COVID-19 and Transportation Behavior

April 2020

There are many unknowns about the extent of COVID-19's impact on society, but it is clear that the virus is influencing how we live, work, and move. Of critical importance, **experts have noticed a major overall shift in transportation behavior from communal to more solitary modes of travel.** Although this can be a setback for those of us attempting to foster sustainable commuting and travel habits, it can also serve as a catalyst for change.

Root Solutions created this report because of the critical need to understand and address evolving transportation needs in response to the pandemic. Further, due to the disruption, we are in a window of urgency for preserving existing sustainable habits, but also have an opportunity to positively shape behavior to form new habits in the realm of transportation. We present an overview of the **societal and psychological forces** expected to influence transportation behavior, followed by a set of **proactive, research-based solutions** for changing transportation behavior in response to the pandemic.

Implications of Coronavirus for Transportation[1]

Observed short-term effects

As stay-at-home orders fell into place, **transportation patterns have drastically shifted.**

Fears grew quickly around the spread of coronavirus.

- In an early March survey, 48% of Americans indicated that taking public transit poses a high health risk due to the virus.

Cities saw a massive dip in public transit ridership.

- Data from Transit, a popular navigation app, shows that ridership numbers are, on average, 74% below pre-crisis levels.
- Many marginalized members of society, however, are still using transit, putting them at greater risk. While many white-collar workers are able to continue working remotely, lower income essential workers, who are disproportionately people of color, are still on board. These inequities extend to America's transit workers as well.

BART ridership in San Francisco's Bay Area was down 94% as of early April and the agency is losing $9 million weekly.

1 We build upon Brianne Eby's robust analysis of the implications of COVID-19 for transportation behavior for *Eno Center for Transportation*.

Less Single Occupancy Vehicle (SOV) use in the short-term.

- At least twice as many people are working remotely than this time last year. While this is a blow to public transit, it also means less people driving, especially during congested commute times.
- For California, it has meant a 50% reduction in traffic accidents and crash-related injuries, which has **saved the state $40 million per day** during shelter-in-place.

People are getting outside more.

- Major cities have responded to stay-at-home orders by opening their streets to cyclists and pedestrians. Oakland alone has closed 74 miles of streets to traffic.
- New York and Chicago saw a 67-100% increase in bikesharing trips in early March. Additionally, cycle shops have seen an influx of purchases that could forecast a major shift toward cycling.

Expected medium- and long-term effects

As travel restrictions are lifted, lingering fears may **hinder communal transportation, while bolstering solo modes of travel.**

Pent-up demand for travel could cause a drastic rebound effect.

- The desire to reconnect with friends and family and reschedule gatherings is likely to create an initial surge in SOV (single occupancy vehicle) travel, amplified by historically low gas prices.
- While the experience of a global health crisis could amplify concerns over impending global climate crises, it could also backfire, causing people to bounce back from "lost time" with travel plans that are more environmentally costly, such as vacation to Europe versus Lake Tahoe.

Fears may last long into the future, causing a surge in individual modes of transportation.

- **Psychological impact:** Concerns over the virus could influence travel decisions for years to come--a 2011 survey indicated that 1 in 4 Americans **were reluctant to fly 10 years after 9/11**. Other health crises, like AIDS, SARS, and Ebola, have produced similar, long-lasting reactions.
- **SOV use:** Early indications from a post-outbreak survey in China show **private car use doubling**, while bus/metro use has been slashed in half. Similar patterns may emerge in the U.S.
- **Car purchasing behavior:** Driven primarily by the desire to reduce the chance of infection, 66% of those without a car in China have the **intention to purchase** one within 6 months. Others have already done so, as evidenced by a car purchasing boom in Wuhan and a slew of new Tesla orders in China.

- **Bicycling:** Fears about the safety of public transportation have resulted in an upside for solo modes of travel like bicycling. Bicycling has been touted as a solution in times of crisis due to its immunity to extreme economic, health, and weather shifts.

Distancing plans could mean a slow return to public and shared transit.

- **Public transit:** Agencies hit the hardest by the virus could be slow to get service back up and running; causing unreliable service, loss of funds, and **loss of riders' trust**.
- **Shared mobility:** Micromobility companies, coming out of their already slower, winter months, may struggle to survive after extensive stay-at-home orders.
- **Unemployment:** Economists project several years of high unemployment in California after peaking at 16.4% later this summer--reducing transit ridership and tax revenue.
- **Remote education:** Shifts toward remote education may keep riders away, as schools are cautious to reopen their doors in the fall.
- **Telework:** Workplace analysts predict that 25-30% of the workforce will be working from home multiple days a week by the end of 2021, compared with only 4% before COVID.

BART's projections for ridership in the coming months are bleak.
"The worst-case scenario shows the ridership slump continuing at least through July, and only rising to 50% of its usual 411,000 daily rider trips by January, finally reaching 70% of system ridership next June."

Taking A Behavioral Approach to Transportation

Our BEHAVIORAL Building Blocks™
Highlight norms to leverage **BELONGING**
Make it **EASY**
Cultivate powerful **HABITS**
Capture **ATTENTION**
Relate it to what we **VALUE**
Encourage consistent **IDENTITY**
Inspire **OPTIMISM**
Carefully bestow **REWARDS**
Frame to activate key **ASSOCIATIONS**
Cultivate compassion to make it **LASTING**

While times of disruption -- like the one we face right now -- present a clear moment for breaking bad habits, they also mean that existing sustainable habits are vulnerable. Thus, efforts must be made to preserve existing good habits for public and active transportation. Additionally, it is important to act as soon as possible, before even the first transportation-related decisions (e.g., to purchase a car, to terminate one's metro pass) are made when stay-at-home orders are lifted.

How can we best respond to this urgency? Transportation habits are notoriously difficult to change,[2] requiring more than a light-touch nudge.[3]

2 Alta Planning + Design & Behavioural Insights Team (2017). *Applying behavioural insights to Transportation Demand Management.* Retrieved from https://altaplanning.com/resources/behavioral-insights-transportation-demand-management/

3 Kristal, A. S., & Whillans, A. V. (2020). What we can learn from five naturalistic field experiments that failed to shift commuter behaviour. *Nature Human Behaviour*, *4*(2), 169-176.

To foster sustainable behavior, we often rely on legislation and incentives, yet these strategies can be costly and difficult to implement.[4] On the other hand, simply providing people with direct advice and information is not enough. ***By using insights from behavioral science and human-centered design, we can quickly adapt to changing circumstances and design approaches that are both efficient, and effective at changing transportation behavior.*** Below we provide a variety of strategies for doing so based on our **BEHAVIORAL Building Blocks™** Framework.

Timely Behavior Change Solutions are Critical

Below are several opportunities we've identified for: 1) **understanding evolving barriers and benefits** to active and shared modes of transportation and 2) **leveraging our current disruption for good** in the transportation sector.

Reduce SOV Trips - Stay-at-home orders have revealed the positive impact that minimizing SOV and air travel can have on reducing air pollution and greenhouse gas emissions. Moving forward, we can:

- Design transportation campaigns that provide what people are seeking right now -- **connection, hope, and fun** (e.g., neighborhood scavenger hunts or photo challenges).
- **Foster social norms** of shopping, eating, and playing closer to home by using messages that promote a sense of community.
- Work with employers to **make picking shared modes of transit easier** after shelter-in-place (e.g., priority carpool parking, emergency rides home).

Encourage Telework - The shift to temporary telework (although challenging for those at home with children) has lessened concerns with and illuminated the benefits of telework for employees and employers, including time and resources saved by eliminating trips. We can:

- **Conduct a barriers analysis** to identify the biggest behavioral barriers to effective teleworking and determine best practices to overcome them.
- **Equip employees to advocate for flexible work arrangements** before the end of the outbreak marks a return to "business as usual" or a "new normal."

Support Bicycling - Bicycling to work, or for errands, is often perceived as time consuming and uncertain. We have an opportunity to amplify the positive aspects of cycling--such as control over one's time, travel route, and exercise, while maintaining a safe distance from others. During this time, we can:

- **Educate interested riders** with posts, videos, and virtual events on how to utilize bike sharing, maintain a bike, and ride safely.

4 Benartzi, S., Beshears, J., Milkman, K. L., Sunstein, C. R., Thaler, R. H., Shankar, M., ... & Galing, S. (2017). Should governments invest more in nudging?. *Psychological Science*, *28*(8), 1041-1055.

- **Address uncertainties** by providing new bicyclists personalized travel plans to frequently traveled destinations (e.g., work, family, friends).

Promote Walking - People are out walking more than ever before, seeking fresh air, exercise, and socially-distant interaction in their community. Maintain this momentum by encouraging people to continue walking for a range of purposes. To do so, we can:

- **Reward people** for using active transportation by encouraging locally-owned businesses to offer special perks for patrons who choose to walk (or bike) there.
- Encourage families to explore sustainable alternatives for school drop-off/pick-up and practice safe walking (or biking) routes to **overcome safety concerns about and build confidence in** their child's ability.

Increase Bus/Metro Use - Encouraging people to utilize public transit is hard enough. Getting ahead of fears over the health risks of public transit will be a colossal task in the coming months. To help transit agencies and their patrons adapt to the "new normal," we can:

- **Conduct a barriers analysis** to help agencies understand and then address people's concerns about public transportation safety.
- **Advise on policy and structural changes** (e.g., social distancing protocols, hand sanitizer stations at bus stops and mobility hubs) to reduce concerns and rebuild trust.
- **Design messaging to assuage fears** and rebuild trust not only retain committed riders, but also encourage new riders when travel bans are lifted.

Root Solutions helps organizations leverage the power of behavioral science insights to successfully and efficiently promote sustainable behavior change. We conduct research, design and implement campaigns, and provide trainings based on the science outlined in our forthcoming book, *Making Shift Happen: Designing for Successful Environmental Behavior Change*.

We're here to help:

1. **Deliver recommendations** for strategy, infrastructure, and messaging.
2. **Conduct behavioral research** to understand your audience's evolving needs and concerns.
3. **Implement new campaigns or pivot existing** or planned programs.

To learn more about how Root Solutions can help, email Lauren Highleyman, our Assistant Director, at lauren.highleyman@therootsolutions.org or call us at 415-260-0626.