Michigan LTAP

Great Ideas

2019 Challenge

Shining a spotlight on local road agency innovations for a brighter Michigan

www.MichiganLTAP.org/GreatIdeas

Center for Technology & Training

Attention!

Note: This document describes equipment and practices developed by employees of local road agencies for use within their agencies. The equipment and practices described herein have not necessarily been tested and/or approved to meet engineering design or safety standards. Agencies considering adopting the practices described in this document should first verify the practice is appropriate and safe for their agency's use. The Center for Technology & Training (CTT) is not responsible for damage to equipment or facilities, or for bodily injury as a result of reproducing and/or using the equipment or practices described herein.

What is the Great Ideas Challenge?

Working through Michigan's Local Technical Assistance Program (LTAP), members of the Center for Technology & Training staff visit dozens of local road agency facilities every year. Every time we stop at a county road commission or a city department of public works, we are impressed with what goes on behind the scenes. The men and women who manage and maintain local agency roads, facilities, and equipment are intelligent, ambitious, passionate, innovative, and productive. No matter the obstacle, they figure out how to get stuff done — and do it well.

The *Great Ideas Challenge* is meant to help identify, share, and reward the great work that gets done at local road agencies in Michigan. The Challenge is open to all employees of road agencies who serve counties, townships, cities, and villages in Michigan. All entries are considered for the statewide competition, and the entry that wins first place in Michigan is automatically entered in the Federal Highway Administration's LTAP Build a Better Mousetrap national competition.

Next year, the 2020 *Great Ideas Challenge* submissions will open in October 2019 and will have a May deadline for submitting a great idea.

Special Thanks to the Judges

Judges for the *Great Ideas Challenge* took time out of their busy schedules to evaluate, discuss, and score each entry based on five criteria: Cost, Ingenuity, Effectiveness, Ease of Adoption, and Return on Investment. Judges include:

Christopher Gilbertson — Associate Director, Center for Technology & Training
Andrew Manty — Research Engineer, Center for Technology & Training
Lance Malburg — Engineer, Dickinson County Road Commission

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Ottawa County Road Commission

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Problem Statement

A road commission often uses dump trucks for carrying everything from concrete to tree branches and brush. When it comes time to unload, the tailgate chains always seem to cause trouble. Material frequently gets caught up in the chains, causing the material to wad up rather than unload from the truck or—worse—the tailgate to fall off.

Summary of Solution

The Box Tailgate Extension consists of solid box side plates that attach in the tailgate pins. A tailgate lock completes the Box Tailgate Extension.

Box Tailgate Extension *(cont.)*

Material & Expenses, Labor, Equipment

The Box Tailgate Extension takes three to four hours of a mechanic's time to make. The work involves welding, drilling holes for the tailgate pin, and cutting off bolt heads. To construct the Box Tailgate Extension requires 1/2 x 3 feet of 20-foot flat stock, 36 x 36 inches of 1/4- to 3/8-thick sheet steel, a four-inch piece of angle iron at 1/2 x 3 x 3 inches (used for the tailgate lock), and two 1-1/4 bolts and nut (four-inch long, grade 8, locking nuts). The approximate total cost of materials and labor is $400.

Benefits

The Box Tailgate Extension eliminates the need for the tailgate's chains and allows for smooth box sides. The smooth sides allows material to slide out easily. With the addition of a tailgate lock, the driver cannot accidentally open the tailgate.

The Center for Technology & Training is located on the campus of Michigan Technological University. The CTT's mission is to develop technology and software, coordinate training, and conduct research to support the agencies that manage public infrastructure. For more information, visit www.ctt.mtu.edu.