State of Oregon
DEQ Department of Environmental Quality

2017 AirToxScreen Summary Document

April 2025

Executive summary

The Oregon Department of Environmental Quality created this summary of point source air toxics emissions data from industrial facilities and the related human health risk for Oregon presented in U.S. EPA's AirToxScreen Database for 2017, with supplementary information obtained from EPA's AirToxScreen Mapping Tool.

- These ATS results provide information on cancer and noncancer human health risks related to point source emissions of air toxics from industrial facilities in the U.S. in 2017. EPA releases this data to states approximately three to four years after collecting it so that the states can review it and provide their own quality control and assurance processes. DEQ then carefully reviews ATS data specific to Oregon and provides a summary of this information as a tool for users who might not be familiar with how to search each year's ATS Database.
- The ATS data will be provided on an annual basis, and replaces the former National Air Toxics Assessment program, which provided air emissions data every three years.
- The 2017 nationwide average cancer risk and Oregon statewide average cancer risk from air emissions are both 30 in a million. Washington and California also have average cancer risks of 30 in a million, while Idaho has 20 in a million.
- Among Oregon's 36 counties, the 2017 county-wide average cancer risks ranged from 14 in a million in Harney County to 44 in a million in Hood River County in 2017.
- The majority of 2017 cancer risk from air toxics in Oregon was due to formaldehyde, a chemical found in air and created in large part through the process of secondary formation of air pollutants. Certain manufacturing and industrial facilities, commonly referred to as point sources, can also emit large amounts of formaldehyde.
- Cancer risks are discussed using two different but related subsets of ATS data: risk by pollutant, and risk by source category.
- Noncancer risks in Oregon in 2017 did not exceed a hazard quotient of 1 for any pollutant in any location.
- In general, 2017 cancer risk due to air toxics in Oregon did not increase from the 2014 air emissions data presented in the last and final National Air Toxics Assessment.
- This summary, as well as the EPA 2017 ATS Database on which it is based, does not provide risk information for locations that are smaller than a census tract.

An expanded description of related details is provided below. Although DEQ is providing this summary, EPA is the creator of the original ATS Database and is the appropriate agency to contact if complex questions arise.

1.0 Introduction

The information in this summary document was pulled from U.S. EPA's AirToxScreen Database of 2017 air toxics emissions and human health risk data for the United States, as well as for individual states, counties, and census tracts. An accompanying tool, [the AirToxScreen MappingTool](), provides another perspective on this data with an interactive set of maps. DEQ summarized the EPA 2017 ATS data here to make it more easily understood by the general public in Oregon.

The 2017 ATS Database provides risk estimates related to both individual pollutants and to source categories. The statewide risk for Oregon is the same whether you look at it as total risk from pollutants or total risk from source categories. It's important to know which pollutants are driving risk in Oregon, and where those pollutants are coming from, that is, from which source categories. In this summary we'll first investigate the data from individual pollutants and then follow this by looking at the source categories.

EPA's ATS program is meant to provide a comprehensive evaluation of air toxics in the U.S., based on air data and modeled air quality submitted by state and local air agencies. The process is similar to that used to produce previous National Air Toxics Assessment reports. EPA developed ATS as a tool for state, local and tribal agencies to prioritize air toxics, emission sources, and locations of interest for further study to gain a better understanding of risks to human health. However, this process is not designed to predict risks at specific locations, such as a specific residential address.

Prior to 2017, EPA published NATA data about once every three years; the last and final NATA report was published for 2014 data. The ATS Database replaced EPA's former use of NATA and will present emissions and risk data annually. Although it is inappropriate to compare ATS 2017 results to the previous 2014 NATA because the methodologies used are different, it appears that human health risks in Oregon due to inhalation of pollutants in air emissions are roughly the same. The 2014 NATA showed that the average cancer risk across the U.S. was 32 in a million, compared to the 2017 ATS cancer risk of 30 in a million. For the entire state of Oregon in 2014, the NATA cancer risk of 31 in a million was marginally larger than the 2017 ATS cancer risk for Oregon of 30 in a million. However, ATS rounds cancer risk for the entire U.S. and the states to the nearest multiple of 10; so, cancer risks of 26.7 and 32.9 would each be presented as 30 in a million. Thus, there is likely little difference between the statewide cancer risks for Oregon presented in the final NATA report and in the 2017 ATS data.

Noncancer risks were not present above acceptable levels in Oregon in 2017, based on ATS data. Noncancer risks are discussed in terms of a hazard quotient. A hazard quotient is obtained by dividing the concentration of a pollutant in air by its noncancer inhalation toxicity value. A hazard quotient of 1 or below for a single chemical is the level at which noncancer human health effects are considered unlikely. As the hazard quotient increases above 1, the likelihood of adverse human health effects also increases. When considering the noncancer risks from **multiple** chemicals, the term "hazard index" is used.

No air pollutant in any Oregon county or census tract exceeded a noncancer hazard quotient of 1 for any target organ or system that was evaluated, including:

- Respiratory
- Neurological

- Liver
- Developmental
- Reproductive
- Kidney
- Ocular
- Endocrine
- Hematological
- Immunological
- Skeletal
- Spleen
- Thyroid
- Whole body (critical effects relevant to the whole body, such as decreased body weight).

Based on the lack of potential adverse noncancer effects in Oregon air, only cancer risks for air toxics emissions are discussed below.

2.0 Why cancer risk matters

Cancer risk is presented as a probability of contracting cancer. Typically, cancer risk estimates are presented as the number of *additional* cancer cases that could occur within a population of one million human beings due to exposure to a particular carcinogenic pollutant. “Additional” cancer cases refer to the fact that the background cancer rate in the United States -- without any additional chemical exposure – is about 1 in 3 for women and 1 in 2 for men, according to the American Cancer Society. The background cancer rate is related to genetics, exposure to things in typical daily life, voluntary choices such as smoking, and other parameters.

So, if 1 in 3 women in the U.S. is likely to get cancer during her lifetime, then she has an approximate 33 percent chance of getting cancer. This is equivalent to 33 in 100, which would be the same as 330,000 in one million. In combination with the state cancer risk of 30 shown below, the potential cancer risk for a population of one million women in Oregon would be 330,0**30** in one million. In this example, 30 of the possible incidents of cancer in a population of one million women could be due to exposure to air toxics discussed in this summary.

2.1 Acceptable cancer risk levels

An acceptable cancer risk level for an individual carcinogenic compound is typically considered to be 1 in 1 million, also written as 1×10^{-6}, or simply 10^{-6}. For multiple carcinogens, an acceptable cancer risk level is typically considered to be 10 in 1 million, or 1×10^{-5}, or 1 in 100,000.

The U.S. Environmental Protection Agency discusses a range of acceptable cancer risk from 1 in 1 million to 1 in 10,000 – that is, 1×10^{-6} up to 1×10^{-4}:

> “Acceptable Exposure Level is a legal term defined in the National Contingency Plan (NCP), which is the regulation that promulgates the Comprehensive Environmental Remediation, Cleanup, and Liability Act, or CERCLA, typically associated with the cleanup of Superfund sites. An acceptable exposure level is the ‘concentration level of a contaminant to which the human population, including sensitive subgroups, may be exposed without adverse effect during a lifetime or part of a lifetime....”. For known or

suspected carcinogens, acceptable exposure levels are generally concentration levels that represent lifetime cancer risk to an individual of between 10^{-4} (1 in 10,000) and 10^{-6} (1 in 1,000,000) using information on the relationship between the dose and response.

Sometimes this is referred to as the acceptable risk range (Source: National Oil and Hazardous Substances Pollution Contingency Plan). Sometimes 'acceptable exposure level' is referred to as 'acceptable risk.' So, an "acceptable" risk level (or range) of a contaminant, defined by law, is a range that EPA uses to make cleanup decisions at Superfund sites. This is a risk level (or range) that people can be exposed to, including sensitive populations, without health problems. For carcinogens, the acceptable risk range is between 10-4 (1 in 10,000) and 10-6 (1 in 1,000,000)."

The cancer risk values given for Oregon counties in Table 1 below are based on the presence of multiple carcinogenic air toxics and are assumed to be part of a single human exposure pathway, inhalation.

3.0 Cancer risks nationally

The 2017 ATS Database includes emissions from all 50 states, and three territories that include the Virgin Island, Puerto Rico, and the District of Columbia. Louisiana, Georgia, DC, and Arizona have the highest cancer risks, at 40 in a million. Twenty-five of the 53 states and territories have a cancer risk of 30 in million (including Oregon), while 20 states and Puerto Rico have a cancer risk of 20 in a million. Two states and one territory have the lowest cancer risk of 10 in a million – Wyoming, Hawaii, and the Virgin Islands. The average cancer risk for the U.S. as a whole is 30 in a million.

For the entire U.S., nearly half of the cancer risk is due to formaldehyde coming from secondary formation in air. As is true everywhere in the U.S., about 3 in a million is due to the background chemical carbon tetrachloride, 2 in a million is due to biogenics (please see Section 4,4), and 1.6 in a million is due to stationary point sources, which are typically industrial facilities. There are dozens of additional types of emissions sources across the U.S., but none of those exceeded approximately one in a million, and most were much lower. The source categories discussed in Section 4.4 are responsible for the majority of cancer risk in the U.S.

4.0 Cancer risks in Oregon

Cancer risk for pollutants in air for the state of Oregon is approximately 30 in a million, which means that due to exposure to certain air toxics in Oregon, there is a probability that 30 *additional* incidents of cancer above background levels may occur within a population of one million people. The following list presents cancer risks and population numbers in the states of Oregon, Washington, California, and Idaho. In each case, the cancer risk number shown indicates that for any population of one million people within a state, this additional (above background) number of cancer cases may occur.

State	Cancer risk in a million	Population
Oregon	30	3,831,050
Washington	30	6,724,526
California	30	37,249,389
Idaho	20	1,567,577

Note: Based on EPA's 2017 ATS cancer risk data, the unrounded cancer risk in Oregon is 32.9 in a million.

4.1 Cancer risks for counties in Oregon

There are 36 counties in Oregon. Below is a table listing highest-to-lowest cancer risks for all 36 counties, based on the averaging of cancer risk-per-pollutant across all census tracts in a county, followed by summation of the average cancer risks for each pollutant in a county. ATS describes census tracts as land areas defined by the U.S. Census Bureau. Tracts usually contain from 1,200 to 8,000 people, with most having close to 4,000 people. Census tracts are usually smaller than 2 square miles in cities but are much larger in rural areas; this means metropolitan counties such as Multnomah will have a larger number of census tracts than counties with lower populations. There are 175 pollutants listed in the ATS Database for each county in Oregon, although cancer risks for many of the pollutants are zero.

In 2017, Hood River and Multnomah counties had the highest cancer risks related to air toxics emissions, respectively, as shown below in Table 1. Of the 3,224 counties among the 50 states, District of Columbia, Puerto Rico, and the Virgin Islands, Hood River County ranked 35th for cancer risk, and Multnomah County ranked 40th for cancer risks. Harney County had the lowest cancer risk in Oregon and was 2,977th out of 3,224 counties in the U.S. The high risks for Hood River and Multnomah counties reflect the high frequency and large swaths of wildfires that took place in Oregon and Washington in 2017. The large Eagle Creek and Indian Creek fires in the Columbia Gorge and southwest of the town of Hood River created severe smoke health hazards and drove up the cancer risk due to toxic chemicals formed in the fire being transported to other areas.

Table 1

No.	County	Cancer Risk (in a million)
1	Hood River	44
2	Multnomah	42
3	Curry	38
4	Josephine	37
5	Clackamas	36.5
6	Jackson	36
7	Washington	35
8	Wasco	32
9	Marion	31
10	Deschutes	31
11	Lane	31
12	Linn	29
13	Douglas	29
14	Yamhill	27
15	Polk	27
16	Sherman	26
17	Morrow	26
18	Columbia	25

No.	County	Cancer Risk (in a million)
19	Klamath	25
20	Umatilla	25
21	Benton	24
22	Gilliam	22
23	Jefferson	21
24	Malheur	21
25	Crook	20
26	Union	20
27	Coos	19
28	Wheeler	17
29	Baker	17
30	Grant	17
31	Clatsop	16
32	Tillamook	16
33	Wallowa	16
34	Lake	15
35	Lincoln	15
36	Harney	14

The total cancer risk values per county in the table above represent the sums of per-pollutant cancer risks that are averaged across all census tracts for each county. As an example, the cancer risk related to formaldehyde in Multnomah County is an average of the formaldehyde risks across all census tracts in Multnomah County; this averaging is performed for each pollutant in Multnomah County. Then, those average cancer risks for each pollutant are added together to obtain a total cancer risk for Multnomah County.

4.2 Importance of cancer risk in individual census tracts

When considering individual census tracts, the cancer risk can be higher in a single census tract within a county than the average cancer risk for that county as a whole. Calculating an average emissions concentration and the related cancer risk for a county or the state tends to dilute, or "wash out" the higher cancer risks within census tracts inside those larger areas. If you look at the 2017 ATS Mapping Tool, it shows a number of tracts in Multnomah County between Portland International Airport and the city of Gresham with cancer risks ranging from 50 to 80 in a million. So, these individual tracts have a higher cancer risk than does Multnomah County, which has an average cancer risk of 42 in a million. PAH tracts, DEQ removed the cancer risks that the source categories of Secondary Formation and Background contributed to the total cancer risk for a tract. Toxic pollutants formed through Secondary formation and concentrations of carbon tetrachloride, which make up Background emissions, cannot be directly controlled by DEQ actions. Removing cancer risks from these two source categories allows us to see whether Point sources are driving cancer risk in a tract.

For most other census tracts in Oregon, the source category of secondary formation drives the cancer risk, while the toxic air pollutant driving this risk is formaldehyde. Most formaldehyde in air comes from secondary formation of chemicals.

However, as explained in Section 4.5, the high cancer risk due to hexavalent chromium in the high-cancer-risk tracts in Multnomah County is most likely not present. The Boeing Company provided overestimates of their hexavalent chromium emissions to the TRI in 2017, which is why it appears that cancer risks are so high in these tracts. Nevertheless, this situation illustrates the importance of DEQ evaluation of the ATS data from EPA. If this cancer risk from hexavalent chromium had been real, DEQ would have quickly prioritized making sure these emissions were halted or decreased to a very low level that would reduce cancer risk to acceptable levels.

4.3 Toxic air pollutants driving cancer risk in Oregon

For the purposes of this summary, DEQ discusses the six toxic air pollutants emitted from Oregon point sources that have the highest cancer risk associated with them.

Any toxic air pollutant with a **statewide** cancer risk greater than one in a million is discussed below. These include, in, order of level of cancer risk:

- Formaldehyde (17 in one million)
- Benzene (3.2 in one million)
- Carbon tetrachloride (3.1 in one million)
- Acetaldehyde (2.5 in one million)
- Naphthalene (2.5 in one million)
- Polycyclic aromatic hydrocarbons/polycyclic organic matter or PAHPOM (2.2 in one million)

In every Oregon county, formaldehyde drives the cancer risk estimate – in other words, it contributes the highest cancer risk to each county's total cancer risk. In fact, formaldehyde contributes roughly 50 to 100 percent of the cancer risk in most Oregon counties. The source categories that contribute the most to these formaldehyde levels are secondary formation in air, biogenics, residential wood combustion, and fire, typically in that order. Secondary formation of formaldehyde occurs through the chemical oxidation of volatile organic compounds present in air, and reactions between ozone and certain alkene compounds.

In general, the second largest contributor to county cancer risk in Oregon is benzene, which originates from residential wood smoke, light-duty vehicles that use gas as fuel (cars, vans, SUVs, pickup trucks), and fires. The third largest contributor is carbon tetrachloride, which, as explained above, is a background air pollutant common to every state within the continental U.S.

The AirScreenTox Database indicates that acetaldehyde originates from secondary formation and biogenics, for the most part. Acetaldehyde is ubiquitous in the ambient environment. It is an intermediate product of plants emitting oxygen after taking up carbon dioxide and formed as a product of incomplete wood combustion in fireplaces and woodstoves, coffee roasting, smoking, vehicle exhaust fumes, and coal refining and waste processing. Residential fireplaces and woodstoves are the two highest sources of emissions, followed by various industrial emissions.

Naphthalene comes primarily from nonpoint sources of solvents and coatings, residential wood combustion, and fires. Residential wood combustion and fires are also the primary producers of PAHPOM, a grouping of chemicals containing polycyclic aromatic hydrocarbons and polycyclic organic matter.

4.4 Cancer risk from source categories in Oregon

The 2017 ATS data provides air emissions data and related estimated cancer risks related to types of source categories emitting those pollutants nationally, per state, per county, and per census tract. Some examples of source categories evaluated in ATS are on-road light duty gas-powered vehicles (like cars and pickup trucks); non-road airports, railyards, and locomotives, stationary point sources, and non-point sources involving emissions of solvents, fuels, and waste disposal. Local residents burning fuel in wood stoves to heat their homes, which is referred to in the ATS Database as “combustion of residential wood”, is considered a type of non-point source of emissions. Figure 1 below shows the amount of cancer risk each source category contributes in Oregon to the total cancer risk for the state of 32.9 in a million. Other types of source categories include:

Fire – Fire produces emissions of many toxic air pollutants. Types of fires that were evaluated for the 2017 ATS data include wildfires, prescribed fires, cropland fires, and grassland fires. Wildfire smoke, for example, is comprised of a mixture of gaseous pollutants (like carbon monoxide), hazardous air pollutants (like polycyclic aromatic hydrocarbons [PAHs]), water vapor, and particle pollution. During the latter half of 2017, Oregon and Washington experienced an extreme fire season of multiple wildfires that lasted weeks and burned large areas of forest. The large Eagle Creek and Indian Creek fires in the Columbia Gorge and southwest of the town of Hood River created severe smoke conditions in both Hood River and Multnomah counties in 2017.

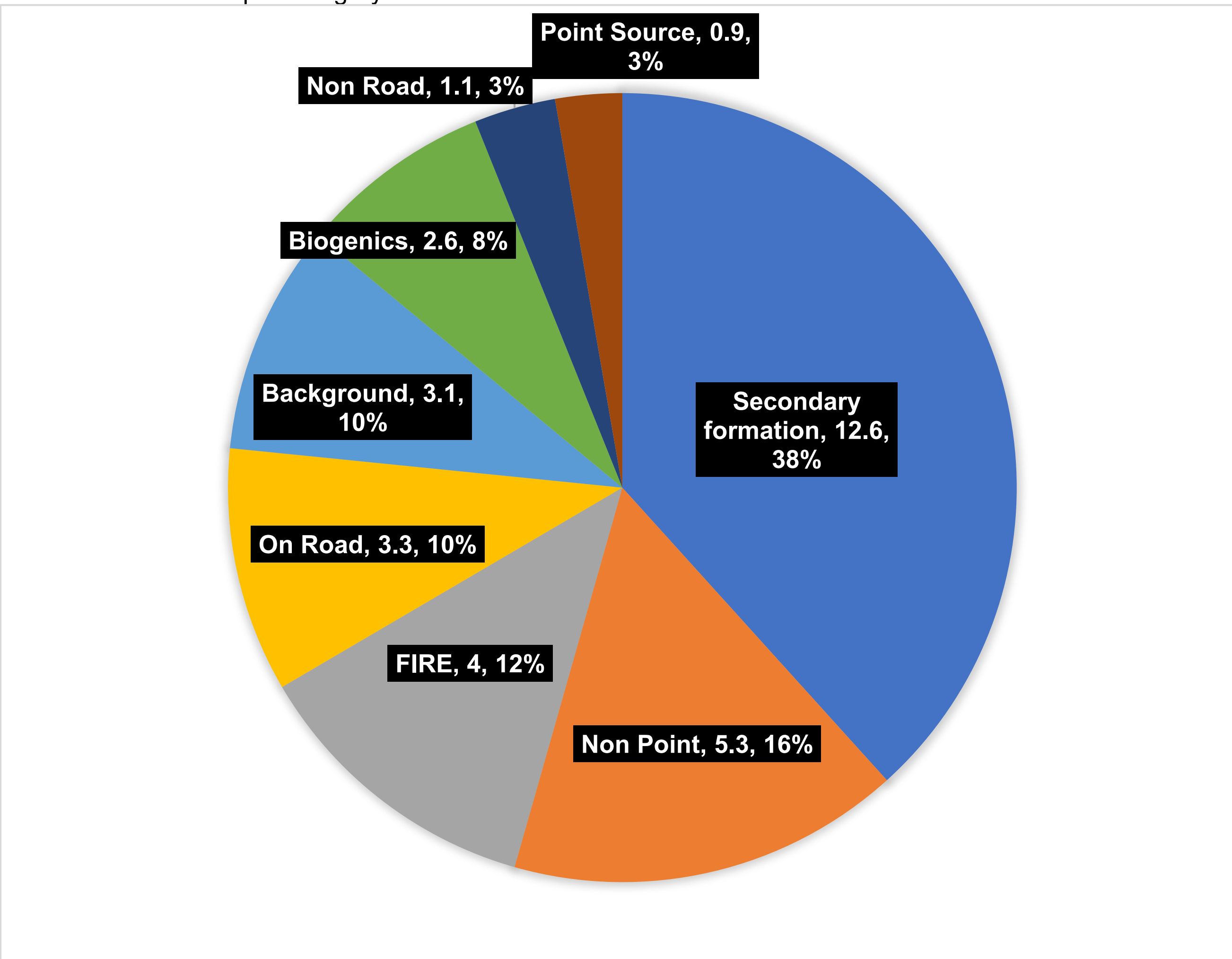
Biogenics – Biogenics are naturally-occurring pollutants in air that come from vegetation and in some cases, soil. Biogenic sources can emit formaldehyde, acetaldehyde and methanol; and formaldehyde and acetaldehyde tend to be key risk drivers in air.

Secondary --Secondary pollutants are pollutants formed in the atmosphere from interactions of certain VOCs in air with sunlight and with each other, and include pollutants such as acetaldehyde, acrolein, and formaldehyde. Secondary formation makes up 38 percent of the cancer risk in Oregon, which is the highest source category contributor.

Background -- Background levels of pollutants in air are ambient air concentrations averaged over broad geographic regions.

One example of a toxic air pollutant that is typically attributed to background is carbon tetrachloride. It was widely used as an aerosol propellant from the 1950s to the mid-1970s, when its use began to decline due to the availability of other propellent types and because of recognition of its ozone-depleting properties. In 2000, carbon tetrachloride use in the U.S. was phased out completely. However, carbon tetrachloride is still ubiquitous in air in the U.S. due its slow breakdown time.

Figure 1: Oregon's cancer risk per million people in 2017 based on source categories, and percentage of statewide cancer risk per category



4.5 Importance of ATS data review by Oregon DEQ

During DEQ's review of 2017 ATS data, high cancer risks in some census tracts in Multnomah County seemed unusually high, and ATS data indicated a likely association of this risk with emissions of hexavalent chromium. Using the 2017 ATS Mapping Tool, it appeared that a facility in the area of high risk, The Boeing Company, might be the source of hexavalent chromium emissions.

Using the ATS Mapping Tool described above, specific facilities can be identified within a tract, and a bar chart presents how many tons of a particular chemical are being emitted by each facility in that tract. The tons of emissions from a facility do not themselves represent actual cancer risk. In this case, the bar chart from the Mapping Tool shows that The Boeing Company located in one tract emitted a total of approximately 3.6 tons of air toxics in 2017 and 2018, with 0.58 ton of this amount (approximately 1,160 pounds) due to hexavalent chromium. The facility's air emissions seemed to affect more than that one tract.

However, Toxics Release Inventory data for 2019 and 2020 for the Boeing Co. shows a thousand-fold drop in total chromium emissions, down from approximately 5,500 pounds in 2017 and 2018 to seven and four pounds in 2019 and 2020, respectively. The TRI is part of a regulatory program that requires facilities to provide their own estimates of their emissions each year, and EPA uses this data in concert with other air emissions data and modeling assumptions to populate the ATS Database. For The Boeing Company, it was discovered that their self-reported TRI estimates of amounts of chromium being emitted significantly overestimated what the facility was actually emitting, as ProPublica reported in a Dec. 16, 2021 article. The Boeing Company provided corrected estimates to the TRI of their chromium emissions for 2019 and 2020. Thus, the large amounts of chromium estimated to be emitted by The Boeing Company in 2017 and 2018 were incorrect, indicating that the risk of exposure to chromium emissions from the facility has likely always been low. If the higher hexavalent chromium emissions had actually occurred, DEQ would have prioritized halting the emissions or decreasing them to a level associated with acceptable risk to protect nearby neighborhoods.

This example, in addition to demonstrating how the cancer risk in a census tract can be much higher than the cancer risk for the county the tract is contained in, is also a cautionary tale about the uncertainties that can be associated with ATS data. That is why DEQ carefully reviews all ATS data it receives from EPA.

5.0 Conclusions

ATS data for 2017 indicates that emissions in Oregon create a level of concern for cancer risk, but little to none for noncancer risk. EPA reports the cancer risk in Oregon as 30 in a million, but this is a rounded number. The non-rounded cancer risk in Oregon is 32.9 in a million. This puts Oregon on par with similar state-wide cancer risks in the neighboring states of Washington and California, and is similar to the cancer risks in about half of U.S. states and to the U.S. as a whole, each of which has a cancer risk of 30 in a million.

The pollutant driving cancer risk in Oregon statewide based on the 2017 ATS data is formaldehyde, at 17 in a million, which is approximately half of the statewide total pollutant cancer risk of 32.9 in a million. The source category driving cancer risk is Secondary formation. Formaldehyde emissions are due primarily to the secondary formation of this pollutant in air, from chemical reactions between VOCs and nitrogen oxides in the presence of sunlight. Formaldehyde is also generated during wildfires, and in 2017 wildfire smoke and emissions were heavy and prolonged in Oregon. Some of the formaldehyde emissions in Oregon come from a few industrial facilities, as well.

Secondary formation -- as a source category -- has a cancer risk of 12.6 in a million, which makes up about 38 percent of the total statewide cancer risk of 32.9 in a million among all source categories. Secondary formation of chemicals in air depends on the presence of VOCs and nitrogen oxides. VOCs and NOx come from a number of natural and human-related sources. Industrial activities and vehicle emissions are two of the human-related sources of these chemicals and are two sources that are addressed through current, ongoing DEQ regulation.

The ATS 2017 data for Oregon indicates that 0.9 per million cancer risk (out of a statewide total cancer risk of 32.9 in a million) is due to industrial emissions. When averaged statewide or at the county level, emissions from industrial facilities don't contribute the highest amount of cancer risk. However, as discussed above, it is possible that cancer risks in individual census tracts, near where people live, can be high due to facility emissions. DEQ's air permitting program, air toxics program and Cleaner Air Oregon program are all aimed at monitoring, controlling, and reducing emissions from facilities like these. This is why DEQ carefully evaluates annual ATS data received from EPA and then applies resources if necessary to reduce emissions in neighborhoods.

The pollutant benzene contributes the next-highest cancer risk in Oregon, at 3.2 in a million, while the source category of on-road vehicle emissions contributes the next-highest cancer risk of 5.3 in a million. Benzene is a common air pollutant associated with vehicle emissions. Controlling and reducing vehicle emissions of benzene and other VOCs help to decrease cancer risk from air emissions. Many state agencies are involved in laws and programs aimed at reducing emissions. For starters, DEQ has programs in place to replace dirty diesel engines, which release multiple toxic air pollutants. Oregon House Bill 2007 requires the phase-out of 1997 and older diesel engines by 2023, and 2010 and older diesel engines by 2029. Replacement of older diesel engines on school buses is part of this approach, through the School Bus Replacement Program. DEQ offers grants annually, depending on available funding, to businesses, local governments, and equipment owners for replacement of older diesel engines with cleaner alternatives through the Diesel Emissions Mitigation Grant Program.

Oregon Executive Order No. 20-04, issued on March 10, 2020, from the Governor's office, set science-based Greenhouse Gas emissions reductions goals, setting the state on a path to reduce its GHG emissions by at least 45 percent below 1990 emissions levels by 2035, and at least 80 percent below 1990 emission levels by 2050. Goals set for the reduction of GHG emissions will also reduce the pollutants like benzene and thus reduce these additional statewide cancer risks.

The Oregon Department of Land Conservation and Development and the Land Conservation and Development Commission subsequently initiated rulemaking related to the Executive Order. In July 2022, the LCDC adopted 89 Climate-Friendly and Equitable Communities rules, which generally require local government to adopt zoning regulations and amend their transportation system plans in specific ways meant to reduce the use of automobiles. In addition, reduction of GHG emissions would help decrease the levels of NOx, which in turn help lower levels of secondary formation of air pollutants like formaldehyde.

In November 2024, the EQC adopted rules to establish the Climate Protection Program in Oregon as part of Oregon Administrative Rule 340-273, setting an enforceable declining cap on GHG emissions from fossil fuels used in Oregon including diesel, gasoline, and natural gas. The emissions cap described in these rules requires 50 percent emissions reduction by 2035, and 90 percent emissions reduction by 2050. These rules also support reductions of other types of air pollution and focus on improving public health in environmental justice communities and other Oregon communities. Lastly, the Oregon Department of Transportation published the Climate Action Plan, 2021-2026, in July of 2021. It presents details and goals aimed at reducing carbon emissions from transportation and the impacts climate is having on moving people and goods in the state.

Wildfires are devastating and unpredictable, and in 2017, Hood River and Multnomah counties had the highest cancer risks in Oregon, of 44 and 42 in a million, respectively. These high cancer risks are due primarily to big wildfires and the related smoke that occurred in Oregon and other parts of the Pacific Northwest in 2017. Oregon has had a wildfire-fighting program in place for a long time, but climate change has caused lower water and snow levels, higher temperatures and drier vegetation over the last few years, which makes wildfire activity much more likely to happen and for fires to be larger and hotter than previous years. The Oregon Department of Forestry's Fire Protection Program is tasked with protecting 16 million acres of forest in Oregon. Recently (as of 2024 and 2025), innovative tools such as wildfire detection cameras, air sensors, and artificial intelligence are being used to monitor weather conditions and provide detection of wildfires in their early stages.

As new and better information on emerging chemicals and on toxicity studies related to air pollutants becomes available, DEQ will update information related to the agency's evaluation of each annual ATS dataset moving forward. As is true with any project or program that depends on scientific data, the science behind how this data is interpreted and used will evolve over time. As we continually learn more, we will get better at controlling these emissions, and at recognizing any new chemicals that need to be considered and controlled.

Contact

If you have specific questions for DEQ or would like this data in another format, or if in your own research on air emissions, you find something that seems questionable and you're unable to resolve the issue on your own, please contact Sue MacMillan, Air Toxics Science and Policy Analyst, at (503) 875-7741 or susan.macmillan@deq.oregon.gov

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