



Summary of 2019 Multnomah County Carbon Emissions and Trends

February 2022



THE BUREAU OF
**PLANNING &
SUSTAINABILITY**

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Introduction

This document summarizes Portland and Multnomah County's carbon emissions inventory and trends for the years 1990-2019. Portland and Multnomah County have been tracking local carbon emission for nearly 30 years using an annual sector-based emissions inventory. The sector-based inventory is used widely by local, state, and national governments and meets the Global Protocol for Community-scale Greenhouse Gas Emission Inventories.

2019 Emissions

- Total Multnomah County emissions for 2019 were 7,531,000 MT CO₂e.
- Emissions increased 2.8% from 2018 to 2019. Emissions are still lower than 2017 levels.
- Total 2019 emissions were 17% below 1990 baseline emissions levels and 28% below peak 2000 emission levels.
- Multnomah County continues to benefit from significant per person emission reductions of 40% below 1990 levels.
- United States emissions decreased 2% from 2018-2019 and are currently 1.8% above 1990 levels.

Insights

Emissions reductions remain plateaued and need to rapidly accelerate to reach Portland's adopted carbon emissions reduction targets of at least 50% below 1990 levels by 2030 and net zero emissions by 2050.

Increases from 2018 levels were largely the result of changes in weather, with increases in electricity and natural gas used for home and business heating and cooling. Transportation sector emissions declined again slightly, from a 2% drop in gasoline sales.

Annual Changes of Interest

- Residential sector emissions are up 8 % from 2018, mostly due to increased use of electricity, natural gas, and fuel oil from a colder winter.
- Commercial sector emissions are also up by 8 % from 2018. The increase is also due to more electricity and natural gas use from a colder winter.
- Industrial sector emissions rose nearly 6 % from 2018. The increase is mostly due to increased industrial sector electricity, natural gas, fuel oil and propane use. Some of this increase is also likely due to weather, resulting from increased onsite power generation for institutional facilities.
- Transportation sector emissions decreased by 2.8 % from 2018-2019, due to a reduction in gasoline sales. Transportation sector emissions are still 3 % over 1990 levels.
- Emissions from solid waste and total tonnage hauled to landfills decreased by 4%.

Multnomah County Carbon Emissions by Source (2019)



Figure 1: Multnomah County carbon emissions by source.

Multnomah County
Emissions Change for All Sectors
(2000 - 2019)

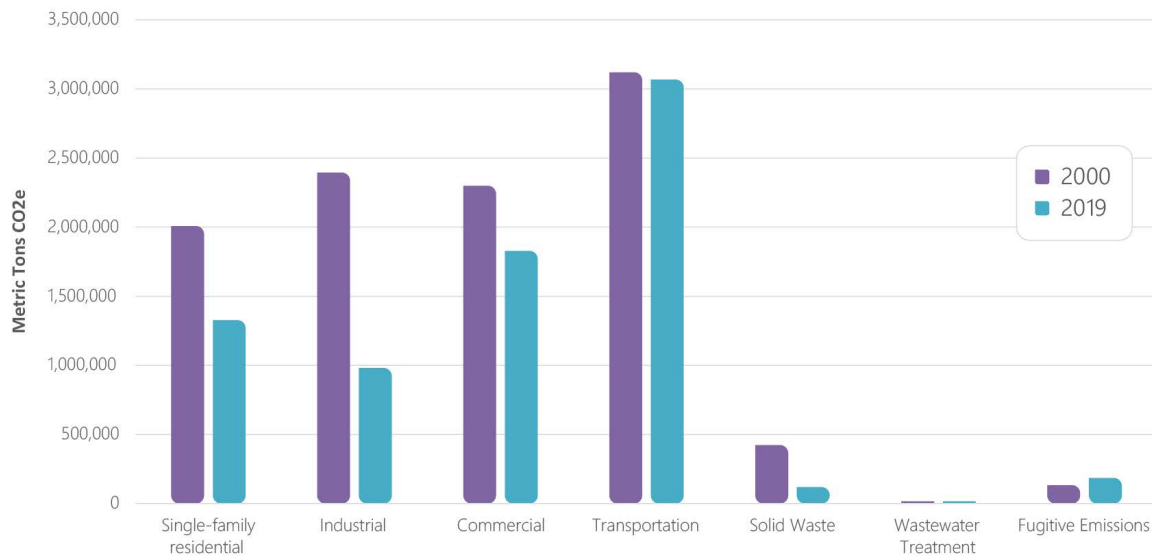


Figure 2: Multnomah County emissions changes for all sectors.

Multnomah County
Population & Jobs Up, Carbon Emissions Down
 (1990 - 2019)

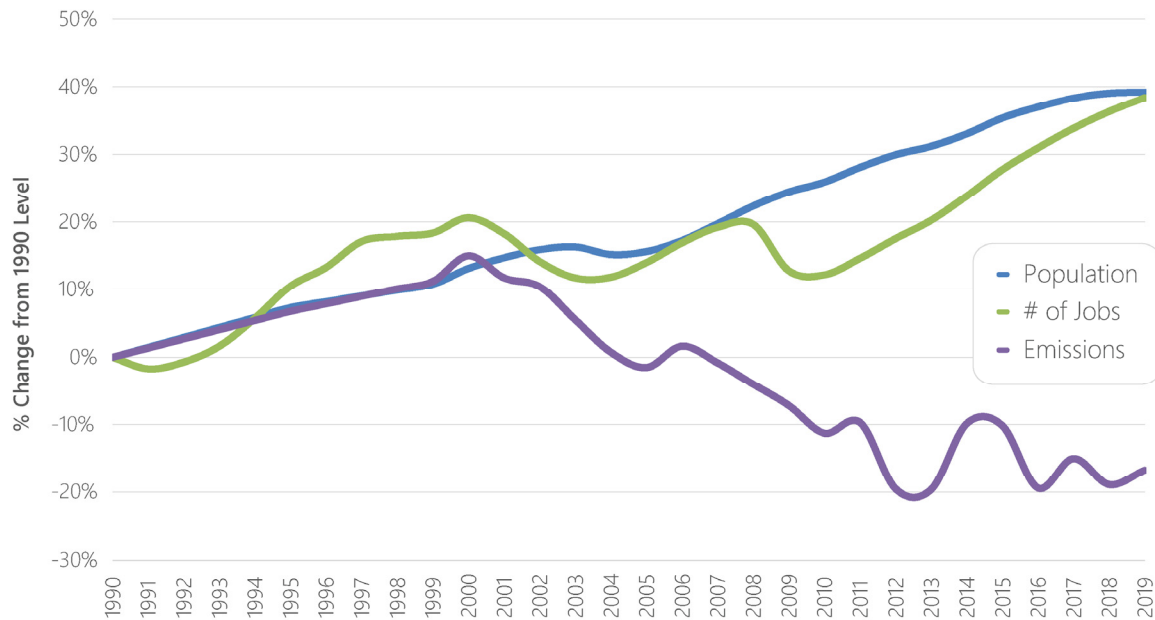


Figure 3: Population and jobs up, carbon emissions down.

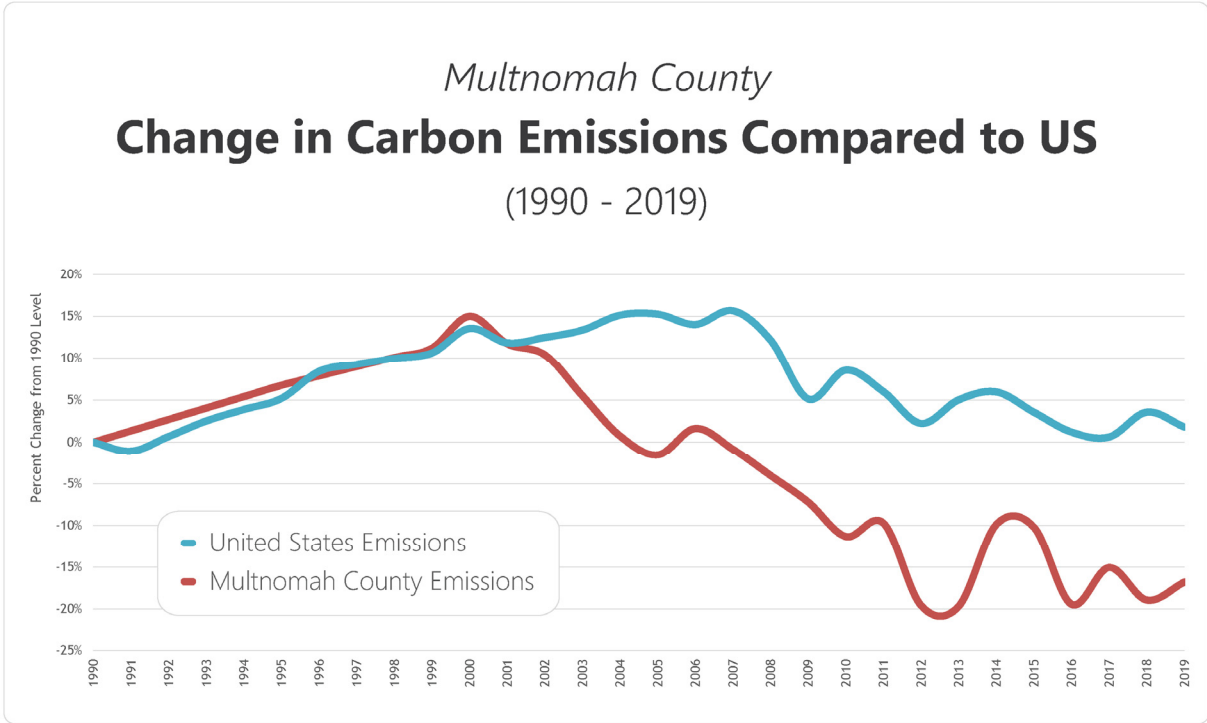


Figure 4: Change in Multnomah County carbon emissions compared to United States emissions.

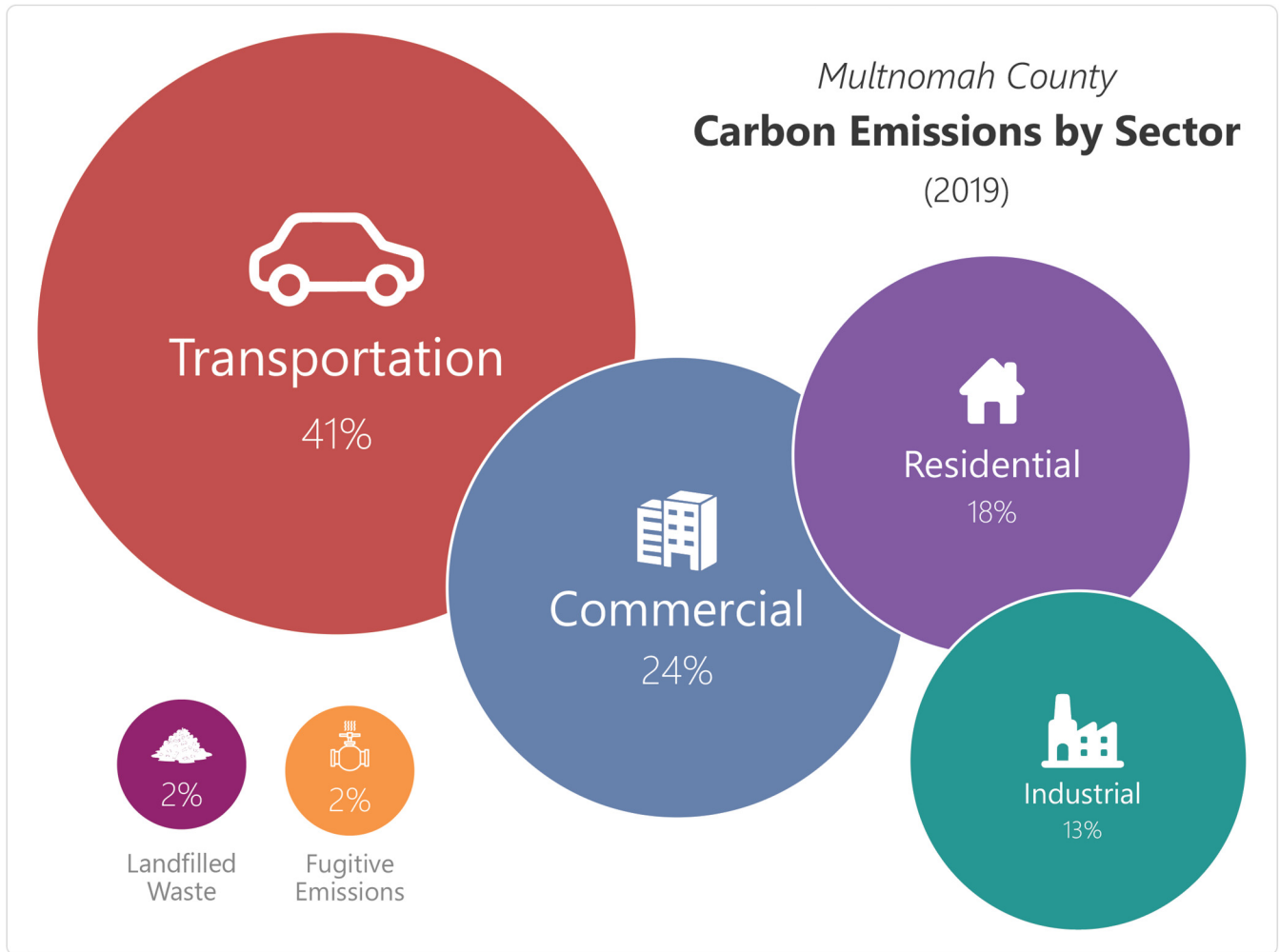


Figure 5: Multnomah County carbon emissions by sector.

Notes

The 2019 Multnomah County Emission Inventory is considered preliminary, although forthcoming updates should not affect the overall trends or percent change reductions from base levels.

Carbon dioxide emissions in Multnomah Co., 1990 - 2019
This report has been generated for Portland, Oregon using ClearPath software suite from ICLEI-USA
Note: Figures have been revised from previous years to incorporate revised data from U.S. E.I.A., updated electricity emission coefficients provided by ICLEI, and estimated ethanol use.

Total emissions (metric tons CO2-equivalent)

Year	1990	1995	2000	2005	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Change since previous year	Change since 1990
Residential	1,725,000	1,756,000	2,007,000	1,639,000	1,553,000	1,635,000	1,342,000	1,367,000	1,588,000	1,438,000	1,190,000	1,363,000	1,224,000	1,327,000	8%	-23%
Commercial	1,877,000	2,042,000	2,393,000	2,006,000	1,892,000	1,923,000	1,575,000	1,585,000	2,010,000	2,004,000	1,579,000	1,715,000	1,686,000	1,827,000	8%	-3%
Industrial	1,891,000	2,104,000	2,299,000	1,470,000	1,335,000	1,432,000	1,237,000	1,193,000	1,392,000	1,391,000	1,173,000	1,058,000	927,000	980,000	6%	-48%
Transportation	2,979,000	3,155,000	3,120,000	3,145,000	2,940,000	2,874,000	2,815,000	2,823,000	2,846,000	2,949,000	3,008,000	3,216,000	3,156,000	3,067,000	-3%	3%
Solid Waste	510,000	490,000	423,000	474,000	98,000	98,000	93,000	107,000	118,000	134,000	132,000	126,000	134,000	119,000	-11%	-77%
Wastewater Treatment	19,000	23,000	16,000	13,000	15,000	15,000	17,000	17,000	18,000	18,000	17,000	17,000	16,000	16,000	0%	-19%
Fugitive Emissions	36,000	76,000	133,000	153,000	184,000	184,000	191,000	168,000	173,000	184,000	183,000	183,000	185,000	185,000	0%	419%
Total	9,038,000	9,646,000	10,391,000	8,900,000	8,018,000	8,162,000	7,270,000	7,260,000	8,146,000	8,118,000	7,282,000	7,679,000	7,328,000	7,521,000	3%	-17%
% change from 1990	0%	7%	15%	-2%	-11%	-10%	-20%	-20%	-10%	-10%	-19%	-15%	-19%	-17%		
% change from 2000			0%	-14%	-23%	-21%	-30%	-30%	-22%	-22%	-30%	-26%	-29%	-28%		

Year	1990	1995	2000	2005	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Change since previous year	Change since 1990
Multnomah Co. population	583,887	626,500	660,486	675,175	735,334	747,977	758,817	766,082	776,712	790,294	799,766	807,555	811,880	812,855	0.001200916	0.39214437
Multnomah Co. Jobs	375,768	415,113	453,254	428,305	421,452	430,662	441,648	451,880	465,483	480,109	492,062	502,929	512,206	520,002	0.015220439	0.3838379
Commercial establishments					27,782	28,428	29,372	29,610	30,581	31,888	33,160	34,412	35,353	36,164	0.022940062	

Per capita emissions (metric tons CO2-equivalent)

Year	1990	1995	2000	2005	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Change since previous year	Change since 1990
Residential	3.0	2.8	3.0	2.4	2.1	2.2	1.8	1.8	2.0	1.8	1.5	1.7	1.5	1.6	-3%	-45%
Commercial	3.2	3.3	3.6	3.0	2.6	2.6	2.1	2.1	2.6	2.5	2.0	2.1	2.1	1.2	-43%	-62%
Industrial	3.2	3.4	3.5	2.2	1.8	1.9	1.6	1.6	1.8	1.8	1.5	1.3	1.1	2.2	72%	-31%
Transportation	5.1	5.0	4.7	4.7	4.0	3.8	3.7	3.7	3.7	3.7	3.8	4.0	3.9	3.8	-5%	-26%
Solid Waste	0.9	0.8	0.6	0.7	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1	-6%	-83%
Wastewater Treatment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-9%	-42%
Fugitive Emissions	0.1	0.1	0.2	0.2	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1%	273%
Total	15.5	15.4	15.7	13.2	10.9	10.9	9.6	9.5	10.5	10.3	9.1	9.5	9.0	9.3	-3%	-40%
% change from 1990	0%	-1%	2%	-15%	-30%	-30%	-38%	-39%	-32%	-34%	-41%	-39%	-42%	-40%		
% change from 2000			0%	-16%	-31%	-31%	-39%	-40%	-33%	-35%	-42%	-40%	-43%	-41%		

Total energy use (million BTUs)

Year	1990	1995	2000	2005	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Change since previous year	Change since 1990
Residential	18,214,000	18,900,000	21,253,000	20,012,000	20,554,000	21,965,000	20,586,000	21,269,000	20,759,000	18,910,000	19,493,000	23,024,000	20,992,000	22,113,000	5%	21%
Commercial	19,415,000	20,606,000	22,593,000	21,236,000	21,465,000	22,062,000	21,217,000	21,440,000	21,579,000	21,442,000	21,620,000	23,951,000	23,799,000	24,346,000	2%	25%
Industrial	22,064,000	24,657,000	24,670,000	18,127,000	17,124,000	18,559,000	17,890,000	17,448,000	17,610,000	17,569,000	17,441,000	16,268,000	14,652,000	14,510,000	-1%	-34%
Transportation	40,496,000	42,822,000	42,889,000	43,683,000	43,257,000	42,260,000	41,394,000	41,463,000	41,801,000	43,523,000	44,242,000	44,804,000	44,419,000	43,107,000	-3%	6%
Wastewater Treatment	363,000	373,000	354,000	593,000	677,000	597,000	599,000	717,000	746,000	749,000	698,000	705,000	707,000	707,000	0%	95%
Total	100,552,000	107,358,000	111,760,000	103,651,000	103,077,000	105,443,000	101,687,000	102,337,000	102,496,000	102,194,000	103,494,000	108,752,000	104,569,000	104,783,000	0%	4%

Year	1990	1995	2000	2005	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Change since previous year	Change since 1990
Multnomah Co. population	583,887	626,500	660,486	675,175	735,334	747,977	758,817	766,082	776,712	790,294	799,766	807,555	812,855	812,855	0%	39%
Source: U.S. Census Bureau																

Per capita energy use (million BTUs)

Year	1990	1995	2000	2005	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Change since previous year	Change since 1990
Residential	31.2	30.2	32.2	29.6	28.0	29.4	27.1	27.8	26.7	23.9	24.4	28.5	25.8	27.2	5%	-13%
Commercial	33.3	32.9	34.2	31.5	29.2	29.5	28.0	28.0	27.8	27.1	27.0	29.7	29.3	30.0	2%	-10%
Industrial	37.8	39.4	37.4	26.8	23.3	24.8	23.6	22.8	22.7	22.2	21.8	20.1	18.0	17.9	-1%	-53%
Transportation	69.4	68.4	64.9	64.7	58.8	56.5	54.6	54.1	53.8	55.1	55.3	55.5	54.6	53.0	-3%	-24%
Wastewater Treatment	0.6	0.6	0.5	0.9	0.9	0.8	0.8	0.9	1.0	0.9	0.9	0.9	0.9	0.9	0%	40%
Total	172.2	171.4	169.2	153.5	140.2	141.0	134.0	133.6	132.0	129.3	129.4	134.7	128.6	128.9	0%	-25%
% change from 1990		0%	-2%	-11%	-19%	-18%	-22%	-22%	-23%	-25%	-25%	-22%	-25%	-25%		

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