Global Mobility Response to COVID-19

How cities are responding, recovering, and reopening transportation systems around the world

June 2020 | Version 1.0

Sam Schwartz
# Global Mobility Response to COVID-19

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## About Sam Schwartz

Sam Schwartz is a full-service engineering, design, and consulting firm with nearly 25 years of experience helping cities respond to unexpected challenges. From the beginning, our firm has focused on two things: solving the most novel, complicated problems—and putting people first.

In the wake of 9/11, Superstorm Sandy, and other disasters, we were trusted by public and private clients to address unprecedented challenges. During these crises, we went to work immediately to ensure efficient and safe movement of people and goods. Similarly, in this moment, we are committed to doing everything we can to keep our first responders moving, our institutions operational, and our communities safe.

## Acknowledgements

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Global Mobility Response to COVID-19

Introduction

“When the world slowed down... the opportunity to rethink the movement of people began”

COVID-19 has highlighted the role the transportation sector plays in a public health crisis. The global pandemic has impacted the mobility landscape around the world and requires an examination of how jurisdictions responded, recovered, and reopened, in an effort to understand best practices and lessons learned. Such knowledge can prepare us for future public health emergencies and inform the decisions we make regarding transportation planning, operations, and maintenance.

When the pandemic hit, many cities responded with an immediate suspension of transportation activity; this led to significant reduction in transit ridership, a slowdown of economic activity, and a drop in traffic volumes. In some cities, bicycling surged as an alternative mode of transit while other cities saw increase in foot-traffic around new destinations such as grocery stores, testing centers, and parks.

As we now look toward long-term recovery, regaining many of these transit riders is a key focus, as is determining if some of the temporary measures—implemented to facilitate social distancing—should become permanent.

The need for safe and efficient movement of people and goods is crucial; this leads to creative solutions and recovery strategies that transform transportation system operations, reconfigure street design, and enact new mobility policies and regulations.

This resource captures a worldwide perspective to support the long-term planning for sustainable transportation systems and infrastructure. As of this writing, there is still uncertainty about the global impacts of COVID-19 in the future. Understanding the breadth of responses can help professionals chose the right ones to mitigate those impacts in their communities.

USING THIS RESOURCE:

This report synthesizes research on global COVID-19 transportation responses, conducted from March 2020 through June 2020. The report contains navigation links to relevant examples and strategies enacted in different cities.

An accompanying database includes examples of response and recovery actions taken by cities around the world. This database is broken out by geography, time interval, transportation category, and intervention type.

This is living research; the database and research report will be updated over time, marked by version number and date.

To learn more about global strategy, click this icon to view the online database. Use “sort by,” or search using keyboard shortcut ctrl+F to find a specific example.
Research Framework
Global Mobility Response to COVID-19

Research Framework

This research assembles more than 100 worldwide examples of how cities around the world have responded to the COVID-19 pandemic, including strategies to reopen transportation systems to allow for safe movement of people and goods.

The information and global examples were classified into three categories: Time Frame, Intervention Type, and Transportation Category.

**Time Frame**
- **Crisis (3-6 weeks)**: Rapid response deployed to immediately facilitate physical distancing and emergency needs.
- **Recovery (3-6 months)**: Longer-term intervention to allow sustained distancing efforts and safe mobility.
- **New Normal (Ongoing)**: Permanent condition reflecting new regulations, transportation service patterns, and human behavior.

**Intervention Type**
- **Design and New Infrastructure**: Planning, design, and construction of new physical interventions in the built environment.
- **Operational Changes**: Shifts in how existing infrastructure and resources are used, managed, and operated.
- **Policy and Regulatory Changes**: Legal tools that introduce new opportunities, change existing public mandates, and alter behavior.

**Transportation Category**
- **Traffic**: Volumes, speeding, signals, etc.
- **Transit**: Subway/Metro, bus systems, etc.
- **Transportation Network Companies (TNC)**: Taxis, ride hailing services (Uber, Lyft, etc.).
- **Micromobility Infrastructure**: Temporary bikeways, scooters, etc.
- **Freight**: Loading, operations, etc.
- **Street Design and Management**: Open streets, sidewalk expansions, curb regulation, etc.
Global Mobility Response to COVID-19 Overview
Starting in January 2020, wide-reaching, immediate lockdowns and transportation stoppages attempted to slow the spread of COVID-19 by severely limiting human mobility, interaction, and public exposure. Nations on every continent have followed the lead of Wuhan, China, which began its lockdown on January 23rd, 2020.

While lockdown looks different everywhere, a central tenet has been the limiting or suspension of transportation and mobility services. In the most severe cases, as in Egypt and India, all transportation has been prohibited—including that by private vehicle—and strict, universal police enforcement has been promised.

### Immediate Response in a new transportation landscape

**TRAFFIC**
Vehicle traffic volumes have decreased immensely around the world. In the United States, vehicle volumes were down by 41% from pre-pandemic levels according to INRIX¹.

**TRANSIT**
Everywhere, transit ridership has fallen in response to stay-at-home orders and fear of the virus. Some cities’ ridership has dropped by over 90%².

**MICROMOBILITY**
Bicycle use soared³ during the onset of the virus as people sought a safe, reliable mobility option, and it has remained a popular mode choice.

**TRANSPORTATION NETWORK COMPANIES**
TNCs have had to adapt their shared-ride policies in response to social distancing measures, and have required safeguards, both physical and behavioral, for their drivers and passengers.

**FREIGHT**
Global demand has generally been depressed, but local deliveries of less than 100 miles have increased by 100% as residents have sheltered-in-place and retail closed⁴.

**STREET DESIGN AND MANAGEMENT**
Pedestrian volumes have decreased in the densest corridors⁵, but new destinations have led to a need for more open space to ensure social distancing.
Recovery-Based Strategies—Worldwide Case Studies

- Rethinking the Right of Way
- Implementing Micromobility Infrastructure
- Recovering Transit Systems
- Managing Traffic and TNC Regulations
- Other Innovative Practices
Rethinking the Right of Way

In many cities, the right-of-way has long been dominated by automobiles, leaving those traveling by foot, bicycle, or other non-motorized option relegated to space on narrow, often impeded sidewalks, or sharing the road with motor vehicles. Given the guidelines for social distancing (as of this writing, three feet from the World Health Organization\(^6\) and six feet from the US Centers for Disease Control and Prevention\(^7\)) the minimal space allocated to pedestrians in most cities has been highlighted.

This is even more apparent given the precipitous drop in number of motor vehicles on city streets: video of an attempt to maintain social distance on Toronto sidewalks has gone viral\(^8\), and a color-coded map\(^9\) of New York City sidewalk widths has been widely shared.

In an effort to encourage public health and enable movement of citizens around their neighborhoods, many jurisdictions have begun to reimagine rights-of-way to incorporate expanded space for walking, cycling, and other forms of active mobility and transportation.

Cities and their suburbs are working at a variety of scales. Many are implementing temporary, geographically-limited pilots that take advantage of emptier roadways to open up space for recreation, hoping to reduce crowding in parks and other public spaces. Others have committed to longer-term or more regional interventions, introducing opportunities to create new bike lanes, prioritize pedestrians, and create more open space in neighborhoods with limited access to parks.

In the United States, vehicle volumes have fallen 41\% during the coronavirus pandemic\(^10\). While evidence suggests that foot traffic has generally decreased\(^11\) (particularly among the densest commercial corridors) a whole host of new pedestrian “destinations” have popped up. Grocery stores, parks, hospitals, and testing centers have all been transformed from places where one might occasionally brave a crowd into centers of carefully choreographed social distancing, with waiting rooms and cashier lines moving onto sidewalks with six-foot markings.

In response, jurisdictions began implementing “open streets” by carving space from vehicular traffic in order to create designated zones for safely-distanced outdoor activity. Most have been conceived as temporary interventions; some are being codified as permanent additions to a city’s public space.

While each jurisdiction is different, open streets have been rolled out along largely similar lines: temporary barriers communicate a ban to through traffic, while local traffic retains access to an environment shared with people on foot and on wheels; emergency vehicles are permitted at all times. Some locations have targeted roadways adjacent to parks and other open spaces to accommodate socially-distanced crowds; others are attempting to distribute these new resources more widely throughout their communities, using open streets as a tool to address inequities in access to recreational facilities. Open streets are among the most common and widely celebrated response to COVID-19 in the realm of transportation.

While long-term modal trends are hard to predict in this moment, cities around the world are seizing the chance to reconceptualize the right-of-way with equity, social, and environmental justice as central tenets.

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**STRATEGIES:**
- Permanent Open Streets
- Temporary Open Streets
- Curbside Use
- National Open Streets Funding
Permanent Open Streets

CASE STUDY:
Seattle, WA

Date: May 2020

Responsible Party:
Mayor of Seattle, Seattle Department of Transportation

Overview:
What began as a need for temporary, pandemic-related street closures was converted to permanent street closures to provide residents with the healthy long-term benefit of additional street space for walking and cycling.

Implementation:

- 20 miles of streets to remain permanently closed to most vehicle traffic
- Streets closed to traffic but delivery drivers, sanitation trucks, and emergency response vehicles all retained access

Open streets are typically closed to thru traffic but maintain access for certain vehicles.
**Temporary Open Streets**

**CASE STUDIES:**

Paris, France | Milan, Italy

**Date:** Spring 2020

**Responsible Party:** Mayors of Paris and Milan

**Overview:**
The mayors of Paris and Milan converted many of their city-center streets, including some major thoroughfares, into pedestrian-priority streets. These leaders are forcefully committed to decreasing the amount of road space for automobiles. Some are committed to maintaining this following the acute public health crisis.

**Implementation:**

- Officials are working to gradually expand pedestrian space into parking and moving lanes
- Accomplished with small-scale physical infrastructure including re-paving, re-striping, and re-curbing

>"If everybody drives a car, there is no space for people, there is no space to move. We think we have to re-imagine Milan in the new situation."

-Marco Granelli, Deputy Mayor of Milan

In Paris, many streets that once catered to cars have been converted to prioritize pedestrians. Photo by Matthieu Oger.
## Temporary Open Streets

**CASE STUDIES:**

England (London, Brighton, Manchester)  
Oakland, CA | Denver, CO  
Minneapolis, MN | Vancouver, BC  

**Date:** Spring 2020

**Responsible Party:**  
Departments of Transportation, Parks Departments

**Overview:**  
Many cities throughout Europe and North America implemented “Slow Streets” or “Stay Healthy Streets” programs. Streets are closed to through traffic, which is intended to support outdoor physical activity for residents while allowing adherence to physical distancing guidelines.

**Implementation:**

- Soft closures involve signage, traffic cones, planters, and barricades; limited police presence  
- Streets mostly remain open to local traffic, with motorists advised to use caution  
- Emergency access is maintained; some public transit access is maintained

### TIMEFRAME

<table>
<thead>
<tr>
<th>Crisis (3-6 Weeks)</th>
<th>Recovery (3-6 Months)</th>
<th>New Normal (Ongoing)</th>
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### INTERVENTION TYPE

- Design and New Infrastructure  
- Operational Changes  
- Policy and Regulatory Changes

### TRANSPORTATION CATEGORY

- Traffic  
- Transit  
- Freight  
- Street Design and Management

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**A bicyclist shares one of Oakland’s open streets.**
Temporary Open Streets

CASE STUDY:
New York, NY

Date: Spring 2020

Responsible Party:
Mayor of New York City, NYCDOT, NYPD

Overview:
Under pressure from the City Council after an initial pilot program was abandoned, New York City’s mayor committed to open 100 miles of roadway to create more access for residents of the five boroughs. Within the first month of the program, 40 miles of roadway were opened with the initial emphasis on parks.

Implementation:
The program commits to the following:

- 60 miles within and adjacent to parks
- 20 miles locally designated
- 10 miles managed by local partners
- 2.5 miles of sidewalk expansions
- 10 miles of protected bicycle lanes

Residents of New York City’s Upper East Side neighborhood on a shared street. (Photo by Fred Cannizzaro)
Curbside Use

CASE STUDY:

United States

Date: Spring 2020

Responsible Party: Various local governments

Overview:
To create more space for residents, some cities are examining how sidewalks, parking spaces, parking lots, and street right-of-way can be converted to social and commercial space. Street furniture and temporary installations are being used to more clearly demarcate the space and provide a friendly and inviting atmosphere. To facilitate the process, cities are examining the introduction of special permits or even waiving permit requirements.

Implementation:
• Spaces for socially-distant sit-down dining
• Expanded walking space for shop-goers
• Pop-up events such as drive-in movies or concerts

Cities are rethinking the physical organization of sidewalks, curbs, and streets and adjusting policies to provide more space for commercial uses.
National Open Streets Funding

CASE STUDIES:
New Zealand | Scotland

Date: Spring 2020

Responsible Party: Various governmental bodies

Overview: Government bodies have committed to providing the necessary funding and technical guidance to their local municipalities so they can in turn, build needed sidewalk expansions and more bicycle lanes. These efforts are funded with the goal to create more space for residents and to support healthy activities during the pandemic.

Implementation:

- New Zealand cities invited to apply for up to 90% of funding for “tactical urbanism” interventions
- Scottish government diverting £10 million for roadway conversions

Commitment to street redesign was solidified through funding and technical assistance programs.
Global Mobility Response to COVID-19

Key Trends

The COVID-19 pandemic has pushed the open streets movement to the forefront and forced a review of the use, allocation, and purpose of city streets worldwide. Lower vehicular volume has enabled different uses of our street space, and local governments have capitalized upon these new conditions to create room for socially-distanced recreation and mobility.

As of this writing, early adopters of open streets, such as Milan and Oakland, continue to expand their programs. An increasing number of cities and suburbs are turning over their pavement to pedestrians and cyclists. The trend has grown so widely that even Google Maps includes a typological indicator, painting open streets in with a dashed blue line.

Temporary street closures and redesigns, whether comprised of a movable wooden barrier or a full program of re-paving and striping, enable cities to pilot new roadway allocations to meet the current demand for more pedestrian space. Low-cost and flexible demarcations assist in keeping these programs nimble and responsive to observed use and demand.

National funding, expert guidance, and simple peer-to-peer knowledge sharing have positively affected the proliferation of open streets, helping to spur interventions in cities initially resistant and offering smaller municipalities the resource they need to enact these changes. Open streets—whether discontiguous recreational spaces or corridors for active mobility—present to cities a new vision of pedestrian infrastructure which can easily be maintained even as the pandemic subsides.

Three Take-aways

1. Lower vehicular volume has enabled cities and suburbs to reconfigure streets for pedestrians and cyclists. Temporary street closures can be quickly and inexpensively implemented with measures such as moveable barriers and paint.
2. The reconfiguration of curbside space can be implemented in a way that promotes two goals: economic vibrancy and public health.
3. A network of funding, technical assistance, and peer-exchange exists to support the implementation of shared streets.
Implementing Micromobility Infrastructure

In cities around the globe, the bicycle has emerged as a remarkably applicable mode of transportation during the coronavirus pandemic. Individualized, inherently socially-distancing, and low-cost, the bicycle—and its micromobility cousin, the scooter—has soared in popularity since the start of the pandemic and the reduction in many cities’ transit services: bicycle traffic is up more than 50% in New York City, and has risen even further in other cities, with dramatic upward trends in new bicycle purchases. While the rise of open streets provide more space for safe cycling, many cities are going further by implementing a larger network of dedicated micromobility infrastructure.

The reduction in vehicular traffic has enabled jurisdictions to swiftly implement new dedicated bike lanes, both temporary and permanent. Some of these are separated from other traffic by simple cones or small, flexible barriers; others are seeing new roadway striping and physical separations. Plans are being put forward in some jurisdictions for more permanent redesigns to be implemented in the future, particularly as a means of introducing or completing a regional-scale bike lane system.

Governments and service providers are looking to further encourage cycling beyond designating roadway space by directing funding toward everyday bicycle maintenance and waiving membership fees for bikeshare systems. In doing so, cities are making strides toward solidifying micromobility as a primary mode of transportation, facilitating safe and healthy movement, and reducing automobile emissions.

STRATEGIES:
- Temporary Bicycle Lanes
- Temporary & Permanent Bicycle Lanes
- Permanent Bicycle Lanes
- Bikeshare Discounts
- National Cycling Program
CASE STUDY:
Bogotá, Columbia

Date: Spring 2020

Responsible Party: Mayor of Bogotá

Overview:
To support and incentivize people to ride bicycles during the pandemic, the Mayor of Bogotá changed policy so that the existing Sunday-only ciclovia were expanded to include weekdays. This decision provides a safe and healthy transportation alternative for all residents.

Implementation:

- 22 km (13 miles) of temporary bike lanes were installed overnight on March 17, 2020
- 76 km (47 miles) of temporary bike lanes to be opened in total

The Mayor of Bogotá acted quickly to change policy and expand physical infrastructure.
**Temporary & Permanent Bicycle Lanes**

**CASE STUDY:**

Paris, France

**Date:** Spring 2020

**Responsible Party:** Mayor of Paris

**Overview:**
The Mayor of Paris, Anne Hidalgo, declared, “Returning to a Paris dominated by cars after the lockdown is out of the question.” Recognizing the opportunity presented during the crisis to rethink transportation throughout the city, 650 kilometers of “cycleways” were created in the month of May, 2020. This included pop-up “corona cycleways” that were carved out of parking spaces, all to be ready to adapt to the easing of lockdown restrictions.

**Implementation:**

- New cycle paths are planned that expand from the city center into outer suburbs, mirroring three key subway routes
- The initiative represents hastening of Mayor’s emissions reduction and alternative transportation program, tying responses to the public health crisis and responses to the environmental crisis

“The returning to a Paris dominated by cars after lockdown ends is “out of the question.””
- Anne Hidalgo, Mayor of Paris

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**TIMEFRAME**

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<th>TIMEFRAME</th>
<th>INTERVENTION TYPE</th>
<th>TRANSPORTATION CATEGORY</th>
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<td>Crisis (3-6 Weeks)</td>
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<tr>
<td>New Normal (Ongoing)</td>
<td>Policy and Regulatory Changes</td>
<td>Micromobility Infrastructure</td>
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</tbody>
</table>

The French Minister for the Ecological and Inclusive Transition Elisabeth Borne sprays yellow paint to mark new bicycle lanes.
Permanent Bicycle Lanes

CASE STUDY:
Berlin, Germany

Date: Spring 2020

Responsible Party: Berlin district parliaments

Overview:
Recognizing the need to help people move through Berlin without using public transit, Berlin created a program of pop-up bicycle lanes, installed initially in the district of Friedrichshain. This new program was a rapid deployment and expansion of an existing longer-term bicycle infrastructure plan.

Implementation:

- Expansion of existing bicycle lanes
- New bicycle lanes on streets without them
- Lanes temporarily demarcated using paint, warning beacons, signage, and foil barriers that can be removed or made permanent in the future

Berlin rapidly expanded its bicycle network.
Permanent Bicycle Lanes

**CASE STUDY:**
Brussels, Belgium

**Date:** Spring 2020

**Responsible Party:**
Brussels Government and Regional Minister of Mobility

**Overview:**
To provide more transportation access for residents, roadways in Brussels’ central *Pentagone* district were prioritized and converted for bicycle use. The need to create more transportation access has allowed Brussels to begin rebalancing the allocation of space for automobiles with more sustainable modes of travel designed to promote a healthy lifestyle.

**Implementation:**

- Signage will be posted and police will monitor compliance
- Flower boxes or concrete barriers will be installed as needed
- The region will open 40 additional km of bicycle lanes providing access to the city center, main axial routes, and connections to existing bicycle infrastructure

**TIMEFRAME**
- **Crisis** (3-6 Weeks)
- **Recovery** (3-6 Months)
- **New Normal** (Ongoing)

**INTERVENTION TYPE**
- Design and New Infrastructure
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Workers paint new bike lanes in Brussels.
**Bikeshare Discounts**

**CASE STUDIES:**
Glasgow, Scotland | New York, NY
Boston, MA | Chicago, IL

**Date:** Spring 2020

**Responsible Party:** nextbike, Lyft

**Overview:**
Since the start of the pandemic, bike share ridership has increased in multiple cities. In Glasgow, nextbike offered 1,000 free monthly memberships to National Health Service workers from April 2020—June 2020. These free memberships provide unlimited 30-minute rides on the standard pedal bikes and a £2.50 e-bike credit. The program supports essential workers and is designed to provide them with an alternative way to get to work safely.

Lyft is offering free monthly memberships in New York and Chicago to first responders and hospital and transit workers on the systems it operates and has installed new stations near hospitals.

**Implementation:**
- Additional stations are installed in key locations to serve essential workers.
- Bicycles and kiosks to receive enhanced cleaning and sanitation.

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Bikeshare policies and cleaning practices evolved in response to the pandemic.
**Bikeshare Discounts**

**CASE STUDIES:**
Kansas City, KS & MO | Detroit, MI
Memphis, TN

**Date:** Spring 2020

**Responsible Party:** BCycle, MoGo, Explore

**Overview:**
To create more alternatives to driving, cities are launching free bikeshare rides that are available to all. The programs are designed to help expand outdoor recreational opportunities during the pandemic.

**Implementation:**
- Kansas City: First 20 minutes free
- Detroit: Free monthly pass for all users
- Memphis: Free 60-minute rides, costs covered by sponsor and non-profit
- Kansas City: KC Bcycle is providing unlimited e-bike and scooter use to local small businesses
- In many cities, bicycles and kiosks receive enhanced cleaning and sanitation

Free bikeshare programs have proliferated as a result of the pandemic.
National Cycling Program

CASE STUDY: France

Date: Spring 2020

Responsible Party: Minister of Ecological Transition and Federation of Bicycle Users

Overview:
To encourage more people to use bicycles, France’s Federation of Bicycle Users is registering a network of bicycle repair shops that will be reimbursed by the government.

Implementation:
- All cycle repairs, up to €50 will be provided free of charge to cyclists under Plan gouvernemental pour encourager le vélo (Plan for Cycling)
- Further funding is allocated for temporary bike racks and training courses

Bicycle shops performing repairs will be reimbursed by the French government.
Global Mobility Response to COVID-19

Key Trends

With an uptick in bicycle use and the need for safe, healthy, and socially-distant mobility, jurisdictions set up temporary micro-mobility extensively and quite rapidly—in some cases, overnight. Some bike lanes were installed using temporary materials, the result of a few plastic cones; others represent a significant capital investment and a physical change to the street. Regardless, all of them are helping facilitate people’s movement around their cities at a time when other modes may not be as accessible.

The diversity in implementation demonstrates just how dynamic and adaptable micromobility—and its users—can be: what is most important throughout the world is the existence of space to cycle, with context, culture, and politics influencing the details of implementation.

Many cities are also looking at long-term bicycle plans and figuring out what can be implemented today. Increased demand for dedicated bicycle lanes coupled with a reduction in automobile traffic means that authorities can jump-start the process of building permanent infrastructure—defining a new normal from acute, present needs—and ensuring that micromobility remains a central part of urban transportation even after the pandemic subsides.

Projects that facilitate bicycle use by offering free use of bikeshare systems or government-funded maintenance seek to further expand comfort and familiarity with cycling in pursuit of a future with fewer automobiles.

Three Take-aways

1. In the early months of the pandemic, city-dwellers turned to bicycles as a safe and efficient mode of travel
2. Jurisdictions quickly accommodated bicycles and other forms of micromobility with new programs and infrastructure
3. Many cities are considering how to expand or make permanent the temporary measures
Recovering Transit Systems

When the coronavirus pandemic began noticeably impacting cities, many commuters around the world avoided the public transit systems that they had so long relied on. Enclosed and often crowded, public transit has experienced dramatic losses in ridership. Across systems in the United States, it is estimated that passenger numbers have dropped 54% (see chart on the right). This included the New York City Subway, which in May took the unprecedented step of shutting down overnight for sanitization and maintenance.

Transit agencies face several challenges: maintaining a level of dependable service for essential workers; inspiring confidence in former passengers so that they return to the system; and promoting financial stability when farebox collections have been severely impacted.

While every city and every system reflects its citizen’s mobility needs, transit culture, and coronavirus outbreak severity, several common themes have emerged: reduced capacity; rules and requirements for safe passenger and operator behavior; and highly visible, frequently practiced sanitization.

As of this writing, it remains unclear when, or how, people will feel completely comfortable returning to public transit. On the surface, agencies are making modifications to ensure safe and viable bus service. Across all modes, it is yet to be seen what new etiquette will dictate interactions among riders. As was true before the onset of COVID-19, the life of a transit system is inextricably tied to the decisions and confidence of the people who ride it.

STRATEGIES:
- Rail Capacity Reduction
- Bus Capacity Reduction
- Risk Reduction Measures
- Increased Sanitation
- Increased Sanitation: UV
- Transit Service Replacement

RECOVERY-BASED STRATEGIES — WORLDWIDE CASE STUDIES
Rail Capacity Reduction

CASE STUDIES:
Milan, Italy | London England
Hong Kong | Singapore

Date: Spring 2020

Responsible Party: Government and transit agencies

Overview:
The pandemic required transit agencies worldwide to implement passenger reductions and restrictions to maintain safety standards and abide by social distancing guidelines. In addition, concerns about how the virus spreads have greatly reduced the volume of ridership that is customary for rail service. Agencies are now challenged to align safety with the need for mass ridership volumes needed to fund operational budgets.

Implementation:

Implemented Service Changes:
• London: a full-time weekend schedule
• Hong Kong: Increased headways on airport and tourism related lines
• The need for the complete closure of certain stations and lines in multiple cities

Implemented Passenger Restrictions:
• Physical markings on the floor to remind passengers to remain socially distanced
• Proof of a passenger’s essential worker status
• City-wide staggered commute times to avoid overcrowding on transit vehicles

The metro in Milan guides passengers on where to stand.
Bus Capacity Reduction

CASE STUDIES:
London, England | Chicago, IL
Boston, MA | Buffalo NY

Date: Spring 2020

Responsible Party:
Various governments and transit agencies

Overview:
Mandated social distancing requirements have increased concerns among bus riders. In response, cities are reducing bus ridership volumes and enacting social distancing measures in order to attract riders back to public transit. As lockdowns are lifted, the challenge for many cities has become providing full service in the face of lower passenger occupancy limits. These limits are being strictly enforced by drivers, with some stops being skipped all together if the bus reaches its reduced capacity.

Implementation:
- Middle or rear-door boarding required for all passengers; elderly or handicapped passengers may require front-door boarding to avoid passengers’ interactions with bus drivers
- Fares waived on most services
- Updated cleaning protocols reduced the length of time in between cleanings of frequently touched surface

Cities like Chicago, Illinois are working social distancing measures into their practices.
CASE STUDY:
London, England

Date: Spring 2020

Responsible Party: Transport for London

Overview:
Bus riders in London are seeking assurances that every precaution is being taken on their behalf to provide them with a safe riding environment. In turn, TfL is installing new safety features in the bus fleet which will, after lockdown restrictions are fully lifted, provide the public with a better transit experience. Such measures can become a positive service benefit to entice ridership in the future.

Implementation:

• Air filters have been installed on 100 buses in TfL’s bus fleet, specifically targeting vehicles used to transport people to and from hospitals. This intervention may be rolled out more widely
• Buses utilize all middle-door boarding, with transit fares waived
• Protective screens for drivers and frequent disinfecting will be employed

All buses on Transport for London’s fleet are loaded from the middle doors.
Risk Reduction Measures

CASE STUDIES:
Madrid, Spain | Seoul, South Korea

Date: May 2020

Responsible Party: Various public transit agencies

Overview:
Social distancing is challenging and difficult to maintain in many metro systems. Among other interventions, Madrid and Seoul are implementing risk reduction measures to instill confidence in the riding public.

Implementation:
- Both cities are requiring mandatory mask usage by all riders in both transit stations and vehicles
- Service on Madrid Metro to be run at 100% to avoid overcrowding
- Safety personnel enforce rules at peak times when train cars are at 150% capacity

<table>
<thead>
<tr>
<th>TIMEFRAME</th>
<th>INTERVENTION TYPE</th>
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<tbody>
<tr>
<td>Crisis (3-6 Weeks)</td>
<td>Design and New Infrastructure</td>
<td>Traffic</td>
</tr>
<tr>
<td>Recovery (3-6 Months)</td>
<td>Operational Changes</td>
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</tr>
<tr>
<td>New Normal (Ongoing)</td>
<td>Policy and Regulatory Changes</td>
<td>Street Design and Management</td>
</tr>
</tbody>
</table>

Masks are mandatory on the Seoul metro system.
**Risk Reduction Measures**

**CASE STUDY:**
Rome, Italy

**Date:** May 2020

**Responsible Party:** Roman government

**Overview:**
As commuters in Rome begin using public transit again, the government has mandated that all riders are required to wear protective masks and keep a distance of one meter apart from other people. For additional safety, those arriving at the Termini Station have their temperatures taken by the station’s staff.

**Implementation:**
- Some train and bus seats kept empty to facilitate social distancing
- Markers installed on station and vehicle floors to facilitate social distancing

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**INTERVENTION TYPE**
- Design and New Infrastructure
- Operational Changes
- Policy and Regulatory Changes

**TRANSPORTATION CATEGORY**
- Traffic
- Transit
- Street Design and Management
- Transportation Network Companies
- Freight
- Micromobility Infrastructure

Workers conduct temperature checks at Termini Station.
## Risk Reduction Measures

### CASE STUDY:

Beijing, China

**Date:** April 2020

**Responsible Party:** Beijing Municipal Government

**Overview:**

Facial recognition technology is currently being deployed on Line 6 in Beijing. High-resolution cameras scan passengers to determine compliance with mask requirements; if passengers faint or fall ill; or if passengers wave or request help. These extra levels of security allow for faster response, promoting passenger safety.

**Implementation:**

- “Intelligent communication system” facilitate communication between subway operators and riders
- Strict control of access to all stations, with registration and temperature checks required

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<td>Micromobility Infrastructure</td>
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</table>

*Workers conduct temperature checks on the Beijing metro.*
## Increased Sanitation

### CASE STUDY:

**Hong Kong**

**Date:** March 2020

**Responsible Party:** Hong Kong Mass Transit Railway (MTR)

**Overview:**
Transit riders and the media reacted positively in Hong Kong to the use of MTR’s innovative cleaning machine technology. These robots can efficiently clean subway cars using vaporized hydrogen peroxide while keeping the operator at a safe distance. Although the coronavirus pandemic has mandated the increased cleaning of subway cars, platforms and stations, the long-term use of robots is an operational investment that provides a positive image of enhanced safety measures, while demonstrating that Hong Kong is looking to what’s next and thinking outside of the box. Embracing new technology can become a decisive factor in restoring ridership.

**Implementation:**

- An operator can control the machine remotely from up to 20 meters away
- Machines can clean an 8-car train in 4 hours
- The can also be used to clean station and ticketing area
- MTR plans to deploy 20 cleaning robots

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</table>
**Increased Sanitation: UV**

**CASE STUDIES:**
Shanghai, China | New York, New York

**Date:** Spring 2020

**Responsible Party:** Various public transit agencies

**Overview:**
UV light is one next generation technology for cleaning and disinfecting both subway cars and buses. To streamline the manual cleaning process and the purchase of costly supplies, transit agencies in Shanghai have constructed bus-sized tunnels that allow for the automated disinfection, both inside and out.

**Implementation:**
- Transit vehicles are blasted with UV light after service to kill the virus on surfaces
- Cleaning takes place at depots equipped with hundreds of high-intensity UV tubes
- The cleaning can be operated remotely to avoid excessive human UV exposure

Transit in Shanghai is cleaned by UV light.
## Transit Service Replacement

### CASE STUDY:
**New York, New York**

**Date:** Spring 2020

** Responsible Party:** MTA

**Overview:**
Once one of the world’s few 24/7 systems, the requirement to deep-clean New York City’s entire subway system necessitated the complete shutdown of service from 1 AM – 5 AM every day of the week. To maintain service for essential workers—many of whom ride the trains from 1 AM to 5 AM—the city introduced the “Essential Connector” service to provide alternate means of transportation to any essential worker whose bus trip would take more than 1 hour and 20 minutes, require more than two transfers, or has to walk to or from a bus stop that is is more than 1/2 mile (10 minutes) from their location.

**Implementation:**
- Taxis, TNC vehicles, dollar vans, and paratransit operators were contracted to provide service
- Transportation arranged via MTA-run telephone line, website and app
- One free trip per night is provided free of charge to users who meet qualifications

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#### TRANSPORTATION CATEGORY

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**Traffic**

**Transit**

**Freight**

**Street Design and Management**

**Micromobility Infrastructure**

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“The City that Never Sleeps” saw its world-famous 24/7 subway service halted for deep cleaning of the system between 1am and 5am. (Photo by Stanislav Parfenov)
Global Mobility Response to COVID-19

Key Trends

Lockdown decrees, work-from-home orders, the disappearance of tourism, and an understandable discomfort among the public has decimated public transit ridership around the globe.

Not all cities, however, are facing the same crisis: where passengers were met with strict and early social-distancing and isolation requirements, such as in Seoul and Hong Kong, ridership has fallen less severely and service levels remain high. Even so, most cities worldwide have focused on keeping the transit system from becoming a hotspot of infection, limiting access to avoid crowding and keep transit safe for the essential workers who rely on it. That translates into immediate service changes and stoppages as well as the creation of new, substitute transportation programs like New York City’s Essential Connector.

Future ridership will be impacted by factors beyond the transit agencies themselves: the quality of the public health response, the future conditions of work and education, and the modal shifts set in motion by the coronavirus. Understanding that most cities cannot withstand an increase in private vehicle traffic and that bicycles lack universal accessibility and applicability, it is vital that transit systems adapt in an effort to demonstrate publicly that they are safe to ride.

In the short-term, as seen around the world, this means the enforcement of social distancing; requirements to wear personal protective equipment (PPE); or, in some places, undergoing a temperature check. Some agencies are opting for highly visible, well-publicized campaigns of cleaning and sanitization—whether it be by old-fashioned scrubbing or the deployment of futuristic light beams. In the long term, this may mean a reconsidered relationship between how our society operates and how we use transit.

Three Take-aways

1. Many transit systems modified service or shut down completely in response to the coronavirus crisis, often leading to a swift and severe drop in ridership
2. In the response phase, cities around the world are modifying operations to include new cleaning routines, PPE requirements, or temperature checks
3. Long-term ridership trends will be impacted by local factors such as the public health response to new outbreaks and the nature of the regional economy

London’s transit system, like many across the world, has been impacted by COVID-19.
An unexpected phenomenon during the spring of 2020 was the emergence of blue skies over cities like Los Angeles, Delhi, and Chongqing, often associated with degraded air quality. Commentators were quick to point out the likely cause: with so many people in isolation at home, far fewer automobiles were out on the roads. Indeed, vehicle volumes in the United States have been estimated to have dropped 41% when compared to pre-pandemic levels.

Automotive dependence, particularly in less urbanized areas with lower density, has not been eradicated, of course: the change comes from an extreme drop-off in city-center automobile trips related to the work commute. Incidentally, many of these trips could likely be replaced by another mode, be it transit or something more active.

The reduction in vehicle volumes on our city streets has paved the way for a rethinking of the right-of-way and has given the green light to a number of temporary and permanent pedestrian and micromobility interventions. To accommodate a growing number of non-automotive users of the road, cities are implementing new rules for and paradigms for driving in central districts. Along with the widespread introduction of shared streets typologies (and the increased vigilance these press upon drivers) some cities—among them, Milan and Brussels—are lowering speed limits to levels in line with, or below, Vision Zero guidelines.

At the same time, the road users with perhaps the biggest footprint in many cities—taxis and for-hire vehicles—are facing challenges as a result of public reticence to share such close quarters with a stranger. New regulations aimed at somewhat easing such fears are, perhaps, indicative of the norms that will come to define mobility in the future.
Traffic Speed Reduction

CASE STUDIES:
Milan, Italy | Brussels, Belgium

Date: Summer 2020

Responsible Party: Governments of Milan and Brussels

Overview:
Lower vehicle volumes have resulted in increased vehicle speeds in many cities. Leaders in Milan and Brussels are taking two approaches to improving safety. As a regulatory action, governments are lowering speed limits. Taking a design approach, these cities are implementing “shared streets” that require drivers to slow down and share the road with pedestrians and bicyclists.

Implementation:
- Enforcement of new lower speed limits: 35 km/hour in Milan, 20 km/hour in Brussels (including street cars)
- Reduced lane capacity on city-center streets
- Introduction of new shared street spaces open to pedestrians and bicyclists in addition to automotive vehicles

Restricted speed zones in Milan.
Taxi Ridership Regulations

CASE STUDIES:
Edmonton, AB | Boston, MA
United Arab Emirates | South Korea

Date: Spring 2020

Responsible Party: Various city governments

Overview:
Taxis and for-hire vehicles are facing challenges as a result of reluctance of riders to share close quarters with a driver or “shared ride” passenger. Although many private companies have proactively changed their offerings and policies, several cities are implementing new regulations aimed at somewhat easing such fears and promoting public health.

Implementation:
- Strict limitations on the number of passengers, with a maximum of two passengers (if not family members)
- Passengers and drivers required to wear PPE for duration of trip, with drivers able to refuse non-compliant riders
- Cleaning supplies required to remain visible to passengers within vehicle to encourage frequent cleaning

Public health concerns have required TNC companies to revise their safety practices.
Key Trends

With automobile traffic down and city streets open to other uses and users, urban environments face an important moment in defining their future. If roadway space is to be shared by pedestrians, scooters, and bicycles in addition to motor vehicles, streets must employ mechanisms that allow this diversity of users—all with different speeds, weights, and levels of protection—to coexist safely.

Reducing speed limits may be the most overt way to do this, and the cities that are codifying lower speed limits are sending a strong message about who roadway space is for. Yet even cities that haven’t formally changed their speed limits—such as New York City, London, and Oakland, CA—have engaged in an effort to reduce vehicle speeds by deploying bollards, planters, barriers, and signs alerting drivers that they are no longer the only inhabitants of that space. If political will and public pressure coalesce, this de-prioritization of the automobile may be a long-lasting legacy of the coronavirus pandemic.

The taxi and for-hire vehicle industry also faces a potential shift in how it operates and the space it occupies. As with transit systems, taxis and for-hire vehicles face a public skeptical about being in a confined space with someone they do not know, even if the environment may be somewhat more predictable than the subway platform. Restricting capacity, requiring frequent and visible cleaning, and enforcing distancing rules to the extent possible are all attempts to restore confidence in taxis as a safe form of individualized public transportation. Shared rides, something that transportation network companies have promoted as a way to reduce congestion and lower emissions while providing personalized service, are currently not viable, and have been halted by service providers. If these regulations become norms, this mode of transportation may see a need to redefine itself.

Three Take-aways

1. Improved air quality has been an interrelated benefit of reduced vehicle volumes

2. Reduced automobile traffic has often required implementation of lower speed limits to curtail speeding and promote safety—particularly on shared streets

3. Taxis and for-hire vehicles have modified protocols or eliminated offerings, such as shared rides
In response to the acute impacts of the coronavirus pandemic, cities have adopted practices and enacted principles that facilitate safe movement, permit healthy transportation, and establish sustainable systems for the future. Many cities are learning from their peers, observing what sister cities are doing, and figuring out ways to implement similar programs in their own context.

No two cities are alike, however. Different histories, cultures, demographics, and economies lead to unique opportunities and localized ways of meeting the challenges posed by the coronavirus. Many jurisdictions are taking action in ways that reflect their specific political structure yet can be applied in other countries and cities. Others are employing new ideas that may not have a broad impact, yet display ingenuity, imagination, and a commitment to trying innovations that promote well-being and safety during the coronavirus.

These innovative practices stem from an honest and comprehensive assessment of what can be done and how: the opportunities, technologies, and resources can be capitalized upon in pursuit of a healthy present and a favorable future.

STRATEGIES:

- Expedited Construction
- Remote-Controlled E-Scooters
- Re-Use of Transit Vehicles

High-speed rail project in Tel Aviv, Israel, where construction plans are being expedited.
CASE STUDY: 
Israel

**Date:** March–April 2020

**Responsible Party:** Ministry of Transportation

**Overview:** 
Reduced vehicle volumes and transit usage have afforded many cities an opportunity to reevaluate—and often accelerate—construction schedules. This has become a stated goal of Israel’s Ministry of Transportation, which is prioritizing expedited construction.

**Implementation:**
- High-speed rail from Tel Aviv to Jerusalem to be completed six months–one year ahead of schedule
- Expansion of a major highway in central Israel to be completed six months–one year ahead of schedule
- Closure of a main thoroughfare in Tel Aviv for subway construction was limited to just ten days, rather than the scheduled five weeks
Remote-Controlled E-Scooters

CASE STUDY:
Peachtree Corners, GA

**Date:** May 2020

**Responsible Party:** Curiosity Lab

**Overview:**
A result of a partnership between a publicly-funded smart city lab and area start-ups, the remote-controlled E-Scooter program in Peachtree Corners, GA is combining elements of shared micromobility with on-demand ride hailing.

**Implementation:**
- E-scooters can be hailed via mobile app can be remotely driven to pick-up point from central base
- E-scooters are remotely recalled to base after each trip to be charged and sanitized
- Remote operation ensures that e-scooters are handled only by those who request them while increasing system accessibility and reducing on-street clutter

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**GoX Scooters** provides self-driving scooters through an on-demand app. ([https://goxapollo.com/index.html](https://goxapollo.com/index.html))
Re-Use of Transit Vehicles

CASE STUDY:
Karnataka, India

Date: April 2020

Responsible Party:
Karnataka State Road Transport Corporation

Overview:
In Karnataka, India, out-of-service buses have been converted to ‘sanitizer buses’ to disinfect people in public places. These sanitizer buses are available to police personnel, health workers, waste collectors, and others who are carrying out essential services.

Implementation:

- To get disinfected, essential service workers enter the front door and exit the rear door and are sprayed with disinfectant
- Buses that are slated for scrap are modified for ₹20,000 (approximately $250)

Out of service buses are used to sanitize service workers. (Photo by V. Sreenivasa Murthy, The Hindu)
Global Mobility Response to COVID-19

Key Trends

While some of the more unique and localized transportation-related responses to COVID-19 may be interesting, many do not possess transferability. Some countries may lack the capacity to hasten large-scale infrastructure projects, even if the conditions support an accelerated schedule. Some cities may be too crowded or their roadways too dangerous to allow for e-scooter use, remote controlled or otherwise, to ever be viable. And some contexts simply do not support the conversion of expanded transit vehicles into sanitization showers, regardless of the ability to convince people to use them. Certain practices may spread around the globe and situate themselves in a plethora of urban environments; others, no less important, may not.

And yet, in large part, jurisdictions worldwide are testing new practices, implementing new principles, and establishing new structures in the face of a truly unexpected and unpredictable pandemic. They are, forced by the very immediate public health needs, deeply examining the arrangements that have defined urban mobility for decades and questioning whether they fit this moment. In many cases, they are asking whether these arrangements fit the future they are trying to create and what needs to be done to amend them so that they do.

The very solutions being crafted in response to the coronavirus pandemic may, in fact, be those that help define our new normal. They may be the solutions that serve as a catalyst for lasting, human-centered change across all fields of mobility.

Three Take-aways

1. The current crisis has afforded opportunities to rethink, and often accelerate, infrastructure construction timelines
2. Many solutions are specific to the local political and social context
3. Innovations, necessitated by the pandemic, can guide the way toward a more sustainable and equitable long-term future
Future Possibilities
As reflected in this report, the global mobility response to the pandemic has varied by geography, reflecting cultural diversity and jurisdictional priorities. This research reflects a worldwide behavioral shift as billions of people quickly grapple with the need to move through places that have largely been designed around cars. The founder of our company, Samuel I. Schwartz, PE, suggests looking to both the near- and long-term futures: “we should be relying on science on assessing risk probabilities on various ways to travel.”

This is a critical opportunity to learn from different cities on strategies for transportation recovery. Implementing innovative and “out of the box” methods is critical for the success of reopening transportation systems. As a company, the role of Sam Schwartz is to bring the latest knowledge and best practices to our clients. As leaders in the transportation profession, it is our goal to encourage creative thinking when planning for future mobility.

This research led us to a key question:

**What should we recommend to cities around the globe as they reopen transportation systems and seek to provide safe travel options?**

**INCREASE PEDESTRIAN SPACE**

Carve out street space and create designated zones for safely-distanced pedestrian flow and activity. This could start as a temporary intervention that will inform permanent additions to a city’s public space.

**EXPAND MICROMOBILITY SYSTEMS**

Implement new dedicated micromobility lanes, both temporary and permanent, and provide additional infrastructure such as bike parking, shared micromobility systems and programs to increase access to micromobility options.

**RETHINK PUBLIC TRANSIT MODELS**

If possible, maintain multiple travel options (shuttle, ferry, bus, BRT, LRT, etc.) and if cuts
Global Mobility Response to COVID-19

Sam Schwartz

are required, maintain or increase service on the high-demand routes to rebalance passenger crowding. Implementing changes in operation to ensure safety and sanitization, building rider confidence.

REALLOCATE RIGHT-OF-WAY SPACE TO NON-VEHICULAR USES

Create a dynamic and innovative curb management operation to answer competing demand for curbside and right-of-way space. Use ‘time-of-day’ closure strategies to support the reopening of schools, retail, and other uses with specific functions and demand patterns.

INTEGRATE NEW TECHNOLOGIES IN TRANSPORTATION SYSTEM OPERATIONS AND MAINTENANCE

Collaborate with tech and data-driven companies across the industry for real-time response to transportation needs. This will be important not only for public health crises, but as we plan for dynamic future. Sam Schwartz is committed to planning for sustainable futures and safe mobility. We share this resource to contribute to the ongoing conversations on the future of the city from a mobility perspective, and are available to provide support at all scales, and across sectors. Please visit us at www.samschwartz.com for more information and resources.

SAM SCHWARTZ PROJECTS FOR TRANSPORTATION RECOVERY POST COVID-19:

STREETS FOR PANDEMIC RESPONSE + RECOVERY
Sam Schwartz contributed to this NACTO report, which distills the experiences of global cities into implementable guidance for leveraging public space to meet the challenges of this moment.

POST-PANDEMIC RAIL STATION MODELING
In collaboration with T.Y. Lin International and Ross & Baruzzini, Sam Schwartz conducted a modeling exercise to examine how transit agencies can plan for crowding while maintaining physical distancing.

RAPID RESPONSE MOBILITY PLANNING
This thought leadership from the Sam Schwartz team discusses methodologies, best practices, and considerations for meeting rapidly changing mobility needs.

TESTING SITE SUPPORT
Sam Schwartz provided traffic planning and logistical support for implementation of COVID-19 testing sites throughout Washington, DC.

For more COVID-19 resources, visit https://www.samschwartz.com/covid19-response-and-analysis
## Global Mobility Response to COVID-19

**Worldwide Example Database**

<table>
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<th>Location</th>
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<th>Date</th>
<th>Resource</th>
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<tbody>
<tr>
<td>Asia</td>
<td>China</td>
<td>Recovery Phase I</td>
<td>Freight</td>
<td>Operations</td>
<td>Two months after a near complete standstill in China that rattled global supply chains, the country’s ports are again pushing out thousands of containers that were stranded at the onset of the coronavirus outbreak.</td>
<td>19-Mar-20</td>
<td><a href="https://www.wsj.com/articles/china-shipping-exports-rebound-just-as-western-ports-cope-with-coronavirus-down-turn-11584647486">Resource</a></td>
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<td>Asia</td>
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<td>Operations</td>
<td>India’s largest container shipping port has come up with plans to avoid getting clogged by deliveries not picked up during the COVID-19 lockdown. They will use temporary inland sites to remove a backlog of 89,000 boxes. This will add to the cost of importing goods.</td>
<td>10-Apr-20</td>
<td><a href="https://www.thehindubusinessline.com/economy/logistics/jnpt-draws-up-plans-to-avert-logjam-as-covid-19-throws-trade-out-of-gear/article31309873.ece">Resource</a></td>
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<td>Operations</td>
<td>As the government prepares to lift the lockdown in phases, the demand for trucks will increase but transport companies say the big challenge will be convincing drivers to return to work, even with higher salaries and allowances on offer.</td>
<td>24-Apr-20</td>
<td><a href="https://www.reuters.com/article/us-health-coronavirus-india-freight/indias-truckers-in-crisis-police-checks-no-food-and-fears-of-coronavirus-idUSKCN2260VE">Resource</a></td>
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<tr>
<td>Asia</td>
<td>China</td>
<td>Crisis</td>
<td>Freight</td>
<td>Operations</td>
<td>Shipping volumes out of China are plummeting as the impact of the coronavirus outbreak takes a deeper toll on industrial production, and ocean carriers are bracing for financial blows from the diminished output. “Substantially less cargo is being moved between China and the rest of the world” said Lars Jensen, head of Denmark-based maritime research group Sea-Intelligence.</td>
<td>14-Feb-20</td>
<td><a href="https://www.wsj.com/articles/chinas-shipping-nears-a-standstill-amid-coronavirus-disruption-11586908854">Resource</a></td>
</tr>
<tr>
<td>America</td>
<td>National</td>
<td>Crisis</td>
<td>Freight</td>
<td>Operations</td>
<td>Supply-chain disruptions from the coronavirus outbreak are likely to prolong a continuing slump in U.S. freight transport, industry analysts say. But transportation operations could see a bump once production in China ramps back up as companies rush to restock depleted inventories.</td>
<td>27-Feb-20</td>
<td><a href="https://www.wsj.com/articles/coronavirus-impact-expected-prolonging-us-freight-slump-11582832476">Resource</a></td>
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<tr>
<td>Other</td>
<td>Global</td>
<td>Crisis</td>
<td>Freight</td>
<td>Operations</td>
<td>Coronavirus could have impacts on freight and shipping. It can affect people’s mobility and employment, leading to changes in production, spending, and exposing vulnerabilities in supply chains.</td>
<td>16-Mar-20</td>
<td><a href="https://www.freightwaves.com/news/how-coronavirus-could-affect-supply-chain-and-freight-shipping">https://www.freightwaves.com/news/how-coronavirus-could-affect-supply-chain-and-freight-shipping</a></td>
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<tr>
<td>America</td>
<td>Los Angeles</td>
<td>Crisis</td>
<td>Freight</td>
<td>Operations</td>
<td>The nation’s largest port is hurting. That may be a leading indicator of the pain that’s in store for Southern California and the U.S. economy as businesses hunker down to deal with the coronavirus. The crisis is most severe for the 13,000 truckers who ferry goods from ships to warehouses and rail yards across Southern California.</td>
<td>7-Mar-20</td>
<td><a href="https://www.latimes.com/business/story/2020-03-07/la-fi-coronavirus-ports-california-economy">https://www.latimes.com/business/story/2020-03-07/la-fi-coronavirus-ports-california-economy</a></td>
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<td>Asia</td>
<td>China</td>
<td>Crisis</td>
<td>Freight</td>
<td>Operations</td>
<td>Shipping companies that carry goods from China to the rest of the world say they are reducing the number of seaborne vessels, as measures to stop the spread of the coronavirus crimp demand for their services and threaten to disrupt global supply chains. About 80% of world goods trade by volume is carried by sea and China is home to seven of the world’s 10 busiest container ports, according to the United Nations Conference on Trade and Development.</td>
<td>20-Feb-20</td>
<td><a href="https://www.cnn.com/2020/02/05/business/shipping-coronavirus-impact/index.html">https://www.cnn.com/2020/02/05/business/shipping-coronavirus-impact/index.html</a></td>
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<td>Middle East/Africa</td>
<td>Lebanon</td>
<td>Crisis</td>
<td>Freight</td>
<td>Operations</td>
<td>Lebanon’s food importers, already hit by a dollar crunch, have struggled to book new cargoes as the coronavirus pandemic threatens supplies and sparks fears of even more painful price hikes. Some vendors are delaying shipments and refusing new orders to Lebanon—which relies heavily on imports—as the spread of the virus slows global food supply chains.</td>
<td>12-Apr-20</td>
<td><a href="https://www.haaretz.com/middle-east-news/premium-coronavirus-disrupts-food-supply-chains-in-struggling-lebanon-1.8799955">https://www.haaretz.com/middle-east-news/premium-coronavirus-disrupts-food-supply-chains-in-struggling-lebanon-1.8799955</a></td>
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<td>Middle East</td>
<td>Crisis</td>
<td>Freight</td>
<td>Policy/Regulations</td>
<td>The Middle East is shutting down as the novel coronavirus accelerates its spread across a part of the world where war, famine, financial collapse and political unrest threaten to compound the impact of the disease. Trade and travel are skidding to a halt. Saudi Arabia has suspended all travel in and out of the kingdom.</td>
<td>17-Mar-20</td>
<td><a href="https://www.washingtonpost.com/world/middle_east/the-middle-east-is-already-wrecked-by-war-now-it-must-confront-coronavirus-too/2020/03/16/0a253dcb0-52f8-e1ea-89b6-5c536e52760_story.html">https://www.washingtonpost.com/world/middle_east/the-middle-east-is-already-wrecked-by-war-now-it-must-confront-coronavirus-too/2020/03/16/0a253dcb0-52f8-e1ea-89b6-5c536e52760_story.html</a></td>
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<td>Operations</td>
<td>During the height of the pandemic trucking speeds in affected areas such as NYC, Los Angeles, and Chicago were double their normal speeds during rush hour. Reduced traffic led to higher efficiency in delivery.</td>
<td>24-Mar-20</td>
<td><a href="https://truckingresearch.org/2020/03/26/gps-data-shows-critical-truck-deliveries-continue-despite-covid-19-analysis-of-data-finds-unprecedented-performance-year-over-year/">https://truckingresearch.org/2020/03/26/gps-data-shows-critical-truck-deliveries-continue-despite-covid-19-analysis-of-data-finds-unprecedented-performance-year-over-year/</a></td>
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<td>America</td>
<td>USA</td>
<td>‘New Normal’</td>
<td>Freight</td>
<td>Operations</td>
<td>Truck logistics companies have teamed up to help long haul truckers find safe parking facilities and overnight rest areas. Seek to allow truckers driver longer routes and hours the ability to park and rest. This can save time, increase efficiency, and safety.</td>
<td>16-Apr-20</td>
<td><a href="https://www.logisticsmgmt.com/article/need-a-place-to-park-that-rig-strategic-partnership-between-truckers-tools-an">https://www.logisticsmgmt.com/article/need-a-place-to-park-that-rig-strategic-partnership-between-truckers-tools-an</a></td>
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<td>America</td>
<td>USA</td>
<td>‘New Normal’</td>
<td>Freight</td>
<td>Policy/Regulations</td>
<td>Starting in the fall of 2020, US DOT will relax the rules for short-haul truckers to allow for a longer work day and eliminating mandatory breaks. Shifts would increase from 12 to 14 hours, distance would increase from 100 to 150 miles.</td>
<td>14-May-20</td>
<td><a href="https://money.usnews.com/investing/news/articles/2020-05-14/us-revises-hours-of-service-rules-for-truck-drivers">https://money.usnews.com/investing/news/articles/2020-05-14/us-revises-hours-of-service-rules-for-truck-drivers</a></td>
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<td>Europe</td>
<td>France</td>
<td>Recovery Phase I</td>
<td>Micromobility</td>
<td>Policy/Regulations</td>
<td>France offers subsidy to tempt lockdown cyclists. The move was aimed at reducing driving and making bicycles “a real transport solution”. Under the €20 million (£17m; $21.7m) everyone will be eligible for bike repairs of up to 50 at registered mechanics. (Article in French).</td>
<td>30-Apr-20</td>
<td><a href="https://www.citylab.com/transportation/2020/04/paris-cars-air-pollution-health-public-transit-bike-lanes/610861/">https://www.citylab.com/transportation/2020/04/paris-cars-air-pollution-health-public-transit-bike-lanes/610861/</a></td>
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<td>Europe</td>
<td>Glasgow</td>
<td>Recovery Phase I</td>
<td>Micromobility</td>
<td>Operations</td>
<td>NHS staff in Glasgow are being offered free nextbike memberships to help them travel to work safely during the Covid-19 pandemic. Up to one thousand free memberships a month will be made available over three months.</td>
<td>27-Mar-20</td>
<td><a href="https://www.glasgowlive.co.uk/news/18341644/nhs-staff-glasgow-offered-free-bike-memberships/">https://www.glasgowlive.co.uk/news/18341644/nhs-staff-glasgow-offered-free-bike-memberships/</a></td>
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<td>Other</td>
<td>Global</td>
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<td>Micromobility</td>
<td>Operations</td>
<td>Some evidence suggests many people are turning to cycling as a resilient and reliable option to fill the gap. Many urban cycling networks have seen a surge in traffic, including in China, Germany, Ireland, the United Kingdom and the United States.</td>
<td>N/A</td>
<td><a href="https://www.wri.org/blog/2020/04/coronavirus-biking-critical-in-cities">https://www.wri.org/blog/2020/04/coronavirus-biking-critical-in-cities</a></td>
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<td>Europe</td>
<td>Madrid</td>
<td>‘New Normal’</td>
<td>Micromobility</td>
<td>Operations</td>
<td>Madrid City Council will reopen BiciMAD next Wednesday, April 22, at 6:00 am. After its closure on March 16 due to the evolution of COVID-19, the Madrid Municipal Transport Company (EMT), turned off the network of stations and removed all bicycles from public roads to stop infections. (Article in Spanish).</td>
<td>22-Apr-20</td>
<td><a href="https://madrid365.es/noticias/el-servicio-de-bicimad-se-reanudara-el-miercoles-22-de-abril-20200418-1100/">https://madrid365.es/noticias/el-servicio-de-bicimad-se-reanudara-el-miercoles-22-de-abril-20200418-1100/</a></td>
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<td>America</td>
<td>New York</td>
<td>‘New Normal’</td>
<td>Micromobility</td>
<td>Operations</td>
<td>Citi Bike is struggling to keep up with a coronavirus-induced ridership spike, The Post has learned. Ridership on the Lyft-owned bikes through the first 11 days of March was 517,768, a 67-percent increase compared to the same period last year.</td>
<td>13-Mar-20</td>
<td><a href="https://nypost.com/2020/03/13/citi-bike-struggling-to-keep-up-with-coronavirus-ridership-spike/">https://nypost.com/2020/03/13/citi-bike-struggling-to-keep-up-with-coronavirus-ridership-spike/</a></td>
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<td>‘New Normal’</td>
<td>Micromobility</td>
<td>Policy/Regulations</td>
<td>A government plan of 20 million euros to encourage cycling during the deconfinement. The plan includes a 50 euro package for the rehabilitation of a bicycle within a referenced network of repairers and the creation of temporary parking spaces. In order to prevent de-confinement from being synonymous with a massive increase in air pollution, cycling is promoted. (Article in French).</td>
<td>30-Apr-20</td>
<td><a href="https://www.lemonde.fr/planete/article/2020/04/30/un-plan-gouvernemental-de-20-millions-d-euros-pour-encourager-la-pratique-du-velo-au-deconfine-ment_6038198_3244.html">https://www.lemonde.fr/planete/article/2020/04/30/un-plan-gouvernemental-de-20-millions-d-euros-pour-encourager-la-pratique-du-velo-au-deconfine-ment_6038198_3244.html</a></td>
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<td>National</td>
<td>‘New Normal’</td>
<td>Micromobility</td>
<td>Design/New Infrastructure</td>
<td>COVID-19, has placed U.S. transit agencies in the difficult position of urging passengers not to use their services, and plummeting ridership has resulted in urgent calls for a transportation stimulus. As Congress considers legislation it should consider how micromobility could accelerate our economic recovery while America’s planes, trains, and automobiles get back up to speed. Electrified transportation such as e-scooters and e-mopeds—is quickly becoming an integral part of the urban transportation mix with 84 million rides taken in 2018 alone.</td>
<td>N/A</td>
<td><a href="https://www.enotrans.org/article/guest-op-ed-micromobility-can-get-america-moving-again/">https://www.enotrans.org/article/guest-op-ed-micromobility-can-get-america-moving-again/</a></td>
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<td>Beijing</td>
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<td>Micromobility</td>
<td>Operations</td>
<td>Meituan Dianping, China’s leading e-commerce platform for services, has recorded an upturn in its bike-sharing business, as more commuters shift away from crowded modes of transport amid the coronavirus crisis. In Beijing, the daily average growth of rides was up 187 per cent, compared with the Lunar New Year week.</td>
<td>13-Mar-20</td>
<td><a href="https://www.scmp.com/tech/apps-social/article/3075124/meituan-dianping-sees-surge-bike-sharing-dont-call-it-comeback">https://www.scmp.com/tech/apps-social/article/3075124/meituan-dianping-sees-surge-bike-sharing-dont-call-it-comeback</a></td>
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<td>America</td>
<td>Peachtree Corners</td>
<td>‘New Normal’</td>
<td>Micromobility</td>
<td>Policy/Regulations</td>
<td>Local government initiative the Curiosity Lab worked with scooter share company to create an e-hail remotely driven scooter. The scooter comes to the user and goes back to the charging station via remote to facilitate cleaning and reduces need to redistribute.</td>
<td>26-May-20</td>
<td><a href="https://hypepotamus.com/news/curiosity-labs-aims-to-fix-micro-mobility-by-bringing-a-remote-controlled-scooter-to-you/">https://hypepotamus.com/news/curiosity-labs-aims-to-fix-micro-mobility-by-bringing-a-remote-controlled-scooter-to-you/</a></td>
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<td>Asia</td>
<td>Wuhan</td>
<td>‘New Normal’</td>
<td>Micromobility</td>
<td>Design/New Infrastructure</td>
<td>From January 23 to March 12, Meituan Bikeshare, formerly known as Mobike, provided about 2.3 million trips in Wuhan, according to its own data collection, accounting for more than half of all non-walking trips in the city during the epidemic.</td>
<td>17-April-20</td>
<td><a href="https://www.wri.org/blog/2020/04/coronavirus-bikesharing-critical-in-cities">https://www.wri.org/blog/2020/04/coronavirus-bikesharing-critical-in-cities</a></td>
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<td>Other</td>
<td>Global</td>
<td>‘New Normal’</td>
<td>Micromobility</td>
<td>Design/New Infrastructure</td>
<td>The COVID-19 pandemic now affects the scooter-sharing operators negatively in many countries as many cities limit people’s mobility temporarily. This should not have any impact on the long-term growth in this market, but will result in lower ridership in 2020 than first anticipated.</td>
<td>20-March-20</td>
<td><a href="https://www.citylab.com/perspective/2020/03/coronavirus-bike-lane-emergency-transportation-covid-19/608725/">https://www.citylab.com/perspective/2020/03/coronavirus-bike-lane-emergency-transportation-covid-19/608725/</a></td>
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<td>‘New Normal’</td>
<td>Micromobility</td>
<td>Design/New Infrastructure</td>
<td>According to this market research report, the scooter-sharing fleet is forecasted to grow from 774,000 vehicles worldwide in 2019 to more than 4.6 million vehicles in 2024. The market consists of traditional sit-down electric scooters and stand-up electric scooters.</td>
<td>20-March-20</td>
<td><a href="https://www.researchandmarkets.com/reports/5017553/the-bike-and-scooter-sharing-telematics-market">https://www.researchandmarkets.com/reports/5017553/the-bike-and-scooter-sharing-telematics-market</a></td>
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<td>‘New Normal’</td>
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<td>What are the latest developments in the bike-sharing and scootersharing market? This research estimates that the number of deployed vehicles in bike-sharing schemes will grow at a CAGR of 9 percent from 23.2 million at the end of 2019 to 35.8 million by 2024.</td>
<td>13-May-20</td>
<td><a href="https://www.businesswire.com/news/home/20200513005254/en/Bike-Scootersharing-Telematics-Market-2020---Ridership">https://www.businesswire.com/news/home/20200513005254/en/Bike-Scootersharing-Telematics-Market-2020---Ridership</a></td>
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<td>Asia</td>
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<td>‘New Normal’</td>
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<td>Operations</td>
<td>The Global Times, a Chinese newspaper, reported that bike sharing platforms throughout China have experienced rising demand due to the disease outbreak. “The epidemic has highlighted the advantages of bike-sharing—open air and no crowd gathering—which are helpful to curb the spread of the coronavirus,” the article quotes. US cities are seeing a similar uptick.</td>
<td>13-March-20</td>
<td><a href="https://www.kittelson.com/ideas/how-covid-19-is-impacting-travel-patterns-and-transportation-mode-choice/">https://www.kittelson.com/ideas/how-covid-19-is-impacting-travel-patterns-and-transportation-mode-choice/</a></td>
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<td>Micromobility</td>
<td>Design/New Infrastructure</td>
<td>Still, relatively few Americans have used bikes as a serious alternative to cars and public transit. Today fewer than 1 percent of New Yorkers commute by bike. In Portland, which has the highest percentage of cycling commuters of any American city, only 6.3 percent of commuters ride bikes. By comparison, in Copenhagen nearly half of all trips to work and school take place on bicycles.</td>
<td>18-May-20</td>
<td><a href="https://www.nytimes.com/2020/05/18/nyregion/bike-shortage-coronavirus.html?auth=link-dismiss-google-1tap">https://www.nytimes.com/2020/05/18/nyregion/bike-shortage-coronavirus.html?auth=link-dismiss-google-1tap</a></td>
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<td>Canada</td>
<td>‘New Normal’</td>
<td>Micromobility</td>
<td>Operations</td>
<td>Public transportation, which many Canadians depend on to commute, has been hit hard across the country. But Harris sees demand surging in North America: U.S. sales increased by 85 per cent in March, according to the New York Times, while he said Canadian businesses are struggling to keep e-bikes in stock.</td>
<td>4-June-20</td>
<td><a href="https://www.cbc.ca/news/technology/what-on-earth-covid-19-e-bikes-1.5598801">https://www.cbc.ca/news/technology/what-on-earth-covid-19-e-bikes-1.5598801</a></td>
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<td>Operations</td>
<td>With the rapid evolution of ebike technology, this could be the big break bike tech has needed to dent automobile and transit-dominated commuting habits. In places like Japan, Asia, Portland and Amsterdam, there were already large numbers of people on bikes. Will they be joined by even more as warm weather arrives in the Northern Hemisphere, worksites reopen and commuters rethink riding public transit?</td>
<td>28-May-20</td>
<td><a href="https://www.forbes.com/sites/billroberson/2020/05/29/bike-sales-get-a-big-boost-in-perfect-storm-of-demand-covid-19-recovery-and-ebike-maturity/#63bbf520f919">https://www.forbes.com/sites/billroberson/2020/05/29/bike-sales-get-a-big-boost-in-perfect-storm-of-demand-covid-19-recovery-and-ebike-maturity/#63bbf520f919</a></td>
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<td>Middle East/Africa</td>
<td>Israel</td>
<td>Recovery Phase I</td>
<td>Other</td>
<td>Design/ New Infrastructure</td>
<td>Many countries have debated whether to keep up construction amid fears of spreading the infection, but Israel, spotting a chance early on in its battle with the outbreak, took the risk. Accelerating work on little used roads may lead to a high speed rail and major highway project being completed 6 months to one year early.</td>
<td>24-Feb-20</td>
<td><a href="https://www.jpost.com/israel-news/israel-is-using-the-coronavirus-crisis-to-up-construction-efforts-625665">https://www.jpost.com/israel-news/israel-is-using-the-coronavirus-crisis-to-up-construction-efforts-625665</a> <a href="https://www.jpost.com/israel-news/coronavirus-quiet-enables-israel-to-drive-forward-infrastructure-projects-624431">https://www.jpost.com/israel-news/coronavirus-quiet-enables-israel-to-drive-forward-infrastructure-projects-624431</a></td>
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<td>Asia</td>
<td>Tokyo</td>
<td>Crisis</td>
<td>Other</td>
<td>Policy/ Regulations</td>
<td>In Tokyo, officials are cancelling large events such as school graduation ceremonies and entrance examinations through mid-March, and organizers of the Tokyo Marathon have cut more than 30,000 public runners from the March 1 race. Rush hour trains remain packed, according to commuters.</td>
<td>24-Feb-20</td>
<td><a href="https://www.usnews.com/news/cities/articles/2020-02-24/asian-cities-tackle-coronavirus-with-varying-success">https://www.usnews.com/news/cities/articles/2020-02-24/asian-cities-tackle-coronavirus-with-varying-success</a></td>
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<td>Middle East/Africa</td>
<td>Saudi Arabia</td>
<td>Crisis</td>
<td>Other</td>
<td>Policy/ Regulations</td>
<td>Saudi Arabia closed off air and sea travel to nine countries affected by the new coronavirus Monday as Mideast stock markets tumbled over fears about the widening outbreak’s effect on the global economy. Earlier Monday, coronavirus concerns led Saudi Arabia to cut off air and sea travel with Bahrain, Egypt, Iraq, Italy, Kuwait, Lebanon, South Korea, Syria and the United Arab Emirates. The kingdom had earlier closed off its land borders as well.</td>
<td>9-Mar-20</td>
<td><a href="https://www.haaretz.com/middle-east-news/saudi-arabia-cuts-off-travel-over-coronavirus-as-markets-tumble-1.8642083">https://www.haaretz.com/middle-east-news/saudi-arabia-cuts-off-travel-over-coronavirus-as-markets-tumble-1.8642083</a></td>
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<td>Milan</td>
<td>Recovery Phase I</td>
<td>Street design</td>
<td>Design/New Infrastructure</td>
<td>Traffic congestion has fallen 30-75% and polluting nitrogen dioxide dropped 24% in March compared with the previous four weeks, according to the European Environment Agency. When the lockdown begins to lift, Milan’s authorities have announced that the city will be introducing one of the most ambitious schemes in Europe to reduce traffic congestion in the center.</td>
<td>23-Apr-20</td>
<td><a href="https://www.forbes.com/sites/rebeccahughes/2020/04/23/milan-limits-cars-as-italian-cities-hope-to-make-lockdown-environmental-changes-permanent/#2bb0580see">https://www.forbes.com/sites/rebeccahughes/2020/04/23/milan-limits-cars-as-italian-cities-hope-to-make-lockdown-environmental-changes-permanent/#2bb0580see</a></td>
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<td>America</td>
<td>Oakland</td>
<td>Recovery Phase I</td>
<td>Street design</td>
<td>Operations</td>
<td>Oakland, California, is closing off 74 miles of its streets to passing cars, making it easier for residents to run, bike or play just in time for the holiday weekend. Oakland’s “slow streets” initiative, announced on Thursday by Mayor Libby Schaaf, will set aside up to 10% of the city’s streets for recreation.</td>
<td>1-May-20</td>
<td><a href="https://www.theguardian.com/world/2020/apr/10/oakland-california-slow-streets-coronavirus-us">https://www.theguardian.com/world/2020/apr/10/oakland-california-slow-streets-coronavirus-us</a></td>
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<td>Europe</td>
<td>Berlin</td>
<td>Recovery Phase I</td>
<td>Street design</td>
<td>Design/New Infrastructure</td>
<td>Berlin: Leading the way in making new space for cycling. The Berlin district of Friedrichshain-Kreuzberg was one of the first cities to implement temporary infrastructure to facilitate safer and more comfortable cycling in reaction to these changing mobility patterns.</td>
<td>N/A</td>
<td><a href="https://mobycon.com/updates/a-guide-to-temporary-bike-lanes-from-berlin/">https://mobycon.com/updates/a-guide-to-temporary-bike-lanes-from-berlin/</a></td>
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<td>Europe</td>
<td>London</td>
<td>Recovery Phase I</td>
<td>Street design</td>
<td>Policy/Regulations</td>
<td>Space on London’s busiest roads could be taken from cars and given to pedestrians and cyclists during the coronavirus lockdown in order to improve street safety and allow people to remain active while maintaining their distance. Bollards can be used to provide bicycle lanes and lights can be timed for cyclists. Emergency vehicle access will still be permitted.</td>
<td>16-Apr-20</td>
<td><a href="https://www.theguardian.com/uk-news/2020/apr/15/london-pedestrians-and-cyclist-may-get-more-space-on-roads-during-coronavirus-lockdown?CMP=Share_AndroidApp_Tweet">https://www.theguardian.com/uk-news/2020/apr/15/london-pedestrians-and-cyclist-may-get-more-space-on-roads-during-coronavirus-lockdown?CMP=Share_AndroidApp_Tweet</a></td>
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<td>Europe</td>
<td>Scotland</td>
<td>Recovery Phase I</td>
<td>Street design</td>
<td>Operations</td>
<td>The Scottish Government announced that £10 million will be made available to create temporary bike lanes and widened footpaths in response to COVID-19. This comes as cities the world over have allocated more space to active recreation and essential trips by walking or bicycle.</td>
<td>29-Apr-20</td>
<td><a href="https://www.transport.gov.scot/news/10-million-to-support-pop-up-active-travel-infrastructure/">https://www.transport.gov.scot/news/10-million-to-support-pop-up-active-travel-infrastructure/</a></td>
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<td>Europe</td>
<td>Brussels</td>
<td>Recovery Phase I</td>
<td>Street design</td>
<td>Operations</td>
<td>Brussels announces 20km/h limits and expanded bike network. Pedestrians and cyclists will have more priority on roads to make it easier to travel on foot or by bike throughout the city. Vehicle traffic is still permitted, but a maximum speed of 20km/h. The same rule applies to trams and buses.</td>
<td>29-Apr-20</td>
<td><a href="https://www.polisnetwork.eu/article/brussels-announces-20km-h-limits-to-give-more-space-to-people/?id=12791">https://www.polisnetwork.eu/article/brussels-announces-20km-h-limits-to-give-more-space-to-people/?id=12791</a></td>
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<td>America</td>
<td>Bogota</td>
<td>Recovery Phase I</td>
<td>Street design</td>
<td>Design/New Infrastructure</td>
<td>The Colombian capital of Bogotá is opening 76km (47 miles) of temporary bike lanes to reduce crowding on public transport and help prevent the spread of coronavirus (Covid-19), as well as to improve air quality. They were able to reconfigure 13 miles of car lanes overnight to quickly progress towards the goal.</td>
<td>23-Mar-20</td>
<td><a href="https://www.planetizen.com/news/2020/03/108809-bogot-expanding-bike-infrastructure-respond-coronavirus">https://www.planetizen.com/news/2020/03/108809-bogot-expanding-bike-infrastructure-respond-coronavirus</a></td>
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<td>America</td>
<td>Vancouver</td>
<td>Recovery Phase I</td>
<td>Street design</td>
<td>Operations</td>
<td>In Canada, Vancouver’s park board announced that Stanley Park is now cycling and walking only. Cities all over the world are turning streets over to walkers and cyclists.</td>
<td>11-Apr-20</td>
<td><a href="https://www.theguardian.com/world/2020/apr/11/world-cities-turn-their-streets-over-to-walkers-and-cyclists">https://www.theguardian.com/world/2020/apr/11/world-cities-turn-their-streets-over-to-walkers-and-cyclists</a></td>
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<td>America</td>
<td>National</td>
<td>Recovery Phase I</td>
<td>Street design</td>
<td>Design/New Infrastructure</td>
<td>The Pandemic Shows What Cars Have Done to Cities. The current crisis gives us the impetus to rethink and recalibrate, at least temporarily, the allocation of urban space.</td>
<td>24-Apr-20</td>
<td><a href="https://www.theatlantic.com/ideas/archive/2020/04/pandemic-shows-what-cities-have-surrendered-cars/610423/">https://www.theatlantic.com/ideas/archive/2020/04/pandemic-shows-what-cities-have-surrendered-cars/610423/</a></td>
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<td>America</td>
<td>New York</td>
<td>Recovery Phase I</td>
<td>Street design</td>
<td>Policy/Regulations</td>
<td>Close Down the Streets. In Manhattan, where 36 percent of the land is dedicated to streets, the mayor briefly piloted an “open streets” program but didn’t extend the program beyond the initial 11 days, saying it was not a priority. It should be. The city should be opening up whole avenues and blocks in Manhattan — and in Queens, the Bronx and Brooklyn, too.</td>
<td>25-Apr-20</td>
<td><a href="https://www.nytimes.com/2020/04/25/opinion/summer-parks-covid.html">https://www.nytimes.com/2020/04/25/opinion/summer-parks-covid.html</a></td>
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<td>Asia</td>
<td>Hong Kong</td>
<td>Crisis</td>
<td>Street design</td>
<td>Policy/Regulations</td>
<td>Market for buying and selling private parking spaces fell by 67% in Hong Kong in April. Safety measures and bans on public gatherings have affected car usage and the demand for parking spaces. Prices are expected to fall.</td>
<td>6-May-20</td>
<td><a href="https://www.scmp.com/business/article/3082942/craze-car-parking-spaces-stalls-sentiment-takes-hit-amid-weakening-economy?utm_source=twitter&amp;utm_medium=share_widget&amp;utm_campaign=3082942">https://www.scmp.com/business/article/3082942/craze-car-parking-spaces-stalls-sentiment-takes-hit-amid-weakening-economy?utm_source=twitter&amp;utm_medium=share_widget&amp;utm_campaign=3082942</a></td>
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<td>Europe</td>
<td>Vilnius</td>
<td>‘New Normal’</td>
<td>Street design</td>
<td>Policy/Regulations</td>
<td>Vilnius has announced plans to give over public space to hard bars and restaurants to allow outdoor seating whilst still observing physical distancing rules. 18 public squares and plazas will allow nearby restaurants to set up outdoor space.</td>
<td>28-Apr-20</td>
<td><a href="https://www.theguardian.com/world/2020/apr/28/lithuanian-capital-to-be-turned-into-vast-open-air-cafe-vilnius">https://www.theguardian.com/world/2020/apr/28/lithuanian-capital-to-be-turned-into-vast-open-air-cafe-vilnius</a></td>
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<td>America</td>
<td>Global</td>
<td>‘New Normal’</td>
<td>Street design</td>
<td>Operations</td>
<td>Cities across the U.S. and world are closing streets to traffic in response to the pandemic, offering a glimpse of a world where cars are no longer king. Much of the planning to accommodate automobiles was done before their negative effects were known. Cities are now retrofitting streets to allow pedestrian and cycling usage they weren’t designed for.</td>
<td>N/A</td>
<td><a href="https://m.huffpost.com/us/entry/us_5e9eb3e5-c5b63c-5b99741843">https://m.huffpost.com/us/entry/us_5e9eb3e5-c5b63c-5b99741843</a></td>
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<td>America</td>
<td>Chicago</td>
<td>‘New Normal’</td>
<td>Street design</td>
<td>Design/New Infrastructure</td>
<td>With Chicago’s lakefront wisely closed to prevent gatherings that could spread the deadly coronavirus, the need for other open spaces is crucial, not just so people can get exercise, but so they don’t go stir crazy. Fortunately, an ingenious piece of urban infrastructure — a gently curving, ultralong pedestrian and bike bridge over the North Branch of the Chicago River — is helping to meet that need.</td>
<td>23-Apr-20</td>
<td><a href="https://www.chicagotribune.com/columns/blair-kamin/ct-biz-riverview-bridge-pedestrians-river-kamin-20200423-wj43drozkirb-vhpaphzwtaizvqy-story.html">https://www.chicagotribune.com/columns/blair-kamin/ct-biz-riverview-bridge-pedestrians-river-kamin-20200423-wj43drozkirb-vhpaphzwtaizvqy-story.html</a></td>
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<td>America</td>
<td>New York</td>
<td>‘New Normal’</td>
<td>Street design</td>
<td>Policy/Regulations</td>
<td>De Blasio Commits to 100 Miles of ‘Open Streets. “Over the next month, we will create a minimum of 40 miles of open streets. And as the crisis continues, the goal is to get up to 100 miles. We will focus first on streets in and around our parks.” The mayor also said the city would look to “expand sidewalks” and create more temporary bike lanes.</td>
<td>27-Apr-20</td>
<td><a href="https://nyc.streetsblog.org/2020/04/27/de-blasio-commits-to-100-miles-of-open-streets/?mc_cid=2607c7b7e5&amp;mc_eid=462718b0b3">https://nyc.streetsblog.org/2020/04/27/de-blasio-commits-to-100-miles-of-open-streets/?mc_cid=2607c7b7e5&amp;mc_eid=462718b0b3</a></td>
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<td>America</td>
<td>Seattle</td>
<td>‘New Normal’</td>
<td>Street design</td>
<td>Policy/Regulations</td>
<td>Nearly 20 miles of Seattle streets will permanently close to most vehicle traffic by the end of May. Mayor Jenny Durkan announced Thursday. The streets had been closed temporarily to through traffic to provide more space for people to walk and bike at a safe distance apart during the coronavirus pandemic. Now the closures will continue even after Gov. Jay Inslee’s stay-at-home order is lifted.</td>
<td>7-May-20</td>
<td><a href="https://www.seattletimes.com/seattle-news/transportation/seattle-will-permanently-close-20-miles-of-residential-streets-to-most-vehicle-traffic/">https://www.seattletimes.com/seattle-news/transportation/seattle-will-permanently-close-20-miles-of-residential-streets-to-most-vehicle-traffic/</a></td>
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<td>America</td>
<td>Minneapolis</td>
<td>‘New Normal’</td>
<td>Street design</td>
<td>Policy/Regulations</td>
<td>The City of Minneapolis is planning to open more streets up to pedestrians and cyclists in order to help people better follow social distancing guidelines while outdoors. Starting Wednesday, the city will designate 11 miles as “Stay Healthy Streets” routes, which will create three separate routes along mostly residential streets.</td>
<td>27-Apr-20</td>
<td><a href="https://www.fox9.com/news/minneapolis-closing-more-streets-to-traffic-to-create-3-loops-for-pedestrians-cyclists">https://www.fox9.com/news/minneapolis-closing-more-streets-to-traffic-to-create-3-loops-for-pedestrians-cyclists</a></td>
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<td>Europe</td>
<td>Paris</td>
<td>‘New Normal’</td>
<td>Street design</td>
<td>Policy/Regulations</td>
<td>Paris is the latest global city to roll out emergency bike lanes for the use of key workers and others during the lockdown. 650 kilometers of cycleways—including a number of pop-up “corona cycleways”—will be readied for May 11 when lockdown is eased in France. Paris saw a doubling of cycling during 2019 transit strike, and expects cycling to increase again.</td>
<td>22-Apr-20</td>
<td><a href="https://www.forbes.com/sites/carltonreid/2020/04/22/paris-to-create-650-kilometers-of-pop-up-corona-cycleways-for-post-lockdown-travel/#7ced39e254d4">https://www.forbes.com/sites/carltonreid/2020/04/22/paris-to-create-650-kilometers-of-pop-up-corona-cycleways-for-post-lockdown-travel/#7ced39e254d4</a></td>
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<td>Asia</td>
<td>New Zealand</td>
<td>‘New Normal’</td>
<td>Street design</td>
<td>Policy/Regulations</td>
<td>New Zealand has become the first country to provide funding to make tactical urbanism into official government policy during the coronavirus pandemic. Tactical urbanism can involve many forms of interim improvements to the public realm, including creating or widening sidewalks and bike lanes with brightly painted concrete blocks and planters.</td>
<td>13-Apr-20</td>
<td><a href="https://www.forbes.com/sites/carltonreid/2020/04/13/new-zealand-first-country-to-fund-pop-up-bike-lanes-widened-sidewalks-during-lockdown/#7956e1b254d4">https://www.forbes.com/sites/carltonreid/2020/04/13/new-zealand-first-country-to-fund-pop-up-bike-lanes-widened-sidewalks-during-lockdown/#7956e1b254d4</a></td>
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<tr>
<td>Europe</td>
<td>Newcastle</td>
<td>‘New Normal’</td>
<td>Street design</td>
<td>Design/ New Infrastructure</td>
<td>Newcastle is the latest city to unveil pandemic measures to curb motor vehicles. The city council will introduce pop-up bike lanes, widened sidewalks, and more 20mph streets. Measures are pro-city, not anti-car.</td>
<td>15-May-20</td>
<td><a href="https://www.forbes.com/sites/carltonreid/2020/05/15/parking-cull-and-pocket-parks-for-englands-finest-street-as-newcastle-plans-post-pandemic-future/#7634354410d7">https://www.forbes.com/sites/carltonreid/2020/05/15/parking-cull-and-pocket-parks-for-englands-finest-street-as-newcastle-plans-post-pandemic-future/#7634354410d7</a></td>
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<td>America</td>
<td>Parksville</td>
<td>‘New Normal’</td>
<td>Street design</td>
<td>Policy/Regulations</td>
<td>Vancouver Island communities will allow businesses to use the sidewalk, on-street, and off-street parking to set up tables, chairs, umbrellas, and planters.</td>
<td>25-May-20</td>
<td><a href="https://www.vancouverislandfreedaily.com/business/covid-19-island-towns-opening-sidewalks-and-parking-lots-for-business-use/">https://www.vancouverislandfreedaily.com/business/covid-19-island-towns-opening-sidewalks-and-parking-lots-for-business-use/</a></td>
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<td>America</td>
<td>Dallas</td>
<td>‘New Normal’</td>
<td>Street design</td>
<td>Policy/Regulations</td>
<td>Dallas has allowed businesses to apply for Temporary Parklet licenses to expand outdoor seating on sidewalk or adjacent to sidewalk. Editorial Board of the Dallas Morning News calls for more creative uses of street and parking space.</td>
<td>23-May-20</td>
<td><a href="https://www.dallasnews.com/opinion/editorials/2020/05/23/right-now-we-have-the-perfect-chance-to-reimagine-our-streets-and-parking-lets-seize-it/">https://www.dallasnews.com/opinion/editorials/2020/05/23/right-now-we-have-the-perfect-chance-to-reimagine-our-streets-and-parking-lets-seize-it/</a></td>
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<td>Europe</td>
<td>Schüttorf</td>
<td>‘New Normal’</td>
<td>Street design</td>
<td>Operations</td>
<td>Club Index in Lower Saxony erected a festival stage and used their parking lot to have a drive in concert. 250 cars were able to attend with a maximum occupancy of two per vehicle.</td>
<td>4-May-20</td>
<td><a href="https://mixmag.net/read/worlds-first-drive-in-rave-germany-news?utm_source=ming_brew">https://mixmag.net/read/worlds-first-drive-in-rave-germany-news?utm_source=ming_brew</a></td>
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<td>Asia</td>
<td>Bengaluru</td>
<td>‘New Normal’</td>
<td>Street design</td>
<td>Policy/Regulations</td>
<td>Directorate of Urban Land Transport seeking to end free on-street parking. Fees would be aimed strategically to boost shared mobility, non-motorized transport, and public transportation. Aimed at easing increasing congestion in the city.</td>
<td>16-Apr-20</td>
<td><a href="https://www.deccanherald.com/city/top-bengaluru-stories/the-days-of-free-parking-may-soon-be-over-825894.html">https://www.deccanherald.com/city/top-bengaluru-stories/the-days-of-free-parking-may-soon-be-over-825894.html</a></td>
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<td>America</td>
<td>Edmonton</td>
<td>‘New Normal’</td>
<td>TNCs</td>
<td>Policy/Regulations</td>
<td>Edmonton taxis, limousines and ride-hailing services can no longer pick up more than one passenger at a time, unless others are from the same household, are in a close personal relationship or are required caregivers.</td>
<td>1-Apr-20</td>
<td><a href="https://www.cbc.ca/news/canada/edmonton/new-covid-19-rules-limit-edmonton-taxis-ride-hailing-vehicles-to-1-passenger-or-household-group-13917988">https://www.cbc.ca/news/canada/edmonton/new-covid-19-rules-limit-edmonton-taxis-ride-hailing-vehicles-to-1-passenger-or-household-group-13917988</a></td>
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<td>America</td>
<td>Denver</td>
<td>Recovery Phase I</td>
<td>Traffic</td>
<td>Operations</td>
<td>Some Denver streets will close to cars, giving people who walk and bike more elbow room during the coronavirus pandemic. Congregating will not be allowed. Denver parks are also closed to cars.</td>
<td>3-Apr-20</td>
<td><a href="https://denverite.com/2020/04/03/some-denver-streets-will-go-car-free-giving-people-who-walk-and-bike-more-elbow-room-during-the-covid-19-pandemic/">https://denverite.com/2020/04/03/some-denver-streets-will-go-car-free-giving-people-who-walk-and-bike-more-elbow-room-during-the-covid-19-pandemic/</a></td>
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<td>Europe</td>
<td>Paris</td>
<td>‘New Normal’</td>
<td>Traffic</td>
<td>Policy/Regulations</td>
<td>Paris Has a Plan to Keep Cars Out After Lockdown. Returning to a Paris dominated by cars after lockdown ends is “out of the question,” according to the city’s mayor, Anne Hidalgo. The program is focused on remodeling the city core to make more space for pedestrians and cyclists, while barring older, more polluting cars from entering the city. (Article in French).</td>
<td>29-Apr-20</td>
<td><a href="https://www.citylab.com/transportation/2020/04/paris-cars-air-pollution-health-public-transit-bike-lanes/610861/">https://www.citylab.com/transportation/2020/04/paris-cars-air-pollution-health-public-transit-bike-lanes/610861/</a></td>
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<td>Middle East</td>
<td>Jordan</td>
<td>‘New Normal’</td>
<td>Traffic</td>
<td>Policy/Regulations</td>
<td>Jordan allowed people to freely move around and businesses to reopen as it relaxed its countrywide lockdown. The decisions allows people to drive and businesses to reopen for the first time in more than a month. Jordanians can now drive their vehicles between 8 a.m. and 6 p.m. Public transportation and taxi services have resumed, but people using them must wear gloves and a face mask, according to a report from Reuters.</td>
<td>28-Apr-20</td>
<td><a href="https://www.al-monitor.com/pulse/originals/2020/04/jordan-allowed-daytime-driving-coronavirus-lockdown-relaxes.html">https://www.al-monitor.com/pulse/originals/2020/04/jordan-allowed-daytime-driving-coronavirus-lockdown-relaxes.html</a></td>
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<td>Middle East</td>
<td>Abu Dhabi</td>
<td>‘New Normal’</td>
<td>Traffic</td>
<td>Policy/Regulations</td>
<td>Malls in the United Arab Emirates’s capital, Abu Dhabi, began reopening to a restricted number of customers. According to state media agency WAM, members of the same family are allowed to travel in the same vehicle without getting fined for violating the three-people limit, Dubai police have said.</td>
<td>4-May-20</td>
<td><a href="https://www.aljazeera.com/news/2020/05/middle-east-states-began-easing-lockdown-restrictions-200504102125600.html">https://www.aljazeera.com/news/2020/05/middle-east-states-began-easing-lockdown-restrictions-200504102125600.html</a></td>
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<td>Middle East</td>
<td>Tehran</td>
<td>‘New Normal’</td>
<td>Traffic</td>
<td>Policy/Regulations</td>
<td>Iran has begun to lift some of its lockdown restrictions with some shops and inter-city roads opening. Travel between provinces had been restricted for close to a month but was permitted again from Monday. Traffic in the capital, Tehran, was also visible as residents were told to use their own cars instead of public transport.</td>
<td>1-Apr-20</td>
<td><a href="https://www.nbcnews.com/health/health-news/live-blog/2020-04-20-coronavirus-news-n1187556/nrcl1187611#blog-header">https://www.nbcnews.com/health/health-news/live-blog/2020-04-20-coronavirus-news-n1187556/nrcl1187611#blog-header</a></td>
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<tr>
<td>Other</td>
<td>Global</td>
<td>‘New Normal’</td>
<td>Traffic</td>
<td>Operations</td>
<td>As lockdowns ease and parts of the world reopen for business, driving has emerged as the socially distant transportation mode of choice. There seems to be fear of public transit. It remains to be seen whether this change is permanent.</td>
<td>12-May-20</td>
<td><a href="https://www.autonews.com/retail/commuters-choose-cars-over-public-transport-avoid-exposure-coronavirus">https://www.autonews.com/retail/commuters-choose-cars-over-public-transport-avoid-exposure-coronavirus</a></td>
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<td>America</td>
<td>Pensacola</td>
<td>‘New Normal’</td>
<td>Traffic</td>
<td>Operations</td>
<td>Major downtown shopping street to be closed to cars Sundays through June. This will allow retailers and restaurants to use the street space to serve customers.</td>
<td>20-May-20</td>
<td><a href="https://www.msn.com/en-us/news/us/palafox-street-in-downtown-pensacola-to-close-to-cars-on-sundays-through-june/ar-BB14n21Z">https://www.msn.com/en-us/news/us/palafox-street-in-downtown-pensacola-to-close-to-cars-on-sundays-through-june/ar-BB14n21Z</a></td>
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<td>Asia</td>
<td>Hong Kong</td>
<td>Recovery Phase I</td>
<td>Transit</td>
<td>Policy/Regulations</td>
<td>Hong Kong’s MTR Corp has deployed an automated Vapourised Hydrogen Peroxide Robot to undertake deep cleaning and decontamination of its trains and stations. The robot can be set to operate automatically based on the layout of the space. It can also be operated remotely from up to 20m away.</td>
<td>11-Mar-20</td>
<td><a href="https://www.railwaygazette.com/technology-data-and-business/metro-operator-deploys-cleaning-robot-to-fight-the-coronavirus/55995.article">https://www.railwaygazette.com/technology-data-and-business/metro-operator-deploys-cleaning-robot-to-fight-the-coronavirus/55995.article</a></td>
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<td>Asia</td>
<td>Nagoya, Japan</td>
<td>Recovery Phase I</td>
<td>Transit</td>
<td>Operations</td>
<td>Japan’s commutes have become easier to bear in big cities lately thanks to state and corporate measures to contain the coronavirus epidemic. According to the bureau, subway use in Nagoya on Tuesday was down 20 to 30 percent from about a month ago, with student ridership down by 60 percent.</td>
<td>7-Mar-20</td>
<td><a href="https://www.japantimes.co.jp/news/2020/03/07/national/science-health/japan-coronavirus-commuter-trains/#XotFGh6cUk">https://www.japantimes.co.jp/news/2020/03/07/national/science-health/japan-coronavirus-commuter-trains/#XotFGh6cUk</a></td>
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<td>Europe</td>
<td>Milan</td>
<td>Recovery Phase I</td>
<td>Transit</td>
<td>Policy/Regulations</td>
<td>Milan is also joining many other European cities in using the coronavirus crisis to reevaluate its relationship with automobiles, which threaten to become a more popular post-pandemic commuting mode when transit-anxious workers venture back to the office.</td>
<td>22-Apr-20</td>
<td><a href="https://www.citylab.com/transportation/2020/04/coronavirus-reopen-cities-public-transit-car-free-bike-milan/610360/">https://www.citylab.com/transportation/2020/04/coronavirus-reopen-cities-public-transit-car-free-bike-milan/610360/</a></td>
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<td>Europe</td>
<td>Madrid</td>
<td>Recovery Phase I</td>
<td>Transit</td>
<td>Operations</td>
<td>The Madrid City Council reduces the capacity of passengers on the buses of the Municipal Transport Company (EMT) up to 75% while the state of alarm remains active. This measure is taken to prevent the spread of the virus and to allow users to maintain a safe distance. (Article in Spanish).</td>
<td>18-Mar-20</td>
<td><a href="https://www.emtmadrid.es/Noticias/EMT-reduce-hasta-un-75-el-aforo-permitido-en-sus-aspx">https://www.emtmadrid.es/Noticias/EMT-reduce-hasta-un-75-el-aforo-permitido-en-sus-aspx</a></td>
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<td>Europe</td>
<td>London</td>
<td>Recovery Phase I</td>
<td>Transit</td>
<td>Operations</td>
<td>London has announced new measures to adapt its transport system to COVID-19. Plans were announced last week to install air filters on 100 buses across the capital to protect customers and staff.</td>
<td>27-Apr-20</td>
<td><a href="https://www.polisnetwork.eu/article/london-launches-new-measures-to-reduce-spread-of-virus/?id=12279">https://www.polisnetwork.eu/article/london-launches-new-measures-to-reduce-spread-of-virus/?id=12279</a></td>
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<td>America</td>
<td>Denver</td>
<td>Recovery Phase I</td>
<td>Transit</td>
<td>Operations</td>
<td>Denver RTD ridership drops 60% amid coronavirus outbreak, but agency isn’t cutting service. Other agencies have cut service and have seen more crowding on vehicles. RTD have had trouble maintaining adequate staffing levels in the past and this could become a problem if too many operators call out.</td>
<td>18-Mar-20</td>
<td><a href="https://www.denverpost.com/2020/03/18/rtd-service-denver-colorado-coronavirus/">https://www.denverpost.com/2020/03/18/rtd-service-denver-colorado-coronavirus/</a></td>
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<td>Asia</td>
<td>Hong Kong</td>
<td>Recovery Phase I</td>
<td>Transit</td>
<td>Operations</td>
<td>Hong Kong’s March 2020 MTR ridership fell by 42% when compared to March 2019. The company started reducing service in February to address falling demand while schools were closed and workers worked from home.</td>
<td>29-Apr-20</td>
<td><a href="https://sg.news.yahoo.com/coronavirus-mtr-corp-passenger-numbers-040052804.html">https://sg.news.yahoo.com/coronavirus-mtr-corp-passenger-numbers-040052804.html</a></td>
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<td>Asia</td>
<td>India</td>
<td>Crisis</td>
<td>Transit</td>
<td>Operations</td>
<td>Authorities started to lock down many of the country’s 1.3 billion people. As lockdowns spread, rail stations were still full of people seeking to leave cities to travel to their home towns. As a result the vast train network is being shutdown during the lockdown.</td>
<td>23-Mar-20</td>
<td><a href="https://www.mercurynews.com/2020/03/23/coronavirus-india-shuts-down-rail-system-to-stop-outbreak/">https://www.mercurynews.com/2020/03/23/coronavirus-india-shuts-down-rail-system-to-stop-outbreak/</a></td>
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<td>Asia</td>
<td>Wuhan</td>
<td>Crisis</td>
<td>Transit</td>
<td>Operations</td>
<td>Wuhan, a Chinese city of eleven million people, has temporarily shut down its public transport as it tries to halt the outbreak of a new strain of virus. Those living in the city have been advised not to leave, in a week when millions of Chinese are travelling for the upcoming Lunar New Year holiday.</td>
<td>23-Jan-20</td>
<td><a href="https://www.bbc.com/news/world-asia-china-51215348">https://www.bbc.com/news/world-asia-china-51215348</a></td>
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<td>Asia</td>
<td>China</td>
<td>Crisis</td>
<td>Transit</td>
<td>Policy/Regulations</td>
<td>In China, despite most of the country being in lockdown, public transport was entirely suspended only in Wuhan and its commuter belt. Most other Chinese cities ran reduced public transport services, with a heavy focus on hygiene and sanitation. Temperature checks of workers, mandatory PPE, checkpoints for rider screening, camera enforced reduced capacity, and social distancing markings were used.</td>
<td>16-Mar-20</td>
<td><a href="https://theconversation.com/to-limit-coronavirus-risks-on-public-transport-heres-what-we-can-learn-from-efforts-overtreat-137764">https://theconversation.com/to-limit-coronavirus-risks-on-public-transport-heres-what-we-can-learn-from-efforts-overtreat-137764</a></td>
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<td>Asia</td>
<td>Seoul</td>
<td>Crisis</td>
<td>Transit</td>
<td>Policy/Regulations</td>
<td>South Korea acted quickly, advising only essential trips when there were still few cases confirmed. As a result car traffic decreased by 7.2% in March and the number of passengers on public transportation went down by 34.5% as compared to January.</td>
<td>20-Feb-20</td>
<td><a href="https://ecomobility.org/covid-19-focus-on-cities-and-transport-responses-south-korea/">https://ecomobility.org/covid-19-focus-on-cities-and-transport-responses-south-korea/</a></td>
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<td>Asia</td>
<td>Singapore</td>
<td>Crisis</td>
<td>Transit</td>
<td>Operations</td>
<td>Singapore’s MRT has seen a 75% reduction in demand for rail trips and 71% reduction in bus ridership during a lockdown dealing with a second wave of infections. As a result services are being cut and suspended. The “Circuit Breaker” initiative mirrors other widespread lockdowns in its restrictiveness and its effect on transit ridership.</td>
<td>14-Apr-20</td>
<td><a href="https://www.channelnewasia.com/news/singapore/mrt-train-operating-hours-bus-services-suspended-covid-19-fa-02640448">https://www.channelnewasia.com/news/singapore/mrt-train-operating-hours-bus-services-suspended-covid-19-fa-02640448</a></td>
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<td>Asia</td>
<td>Tokyo</td>
<td>‘New Normal’</td>
<td>Transit</td>
<td>Operations</td>
<td>Rush hour ridership on the Tokyo Metro declined between 43% and 61% in early April. People are heeding the governments calls to limit all non-essential trips. Commuter trips have also declined by about 60%.</td>
<td><a href="http://www.asahi.com/ajw/articles/13287608">http://www.asahi.com/ajw/articles/13287608</a></td>
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<td>Asia</td>
<td>Beijing</td>
<td>‘New Normal’</td>
<td>Transit</td>
<td>Operations</td>
<td>A metro line in Beijing is piloting an intelligent service system which can identify whether passengers are wearing masks. The carriages in Line 6 are equipped with high-resolution sensing cameras, which will capture passengers’ images and transmit them to an intelligent background system for analysis.</td>
<td>9-Apr-20</td>
<td><a href="http://www.ecns.cn/news/2020-04-09/detail-ifz-yiigg923848.shtml">http://www.ecns.cn/news/2020-04-09/detail-ifz-yiigg923848.shtml</a></td>
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<td>America</td>
<td>Philadelphia</td>
<td>‘New Normal’</td>
<td>Transit</td>
<td>Operations</td>
<td>SEPTA seeks 10,000 face masks as pandemic continues to take a toll on transit service. SEPTA has retrofitted buses and trolleys with protective shields to reduce operators’ exposure to riders, enacted a rigorous cleaning schedule to protect staff.</td>
<td>3-Apr-20</td>
<td><a href="https://www.phillytrib.com/news/health/coronavirus/septa-seeks-10-000-face-masks-as-pandemic-continues-to-take-a-toll-on-transit/article_b87eaed6-75aa-11ea-b021-0f70e28b5ef4.html">https://www.phillytrib.com/news/health/coronavirus/septa-seeks-10-000-face-masks-as-pandemic-continues-to-take-a-toll-on-transit/article_b87eaed6-75aa-11ea-b021-0f70e28b5ef4.html</a></td>
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<td>Other</td>
<td>Global</td>
<td>‘New Normal’</td>
<td>Transit</td>
<td>Operations</td>
<td>Ridership has plunged more than 80% on major public transportation systems in European and US cities since Jan. 15, according to data from Moovit, an urban mobility app with 750 million users, a stark indication of how the coronavirus pandemic has brought urban life to a standstill.</td>
<td>24-Mar-20</td>
<td><a href="https://qz.com/1824243/coronavirus-has-killed-off-public-transportation-across-the-world/">https://qz.com/1824243/coronavirus-has-killed-off-public-transportation-across-the-world/</a></td>
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<td>America</td>
<td>New York</td>
<td>‘New Normal’</td>
<td>Transit</td>
<td>Operations</td>
<td>A controversial study linking NYC’s outbreak to subway ridership has been met with controversy. It shows how easy it is to blame public transit for virus spread, even when the evidence is tenuous that riding transit increases risk.</td>
<td>21-Apr-20</td>
<td><a href="https://www.citylab.com/transportation/2020/04/coronavirus-cases-new-york-subway-infection-riders-mta/610159/">https://www.citylab.com/transportation/2020/04/coronavirus-cases-new-york-subway-infection-riders-mta/610159/</a></td>
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<td>America</td>
<td>New York</td>
<td>‘New Normal’</td>
<td>Transit</td>
<td>Operations</td>
<td>New York City’s Metropolitan Transportation Authority, which hosts 8 million passengers a day, said it would be bringing in a hefty supply of bleach and other antiviral treatments. They’ll be used for cleaning subway station equipment like MetroCard machines, turnstiles, and handrails.</td>
<td>9-Mar-20</td>
<td><a href="https://www.theverge.com/2020/3/9/21168516/coronavirus-covid19-city-public-transportation-subway-bus-cleaning">https://www.theverge.com/2020/3/9/21168516/coronavirus-covid19-city-public-transportation-subway-bus-cleaning</a></td>
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<td>America</td>
<td>New York</td>
<td>‘New Normal’</td>
<td>Transit</td>
<td>Operations</td>
<td>MTA announced service cutbacks on subway, bus, and commuter rail service on Tuesday afternoon, after weeks of declining ridership due to the coronavirus pandemic. The service cuts come as ridership across the system has dropped precipitously during the coronavirus pandemic. Subway ridership was down 87 percent, and ridership on buses down 70 percent. The MTA’s suburban rail systems, Metro-North and the LIRR, are down 94 percent and 76 percent respectively.</td>
<td>24-Mar-20</td>
<td><a href="https://nyc.streetsblog.org/2020/03/24/mta-anounces-service-cuts-in-response-to-coronavirus-related-ridership-drop/">https://nyc.streetsblog.org/2020/03/24/mta-anounces-service-cuts-in-response-to-coronavirus-related-ridership-drop/</a></td>
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<td>America</td>
<td>Chicago</td>
<td>‘New Normal’</td>
<td>Transit</td>
<td>Operations</td>
<td>The Chicago region has already seen a downturn in train use as people seek to limit their exposure to the virus and businesses ask employees to work from home. Metra and Amtrak are reporting fewer riders, and Metra is considering reducing the number of trains. It’s likely that a byproduct of the outbreak will be a shift towards more sustainable commuting and travel practices, namely walking, biking, and telecommuting.</td>
<td>13-Mar-20</td>
<td><a href="https://chi.streetsblog.org/2020/03/13/a-silver-lining-of-the-coronavirus-epidemic-more-walking-biking-and-telecommuting/">https://chi.streetsblog.org/2020/03/13/a-silver-lining-of-the-coronavirus-epidemic-more-walking-biking-and-telecommuting/</a></td>
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<td>Asia</td>
<td>Karnataka</td>
<td>‘New Normal’</td>
<td>Transit</td>
<td>Operations</td>
<td>The Karnataka State Road Transport Corporation (KSRTC) is converting its old buses that were slated to be scrapped into ‘sanitizer buses’ to disinfect people in public places. By stripping the interior seats and poles they can create a walk through spray on sanitizing station for essential workers.</td>
<td>11-Apr-20</td>
<td><a href="https://www.thehindu.com/news/cities/bangalore/ksrtc-launches-sanitizer-bus/article31318794.ece">https://www.thehindu.com/news/cities/bangalore/ksrtc-launches-sanitizer-bus/article31318794.ece</a></td>
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<td>Asia</td>
<td>Delhi</td>
<td>‘New Normal’</td>
<td>Transit</td>
<td>Operations</td>
<td>Aiming to gain public trust and reassure passengers, transport operators are taking advantage of the forced halt in operations to improve their standards. In the wake of the health emergency, the Delhi Metro and buses, and Mumbai’s local trains have been sanitized. The government has also decided to enhance the hygiene condition of these two highly essential services.</td>
<td>28-Apr-20</td>
<td><a href="https://ecomobility.org/covid-19-focus-on-cities-and-transport-responses-india/">https://ecomobility.org/covid-19-focus-on-cities-and-transport-responses-india/</a></td>
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<td>Asia</td>
<td>China</td>
<td>‘New Normal’</td>
<td>Transit</td>
<td>Operations</td>
<td>Health experts in China are blasting buses with beams of ultraviolet light in a bid to contain the coronavirus outbreak. Guidance issued by the National Health Commissioner says the virus is sensitive to ultraviolet light and heat.</td>
<td>5-Mar-20</td>
<td><a href="https://metro.co.uk/2020/03/05/buses-blasted-uv-light-rid-corona-virus-12352400/">https://metro.co.uk/2020/03/05/buses-blasted-uv-light-rid-corona-virus-12352400/</a></td>
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<td>Middle East/Africa</td>
<td>Tehran</td>
<td>‘New Normal’</td>
<td>Transit</td>
<td>Operations</td>
<td>A large number of people who do not own a private car inevitably take a bus or taxi, or use subway to get to work. As ridership grows to 350,000 per day, social distancing becomes impossible.</td>
<td>18-Apr-20</td>
<td><a href="https://financialtribune.com/articles/people/102912/public-transport-commuters-surge-as-businesses-re-open-in-tehran">https://financialtribune.com/articles/people/102912/public-transport-commuters-surge-as-businesses-re-open-in-tehran</a></td>
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<td>America</td>
<td>Erie County</td>
<td>‘New Normal’</td>
<td>Transit</td>
<td>Policy/Regulations</td>
<td>Look for some changes on local buses as the Niagara Frontier Transportation Authority continues to adapt to the realities of the COVID-19 pandemic. According to April Baskin, chair of the Erie County Legislature, buses will now be limited to only 15 passengers. Also, buses will carry signage reminding riders of the need to remain socially distant to prevent the spread of the coronavirus.</td>
<td>29-Apr-10</td>
<td><a href="https://news.wbfo.org/post/nfta-restricts-ridership-15-passengers-bus">https://news.wbfo.org/post/nfta-restricts-ridership-15-passengers-bus</a></td>
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<td>America</td>
<td>New York</td>
<td>‘New Normal’</td>
<td>Transit</td>
<td>Operations</td>
<td>MTA will begin using powerful ultraviolet light as part of its beefed-up sanitization program on subways and buses. Starting May 11th, UV lamps will be placed inside subway cars and buses at two rail yards and bus depots.</td>
<td>4-May-20</td>
<td><a href="https://www.theverge.com/2020/5/4/21246491/nyc-mta-ultraviolet-light-uv-light-subway-bus-coronavirus">https://www.theverge.com/2020/5/4/21246491/nyc-mta-ultraviolet-light-uv-light-subway-bus-coronavirus</a></td>
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<td>America</td>
<td>New York City</td>
<td>‘New Normal’</td>
<td>Transit</td>
<td>Operations</td>
<td>Starting May 6, the subway system will shut down from 1 a.m. to 5 a.m. to give workers time to scrub and disinfect trains in an “unprecedented” move to curb the spread of coronavirus, Governor Cuomo said. Under the plan announced Thursday, all 472 subway stations will close, and the estimated 10,000 riders and 2,000 homeless people on the system during those four hours will be ordered off trains and out of stations.</td>
<td>30-Apr-20</td>
<td><a href="https://www.nydailynews.com/coronavirus/ny-coronavirus-cuomo-briefing-mta-subway-20200430-oo3bmkre-57m4xboorxsva4u-story.html">https://www.nydailynews.com/coronavirus/ny-coronavirus-cuomo-briefing-mta-subway-20200430-oo3bmkre-57m4xboorxsva4u-story.html</a></td>
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<td>Europe</td>
<td>Rome</td>
<td>‘New Normal’</td>
<td>Transit</td>
<td>Policy/Regulations</td>
<td>Commuters using public transport are required to wear protective masks and keep a distance of one meter from other people. These photos show signs on train and bus seats that have to remain empty and markers on the floor to ensure social distancing. People arriving at Termini train station in Rome also had their body temperatures taken by the staff.</td>
<td>5-May-20</td>
<td><a href="https://www.newsweek.com/italy-lockdown-restrictions-lifted-coronavirus-stores-public-transport-pictures-1502028">https://www.newsweek.com/italy-lockdown-restrictions-lifted-coronavirus-stores-public-transport-pictures-1502028</a></td>
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<td>Europe</td>
<td>Madrid</td>
<td>‘New Normal’</td>
<td>Transit</td>
<td>Policy/Regulations</td>
<td>Metro Madrid introduced signage to new rules clear to riders. Social distance must be maintained, elevator ridership is limited, and cash payments is not allowed on buses. Recommendations are made to avoid rush hour and to wear a mask.</td>
<td>12-Apr-20</td>
<td><a href="https://www.comunidad-madrid.notas-prensa/2020/05/12/comunidad-madrid-prep%D0%B0%D1%80%D0%B0%D1%82-desescalada-metro-nueva-senalizacion-informa-usuarios-condiciones-viaje">https://www.comunidad-madrid.notas-prensa/2020/05/12/comunidad-madrid-prepарат-desescalada-metro-nueva-senalizacion-informa-usuarios-condiciones-viaje</a></td>
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<td>Asia</td>
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<td>‘New Normal’</td>
<td>Transit</td>
<td>Policy/Regulations</td>
<td>Seoul subway riders will be required to wear masks on crowded trains as of May 11. Station personnel will enforce rule when trains exceed 150% capacity and social distance cannot be maintained.</td>
<td>12-May-20</td>
<td><a href="http://english.chosun.com/site/data/html_dir/2020/05/12/20200512021b.html">http://english.chosun.com/site/data/html_dir/2020/05/12/20200512021b.html</a></td>
</tr>
</tbody>
</table>
Global Mobility Response to COVID-19

ENDNOTES

3. Source: NYC DOT (NYC_DOT). “We’ve seen a surge in cycling since the beginning of March, with warmer temperatures and after recommendations from @NYCMayor and @nycHealthy regarding COVID-19. This week we’ve seen a 50+% increase in cycling on all East River Bridges (vs 2019).” March 11, 2020. 3:52 PM. Tweet.
9. www.sidewalkwidths.nyc/
12. NYC DOT (NYC_DOT). “We’ve seen a surge in cycling since the beginning of March, with warmer temperatures and after recommendations from @NYCMayor and @nycHealthy regarding COVID-19. This week we’ve seen a 50+% increase in cycling on all East River Bridges (vs 2019).” March 11, 2020. 3:52 PM. Tweet.