Backgrounder - AQHI

For media use | June 8, 2016

1. What is the Air Quality Health Index?

The AQHI relates air quality to your health, using a simple 10 point scale -- the higher the number the higher the health risk. This real-time information allows you to make decisions to protect your health, such as reducing or scheduling time outdoors.

2. What does the AQHI measure?

The AQHI is a *guide* to the risk presented by three common air pollutants. It interprets real-time data collected from devices that monitor local levels of particulate matter, ground-level ozone, and nitrogen dioxide. The AQHI does not measure the effects of odour, heat or humidity on your health.

3. Why should people care about the AQHI?

Air quality can affect both your short term and long term health depending on the quantity of air pollutants and your exposure time. Depending on the length of time you are exposed, your health status and the concentration of pollutants, air pollution can irritate your lungs and airways, make it harder to breathe and worsen chronic diseases such as heart disease, chronic bronchitis, emphysema and asthma. Poor air quality can make some people more vulnerable to the adverse effects of air quality in the future.

Those considered to be at higher risk or more susceptible to air pollution include children, seniors, those with lung disease, heart disease or diabetes.

People participating in sports or strenuous work outdoors may have greater exposure and therefore increase their risk.

The AQHI can be used to help plan outdoor activities, especially if you are in an at-risk group, or care for someone who is at-risk.

4. How does air pollution affect human health?

Particulate matter can irritate your lungs and airways, making it harder to breathe. This is more likely to occur if you have a chronic condition (such as diabetes, heart disease, asthma or COPD) or are very young or old. Air pollution can also irritate your eyes, nose and throat. Studies have shown that even modest increases in air pollution can contribute to more emergency room and hospital admissions.

5. When should I be concerned about air quality?

When an individual will notice the effects of air pollution depends on the how much they are exposed, their health status and the concentration of pollutants.

The chart on the reverse has actions recommended for the at-risk and general population, depending on the AQHI level.

Air Quality Health Index health messages

Index	At Risk Population*	General Population
1 – 3 Low risk	**Enjoy** your usual outdoor activities.	**Ideal** air quality for outdoor activities.
4 – 6 Moderate risk	**Consider reducing** or rescheduling strenuous activities outdoors if you are experiencing symptoms.	**No need to modify** your usual outdoor activities unless you experience symptoms such as coughing and throat irritation.
7 – 10 High risk	**Reduce** or reschedule strenuous activities outdoors. Children and the elderly should also take it easy.	**Consider reducing** or rescheduling strenuous activities outdoors if you experience symptoms such as coughing and throat irritation.
+ Very high risk	**Avoid** strenuous activities outdoors. Children and the elderly should also avoid outdoor physical exertion.	**Reduce** or reschedule strenuous activities outdoors, especially if you experience symptoms such as coughing and throat irritation.

* People with heart or breathing problems are more sensitive to air pollution and are considered at risk.

Follow your health care provider's usual advice about exercising and managing your condition when the air quality index is higher than usual.

6. Who can access AQHI information for Yukon?

The AQHI is available for Whitehorse and area residents online at *airquality.gov.yk.ca* or through the new national Air Health app (search for "AQHI Canada" or find the link on the website listed above) available for free to Android and iOS smartphone users. The Whitehorse AQHI reading will also be available on the Environment Canada and Climate Change weather page, the Weather Channel and at www.airhealth.ca.

7. How can the AQHI help me protect my health overall?
Just as you keep an eye on the weather (temperature, precipitation and wind), keeping tabs on the AQHI over time helps you know what is going on in the environment and prepare properly for your activities. By providing a number from 1 to 10+ to indicate the risk, and noting if the number is considered "low," "moderate," "high" or "very high," the AQHI helps you quickly assess air quality conditions.

8. Why isn't AQHI information available for each Yukon community?
Yukon currently has a single air quality monitoring station, in downtown Whitehorse, linked to the AQHI network. As a result, only Whitehorse data is available. We are developing a wildfire smoke air quality self-assessment tool, which, along with Environment Canada visibility information, can be used by residents in other Yukon communities to determine their risk and appropriate actions. This will be available in the coming weeks.

9. How is air quality measured?
The concentration of particulate matter ($PM_{2.5}$) in the air is used to evaluate air quality. In 2013, the most recent year for which we have data, the average annual ambient concentration of $PM_{2.5}$ in Whitehorse was 6.1 micrograms per cubic meter, well below the acceptable level of 10 $\mu g/m^3$. $PM_{2.5}$ levels were above Yukon Ambient Air Quality Standards for just two days in 2013, when winter temperature inversions trapped wood smoke in the river valley bottom. Yukon is part of the National Air Pollution Surveillance (NAPS) program, which provides accurate and long-term air quality data of a uniform standard across Canada. The air monitoring station was established in 1992.

10. Is air quality of concern in Whitehorse?
Air quality here is usually pretty good, because we don't have too much pollution from industry, vehicle use and residential and commercial heating sources. Whitehorse's air quality is similar to that in Yellowknife for most of the year, but with higher $PM_{2.5}$ levels in November and December.

However, while the overall air quality is good, your own exposure depends on your individual location and activities. Your exposure to pollution will be affected by whether you smoke, whether you spend time near sources of pollution such as idling cars or poorly managed wood stoves.

Yukon's Ambient Air Quality Standards align with the Canadian Ambient Air Quality Standards used by all provinces and territories. The Yukon government reports air quality data once a year through the *State of the Environment Report*.

11. Who is considered at-risk to poor air quality?
There are three groups considered at risk: people with chronic health conditions, seniors and children.

- People with diabetes, lung disease (COPD, asthma, lung cancer) or heart disease (angina, history of heart attacks) are more sensitive to air pollution.
- Seniors are at higher risk because of weakening of the heart and lungs as well as an increased likelihood of having a chronic health condition.
- Children are more vulnerable to air pollution because they have a less-developed respiratory system. As well, because of their size, they inhale more air per kilogram of body weight than adults.

As well, people who participate in strenuous sports or work outdoors can be at risk because they breathe more deeply and rapidly, allowing more air pollution to enter their lungs.

12. What contributes to poor air quality in Whitehorse?
Typically, air pollution here is caused by vehicle use and residential heating (both wood and hydrocarbon). We can each do our part to help reduce air pollution by using public transit, walking, biking and carpooling, as well as by using good burning practices (wood stoves) and conserving energy use (oil furnaces).