Overview of the MORE project

Peter Jones, Centre for Transport Studies, UCL

Scientific Co-Ordinator, MORE

MORE TENT Corridor Workshop, Online
14/12/20

MORE
Multimodal Optimisation of Roadspace in Europe

The context

- Demands on busier urban roads/streets are increasing, due to:
  - the emergence of new modal options (e.g. e-scooters)
  - growing mobility-related sectors (e.g. home deliveries)
  - a greater interest in place-related activities
  - population/employment densification
- Kerb & carriageway largely fixed –> pressures/conflicts intensify
- Different agencies own road networks, with their own priorities (e.g. London: Highways England, TLRN, Borough roads)

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 769458

Multimodal Optimisation for Roadspace in Europe

- MORE identifies existing and future pressures on urban main roads in cities that connect the core of the 'Urban Nodes' (city centre, port, etc.) - with the Trans-European Road Network: the 'feeder routes'

- It develops design tools and processes that will enable these key routes to be planned, designed, managed and operated in a way that make them responsive to future pressures, in a flexible manner

- Areas of focus:
  - Interfaces between TEN-T and urban road/street networks
  - Regulating pro-actively for new road-based modes
  - Exploring the dynamic use of LED signs and road markings

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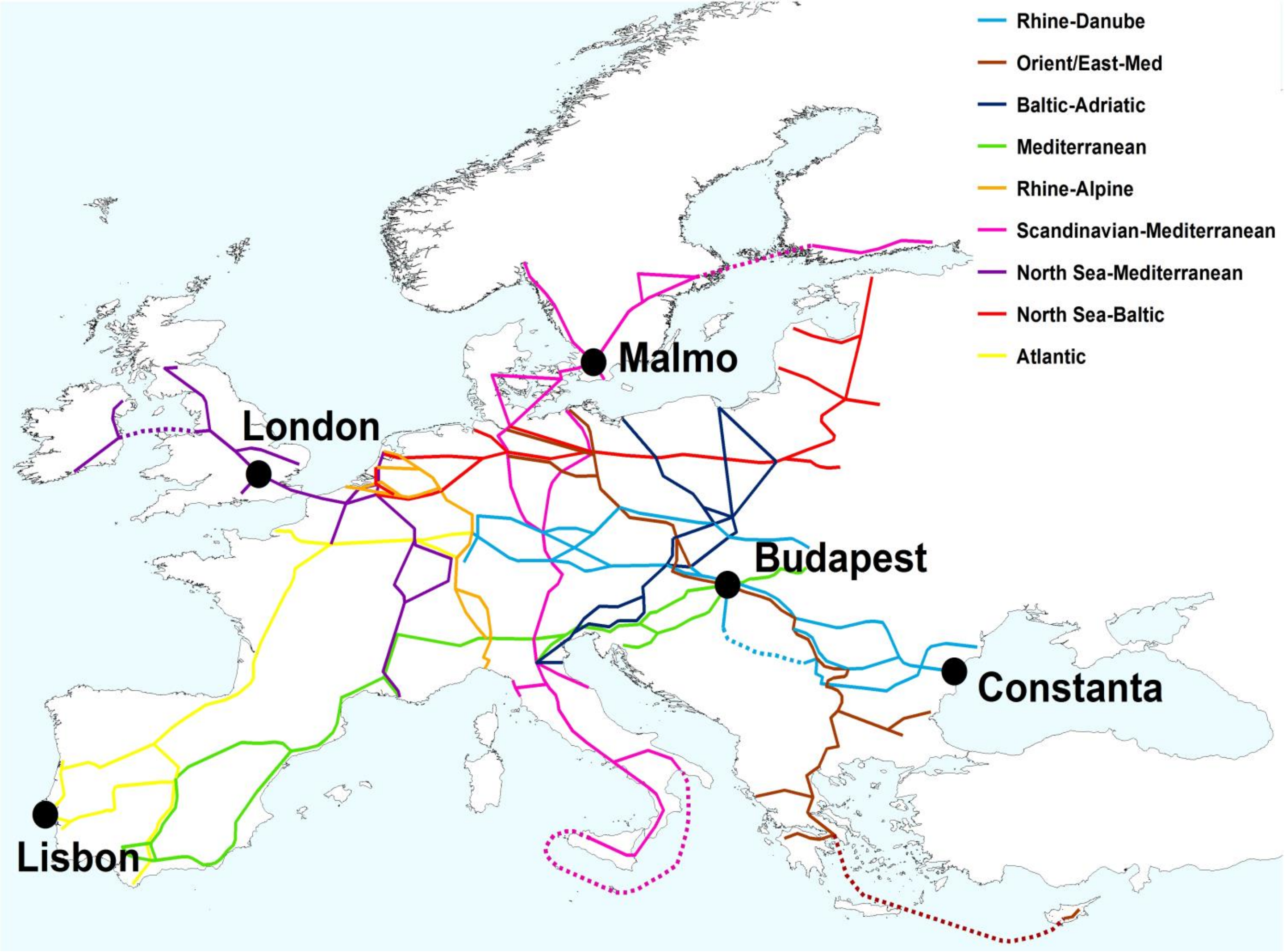
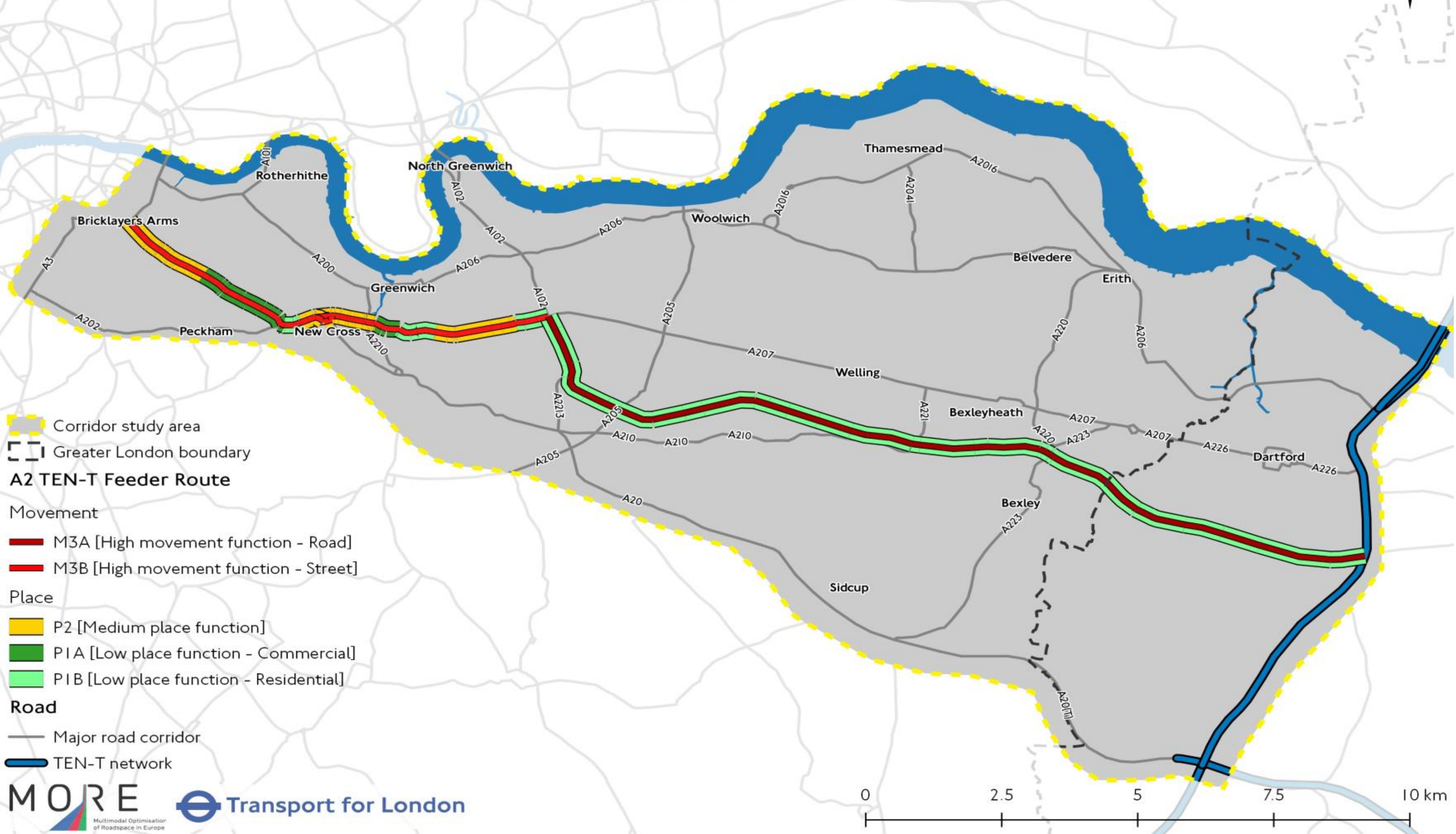
MORE Multimodal Optimisation of Roadspace in Europe


Rhine-Danube
Orient/East-Med
Baltic-Adriatic
Mediterranean
Rhine-Alpine
Scandinavian-Mediterranean
North Sea-Mediterranean
North Sea-Baltic
Atlantic
Malmo
London
Budapest
Constanta
Lisbon

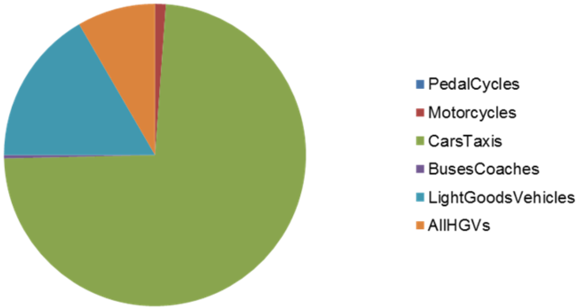
EU MORE - A2 Corridor
Street Types



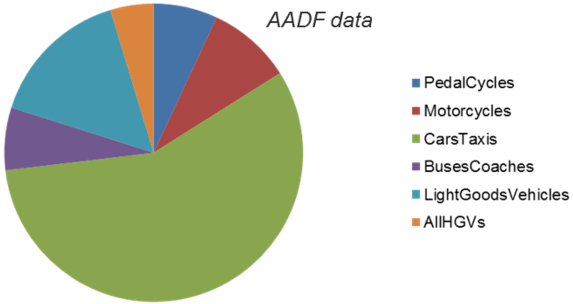
MORE Multimodal Optimisation of Roadspace in Europe

Transport for London

Urban Feeder Routes: Mix of ‘Roads’ and ‘Streets’



Total AADF:
128,239



Total AADF:
29,593

Current problems

- Poor street conditions:
  - Congestion
  - Air & noise pollution
  - Safety and security
  - Traffic severance
  - ‘Unhealthy’ street environment
  - Failing shopping centres

- Technical and political trade-offs: how much weight to give to different needs
  - Kerbside vs carriageway capacity (e.g. cycle lane vs residents’ parking)
  - Parking vs loading
  - More pedestrian crossings vs delays to road traffic
  - …………………………………………..

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Future challenges

- Growing mobility demands:
  - Increasing population and employment
  - More of a 24-hour city
  - An ageing population?
  - Growing wealth = growing mobility??
  - ………………………………..

- New technological challenges
  - New forms of mobility – produces and services
  - New non-transport technologies (e.g. remote health treatment, 3-D printing)
  - Surface and sub-surface developments
  - …………………………………

- Intra-agency co-ordination

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Potential transport technological developments:

- Electrification of the vehicle fleet
- Autonomous vehicles: road, rail water, air
- Advances in traffic control systems
- Advances in parking and loading management
- Implications of employing new types of sensors
- Self-healing roads
- Trenchless technologies, underground logistics

- Including potential personal and cyber security risks

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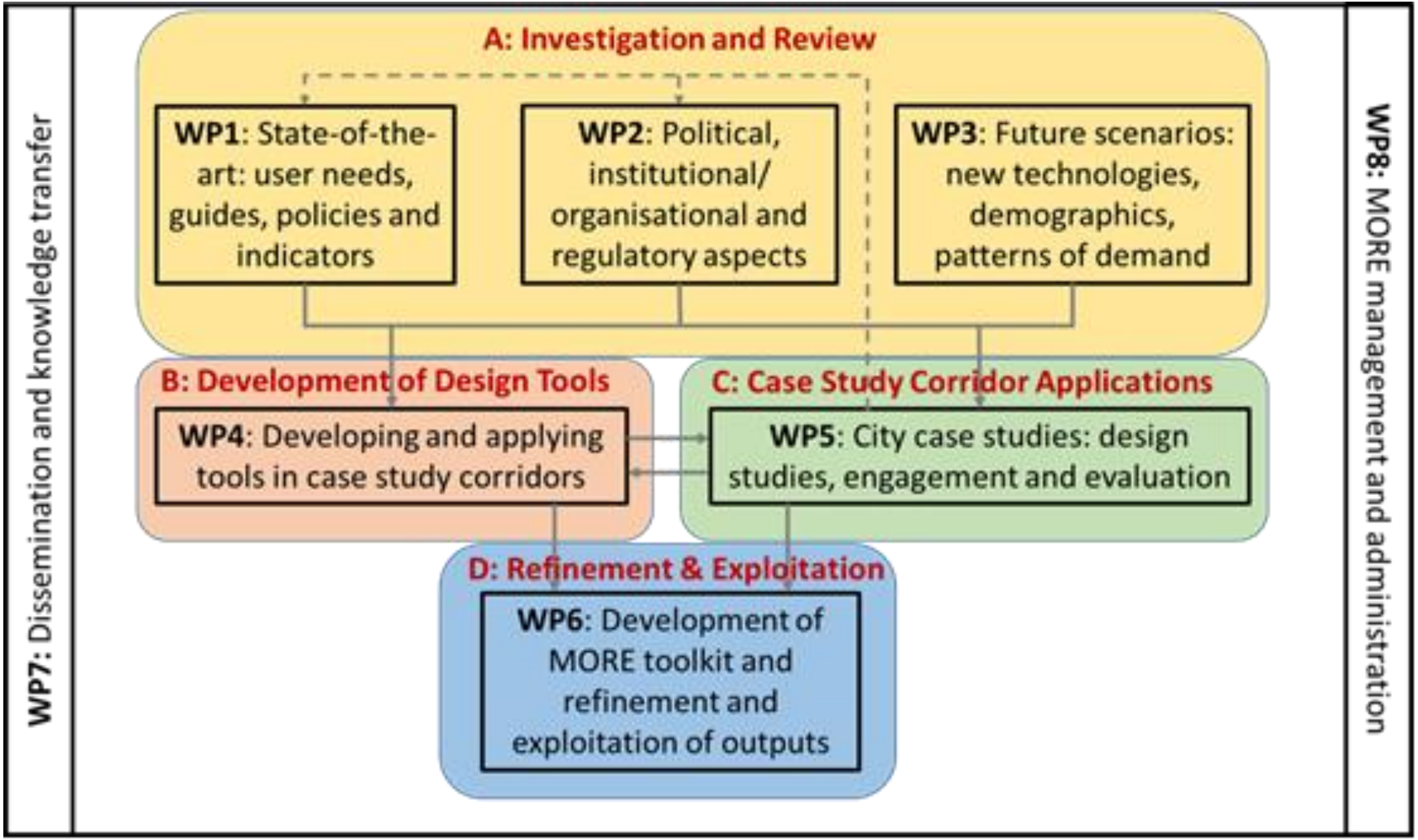
Approach

6 Technical Workpackages


A: Investigation and Review
WP1: State-of-the-art: user needs, guides, policies and indicators
WP2: Political, institutional/ organisational and regulatory aspects
WP3: Future scenarios: new technologies, demographics, patterns of demand
B: Development of Design Tools
WP4: Developing and applying tools in case study corridors
C: Case Study Corridor Applications
WP5: City case studies: design studies, engagement and evaluation
D: Refinement & Exploitation
WP6: Development of MORE toolkit and refinement and exploitation of outputs
WP7: Dissemination and knowledge transfer
WP8: MORE management and administration

Outputs

MORE – Major technical outputs to date

D1.1: Incorporating user needs in the design of major urban TEN feeder route corridors [IRU]
D1.2: Urban corridor road design: guides, objectives and performance indicators [TUD]

D2.1: Analysis of institutional and organisational factors [Science Po]
D2.2: The regulatory framework (Buchan Computing]
D2.3: Streets as ‘contested spaces’ [Sciences Po]

D3.1: Analysis of technological advances [Dynniq]
D3.2: Future user needs [EIP]
D3.3: Future scenarios for TEN Feeder Routes [UCL]

D4.1: Tools for generating feasible roadspace design options [UCL]
D4.2: Tools for enhanced stakeholder engagement in street design [Buchan Computing]
D4.3: Enhanced simulation of place-related aspects of urban street operation [PTV]
D4.4: Appraisal tools for assessing and prioritising street design options [UCL]

D5.1: Feeder routes – current conditions and design briefs [Vectos]

PRIORITIES

Choose from the green dropdown menus the degree of priority of each type of road user or road use

- **0** Can be worse off than now, if needed
- **1** Should not be worse off than now — Choose a maximum of 3 road uses with level 1
- **2** Should be better off than now — Choose a maximum of 3 road uses with level 2

Road user	Road use	
Pedestrians	Walk	0
	Cross the road	0
	Stroll	0
	Sit (street furniture)	0
	Sit (outdoor cafe)	0
Pedestrians with restricted mobility	Walk	0
	Cross the road	0
Cyclists	Move	0
	Park	0
	Rent (dock)	0
	Rent (dockless)	0
Micromobility users (scooters, skates, etc.)	Move	0

Road user	Road use	
Bus drivers	Move	0
	Stop	0
Bus Passengers	Interchange	0
	Wait	0
Rail/metro/bus passengers	Interchange	0
Car drivers	Move	0
	Park	0
	Stop	0
Car share users	Move	0
Motorcyclists	Move	0
Taxi drivers (inc. ride-hailing)	Wait	0
Taxi passengers (inc. ride-hailing)	Wait	0
Goods vehicles	Move	0
	Stop	0
Emergency vehicles	Move	0
Service vehicles	Move	0

Back Next

OBJECTIVES

Fill the checkboxes of the objectives the intervention aims to achieve

Choose only the main objectives (Maximum of 5)

Movement

- [ ] Increase number of trips
- [ ] Reduce travel time
- [ ] Increase travel time reliability
- [ ] Reduce congestion
- [ ] Improve trip quality
- [ ] Achieve a more sustainable modal split

Place

- [ ] Facilitate place activities (e.g. people sitting)
- [ ] Facilitate kerbside activities
- [ ] Improve access to local buildings

Road operation

- [ ] Improve resilience (to weather conditions)
- [ ] Increase flexibility (to different road uses)

Wider objectives: economic

- [ ] Reduce costs of transport
- [ ] Promote local economy

Wider objectives: social

- [ ] Improve traffic safety
- [ ] Reduce community severance
- [ ] Increase personal security
- [ ] Promote physical activity/health
- [ ] Promote social interaction
- [ ] Promote social inclusion
- [ ] Increase wellbeing

Wider objectives: environmental

- [ ] Increase green space
- [ ] Improve air quality
- [ ] Reduce noise
- [ ] Improve visual environment
- [ ] Protect soil/water and reduce flood risk
- [ ] Improve local climate
- [ ] Reduce energy consumption
- [ ] Improve regional/global environment

Back | See Policies

POSSIBLE ROAD DESIGNS

Back Restart Next

Check one or more feasible options

City: Lisbon **Road section:** Lisbon_try

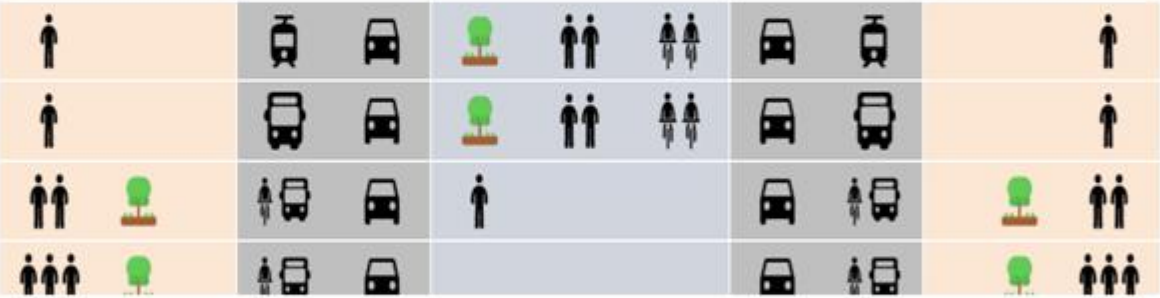
Season: Spring **Day of week:** Weekday **Time of day:** Morning Peak

Legend

Walking			Place activities		Green area	General purpose		Bus lane		Cycling		Bus + cycle	Parking/ loading	Tram line	
Narrow	Medium	Wide	Narrow	Wide		1 lane	2 lanes	1 lane	2 lanes	1 lane	2 lanes			1 track	2 tracks
2m	3m	4m	2m	3m	1.5m	3m	6m	3m	6m	2-3m	3-4.5m	4m	2.5m	3m	6m

Fill the checkboxes of all options you think are feasible in the road subsection

Left footway and kerbside Feasible	Left carriageway	Median strip	Right carriageway	Right footway and kerbside



Total road width (m)	Width of Design Elements (m)								Capacity per 75m² of roadspace			Feasible ?
	Walking	Place activities	Green area	General purpose	Bus lane	Cycling	Parking/ loading	Tram line	Movement (people)	Place activities (people)	Parking/ loading (vehicles)	
27	7	0	1.5	6	0	4.5	0	6	360	10	0	☐
27	7	0	1.5	6	6	4.5	0	0	360	10	0	☐
27	8	0	3	6	5.6	2.4	0	0	350	20	0	☐
27	8	0	3	6	5.6	2.4	0	0	350	20	0	☐

COVID: Transforming Street-space Allocation

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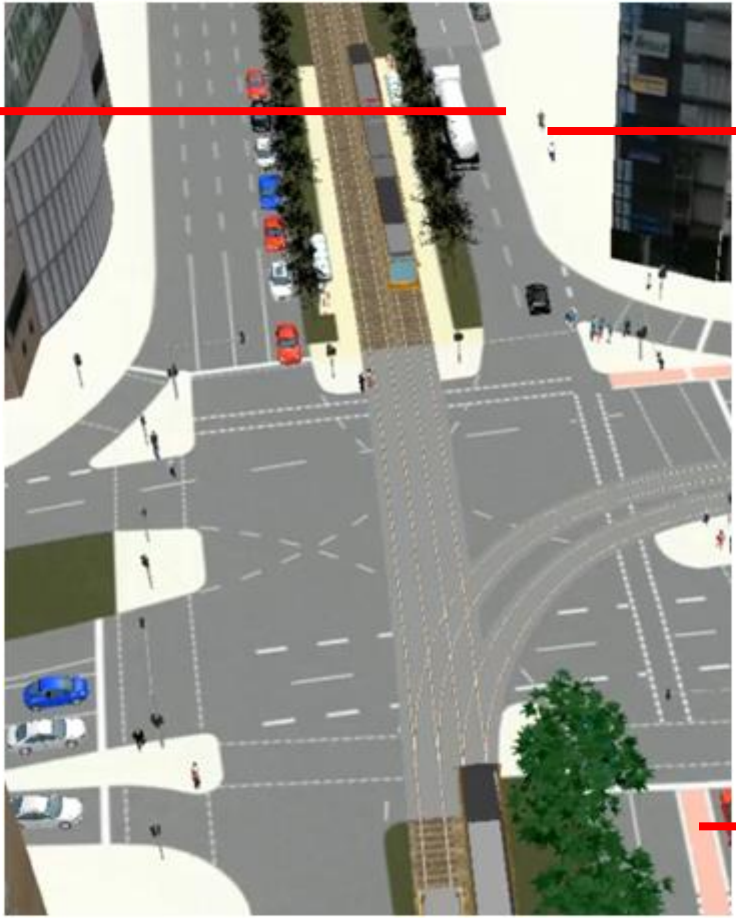
VISSIM Modelling development (PTV)

Parking
and loading

- Kerbspace efficiency
- Ease of finding space
- Revenues



Pedestrians moving
or not moving
(place activities)

Dynamic roadspace
reallocation

- movement → parking
- all vehicles → bus only
- …

Areas of Focus

Lack of TEN-T/Urban network co-ordination

- All MORE cities focus on roads within their administrative boundaries
- These boundaries often are unrelated to network structures
- There is very little day-to-day interaction between city authorities and national/TEN-T network operators
- Each authority tends to optimise its network with less consideration of repercussions for the other

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Issue: Turning regulation on its head?

- Current approach: regulate new mode as it becomes 'established' – always 'on the back foot'

- Suggested approach: pro-active - generic regulation of activities allowed on different parts of the street e.g.:
  - **Footway:** non-motorised plus electric modes; maximum speed of 8kph (??), audible warning if wheel-based; no lights or protective gear
  - **'Cycle' lane:** Wheeled vehicles (motorised and non-motorised) between 8kph and 30kph (??); night time lighting, effective brakes; protective gear recommended; insurance for motorised vehicles
  - **Carriageway:** All motor vehicles capable of travelling at over 30kph; night lights and protective gear required, effective brakes, plus license, identification and insurance

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Issue: LED signing – some challenges

- Allowing for different uses of the same physical space (e.g. kerbside) at undefined times of day – not pre-specified. In some extreme cases, part of a footway might become part of the carriageway at certain times.
- Ensuring that the electronic signs and road markings are correctly operating and are fully visible at all times.
- Determining how to record the traffic regulations in operation at any particular point in time, in a way that is reliable and enforceable.
- Determining how to handle transition periods, from one set of regulations to another; (e.g. for parking switchover period would be set at the maximum allowed parking duration; but for the sudden introduction of a bus lane might find a driver in the 'wrong' lane for a short period of time.

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Thank you –

https://www.roadspace.eu

peter.jones@ucl.ac.uk

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