

Air Quality Action Plan

The KAUST School



Introduction

Air Quality Action Plan (AQAP) is a living document and a guide that is intended as a communication and a decision-making tool in the event of poor air quality as it relates to outdoor workers.¹ and school-led outdoor activities². This AQAP is department specific, and details various school-led outdoor activities being directed by The KAUST School (TKS) that might be impacted in the event of poor air quality such as sandstorms.

Adverse air quality events can occur anytime and can sustain for an unknown period. Therefore, it is prudent to define actions needed whenever AQI (Air Quality Index) levels reach or exceed certain levels to avoid or minimize student and staff exposure to poor air quality. The primary objective of the AQAP is to create a decision-making process that is transparent, consistent and provides health-based protective measures. AQI that is being issued regularly by the Health, Safety and Environment (HSE) Department will be key a trigger point, coupled with TKS internal communication processes.

AQI

The AQI is a standard approach for monitoring how clean or polluted our local air might be. It aligns with a pre-defined range of AQI values (Table 1 below) with potential health effects that some people might experience within a few hours or even days after an air pollution event. Think of the AQI as a meter stick that runs from 0 to 500. The higher the AQI value, the greater the level of air pollution and the greater the health concern. For example, an AQI value of 50 represents good air quality with little or no potential to affect public health, while an AQI value over 300 represents air quality so hazardous that everyone may experience serious effects.

Table 1

Good (0 to 50)	Moderate (51 to 100)	Unhealthy for Sensitive Groups (101 to 150)	Unhealthy (151 to 200)	Very Unhealthy (201 to 300)	Hazardous (301 and higher)
-------------------	-------------------------	---	---------------------------	--------------------------------	-------------------------------

HSE manages KAUST Weather stations that use industry accepted methodology to monitor air quality within KAUST and publishes AQI every fifteen minutes through [KAUST Weather](#) webpage.

Based on historical data, the level of AQI that warrants an activation of AQAP (unhealthy, very unhealthy and hazardous) have only been associated with sandstorms that cause high particulate levels in the ambient air, and this has been about 3% over the entire year. This occurrence level could change over the years due to number of reasons including frequent or less sandstorms, or man-made pollution sources. KAUST Weather webpage is your local resource for managing this AQAP.

¹ Outdoor workers include any workers who spend a substantial portion of the shift outdoors. Examples include landscaping and yard maintenance workers, waste management workers, security staff, outdoor operation and maintenance staff and field researchers. These workers are at an increased risk of ambient air quality related illness when the air quality index is high.

² School-led outdoor activities include, but not limited to outdoor lunch seating, field trips, physical education classes, and tournaments. Students and staff are at an increased risk of ambient air quality related illness when the air quality index is high.

Air Quality Action Plan

The KAUST School



Roles and Responsibility

ROLE	RESPONSIBILITY
TKS	<ul style="list-style-type: none">• Ensure AAQP is implemented and communicated to the relevant staff.• Monitor AQI information at KAUST Weather webpage.• Update HSE in the event of changes to the outdoor activities that are listed in the “Health-based Protective Measures Matrix” of this document.• Provide the provision of guidance and advice on matters related to air quality.• Keep KAUST Weather website up to date including, but not limited to publishing AQI data.
HSE	<ul style="list-style-type: none">• Initiate periodic review of this AQAP in consultation with TKS.• Collaborate with TKS director regarding school cancellation or closure.³

Health-based Protective Measures Matrix

The Health-based Protective Measures Matrix has been designed to reduce the exposure to unhealthy air while in an outdoor environment. The matrix identifies several key outdoor activities that entail either just being in an outdoor environment with a limited physical activities such as eating in an outdoor seating area or guarding a crossing. The matrix also includes activities that entail prolonged or heavy exertion activities that might result students or staff breath harder than normal such as physical education classes in an outdoor environment.

The matrix details specific protective measures for AQI levels of Unhealthy, Very Unhealthy and Hazardous and include protective measures such as rescheduling activities when the air quality is better, moving activities indoor, the use of personal protective equipment such as dust masks, or in an extreme cases suspending activities.

³ There is no established number that would indicate school cancellation or closure. TKS will rely on the direction of HSE to determine the need to cancel or close school due to very unhealthy or hazardous conditions. Decisions around school cancellation would be made by 6:00 am. Should HSE make this recommendation, TKS will communicate with the school community following an announcement from HSE.

Air Quality Action Plan



Air Quality Action Plan

Department: The KAUST School	Date: April 2021
-------------------------------------	-------------------------

Health-based Protective Measures Matrix

Outdoor Activities AQI Level	Outdoor Physical Activities	Student Outdoor Eating	Field Trips	Crossing Guards
Unhealthy (151 to 200)	<p>Consider moving activities indoors based on the local ambient conditions.</p> <p>Reduce prolonged or heavy exertion. Take more breaks during all outdoor activities.</p> <p>Students who have asthma, as indicated on their medical care plan, should remain indoors.</p>	<p>Consider moving activities indoors based on the ambient conditions.</p> <p>Students who have asthma, as indicated on their medical care plan, should remain indoors.</p>	<p>Consider rescheduling to a time when air quality is better.</p>	<p>Wear a dust mask and reduce prolonged or heavy exertion.</p>
Very unhealthy (201 to 300)	<p>Avoid all activity outdoors. Move activities indoors, if possible, or reschedule/cancel them.</p>	<p>Avoid all activity outdoors. Move activities indoors.</p>	<p>Reschedule to a time when air quality is better or cancel.</p>	<p>Wear a dust mask and reduce prolonged or heavy exertion.</p>
Hazardous (301 and higher)	<p>Avoid all activity outdoors. Move activities indoors, if possible, or reschedule/ cancel them.</p> <p>Announcement to people walking/cycling home to cover their nose and mouth.</p>	<p>Avoid all physical activity outdoors. Move activities indoors.</p>	<p>Reschedule to a time when air quality is better or cancel.</p>	<p>Wear a dust mask and reduce prolonged or heavy exertion.</p>