

Spokane's Air Quality During Quarantine *and carry-over behaviors worth continuing for healthier air*

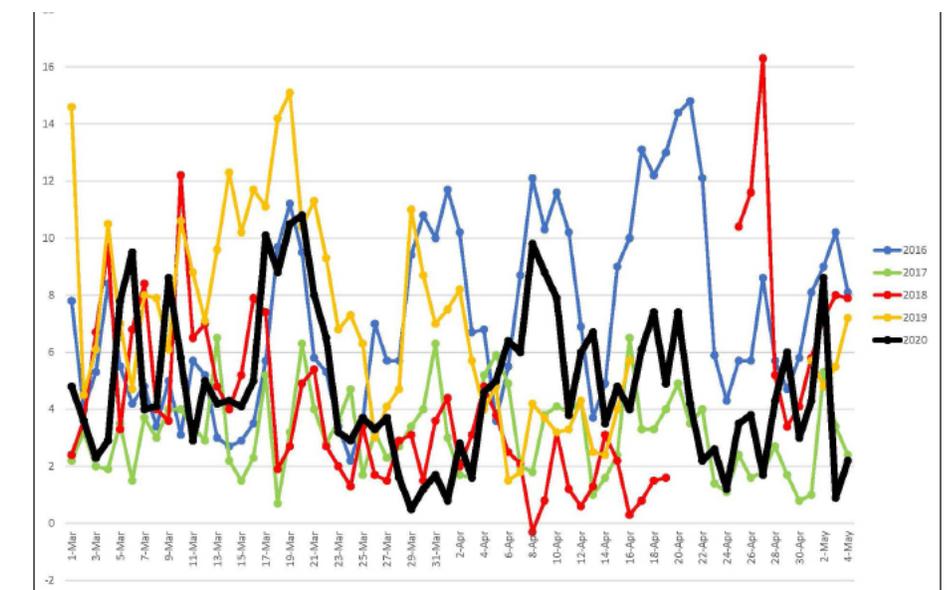
In the current COVID-19 pandemic, news outlets are reporting that air pollution is declining in several major metropolitan areas. Following this, Spokane Regional Clean Air Agency has been asked if we are seeing a decline in Spokane's air pollution.

So, are we seeing a decline in air pollution in our area? The simple and easy answer is: Maybe. Analyzing air pollutant concentrations alone isn't enough to fully and adequately answer this question. There are many factors that influence pollutant concentrations, mostly notably meteorology. That said, fewer vehicles on our roads, especially during the heavy commute periods, can have a positive affect on our air quality.

The use of personal motor vehicles is one of the largest contributors to two main air pollutants in Spokane County: fine particles and ground-level ozone. Let's take each one and discuss:

Fine particles (also called PM_{2.5}) measure 2.5 microns in diameter or smaller. These microscopic particles come from a variety of sources, including motor vehicle exhaust, road dust, open burning, and wood heating.

When fewer cars and trucks are on the



The chart above depicts PM_{2.5} concentrations for the period of March 1 - May 4, for five years (2016-2020). Please note: meteorological data for this period was not analyzed. Meteorological data can have a significant affect on air pollutant concentrations.

roads, less PM_{2.5} is being contributed to by this source category.

However, while we've had fewer motor vehicles on our roads, we may also have experienced an increase in the other behaviors that contribute to PM_{2.5}—outdoor burning and wood heating. As outdoor temperatures increase in spring, we typically see an increase in outdoor burning. Furthermore, we still experience cold temperatures in spring, particularly at night and early in the season,

the same time as the *Stay Healthy, Stay Home* orders were issued. Individuals are home more and may be using wood-heating in their homes more.

So, has our air quality monitoring network measured a noticeable change in PM_{2.5} levels that can be attributed to more people being at home?

The answer is no, not conclusively. Although fine particles from some transportation sources may have decreased,

continued on back page

Prepare Now For Wildfire Smoke

The last thing people want to hear about right now with the pandemic, is talk of wildfire smoke! However, given our track record, the odds are that we'll experience at least some degree of smoke this summer. Preparing for smoke now may be more important than ever. Individuals with existing health issues, children and adults over 65 are at a higher risk from smoke and should check with their health care team for a plan that fits their needs.

When smoke levels are high, even healthy people may have symptoms or health problems. The best thing to do is to limit your exposure to smoke. Depending on your situation, a combination of the strategies below may work best and give you the most protection from wildfire smoke. The more you do to limit your exposure to wildfire smoke, the more you'll reduce your chances of having health effects.

Keep indoor air as clean as possible. Keep windows and doors closed. Use a high- efficiency particulate air (HEPA) filter to reduce indoor air pollution. Avoid smoking tobacco, using wood-burning stoves or fireplaces, burning candles, incenses or vacuuming.

Listen to your body and contact your healthcare provider or 911 if you are experiencing health symptoms.

Drink plenty of water

Reduce the amount of time spent in the smoky area.

If you have to spend time outside when the air quality is hazardous: Do not rely on paper or dust masks for protection. N95 masks properly worn may offer some protection.

Reduce the amount of time spent outdoors. Avoid vigorous outdoor activities.

Wildfire Smoke, Health, and Air Quality Resources in Spokane County:

Spokane Regional Health District: SRHD.org

Spokane Regional Clean Air Agency: SpokaneCleanAir.org



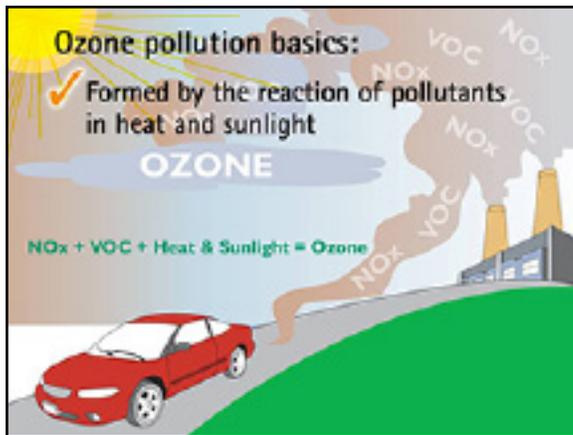
Spokane's Ground-Level Ozone Pollution

Do you know the between “good” ozone and “bad” ozone? If you don't, you are not alone.

Good ozone Ozone (O3) - Unlike ozone that is present in the upper atmosphere, ozone at the Earth's surface is a harmful air pollutant that poses a risk to human, animal and plant life. Ground-level ozone is formed as a result of photo-chemical reactions between nitrogen oxides and volatile organic compounds in the presence of sunlight and heat.

In our region, ozone is only a concern during the hot, summer months when levels can pose a health concern.

Even at low concentrations, ozone causes respiratory problems and aggravates asthma in children. People with respiratory diseases and those who work or exercise outside should limit their time outdoors on hot, sunny days when ozone levels are likely to be elevated.



Children are most at risk from exposure to ozone because they are often active outside during the summer and their lungs are not fully developed.

Long-term exposure to ozone may lead to premature aging of the lungs and chronic respiratory illnesses.

Ozone-forming emissions come from many sources including motor ve-

hicles, industrial solvents, gasoline refueling, gasoline-powered yard equipment, auto body paint shops, and consumer products such as charcoal lighter fluid, paints, etc. Some studies show that wildfires can have an effect on ozone levels in some areas of the country; this has not been studied in the Spokane area. ■

Costco Earns Clean Air Award

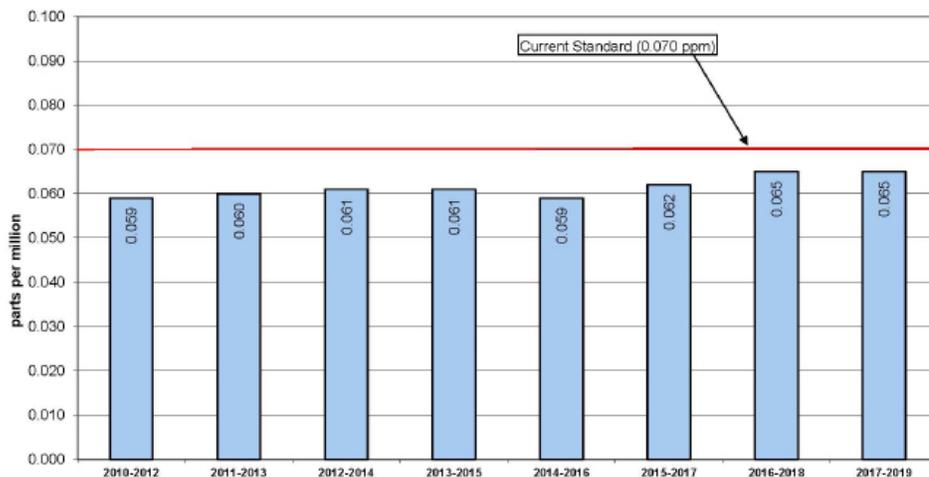
Earlier this year, we presented the annual Clean Air Award to Costco Wholesale for their investment in air pollution control technologies above and beyond current requirements for their north side station. In doing so, Costco achieved an annual reduction of an additional 80 tons of Volatile Organic Compounds (VOCs) from being emitted into the air.

VOCs contribute to the formation of ground-level ozone, a harmful air pollutant. Minimizing the release of VOCs is important for the Spokane area to continue to meeting the national, health-based standards for ground-level ozone.

Gasoline stations are required to install and maintain equipment designed to reduce vapor loss when underground storage tanks are being refilled. Additionally, a handful of stations are required to install vapor recovery nozzles that capture vapors during vehicle refueling.

Read more about Costco's work and past Clean Air Award recipients at spokanecleanair.org/business/recognition. ■

Ozone 8-Hour Design Values
Greenbluff Monitoring Station



To attain the ozone standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.070 ppm. Standard was revised in 2015.

The chart above shows the 3-year average ozone levels. Wildfire smoke could be a contributing factor of this upward trend.

Air Quality During Quarantine

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there are other sources of fine particles, described previously, that may have remained steady or increased during this same period.

Ozone (O₃) - Another air pollutant connected to transportation is ozone. Ozone at ground-level is a harmful air pollutant that is measured between May and September. Ozone is formed photochemically when volatile organic compounds from gasoline, solvents, paints, etc., react with nitrogen oxides in the presence of sunlight.

Ozone levels peak on the hottest days of summer. If the *Stay Home, Stay Healthy* orders were to continue into July and August, we might be able to compare the levels of ozone pollution to previous years, along with meteorological data, to see if there were noticeable differences and if they could be attributed to fewer cars on the roads.

So, what are some behaviors that have resulted from the *Stay Home, Stay Healthy* orders that, if maintained long-term, could help improve air quality?

Teleworking

Many employers have had to figure out how to make teleworking a viable option for employees. When businesses open back up, employers may wish to continue to provide a telework option for some

employees even if for just once or twice a week. This would reduce the number of vehicles on the roads and thus cut down on pollution.

Virtual meetings

While the transition to remote technologies may have been a difficult one, many of us have realized that not every meeting needs to be in person. It may be that virtual meetings can be just as productive. This would further cut down on unnecessary car trips and benefit the air.

Efficient trips in our car

To reduce exposure to and spread of COVID-19, experts have suggested that we make fewer trips for essential items such as groceries. Once the Stay Home orders are lifted, continuing to reduce unnecessary trips and combining errands will be beneficial to our air quality. Simple changes, like meal planning and keeping a grocery list, will help your trips be more efficient.

Conservation efforts

We are all, to varying degrees, experiencing shortages of both essential and nonessential items. So, out of necessity, we have learned to use less of some products that we would have otherwise never given second thought. Continuing to reduce our consumption of products,

On the Air is a publication of the Spokane Regional Clean Air Agency. Its purpose is to inform local residents on all aspects of outdoor air pollution. Contact Lisa Woodard, *Editor*, with comments or story ideas:
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particularly disposable products, can greatly reduce carbon emissions and waste in the long-term.

While we never want to go through another situation like this, it has forced us to make changes that positively affect our environment, many of which we might have thought were impossible or unreasonable, such as telecommuting or reducing our paper towel usage. Therefore, we can each reflect on our own behavioral changes and determine which ones we think are worth hanging onto. ■