

STABILISE AND CONSOLIDATE WASHED OUT ROADWAY

Site Profile

The Roads and Maintenance Team of a local Council is responsible for the maintenance of all roadways in the in region.

One such roadway is a road providing access to five residential homes – the only access point in and out for the people who live there.

The culverts are designed to act as structure that channels water to a waterway to prevent flooding and damage to other infrastructure.



Figure 1: The two culverts underneath the road.

The Situation

The local Council had been severely impacted by recent storms and flooding events.

These storms arrived with torrential rain and strong winds resulting in much loose debris and fallen branches. The debris was picked up by the flowing water and channelled into the culverts. The two culverts were eventually overwhelmed and became blocked with trees and debris. Without the clear culverts to escape through, the storm water was forced to pass through the surrounding subsoil and up over the roadway.

This impaired drainage and subsequent flooding event significantly compromised the roadway resulting in the occurrence of two sinkholes.

The damage to the road meant that the residents were unable to use it to enter or leave their homes, effectively leaving them stranded. The Council identified that this was an emergency and contacted Resinject to see if we could help repair the roadway in the shortest amount of time possible.



Figure 2: The Resinject Emergency Maintenance crew completing the works

Our Solution

The local Council contacted Resinject on a Friday and work began and was completed on the Monday. The work was completed by Resinject's emergency maintenance crew.

The Resinject team conducted a series of deep, in-ground injection to various depths. Our specialised resin solution was injected below the overarching roadway to re-support the roadway and the ground around the pipes.

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Our principal aim was to stabilise and consolidate the ground so that road would be safe and able to be used again as soon as possible providing much needed access for the residents.

Immediately following our injection treatment, the Councils Road and Maintenance Team repaired the sinkholes with a bitumen hot mix so that the roadway was made level again.

On initial inspection, it did not appear that the ground was as bad as it turned out to be. After completing works, Resinject identified that if the works had been left for any further amount of time that the roadway would have completely fallen in due to the extreme levels of washout and the damaging sinkholes.

Resinject's RSJ170 Resin has no detrimental effects on ground water, soil quality or local wildlife and is backed by a 50-year product warranty.



Figure 3: The consolidated sinkhole with the applied bitumen

The Results

After completing the proposed deep, in-ground injection solution, Resinject was able to confirm that the ground beneath the roadway was now stabilized, consolidated and safe to use.

The work was completed by Resinject over a 12-hour shift to ensure that the roadway could be open for traffic as soon as possible, minimising the impact to the community.

Rather than having to close the road, dig it up and do major repairs, making the road unusable for 3 months or more. Resinject's solution, which was completed in 12 hours, enabled the road to be trafficked immediately upon completion of works. This saved the client having to spend time and money on a major capital project.

Resinject's solution has ensured the longevity of the roadway, the safety of the residents and saved the Council significant capital expenditure in both time and money.

Acknowledgements

Resinject would like to thank the local Council for the opportunity to demonstrate our sustainable, and cost and time effective solutions.

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