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Journal of Land Use, Mobility and Environment

The Times They Are a-Changin' and cities have to face challenges which may not be further postponed. The three issues of the 13th volume will collect articles concerning the challenges that cities are going to face in the immediate future, providing readings and interpretations of these phenomena and, mostly, methods, tools, technics and innovative practices (climate proof cities, zero consumption cities, car free cities) oriented to gain and keep a new equilibrium between cities and new external agents.

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REVIEW NOTES

The quality of the offer that the magazine has set as a priority since its foundation has given increasingly encouraging results, first with the recognition by readers and, subsequently, by the institutional bodies responsible for the quality of research in Italy. The recent inclusion of TeMA in the list of reviews of A class represents a milestone to start from. The Review Pages section, since the first issue of TeMA in 2007, has played a substantial role in the general balance of the review, both as an expression of constant updating and as a permanent observatory on emerging issues relating to the relationships between urban planning, mobility and the environment. Starting from the issue of August 2020, the Review Pages will have the new form of Review Notes. They will become short scientific articles, which, while maintaining the function of a reasoned review, will deepen relevant issues in the context of the scientific debate on the recent challenges of the cities, territories and environment. The Review Notes will contain critical thoughts congruent with the topic of the review. The guidelines for these considerations will be: centrality and interest in the scientific debate; advancements and innovativeness of topics; significant gaps resulting from the analysis of the state of the art; recent evidence stemming from the scientific debate; perspectives and potential developments. The Review Notes will consist of four sections, edited by the following researchers:

- Carmen Guida for the section Urban Planning Literature Review;
- Federica Gaglione for the section Town Planning International Rules and Legislation Overview;
- Gennaro Angiello for the section Projects and Innovative Approach;
- Stefano Franco for the section Economy, Business and Land Use.

Researchers can identify a specific and personal topic to deepen in more than one issue, becoming self-contained scientific articles. Articles are subjected to the usual submission process required by the statement of TeMA journal. The Editorial Staff provides a specific quality control of the articles.

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REVIEW NOTES – Town planning international rules and legislation

Strategies and guidelines for urban sustainability: the Covid-19 effects on the mobility system in Italy

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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 written by young researchers. 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 Town planning international rules and legislation overview section aims at presenting the latest updates in the territorial and urban legislative sphere.
Urban patterns and their intrinsic relationships have completely changed since Covid-19. In particular, the mobility subsystem experienced a strong setback. Local public transport recorded a significant reduction in regional rail services compared to the period prior to the emergency and an equally substantial cut in urban and suburban road transport. This section examines the legislative decrees issued by the Italian government to restart local public transport after the lockdown.

Keywords
Urban sustainability; Urban mobility; Covid-19; Local public transport.

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1. Introduction

The spread of coronavirus disease (Covid-19) has radically altered urban life, reducing population mobility at both local and country scales and dramatically affecting social relationships. The emergency led to significant impacts on all components of the socio-economic, physical and functional urban systems while generating a high economic crisis (Gargiulo et al., 2020). Italy was the first nation to register a high spread of the virus within Europe. The contagion index has changed from day to day also due to the different restrictive measures implemented by regional authorities. Furthermore, the irregular geographic distribution of the virus in Italy is still an enigma today given the intense movement between regions before the lockdown measures (Becchetti et al., 2020). The effect of Coronavirus on urban mobility has long lasting consequences. In more detail, the focus of this section is to examine how Covid-19 containment measures changed people's habits in reaching urban places and services, thus influencing the mobility subsystem. Urban system mobility is very complex and depends on several factors, primarily on the ways users move around the cities (walking, cycling, by buses or underground), on the level of accessibility to a place and the organization and structure of the public transport supply. A recent report conducted by the Ipsos Group highlights variations in travel preferences during the Covid-19 period. In more detail, Ipsos Group conducted the first research on the subject by examining travel preferences before and after the blockade on Chinese territory, where the first outbreak of Covid-19 occurred. The results obtained from this research show that in China, the fear of contagion has discouraged users from moving from public transport to using a private vehicle. Specifically, users tended to use private cars in a percentage of 34%; after the emergency phase this value raised up to 66%. On the other hand, the percentages are reversed when users are asked about the use of public transport, with numbers more than halved (from 56% to 24%) due to the perception of being at higher risk of infection in the Chinese territory (Ipsos, 2020). In Italy, a similar model is highlighted, according to research conducted by Isfort, the perception of unsafe use of public transport is greater than travel by car and on foot. The comfort during the pandemic period has carried out research aimed at defining the levels of perception of safety of the different ways of moving users on a scale from 1 to 10. The results obtained highlight how traveling by foot or by private vehicle are perceived as safer with an average rating ranging between 7.3 and 8.7, while the values obtained for public transport do not exceed the score of 3.5, highlighting the lack of perceived safety. Confined spaces, crowds and proximity to strangers, the need to cling to the supports touched by many people are, in fact, all reasons that encourage users to avoid public-transport usage, in favour of the private vehicle. The increase in private mobility in the short term also occurred due to an immediate inability by local public transport to cope with an imminent emergency and to be able to keep the metro interpersonal distance between travellers on board buses, trains and subways. The idea that travel takes place with a private vehicle generates serious urban concerns, given the limited unused capacity of roads and parking in Europe within city centres. In addition, the increase in car travel leads to a high level of congestion with serious consequences on the environment and on the quality of life of people and the air. It is important to rethink how to plan the reopening of local public transport by ensuring adequate levels of safety based on the needs and requirements of travellers. The first objective to encourage the reopening of public transport and the increase in passenger flows to relieve the pressure that gravitates around public transport avoiding its overload, to limit the increase in the traffic of private cars and to prevent the increase in emissions pollutants that would be one of the key factors in the spread of the virus as some studies claim (Otmani et al., 2020; Zoran et al., 2020).

With this in mind, governments, local public administrations and the scientific community are under due to answer to new research questions, in relation to the forms of organization of the mobility system, still moving in unexplored waters. Mobility networks and the offer of local public transport, combined with the distribution of activities in the area, affect the lifestyles of users who live in the city.

The scientific community has always questioned about the offer of public transport in terms of accessibility to services with the aim of identifying the critical areas in which potential actions should be priorities to improve

access and the quality of the service offered (Langford et al., 2012; Morency et al., 2011; Luo & Wang, 2003) This research segment has conducted investigations through the processing of questionnaires to collect information relating to users' habits and preferences, the use of multivariate statistical techniques for the assignment of weights and the relative identification of significant variables and the application of accessibility models in order to understand the availability of in reaching a specific transport service and to identify the areas where priority should be given. The processing of questionnaires to collect information on the lifestyles of the elderly population combined with the use of multivariate statistical techniques for the assignment of weights and the relative identification of significant variables was also developed within a other lines of research aimed at identifying what are the key factors (waiting times, frequency of the service, travel costs) that influence users' travel decisions due to the space-time constraints present in the territory (Tseng & Wu, 2018; Szeto et al., 2017; Spinney et al., 2009).

Today Covid-19 poses new questions to the scientific community, thus leading scientists from many fields to consider new variables and indicators to measure the transport supply. In this perspective, in the reopening phase, albeit in a still precarious condition, it will be necessary to take into account how to restore the transport sector and the safety measures for travelers also by using technology solutions (Coppola & De Fabiis, 2020).

We need to rethink the forms of reorganization of urban mobility that are combined within a new system of urban life rules that includes new timetables for economic activities and differentiated timetables for school and education. The challenge is by no means trivial, it requires a radical change in people's lifestyles and family habits, but at the same time also an opportunity to restart a series of mobility reforms.

In this direction, the content of this review aims to examine, through the revision of Italian legislative documents, the measures to relaunch public transport and sustainable mobility after Covid-19 in Italy.

Law Dl Rilancio, legge 17 luglio 2020

The Legislative Decree May 19, 2020, no. 34, containing *"Urgent measures on health, support for work and the economy, as well as social policies related to the epidemiological emergency from Covid-19"* (the so-called "Decreto Rilancio") was published in the Official Gazette no. 128 dated 19 May 2020 (Ordinary Supplement no. 21). Recently converted into law L. 17/07/2020, n. 77 with amendments, of the decree-law of 19 May 2020 and published on the official gazette n.180 of 18-07-2020 - Suppl. Ordinary no. 25. The text contains hundreds of heterogeneous provisions that range, among others, from construction to culture, from taxation to school, from healthcare to mobility, businesses etc. In this review, the emphasis is on the mobility system and the measures implemented to restart the local public transport system.

More specifically, among the 260 articles of the provision there are several measures aimed at the economic recovery from the Covid-19 crisis. In the matter of urban mobility and local public transport, the decree provides in art. 200 a fund of 500 million euros established by the Ministry of Infrastructure and Transport, aimed at compensating companies (local public transport, regional and national rail transport) in view of the reduction in tariff revenues deriving from the epidemiological emergency. The same article regulates that long-distance rail transport and inter-regional services relating to containment measures do not entail any reduction in the fees provided for in the service contracts even if there is a reduction in the service offered, in favor of LPT companies. The decree also establishes to anticipate the disbursement of 80% of the National LPT Fund (by 30 June) and to disburse, by 31 July, 80% of the fees provided for in the service contracts until August 31, 2020.

Furthermore, the decree provides for the suspension of co-financing for the renewal of the bus fleet for Regions, local authorities and managers of local and regional public transport services and, until 30 June 2021, the same subjects benefit from the suspension of the provisions aimed at implementing the renewal of the rolling stock with alternative fuel vehicles. Finally, until December 31, 2021, a share, up to a maximum of 5% of the resources allocated for the renewal of local and regional LPT bus and rail parks, can be used to adapt vehicles with suitable equipment to reduce epidemiological risks for passengers and staff.

Article 229 regulates incentives for measures that promote sustainable mobility by encouraging the purchase of bicycles, including pedal-assisted e-bikes, as well as vehicles for personal mobility with mainly electric propulsion. The "mobility bonus" can be requested only once and exclusively for one of the intended uses. By decree of the Minister of the Environment, the methods and terms for obtaining and disbursing the benefit will be defined, also for the purpose of respecting the spending limit. Furthermore, the Ministry of the Environment has recently reiterated that the bonus can

be requested by adult citizens residing in the regional capitals, in the metropolitan cities, in the provincial capitals or in the municipalities with over 50,000 residents and will have retroactive effect. To obtain the contribution, it is necessary to keep the expense receipt (invoice) and, as soon as it is online, access via SPID (Public Digital Identity System) credentials on the web application that is being prepared by the Ministry of the Environment and also accessible from its institutional website.
From the application start day (within 60 days from the publication of the provision in the Official Gazette), the mobility bonus can only be used through a digital shopping voucher that the beneficiaries can generate on the web application. In practice, the interested parties will have to indicate on the platform the vehicle or service they intend to purchase and the platform will generate the electronic shopping voucher to be delivered to authorized suppliers, together with the balance at their expense, to collect the goods or enjoy the service identified. In 2021, the provisions of the Climate Decree, which provides for a fund to be paid by the Ministry of the Environment, will be effective again.
Paragraph 4 of article 229 invites transport companies and public administrations to adopt, by December 31 of each year, a plan for the home-work commute of their employees aimed at reducing the use of private means of transport by appointing, for this purpose, a mobility manager able to provide continuous professional support to the strategic development, implementation and promotion of optimal sustainable mobility solutions. The mobility manager is responsible for a demand-oriented approach to passenger transport that involves the promotion of more sustainable transport modes to reduce dependency on private cars and the consequent environmental impact deriving from vehicular traffic in urban and metropolitan areas. For public administrations, this figure must be chosen from the permanent staff (a non-regulatory decree and implementation of these provisions is envisaged by the Ministry of the Environment-Ministry of Transport). To summarize, the Relaunch decree pursues a twofold objective in the matter of mobility: to restore the structure of local public transport on rail and road so that the transport system recovers from the pandemic crisis, promoting incentives to reduce tariffs and compensate for revenue losses; to encourage a sustainable mobility development model (micro-mobility) to replace the use of private vehicles that can affect the urban system in terms of congestion of vehicular traffic and noise pollution.

MIT guidelines

After the enactment of the Relaunch decree and with the end of the lockdown, the Ministry of Infrastructure and Transport (MIT) has issued guidelines to protect transport workers and passengers. The sections of the "Guidelines for information to users and organizational measures to contain the spread of Covid-19" adopted by the Ministry of Infrastructure and Transport also include the organizational and informative indications for local public road, lake and rail transport sectors. With the publication of the Prime Ministerial Decree April 26, 2020, the Italian government has launched the so-called "Phase 2" of the measures for the containment and management of the epidemiological emergency of Covid-19. In more detail, article 7 of the Decree provides the measures to be adopted for local public transport and goods according to the provisions contained in the aforementioned guidelines, which take into account what MIT itself shared with the trade associations on the occasion of the signing of the Common regulatory protocol for containing the spread of Covid-19 in the transport and logistics industry, which took place on March 20, 2020 (attachment 8 to the Prime Ministerial Decree).
The MIT guidelines are divided into: (i) systemic measures (ii) general measures (iii) recommendations for all users of public transport services. The systemic measures directly link to the use of transport services to modulate the mobility of workers and consequently prevent the aggregation risks connected to the mobility of citizens. The extension of opening hours of offices, shops, public services and schools of all levels is also a useful preventive approach, while encouraging alternative forms of sustainable mobility. The individual responsibility of all users of public transport services is essential to guarantee social distancing and hygiene measures. In addition, mobile information panels are provided to communicate the behavioral rules in the use of means of transport.
The general measures are provided with the following indications: (i) sanitization and sanitation of premises, means of transport and means of work must concern all parts occupied by travelers and/or workers (ii) installation of dispensers in airports, ports and on long-distance means of transport (iii) sale of tickets with telematic systems and differentiated costs according to the hours of the day. Tickets must be sold observing the interpersonal distance of at least one meter between passengers. In cases where it is not possible to respect the aforementioned distance, passengers should necessarily be provided with specific individual protections (iv) installation of points of sale, also by means of security device distributors in stations or ticket sales offices.
The recommendations for users are intended both to provide indications on the signs and routes indicated inside the stations and advise to purchase tickets electronically or via app.
In addition, the specific indications for each transport sector are contained in the technical annex of the guidelines dedicated to the individual modes of transport, including local public road, lake and rail transport sector. The ministerial recommendations contain, inter alia, measures aimed at pursuing the following objectives: (i) suspension of the sale and control of travel tickets on board; (ii) increased frequency of vehicles during peak hours; (iii) management of passenger flows by separating entry and exit doors; (iv) application of markers on non-usable seats; (v) reduction of the number of passengers to ensure interpersonal distancing; (vi) video-surveillance systems to avoid crowding.

Due to the indications provided by the Ministry of Infrastructure regarding the introduction of different tariffs per hour of the day, every passenger should reserve a seat and book for the travel time slot to access the stations/vehicles. In addition, the physical distancing measures on board of public vehicles and their effective sanitization entail additional staff and operating costs for public transport companies which have already suffered a major loss of revenues. The reading of this document also raises new questions within the scientific debate about the key factors influencing travel mode choices of city users and how to improve accessibility to the local public transport supply after the pandemic.

A plan for post-lockdown

In the light of what is regulated under the legislative decrees analyzed above, public transport companies, especially the Italian ASSTRA, outline through *a position paper* the operational measures that companies and public bodies must implement to safely manage the emergency phases. In more detail, the document aims to define the interventions required in the short to medium-term compatibly with the economic, regulatory and organizational constraints, with the primary objective of ensuring health security and avoiding as much as possible the unsustainable increasing use of private cars. The measures proposed in the short term aim to give a positive structural impact on the mobility systems and on the integration between the world of transport and the production sector, while the measures in the medium to long-term are aimed at promoting investments in sustainable mobility and quality of life, which must be the cornerstone of any mobility policy in relation to the current mobility flow demand. According to the recent ISFORT report, Italy before Covid-19 recorded movements of more than 14 million people per day at national level by public transport. In the first months of the emergency, almost 400 million travels per month were lost. During Phase 2 (starting from May 4, with limited reopening of trade and production activities and gradual resumption of local public transport), the use of public transport was limited to work reasons or cases of real necessity. It is estimated that the modal share of motorized private mobility is growing significantly at the expense of public transport services, which could be reduced by 50%.

In light of these data, the operational measures adopted for Phase 2 and Phase 3 (the latter starting in September with the reopening of educational activities and massive recovery of the entire production sector) are based on the following six pillars: (i) institution of a national "control room", which provides general guidelines to be adapted at regional and local level according to an analysis of the demographic, socio-economic and, therefore, transport characteristics of the territory; (ii) coordination between competent public bodies (Regions, local authorities, agencies) and public transport companies through territorial control rooms that guarantee the implementation of national guidelines; (iii) definition of the use of public transport by citizens; (iv) definition of precise parameters to implement the principle of physical distancing taking into account the differences in the mode of transport; (v) greater flexibility in the production of services (e.g. on call and dedicated); (vi) correct attribution of control activities.

In turn, the operational measures are divided into four macro categories. The first one is about the institution of coordinating bodies between public authorities and companies: for their organization and data flows, the urban and suburban transport companies are able to offer services in line with the needs deriving from the emergency management. Therefore, they represent the subjects that, in coordination with the reference body and in compliance with roles and responsibilities, are able to effectively guarantee immediate full coordination of the collective mobility offer in the catchment area, ensuring uniform reporting and above all homogeneity in the application of sanitary rules to protect public health. The second category of measures (to be implemented in the short term) is about the overall mobility flows: in addition to the indications provided for in the decrees, it also provides for possible staggered start times of schools, university, work and production activities, so as to distribute people flows throughout the day and avoid the typical LPT curves characterized by peak times and soft hours, and for an increase in preferential lanes and intelligent traffic lights, which would guarantee an increase in commercial speed and, consequently, reduce the risk of contagion. The third one is about the recovery of public transport: the measures aim at creating dedicated point-to-point services and executive services (such as the skip-stop service) to be carried out only on specific transport lines and with different price levels. The fourth one is about the safety of local public transport. In addition to the safety measures outlined in the decrees, ASSTRA proposes the use of technologies capable of providing indications on the concentration of passengers on vehicles or at stops (e.g. data deriving from geolocation through telephone cells) and technologies accessible by users to check the influx of passengers at stops, waiting times and punctual information through company channels (website, apps, ticket offices, communication campaigns, etc.) on the conditions of access to services, on the mandatory requirements imposed on travelers and on the consequences of violations.

The examination of these documents shows that to face the epidemiological emergency technology will certainly contribute to the new organization of urban mobility systems. Moreover, the policies and interventions that transport associations are trying to pursue for economic and social sustainability should be deployed as quickly as possible to reorganize the services and manage the mobility demand. Hence, it is necessary to support the public transport system, not only to preserve a strategic urban mobility sector (the collapse of which would lead to a failure of the entire urban transport system), but also because an increase in the use of private vehicles could lead to a high level of road congestion with serious consequences on the environment and people's quality of life.

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