



Size  
109  
stockpiles



Scan time  
10 mins per  
scan



Location  
Iowa,  
USA



Industry  
Mining



Scanned  
Salt  
stockpiles

## Words by

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At Iowa State DOT (Department of Transport) it is our job to make sure over 24,000 miles of road remains clear and safe to use in winter. We have 109 maintenance areas across the state where stockpiles of salt are kept for distribution. Each facility can each hold up to 1200 tonnes.

Throughout winter salt is loaded onto trucks and spread on roads to stop the surface from freezing. Pay loads are measured in weight as salt is loaded onto spreading trucks and supplies are depleted. But as the salt is used, there is a clear discrepancy between the volume of salt in the shed and the paper records – it is not reliable to just look inside a half-empty shed and assess how much material remains.

If volume of salt is too low or we don't know how much is available, we may find ourselves forced to make snap decisions about redistribution which is both costly to the state and inconvenient to residents and businesses alike.

We needed another solution and following a few severe winters where salt reserves around the country ran out, the Great Lakes froze and shipments were halted we were determined to invest in a reliable measuring process for managing stockpiles in future, which led us to a GeoSLAM volumes solution.

**“ In terms of speed and accuracy, this was a real game changer for us! ”**

Using the handheld SLAM device, we can produce a three-dimensional model of the stockpile in just a few minutes. We have never experienced this level of accuracy before and capturing data was as easy as surveying the site with the naked eye.





The surface of the stockpile is very uneven with lumps on one side and big cliffs on the other where loaders have dug-out salt for spreading, in the past our 'best guess' used to involve looking at the stockpile against some markers on the walls of the shed which provided limited accuracy to say the least, so this was a real game changer for us.

Data is then processed using GeoSLAM Hub and imported to the volumes software. As the granules vary in size, we apply a bulk density value as well as defining a floor and perimeter of each pile calculate the total volume of the stockpile in tonnes.

From start to end, the entire process took around twenty minutes. We now have depot staff going out and scanning the stockpiles regularly. This new level of insight means we don't have to worry about compromising road users' safety across the state of Iowa as we always know what volume of salt we have available to use.

