

## MEMORANDUM

DATE February 1, 2024

SUBJECT Community-wide and Municipal Operations Greenhouse Gas (GHG) Emissions - Results for 2018, 2021, 2030, and 2045

### 1. Introduction

PlaceWorks is working with the City of Laguna Beach to prepare a Climate Action and Adaptation Plan (CAAP). The CAAP will include strategies to reduce greenhouse gas (GHG) emissions and adapt to climate change-related hazards. The GHG emissions reduction component will address emissions from community-wide activities and municipal government operations. A first step in preparation of a CAAP is to assess current GHG emissions within the community and to forecast those emissions to future years based on current growth assumptions. PlaceWorks reviewed and updated GHG emissions inventories for 2018, prepared an inventory of GHG emissions for the calendar year 2021, and forecast GHG emissions to 2030 and 2045. PlaceWorks also reviewed Laguna Beach's 2004 GHG inventory, summarized in the 2009 Climate Protection Action Plan, but did not update this inventory owing to the lack of available data. All GHG inventories and forecasts assess community-wide sources and City operations. This work occurred during April - November 2023.

This memo provides the draft results of the GHG emissions inventories from 2018 and 2021 along with a business-as-usual (BAU) forecast of emissions for the years 2030 and 2045. Forecasting GHG emissions will assist the City of Laguna Beach in establishing attainable emissions reduction goals for subsequent years, building on work that has been a community priority for over a decade. Furthermore, associating GHG emissions with specific activities allows the City the opportunity to develop targeted policies and programs to facilitate GHG emissions reduction.

GHG emissions are generated by commonplace daily activities. Some GHG emissions are released at the location of the activity, such as carbon dioxide emissions from a vehicle's internal combustion engine. Alternatively, other activities, such as using fossil-fuel derived electricity in a building, cause GHG emissions to be released elsewhere, at the location of the power plant. Therefore, for this analysis the City must consider GHG emissions attributable to community activities and government operations, including GHG emissions generated at facilities or locations outside Laguna Beach's jurisdictional boundary. The inventories included in this memo and the CAAP estimate emission levels of three most common GHGs from human activities: carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and nitrous oxide (N<sub>2</sub>O). Other GHGs are not emitted in Laguna Beach, or are only emitted in trace amounts and cannot be accurately assessed.

The CAAP contains two types of GHG inventories: (1) a community-wide inventory; and (2) a government or City operations inventory.

- A **community-wide inventory** identifies GHG emissions that result from activities of Laguna Beach residents, businesses, visitors, and other community members. Examples include residents driving cars, homes using water, and businesses using electricity.
- A **government operations' inventory** summarizes emissions that are a direct result of the City's municipal government operations. Examples include electricity and water used in municipal buildings or the fuel used for City vehicles.

Laguna Beach completed its first community-wide GHG inventory in 2009 as part of the Laguna Beach City Climate Protection Action Plan (CPAP). The CPAP established 1990 as the baseline level of emissions using per capita averages of California state level emissions, and estimated community-wide emissions for the years 1990 and 2004.

For the CAAP, PlaceWorks prepared 2021 community-wide and government operations GHG inventories and updated the existing 2018 community-wide and government operations inventories using current methods as compared to previous reports. Specific changes to the methods are discussed in the following section. This memo discusses the methods used to prepare the GHG inventories (Section 2), the results of the inventories (Section 3), the results of the BAU forecasts (Section 4), and a brief review of next steps (Section 5).

## 2. Methods

### PROTOCOLS

Guidance documents, called protocols, provide recommendations on how to adequately assess GHG emissions. PlaceWorks prepared the inventory in a manner consistent with two widely adopted, standard protocol documents, the Local Government Operations Protocol, and the United States Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions. These protocols provide guidance by defining what activities should be included in the GHG inventory, and how to consistently estimate emissions from those activities. The use of standard methods allows for comparison of GHG emissions across multiple years and communities.

- **The Local Government Operations Protocol (LGOP)** was first developed by the California Air Resources Board in 2008 and updated in 2010. The LGOP is a tool for accounting and reporting GHG emissions of local government operations and is used throughout California and the United States. The LGOP includes guidance from several existing partner programs<sup>1</sup> as well as the State's mandatory GHG reporting regulations. This protocol provided guidance for the majority of the estimates made in the government operations inventory.
- **The United States Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions (U.S. Community Protocol)** was first developed by ICLEI – Local Governments for Sustainability USA in 2012 and updated most recently in 2019. The California Governor's Office of Planning and Research encourages cities and counties in California to follow the U.S. Community Protocol for community-wide GHG emissions. It is also used in this government operations inventory in limited cases where the LGOP lacks specific calculations for an emissions type, for example, wastewater emissions.

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<sup>1</sup> These partner programs include the California Climate Action Registry, ICLEI – Local Governments for Sustainability, The Climate Registry, and other stakeholders.

GHG inventories are estimates of GHG emissions rather than direct measurements of emissions. The use of the standard methods identified in the protocols, in combination with verified datasets from appropriate sources, makes GHG inventories accurate and consistent estimates of local emissions.

### **UNITS OF MEASUREMENT**

The GHG inventories report emissions in carbon dioxide equivalents (CO<sub>2</sub>e), which is a unit that allows combined reporting of all GHGs analyzed in the inventory: carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and nitrous oxide (N<sub>2</sub>O). CO<sub>2</sub>e is a weighted unit that reflects each GHG's relative potency. Non-carbon dioxide GHGs (methane and nitrous oxide) are converted to an equivalent quantity of carbon dioxide based on their global warming potential. The inventory reports the amounts of GHGs in metric tons of CO<sub>2</sub>e (MTCO<sub>2</sub>e). One metric ton is equal to 1,000 kilograms or approximately 2,205 pounds.

### **EMISSION FACTORS**

In accordance with the protocols, most of the GHG emissions are calculated using data on GHG-generating activities in combination with emission factors. An emissions factor describes how many MTCO<sub>2</sub>e are released per unit of an activity. For instance, an emissions factor for electricity describes the MTCO<sub>2</sub>e produced per kilowatt-hour (kWh) of electricity used, or an emission factor for on-road transportation describes the MTCO<sub>2</sub>e produced per mile of driving. Emission factors may change from year to year based on changes in the technologies, fuels, or behaviors associated with the emissions. For example, an increase in vehicle fuel efficiency and greater adoption of zero-emission vehicles causes a decrease in emission factors for on-road vehicles. **Table 1** below lists the emissions factors for 2018 and 2021.

**Table 1: Emission Factors**

SECTOR	UNIT	2018	2021	PERCENTAGE CHANGE	SOURCE
Electricity	Per kWh	0.000233	0.000263	13%	Southern California Edison
Electricity	Per kWh	0.000274	0.000229	-16%	San Diego Gas & Electric
Natural gas	Per therm	0.005312	0.005312	0%	SoCal Gas
On-road transportation (light duty)	Per mile	0.000333	0.000330	-1%	California Air Resources Board
On-road transportation (heavy duty)	Per mile	0.001356	0.001045	-23%	California Air Resources Board
On-road transportation (combined)	Per mile	0.000402	0.000384	-4%	California Air Resources Board
Solid waste (landfilled waste-in-place)	Per ton	0.253247	0.253247	0%	CalRecycle
Solid waste (waste-to-energy)	Per ton	0.000378	0.000378	0%	CalRecycle
Trolleys	Varies*	0.00466	0.00559	NA	Local Government Operations Protocol

*\*The units for the 2018 emission factor for local trolleys is in MTCO<sub>2e</sub> per mile and the 2021 emission factor is in MTCO<sub>2e</sub> per gallon of propane.*

### 3. GHG Inventory Results

The 2018 and 2021 community-wide GHG inventories assessed the following eight sectors:

- **Energy – Residential built environment:** Electricity and natural gas used in residential buildings. This includes the losses in power between sources of power supply and residential users, known as transmission and distribution losses. Residential electricity is provided by Southern California Edison and San Diego Gas & Electric. Natural gas is provided by SoCal Gas.
- **Energy – Commercial/industrial built environment:** Electricity and natural gas used in nonresidential buildings and operations (e.g., industrial, commercial, municipal). This includes the losses in power between sources of power supply and commercial/industrial users, known as transmission and distribution losses. Nonresidential electricity is provided by Southern California Edison and natural gas is provided by SoCal Gas.
- **On-road transportation:** On-road vehicle trips on local roads and State highways within the city limits as informed by the Orange County Transportation Authority’s regional travel demand model (OCTAM 2016). Trips that merely pass-through the city limits are not included. This sector includes light-duty vehicles (those weighing 8,500 pounds or less, which includes passenger cars and small trucks/vans/SUVs) and heavy-duty vehicles (those weighing more than 8,500 pounds). This sector also includes transit routes in Laguna Beach.

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- **Solid waste generation:** Material produced by the community that is deposited in landfills and decompose and produce methane. This sector also includes waste that is burned (waste-to-energy). Solid waste tonnage comes from the City and waste characterization is informed by CalRecycle and the California Air Resources Board.
- **Water:** Energy used to treat and pump water used by residents and workers in Laguna Beach. Water data comes from the two water suppliers for Laguna Beach: Laguna Beach County Water District and South Coast Water District.
- **Wastewater:** Energy used to treat and pump wastewater created by residents and workers in Laguna Beach, along with emissions from the processing of wastewater. Data for this sector comes from the South Orange County Wastewater Authority.
- **Off-road equipment:** The fuel use of portable equipment and vehicles that do not travel on roads (e.g., construction or lawn and garden equipment). Results from this sector were not included in the initial 2018 GHG inventory. They have been retroactively added using the same method as the 2021 inventory, which is informed by the EMFAC model from the California Air Resources Board.
- **Land use and sequestration:** The GHG emissions absorbed and stored in trees and soils (sequestration) or released into the atmosphere from development of previously undeveloped lands (land use). Results from this sector were not included in the initial 2018 GHG inventory. They have been retroactively added using the same method as the 2021 inventory. Data for this sector, which includes acres of developed land, comes from the City of Laguna Beach.

Emissions from wildfires were not included in the inventories as there were no reported wildfires in Laguna Beach during the inventory years.

## SECTORS FOR MUNICIPAL OPERATIONS

The 2018 and 2021 government operations GHG inventories assessed the following seven sectors:

- **Energy:** Electricity and natural gas used to power City operations including the subsectors of buildings and facilities and streetlights and traffic signals.
- **Employee commute:** The total annual miles that City staff drive to get to and from work.
- **Transportation- Transit:** Fuel used by Laguna Beach’s City-operated transit operations and trolleys.
- **Transportation- City fleet:** Fuel used by City vehicles.
- **Solid waste:** Material produced by City employees and visitors to City facilities that is deposited into landfills.
- **Water:** Energy used to treat and pump water used by City employees and visitors to City facilities.
- **Wastewater:** Energy used to treat and pump wastewater created by City employees and visitors to City facilities, along with emissions from the processing of wastewater.

## COMMUNITY-WIDE GHG INVENTORY RESULTS

**Table 2** shows the activity data for each sector assessed in the community-wide inventories. Activity data is multiplied by emission factors to calculate total emissions. Changes in emissions between inventories can be due to changes in activity data (or use of a resource) or changes in emission factors.

**Table 2: Summary of Activity Data by Sector, Community-wide GHG Inventory, 2018 and 2021**

Sector	Unit	2018	2021	Percent Change, 2018 - 2021
Energy - Residential built environment electricity use	kWh	84,558,970	79,211,580	-6%
Energy - Residential built environment electricity transmission and distribution losses	kWh	3,899,030	3,485,310	-11%
Energy - Residential built environment natural gas use	Therms	4,351,790	4,919,410	13%
Energy - Commercial/industrial built environment electricity use	kWh	59,971,080	49,827,850	-17%
Energy - Commercial/industrial built environment electricity transmission and distribution losses	kWh	2,746,770	2,192,430	-20%
Energy - Commercial/industrial built environment natural gas use	Therms	1,731,060	1,545,410	-11%
On-road transportation (light-duty vehicles)	Miles	247,970,020	266,013,600	7%
On-road transportation (heavy-duty vehicles)	Miles	9,931,180	13,953,940	41%
Solid waste generation (landfilled)	Tons	32,070	33,230	4%
Solid waste generation (waste-to-energy)	Tons	5	4,520	90,300%
Water	Million Gallons	1,350	1,020	-32%
Wastewater	Million Gallons	590	550	-7%
Off-road equipment	Varies	NA	NA	NA

*Note: Totals are rounded to the nearest 10.*

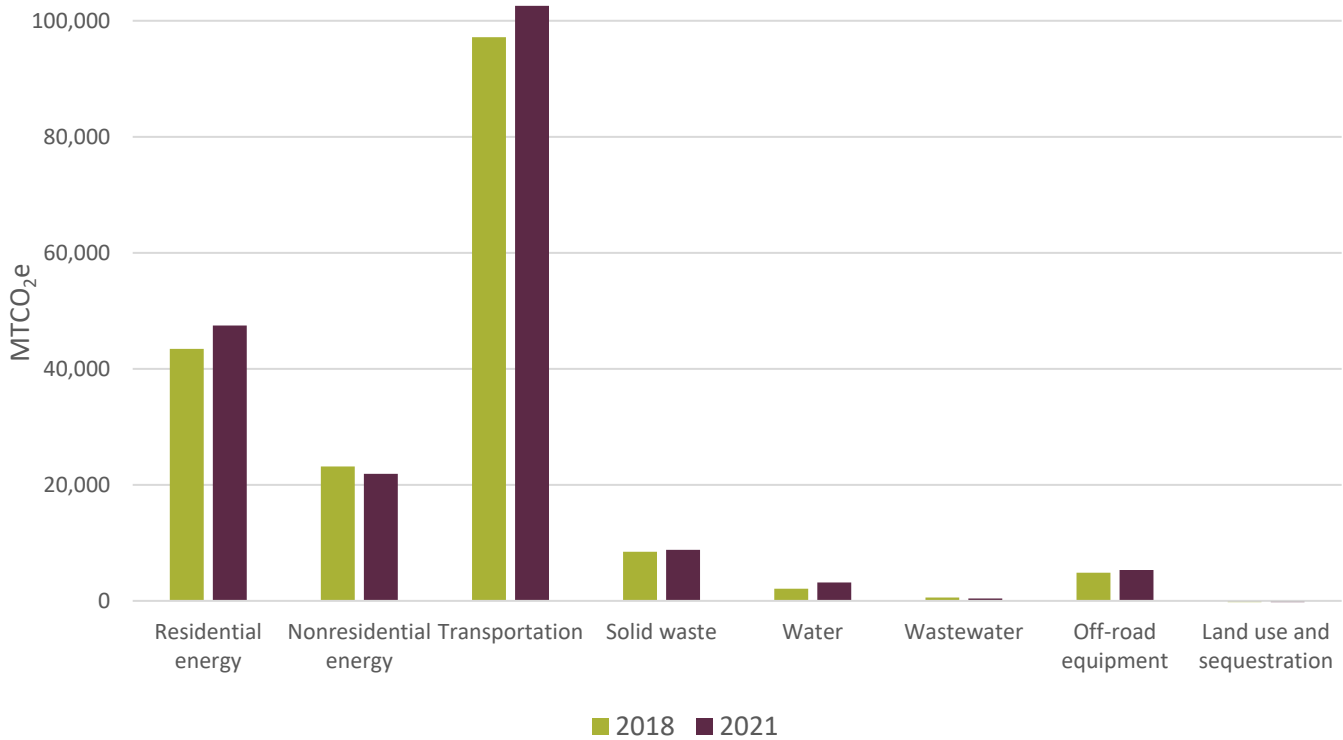
**Table 3** and **Figure 1** show the total GHG emissions for each sector assessed in the community-wide inventories. The total GHG emissions from the covered activities in the 2021 inventory year were 189,410 MTCO<sub>2</sub>e, which is a five percent increase from the 2018 inventory year which produced 179,610 MTCO<sub>2</sub>e. Overall, the relative proportion of emissions from the different sectors remained similar from 2018 to 2021 (**Figure 2**).

Table 3: Summary of Community-Wide Emissions (MTCO<sub>2</sub>e) by Sector, 2018 and 2021

Sector	2018	2021	Percent Change, 2018 – 2021
Energy - Residential built environment	43,450	47,470	9%
Energy - Commercial/industrial built environment	23,170	21,900	-6%
On-road transportation	97,180	102,570	6%
Solid waste generation	8,470	8,780	4%
Water	2,100	3,160	50%
Wastewater	590	410	-31%
Off-road equipment	4,870	5,340	10%
Land use and sequestration	-220	-220	0%
<b>Total</b>	<b>179,610</b>	<b>189,420</b>	<b>5%</b>

Note: Totals are rounded to the nearest 10. Totals may not equal the sum of their component rows.

Figure 1: Community-wide GHG Emissions (MTCO<sub>2</sub>e), 2018 and 2021



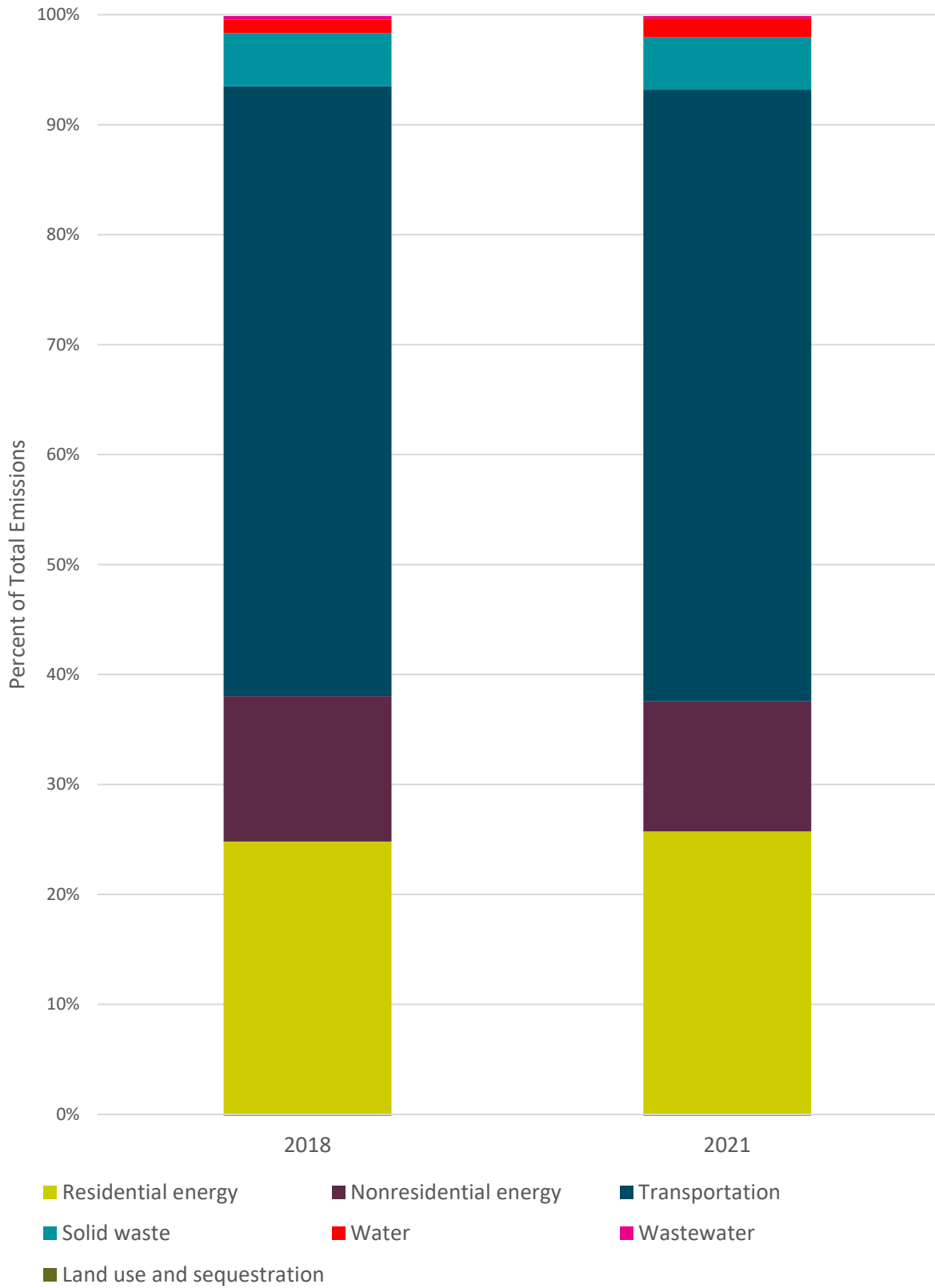
It is common for emissions to vary somewhat between years, typically by 10 percent or less. This can be the result of minor changes in economic conditions, personal behaviors, local climate, and many other factors. Notable trends and findings from the 2018 and 2021 community-wide GHG inventory are noted below.

### **Key Takeaways**

- Emissions from the residential built environment increased by 9 percent between 2018 and 2021, which includes electricity and natural gas use. This is likely due to an increase in natural gas use (13 percent) and higher electricity emission factor for Southern California Edison in 2021 (a 13 percent increase from 2018). Southern California Edison sourced a higher proportion of power from non-renewable sources, mainly natural gas, in 2021 than in 2018.
- The only sector to see a decrease in emissions was energy use by the commercial/industrial built environment (6 percent), which is due to a decrease in electricity and natural gas use. This could be attributed to a decrease in commercial activity as more people worked from home and many businesses maintained limited hours of operation following the COVID-19 shelter-in-place period.
- On-road transportation, which includes personal vehicles, commercial vehicles, regional buses, and local trolleys, remains the largest source of emissions in 2018 and 2021 at 54 percent of total emissions each year. Vehicles miles traveled (VMT) increased 7 percent for light-duty vehicles and 41 percent for heavy-duty vehicles, which includes vehicles over 8,500 pounds. The overall increase in VMT is likely due to a change in methods as each inventory used a different model to estimate VMT. The COVID-19 pandemic likely also played a role in increasing VMT from light-duty vehicles as it resulted in slightly more people opting to drive alone in personal vehicles versus carpooling or taking transit. While VMT for heavy-duty vehicles increased significantly in 2021, the emission factor for both light and heavy-duty vehicles decreased as vehicles became more fuel efficient and electric vehicles adoption increased. Therefore, emissions from transportation overall only increased 6 percent between 2018 and 2021.
- Off-road equipment emissions increased by 10 percent between 2018 and 2021. This is driven by an increase in the subsectors of industrial, lawn and garden, and light commercial equipment, which each increased by approximately 18 percent.
- Emissions from water use increased by 50 percent primarily due to a difference in methods between the 2018 and 2021 inventories, as well as differences in the availability of data. Emissions from wastewater activities declined 31 percent during this period, likely due to similar methodological differences and data availability.



Figure 2: Community-wide GHG Emissions Proportions, 2018 and 2021



## GOVERNMENT OPERATIONS GHG INVENTORY RESULTS

**Table 4** below shows the activity data for each sector assessed in the City of Laguna Beach government operations inventories. This activity data is limited to City facilities, operations such as transit services, and employees such as employee commute and waste produced by employees. Changes in emissions between inventories can be due to changes in activity data or changes in emission factors. For 2018 and 2021, there is no activity data for refrigerant use in City facilities and vehicles. This sector has been omitted from the inventories.

**Table 4: Summary of Activity Data by Sector, Government Operations GHG Inventory, 2018 and 2021**

Sector	Unit	2018	2021	Percent Change, 2018 – 2021
Buildings and facilities electricity use	kWh	1,964,640	1,855,010	-6%
Buildings and facilities natural gas use	therms	58,500	50,020	-14%
Street lights and traffic signals electricity use	kWh	793,050	765,710	-3%
Employee commute trips	miles	391,250	320,760	-18%
Transit – trolleys	gallons	204,860	24,690	-88%
Transit operations diesel use	gallons	NA	960	NA
Transit operations propane use	gallons	NA	10,230	NA
City fleet vehicles	Varies	756,600	111,990	NA
Solid waste from City facilities	tons	280	330	18%
Water delivery facilities electricity use	kWh	1,080,550	1,179,350	9%
Water delivery facilities natural gas use	therms	110	NA	NA
Indirect water treatment	million gallons	40	40	NA
Indirect wastewater treatment	NA	NA	NA	NA
Direct wastewater treatment	NA	NA	NA	NA

*Note: Totals are rounded to the nearest 10. The 2021 inventory included activity data for City fleet vehicles use of propane, but this was not included in 2021 data. The 2018 inventory included activity data for off-road vehicles, while the 2021 inventory did not. Activity data for City fleet vehicles in 2018 was in miles, while in 2021 it was in gallons of fuel used.*

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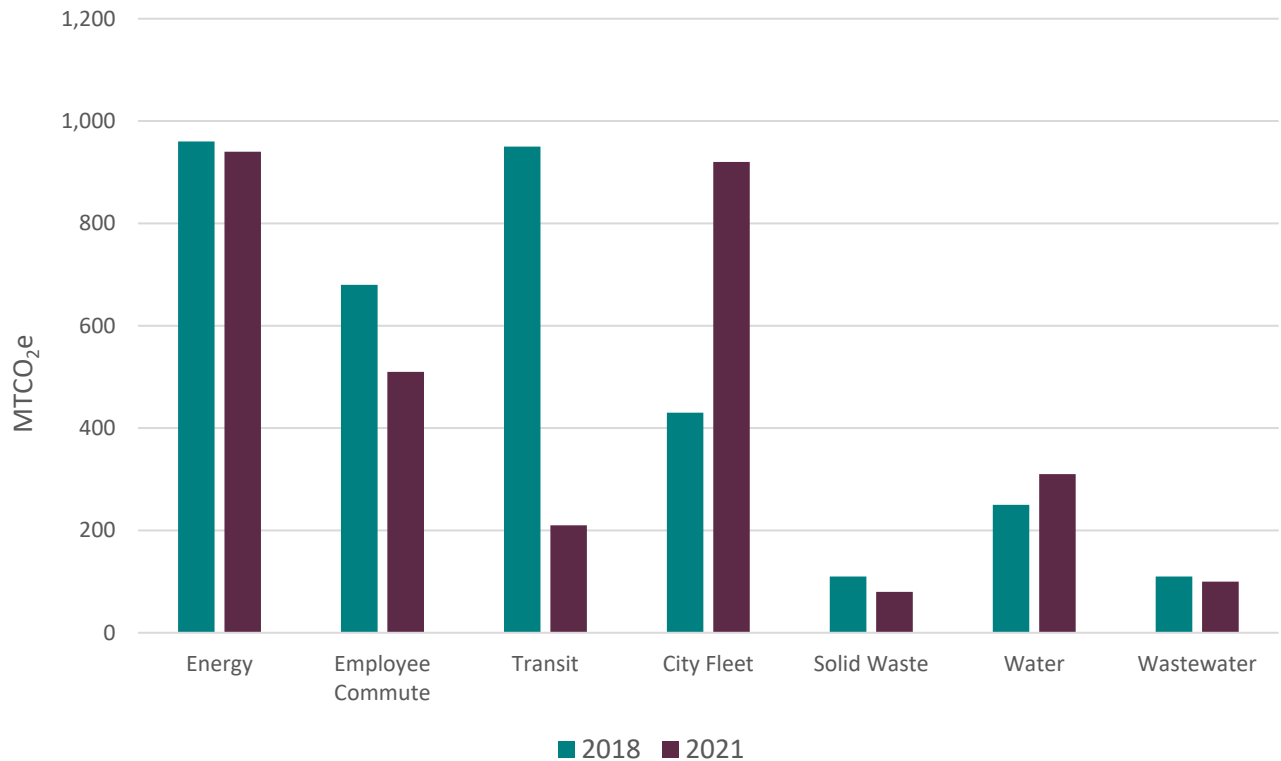
**Table 5** and **Figure 3** shows the total GHG emissions for each sector assessed in the government operations inventories. The total GHG emissions from the covered activities were 3,480 MTCO<sub>2</sub>e in 2018 and 3,070 MTCO<sub>2</sub>e in 2021, a 12 percent decline between the two years. The relative proportion of emissions from the different sectors shifted from 2018 to 2021. As shown in **Figure 4**, emissions from City fleet vehicles made up a larger percentage of emissions in 2021 than in 2018 while emissions from transit reduced in relative proportion from 2018 to 2021.

**Table 5: Summary of Government Operations Emissions (MTCO<sub>2</sub>e) by Sector, 2018 and 2021**

Sector	2018	2021	Percent Change, 2018-2021
Energy	960	940	-2%
Employee Commute	680	510	-25%
Transit	950	210	-78%
City Fleet	430	920	114%
Solid Waste	110	80	-27%
Water	320	400	25%
Wastewater	20	10	-50%
<b>Total</b>	<b>3,480</b>	<b>3,070</b>	<b>-12%</b>

*Note: Totals are rounded to the nearest 10. Totals may not equal the sum of their component rows.*

Figure 3: Laguna Beach Government Operations Emissions, 2018 and 2021 (MTCO<sub>2</sub>e)

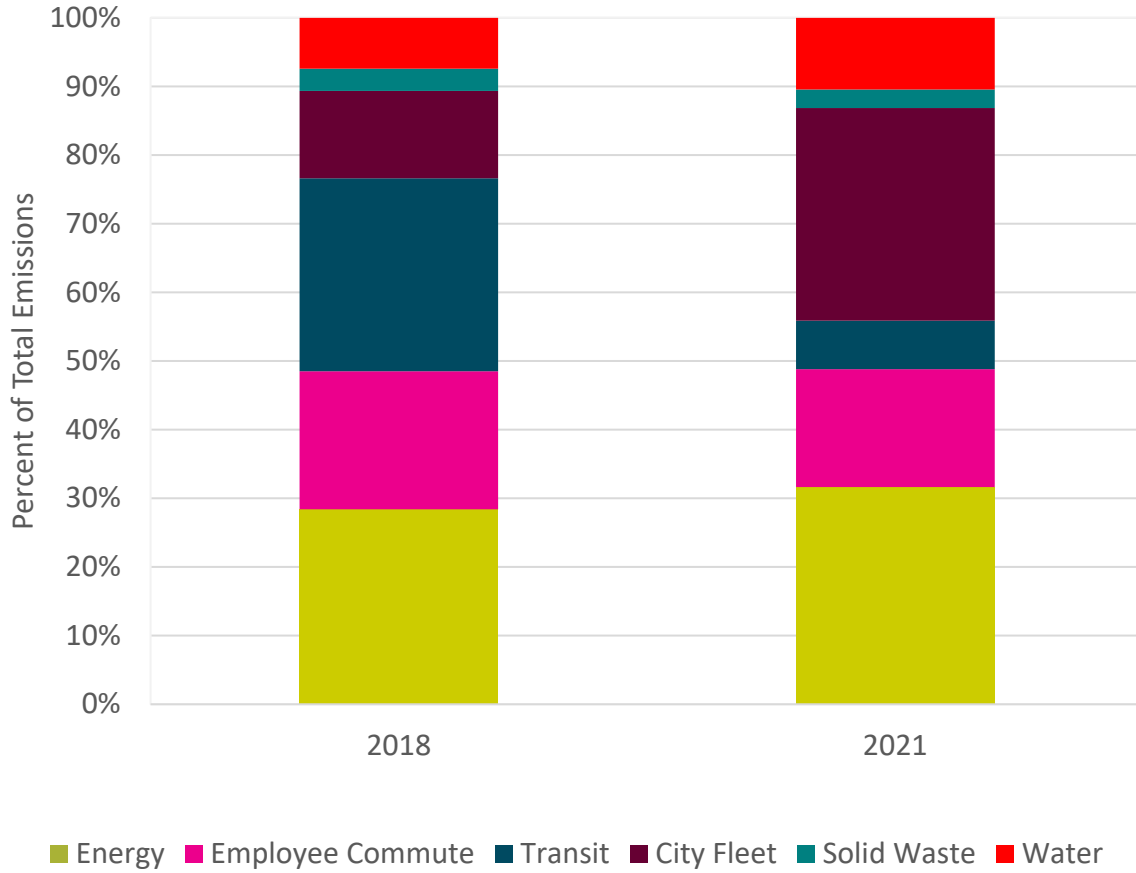


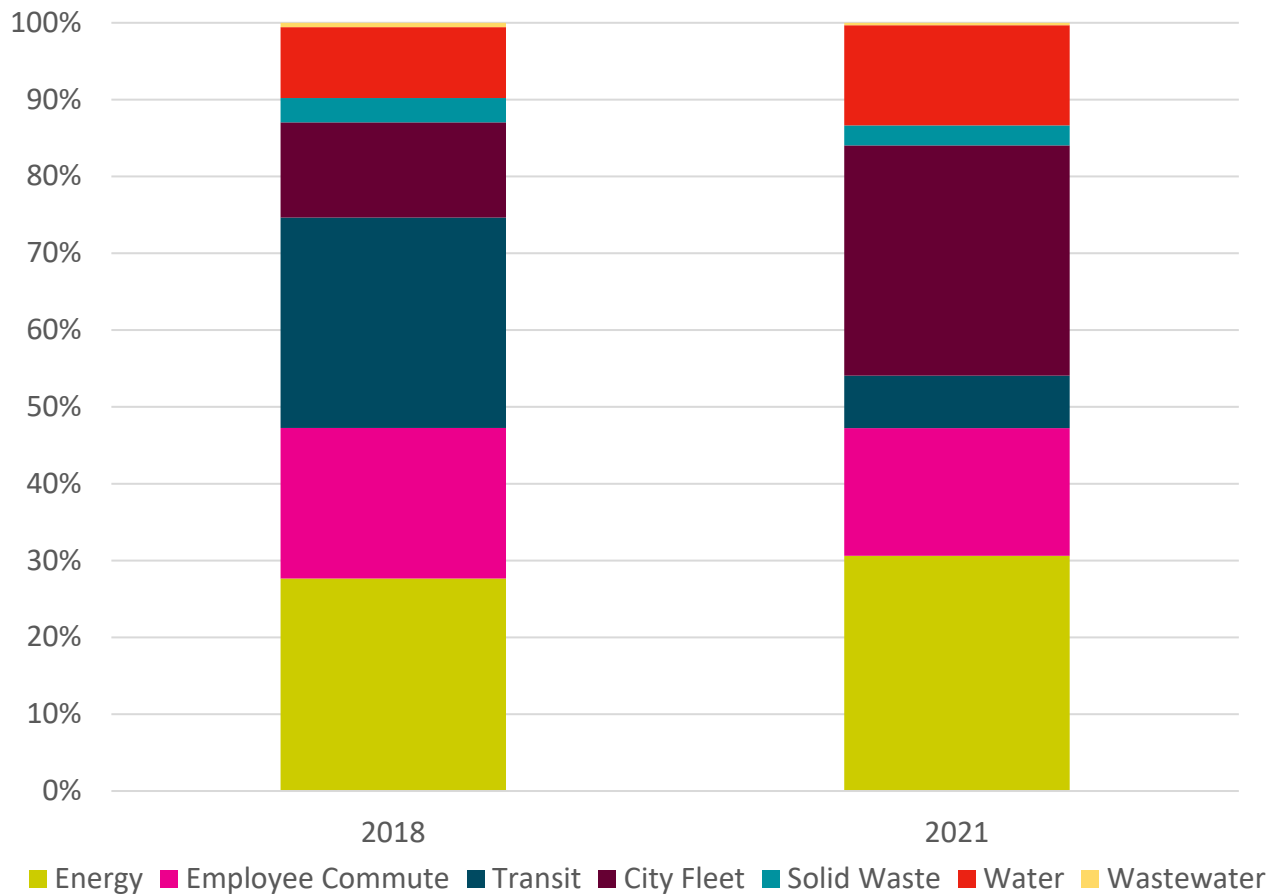
Similar to the community-wide inventory, changes of under 10 percent are to be expected when comparing one year to another. The government operations inventories saw larger changes between 2018 and 2021. The key changes and other notable findings from the 2018 and 2021 government operations inventories are noted below.

### Key Takeaways

- Emissions from the employee commute sector decreased 25 percent between 2018 and 2021, which is likely due to a reduction in employees driving to and from work following the COVID-19 pandemic shelter-in-place period.
- Emissions from transit decreased 78 percent, which was driven by a reduction in fuel used for local trolleys. As with emissions from employee commute, this reduction is also likely due to decreased trolley service in the wake of the COVID-19 shelter-in-place period. The City has also transitioned to an on-demand service that uses smaller vehicles since 2018.
- Emissions from City fleet vehicles increased 114 percent, which is likely due to a methodological difference between the 2018 and 2021 inventory preparers.
- Solid waste emissions from City facilities decreased 27 percent. Similar to that of employee commute, this reduction is likely driven by fewer employees working from City facilities following the COVID-19 pandemic shelter-in-place period.
- Emissions from the water sector increased 25 percent, which is driven by an increase in energy used for water treatment and the higher emission factor for Southern California Edison in 2021 versus 2018. Emissions from wastewater declined by 50 percent, although this is primarily a change in methods and a result of the rounding. Both total municipal water use and wastewater generation declined by approximately 7 percent from 2018 and 2021.

Figure 4: Government Operations GHG Emissions Proportions, 2018 and 2021





#### 4. Forecast Results

The forecast is Laguna Beach’s projection of future community-wide and government operations GHG emissions. It illustrates how emissions are expected to change over time. This is also known as a “business as usual” (BAU) or worst-case scenario, since it assumes that there is no new action taken to reduce GHG emissions and that each individual Laguna Beach City employee or community member continues to produce the same level of GHG emissions. A GHG emission forecast is informed by demographic indicators, such as City population, households, and jobs. As the City adds employees and grows in population, the BAU forecast assumes emissions increase proportionally.

**Table 6** lists the demographic indicators used to forecast community-wide GHG emissions. **Table 7** shows the results of the community-wide GHG emissions forecast. In total, GHG emissions are projected to increase two percent from 2021 to 2045. Emissions from all sectors do not change significantly as the population and number of jobs in Laguna Beach are not predicted to increase significantly. Emissions from the residential built environment increase more than other sectors given the predicted increase in households between 2021 and 2045. Population is expected to decline slightly despite the increase in households, due to anticipated reductions in the average household size.

**Table 6: Demographic Indicators, Community-wide GHG Emission Forecast 2021-2045**

Indicator	2021	2030	2045	Percent Change, 2021-2045
Population	24,090	23,810	23,350	-3%
Households	13,000	13,400	14,100	8%
Jobs	13,360	13,360	13,360	0%
Service population (jobs + population)	37,450	37,170	36,710	-2%

*Sources: City of Laguna Beach, Southern California Association of Governments, California Department of Finance  
Note: Totals are rounded to the nearest 10. Totals may not equal the sum of their component rows.*

**Table 7: Community-wide GHG Inventory and Forecast, 2021 - 2045**

Sector	2021	2030	2045	Percent Change, 2021-2045
Energy - Commercial/industrial built environment	21,900	21,900	21,900	0%
Land use and sequestration	-220	-220	-220	0%
Off-road equipment	5,330	5,640	5,670	6%
On-road transportation	102,580	102,790	103,140	1%
Energy - Residential built environment	47,470	48,930	51,490	8%
Solid waste generation	8,790	8,730	8,630	-2%
Water	3,160	3,140	3,100	-2%
Wastewater	410	410	410	0%
<b>Total</b>	<b>189,420</b>	<b>191,320</b>	<b>194,120</b>	<b>2%</b>

*Note: Totals are rounded to the nearest 10. Totals may not equal the sum of their component rows.*

**Table 8** lists the demographic indicators used to forecast government operations GHG emissions. **Table 9** shows the results of the government operations GHG emissions forecast. In total, emissions from government operations increased 42 percent from 2021 to 2045 under a business-as-usual scenario, which is driven by an increase in City employees of 59 percent. Emissions from City facilities energy use, employee commute, and the City’s vehicle fleet each increase over 50 percent by 2045 if no reduction actions are taken.

**Table 8: Demographic Indicators, Government Operations Forecast, 2021-2045**

Indicator	2021	2030	2045	Percent Change, 2021-2045
City employees	270	340	430	59%
Population	24,090	23,810	23,350	-3%
Service population	37,450	37,170	36,710	-2%

*Sources: City of Laguna Beach, Southern California Association of Governments, California Department of Finance  
Note: Totals are rounded to the nearest 10.*

**Table 9: Government Operations GHG Inventory and Forecast, 2021 – 2045**

Sector	2021	2030	2045	Percent Change, 2021-2045
Energy	940	1,140	1,390	48%
Employee Commute	510	640	810	59%
Transit	207	210	210	2%
City Fleet	920	1,130	1,470	60%
Solid Waste	80	80	80	0%
Water	400	400	390	-3%
Wastewater	10	10	10	0%
<b>Total</b>	<b>3,070</b>	<b>3,610</b>	<b>4,360</b>	<b>42%</b>

*Note: Totals are rounded to the nearest 10. Totals may not equal the sum of their component rows.*

## 5. Next Steps

PlaceWorks will work with City staff to determine appropriate targets for reducing GHG emissions from community-wide activities and government operations. PlaceWorks will quantify the GHG-reduction benefits from existing and planned State activities, including relevant laws and regulations, through 2045 to determine initial progress towards achieving the targets. The results of the forecast and quantification of existing local and State reduction activities will inform GHG reduction policies in the CAAP.