Connecticut
Creative Solutions Guide
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Under Guide Rail Material Pusher
Town of Thomaston, Highway Department (2005 CCSA Winner)

Problem Identified:

Heavy build-up of sand and other material under the guide rails, some actually covering the bottom cable.

Solution:

Material Pusher was fabricated to fit under the bottom cable and between the existing posts to push excess material out from under the rail to get the proper grade.

Cost Estimate:

$350.00 (cost of mounting plate for skid steer) – all steel was in stock.

Benefit:

No need to remove cables, less manual work, no cost of weed control. Only 2 employees needed, Operator and Flagger – frees up backhoe for other jobs.

Contact:

Paul Pronovost
Superintendent of Highways
Thomaston Highway Department
158 Main Street
Thomaston, CT 06787
Ph: 860-283-4030
towngarage@snet.net
Catch Basin Top Removal Sling
Town of Woodstock Highway Department (2005 CCSA Winner)

Problem Identified:
In some instances, it is not possible or practical to lift a basin top from the outside of the top.

Solution:
A sling was made that lifts the top from the inside (after grate is removed).

Cost Estimate:
$200.00 - $300.00 – Materials and lift labor.

Benefit:
It makes it easier to remove tops then excavate material around area – less material to excavate and smaller asphalt cuts. One-person operation.

Contact:
Town of Woodstock Highway Facility
215 Coatney Hill Road
Woodstock, CT 06282
Ph: 860-974-0330
Anti-icing Program Using Pre-wetted Salt and No Sand
Town of East Hartford, Department of Public Works (2006 CCSA Winner)

Problem Identified:

The sand/salt mixture being used was so ineffective that multiple applications were required to get down to bare pavement. Treatment was occurring too late to prevent ice and snow from bonding to the pavement. Sand is a primary pollutant of wetlands and water courses as well as a source of particulates that exacerbates respiratory illnesses including asthma. Sand residue is a hazard to cyclists.

Solution:

The new program follows the anti-icing methodology instead of the old de-icing strategy. It works by applying the pre-wetted salt to the road surface before ice and snow can form a bond with the road surface. The material works better than straight salt by sticking better to the pavement and entering into solution faster, which results in quicker melting. The pre-wetted salt works at lower temperatures and is much less corrosive than straight salt.

Cost Estimate:

No cost to implement the program. However, there have been substantial savings associated with the program.

Benefit:

- Vastly improved level of service and fewer complaints
- Less pollution of air and water resources
- Cost savings, primarily in street sweeping and catch basin cleaning
- Much improved appearance of the community
- Greater employee satisfaction

Contact:

Billy G. Taylor, P.E., Director of Public Works
Town of East Hartford, Department of Public Works
740 Main Street
East Hartford, CT 06108
Ph: 860-291-7365
btaylor@ci.east-hartford.ct.us
Dirt Road V-Plow
Town of Woodstock Highway Department (2006 CCSA Winner)

Problem Identified:

Standard steel slush on drift plows tear up the dirt roads pushing material into open drainage ditches on roads. The plows trip quite a lot when the dirt roads are not frozen. This results in a wash-boarding effect on the road surface. Steel plows remove the crown from the dirt road.

Solution:

The highway facility built a wood V-plow to plow the dirt roads – the radical angle of the “V” combined with the length and width makes the plow glide over the road surface, which stops any damage from happening to the road.

Cost Estimate:

Price of wood and some c-channel, round stock and two steel plow blades (not carbide).

Benefit:

Dedicate one plow driver to utilize the V-plow and plow all the dirt roads. The plow can do a dirt road in one pass during a storm.

Contact:

Town of Woodstock Highway Facility
215 Coatney Hill Road
Woodstock, CT 06282
Ph: 860-974-0330
Demolition Debris Tailgate Chute
Town of Bloomfield, Public Works Department (2007 CCSA Winner)

Problem Identified:

Handling demolition or brush can be difficult without the right equipment. Truck tailgates at a 5% angle from horizontal work well for this. However, chain slots easily rip out of the body while dumping and it is not unusual for the tailgate pivot pins to shift out of the locks while traveling.

Solution:

We had some old steel tailgates from trucks we had re-bodied with combination bodies. By adding a box tubing support on each side and closing it in we have created a “skip” profile that is attached in several places and uses the body itself as a support.

Cost Estimate:

$200.00 in structural steel and miscellaneous supplies.

Benefit:

Less spillage, better retention of material, eliminating the time-consuming and hazardous practice of dropping tailgates and increased load capacity (brush/bulk).

Contact:

Pete Joseph, General Foreman
Town of Bloomfield, Public Works Department
PO Box 337, 21 Southwood Road
Bloomfield, CT 06002
Ph: (860) 726-9394 or (860) 243-1487
pjoseph@bloomfieldct.org
Creating a Safety Culture
Town of Glastonbury Highway Division (2007 CCSA Winner)

Problem Identified:

Proactive discussions with members of the highway crew on safety issues have been critical to the reduction of accidents and injuries of the employees. Setting aside time for preventive maintenance of vehicles has reduced the overall cost of maintenance (repairing small things before they become big things) and also has reduced project delays because of equipment being off line for repairs.

Solution:

Formal Safety Huddles are held every Friday during weekly operations meetings. The meeting is used to increase the communications and open discussion among the members of the Highway Department and to address safety related issues.

Maintenance Mondays are a dedicated block of time for the Highway Department staff to address the maintenance of vehicles, equipments, tools and facilities. It is scheduled from 7:00 to 9:30 am. This is also an opportunity to perform pre-trips. Operator level maintenance includes: Visual checks, oil, lube, grease, fluid, wash, clean, tire pressure, etc. Upon the conclusion of this block of time, additional maintenance that has been identified can be scheduled.

Winter Operations Round-Ups – all Town of Glastonbury employees who are involved in Winter Operations are invited to attend the winter operations round-up. Public Works Departments from surrounding towns are also invited to attend to share their experiences. Guest speakers are invited to discuss winter operations, driver safety and new equipment and treatments.

Cost Estimate:

This program requires the management commitment of staff time but not additional budget dollars beyond that.

Benefit:

- Improves the level of communication within the department
- Improves the morale of employees by building a culture of safety
- Reduces the number of worker accidents and injuries
- Improves the maintenance and performance of vehicles and equipment.

Contact:

Town of Glastonbury Highway Division
2155 Main Street
Glastonbury, CT 06033
Ph: (860)-652-7754
Public Storm Water Display
Town of South Windsor Public Works (2007 CCSA Winner)

Problem Identified:
A requirement by the EPA Stormwater Act Phase II, which has been adopted by the CT DEP, is to provide information and education about the importance of regulating stormwater run-off protecting the environment.

Solution:
The display provides a visual concept of why such regulations are necessary and how easily the environment can be impacted by everyday chores that are taken for granted. It has been designed to stimulate the public’s thought process by visually simulating their everyday practices.

Cost Estimate:
The cost is estimated at $750.00 but the display is indispensable to our organization.

Benefit:
The benefit to our organization is two-fold. The project has served the purpose of public information of stormwater management by gaining attention visually rather than just mailing informational flyers to homes, which usually are discarded. We set the display up at well-attended public functions and events such as fairs, festivals, awareness days, schools, etc. In this way, we gain public exposure and support for our department, which seldom gets recognized for its achievements.

Contact:
Ronald R. Asselin, Administrative Manager
Town of South Windsor Public Works
157 Burgess Road
South Windsor, CT 06074
Ph: (860) 648-6366
asseli@southwindsor.org
Curb Backfill Conveyor
Town of Southbury Department of Public Works (2007 CCSA Winner)

Problem Identified:
To improve the efficiency of crews backfilling new curbing. Reduce scuffing of new pavement if a loader is used to place backfill or reduce the amount of hand work required.

Solution:
Moves topsoil from conveyor of all-seasons dump body to deposit material behind new curb.

Cost Estimate:
$500.00 – An existing surplus sand-spreader was recycled.

Benefit:
Conveyor has allowed crews to restore the area behind curbs quicker and more efficiently. Operation is much less disruptive to traffic and is safer for the town employees.

Contact:
Tom Cromwell, Senior Mechanic
Town of Southbury Department of Public Works
501 Main Street South
Southbury, CT 06488
Ph: (203) 262-0671
Drainage Conversion Chart
Town of Hebron (2007 CCSA Honorable Mention)

Problem Identified:

Difficulty in figuring correct slope for pipe installation.

Solution:

Checks pipe slope while out in the field in 20-foot increments. (See two-page chart attached.)

Cost Estimate:

N/A

Benefit:

Workers in the field can check the pipe slope to see if it is installed properly.

Contact:

Andrew J. Tierney, Director of Public Works
Town of Hebron
15 Gilead Street
Hebron, CT 06248
Ph: (860) 228-2871
hebronroadboss@sbcglobal.net
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Anti-Icing Program (Liquid Brine & Treated Salt)  
Town of New Milford (2007 CCSA Honorable Mention)

Problem Identified:
Improves service level, vehicle operating cost, reducing salt usage and environmentally beneficial.

Solution:
Treated salt works at a lower temperature than dry salt alone, stays on the road better by reducing bounce and scatter, can safely be applied prior to a storm event thus preventing a bond from forming between the pavement and snow accumulation and is ideal for treating black ice on roads and frost on bridge surfaces. Can also be used as a concentrate with salt brine to reduce corrosion, lower freeze point and increase working time.

Cost Estimate:
Ice B’Gone $66.41 per ton and Envirobrine liquid melting agent $0.72 per gallon.

Benefit:
We experienced a higher level of service in snow/ice control, fewer phone calls and cleaner streets. We saved $57,600.00 in labor finishing six (6) weeks earlier sweeping town roads. No dust complaints, safer roads for motorists, catch basins easier to clean, (allow highway crew to clean 2,010 basins yearly and allow highway crew to get other work done).

Contact:
Jerry Hollins, Highway Superintendent  
Town of New Milford  
10 Main Street  
New Milford, CT 06776  
Ph: (860) 355-6045  
Jhollins@newmilford.org
Safety Incentive Program
City of Milford (2008 CCSA Winner)

Problem Identified:

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

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 Estimate:

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

Benefit:

Each team tends to work just a little bit safer than they did before this program was initiated. “Peer Pressure Works.”

Contact:

Bruce C. Kolwicz
Director of Public Works
City of Milford
83 Ford Street
Milford, CT 06461
Ph: (203) 783-3269
BKolwicz@ci.milford.ct.us
Pinchie the Basin Cleaner  
Town of Simsbury (2008 CCSA Winner)

Problem Identified:

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.

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 Estimate:

Approximately $1,015.00.

Benefit:

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.

Contact:

Tony Amaral and Don Bordanaro  
Town of Simsbury, Public Works Department (Highway Garage)  
P.O. Box 495, 66 Town Forest Road  
Simsbury, CT 06070  
Ph: (860) 658-5278  
cbelli@simsbury-ct.gov
Reuse of Sweeper Brooms on a Bobcat
Town of Mansfield (2008 CCSA Winner)

Problem Identified:

We were sweeping with our Bobcat with a rotary broom.

Solution:

Adapted the front broom attachment of the Bobcat Skid-steer loader so that used sweeper brooms could be reused on the Bobcat.

Cost Estimate:

No cost to implement the program. However, there have been substantial savings associated with the program.

Benefit:

A cost savings has been realized in reusing brooms that would otherwise be thrown away.

Contact:

Lon Hultgren, Director of Public Works
Town of Mansfield
4 South Eagleville Road
Mansfield, CT 06268
Ph: (860) 429-3332
hultgrenlon@mansfieldct.org
Local Work Zone Safety Posters
Town of Mansfield (2008 CCSA Honorable Mention)

Problem Identified:
Crews were experiencing fast work zone traffic.

Solution:
Locally designed signs (posters) displayed at town facilities and some businesses to help raise awareness for work zone speeds and safety.

Cost Estimate:
The price of the paper.

Benefit:
A higher awareness from the crews and others.

Contact:
Lon Hultgren, Director of Public Works
Town of Mansfield
4 South Eagleville Road
Mansfield, CT 06268
Ph: (860) 429-3332
hultgrenlon@mansfieldct.org
Pipe Site Truck
Town of Thomaston (2008 CCSA Honorable Mention)

Problem Identified:

We needed one truck that could carry our pumps, compactors, signs, barricades, fittings, tools, etc.

Solution:

We obtained a truck that the Town of Thomaston Fire Department was planning to use in a “jaws of life” training drill. After replacing the clutch, the entire crew from the Highway Department went to work in their spare time to install shelving for various items. We also installed a trailer hitch which has allowed us to tow our mixer, light tower and trailer that we made to haul 20’ lengths of pipe.

Cost Estimate:

$165.00 for a new clutch and one of the guys’ fathers painted a “Hagar the Horrible” to match our department.

Benefit:

All the supplies you need are on site. The truck has a security system so it can be locked and kept on the jobsites overnight. This eliminated going back and forth to the garage for supplies and reduced the use of fuel. Also, set-up and clean-up times have been reduced by leaving the truck on site for the duration of the job. We’ve gained about 45 minutes per day in construction time.

Contact:

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Multi-Use Water Truck
Town of Bloomfield (2009 CCSA Winner)

Problem Identified:
We wanted to build a water truck with a cab controlled, pressurized spray delivery boom. It evolved into a multi use truck to service many needs for portable water for our dept.

Solution:
We mounted and inter-connected two 500 gallon aluminum tanks on a truck chassis, incorporating a hydrant fill connection. It has a mounted portable pump for water distribution with a mounted hose reel with assorted nozzles. We also mounted a hot water pressure washer, and tool box for additional hoses. The back of the vehicle has a spray boom for street application, with its own cab controlled electric pump. All of the accessories are permanently plumbed, but have ball valves or fittings for service or repair. As the operator of this vehicle also cleans out offset basins and corner, two flat shovels and a street broom were mounted as well. We also added additional surplus safety lighting including an arrow stick with an ample supply of safety cones for hazards found and securing parking areas for sweeping operations.

Cost Estimate:
$950.00

Benefit:
We wanted a vehicle capable of performing multiple tasks efficiently and realized we would have to build one to meet those needs. We utilized an older truck and military surplus tanks (state surplus) and a portable hot water pressure washer (state surplus), previously not being utilized.

Contact:
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Modified Salt Chute
CT Department of Transportation (2009 CCSA Winner)

Problem Identified:

The modified materials chute is a conceptual model that was created and field tested to determine the feasibility of improving the Department’s effectiveness to apply snow and ice control materials to the State’s roadways during winter storm conditions. Over-scattering of snow and ice control materials is a contributing factor leading to the ineffectiveness for deicing materials to work at maximum capabilities.

Solution:

By bypassing the truck’s salt spinner, this chute allows for maximum flow of a material onto the middle of the roadway, increasing the effectiveness of the material and allowing the brine solution to work more efficiently. Tests show greatly reduced scatter and experience has shown a reduction in the amount of material used.

Link to: DOT Side Chute Testing Slideshow

Cost Estimate:

The cost to research and create the modified materials chute will be minimal to the Department. The chutes were made from recycled street signs that were designed to conform to the various designs of our 9-ton dump trucks. The Department uses three basic styles to accommodate the different types of vehicles in our fleet. The only cost incurred would be the labor to manufacture the modified chute. The testing chutes were created with a few basic hand tools and work bench, our production chutes will be produced by a metal brake to department specifications.

Benefit:

In addition to the benefit of greater control over the placement of snow and ice control materials, operators reported that they noticed they used less snow and ice control materials during various types of storms. It appears that the increased concentration and the placement of snow and ice control materials reduced the time needed to create a salt brine solution. In some cases it extended the time between reapplication of the snow and ice control materials. Some operators decreased their application rate in response to the results of the modified materials chute effectiveness.

Contact:

James F. Wilson, Training Coordinator
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Bureau of Highway Maintenance, District 2
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Traffic Control Vehicle
Town of Bloomfield (2009 CCSA Honorable Mention)

Problem Identified:

The Bloomfield Public Works Department has always stressed the safety of its employees. Following training, one employee found it challenging to properly apply Work Zone Safety to his work environment. With consultation and assistance from CONN-OSHA, and some additional training with the crew chiefs, it was determined the best way to integrate work zone safety was to make it part of the job, and as easy as possible.

Solution:

Much Traffic control was stored in the building in various locations, or on various trucks, and shuttled around on an as needed basis. A step van surplus to our needs was very slightly modified with some additional exterior lighting, a step platform and grab handles, and some interior lighting for night use.

Cost Estimate:

Exterior lighting and lettering cost maybe $600.00. The van and all the contents were already here, in various locations and it took 2 to 3 workdays in the shop for the step and up-fitting.

Benefit:

All the traffic control devices store in the van, so it is simple to deploy and the truck itself is usable as a barrier to traffic. While a single function vehicle, it is usable as is by Public Works, Police, the Fire Departments, etcetera, so all town traffic control events are serviced by one unit.

Contact:

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Context Sensitive Salt Shed  
Town of East Haddam (2009 CCSA Honorable Mention)

Problem Identified:
East Haddam has an area of 56 sq. mi. and 119 miles of road to maintain. Remote storage for sand/salt at a second site is necessary; but budget constraints would not allow a pre-engineered conventional salt shed building.

Solution:
Pre-cast 6'x6'x3' concrete blocks were available at no cost from a bridge job recently completed in Town. Town forces did the site preparation and layout. Sixty blocks were moved to the site and set in place by the Town. The Town issued a performance-based "design-build" scope for a carpentry contractor to create a structure in compliance with performance standards identified by the Town's Director of Public Works. There was no architect or engineering firm employed. Contract administration and quality assurance was performed in house by the Town's Public Works Director and Road Foreman. The Town's Building Official provided plan review through the permitting process.

Cost Estimate:
$29,000 for all carpentry work and material. This does not include the value of the Town's labor or donated concrete blocks. We believe this represents a cost savings of more than $60,000 compared to a conventional dome or gambrel topped structure for this use.

Benefit:
The benefit is an effective covered storage building that will safeguard the environment, reduce over-the-road truck time to refill during storm events and do so in an aesthetically pleasing, economical way.

Contact:
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