Build a Better Mousetrap Competition:
A Comprehensive Planning Guide

Images from the 2009 Build a Better Mousetrap: National Competition

National LTAP & TTAP Program's
Serving America's Local Road & Bridge Agencies
Dear LTAP/TTAP Center,

I would like to thank you for your interest in holding a Build a Better Mousetrap Competition in your state/region. Our goal is to help you collect, share, and reward the creative work that your state and local agencies perform on a daily basis. The FHWA LTAP/TTAP Clearinghouse has put together a comprehensive toolkit that details how to hold your own competition. We made sure to include template forms and letters – all you have to do is personalize them with your Center information and you will be ready to go!

We want to make this process as easy and rewarding as possible for you and your clients. When your competition has concluded, please send in all entries, not just the winner, to be included in a national electronic booklet that will be disseminated to all LTAP/TTAP Centers. Also, make sure to submit your winner(s) to be considered for the national competition. The final winners will be announced annually at the LTAP/TTAP National Conference.

Thank you so much again for your interest in the Build a Better Mousetrap Competition. If you have any questions please feel free to contact me at smonahan@artba.org or 202.289.4434. I am thrilled at the prospect of your Center holding a competition, and look forward to seeing all of your submissions!

Sincerely,

Susan Monahan
FHWA LTAP/TTAP Communications Liaison
Table of Contents
Checklist ........................................................................................................... 1
Email/Letter from LTAP/TTAP Center to State & Local Agencies Announcing the Competition ................................................................................. 2
Build a Better Mousetrap Competition Entry Form ................................... 3
Follow Up Email/Letter from LTAP/TTAP Center ....................................... 4
Judging Criteria ............................................................................................. 5
Suggested List of Prizes ................................................................................ 5
Email/Letter from LTAP/TTAP Center to State & Local Agencies Announcing the Winner(s) .................................................................................... 7
Template for the Electronic Booklet .......................................................... 8
Email Your Winner to the Clearinghouse: ............................................... 9
For Your Reference ...................................................................................... 11
2009 Build a Better Mousetrap: National Competition Winners .......... 12
Checklist

- Establish the timeline of your competition
  - When do you want to send the initial email out?
  - When do you want to send a follow up email?
  - What date do you want to set as the cutoff for entries?
  - What date do you want the judges to have chosen the winner by?
  - What date do you want to announce the winner?

- Choose your method(s) of distribution
  - Email
  - Mail with the Quarterly Newsletter
  - Mail Separately
  - Pass Out/Have Available at the end of workshops

- Decide on prizes and how many winners you are going to have

- Send out your first announcement of the competition
  - You may include the prizes to try and entice people to enter, but if the prizes have not been finalized I would not recommend advertising them

- Secure your judges
  - Reach out to members of the community to act as judges

- Finalize prizes

- Send a follow up email reminding people of the competition and encouraging them to participate
  - Remember to highlight the prizes and the chance at being entered into the national competition

- On the entry cutoff date, call those who said they were going to send in an entry, but didn’t just to see if they still wanted to enter

- Collect all of the entries and email them to your judges

- Host a conference call once the judges have reviewed all of the entries so they can discuss and choose winners together

- Create a booklet that includes all of the entries

- Announce the winner via a special email and attach the booklet

- Post the booklet to your website and allow people to download it

- Write an article about the winner for your newsletter

- Send in the winner of the competition and the booklet of all the entries to Susan Monahan at the FHWA LTAP/TTAP Clearinghouse

- Attend the national conference to find out if your entry won the national competition
Email/Letter from LTAP/TTAP Center to State & Local Agencies
Announcing the Competition

Use this initial email to your client to inspire excitement, competition, and most importantly participation. You can also print this letter and the entry form and get creative with your distribution. Pass it out at the end of a workshop, or include them with your quarterly newsletter. If people are still not sending things in, start making some phone calls and generate interest by word of mouth.

Dear X,

Have you or one of your co-workers recently built an innovative gadget or developed an improved way to do a job? Well, now is the time to show off a project your agency is proud of in our Build a Better Mousetrap Competition!

We are looking for projects that you, your employees, or crew designed and built; it can be anything from the development of tools, equipment modifications, and/or processes that increase safety, reduce cost, improve efficiency, and improve the quality of transportation.

Submit entries to us here at the (____) Center, where we will pick a state/regional winner. The winning entry from each Center across the country will be automatically submitted into a national competition where both you and we here at the Center will compete for fantastic prizes, and of course bragging rights! Winners will be announced at the annual LTAP/TTAP National Conference. All entries will be posted on the LTAP/TTAP program website and compiled into an electronic booklet for you.

To enter please complete the attached entry form and return it to us by X date. Please feel free to email the form to X, fax it at XXX.XXX.XXXX, or to mail it in at:

X LTAP/TTAP
X XXXX
XXXXXX, XX XXXXX

Thank you so much, we look forward to reviewing all of your fantastic entries.

Sincerely,

Appropriate Center Staff
Build a Better Mousetrap Competition Entry Form

Agency Name: ____________________________  Contact Person: ____________________________

Contact Phone #: ________________________  Contact Email: ____________________________

Contact Address: ____________________________

Entry Title: ____________________________

Problem Statement: ____________________________

Discussion of Solution: ____________________________

Labor, Equipment, Materials Used: ____________________________

Cost: ____________________________

Savings/Benefits to the Community: ____________________________

*Please keep in mind that photographs are encouraged, but not mandatory

Please return your completed form to X via email at X, via fax at XXX.XXX.XXXX or via mail at
X LTAP
X XXXX
XXXXXX, XX XXXXX
Follow Up Email/Letter from LTAP/TTAP Center

Use this email to follow up with your clients to see if anyone is planning to submit an entry into the competition that has not already done so.

Hello X,

I hope you are doing well. I wanted to follow up with you and see if you were planning on submitting anything to the **Build a Better Mousetrap Competition**. I know that you and your team are extremely busy, but I would love to see some of the inventive and creative work you do put on display.

If you are interested in participating in the competition I have attached an entry form for you to fill out and return by X date. Please keep in mind that whoever wins the state/regional **Build a Better Mousetrap Competition** is automatically entered into the National Competition, where winners will be announced at the National LTAP/TTAP Conference.

Thank you so much, I look forward to reviewing your entries.

Sincerely,

Appropriate Center Staff
Judging Criteria

The National Competition is judged on the criteria listed below within the framework of a five point rating scale. Provided is an example matrix that lists each of the judging criteria and assigns each entry a rating of one through five. The winner is the entry that has the highest number of overall points. We recommend using these criteria and the five point rating scale as a template, but be sure to make adjustments based on your Center’s individual needs.

Judging Criteria
- Cost
- Savings/Benefits to the Community
- Ingenuity
- Transferability to Others
- Effectiveness

Five Point Rating Scale
- 5 = Excellent
- 4 = Very Good
- 3 = Good
- 2 = Fair
- 1 = Poor

<table>
<thead>
<tr>
<th>Entry #</th>
<th>Cost</th>
<th>Savings/Benefits to the Community</th>
<th>Ingenuity</th>
<th>Transferability to Others</th>
<th>Effectiveness</th>
<th>Overall Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entry #1</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>17</td>
</tr>
<tr>
<td>Entry #2</td>
<td>5</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>20</td>
</tr>
<tr>
<td>Entry #3</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>3</td>
<td>14</td>
</tr>
<tr>
<td>Entry #4</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>23</td>
</tr>
</tbody>
</table>

Suggested List of Prizes

Please note that these are only suggestions. You know your clients best; be creative and come up with prizes that they are really interested in and want to compete for.

- Award Certificate
- Waive the Tuition Fee to a Workshop of the Winner’s Choice
- Piece of Equipment or a Tool
- Money/Gift Certificate
- Sponsor a recognition luncheon/awards ceremony/mini-conference where people bring in their submissions and show them off to each other
- Prime Placement in your Center’s quarterly newsletter
- Prime Placement on your Center’s website
Use this email not only to announce the winner of your competition, but also use it as an opportunity to thank everyone who participated by sending in entries, remind them of the National Competition and the National Entry Booklet, and don’t forget to promote next year’s competition!

Hello,

I am pleased to announce the winner of this year’s Build a Better Mousetrap Competition is:

Agency X
Entry Title: X

[Include description of entry]

Agency X will automatically be submitted into the Build a Better Mousetrap: National Competition that is sponsored by the FHWA LTAP/TTAP Clearinghouse. The national winner will be announced at the National Conference in Oklahoma City. Please be on the lookout to see if Agency X won the National Competition, and also for the National Electronic Booklet that profiles every submission from across the country.

Honorable Mentions
We would also like to recognize the following people with Honorable Mentions for their excellent submissions:

X Agency for their entry [brief description]*

X Agency for their entry [brief description]*

Thank you so much to everyone who sent in entries to the 2010 Build a Better Mousetrap Competition. Attached is an electronic booklet of all the entries we received; we have also posted this booklet to our website for you to download. Remember to watch for the announcement of the national winner and the national electronic booklet that we will send to you. Thank you so much again for your participation. We look forward to seeing what you will send in next year!

Best,

Appropriate Center Staff
Depending on the amount of entries you receive you could list all of them in your email as Honorable Mentions

**Template for the Electronic Booklet**

Please feel free to change this template as you see fit, also make sure to include pictures whenever possible, they really do say a thousand words!

**ENTRY NAME**

City and/or County, State

Contact:
X Name
Title
Agency Name
Address
City, State Zip
Phone #
Email

Problem Statement:
[Include answer from entry form]

Discussion of Solution:
[Include answer from entry form]

Labor, Equipment, & Materials Used:
[Include answer from entry form]

Cost:
[Include answer from entry form]

Savings & Benefits:
[Include answer from entry form]
**Email Your Winner to the Clearinghouse:**

*Below is a sample email that you can use as a template when you email the FHWA LTAP/TTAP Clearinghouse with your Center Winner and National Competition Submission.*

Hello Susan,

I have attached the entry form of our Center Winner for submission into the Build a Better Mousetrap: National Competition. I also included the Agency and Name of the Entry below:

Agency:
Entry Title:

Please note that I have also attached the electronic booklet of all our entrants for you to include in the national electronic booklet*. If you have any questions please let me know. Thanks.

Sincerely,

Appropriate Center Staff
*Please note, if you do not create an electronic booklet that’s ok, but please still email or send me all of your entries to be included in the National Booklet*
For Your Reference

Below we have provided the contact information for Centers that already have either a Build a Better Mousetrap Competition or a comprehensive variation for you to review and use for further guidance.

**Connecticut LTAP Center:**
Donna Shea  
(860)486-5400  
shea@engr.uconn.edu  
http://www.t2center.uconn.edu/solutionsaward.php

**Colorado LTAP Center:**
Renée Koller  
(303) 735-3530  
cltap@colorado.edu  
http://ltap.colorado.edu/

**Hawaii LTAP Center:**
Costas Papacostas  
(808)956-9006  
csp@hawaii.edu  
http://www.eng.hawaii.edu/~hltap/
First Place:
Culvert Inlet Improvement to Existing Rural Culverts by Adding Low Cost Drop Inlets
Town of Snowmass Village, Colorado

Contact:
Will & Scott Binegar
Road Division, Public Works Department
3745 Owl Creek Road
PO Box 5010
Snowmass Village, CO 81615
(970) 923-5110

Problem Statement:
Old Culvert inlets get covered up, plugged or lost over time.

Discussion of Solution:
By adding a low cost in-house built drop culvert that is durable, heavy rain, run-off and snowmelt will not stand a chance with this system. Also, maintenance is minimal and quick.

The Town of Snowmass Road Division designed a Drop Culvert using a sonotube, sackcrete, a steel manhole ring and a 24” slotted lid. The final product allows for the preservation of culvert inlets by adding protection from debris, run-off, rocks, etc.

Labor, Equipment, & Materials Used:
30” Round Sonotube
24” Round Sonotube
Sackcrete
24” Slotted Lid
24” Steel Sewer Riser Ring

Cost:
30” Sonotube: approx. $1.60 per ft.
24” Sonotube: approx. $1.40 per ft.
Bags of Sackcrete: $7.00 per bag
Old Steel Sewer Riser Ring: no cost
24” Slot Cover: $90.00
Second Place:

Magnet System for Road Debris
District #3, Phillips County, Colorado

Contact:
Mike Salyards
District #3 Supervisor
433 E Fletcher
Haxtun, CO 80731
mikespc3@schollnet.com

Problem Statement:
Rural residents complained of flat tires due to road maintenance.

Discussion of Solution:
Devised an automatic, trouble free magnet system. It is intended to remove nails, wires, screws, staples, and any other small metal pieces from the road surface while performing routine road maintenance without added operations. Magnet system raised by the Maintainers built in air system.

Labor, Equipment, & Materials Used:
Welder, Metal Saw, and Drill. Miscellaneous square tubing and hardware, air cylinder, electric micro-switch, electric operated solenoid valve, 2 forty-eight in yard magnets. We also used two days of in-house labor.

Cost:
Miscellaneous iron and hardware: $40
Air Cylinder: $80
Electric Micro-switch: $38
Electric operated solenoid valve: $55
Magnets: $535
The total cost was $748.

Savings & Benefits:
No direct savings to Phillips County; however, indirect savings are seen in the motoring public spending less to repair flat tires that occur on Phillips County gravel roads.
**Third Place:**  
**Asphalt Equipment Clean-Out System**  
Boulder County, Colorado

**Contact:**  
Ted Plank, Road Supervisor  
Boulder County Transportation Department  
1288 Alaska Ave.  
Longmont, CO 80501  
(303) 441-3962  
tplank@co.boulder.co.us

**Problem Statement:**  
Our challenge was to find a way to clean out oil distributor trucks and tack oil tanks after use, without creating a mess or causing environmental impact. We needed some way to empty our spray bars of the diesel fuel/tack oil without just spraying out on the ground, parking lot or roadway.

**Discussion of Solution:**  
The current system is the third generation of the idea we had about 12 years ago. A 20-foot section of culvert is cut in half lengthwise. The section of culvert sits in a metal frame with steel plates hinged to create covers that can be closed when the system is not in use. The frame and culvert are elevated at one end to create flow. The ends of the culvert were sealed using a lid from a 55-gal drum, cut in half. A nipple is threaded to the bung of the 55-gal drum lid, and attached to the nipple is a 2 ½ ”suction hose that leads to a 300 gallon tank.

To use the system, a distributor truck backs up to the culvert and empties the spray bars into it. The used diesel/tack flows from the culvert into the tank. When the tank is full, we contact a waste-oil company for pick up.

**Labor, Equipment, & Materials Used:**  
Two employees (including one with welding experience) can construct the system.  
Equipment included hand tools, a welder and a front loader. Materials included:  
- 20 feet of 24” diameter culvert  
- Steel for frame and covers  
- 2 ½” suction hose  
- 300 gal plastic tank  
- Miscellaneous parts (screws, caulk, etc.)

**Cost:**  
The current system is much enhanced over our first attempts at creating a cleanout method; a similar system can be constructed for much less.  
Materials: $845.00  
Labor: $720.00  
Equipment: $200.00  
Total: $1,765.00

In addition, we paved our approach ramp, and added containment for the holding tank at an additional cost of approximately $1,500.00. We have a contractor empty the tank about twice annually at a cost of approximately $500.00 each time.
Savings & Benefits:
Like many counties, cities or paving contractors, we had nowhere to spray the diesel fuel/tack oil residue from cleaning out spray bars and tanks after paving or chip seal operations. This system allows us to quickly and efficiently clean paving equipment and dispose of the residue without impacting the environment or creating a mess.

Honorable Mention:
Safety Incentive Program
City of Milford, Connecticut

Contact:
Bruce C. Kolwicz
Director of Public Works
City of Milford
83 Ford Street
Milford, CT 06461
(203) 783-3269
BKolwicz@ci.milford.ct.us

Problem Statement:
To control the escalating costs associated with Worker’s Compensation.

Discussion of Solution:
Teams are created in each of the Public Works Divisions. A Team that remains accident free per quarter (3 months) is then eligible for the Safety Luncheon and Award. Any individual who remains accident-free for the entire year is eligible for a $500.00 cash drawing.

Cost:
Approximately $2,000.00 to $2,200.00 quarterly; cost includes lunch and then award. 150 employees – average 110 winners per quarter.

Savings & Benefits:
Each team tends to work just a little bit safer than they did before this program was initiated. “Peer Pressure Works.”
**Honorable Mention:**

*Pinchie the Basin Cleaner*

**Town of Simsbury, Connecticut**

**Contact:**
Tony Amaral and Don Bordararo
Town of Simsbury, Public Works Department
P.O. Box 495, 66 Town Forest Road
Simsbury, CT 06070
(860) 658-5278
cbelli@simsbury-ct.gov

**Problem Statement:**
We cannot call a Vac Truck for one clogged catch basin. Running water limits the use of a Vac Truck in the event of a flooded basin.

**Discussion of Solution:**
Unit quick couples to a skid steer machine and offers a 30’ depth of debris removal capability. Operator can choose a sand-removal bucket or a debris-removal bucket.

**Cost:**
Approximately $1,015.00

**Savings & Benefits:**
This will clean a clogged catch basin without sending a man down in it. It will also remove a catch basin top that has been dropped in.

---

**Honorable Mention:**

*Suck’Em Dry Molokai*

**Maui District, Hawaii**

**Contact:**
Jordan Canha
Hawaii Department of Transportation, Maui District

**Problem Statement:**
The Molokai Maintenance crew has long been burdening other agencies by borrowing their pumps during the rainy periods for flooding in the low-lying areas of Kamehameha V Highway.

**Discussion of Solution:**
Maui District Highways Division recently fabricated the “Suck’em Dry Molokai” all-weather, portable hydraulic pump. This “Frankenstein” was created using a demolished variable message
board sign as the trailer base, a used motor from a disposed herbicide sprayer, old sign posts, and old highway signs. The only new parts used are the pump, hoses and fittings, gas tank, and muffler.

Bridge Maintenance Worker Jordan Canha, cut, bent, hammered, and welded the surplus materials to create this all-weather workhorse. This pump is light, versatile, and can be towed using a small pickup and can run in the worst inclement weather because of its vented, enclosed shell.

Don’t let its “showroom” good looks fool you, it’s equally as functional. This motorized “sponge” is outfitted with a rebuilt four-stroke, 8-horsepower, gas-operated, automatic ignition Briggs and Stratton motor that can pump 300 gallons per minute.

**Honorable Mention:**
*Scarifying Blades*

Missoula County, Montana

**Problem Statement:**
There is the need to reshape a gravel road periodically to restore overall shape and drainage. The material is primarily recovered gravel that can be used on the road. When cutting gravel road surfaces, cutting edges can wear unevenly.

**Discussion of Solution:**
The bits of these scarifying-blade systems are easily replaced and are made of carbide steel for greater resistance to abrasion. These large picks allow for deep cutting with less wear. They require less horsepower to pull. Scarifying blades perform better where there is embedded shelf rock.