

NORTHERN VIRGINIA SNOW BRIEFING

Metropolitan Washington Council of Governments

Lauren Mollerup, P.E., CCM, District Maintenance Engineer

November 10, 2021



Northern Virginia District Background

- **Fairfax, Loudoun, Prince William, and Arlington***
** Arlington maintains own network (secondary roads)*
- **Population:** 2.2 million
- **Commuter lots:** 24
- **Bridges/large culverts:** 2,147
- **Traffic signals:** 1,520
- **VDOT employees:** 900



Total lanes miles: 14,142

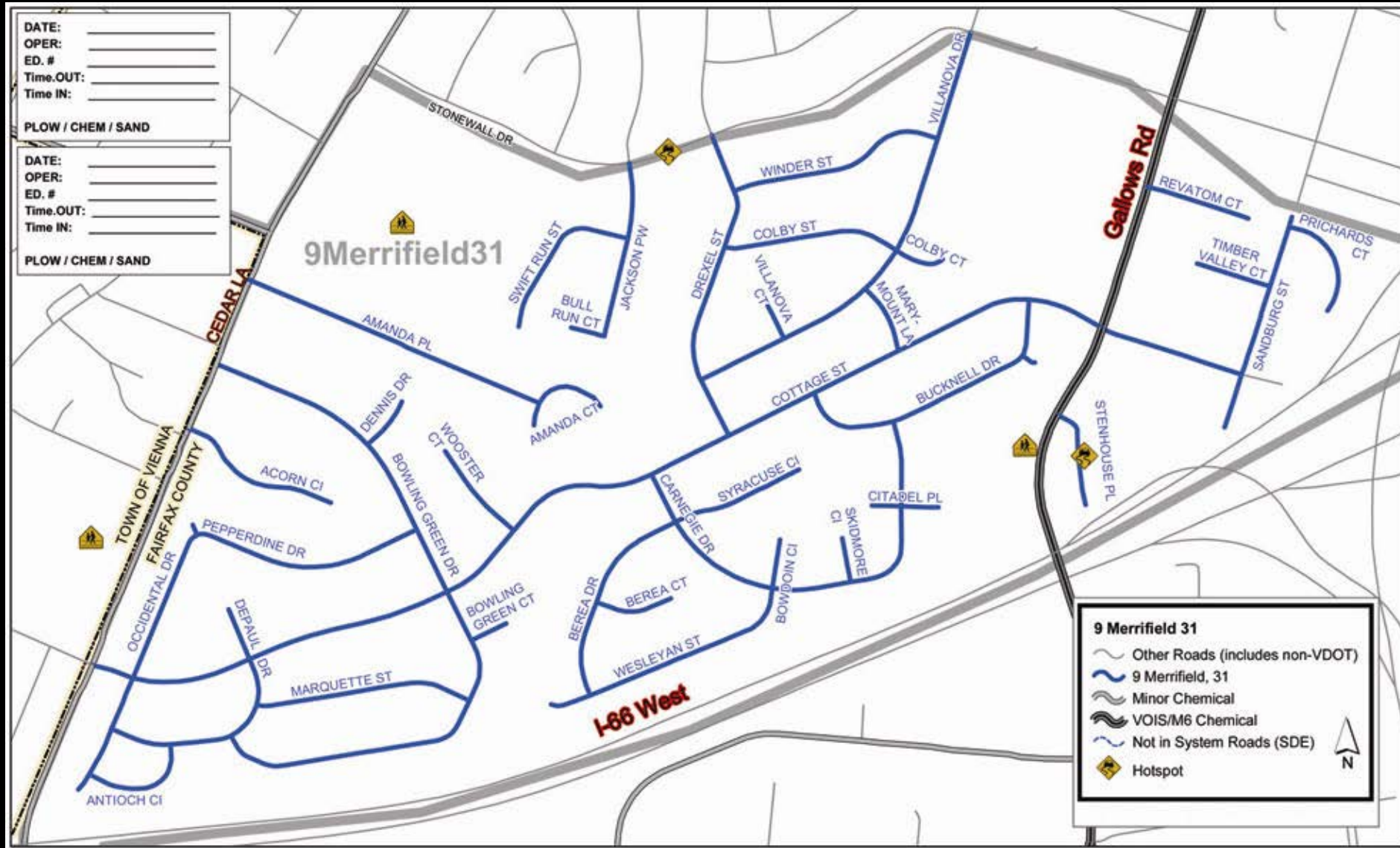
- **Interstate: 803**
- **Primary: 1,693**
- **Secondary: 11,571**
- **Gravel: 573**
- **Frontage: 75**
- **Total subdivision streets: 17,159**

18 maintenance headquarters

- **Arlington: 1**
- **Fairfax: 9**
- **Loudoun: 4**
- **Prince William: 4**



The district is divided into **647 snow maps** to include interstates, primary, and secondary roads.



2021-2022 Snow Removal



Materials at start of season:

- Salt: 120,000 tons
- Sand: 25,000 tons
- Brine: 250,000 gallons

Pieces of equipment:

- 3,500 (*mostly contracted*)

Planning, Preparations, & Training





- **Forecast reviews** with National Weather Service ([weather.gov/washington/winter](https://www.weather.gov/washington/winter)) and Iteris
- **Mobilization plan** determined, including if incident command will be activated
- **Message is shared with residencies** including counties and interstates

VDOT MOBILIZATION PLAN VDOT MOBILIZATION PLAN
Start Time: TBD – End Time: TBD
EVENT #16; AU1 # NVSNW1916

Weather Summary:
 The DME has declared an local emergency at 0:00 M on //19.

Fairfax

Day Shift Residency Manager
Jerry Himes 571-969-0538

Night Shift Residency Manager
Paul Matticks - 703-975-5027

Area	Day Shift Mgr.	Mobile	Night Shift Mgr.	Mobile	Snow Room#
102 Merrifield	Melvin Riser	(571)749-8058	Craig Detwiller	(703)638-8795	703-259-2317
103 Chantilly	Justin Springhetti	(571)749-8870	Keith Wester	(703)268-0121	703-259-2317
104 Clifton	Russell Dodson	(571)749-8072	David Klink	(571)749-8045	703-259-2317
105 Van Dorn	Harry Lagree	(703) 774-2803	Howard Stewart	(571) 238-7091	703-259-2317
106 Lorton	Howard Akers	(571)749-8061	Shane White	(703)656-1520	703-259-2317

NOVA 4:00am Status Report 3/8/19

Area	Air Temps	Surface Temps	Precipitation/Accumulation	Current Weather Conditions (Clear/Fair/Poor/Moderate)	# of VDOT Trucks	# of M7B Trucks	Service Contract Trucks	# M7B Loaders/Heavy Equipment	Monitors	SWAS Updated?	TOC/VA-511 Road Closures	Issues/Comments
Interstate/Arlington	34-39	34-38	0	Clear	4	2	43	4	1	yes	None	None reported
Fairfax	34	35	0	Cloudy / Rain	31	444	0	8	4	Yes	N/A	N/A
Loudoun	32-35	33-35	0.0 in east 2-inches Hillsboro	Cloudy	14	57	70	2	10	SWAS Updated at 2:00am	None At this time	Icing out in western areas
Prince William	33-34	33-37	wet / 0	Cloudy	19	13	0	1	0	yes	0	No issues and on standby

Gainesville AHQ	Kevin Kraus	571 220-5272	Billy Marlow	571 722-4979	571 261-3890
Lake Ridge	Mike Collier	571 749-8056	Bill Cornell	571 571 220-5282	703 590-5131
Manassas AHQ	Glenn Gill	571-221-6074	Darren Dodson	571-220-5278	703 366-2033

Day Shift Residency Manager Jimmy Coleman (571) 259-5813

Night Shift Residency Manager (7 PM - 7 AM)

Area	Day Shift Mgr.	Mobile	Night Shift Mgr.	Mobile	Snow Room#
401 Arlington	Henry Williams	571 369-8798	Russell Graham	571-748-8823	703-486-3393
402 I-66	John Carter	571-722-5342	Ron Hickman	571-437-2564	703-486-3393
403 I-95	Roy Campbell	571-384-0384	Bill Ludke	571-749-7871	703-486-3393
404 - Beltway (495)	Robert Red	571 238-0347	Stanley Newman	571-220-5315	703-486-3393

2021-2022 NOVA Mobilization Levels

Weather Forecast	Mob. Level	Response Plan	SALT Application Rate*	Applied Lane Miles		Equipment Required (based on VDOT single axle truck carrying)				Staffing	Reports
				Area	Miles	Area	Liquid	Salt	Total		
Precipitation: 20% or Greater Accumulation: Ice/Snow Possible Ambient or Pavement Temp: 30-36	Anti Ice	Treatment of Critical Structures & Locations	Application Liquid: 50 gal/ln mi Application Salt: 325 lbs/ln mi	Area	Miles	Area	Liquid	Salt	Total	State and Hired Anti-Ice Units	
				FFX	1520	FFX	50		50		
				PW	250	PW	13	7	20		
				LDN	700	LDN	30		30		
				INT	400	INT	10	14	24		
DISTRICT	2870	DISTRICT	103	21	124						
Precipitation: 20%-49% or Greater Accumulation: Snow Possible Ambient or Pavement Temp: 30-36	Skeleton Crews	Spot Treatment of Critical Structures & Locations Respond to Icy Conditions as Needed	325 lbs/ln mi	Area	Miles	Area	Liquid	Salt	Total	Maintenance Crews	SWAS updates, HETTS data input
				FFX	1520	FFX		121	121		
				PW	570	PW		14	27		
				LDN	700	LDN		20	20		
				INT	400	INT		24	24		
DISTRICT	3190	DISTRICT		179	192						
Precipitation: 20%-49% or Greater Accumulation: Snow Possible Ambient or Pavement Temp: 30-36	1	Springfield Interchange, Spot Treatment of Other Critical Structures & Locations	325 lbs/ln mi	Area	Miles	Area	Liquid	Salt	Total	Maintenance Crews, Contractors, Limited support staff	SWAS Updates and HETTS time entries within two hours of check-in
				FFX	5857	FFX		492	492		
				PW	570	PW		19	32		
				LDN	700	LDN		89	89		
				INT	900	INT		47	47		
DISTRICT	8027	DISTRICT		647	647						
Precipitation: 50%-100% Chance Accumulation: Up to 1 inch of Snow Ambient or Pavement Temp: 25-29	2	Light Salting Operation; Limited Work in Subdivisions - Includes Cold Spot Treatment in Subdivisions & Gravel Roads	400 lbs/ln mi	Area	Miles	Area	Liquid	Salt	Total	District Monitors, District Support Team	SWAS Updates, Idle Time Alerts, Lost Power Alerts
				FFX	5857	FFX		992	992		
				PW	1223	PW		127	140		
				LDN	1811	LDN		136	136		
				INT	900	INT		94	94		
DISTRICT	9791	DISTRICT		1349	1349						
Precipitation: 50%-100% Accumulation: Up to 2 inches of Snow or 1/10 inch of Ice Ambient or Pavement Temp: 20-24	3	Salting Operation; Potential for Plowing; Includes Cold Spot Treatment in Subdivisions & Gravel Roads	475 lbs/ln mi	Area	Miles	Area	Liquid	Salt	Total	Mechanics on Site - Call Center Open, Snow Rooms Open, VA Traffic	SWAS reports@8am,2pm,8pm,2am, Idle Time Alerts, Lost Power Alerts, Geo Fence Violation Alert, Exception Report
				FFX	8024	FFX		1938	1938		
				PW	3680	PW		339	352		
				LDN	3137	LDN		371	371		
				INT	1894	INT		130	130		
DISTRICT	16735	DISTRICT		2778	2791						
Precipitation: 50%-100% Accumulation: Up to 6 inches of Snow or 1/4 inch of Ice Ambient or Pavement Temp: 15-19	4	Salting/Plow Operation; Includes Plowing Subdivisions & Sanding as Necessary	550 lbs/ln mi	Area	Miles	Area	Liquid	Salt	Total	All of the Above	SWAS reports@8am,2pm,8pm,2am, Idle Time Alerts, Lost Power Alerts, Geo Fence Violation Alert, Exception Report
				FFX	8024	FFX		2220	2220		
				PW	3680	PW		520	525		
				LDN	3137	LDN		511	511		
				INT	1894	INT		241	241		
DISTRICT	16735	DISTRICT		3492	3492						
Precipitation: 50%-100% Accumulation: Up to 6 inches of Snow or 1/4 inch of Ice Ambient or Pavement Temp: 10-14	5	Salting/Heavy Plow Operation; Includes Plowing Subdivisions & Sanding as Necessary ALL RESOURCES ARE DEPLOYED	625 lbs/mi	Area	Miles	Area	Liquid	Salt	Total	All of the Above, Heavy Equipment and Possibly HERT Teams	SWAS reports@8am,2pm,8pm,2am, Idle Time Alerts, Lost Power Alerts, Geo Fence Violation Alert, Exception Report
				FFX	8024	FFX		2341	2341		
				PW	3680	PW		646	659		
				LDN	3137	LDN		580	580		
				INT	1894	INT		422	422		
DISTRICT	16735	DISTRICT		3989	3989						

- **Anti-icing treatment most effective during first hour** of weather event
- **Reduces bonding** to asphalt and concrete surfaces
- **Piloting brine treatments during storms** when conditions are favorable

Depending upon the storm and the window of time, we may perform a **partial or full treatment of all bridges, overpasses, elevated surfaces, primary and/or secondary roads.**





Crews work interstates, major roads and main subdivision roads in priority order.

Passable lane goals:

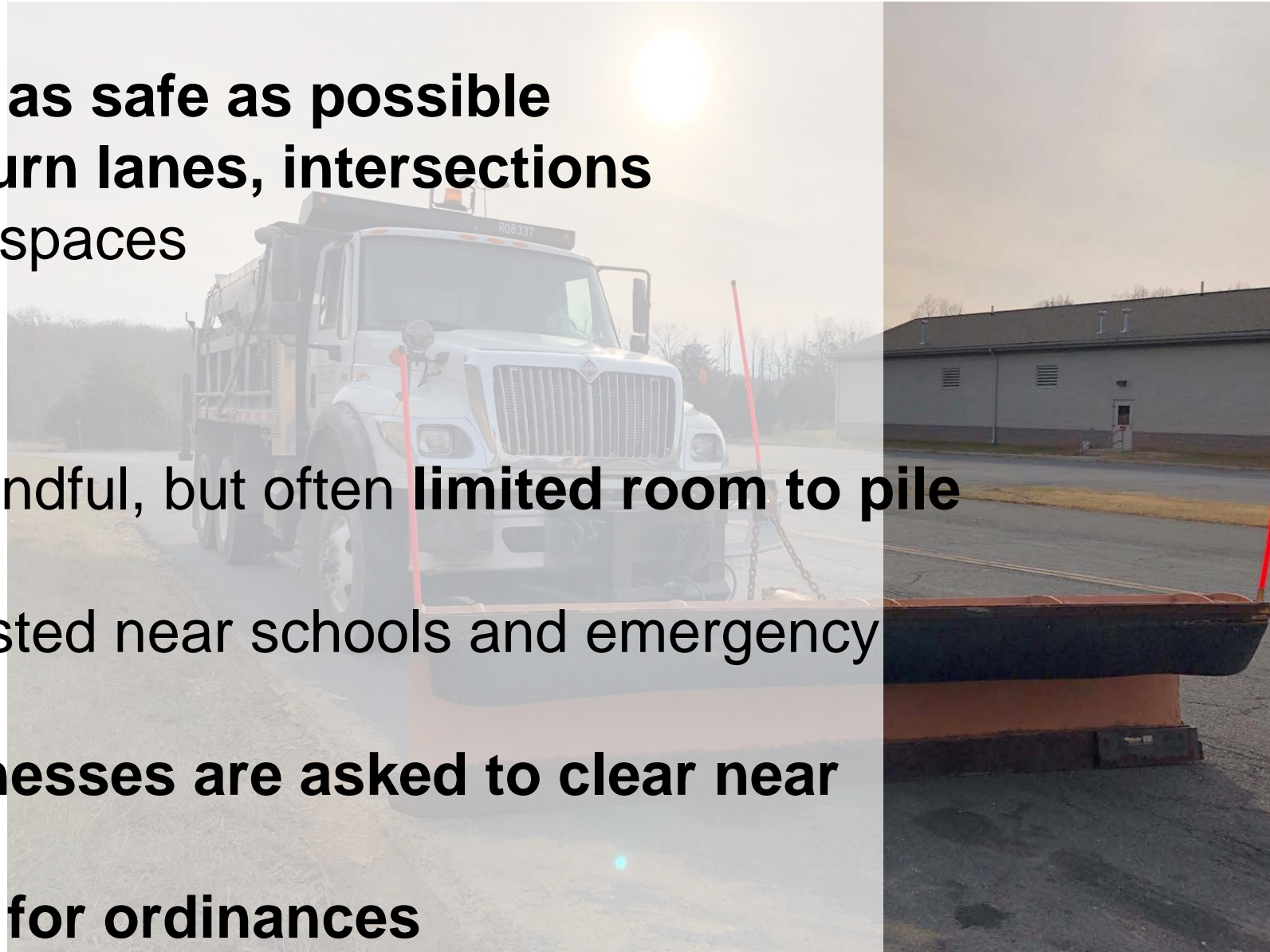
- **2-4" of snow: 24 hours**
- **4-6" of snow: 48 hours**
- **6"+ of snow: 72+ hours**

Additional priorities:

- Getting the roadways **as safe as possible**
- **Shoulders, ramps, turn lanes, intersections**
- **12,000** park-and-ride spaces

Sidewalks and Trails

- Crews asked to be mindful, but often **limited room to pile snow from roads**
- Special care is requested near schools and emergency facilities
- **Residents and businesses are asked to clear near their property**
- Check with **localities for ordinances**



VDEQ Salt Management Strategy (SaMS)

- Since January 2018, VDOT has participated in the Salt Management Strategy (SaMS) development coordinated by the Virginia Department of Environmental Quality (VDEQ)
- Stakeholders working to balance public safety and impacts of salt use
- Aims to raise awareness of salt use; share how individuals, businesses, and organizations can participate; and provide voluntary guidance for potential monitoring and research
- SaMS Tool kit finalized March 2021- Details:
<https://www.novaregion.org/1399/Northern-Virginia-Salt-Management-Strate>



Sustainable Winter Management (SWiM)

This winter, VDOT will continue work with WIT Advisors on a targeted study to evaluate current salt use, management and potential opportunities and efficiencies in northern Virginia's winter program.

Consistent with the VDEQ SaMS study, the focus area will be the Accotink Watershed (I-95 and Route 1 corridor) as well as select areas in Loudoun and Prince William counties.

The study will include assessments of:

- Calibration and training
- Staff interviews to understand current practices
- Application rates
- Optimal plow times, application times/types and temperature considerations
- Considerations regarding anti-icing/brining; less granular application
- Current training preparations with staff and future training for VDOT and contractor personnel
- Installation of salt tracker devices on fleet vehicles
- Monitoring and recording specific data on each storm
- Variations between interstate and primary routes

Partnership with Waze

How it Started

VDOT's Office of Strategic Innovation (OSI) initiated an effort to look into a crowdsourced approach for monitoring & reporting snow clearance status and apply data analytics approach to learn the efficacy. Waze representative learned of and agreed with the idea.

Evaluation

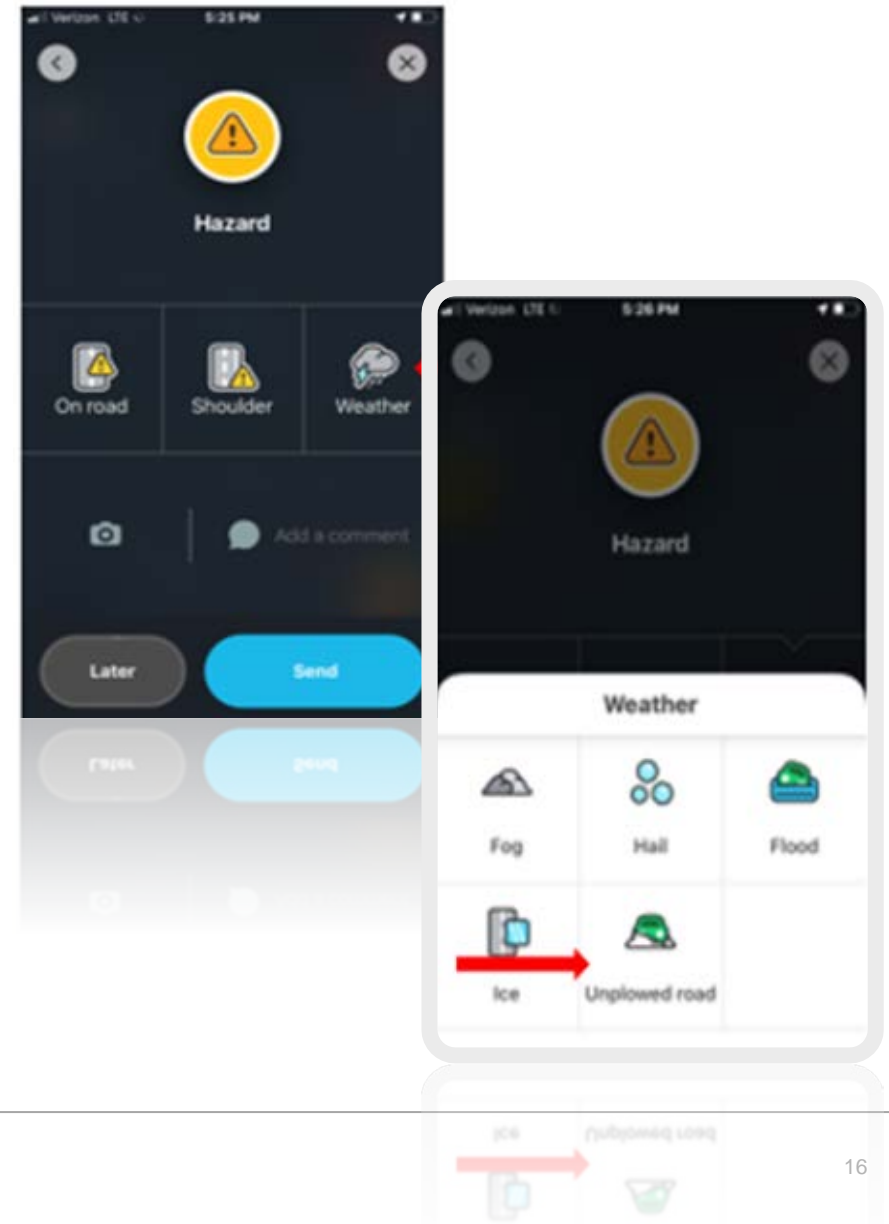
OSI, partnering with the Virginia Transportation Research Council (VTRC) and Northern Virginia District, is working to evaluate the use of crowdsourced data during snow events, specifically using features available through Waze and assessing how best the information can be incorporated into snow operations.

Pilot

VDOT plans to work with several targeted neighborhoods in Northern Virginia this winter on a hyperlocal pilot to monitor and document observations on the use of Waze for reporting neighborhood road clearance conditions.

Waze Application Recap: 2019 - 2020

- **Waze added Unplowed Roads to its app**
- **Preliminary evaluation**
 - VTRC evaluated the volume, scope, and quality of Waze's crowdsourced unplowed roads data during the 2020 winter season:
 - Despite a very mild winter during VTRC's evaluation, the volume and quality of Waze data was sufficient to warrant further exploration in the 2020 - 2021 winter season.
- **Decision**
 - Pilot local data observations for 2020 – 2021 winter



Observations: 2020-2021 Winter

Waze Usage related to Winter

- Mostly icy storms with very little or no snow accumulation – the Waze reports were mainly for icy road conditions, nothing for “unplowed roads.”
- Majority of Waze weather reports were on Interstate and primary routes – mainly for the purpose of alerting other drivers.
- More usage in Richmond and Maryland than NoVA.
- Observed a good amount of weather reports in the colder region (e.g. northeast area of US) and they were primarily on Interstate and major highways, similar to weather reports in Virginia.



Pilot for targeted messaging to residents

- Manassas AHQ cleared the snow much more quickly than expected for pilot area (Bristow Village) – left no “opportunities” for residence to report issues.
- Waze “Unplowed Roads” report is most applicable for VDOT’s use toward the end of major storms. Data could provide more insights for VDOT’s business decision making.
- Successfully sent one targeted heads-up message via NextDoor.

2021 - 2022 Plan: Repeat the Pilot

Purpose

- Explore the efficacy and value of using crowdsourced data during snow events to improve the efficiency and safety of VDOT snow operations as well as improve customer satisfaction.
- Investigate the availability and characteristics of Waze's unplowed roads data.



Objectives

- Localized observations in NoVA vs. current practice
- Evaluate targeted messaging
- Identify tools and develop SOP for wider deployment
- Deferred Objective: Assist with demobilization timing decision (winter 2022-2023)



WE ARE PRACTICING **SOCIAL DISTANCING**

Please report your road issue via
800-FOR-ROAD or
my.vdot.virginia.gov.

Thanks for giving crews **S P A C E .**



Work During COVID-19

VDOT Reopening Stage 3 – Part 2	
Telework	Office staff must be in the office 20% of the time; total occupancy should not be more than 40% at a time. Update Telework Agreements and ED60 forms by July 1.
Travel	Non-essential and overnight travel approved by DE/DA.
Meetings	Indoor meetings permitted. Utilize virtual and hybrid meetings when possible.
Training	Indoor trainings permitted. Utilize virtual and hybrid trainings when possible.
Cleaning	Continued enhanced cleaning.
Distancing	Unvaccinated staff must socially distance. Vaccinated resume normal activities.
Face Covers	Unvaccinated staff must wear face coverings per Executive Directive 18.
Facilities	Common areas reopened.
Visitors	All facilities reopened to walk-in visitors. Visitors should follow posted guidance.
Sanitation	Clean workstations frequently.

More at virginiadot.org/newsroom/covid-19





VDOT COVID-19 Winter Weather Operations

- The safety of the traveling public and of the agency's employees and partners is always top priority.
- To help protect agency employees and partners, we are implementing new Virginia Department of Health COVID-19 safety protocols for equipment operator transfers.
- Procedures and training have been updated to conduct winter operations with minimal contact or contactless interactions through all stages.
- While these additional precautions may increase the driver exchange timeline, crews will continue to work around the clock, as needed, in response to snow and ice events aligned with current practice.



Current Local Traffic Trends

- Traffic volume overall is near pre-pandemic levels on most of the roadways
- Interstates at 96% daily volume level in October, 2021 compared to October, 2019
- Primary roads at 88% daily volume level in October, 2021 compared to October, 2019
- More traffic congestion in PM than AM
- Traffic volume in September didn't show a noticeable increase from summer months
- Signal Operations Center (SOC) continues to monitor/adjust signal timing, restored the typical time of day timing plans on many corridors, and developed/implemented special timing plans
- Signal Operations team is currently developing the special holiday timing plans for the signals (200+) around the major shopping centers in the region
- The lane closure hours for major construction work zones are carefully reviewed based on the latest traffic data

Stay Informed



- virginiadot.org/novaemergency
One-stop shop for links to news releases, Twitter feed, status updates, VDOT Plows, customer service, FAQs and other resources



- [@vadotnova](https://twitter.com/vadotnova) for updates



- 511virginia.org for road conditions and traffic cameras



VDOT Plows

- vdotplows.org for status of subdivisions once 2" have fallen



VIRGINIA
75-359S

QUESTIONS?