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Maryland's SMART Salt Program

Gregorio Sandi

Watershed Restoration Planning Division
Maryland Department of the Environment

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SMART Salt

- Enhanced winter maintenance:
Being able to respond to winter precipitation events by using the least amount of winter deicer as possible, while maintaining public safety!!
- Not a zero salt approach!!!!



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Why is it needed?



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Source: MDE 2016 303(d) list

What is MDE's SMART Salt Program?

- Enhanced Winter Maintenance training focused on private parking lots, sidewalks, and stairs
- Creates a voluntary certification
- Hybrid online and in person learning
- Built from a mesh of information from around the country and industry input
- A partnership between, Chesapeake Landscaping Professionals, MDE, UMD EFC



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Who's the intended audience?

Primary Audience:

- Crew bosses and decision-makers at companies that provide winter maintenance operations
- Large private and public property owners

Secondary Audience:

- Seasonal Workers

(source USGS: [2018 Salt Statistics and Information](#))



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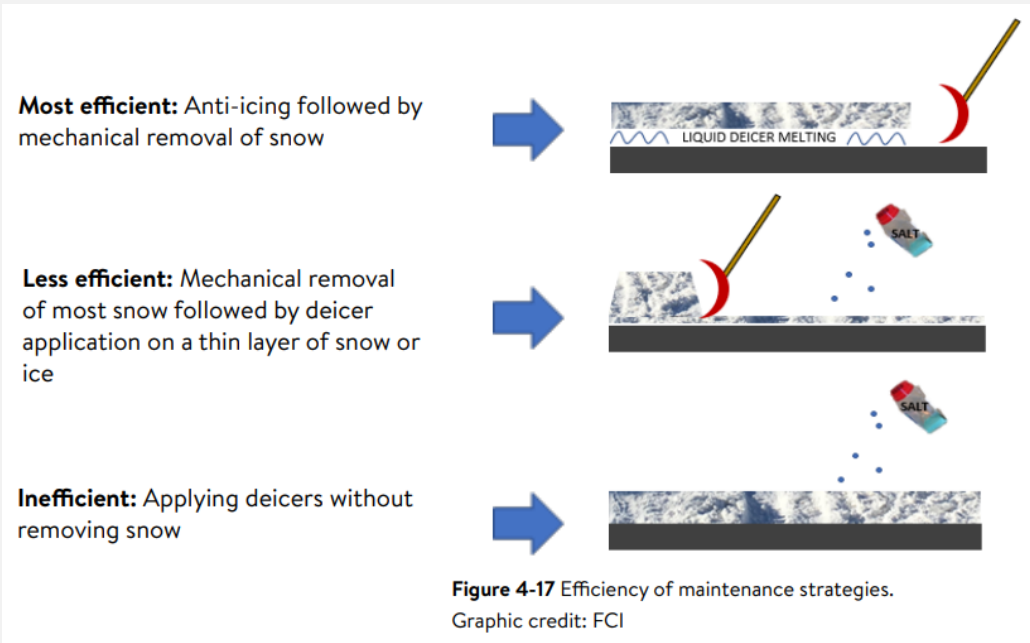
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WHAT IS IN THE TRAINING?

6 Online Modules

1-2 In person Discussion/Demonstration classes

Module 1: Why Should I Reduce Salt Use?



APPLY SALT WISELY!

ONCE IN OUR WATERWAYS, IT CAN'T BE TAKEN BACK

•De-icers **DO NOT** melt ice effectively if too much is applied. Adding more salt won't make the ice and snow melt faster.



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Module 2: What is SMART Salting?

Key ideas of Smart Salting are:

- Focus on manual removal vs. material use
- Use the right amount of deicer if you must use it
- Clean up any excess deicer after a storm
- Never apply deicer on top of ice or snow, use kitty litter or sand on ice for traction
- Remove snow early and as often as needed during an event
- Check your weather, some events in the Mid-Atlantic occur in the morning and are melted by the afternoon



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Module 3: Pre-season Preparations

- Review operations policies
- Staff training
- Equipment maintenance and calibration
- Review site plans and contracts
- Decide weather forecast sources and checking routine for winter storms



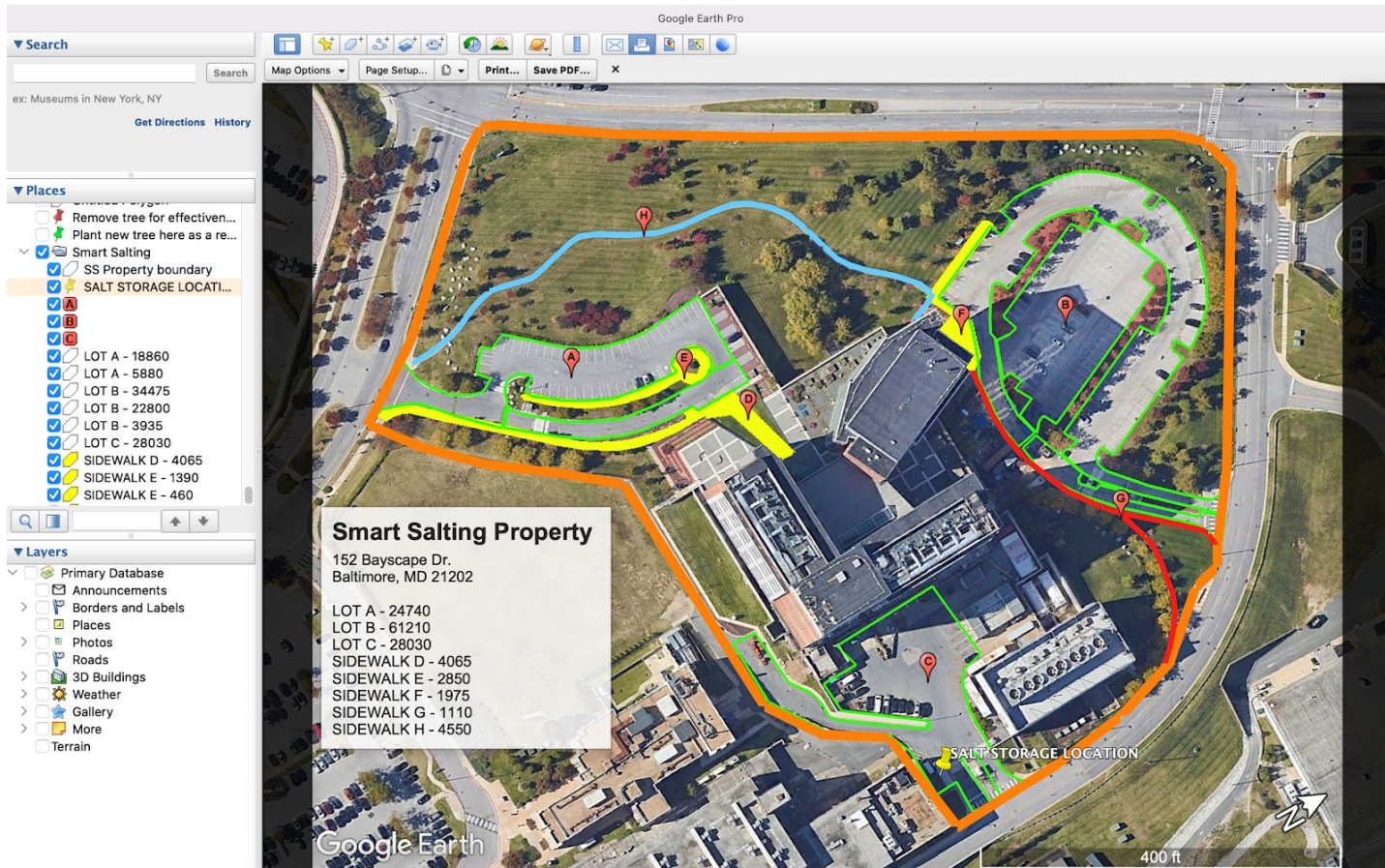
Image from Jason Swope

THIS IS NOT THE TIME TO HAVE DISCUSSIONS AND TRAINING



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Module 4: Site Planning and Contracts



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Module 5: Storm Operations

Deicing Application Rate Guidelines for Parking Lots and Sidewalks

These rates are adapted from road application guidelines (Mn Snow & Ice Control Field Handbook, Manual 2005-1). Develop your own application rates using the guidelines as a starting point and modify them incrementally over time to fit your needs. The area should first be cleared of snow prior to applying chemical.

Pavement Temp. (°F) and Trend (↑↓)	Weather Condition	Maintenance Actions	Application Rate in lbs. per 1000 square foot area			
			Salt Pretreated/ Pretreated With Salt Brine	Salt Pretreated/ Pretreated With Other Blends	Dry Salt	Winter Sand (abrasives)
>30°↑	Snow	Plow, treat intersections only	0.75	0.5	0.75	not recommended
	Frz. Rain	Apply chemical	1.25	1.0	1.5	not recommended
30°↓	Snow	Plow & apply chemical	1.25	1.0	1.5	not recommended
	Frz. Rain	Apply chemical	1.5	1.25	1.75	not recommended
25 - 30°↑	Snow	Plow & apply chemical	1.25	1.0	1.5	not recommended
	Frz. Rain	Apply chemical	1.5	1.25	1.75	not recommended
25 - 30°↓	Snow	Plow & apply chemical	1.25	1.0	1.5	not recommended
	Frz. Rain	Apply chemical	1.75	1.5	2.25	3.25
20 - 25°↑	Snow or Frz. Rain	Plow & apply chemical	1.75	1.5	2.25	3.25 for frz. rain
20 - 25°↓	Snow	Plow & apply chemical	2.0	2.0	2.75	not recommended
	Frz. Rain	Apply chemical	2.5	2.0	3.0	3.25
15° to 20°↑	Snow	Plow & apply chemical	2.0	2.0	2.75	not recommended
	Frz. Rain	Apply chemical	2.5	2.0	3.0	3.2
15° to 20°↓	Snow or Frz. Rain	Plow & apply chemical	2.5	2.0	3.0	3.25 for frz. rain
0 to 15°↑	Snow	Plow, treat with blends, sand hazardous areas	not recommended	3.0	not recommended	5.0 spot treat as needed
< 0°	Snow	Plow, treat with blends, sand hazardous areas	not recommended	4.5	not recommended	5.0 spot treat as needed

To determine the amount of material needed, take the application rate x parking lot area / 1000 ft². **Example:** Given a 300,000 sq. ft. parking lot and an application rate of 1.5 lbs/1000ft² 1.5 x 300,000 = 450,000 450,000/1000 = 450 lbs (nine 50 lb. bags).

Anti-Icing Guidelines

These are a starting point only. Adjust based on your experience.

Condition	Gallons/1000 sq. ft.		Other Products
	MgCl ₂	Salt Brine	
1. Regularly scheduled applications	0.2 - 0.4	0.3 - 0.6	Follow manufacturers' recommendations
2. Prior to frost or black ice event	0.2 - 0.4	0.3 - 0.6	
3. Prior to light or moderate snow	0.2 - 0.4	0.3 - 0.8	

CAUTION: Too high an application rate may result in slippery conditions or tracking.

- Weather forecast
- Pavement temperature
- Air temperature and trends
- Precipitation type
- Wind speed and direction
- Practical melting temperature of products
- Application charts
- Level of service



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Module 6: Post-Storm and End of Season Actions

- Clean-up, storage, and maintenance
- Documenting winter operation procedures
- Evaluating the effectiveness of winter operations



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Timeline for Training

- 2022-2023: MDE Developed a Salt Application Manual with the help of the Interstate Commission on the Potomac River Basin
- 2023 – 2024: SMART Salting course developed, and Beta tested with CBLP and UMD Environmental Finance Center
 - Seasonal Worker Training being developed and translated into Spanish
- Summer 2024 and beyond: Role out the training to all and continually tailor the content to meet the needs of our target audiences
 - Begin robust outreach/communications on getting as many people trained as we can
- Develop a tool to help SMART Salters continually improve their efforts to reduce winter deicer use



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THANK YOU!

Gregorio Sandi

Watershed Restoration Planning Division

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For questions and more information contact:
gregorio.sandi@maryland.gov



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