

# Maryland Department of Transportation State Highway Administration



## Winter Hired Equipment Presentation

revised 08/19/2022

# Presentation Agenda

- Invoicing/Contract Item Number(s)
- Right to Audit Clause
- Conflict of Interest Clause
- Insurance/Registration
- Contractor/Equipment Requirements
- V-Box Spreader Systems
- Salt Usage/Environmental Impacts
- Plowing Best Practices
- Social Media
- FMCSA Regulations
- COVID/Virus Protocols
- Equipment/Facility/Structure Damage

# Invoicing Requirements

- Winter invoices are now required to be submitted by email this winter season
- A valid email address shall be listed on the Contractor Equipment Questionnaire in the contract
- Electronic signatures will be used for this process
- All supporting documentation is required to be submitted with each winter invoice

# “e”Invoice Process

- Each Maintenance Facility has a designated email address to receive electronic invoices
- A specific email address will be provided to the Contractors for sending/receiving winter invoices
- Example Email address: [prefix@mdot.maryland.gov](mailto:prefix@mdot.maryland.gov)
- Ask your facility Office Manager/Procurement Officer for information specific to your location

# Item Number(s)/Invoicing

- Item number(s) have been established for equipment type/configurations in the Contract
- These will be required on the Contractor Equipment Questionnaire and all invoices
- If item number(s) and equipment type/ configurations are not included on the Contract /invoices this will delay payment

# Item Number(s)/Invoicing Cont.

- If a piece of equipment is going to provide multiple services to MDOT SHA, then each corresponding item number should be listed on the Contractor Equipment Questionnaire
- Contractor equipment that provides multiple services to MDOT SHA shall only be entitled to one pre-season retainer (if applicable), one minimum payment guarantee (if applicable), and one post-season retainer (if applicable), whichever is highest for those services provided

# Item Number Example(s)

## Item Single Axle Dump Trucks

## Hour

- (01) Single axle dump with Contractor supplied snowplow and Control Point spreader
- (02) Single axle dump with Contractor supplied snowplow and salt spreader
- (03) Single axle dump with Contractor supplied salt spreader and MDOT SHA supplied plow
- (04) Single axle dump with Contractor supplied snowplow and MDOT SHA salt spreader
- (05) Single axle dump with Contractor supplied snowplow or spreader
- (06) Single axle dump carrying MDOT SHA supplied snowplow and salt spreader
- (07) Single axle dump carrying MDOT SHA supplied snowplow or spreader
- (08) Single axle dump for hauling salt, abrasives, snow, or winter debris

# Item Number Example(s) Cont.

Here are a few examples:

- Liquid Applicator Truck (3,000 gallon and above capacity) is Item 28 in the Contract
  - If used for transporting salt brine or other liquid de-icers it would be Item 31
- Tri-Axle with MDOT SHA Supplied Plow or Spreader is Item 23 in the Contract
  - if used for hauling salt, abrasives, snow, or winter debris it would be Item 24



# Equipment Questionnaire Example

CONTRACTOR EQUIPMENT QUESTIONNAIRE

**Required**

**Item Number(s)**



COMPANY NAME \_\_\_\_\_

COMPANY PHONE \_\_\_\_\_

COMPANY EMAIL (required) \_\_\_\_\_

Available for \_\_\_\_\_ County

ITEM NO. / NO's	EQUIP. TYPE	CONT. EQUIP. NO.	TAG NO.	VEHICLE IDENTIFICATION NO. (VIN)	SIZE/ CAPACITY *(SA/DA/TRI) (CY BUCKET) (GALLONS)	FLOW/ FRAME	SPREADER	CB RADIO	DICKEY JOHN / CONTROL POINT SYSTEM
	<i>SAMPLE BELOW</i>								
(23)	TRUCK	K 13	123456	1JC233K001EC	TRI	MDOT SHA	N/A	Yes	No

# Invoice Example

## WINTER HIRED EQUIPMENT CONTRACT INVOICE TEMPLATE

Invoice Number: \_\_\_\_\_ BPO #: \_\_\_\_\_ Date: \_\_\_\_\_

Federal I.D. # or Social Security #: \_\_\_\_\_ Company Name: \_\_\_\_\_

**Item Number(s)**

Company Address: \_\_\_\_\_ Company Email Address: \_\_\_\_\_

Bill To: Maryland Department of Transportation State Highway Administration

Address: \_\_\_\_\_

Event # \_\_\_\_\_

**Required**

Item No.	Type of Equipment/Configuration	Tag No.	Date(s) of Service	Check In	Check Out	Rate	Travel Time (if applicable)	Clean Up Time (if applicable)	Down Time	Total Hours	Redeployed (EA)	Amount
	<i>SAMPLE BELOW</i>											
(23)	Tri Axle Dump w/ MDOT SHA Plow or Spreader	123456	12/29/22	0100	1200	150.00	N/A	N/A	N/A	11.0	N/A	1650.00
<b>Total Amount of Invoice</b>											1650.00	

# Right to Audit Clause

- This requires the Contractor to maintain all records pertaining to the Contract for three (3) years, after the Contract end date, and make them accessible at MDOT SHA's request
- This could be documents that are paper, electronic, .pdf, carbon copy, etc.
- Any monies found owed to the Administration will be deducted from future payments or captured by other means if necessary
- This section now requires a signature

# Conflict of Interest Clause

- This requires the Contractor to disclose any relationships within company framework that might cause a conflict of interest
- The Contractor is required to disclose any potential conflict of interest to MDOT SHA once they become aware
- The Contract may be terminated but MDOT SHA will need to conduct a thorough investigation
- A section to disclose any conflicts prior to submitting the contract for approval has been added

# Insurance/Registrations

- All insurance policies/registration(s) must be maintained, at a minimum, from November 1, 2022 through April 30, 2023
- The failure to maintain all insurance/registration requirements throughout the term of the Contract will be cause for termination of the Contract and will void the post-season retainer and any remaining minimum payment guaranteed due to the Contractor
- The Contractor shall make MDOT SHA aware of any changes to the status of certificate(s) of insurance or registration(s) within five (5) calendar days

# Winter Operations

- Safety is the Maryland Department of Transportation State Highway Administration's (MDOT SHA) number one priority during all snowstorm activities
- Snow removal equally shares first priority regarding highway maintenance operations
- MDOT SHA and Contract forces are jointly responsible for minimizing impacts to our environment and minimizing winter operations costs

# Winter Operations

- MDOT SHA's policy states that winter operations will continue until all state roads are free from snow and ice
- If needed, relief operators shall be employed by the Contractor and shift changes shall occur on the assigned snow route or at a pre-determined location
- Contractor operators/equipment are not exempt from any FMCSA laws or regulations, including hours of service, while performing winter operations for MDOT SHA



# Contractor Equipment Requirements

- All equipment used for snow removal operations **SHALL** have met the Contract requirements
- All equipment used for snow removal operations **SHALL** be approved by MDOT SHA and listed on or added to the Contract prior to its use
- If any equipment used by the vendor is found to be non-compliant and in breach of the Contract it may be terminated



# Snow Removal Requirements

- Operators are required to have all equipment calibrated and operational prior to check in
- All contract personnel and equipment must be logged in and out of service and, at the request of the facility, operators must provide their cell phone number
- ***NO REPAIR DELAYS!*** All equipment should be ready for work upon arrival
- MDOT SHA will not pay for down time on trucks and equipment that extends beyond one hour

# Snow Removal Requirements

- All CB radios must be in good working condition
- Check with your Snow Supervisor for the appropriate channel
- MDOT SHA equipment being utilized by contract forces shall **NOT** be used for any other work



wiseGEEK

# Automatic Vehicle Location (AVL)

- AVL technology will be used to track the current and past locations of MDOT SHA trucks and select contract equipment
- AVL technology will increase the efficiency, effectiveness, and safety of MDOT SHA and contracted equipment operators

# Automatic Vehicle Location (AVL)

- The Contractor's truck shall provide a 12-volt DC Power Port or other similar power source for the plug-in AVL unit
- The power source shall be in the truck's cab in order to protect the AVL device from damage
- The Contractor's equipment may be fitted with an AVL at the pre-season inspection
- The Contractor's personnel may be asked to sign a form accepting the AVL for the winter season

# Automatic Vehicle Location (AVL)

- The AVL unit must be kept operational throughout the storm and returned, in working order, at the close of the winter season
- Failure to keep the AVL unit powered during winter operations will result in a 50% deduction from the post-season retainer
- A second occurrence will result in no post-season retainer and the contract will be terminated
- The Contractor will have \$300 deducted from post-season retainer for failing to return the unit in working order

# V-Box Type Spreader System

- At the request or discretion of the RME or designee, Contractors may opt to use an equivalently sized V-Box type spreader/delivery system
- The RME or designee shall make the sole determination as to whether the equivalently sized V-Box type spreader/delivery system meets the needs of the Administration
- There shall be no additional compensation for the use, maintenance, repair, or any damages to an equivalently sized V-Box type spreader/delivery system on a hired piece of winter equipment



# Call-Out Phases

- Each storm is evaluated based on the forecasted accumulation and severity
- Report times can be accelerated based on intensity of the storm, timing of the event, and other factors beyond our control

# Call-Out Phases

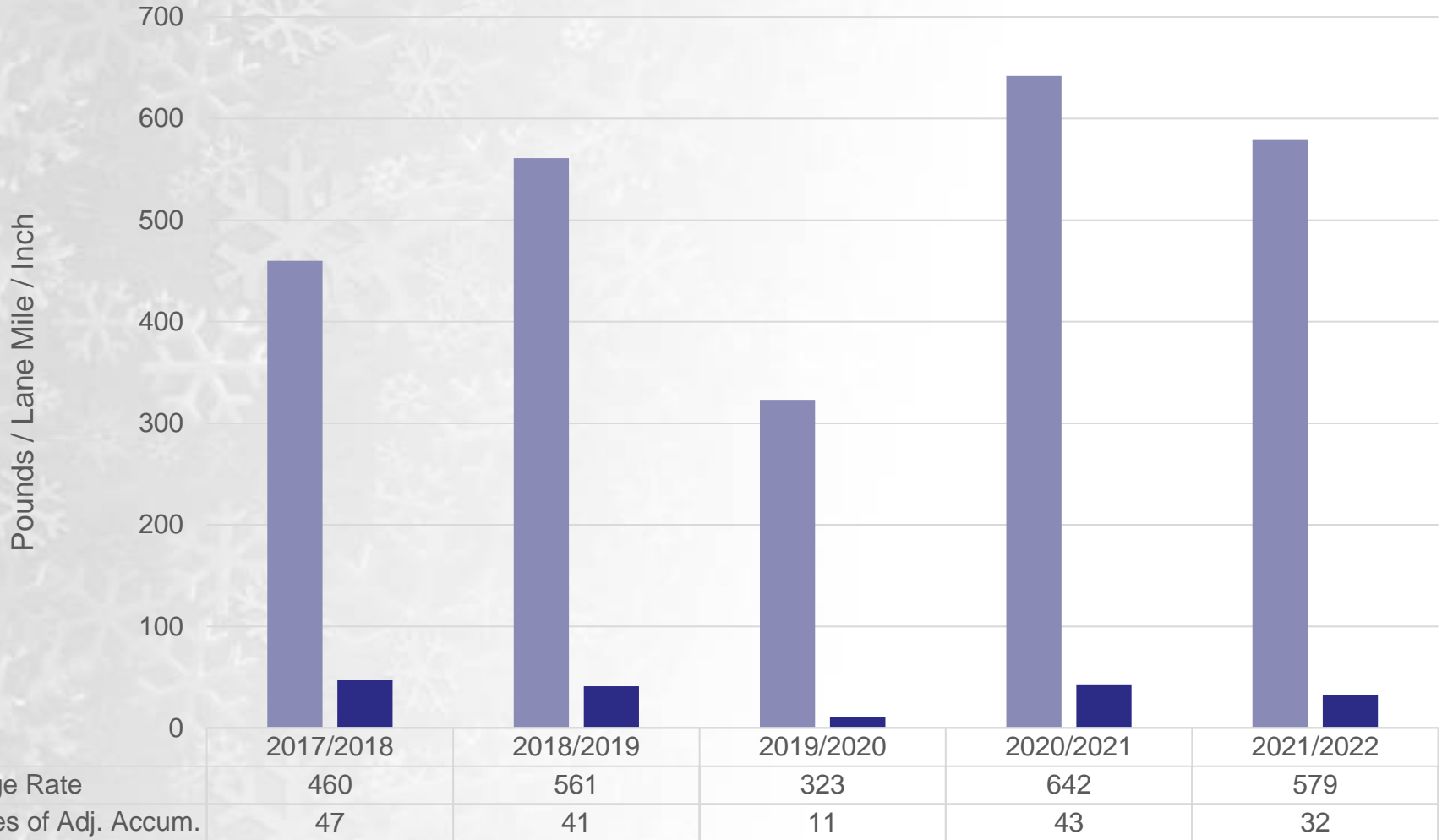
- **Phase 1** - (0-1 inch forecast or  $<0.1$  inches of freezing precipitation) Includes only MDOT SHA Trucks
- **Phase 2** - (1-2 inch forecast or 0.1 to 0.2 inches of freezing precipitation) Includes Phase 1 trucks and hired spreader trucks to supplement MDOT SHA work forces on designated routes where there are no assigned MDOT SHA trucks



# Call-Out Phases

- **Phase 3** - (2-4 inch forecast or  $>0.2$  inches of freezing precipitation) Includes Phase 2 trucks and hired spreader trucks to supplement the MDOT SHA work forces during heavier snowfalls
- **Phase 4** - ( $>4$  inch forecast or major freezing precipitation) Includes all Phase 3 trucks and hired push trucks to supplement MDOT SHA work forces on designated routes as roadway conditions warrant

# Statewide Salt Usage Trend



■ Usage Rate ■ Inches of Adj. Accum.


# Salt Impacts on the Environment



***So what's the big deal?? Salt is a naturally occurring substance!***

While salt is a naturally occurring substance, high concentrations of salt negatively affect or destroy land based and aquatic habitats and species

# Salt Impacts on the Environment

- 
- Once granular salt mixes with snow or ice it becomes a brine solution. This solution then runs off the roadway and is forever stored in soil or water and can reach levels that are considered unhealthy to the environment
  - Salt will contaminate drinking water supplies in wells and in reservoirs, slows the establishment of vegetation or crops, and destroys waterways for fish and other marine life

# Salt Impacts on the Environment



Dumping salt in this area killed the vegetation and the area was at risk for erosion. This area had to be restored by removing contaminated soil, backfilling and seeding and mulching.

# TMDL

- **Total Maximum Daily Load**
- Definition: a regulatory term in the U.S. Clean Water Act, describing a value of the maximum amount of a pollutant that a body of water can ingest daily while still meeting water quality standards
- TMDL's already exist for phosphorus, nitrogen, and sediment for many watersheds and waterways in Maryland

# TMDL

- TMDL's for Chlorides (salt) are not currently being applied to Maryland's watersheds and waterways
- Should they be implemented MDOT SHA will be **required** by law to not exceed a set salt usage rate during winter operations
- Once a TMDL is placed on a watershed or waterway it carries heavy fines if not adhered to

# TMDL

Ask yourself these three simple questions when it comes to TMDL's and salt usage...

Do I enjoy spending time outdoors and enjoying some of Maryland's finest seafood?

Do I value the drinking water, health and well being of my spouse, child, or elderly parent?

Is there something I may be able to do different to make a difference?



# THE BOTTOM LINE

Over salting is ruining our environment and the very water we need to survive so realize it and let's collectively do something about it...



**YOU play a more prominent role in protecting our environment during winter operations than you may have originally thought**

# Practical Salt Usage

- A well-trained operator knows when to apply salt, and when not to
- Use the correct amount of salt necessary to get the job done
- Using more salt than necessary works against you and damages the environment



# Practical Salt Usage

- Never overload trucks to avoid spillage of salt at MDOT SHA facilities and on the road
- Always travel at a safe speed for optimum performance, safety, and to help keep salt on the road and out of the roadside ditches



# Practical Salt Usage

- Always keep your load covered to avoid unnecessary loss of material when traveling
- Don't salt roads that have already been salted
- Only apply salt to your designated snow route when directed by MDOT SHA personnel
- Always use appropriate shop application rates or rates as directed by MDOT SHA management

# Practical Salt Usage

- Don't apply salt to an undesignated snow route unless directed to by MDOT SHA personnel
- All unused salt must be returned to the dome or barn that it was loaded from
- Never spread salt just to get rid of it

# Best Practices for Plowing Safety

- Be aware of the weight of heavy snow and the damage it can cause when thrown by a plow



- Never plow snow over bridge parapets or jersey barrier walls - that could endanger traffic and/or pedestrians below

# Best Practices for Plowing Safety

Watch out for manholes, railroad tracks, expansion joints, bridge abutments, utility cuts, mailboxes, etc.





# Best Practices for Plowing Safety

Watch for curbs and steel plates...



# Best Practices for Plowing Safety

Be aware your truck's bed height - watch for overhead signs, traffic signals, utility wires, tree limbs and bridges



# Intersections

- Empty your plow before crossing intersections
- Reduce the size of the windrow
- Avoid building snowbanks that interfere with sight distance
- Keep traffic signs unobstructed from view

# Ramps and Curves

- Plow ramps and curves from the high side to the low side
- Spread salt on the high side of ramps and curves
- Keep your speed down on all ramps and curves

# Bridges and Overpasses

- Bridge surface may be higher than the road surface due to the bridge freezing and expanding
- Care must be taken not to throw snow over the bridge to the road below
- Keep the sidewalks on bridges open for pedestrians

# Shoulders, Medians & Jersey Barriers

- Plow away from medians with minimum width shoulder and barrier wall
- Avoid plowing snow against a jersey barrier as this creates a ramp for vehicles to possibly become airborne

# Mountains and Hills

- Traction is limited on hills
- Stopping can be difficult on hills
- Watch for melted snow refreezing in the road valley

# Railroad Crossings

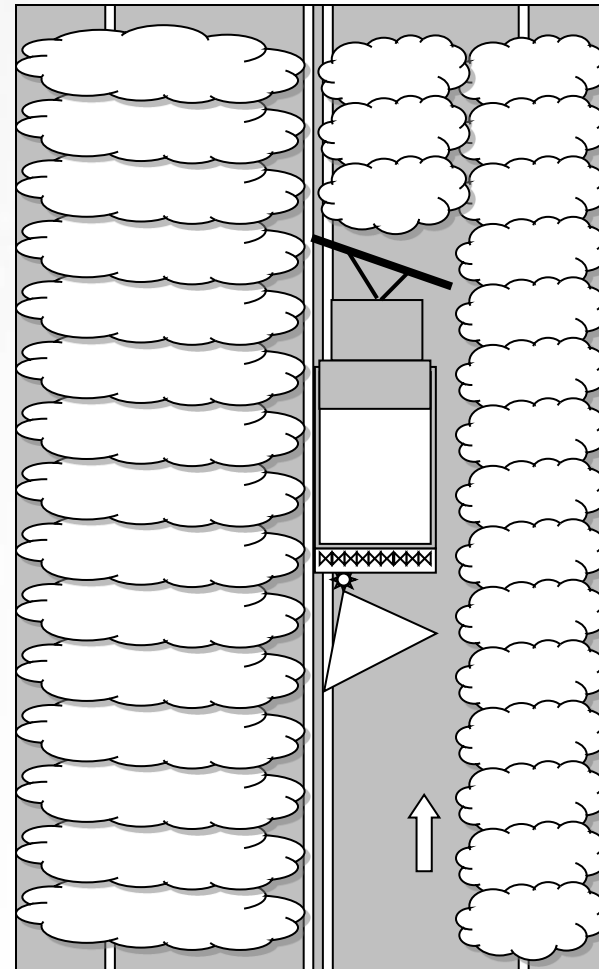
- Avoid piling snow against signals, switch boxes, signs, etc.
- Raise plows slightly when crossing railroad tracks
- Watch for flashing lights and mast arms blocking the roadways



# Two Way Road Single Truck

## First Pass

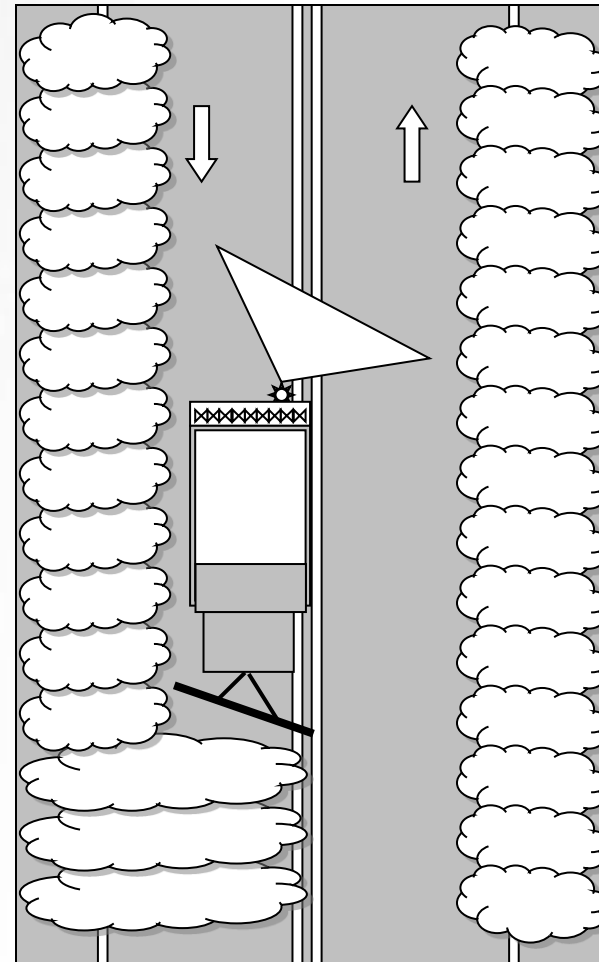
Plow lane in one direction and drop salt behind truck



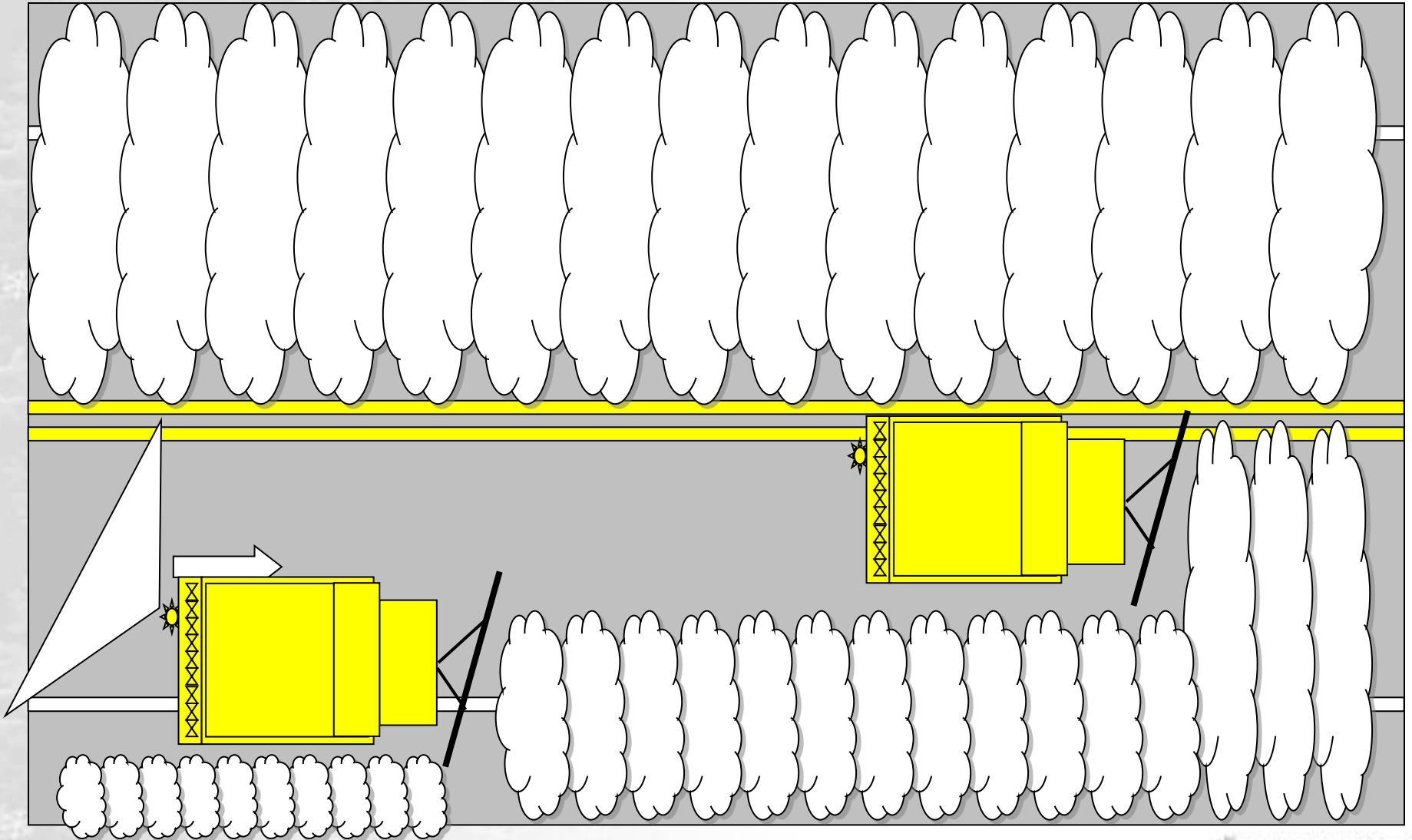
# Two Way Road Single Truck

## Second Pass

After plowing in one direction, turn at end of route, plow lane in opposite direction and salt both lanes

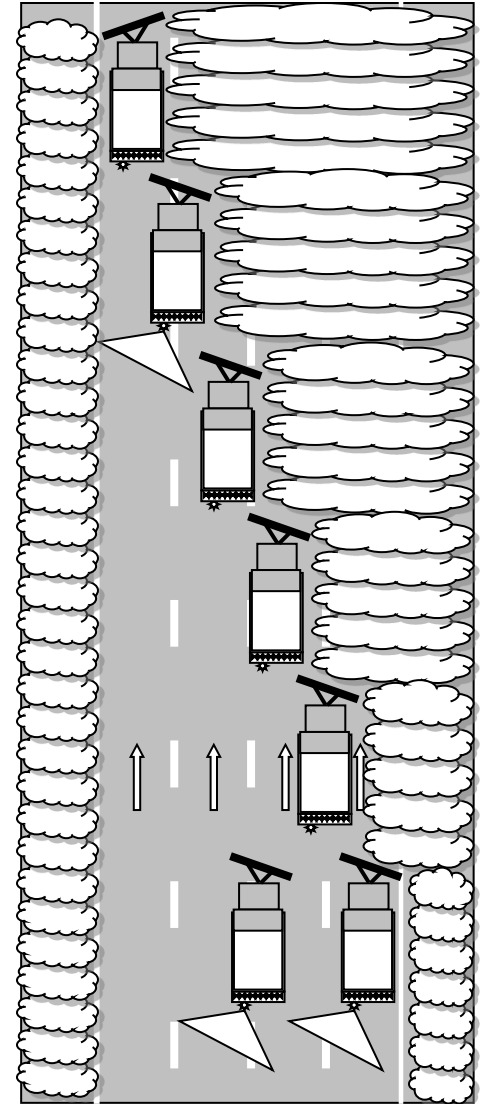


# Two Way Road Two Trucks



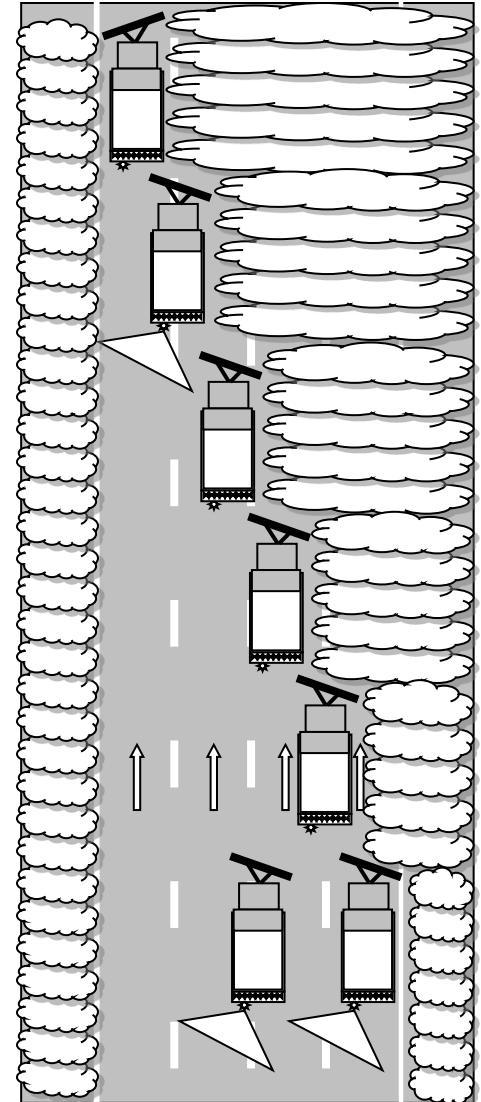
# Multi-Vehicle Plowing

- The deeper the snow, the more overlap needed to avoid leaving a windrow
- First truck clears 8 feet of the left traffic lane, leaving 4 feet for second truck
- Second truck overlaps 1 foot clearing 4 feet of first lane and 3 feet of second lane, leaving 9 feet for third truck



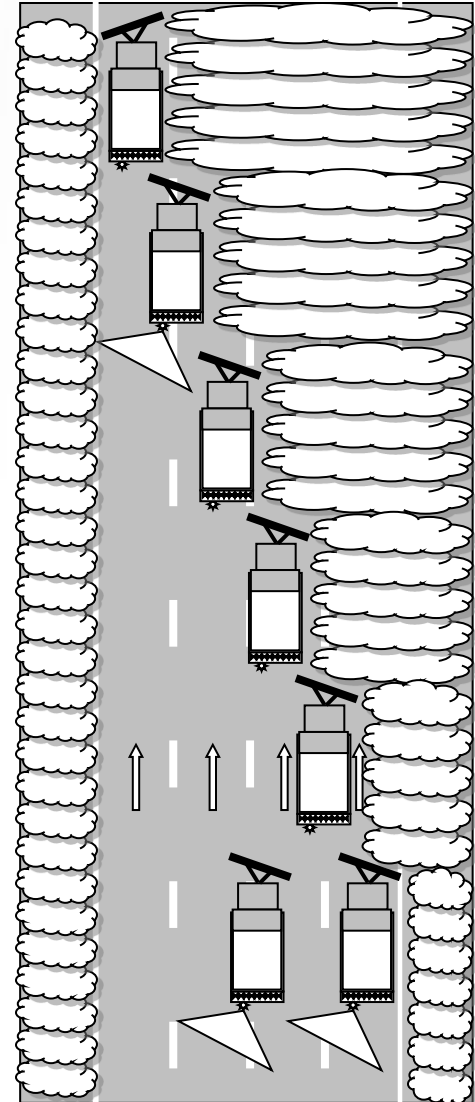
# Multi-Vehicle Plowing

- Third truck overlaps 1 foot clearing 7 feet of second lane, leaving 2 feet for fourth truck
- Fourth truck overlaps 1 foot clearing 2 feet of second lane and 5 feet of shoulder
- One more truck would be required if a third lane was present



# Multi-Vehicle Plowing

- Four or more lanes would require more plow trucks
- The larger trucks should be at the end of the train
- The last truck plows ramps



# Plowing Points to Remember

- Always give bridges and ramps special attention
- Salt the high sides of curves
- Do not over-use salt. Use just enough to get the job done
- Designate specific trucks in a plow train for salting to ensure no overlap of resources

# Plowing Points to Remember

- Salt loses most of its effectiveness at temperatures below 20°F
- Adding more salt to an already salted roadway can actually cause the brine solution to freeze
- Salt stops working altogether at - 6°F



# FMCSA Regulations

- All applicable FMCSA regulations apply to equipment and operators
  - This includes, but not limited, Hours of Service
- Contractors are not covered under MDOT SHA's emergency exemption during winter events

# Operator Guidelines

- Always contact your MDOT SHA supervisor prior to leaving your designated snow route or if you get separated from your assigned SHA truck
- Show up or commute time, from the designated MDOT SHA facility to assigned route, must not be excessive

# Operator Guidelines

- Always communicate the need for fuel or meals with your snow supervisor prior to leaving your assigned route
- Coordinate all refueling to minimize disruptions to the snow removal operations



# Operator Guidelines

- Check the cutting edge of your plow before each event to avoid damage to the plow structure
- When working for MDOT SHA, DON'T plow and salt parking lots, driveways or roads that do not belong to MDOT SHA

# Operator Guidelines

- Relief operators shall be changed out on their snow routes or at predetermined location approved by MDOT SHA
- All trucks loaded with salt while on standby or just plowing should be covered to avoid freezing

# Facility Entrance Protocols

- Considering additional COVID/Virus concerns, MDOT SHA will continue with current security protocols for building entrance
- Building entrance protocols may change throughout the snow season, please read all signs before entering a building
- Operators must adhere to all current MDOT SHA building security procedures when entering and exiting facilities during winter operations

# Social Media Usage

- Operators shall not post anything MDOT SHA related on social media while performing winter operations for the Administration
- This could lead to negative public perception of MDOT SHA winter operations
- It may also lead to legal issues should an accident or an act of environmental non-compliance occur

# Accidents and Damage

- Always maintain a heightened state of awareness when working around salt structures or out on the roadways
- Report all accidents involving MDOT SHA equipment or facilities promptly to the snow supervisor and obtain a police report
- MDOT SHA will not be held responsible for damage incurred to the Contractor's vehicle while carrying MDOT SHA's snow removal equipment



# Accidents and Damage

- Upon returning to the shop, the driver will stay with their truck and assist with the repairs of MDOT SHA equipment
- If a repair part is required at the shop, all repair parts must be acquired by a shop mechanic
- All damaged or non-operating equipment must be reported to the snow supervisor, repaired ASAP and/or prior to the next storm

# Overhead



# Structure Hits



# Overhead Structure Hits

- Keep truck bodies lowered when traveling
- Use extreme caution when raising to fill the auger box
- Remain aware of your surroundings:
  - signals
  - utility wires
  - overhead signs
  - bridges

# Overhead Structure Hits

- The “Notice of Unsatisfactory Performance” will now allow post-season retainers to be deducted and your contract terminated for multiple infractions
- Contractors will be responsible for cost of damages due to any negligence
- **SO PLEASE BE VIGILANT...**

**Thank You For Your Attendance!**

**There is no better time than the present to express our appreciation for your support**

**The Maryland Department of Transportation State Highway Administration thanks you for making a difference towards our winter snow removal activities**