Liquid Anti-icing

- Ron Wolf, District 6 Mechanic, Iowa DOT
- Illinois DOT Districts 2 (Dixon) and 3 (Ottawa)
- Brien Keltner, Anamosa Highway Maintenance Supervisor, Iowa DOT
Liquid/Granular Calculation

- Maximize liquid, minimize granular
  - Operator inputs amount of salt per lane mile
  - Calculator calculates the amount of liquid to use based upon length of run
  - Controller uses all but 10% of the liquid during the run
  - Calculator calculates amount of salt/lane mile in the liquid
  - Controller makes up the rest of needed salt with granular

![Liquid/Ganular Calculation Table](image)
Wedge-Shaped Brine Tanks

Version 1- Home made system carried up to 3 tanks with 1,800 gallons of total liquid capacity or can also carry 1,200 gallons of liquid and 6-tons of dry material.

Version 2- Pengwyn System- carried 6-100 gallon tanks in a medium duty truck with the ability to also carry 6 tons of dry material.
Version 3- Henderson System-
900 gallons of liquid in the wedge tanks + 220 in the winter tailgate.

6 tons of granular material can be hauled between the tanks.

Current system employed by Iowa DOT.

Single axle truck version holds 556 gallons and 3.5 tons of granular salt.
Trailers

- Increased liquid capacity
- 1,800 gal – 2,700 gal trailers
- 3,500 gal - 6,000 gal tanker
- Safety benefits
- Modifications for carrying brine in storms
Brine Bar with Wedge Tanks

Tandem with Brine Bar
Notice bar does not inhibit trailer hookup

Tandem with Brine Bar & Wedge Tanks
Anti-Ice Trailers

2,700 gallon anti-ice trailers
Anti-Ice Tractor-Trailer

5,000 gallon tanker
Brine Tanks for Radius Bodies

- 900 gallon in-bed tank
- 120 gallon saddle tanks
Frame-mounted Brine Tanks
Frame-mounted Brine Tanks
Frame-mounted Brine Tanks
Frame-mounted Brine Tanks
Chassis-mounted Brine Tanks
Chassis-mounted Brine Tanks
Liquid Blending Station

Brine Building housing Brine Maker

Blending Building housing Controls & Pumps

Salt Brine

Calcium Chloride
Liquid Blending Station

Control Panel

Pumps, Flow Meters, & Electronically Actuated Valves

Iowa Department of Transportation
Liquid Blending Station
Let’s go see the equipment!