



SNOW & ICE CONTROL
INNOVATION & TECHNOLOGICAL ADVANCEMENTS

Presented by Clay Hildreth



GreenTM
Exponentially Better

Environment

- Cleaner roadsides, ditches and ground water.

Economy

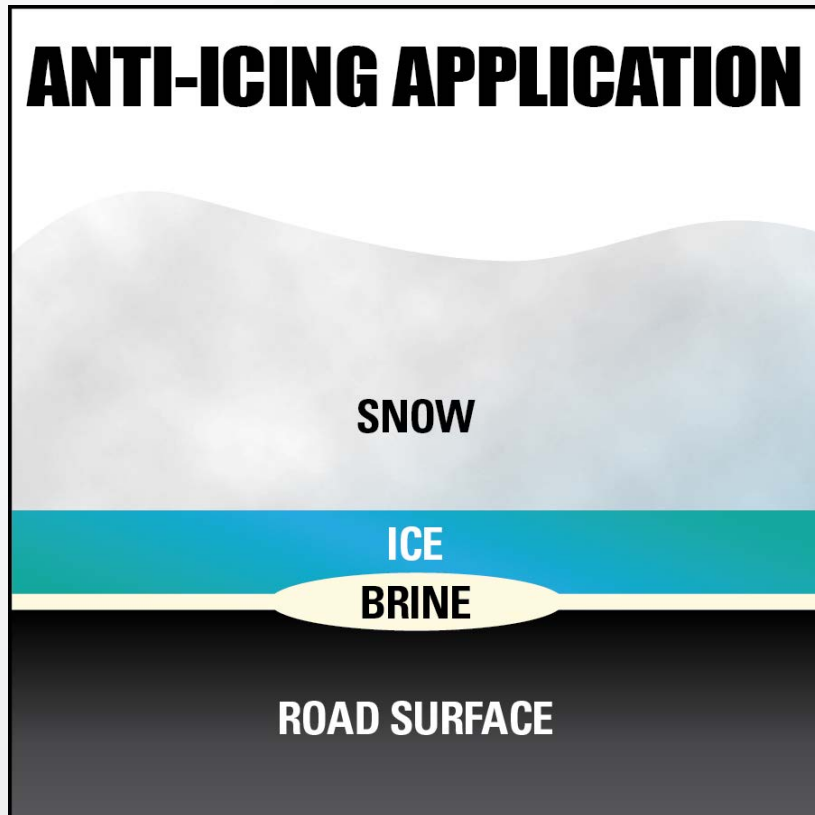
- Cut cost by reduced trips, saving on fuel & manpower.
- Allows for reduced application rates, in some cases up to 50%.

Safety

- Improve travel conditions faster and more effectively.

Anti-icing Applications

A proactive approach to managing winter weather events.



"It takes 4 times more chemical to break the bond than it does to prevent it."

Minnesota DOT

"Anti-icing reduces the amount of time required to restore the roads to a clear, dry state."

North Dakota DOT

Anti-icing Applications

A proactive approach to managing winter weather events.



ADVANTAGES

- Establishes a protective layer between the road's surface and frozen precipitation
- Allows plow trucks to quickly and effortlessly peel away snow and ice
- Can be applied up to 48 hours before the storm
- Reduces rock salt consumption 30% or more
- Salt brine is a highly effective anti-ice solution
- Straight salt brine is the most environmentally friendly liquid anti-ice solution available today

APPLICATION

- 40-80 gallons per lane mile
- 40 gallons = 91.5 lb. of salt per lane mile

Case Study of Annual Rock Salt Usage



Town of East Fishkill, NY

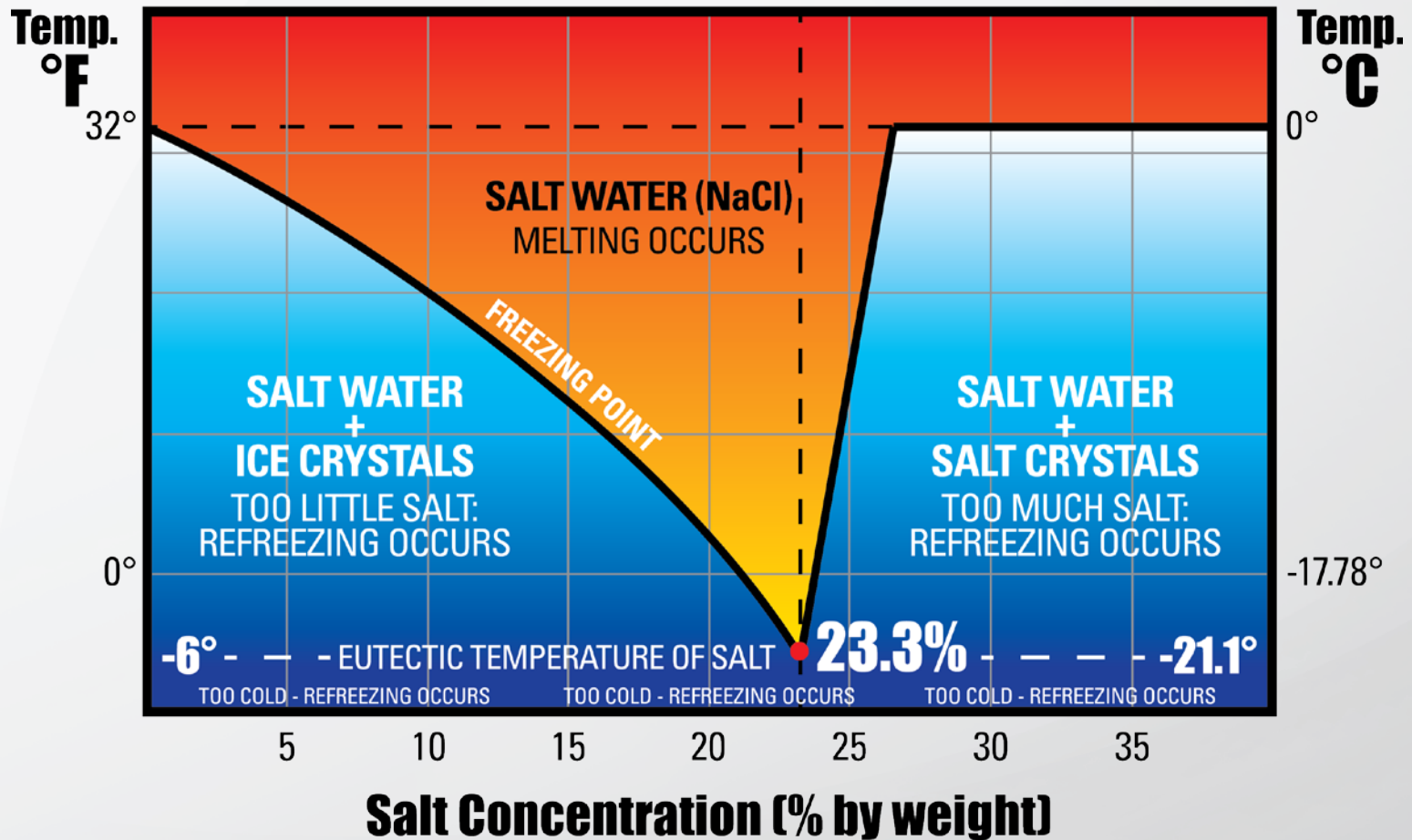
- Pop. of 29,029 (*U.S. Census Bureau 2010*)
- 2008-09 used 10,637 tons of salt @ \$70 per ton
- **Total cost = \$744,590**

- 2009-10 used 7,154 tons of salt @ \$70 per ton
- **Total cost = \$500,780**
- Had a greater amount of snow fall than the previous year
- Implemented new liquid anti-ice and deicing equipment
- Reduced salt usage by 3,483 tons
- Savings of **\$243,810**

Source:

*The Cary Institute of Ecosystem Studies
Road Salt: Moving toward the solution - SPECIAL REPORT*

SALT BRINE - PHASE DIAGRAM



Data courtesy of the Federal Highway Administration (FHWA)

PROFESSIONAL BRINE SYSTEMS



BrineXtreme[®] ULTIMATE

- Precise 23.3% salt concentration by weight
- Continuous production – up to 9,600 GPH
- 100% automation, self-cleaning & repeatability
- Stainless steel construction
- Blends brine with up to 4 additives & up to 3 micro ingredients

BrineXtreme[®] ULTIMATE MOBILE UNIT

- MOBILIZE, make brine at multiple locations
- Precise 23.3% salt concentration by weight
- Continuous production – up to 9,600 GPH
- 100% automation, self-cleaning & repeatability



PROFESSIONAL BRINE SYSTEMS



Brine^{❄️}Xtreme[®] PRO

- Precise 23.3% salt concentration by weight
- Continuous production – up to 6,000 GPH
- 100% automation & repeatability
- Stainless steel construction
- Plug and play set-up

Brine^{❄️}Xtreme[®] TRUCK FILL PRO

- Fill Rates of 100 or 200 GPM
- Multiple users w/unique PIN numbers (up to 100)
- Stacking, up to 3 products
- Data logging, password protected
- Remote access optional
- Plug and play set-up



ANTI-ICING



LAS[™] 
LIQUID APPLICATION SYSTEM

**ANTI-ICE
DUST CONTROL
& MORE
COVERAGE UP TO 3 LANES**



LIQUID CAPACITIES:

- 925 gal.
- 1,235 gal.
- 1,635 gal.
- 1,800 gal.
- 2,035 gal.

SLURRY ADVANCEMENTS



“A watery mixture of insoluble matter”

Advantages of Slurry

- Excellent retention and placement behaviors
- Efficient use of deicing material, equipment and labor resources

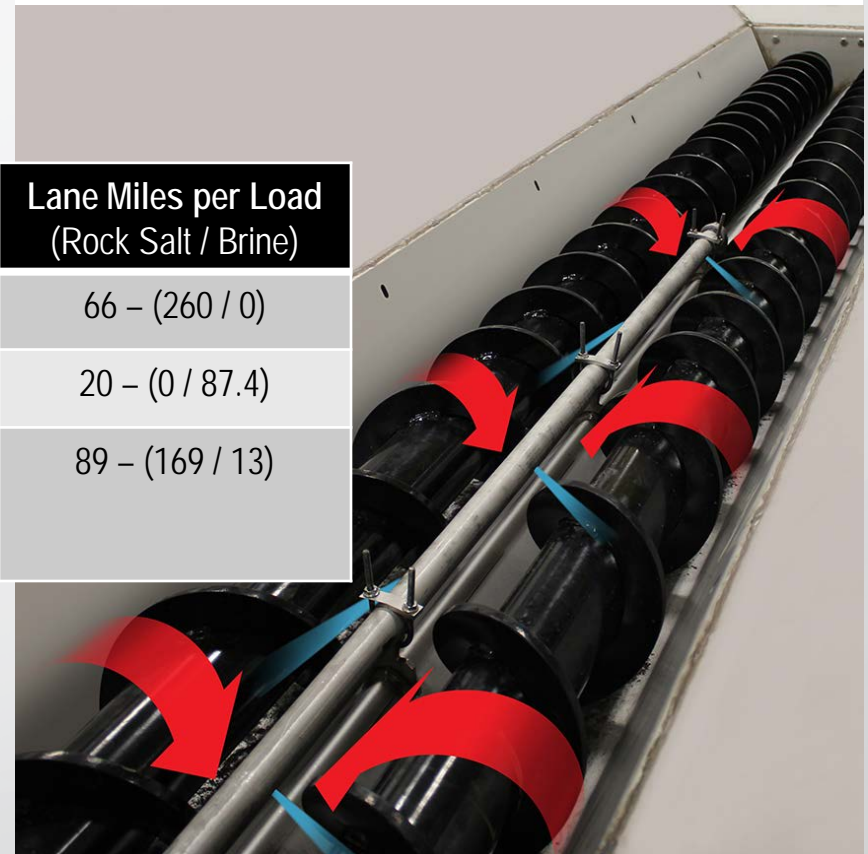
Comparison with same Class vehicle, applying 200 lb. / lane mile of active, usable ingredient.

	Solid Capacity (cu. yd.)	Liquid Capacity (gal.)	Lane Miles per Load (Rock Salt / Brine)
Straight Salt	8	-	66 – (260 / 0)
Salt Brine	-	1,758	20 – (0 / 87.4)
Slurry 15% wt/wt or 158 gal/ton	7	1,200	89 – (169 / 13)

- **Anti-icing** – excellent retention qualities
- **Deicing** – brine begins to work immediately, while rock salt provides a long-lasting residual

HENDERSON EXCLUSIVE

Liquid is injected directly into the hopper, where dual counter-rotating augers mix up a slurry solution (up to 6' of travel). This ensures salt crystals are fully saturated and active prior to landing on the pavement.



ANTI-ICING / DEICING



FIRST RESPONSE 
PREMIUM LIQUID ANTI-ICING & DEICING SYSTEM



4 IN 1
**ANTI-ICE
SLURRY
PRE-WET
GRANULAR**
COVERAGE UP TO 3 LANES

BEST-IN-CLASS PERFORMANCE
**SLURRY
APPLICATION**
A TRUE SLURRY GENERATED
IN THE BODY
DELIVERS LARGE FULLY
SATURATED SALT CRYSTALS
FOR AN IMMEDIATE BURN
& LONG LASTING
RESIDUAL
THE HENDERSON ADVANTAGE

LENGTH	GRANULAR CAPACITY (cu. yd.)	LIQUID CAPACITY (gal.)	TRUCK CHASSIS
9' to 12'	5.2 to 7.0	900 to 1,200	72" to 108" CA
13' to 15'	7.5 to 8.7	1,300 to 1,500	96" to 120" CT

ANTI-ICING / DEICING



TASK FORCE™ LIQUID ANTI-ICING & DEICING SYSTEM



4 IN 1
**ANTI-ICE
SLURRY
PRE-WET
GRANULAR**
COVERAGE UP TO 3 LANES

BEST-IN-CLASS PERFORMANCE

SLURRY APPLICATION
A TRUE SLURRY GENERATED
IN THE BODY
DELIVERS LARGE FULLY SATURATED SALT CRYSTALS FOR AN IMMEDIATE BURN & LONG LASTING RESIDUAL

THE HENDERSON ADVANTAGE

LENGTH	GRANULAR CAPACITY (cu. yd.)		LIQUID CAPACITY (gal.)	TRUCK CHASSIS
	54" or 56" Side Heights	60" or 62" Side Heights		
10' to 12'	6.9/8.2 to 8.4/9.9	8.3/9.6 to 9.9/11.4	400	84" to 108" CA
13' to 16'	9.0/10.7 to 11.0/13.0	10.7/12.4 to 13.0/15.0	400 to 800	96" to 132" CT

ANTI-ICING / DEICING



BLACKBELT[®]MAXX ALL-SEASON MULTI-PURPOSE BODY



4 IN 1
ANTI-ICE
SLURRY
PRE-WET
GRANULAR
COVERAGE UP TO 3 LANES

BEST-IN-CLASS PERFORMANCE

SLURRY APPLICATION

A TRUE SLURRY GENERATED
IN THE BODY
DELIVERS LARGE FULLY SATURATED SALT CRYSTALS FOR AN IMMEDIATE BURN & LONG LASTING RESIDUAL

THE HENDERSON ADVANTAGE

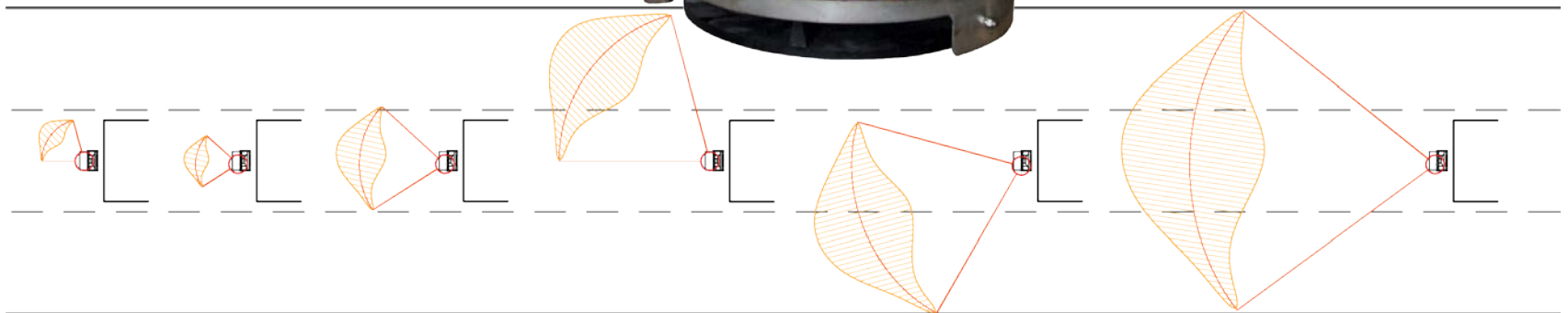
LENGTH	GRANULAR CAPACITY (cu. yd.)	LIQUID CAPACITY (gal.)	TRUCK CHASSIS
10' to 17'	7.65 to 13.25	280 to 640	84" to 172" CT

PRECISION APPLICATION



DIRECTCAST™ 3 ON-THE-GO DIRECTIONAL CONTROL

- In-cab directional controls
- Cover 1, 2 or 3 lanes
- Keep material on the road, where you need it
- Easily handles all material: dry, pre-wetted or slurry mix
- Works with all Henderson spreaders





THANK YOU

For More Information, Visit Our Booth