YOU SHOW US CONTEST
2012
2012 National Better Mousetrap Winners

- **1ST PLACE**: Repurposing Used Truck Tires for Wing Plow Cutting Edge: *Michigan*
- **2ND PLACE**: Under Vehicle Washer: *Connecticut*
- **3RD PLACE**: Snow Pusher *North Dakota*
“YOU SHOW US” CONTEST

Judges

- Monty Sedlak; f. County Street Supervisor (CH2M Hill)
- Wayne Lupton; f. DOT Maintenance/ Winter Ops (Envirotech)
- Laura Kroeger; Urban Drainage and Flood Control District
- Mark Hood; PA LTAP Traffic/Safety Engineer (Pennoni)
- Mark Sandifer; f. LTAP Manager (FHWA Technology Deployment)
- John Bemelen; Trainer (ATSSA)
- Cathy Satterfield; FHWA Office of Safety Design
- Dahir Egal; FHWA Safety and Traffic Operations
Please use the following simple score sheet to rank nominees from highest/best (4) to lowest (1).

<table>
<thead>
<tr>
<th>PROJECT</th>
<th>Intake Backing Plates</th>
<th>Spray Bar System</th>
<th>Wheel Rake</th>
<th>Loader Scaffold</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety Improvement</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operational Efficiency</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Innovation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cost Savings</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ease of Implementation by Others</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Please provide a comment or two as to why you selected your first choice:
North Dakota: Wheel Rake

- Matt Monson and Jim Anderson
  Griggs County
North Dakota: Wheel Rake

Problem

- Mowed grass from ditch blows onto roadway.
- When blading, grass mixes with gravel causing big mounds and ridges.
- 2-3 feet of mowed grass ends up narrowing road width
- Hazard to the traveling public, potential for accidents
North Dakota: Wheel Rake

- Modified wheel rake to mount on front end of a motor grader to remove loose grass prior to road blading.

- Rake attaches to dozer blade with multiple adjustments for angle and height.

- Loose grass raked into the ditch blows away or deteriorates.
Wheel rake discarded by local farmer = $0

Modifications: flat iron, telespar tubing, nuts & bolts = $50.

Labor: 2pp x 8 hrs x $35/hr = $280

Total cost: $330
North Dakota: Wheel Rake

Savings & Benefits

- Safety to traveling public greatly improved by eliminating mounds/ridges of mixed grass and gravel.
- Road is wider and gravel is more evenly distributed.
- Making just one pass while blading saves time and money.
- Employee and public safety is improved with limited time spent on road surface.
Colorado: Asphalt Spray Bar System

- John McMinn
  *El Paso County*
When patching large areas, like "blade patching“, used truck mounted spray wands to apply the tack oil.

Doing by hand resulted in uneven application, too much product, or during wind – getting covered in tack oil.

A distributor truck for relatively small jobs was "overkill".
A "spray-bar" that hung on back of asphalt patch truck, on lift arms for patch roller.

The hand wand can be quickly disconnected, and hose attached to the spray-bar.

Has several valves to control width of spray area

Roller lift can raise/lower bar changing thickness of pattern

Can all be turned on/off from inside cab while on move
Colorado: Asphalt Spray Bar System

Labor & Materials

- Spray nozzles, ½” iron pipe, 1/2” tees, ball valves
- Total Cost: ~ $40
Colorado: Asphalt Spray Bar System

Savings & Benefits

- More even application, resulting in better final product
- 1/3 less oil used - saving money
- Operators no longer going home "wearing" layer of oil, keeping it out of eyes and off clothes
South Dakota: Loader Scaffold

- Dennis Clark
  Brookings County
South Dakota: Loader Scaffold

- Need to cut trees or limbs that overhang roads
- Crew members stood in loader bucket while cutting with chain saw. Safer operation needed since a man fell from bucket after cutting a large limb.
- Cost prohibitive to purchase a bucket truck
- Difficult to hire service in emergencies
South Dakota: Loader Scaffold

- A safety scaffold that mounts at front of loader bucket
- Railing surrounding front and sides of bucket
- Strong mesh floor for safety in preventing slips
- Safety harness and lanyard attached to a ring
South Dakota: Loader Scaffold

Labor & Materials

- All material salvaged, except safety mesh for floor.
- Materials: $200
- Labor: $800 (estimate)
- Total cost: ~$1,000

A locking device installed on loader controls in cab so bucket cannot be tilted or raised/ lowered while work is being done from bucket.
South Dakota: Loader Scaffold

**Savings & Benefits**

- Risk manager for public liability pool inspected the scaffold and gave approval for doing overhead work.
- One serious or minor injury from fall far outweighs cost of building scaffold.
- No injury of any kind sustained in overhead work since its use.
MONTANA: Intake Backing Plate

- Steve Kurk
  City of Bozeman
  Street Dept
MONTANA:

Backing Plate

- Backing plates covering stormwater drains damaged by heavy equipment or struck by snow plows in winter

- Backing plates are required by City’s Engineering Dept to protect debris from getting into stormwater drain systems

- Old method of replacing damaged plates required digging out old broken plates embedded in concrete
Removal of concrete and infrastructure took approx 3 days in labor to replace entire backing structure.

A viable solution was to bolt a metal cap onto the remaining infrastructure of the damaged plate.
MONTANA: 
Backing Plate

- Shop time to cut and mold cap plate to specific intake plate location + labor to replace plate:
  
  - 1pp @ $25/hr x 3 hours = $75

- Equipment: Metal Cutter; Metal Folding Equip, Wrench

- Materials: $3/16 Metal Plate, Bolts, Paint to Match = $25

- Total Cost: $100
MONTANA: Intake Backing Plate

- Less time & materials to repair damaged intake plates
- 3 hours vs. 3 days, for a savings of $700
- Quicker replacement of damaged plates meets requirement of City’s Engineering Dept to protect stormwater drain system
AND THE WINNER IS...