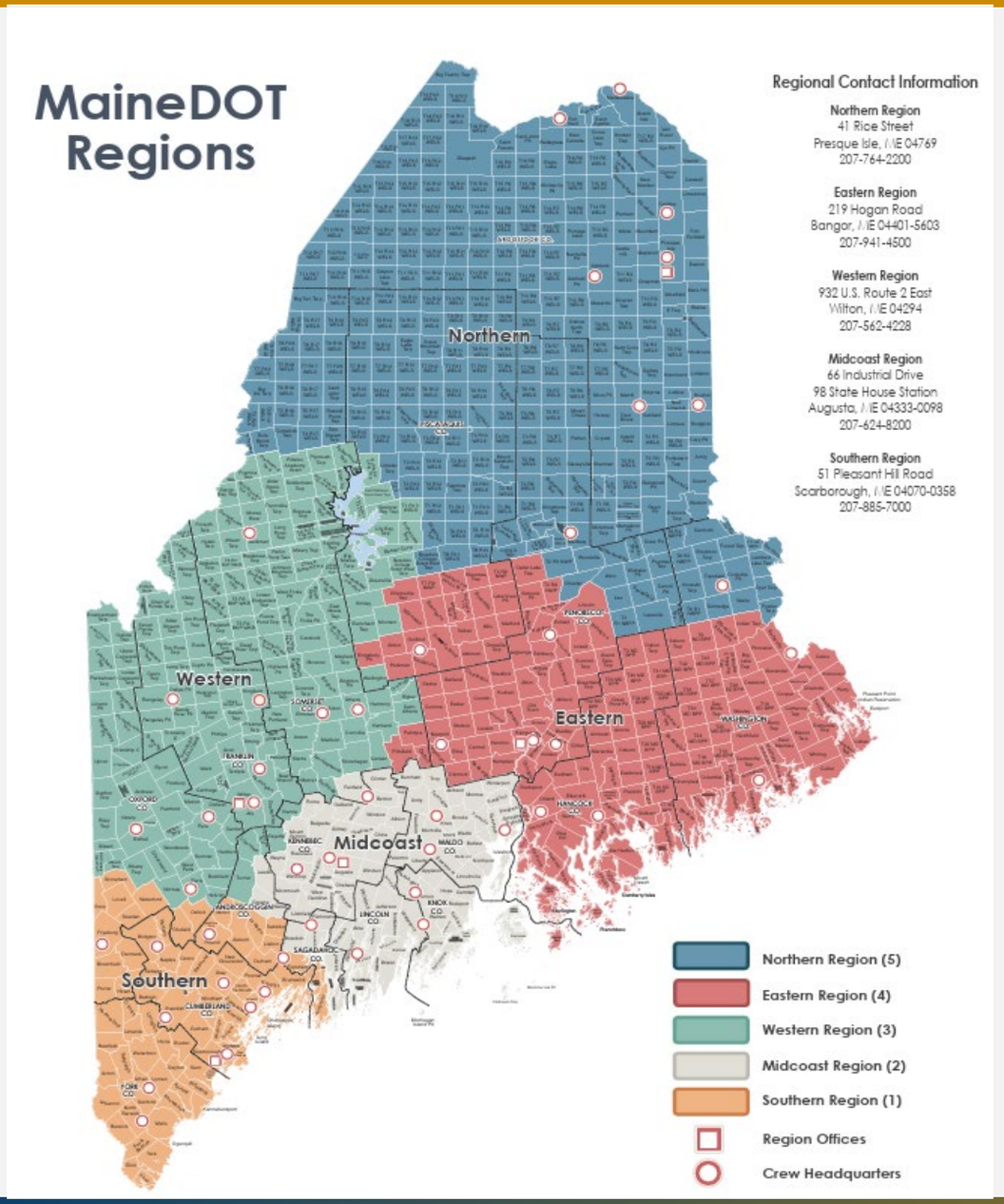
MaineDOT Current Salt Reduction Efforts

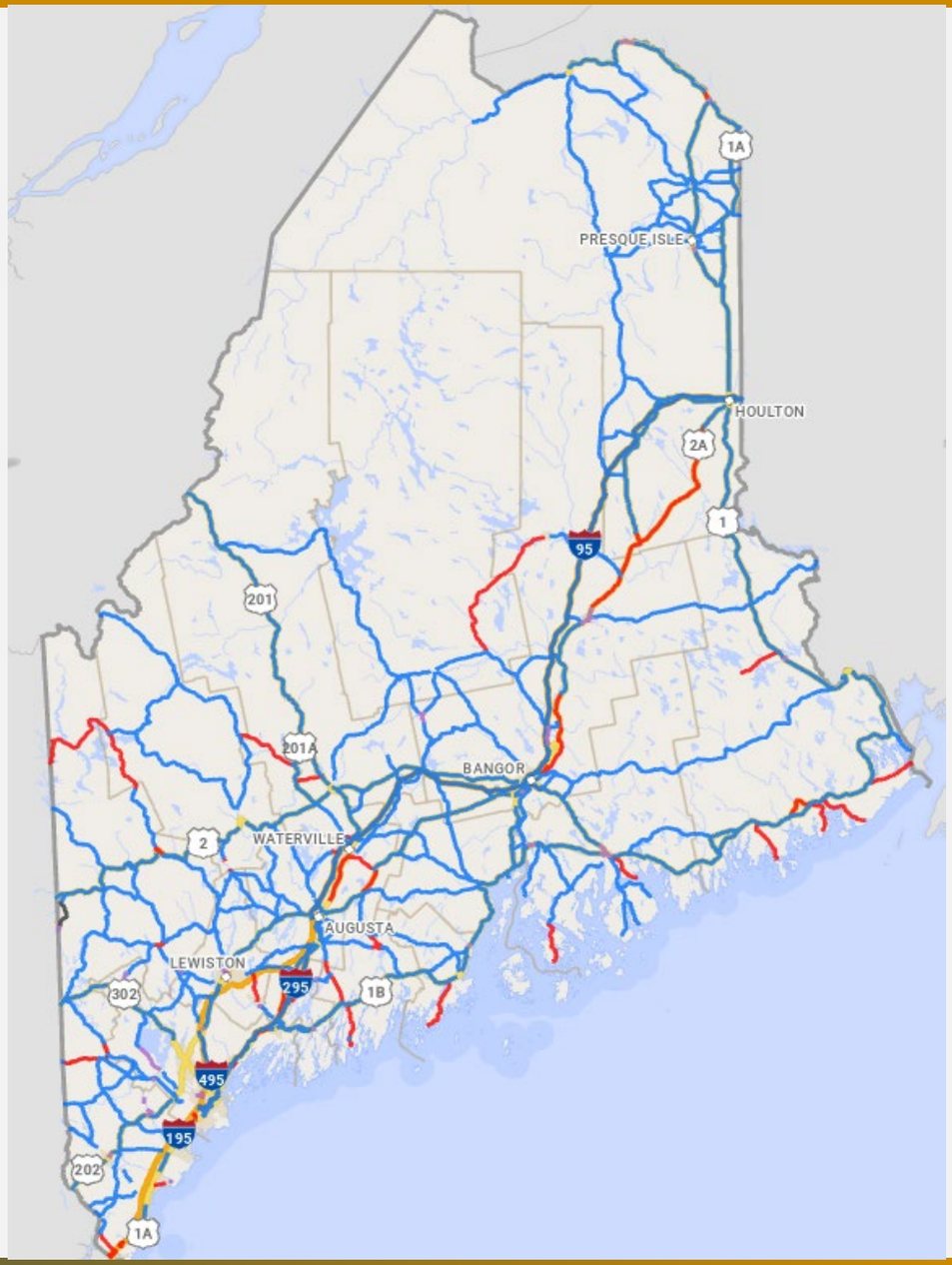
Cindy Dionne
Stormwater Program Manager
MaineDOT

The Why

Our Mission: To support economic opportunity and quality of life by responsibly providing our customers the safest and most reliable transportation system possible, given available resources.

MaineDOT has 5 Regions





In order to maintain Level of Service across the State

- MaineDOT uses pre-wetted salt to manage winter conditions

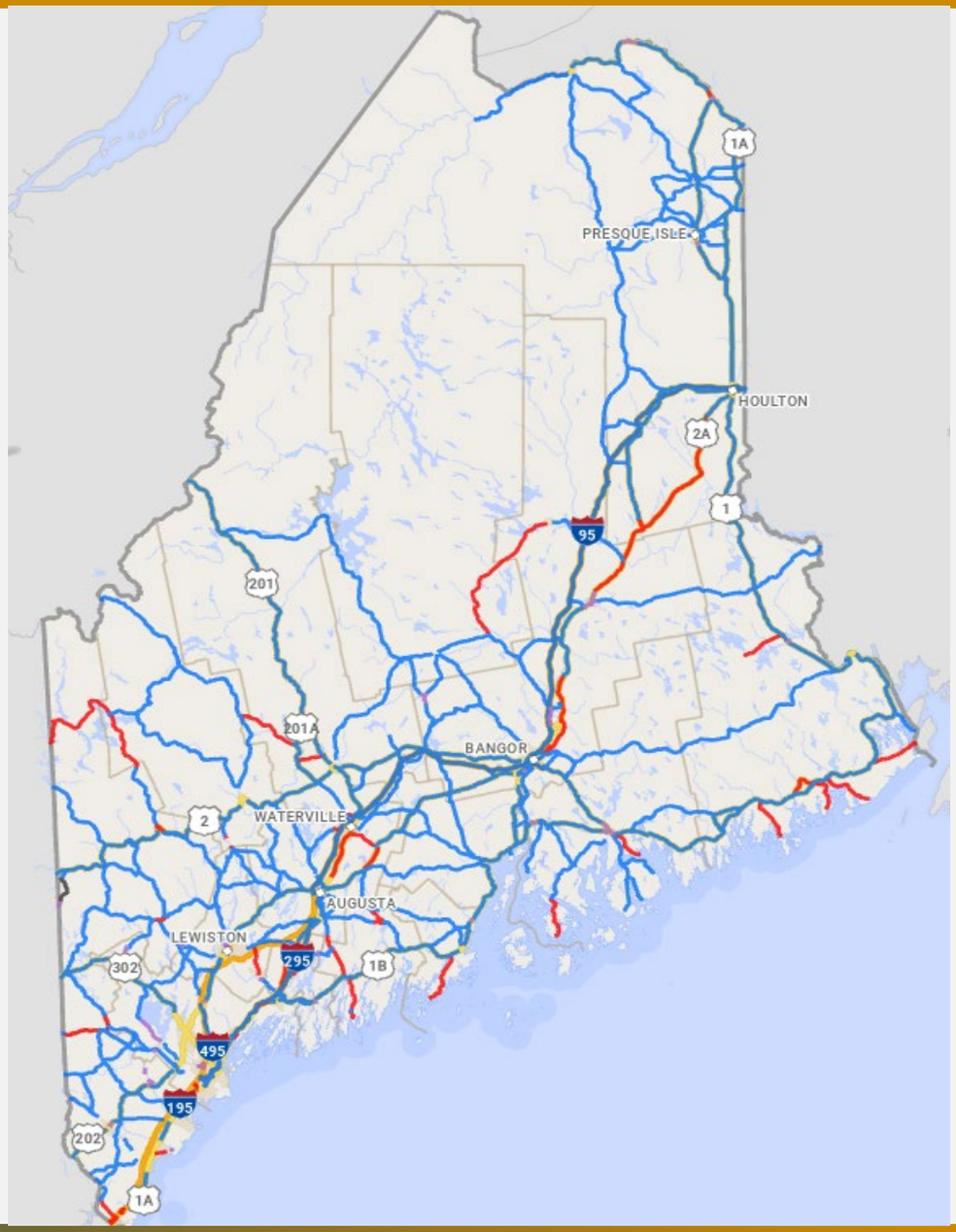
- Previously MaineDOT used sand/salt which resulted in safety issues in the winter when sand accumulated on the roadway. Also, it resulted in sediment accumulating in waterbodies where it had runoff from roads/roadsides before it could be removed during spring/summer cleanup.

- Now that salt has been used in winter climates across the country for many years, environmental impacts are being documented, so we are looking for ways to reduce salt.

Salt Reduction…In the Cab

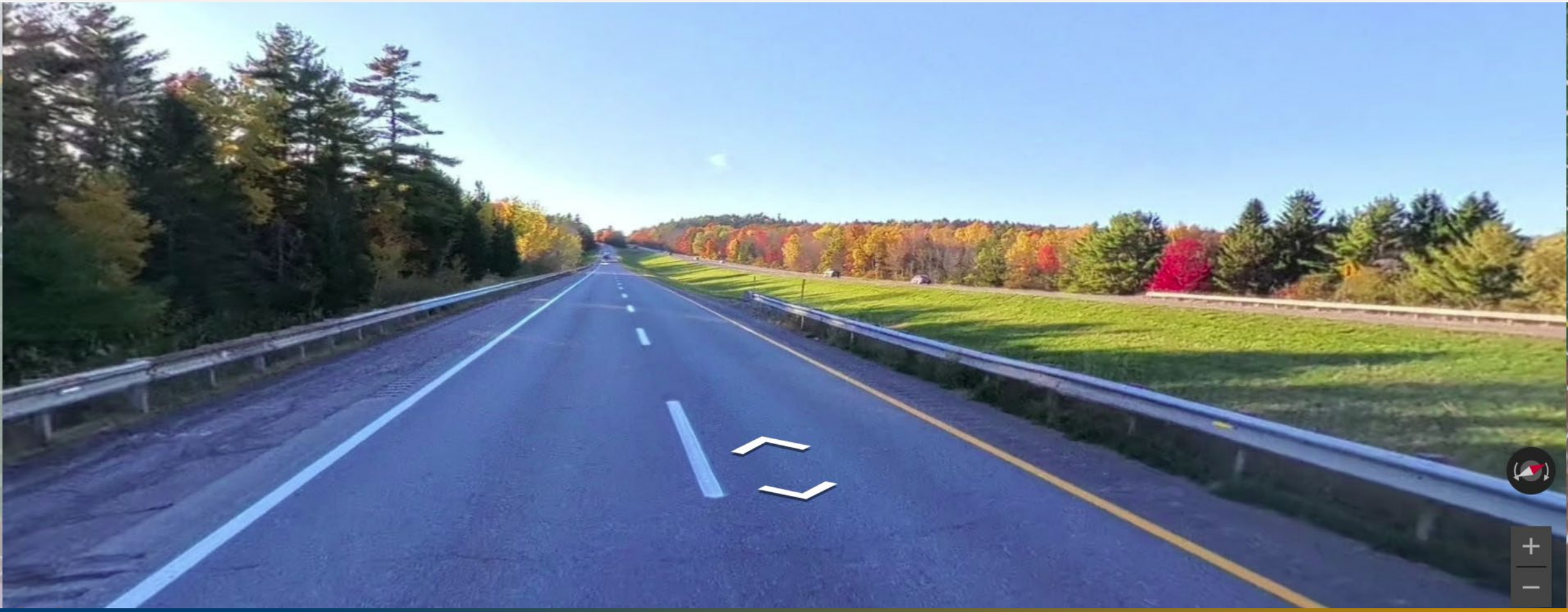
AI Salt Pilot

In an effort to understand how we can best maintain our Level of Service while reducing salt use, MaineDOT contracted with Swedish firm Klimator for a pilot project in Region 4 (Bangor area) in the winter of 2025-2026.



They have implemented a salt reduction program resulting in a 30% reduction of salt AI-informed forecasting for road segments. This provides detailed salt treatment recommendations.

Etna I-95 NB looking south



How?

- The Klimator AHEAD system along with RWIS units gather current road conditions.
- The software integrates this information with climate/weather forecasts to predict road conditions for specific road segments.
- The Klimator Road Status Information (RSI) dashboard presents road segment conditions and allows crew to view the forecast, segment, application rates at the garage.

- Provides dynamic application rate recommendations in the cab.
- Not without challenges and a learning curve…

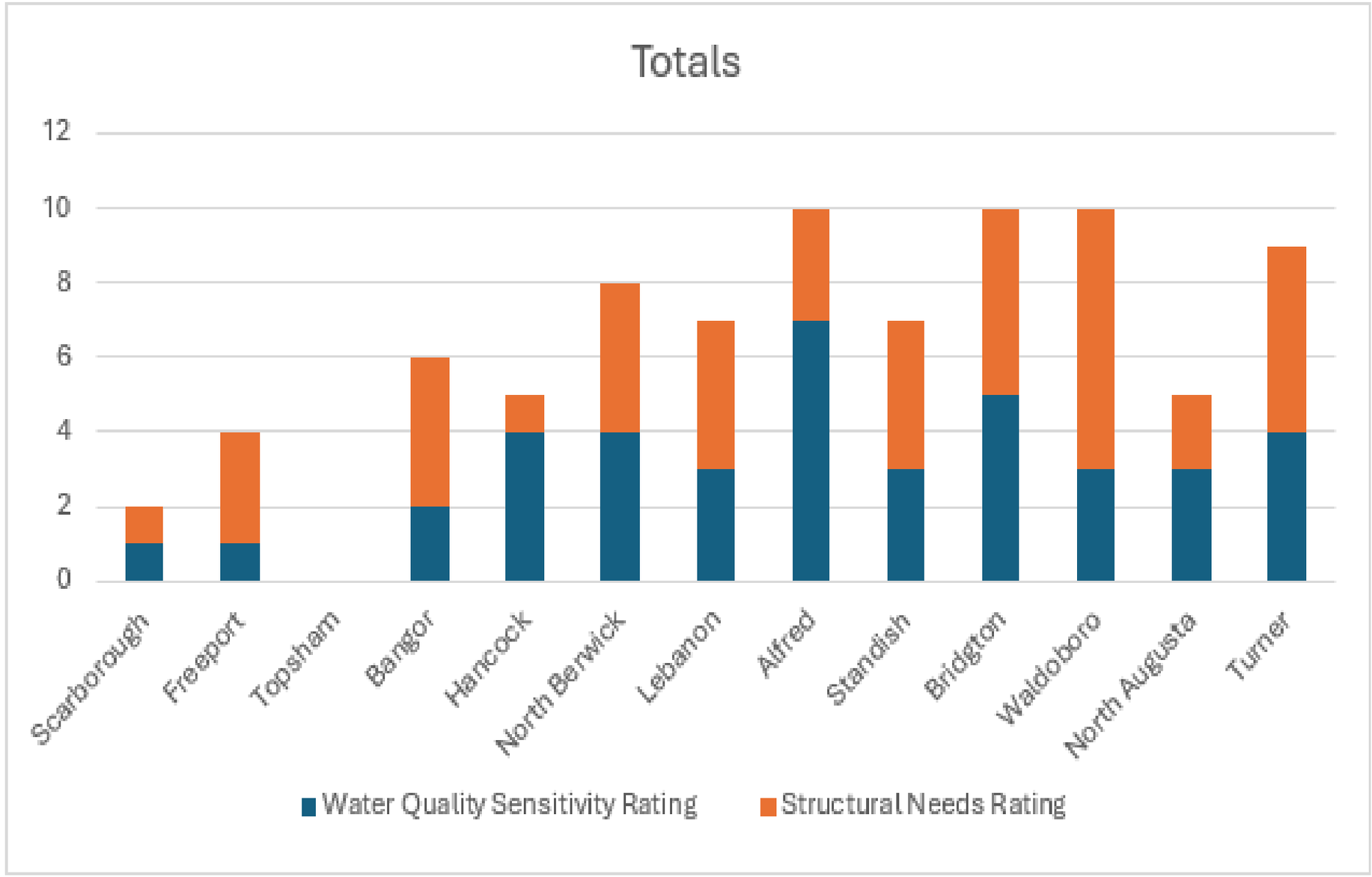
Salt Reduction…At the Lot

Salt Source Inspection Report

Inspecting DOT Salt Storage facilities for source control management. Inspections checked:

- Reflection/Visibility
- Secondary containment for tanks/piles
- Physical Barricades to tanks/piles
- Surrounding pavement condition
- Proximity to catch basins/resource
- Valve protection/condition

Scored each Lot based on “need” paired with environmental indicators such as proximity to public drinking water supply, population of the supply, and proximity to Urban Impaired Streams, Lake Most at Risk Watersheds



Salt Reduction…At HQ

Salt Additive Experiment – Crushed seashells

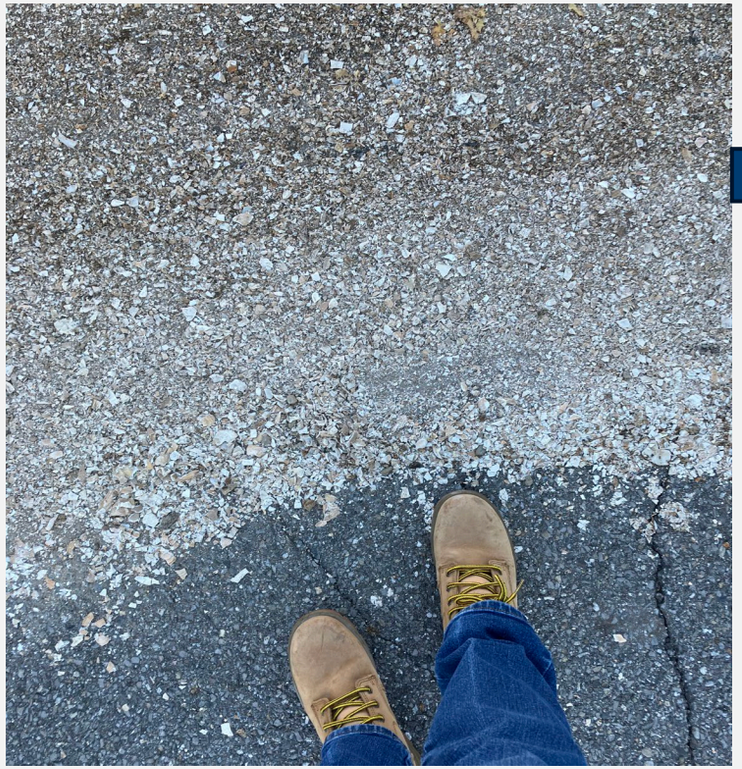
50/50 mix seashell and Zep Antarctica, apply as if 100% salt

-Immediate reduction of salt applied;

-Satisfies the visual cue of the applicator and the public;

-Continues to provide traction and grit; and

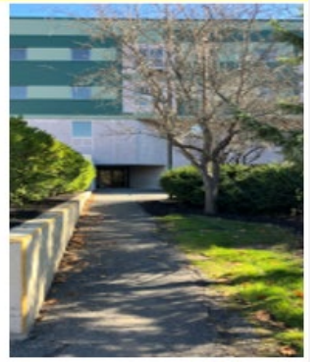
-When discharged in a catch basin or to the ground, the shells will slowly degrade and provide pH buffering capacity against acidifying conditions in receiving waters/soils since they are made of calcium carbonate.



DID YOU JUST USE THIS WALKWAY?

DOT IS TESTING AN EXPERIMENTAL SALT PRODUCT HERE.

YOUR FEEDBACK IS IMPORTANT. PLEASE TAKE THIS QUICK 3 QUESTION SURVEY.



Questions?
Email MaineDOT's
Stormwater Manager:
Cindy Dionne
cindy.l.dionne@maine.gov

Experiment ended due to Housekeeping issue.

Salt Reduction…Across this State and Others

- Funded UMaine assessment of winter practices and safety (2022)
- Funding AVLs and spreader control upgrades in our trucks
- Installing additional RWIS (Road Weather Information System) units for site specific conditions
- Reporting salt usage per lane mile in 5 Urban Impaired Stream watersheds (Bangor (2)/Freeport/South Portland/Hampden)
- Proposing seashell use in stormwater BMPs, monitoring of BMPs once installed
- Participated in national Cold Weather Stormwater Management Workshop (based out of Colorado)
- Funded Smart Chloride System research project through Tom Ballesteros (UNH) (2024)
- Participating in Cold Climate Stormwater Centers of Excellence Outreach Advisory Committee (EPA-funded)
- DOT runs the Maine Local Roads Program to assist and train Municipal staff on Winter Maintenance activities

MaineDOT Snow & Ice Control

35

Maine's Average **SNOW & ICE EVENTS** each year

Maine's average annual **SNOWFALL** is **60-110 INCHES**

MaineDOT Traffic Management Center **24/7 365**

MaineDOT OPERATES **430** **SNOWPLOWS** which cost an average of **$275K** each

MaineDOT EMPLOYS roughly **850** commercially licensed **SNOWFIGHTERS**

Maintenance CREWS **50**

Maintenance LOCATIONS **100**

MaineDOT is responsible for **PLOWING** **8,800** **LANE MILES of ROADS** *(600 of which are contracted)*

For a typical winter we plan to use... **150,000** **TONS of SALT** **5,000** **TONS of SAND**

MaineDOT BUDGETED **$53M** for 2025-2026 Snow & Ice Control

MaineDOT's winter: **20** **WEEKS** November to April

CHANGEABLE MESSAGE SIGNS *advise motorists of weather conditions, speed limits, and safety tips.*

Always stay at least **4** **CAR LENGTHS BACK** from snowplows

A snowplow operator's field of vision is restricted.
You may see them, but they may not see you.

MaineDOT

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