



# All Liquid Routes State and County

Don Grande

Price County Highway Commissioner  
2018 Winter Operations Conference

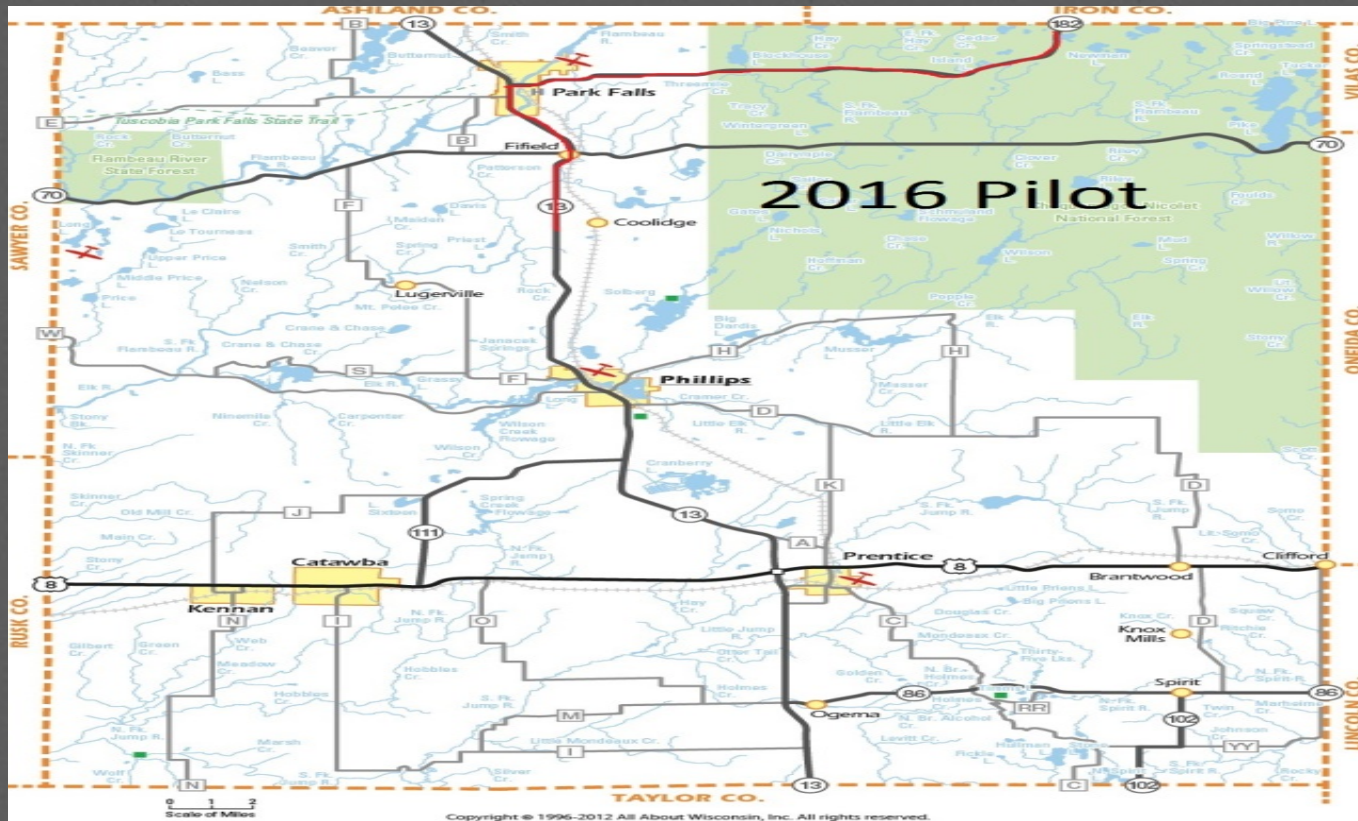
# 2016 Initial State Pilot

- o Xzalt 14' prototype spreader utilized
- o 70/30 dry to wet ratio
- o Directional placement spinner with multilane option
- o 7.6 Yards salt and 584 gallons of liquid
- o 60.5 Lane Miles





# 2016 Pilot Xzalt Route



# 2016 Pilot Data

- Reduction in solids per application by 25% compared to other routes.
- Increase in liquids per applications by 135% over other routes.
- 1.6 applications for the neighboring sections one single application.
- Cost increase of 14% per lane mile over other adjoining sections.

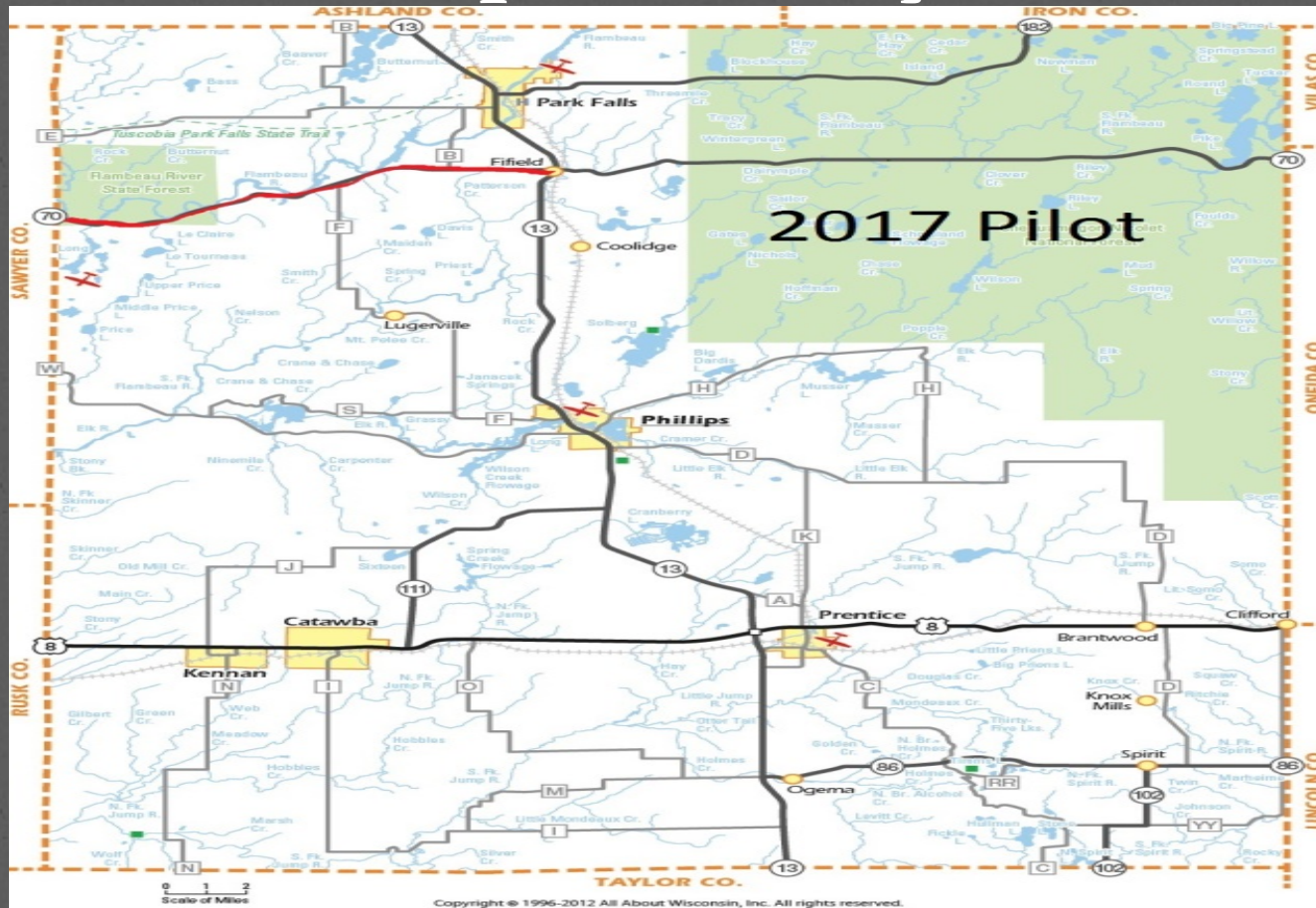


# 2016 Issues

- o Not enough capacity
- o Required to run spinner at minimum 40 RPMS
- o Broadcast in place of centerline application
- o LOTS of electronic and issues associated



# 2017 Liquid Only Pilot





# 2017 Pilot Data

- o All liquid applications for 14 storm events
- o Cost decrease of 64% on material application
- o Application issues with full lane liquid applications 9' with add a lane feature
- o Changed application system to twin 4' centerline to quarter crown application with direct flow pencil nozzles 0.008"















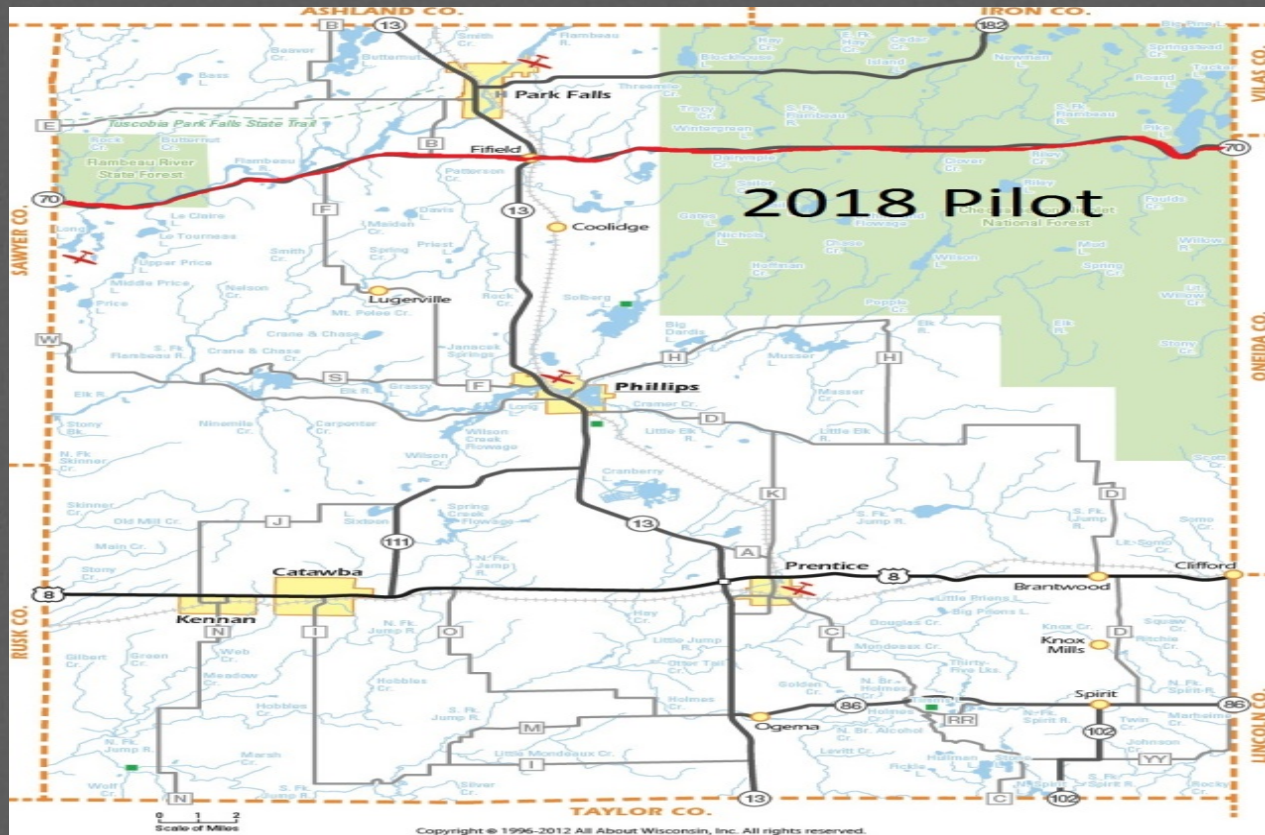








# 2018 Liquid Only Pilot





# New Setup for 2018-2019 Pilot



# Today's System























BEET AICE  
Master Key

FRESH WATER	MAKER PUMP	MAIN PUMP	DISCHARGE	TRUCK	FLUSH OUT	TANK 1	TANK 2	TANK 3	TANK 4	TANK 5	LOOP
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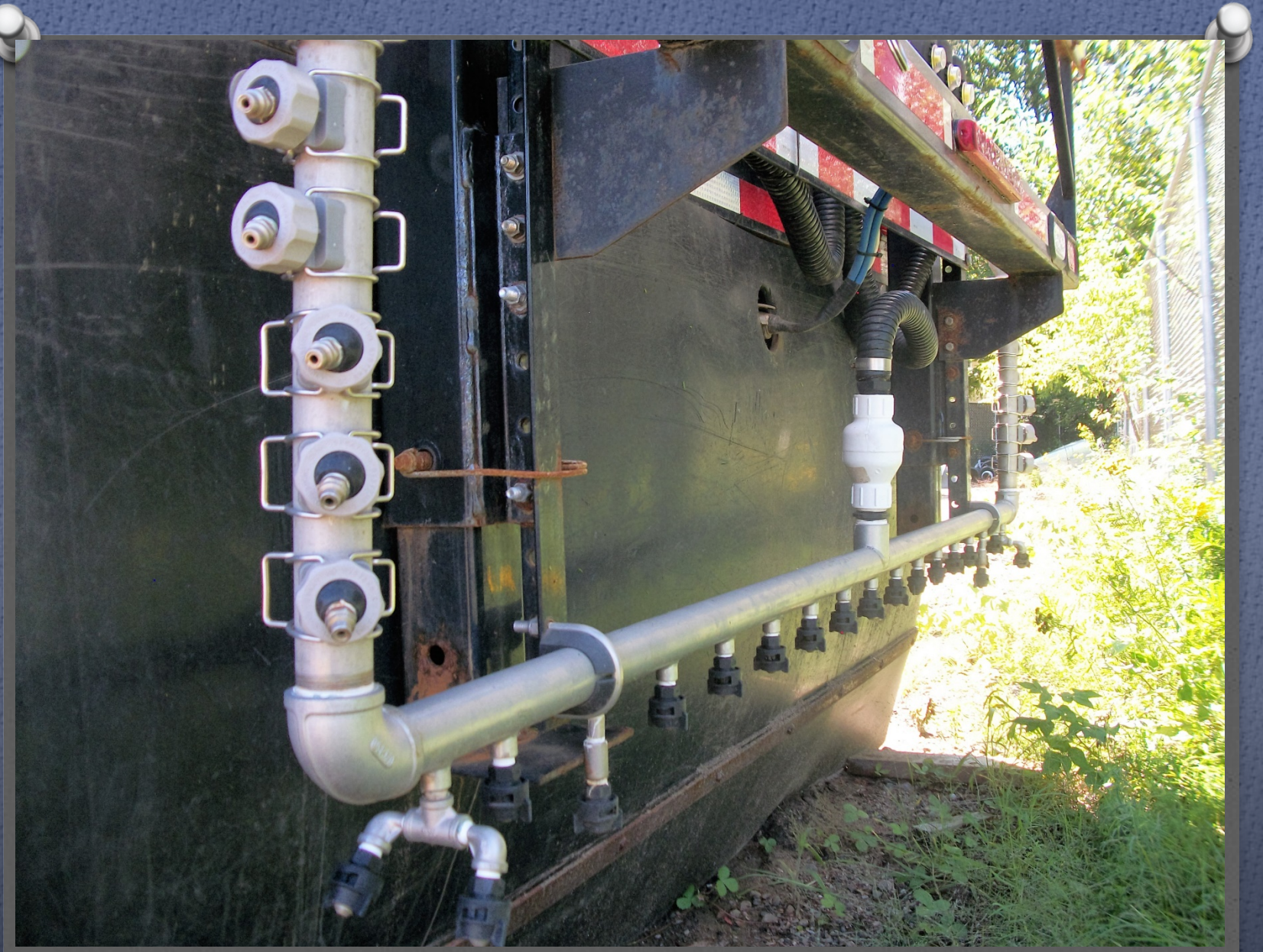
SUCTION	TRUCK	MAIN PUMP	TANK 1	TANK 2	TANK 3	TANK 4	TANK 5	LOOP
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SALT BRINE  
Material #105















**ANTI-ICING**  
**STAY BACK 200FT**





# Thank You

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