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Summary of 2018 Multnomah County Carbon Emissions and Trends December 18, 2020

This document summarizes Portland and Multnomah County’s carbon emissions inventory and trends for the years 1990-2018. 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.

2018 Emissions

- Total Multnomah County emissions for 2018 were 7,317,000 MT CO₂e
- Total 2018 emissions were 19% below 1990 levels, see Figure 1.
- Emissions declined in 2018, a decrease of 4.6% from 2017 levels, but still slightly higher than 2016 levels.
- Multnomah County continues to benefit from significant per person emission reductions of 42% below 1990 levels.
- United States emissions increased 3% from 2017-2018 and are currently nearly 5% above 1990 levels.

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

Reductions from 2017 levels were largely the result of changes in weather. Transportation sector emissions also declined slightly for the first time since 2012, from a 2% drop in gasoline sales. This is likely due to higher gasoline prices. According to the Energy Information Administration, the average annual gasoline price for Pacific NW increased by 15% from 2017 to 2018.

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Annual changes of interest

- Residential sector emissions are down 10 % from 2017, mostly due to reduced use of electricity, natural gas, and fuel oil from a warmer winter.
- Commercial sector emissions are down almost 2 % from 2017. The decrease is also due to less electricity and natural gas use from a warmer winter.
- Industrial sector emissions dropped 12 % from 2017. The decrease is mostly due to reduced industrial sector electricity, natural gas, fuel oil and propane use.
- Transportation sector emissions also decreased almost 2 %, due to a reduction in gasoline sales. Transportation sector emissions are still 6 % over 1990 levels and continue to climb as a share of total emissions, rising to 43 % of total emissions.
- Emissions from solid waste and total tonnage hauled to landfills increased by 7 %. Metro has identified this increase as largely the result of construction and demolition waste. Garbage disposal has been increasing since the bottom of the last recession, around 2013. Regional population and economic growth have contributed to increased construction and demolition waste, the bulk of which was pushed to landfill.
- NW Natural's reported fugitive emissions are up 24 %. This is due to a change in NW Natural's methodology. They were previously using a system-wide fugitive emissions figure, based on the number of accounts in Portland. Now they are using the number of connections within the distribution system to improve accuracy.



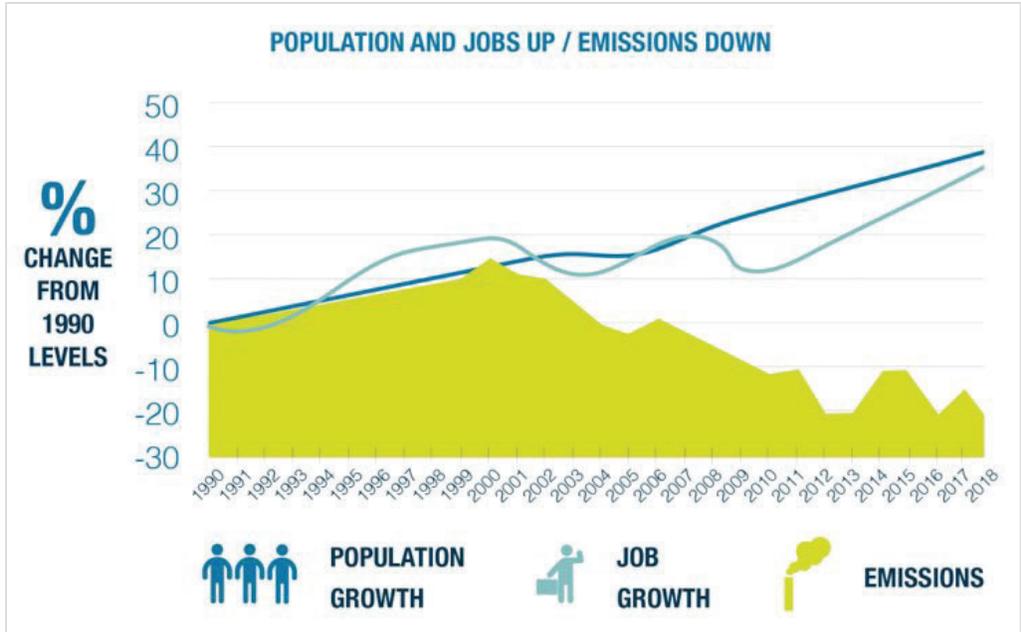


Figure 1: Change in carbon emissions 1990-2018, compared to changes in Multnomah County population and jobs.

Notes

The 2018 Multnomah County Emission Inventory is considered preliminary, although forthcoming updates should not affect the overall trends or percent change reductions from base levels. Oregon has not released the 2018 State emissions inventory, so Portland is unable to update all fugitive emissions factors from refrigerants, aerosols, etc. Instead, 2017 data on fugitive emission has been adjusted for population growth and is used in the preliminary inventory. In addition, historical transportation propane data needs to be updated because EIA reporting methodologies changed.



Carbon dioxide emissions in Multnomah Co., 1990 - 2018

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., and updated eGRID electricity emission coefficients. This inventory is preliminary as some data sources remain outstanding.

Total emissions (metric tons CO2-equivalent)

Year	1990	1995	2000	2005	2010	2011	2012	2013	2014	2015	2016	2017	2018	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	1,387,000	1,588,000	1,438,000	1,190,000	1,363,000	1,224,000	-10%	-29%
Commercial	1,877,000	2,042,000	2,383,000	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	-2%	-10%
Industrial	1,891,000	2,104,000	2,289,000	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	-12%	-51%
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	-2%	6%
Solid Waste	510,000	490,000	423,000	474,000	98,000	98,000	93,000	107,000	103,000	122,000	122,000	115,000	123,000	7%	-76%
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	-8%	-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	1%	419%
Total	9,037,000	9,646,000	10,391,000	8,900,000	8,017,000	8,161,000	7,270,000	7,260,000	8,131,000	8,106,000	7,272,000	7,668,000	7,317,000	-5%	-19%
% change from 1990	0%	7%	15%	-2%	-11%	-10%	-20%	-20%	-10%	-10%	-20%	-15%	-19%		
% change from 2000	0%	0%	0%	-14%	-23%	-21%	-30%	-30%	-22%	-22%	-30%	-26%	-30%		

Per capita emissions (metric tons CO2-equivalent)

Year	1990	1995	2000	2005	2010	2011	2012	2013	2014	2015	2016	2017	2018	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	-11%	-49%
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	-2%	-35%
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	-13%	-65%
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	-2%	-24%
Solid Waste	0.9	0.8	0.6	0.7	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.2	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	-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	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	-5%	-42%
% change from 1990	0%	-1%	2%	-15%	-30%	-30%	-38%	-39%	-32%	-34%	-41%	-38%	-42%		
% change from 2000	0%	0%	0%	-16%	-31%	-31%	-39%	-40%	-33%	-35%	-42%	-40%	-43%		

Energy use in Multnomah Co, 1990 - 2018
 This report has been generated for Portland, Oregon using ClearPath software suite from ICLEI-USA

Total energy use (million BTUs)

Year	1990	1995	2000	2005	2010	2011	2012	2013	2014	2015	2016	2017	2018	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	20,755,000	18,910,000	19,493,000	23,024,000	20,992,000	-9%	15%
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	-1%	23%
Industrial	22,064,000	24,657,000	24,670,000	18,127,000	17,124,000	18,559,000	17,890,000	17,449,000	17,610,000	17,569,000	17,441,000	16,268,000	14,652,000	-10%	-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	-1%	10%
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	0%	95%
Total	100,552,000	107,358,000	111,760,000	103,651,000	103,077,000	105,443,000	101,686,000	102,337,000	102,495,000	102,193,000	103,494,000	106,752,000	104,569,000	-4%	4%

Year	1990	1995	2000	2005	2010	2011	2012	2013	2014	2015	2016	2017	2018	Change since previous year	Change since 1990
Multnomah Co. population	583,887	626,500	680,486	675,175	735,334	747,977	758,817	766,082	776,712	790,294	799,786	807,555	811,880	1%	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	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	25.9	-9%	-17%
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	-1%	-12%
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	-10%	-52%
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	54.7	-1%	-21%
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%	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	128.8	-4%	-25%

% change from 1990