

Health and Safety Plan Attachments

Section 2

Metrics MTA will use to assess whether occupancy limits are being exceeded system-wide, on specific routes, specific vehicles, and at particular times of day.

We utilize four approaches:

1. Immediate, vehicle-based management: This is when an operator determines the vehicle is at capacity and changes their operation to drop-off only
2. Immediate, field-based: Our Ambassadors and Transit Fare Inspectors support operators by instructing passengers waiting to board the vehicles when vehicles are at or approaching capacity and inform them to wait for a subsequent vehicle
3. Immediate, remote monitoring: This is when a Controller in our Transportation Management Center notifies an operator they are approaching capacity and should shift to drop-off only
4. Retrospective: Our planning team reviews areas with high loads and shifts resources to address demand when possible.

The SFMTA recently completed an upgrade of the on-board computer systems across our transit fleet. This provides our Transportation Management Center (TMC) staff with the ability to monitor on board crowding levels remotely. The Transit Controllers at the TMC are able to proactively support the operators by contacting them and instructing that they operate on a drop-off only basis until their load is decreased.

Our Analytics team has developed a series of tools to assist operations and planning staff in determining their response to crowding in the field including a dashboard that shows average loads (number of people on board at any one time) by stop. We can use this information in real time to instruct operators, to communicate crowding information to the public, and to deploy supportive resources like the Muni Ambassadors to assist operators and passengers at specific locations.

Measures MTA will use to ensure vehicles do not go over the planned vehicle occupancy

- Messaging to riders about when routes or vehicles are more or less crowded.
- Adding vehicles to busy routes
- Deploying ambassadors to assist operators at stops and on vehicles
- Others (Brief description): Operators may shift to drop off only mode in the event a vehicle is approaching capacity

Measures to be taken when there is evidence of occupancy exceedance, including thresholds and triggers for taking specific actions.

We monitor on-board capacities and the percent of trips at or approaching the stated capacities. We deploy the following strategies when possible to improve crowding:

- Adding vehicles to busy routes and increasing service when possible
- Deploying ambassadors to assist operators at stops and Transit Fare Inspectors to provide support on vehicles

Strategies to address frustration and anger among riders when buses pass by due to too many riders.

We have limited resources and are deploying them to address issues as they arise to the greatest extent possible. Improving frequency and reliability are our two primary strategies in managing crowding-related pass ups. We have already implemented five service changes to address these concerns. We provide support to passengers through the following:

- Messaging to riders about when routes or vehicles are more or less crowded is available on the SFMTA website so passengers can choose to travel at a less-crowded time
- Adding vehicles to busy routes and increasing service when possible
- Deploying ambassadors to assist operators at stops and Transit Fare Inspectors to provide support on vehicles. These SFMTA personnel have received de-escalation training and have been taught to empathize with customers and remind them that due to COVID, buses may have to do pass ups as they become too full but that there should be another bus arriving soon.

Section 3

MTA must post the agreed upon signage and deploy public messaging with specific content throughout the system as shown in the power point attachment.

- MTA has completed a detailed plan describing:
 - Sign and messaging deployment, including timing and maintenance.
See attached matrix for all messaging. New signage can be printed and installed in 7-10 days. Car cleaners ensure that vehicles have the required health message car cards installed before the vehicles are marked as ready to go into service.
 - Minimum signage that will be deployed before relaxed distancing is allowed.
Propose that existing messaging is adequate while we print and install additional signage.
 - Translation indicating languages and schedule for deployment of translated materials.
Translation timeline is included in the deployment timeline, it includes English, Spanish, Chinese, Filipino

Metrics to assess whether signage is maintained in good condition system-wide or on specific routes or specific vehicles

Vehicles are regularly provided with new signs during the daily cleaning process.

Measures to be taken when there is evidence of problems with signage, such as removal or vandalism, including thresholds and triggers for taking specific actions.

Signage is replaced when it is removed/vandalized as described above.

Section 4

Check the strategies MTA will use to ensure riders wear face coverings at all times, unless specifically exempted; describe in detail in an attachment:

All passengers are subject to the State of California's mask-wearing policy, and also the Federal masking requirements. We have aggressively messaged this policy (see details in Section 3.)

We provide pro-social enforcement via our Ambassadors and our Transit Fare Inspectors. Both teams are outfitted with free masks for any passenger who may require one. Mask wearing compliance is

approximately 90-92%, with an addition 3-5% of riders visibly in possession of a mask, but not wearing it or wearing it improperly.

We have a pilot mask and hand sanitizer dispensing program that we are planning to expand to a fleet of 50 vehicles by April 2021. Provided this program continues to remain effective, we will further expand the program as resources permit with an aim of reaching our full transit fleet.

Detailed plan for monitoring and ensuring continuous improvement in mask compliance includes:

- Metrics to assess mask compliance system-wide, on specific routes, specific vehicles, and at particular times of day**
 We have a mask monitoring program that samples passengers from on board videos to determine ongoing compliance. This is tracked by route, neighborhood, and time of day.
- Measures to ensure mask compliance is maintained**
 We report these figures publicly weekly. We have established the following criteria, in conjunction with DPH staff, to determine when compliance is slipping:

Category	Key Question	Indicator	Triggers related to a higher level	Triggers related to a lower level	Level 1 New Normal	Level 2 Low Alert	Level 3 Moderate Alert
Mask Compliance	Are passengers wearing masks as required?	Percent of passengers observed wearing masks properly in video survey	Increasing to meet new threshold over 7 days	Decreasing to meet new threshold over 7 days	90%+	80-89%	<80%

- Measures to be taken when there is evidence of poor mask compliance, include thresholds and triggers for taking specific actions**
 Triggers/thresholds are established above.
- Established collaboration with Advance Planning to improve mask compliance strategies and includes specific milestones for implementation.**
 This is reported out on a weekly basis with DPH staff.

Section 5

The Health and Safety Plan includes the following and provides additional detail.

- Brief description of mechanical ventilation available in the fleet.

Rubber Tire Vehicles

The HVAC system on the rubber tire fleet does not have a dedicated fresh air supply, but instead recirculates the vehicle air. The total air flow rate at full evaporator speed for the 40' and 60' vehicles is 2250 CFM and 4150 CFM respectively, or approximately 50 and 70 ACH. Fresh air infiltration is only by

means of windows (two on the roof, and passenger windows along the side) and door cycling. All windows on all rubber tire vehicles are opened during the sanitization process

Jacobs Engineering provided estimates regarding fresh air introduction via the doors when the vehicle HVAC is operating and determined the following rates of air exchange:

Air exchanges as a result of door open events + HVAC

Scenario	Average # of door events per hour	% Fresh Air Exchanged per door cycle	Fresh Air Exchange Rate per hour from doors
40' Cooling	30	10.9%	3.3
40' Heating	30	10%	3
60' Cooling	40	14.7%	3.7
60' Heating	40	13.5%	3.4

Additional fresh air is routinely introduced via the windows as well. Jacobs determined that when the vehicle windows can be left open, there is the potential for significant fresh air introduction.

Fresh air exchanges as a result of open windows

Scenario	6" opening on all windows	3" opening on all windows	2" opening on all windows	1" opening on all windows
40' Rubber Tire vehicle	10.1	5.1	3.4	1.7
60' Rubber Tire vehicle	11.0	5.5	3.7	1.8

To summarize, it is most efficient to keep all windows open and to frequently cycle doors to introduce as much fresh air into the bus as possible. It is possible to get up to 13-14 air exchanges on a 40' or 60' bus per hour purely from the fresh air intake due to door cycling and keeping windows open.

As additional research becomes available, and new techniques are developed by HVAC manufacturers, the SFMTA will deploy improved practices to the greatest extent possible.

- **Guidance for operators to open all doors at each stop and circumstances where operators will be able to keep doors open for extra time while passengers are embarking or disembarking**

Operators have been instructed to open all doors at all stops. Operators will not be asked to keep doors open longer than necessary which would result in slower travel times and longer passenger exposure.

- **Strategy for opening windows 6” at the beginning of each route**
All windows are opened at the beginning of an operator shift.
- **Plans for window ventilation for poor air quality or bad weather:**
 - **Ways that MTA will work to improve ventilation for COVID-19 prevention on the fleet, include:**
 - **Specific plans for considering emerging technologies**
Our fleet engineering team reviewed existing technologies at the outset of the State of Emergency. They did not identify any new technologies that are currently proven to work against this virus. However, as technology progresses, we continue to speak with partners across the country regarding the success of pilot programs
 - **Description of thresholds or criteria to evaluate feasibility**
Generally speaking, we would consider the existing technology on board our fleet, the certifications/accreditations giving credence to the new technology (e.g. how experimental is it?), and the ability to integrate the new technology into our current systems. This would also be considered within our budgetary and labor constraints.
 - **Budget planning for ventilation improvements, including specific milestones.**
This will be determined on a case by case basis.

Section 6

The Health and Safety Plan shall include an attachment with details about sanitation practices including:

- Identification of high touch surfaces
- Frequency of cleaning
- identify cleaning and disinfection products types and requirements for use
- Personnel responsible for cleaning
- Cleaning logs or tracking

The SFMTA sanitizes vehicles according to industry standards, in accordance with CDC recommendations. We utilize disinfection products in accordance with CDC and CalOSHA recommendations. We maintain personnel logs for contact tracing.