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EXECUTIVE SUMMARY

This Greenhouse Gas (GHG) inventory report was prepared for Stanford Children's by Mazzetti, following the GHG Protocol Corporate Accounting and Reporting Standard. The purpose of this inventory is to assess Stanford Children's portfolio carbon footprint and identify opportunities for emissions reduction.

The GHG inventory covers the period from September 1, 2021 – August 31, 2022 and provides a comprehensive assessment of the hospital Scope 1, Scope 2, and select Scope 3 emissions sources. This year marks the transition from calendar year to fiscal year, and this report notes the overlapping period between calendar year and fiscal year (September 2021 – December 2021).

New for this year's inventory is the inclusion of 40 additional Stanford Children's facilities. This brings the total number of facilities in the organization's portfolio to 41. Throughout the report, the total contribution of each emission source is shown in Metric Tons of Carbon Dioxide Equivalent (MTCO₂e).

Certain Scope 3 emission categories for the 40 additional locations are measured at the enterprise level and reported as part of 725 Welch Road (LPCH Main and West Campus Hospital) emissions. Consequently, only those Scope 3 emissions directly attributable to the additional locations are individually listed.

A correction was made to Fleet Vehicle and Patient Transport emissions for the calendar year (CY) 2021 due to improved data quality. As a result, the total emissions for calendar year 2021 have been revised from 135,140 MTCO₂e to 137,447 MTCO₂e.

The successful completion of this work was made possible through the collaboration and support of numerous stakeholders within Stanford Children's. Mazzetti extends its gratitude to these individuals for their time, effort, creativity, and valuable contributions.



Annual Emissions per Scope	Baseline Year: CY2019 (MTCO ₂ e)	CY2020 (MTCO ₂ e)	CY2021 (MTCO ₂ e)	FY2022 (MTCO ₂ e)	CY2020 % Change over Baseline Year	CY2021 % Change over Baseline Year	FY2022 % Change over Baseline Year
SCOPE 1*	2,498	1,142	1,280	1,306	-54%	-49%	-48%
SCOPE 2	3,875	3,738	3,877	3,428	-4%	0%	-12%
SCOPE 3*	135,857	122,277	132,290	129,623	-10%	-3%	-5%
Total	142,230	127,157	137,447	134,357	-11%	-3%	-6%

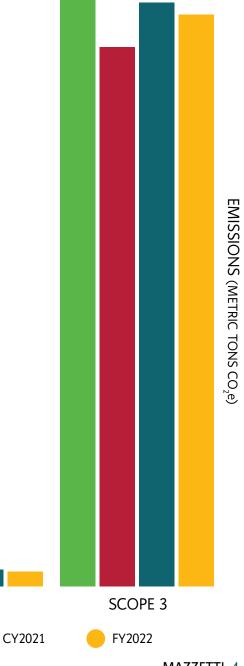
^{*}Correction to CY2021 Fleet Vehicle and Patient Transport data resulted in a change in the CY2021 emissions total compared to the previously published 2021 GHG accounting report.

SCOPE 1

CY2019

SCOPE 2

CY2020



METHODOLOGY

This Greenhouse Gas (GHG) inventory was prepared for Stanford Medicine Children's Health by Mazzetti, utilizing the GHG Protocol Corporate Accounting and Reporting Standard, with the following considerations:

- Scope 1: Direct emissions from owned or controlled sources.
- Scope 2: Indirect emissions from the generation of purchased energy.
- Scope 3: All other indirect emissions that occur upstream and downstream in the value chain for the portion of Stanford Children's operations included in the boundary of this inventory.
- The greenhouse gases considered in this report include Carbon Dioxide (CO2), Methane (CH4), Nitrous Oxide (N2O), Hydrofluorocarbons (HFCs), Perfluorocarbon (PFC), Sulfur Hexafluoride (SF6), Desflurane, Sevoflurane, and Isoflurane.





BOUNDARY OF INVENTORY

For this inventory, Stanford Children's expanded the scope beyond 725 Welch Road Hospital properties to include 40 additional locations, and these locations comprise Medical Office Buildings (MOB), Offices, Apartments, and inpatient care satellite units located in partner hospitals.

Most of the emission source data was provided by individual location. Fleet Vehicles, Business Travel, Purchased Goods and Services, and Capital Goods were provided in aggregate at the entity-wide level and are included in 725 Welch Road emissions

FACILITIES INCLUDED IN THE INVENTORY

ADDRESS	FACILITY TYPE	OWNERSHIP TYPE*	CITY	STATE	OCCUPIED AREA SQUARE FEET
725 Welch Road	Hospital	Owned	Palo Alto	CA	1,068,600
777 Welch Rd.	Office	Owned	Palo Alto	CA	13,203
1195 West Fremont Ave.	Medical Office Building	Owned	Sunnyvale	CA	80,000
14601 S. Bascom Ave.	Medical Office Building	Owned	Los Gatos	CA	24,274
14651 S. Bascom Ave.	Medical Office Building	Owned	Los Gatos	CA	35,953
700 Welch Rd.	Office	Leased -Sole Operated	Palo Alto	CA	36,742
730 Welch Rd. & 732 Welch Rd.	Medical Office Building	Leased -Sole Operated	Palo Alto	CA	32,902
1290 59th St.	Medical Office Building	Leased- Not Affiliated	Emeryville	CA	6,280
2147 Mowry Ave.	Medical Office Building	Leased- Not Affiliated	Fremont	CA	1,516
321 Middlefield Rd.	Medical Office Building	Leased- Not Affiliated	Menlo Park	CA	15,211
555 Knowles Dr.	Office	Leased- Not Affiliated	Los Gatos	CA	2,499
4100 Bohannon Dr.	Office	Leased- Not Affiliated	Menlo Park	CA	47,379
4200 Bohannon Dr.	Office	Leased- Not Affiliated	Menlo Park	CA	16,965
4300 Bohannon Dr.	Office	Leased- Not Affiliated	Menlo Park	CA	15,154
4700 Bohannon Dr.	Office	Leased- Not Affiliated	Menlo Park	CA	63,078
4600 Bohannon Dr.	Home pharmacy/office	Leased- Not Affiliated	Menlo Park	CA	11,157
1401 Spanos Ct.	Medical Office Building	Leased- Not Affiliated	Modesto	CA	2,254
1174 Castro St.	Medical Office Building	Leased- Not Affiliated	Mountain View	CA	4,177
2495 Hospital Dr.	Medical Office Building	Leased- Not Affiliated	Mountain View	CA	3,765
2490 Hospital Dr.	Medical Office Building	Leased- Not Affiliated	Mountain View	CA	3,765
2500 Grant Rd.	Hospital	Leased- Not Affiliated	Mountain View	CA	28,003
401 Quarry Rd.	Medical Office Building	Leased- Not Affiliated	Palo Alto	CA	4,792
750 Welch Rd.	Medical Office Building	Leased- Not Affiliated	Palo Alto	CA	29,998
770 Welch Rd.	Medical Office Building	Leased- Not Affiliated	Palo Alto	CA	37,726
2452 Watson Ct.	Medical Office Building	Leased- Not Affiliated	Palo Alto	CA	7,300
180 El Camino Real	Office	Leased- Not Affiliated	Palo Alto	CA	39,427
5000 Pleasanton Ave.	Medical Office Building	Leased- Not Affiliated	Pleasanton	CA	5,627
170 Alameda de las Pulgas	Hospital	Leased- Not Affiliated	Redwood City	CA	3,050
2900 Whipple Ave.	Medical Office Building	Leased- Not Affiliated	Redwood City	CA	1,737
212 San Jose St.	Medical Office Building	Leased- Not Affiliated	Salinas	CA	2,397
1100 Van Ness Ave.	Medical Office Building	Leased- Not Affiliated	San Francisco	CA	26,622
1685 Commercial Way	Medical Office Building	Leased- Not Affiliated	Santa Cruz	CA	1,850
1720 El Camino Real	Medical Office Building	Leased- Not Affiliated	Burlingame	CA	3,484
14777 Los Gatos Bvd- Los Gatos	Medical Office Building	Leased- Not Affiliated	Los Gatos	CA	4,202
3480 Buskirk Ave.	Medical Office Building	Leased- Not Affiliated	Pleasant Hill	CA	4,922
106 La Casa Via	Medical Office Building	Leased- Not Affiliated	Walnut Creek	CA	6,262
350 Park Dr	Apartments	Leased- Not Affiliated	Menlo Park	CA	2,550
1371 E. Foxhill Drive	Apartments	Leased- Not Affiliated	Fresno	CA	4,050
1601 Ygnacio Valley Road -Office	Office	Leased- Not Affiliated	Walnut Creek	CA	1,242
1602 Ygnacio Valley Road - MOB	Medical Office Building	Leased- Not Affiliated	Walnut Creek	CA	1,340
2800 L Street	Medical Office Building	Leased- Not Affiliated	Sacramento	CA	1,800

*"Owned" denotes facilities exclusively owned and operated by Stanford Children's. "Leased-Sole Operated" describes facilities leased from a third party, where Stanford Children's oversees the building's operations and is the sole occupant. "Leased-Not Affiliated" refers to facilities leased by Stanford Children's in buildings where they do not have operational control. These buildings are managed by entities unaffiliated with Stanford Children's.

CONSOLIDATION APPROACH

- Equity Share
- Financial Control
- Operational Control ✓

EQUITY SHARE: The equity share approach reflects economic interest, which is the extent of a company's rights to the risks and rewards flowing from an operation. Typically, the share of economic risks and rewards in an operation is aligned with the company's percentage ownership of that operation, and the equity share will typically be the same as the ownership percentage. Under the equity share approach, a company accounts for GHG emissions from operations according to its share of equity in the operation.

FINANCIAL CONTROL: Financial Control is defined as the ability to direct an operation's financial and operating policies to gain economic benefits. A company is considered to financially control an operation if it retains the majority of risks and rewards of ownership of the operation's assets.

OPERATIONAL CONTROL: Operational Control is defined as the authority to introduce and implement operating policies. Based on this definition, it was determined that Stanford Children's has operational Control over its facilities. Under the operational control approach, a complete inventory accounts for 100% of emissions from operations under the organization's Control, including owned and leased assets.

REPORTING PERIOD COVERED

This inventory was created using Stanford Medicine Children's Health fiscal year 2022 data (September 1, 2021 – August 31, 2022).

EMISSIONS SOURCES

Scope 1 emissions sources included in this inventory are On-site Natural Gas, Fleet Vehicles, Generator Fuel, Medical Gas, and Refrigerants.

Scope 2 emissions sources included in this inventory are Purchased Electricity, Steam, Central Energy Facility: Electricity for Heating and Cooling, and Central Energy Facility: Natural Gas for Heating.

Scope 3 emissions sources included in this inventory are Capital goods, Purchased Goods and Services, Fuel and Energy-Related Activities (not included in scope 1 or 2), Employee Commute, Business Travel, Solid Waste, Wastewater, Patient Transport, and Helicopter Fuel.

Scope 3 emissions sources excluded from this inventory are Upstream transportation and distribution, Upstream leased assets, Processing and use of sold products, End-of-life treatment of sold products, Downstream leased assets, Franchises, and Investments.

STANDARD APPLIED

This GHG inventory was compiled following the GHG Protocol Corporate Accounting and Reporting Standard, revised edition, published by the World Resource Institute in 2015.



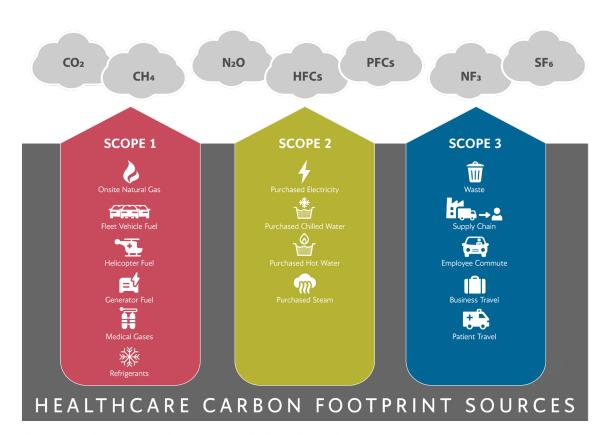
DATA COLLECTED:

The following data types were collected and analyzed to complete this inventory:

DATA TYPE	DATA COLLECTED
Facility Demography	Facility type, location, and size.
Energy	Name of electricity and natural gas providers for each building, annual utility bills for each building, and power content label information.
Chilled and Heating Water	Stanford University Central Energy Facility data for Chilled and Hot Water (specific to 725 Welch Road buildings).
Steam	Steam is purchased from SHC, and the usage data is collected and used to determine the steam allocation to 725 Welch Road buildings and to determine the allocation of the steam plant diesel generator
Fleet Vehicles	Fuel usage records (annual) for all owned and leased vehicles. Data for each location is incorporated into the Main Campus data.
Helicopter Fuel	Flight hours and fuel burn rate (specific to 725 Welch Road facility).
Diesel Generators	Fuel purchase records (annual) for emergency diesel generators by facility.
Anesthetic gases	Anesthetic gas purchase records (annual) and recovery records by facility.
Refrigerants	Refrigerant recharge logs by facility.
Patient Travel	Anonymized Patient in-person encounter data with zip codes by facility.
Employee Travel	Annual transportation survey results.
Waste	Waste volumes by facility type, treatment method, hauling distance, and frequency.
Wastewater	Wastewater volume, municipal utility greenhouse gas report, and California Energy Commission (CEC) energy consumption estimates for wastewater treatment
Business Travel	Dollars spent in various transportation modes. Data for each location is incorporated into the Main Campus data.
Capital Goods	General ledger reporting for capital procurement expenses. Data for each location is incorporated into the Main Campus data.
Purchased Goods and Services	General ledger reporting for non-personnel expenses. Data for each location is incorporated into the Main Campus data.
Fuel and Energy Related Emissions	Central Energy Facility, utility, and grid report on transmission and distribution losses.

BACKGROUND ON SCOPE 1, 2, & 3 **EMISSIONS**

Emissions are categorized into three scopes. Scope 1 emissions are direct emissions from stationary sources such as natural gas boilers, mobile sources such as fleet vehicles, and unintentional fugitive emissions like refrigerant loss and anesthetic gas use. Scope 2 is reserved for purchased energy such as electricity or chilled water and hot water supplied from an outside source. Scope 3 sources are indirect emissions that are both upstream and downstream from the reporting entity. Examples of Scope 3 emissions are employee commuting and the disposal of waste products. Scope 3 emissions are another entity's Scope 1 or 2 emissions that support the reporting entity's operations.





GLOBAL WARMING **POTENTIAL**

Global Warming Potential (GWP) values from the Intergovernmental Panel on Climate Change (IPCC) sixth assessment report (AR6) are used when calculating metric tons of carbon dioxide equivalent (MTCO₂e).

GREENHOUSE GAS	GWP
CO ₂	1
CH₄	29.8
N ₂ O	273
HFC's	1,300-4,000
Desflurane	2540
Isoflurane	510
Sevoflurane	130

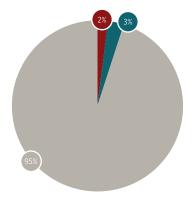
ENTITY-WIDE EMISSIONS SUMMARY

In the fiscal 2022, the greenhouse emissions of Stanford Children's portfolio amounted to a total of 142,926 metric tons of CO2 equivalent (MTCO2e). Scope 1 emissions totaled 3,290 MTCO2e, Scope 2 emissions totaled 3,682 MTCO2e, and Scope 3 emissions totaled 135,953 MTCO2e.

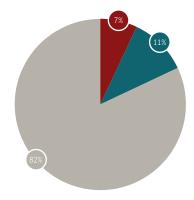
The table below lists Stanford Children's emission sources from the highest percentage of total emissions to the lowest. This list serves as a guide for prioritizing action, focusing on addressing the larger emissions sources first.

Emissions Category	Percentage of Total Emissions (Scope 1, 2, & 3)
Purchased Goods & Services	67.00%
Capital Goods	11.49%
Patient Transport	6.52%
Employee Commuting - Vehicle Miles Traveled	6.48%
Natural Gas	2.13%
Steam	2.01%
Fuel & Energy Related Activities	1.50%
Waste	1.08%
Employee Commuting - Other Modes	0.47%
Medical Gas	0.29%
Business Travel	0.22%
CEF: Electricity for Heating and Cooling	0.19%
CEF: Natural Gas for Heating	0.18%
Purchased Electricity - Market Based Emissions	0.17%
Refrigerants	0.13%
Helicopter Fuel	0.05%
Helicopter Fuel	0.05%
Fleet Vehicles	0.03%
Generator Fuel	0.03%
Wastewater Treatment and Transport	0.02%

ENTITY-WIDE TOTAL EMISSIONS BREAKDOWN (MTCO₂e)



AVERAGE HEALTHCARE EMISSIONS BREAKDOWN (MTCO,e)



TOTAL EMISSIONS PER FACILITY (SCOPE 1, 2, & 3)

FACILITY ADDRESS	OWNERSHIP TYPE*	FACILITY TYPE	TOTAL MTCO₂e	PERCENTAGE OF TOTAL ORGANIZATIONAL SCOPE 1, 2, & 3 EMISSIONS
725 Welch Road**	Owned	Hospital	134,357	94.00%
730 and 732 Welch Specialty Services	Leased -Sole Operated	MOB	1,551	1.09%
1195 West Fremont Ave.	Owned	MOB	1,080	0.76%
4700 Bohannon Dr.	Leased- Not Affiliated	Office	865	0.61%
4100 Bohannon Dr.	Leased- Not Affiliated	Office	804	0.56%
770 Welch Rd.	Leased- Not Affiliated	MOB	677	0.47%
2500 Grant Rd.	Leased- Not Affiliated	Hospital	402	0.28%
14651 S. Bascom Ave.	Owned	MOB	387	0.27%
14601 S. Bascom Ave.	Owned	MOB	351	0.25%
321 Middlefield Rd.	Leased- Not Affiliated	MOB	276	0.19%
2452 Watson Ct.	Leased- Not Affiliated	MOB	242	0.17%
1100 Van Ness Ave.	Leased- Not Affiliated	MOB	222	0.16%
750 Welch Rd.	Leased- Not Affiliated	MOB	213	0.15%
180 El Camino Real	Leased- Not Affiliated	Office	157	0.11%
106 La Casa Via	Leased- Not Affiliated	MOB	147	0.10%
4200 Bohannon Dr.	Leased- Not Affiliated	Office	127	0.09%
700 Welch Rd.	Leased -Sole Operated	Office	111	0.08%
170 Alameda de las Pulgas	Leased- Not Affiliated	Hospital	105	0.07%
777 Welch Rd.	Owned	Office	103	0.07%
4300 Bohannon Dr.	Leased- Not Affiliated	Office	89	0.06%
4600 Bohannon Dr.	Leased- Not Affiliated	Home pharmacy/office	79	0.06%
14777 Los Gatos Bvd- Los Gatos	Leased- Not Affiliated	MOB	54	0.04%
1290 59th St.	Leased- Not Affiliated	MOB	53	0.04%
401 Quarry Rd.	Leased- Not Affiliated	MOB	51	0.04%
5000 Pleasanton Ave.	Leased- Not Affiliated	MOB	48	0.03%
3480 Buskirk Ave.	Leased- Not Affiliated	MOB	48	0.03%
1174 Castro St.	Leased- Not Affiliated	MOB	44	0.03%
1720 El Camino Real	Leased- Not Affiliated	MOB	42	0.03%
2490 Hospital Dr.	Leased- Not Affiliated	MOB	41	0.03%

TOTAL EMISSIONS PER FACILITY (SCOPE 1, 2, & 3)

FACILITY ADDRESS	OWNERSHIP TYPE*	FACILITY TYPE	TOTAL MTCO ₂ e	PERCENTAGE OF TOTAL ORGANIZATIONAL SCOPE 1, 2, & 3 EMISSIONS
2495 Hospital Dr.	Leased- Not Affiliated	MOB	32	0.02%
212 San Jose St.	Leased- Not Affiliated	MOB	28	0.02%
2900 Whipple Ave.	Leased- Not Affiliated	MOB	27	0.02%
555 Knowles Dr.	Leased- Not Affiliated	Office	23	0.02%
1371 E. Foxhill Drive	Leased- Not Affiliated	Apartments	16	0.01%
350 Park Dr	Leased- Not Affiliated	Apartments	13	0.01%
1685 Commercial Way	Leased- Not Affiliated	MOB	12	0.01%
2800 L Street	Leased- Not Affiliated	MOB	12	0.01%
1401 Spanos Ct.	Leased- Not Affiliated	MOB	11	0.01%
1601 Ygnacio Valley Road - MOB	Leased- Not Affiliated	MOB	9	0.01%
2147 Mowry Ave.	Leased- Not Affiliated	MOB	9	0.01%
1601 Ygnacio Valley Road - Office	Leased- Not Affiliated	Office	8	0.01%

^{*&}quot;Owned" denotes facilities exclusively owned and operated by Stanford Children's. "Leased-Sole Operated" describes facilities leased from a third party, where Stanford Children's oversees the building's operations and is the sole occupant. "Leased-Not Affiliated" refers to facilities leased by Stanford Children's in buildings where they do not have operational control. These buildings are managed by entities unaffiliated with Stanford Children's.

^{**}Note that each facility's Fleet Vehicles, Business Travel, Purchased Goods and Services, and Capital Goods emissions are included in 725 Welch Road data.

FY2022 SCOPE 1 AND 2 EMISSIONS SUMMARY BY FACILITY

FACILITY ADDRESS	OWNERSHIP TYPE*	FACILITY TYPE	Scope 1 & 2 MTCO₂e	PERCENTAGE OF TOTAL ORGANIZATIONAL SCOPE 1 & 2 EMISSIONS
725 Welch Road	Owned	Hospital	4,734.0	67.90%
1195 West Fremont Ave.	Owned	MOB	561.4	8.05%
730 and 732 Welch Specialty Services	Leased -Sole Operated	MOB	209.7	3.01%
2500 Grant Rd.	Leased- Not Affiliated	Hospital	190.4	2.73%
4700 Bohannon Dr.	Leased- Not Affiliated	Office	186.9	2.68%
4100 Bohannon Dr.	Leased- Not Affiliated	Office	147.7	2.12%
14601 S. Bascom Ave.	Owned	MOB	134.7	1.93%
14651 S. Bascom Ave.	Owned	MOB	130.4	1.87%
750 Welch Rd.	Leased- Not Affiliated	MOB	106.2	1.52%
770 Welch Rd.	Leased- Not Affiliated	MOB	105.6	1.52%
106 La Casa Via	Leased- Not Affiliated	MOB	65.4	0.94%
180 El Camino Real	Leased- Not Affiliated	Office	58.0	0.83%
1100 Van Ness Ave.	Leased- Not Affiliated	MOB	53.5	0.77%
321 Middlefield Rd.	Leased- Not Affiliated	MOB	35.5	0.51%
4200 Bohannon Dr.	Leased- Not Affiliated	Office	26.0	0.37%
4300 Bohannon Dr.	Leased- Not Affiliated	Office	23.3	0.33%
170 Alameda de las Pulgas	Leased- Not Affiliated	Hospital	20.4	0.29%
777 Welch Rd.	Owned	Office	17.4	0.25%
4600 Bohannon Dr.	Leased- Not Affiliated	Home pharmacy/office	17.1	0.25%
1174 Castro St.	Leased- Not Affiliated	MOB	16.4	0.24%
1720 El Camino Real	Leased- Not Affiliated	MOB	14.9	0.21%
1371 E. Foxhill Drive	Leased- Not Affiliated	Apartments	10.2	0.15%
2452 Watson Ct.	Leased- Not Affiliated	MOB	10.2	0.15%
212 San Jose St.	Leased- Not Affiliated	MOB	10.0	0.14%
1290 59th St.	Leased- Not Affiliated	MOB	9.6	0.14%
5000 Pleasanton Ave.	Leased- Not Affiliated	MOB	9.2	0.13%
2900 Whipple Ave.	Leased- Not Affiliated	MOB	8.7	0.12%
2495 Hospital Dr.	Leased- Not Affiliated	MOB	8.0	0.11%

FACILITY ADDRESS	OWNERSHIP TYPE*	FACILITY TYPE	Scope 1 & 2 MTCO ₂ e	PERCENTAGE OF TOTAL ORGANIZATIONAL SCOPE 1 & 2 EMISSIONS
2490 Hospital Dr.	Leased- Not Affiliated	МОВ	8.0	0.11%
401 Quarry Rd.	Leased- Not Affiliated	MOB	6.7	0.10%
350 Park Dr	Leased- Not Affiliated	Apartments	6.4	0.09%
14777 Los Gatos Bvd- Los Gatos	Leased- Not Affiliated	МОВ	6.1	0.09%
1401 Spanos Ct.	Leased- Not Affiliated	MOB	4.5	0.07%
1685 Commercial Way	Leased- Not Affiliated	МОВ	3.7	0.05%
700 Welch Rd.	Leased -Sole Operated	Office	3.5	0.05%
555 Knowles Dr.	Leased- Not Affiliated	Office	3.1	0.04%
3480 Buskirk Ave.	Leased- Not Affiliated	MOB	2.8	0.04%
2800 L Street	Leased- Not Affiliated	MOB	2.5	0.04%
1601 Ygnacio Valley Road - MOB	Leased- Not Affiliated	MOB	1.9	0.03%
1601 Ygnacio Valley Road - Office	Leased- Not Affiliated	Office	1.8	0.03%
2147 Mowry Ave.	Leased- Not Affiliated	МОВ	0.5	0.01%
TOTAL			6,973	100.00%

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FY2022 SCOPE 1 AND 2 EMISSIONS SUMMARY BY FACILITY

This section of the report presents a concise overview of the Scope 1 and 2 GHG emissions for each facility. Each facility's emissions are displayed in a one-page format, starting with the facility with the smallest emissions and progressing to those with the largest. Each letter within the index column in the table on the following page contains a hyperlink that leads to the specific facility's one-page infographics.

The top of each one-pager shows the address of the facility (A.), and the graphs below each address reflect the Scope 1 and 2 emissions for that location.

The bar chart at the top of the one-pager (B.) compares the carbon intensity of Scope 1 and 2 across all facilities, sorted from smallest to largest. The highlighted bar denotes the carbon intensity of the facility in comparison to others.

The donut chart directly beneath the Scope 1 and 2 Carbon Intensity Comparison bar displays the breakdown of Scope 1 and 2 emissions as a percentage of the total (C.).

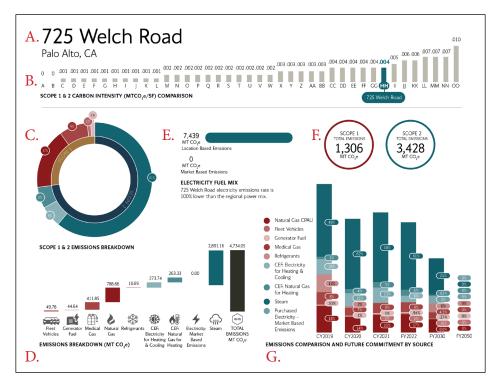
Below the donut chart, the waterfall graph (D.) showcases the $MTCO_2e$ of each emission category. The last bar in the waterfall graph represents the total Scope 1 and 2 emissions for that facility.

On the right-hand side of the donut chart, you'll find data on the facility's electricity emissions (E.). This includes a comparison between location-based and market-based emissions. The electricity fuel mix information illustrates the proportion of the facility's electricity emissions rate (market-based emissions) relative to the regional power mix (location-based emissions).

The two bubble charts on the right side of the one-pager (F.) displays the facility's Scope 1 and 2 total in MTCO₂e.

The stacked bar chart (G.) displays the facility's emissions by source for FY2022, as well as estimated emissions for FY2030 and FY2050. For facilities with prior years of data, such as 725 Welch Road, the past years' emission data are included in the stacked bar chart.

In line with Stanford Children's dedication to the White House/Health and Human Services (HHS) Health Sector Pledge, which requires a 50% decrease in greenhouse gas emissions from the baseline year by 2030 and the attainment of net-zero emissions by 2050, the stacked bar charts for FY2030 and FY2050 illustrate the anticipated percentage reduction for each emission source, aligning with the pledge's reduction targets.



FY2022 SCOPE 1 AND 2 EMISSIONS SUMMARY BY FACILITY

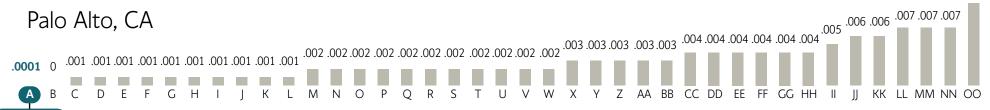
INDEX	FACILITY ADDRESS	FACILITY TYPE*	INDEX	FACILITY ADDRESS	FACILITY TYPE*
Α	700 Welch Rd.	Office	V	2490 Hospital Dr.	MOB
В	2147 Mowry Ave.	MOB	W	321 Middlefield Rd.	MOB
С	3480 Buskirk Ave.	MOB	Х	350 Park Dr	Apartments
D	555 Knowles Dr.	Office	Υ	1371 E. Foxhill Drive	Apartments
Е	777 Welch Rd.	Office	Z	770 Welch Rd.	MOB
F	401 Quarry Rd.	MOB	AA	4700 Bohannon Dr.	Office
G	2452 Watson Ct.	MOB	ВВ	4100 Bohannon Dr.	Office
Н	2800 L Street	MOB	CC	750 Welch Rd.	MOB
I	1601 Ygnacio Valley Road - MOB	MOB	DD	14651 S. Bascom Ave.	MOB
J	14777 Los Gatos Bvd- Los Gatos	MOB	EE	1174 Castro St.	MOB
К	180 El Camino Real	Office	FF	212 San Jose St.	MOB
L	1601 Ygnacio Valley Road - Office	Office	GG	1720 El Camino Real	MOB
М	1290 59th St.	MOB	HH	725 Welch Road	Hospital
N	4300 Bohannon Dr.	Office	II	2900 Whipple Ave.	MOB
0	4600 Bohannon Dr.	Home pharmacy/office	JJ	14601 S. Bascom Ave.	MOB
Р	4200 Bohannon Dr.	Office	KK	730 and 732 Welch Specialty Services	MOB
Q	5000 Pleasanton Ave.	MOB	LL	170 Alameda de las Pulgas	Hospital
R	1100 Van Ness Ave.	MOB	MM	2500 Grant Rd.	Hospital
S	1401 Spanos Ct.	MOB	NN	1195 West Fremont Ave.	MOB
T	1685 Commercial Way	MOB	00	106 La Casa Via	MOB
U	2495 Hospital Dr.	MOB			

^{*&}quot;Owned" denotes facilities exclusively owned and operated by Stanford Children's. "Leased-Sole Operated" describes facilities leased from a third party, where Stanford Children's oversees the building's operations and is the sole occupant. "Leased-Not Affiliated" refers to facilities leased by Stanford Children's in buildings where they do not have operational control. These buildings are managed by entities unaffiliated with Stanford Children's.

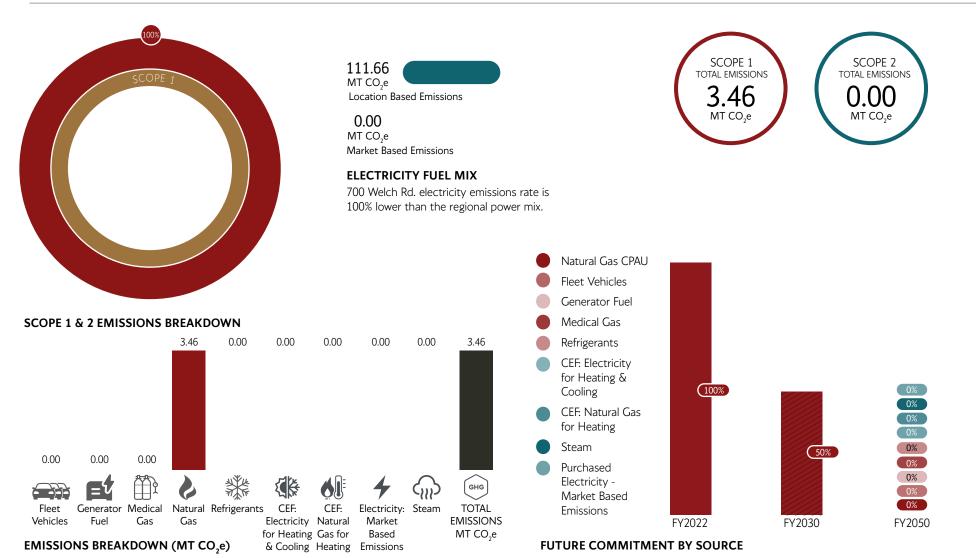
700 Welch Road

Palo Alto, CA

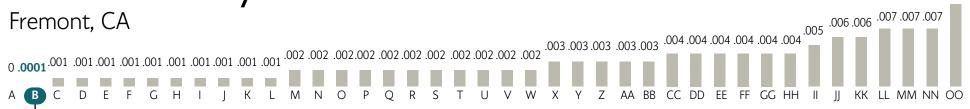
700 Welch Rd.



SCOPE 1 & 2 CARBON INTENSITY (MTCO,e/SF) COMPARISON

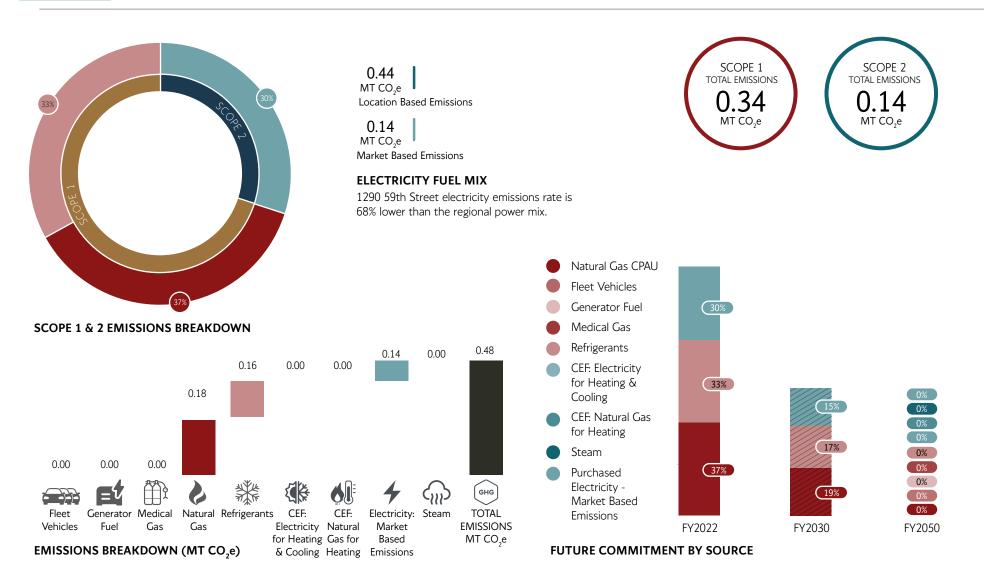


2147 Mowry Avenue



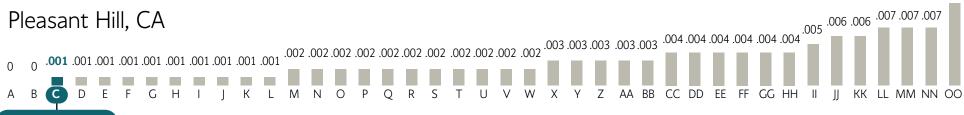
2147 Mowry Avenue

SCOPE 1 & 2 CARBON INTENSITY (MTCO,e/SF) COMPARISON



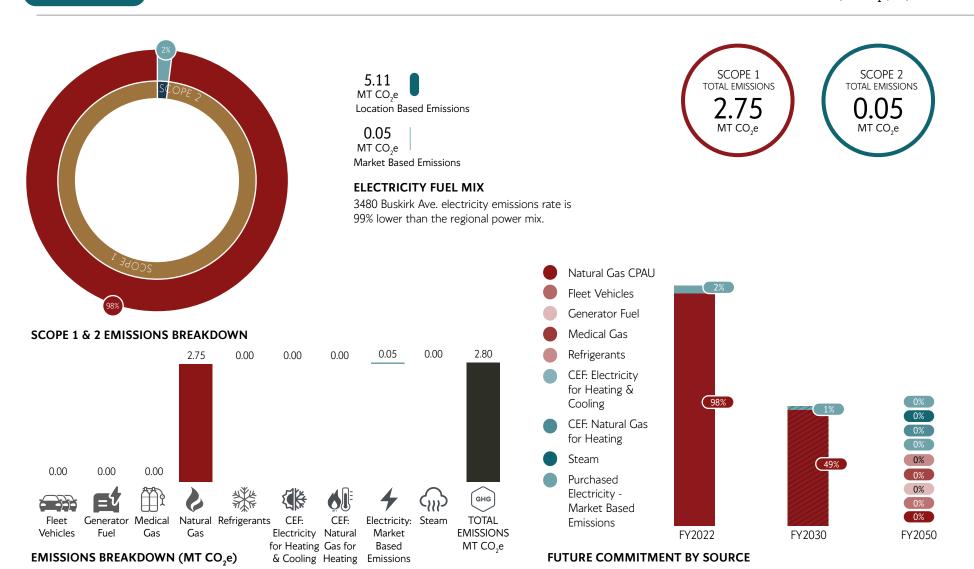
3480 Buskirk Avenue

Pleasant Hill, CA



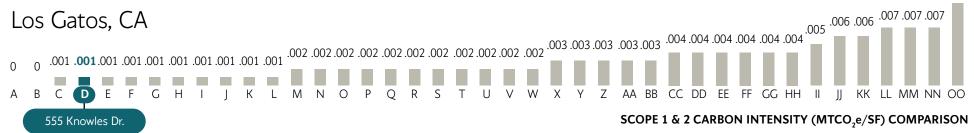
3480 Buskirk Ave.

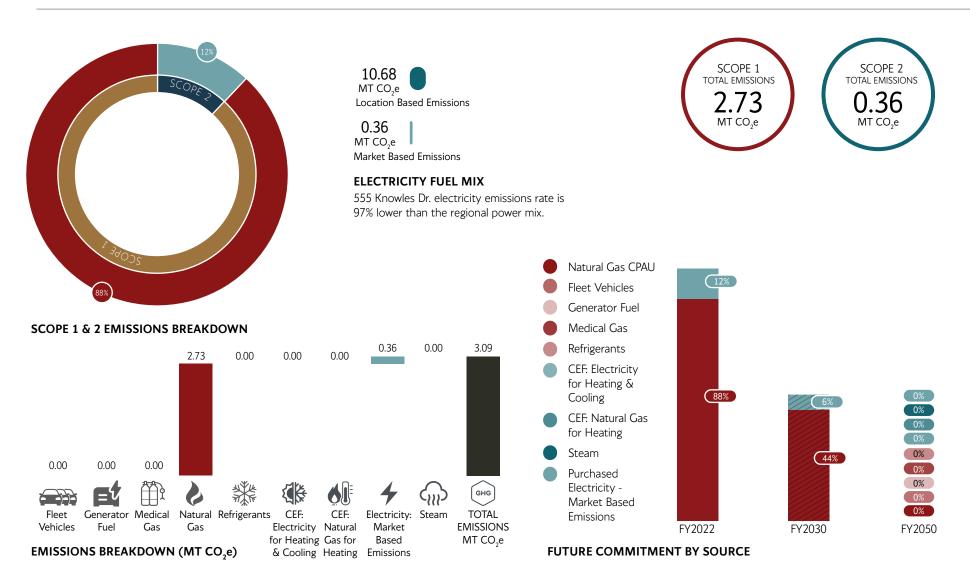
SCOPE 1 & 2 CARBON INTENSITY (MTCO,e/SF) COMPARISON



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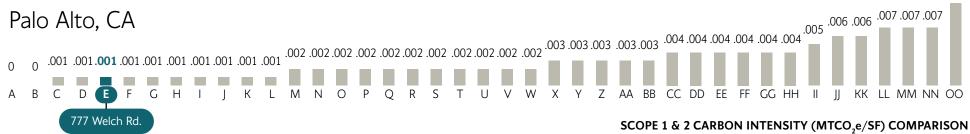
Los Gatos, CA

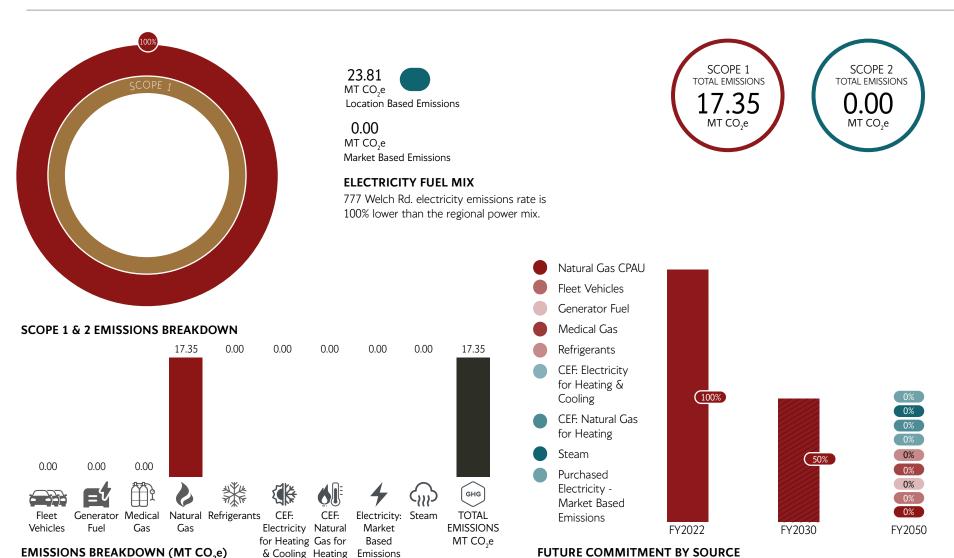




777 Welch Road

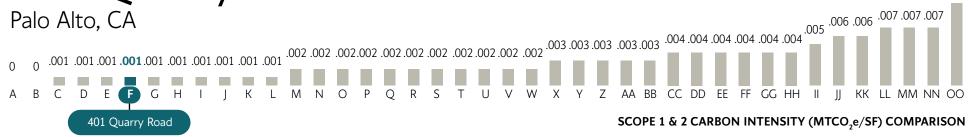
Palo Alto, CA

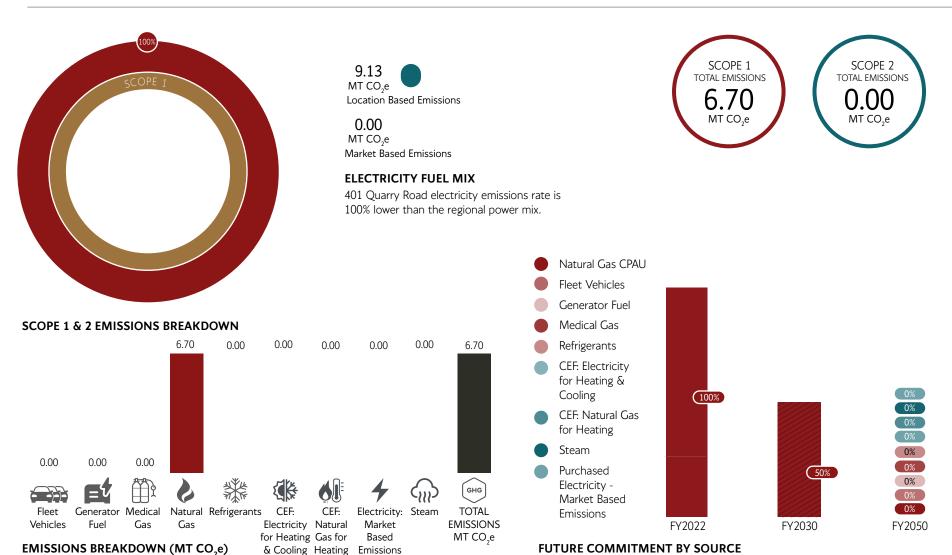




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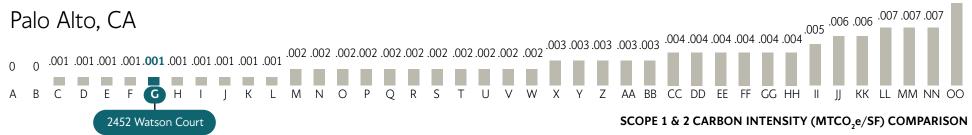
Palo Alto, CA

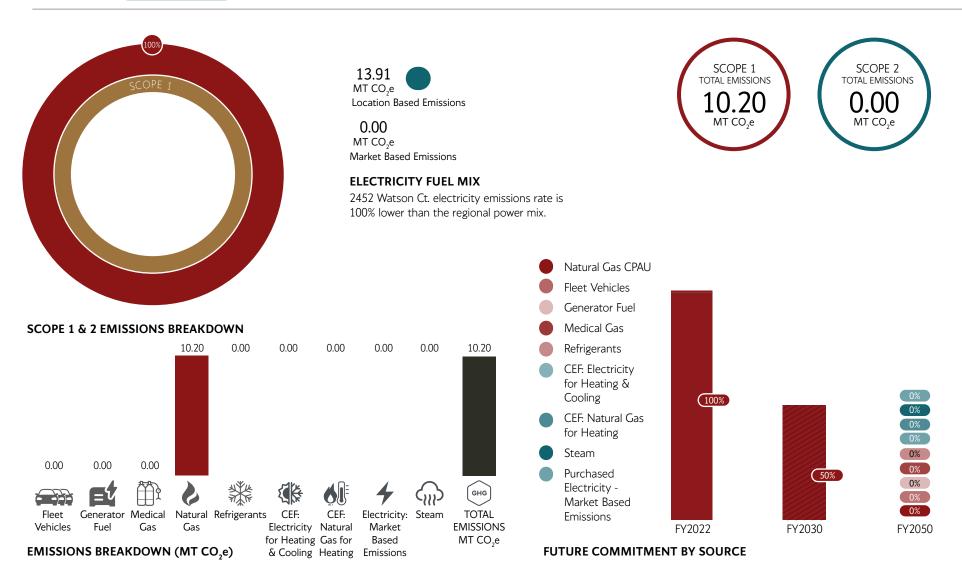




2452 Watson Court

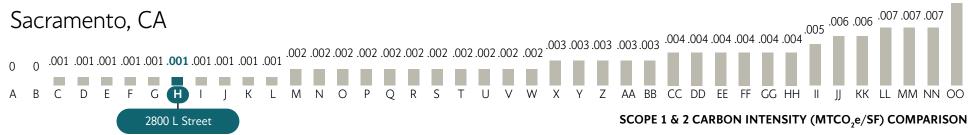
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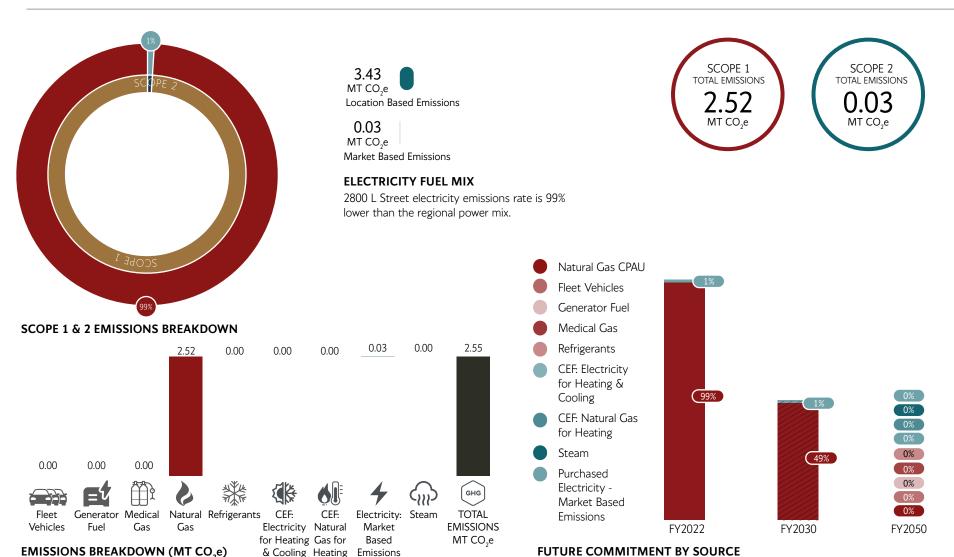


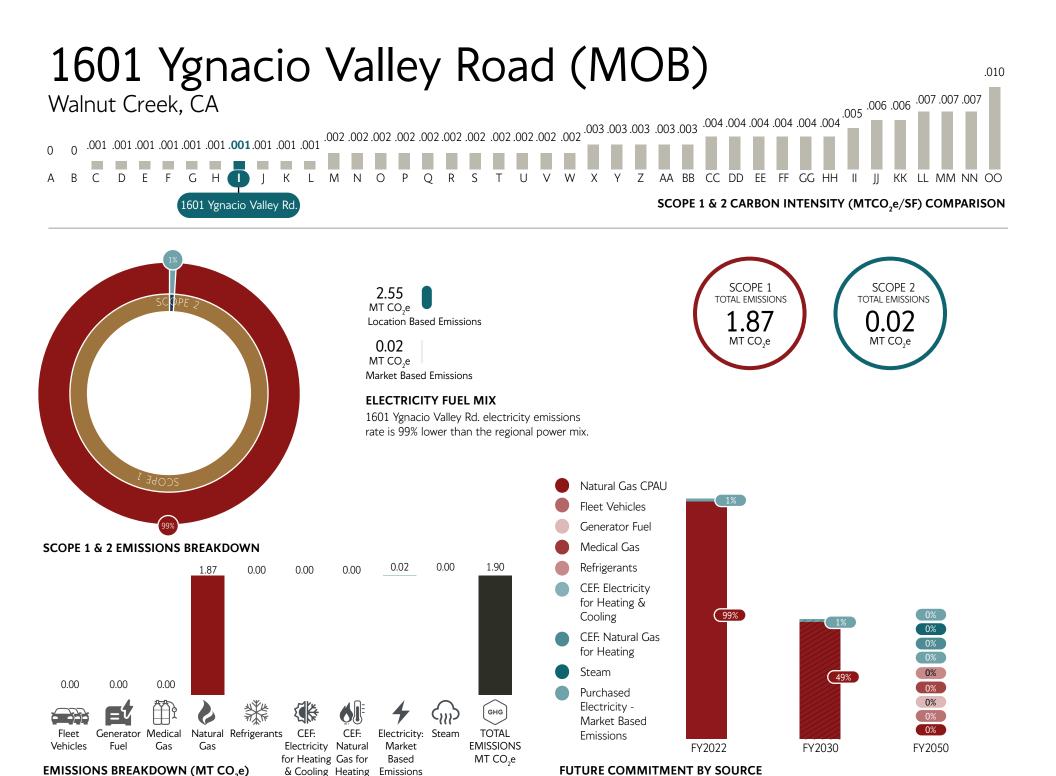


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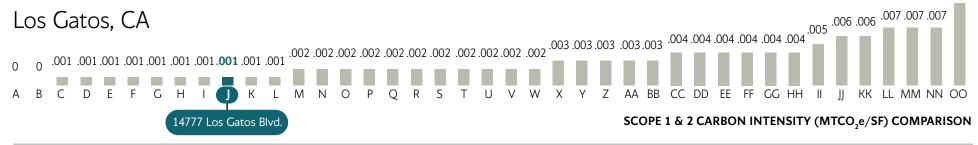
Sacramento, CA

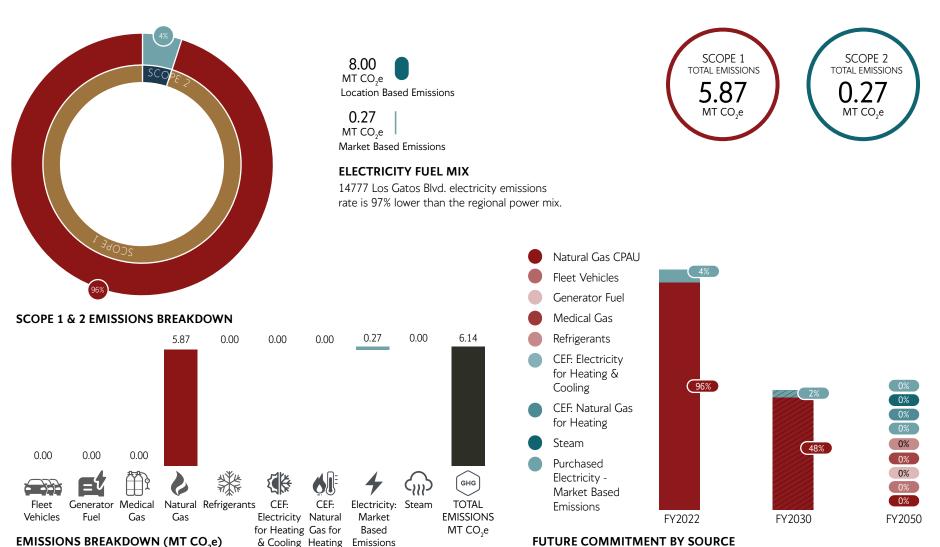






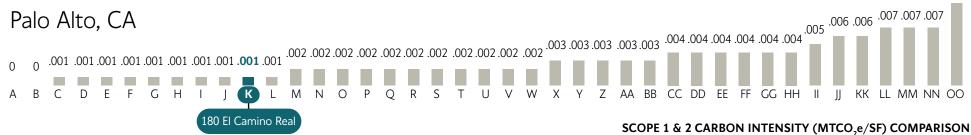
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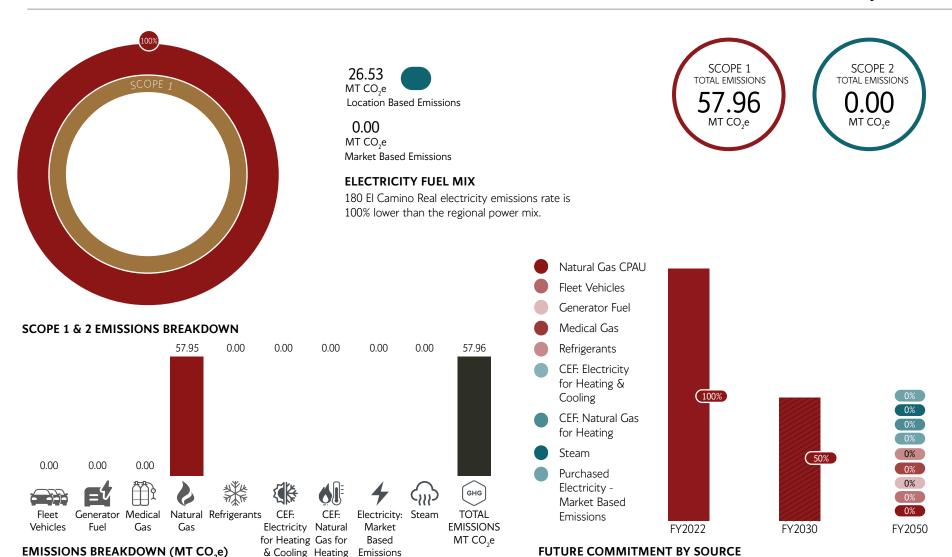


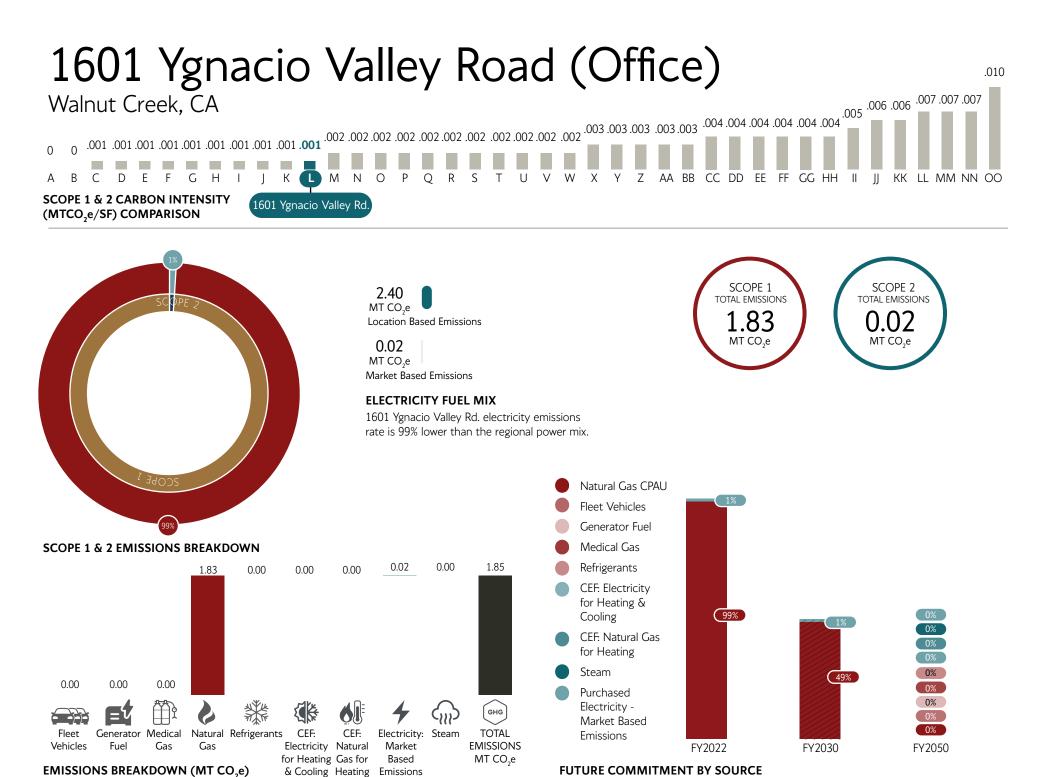


180 El Camino Real

Palo Alto, CA

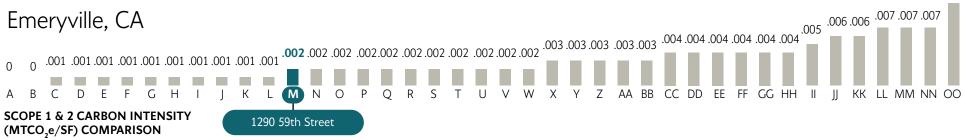


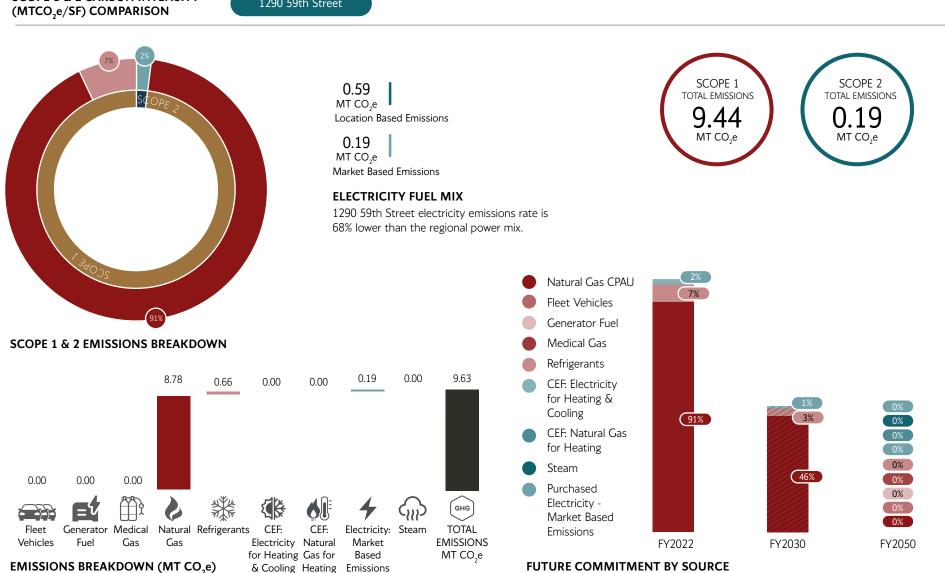




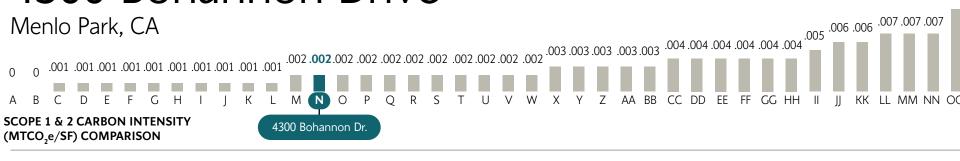
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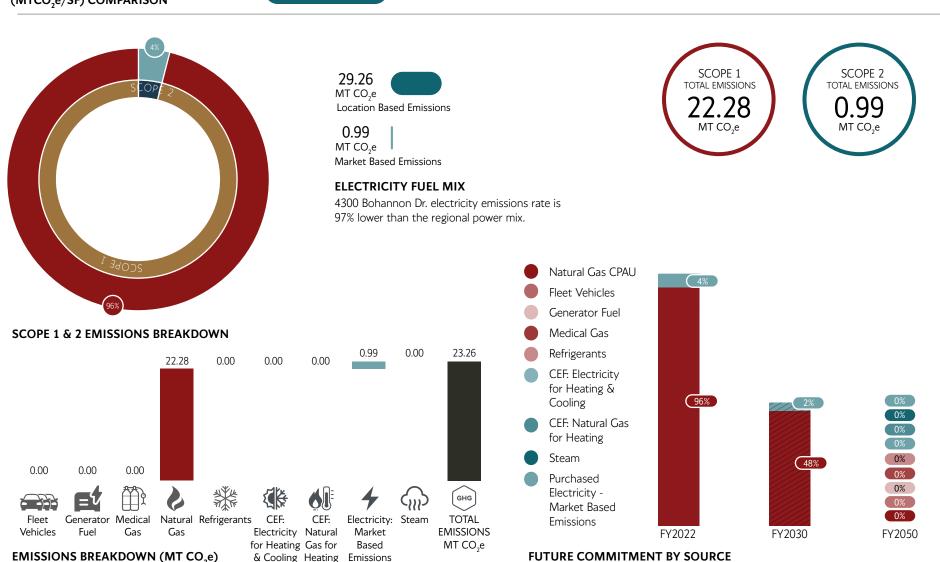
Emeryville, CA





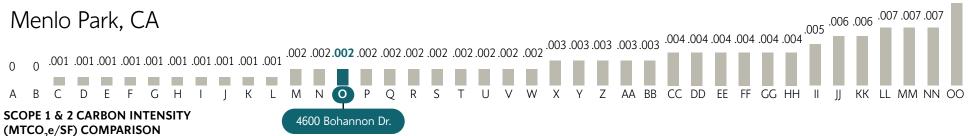
4300 Bohannon Drive

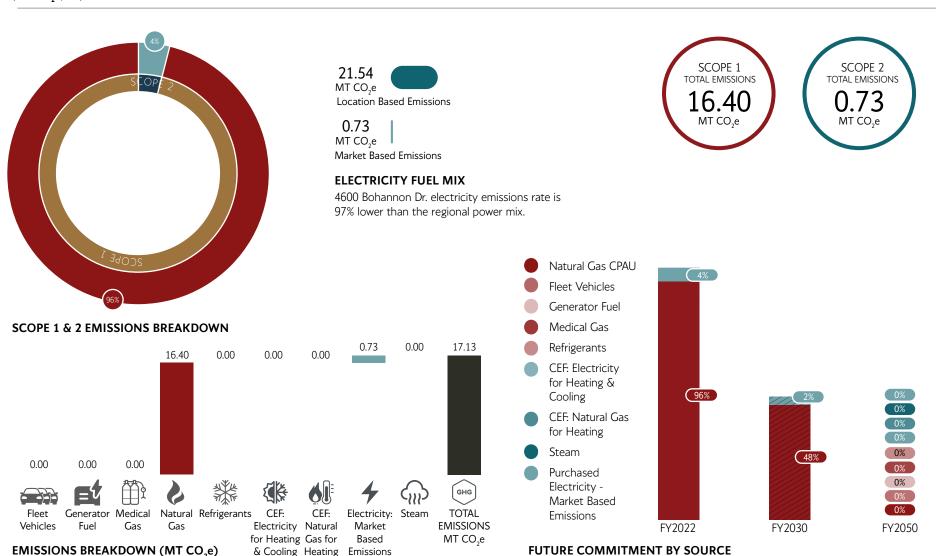




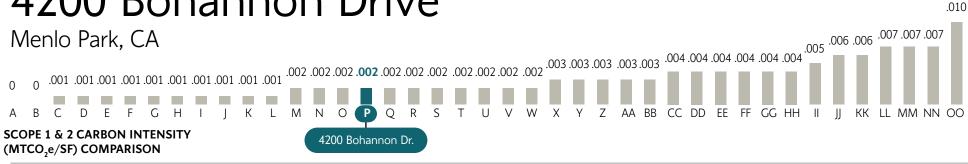
4600 Bohannon Drive

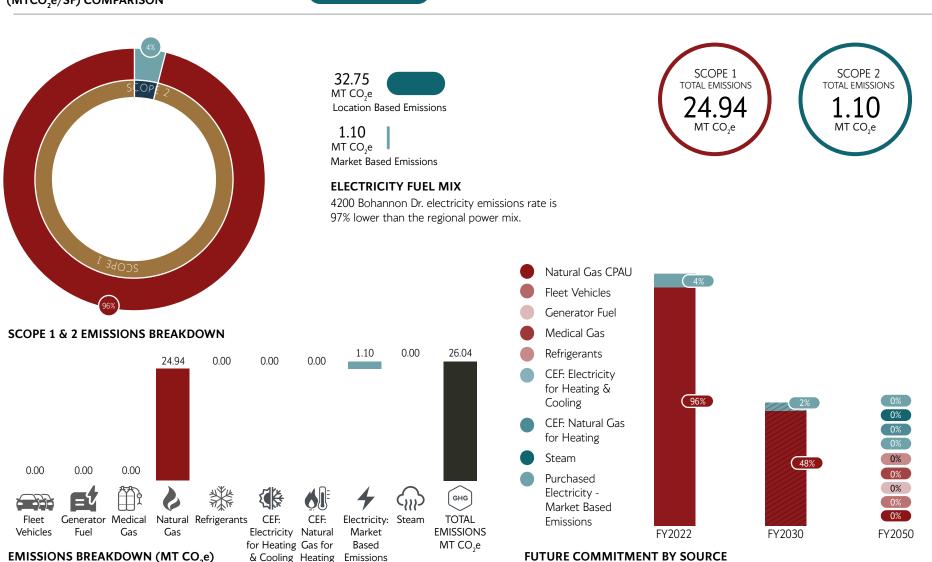






4200 Bohannon Drive





5000 Pleasanton Avenue

for Heating Gas for

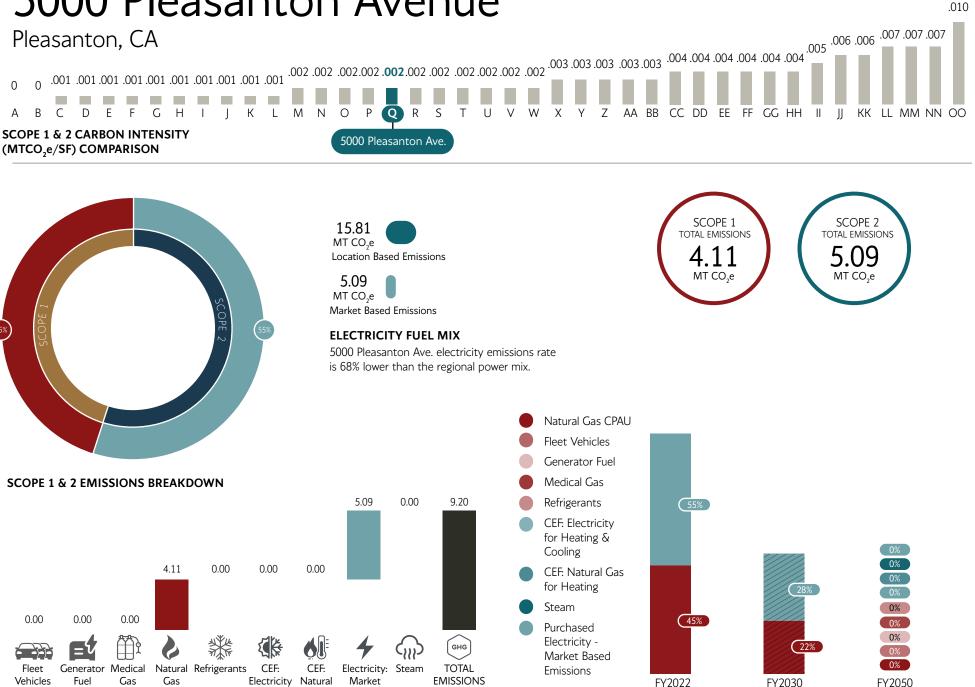
& Cooling Heating Emissions

EMISSIONS BREAKDOWN (MT CO,e)

Based

MT CO,e

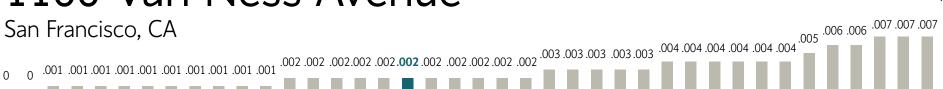
FUTURE COMMITMENT BY SOURCE



1100 Van Ness Avenue

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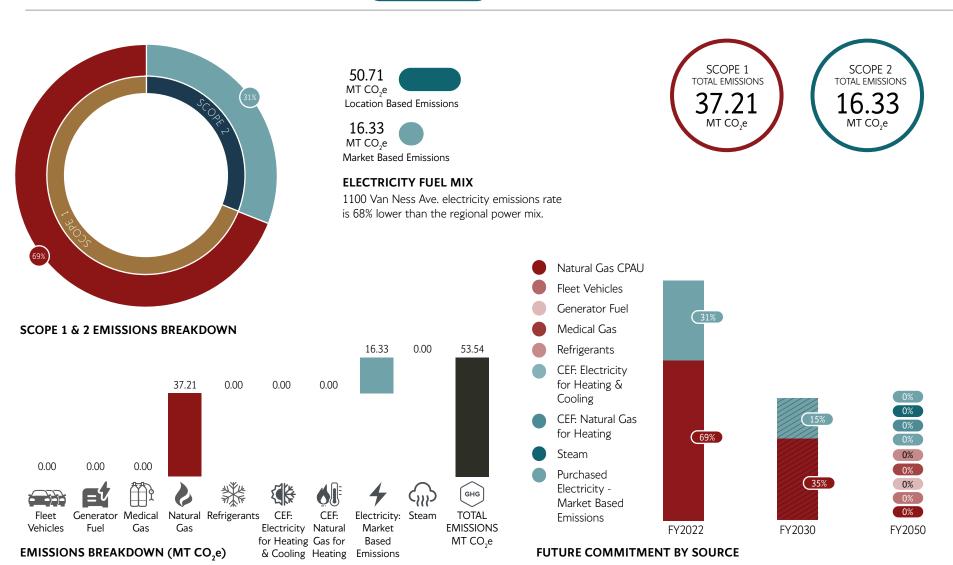
FF GG HH

SCOPE 1 & 2 CARBON INTENSITY (MTCO,e/SF) COMPARISON (

1100 Van Ness Ave.

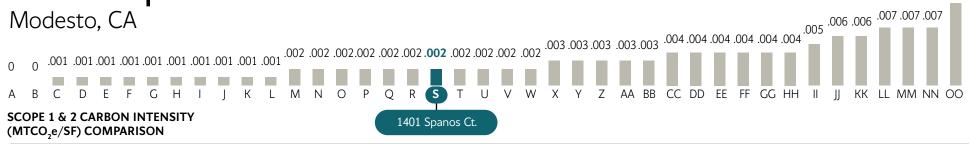
R

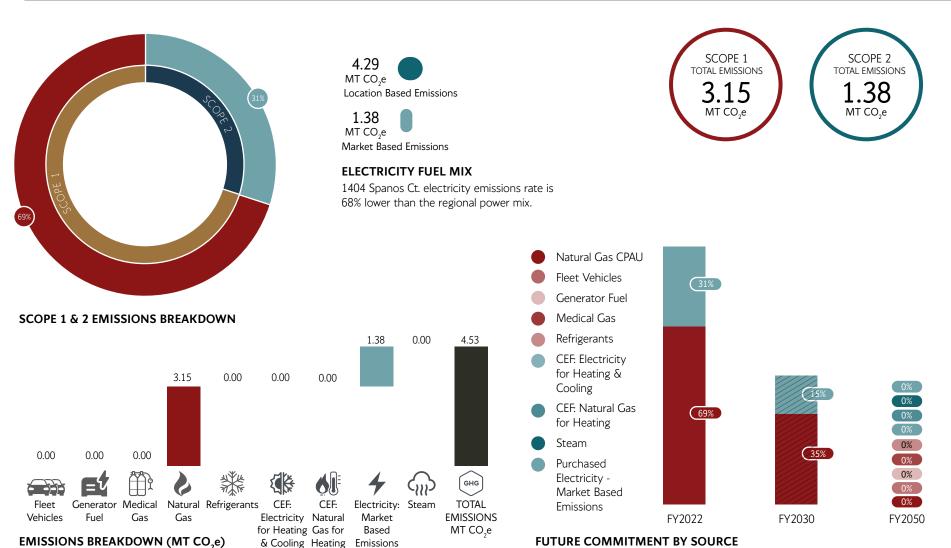
Q



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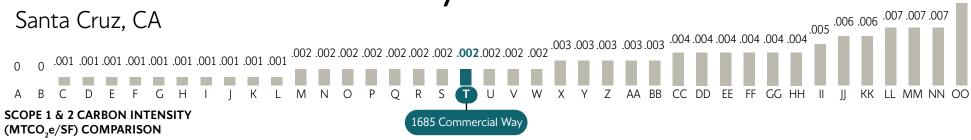
Modesto, CA

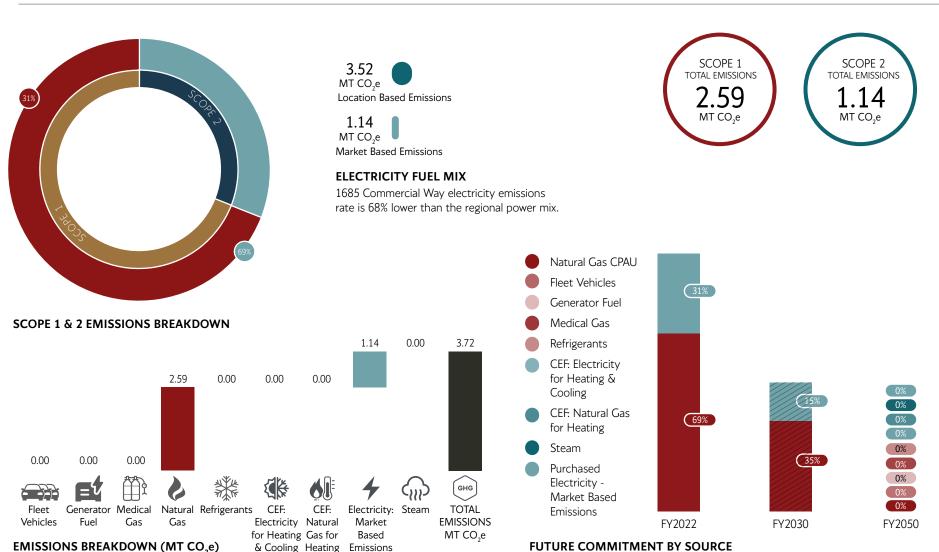




1685 Commercial Way

Santa Cruz, CA

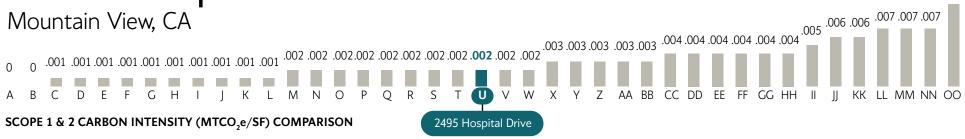


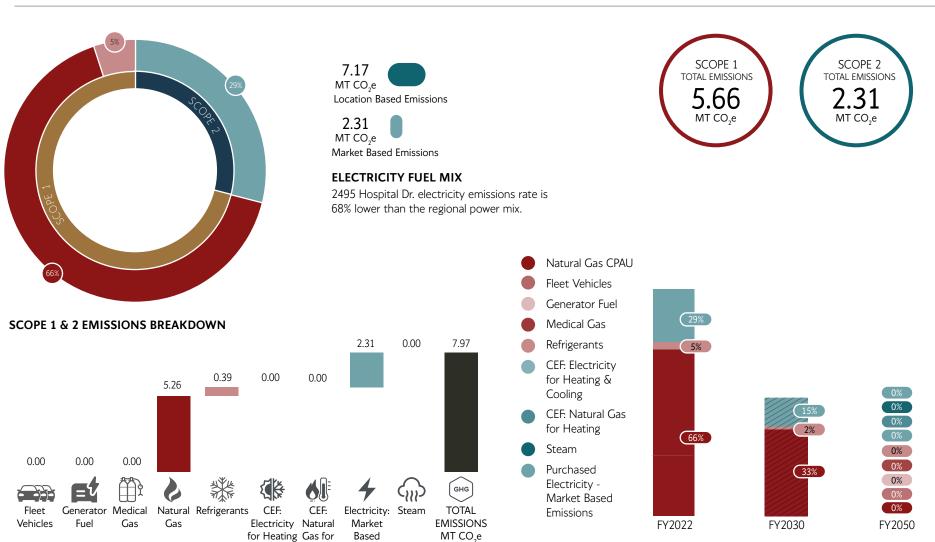


2495 Hospital Drive

Mountain View, CA

EMISSIONS BREAKDOWN (MT CO,e)



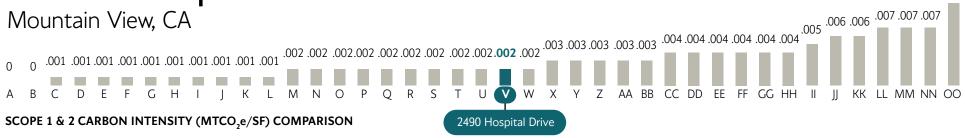


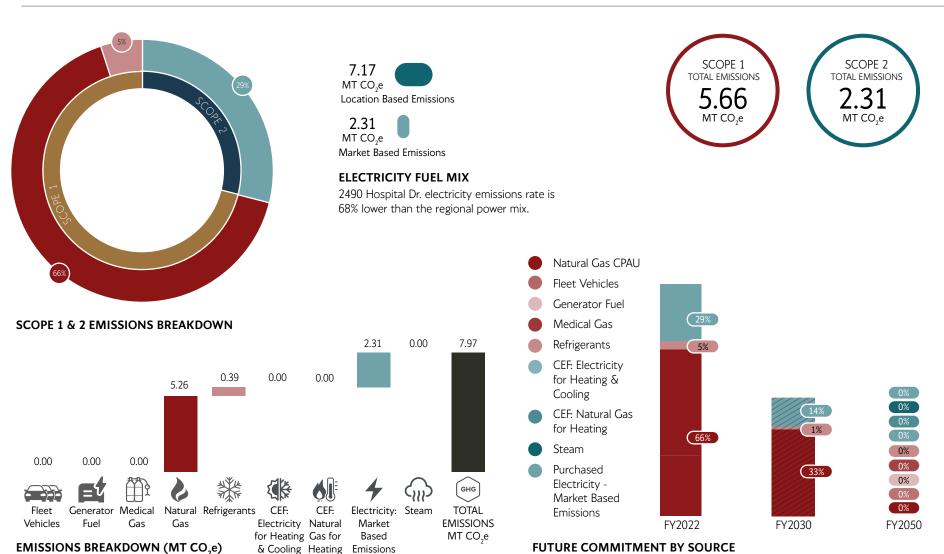
& Cooling Heating Emissions

FUTURE COMMITMENT BY SOURCE

2490 Hospital Drive

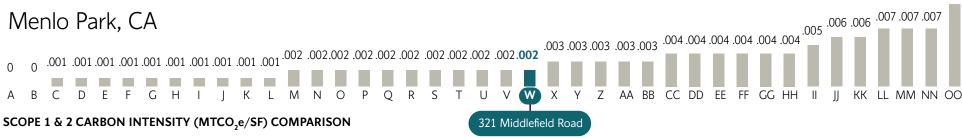
Mountain View, CA

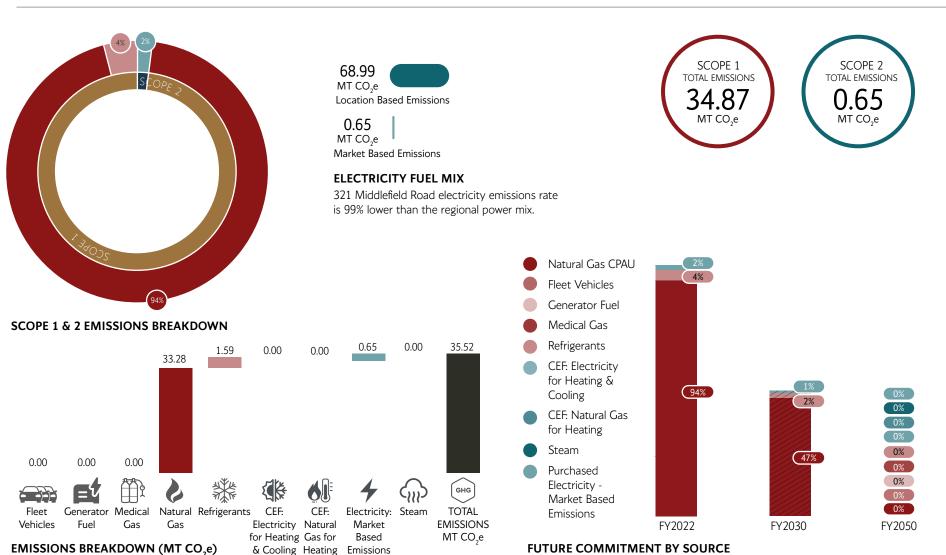




321 Middlefield Road

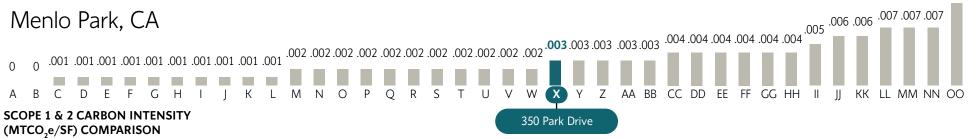
Menlo Park, CA

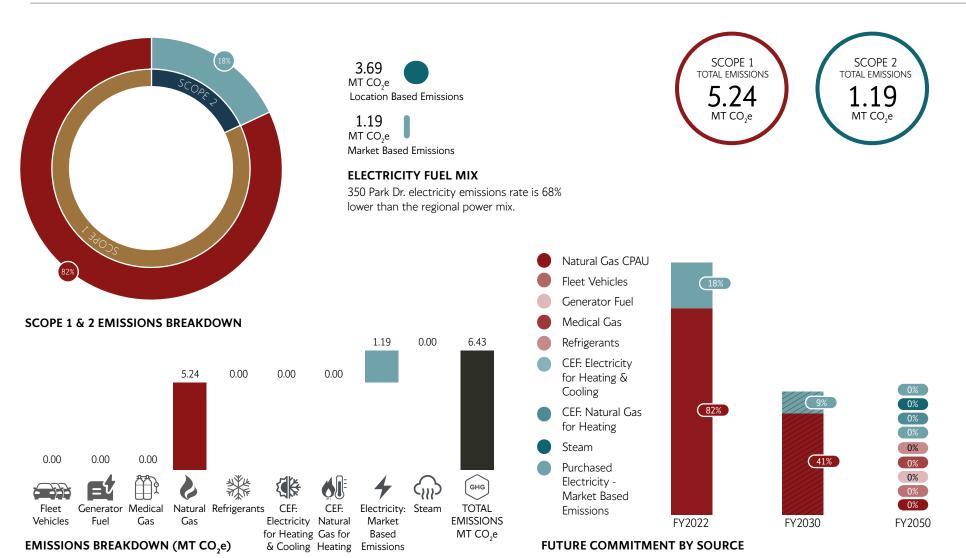




350 Park Drive

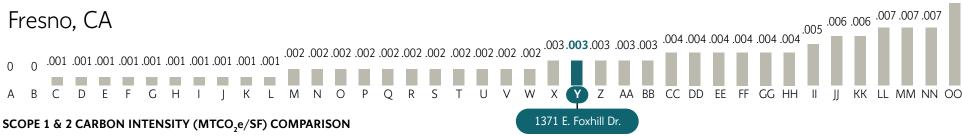
Menlo Park, CA

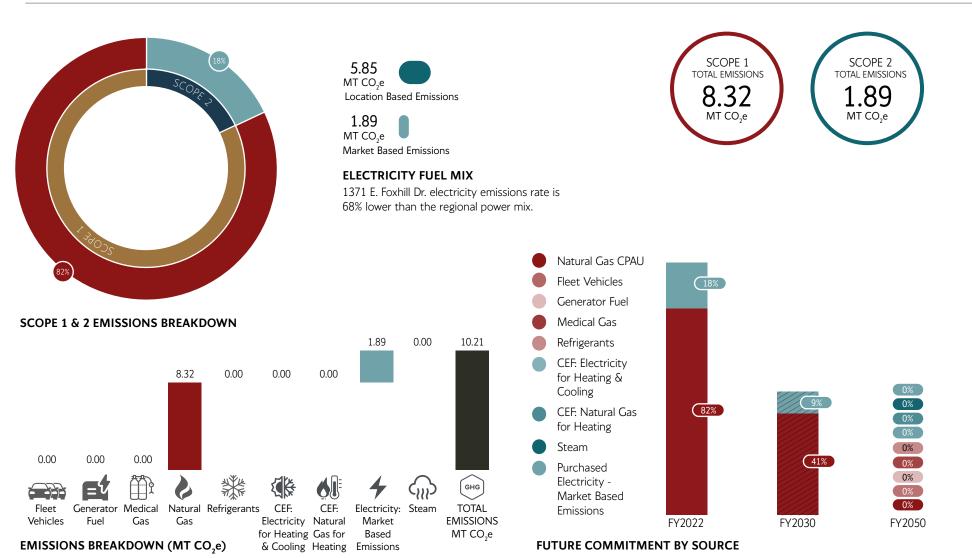




1371 E. Foxhill Drive

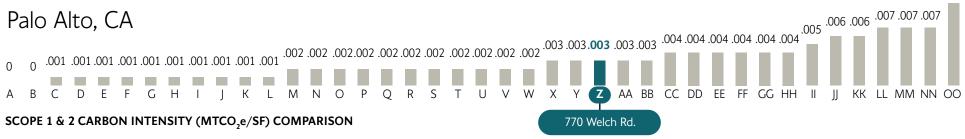
Fresno, CA

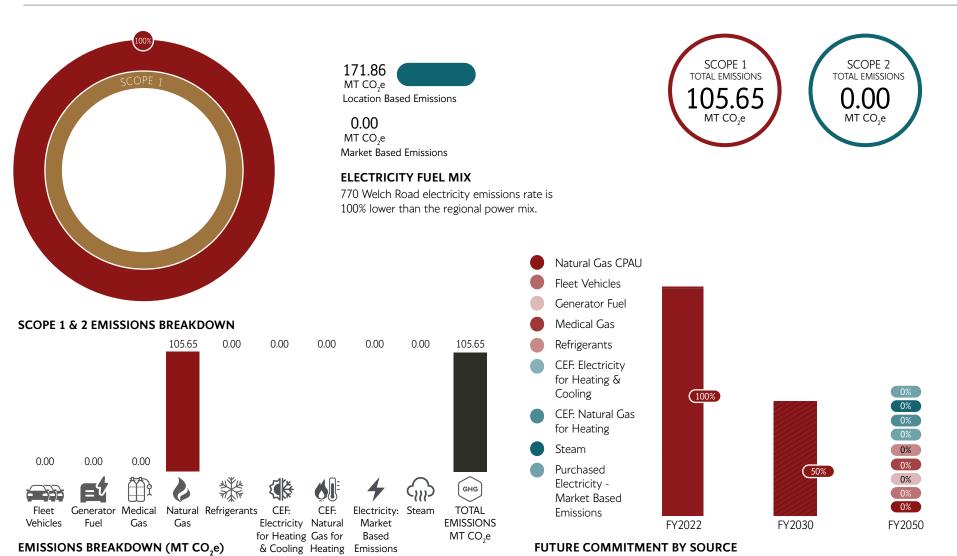




770 Welch Road

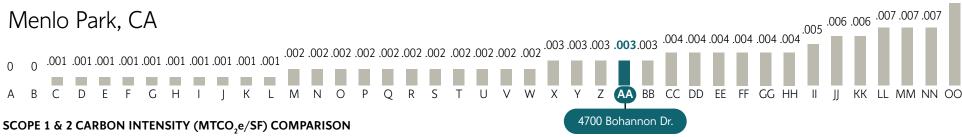
Palo Alto, CA

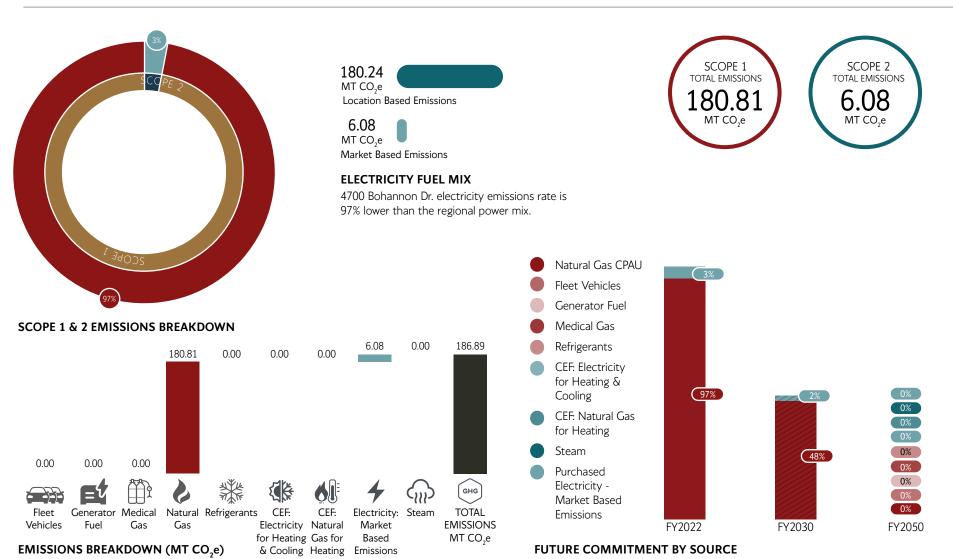




4700 Bohannon Drive

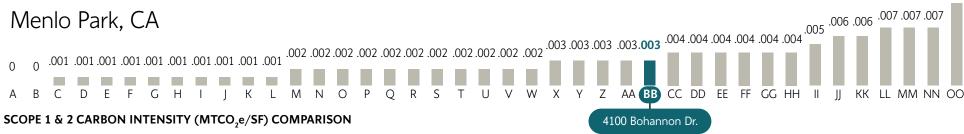
Menlo Park, CA

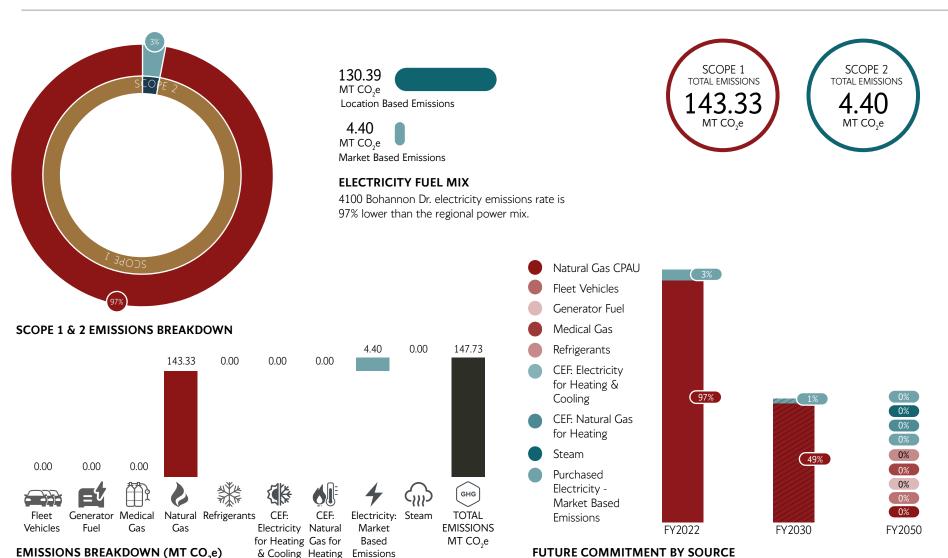




4100 Bohannon Drive

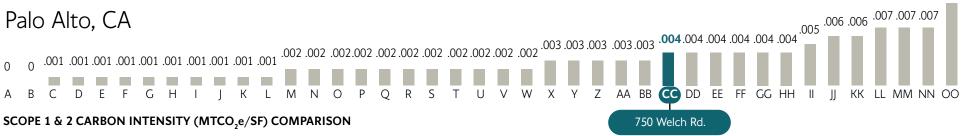


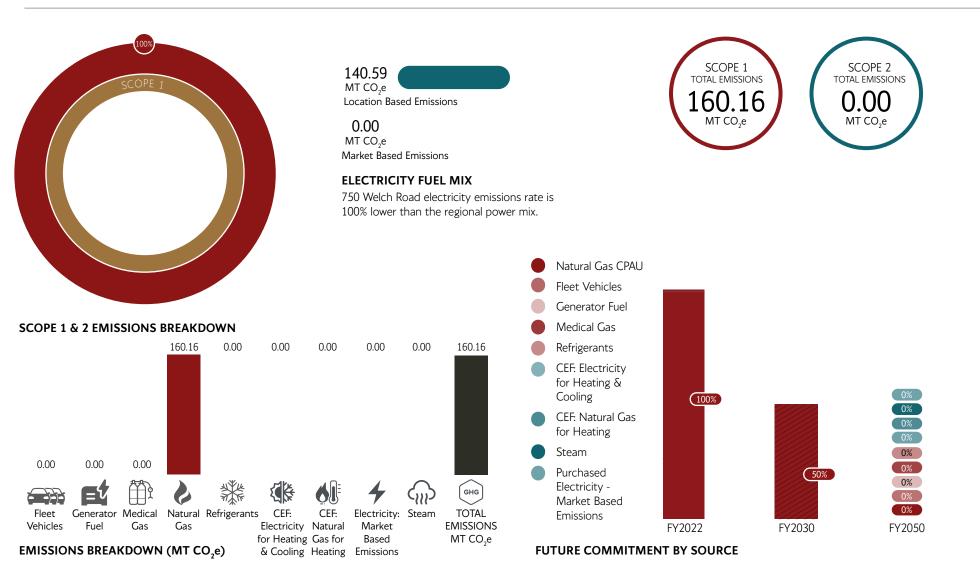




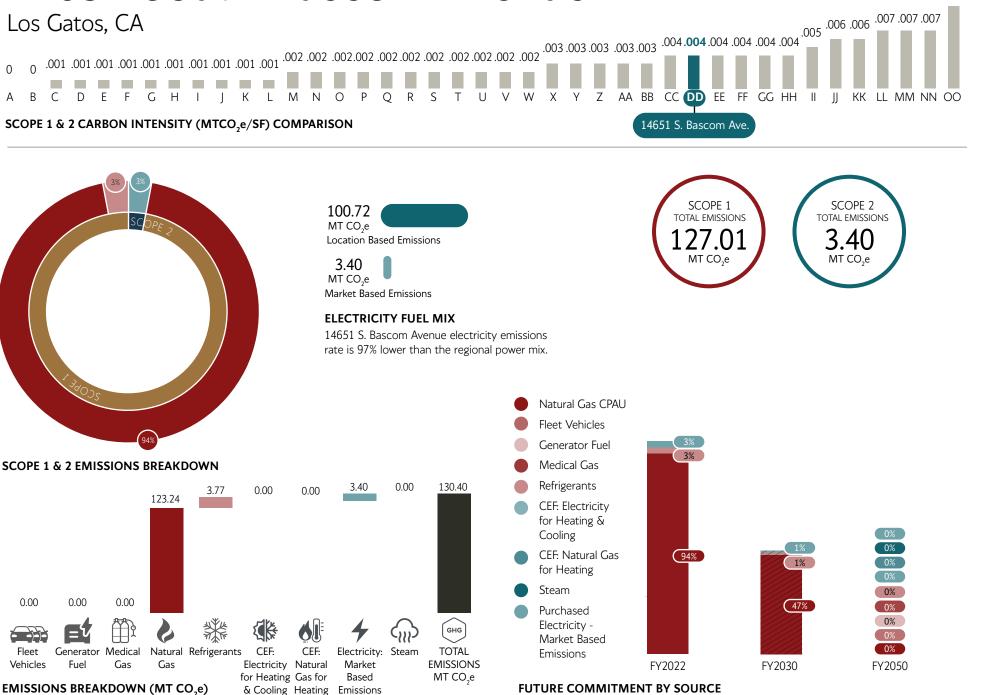
750 Welch Road

Palo Alto, CA



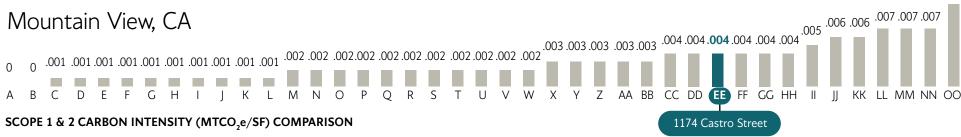


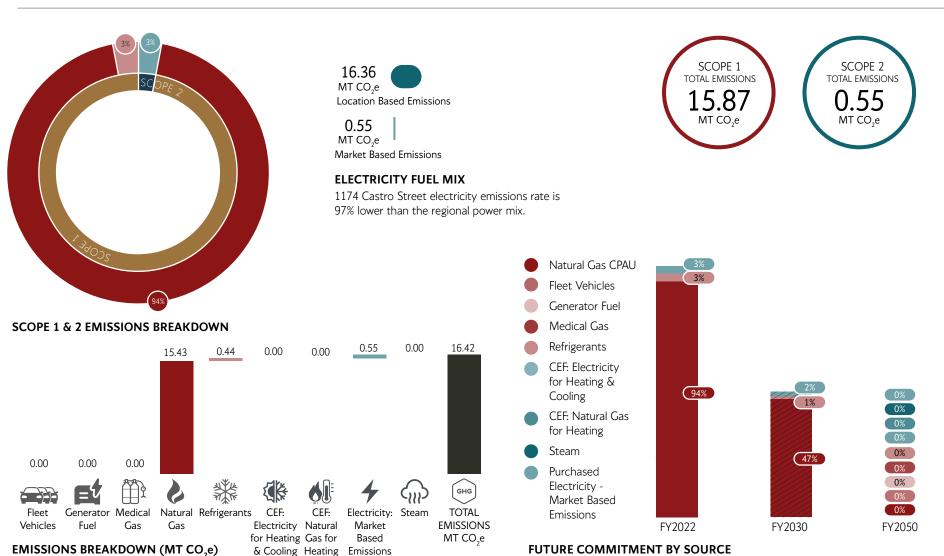
14651 South Bascom Avenue



1174 Castro Street

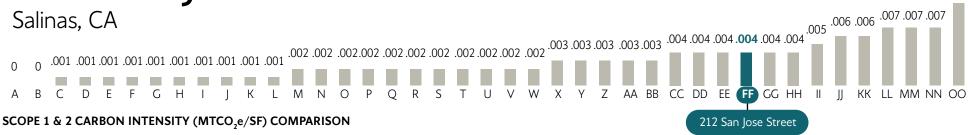
Mountain View, CA

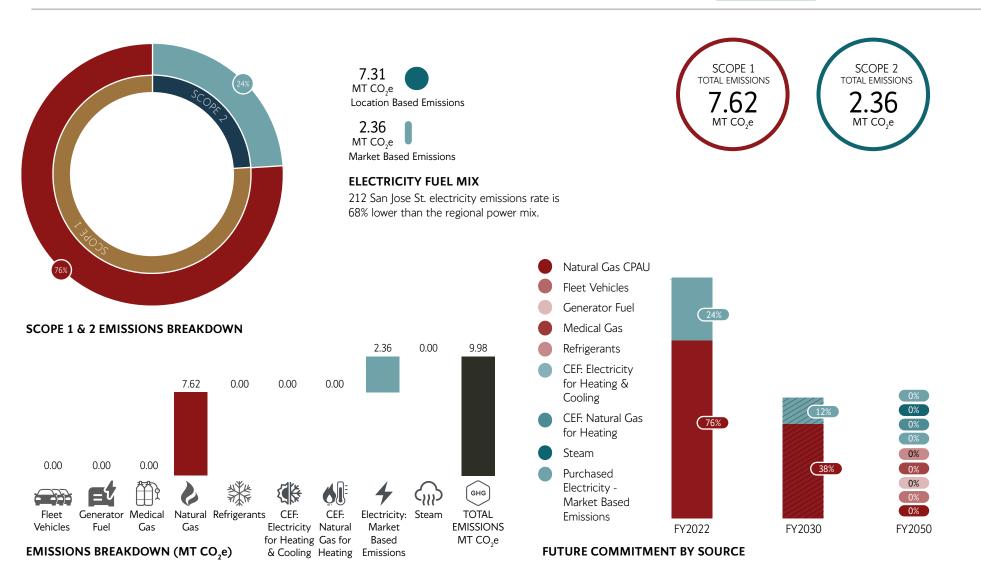




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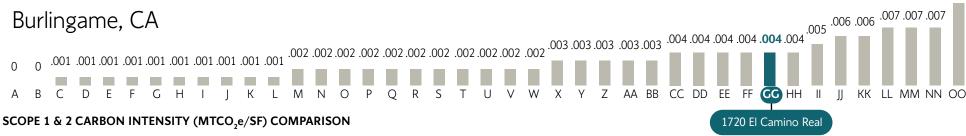
Salinas, CA

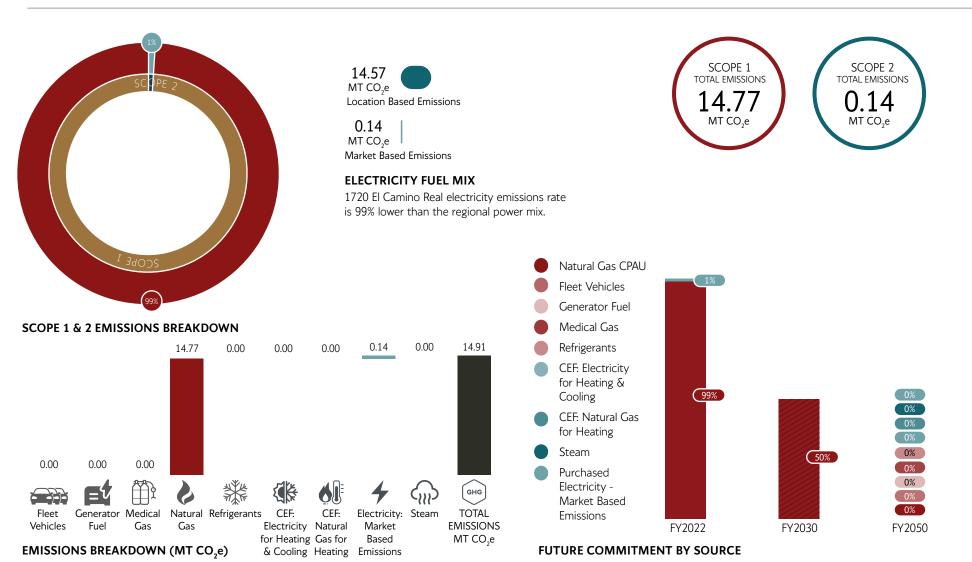




1720 El Camino Real

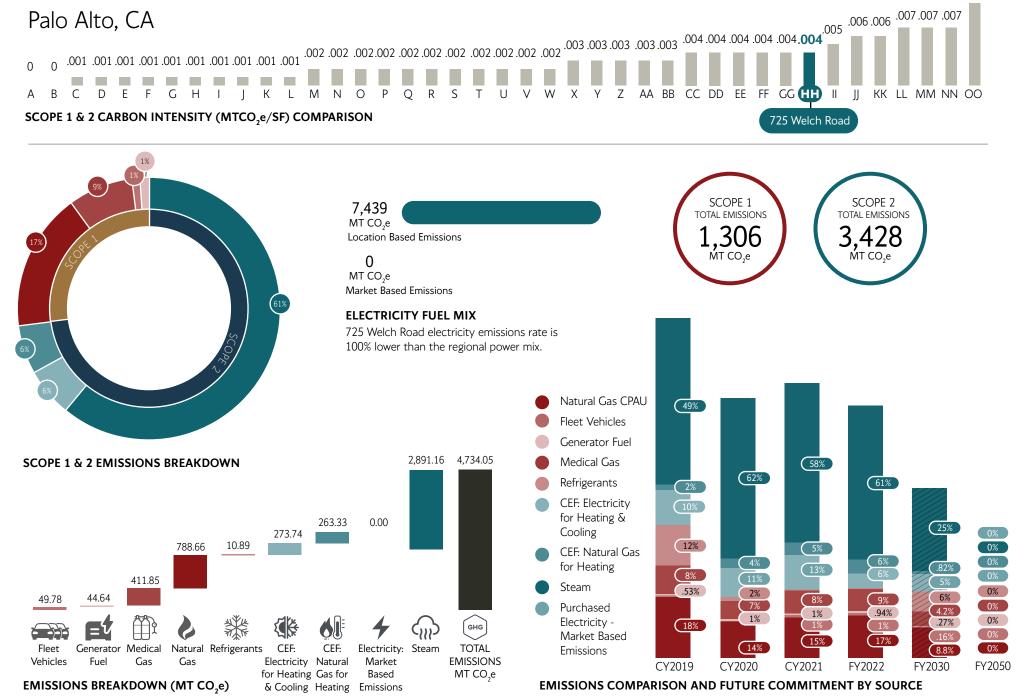
Burlingame, CA





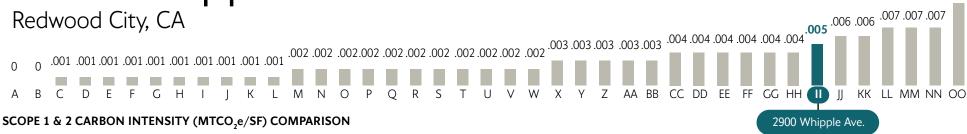
725 Welch Road

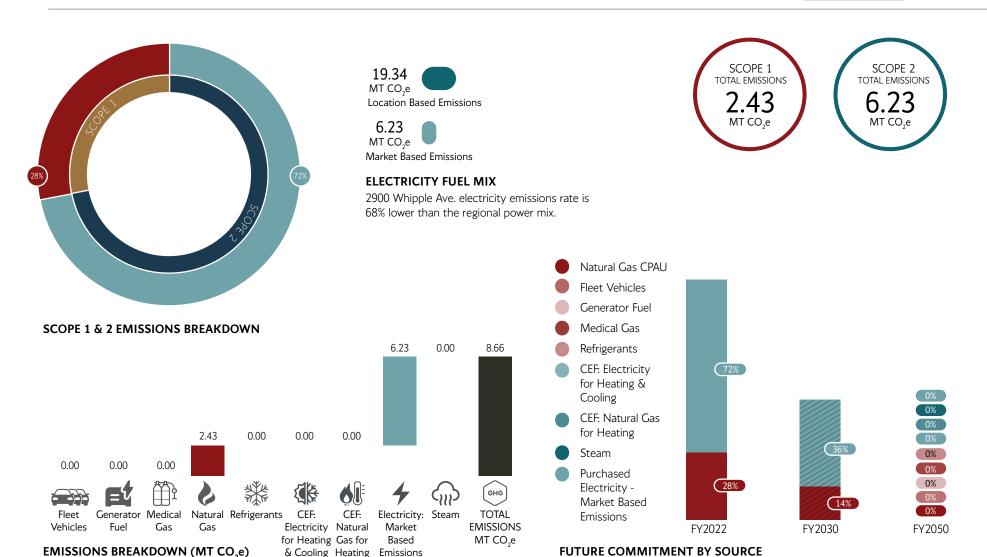




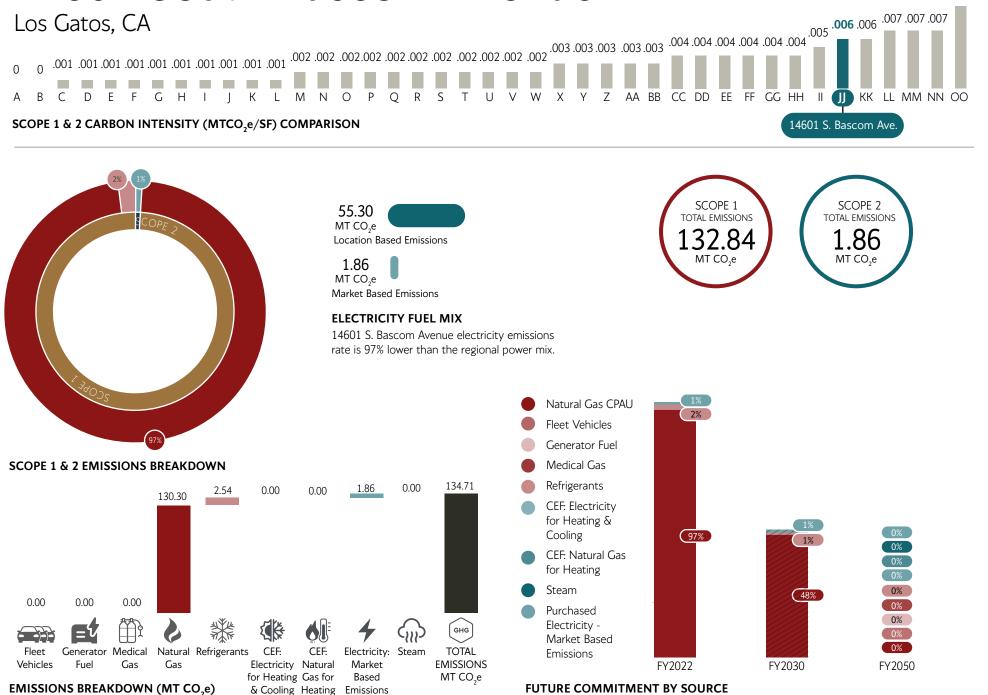
2900 Whipple Avenue



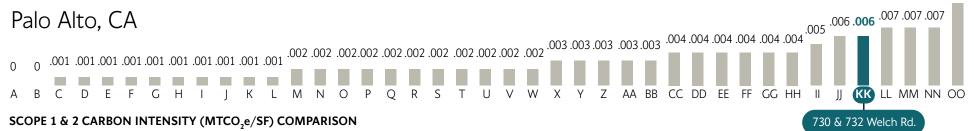


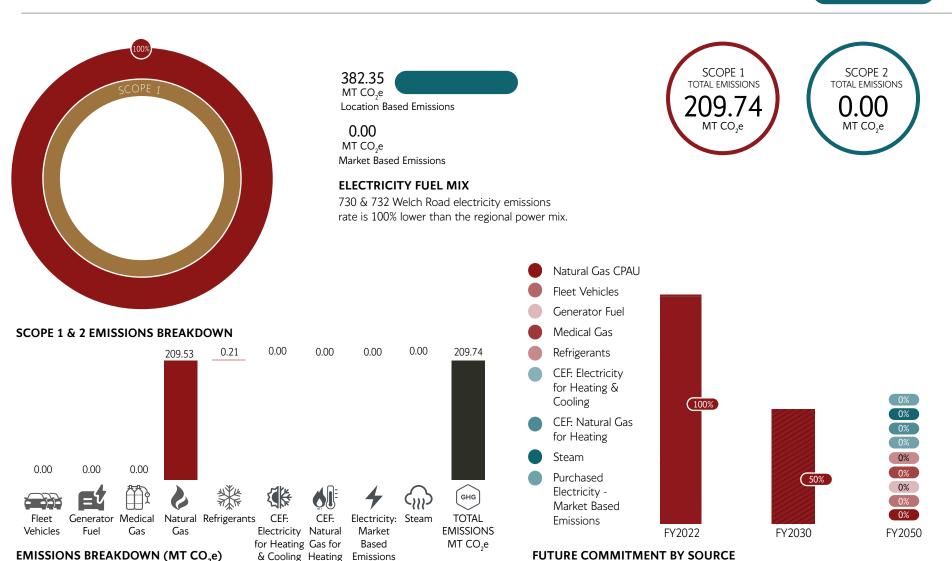


14601 South Bascom Avenue



730 & 732 Welch Road





170 Alameda de las Pulgas

for Heating Gas for

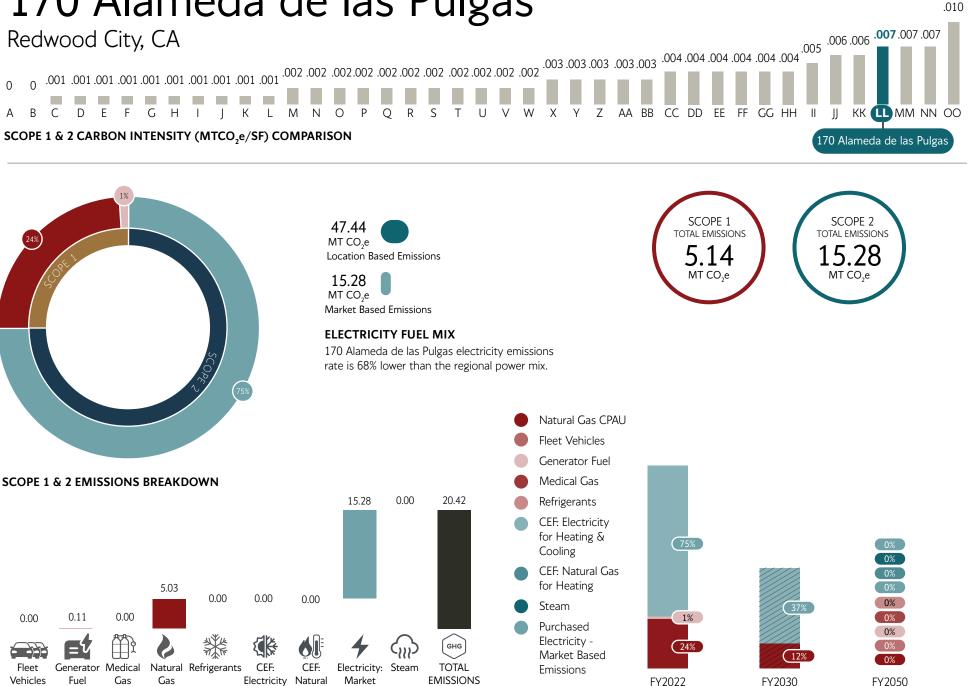
& Cooling Heating Emissions

EMISSIONS BREAKDOWN (MT CO,e)

Based

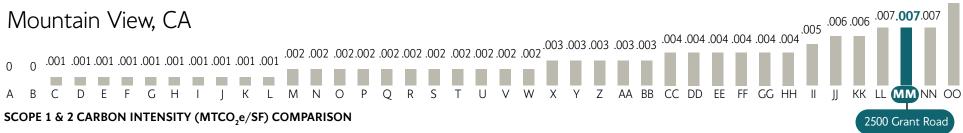
MT CO,e

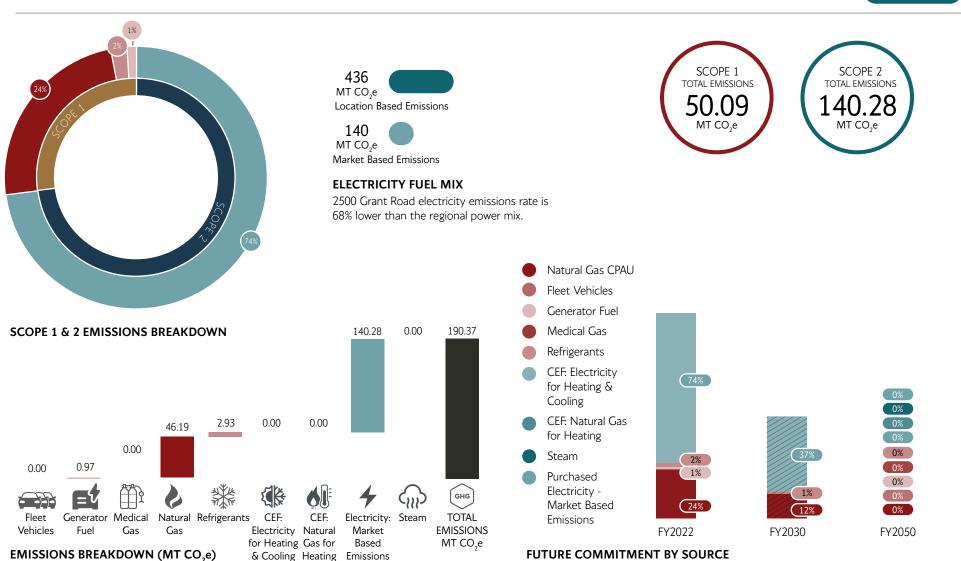
FUTURE COMMITMENT BY SOURCE



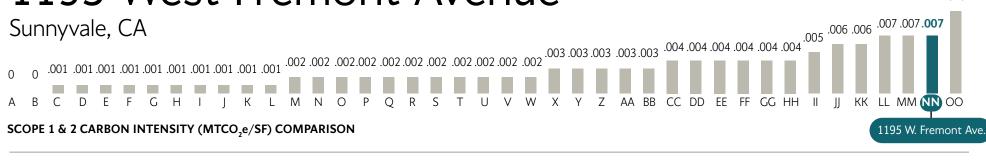
2500 Grant Road

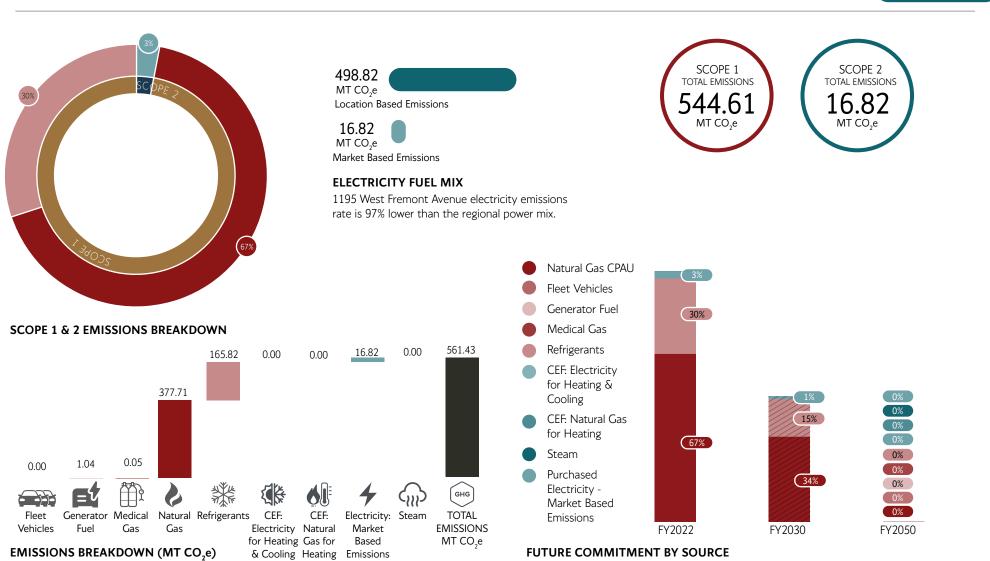
Mountain View, CA





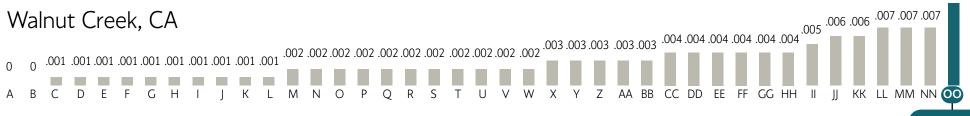
1195 West Fremont Avenue





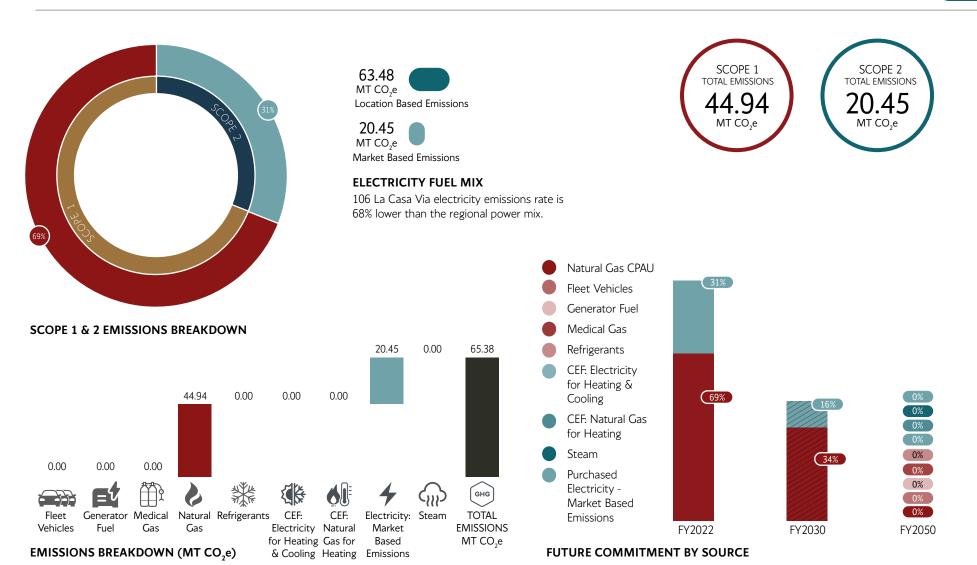
106 La Casa Via





SCOPE 1 & 2 CARBON INTENSITY (MTCO,e/SF) COMPARISON





STANFORD CHILDREN'S SCOPE 3 **GHG ANALYSIS**

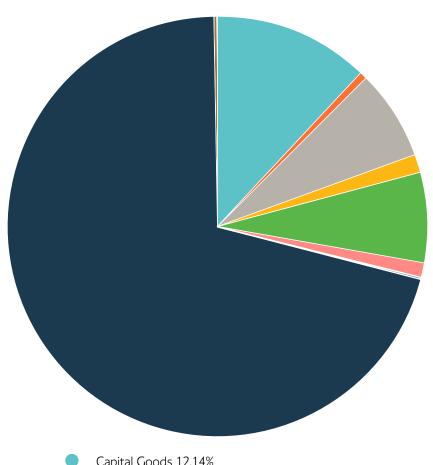
In the fiscal year 2022, Stanford Children's Scope 3 emissions totaled 135,953 MT CO2e. The emissions attributable to Scope 3 result from Business Travel, Patient Transport, Employee Commute, Helicopter Fuel, Fuel and Energy Related Activities, Capital Goods, Purchased Goods and Services, Waste, and Wastewater Treatment and Transport.

Business Travel (personal car and all other modes), accounting for 0.2% of Stanford Children's's entity-wide Scope 3 emissions, refers to emissions associated with employee travel for business purposes. This includes flights, train travel, car rentals, and other modes of transportation used by employees for work-related reasons.

Patient Transport, representing 6.9% of Stanford Children's's entity-wide Scope 3 emissions, refers to emissions associated with transporting patients to and from Stanford Children's facilities for medical purposes. It includes emissions from ambulance services, medical shuttle services, and transportation arranged by patients or their caregivers to access healthcare services.

Employee Commute (Vehicle Miles Traveled and Other Modes). jointly accounting for 7.3% of Stanford Children's's entity-wide Scope 3 emissions, refers to emissions associated with the daily travel of employees to and from their workplace. This includes emissions from transportation modes such as personal vehicles, public transportation, bicycles, or walking.

Helicopter Fuel, comprising 0.05% of Stanford Children's's entity-wide Scope 3 emissions, refers to emissions associated with the use of helicopters for medical purposes. Fuel and Energy Related Activities, accounting for 1.6% of Stanford Children's's entity-wide Scope 3 emissions refers to emissions associated with the extraction, production, and transportation of fuel and energy sources used by the organization.



- Capital Goods 12.14%
- Employee Commute Other Modes 0.49%
- Employee Commute Vehicle Miles Traveled 6.86%
- Fuel & Energy Related Activities 1.53%
- Helicopter Fuel 0.05%
- Patient Transport 6.89%
- Waste 1.03%
- Wastewater 0.22%
- Purchased Goods & Services 70.76%
- Business Travel Personal Car Miles 0.05%
- Business Travel All Other Modes 0.18%

STANFORD CHILDREN'S SCOPE 3 GHG ANALYSIS







Capital Goods, representing 12% of Stanford Children's Scope 3 emissions, refers to emissions associated with the production, procurement, and use of long-lasting physical assets such as buildings, infrastructure, machinery, and equipment used in the organization's operations.

Purchased Goods and Services, the largest source of Stanford Children's Scope 3 emissions, constitutes 71% of the organization's emissions. This category refers to emissions associated with the goods and services procured by the organization to support its operations.

Waste, accounting for 1.03% of Stanford Children's Scope 3 emissions, refers to emissions associated with the disposal of waste produced within the organization. Wastewater Treatment and Transport, comprising 0.02% of Stanford Children's's entity-wide Scope 3 emissions, refers to emissions associated with the treatment and transport of wastewater generated by the organization covering the entire lifecycle of wastewater management. It encompasses the emissions that occur throughout the entire lifecycle of wastewater management, from collection to treatment and disposal.

It is important to note that each facility's Business Travel, Purchased Goods and Services, and Capital Goods emissions are included in 725 Welch Road data, following established historical practices. Compared to CY2021, Business Travel emissions (Business Travel - personal Car and Business Travel - all other modes) were reduced by 39%. Purchased Goods and Services emissions experienced a decrease of 1%, while Capital Goods emissions saw an increase of 14% compared to CY2021.

Helicopters are exclusively used at 725 Welch Road.

FACILITY TYPE ANALYSIS

Hospitals are typically more carbon-intensive than Medical Office Buildings (MOB), office buildings, and apartments due to several factors. Firstly, hospitals house specialized medical equipment like imaging machines and surgical tools, which require significant energy usage. The operation of these high-tech medical devices contributes to the overall energy consumption and carbon emissions of hospitals.

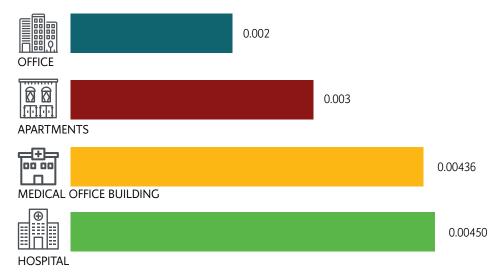
Moreover, hospitals operate 24/7 and provide a wide range of services, including emergency care, inpatient care, and critical care. The continuous operation of departments such as emergency rooms, operating theaters, and intensive care units demands a constant energy supply, resulting in higher energy consumption compared to facilities like medical office buildings and offices, which generally operate during regular business hours.

Additionally, hospitals accommodate a larger number of patients, staff, and visitors compared to medical office buildings. The presence of more

individuals within the facility leads to increased water usage, waste generation, refrigerant usage, as well as emissions associated with patient transport and employee commute. These factors contribute to the higher carbon intensity of hospitals in comparison to medical office buildings, office buildings, and apartments.

Residential apartments tend to have a higher carbon intensity compared to office buildings due to the continuous energy usage associated with daily living. In residential buildings, occupants utilize energy-intensive appliances throughout the day, such as heating, cooling, cooking, and various electrical devices. Conversely, offices typically operate within standard working hours, resulting in lower occupancy and reduced energy consumption during non-working hours.

It is important to note that the carbon intensity of each facility type aligns with the Energy Star Portfolio Manager energy use intensity by property type.



SCOPE 1 & 2 CARBON INTENSITY (MTCO,e/SF) BY FACILITY TYPE

METHODOLOGY DETAIL

SCOPE 1

Scope 1 Emission Sources	Description of the types, sources, and quality of data used to calculate emissions	Description of the methodologies, allocation methods, and assumptions used to calculate emissions
On-site Natural Gas	The natural gas data utilized in this inventory was obtained from various sources, including Key Green Solutions, direct vendor reports, and estimations based on available information. Table 2- List of Estimated Data provides a list of sites where estimated data was used in emission calculations.	Natural gas emissions factors came from the EPA GHG Emission Factors Hub. CPAU supplies their customers with 100% carbon-neutral natural gas, allowing them to claim zero CO2e emissions for all their usage. To achieve this, CPAU purchases carbon offsets to offset the emissions associated with natural gas usage in Palo Alto. However, Stanford Children's treats the natural gas emissions as if no offsets are in place to focus on emissions reduction efforts. The methodology to account for On-site Natural Gas emissions for facilities that purchase carbon-neutral natural gas from CPAU is consistent with the GHG Protocol Methodology. The Protocol only recognizes upstream instruments like RECs, not offsets.
Fleet Vehicles	Fleet data used in this inventory was sourced from Stanford Children's Fuel Transaction Data, and it includes the fleet vehicles owned and leased by Stanford Children's. It is understood that Stanford Children's also uses fleet vehicles owned by SHC, but those have been included in SHC's GHG Inventory and will not be accounted for in this report. The fleet vehicle data collected for Stanford Children's consists of the fuel usage data (FY2022) for gasoline and diesel vehicles. Note that Fleet Vehicle data was provided entity-wide, and the fleet data for the 40 additional facilities is included in 725 Welch Road Data.	All natural gas emissions are shown in the Emissions Summary by Facility. In contrast to previous years' emissions calculations, which utilized the GHG Protocol Mobile Combustion tool version 2.6, this year's calculation of fleet vehicle emissions was conducted using the EPA Simplified GHG Emissions Calculator (SGEC) for Fleet Vehicle, which allows for greater granularity of data. The version used for this report is SGEC version 7.

Scope 1 Emission Sources	Description of the types, sources, and quality of data used to calculate emissions	Description of the methodologies, allocation methods, and assumptions used to calculate emissions
4	Diesel fuel data used for Stanford Children's calculation was provided by SHC Facility Field Services. For shared SHC/Stanford Children's generators (12KV and Steam Plant), a 70/30% split percentage was applied to the diesel fuel used.	The diesel fuel emission factors came from the EPA GHG emission factors hub.
Generator Fuel	Diesel fuel data for 2500 Grant Road and 170 Alameda de las Pulgas was estimated using 725 Welch Road FY2022 and other historical data. Data for 1195 West Fremont Avenue was provided by the facility.	
	Medical nitrous oxide and carbon dioxide data for 725 Welch Road were provided by Airgas. Desflurane, sevoflurane, and isoflurane data were pulled from Stanford Supply Chain, and only deliveries to 725 Welch Road were included. Data for 1195 West Fremont Avenue was provided by the	Weights per purchased quantity were used to calculate the total weight for nitrous oxide and carbon dioxide. 100-year Global Warming Potentials for desflurane, sevoflurane, and isoflurane came from <u>Assessing the Impact on Global Climate from General Anesthetic Gases</u> .
Medical Gas	facility.	725 Welch Road does employ a WAGD medical gas capture system. It was assumed that 90% of the emitted medical gases (95% of the total) in 725 Welch Road were captured by the WAGD system.
NYK.	Refrigerant data for 725 Welch Road was provided by the Stanford Children's Engineering and Maintenance team. This inventory utilized refrigerant usage records.	The GHG Protocol Approach 2: Lifecycle Stage Approach was used to calculate Stanford Children's emissions. From the equipment owner and operator's standpoint,
F F	To estimate the average CO ₂ e of refrigerants for sites with missing data, a sample of over 1000 buildings in the healthcare field was examined. The sample accurately	refrigerants are being used to recharge equipment, and it is assumed that the value of refrigerants being added is equal to that lost through leakage.
Refrigerants	represents all types of medical buildings.	According to GHG Protocol, CFCs, and HCFCs may be omitted since they are being phased out by the Montreal Protocol. They were omitted in this inventory.

SCOPE 2

Scope 2 Emission Sources	Description of the types, sources, and quality of data used to calculate emissions	Description of the methodologies, allocation methods, and assumptions used to calculate emissions
Purchased Electricity - Market-Based Emissions	The electricity data utilized in this inventory was obtained from various sources, including Key Green Solutions, direct vendor reports, and estimations based on available information. Table 2- List of Estimated Data provides a list of sites where estimated data was used in emission calculations.	The utilities provide annual market-based emissions factors. CPAU provides 100% carbon-neutral electricity by matching electricity demand with carbon-free supply on an annual basis. This offers their customers the ability to claim zero CO2e emissions for all their usage.
Purchased Electricity - Location-Based Emissions	The electricity data utilized in this inventory was obtained from various sources, including Key Green Solutions, direct vendor reports, and estimations based on available information. Table 2- List of Estimated Data provides a list of sites where estimated data was used in emission calculations.	The annual location-based emissions factors can be found using the EPA's eGrid Explorer tool on their website. The emissions factor is based on the CAMX region for 2021, which was the most current data available.
	725 Welch Road receives both chilled water and heating hot water from Stanford University's Central Energy Facility (CEF). Stanford University provided a breakdown for 725 Welch Road buildings in terms of electricity consumption for chilled water and heating water.	Stanford University's Office of Sustainability & Energy calculated emissions from the CEF plant and provided a breakdown for all 725 Welch Road buildings.
CEF. Electricity for Heating and Cooling	It is vital to note that from April 1, 2022, the Central Energy Facility began procuring 100% renewable electricity for its operations, leading to a significant reduction in 725 Welch Road Scope 2 emissions.	
CEF: Natural Gas for Heating	Stanford University provided a breakdown for 725 Welch Road buildings in terms of natural gas consumption for heating hot water. At 725 Welch Road, the heating hot water produces building heating and domestic hot water.	Stanford University's Office of Sustainability & Energy calculated emissions from the CEF plant and provided a breakdown for all 725 Welch Road buildings.
	Energy data for the steam plant and the steam consumption breakdown per building were pulled from Key Green Solutions. Steam is provided to 725 Welch Road (West Campus) from SHC's steam plant located at 901 Quarry. At 725 Welch Road (West Campus), the steam produces heating hot water for building heating, domestic hot water, and direct steam for humidification.	The emissions for the steam plant were calculated using electricity (CPAU) and natural gas (PG&E) supplied to the steam plant. The steam plant serves Stanford Health Care, 725 Welch Road (West Campus), and the School of Medicine. A breakdown percentage based on the steam meters was used to determine the energy and emissions for each facility. Based on the breakdown from 2019, 725 Welch Road (West Campus) is responsible for 25.8%.
Steam from Stanford Steam Plant		The steam meters had reporting errors in FY2022, causing the steam use breakdown to be inaccurate. A decision was made to continue using the steam breakdown from 2019 in FY2022 GHG Inventory.

SCOPE 3

Scope 3 Emission Sources	Description of the types, sources, and quality of data used to calculate emissions	Description of the methodologies, allocation methods, and assumptions used to calculate emissions
1. Capital Goods	Expense data for 725 Welch Road was provided by Stanford Children's Finance Department via general ledger reporting. Note that Capital Goods data for the 40 additional facilities is included in 725 Welch Road Data	Expenses were matched with the categories and emissions factors from the EPA Supply Chain Greenhouse Gas Emissions Factors for US Industries and Commodities' Dataset v1.1
2. Purchased Goods and Services	Expense data for 725 Welch Road was provided by Stanford Children's Finance Department via general ledger reporting. Note that Purchased Goods and Services data for the 40 additional facilities is included in 725 Welch Road Data.	Expenses were matched with the categories and emissions factors from the EPA Supply Chain Greenhouse Gas Emissions Factors for US Industries and Commodities' Dataset v1.1 Expenses such as Medical Waste Processing and Travel expenses were excluded because they are covered in Scope 3.5: Waste Treatment and Scope 3.6 Business Travel.
	The energy data utilized in this inventory was obtained from various sources, including Key Green Solutions, direct vendor reports, and estimations based on available information. Stanford Central Energy Facility (CEF) plant provides chilled water and heating hot water for 725 Welch Road. The plant provided thermal distribution losses for chilled and hot water systems, as well as in-plant electricity losses.	Upstream Emissions of Purchased Fuels: The emissions associated with the extraction, production, and transportation of natural gas, diesel, and gasoline are reported in Scope 1 emissions using emissions factors from the UK Department for Business, Energy, and Industrial Strategy's 2022 Greenhouse Gas Reporting Conversion Factors. US-based factors are not available via the EPA or other trusted US sources.
3. Fuel and Energy Related Activities	Table 2- List of Estimated Data provides a list of sites where estimated data was used in emission calculations.	Upstream Emissions of Purchased Electricity: Directly purchased electricity has no extraction, production, or transportation emissions; however, indirectly purchased electricity (e.g., PG&E-supplied electricity used at CEF) does result in emissions. Emissions were calculated using the UK factors for overseas US electricity production.
5. Fuel and Energy Related Activities		Transmission and Distribution (T&D) Losses: Because directly purchased electricity is 100% renewable, there are no resulting T&D loss emissions. There are, however, T&D losses for directly purchased non-renewable electricity and other indirectly purchased electricity.
		Grid losses were calculated at 4.4% per the EPA eGrid Western region grid losses (2023 data). The CEF reports that 2.3% of electricity is lost in production at CEF, and the hot water thermal loss is 4% and 6% for chilled water.

Scope 3 Emission Sources	Description of the types, sources, and quality of data used to calculate emissions	Description of the methodologies, allocation methods, and assumptions used to calculate emissions				
4. Solid Waste	The waste tonnage data utilized in this inventory was obtained from various sources, including Key Green Solutions, direct vendor reports, and estimations based on available information. A 21% allocation for 725 Welch Road facility landfill, biohazardous waste, municipal recycling, and compost is applied in Key Green Solutions. Hauling distance and frequency came from the SHC Waste Index spreadsheet and waste disposal vendors. Table 2- List of Estimated Data provides a list of sites where estimated data was used in emission calculations.	Emission factors came from the EPA GHG emission factors hub. Assumptions include diesel as the hauling fuel and to-and-from hauling distances. "Average" hauling distances are included in the EPA emissions factors, but this distance is not disclosed and, although requested, has not been received as of the time of writing. Without this data point, Mazzetti took the conservative approach of including all estimated miles traveled in calculations. Compacted waste hauling distances were calculated using round trip miles as the compactor is returned to campus after each service. Other wastes were calculated using one-way trip distances.				
5. Wastewater	The Wastewater data utilized in this inventory was obtained from various sources, including Key Green Solutions, direct vendor reports, and estimations based on available information. Table 2- List of Estimated Data provides a list of sites where estimated data was used in emission calculations.	The wastewater emissions factor used for each site was sourced directly from the wastewater vendor. In cases where the emissions factor could not be obtained from the vendor, the California Energy Commission (CEC) wastewater treatment and disposal estimate was utilized. At the time of writing, CPAU had yet to publish its 2022 wastewater emissions. As a result, 2022 emissions factors were calculated based on CPAU's 2020 reported wastewater emissions.				
6. Business Travel - Personal Car Mileage	Business travel data (personal Car) for 725 Welch Road was provided by Account Payable in the form of dollars spent. If mileage can be collected in the future, this will provide for more accurate emissions estimates. The Business Travel data for the 40 additional facilities is included in 725 Welch Road data.	The spend-based method was used to estimate emissions, using secondary EEIO (environmentally extended inputoutput) factors from the EPA Supply Chain GHG Emissions Factors for US Industries and Commodities.				
6. Business Travel - All Other Modes	Business travel data (all other modes) for 725 Welch Road was provided by Account Payable in the form of dollars spent. The Business Travel data for the 40 additional facilities is included in 725 Welch Road data.	The spend-based method was used to estimate emissions, using secondary EEIO (environmentally extended inputoutput) factors from the EPA Supply Chain GHG Emission Factors for US Industries and Commodities. Transportation modes were aligned with the best available emission factors e.g., "Rail" emissions factors were used for train/subway spending).				

Scope 3 Emission Sources	Description of the types, sources, and quality of data used to calculate emissions	Description of the methodologies, allocation methods, and assumptions used to calculate emissions
7. Employee Commute – Vehicle Miles Traveled (VMT)	Stanford Health Care and Stanford Parking and Transportation Services provided the VMT data used in this report. The data was obtained from the 2021-2022 Commuter Survey Extract Spreadsheet. For sites where VMT data could not be obtained, estimates were made using available data. Table 2- List of Estimated Data provides a list of sites where estimated data was used in emission calculations.	The Passenger Car (fuel unknown) emission factors were used from the EPA GHG emission factors hub. To calculate this emissions category, an assumption was made that employees who commute less than 100 miles each way are in-person workers. Conversely, employees who commute more than 100 miles to work are assumed to be remote workers. Other assumptions include 48 work weeks per year, 2 trips per day, 2 persons per carpool, and 5 persons per vanpool.
7. Employee Commute - Passenger Miles	The Employee Commute-Passenger Miles data used in this report was provided by Stanford Health Care and Stanford Parking and Transportation Services. The data was obtained from the 2021-2022 Commuter Survey Extract Spreadsheet. For sites where Passenger Miles data could not be obtained, estimates were made using available data. Table 2- List of Estimated Data provides a list of sites where estimated data was used in emission calculations.	Annual miles traveled were scaled based on the percentage of survey responses for each transportation mode and the Stanford Children's population. To calculate this emissions category, an assumption was made that employees who commute less than 100 miles each way are in-person workers. Conversely, employees who commute more than 100 miles to work are assumed to be remote workers. Other assumptions include 48 work weeks per year, 2 trips per day, 2 persons per carpool, and 5 persons per vanpool. The appropriate emission factors for each transportation mode were used from the EPA GHG emission factors hub. The Marguerite shuttle emission factor is zero, as the fleet serving Stanford Children's is all electric and on CPAU power. Survey responses for "Other" primarily involve the
8. Patient Transport	Patient travel data for 725 Welch Road, 321 Middlefield Road, 730 & 732 Welch Specialty Services, 770 Welch Road, 777 Welch Road, and 2452 Watson Court was provided by IS Analytics & Reporting. Distances were estimated using the NBER Zip Code Distance Database. There-and-back travel was assumed for each entry.	use of personal auto, so the category was calculated using passenger vehicle emissions factors. The distance-based method was used to estimate emissions, using Air Travel (Medium Haul) and Passenger Car (fuel unknown) emission factors from the EPA GHG emission factors hub. As transportation modes were unavailable for in-person visits, trips of 250 miles or less were assumed to be vehicular travel, while distances over 250 miles were assumed to be air travel.
9. Helicopter Fuel	Jet fuel data for 725 Welch Road came from Stanford Life Flight. Gallons of fuel were estimated based on total flight hours and a fuel burn rate of 80 gal/hr. Flights associated with 725 Welch Road were estimated by accounting for the flight volume of PIC/NICU/OB patients going to 725 Welch Road.	The jet fuel (jet A fuel) emission factors came from the Climate Registry 2021 Default Emission Factor Document.

CONCLUSION

This inventory marks the transition from the calendar year to the fiscal year (FY). It is the first inventory to comprehensively analyze Stanford Children's entitywide emissions (emissions from 725 Welch Road and 40 additional facilities). In FY2022, Stanford Children's facilities collectively emitted 142,926 Metric Tons of CO2e from Scope 1, 2, and 3 emissions.

In FY2022, 725 Welch Road achieved a commendable 6% reduction in emissions compared to the baseline year (CY2019) and a 2% reduction from CY2021. Notable emissions reductions from the baseline year can be attributed to decreased usage of Natural Gas (31%), Medical Gas (23%), Refrigerant (99%), Electricity for Heating and Cooling (58%), Steam (7%), Capital Goods (48%), Solid Waste (2%), Business Travel - All Other Modes (46%), Employee Commute - Passenger Miles (67%), Patient Transport (13%), and Helicopter Fuel (24%).

725 Welch Road also saw a significant 12% reduction in Scope 2 emissions from the baseline year and a 12% reduction from CY2021, primarily due to the procurement of clean energy by the Stanford Central Energy Facility.

While 725 Welch Road had an overall 6% reduction in its emissions from the baseline year, several emission categories increased. Fleet Vehicles emissions increased by 137% from the baseline year due to the inclusion of leased vehicles in the calculation methodology. Generator Fuel increased by 31%, CEF. Natural Gas for Heating increased over the 2019 baseline, and usage is up 151%. Purchased Goods and Services increased by 12%, Business Travel – Personal Car increased by 29%, and Employee Commute – Vehicle Miles Travelled (VMT) increased by 10%. Wastewater increased by 358%, and the increase in wastewater emissions is due to the lack of complete data for 725 Welch Road 2019 wastewater calculation.

It should be noted that while this inventory excluded certain Scope 3 emission sources, the overall breakdown of Scope 1, 2, and 3 emissions generally aligns with the emission scope breakdown commonly observed in the US healthcare sector.

RECOMMENDATIONS

- To reduce purchased goods and services emissions, the largest source of Stanford Children's entity-wide emissions, the hospital should implement a sustainable procurement policy that includes environmental criteria in selecting and evaluating suppliers. The hospital should prioritize suppliers with solid sustainability practices and certifications and engage with suppliers to encourage sustainable practices throughout the supply chain.
- To reduce Capital Goods emissions, the second largest source of Stanford Children's emissions, the hospital should conduct a lifecycle assessment (LCA) of capital goods to identify emissions hotspots and evaluate potential improvements. Assess the environmental impacts of the entire lifecycle, including raw material extraction, production, transportation, use, and end-oflife disposal, and use the information to inform decision-making.
- To reduce emissions due to Patient Transport, the hospital can explore the possibility of implementing shared transport services for patients who have similar destinations or appointments in close proximity. This can reduce the number of individual trips and optimize vehicle occupancy, resulting in lower emissions per patient transported. The hospital should also explore more opportunities to leverage telemedicine and remote care services to minimize the need for physical patient transport.
- To reduce emissions from Employee Commuting, the hospital should promote alternative transportation methods with lower carbon footprints, such as carpooling, public transportation, cycling, or walking. The hospital can also provide incentives or subsidies for employees who choose these options, such as discounted public transit passes, bike storage facilities, or carpool matching services.
- To reduce emissions from using natural gas, the hospital should implement energy efficiency measures to reduce natural gas consumption, conduct energy audits to identify areas of energy waste and implement energy-saving technologies and practices.

APPENDIX

TABLE 1: LIST OF ESTIMATED DATA

Facility Address	Fleet Vehicles	Generator Fuel	Medical Gas	Natural Gas	Refrigerants	CEF. Electricity for Heating and Cooling	CEF. Natural Gas for Heating	Purchased Electricity - Market-Based Emissions	Purchased Electricity - Location-Based Emission	Steam	Capital Goods	Purchased Goods & Services	Fuel & Energy Related Activities	Wastewater Treatment and Transport	Waste	Business Travel	Employee Commuting - Other Modes	Employee Commuting - Vehicle Miles Traveled	Helicopter Fuel	Patient Transport
725 Welch Road	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided
1290 59th St.	N/A	N/A	N/A	Estimated	Estimated	N/A	N/A	Provided (CY)	Provided (CY)	N/A	N/A	N/A	Provided (CY) & Estimated	Provided (CY)	Provided	N/A	Provided	Provided	N/A	N/A
2147 Mowry Ave.	N/A	N/A	N/A	Provided (CY)	Estimated	N/A	N/A	Provided (CY)	Provided (CY)	N/A	N/A	N/A	Provided (CY)	Estimated	Estimated	N/A	Provided	Provided	N/A	N/A
14601 S. Bascom Ave.	N/A	N/A	N/A	Provided	Estimated	N/A	N/A	Provided	Provided	N/A	N/A	N/A	Provided	Provided	Provided	N/A	Estimated	Estimated	N/A	N/A
14651 S. Bascom Ave.	N/A	N/A	N/A	Provided	Estimated	N/A	N/A	Provided	Provided	N/A	N/A	N/A	Provided	Provided	Provided	N/A	Estimated	Estimated	N/A	N/A
321 Middlefield Rd.	N/A	N/A	N/A	Provided (CY)	Estimated	N/A	N/A	Provided (CY)	Provided (CY)	N/A	N/A	N/A	Provided (CY)	Provided (CY)	Estimated	N/A	Provided	Provided	N/A	Provided
555 Knowles Dr.	N/A	N/A	N/A	Provided	N/A	N/A	N/A	Provided	Provided	N/A	N/A	N/A	N/A	N/A	Estimated	N/A	Estimated	Estimated	N/A	N/A
4100 Bohannon Dr.	N/A	N/A	N/A	Provided	N/A	N/A	N/A	Provided	Provided	N/A	N/A	N/A	Provided	Estimated	Provided	N/A	Provided	Provided	N/A	N/A
4200 Bohannon Dr.	N/A	N/A	N/A	Estimated	N/A	N/A	N/A	Estimated	Estimated	N/A	N/A	N/A	Estimated	Estimated	Provided	N/A	Provided	Provided	N/A	N/A
4300 Bohannon Dr.	N/A	N/A	N/A	Estimated	N/A	N/A	N/A	Estimated	Estimated	N/A	N/A	N/A	Estimated	Estimated	Provided	N/A	Provided	Provided	N/A	N/A
4700 Bohannon Dr.	N/A	N/A	N/A	Estimated	N/A	N/A	N/A	Provided	Provided	N/A	N/A	N/A	Provided	Estimated	Provided	N/A	Provided	Provided	N/A	N/A
4600 Bohannon Dr.	N/A	N/A	N/A	Estimated	N/A	N/A	N/A	Estimated	Estimated	N/A	N/A	N/A	Estimated	Estimated	Provided	N/A	Provided	Provided	N/A	N/A
1401 Spanos Ct.	N/A	N/A	N/A	Estimated	N/A	N/A	N/A	Estimated	Estimated	N/A	N/A	N/A	Estimated	Estimated	Estimated	N/A	Provided	Provided	N/A	N/A
1174 Castro St.	N/A	N/A	N/A	Provided (CY)	Estimated	N/A	N/A	Provided (CY)	Provided (CY)	N/A	N/A	N/A	Provided (CY)	Provided (CY)	Estimated	N/A	Provided	Provided	N/A	N/A
2495 Hospital Dr.	N/A	N/A	N/A	Estimated	Estimated	N/A	N/A	Estimated	Estimated	N/A	N/A	N/A	Estimated	Estimated	Estimated	N/A	Estimated	Estimated	N/A	N/A
2490 Hospital Dr.	N/A	N/A	N/A	Estimated	Estimated	N/A	N/A	Estimated	Estimated	N/A	N/A	N/A	Estimated	Estimated	Estimated	N/A	Provided	Provided	N/A	N/A
2500 Grant Rd.	N/A	Estimated	N/A	Estimated	Estimated	N/A	N/A	Estimated	Estimated	N/A	N/A	N/A	Estimated	Estimated	Estimated	N/A	Provided	Provided	N/A	N/A
401 Quarry Rd.	N/A	N/A	N/A	Estimated	N/A	N/A	N/A	Estimated	Estimated	N/A	N/A	N/A	Estimated	Estimated	Estimated	N/A	Provided	Provided	N/A	N/A
700 Welch Rd.	N/A	N/A	N/A	Provided	N/A	N/A	N/A	Provided	Provided	N/A	N/A	N/A	Provided	Provided	Provided	N/A	Provided	Provided	N/A	N/A
730 and 732 Welch Specialty Services	N/A	N/A	N/A	Provided	Estimated	N/A	N/A	Provided	Provided	N/A	N/A	N/A	Provided	Provided	Provided	N/A	Provided	Provided	N/A	Provided
750 Welch Rd.	N/A	N/A	N/A	Provided	N/A	N/A	N/A	Provided	Provided	N/A	N/A	N/A	Provided	Provided	Provided	N/A	Provided	Provided	N/A	N/A
770 Welch Rd.	N/A	N/A	N/A	Provided	N/A	N/A	N/A	Provided	Provided	N/A	N/A	N/A	Provided	Provided	Provided	N/A	Provided	Provided	N/A	Provided
777 Welch Rd.	N/A	N/A	N/A	Provided	N/A	N/A	N/A	Provided	Provided	N/A	N/A	N/A	Provided	Provided	Provided	N/A	Estimated	Estimated	N/A	Provided
2452 Watson Ct.	N/A	N/A	N/A	Estimated	N/A	N/A	N/A	Estimated	Estimated	N/A	N/A	N/A	Estimated	Estimated	Estimated	N/A	Provided	Provided	N/A	Provided
180 El Camino Real	N/A	N/A	N/A	Estimated	N/A	N/A	N/A	Provided	Provided	N/A	N/A	N/A	Provided & Estimated	Provided	Provided	N/A	Provided	Provided	N/A	N/A
5000 Pleasanton Ave.	N/A	N/A	N/A	Provided	N/A	N/A	N/A	Provided	Provided	N/A	N/A	N/A	Provided	Provided	Provided	N/A	Provided	Provided	N/A	N/A
170 Alameda de las Pulgas	N/A	Estimated	N/A	Estimated	N/A	N/A	N/A	Estimated	Estimated	N/A	N/A	N/A	Estimated	Estimated	Estimated	N/A	Provided	Provided	N/A	N/A
2900 Whipple Ave.	N/A	N/A	N/A	Estimated	N/A	N/A	N/A	Provided	Provided	N/A	N/A	N/A	Provided & Estimated	Estimated	Estimated	N/A	Estimated	Estimated	N/A	N/A

Facility Address	Fleet Vehicles	Generator Fuel	Medical Gas	Natural Gas	Refrigerants	CEF. Electricity for Heating and Cooling	CEF. Natural Gas for Heating	Purchased Electricity - Market-Based Emissions	Purchased Electricity - Location-Based Emission	Steam	Capital Goods	Purchased Goods & Services	Fuel & Energy Related Activities	Wastewater Treatment and Transport	Waste	Business Travel	Employee Commuting - Other Modes	Employee Commuting - Vehicle Miles Traveled	Helicopter Fuel	Patient Transport
212 San Jose St.	N/A	N/A	N/A	Provided (CY)	N/A	N/A	N/A	Provided (CY)	Provided (CY)	N/A	N/A	N/A	Provided (CY)	Provided (CY)	Provided (CY)	N/A	Provided	Provided	N/A	N/A
1100 Van Ness Ave.	N/A	N/A	N/A	Estimated	N/A	N/A	N/A	Estimated	Estimated	N/A	N/A	N/A	Estimated	Estimated	Estimated	N/A	Provided	Provided	N/A	N/A
1685 Commercial Way	N/A	N/A	N/A	Estimated	N/A	N/A	N/A	Estimated	Estimated	N/A	N/A	N/A	Estimated	Estimated	Estimated	N/A	Provided	Provided	N/A	N/A
1195 West Fremont Ave.	N/A	Provided	Provided	Provided	Provided	N/A	N/A	Provided	Provided	N/A	N/A	N/A	Provided	Provided	Provided	N/A	Provided	Provided	N/A	N/A
1601 Ygnacio Valley Road - Office	N/A	N/A	N/A	Estimated	N/A	N/A	N/A	Provided	Provided	N/A	N/A	N/A	Provided & Estimated	Estimated	Estimated	N/A	Provided	Provided	N/A	N/A
1601 Ygnacio Valley Road - MOB	N/A	N/A	N/A	Estimated	N/A	N/A	N/A	Provided	Provided	N/A	N/A	N/A	Provided & Estimated	Estimated	Estimated	N/A	Provided	Provided	N/A	N/A
1720 El Camino Real	N/A	N/A	N/A	Provided (CY)	N/A	N/A	N/A	Provided (CY)	Provided (CY)	N/A	N/A	N/A	Provided (CY)	Provided (CY)	Provided (CY)	N/A	Provided	Provided	N/A	N/A
14777 Los Gatos Bvd- Los Gatos	N/A	N/A	N/A	Estimated	N/A	N/A	N/A	Estimated	Estimated	N/A	N/A	N/A	Estimated	Estimated	Estimated	N/A	Provided	Provided	N/A	N/A
3480 Buskirk Ave.	N/A	N/A	N/A	Provided	N/A	N/A	N/A	Provided	Provided	N/A	N/A	N/A	Provided	Estimated	Provided	N/A	Provided	Provided	N/A	N/A
106 La Casa Via	N/A	N/A	N/A	Provided	N/A	N/A	N/A	Provided	Provided	N/A	N/A	N/A	Provided	Provided	Provided (CY)	N/A	Estimated	Estimated	N/A	N/A
350 Park Dr	N/A	N/A	N/A	Estimated	N/A	N/A	N/A	Estimated	Estimated	N/A	N/A	N/A	Estimated	Estimated	Estimated	N/A	N/A	N/A	N/A	N/A
1371 E. Foxhill Drive	N/A	N/A	N/A	Estimated	N/A	N/A	N/A	Estimated	Estimated	N/A	N/A	N/A	Estimated	Estimated	Estimated	N/A	N/A	N/A	N/A	N/A
2800 L Street	N/A	N/A	N/A	Estimated	N/A	N/A	N/A	Estimated	Estimated	N/A	N/A	N/A	Estimated	Estimated	Estimated	N/A	Estimated	Estimated	N/A	N/A

 $^{^{\}star}$ CY means Calendar Year information was provided rather than fiscal year

TABLE 2: 725 WELCH ROAD YEAR-TO-YEAR EMISSIONS REDUCTION

Emissions Per Scope	Emissions Category	Baseline Year -CY2019 (MTCO2e)	CY2020 (MTCO2e)	CY2021 (MTCO2e)	FY2022 (MTCO2e)	CY2020 % Change over Baseline Year	CY2021 % Change over Baseline Year	FY2022 % Change over Baseline Year	FY2022 over CY2021
	Natural Gas CPAU	1,143	681	753	789	-40%	-34%	-31%	5%
	Fleet Vehicles	21	12	48	50	-43%	129%	137%	4%
SCOPE 1	Generator Fuel	34	31	37	45	-9%	9%	31%	21%
	Medical Gas	533	344	428	412	-35%	-20%	-23%	-4%
	Refrigerants	767	74	14	11	-90%	-98%	-99%	-22%
	Purchased Electricity - Market- Based Emissions	-	-	-	-	-	1	-	-
	Purchased Electricity - Location- Based Emissions	5,683	5,744	6,380	7,439	1%	12%	31%	17%
SCOPE 2	CEF. Electricity for Heating and Cooling	651	548	655	274	-16%	1%	-58%	-58%
	CEF: Natural Gas for Heating	105	175	233	263	67%	122%	151%	13%
	Steam from Stanford Steam Plant	3,119	3,015	2,989	2,891	-3%	-4%	-7%	-3%
	3.1 Capital Goods	32,034	14,554	14,477	16,499	-55%	-55%	-48%	14%
	3.2 Purchased Goods & Services	86,082	88,062	97,302	96,202	2%	13%	12%	-1%
	3.3 Fuel & Energy-Related Activities	-	-	1,415	980	ı	-	-	-31%
	3.5 Solid Waste	774	797	887	762	3%	15%	-2%	-14%
	3.5 Wastewater	2	9	10	9	350%	400%	358%	-8%
SCOPE 3	3.6 Business Travel - Personal Car Mileage + Lyft Program	53	34	36	68	-36%	-32%	29%	90%
	3.6 Business Travel - All Other Modes	467	153	84	250	-67%	-82%	-46%	198%
	3.7 Commute - VMT	5,977	8,320	6,103	6,556	39%	2%	10%	7%
	3.7 Commute - Passenger Miles	1,428	658	697	467	-54%	-51%	-67%	-33%
	3.9 Patient Transport	8,954	9,635	11,215	7,764	8%	25%	-13%	-31%
	3.9 Helicopter Fuel	86	55	64	65	-36%	-26%	-24%	2%
TOTAL		142,230	127,157	137,447	134,357	-11%	-3%	-6%	-2%

