Clear Roads Research Proposals
2013

Prop #	Title	Est. Cost	Est. Duration	Project Summary	Proposed by	Page
1.	Standardization of Traction Devices	TBD	TBD	This project would develop a national standard for chains and/or traction devices.	David Frame, Caltrans	5
2.	Determining the Best Method for Pre-treating Salt	$150,000	12 months	This project would assess different methods to mix or pre-treat dry rock salt (including but not limited to stockpile injecting, onboard pre-wet, pre-wetting each truck load with spray bar, etc) to determine which method is most effective at delivering the best pre-treated product to the roadway and the costs associated with each.	David Wieder Colorado DOT/ Justin Droste, Michigan DOT	6
3.	Determining Effectiveness of Salt Neutralizers in Limiting Corrosion on Winter Maintenance Equipment.	$125,000	18 months	Even with regular washing throughout the season, there are still areas where salt will collect on equipment and cause corrosion. This project would test various products that claim to neutralize corrosion and determine effectiveness and costs associated with each.	David Wieder, Colorado DOT/ Justin Droste, Michigan DOT	8
4.	2013 National Winter Maintenance Peer Exchange	$40,000	n/a	A request to fund the 2013 National Winter Maintenance Peer Exchange.	Annette Dunn, Iowa DOT	10
5.	Developing Test Bed Software to Qualify Plug and Play Technology	$30,000	9 months	Clear Roads is developing a plug and play specification for mobile technology for plow trucks. There is a need for Clear Roads to maintain a list of vendors with products that have qualified. This project would develop a Test Bed software system that Clear Roads could use for qualification of vendors.	Annette Dunn, Iowa DOT	12

6.	Cost Benefit Analysis of Various Winter Maintenance Strategies	$125,000	18 months	This project would compare the costs and benefits of using two winter maintenance strategies to understand their impacts: reactive strategies (plowing and spreading abrasives after snowfall) and proactive (pretreating before snowfall, plowing, and using additional chemicals if needed). Variations in strategies impact safety, level of service, and the overall cost to the department and the highway users.	Ron Wright, Idaho DOT	14
7.	Identify Sustainable Cost-Effective Snowplow Simulator Training	$75,000	18 months	This project would assess current technology to recommend the best sustainable, cost-effective snowplow simulator training or develop a new package that fits the needs of DOTs.	Troy Whitworth, Kansas DOT	17
8.	Snow and Ice Control Environmental Best Management Practices Manual	$150,000	12 months	Over the last several decades, numerous best management practices have been developed to minimize the amount of chlorides that are introduced into our roadside environments each winter. This project would consolidate these existing practices into a national Snow and Ice Control Environmental BMP Manual that would provide the most up-to-date recommendations.	Brian Burne, Maine DOT	19
9.	Development of Standardized Specifications (Part 1: Carbide Plow Blades)	$15,000	6 months	This proposal is to develop a standardized carbide plow blade specification. Most DOTs have differing specifications for carbide plow blades. Consolidating these into a single, most appropriate and complete specification would streamline efforts and could save money by aiding group procurement contracts and helping suppliers to streamline their production.	Brian Burne, Maine DOT	21
10.	A Reference Guide and Video on Proper Calibration Techniques.	$100,000	18 months	The goal of this project would be to produce a comprehensive reference guide of procedures to calibrate closed loop controllers, including pictures with step-by-step instructions tailored to different brands of spreaders. The project would also produce a video indexed by manufacturer and type of controller to complement the written guide.	Paul Brown/ Scott Wilson, Mass DOT	23

11.	Compare and Contrast the Effectiveness of Vertical and Curved (mop) Underbody Blades.	$150,000	12 months	This project would test and analyze mold board types to determine the best blade type for mechanically removing snow from roadways, while also considering the prevention of wear and tear on the truck.	Justin Droste, Michigan DOT	25
12.	Developing a Training Video/Manual for Best Practices and Techniques in Clearing Different Interchange Configurations and Other Geometric Layouts.	$100,000	6 months	This proposal is to develop a video/ training materials to instruct new operators on the best practices for clearing different interchange configurations (Diamond, Cloverleaf, SPUI, Roundabout, Michigan Left, Diverging Diamond, etc).	Justin Droste, Michigan DOT	27
13.	Understanding the Effectiveness of Non-Chloride Organic Deicer Performance	$150,000	18 months	This project would develop parameters and test methods for evaluating the effectiveness of organic liquid deicing chemicals and document their performance based on user surveys and lab testing. The deliverables would also include recommended practices for the use of organic deicing chemicals and specifications for use in procurement.	Mike Mattison, Nebraska DOR	29
14.	Identifying Characteristics, Benefits, and Mechanisms of Commonly Used Agricultural and Mineral By-Products in the Deicer Industry	$250,000	12 months	This project would study the characteristics and environmental impacts of agricultural or mineral by-products used as additives to deicer products for corrosion inhibition and performance enhancement, or as stand-alone treatments for ice and snow prevention.	Mike Mattison, Nebraska DOR/ Monty Mills, Washington DOT	31

15.	Determining the Viability of On-board Truck Scales	$100,000	18 months	This project would select and test an existing on-board truck scale systems and develop a cost-benefit analysis and recommendations for implementation.	Scott Lucas, Ohio DOT	33
16.	Mitigating Snow Squall Traffic Accidents	$150,000	18 months	The objective of the research will be to devise a best practice method and/or process for State DOT's to use to mitigate accidents that result from blinding snow squalls.	Daryl St. Clair, Pennsylvania DOT	35
17.	Assessment of the Comparative Environmental Impacts of Various Snow and Ice Control Strategies and Materials	$200,000	24 months	This project would develop a comprehensive comparative analysis of the cumulative environmental impacts of various snow and ice material use strategies including chlorides, abrasives, non-chloride deicers, and organic by-products.	Monty Mills, Washington DOT	37
18.	Best Practices for the Prevention of Corrosion to DOT Equipment: A User's Manual	$35,000	6 months	This project would create a manual of best practices using the information that has been provided in the recent publication of Best Practices and Guidelines for Protecting DOT Equipment from the Corrosive Effect of Chemical Deicers.	Monty Mills, Washington DOT	39
19.	Understanding the Impact of Chlorides on Deer and Elk Herds	$75,000	12 months	This study would explore whether applying chlorides at the correct rate (or less) will reduce impacts on the environment, particularly deer and elk populations during the spring migration.	Cliff Spoonemore, Wyoming DOT	41
20.	Developing a Video to Communicate the Parameters for Effective Implementation of Liquid-Only Plow Routes.	$20,000	6 months	The goal of this project is to develop a training video to support implementation of the project on Identifying the Parameters for Effective Implementation of Liquid-only Plow Routes.	Cliff Spoonemore, Wyoming DOT	43