

**Technical Report
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Abstract

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16. Abstract <p>The Michigan Department of Transportation (MDOT) allows trucks that exceed their legal loads to cross bridges if they apply and are approved for a permit. More than 30,000 permits have been processed each year since 2002, providing a vital service to Michigan's economy. However, the permitting system must be robust enough to ensure that the safety of the motoring public is maintained by accounting for overload vehicles without unduly restricting commerce.</p> <p>Currently, structures are placed into Overload Class by checking all service limit states as identified by the 2005 MDOT Bridge Analysis Guide (BAG) with 2009 Interim Updates and the 2010 American Association of State Highway and Transportation Officials (AASHTO) Manual for Bridge Evaluation (MBE) with interims. Vehicles are placed into the Overload Class by comparing the maximum moments of the vehicle for span lengths between 15-ft to 160-ft to the moments produced by the 20 standard overload configurations provided by the BAG. Structures that do not pass an overload class would be marked as restricted and require a specific analysis, increasing the turn-around time for the client and the analysis cost incurred by MDOT.</p> <p>The current software used for the analysis of the structures is a simplified solution that was developed well over 20 years ago when more robust solutions were not feasible. With the capability of modern computing and the availability of bridge software solutions, this research project looks at solutions for updating the bridge analysis as well as the overall overload permit classification process.</p>				
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