FUTURE STREETS
This NLA Research was published by New London Architecture (NLA) in November 2019. It accompanies the NLA exhibition and events programme Future Streets taking place from November 2019, forming part of NLA’s year-round Transport & Infrastructure programme.

NLA, The Building Centre, 26 Store Street, London, WC1E 7BT
nla.london
#NLAFutureStreets #NLATransport
© New London Architecture (NLA)
ISBN 978-1-9993513-3-6
We are moving quickly towards the next tectonic shift in the movement infrastructure of London. In the 19th century we ripped through the fabric of areas like Paddington, King’s Cross and Waterloo to create the rail network; in the 20th century we gave over our streets to the motor car; now, in the 21st we have big choices to make—do we use the various technologies at our disposal to replicate the mistakes of the past, or can we plan for and deliver a city where streets are for people, are not life-threatening and provide mobility services that are efficient and sustainable.

The CREATE study Urban Mobility: Preparing for the Future, Learning from the Past, (see page 70) studied the experience of five European capitals: Berlin, Copenhagen, London, Paris and Vienna and how they are dealing with car use, congestion, pollution and traffic dominance.

The report set out three phases of change - first, the car-oriented city, then the sustainable-mobility city and thirdly, the city of places. The drivers of these changes were seen to be the oil crisis in the 1970s, followed by growing concerns about CO2 emissions in the ‘90s. Then came the realisation that our inactive lifestyle was one of the key reasons for rising levels of obesity and related health issues. On top of that, it became clear that if cities like London and Paris were to remain competitive in a global economy, then quality of the environment had to be high on the agenda.

London is making progress in delivering the third phase. The Congestion Charge reduced car usage in central London (although the space has since been filled up by private hire vehicles and internet sales delivery vans). Approximately 25 per cent of road space in inner London has been reallocated to walking, cycling and public transport over the last ten to 15 years. We are seeing major changes to the car-oriented infrastructure of the 1970s with the central London gyratories at Piccadilly/Pall Mall, Baker Street/Gloucester Place, Tottenham Court Road/Gower Street and Aldgate being removed. The new London Plan aims to substantially increase the levels of active travel and to deliver healthy streets.

Yet while policies are clear, changes are hard-fought—inspirational plans like the improvements to Bank Junction were so contentious that the Chairman of the City Planning and Transportation Committee required a 24 hour police protection following threats from the black cab lobby; the delivery of cycleways is hindered by car driving voters concerned about minor delays to their journeys; freight consolidation needs greater political backing if it is to reduce the number of vehicles on the road. Meanwhile, the Government fails to make up its mind on Crossrail 2. Such infrastructure investment is key since the place-oriented city needs high-frequency and high-quality public transport services on main corridors while offering sufficient local diversity that residents can walk or cycle to access daily needs.

There are substantial parts of the community who have not yet fully bought into the idea of the place-based city. At the end of this report, we set out the heaven and hell scenarios for the future. Heaven is where burgeoning technologies and ideas around mobility as a service help to deliver a city which celebrates place and its social benefits. Hell is a city where we end up repeating the mistakes of the 20th century, allowing technology to determine outcomes for the future of streets in London and we lose the current determination to make streets that support a healthy, happy and equitable London.

There is much work to be done to communicate this shift from a car-oriented city to a city of places. NLA provides a vital forum where the discussion can involve all those with an interest in shaping a better city—the politicians, the planners, the development professionals and the people. This report provides a basis for that debate and illustrates ideas that can help deliver heaven rather than hell.

Peter Murray
Curator-in-Chief
New London Architecture
Definitions

AUTONOMOUS VEHICLES
- A vehicle that can drive and navigate without human operation, also known as driverless car or self-driving car.

BUS RAPID TRANSIT
- A bus-based rapid transit system featuring continuous dedicated lanes, off bus ticketing and more subway-like stations. This is to improve reliability, increase capacity and improve passenger experience.

CAR SHARING
- Sometimes referred to as ‘car clubs’, car sharing is a model where people can rent cars for short periods of time. Unlike traditional car rental, cars are often located at various locations around the city and can be accessed with a smart card or phone. Examples include Zipcar and City Car Club.

CONNECTED AND AUTONOMOUS VEHICLES
- A vehicle that is both digitally connected and autonomously driven.

CONNECTED VEHICLE
- A vehicle that is equipped with the ability to communicate data about its characteristics, such as position and speed, remotely via GPS or an internet connection. This data may be sent to the infrastructure, other vehicles or the regulator.

DEMAND RESPONSIVE TRANSIT
- A form of public transport where transit vehicles (often minibuses or vans) alter their route based on requests from passengers. Passengers will often request the vehicle via an app or telephone service.

DOCKERLESS BIKESHARE
- A bikeshare system that does not require the use of a fixed docking station, but instead allows bikes to be picked up and parked anywhere. Payment and unlocking is conducted through an app. Examples in London include Jump Bikes and Lime Bikes.

E-BIKE
- A bicycle with an electric assist motor that engages when the user pedals the bike.

E-SCOOTER
- Electrically powered scooters, often accessed through an app or online platform such as Lime or Bird. E-Scooters are currently illegal for usage on public roads or footways in the UK.

ELECTRIC VEHICLE
- A vehicle that is entirely propelled using an electrical engine rather than an internal combustion engine.

HEALTHY STREETS
- A policy framework that seeks to ensure streets are designed in ways that promote positive health outcomes for the city.

KERB MANAGEMENT
- Policies, enforcement and design strategies relating to methods of regulating, managing or pricing the use of the kerb for activities such as parking, pickup/drop-off or loading goods.

LEVELS OF AUTONOMOUS DRIVING
- Level 0—complete human control of all vehicle operations.
- Level 1—the vehicle can assist either steering or acceleration/deceleration, for example with cruise control.
- Level 2—the vehicle can assist with both steering and acceleration/deceleration. Examples include Tesla Autopilot and Lane Assist.
- Level 3—all driving can be performed by the vehicle, but requires constant driver supervision and occasional takeover.
- Level 4—all driving can be performed by the vehicle without driver supervision but only in controlled environments.
- Level 5—all driving can be performed by the vehicle in any environment or condition without driver supervision.

MOBILITY AS A SERVICE
- A term describing a move away from the private ownership model of transportation towards platforms that allow mobility to be consumed as a service. It can take the form of a single platform through which users can book multiple different modes, including bikeshare, ride-hailing and public transport.

MOBILITY DATA SPECIFICATION
- Requirements established for new mobility services to share specific sets of anonymised data about their service with the public sector. For a dockless bike share operator, this could include data sets such as average usage of bikes, the routes taken and parking locations. This data can be used to inform policy and regulatory decisions.

MOBILITY HUB
- A transportation hub in which people may interchange between different modes of transportation including bike share, ride-hailing services and public transport. Mobility Hubs may also be integrated with other uses such as community facilities or retail.

NEW AND FUTURE MOBILITY
- New business models, technologies and platforms within the transportation sector.

OPEN DATA
- A policy that requires both public and private transportation operators to share various data sets regarding the use and management of transportation services. For example, Transport for London’s open data policy allows for the sharing of data on ridesharing and usage of their services.

PERSONAL MOBILITY DEVICE / MICRO MOBILITY
- A term used to indicate transportation devices that allow for personalised mobility, as opposed to transport services on a schedule or a fixed route. Often used in reference to technologies such as dockless bikeshare and e-scooters.

RIDE HAILING
- Ride hailing services are app-based platforms that allow customers to connect to drivers using their personal vehicles to offer taxi-style transportation. Drivers are not technically employed by the ride-hailing company, but are classified as self-employed drivers accessing work via the platform. Examples include Uber and Lyft.

RIDE POOLING
- A synonym for ridesharing.

RIDESHARE
- Often as a part of a ride-hailing service, users may decide to share their ride with other users who are travelling a similar route in order to receive a reduced fare or other incentive.

SHARED MOBILITY
- Concept indicating the move away from the private ownership of mobility assets, like cars, towards accessing transportation through shared assets services such as car share and bike share.

TRANSPORTATION NETWORK COMPANY
- A company that provides transportation services, often using an app-based platform to connect customers with drivers whom use their own vehicle to deliver the service.

ACRONYMS
- AV: Autonomous Vehicle
- CCAV: The Centre for Connected and Autonomous Vehicles
- CAV: Connected and Autonomous Vehicles
- DRT: Demand Responsive Transport
- EV: Electric Vehicle
- HS2: High-Speed Two
- MTS: Mayor’s Transport Strategy
- MaaS: Mobility as a Service
- PMD: Personal Mobility Device
- TIL: Transport for London
- TNC: Transportation Network Company
- ULEZ: Ultra-Low Emission Zone
- VED: Vehicle Excise Duty
- VMT: Vehicle Miles Traveled
'People have always lived on streets. They have been the places where children first learned about the world, where neighbours met, the social centres of towns and cities, the rallying points for revolts, the scenes of repression... The street has always been the scene of this conflict, between living and access, between resident and traveller, between street life and the threat of death.'

Donald Appleyard
Key Findings

1 Technology is not a goal in and of itself. New mobility technologies must be understood as ways to enable broader societal goals such as health, social cohesion, equity and environmental sustainability.

2 Designers and policy makers must be proactive in shaping and determining how to implement new technologies. Mitigating the worst effects of unchecked technological determinism should not however deter technology that may aid in achieving societal goals.

3 Looking at the historical evolution of streets is crucial to plan for the future. It is important to acknowledge how in the past streets have progressively lost their function as places to accommodate new mobility technologies, which have, in turn, inadvertently reduced the quality of life in cities.

4 Investing in streets and public transport now should be prioritised, despite fears that it will be redundant in 50 years. Human centric design that ameliorates quality of life implemented now will continue to be ‘good’ design regardless of technological changes.

5 Flexibility must be built into design, yet the core principles and visions of what the city should be need to remain strong.

6 Streets will be the principle ‘arena’ in which new mobility technologies will precipitate—design and regulation must consciously address broader principles.

7 The societal externalities of the transportation choices must be reflected in price and in how these are prioritised on the street and, more generally, in the built environment.

8 The period of mobility ‘interregnum’, during which new technologies emerge and the status quo is challenged, is crucial in shaping how technology will affect society in the future.

9 Greater integration of technologists and urbanists is essential in order to achieve positive outcomes. Greater disciplinary integration is needed.

10 Positive change requires public support. Streets are the most fundamental unit of public space and are tied closely to our homes, our livelihoods and where we work. The public, including people of all ages and sectors of society, should play a large role in shaping the streets of the future and the role of new mobility.

Introduction

Throughout the history of city building, transportation technologies have driven the urban form—the historical dense urban core of most European cities emerged with a pedestrian’s walkshed in mind, while the suburbanisation of the 19th and 20th centuries was precipitated first by the tram and rail network, and subsequently by the mass adoption of the motorcar.

In the past, designers and planners have worked on the assumption that ‘more mobility’ was always preferable, and that new mobility technologies should be accommodated with little regard as to the externalities they might bring. The consequences of the mass motorisation of society are more acute now than ever as we assess 60 years of car-centric planning. It is clear that the environmental cost, the social isolation, the crisis of inactivity and physical disconnection motorisation has brought does not correlate with the cities we want to build and inhabit.

Today, as a new set of mobility technologies are emerging, it is crucial to understand these new technologies as a means to achieving human-centric principles, rather than allowing new technology to be the determining factor in patterns of urban development and questions of city design.

The primary space in which debates about the future of our cities will take place is the humble street and as such, the street should receive primary consideration from all disciplines concerned with the built environment—from architects and urban planners to technologists and sociologists. We must not underestimate the power and ability for streets to transform society both for the better, and worse. Streets are, after all, the primary public spaces in which ‘society happens’—streets are the places where the state of a nation can be seen. They are one of the final places where the rich still must meet the poor, and where homelessness or addiction are laid bare. The place in which great shows of political manifestation can take place, and where the diversity of races, religions and ages may be seen side by side. Streets tell us who we are as a society, they tell us what we value and, ultimately, where we are going.

Given this central, yet often obscured role that streets play in society, it is no exaggeration to say that ‘when we change the street, we change the world’, to use the words of Janette Sadik-Khan, Chair of the North American National Association of Transportation Officials (NACTO).