

Wildfire Reserve Closure Plan



*Note: All trigger points are based on the Fire and Emergency NZ (FENZ)
“Establish triggers for voluntary restrictions on high fire risk activities” (2022) publication.*

12.12.2023

Purpose

The purpose of this document is to create a standardised methodology that will be used to monitor wildfire risk in high exposure reserves and to implement reserve closures where necessary during periods of elevated wildfire danger. Closures mitigate the risk of fires starting by removing people and their associated activities that can start fires and prevent loss of life by removing people from harm's way if a fire were to occur.

Assessing trigger points to establish the Forest Fire Risk Management Code Level as tabled below should be used as a guideline along with consultation with the **Fire Risk Stakeholders Group**. Two groups will be formed between Queenstown and Wānaka and can include members from Fire and Emergency NZ (FENZ), Queenstown Lakes District Council (QLDC), Civil Defence, and the Department of Conservation (DOC). The groups will also include reserve specific users such as commercial operators and community groups.

The **Fire Risk Stakeholders Group** will be activated during times of elevated fire danger, or when FENZ declares a seasonal Prohibited Fire Season. The activation of the group will be the responsibility of the groups' chair. The group will meet regularly (weekly or as agreed) from being activated, to closely monitor the forecast indices, providing a response in conjunction with these guidelines. The groups chair will also be responsible for closing the **Fire Risk Stakeholders Group** season.

The delegated responsibility to close a public reserve is with QLDC.

Point of contact: parksrequest@qldc.govt.nz

The intended audience of this document is primarily QLDC and the Fire Risk Stakeholders Group. Other users such as long term users of the reserves, permit holders, leasees and the general public can use this to determine the level of wildfire risk to their activities at any given time.

This document and further wildfire information can be sourced on QLDC's web page www.qldc.govt.nz/managing-wildfire-risk

Fire risk assessment

To assess the levels of wildfire risk to reserves, Queenstown Lakes District Council has adopted assessment protocols based on FENZ assessment publications for determining “Trigger Points”.

Reserve closures may be necessary during periods of elevated wildfire danger.

Closing a reserve will be enforced through QLDC legal powers under the Reserves Act 1977. QLDC will monitor and assess the changing levels of risk in consultation with FENZ.

The CEO or their designated authority (refer **QLDC Register of Delegations**) has accountability to activate a reserve closure. Refer to the responsibility matrix on page 4 for more detail.

QLDC will inform key stakeholders through the Fire Risk Stakeholder Group, referenced on page 5. As part of this, regular consultation will be held through periods of heightened wildfire risk and the FENZ seasonal prohibited fire season nominally during the months of December to March. Separate Fire Risk Stakeholder Groups will be formed for each area. (Queenstown and Wānaka).

Reserves identified as ‘high risk’

19 Reserves across the district have been prioritised for risk mitigation and listed below:

Site Name	Location	Risk Level
Ben Lomond	Queenstown	Extreme
Queenstown Hill	Queenstown	Extreme
Mount Iron (predicated by land transfer to QLDC ownership)	Wānaka	Extreme
Clutha Outlet	Wānaka	Very High
One Mile, Bob’s Peak and Wynyard	Queenstown	Very High
Kelvin Heights and Willow Place	Queenstown	High
Sunshine Bay and Glenorchy Road	Queenstown	High
Albert town, Campground, and River	Wānaka	High
Penrith Park, Bremner Bay, Artherton	Wānaka	Moderate
Arrow River, Bush Creek	Queenstown	Moderate

Due to the classified extreme risk, priority is to be given to the reserves; Ben Lomond, Queenstown Hill and Mount Iron.

Closure approval and responsibility matrix

Forest Fire Risk Code level	QLDC Parks and Open Spaces Planning Manager	Experts / Advisors	QLDC Parks Manager	QLDC General Manager Community Services	QLDC CEO	QLDC ELT	QLDC Elected Members	QLDC Comms Manager	FENZ	Stakeholders
Monitor / Assessment of Code Levels										
Green/Yellow	R	C	R	A	I	I		I	C	I
Orange	R	C	R	R	A	I	I	I	C	I
Red	R	C	R	R	A	I	I	I	C	I
Purple	R	C	R	R	A	I	I	I	C	I

R – Responsible

A – Accountable

C – Consulted

I – Informed

Fire Risk Stakeholders Group

The **Fire Risk Stakeholders Group** will be activated during times of elevated fire danger, initiated and maintained when FENZ declares a seasonal Prohibited Fire Season. The group will meet or communicate regularly (weekly or as agreed) to monitor the forecast fire indices.

The responsibility to close a reserve will remain with QLDC.

QLDC will assess the trigger points and inform the **Fire Risk Stakeholders Group** to close a reserve.

Initially two Fire Risk Stakeholder Groups will be formed, one for Queenstown (Ben Lomond and Queenstown Hill) Reserves and Wānaka (Mount Iron Reserve).

QLDC is responsible for activating and deactivating the Fire Risk Stakeholders Group. QLDC will ensure the appropriate stakeholders are represented as these members may change overtime.

It is anticipated the groups will initially comprise of the following stakeholders.

QUEENSTOWN

QLDC Open Spaces and Parks Planning Manager

QLDC Parks Service Delivery Manager

QLDC Parks Contracts Manager

Fire and Emergency New Zealand

Department of Conservation

Skyline

Ziptrek

Queenstown Mountain Biking Club

Peak Bungy Ltd

Gforce Paragliding

Aurora Energy / Delta

Expert: Wildfire Management NZ

WĀNAKA

QLDC Open Spaces and Parks Planning Manager

QLDC Parks Service Delivery Manager

QLDC Parks Contracts Manager

Expert: Wildfire Management NZ

Fire and Emergency New Zealand

Department of Conservation

Aurora Energy / Delta

Forest Fire Risk Management Code Level

The identified trigger points for the Forest Fire Risk Management Code Level, are based on the FENZ fire weather indices and codes. The Build Up Index (BUI) is a measure of how much fuel is dried out and available to burn, and the Fire Weather Index (FWI) is a measure of fire intensity that indicates how damaging a fire may be and how hard it will be to control. Using the data below, a decision will be made within the Fire Risk Stakeholder Group to determine a reserve closure. Closures could be for the entire reserve for a period of days, or for certain parts of reserves, or at peak times of fire risk during the day (often in the afternoons). See page 5 for case study data and trigger point level fire behaviour.

Reserves should be closed in purple at all FWI values, and in orange and red if the FWI is over 30 and 25 respectively.

The table below identifies the Forest Fire Risk Management Code Level.

Forest Fire Risk Management Code Level	BUI range	Fire Weather Index (FWI) code calibration of BUI Range
Green	<40	If FWI >25 elevate to Code Blue
Blue	40.1-60	If FWI >25 elevate to Code Yellow
Yellow	60.1-80	If FWI >25 elevate to Code Orange
Orange	80.1-100	If FWI >25 elevate to Code Red If FWI >30 Close Reserve
Red	100.1-120	If FWI >25 elevate to Code Purple
Purple	>120	Close Reserve

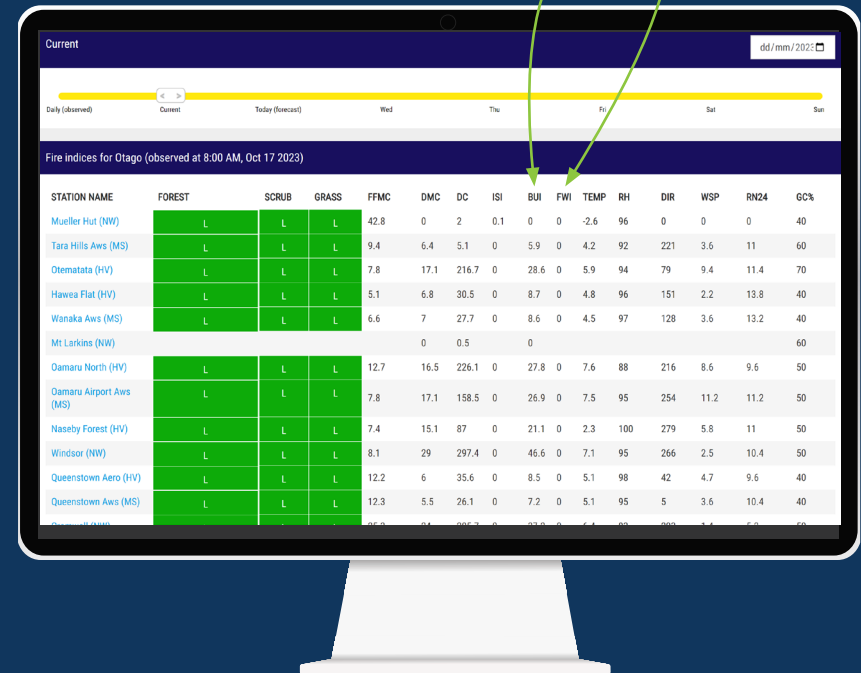
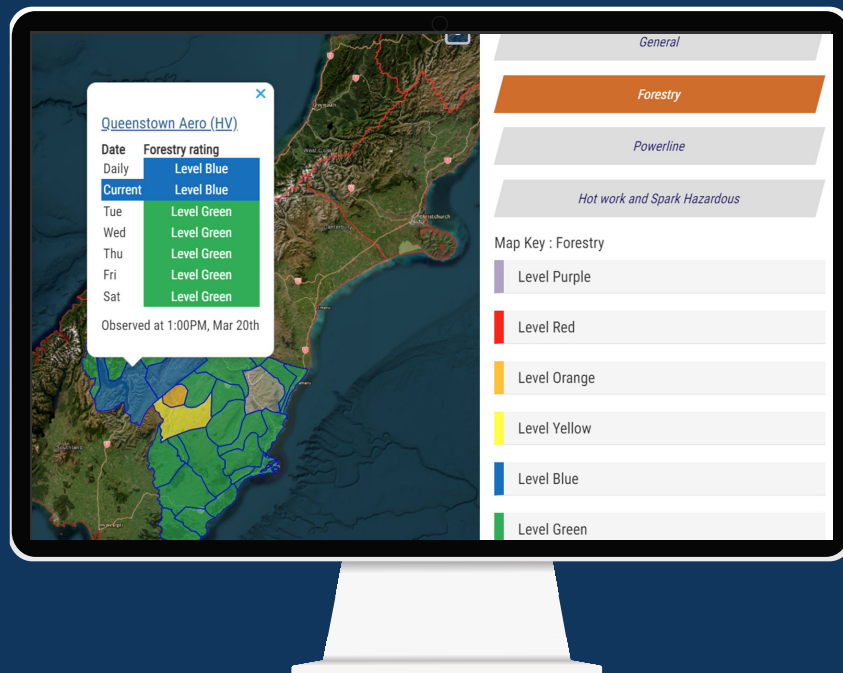
(No colour code can elevate up more than one level. I.e. if the Forest Fire Risk Management Code Level is in yellow and the FWI is over 25, then it would elevate to orange. If the FWI is still over 25 it would not then elevate to red. If the FWI was then over 30, it would trigger a reserve closure.)

NIWA/FENZ Fire Weather Website to establish indices (BUI and FWI)

Disclaimer: This link is to the FENZ / NIWA fire weather website. The link was accurate on the date of publication of this document, over time the web page format and information may change and you may have to search for the correct information.

1. Go to the NIWA/FENZ fire weather site fireweather.niwa.co.nz/region/Otago to determine the 'Forestry' code level or forecasted and daily BUI and FWI figures.
2. Click on the 'Forestry' tab, located on the right-hand side.
3. Click on the map at the appropriate location to see daily, current and forecast levels.

4. The table below the map indicates where to find BUI and FWI. Note for the Queenstown Station use the "Aero (HV) site".



Case studies of potential closure days

Based on historical Data (1st December 2018 to 15 March 2023)

Table 1 – Forestry Levels: Days per year that reserve closures would have occurred. (BUI over 120 or combination of BUI over 60 and FWI over 30)

Year	Queenstown (mainly afternoons)	Wānaka (mainly full days)
2019	2	4
2020	5	17
2021	0	10
2022	6	14
2023	11	29
Total Average	5 per year	15 per year

Fire behaviour assumptions for reserve closure

Reserve closures occur at code purple at all FWI values, and code orange or red with an FWI over 30. (BUI over 120, or a combination of BUI over 60 and FWI over 30. (yellow is BUI 60-80 with an increase to orange if FWI over 25 means closures can occur with a BUI above 60)).

Based on the above values a fire starting at the base of Ben Lomond, could reach the base building (approx. 800m) in around 20 minutes with an intensity of 35,000kw (well above the 10,000kw aircraft suppression level).

For Mt Iron, a fire starting off Aubrey Road, could reach the top of the mountain (approx. 1000m) in around 20 minutes with an Intensity of 50,000kw.

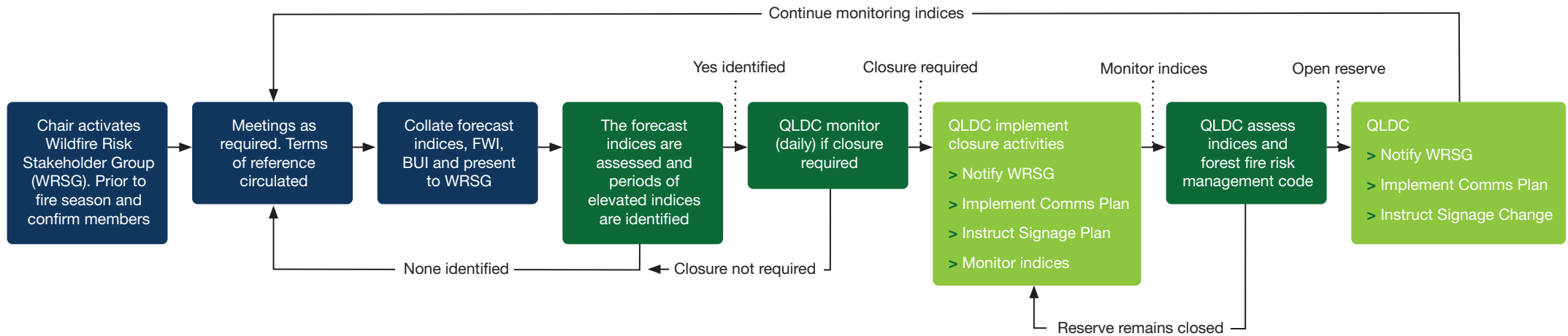
The QLDC trigger points are based around uncontrollable fires, that allow around 20 minutes warning for people at the top of Bobs Peak or the top of Mt Iron to escape or prepare for a fires impact. Despite the many extreme fire danger days over the past 15 years, there has not been a fire that has burnt to the top of either site.

The trigger points have been created as guidelines to recognise the fire danger of the reserves in this area and to balance this against the many users of the reserves both privately and commercially. If QLDC wishes to increase the amount of time for people to be warned or escape a fire, the trigger levels will need to be reduced.

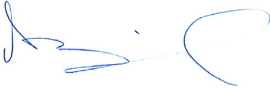
Fire weather inputs- Temp 30, RH 35, Wind 15km/hr, FFMC 91, DMC 50, DC 500, BUI 80- Queenstown Mature Pines at 35 deg slope, Wānaka Scrub Manuka/ Kanuka 3m high on 10 deg slope. Fires obtaining 90% of equilibrium in 30 mins. EXTREME fire danger.



Reserve closure flowchart



Document Control

Date:	4 December 2023
Approver:	Kenneth Bailey, General Manager Community Services
Approvers signature:	
Next review:	October 2024