

EMMET COUNTY ROAD COMMISSIN ANTI-ICING EXPERIENCE

BY:

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ENGINEER-MANAGER

HOW DID WE GET THERE?

1995 - I STARTED WITH THE EMMET COUNTY ROAD COMMISSION

SALT / SAND USAGE TYPICAL

AVERAGE 9,500 TONS OF SALT AND 13,000 TONS OF SAND

NO LIQUID USE

1998 PRICES: SALT WAS \$35 / TON. SAND WAS \$3.50 / TON

TOTAL YEARLY COST = \$371,000

HOW DID WE GET THERE?

THE PRE-WET EXPERIENCE

FALL OF 1997

WAS CONTACTED BY THE FOLKS AT “ICE-BAN” ABOUT A NEW CONCEPT OF PRE-WETTING SALT AND SAND TO SAVE MONEY.

PRESENTATION MADE SENSE BUT SOUNDED TOO GOOD TO BE TRUE.

STARTING OUT SMALL

PRE-WET WITH ICE BAN

WINTER 1997 – 98: ICE BAN. 1 PLOW TRUCK.

WE PRE-MIXED 300 TONS OF SALT WITH ICE-BAN AT A RATE OF 8 GALLONS PER TON FOR THE TRUCK. ICE-BAN WAS \$1 PER GALLON.

RESULTS: IT WORKED. WE REDUCED OUR SALT APPLICATION RATE FROM 450 # PER LANE MILE TO 300# PER LANE MILE.

DID NOT HAVE TO RE-APPLY AS MUCH AS OTHER TRUCKS DURING THE SAME STORM.

PRE-WET TRIAL RESULTS

MATERIAL COST SAVINGS WERE IN THE \$2,500 RANGE.

IF SPREAD OVER THE 25 TRUCKS THAT WOULD RESULT IN A \$50,000 MATERIAL SAVINGS.

IN ADDITION, OVERTIME WAS REDUCED FOR THAT DRIVER.

FINALLY, THE ROADS STAYED IN A WET CONDITION LONGER THAN THE ROADS THAT WERE NOT TREATED.

THIS MAKES A SAFER TRAVELLING EXPERIENCE FOR THOSE FOLKS.

WHAT CAME NEXT WITH PRE-WET?

NEW TECHNOLOGY INTRODUCED

AUGUST 31, 1998. I RECEIVED MY VERY FIRST E-MAIL AT THE EMMET COUNTY ROAD COMMISSION.

THE E-MAIL SAID: “WITH THIS E-MAIL, A NEW ERA IN COMMUNICATIONS OPENS WITH THE 37 MICHIGAN COUNTY ROAD COMMISSIONS WHO ARE “ON-LINE”.

THE E-MAIL WAS FROM THE “ICE-BAN” FOLKS.

THERE WAS A MEETING SCHEDULED IN LANSING TO DISCUSS THE USE OF THEIR PRODUCT TO REDUCE THE AMOUNT OF SALT BY **ANTI-ICING** AND PRE-WETTING.

Winter Maintenance Seminar!

featuring "ICE BAN™"

WHEN? Wednesday, September 23rd, 1998
8:30 A.M. - 12:30 P.M.

WHERE? Lansing, Michigan 48910
Harley Hotel, 3600 Dunckel Drive

WHAT? **Topics of Discussion**

- ☐ Liquid Anti-Icing/De-Icing users share their knowledge
- ☐ Equipment - storage and application options with recommendations
- ☐ A "Nuts & Bolts" Q & A with lively discussion
- ☐ Dust Control vs. Soil Stabilization...which is better?
- ☐ Reducing costs...maintenance, equipment and labor

WHO? **Featured Speakers**

- ☐ STEVE BYTNAR, Technical Biologist representing ICE BAN™.
- ☐ DALE KEEP, Washington State DOT. Anti-Icing for 13 years.
- ☐ DOUG WAY, Michigan Distributor for ICE BAN™
- ☐ CARL KINDIG, Indiana DOT. Bringing ICE BAN™ to Michigan.
- ☐ JOE KROLL, Dust control/Soil Stabilization

COST? **FREE! BUT Seating Limited!**

RESERVATIONS? **Call NOW! (888) 888-3615**

HOSTS? **Road-Way Solutions, Inc.**

"Michigan Distributors for Ice Ban™ No-Rust Road De-Icing Solution"
Michigan Terminal Operations-----05916 U.S. 31 South, Charlevoix, Michigan 49720
Phones (800) 800-8127 or (616) 547-9860 or (810) 658-0102 Fax (616) 547-0681

Mountain Products & Equipment

Post Office Box 809

Phones (555) 888-3615 or (502) 636-4522

Georgetown, Kentucky 40324-0809

Fax (502) 535-4788

NEW WINTER MAINTENANCE STRATEGIES

DALE KEEP, FROM WASHINGTON STATE DOT WAS ONE OF THE FEATURED SPEAKERS.

A COUPLE OF THINGS STUCK WITH ME.

1. NEVER APPLY DRY MATERIAL. 40-60% OF DRY MATERIAL BLOWS OFF THE TRAVELLED PORTION. IN OTHER WORDS, ALWAYS PRE-WET.
2. LIQUID **ANTI-ICING** CAN BE USED UP TO 3 DAYS BEFORE A STORM TO PRE-VENT SNOW AND ICE FROM BONDING ON ROADS. ALLOWS CREWS ADDITIONAL TIME TO REACT TO AN EVENT.

MORE TO COME ON LIQUIDS

PRE-WET

AFTER HEARING DALE KEEP SAY WE COULD SAVE 40% TO 60% OF MATERIAL BY PRE-WETTING, THAT WOULD MEAN MORE FUNDING AVAILABLE FOR OTHER ACTIVITIES OF THE ROAD COMMISSION.

THIS REINFORCED THE EMMET COUNTY ROAD COMMISSION EXPERIENCE FROM THE YEAR PRIOR.

ALL IN ON PRE-WET

FALL OF 1998

WE INSTALLED A 6,000 GALLON STORAGE TANK FOR DE-ICING LIQUID AT OUR MAIN GARAGE.

MIXED ICE BAN AND SALT WITH A LOADER.

NOT AN EFFICIENT WAY TO MIX, BUT SUCCESSFUL.

SEP 23 1998

©ROAD-WAY SOLUTIONS, INC.*

"Michigan Distributors for ICE BAN™ No-Rust Road De-Icing Solution"

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ICE BAN™ No-Rust Road De-Icing Solution

September 19, 1998

Re: [63] Mr. Brian Gutowski, Engineer-Manager
(24) Emmet County Road Commission
2265 East Hathaway Road
Harbor Springs, Michigan 49740-9430

In Re: ICE BAN™ No-Rust Road De-Icing Solution

Dear Brian:

CONGRATULATIONS on your decision to become the MDOT North Region ICE BAN™ "Pilot Program" County! As we've stated, we look forward to assisting you with your tests and providing the kind of professional service you'd expect from a local company. We'll do everything we can to help make the transition smooth from ICE BAN™-less to ICE BAN™-friendly.

On Friday afternoon, I talked with **Buzz Howes** [Phone (517) 743-2228, Fax (517) 743-5008] Managing Director of the Shiawassee County Road Commission and encouraged him to contact you. We've offered the ICE BAN™ "Pilot Program" to Shiawassee County for the MDOT University Region, just as we offered it to you for the MDOT North Region. He's going to be at Shanty Creek in Bellaire from Monday till Wednesday next week, but, hopefully, will call you in the near future.

We look forward to visiting with you soon, and getting that interview for an upcoming issue of **The ICE BAN™ Comet**! If we can answer further questions, please let us know. Doug will be in contact with you soon to install the storage tank. Say "Hi" to Jeri! I've really been impressed with her.

If you talk to other people interested in ICE BAN™, please let me know. I'll immediately forward some information to them. Thanks for all your help.

Very truly yours,



©ROAD-WAY SOLUTIONS, INC.
J. Hilliard Shackford
Michigan Sales Co-Ordinator

R-WSI; TB Ltr to Emmet County Road Commission

Date Prepared: September 19, 1998 [5:28pm]

ALL IN ON PRE-WET

FALL 1999

WE INSTALLED A 6,000 GALLON TANK AT OUR LEVERING GARAGE AND INSTRUCTED ALL EMPLOYEES TO ALWAYS PRE-WET.

STARTING PURCHASING SADDLE TANKS ON ALL OF OUR SANDERS IN 2000.





PRE-WET ISSUES

2000 – PROBLEMS WITH ICE-BAN

2001 – LIQUIDOW ARMOUR

2002 – BACK TO ICE-BAN

2004 – SWITCHED TO CM90. BLEND OF MAGNESIUM AND CALCIUM CHLORIDE WITH A CORN STEEP (7-10%) TO LESSEN THE CORROSION. TOTAL CHLORIDES ARE 29 – 32%.

PRE-WET RESULTS

OVER THE PAST 5 YEARS, WE HAVE AVERAGED:

7,000 TONS OF SALT (USED TO AVERAGE 9,500 TONS)

3,000 TONS OF SAND (USED TO AVERAGE 13,000 TONS)

46,000 GALLONS OF BRINE (NEVER USED PRIOR TO 1998)

WE USED TO SPEND \$371,000 ON WINTER MATERIALS PRIOR TO 1998. (THIS IS WHEN SALT WAS \$35 PER TON)

WE HAVE AVERAGED \$270,000 ON MATERIALS THE PAST 5 WINTERS. (THIS IS WITH SALT AVERAGING \$60 PER TON)

ANTI-ICING IN NORTHERN MICHIGAN



IT WON'T WORK HERE BECAUSE OF THE LAKE EFFECT(?) AND HOW MUCH SNOW WE RECEIVE (?)

ANTI-ICING EXPERIENCE

LIKE OUR PRE-WET EXPERIENCE

STARTING WITH 1 TRUCK.

THE NAYSAYERS ARE SAYING IT WON'T WORK UP HERE.

I SAY HOW CAN IT NOT WORK IF IT WORKS IN OTHER
PARTS OF THE COUNTRY.

ANTI-ICING IN NORTHERN MICHIGAN



ANTI-ICING PROCESS AT EMMET COUNTY ROAD COMMISSION



ANTI-ICING AT EMMET COUNTY ROAD COMMISSION



ANTI-ICING AT EMMET COUNTY ROAD COMMISSION



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ANTI-ICING EXPERIENCE

DID IT WORK?

- WE APPLIED DAY BEFORE EXPECTED SNOW FALL.
- RATE OF 35 - 40 GALLONS PER LANE MILE
- TEMPERATURE WAS FORECAST TO BE 20 DEGREES
- PRIMARY ROAD: STATE ROAD
- HAD VIDEO OF ROAD WITH AND WITHOUT ANTI-ICE
- SECTION OF ROAD WITH ANTI-ICE WAS WET.
- SECTION OF ROAD WITHOUT ANTI-ICE WAS SNOW COVERED.

WHAT HAPPENED TO THE VIDEO? THE CLOUD ATE IT

ANTI-ICE CONCLUSION

CONCLUSION

- IS A USEFUL TOOL.
- BUYS TIME FOR OUR CREWS TO RESPOND DURING A STORM.
- MAKES OUR ROADS SAFER / QUICKER
- INEXPENSIVE. PRO-ACTIVE VS. REACTIVE
- COST SAVINGS IN SALT USAGE.

NEW FOR WINTER 2016-17

XZALT PRECISION APPLICATOR TRIAL.

70% DRY / 30% LIQUID APPLICATION



NEXT STEP IN PRE-WET / ANTI-ICING

BRINE MAKING. 2017 – 2018 WINTER SEASON

Salt brine used as an anti-ice treatment has proven to reduce annual rock salt consumption by as much as 30%. It reduces the number of deicing applications needed to achieve clear roads.

Salt brine used in deicing efforts activates rock salt faster and reduces scatter.

Salt brine that is 23.3% salt concentration by weight is the perfect (eutectic) brine. This precise concentration allows the brine to work in outside temperatures down to -6° F (-21° C).

Salt brine can be produced for a little as \$0.10 per gallon.

XZALT AND BRINE MAKING

FUTURE WINTER OPERATIONS PRESENTATIONS?

2017: EMMET CRC EXPERIENCE WITH XZALT SYSTEM

2018: BRINE MAKING IN NORTHERN MICHIGAN

QUESTIONS?