

# TeMA

Journal of  
Land Use, Mobility and Environment

Cities need to modify and/or adapt their urban form, the distribution and location of services and learn how to handle the increasing complexity to face the most pressing challenges of this century. The scientific community is working in order to minimise negative effects on the environment, social and economic issues and people's health. The three issues of the 14th volume will collect articles concerning the topics addressed in 2020 and also the effects on the urban areas related to the spread Covid-19 pandemic.

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METHODS, TOOLS AND BEST PRACTICES

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## REVIEW NOTES – Urban practices

# Toward greener and pandemic-proof cities: North American cities policy responses to Covid-19 outbreak

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### Abstract

Starting from the relationship between urban planning and mobility management, TeMA has gradually expanded the view of the covered topics, always following a rigorous scientific in-depth analysis. This section of the Journal, Review Notes, is the expression of a continuous updating of emerging topics concerning relationships among urban planning, mobility and environment, through a collection of short scientific papers. The Review Notes are made of four parts. Each section examines a specific aspect of the broader information storage within the main interests of TeMA Journal. In particular, the Urban practices section aims at presenting recent advancements on relevant topics that underlie the challenges that the cities have to face. The present note provides an overview of the policies and initiatives undertaken in three North American cities in response to the Covid-19 outbreak: New York City (US), Mexico City (MX) and Montreal (CA). A cross-city analysis is used to derive a taxonomy of urban policy measures. The contribution discusses the effectiveness of each measures in providing answers to epidemic threats in urban areas while, at the same time, improving the sustainability and resilience of urban communities.

### Keywords

Covid-19; Urban policies; New York, Mexico city; Montreal

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## 1. Introduction

In December 2019, in the Wuhan province of China, a new form of Coronavirus (Covid-19) emerged. Since then, the virus has been spreading globally and, as of 05 March 2020, more than 200 Countries around the world have reported 136.82 million confirmed cases and a death toll of 2.96 million deaths (Template: Covid-19 pandemic data). The Covid-19 pandemic triggered both third and first world economies, causing severe disruption to society and business, especially in urban areas (OECD, 2020a).

## 2. Toward greener and pandemic-proof urban areas?

Urban areas have been the ground zero of the Covid-19 pandemic, with 90 per cent of reported cases (UN, 2020). They are densely populated places where people live and gather, thus at high risk of spreading the virus due to the close proximity among residents and challenges to implement social distancing (Neiderud, 2015). These conditions have generated a large debate about the future role of cities in the post-Covid scenario. In this respect, some authors have argued that large urban areas are nearly defenseless in times of unprecedented disease outbreaks (Desai, 2020) and that dense urban settlements are not compatible with the needs of social distancing (Megahed and Ghoneim, 2020). These circumstances, coupled with increasing dematerialization of services and pandemic-pushed growing teleworking rates, have prompted some authors to questioning the ever-growing urban concentration model and envisioning a resurgence of rural areas as alternative and safer mode of urbanization in the post-Covid society (Cotella and Brovarone, 2020).

On the contrary, other authors have stressed the pivotal role played by cities in the Covid-19 response in terms of implementing nation-wide measures, but also in terms of providing laboratories for bottom-up and innovative recovery strategies (UN, 2020; OECD, 2020a; UCCN, 2020). Advocates of this second line of argument have seen in the Covid-19 crises an unpredictable opportunity to reshape our cities toward a greener and cleaner urban future (OECD 2020a; Lai et al., 2020; Pierantoni et al., 2020). These optimistic claims are supported by a growing body of interdisciplinary research. Synergies, indeed, has been identified between policies aimed at providing answers to epidemic threats in urban areas and policies aimed at improving the sustainability and resilience of urban settlements (Garcia, 2020; Barbarossa, 2020; Pinheiro et al., 2020). Decentralization of public facilities, prioritization of soft over car-centric mobility, hierarchization of the transport system and public services, and redundancy of public, green and open-space functions have been identified as integrated measures able to achieve both public health and city sustainability targets (Pisano, 2020; Sharifi et al., 2020).

Within this context, the present short paper provides an overview of policies and initiatives undertaken in three major North American cities in response to the Covid outbreak. This is followed, in paragraph 4, by a discussion on whether these measures are (or will) promote a sustainable urban recovery.

### 3.1 New York City



New York is the most populous city in the United States. With an estimated population of 8,336,817 distributed over about 302.6 square miles (784 km<sup>2</sup>), it is also the most densely populated major city in the United States. The city is considered as the cultural, financial, and media capital of the world, significantly influencing commerce, entertainment, research, technology, education, politics, tourism, art, fashion, and sports. The city has experience a sustained urban growth over the past few decades, characterized by the implementation of large-scale urban projects and the development of an efficient and modern public transportation network, coupled with a well-developed shared-mobility ecosystem.

The pandemic has severely hit the city's dynamic economy and social life, reversing the long-standing growth trends that have characterized its economy, with leisure, hospitality, finance, administrative and support services being the most affected economic sectors. As a consequence - only in 2020 - the city lost 750,000 jobs, nearly one out of every six job. This lopsided impact have exacerbated previously existing income inequalities, since the devastating effects have had a concentrated impact on predominantly low-income workers of color, young adults, and women (Parrot, 2021). During the first year of the pandemic, the city has adopted a number of measures to facilitate social distancing and

containing the spread of the virus. For instance, the city expanded its pedestrian walkways and pedestrian-only streets, which has come in handy during social distancing, and has closed down numerous streets in the five boroughs to allow for more pedestrian walkway. As a result, 83 miles of additional car-free streets (also known as Open Streets) have been implemented in 2020. In addition to pedestrian walkways, bike lanes, which were once a hotly contested and controversial topic, have been incredibly expanded: the New York City Department of Transportation has indeed constructed a record 28.6 lane miles of new protected bike lanes since the beginning of the pandemic. In addition to pedestrian sidewalks and bike lanes, there has been also an emphasis on the recovery of the leisure activities: bars, restaurant and café have been allowed to expand their terraces onto sidewalks and even close roads in some areas, resulting in 10,800 so-called Open Restaurants. Other intervention for the 2020 year included the restoration and the expansion of several public green areas and blue spaces. In January 2021, the city Council adopted an integrated and more structured approach to urban recovery by delivering the *Recovery for all* plan, the Major strategy aimed at creating a stronger, fairer and safer city for all New Yorkers. The strategy is articulated around six main pillars and 33 lines of intervention. Most of them introduce transformations in the built environment as a tool to promote social and economic recovery. For instance, under the *Fight the Climate Crisis* pillar, the plan envisions to make the *Open Streets* developed during the previous year a permanent part of the city landscape, while also opens applications for new streets, with a focus on local partner management and support. In addition, New York City will begin construction on five new *Bike Boulevards*, streets that are designed to give bicycles travel priority and put cyclist safety first. Under the same pillar, the plan also envisions the development of new public spaces (particularly for neighborhoods hardest hit by Covid) that will help support local small businesses, foster community ties and provide space for arts and culture. The *Bend Government to Fight Inequality* pillar focuses on social and spatial inequalities that have been further exacerbated by the pandemic crisis. In this respect, the plan envisions, among other measures, the establishment of a permanent taskforce on racial inclusion and equity with the aim of identifying the communities hardest hit by Covid-19 and driving new investments and initiatives in these neighborhoods. An important part of the plan concerns with the recovery and diversification of the urban economy. Actions in this domain are grouped under the *Build a New Economy* pillar and include, among others, the revitalization of small businesses by introducing a small-business recovery tax credits and loans scheme. Finally, particular emphasis is also given to the participation of the population (and especially the marginalized groups) in the decision-making process, as reflected in the *Community Power in Neighborhood* pillar.

### 3.2 Mexico City



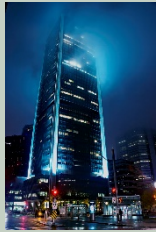
With an urban population of 9.2 million inhabitants, Mexico City is the capital and largest city of Mexico and the most populous city in North America. It is one of the most important cultural and financial centers of North America and one of the most productive urban areas in the world, generating – alone – approx. the 16% of total Mexico's GDP. Due to domestic migration, the city is expanding at an unprecedented rate. Rapid and unplanned urbanization however has caused several problems, including poor air and water quality, waste-disposal problems, high-energy consumption, and growing social and territorial inequalities. Despite this, the city is currently working toward radically reshaping its urban fabric, especially through the implementation of large-scale sustainable mobility initiatives.

The city economy has been severely hit by the pandemic. Furthermore, the pandemic has reinforced pre-existing social and spatial inequalities. Recent research findings (Jaramillo Molina, 2021) have underlined that, although the virus has spread throughout Mexico City, there are important spatial/geographical patterns associated with underlying inequalities: disadvantaged neighborhood have indeed reported a disproportional rates of infections and deaths. To recover its urban economy and alleviate pandemic-pushed social inequalities, Mexico City has announced on September 2020 an ambitious recovery plan. According to this plan, the city government will invest USD 1 billion to create around 1 million new jobs, mainly through public investments in infrastructure and social housing. The plan is expected to contribute to the redevelopment of 13 urban corridors through housing projects, mostly housing improvement projects and new social housing in areas with good transport connection. For the city government the investment in infrastructure and social housing is essential in the recovery strategy due to the multiplier effect and the indirect jobs it may create. Although the projects will be carried out in large part by private companies, the plan poses particular emphasis on the consultations with the residents and the public at large in order to amplify the voices of those affected and allow for a more integrated and large-scale urban planning, compared to what would be possible with unguided private activities that have characterized part of the recent city development history. Beside intervention in the housing domain, the recovery plan also include measures aimed at improving public transport and soft mobility. In the respect, the plan envisions the creation of a new Bus Rapid Transit (BRT) line as well as two 'cablebuses' (cableways) lines connecting the historic center with recently developed, car-oriented neighborhoods. On the soft mobility side, the plan includes measures to expand the city bicycle path networks and promote the use of shared bicycles as a safe transportation mode, as well as the implementation of small-scale interventions aimed at increase the comfort and safety of cyclists on already-existent cycling routes. Interventions on the city's built environment will not only cover housing and transportation, but will also focuses on the recovery and expansion of Mexico City's industrial area (Vallejo neighborhood) with the aim of attracting new private investments, especially in the field of clean energy technologies.



Measures in the social welfare domain have been another important focus of the public administration recovery strategy. City unemployment rate is indeed relatively high, and there are large numbers of households living below the poverty line. Furthermore, almost half of the economically-active population works in the informal economy. To tackle these issues the City administration has created a dedicated budget, financed by both public funds as well as private donations. These resources have been devoted to provide aids to families in the form of direct economic support, rent relief support, food aids, municipal taxes relief programs and discounts on the purchase of public transport subscriptions. A further line of intervention concerns with the simplification, expansion and acceleration of digital services available to the citizens in order to reduce the needs to travel and contain physical contacts between public servants and city users.

### 3.3 Montreal



With 1.7 million inhabitants, Montreal is the second-most populous city in Canada and the most populous city in the province of Quebec. Historically the city has been the commercial capital of Canada. However, starting from the late 70s, Montreal was surpassed in population and in economic strength by Toronto. Despite this, Montreal remains an important center of commerce, finance, industry and technology.

Over the past few decades, the city has been home of important urban transformations. From one side, its historic district has been the focus of both public and private interventions finalized at consolidating the district's attractiveness as a living environment, in addition to a center of heritage and tourism. On the other side, the city has successfully promoted a model of urban development for its outskirt areas that supports the creation of dense, mixed-use communities around main public transportation nodes.

Since the beginning of the pandemic, Montreal has remained the worst affected health region in Canada, having both the highest total case count and the highest death rate (Ville de Montreal, 2020). Therefore, the city has experienced significant economic loss that, in turn, have resulted in unprecedented rates of unemployment. In order to provide a response to the economic challenges posed by the pandemic, on June 2020, the city Council launched an ambitious recovery plan, aimed at supporting Montréal's economy in the short term, while taking concrete actions to stimulate city recovery in the long run in a more resilient, inclusive and sustainable way. The plan is geared towards three main objectives: i) stabilize and support the economy in the short-term, ii) reinvent the economic development of the city in the long term, and iii) mobilize all partners towards green and inclusive urban development. Based on these objectives, the plan defines three main axes of intervention. For the first axis *Businesses at the heart of our economic recovery*, \$5.6 M will be injected in order to stimulate the vitality of the commercial thoroughfares and to support businesses resume their activities and develop major projects geared toward client experience and physical distancing. Beside direct economic support to commercial activities and business, measures under this pillar also cover: i) actions aimed at favoring the temporary or transitory occupancy of vacant city spaces; ii) the creation of a permanent urban, carbon-free bicycle delivery service, as well as iii) the elaboration of a dedicated plan to regulate and boost the city's nocturnal economy. For the second axis *Helping entrepreneurs do business differently*, \$4.8 M are invested to stimulate entrepreneurship, namely by providing support to small and medium-size businesses that are struggling with debt, or that wish to transform their business models. Measures under this axis, also aim to support start-ups and social economy organizations.

The third axis focuses on the redevelopment of the urban environment that is strategically seen as one of the main city asset, and a potent lever to stimulate economic recovery. This axis is called *Reinventing the economic development of our territory*, and envisions investments for \$10.5 M to catalyze Montréal's transition towards a greener and more inclusive city. This axis focuses on urban regeneration projects such as the decontamination of the Montréal's East End, an area of about 4 million square feet of land formerly devoted to industrial functions that will be mainly converted in research, innovation and entrepreneurial functions. Other examples of interventions include: i) the extension of the orange metro line to the northwest, and the blue metro line to east; ii) the renovation of selected heritage buildings into mixed-use modern buildings, including low-cost housing; iii) the extension and upgrade of sidewalks in the historic city center. Finally, for the axis *Mobilizing the economic ecosystem to elicit collective and renewed commitment*, \$1.1 M will help support and coordinate the most far-reaching initiatives of the city's economic development ecosystem in the current context, namely with respect to the city's global economic standing, to the creation and sharing of strategic data, as well as to the adaptation of the training provided in order to aid in the reintegration and reorientation of the workforce.

## 4. Discussion and conclusions

As Covid-19 spreads across the world, cities have become epicenters of the pandemic, amplifying the spread and transmission of infection, with their dense population and transport networks. At the same time, cities have become catalysts of sustainable recovery. Many examples of good practices taking place in cities across the world are captured by dedicated and constantly-updated reports of international organizations such as

WHO (2020), UN (2020) and OECD (2020a) and UCCN (2020). This contribution provided a focus on North America and examined policy response to the Covid-19 epidemic in three cities.

A cross-city analysis of measures implemented in the cities under investigation can be a useful exercise to derive a taxonomy of urban policy measures. This is reported below, together with some considerations on the effectiveness of such measures in providing answers to epidemic threats in urban areas while, at the same time, improving the sustainability and resilience of urban communities. Considering the social, the physical and the functional subsystems composing the city, measures could be addressed to:

#### PHYSICAL SUBSYSTEM

- Expansion of cycling infrastructures. Cycling is promoted by many cities as a recovery strategy since it can reduce pressure on crowded (and often depotentiated) public transport while allowing citizens to respect social distancing, thus lowering the risk of virus transmission. Especially in dense urban settlements, as those examined in this article, where commuting distances are compatible with the use of bike, cycling represents an alternatives solution to provide citizens with essential needs, go to work when necessary, and still perform some physical activity, even in times of pandemic outbreaks (Garcia, 2020). At the same time, the promotion of cycling in urban areas represents an essential ingredient to improve cities livability and reduce the externalities of car-oriented urban development (Ison and Shaw, 2012).
- Improvement of walking paths/ expansion of pedestrian areas. These measures can be considered effective tools to promote sustainable mobility while, at the same time adapting the city physical environment to the new challenges imposed by the virus outbreak. On the city sustainability side, these measures can contribute to sustainable mobility targets by shifting mobility demand from private cars to active transportation modes (Li et al., 2014). On the health side, ameliorate walkability has been demonstrated an effective tool to improve public health by promoting physical activity (Frank et al., 2006). Furthermore, extension of pedestrian areas and sidewalks can guarantee enough space for safe physical distancing while favoring business reopening by accommodating longer lines deriving for lower business accommodation capabilities (WHO, 2020).
- Extension of green and open space functions. Environmental benefit of public, green and open spaces are well-established: they contribute to the purification of water and air climate, to the regulation and mitigation of the urban climate, and support biodiversity conservation (Chiesura, 2004). Following the pandemic outbreak, researchers have found that the virus transmission spreads more easily indoors than outdoors (Morawskaa and Caob, 2020) and that urban green urban spaces have been crucial for exercise and mental wellbeing during the stringent lockdown (Razani et al., 2020). Extension of these areas represents thus a valuable contribution to foster city sustainability while, at the same, time providing concrete spatial planning answers to epidemic threats.

#### FUNCTIONAL SUBSYSTEM

- Decentralization of public facilities. Decentralization of public facilities is considered a fundamental property to contain the spread of the virus since it allows people to be able to get the goods and facilities they need within the minimum distance from their houses, thus limiting the interaction with the other sectors of the population (Pinheiro et al., 2020). Furthermore, the decentralization of healthcare services can reduce the response time, and saving operating costs (Pisani, 2020). A balanced juxtaposition of homes and services, is thus not only a well-known urban planning strategy to reduce long-distance trips and promote active transport, but represents also an emerging tool for containing epidemic spreading.
- Improvement of IT infrastructures and digital services. These measures can generate positive co-benefits: the digitalization of public services can indeed reduce the need to travel while at the same time

contain physical contacts between public servants and city users. Furthermore, IT technologies can also provide a fast and concrete response to citizen's needs. Investments in this domain should be thus certainly encouraged in the context of city's recovery plan.

## SOCIAL SUBSYSTEM

- Household / small business economic support. The pandemic crises has exacerbated the existing social inequalities while severely affecting cities economy. Measure aimed at provide households economic, social or rental support as well as measures target at provide relief to most affected economic sectors have been implemented in all cities under investigation. While undoubtedly necessary, these measure, if not integrated in a wider urban economic recovery strategy, can be considered only effective in the short term. Their impacts on cities sustainability and resilience is hard to demonstrate.
- Human capital development. According to OECD (2020b), the global pandemic is triggering substantial changes in the labor market. Accordingly, it is essential for governments to help workers transition to the post-Covid 19 economy. These measures are highly recommended by international organizations as they provide the ground for fostering citizens' resilience to current and future disruptive events.

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## Image Sources

All images are from wekepedia.org.

## Author's profile

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He is a Senior IT Consultant, currently auditing for the European Commission, where he leads the analysis and design of Information Technologies aimed at supporting data-driven policy-making in the domain of public health and food safety. Prior to moving to the private sector, Gennaro has worked as researcher at the Department of Civil, Architectural and Environmental Engineering of the University of Naples Federico II and has been Visiting Fellow at the Department of Human Geography of the Complutense University of Madrid.