

ERUPTION IMPACTS

HOW WOULD AN ERUPTION IN TĀMAKI MAKĀURAU IMPACT THE CITY?

DEVORA

FACT SHEET Dec 2025

Interesting volcanic facts from the DETERMINING VOLCANIC RISK IN AUCKLAND (DEVORA) PROJECT

The city of Tāmaki Makaurau / Auckland could be affected by volcanic eruptions from the Auckland Volcanic Field (AVF) in different ways. Future eruptions could create many different volcanic hazards, each with varying impacts, and not all occurring in every single eruption.



POTENTIAL HAZARDS WITH IMPACTS IN TĀMAKI MAKĀURAU / AUCKLAND CITY:

A volcanic hazard refers to any potentially dangerous volcanic process, with the potential to impact lives, livelihoods, or infrastructure.

EARTHQUAKES



LAVA



TSUNAMI



BALLISTICS



VENT FORMATION & COLLAPSE



LAHARS



ASH



ACID RAIN



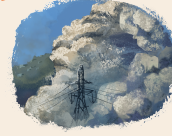
DEFORMATION



GEOTHERMAL & GASES



PYROCLASTIC SURGES



FIRE, LIGHTNING & SHOCKWAVES



... YEAH, BUT WHERE?

Scientists cannot predict where the next AVF eruption will take place, but the eruption location will have a large influence on the impacts. For example, some parts of the city have a lot of housing, some have important transport links like bridges or railways, and some contain equipment and buildings that make life possible (critical infrastructure – water and electricity, for example).

The location is also important because the type of eruption and the hazards it produces will change based on the type of environment (presence of water, rock type) the magma erupts through. To explore how the impacts of eruptions could vary depending on where they occur within the city, experts developed different models and eruption scenarios around the AVF. By studying all the different impacts, we can be better prepared for any future eruptions.

Economic modelling estimates that the cost of a future eruption could start at around NZ\$1 billion in the least damaging scenario and exceed NZ\$60 billion in the most damaging scenario. This estimate doesn't include indirect or intangible losses (like reduced revenue or impacts on people's wellbeing from the disruption

caused by a volcanic disaster), which could make the total cost even higher.

An eruption at sea far from the city could cause minor impacts from volcanic ashfall and gas hazards. Meanwhile, a range of volcanic hazards from an eruption near the Auckland port could cause very large impacts such as damaged buildings and critical infrastructure and major disruptions to normal life, business, and health and wellbeing.



An Auckland Volcanic field eruption is considered a low probability event on human timescales but would have high consequences.

SEVERITY AND CONSEQUENCES

...of volcanic hazards depend on their intensity and how they interact with each other. A thick layer of ash can cause a roof to collapse, whereas a thinner layer may only require cleaning up.

The intensity of a hazard varies based on its type, but usually, the farther away it is from a vent, the less intense it will be. This means that during an Auckland eruption, we could expect its impacts to be isolated to only a portion of the city.



MINOR IMPACT

Small accumulation of volcanic ash (up to a few millimetres) causing nuisance to those living and working nearby. Clearing of the ash will be required to prevent health impacts. There is unlikely to be any building damage but it may cause dangerous driving conditions.

MODERATE IMPACT

Some non-structural damage to buildings. Due to large quantities of volcanic ash, clean-up involving considerable resourcing, including heavy machinery, will be required.

MAJOR IMPACT

Widespread structural damage to and/or burial of buildings and infrastructure beneath thick eruptive deposits. Complete loss of service for electricity and water is likely. Roads impassable due to damage and burial beneath layers of ash, rock, and lava.



A future eruption in the Auckland Volcanic Field could generate debris waste on a scale that dwarfs the amount of annual waste Auckland sends to landfills. Estimates suggest that between hundreds of thousands and tens of millions of tonnes of waste could be generated

Volcanic ashfall originating from eruptions elsewhere in NZ such as Taranaki, Ruapehu, Ōkātina, and Taupō, could also cause impacts within the city.

Are you ready for the impacts of volcanic activity?

getready.govt.nz