

NORTH CAROLINA

Department of Transportation



Integrated Mobility Division Transit Systems Call

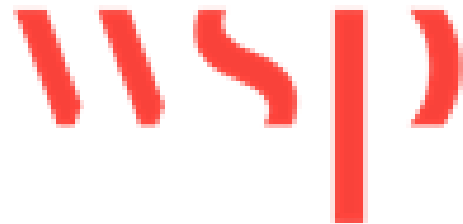
September 23, 2020

AGENDA

- Welcome
- Guest Speaker
- Update on CARES Act Implementation
- OpStat Surpluses
- SMAP/ROAP
- DHHS Funding
- Training
- Questions

Guest Speaker: COVID-19 Transmission What Can You Do NOW.

John Gasparine, AICP, LEED AP
Assistant Vice President
Northeast Transit and Rail Market



Phone: 410 385 4163

Mobile: 410 215 5658

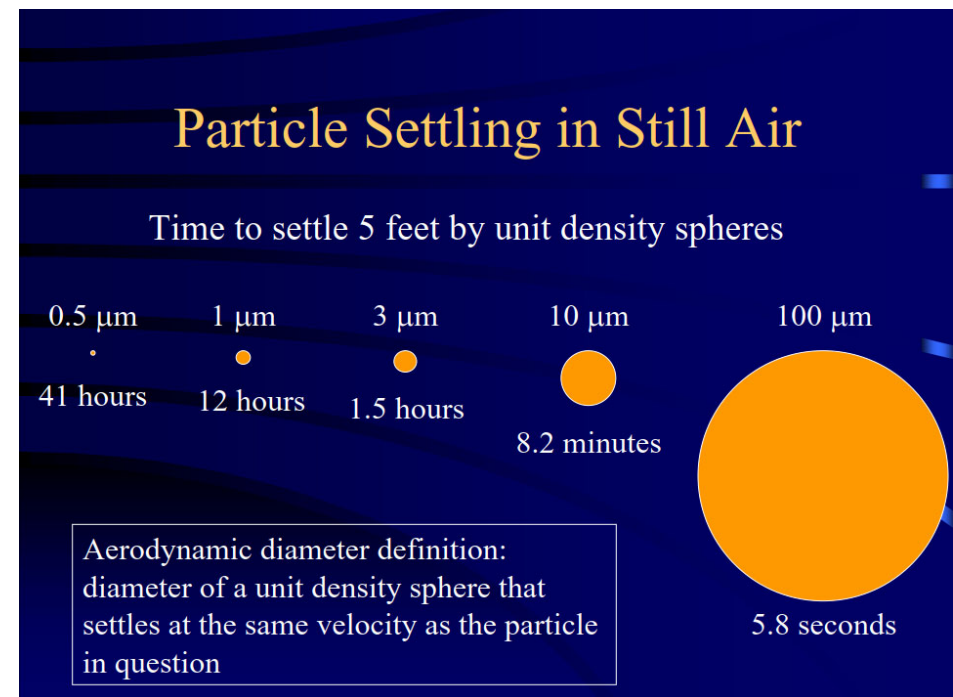
john.gasparine@wsp.com

Relevant COVID-19 Health Guidance

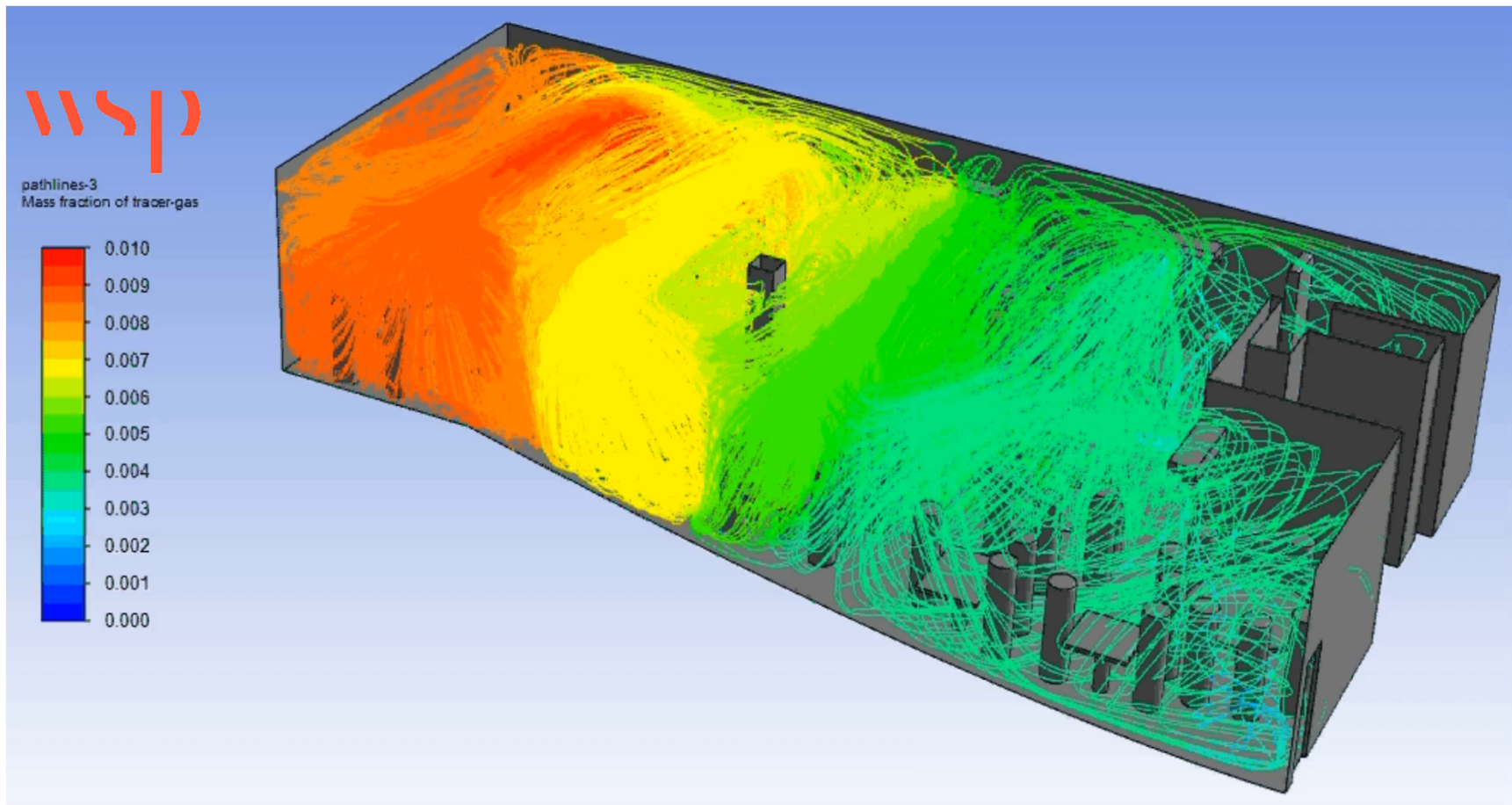
- CDC Guidance
 - Increase outdoor air ventilation
<https://www.cdc.gov/coronavirus/2019-ncov/downloads/php/CDC-Activities-Initiatives-for-COVID-19-Response.pdf>
 - Design of HVAC impacts its ability to remove infectious particles <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/cleaning-disinfection.html>
 - Optimize air flow, HVAC controls, upgrade filter media, portable HEPA, and upper-room UVGI
<https://www.cdc.gov/coronavirus/2019-ncov/community/office-buildings.html>
- Misunderstood/misapplied technologies for “cleaning the air”
 - UVGI in ductwork or on coil
 - Ionization technology
 - Vaporized hydrogen peroxide

Emerging Research on Airborne Transmission (via Aerosols)

- **Open letter from 239 Scientists:** “There is significant potential for inhalation exposure to viruses in microscopic respiratory droplets (microdroplets) at short to medium distances (up to several meters, or room scale)”
<https://academic.oup.com/cid/article/doi/10.1093/cid/ciaa939/5867798>
- **Response from WHO:** “The role and extent of airborne transmission outside of health care facilities, and in particular in close settings with poor ventilation, also requires further study”
<https://www.who.int/publications/i/item/modes-of-transmission-of-virus-causing-covid-19-implications-for-ipc-precaution-recommendations>



Jan. 24, 2020 COVID-19 Outbreak in Restaurant, Guangzhou, China due to HVAC Airflow Patterns and Lack of Ventilation



Direction of Airflow in a Vehicle is Important Too

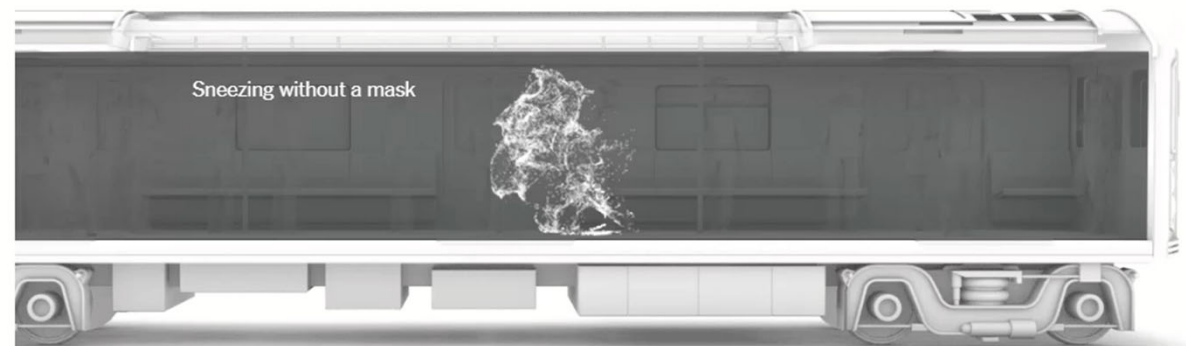
Animation credit: New York Times, 2020

Typical railcar HVAC system:

- Two rooftop HVAC units at both ends of railcar
- Supply air throughout car
- Return air at both ends of car
- Air filters limit fan size and noise
- MERV-8 filtration for conditioned air
- Doors opening/closing impact airflow

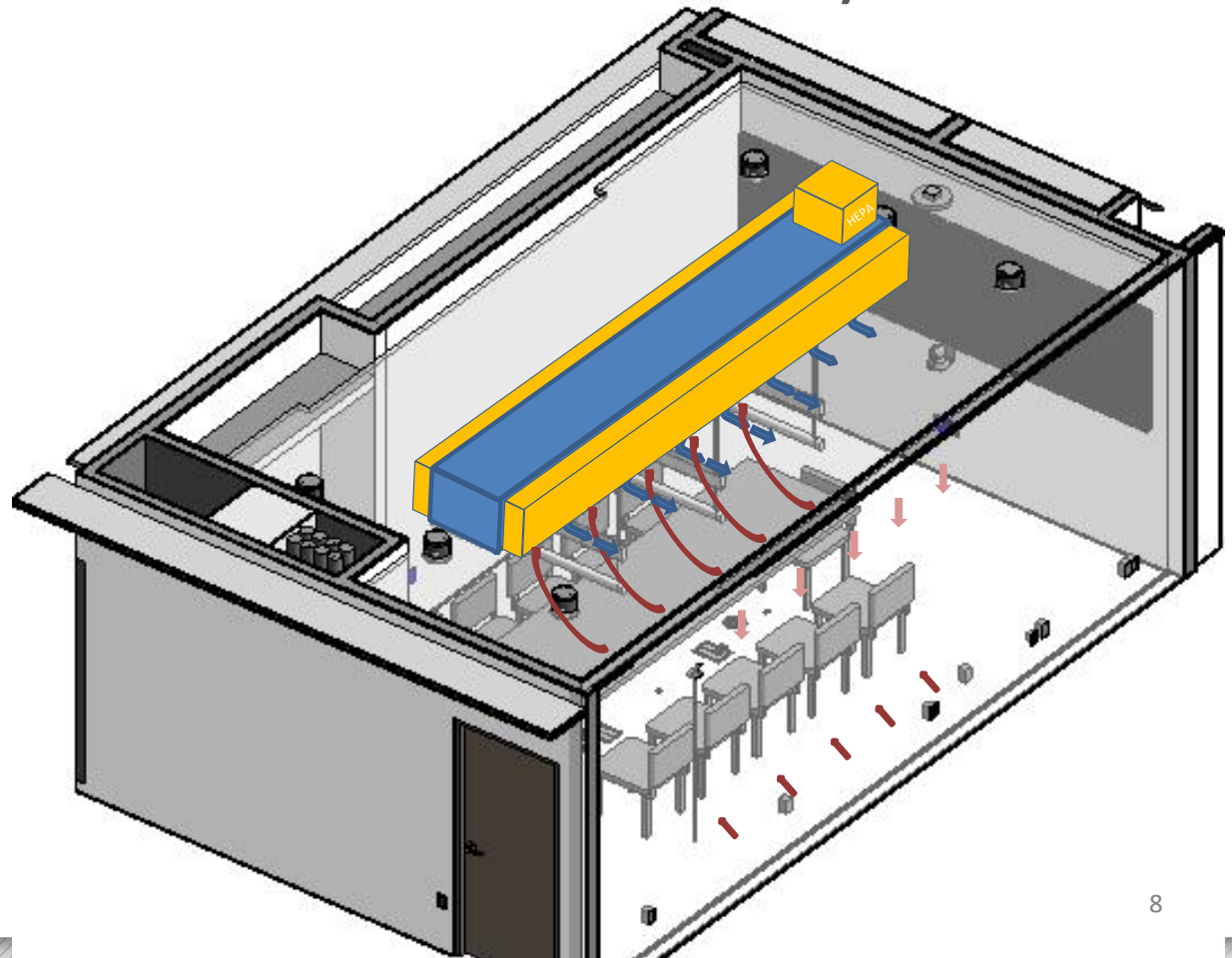


5.1 seconds



Future Vehicles and Facilities can Borrow HVAC Design Concepts from the Healthcare Industry

- Focused on two fundamentals: airflow and filtration
- Central return
- Air distribution designed for thermal comfort and to help prevent cross-contamination from person-to-person
- Coanda effect enhances routing of exhaust air away from people



But What Can We Do Now on our Vehicles and Facilities?

- Don't let a salesperson give you scientific advice on what will improve your indoor air quality- rely on your health officials, members of academia, or other advisors with credible scientific background.
- Make sure your HVAC systems are functioning properly
- Maximize outdoor air ventilation (with reasonable considerations for comfort)
 - Especially important in the driver's cab; use driver's barrier if available, turn on HVAC fan at maximum speed (using outside air), and open driver's window
- Establish procedures to verify that the right HVAC settings are continually used

But What Can We Do Now on our Vehicles and Facilities?

Improve Filtration

- SARS-CoV-2 is 0.17 micron (unattached)
- Respiratory droplets are 5-10 micron
- Aerosols can be as small as 0.3 micron
- Many buses are equipped with **MERV 4** filters which can remove less than **20%** of 3-10 micron particles
- **MERV 8** filters can remove over **70%** of 3-10 micron particles
- Consult your manufacturer to avoid voiding HVAC warranty!

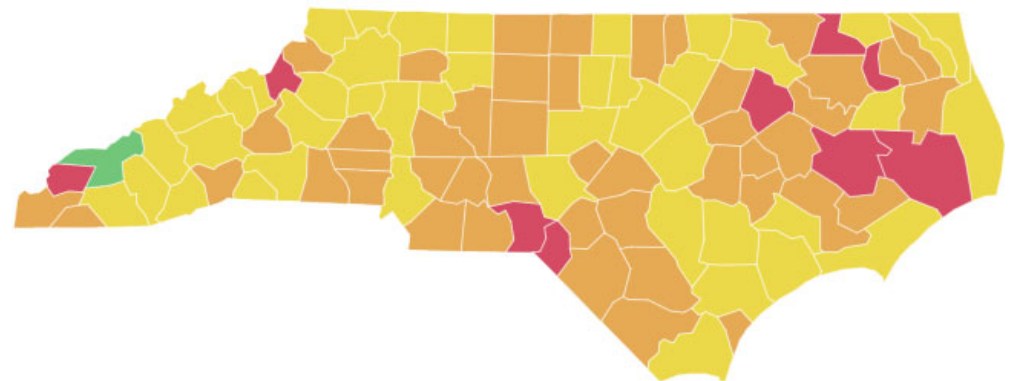
TABLE E-1
Application Guidelines

Std. 52.2 Minimum Efficiency Reporting Value (MERV)	Approx. Std. 52.1 Results		Application Guidelines		
	Dust Spot Efficiency	Arrestance	Typical Controlled Contaminant	Typical Applications and Limitations	Typical Air Filter/Cleaner Type
16	n/a	n/a	0.30–1.0 µm Particle Size All bacteria Most tobacco smoke Droplet nuclei (sneeze) Cooking oil Most smoke Insecticide dust Copier toner Most face powder Most paint pigments	Hospital inpatient care General surgery Smoking lounges Superior commercial buildings	Bag Filters Nonsupported (flexible) microfine fiberglass or synthetic media. 300 to 900 mm (12 to 36 in.) deep, 6 to 12 pockets. Box Filters Rigid style cartridge filters 150 to 300 mm (6 to 12 in.) deep may use lofted (air laid) or paper (wet laid) media.
15	>95%	n/a			
14	90–95%	>98%			
13	80–90%	>98%			
12	70–75%	>95%	1.0–3.0 µm Particle Size Legionella Humidifier dust Lead dust Milled flour Coal dust Auto emissions Nebulizer drops Welding fumes	Superior residential Better commercial buildings Hospital laboratories	Bag Filters Nonsupported (flexible) microfine fiberglass or synthetic media. 300 to 900 mm (12 to 36 in.) deep, 6 to 12 pockets. Box Filters Rigid style cartridge filters 150 to 300 mm (6 to 12 in.) deep may use lofted (air laid) or paper (wet laid) media.
11	60–65%	>95%			
10	50–55%	>95%			
9	40–45%	>90%			
8	30-35%	>90%	3.0–10.0 µm Particle Size Mold Spores Hair spray Fabric protector Dusting aids Cement dust Pudding mix Snuff Powdered milk	Commercial buildings Better residential Industrial workplaces Paint booth inlet air	Pleated Filters Disposable, extended surface, 25 to 125 mm (1 to 5 in.) thick with cotton-polyester blend media, cardboard frame. Cartridge Filters Graded density viscous coated cube or pocket filters, synthetic media Throwaway Disposable synthetic media panel filters
7	25-30%	>90%			
6	<20%	85–90%			
5	<20%	80–85%			



But What Can We Do Now on our Vehicles and Facilities?

- Communicate the science to riders and employees
- Combine these indoor air management techniques with:
 - Focused efforts to reduce crowding in vehicles and facilities
 - Enforcement of mask usage by riders and employees
 - Encouragement of proper hand hygiene
 - Disinfection of frequently touched surfaces... until your county is “green” on the map



Risk Levels: █ Green █ Yellow █ Orange █ Red

9/17/2020 snapshot taken from
<https://globalepidemics.org/key-metrics-for-covid-suppression/>

CARES Act Update

- Grants FTA Approved
 - 5311
 - 5307 GA
 - ADTAP
- Claims Summary



Claims Reimbursements



77 Submitted



\$7,954,569 in claims



\$6,968,158 paid out

5307 GA Grant Award

- Award approved by FTA on September 9, 2020
- No Agreements yet
 - 1 – L1 – Approved
 - 14 – L2 – Approved

OpStat Report Showing Surplus

- Some Systems are showing a surplus in their OpStat Report
- Ensure not double claiming Contract Revenue/Medicaid reimbursements and CARES Act
 - CARES Act funds are to help offset revenue losses
- **All CARES Act Funds will be audited**



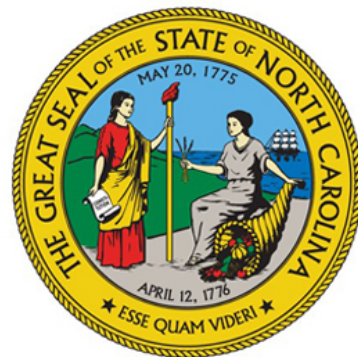


FY21 SMAP/ROAP

- HB 77 zeroed out SMAP and ROAP for FY21
 - There will be no new disbursements of SMAP or ROAP for this fiscal year
- Systems could carry forward remaining funds
- 1st reporting period will be shorter to provide information to legislature when they return
 - Expectation is that carry forward funds will have been expended by then.

DHHS Funding

- Administration of funds will be managed by IMD
- MOU being signed by NCDOT
- Agreements with systems will be based on this MOU and sent out once signed by both Departments



NC DEPARTMENT OF
**HEALTH AND
HUMAN SERVICES**

Training/ Informational Opportunities



- NC Transit Cares
- New/ Refresher Transit Training
- New Multimodal Innovations Webinar Series

NC Transit Cares Update

- The “Work on It” meeting was held on September 9
- The meeting was well attended with valuable presentations and discussion
- For those unable to join, visit the NC Transit Cares website through the NCDOT Transit Connect page
- Innovations will be prioritized for further refinement and development of action plans.

NC Transit Cares 2020 Schedule



- Ongoing information gathering and sharing
- Project culminates with an ideas/best practices library and actionable recommendations for projects and programs

New Directors Training Series

- Every Tuesday and Thursday between September 22 and October 15, starting at 10 AM
- All sessions will be recorded
- Intended for new transit system staff or those who need a refresher
- Register through Smartsheet (see 9/10 email from Heather)
- Meeting info. provided by email after registration

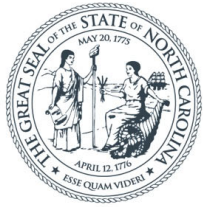
New Multimodal Innovations Webinar Series

- Starts October 21 at 2 PM – mark your calendars!
- The first topic will be on-demand microtransit
- The Wilson microtransit project with Via will be featured
- Additional topics and session dates to be announced later



QUESTIONS?





NORTH CAROLINA
Department of Transportation



**Bicycle and Pedestrian | Public Transportation
Transit Systems Call**

Heather Hildebrandt, Interim Director

Integrated Mobility Division

hjhildebrandt@ncdot.gov

919-707-2601