

Status Update:

**WATER QUALITY
MONITORING &
RESEARCH (WMR)
WORKGROUP**

Salt Management Strategy
Stakeholder Advisory Committee

May 29, 2019

Scope / Focus of WMR Workgroup:

- Will provide recommendations for monitoring the effectiveness of *best management practices* (BMPs) on water quality
- Identify reporting standards for data comparability
 - Identify existing data
 - Highlight needed data
- Long-term: better understand the origin, fate, and transport of deicing salts

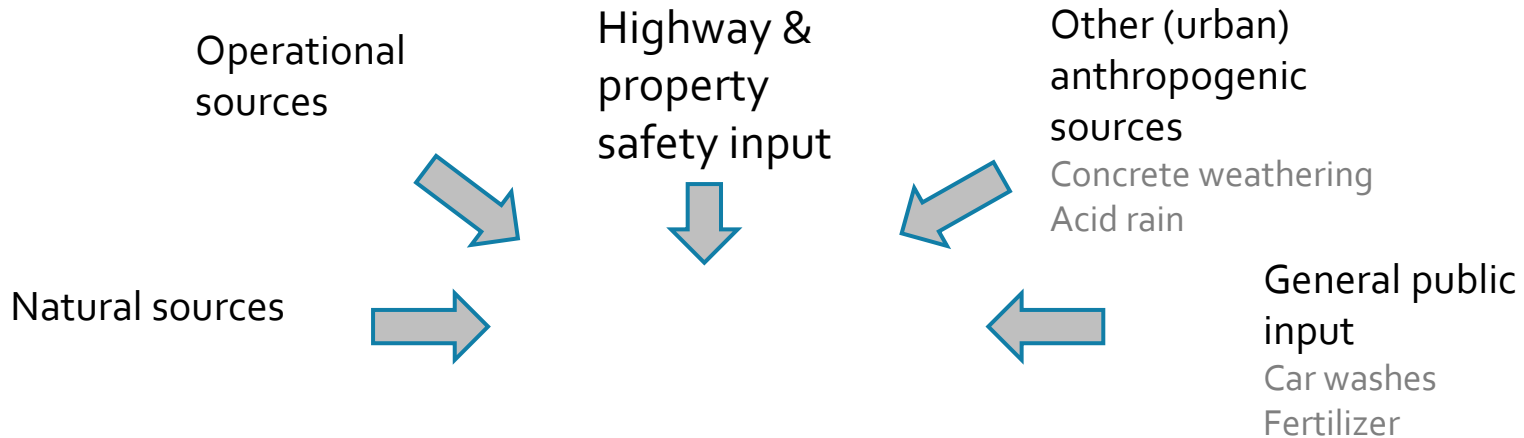


Action Items:

- Develop & refine conceptual model of salt movement through watersheds
 - Main usefulness is for informing monitoring and pilot projects

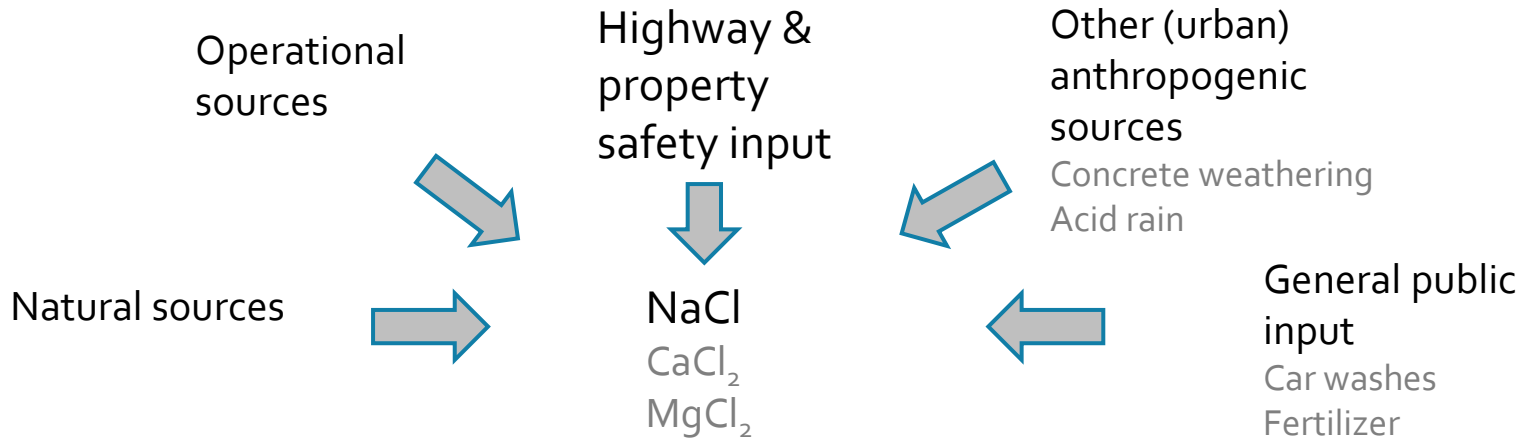
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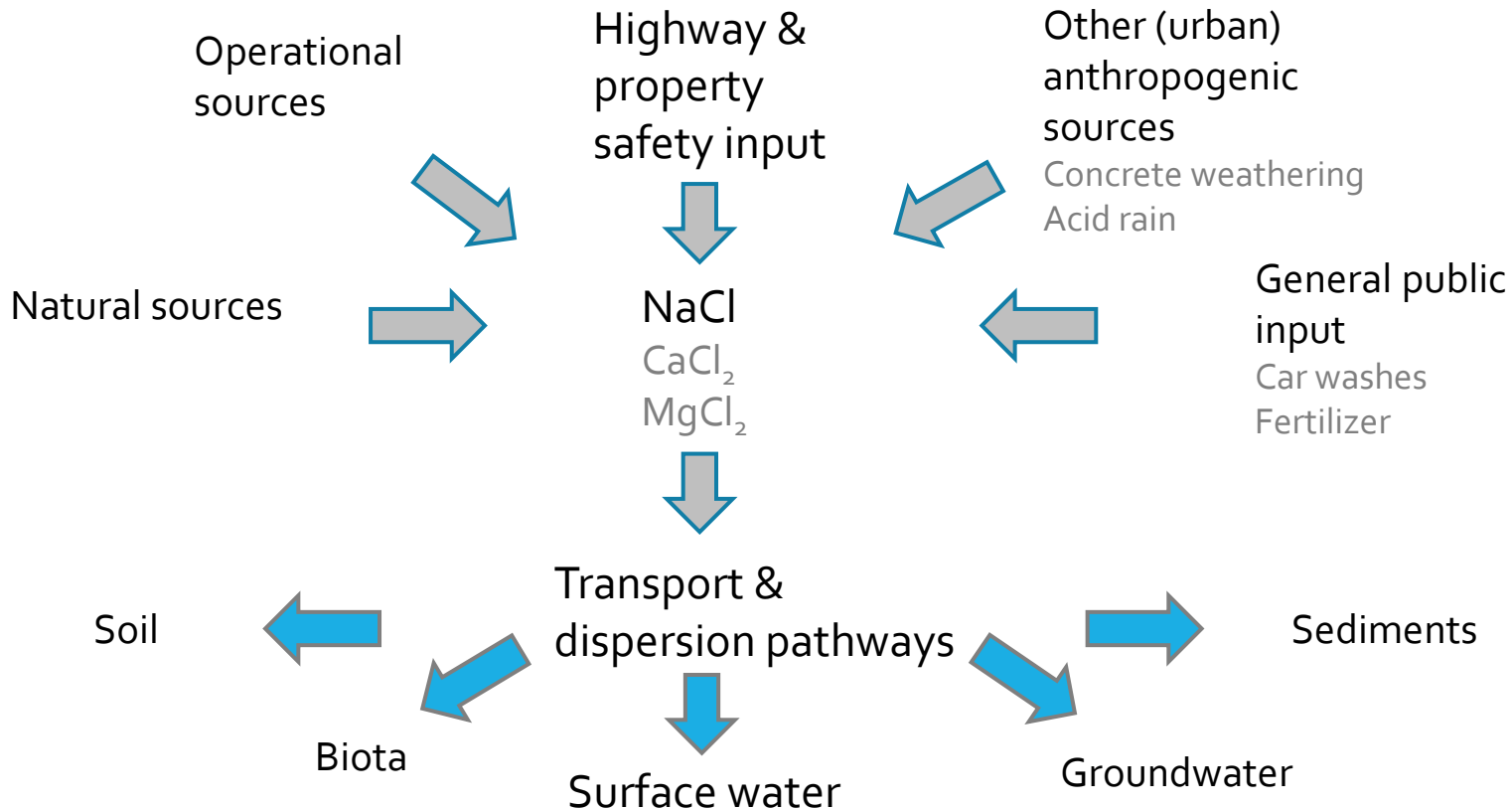
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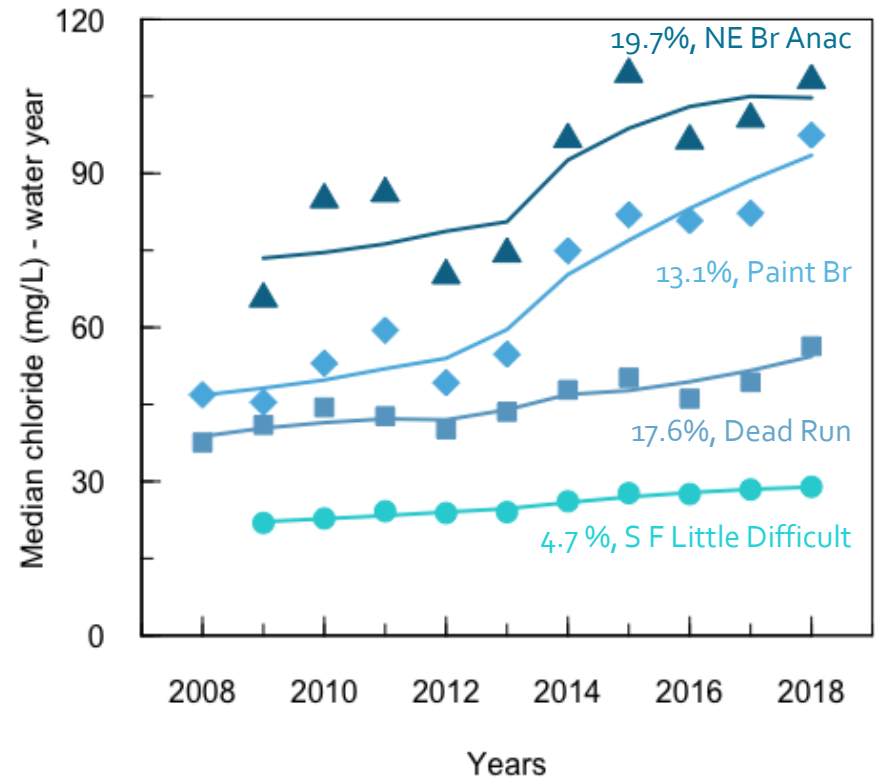
- Availability of water quality data
 - Drafted and distributed survey
 - Received 18 responses thus far
 - 9 of 18 respondents had useful data with *chloride* and *nitrate* available for 8
 - 3 respondents had some restrictions on data sharing
 - Still trying to determine the details of existing government data (federal, state, & local), and so far have received responses from 5 of the 9 local govts.

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Example from J. Moore based on USGS data for an ongoing project

Action Items (2):

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- Decide on an option(s) for a monitoring pilot project to measure effectiveness of BMPs on water quality
 - Three proposals for pilot projects were submitted
 - Proposals will be discussed at the 3rd WMR meeting in June

Action Items (2):

- Develop criteria for a monitoring program criteria
 - Identify general criteria that could be used by an organization doing monitoring
 - Identify resources and partners for organizations interested in water quality monitoring
- Decide on an option(s) for a monitoring pilot project to measure effectiveness of BMPs on water quality
 - Three proposals for pilot projects were submitted
 - Proposals will be discussed at the 3rd WMR meeting in June
- Coordinate information needs with *Salt Tracking & Reporting* workgroup
 - Salt application rates, even if rough estimates will be an important component of pilot project
 - How much and where applied?
 - If, and what, BMPs implemented?

Action Items (2a):

- Example 1 of relevant salt use data related to *Salt Tracking & Reporting*

DEPARTMENT OF PUBLIC WORKS

Public Works Overview

Highways Overview

Stormfighter

Storm Related Costs

MOST REQUESTED SERVICES

Animal Services

County Code

Find Your Zoning

Jobs

Jury Duty

Pay Parking, Red Light or Speed
Camera Tickets

Pay or Search Property Taxes

Police News

Snow Facts 2018 to 2019

Baltimore County Launches Online Snow Route Status Map

The public can now use this new tool for real time [Snow Route Status](#).

The following information is seasonal data related to winter storm operations and costs. The data will be updated annually.

- Snow and ice removal on 2,709.70 miles of roadway equals 6,774.25 lane miles. Ten percent of these roads are considered priority one roadways
- 8,823 roadways in our inventory
- 164 snow routes with each route having 50 to 60 roads
- 529 trucks and equipment with 554 personnel working from 11 locations
- Drivers follow specific routes with no special lists and no preferred customers
- Four to six hours for salting
- 18 to 24 hours for plowing
- Roads are cleared in this order: collector and arterials, then development subdivisions
- 91,600 ton salt storage capacity at 17 sites
- Salt costs: \$59.90 per ton
- Snow emergency plan:
 - All vehicles on road must have all-weather tires or chains
 - Parking is prohibited on snow emergency routes
- \$9,022,032 has been budgeted for snow removal in 2018 to 2019

Action Items (2b):

- Example 2 of relevant salt use data related to *Salt Tracking & Reporting*

The screenshot shows the Baltimore County Government website. The header includes the Baltimore County logo and navigation links: Apply, Pay, Report, Follow Up, Contact, Residents, Businesses, and Visitors. The breadcrumb trail is: Home > Departments > Public Works > Highways > Storm Data. The page title is "Storm Data". Below the title is a paragraph explaining the data: "To better understand the costs involved for the County during the winter season, we have provided a list of major storms, the dates they occurred and the **estimated** costs for each. Minor events, restocking fees and other miscellaneous costs are **not** reflected on this page. We also provide a summary list of [storm-related costs](#) by fiscal year." Below the paragraph is a table with 7 columns: Storm Number, Storm Dates, Labor (Including Contractors), Tons of Salt, Salt Cost Per Ton, Snow Accumulation (in Inches), and Total Cost. The table contains 3 rows of data. On the left side, there are two vertical menus: "DEPARTMENT OF PUBLIC WORKS" with links for Snow Facts, Storm Cost Summary, Highways Overview, and Public Works Overview; and "MOST REQUESTED SERVICES" with links for Animal Services, County Code, Find Your Zoning, Jobs, Jury Duty, and Pay Parking, Red Light or Speed.

Storm Number	Storm Dates	Labor (Including Contractors)	Tons of Salt	Salt Cost Per Ton	Snow Accumulation (in Inches)	Total Cost
1	11/15/2018 to 11/16/2018	\$132,688	5,624	\$59.90	3	\$469,564
2	1/12/2019 to 1/14/2019	\$1,747,034	15,460	\$59.90	4	\$2,673,088
3	1/17/2019 to 1/18/2019	\$282,311	4,785.75	\$59.90	1	\$568,977

Anticipated Recommendations & Products:

- A conceptual model of salt origin, fate, and transport
- Monitoring and research guidelines for public, private, and volunteer organizations
- Perhaps a “grab-and-go” resource summarizing existing and historical ion monitoring data with contact information to follow up with

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- A pilot monitoring project lasting 2–5 years to assess the effectiveness of BMP implementation
 - Each of 3 proposals for pilot included collection of high-frequency specific conductance data
- Areas to add new high-frequency monitoring for specific conductance
- Long-term trends in regional specific conductance
- Coordination with *Salt Tracking & Reporting* workgroup