

		STEAMTOWN WEATHER POLICY & PROCEDURE	Version	V1.0
			Issue Date	Mar 2023
			Review Date	30/02/2026

1. PURPOSE

The purpose of the Policy is to set out guidelines for preparing and implementing actions to address reasonably foreseeable weather situations which are likely to have an adverse effect upon the safety of Steamtown Tour Guides, volunteers, and customers participating in outdoor activities including Tours and the Sound and Light Show.

2. BACKGROUND

Weather conditions have been considered in the development of this Policy.

2.1 WORKER AND CUSTOMER SAFETY

Weather conditions have been identified as being likely to have an adverse effect upon the safety of:

- Steamtown Tour Guides; and
- Steamtown volunteers working outdoors; and
- Tour customers participating in an outdoor activity i.e. a guided tour and/ or Steamtown Sound and Light Show.

2.2 WEATHER CONDITIONS

The weather conditions identified are:

- Storms consisting of
 - (i) Thunder/ lightning;
 - (ii) Strong winds;
 - (iii) Heavy rain/ prolonged rain.
- Temperature extremes in the outdoor environment:
 - (i) Air temperature **above 37°C**;
 - (ii) Air temperature **below 5°C**;
 - (iii) Humidity **over 40%**.

3. BACKGROUND

Advanced knowledge and recording of predicted weather conditions should be used to assist with the preparation and implementation of outdoor related activities including Guided Tours and the Sound and Light Show. This can be done on both a weekly (medium term) and daily basis.

On-line information available from the Bureau of Meteorology weather predictions and warnings plus the CFS Fire Danger warnings have been considered in the development of this Policy. This is because the weather warnings and fire danger ratings are also based upon the weather conditions listed in this Policy.

3.1 BUREAU OF METEOROLOGY WEATHER WARNINGS

The Bureau of Meteorology provides advanced weekly and daily weather advice for:

- (i) Storms, including thunder/ lightning, strong winds, and rain; and
- (ii) Temperature extremes; and
- (iii) Humidity.

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3.2 CFS CATASTROPHIC TOTAL FIRE BAN WARNINGS

Catastrophic Total Fire Ban (TFB) warning advice is issued by the South Australian Country Fire Service (CFS) when the fire behaviour index (FBI) of 100+ is predicted for the following day. The FBI uses local information to produce a fire danger risk rating including:

- (i) temperature;
- (ii) humidity; and
- (iii) wind speed.

3.3 HUMIDITY HEAT INDEX CHART

A Humidity Heat Index chart (**Attachment 1**) can be used to determine if additional safety measures may be needed to address potential safety and welfare issues which could arise for Tour Guides, volunteers and visitors who are likely to be outdoors.

The Humidity Heat Index chart can (i) only be used by staff/ workers who have been trained in how to use the chart; and (ii) decisions made using the chart (**Attachment 1**) must be done in consultation with the Steamtown Manager/ Supervisor.

4. IDENTIFIED REASONABLY FORSEEABLE HAZARDS

It should be noted that possible human factor hazards of the **Tour customers** (e.g. **age, vision, physical fitness, physical limitations including mobility**) have not been considered.

4.1 ACTIONS

Suggested actions to address the identified storm and temperature hazards are:
Using the following on-line tools listed in Section 4.1(a) below:

- Monitor and record long term forecast;
- Monitor and record daily forecast; and
- Identify the day/s where adverse weather events, humidity and outdoor weather temperature are predicted.

4.1(a) ON-LINE TOOLS

- (i) the Bureau of Meteorology Adelaide weather loop Radar, 256km and 512km composite loop to view the current and approaching weather/ rain pattern.
<http://www.bom.gov.au/products/IDR642.loop.shtml#skip>
- (ii) the Bureau of Meteorology wind map
<http://www.bom.gov.au/watl/wind/forecast.shtml>
- (iii) the Bureau of Meteorology Alerts
<http://www.bom.gov.au>
- (iv) Facebook CFS (SA Country Fire Service – Facebook group) weather alerts and warnings, which are posted a short time before the storm front is approaching
- (v) CFS Fire Bans (for identifying Catastrophic Total Fire Ban days)
<http://cfs.sa.gov.au> use the 'search' function and type in the words Fire Ban

4.1(b) PLANNED ACTIONS

Be alert and monitor the weather and temperature as adverse situations occur.
In consultation with Manager/ Supervisor:

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- 1) **For heat and humidity** - Determine the Bureau of Meteorology predicted temperature and humidity for the day/ week
 - i. identify and document the Bureau of Meteorology predicted temperature and humidity for the day/ week; and
 - ii. referring to the Humidity Heat Index chart in **Attachment 1**, identify if the predicted temperature and humidity could have an adverse effect upon the safety and welfare of Steamtown Tour Guides, volunteers and visitors during outdoor activities; and
(Note – the combination of temperature and humidity is only relevant in the months where the temperature is above 24°C)
 - iii. refer to Tour Guides and Customers : Actions to take during adverse weather events (**Attachment 2**), and Volunteer: Actions to take during adverse weather events (**Attachment 3**).

- 2) **For all adverse weather events** - Determine if the adverse weather events will be short term or long term. If long term:
 - i. To plan, prepare and implement suitable safety and welfare actions where the combined humidity and heat factors could have an adverse effect for **outdoor** activities of Steamtown Tour Guides, Steamtown Tour/ Sound and Light Show customers (refer **Attachment 2**);
 - ii. To plan, prepare and implement suitable actions to be implemented for Steamtown volunteers (refer **Attachment 3**)

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Attachment 1 – Humidity Heat index chart (working outdoors – *strenuous work*)

NOTE: The following information must be used with the chart on the next page.

How to Use a Heat Index Chart (*on the next page*)

Locate today's predicted high temperature across the top column (Air Temp).

Down the left side (Relative Humidity), locate today's predicted humidity.

Follow across and down to find the "Apparent Temperature".

Keep in mind, **this heat index chart was devised for shady, light wind conditions**, so exposure to full sun can increase values by up to 9°C (15°F). Also, strong winds, particularly with hot, dry air can be extremely hazardous.

Likelihood of heat disorders with prolonged exposure or strenuous activity:

CAUTION
 EXTREME CAUTION
 DANGER
 EXTREME DANGER

Heat Index	Risk Level	Protective Measures
Less than 91°F (32°C)	Lower (caution)	Basic heat safety and planning
91° to 103°F (32° to 39°C)	Moderate	Implement precautions and heighten awareness
103° to 115°F (39° to 46°C)	High	Additional precautions to protect workers
Greater than 115°F (46°C)	Very high to extreme	Triggers even more aggressive protective measures

Source: National Oceanic & Atmospheric Association & OSHA



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Air Temp.	70°F 21°C	75°F 24°C	80°F 26°C	85°F 29°C	90°F 32°C	95°F 35°C	100°F 38°C	105°F 41°C	110°F 43°C
Relative Humidity	Apparent Temperature (What it Feels Like) (Degrees Fahrenheit/Degrees Celsius)								
0%	64°/18°	69°/21°	73°/23°	78°/25°	83°/28°	87°/30°	91°/33°	95°/35°	99°/37°
10%	65°/18°	70°/21°	75°/24°	80°/26°	85°/29°	90°/32°	95°/35°	100°/38°	105°/41°
20%	66°/18°	72°/22°	77°/25°	82°/27°	87°/30°	93°/34°	99°/37°	105°/41°	112°/44°
30%	67°/19°	73°/23°	78°/25°	84°/28°	90°/32°	96°/35°	104°/40°	113°/45°	123°/51°
40%	68°/20°	74°/23°	79°/26°	86°/29°	93°/34°	101°/38°	110°/43°	122°/50°	137°/58°
50%	69°/21°	75°/24°	81°/27°	88°/31°	96°/35°	107°/42°	120°/49°	135°/57°	150°/66°
60%	70°/21°	76°/24°	82°/27°	90°/32°	100°/38°	114°/45°	132°/56°	149°/65°	
70%	70°/21°	77°/25°	85°/29°	93°/34°	106°/41°	124°/51°	144°/62°		
80%	71°/22°	78°/25°	86°/29°	97°/36°	113°/45°	136°/58°	157°/69°		
90%	71°/22°	79°/26°	88°/31°	102°/39°	122°/50°	150°/66°	170°/77°		
100%	72°/22°	80°/26°	91°/33°	108°/42°	133°/56°	166°/74°			

Likelihood of heat disorders with prolonged exposure or strenuous activity:

CAUTION
 EXTREME CAUTION
 DANGER
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Attachment 2 –Tour Guides and Customers : Actions to take during adverse weather events

NOTE: this also includes adverse humidity and air temperature events where the temperature is predicted to be below 5°C or above 24°C.

1. THUNDER WITHOUT LIGHTNING

Monitor the situation. Be alert for the start of lightning and/ or heavy rain.

2. LIGHTNING WITH OR WITHOUT THUNDER

NOTE – as far as reasonably practicable, remain inside while lightning is occurring.

When lightning is occurring or predicted:

1. Look at the Bureau of Meteorology weather forecast for Peterborough;
2. Look at the Bureau of Meteorology Adelaide weather loop Radar, 256km and 512km composite loop to view the current and approaching weather pattern.
<http://www.bom.gov.au/products/IDR642.loop.shtml#skip>
3. In consultation with Manager/ Supervisor, determine if the lightning will be short term (up to 15 minutes) or long term (over 15 minutes to an hour or more);
4. When lightning is expected or likely to be longer than short term (15 minutes), relocate to Theatre and use relevant video footage for Guided Tour of Steamtown or Sound and Light show.

3. STRONG WINDS

NOTE – as far as reasonably practicable, remain inside while there are strong winds occurring.

When strong winds are occurring or predicted:

1. Look at the Bureau of Meteorology weather forecast for Peterborough;
2. Look at the Bureau of Meteorology wind map
<http://www.bom.gov.au/watl/wind/forecast.shtml>
3. In consultation with Manager/ Supervisor, determine if the lightning will be short term (up to 15 minutes) or long term (over 15 minutes to an hour or more);
4. When lightning is expected or likely to be longer than short term (15 minutes), relocate to Theatre and use relevant video footage for Guided Tour of Steamtown or Sound and Light show.

4. HEAVY RAIN/ PROLONGED RAIN

NOTE – as far as reasonably practicable, remain under cover while there is heavy rain or prolonged rain occurring.

When heavy rain or prolonged rain is occurring or predicted:

1. Look at the Bureau of Meteorology weather forecast for Peterborough;
2. Look at the Bureau of Meteorology Adelaide weather loop Radar, 256km and 512km composite loop to view the current and approaching weather pattern.
<http://www.bom.gov.au/products/IDR642.loop.shtml#skip>
3. In consultation with Manager/ Supervisor, determine if the rain will be heavy and/ or will be short term (up to 15 minutes) or long term (over 15 minutes to an hour or more);

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4. When rain is expected or likely to be longer than short term (15 minutes), relocate to Theatrette and use relevant video footage for Guided Tour of Steamtown or Sound and Light show.

5. HUMIDITY & HEAT

Look at the Bureau of Meteorology weather – temperature and humidity forecast for Peterborough;

1. Temperature predicted below 5°C
 - i. Daytime – where possible, identify what time of the day the temperature will be above 5°C.

For the times of the day that the temperature is predicted to be below 5°C, relocate the guided tour to the Theatrette and use relevant video footage for Guided Tour of Steamtown

- ii. Evening - relocate Sound and Light show to Theatrette and use relevant video footage for the Sound and Light show.

2. Temperature predicted above 24°C

- i. Daytime – where possible, identify what time of the day the temperature will be above 24°C.

For the times of the day that the temperature is predicted to be above 24°C: Identify the predicted humidity for that day and then refer to the Humidity Heat Index chart (**Attachment 1**) to identify if additional safety measures may be needed.

Where the chart identifies extreme caution or danger - relocate the guided tour to the Theatrette and use relevant video footage for Guided Tour of Steamtown.

- ii. Evening – identify what time of the late afternoon – evening that the temperature will be above 24°C.
For the times of the late afternoon – evening that the temperature is predicted to be above 24°C, identify the predicted humidity and refer to the Humidity Heat Index chart (**Attachment 1**). Where the chart identifies extreme caution or danger - relocate the guided tour to the Theatrette and use relevant video footage for Sound and Light Show.

3. Temperature predicted above 37°C

- i. Daytime – relocate the guided tour to the Theatrette and use relevant video footage for Guided Tour of Steamtown.
 - ii. Evening – For the times of the late afternoon – evening that the temperature is predicted to be above 37°C, relocate the guided tour to the Theatrette and use relevant video footage for Sound and Light show.

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Attachment 3 – Volunteers: Actions to address adverse weather working conditions:

NOTE: this also includes adverse humidity and air temperature events where the temperature is predicted to be below 5°C or above 24°C.

1. LIGHTNING WITH OR WITHOUT THUNDER

NOTE – remain inside while lightning is occurring.

When lightning is occurring or predicted: volunteers to stay/ work inside (i.e in workshop, diesel shed, VIC)

2. STRONG WINDS

NOTE – remain inside building while there are strong winds occurring.

When strong winds are predicted and/ or occurring volunteers to stay/ work inside (i.e in workshop, diesel shed, VIC)

3. HEAVY RAIN/ PROLONGED RAIN

NOTE – remain under cover / or inside building while there is heavy rain or prolonged rain occurring.

When heavy rain/ prolonged rain is predicted and/ or occurring volunteers to stay/ work inside (i.e in workshop, diesel shed, VIC).

4. HUMIDITY & HEAT

Look at the Bureau of Meteorology weather – temperature and humidity forecast for Peterborough;

- a. Temperature predicted below 5°C
 - i. Daytime – where possible, identify what time of the day the temperature will be above 5°C.

For the times of the day that the temperature is predicted to be below 5°C, Volunteers do not work.

- b. Temperature predicted above 24°C

Identify what time of the day the temperature will be above 24°C. For the times of the day that the temperature is predicted to be above 24°C, Manager Supervisor to refer to the Humidity Heat Index chart (**Attachment 1**) and identify if additional safety measures needed.

Where the chart identifies extreme caution or danger – volunteers to work indoors only.

- c. Temperature predicted above 37°C

Volunteers do no/t work