



A Tradition of Stewardship
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Napa County Regional GHG Inventory Update 2019

Presented by Ascent Environmental
September 23, 2022



Outline



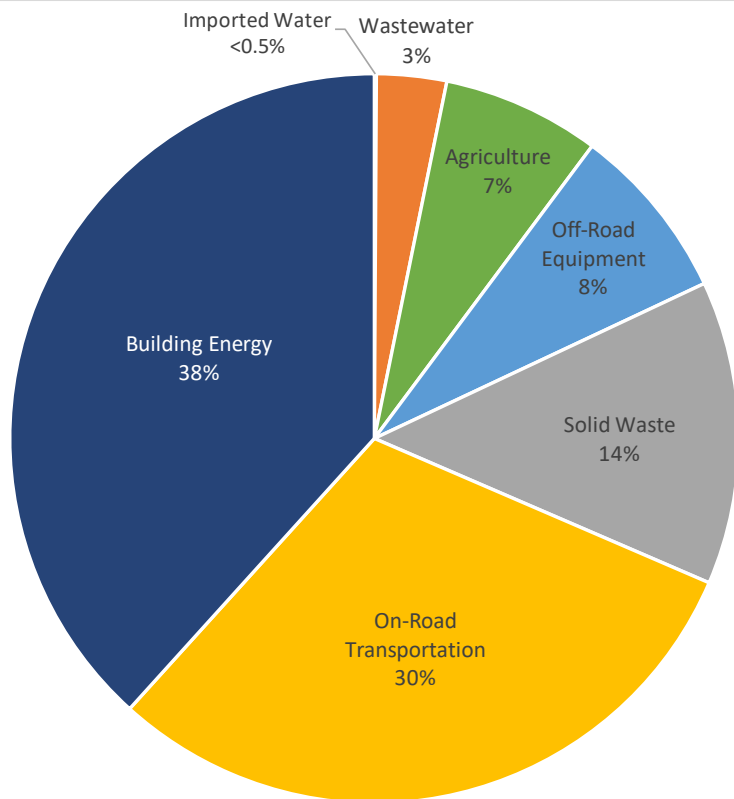
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- GHG Emissions by Sector
- GHG Emissions by Jurisdiction
- Forecasts
- SLCP and Carbon Sequestration
- Next Steps/Questions

GHG Emissions by Sector



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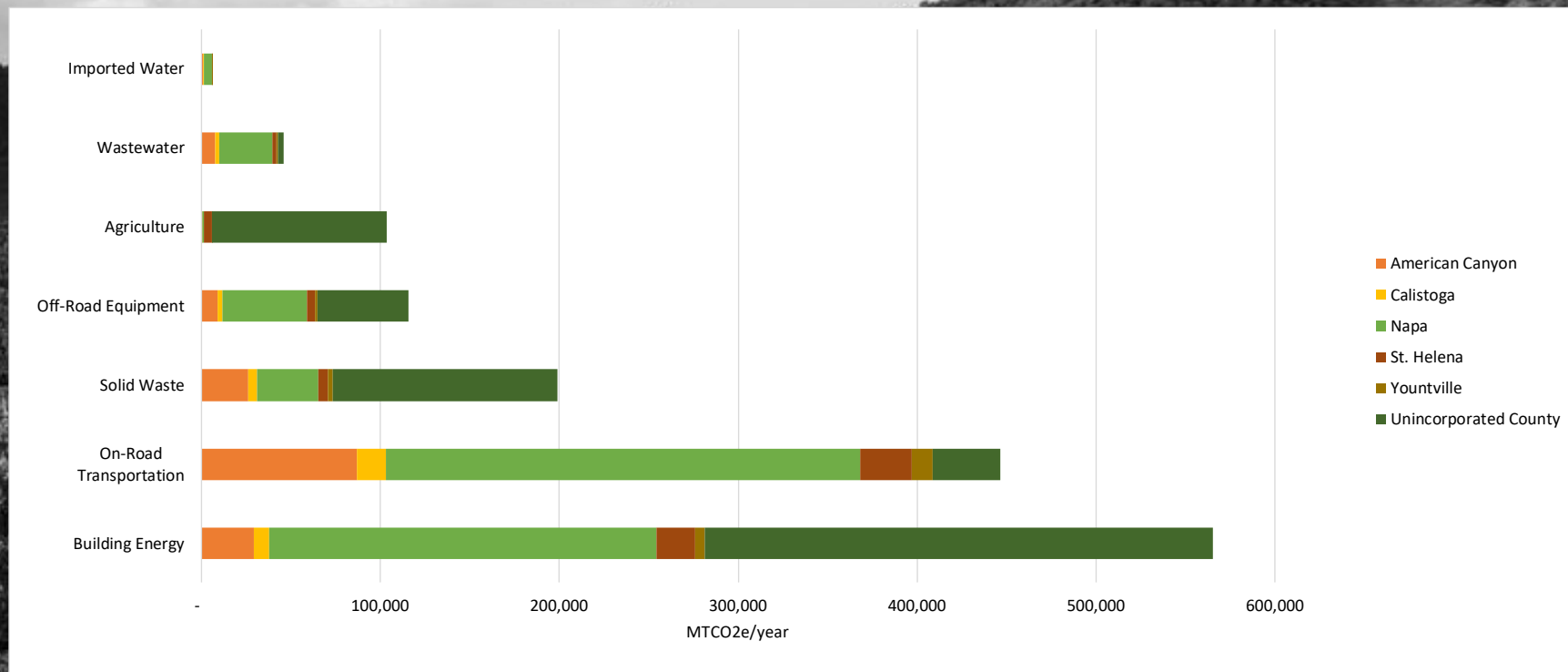
Emissions Sector	2019 (MTCO ₂ e/ year)
Building Energy	564,336
On-Road Transportation	446,673
Solid Waste	198,862
Off-Road Equipment	115,548
Agriculture	103,381
Wastewater	45,858
Imported Water	5,943
Total	1,480,602
Emissions per capita	10.6

GHG Emissions by Sector



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2019 Napa County Regional Greenhouse Gas Emissions Inventory by Sector and Jurisdiction (MTCO₂e/year)



Building Energy



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- Data Source: Electricity and natural gas use data from MCE and PG&E
- Methodology: 2019 emission factors, accounts for Deep Green and Light Green MCE participation
- 85% of residents and businesses use MCE
 - 5% use MCE Deep Green
 - 80% use MCE Light Green
- 97% of emissions are from natural gas.
- Emissions in 2019: 564,336 MTCO₂e/year

On-Road Transportation



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- Data Source: MTC VMT Data Portal
- Methodology: Emission factors from CARB's EMFAC2021 model
- 67% of emissions from commercial vehicles
- 33% of emissions from non-commercial vehicles
- Average passenger VMT per capita: 5,698 mi/yr
- Average truck VMT per capita: 1,346 mi/yr
- Emissions in 2019: 446,673 MTCO₂e/year

Solid Waste



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- Data Source: CalRecycle (waste generated), EPA FLIGHT Database (waste-in-place at landfills)
- Methodology: Emissions per ton of municipal waste generated, Direct emissions from EPA
- All waste-in-place emissions from the Unincorporated County
- Waste-in-Place includes decaying waste from past years and other jurisdictions.
- 42% of emissions from waste generation
- 58% of emissions from waste-in-place
- Emissions in 2019: 198,862 MTCO₂e/year

Off-Road Equipment



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- Data Source: CARB's OFFROAD2021 model
- Methodology: Direct emissions from OFFROAD, apportioned to each jurisdiction by population, jobs, agricultural acres, or service population, depending on equipment type
- 25% of emissions from lawn and garden equipment
- 25% of emissions from pleasure craft
- 11% of emissions from construction
- Emissions in 2019: 115,548 MTCO₂e/year

Agriculture



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- Data Source: Crop Report, CDFA Fertilizer Tonnage Report, BAAQMD, OFFROAD2021
- Methodology: Livestock and diesel irrigation pump emission factors from CARB, Fertilizer emissions formulas from ICLEI's Community Protocol
- 46% of emissions from agricultural off-road equipment
- 21% of emissions from fertilizer application
- Emissions in 2019: 103,381 MTCO₂e/year

Wastewater



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- Data Source: Population served by WWTP vs septic
- Methodology: Population-based formulas for WWTP and septic treatment systems from ICLEI's Community Protocol.
- 94% of emissions from population served by WWTP
- Emissions in 2019: 45,858 MTCO₂e/year

Imported Water



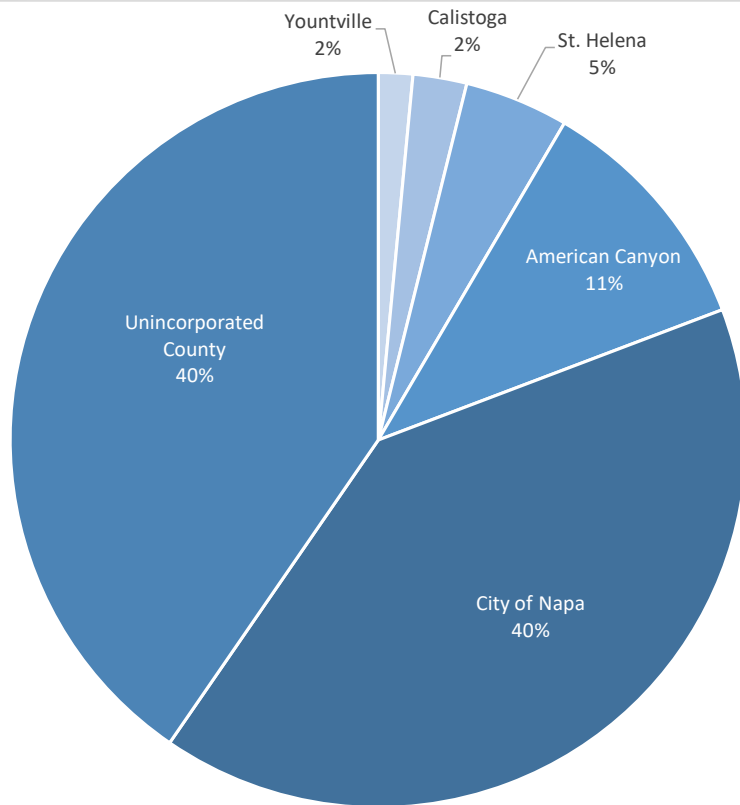
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- Data Source: Imported water volumes from each jurisdiction by source
- Methodology: Energy intensity factors for water sourced from the State Water Project, Average California electricity emission factors
- City of Napa imports the most water (74% of county total)
- Emissions in 2019: 28,783 MTCO₂e/year

GHG Emissions by Jurisdiction



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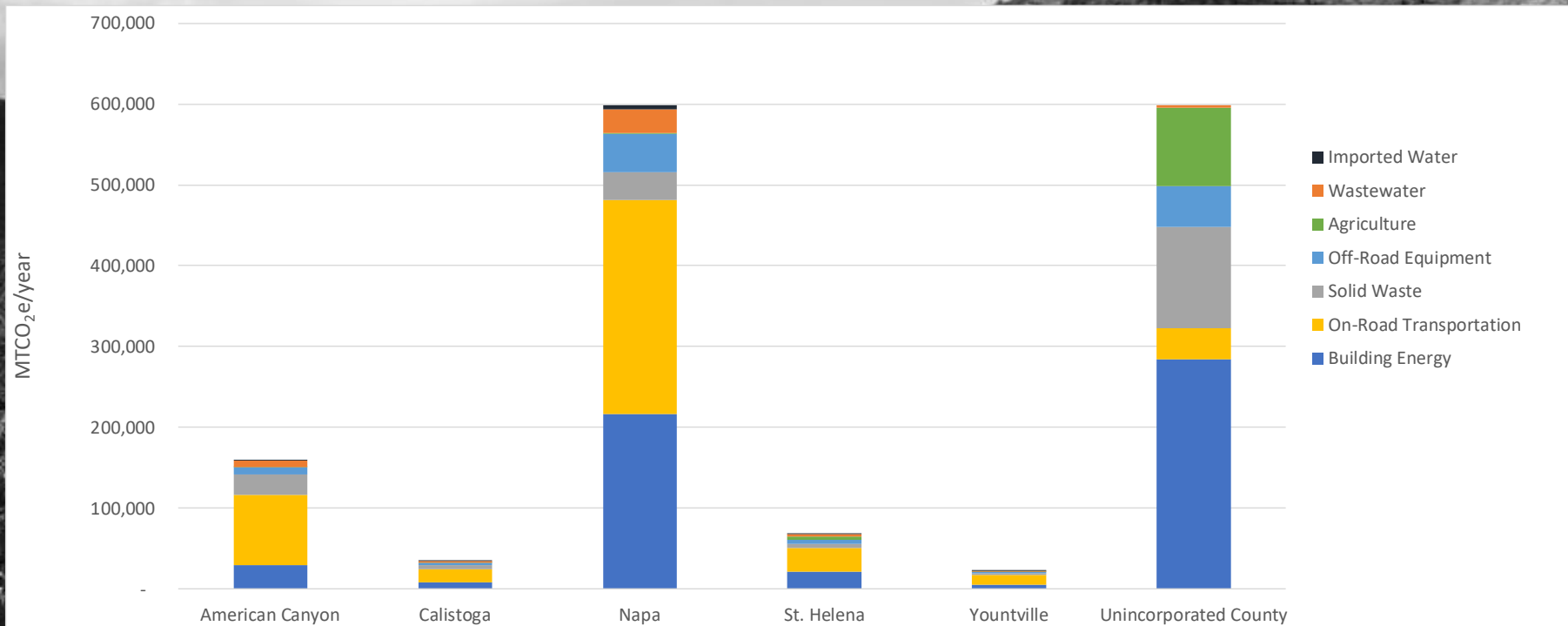
Jurisdiction	2019 (MTCO ₂ e/ year)	Percent of Total
Unincorporated County	598,302	40.4%
City of Napa	597,610	40.4%
American Canyon	159,719	10.8%
St. Helena	67,657	4.6%
Calistoga	34,982	2.4%
Yountville	22,332	1.5%
Total	1,480,602	100.0%

GHG Emissions by Jurisdiction



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2019 Napa County Regional Greenhouse Gas Emissions Inventory by Jurisdiction and Sector (MTCO₂e/year)

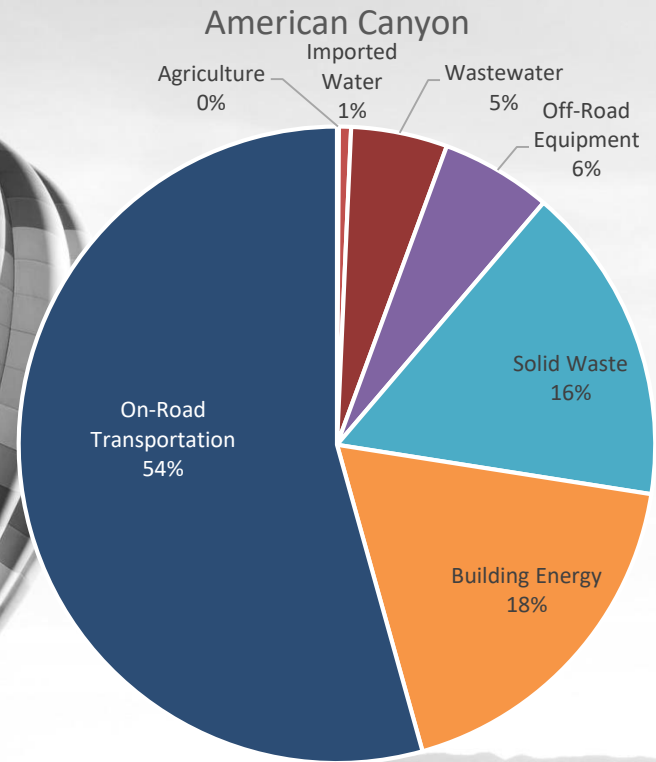


American Canyon



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- Most emissions from On-Road Transportation
- Second most populous city
- Proximity to Bay Area
- Emissions per capita
 - 7.6 MTCO₂e/capita in 2019
- On-Road Emissions:
 - 4.1 MTCO₂e/capita in 2019
- Emissions in 2019:
 - 159,842 MTCO₂e

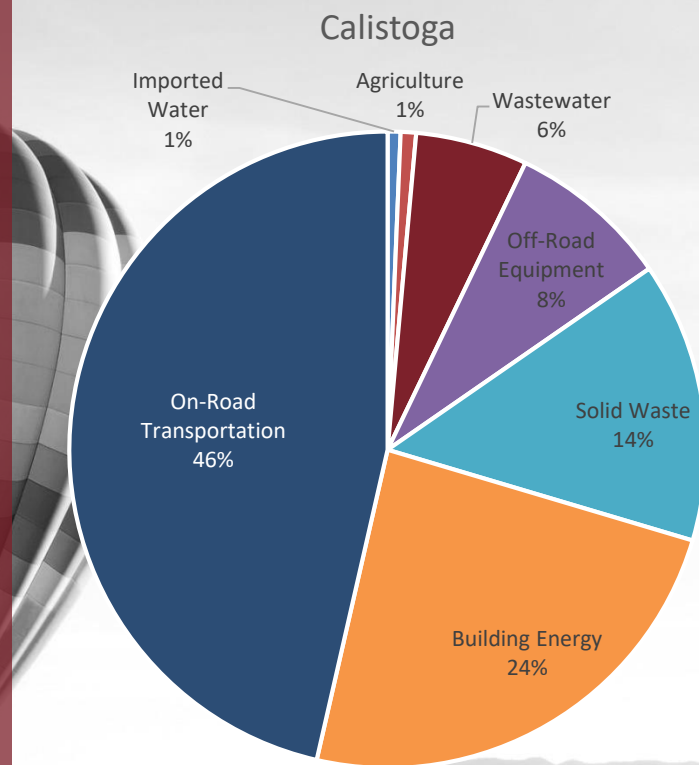


Calistoga



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- Most emissions from On-Road Transportation
- Second smallest city by population
- Emissions per capita:
 - 6.5 MTCO₂e/capita in 2019
- On-Road Emissions:
 - 3.0 MTCO₂e/capita in 2019
- Emissions in 2019:
 - 35,025 MTCO₂e

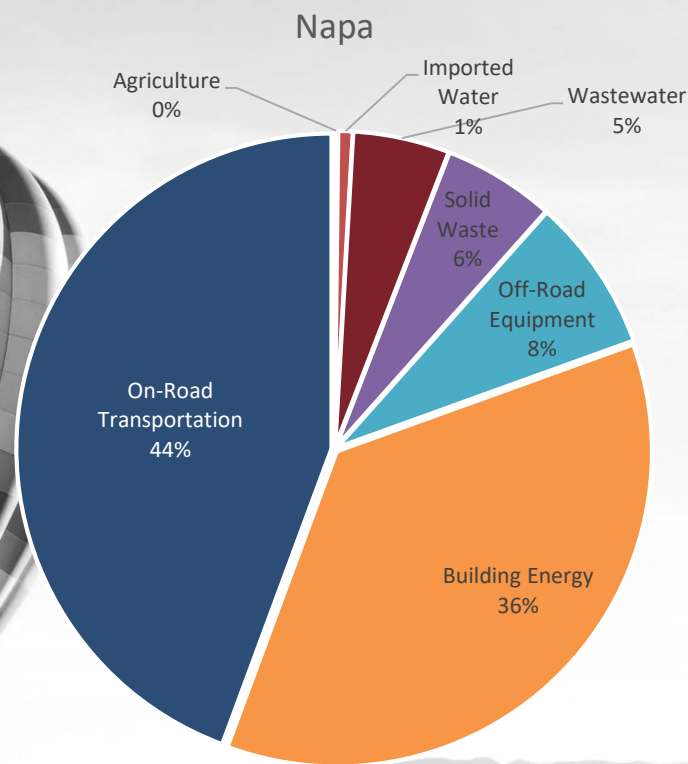


City of Napa



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- Most emissions from On-Road Transportation
- Most populous city. Most number of jobs.
- Emissions per capita:
 - 7.5 MTCO₂e/capita in 2019
- On-Road Emissions:
 - 3.0 MTCO₂e/capita in 2019
- Emissions in 2019:
 - 598,089 MTCO₂e (2nd highest)

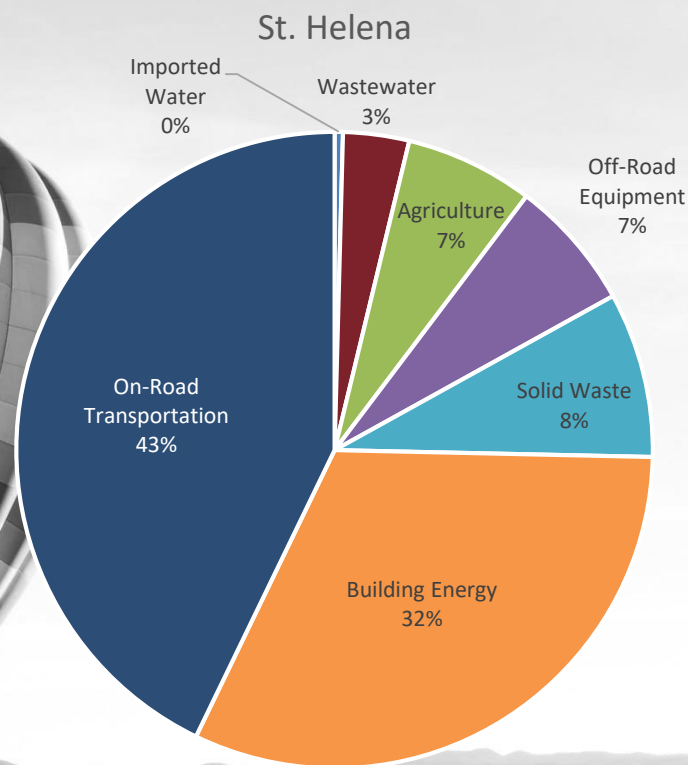


St. Helena



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- Most emissions from On-Road Transportation
- Major tourist destination and large commercial presence
- Emissions per capita:
 - 11.1 MTCO₂e/capita in 2019
- On-Road Emissions:
 - 4.2 MTCO₂e/capita in 2019
- Emissions in 2019:
 - 67,720 MTCO₂e

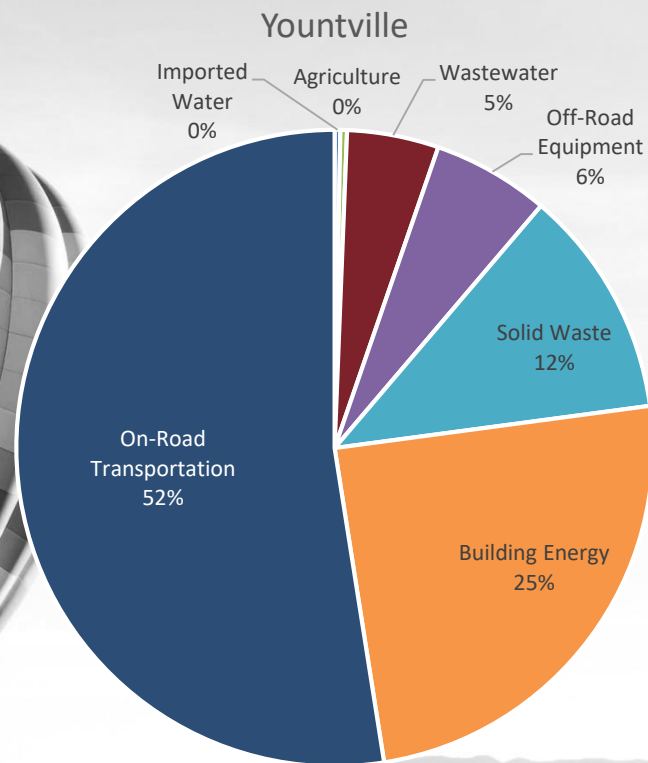


Yountville



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- Most emissions from On-Road Transportation
- Least populous jurisdiction
- Emissions per capita:
 - 8.0 MTCO₂e/capita in 2019
- On-Road Emissions:
 - 4.2 MTCO₂e/capita in 2019
- Emissions in 2019:
 - 22,382 MTCO₂e (lowest)

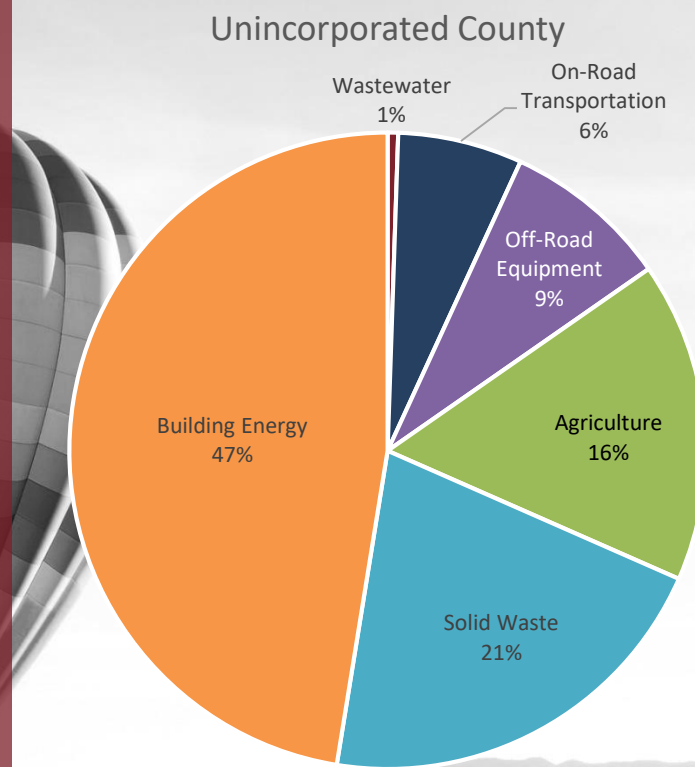


Unincorporated County



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- Most emissions from Building Energy
- Majority of ag emissions here
- Both landfills located here
- Emissions per capita:
 - 23.9 MTCO₂e/capita in 2019
- On-Road Emissions:
 - 1.5 MTCO₂e/capita in 2019
- Emissions in 2019:
 - 598,772 MTCO₂e (highest)

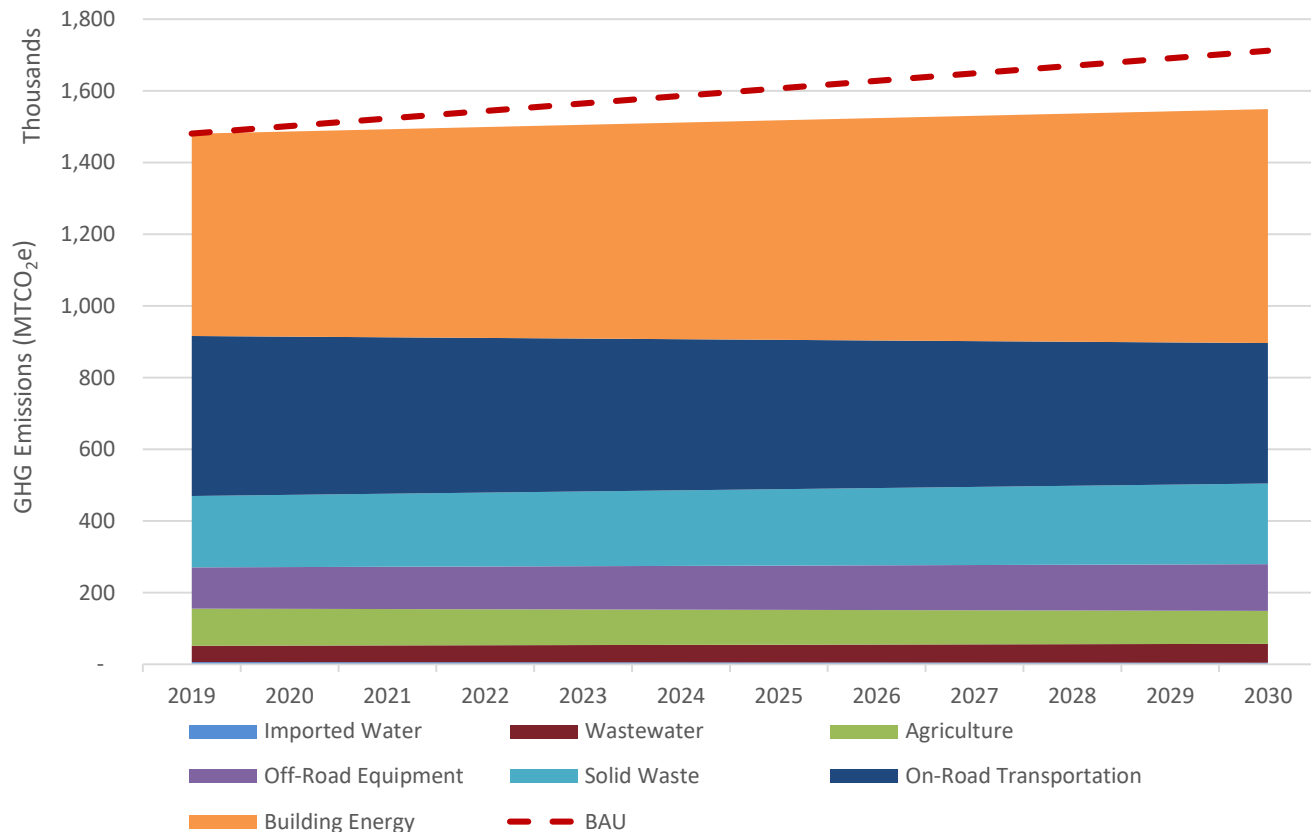


Forecasts



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Napa County Regional GHG Emissions Forecasts (2019-2030)



- BAU increases by 16%
- Legislative-Adjusted BAU increases by 5%
- Forecasts scaled by population, jobs, ag acres, livestock pop, VMT, etc.
- Leg-Adjustments include:
 - MCE plans
 - SB100
 - Vehicle emissions standards
 - Title 24

SLCP and Carbon Sequestration



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- Short Lived Climate Pollutants (SLCP)
 - Some SLCPs already accounted for
 - E.g., methane emissions from livestock and solid waste
 - Currently reviewing other sources of SLCPs
- Carbon Sequestration
 - Currently reviewing carbon storage data sources
- Anticipated Completion: Early 2023



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Questions

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2019 Napa County Regional Greenhouse Gas Inventory by Jurisdiction and Sector (MTCO₂e/year)

Emissions Sector	American Canyon	Calistoga	Napa	St. Helena	Yountville	Unincorporated County	Total
Building Energy	29,168	8,431	216,505	21,599	5,551	284,313	565,567
On-Road Transportation	86,779	16,239	265,100	28,975	11,722	37,859	446,673
Solid Waste	25,938	4,981	34,236	5,676	2,601	125,429	198,862
Off-Road Equipment	8,998	2,880	47,238	4,502	1,328	50,602	115,548
Agriculture	154	274	1,086	4,415	75	97,378	103,381
Wastewater	7,822	1,994	29,542	2,270	1,040	3,191	45,858
Imported Water	983	229	4,383	285	65	-	5,943
Total	159,842	35,025	598,089	67,721	22,382	598,772	1,481,832
Emissions per capita	7.6	6.5	7.5	11.1	8.0	23.9	10.6
Emissions per SP	5.9	4.3	4.6	5.7	5.7	10.8	6.3
Transportation Emissions per capita	4.1	3.0	3.3	4.8	4.2	1.5	3.2