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Managing Chloride in Maryland's Waters

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Metropolitan Washington Council of
Governments

28 Stream and Rivers Impaired by Chlorides



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Source: MDE 2016 303(d) list

Winter Salt Sources

Table 7: Estimated salt usage in the Cabin John Creek watershed during modeling periods

Owner/Manager	Winter 2014 - 2015			Winter 2015 - 2016			Average Fractional Contribution
	Tons road salt	Tons Cl	Tons Cl per acre	Tons road salt	Tons Cl	Tons Cl per acre	
City of Rockville	841	510	3.3	608	369	2.4	7%
Montgomery County	4,071	2,469	3.4	2,944	1,786	2.5	35%
SHA	2,955	1,793	5.3	1,539	934	2.8	22%
Privately-owned roads and parking lots	4,259	2,584	3.3	3,080	1,869	2.4	36%
Total	12,126	7,356	3.7	8,172	4,957	2.5	100%

Grey shading indicates estimated winter salt tonnage is not based on jurisdictional salt application data from that winter season

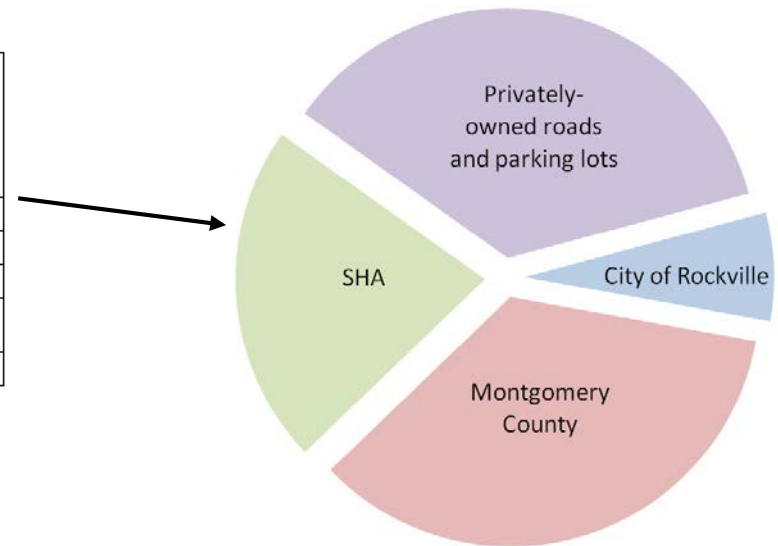


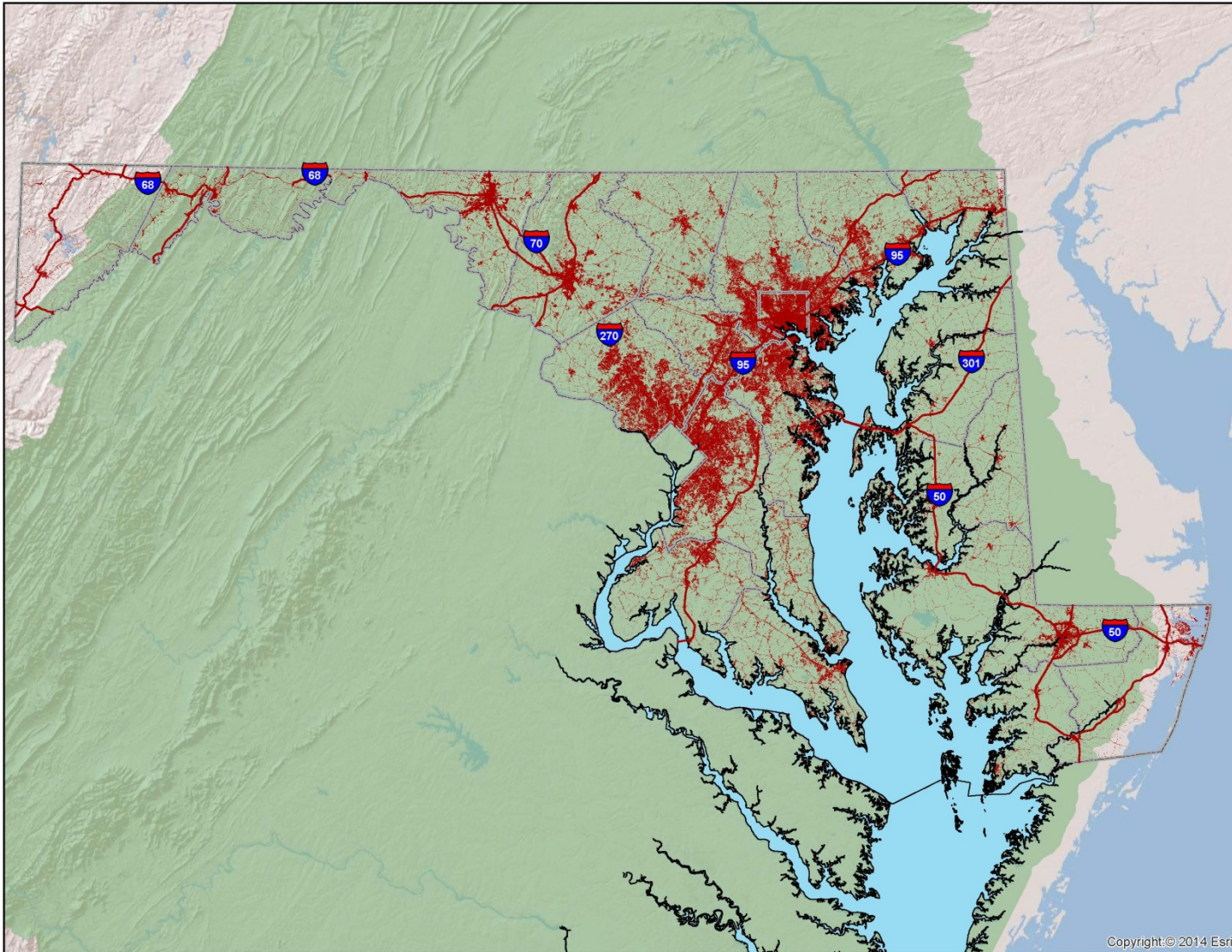
Table 6: Acreage of roads and parking lots in the Cabin John Creek watershed, by owner

Owner/Manager	Acres of road and parking lot managed	Percent
City of Rockville	154	8%
Montgomery County	726	36%
State Highway Administration	336	17%
Privately-owned roads and parking lots	780	39%
Total	1,996	100%



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Logical Linkages



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Maryland's Approach

- 2010 General Assembly passed legislation for a MD Salt Management Plan (SHA)
 - Plan updated in 2019
- MDE's role
 - Expand requirements in MDE 2018 Next Generation NPDES Permit
 - Use on-going monitoring to evaluate Progress
 - Creation of voluntary applicator certification

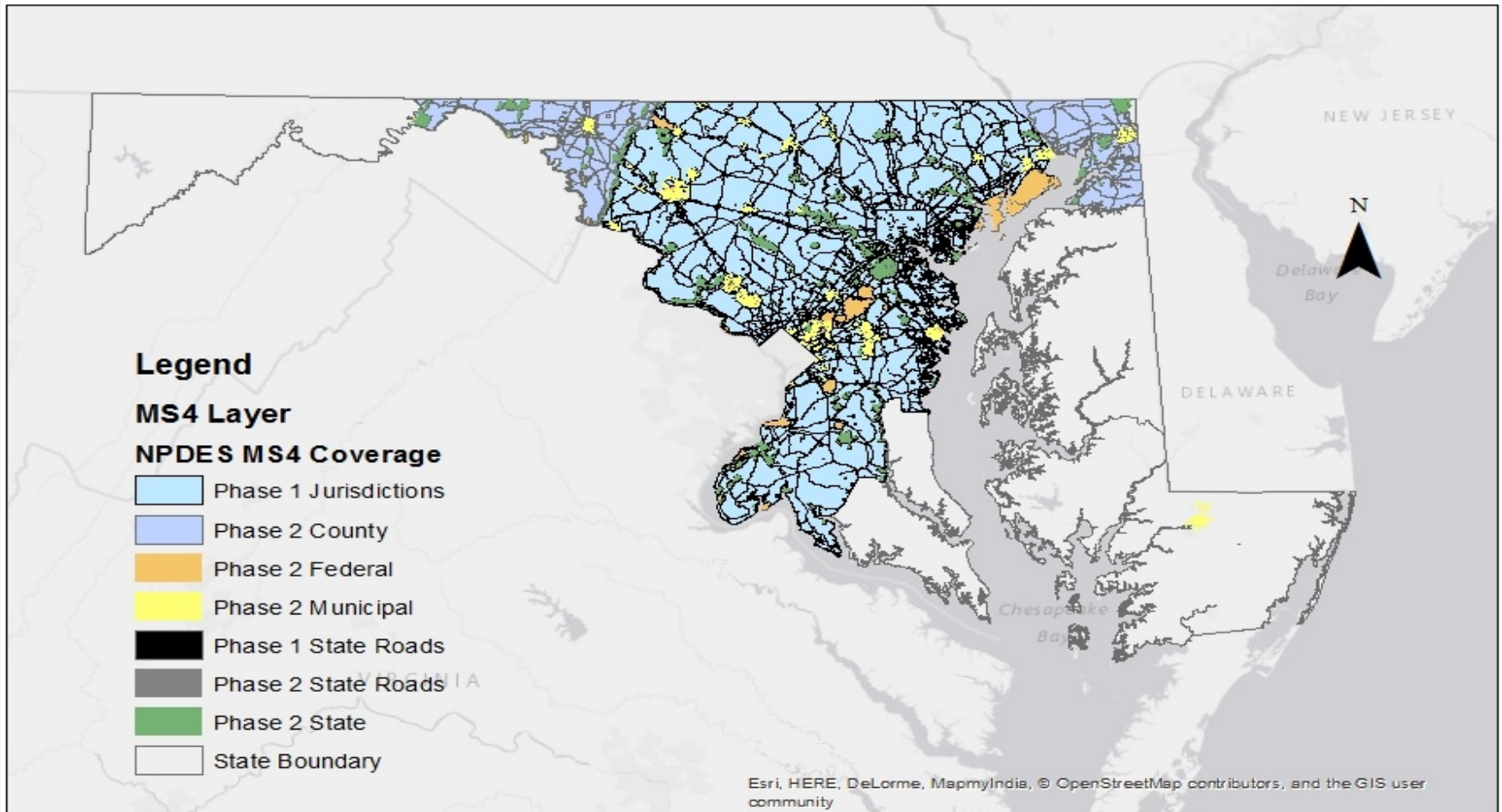
Education and Outreach



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Maryland's MS4 Coverage

- There are 11 Phase 1 MS4 NPDES permits in Maryland that cover the majority of the urbanized area in the State



Proposed Phase I MS4 Permit

New Permits will build on lessons learned from previous permit requirements for salt management:

- County Salt Management Plan (3rd year of permit)
- Equipment Replacement Schedule
- Annual Salt Management Training - staff and contractors; property managers and homeowner training
- Tracking & Reporting (4th year)
 - Amount and location of deicing materials applied per snowfall event
 - Total amount per event; annual total per lane mile per inch of snowfall



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Looking beyond the permits

- Common goals for surface Water Protection and Restoration and drinking water source water protection
- We can use NPDES Permitting and watershed planning to drive reductions
- Expand partnerships to include public and private de-icing applicators:
 - Healthy streams and reservoirs
 - Less costly drinking water treatment
 - Less impact to infrastructure
 - Cost saving from refined application methods



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Additional Strategies



Obtain contractual support to further develop a voluntary certification program

Develop outreach to help promote addressing overapplication of salt in different communities

Work with Universities within Maryland to better understand salt impacts



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Training

- Working to provide training and State certification
 - Work with outside consultant to adopt Minnesota's off-the-shelf training for facilities maintenance, commercial applicators, and property managers
 - Applicators & Property Managers
- Create addition non-certification programs for roads crews (SHA Salt College)



Smart Salting training

In Level 1 training, individual road salt applicators learn best practices to reduce their salt use while maintaining safety. Organizations can earn Level 2 certification by assessing their salt use and taking steps to minimize it. The MPCA is now offering a new Smart Salting certification for Property Managers. The goal is to help property managers save money and protect water resources.



Outreach

- Focus on impacts of over-applying Road Salts
 - Public Health (Drinking Water)
 - Infrastructure (Public & Private)
 - Environmental (Species Loss)
- Engage with Emergency Management Services
- Continue to work with WSSC & the Baltimore Reservoirs Group
- Support the development of educational programs in schools



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Research

- What are the impacts on Stormwater BMPs
 - Flushing effect when saline waters enter the BMP due to ionic bond exchange
 - Interaction with organic matter can lead to concretion
 - timing and extent of pollution from BMP leaching
- Impacts on our processed drinking water
- Working with University system
- LONG TERM – What are the economic impacts (Pros/Cons)



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