



Singapore Sailing Federation Training Facilities

**Incorporating the
National Sailing Centre and the facilities at Marina Reservoir**

Operations Safety Manual

7. Haze

Singapore has been affected by severe smoke haze due to forest fires in the region periodically. This is due to the common practice of open burning to clear land for agricultural uses. It can be made worse by dry seasons, changes in wind direction and poor precipitation. Prevailing winds sometimes carry smoke haze produced by the forest fires over Singapore's skies. This is especially so during the Southwest Monsoon Season.

The Haze Management task force aims to provide timely advice and information to the general public and sports partners with regards to the participation in sporting activities / events and usage of its sports facilities during periods of haze. This is to ensure that Sport Singapore, its partners and stakeholders are better informed to deal with challenges posed by the haze.

The following Haze management protocols apply for Sport Singapore related facilities and activities. This is a guideline, any deviation shall be endorsed by senior management or the appropriate organizing management.

To date, the vast majority of studies on the health effects of short-term exposure to PM have used the 24-hour measurements. These studies do indeed demonstrate good correlation of health effects with 24-hour PM averages. In view of this, the health advisory in Singapore takes reference from the 24-hour PSI. Although there have been recent studies on sub-daily or shorter PM_{2.5} exposure, the evidence of these studies do not constitute a sufficient base of evidence for the development of health advisories.

The 1-hour PM_{2.5} concentrations reflect the PM_{2.5} levels averaged over one hour, and can give you an indication of the current air quality. However, the 1-hour PM_{2.5} concentration levels can be volatile and tend to fluctuate over the day especially during periods of trans boundary haze. Short-term fluctuations will also be very heavily influenced by weather conditions. For example, there could be a short period of transiently high PM_{2.5}, only to improve rapidly in the next one to two hours. **Therefore, the 1-hour PM_{2.5} concentration reading is best used as a guide to adjust your immediate activities, such as deciding if you should go outdoors for a jog now or delay that till later.**

Haze Guidelines, Sport Singapore 19 September 2019

7.1 Monitoring PSI Readings

- 7.1.1 24 hour PSI Reading: 0-50 (Good)
- 7.1.2 24 hour PSI Reading: 51-100 (Moderate)
- 7.1.3 24 hour PSI Reading: 101-200 (Unhealthy)
- 7.1.4 24 hour PSI Reading: 201-300 (Very Unhealthy)
- 7.1.5 24 hour PSI Reading: >300 (Hazardous)
- 7.1.6 Haze advisory and PSI readings can be obtained from the
NEA website: <https://www.haze.gov.sg>

CSO will update current PSI readings via VHF's to coaches / instructors and sailors on water. Announcement may be made via PA system.
(Refer to the NEA's Haze Action Plan at Annex 7a)

7.2 Haze Action Plan

7.2.1 PSI Reading: 0-50 (Good)

- a) Normal Activities

7.2.2 PHASE 1: PSI Reading: 51-100 (Moderate)

- a) Normal Activities;
- b) SSF will monitor regularly once the 24-hour PSI crosses 80, to prepare communication to staff and stakeholders on necessary measures;
- c) Coaches /instructors are to identify their trainee for any pre-existing respiratory illnesses - e.g. asthma, etc. and look out for signs of difficulty during training (breathing problems, skin or eye irritation, coughing and sneezing, etc.);
- d) Ensure sufficient stocks of suitable masks;
- e) Improve efficiency of air cleaning devices for enhanced protection for indoor activities;
- f) Display NEA health advisory poster;
- g) Display ActiveSG Health Advisory (Annex 8b);
- h) Prepare advisories and notices for display in Phase 2.

7.2.3 PHASE 2: PSI Reading: 101-200 (Unhealthy)

- a) Prolonged on water activities shall be minimized for children;
- b) For person/children with pre-existing condition to avoid any prolonged on water activities;
- c) On water time session, shall be kept to the minimal and constant monitoring of the sailors;
- d) SSF will monitor regularly once the 24-hour PSI crosses 80, to prepare communication to staff and stakeholders on necessary measures;
- e) SSF training facilities may remain open;
- f) Coaches / Facilitators / Event Chair to conduct their own risk assessment with due consideration in deciding whether to proceed with activities/events and to take the necessary risk mitigating measures;
- g) Coaches / Facilitators / Event Chair may use the 1-hr PM2.5 figures together with other factors (eg duration of event and exposure to haze, general health of event participants) in deciding whether to proceed, scale back, postpone or cancel their activities/events;
- h) Persons who are not feeling well should stop all sports activities and seek medical attention;
- i) Reduce prolonged or strenuous outdoor work for healthy staff;
- j) Minimize prolonged or strenuous outdoor work/activity for elderly/pregnant staff & children;
- k) Staff who are exposed to prolonged outdoor work may don a mask as added protection if desired;
- l) Display ActiveSG Health Advisory (Annex 8c);
- m) Yellow flag will be displayed at the flag mast;
- n) Prepare advisories and notices for display in Phase 3.

7.2.4 PHASE 3: PSI Reading: 201-300 (Very Unhealthy)

- a) Healthy persons should avoid prolonged or strenuous outdoor physical exertion;
- b) Persons with heart, chronic lung disease should avoid outdoor activity
- c) Children, elderly and pregnant women should minimize outdoor activity
- d) All on-water activity shall be suspended. Only indoor classroom can be conducted.
- e) For person/children with pre-existing condition to avoid any prolonged on water activities;
- f) On water time session, shall be kept to the minimal and constant monitoring of the sailors;
- g) SSF training facilities if in the affected zone(s) may be opened or closed; upon CEO's approval;
- h) In the event of facility closure, display closure notice at the facility (Annex 8d);
- i) Coaches / Facilitators / Event Chair may use the 1-hr PM2.5 figures together with other factors (eg duration of event and exposure to haze, general health of event participants) in deciding whether to proceed, scale back, postpone or cancel their activities/events;
- j) Indoor /sports facilities with air-con may remain open with risk management and risk mitigating measures;
- k) Activities in air-con environment may proceed with risk management and risk mitigating measures;
- l) Increase cleaning frequency of air ventilation devices such as air-conditioners, exhaust fans at sports facilities and offices;
- m) Persons who are not feeling well should stop all sports activities and seek medical attention;
- n) Avoid prolonged or strenuous outdoor work for healthy staff. If outdoor work is unavoidable, they should be provided with suitable masks;
- o) Avoid prolonged or strenuous outdoor work/activity for elderly/pregnant, children and staff with chronic lung disease, heart disease;
- p) Black flag will be displayed at the flag mast;

7.2.5 Any sailors experiencing problems, regardless of the PSI level, are to be returned to shore. Those with acute respiratory symptoms must be evacuated immediately.

Prolonged= continuous exposure for several hours

Strenuous= involving a lot of energy or effort

Reduce= do less

Minimise= do as little as possible

Avoid= do not do

NEA's Haze Action Plan

HAZY?

REFER TO THESE GUIDES TO PLAN YOUR ACTIVITIES

TO PLAN AHEAD, REFER TO THE 24-HOUR PSI FORECAST & HEALTH ADVISORY

Scientific studies on the health effects of particulate matter (PM) are based on 24-hour exposure and hence the 24-hour PSI forecast has a corresponding health advisory. Use this to plan ahead like going to work or school tomorrow.

24-hour PSI Forecast	Good 0 - 50	Moderate 51 - 100	Unhealthy 101 - 200	Very Unhealthy 201 - 300	Hazardous >300
HEALTHY PERSONS	Normal activities	Normal activities	Reduce prolonged or strenuous outdoor physical exertion	Avoid prolonged or strenuous outdoor physical exertion	Minimise outdoor activity
ELDERLY, PREGNANT WOMEN, CHILDREN	Normal activities	Normal activities	Minimise prolonged or strenuous outdoor physical exertion	Minimise outdoor activity	Avoid outdoor activity
PERSONS WITH CHRONIC LUNG DISEASE, HEART DISEASE	Normal activities	Normal activities	Avoid prolonged or strenuous outdoor physical exertion	Avoid outdoor activity	Avoid outdoor activity

Explanatory notes:
Reduce = do less **Minimise** = do as little as possible **Avoid** = do not do **Prolonged** = continuous exposure for several hours **Strenuous** = involving a lot of energy or effort

The impact of haze is dependent on one's health status, PSI, and the duration and intensity of outdoor activity. Reducing outdoor activities and physical exertion can help limit the ill effects. Persons who are not feeling well should seek medical attention. The 24-hour PSI forecast is only available during periods of transboundary haze.

HEALTH ADVISORY

Due to the current haze condition, we recommend that guests minimise vigorous outdoor activities, especially for those who have respiratory and/or heart ailments.

If you feel unwell at any time, please consult a doctor immediately.

Here are some ways that you can limit exposure to the haze on guidelines set by Ministry of Health:

- Stay indoors as far as possible
- Reduce physical exertion
- Drink more water than usual
- Cut down on coffee and alcohol
- Use N95 masks as appropriate, depending on (i) health condition, (ii) Pollutants Standards Index (PSI) Level, (iii) physical exertion and (iv) time spent outdoors.

Thank you.



HAZE PRECAUTIONARY MEASURES

For our guests' safety, implement haze precautionary measures based on the PSI provided by the National Environment Agency (NEA):

24-HR PSI level above 200: All outdoor & non air-conditioned indoor facilities will be closed.

For updates on full-day closure of facilities, please visit myActiveSG.com or call the Service Quality hotline at 1800 344 1177.

We may also closed selected facilities temporarily if the situation worsens. Please contact the respective ActiveSG facility before making a trip there.

We apologise for the inconvenience. Thank you.



TEMPORARY CLOSURE & SUSPENSION OF ACTIVITIES IN NON AIR-CONDITIONED FACILITIES

Due to the current haze condition, all outdoor and non air-conditioned indoor facilities and its' activities are temporarily closed and suspended for our guests' safety.

As the PSI is volatile, please contact the respective ActiveSG facility before making a trip there.

For updates on full-day closure of facilities, please visit myActiveSG.com or call the Service Quality hotline at 1800 344 1177.

We apologise for the inconvenience. Thank you.

