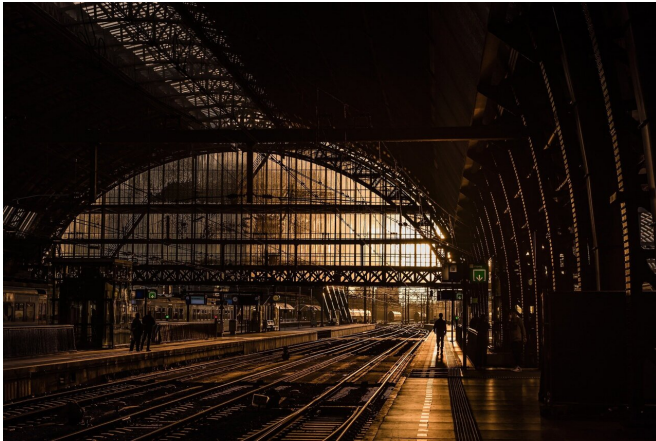


Impact of COVID-19 behavioral inertia on reopening strategies for New York City transit

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The COVID-19 pandemic has affected travel behaviors and transportation system operations, and raised new challenges for public transit. Cities are grappling with what policies can be effective for a phased reopening shaped by social distancing.

The C2SMART researchers used a baseline model for pre-COVID conditions to create a new model representing travel behavior during the COVID-19 pandemic. They achieved this both by recalibrating the population agendas to include work-from-home, and by re-estimating the mode choice model (to fit observed traffic and [transit](#) ridership data) for the Center's MATsim-NYC platform, a multi-agent simulation test bed for evaluating emerging transportation technologies and policies. They then analyzed the increase in car traffic due to the phased reopen plan guided by the state government of New York.

Analyzing four reopening phases and two reopening scenarios (with and without transit

capacity restrictions), they found that a reopening with 100% transit capacity may only see as much as 73% of pre-COVID ridership and an increase in the number of car trips by as much as 142% of pre-pandemic levels. They also discovered that limiting transit capacity to 50% would decrease transit ridership further from 73% to 64% while increasing car trips to as much as 143% of pre-pandemic levels.

They noted that, while the increase appears small, the impact on consumer surplus is disproportionately large due to already increased [traffic congestion](#). Many of the trips also get shifted to other modes like micromobility.

The findings imply that a transit capacity restriction [policy](#) during reopening needs to be accompanied by (1) support for micromobility modes, particularly in non-Manhattan boroughs, and (2) congestion alleviation policies that focus on reducing [traffic](#) in Manhattan, such as cordon-based pricing.

Provided by NYU Tandon School of Engineering

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