

TeMA

Journal of
Land Use, Mobility and Environment

The 10th volume of the TeMA Journal will promote the debate on the definition and the implementation of methods, tools and best practices aimed at improving energy efficiency at the neighbourhood level while increasing the capacity of urban systems to adapt to natural changes and/or man-made changes.

Tema is the Journal of Land use, Mobility and Environment and offers papers with a unified approach to planning and mobility. TeMA Journal has also received the Sparc Europe Seal of Open Access Journals released by Scholarly Publishing and Academic Resources Coalition (SPARC Europe) and the Directory of Open Access Journals (DOAJ).



METHODS, TOOLS AND BEST PRACTICES TO INCREASE THE CAPACITY
OF URBAN SYSTEMS TO ADAPT TO NATURAL AND MAN-MADE CHANGES

METHODS, TOOLS AND BEST PRACTICES TO INCREASE THE CAPACITY OF URBAN SYSTEMS TO ADAPT TO NATURAL AND MAN-MADE CHANGES

3 (2017)

Published by

Laboratory of Land Use Mobility and Environment
DICEA - Department of Civil, Architectural and Environmental Engineering
University of Naples "Federico II"

TeMA is realized by CAB - Center for Libraries at "Federico II" University of Naples using Open Journal System

Editor-in-chief: Rocco Papa
print ISSN 1970-9889 | on line ISSN 1970-9870
Licence: Cancelleria del Tribunale di Napoli, n° 6 of 29/01/2008

Editorial correspondence

Laboratory of Land Use Mobility and Environment
DICEA - Department of Civil, Architectural and Environmental Engineering
University of Naples "Federico II"
Piazzale Tecchio, 80
80125 Naples
web: www.tema.unina.it
e-mail: redazione.tema@unina.it

Cover Image: Hunters Point Park South. Unite States -Landscape Architect - Thomas Balsley Accosiates with Weiss/Manfredi - Landscape Architecture, Temple University, Waterfront Design, ASLA (2016).

TeMA. Journal of Land Use, Mobility and Environment offers researches, applications and contributions with a unified approach to planning and mobility and publishes original inter-disciplinary papers on the interaction of transport, land use and environment. Domains include: engineering, planning, modeling, behavior, economics, geography, regional science, sociology, architecture and design, network science and complex systems.

The Italian *National Agency for the Evaluation of Universities and Research Institutes* (ANVUR) classified TeMA as scientific journal in the Area 08. TeMA has also received the *Sparc Europe Seal* for Open Access Journals released by *Scholarly Publishing and Academic Resources Coalition* (SPARC Europe) and the *Directory of Open Access Journals* (DOAJ). TeMA is published under a Creative Commons Attribution 3.0 License and is blind peer reviewed at least by two referees selected among high-profile scientists. TeMA has been published since 2007 and is indexed in the main bibliographical databases and it is present in the catalogues of hundreds of academic and research libraries worldwide.

EDITOR IN-CHIEF

Rocco Papa, University of Naples Federico II, Italy

EDITORIAL ADVISORY BOARD

Mir Ali, University of Illinois, USA
Luca Bertolini, University of Amsterdam, Netherlands
Luuk Boelens, Ghent University, Belgium
Dino Borri, Polytechnic University of Bari, Italy
Enrique Calderon, Polytechnic University of Madrid, Spain
Roberto Camagni, Polytechnic University of Milan, Italy
Derrick De Kerckhove, University of Toronto, Canada
Mark Deakin, Edinburgh Napier University, Scotland
Aharon Kellerman, University of Haifa, Israel
Nicos Komninos, Aristotle University of Thessaloniki, Greece
David Matthew Levinson, University of Minnesota, USA
Paolo Malanima, Magna Graecia University of Catanzaro, Italy
Agostino Nuzzolo, Tor Vergata University of Rome, Italy
Rocco Papa, University of Naples Federico II, Italy
Serge Salat, Urban Morphology and Complex Systems Institute, France
Mattheos Santamouris, National Kapodistrian University of Athens, Greece
Ali Soltani, Shiraz University, Iran

ASSOCIATE EDITORS

Rosaria Battarra, National Research Council Institute of Studies on Mediterranean Societies, Italy
Luigi dell'Olio, University of Cantabria, Spain
Romano Fistola, University of Sannio, Italy
Carmela Gargiulo, University of Naples Federico II, Italy
Thomas Hartmann, Utrecht University, Netherlands
Markus Hesse, University of Luxembourg, Luxembourg
Seda Kundak, Technical University of Istanbul, Turkey
Rosa Anna La Rocca, University of Naples Federico II, Italy
Houshmand Ebrahimpour Masoumi, Technical University of Berlin, Germany
Giuseppe Mazzeo, National Research Council Institute of Studies on Mediterranean Societies, Italy
Nicola Morelli, Aalborg University, Denmark
Enrica Papa, University of Westminster, United Kingdom
Dorina Pojani, University of Queensland, Australia
Floriana Zucaro, University of Naples Federico II, Italy

EDITORIAL STAFF

Gennaro Angiello, PhD at University of Naples Federico II, Italy
Gerardo Carpentieri, PhD at University of Naples Federico II, Italy
Stefano Franco, PhD student at Luiss University Rome, Italy
Rosa Morosini, PhD student at University of Naples Federico II, Italy
Marco Raimondo, Engineer, University of Sannio, Italy
Maria Rosa Tremitera, PhD student at University of Naples Federico II, Italy
Andrea Tulisi, PhD at Second University of Naples, Italy

TeMA

Journal of
Land Use, Mobility and Environment

METHODS, TOOLS AND BEST PRACTICES TO INCREASE
THE CAPACITY OF URBAN SYSTEMS TO ADAPT TO
NATURAL AND MAN-MADE CHANGES
3 (2017)

Contents

257 EDITORIAL PREFACE
Rocco Papa

FOCUS

259 **Cities and Energy Consumption: a Critical review**
Carmela Gargiulo, Laura Russo

LAND USE, MOBILITY AND ENVIRONMENT

279 **Implementing ITI for urban development locally**
Garyfallia Katsavounidou

299 **Urban Voids: renewal and regeneration experiences in Naples**
Gabriella Punziano, Anna Terracciano

325 **UAV Based Landslide Monitoring**
Servet Yaprak, Ömer Yildirim, Tekin Susam

339 **What is a learning town? Reflections on the experience at Wirksworth**
Peter Wiltshier

355 REVIEW PAGES

Gennaro Angiello, Gerardo Carpentieri,
Maria Rosa Tremiterra, Andrea Tulisi

CALL FOR PAPERS: TEMA VOL. 11 (2018)

The Resilience City/The Fragile City. Methods, tools and best practices.

The fragile/resilience city represents a topic that collects itself all the issues related to the urban risks and referred to the different impacts that an urban system has to face with. Studies useful to improve the urban conditions of resilience (physical, environmental, economical, social) are particularly welcome. Main topics to consider could be issues of water, soil, energy, etc.. The identification of urban fragilities could represent a new first step in order to develop and to propose methodological and operative innovations for the planning and the management of the urban and territorial transformations.

The Journal also welcomes contributions that strategically address the following issues:

- new consideration of the planning standards, blue and green networks as a way to mitigate urban risks and increase city resilience;
- the territorial risks and fragilities related to mobility of people, goods, knowledge, etc.;
- the housing issue and the need of urban regeneration of the built heritage;
- socio-economical behaviour and the "dilemma" about emergency and prevention economy;
- the city as magnet of the next future's flows (tourism, culture, economy, migration, etc.).

Publishing frequency is four monthly. For this reason, authors interested in submitting manuscripts addressing the aforementioned issues may consider the following deadlines

- first issue: 10th January 2018;
- second issue: 10th April 2018;
- third issue: 10th September 2018.

CALL FOR PAPERS: GENERAL CALL.

Papers in Transport, Land Use and Environment

The Journal welcomes papers on topics at the interdisciplinary intersection of transport and land use, including research from the domains of engineering, planning, modeling, behavior, economics, geography, regional science, sociology, architecture and design, network science, and complex systems

CALL FOR PAPERS: SPECIAL ISSUE 2018

Urban Travel Behavior in the Middle East and North Africa

The characteristics of urban travel behaviors and the attitudes of passengers in the Middle East and North Africa (MENA) is less-studied. When it comes to the effects of urban form, residential self-selections, and lifestyles, it is entirely not investigated in majority of the countries of the region. There is a considerable knowledge gap about the circumstances of how people think and decide about their short-term, medium-term, and long-term mobility for commute and non-commute travels. The we do not know if the land use traits such as population and employment densities as well as mix of land uses, accessibility to public transportation and neighborhood amenities, and connectivity of street networks are as influential as they are in western counties or in higher income societies. There is a very limited understanding about the extent to which the personal preferences, lifestyles, and in general psychology of the people of the region affect their transport behaviors. The complexity of the analysis methods applied for studying urban travel phenomena of the MENA region is even less-developed. Longitudinal or discrete choice molding methods are applied in mobility research considerably less than studies coming from high-income countries.

This special issue collects the results of some of the most-recent studies on the MENA countries to fill out a part of the gap in English-language publications. The main topics covered by the issue include the following with focus on the MENA region:

- The role of urban form and land use in forming urban travel behavior;
- Urban sprawl and urban travel behavior;
- The effects of historical urban transformations on urban mobility decisions;
- Car ownership and use; car dependency;
- The impacts of socioeconomics and culture in forming the transport patterns;
- Lifestyles and personal preferences and urban travels; Perceptions of mobility, safety, security, neighborhoods;
- The interactions of travel behavior and health effects of different ages, genders, and income groups;
- Travel behavior of public transport riders;
- and similar topics.

The target countries of this issue are the ones that are referred to as the MENA counties in most of the definitions. Studies on the cities of Turkey and Pakistan are also of particular interest and welcome. Manuscripts about all city sizes are reflected by the issue. The authors interested in submitting manuscripts addressing the aforementioned issues may consider the deadline of 31st January 2018. All submissions will go through rigorous double-blind review, and if accepted will be published. Interested authors are requested to contact Houshmand Masoumi at masoumi@ztg.tu-berlin.de, to discuss submission and review procedure.

TeMA

Journal of
Land Use, Mobility and Environment

EDITORIAL PREFACE: TEMA JOURNAL OF LAND USE MOBILITY AND ENVIRONMENT 3 (2017)

METHODS, TOOLS AND BEST PRACTICES TO INCREASE THE CAPACITY OF URBAN SYSTEMS TO ADAPT TO NATURAL AND MAN-MADE CHANGES

ROCCO PAPA

DICEA - Department of Civil, Architectural and Environmental Engineering

University of Naples Federico II

e-mail: rpapa@unina.it

The 10th volume of TeMA Journal, given the relevance of the topics, dedicates the three issues of 2017 to promote the scientific debate on the definition and the implementation of methods, tools and best practices aimed at improving, in the forthcoming decades, the capacity of the urban areas to cope a range of climate, technological and socio-economic challenges that will require the development of integrated and adaptive strategies. The articles published in this third issue address some themes, such as the resilience capacity of urban system, relationship between the relationships between cities and energy, the renewal and regeneration challenge, the planning and landslide monitoring.

The section "Focus" contains the article "Cities and Energy Consumption: a Critical Review" by Carmela Gargiulo and Laura Russo (University of Naples Federico II), that systematize and compare the approach, methodology and results of the relevant literature on the relationship between cities and energy consumption over the last twenty years. Furthermore, this critical review identifies the knowledge gap between what is known and what is still under debate and, based on that, it proposes a conceptual framework that will help to outline a new direction for future research and support local policy makers in the definition of strategies and actions that can effectively reduce urban energy use and CO₂ emissions.

The section "Land Use, Mobility and Environment" collects four articles. The first one, titled "Implementing ITI for urban development locally" by Garyfallia Katsavounidou (University of Ioannina) deals with Integrated Territorial Investment (ITI), a new strategic instrument introduced by the European Commission in the 2014-2020 Programming Period. ITI shifts the decisions on allocation of funds to the local level and, most importantly, enables drawing of funds from several priority axes and from several European Structural and Investment Funds. The paper focuses on the Greek city of Veria, in the Region of Central Macedonia, where this approach has been implemented for the design of an ITI of urban scale (ITI-SUD). The paper describes the benefits and challenges of the new approach as applied in the local context, in a context of "procedural learning" that offers an insight on how European cohesion policy strategies and tools are tested at the local level.

The second article, titled "Urban Voids: renewal and regeneration experiences in Naples", by Gabriella Punziano (Gran Sasso Science Institute) and Anna Terracciano (University of Naples Federico II), focuses on experiences of renewal, regeneration and recycle, the objective of this exploratory study is to investigate their different impacts in a well-known complex urban system as Naples. The study emphasizes on the urban

and social dimensions, favouring a descriptive and visual perspective from those who experience life in the city, considering the processes implemented by local actors and the reactions of inhabitants to these processes.

The third article, titled "UAV Based Agricultural Planning and Landslide Monitoring" by Servet Yaprak (Gaziosmanpasa University), proposes the adoption of UAVs photogrammetry to study landslides as an alternative to more complex and costly approaches. To this end, the authors observe two different areas, one for agricultural planning and another one for landslides. The study of the first area provides, among the other, useful information about the accuracy of the approach. The study of the second area has been conducted with five different observations in five months. At the end, the authors show that the DSM obtained with an accuracy of 10 cm is useful to quantify landslides, shown on a map with land height decrease or increase.

The fourth article, titled "What is a learning town? Reflections on the experience at Wirksworth", by Peter Wiltshier (University of Derby), explores the legacy of regeneration project work and knowledge management and transfer as a result of intervention through a charity designed to support new business opportunities, specifically in arts and entertainment, tourism, skills development and training. As part of the University of Derby's own work-related learning and problem-based learning, a project team was assigned to work alongside the charity 'New Opportunities in Wirksworth!' (NOW!).

The section "Review Pages" defines the general framework of the issue's theme, with an updated focus on websites, publications, laws, urban practices and news and events on the subject of energy reduction consumption in the transport sector. In particular, the Web section by Maria Rosa Tremiterra describes three web resources of: (i) European Climate Adaptation Platform; (ii) U.S. Climate Resilience Toolkit and (iii) Resiliencetools.org – Empowering Resilient Cities. The Books section by Gerardo Carpentieri briefly reviews three relevant books related to the Issues' theme: (i) Enhancing Urban Climate Change Resilience. Seven Entry Points for Action; (ii) Essential Capacities for Urban Climate Adaptation. A Framework for Cities and (iii) Redefining the city Athens Resilience Strategy for 2030. The Urban Practices section by Gennaro Angiello presents two case studies in the us for planning for sharing mobility: (i) Los Angeles and (ii) Minneapolis. The News and Event section by Andrea Tulisi, proposes a selection of conferences on the topic of decision support tools where developed for supporting adaptation and mitigation policies at urban scale.