

Memo

To: City of Beaumont
From: Raimi + Associates
Date: 8/27/20
Re: General Plan Update EIR GHG Analysis Findings

The following memorandum summarizes the potential greenhouse gas impacts associated with population and job growth facilitated by the land use designations proposed under the General Plan Update (GPU) in 2040. In accordance with CEQA, this analysis evaluates the significance of project impacts in terms of: (1) whether, or not, the project would generate greenhouse gas (GHG) emissions that may have a significant impact on the environment; and (2) whether, or not, the project would conflict with any applicable policy, plan, or regulation intended to reduce GHG emissions.

Key Findings

- Total annual emissions of GPU in 2040 equal 709,218 MTCO₂e and 4.3 MTCO₂e per service population.
- Estimated 2040 emissions 4.3 MTCO₂e per service population are greater than the calculated threshold of significance of 2.0 MTCO₂e per service population. Therefore, emission mitigation measures will be required.

Approach + Methodology

Greenhouse Gas Emissions

Greenhouse gas emissions were calculated for the anticipated future growth in Beaumont. Forecast emission levels were estimated for 2040 using population, housing, and employment forecasts developed for the General Plan update and consistent with the Traffic Impact Analysis (TIA) and other EIR analysis (Table 1). Mobile source emissions were estimated based on daily vehicle miles traveled (VMT) data from the TIA, and the CARB EMFAC emissions factor model was used to estimate vehicle emissions associated with VMT. These estimates include the effects of existing State and city regulations, representing an “Adjusted Business-as-Usual” forecast. The forecast accounts for implementation of State programs to reduce emissions locally (e.g., Assembly Bill 1493, Senate Bill 100, and incremental improvements in Title 24) and of existing local programs to reduce emissions (e.g., water efficiency measure).

Table 1. GPU Demographics Projections 2018-2040

	2018 (Baseline)	2030	2040 (GPU Horizon Year)
Households	14,394	28,825	40,851
Population	49,630	91,944	127,205
Jobs	10,377	25,525	38,149
Beaumont per Service Population	60,007	117,469	165,354

The baseline conditions modeling assumed the year 2018 and the future Beaumont General Plan modeling year assumed 2040. For comparison, 2020 and 2030 greenhouse gas emissions were estimated to compare to the State target defined in Senate Bill 32 (2016), 15 percent below 1990 levels by 2020 and 40 percent below 1990 levels by 2030.

Table 2. Emissions by Sector 2018-2040 (MTCO_{2e})

Sector	2018 (Baseline)	Adjusted 2020	Adjusted 2030	Adjusted 2040 GP Buildout
Residential electricity	28,611	27,916	26,961	12,280
Residential natural gas	27,677	32,301	49,395	67,493
Nonresidential electricity	22,819	23,718	26,735	12,991
Nonresidential natural gas	3,957	4,920	8,781	12,801
On-Road Transportation	249,364	286,315	472,645	547,663
Landfilled Waste	12,030	13,950	21,154	29,778
Water + Wastewater Treatment	88,603	85,894	55,864	26,212
TOTAL	433,062	475,014	661,535	709,218

Establishing GHG Emission Threshold

Although local governments have broad influence and exclusive authority over some activities that contribute to statewide GHG emissions, there are no state-mandated GHG reduction targets for individual cities or counties. However, there are several common approaches for assessing consistency with statewide GHG reduction targets for plan level assessments as well as project level assessments.

This analysis uses as per service population threshold parallel with the 2017 California Scoping Plan (CARB 2017). This approach recognizes that Beaumont is a growing city, and that growing cities do not generally see a reduction in total GHG emissions. Instead, due to the influx of new people and jobs to the city, more emissions are generated. Given that Beaumont’s population and job totals are projected to double by 2040, using a per capita or per service population (jobs + population) is the most valid approach. This technique also acknowledges that cities are dynamic (and not just a point in time analysis). It is a reasonable way of evaluating emissions and is the industry standard in the climate action planning field.

However, using a per capita emissions target would not represent a useful threshold for determining whether future commercial and industrial development projects contribute their fair share towards meeting City emission targets. In order to facilitate subsequent project-level analysis of future residential, commercial, and industrial projects, this analysis uses a per service population threshold.

To determine the significance thresholds, three steps were taken. First, the analysis used the State’s Scoping Plan to establish current conditions for emissions. Then the analysis reviewed existing State policies including AB 32, SB 32 and Executive Order S-03-05 (80% reduction by 2050) to calculate the State target emissions reductions based on the adopted policies. Finally, the analysis established the thresholds of significance based on the State’s target emissions. For 2040, the threshold is 2.0 MTCO₂e per service population (see Table 2).

Table 3. Thresholds of Significance for Greenhouse Gas Emissions in MTCO₂e

	2018 (Baseline)	2020	2030	Adjusted 2040 (GPU Build-out)
State Reduction Target	N/A	15% Below 1990 levels	40% Below 1990 levels	60% Below 1990s levels
Target per Service Population	5.6 MTCO ₂ e	5.6 MTCO ₂ e	3.2 MTCO ₂ e	2.0 MTCO ₂ e
Beaumont per Service Population	7.2 MTCO ₂ e	6.8 MTCO ₂ e	5.6 MTCO ₂ e	4.3 MTCO ₂ e

GHG Analysis Results

In order to determine the GHG impacts of the full buildout of the 2040 General Plan Update, R+A calculated the Adjusted Business-as-Usual (ABAU) emissions based on the General Plan Update growth projections and baseline year 2018 emissions. The ABAU forecast accounts for the impacts of adopted

State climate action policies on local emissions. There are four major policies that the State has adopted to reduce GHG emissions at the local level:

1. **Renewables Portfolio Standard (RPS):** This law requires that electrical utilities provide an increased amount of electricity from eligible renewable sources. SB 100 requires that 33% of electricity sold by utilities in 2020 be renewable, 60% be renewable in 2030, and 100% be carbon-free in 2045.
2. **Title 24:** Title 24 is the set of regulations that specifies how new buildings must be constructed, including specifying minimum energy efficiency standards. These standards are updated triennially to be more stringent. California has set a goal for zero-net energy new construction by 2030.
3. **Clean Car Standards:** These standards require that vehicles sold in California meet minimum fuel efficiency requirements, and that fuel sold in the state emits less GHGs during production and use.
4. **SB 1383:** This law requires that food scraps and other organic material be diverted from landfill disposal. The State goal is that 75% of organic material is diverted from landfill by 2025.

Additionally, R+A utilized the VMT estimates generated by Fehr & Peer’s updated traffic model for the City to calculate on-road emissions. These VMT estimates are a more accurate depiction of the anticipated conditions in Beaumont in 2040.

Based on these adjusted inputs, the estimated total emissions for the Beaumont 2040 build-out equals 709,218 MTCO_{2e} which translates to 4.3 MTCO_{2e} per service population, including the sphere of Influence (SOI) as shown in Table 2. This is a 64% increase in total emissions since the 2018 baseline year and a 41% decrease in per service population emissions.

Table 4. 2040 GPU Estimated Emissions in MTCO_{2e}

	2018 (Baseline)	Adjusted 2020	Adjusted 2030	Adjusted 2040 (GPU Build- out)	% Change (Baseline to 2040)
Total Emissions	433,063 MTCO _{2e}	475,014 MTCO _{2e}	661,535 MTCO _{2e}	709,218 MTCO _{2e}	64%
Beaumont per Service Population	7.2 MTCO _{2e}	6.8 MTCO _{2e}	5.6 MTCO _{2e}	4.3 MTCO _{2e}	-41%

Potential Strategies for GHG Reductions

Since the estimated GHG emissions per service population in 2040 are higher than the threshold of significance, the City must prepare GHG mitigation measures. The City is currently participating in the

Western Riverside Council of Governments (WRCOG) regional Climate Action Plan (CAP) effort that addresses GHG emissions related to the following sectors at a minimum: energy and buildings, transportation, waste, and water and wastewater. The following table presents some best practice goals and strategies to achieve GHG reductions in each sector that the City could examine implementing in the future.

Table 5. Potential GHG Mitigation Strategies by Sector

Sector	Strategy
Buildings + Energy	Require residential and commercial energy efficiency upgrades in existing buildings
	Examine adopting an energy efficiency or electrification reach code beyond Title 24 requirements for new construction
	Explore requiring solar PV installation on residential and commercial buildings beyond CALGreen requirements
	Examine accelerating the renewable portfolio by joining a Community Choice Aggregation (CCA) program that procures 100% renewable energy
Transportation	Implement a Transportation Demand Management Program
	Examine adopting an EV-Ready reach code for EV charging infrastructure in residential and nonresidential new construction beyond CALGreen requirements
	Prioritize implementation of General Plan action items that encourage mode shift from driving alone to biking, walking and transit
	Explore implementing new micro-mobility programs including e-scooters and bikeshare
	Explore redesigning parking pricing in commercial and retail districts; requiring designated parking for EVs and carpool vehicles at new non-residential development; amending zoning codes to reduce vehicle parking requirements in new development.
Waste	Evaluate adopting a polystyrene ban
	Require commercial and residential organics and food waste recycling
	Examine adopting a single-use plastics ban
Water	Require residential and commercial water efficiency upgrades in existing buildings
	Evaluate adopting indoor and outdoor water efficiency requirements beyond CALGreen for new construction
	Streamline permitting for laundry to landscape greywater systems
	Invest in recycled water infrastructure and other local water supplies

Sources

American Community Survey: <https://www.census.gov/programs-surveys/acs/data.html>

Beaumont-Cherry Valley 2015 UWMP: <https://bcvwd.org/wp-content/uploads/2017/09/January-2017-Urban-Water-Management-Plan-Final.pdf>

Beaumont General Plan Update growth and transportation (TIA) assumptions

California Air Resources Board EMFAC 2040 model: <https://arb.ca.gov/emfac/>

California Air Resources Board 2017 Scoping Plan: <https://ww2.arb.ca.gov/ghg-inventory-data>

California Energy Commission:

<https://efiling.energy.ca.gov/GetDocument.aspx?tn=205065&DocumentContentId=21592>

CalRecycle 2014 Waste Characterization Study:

<https://www2.calrecycle.ca.gov/WasteCharacterization/ResidentialStreams?lg=1033&cy=33>

CalRecycle Short-Lived Climate Pollutants (SLCP): Organic Waste Methane Emissions Reductions:

<https://www.calrecycle.ca.gov/climate/slcp>

Energy Code Ace:

[https://energycodeace.com/download/13929/file_path/T20%20Plumbing%20FS%20081116%20\(2\).pdf](https://energycodeace.com/download/13929/file_path/T20%20Plumbing%20FS%20081116%20(2).pdf)

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https://energycodeace.com/download/35133/file_path/fieldList/Whats%20New.2019%20Nonresidential%20Code

SoCalGas data request, February 2020

Southern California Edison data request, February 2020