Visibility and Air Quality Policy

Approved by Board: August 15, 2023; Review: September 2024
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This policy has been developed by Yvonne Cafik (Tri Sask) and Terry and Marlene Hooper (Officials) who provided the initial draft of the policy (The Policy). The purpose of the policy is to assist Coaches, Race Directors, and Technical Officials in evaluating the safety of training and events when the Field of Play is impacted by low visibility or air quality issues.

The goal of this Policy is to increase safety when it comes to less-than-optimal visibility and air quality. To this end, the Policy seeks to reduce risk to health and safety from engagement in physical activity outdoors. In addition, the Policy provides a procedure with evidence-informed strategies to prevent or limit participants' exposure to risk. The information in this Policy always applies to all individuals during Tri Sask sanctioned training and events in Saskatchewan, Canada and abroad.

DEFINING TERMS

Visibility

Visibility is defined as the state of visibility and measured in the distance you can see. Low visibility is generally caused by fog and mist or darkness that impairs what and how far your can see.

Air Quality

Air quality is commonly defined as the degree to which air is free of pollution. Air quality is typically measured in levels of pollution.

Air quality measurements are important as pollution can impact the health and performance of outdoor sport participants, including athletes, coaches and sport officials. Air quality ratings are important in identifying the potential short- and long-term health effects of engaging in physical activity outdoors when the air quality is low. Tri Sask is fully committed to a) informing participants of air quality risks and taking action to reduce them to ensure outdoor activities and events are safe.

Monitoring Visibility and Air Quality

Just as outdoor training or competition may be cancelled or rescheduled due to lightning or other weather conditions, it is essential to take similar actions to protect outdoor sport participants when the visibility and air quality is low.

Tri Sask requires coaches, team managers and sport officials to check visibility and air quality ratings. When it comes to visibility, the swim leg of an event is not to commence unless:

- The first turning mark is clearly visible from the start line, and
- Each subsequent turning mark is clearly marked and is clearly visible to competitors, and
- Every position on the course has a clear view of a safe exit location on the shore.

The bike leg of an event is not to commence unless there is at least 100 metres visibility at all positions on the course.

When it comes to air quality, coaches, managers, and officials should check the Air Quality Health Index (AQHI) before and at the time an activity is scheduled to begin. You can find your local AQHI by visiting AirHealth.ca or by downloading the WeatherCAN app. The WeatherCAN app can also be used to receive notifications when the AQHI exceeds a pre-set level (for example, AQHI 4). Coaches, team managers and sport officials can also monitor media platforms (including television, radio, and social media) for regional and local air quality alerts.

Estimating AQHI Based on Visibility

Not all areas have continuous official monitoring for AQHI, or Race Directors and Technical Officials may not have available access to official monitoring station data. A way of establishing particulate levels in the air has been developed by National Oceanic and Atmospheric Administration (NOAA). A visibility index gives a quick, alternative way to estimate smoke levels. Using landmarks at known distances, an observer can provide a reasonable estimate of particulate concentration. It would be wise to identify landmarks before they are needed and know the approximate distances to allow for an effective visibility measurement.

Table 1: Estimating Particulate Matter Concentrations from Visibility Assessment

Air Quality Category	**AQHI Equivalent (M2.5 1-3 hour average in ug/m3)**	**Visibility in Km**
Good	1 to 3 (0 to 40)	15 km and up
Moderate and unhealthy for sensitive groups	4 to 6 (41 to 175)	5 to 14 km
Unhealthy	7 to 8 (176 to 300)	2.5 to 4 km
Very unhealthy	9 to 10 (301 to 500)	1.5 to 2 km
HAZARDOUS	10+ (>500)	< 1.0 Km

When estimating particulate matter concentrations visually, it is important to face away from the sun. Determine the limit of your visibility range by looking for landmarks at known distances. The visibility range is the point at which even high-contrast objects totally disappear. (Example: a dark building viewed against the sky at noon). Once visibility has been determined in kilometres, use *Table 1: Estimating Particulate Matter Concentrations from Visibility Assessment* to identify the appropriate messaging and actions based on the air quality category. The visibility index is not effective at night or when humidity is high.

Reacting to AQHI Values

The forecasted and observed AQHI values should be used to prevent or limit participants' exposure to air pollution. Specific guidance on forecasted and observed AQHI values is provided below.

Planning

To prevent or limit outdoor sport participants' exposure to air pollution, Tri Sask encourages sport administrators, coaches, and team managers to consider the location and timing of events and activities when planning them. When possible, outdoor events should be scheduled for early morning (before rush hour) or later in the evening (after rush hour) to avoid times when air pollution levels are highest. Additionally, outdoor activities should be held away from busy roadways and industrial plants to minimize exposure to air pollutants. An indoor location may be considered if no such outdoor location is available.

Check the forecast maximums. These values estimate the maximum value that the AQHI will reach in your region during each of the forecast periods.

- If the AQHI value is between 1 to 3 (low risk), plan outdoor activities.

- If the AQHI value is between 4 to 6 (moderate risk), plan a modified version of the outdoor activity*.
- If the AQHI value is over 7 (high risk), plan to hold your session indoors or reschedule the activity for when the forecasted value is low or moderate.

During the Activity

Check the observed conditions. This value indicates the current AQHI value for a specific region. For the AQHI value in the range:

- Between 1 to 3 (low risk), continue with planned outdoor activities.
- Between 4 to 6 (moderate risk), modify the outdoor activity*.
- Over 7 (high risk), move the session indoors or reschedule it to another time.

*Note: When the AQHI value is between 4 to 6 (moderate risk) Tri Sask recommends that the following modifications be made:

- Reduce the intensity of the outdoor activity.
- Incorporate more breaks into the outdoor activity.
- Shorten the duration of the outdoor activity.
- Monitor all participants, particularly those with pre-existing medical conditions, for symptoms.
- Inform sport participants of risks, especially those with pre-existing medical conditions.

Decision Responsibility

Should the air quality be such that an event is impacted to the extent that a decision needs to be made as to whether the event should be re-scheduled, reduced in length, or cancelled,

- The Technical Delegate is responsible and accountable for the decision on any race modification, postponement, or cancellation.
- As part of the decision process, the Technical Delegate must consult the Race Director, Head Referee, Medical Delegate (or equivalent if assigned), and Tri Sask Executive Director or President (if ED is unavailable) to gather evidence to inform decision-making.
- Decisions may also come from the authority of a local public health authority or government. In this case, the Technical Delegate should be informed and communicate information to the RD, HR, MD, and TriSask as well as any other people who need to be involved
- If there are any disagreements with the decision a Technical Delegate makes, Tri Sask can decide to withdraw sanctioning of the event.
- The Race Director is responsible for informing all the race participants (athletes, volunteers, and other supporting organizations) about the Technical Delegate's decisions.

Implementation

This Policy will be accessible to members on our website and will ask that all sport participants, parents, coaches, and officials review it at the beginning of each season. All Tri Sask coaches are encouraged to discuss poor air quality and its effects on health during a pre-season meeting with athletes and parents. Additionally, Tri Sask requires coaches and sport administrators to complete the Air Quality and Outdoor Sport Safety eLearning Module on the Coaching Association of Canada's e-learning platform, The Locker, as part of their pre-season education program.

Resources

Sport Information Resource Centre (SIRC) and Health Canada

- Air pollution & sport safety. February 2023. https://sirc.ca/air-quality-and-sport/
- AIR QUALITY AND OUTDOOR SPORT SAFETY: A POLICY GUIDE FOR CANADIAN SPORT ORGANIZATIONS. February 2023. https://sirc.ca/wp-content/uploads/2023/02/Air-Quality-Policy-Guide-FINAL-EN.pdf
- Let's talk about air pollution: Keeping outdoor sport participants safe. June 2022. https://sirc.ca/blog/air-pollution-and-sport/
- UNDERSTANDING AIR QUALITY: A GUIDING DOCUMENT FOR SPORT ORGANIZATIONS. February 2023. https://sirc.ca/wp-content/uploads/2023/02/Air-Quality-Guiding-Document-FINAL-EN.pdf

NCCP Coach.ca

- Air Quality Health Index Module. July 2023.

Triathlon British Columbia

- Press Release. Air Pollution & Sport Safety – FREE MODULE. June 7, 2023: https://www.tribc.org/news/air-pollution-sport-safety-free-module/
- Air Quality Policy. November 2017. https://www.tribc.org/wp-content/uploads/2018/08/AQHI-policy-171123-v1.pdf

Triathlon Alberta

- Air Quality Policy. June 2019 (Revised February 2023).