

# The New Hampshire Salt Applicator Certification Experience

## Reflections on the First Year

Eric Williams, Supervisor  
Watershed Assistance Section



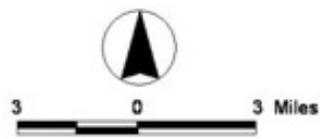
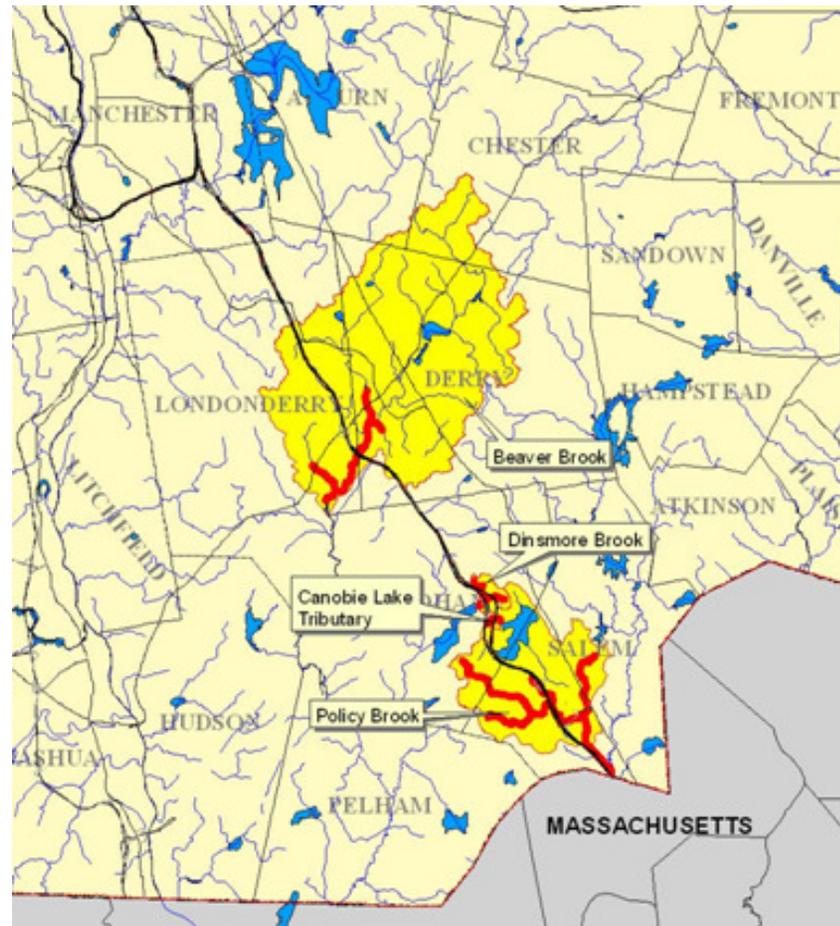


# Why Certification?





# Polluted Water



- Political Boundaries
  - State boundary
  - County boundary
  - Town boundary
- Roads (NHDOT)
  - Interstate
  - State
  - Local
- Impaired waterbodies
  - Rivers and streams
  - Lakes and ponds
  - TMDL Watersheds



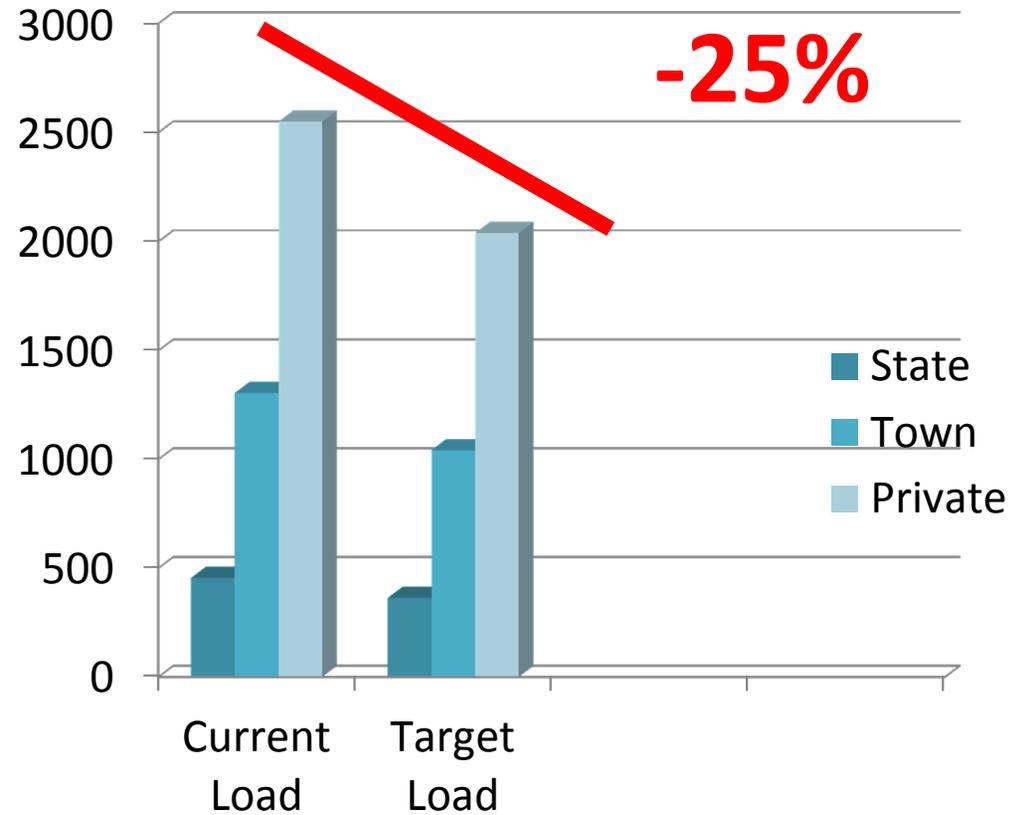
# Salt Reduction For Clean Water

Total Maximum Daily Load (TMDL) Study  
For Waterbodies in the Vicinity of the I-93 Corridor  
from Massachusetts to Manchester, NH  
Policy-Porcupine Brook in Salem and Windham, NH



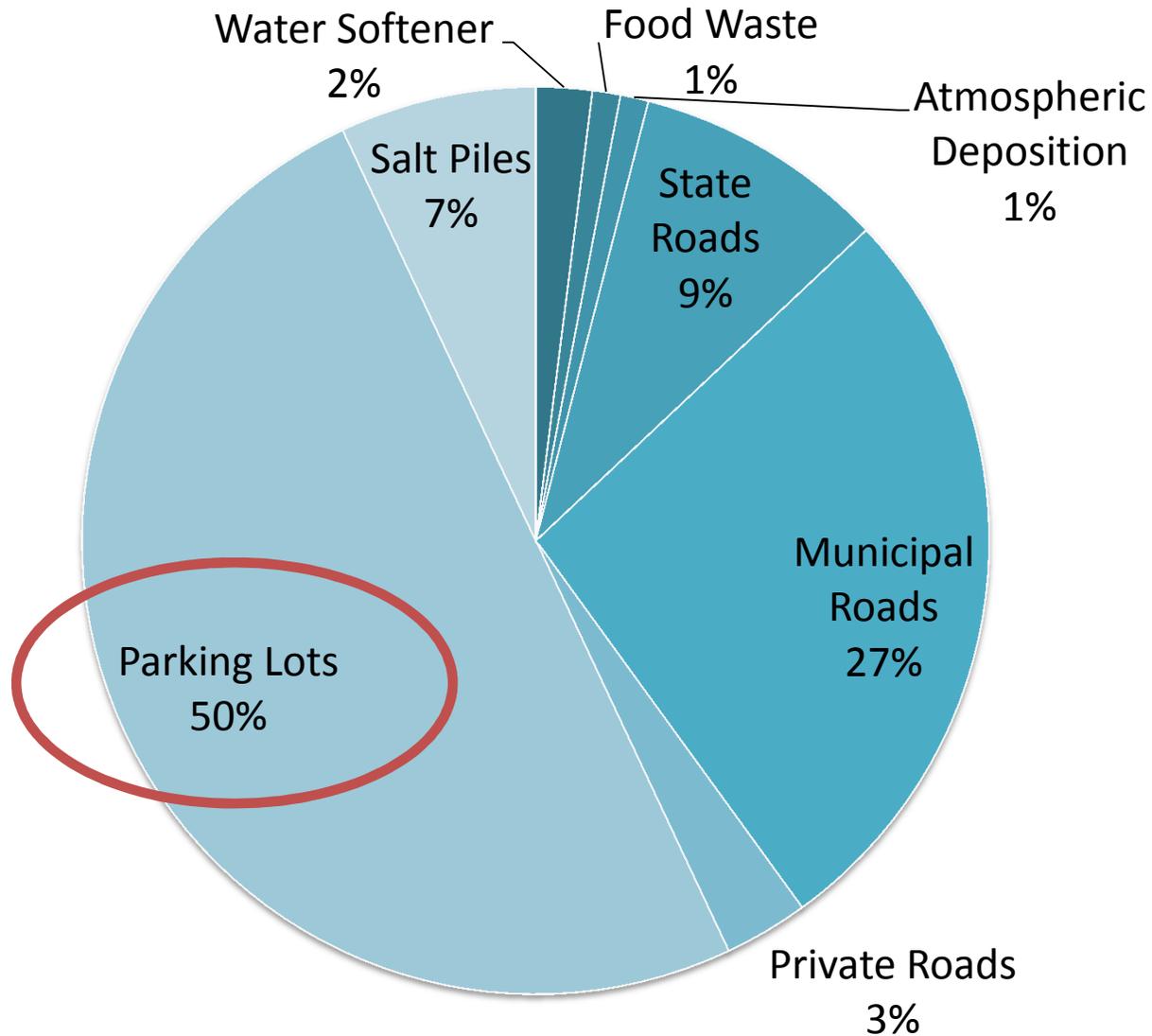
Photo Credit: New Hampshire Department of Transportation

April 18, 2008





# Source Characterization







# Liability Protection

“Salt applicators, and those who hire them, are not liable for damages due to hazards, **EVEN WITH ACTUAL NOTICE THEREOF**, when such hazards are caused solely by snow or ice...”



Walking on snow  
and ice is  
inherently  
dangerous



# Calling in the Experts





Since 2010 – over 500 salt applicators trained





# Course Overview

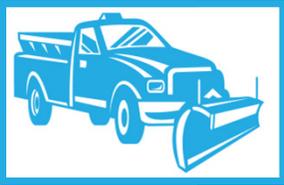
Environmental & Infrastructure Concerns	(20 min)
Pre-Season Preparation, Site Inspection & Expectations	(20 min)
Calibration Demo	(45 min)
Pre-Treatment: Before the Storm	(35 min)
During The Storm Activities	(45 min)
Record Keeping & Salt Accounting System	(10 min)
Exam Review	(10 min)
Exam	(30 min)



# Traditional Field Calibration

- Set Gate Height & Auger/Pony Motor speed
- Discharge and Record Spread Width
- Run spreader for 30 seconds & capture salt to weigh.
- Perform calculations!
- Mark the gate height settings!





# Results of Field Calibration

Gate Opening	W	A	Discharge Rate (lb./min.)			B	D					
	Spread Width (ft.)	5.28 × W	Run 1	Run 2	Run 3	Average Discharge Rate ((Run1 + Run2 + Run3)/3)	Pounds of Material Discharged per 1000 square ft. (D = B × C ÷ A)					
							5 mph (C = 12)	10 mph (C = 6)	15 mph (C = 4)	20 mph (C = 3)	25 mph (C = 2.4)	30 mph (C = 2)
1"	12	5.28 × 12 = 63.36	70	71	68	(70 + 71 + 68)/3 = 69.67	12 × 69.67/63.36 = 13.93	6 × 69.67/63.36 = 6.97	4 × 69.67/63.36 = 4.64	3 × 69.67/63.36 = 3.48	2.4 × 69.67/63.36 = 2.79	2 × 69.67/63.36 = 2.32
1.5"	11.4	5.28 × 11.4 = 60	92	84	86	(92+84+86)/3 = 87.33	12 × 87.33/60 = 17.47	6 × 87.33/60 = 8.74	4 × 87.33/60 = 5.82	3 × 87.33/60 = 4.37	2.4 × 87.33/60 = 3.5	2 × 87.33/60 = 2.91
2"	11	58.08	106	112	99	105.7	21.83	10.92	7.28	5.46	4.37	3.64
2.5"	10.75	56.76	120	128	129	125.7	26.57	13.28	8.86	6.64	5.31	4.43
3"	10.75	56.76	140	150	143	144.3	30.51	15.26	10.17	7.63	6.10	5.09
EX	14	5.28 × 14 = 73.92	87	92	93	(87+92+93)÷3= 90.67	12 × 90.67 ÷ 73.92 = 14.72	6 × 90.67 ÷ 73.92 = 7.36	4 × 90.67 ÷ 73.92 = 4.91	3 × 90.67 ÷ 73.92 = 3.68	2.4 × 90.67 ÷ 73.92 = 2.94	2 × 90.67 ÷ 73.92 = 2.45



# Melting Capacities of Salt

Pavement Temp (°F)	1 lb. salt will melts this amount of ice	Time it takes to melt this amount of ice
30	46.3 lbs.	5 mins.
25	14.4 lbs.	10 mins.
20	8.6 lbs.	20 mins.
15	6.3 lbs.	60 mins.
10	4.9 lbs.	ineffective
5	4.1 lbs.	“
0	3.7 lbs.	“



# Use Pavement Temperature

Truck Mounted  
Thermometer



Cab Display





# Parking Lot Application Rates

Pavement Temp. (°F) and Trend (↑↓)	Weather Condition	Maintenance Actions	Application Rate (lbs/per 1000 sq.ft.)			
			Salt Prewetted/Pre treated with salt brine	Salt Prewetted/Pre treated with other blends	Dry salt	Winter sand
>30 ↑	Snow	Plow, treat intersections only	4.5	4	4.5	Not recommended
	Frz. Rain	Apply chemical	5.75	5.25	6.5	Not recommended
30 ↓	Snow	Plow and apply chemical	5.75	5.25	6.5	Not recommended
	Frz. Rain	Apply chemical	6.5	5.75	7	Not recommended
25 - 30 ↑	Snow	Plow and apply chemical	5.75	5.25	6.5	Not recommended
	Frz. Rain	Apply chemical	6.5	5.75	7	Not recommended
25 - 30 ↓	Snow	Plow and apply chemical	5.75	5.25	6.5	Not recommended
	Frz. Rain	Apply chemical	7	6.5	8.25	10.5



# Parking Lot Application Rates – (Continued)

Pavement Temp. (°F) and Trend (↑↓)	Weather Condition	Maintenance Actions	Application Rate (lbs/per 1000 sq.ft.)			
			Salt Prewetted/ Pretreated with salt brine	Salt Prewetted/ Pretreated with other blends	Dry salt	Winter sand
20 - 25 ↑	Snow or frz. Rain	Plow and Apply chemical	7	6.5	8.25	10.5 for frz. Rain
20 - 25 ↓	Snow	Plow and apply chemical	5.75	7.5	9.5	Not recommended
	Frz. Rain	Apply chemical	7	7.5	10	10.5
15 - 20 ↑	Snow	Plow and apply chemical	7.5	7.5	9.5	Not recommended
	Frz. Rain	Apply chemical	8.75	7.5	10	10.5
15 - 20 ↓	Snow or Frz. Rain	Plow and apply chemical	8.25	7.5	10	10.5 for frz. Rain
0 to 15 ↑↓	Snow	Plow, treat with blends, sand hazardous areas	Not recommended	10	Not recommended	13 and spot-treat as needed
< 0	Snow	Plow, treat with blends, sand hazardous areas	Not recommended	23	Not recommended	13 and spot-treat as needed



# Application Rate Example 1:

January 1, 2015

5:00pm



Current Temp: 20°

Forecast: heavy snow through  
early morning.

Overnight low of 5°.

1. What application rate should you select for:
  - a) Salt Pre-Wet with Salt BRINE
  - b) Dry Salt
2. Roughly how much total salt would you expect to use if the parking lot was ~5000 ft<sup>2</sup>?



# Transition to State Certification

1.  
Train



**Technology Transfer Center**  
New Hampshire LTAP at UNH



2.  
Certify

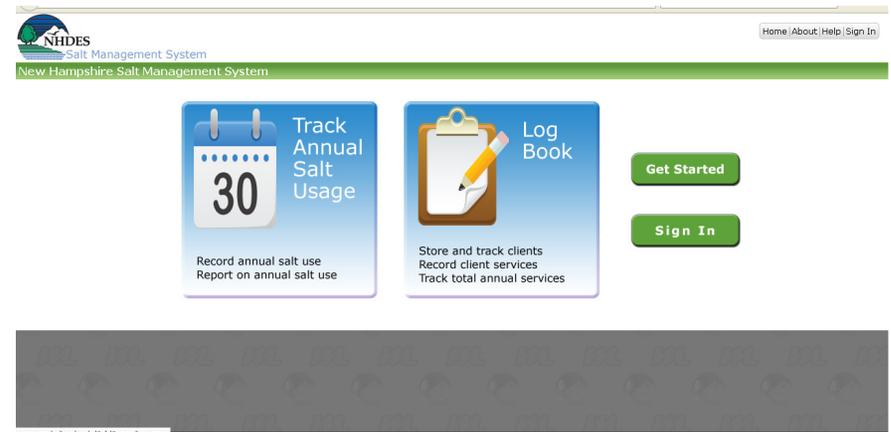


NEW HAMPSHIRE  
DEPARTMENT OF  
**Environmental  
Services**



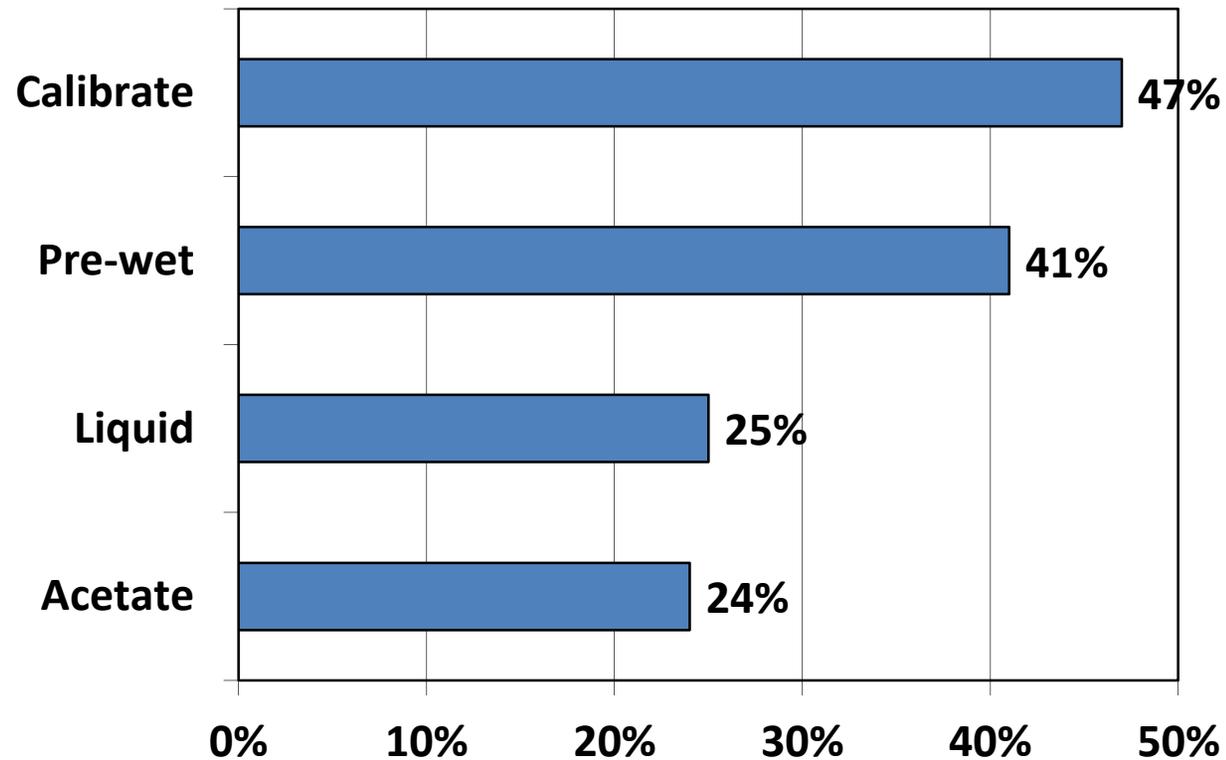
# Content of Rules

- Policy – “to maintain safe surfaces with the least amount of salt.”
- Training Requirements for Initial Certification
- Continuing Education
- Recordkeeping
- Annual Reporting
- Approved Provider Authorization



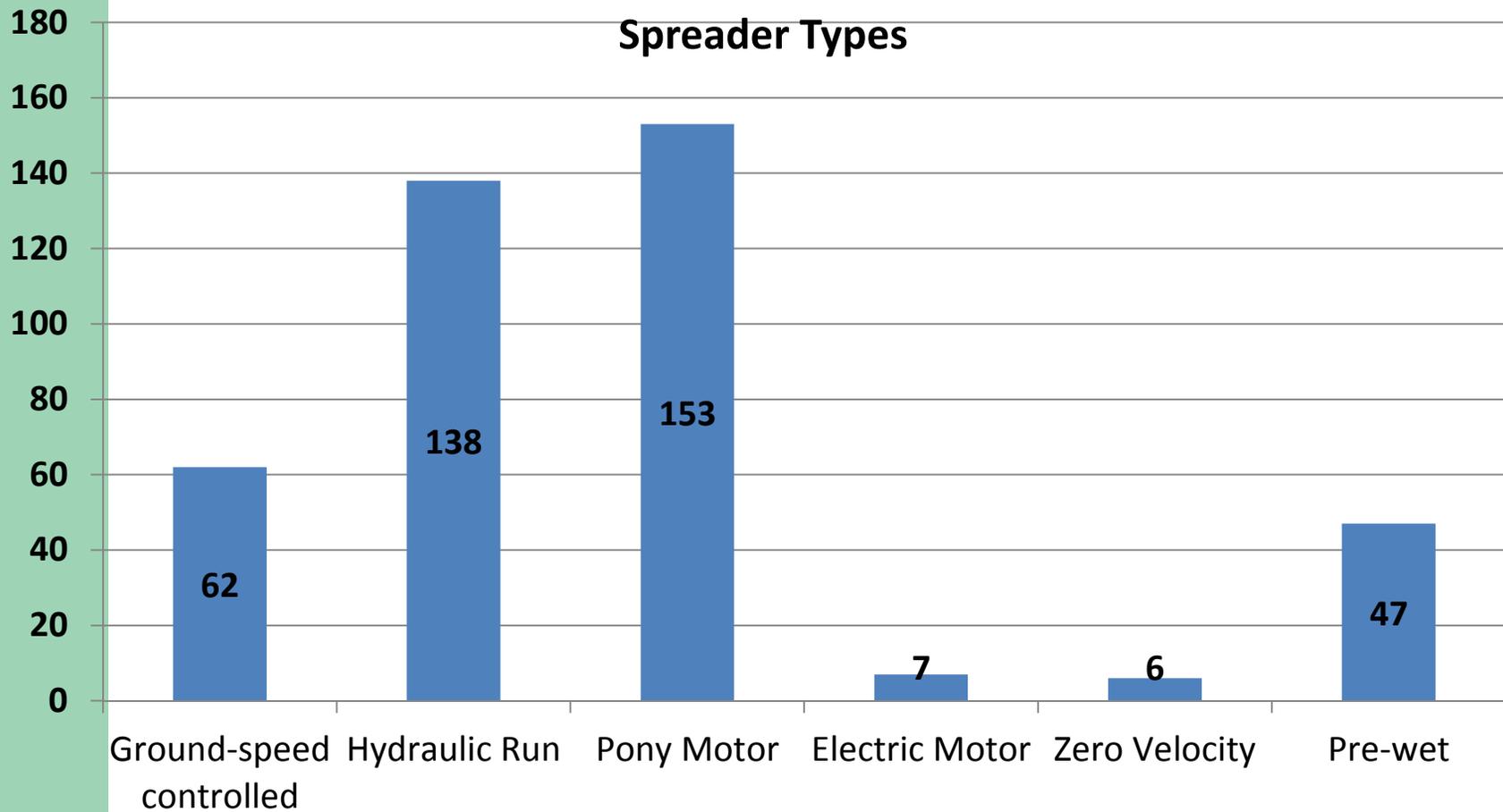


# Profile of Certified Salt Applicators



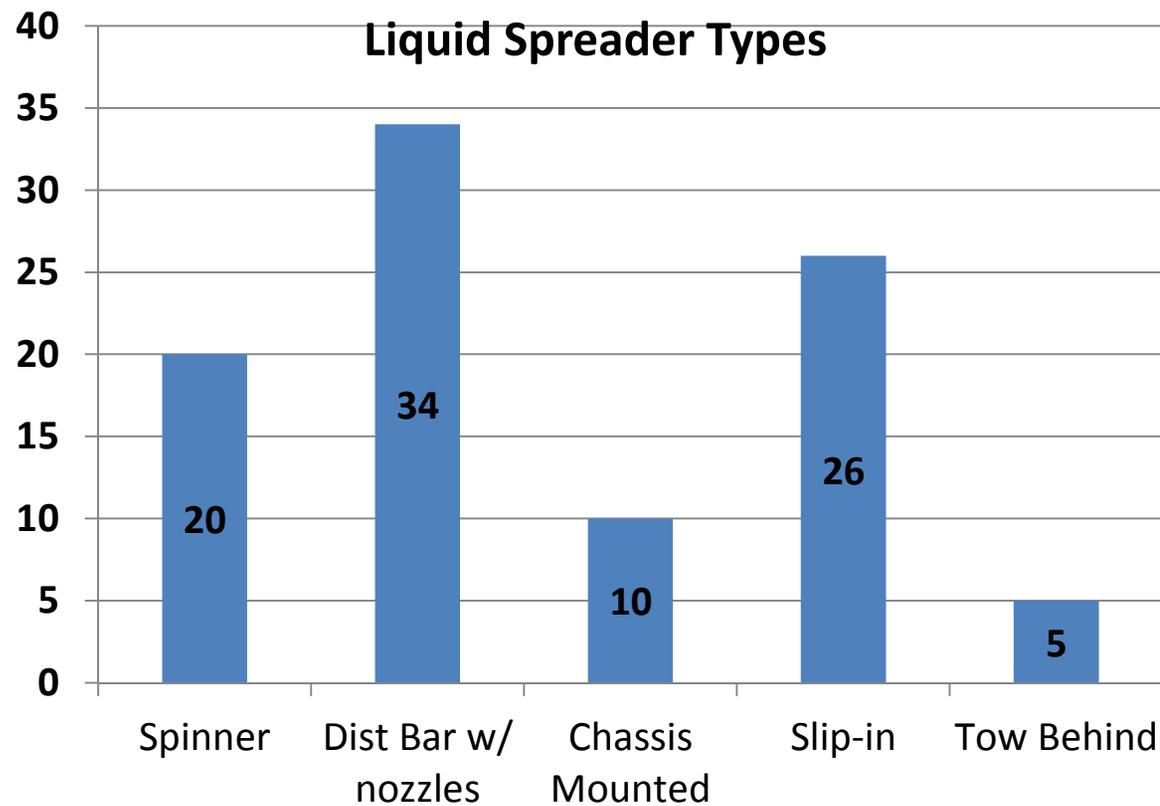


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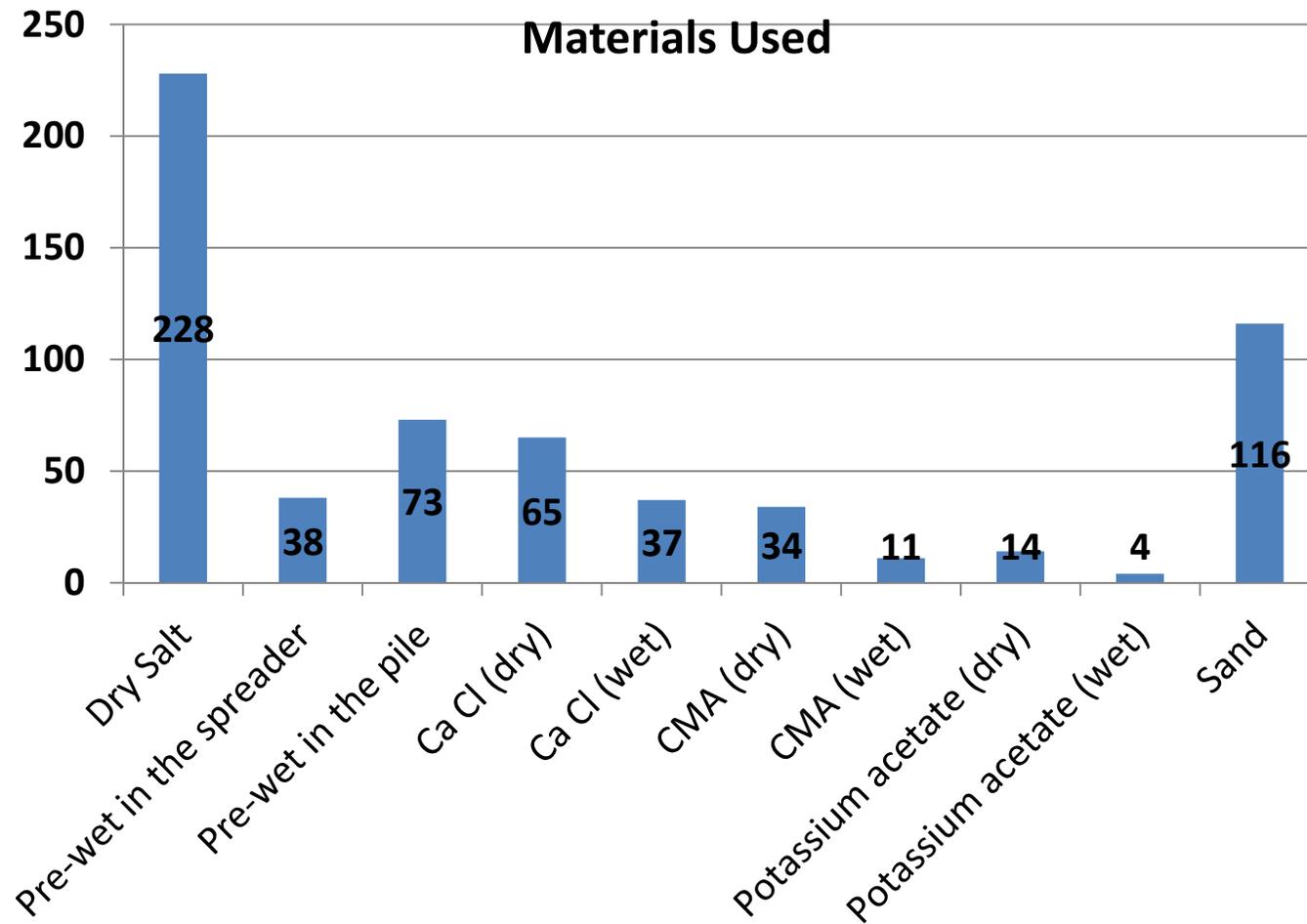


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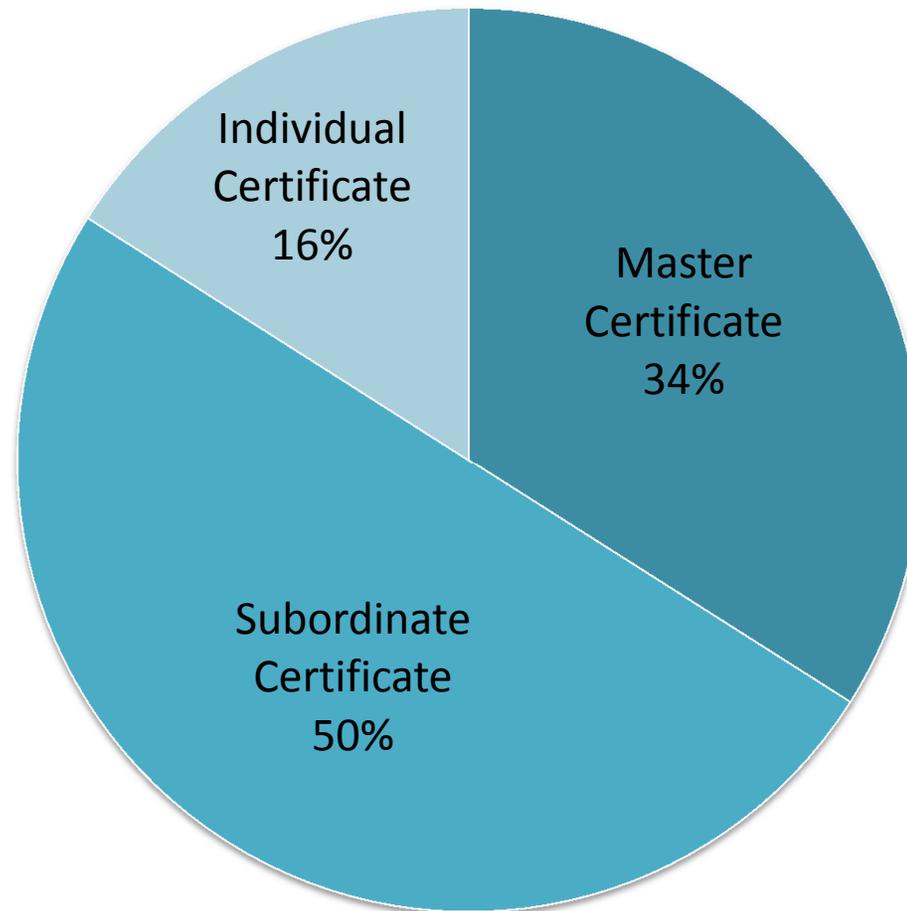


# Profile of Certified Salt Applicators





# Certification Breakdown





# Academic Rigor?

- 5% Failed the Exam

What is a vibration?

*There are good vibrations and bad vibrations. Good vibrations were discovered in the 1960s*



# Re-take Policy

## 1<sup>st</sup> Re-take

- No waiting period

## 2<sup>nd</sup> Re-take

- 14-day wait period

## 3<sup>rd</sup> Re-take

- Must re-take course



# What's Next?

“Pass the Salt” List-serve

Annual Reports

Driver Expectations & safety

Adopt Final Program Rule

Marketing to Business Owners



# On the Web

[www.des.nh.gov](http://www.des.nh.gov)

Click on the “A to Z List”

Select **SALT REDUCTION INITIATIVE**

The screenshot shows the website interface with the following elements:

- Navigation Menu:** PUBLIC, GOVERNMENT, BUSINESS, **A to Z LIST** (circled in red).
- Left Sidebar:** DES Home, A to Z List, About DES, Media Center, Public, Government, Business, Programs, Rules/Regulatory, Contact Us.
- Main Content:** "Welcome!" header, "DES News" section with articles from January 9, 2014, and December 17, 2013, and "What's New" section with various notices.
- Right Sidebar:** "DES Calendar" (a calendar grid), "The Department" (listing Commissioner's Office, Air Resources Division, Waste Management Div., Water Division, and Boards and Committees), and "Quick Links" (listing Administrative Rules, Air Quality Forecasting, Certification/Training, Directions to DES, Disaster Preparedness & Response).
- Footer:** "start" button, search bar, and system tray showing the time as 10:04 AM.



# Questions?

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