 2022. As the project is not expected to be become fully operational until 2022 at the earliest, modeling emissions for the 2022 year is more appropriate than modeling emissions for the 2020 year and the use of the 4.6 MT CO_2e/SP/year threshold for the year 2022 is appropriate as described above.

B. The EIR fails to account for the GHG impacts of vegetation removal, underestimating a significant GHG impact

The comment letter identifies two main concerns related to the removal of vegetation as it relates to the project's impacts under Impact GHG-1. These concerns are summarized and addressed below.

Concern 1 of 2) *The DEIR fails to note the removal of the on-site vegetation would significantly reduce the potential carbon sequestration at the project site.*[8]

Carbon sequestration is the process of capturing and storing atmospheric carbon dioxide.[9] California Emissions Estimator Model (CalEEMod) does include options in the modeling to account for carbon sequestration. However, there are many factors that affect the amount of carbon sequestration from vegetation (vegetation type, the amount of water the vegetation receives, the age of the vegetation). As noted on Page 3.7-41 of the DEIR, data are insufficient to accurately determine the impact that existing plants on-site have on carbon sequestration. Because of the numerous variables that go into quantifying carbon sequestration and the wide range of factors that can be used in quantifying carbon sequestration, any estimates quantifying the net change would be highly speculative.

As described in more detail under Concern 2 of 2, pursuant to BAAQMD guidance, carbon sequestration does not need to be included in either the baseline or when considering the project's generation of GHG

---

[8] Adams Broadwell Joseph & Cordozo (on behalf of Contra Costa Residents for Responsible Development). 2020. Comments on the Del Hombre Project for the May 27, 2020, Contract Costa County Planning Commission (Agenda Items #2-5), pages 4-5.

[9] United States Geological Survey (USGS). no date. What is carbon sequestration? Website: https://www.usgs.gov/faqs/what-carbon-sequestration?qt-news_science_products=0#qt-news_science_products. Accessed June 22, 2020.

emissions,[10] and, therefore, not quantifying a change in carbon sequestration would not result in a significant GHG impact.

Concern 2 of 2) *However, the EIR does not address the increase in GHG emissions from the clearing of trees and the subsequent loss of sequestration at the site. When properly included, Dr. Clark calculated that the resulting increase in GHG emissions would be 263 MT CO2/yr in 2030, bringing the project's total 2030 GHG emissions to 2,187 MT CO2e/yr. Using the EIR's service population of 823 people, the project's GHG emissions generation will be 2.7 MT CO2e/service population/year, which exceeds the EIR's stated 2030 GHG emission threshold of 2.6 MT CO2e/service population/year.*[11]

The estimate of the change in carbon sequestration provided in the comment letter does not accurately reflect the change in carbon sequestration that would be expected from implementation of the project. The comment letter incorrectly asserts that new on-site trees and on-site landscaping would not result in carbon sequestration. The 20-year estimate[12] referred to by Dr. James Clark specifically refers to the amount of time suggested to allow the ecosystem to return to the level of biomass, stable soil, and litter pools of an undisturbed state. Furthermore, CalEEMod includes an option in the modeling specifically to account for the planting of net new trees and assumes a 20-year active growth period when accounting for the carbon sequestration rate. Impacts stemming from GHG emissions contribute to a global impact, so a loss of carbon sequestration at one site can be offset by an increase of carbon sequestration at another site. Therefore, the net change in carbon sequestration from the implementation of the project does not need to be restricted to the project site as the comment letter suggests.

Furthermore, the comment letter inaccurately states the removal of vegetation on the project site would result in an increase in the project's GHG emissions. The removal of carbon sequestration is not equivalent to the generation of GHG emissions. As recommended in the 2017 BAAQMD CEQA Guidelines, only the project's net generation in GHG emissions were estimated and compared against the applicable thresholds of significance in the GHG analyses included in the EIR. The specific guidance provided in the 2017 BAAQMD CEQA Guidelines is provided below. According to CEQA Guidelines 15064.7(c)(d), lead agencies are directed to "consider thresholds of significance previously adopted by other public agencies." Further, using the environmental standards as thresholds of significance established by subject area experts, such as BAAQMD, "promotes consistency in significance determinations and integrates environmental review with other environment planning and regulation" throughout the region.

---

[10] Bay Area Air Quality Management District (BAAQMD). 2017. California Environmental Quality Act Air Quality Guidelines, page 4-2. May.

[11] Adams Broadwell Joseph & Cordozo (on behalf of Contra Costa Residents for Responsible Development). 2020. Comments on the Del Hombre Project for the May 27, 2020, Contract Costa County Planning Commission (Agenda Items #2-5), page 5.

[12] Adams Broadwell Joseph & Cordozo (on behalf of Contra Costa Residents for Responsible Development). 2020. Comments on the Del Hombre Project for the May 27, 2020, Contract Costa County Planning Commission (Agenda Items #2-5), Exhibit A, page 3.

Table 4-2 outlines the recommended methodologies for estimating a project's GHG emissions.

Table 4-2
Guidance for Estimating a Project's Operations GHG Emissions

Emission Source	Emission Type	GHG	Methodology
Area Sources (natural gas, hearth, landscape fuel, etc.)	Direct - natural gas and fuel combustion	CO_2, CH_4, N_20	URBEMIS and BGM
Transportation	Direct - fuel combustion	CO_2, CH_4, N_20	URBEMIS and BGM
Electricity consumption	Indirect - electricity	CO_2, CH_4, N_20	BGM
Solid waste landfill (non-biogenic emissions)*	Direct - landfill	CH_4	BGM
Solid waste transport	Indirect - fuel combustion	CO_2, CH_4, N_20	BGM
Water consumption	Indirect - electricity	CO_2, CH_4, N_20	BGM
Wastewater (non-biogenic emissions)*	Indirect - electricity	CO_2, CH_4, N_20	BGM
Industrial process emissions	Direct	CO_2, CH_4, N_20, and refrigerants	BGM and BAAQMD permits**
Fugitive emissions	Direct	CO_2, CH_4, N_20, and refrigerants	BGM

* Biogenic CO_2 emissions should not be included in the quantification of GHG emissions for a project.
** Industrial processes permitted by the Air District must use the methodology provided in BAAQMD rules and regulations. Other industrial process emissions, such as commercial refrigerants, should use the BGM.

CO_2 (carbon dioxide), CH_4 (methane), N_20 (nitrous oxides), and refrigerants (HFCs and PFCs).

In cases where users may need to estimate a project's GHG emissions manually, BAAQMD recommends using ARB's most current Local Government Operations Protocol (LGOP) as appropriate for guidance. The most current LGOP may be downloaded from ARB's website.

Step 3: Comparison of Unmitigated Emissions with Thresholds of Significance
Sum the estimated GHG emissions from area and mobile sources and compare the total annual GHG emissions with the applicable *Threshold of Significance*. If annual emissions of operational-related GHGs do not exceed the *Threshold of Significance*, the project would result in a less than significant impact to global climate change. If annual emissions do exceed the *Threshold of Significance*, the proposed project would result in a significant impact to global climate change and will require mitigation measures for emission reductions.

Step 4: Mitigation Measures and Emission Reductions
Where operational-related emissions exceed applicable *Thresholds of Significance*, lead agencies are responsible for implementing all feasible mitigation measures to reduce the project's GHG emissions. Section 4.2 contains recommended mitigation measures and associated emission reductions. The Air District recommends using the BGM if additional reductions are needed. The air quality analysis should quantify the reduction of emissions associated with any proposed mitigation measures and include this information in the CEQA document.

Step 5: Comparison of Mitigated Emissions with Thresholds of Significance
Compare the total annual amount of mitigated GHGs with the applicable *Threshold of Significance*, as demonstrated in Table 4-3. If the implementation of project proposed or required mitigation measures would reduce operational-related GHGs to a level below either the 1,100 MT CO_2e/yr or 4.6 MT CO_2e/SP/yr *Threshold of Significance*, the impact would be reduced to a less than significant level. If mitigated levels still exceed the applicable *Threshold of Significance*, the impact to global climate change would remain significant and unavoidable.

Table 4-3
Example of Operational Greenhouse Gas Emissions Analysis

Step	Emissions Source	Emissions (MT CO_2e/yr)*
2	Area Sources	A
	Mobile Sources	B
	Indirect Sources	C
	Total Unmitigated Emissions	A + B + C = D
	BAAQMD Threshold	1,100 or 4.6 MT CO_2e/yr/SP
3	Unmitigated Emissions Exceed BAAQMD Threshold?	Is D > 1,100/4.6? (If Yes, significant. Go to step 4. If No, less than significant)
4	Mitigated Emissions	E
5	Mitigated Emissions Exceed BAAQMD Threshold?	Is E > 1,100/4.6? (If Yes, significant and unavoidable. If No, less than significant with mitigation incorporated)

* Letters "A", "B", and "C" are used to represent numeric values that would be obtained through modeling for area and mobile sources, and by manual calculations for indirect source-emissions. "D" represents the sum of "A", "B", and "C" (i.e., unmitigated emissions). "E" represents mitigated emissions.
Notes: CO_2e = carbon dioxide equivalent; MT = metric tons; yr = year.
Refer to Appendix D for support documentation.

As shown above, the guidance related to quantifying GHG emissions and comparing GHG emissions to applicable thresholds is specifically only for the project's **generation of GHG emissions**. Furthermore, the 2017 BAAQMD CEQA Guidelines provide the following information when considering the appropriate baseline.[13]

> If a proposed project involves the removal of existing emission sources, BAAQMD recommends subtracting the existing emissions levels from the emissions levels estimated for the new proposed land use. This net calculation is permissible only if the existing emission sources were operational at the time the Notice of Preparation (NOP) for the CEQA project was circulated (or in the absence of an NOP when environmental analysis begins), and would continue if the proposed redevelopment project is not approved. This net calculation is not permitted for emission sources that ceased to operate, or the land uses were vacated and/or demolished, prior to circulation of the NOP or the commencement of environmental analysis. This approach is consistent with the definition of baseline conditions pursuant to CEQA.

As noted in the BAAQMD's recommendations for establishing a baseline for the purposes of CEQA and estimating emissions, only existing sources of emissions are of concern. Pursuant to BAAQMD guidance, carbon sequestration does not need to be included in either the baseline or when considering the project's generation of GHG emissions, and, therefore, not quantifying a change in carbon sequestration would not result in a significant GHG impact.

C. The project's GHG Emissions from water consumption would be significantly higher than that which was assumed in the DEIR and FEIR

The comment letter identifies the two main concerns related to GHG emissions from the project's consumption of water during project operations. These concerns are summarized and addressed below.

Concern 1 of 2) *The DEIR and FEIR contain significantly different and conflicting estimates of water demand, with no explanation for the differences.*[14] *The DEIR and FEIR have significantly different projected water demands, with the DEIR projecting 55.23 Mgal/yr and the FEIR projecting 30.169 MG/yr. This change in calculation has a marked impact on the projected GHG emissions from the project, and the EIR must disclose the justification behind this reduction before it can be approved under CEQA.* [15]

A review of the "Air Quality, GHG Emissions, and Energy Supporting Information" appendix material included in the DEIR and FEIR (DEIR Appendix B and FEIR Appendix C) reveals the water consumption assumed to estimate GHG emissions did not change in the FEIR compared to the DEIR; both versions

---

[13] Bay Area Air Quality Management District (BAAQMD). 2017. California Environmental Quality Act Air Quality Guidelines, page 4-2. May.
[14] Adams Broadwell Joseph & Cordozo (on behalf of Contra Costa Residents for Responsible Development). 2020. Comments on the Del Hombre Project for the May 27, 2020, Contract Costa County Planning Commission (Agenda Items #2-5) page 5.
[15] Adams Broadwell Joseph & Cordozo (on behalf of Contra Costa Residents for Responsible Development). 2020. Comments on the Del Hombre Project for the May 27, 2020, Contract Costa County Planning Commission (Agenda Items #2-5), Exhibit A, pages 6-7.

project 30.169MG/yr of unmitigated water consumption for purposes of estimating GHG emissions. As noted in Section 3.7, Greenhouse Gas Emissions, of the DEIR, project water consumption was based on the CalEEMod default factors, with an adjustment for compliance with regulations that would be in place by the start of 2020. This methodology was disclosed in the DEIR and was further supported and explained in response to comments in the FEIR. These estimates account for compliance with the latest building standards, which have significantly decreased the amount of water typically consumed in new residences built in California over time. The estimates are also specific to the region and are explained in detail in the CalEEMod User Guide.[16] The number 55.23 million gallons/year estimate referred to in the comment letter is from Section 3.17, Utilities and Service Systems, and not from Section 3.7 Greenhouse Gas Emissions, or the appendix materials that support Section 3.7. The estimate provided in the Utilities and Service Systems section is based on historical data from the Contra Costa County 2015 Urban Water Management Plan, which overestimates water consumption for new residences, as they would be based on averages from residences built in past that would include homes with older appliances.

The comment letter recommends a usage rate of 92 gallons per capita be used to estimate GHG emissions based on the California Water Resources Control Board water conservation production reports from 2019. However, this average per capita usage for residential development does not consider the type of residential development. Water usage varies widely based on the type of residential development (i.e. single-family home versus multi-family apartment). Because this usage rate does not specify the type of residential development assessed, is not applicable to this project and should not be used to estimate GHG emissions.

Concern 2 of 2) *The FEIR maintains that its water consumption analysis was accurately modeled to include "Apply Water Conservation Strategy" because it incorporated Green Building Code Standards and the Water Efficient Land Use Ordinance. However, the FEIR does not identify how these standards will lead to the reduction of water consumption.*[17]

During the comment period, a comment was timely received in which the commenter stated that the "compliance with Green Building Code or the California Model Water Efficient Landscape" was not sufficient to justify use of the "Apply Water Conservation Strategy" in CalEEMod. In response to this comment, the FEIR included clarification that the project would comply with California Green Building Standards (CALGreen) and the California Model Water Efficient Landscape Ordinance. This was noted in Chapter 2, Project Description, and the clarification was included in Section 3, Errata, of the FEIR.

The CalEEMod model used for the GHG analysis would not otherwise account for reductions in water use resulting from project compliance with these **mandatory measures** unless "Apply Water Conservation Strategy" was manually included in the model as "mitigation" per the structure/naming of CalEEMod.

---

[16] BREEZE Software. A Division of Trinity Consultants in collaboration with the South Coast Air Quality Management District (SCAQMD) and the California Air Districts. 2017. California Emissions Estimator Model Version 2016.3.2 User's Guide. Website: http://www.caleemod.com/. Accessed June 23, 2020.

[17] Adams Broadwell Joseph & Cordozo (on behalf of Contra Costa Residents for Responsible Development). 2020. Comments on the Del Hombre Project for the May 27, 2020, Contract Costa County Planning Commission (Agenda Items #2-5), Exhibit A, page 6.

However, this would be part of the project design and the applicant would be required to adhere to these measures. Specifically, "Apply Water Conservation Strategy" was included to reflect compliance with CALGreen and the California Model Water Efficient Landscape Ordinance. Energy savings from water conservation resulting from CALGreen for indoor water use and California Model Water Efficient Landscape Ordinance for outdoor water use are not automatically included in CalEEMod and need to be entered in manually. The Water Conservation Act of 2009 mandates a 20 percent reduction in urban water use that is implemented with these regulations, which is the source behind the 20 percent reduction from compliance. CALGreen (California Code of Regulations [CCR] Title 24, Part 11 code) provides means for conserving water use indoors, outdoors, and in waste-water conveyance (Division 4.3 Water Efficiency and Conservation). The project would be required to adhere to all applicable measures. Benefits of the water conservation regulations are applied in the CalEEMod mitigation component through the "Apply Water Conservation Strategy." Table 1 demonstrates the project applicability of these regulations as well as the reduction source and the percent reduction in 2022 and 2030.

Table 1: Reductions from Greenhouse Gas Regulations

Regulation	Project Applicability	Reduction Source	Percent Reduction in 2022 and 2030
Green Building Code Standards	The project will include water conservation features required by the Green Building Code Standards such as low flow plumbing fixtures, insulated hot water, Energy Star appliances, and high efficiency water heaters.	CalEEMod "mitigation" component	20 percent[1]
Water Efficient Land Use Ordinance	The project landscaping will comply with the regulation by focusing on drought-tolerant, native species, utilizing weather based smart irrigation controllers, and installing efficient drip watering systems.	CalEEMod "mitigation" component	20 percent[2]
Notes: The source of the percentage reductions from each measure are from the following sources: [1] California Green Building Standards Code [2] California Water Plan Update 2018 (California Department of Water Resources [CDWR] 2018)			

Therefore, use of the Apply Water Conservation Strategy in the CalEEMod model accurately represents the project's compliance with existing ordinances and building standards. The use of the Apply Water Conservation Strategy in the unmitigated scenarios accurately reflects this reduction as part of the project design and is accurately modeled in CalEEMod. Furthermore, the CalEEMod input was disclosed

in the DEIR and FEIR through the inclusion of the CalEEMod output files included as part of the "Air Quality, GHG Emissions, and Energy Supporting Information" appendix (DEIR Appendix B and FEIR Appendix C).

D. Mobile Source and project waste emissions are unsupported in the record

Emissions from the project's mobile sources and waste sources are explained in Section 3.7, Greenhouse Gas Emissions, in Section 3.7.4 under "GHG Emissions Generation Calculation Methodology," and "Approach to Analysis" starting on page 3.7-39 of the DEIR. Furthermore, the assumptions for both of these sources can also be found within the modeling output files used to estimate GHG emissions, which are included in the "Air Quality, GHG Emissions, and Energy Supporting Information" appendix material (DEIR Appendix B and FEIR Appendix C).

Mobile Source Emissions

The comment letter identifies the two main concerns related to the mobile-source emissions included in the GHG analysis. These concerns are summarized and addressed below.

Concern 1 of 2) *The FEIR increased unmitigated mobile source emissions by 3% in 2020 and 2030, relative to estimates in the DEIR. Further, the FEIR indicates that revised mobile source GHG emissions decrease from 1,644 MT CO2e/yr in 2022 to 1,305 MT CO2e/yr in 2030 (as opposed to 1,599 MT CO2e/yr in 2022 to 1,269 MT CO2/yr in 2030 as disclosed in the DEIR). However, the FEIR does not reveal the basis for the increase relative to the DEIR nor the decrease from 2022 to 2030. Thus, the major source of the project's GHG emissions is unsupported.*[18]

Concern 2 of 2) *GHG emissions from mobile sources depend on the fleet mix, miles travelled, and vehicle emission factors. A review of the CalEEMod output files in DEIR Appendix B and FEIR Appendix C indicate that the fleet mix and miles traveled are disclosed in the CalEEMod modeling Appendices and did not change between the DEIR and FEIR. Thus, the only factor that could have changed is the emission factors in MT CO2e per mile traveled. The DEIR and FEIR both fail to disclose the GHG emission factors assumed for mobile sources in 2022 and 2030. Thus, the major source of GHG emissions for the project is unsupported.*[19]

Response to Concern 1 of 2 and Concern 2 of 2

Compared to the DEIR, the following assumptions did not change in the FEIR:

- Fleet mix (in any operational run);
- Miles traveled based on trip type (in any operational run);
- Trip type percentages; and,
- Trip purpose percentages.

---

[18] Adams Broadwell Joseph & Cordozo (on behalf of Contra Costa Residents for Responsible Development). 2020. Comments on the Del Hombre Project for the May 27, 2020, Contract Costa County Planning Commission (Agenda Items #2-5), Exhibit A, page 4.

[19] Adams Broadwell Joseph & Cordozo (on behalf of Contra Costa Residents for Responsible Development). 2020. Comments on the Del Hombre Project for the May 27, 2020, Contract Costa County Planning Commission (Agenda Items #2-5), Exhibit A, page 5.

Compared to the DEIR, the following assumptions did change in the FEIR:

- The trip rate applied to Sunday trips.

As discussed in the FEIR starting on Page 3-44, the mobile-source emissions for both the 2022 and 2030 scenarios increased in the FEIR compared to the DEIR. As also noted in the FEIR, these revisions were made in response to comments. A comment received on the DEIR asserted that Sunday trips were underestimated for the operational phase. As described in the FEIR, the operational modeling was revised in response to this comment. The commenter had asserted that the inputs used to represent Sunday trips in the DEIR underestimated the trips because they were less than the trips used in the Transportation Impact Assessment (TIA). The air quality and GHG analysis in the DEIR used the Institute of Transportation Engineers (ITE) Trip Generation Manual 10th Edition Trip Rates for the ITE Land Use Category 220, applied a 20 percent reduction for additional use of alternative modes of transportation, and applied a 5 percent increase to account for ridesharing trips. The analysis in the DEIR used the methodology consistent with the TIA to determine the project-specific trip rates to apply in the CalEEMod modeling for weekday, Saturday, and Sunday trips.[20] Because the applicable ITE trip rate for Sunday trips is less than the applicable ITE trip rate for weekday trips, the projected trips for Sunday utilized in the modeling were less than the trips projected for weekdays and Saturdays. In response to the comment, the modeling was revised in the FEIR so that the reduction for the use of alternative modes of transportation was not applied to Sunday trips. To reflect this change, the specific "Sunday" trip rate was changed in the CalEEMod inputs from 5.34 trips per dwelling unit to 6.59 trips per dwelling unit. Both 5.34 trips per dwelling unit and 6.59 trips per dwelling unit are non-default values; therefore, both of these inputs to the CalEEMod model are included in the "Non-Default Data" data table of the appropriate CalEEMod output files. These CalEEMod output files were included as part of the "Air Quality, GHG Emissions, and Energy Supporting Information" appendix (DEIR Appendix B and FEIR Appendix C). Furthermore, the difference in overall vehicle miles traveled resulting from these changes can also be seen by comparing the "Trip Summary Information" sections of the appropriate operational CalEEMod output files. No other changes were made to the inputs affecting mobile-source emissions in the FEIR compared to the DEIR. The differences in the estimated project-generated operational emissions resulting from these changes were disclosed in the Errata, included as Section 3 of the FEIR.

As described above, the only difference in the CalEEMod inputs associated with operational mobile-source emissions in the FEIR compared to the DEIR included the increased trip rates applied to Sunday trips in all operational CalEEMod runs. Therefore, although individual trip lengths did not change, the overall projected vehicle miles traveled increased in the FEIR compared to the DEIR, an increase that does not affect the conclusions in the DEIR and FEIR. The comment letter incorrectly concluded that "the only factor that could have changed is the emission factors in MT CO_2e per mile traveled."

---

[20] FirstCarbon Solutions (FCS). 2019. Del Hombre Apartments Project Final Environmental Impact Report (prepared for Contra Costa County). Pages 2-97 and 2-98.

Furthermore, the commenter incorrectly states that "the DEIR and FEIR both fail to disclose the GHG emission factors assumed for mobile sources in 2022 and 2030." The emission factors used to estimate GHG emissions from mobile-source emissions did not change in the FEIR compared to the DEIR. As noted in the DEIR, CalEEMod version 2016.3.2 was used to estimate project emissions for both the DEIR and the FEIR. No changes were made to the default emissions factors to estimate GHG emissions in either the 2022 or 2030 operational year. As previously mentioned, the complete CalEEMod output files used to estimate GHG emissions were included in the "Air Quality, GHG Emissions, and Energy Supporting Information" appendix (DEIR Appendix B and FEIR Appendix C). Any changes to non-default values are shown in the output files. FCS review the operational output files included in DEIR Appendix B and FEIR Appendix C, and no changes were made to the default emission factors in any operational run used to estimate emissions in either the DEIR or the FEIR. The operational runs used the default mobile-source emission factors and the fleet mixes for the operational year analyzed. As noted in Section 3.2, Air Quality, of the DEIR and disclosed in every operational output file included in DEIR Appendix B and FEIR Appendix C, project emissions were assessed for a project in Contra Costa County. Therefore, the GHG emissions factors used to estimate GHG emissions for mobile-source emissions in the 2022 and 2030 scenarios were both disclosed and supported in both the DEIR and FEIR.

Waste Emissions

Concern 1 of 1) *Additionally, the DEIR assumed GHG emissions from processing project waste would be reduced by 74%, from 66 MT CO2e/yr to 49 MT CO2e/yr by complying with AB 341. However, as Dr. Clark explains in his letter, "there is no support for the assumption that a 74% reduction in waste by recycling and composting would reduce GHG emissions by 74%."*[21]

The commenter letter states GHG emissions from waste would be reduced 74 percent; however, a reduction from 66 MT CO_2e per year to 49 MT CO_2e per year represents a 26 percent reduction. As noted in the "Air Quality, GHG Emissions, and Energy Supporting Information" appendices included in the DEIR and FEIR (DEIR Appendix B and FEIR Appendix C), the waste reduction was applied in modeling to reflect compliance with AB 341. The FEIR further addressed this input assumption.

> The project would comply with AB 341 (which mandates that 75 percent of solid waste generated be source reduced, recycled, or composted) and provide recycling and composting facilities on-site; this has been noted in Chapter 2, Project Description, and this clarification is included in Section 3, Errata, of the Final EIR. The CalEEMod model used in this analysis would not otherwise account for reductions in waste resulting from project compliance with this mandatory recycling law unless this reduction is manually included in the model as "mitigation" per the structure/naming of CalEEMod. However, because this would be included as part of the project design, inclusion of a 26 percent waste reduction in CalEEMod accurately represents the project's compliance with this law.[22]

---

[21] Adams Broadwell Joseph & Cordozo (on behalf of Contra Costa Residents for Responsible Development). 2020. Comments on the Del Hombre Project for the May 27, 2020 Contract Costa County Planning Commission (Agenda Items #2-5) page 7.

[22] FirstCarbon Solutions (FCS). 2019. Del Hombre Apartments Project Final Environmental Impact Report (prepared for Contra Costa

The CalEEMod default value already accounted for a diversion rate of 49 percent; therefore, a 26 percent reduction was applied to meet the mandated 75 reduction rate.

Consistent with the recommendations provided in the 2017 BAAQMD CEQA Guidelines, biogenic CO_2 emissions should not be included in the quantification of GHG emissions for a project. Biogenic CO_2 emissions result from materials that are derived from living cells, as opposed to CO_2 emissions derived from fossil fuels, limestone, and other materials that have been transformed by geological processes. Biogenic CO_2 contains carbon that is present in organic materials that include, but are not limited to, wood, paper, vegetable oils, animal fat, and food, animal, and yard waste.[23] Considering this information, it is appropriate to apply the reduction to meet mandated diversion rate without manually adding GHG emissions from forms of recycling (or composting as the comment letter notes).

E. The EIR assumes a Service Population in its analysis that underestimates GHGs

The comment letter argues that the service population disclosed in the DEIR is an overestimation.

The U.S. Department of Housing occupancy estimation identified in the comment letter provides only a general rule and does not accurately reflect the specific housing and population characteristics of the project area. The two persons per bedroom guidance is a general rule established by the U.S. Department of Housing for enforcement of the Fair Housing Act; therefore, the reference to such a "rule" has no relationship to how the California Department of Finance derives an average of persons per household in California. As a state agency, the California Department of Finance provides a more accurate estimation and therefore, it is appropriate to use the estimation.

Using more specific information relevant to the project site, the project is expected to accommodate 818 residents and five employees, resulting in a service population of 823. These numbers were used in the GHG analysis and are consistent throughout the EIR. The number of residents is described in Section 3.12, Population and Housing, page 3.12-8 of the DEIR.

> According to the [California Department of Finance] CDF, unincorporated Contra Costa County has an average of 2.88 persons per household. Using this figure as a multiplier, the project would add 818 persons to the population of Contra Costa County.

In addition, the number of employees is also described in Section 3.12, Population and Housing, page 3.12-8 of the DEIR.

> The project is within a suburban residential area and currently well-served by transportation and utility infrastructure. Once operational, the project is expected to employ five workers on-site daily

County). Page 2-200.

[23] Bay Area Air Quality Management District (BAAQMD). 2017. California Environmental Quality Act Air Quality Guidelines, page 4-5. May.

for the maintenance and operation of the proposed apartment community. These employees would be expected to be drawn from the local labor force.

Therefore, the service population presented in the DEIR is appropriate based on the CDF projections and the resulting GHG emissions per service population per year as disclosed in the DEIR are accurate.

II. Air Quality

Availability of Tier IV Equipment

The comment letter notes that "the likelihood of this mitigation measure [MM AIR-3] being achieved in practice is extremely low."[24]

The comment letter argues that because Tier IV is not the most common equipment type available, it is unlikely the applicant would be able to obtain this type of equipment for construction of the project. However, the project would be required to meet the conditions outlined in MM AIR-3 during project construction, which requires the use of all off-road equipment with diesel engines greater than 50 horsepower to meet either United States Environmental Protection Agency (EPA) or ARB Tier IV Interim off-road emission standards. The Mitigation Monitoring Reporting Program (MMRP) includes a: (1) method of verification, (2) timing of verification, and (3) party responsible for verification of mitigation measures. For this mitigation, the (1) method of verification is incorporation into bid documents and on-site inspection, (2) timing of verification is prior to the issuance of building permit and prior to any fuel powered grading or construction activities, and (3) the agency responsible for verification is Contra Costa County. Compliance with the mitigation would be enforced by the County of Contra Costa. The incorporation of requirements to use Tier IV in the bid documents means that the contractor performing the work must utilize Tier IV or the project cannot be built.

Availability of Tier IV equipment has steadily increased since it first became available.[25,26] The comment letter provides estimates of different equipment tiers available throughout the State. The availability of cleaner equipment for a given project does not have a correlation to the percentage of total equipment that would meet the standard, and the comment letter's conclusion that adequate Tier IV would not be available during project construction is incorrect.

Conclusion

Although this comment letter was received after the close of the public comment period, this Memorandum represents a good-faith, reasoned effort to address the environmental issues identified in

---

[24] Adams Broadwell Joseph & Cordozo (on behalf of Contra Costa Residents for Responsible Development). 2020. Comments on the Del Hombre Project for the May 27, 2020, Contract Costa County Planning Commission (Agenda Items #2-5) pages 10 and 11 .

[25] California Air Resources Board (ARB). No date. Guide to Off-Road Vehicle & Equipment Regulations. Website: https://ww3.arb.ca.gov/msprog/offroadzone/pdfs/offroad_booklet.pdf.

[26] California Air Resources Board (ARB). 2020. Non-road Diesel Engine Certification Tier Chart. Website: https://ww2.arb.ca.gov/resources/documents/non-road-diesel-engine-certification-tier-chart.

the comment letter. As described throughout this Memorandum, the analysis presented in the DEIR, FEIR, and throughout the Administrative Record, is accurate and supported by substantial evidence. CEQA does not require the County to conduct every test or perform all research, study, and experimentation recommended or demanded by commenters. The absence of a specific response to a particular comment does not violate CEQA if the response would merely repeat other responses. Several of the comments repeat issues the County previously addressed as part of the Final EIR. Due to the repetition, the County may rely on those other responses addressing the same or similar issues.

The EIR fully and appropriately discloses and analyzes potential environmental impacts related to the project, including potential GHG emissions and air quality. The comment letter does not raise issues that have not been addressed and analyzed in the EIR. Accordingly, the analysis provided in the EIR does not require revisions and no additional analysis is warranted.

Please contact me at 415.713.5223 or mbean@fcs-intl.com if you have questions regarding this Memorandum.

Sincerely,

Mary Bean, Project Director
FirstCarbon Solutions
1350 Treat Boulevard, Suite 380
Walnut Creek, CA 94597