



# Wairoa Riverside Motor Camp

Wairoa, Hawke's Bay

## Services

Digital

## Sector

Tourism & hospitality

## Brief

Following the destruction caused by Cyclone Gabrielle, we were tasked with creating a digital twin of the campground to assess the damage and potential future development of the site.

## Context 3D capture highlights Wairoa storm damage

When Cyclone Gabrielle hit New Zealand in February 2023, the Riverside Motor Camp, situated on the banks of the Wairoa River on the east coast, was inundated with flood water and silt, leaving a thick layer of mud and debris on the severely affected site.

To urgently assess the damage to the grounds and buildings, and to develop plans to install stormwater pumps in the event of similar situations in the future, owners Wairoa District Council requested a digital 3D capture of the campground.

Context's Spatial Data Lead Isaac Mui picked up the job and says: "The site was completely flooded. The water wiped out trees, a couple of small dwellings and left a trail of destruction and thick mud with mounds up to 2m tall. The campground looked like a disaster zone." The team at Context used LiDAR scanning technology to capture precise geometric data of the site, including its shape, topography, and structural elements, and the damage left behind by the flood waters. This data was then used to create a highly accurate and detailed 3D representation of the site, or a digital twin.

Mui says: "The level of detail provided by the LiDAR can far surpass traditional surveying methods, which enabled us, and Wairoa Council, to have a more comprehensive understanding of the damage to the site and what the recovery could look like.



"Not only does the scan capture create a timestamp of the site, it also records information such as terrain, slopes, elevation changes, and potential hazards. This data can be used for safety and risk assessments in the clean-up and for future natural disaster management. By analysing the digital twin, potential risks and safety concerns can be identified, and appropriate measures can be implemented to mitigate them."



Mui says the benefits of having the site scanned were obvious for the client once complete.

“For the first time, we could actually see in great detail the damage caused by the flood waters. Not only to the grounds of the camp site, but we could see how the flood water flowed across the site, which meant Wairoa Council could start at how to prevent the potential flood risk in the future.”



“The other benefit was the quick turnaround. Assessing the site manually wouldn’t provide a full picture and would take considerably more time. When the scan was complete, we could clearly see the areas that needed attention, meaning the clean-up and redevelopment could start sooner.”

The digital model provided an accurate basis for a discussion with regards to consideration of future development opportunities and landscape architectural interventions on the site that could occur in conjunction with the clean-up. The opportunity for digital representations of possible interventions was also explored.



LiDAR scanning technology can also serve as a platform for effective asset and facilities management and maintenance. By integrating additional data such as sensor readings, maintenance records, and historical performance data into the digital twin, facility managers can monitor the condition of assets, detect anomalies, and plan maintenance activities more efficiently. This proactive approach can help minimise downtime, reduce costs, and extend the lifespan of infrastructure. Due to the success of the project, Wairoa are looking at how they can utilise the benefits of 3D capture across their portfolio or properties.

Get in touch with Context to learn more about how 3D capture using LiDAR scanning can help protect your assets.

**Talk to our digital experts today**



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