Yukon

2018
Air Quality Report

Whitehorse, Yukon

Executive summary

The Government of Yukon maintains an air quality monitoring station in downtown Whitehorse. This station is part of Environment and Climate Change Canada's National Air Pollution Surveillance (NAPS) network.

The NAPS program is a joint federal/provincial/territorial monitoring network with the objective of tracking regional air quality trends throughout Canada. Data from this station also feeds into a Canada-wide air quality database and provides a real-time **air quality health index** and forecast for the Whitehorse area.

Specific air quality pollutants that are currently being monitored at the Whitehorse NAPS station include:

Fine particulate matter ($PM_{2.5}$): Airborne particles that may be directly released by vehicles, industrial facilities, forest fires, woodstove emissions and indirectly released as a result of chemical reactions among other pollutants.

Ozone (O_3): A byproduct of reactions between light and particles in the atmosphere. It may come from vehicle and industry emissions and can be a major component of smog in urban centers in the summer.

Nitrogen oxides: Byproducts of combustion, associated with vehicle and industrial emissions. This study specifically targeted nitrogen dioxide (NO_2).

What we found

The Whitehorse NAPS station monitoring results from the year 2018 were collected and compared to the **Yukon Ambient Air Quality Standards** and the following observations were made:

$PM_{2.5}$

The highest concentrations of $PM_{2.5}$ were observed in the winter months. This trend can likely be attributed to local sources of particulate matter including wood stove emissions and increased vehicle usage. The Yukon Ambient Air Quality Standards include a 24-hour standard and an annual standard for $PM_{2.5}$; neither of these standards were exceeded in 2018.

O_3

The highest concentrations of O_3 were observed in the spring months with the remainder of the year lacking any clear trends. The Yukon Ambient Air Quality Standards include an 8-hour standard for O_3; this standard was not exceeded in 2018.

NO_2

Similar to $PM_{2.5}$, concentrations of NO_2 were observed to be higher in the winter months. This trend can also likely be attributed to increased vehicle usage. The Yukon Ambient Air Quality Standards include a 1-hour and annual standard for NO_2; neither of these standards were exceeded in 2018.

What this means

The Whitehorse NAPS station data feeds into the Canada-wide air quality database and provides a real-time air quality health index for the Whitehorse area. Hourly air quality health index values for Whitehorse were obtained from Environment and Climate Change Canada and have been shown in **Figure 1** below.

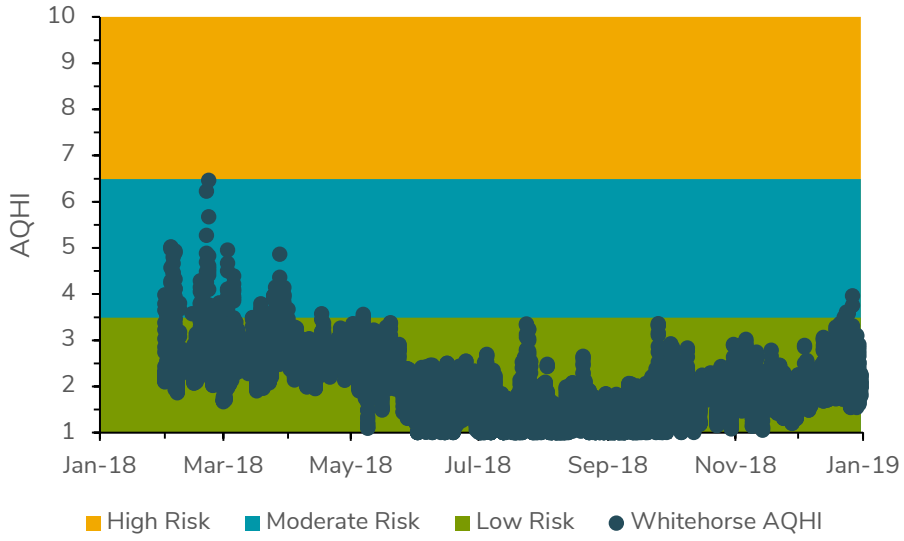

Figure 1

Throughout 2018, there were periods in February through April and in December where air quality health index values fell into the Moderate Risk category; however, these values accounted for only 2% of the data set. The remaining 98% of air quality health index values fell into the Low Risk category. None of the air quality health index values fell into the High or Very High Risk categories.

Air quality in Whitehorse remains good with mainly low risk values reported by Environment and Climate Change Canada. Small increases in risk appeared in the winter months and are likely due to wood stove emissions and increased vehicle usage.