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What is the Ohio Entry Booklet 2016?

The Ohio Entry Booklet is a compilation of all the entries from the Ohio LTAP Center 2016 Build a Better Mousetrap Competition, representing counties, cities, townships, and villages from around Ohio. The Build a Better Mousetrap Competition’s purpose is to collect and disseminate real world examples of best practices, tips from the field, and to assist in the transfer of technology. The competition is an excellent way for innovative ideas to be exchanged with others that may benefit from different concepts and perspectives. It is also a great way for local transportation professionals and other LTAP customers to get some well-earned recognition for their hard work. All entries have been printed as explained by the submitters and all questions concerning the entries should be directed to the listed submitter.

What is the Ohio LTAP Center?

LTAP, an acronym for Local Technical Assistance Program, was created in 1982 as part of a nationwide effort by the Federal Highway Administration to provide for transfer of transportation technology and technical assistance to rural and local governments. Through this program, LTAP, or Technology Transfer (T2) Centers have been established in each of the states and Puerto Rico, and in four additional locations to offer assistance to Native American Tribal governments.

The mission of the Ohio LTAP Center is to provide training, technical assistance, advice and other resources concerning roadways to Ohio's local governments.

If you would like additional information about the Ohio LTAP Center, or the Build a Better Mousetrap Competition please visit http://www.dot.state.oh.us/Divisions/Planning/LocalPrograms/LTAP/Pages/default.aspx or contact us at ltap@dot.ohio.gov or (877) 800-0031 (toll free in Ohio) or (614) 466-3129 (all other areas).
Congratulations to the 2016 Winners:

1\textsuperscript{st} Place – \textbf{Dust Control/Brine Distribution and Storage System} – Hilliar Township, Knox County

2\textsuperscript{nd} Place – \textbf{Secondary Hitch System} – City of Centerville

These entries were selected by our panel of transportation professionals after much deliberation. The quality and innovativeness of all the entries made the selection process very difficult. We commend everyone who entered the competition and encourage you to keep following through with your creative, cost saving ideas! We are already looking forward to next year’s Mousetrap Competition and hope everyone will have at least one great new idea to submit.

\textit{NOTE: The Ohio LTAP Center assumes no liability, express or implied, for the information contained in the submissions included in the entry packet or the implementation of any of the submitted ideas. The entries are solely the ideas and words of those who have submitted them and all questions regarding the entries should be directed to the submitter listed on each entry. Inclusion in the entry booklet does not imply an endorsement by the Ohio LTAP Center, it only demonstrates that the information was submitted as an entry for the competition.}
Hilliar Township, Knox County

1st Place Winner in the 2016 Build a Better Mousetrap Competition

DUST CONTROL/BRINE DISTRIBUTION AND STORAGE SYSTEM

Contact:
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Centerburg, OH 43011
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Problem Statement:

With almost half of our 27.165 road miles still being gravel, we had a great need for dust control system. Resident complaints had been brought forward to the township meetings in 2015. It was apparent we needed an economical solution to this issue.

Discussion of Solution:

In the summer of 2015, it was decided by the current trustees to build a system with equipment and parts acquired from several different sources. Some local resources were used as well as great research and a personal time commitment by Trustee Karen Lawrie.
**Labor, Equipment, & Materials Used:**

Labor was entirely provided by our two full-time employees. It was a good use of time since early winter was with good weather and little snow plowing. Road Supervisor Tim Preisser and Road worker Cody Longshore performed the build of the system.

Equipment used was a 1,000 gallon nurse tank trailer bought at auction, a 90" PVC boom, 3 way banjo valve, LED trailer light kit, misc scrap metal and fittings from the shop.

A 3000 gallon used storage tank on skids was purchased from a local oil drilling company and painted by our crew.

Our recently purchased Mig Welder was also used which saved a large amount of welding costs that used to be hired out.

**Cost:**

- Bulk storage tank - $1400
- Trailer/Nurse tank - $2800
- Banjo valve (new) $431.78
- Misc parts (new) $1075.51
- Labor - $1500

Total cost for the project was $7207.29

If a new system was to be purchased, the approximate cost would have been right at $20,000.
Savings/Benefits to the Community:

Dust control on our gravel roads will keep homes and vehicles clean. Dust allergens will be reduced and a healthier environment for our residents will be achieved. The road surfaces will last longer as less product is lost in the dust.

Another advantage is the use of recycled brine from local well drilling sites. The only cost for the brine mixture will be in the hauling.

We feel that we invested wisely and saved the taxpayers money while providing a service that will benefit in many ways.
City of Centerville

2nd Place in the 2016 Build a Better Mousetrap Competition

SECONDARY HITCH SYSTEM

Contact:
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Problem Statement:

During construction season we have the challenge of transporting multiple pieces of equipment to the job site. Our concrete crew who rebuilds catch basins throughout our City has a trailer that they utilize for all of their materials such as block, mortar, cement, sand, forms etc. This trailer is pulled by a truck equipped with tool boxes which also has a truck mounted crane/lift for lifting heavier objects.

We normally have another dump truck that will tow a trailer that transports the Bobcat, mini excavator, concrete saw and/or concrete breaker. The crew consists of 4 team members so 2 are normally in each truck. In the past the only way we could get the mortar mixer to the job site was to assign a 3rd truck to tow the mixer or try to load the mixer on the trailer along with the other equipment. This required additional load securement for the mixer along with the other equipment and materials being transported.

Once on the job site the mortar mixer would have to be unloaded and reloaded multiple times throughout the day.
Discussion of Solution:

We are a smaller City so we wanted to avoid assigning a 3rd truck so we wouldn't have 1 more truck tied up on the job site. The thought was to find a way to transport the mortar mixer to the site so we could avoid mixing the mortar by hand and to avoid utilizing a 3rd truck or avoid loading/unloading the mortar mixer onto a trailer. One of the guys suggested a secondary hitch system to be mounted to the rear of the construction trailer. Since the mortar mixer only weighs just under 800 lbs the impact was minimal to the towing capacity of the truck/trailer. We checked the laws in Ohio for towing triples and its fine to tow triples along as the total length does not go beyond 65’. Our total length with the truck, trailer and mixer measured 52’ so we were under the total length permitted under the law.

Labor, Equipment, & Materials Used:

Jeremy Schul, a Heavy equipment mechanic in our Public Works Department spent approximately 4 hours making the adjustments to the trailer. The materials for the hitch /receiver was in stock for the most part so we were able utilize what we had on hand. We purchased the wiring harness so we could have a secondary light system mounted to the rear of the construction trailer. The taillights and wiring already existed on the mortar mixer.

Cost:

Labor = Approximately $125.00
Materials = Approximately $20.00 (mainly since we had most of the materials on hand)
Note:If you had to purchase the pintle hitch system along with the wiring harness you may have a total cost of around $125.00-$150.00 for the materials.
Savings/Benefits to the Community:

Since we are a City every decision we make to minimize the use of multiple vehicles on a job site creates a benefit. Another benefit is taking every opportunity to utilize current equipment to the fullest. I believe our system offers both. We have the ability to limit the use of extra equipment and in the process we gain the benefit of maximizing our resources that are already going to be assigned to the job site. When you add up the fuel savings of avoiding the use of the 3rd vehicle and in some cases the avoidance of requiring the 3rd employee on a job site the benefits continue to add up. The employee(s) work safer by having the ability to tow the mortar mixer instead of having to load the mixer onto a trailer along with the other equipment. Anytime we limit exposure to a potential injury we create a benefit. Overall, the Secondary Hitch System creates a safer and more efficient work environment that creates benefits for the Community and the employees alike.