

# Paving the Road to Zero Waste at Toyota's Indiana Plant

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How do you turn manufacturing sludge into a sustainable building material? Toyota Motor Manufacturing, Indiana (TMMI) offers a “concrete” example.

Before 2010, water used in the manufacturing process was pumped into the plant’s wastewater treatment system. It was cleaned and treated with a chemical — ferric sulfate— to remove metals and contaminants. The result: a useless iron-rich sludge left behind as waste...a LOT of waste. Sludge was nearly 70 percent of TMMI’s total waste stream each month.

Enter Toyota’s ongoing commitment to eco-efficient operations. To minimize waste and conserve natural resources, TMMI tested different additives in order to find a more natural way to treat the sludge from TMMI’s wastewater streams and the paint shop. Lime slurry, a non-hazardous mineral and more cost-effective alternative, performed the best. It reduced wastewater sludge by 4 pounds per vehicle, the equivalent of eliminating over 1 million pounds of wastewater sludge each year.

And, it turns out, the calcium-rich sludge left behind is a great replacement for cement in cement kilns. The sludge is dried, compressed and shipped to a facility where it is used to make Portland cement, a basic ingredient of concrete, mortar and stucco.

By developing innovative methods like this, TMMI became a zero waste to landfill facility in 2010 and continues to operate as such today.

Learn more about Toyota’s environmental initiatives in the company’s latest environmental report:  
[www.toyota.com/about/environmentreport2013/](http://www.toyota.com/about/environmentreport2013/)

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