ReVeAL

Regulating Vehicle Access for improved Livability

Barriers to implementing Dynamic Kerbside Management

International Workshop October 15

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 815008.

Dynamic Kerbside Management in ReVeAL

10 Aspects of Kerb Use Mismanagement

Introduction to Dynamic Kerbside Management

Identified barriers – *Work in progress*

Ways to overcome barriers - *Work in progress*

Dynamic Kerbside Management in ReVeAL

Objective: To prepare, setup and carry out a Sandbox (a trial/pilot) for an advanced UVAR approach in the Eastern Cluster area in the City of London, using cutting edge technology and tools.

Step 1 will map and understand present and future needs of different types of kerbside demands, both general and specific to the chosen location. Including

- identify and understand barriers for future implementation
- international workshop (October 2020)

→ report on barriers to dynamic kerbside management (November 2020)

Step 2 will develop a concrete sandbox plan (including objective, hypothesis, methods and evaluation) that will be carried out within the Eastern Cluster area in collaboration between WSP, CoL and TfL (Final report May 2022). The choice of methods and tools will build upon the knowledge from report in step 1.

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Identified barriers

Ways to overcome barriers

1. User needs

Figure 1. Delivery van double parked in Washington D.C., retrieved from https://dc.curbed.com/2019/7/8/20686036/curbside-parking-public-space-curbflow-commercial-deliveries, copyright The Washington Post/Getty Images

2. Traffic flow and congestion

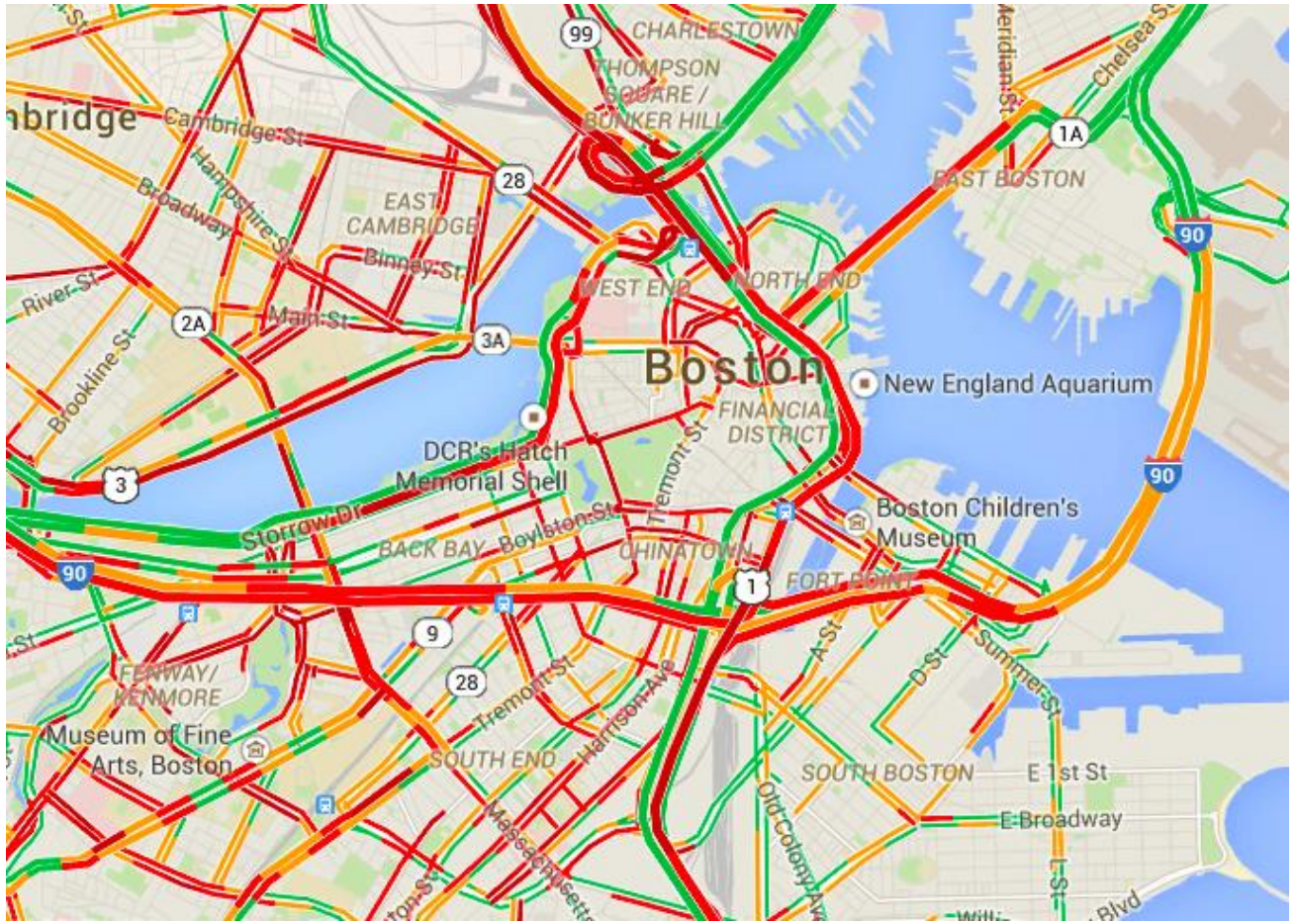

Figure 2. Traffic congestion map over Boston, retrieved from https://medium.com/@imtechpros_87395/where-does-google-maps-get-its-traffic-data-from-2562f984d82f, copyright Google Maps

3. Emissions

Figure 3. Car exhaust in Toronto street, retrieved from https://www.utoronto.ca/news/national-air-pollution-report-highlights-rush-hour-traffic-diesel-truck-emissions-major-areas, copyright Steve Russell/Toronto Star via Getty Images

4. Priority lane performance

Figure 4 Truck blocking bus lane in Washington D.C. street, retrieved from https://www.washingtonpost.com/local/trafficandcommuting/dc-on-track-to-build-3-more-miles-of-bus-lanes-this-summer/2020/07/24/fac9651c-cb57-11ea-bc6a-6841b28d9093_story.html, copyright Luz Lazo/The Washington Post

5. Traffic safety

Figure 5 People queinq to food trucks blocking bike path in Stockholm. retrieved from http://cyklandeombud.se/hinder/cyklande-bryter-nyckelben-barn-skadas-nar-staden-inte-klarar-trafiksakerheten-ralambshov/?fbclid=IwAR2phb2x2CdwrhWGvavFILsQ7cYYeWCayFzBgZPIxWv20kOL2X4C7aiBo8o

6. Security

Figure 6 Conveyor used for delivery block bike lane in New York City, copyright Per Solér

Figure 7 Young cyclist swerves out in car lane while bike lane being blocked by cab in Stockholm, retrieved from https://www.cyklistbloggen.se/stockholm-tar-krafttag-mot-dubbelparkering-i-cykelfalt/

7. Emergency access

Figure 8 Pedestrians walking in car lanes during rush hour in Manhattan, New York City. retrieved from https://www.nytimes.com/2016/07/01/nyregion/new-york-city-overcrowded-sidewalks.html, copyright Victor J. Blue/The New York Times

8. Accessibility

Figure 9 Illegaly parked car blocking pavement in UK town, retrieved from https://news.sky.com/story/pavement-parking-government-considers-uk-ban-11955857

Figure 10 Bikes and e-scooters blocking pavement in Copenhagen, retrieved from https://www.dr.dk/nyheder/regionale/hovedstadsomraadet/koebenhavnere-er-frustrerede-el-loebehjul-staar-parkeret-uden, copyright Peter Bye Andersen DR København

9. Livability

Figure 11 Packages being sorted in New York City street, retrieved from https://www.nytimes.com/2019/10/27/nyregion/nyc-amazon-delivery.html%20and%20https://www.nytimes.com/2020/05/06/realestate/the-pandemic-and-package-overflow.html?auth=login-email&login=email, copyright Brittainy Newman/The New York Times

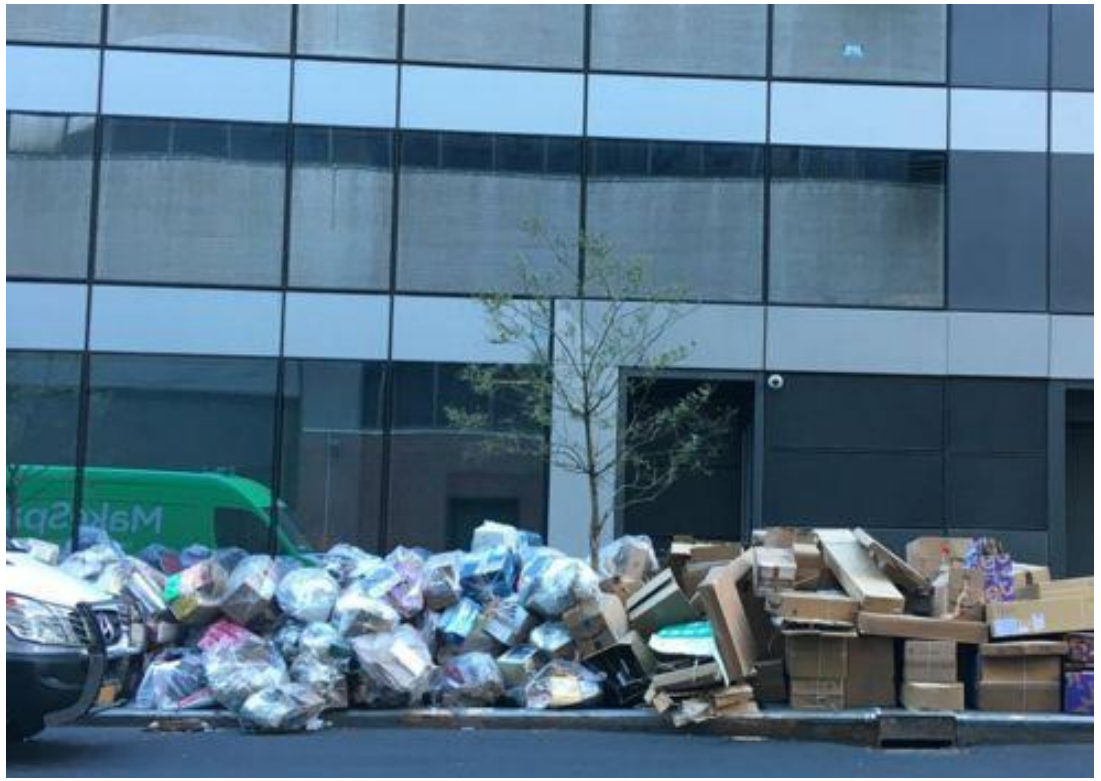

Figure 12 Mounds of boxes at pavement in New York City, retrieved from https://www.bbc.com/news/business-42245367, Copyright Getty Images

10. Urban space as an asset

Figure 14 Parked car covered in bird droppings, retrieved from https://www.bbc.com/news/blogs-news-from-elsewhere-24939386, copyright Corriere della sera

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Kerbside Management…

- …is a strategic and holistic approach for an effective use of a part of the urban street space

– …is about doing what you already do but in a more structured and efficient way

– …supports the move towards sustainable transport systems and livable cities

– …stresses the need for better, digitised and open data, collaboration, and transparent prioritisation and decision-making.

Proposed Definition of Dynamic Kerbside Management

The management of kerb adjacent space according to the time-varying need and demand of different uses or users.

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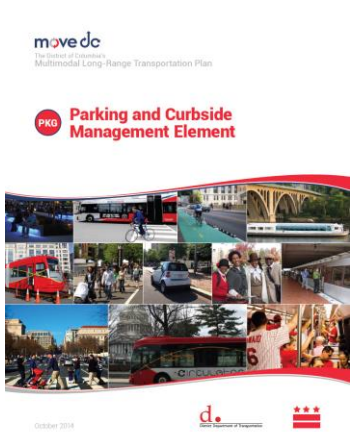

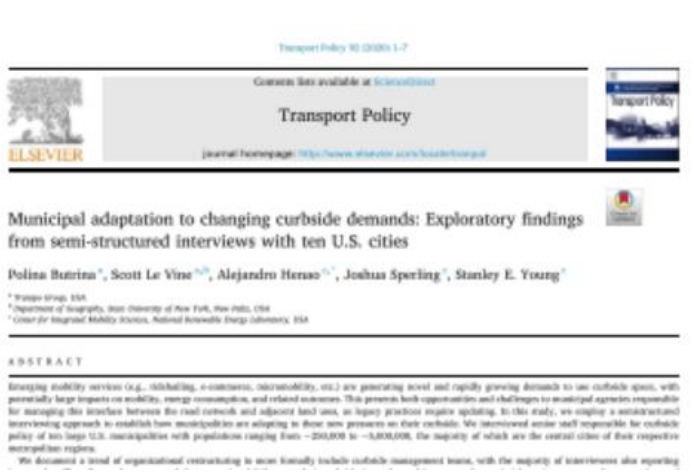

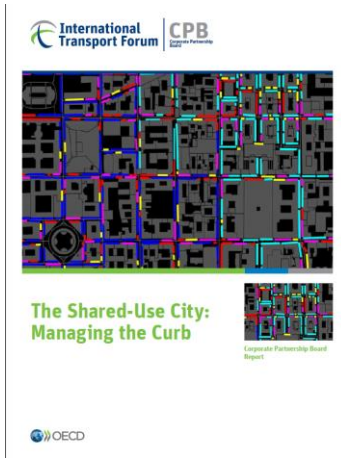

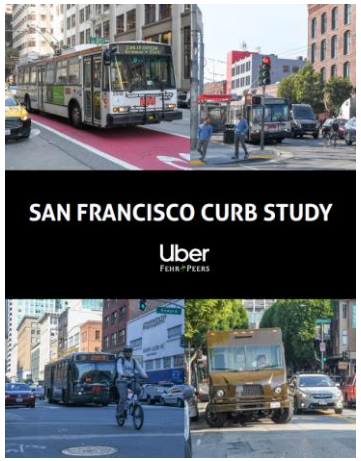

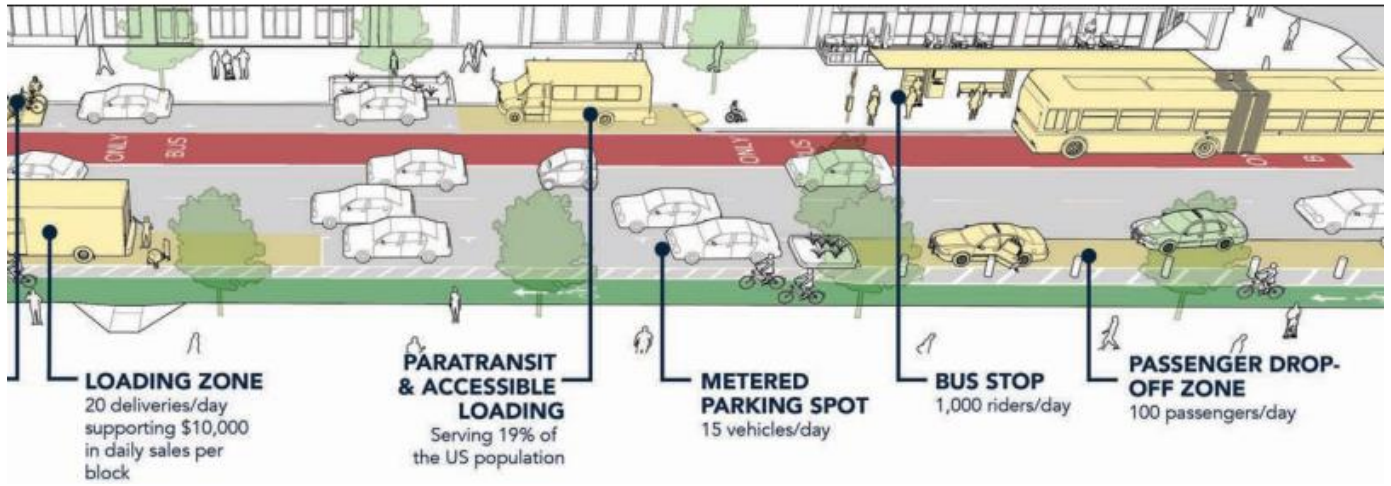

Figure 15 From upper left, Washington DDOT (2014) Parking and Curbside Management Element, SFMTA. (2020). *CURB MANAGEMENT STRATEGY,* D'agostino, M., Pellaton, P., Brown, A., Safford, H., Fleming, K., & Craford, C. (2019). *Mobility Data Sharing: Challenges and Policy Recommendations,* Butrina, P., Le Vine, S., Henao, A., Sperling, J., & Young, S. E. (2020). *Municipal adaptation to changing curbside demands: Exploratory findings from semi-structured interviews with ten U.S. cities,* ITF. (2018). *The Shared-Use City: Managing the Curb*. www.itf-oecd.org, Fehr & Peers. (2018). *SAN FRANCISCO CURB STUDY San Francisco Curb Study,* NACTO. (2017). *Curb Appeal Curbside Management Strategies for Improving Transit Reliability Curb Appeal* (Issue November). https://nacto.org/wp-content/uploads/2017/11/NACTO-Curb-Appeal-Curbside-Management.pdf

Policy documents

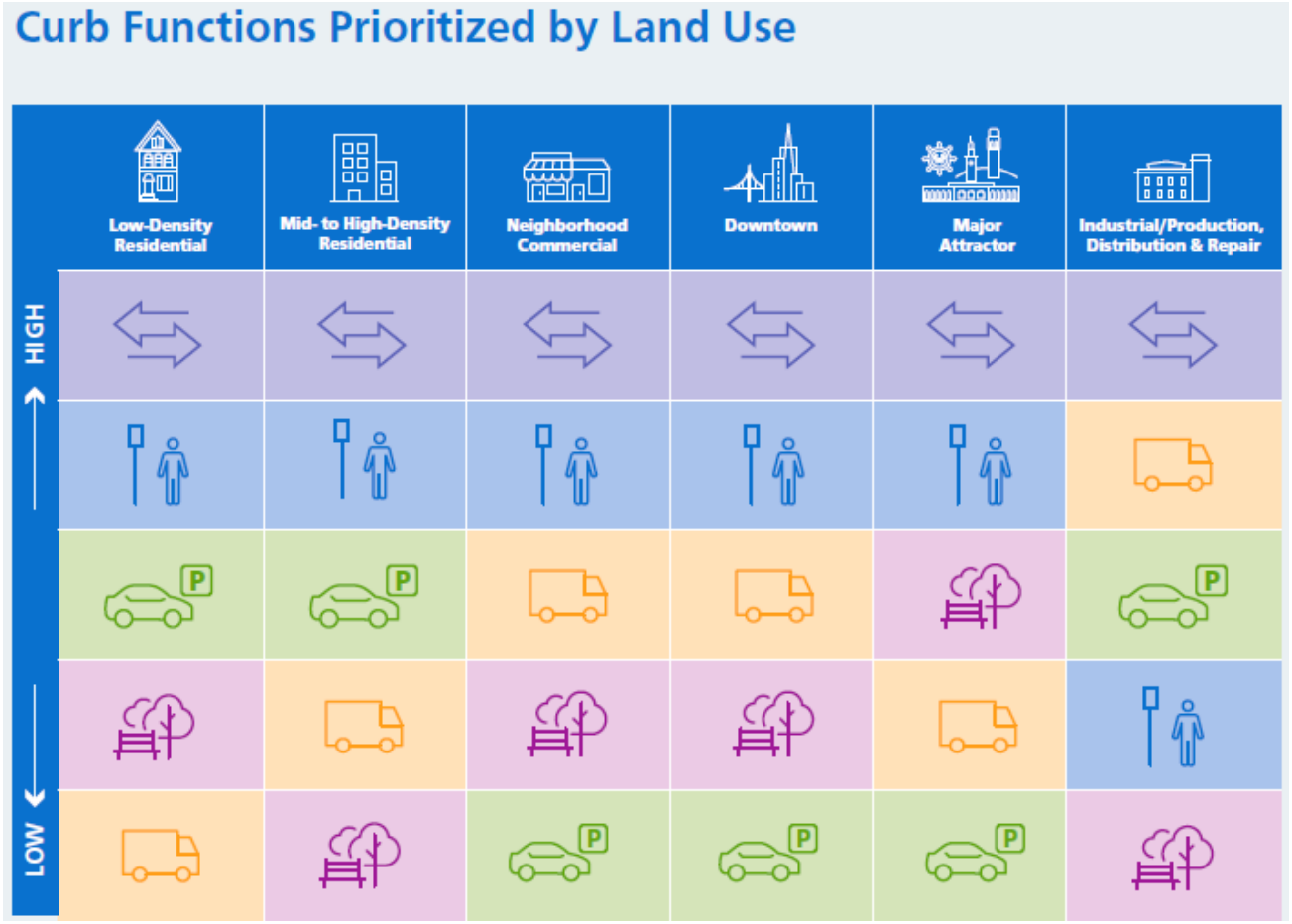

Figure 16 SFMTA. (2020). *CURB MANAGEMENT STRATEGY*

Grey literature

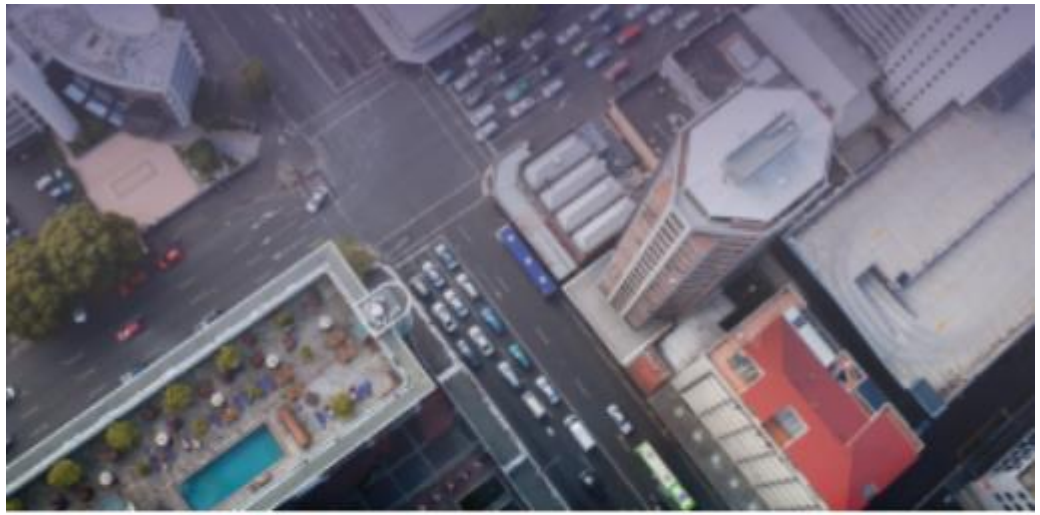

Figure 17 Passport Inc. (2019). Coding the Curb How technology can help cities manage mobility.

Academic articles and papers

Figure 18 Sign announcing coming trial with Pick-up/drop-off zone in Washington D.C., retrieved from https://www.traffictechnologytoday.com/news/multimodal-systems/washington-dc-announces-next-phase-of-its-curbside-management-program.html

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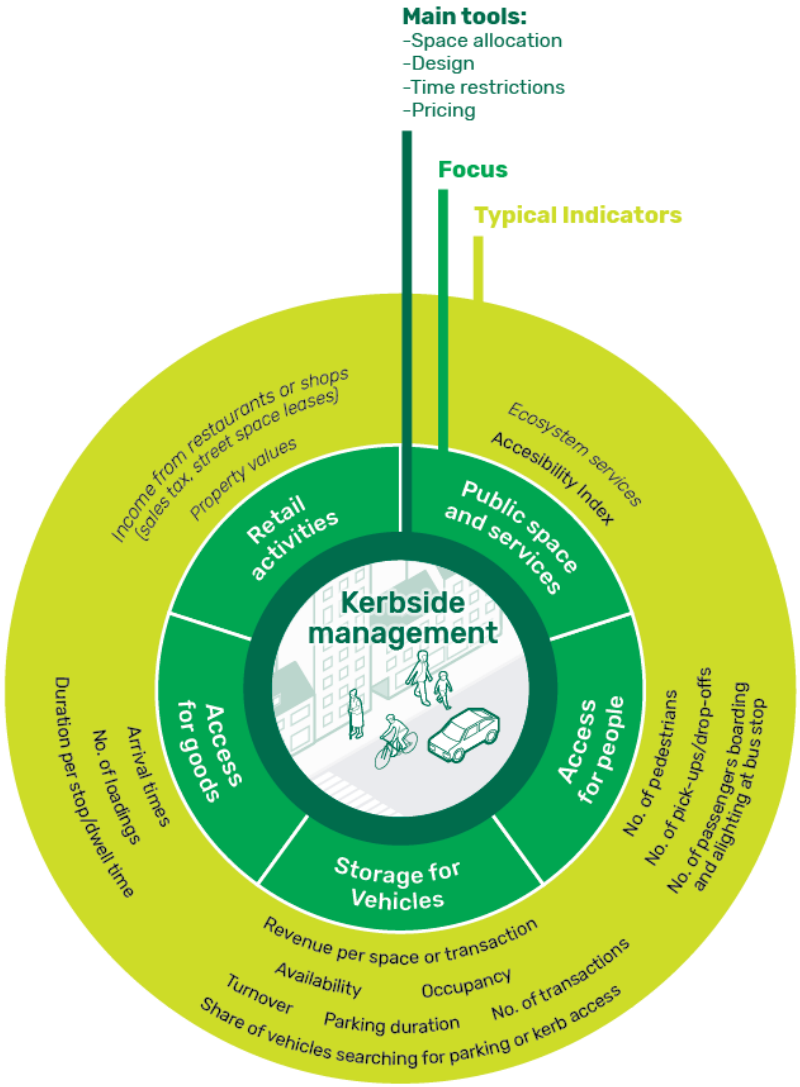

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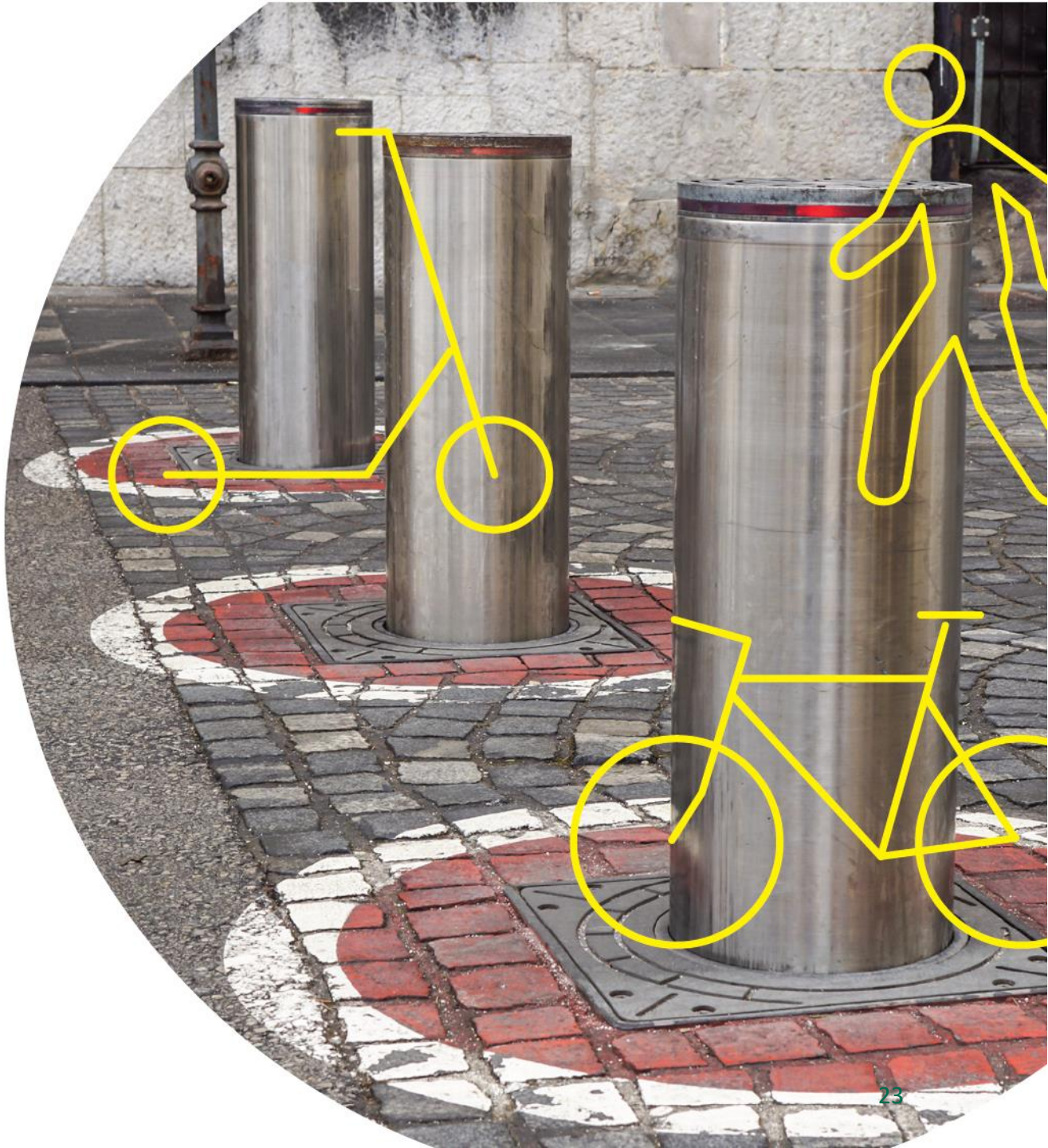
Ways to overcome barriers



Transition Areas

Governance and financing

User needs / acceptance

System design / technology

Mobility concepts

Governance and financing

Organisation and resources

- Silo-organisations
- Staffing
- Shifting revenue streams

Regulation

- Legislation
- Flexibility
- Security
- Personal data protection

Figure 19 Red route sign in London., retrieved from https://tfl.gov.uk/modes/driving/red-routes/rules-of-red-routes/loading-for-the-public

User needs

- User friendliness
- Equity issues
- Personal data protection
- Effects of different measures

Public acceptance

- Shifting status quo
- Privatisation

Figure 20 Booking required loading zone in Omaha, Nebraska, retrieved from https://www.coord.com/blog/omahas-first-smart-zones

System design / technology

System design/Technology

- Existing and new solutions and technology
- Coding the kerb
- Lack of standards
- Enforcement

Figure 21 Appyway's Traffic order management tool and, retrieved from https://appyway.com/

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Identified barriers

Ways to overcome barriers

Structure and organise

Collect and digitise data

Collaborate and do pilots

Structure and organise

- Identify responsibilities
- Framework for prioritising functions and needs
- Street hiearchy and typology

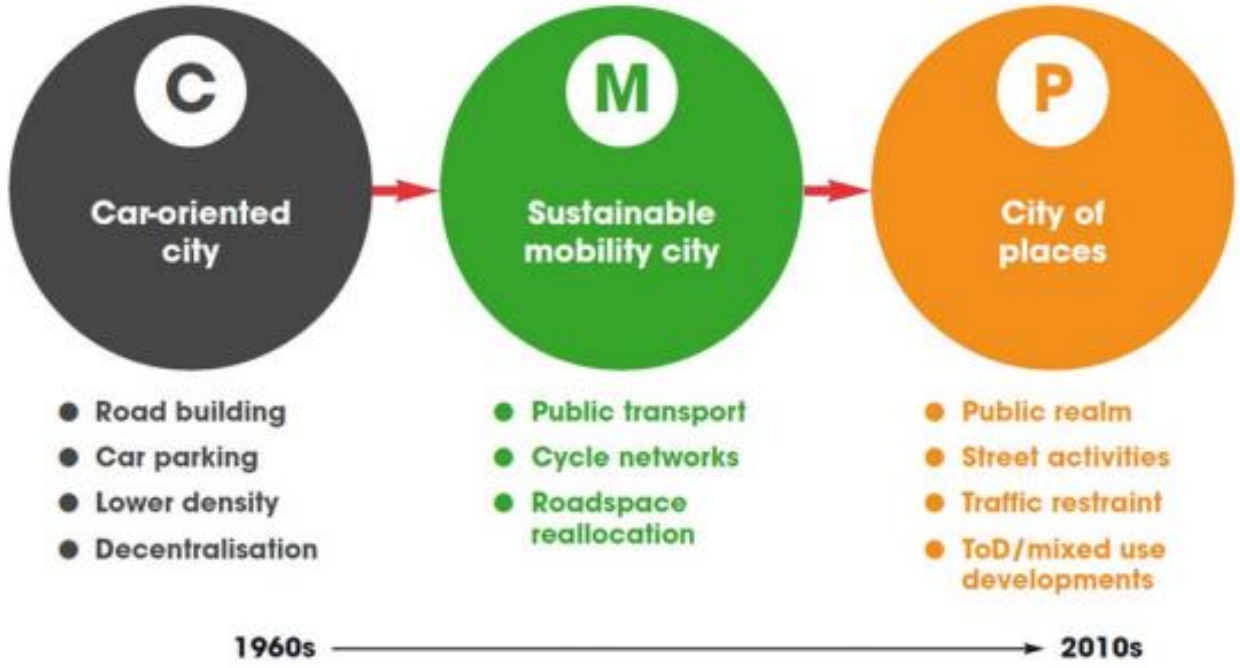


Figure 22 TUD, & UCL. (2019). Urban Corridor Road Design: Guides, Objectives and Performance Indicators. Roadspace.Eu, 769276, 1–161. https://www.roadspace.eu/wp-content/uploads/2019/11/MORE_D1_2_FINAL.pdf

The need to prioritise, Stockholm, 2012

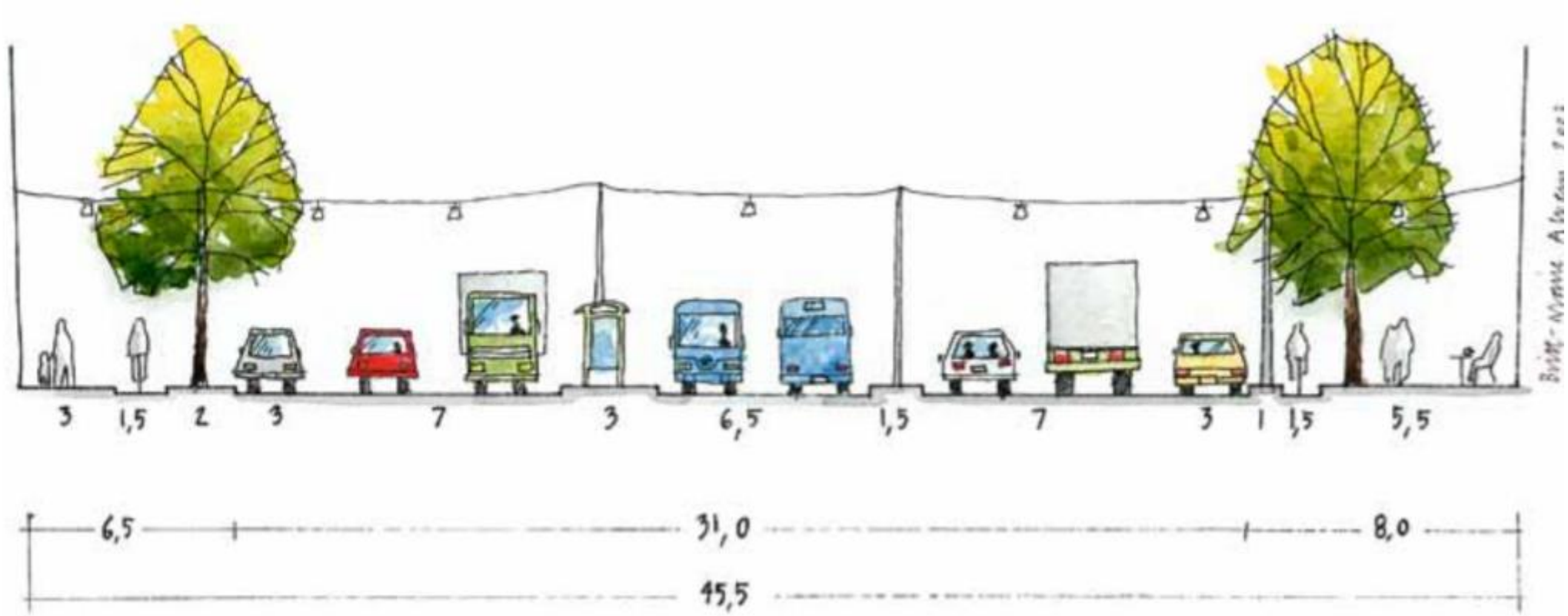
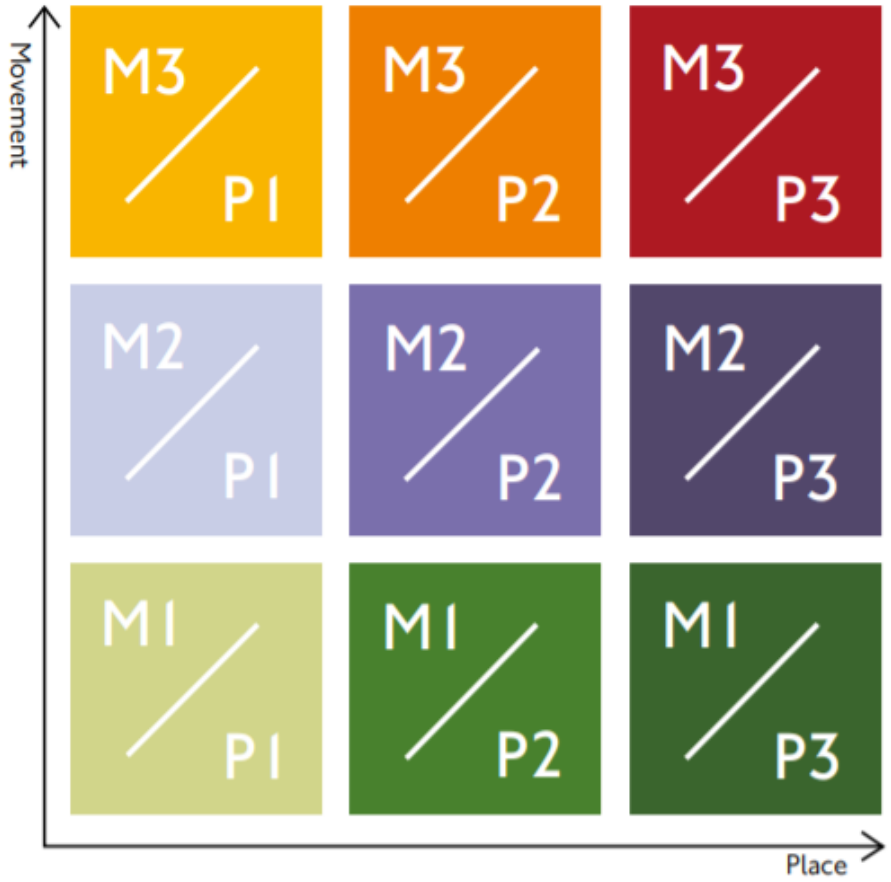


Figure 23 Stockholms stad (2012) *Framkomlighetsstrategin*, http://miljobarometern.stockholm.se/content/docs/tema/trafik/Framkomlighetsstrategin2012.pdf

The Street Types matrix, Transport for London, 2013



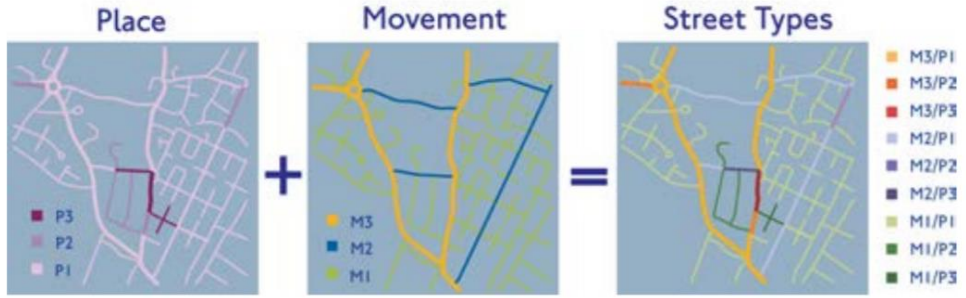


Figure 23 Transport for London (2019) *Streetscape Guidance Fourth edition Revision 1*, http://content.tfl.gov.uk/streetscape-guidance-.pdf

Collect and digitise data

- Identify user needs and activities
- Code the kerb
- Un-lock and gain access to data that is already being collected
- Connect data from different sources

Figure 24 Tagging of parking rules, retrieved from https://github.com/openstreetmap/iD/issues/6178

Collaborate and do pilots

- Openly with both other agencies, cities, solution and technology providers and end users
- Evaluate, adapt and learn
- Make us of existing and new standards

Smart City Pilot

Dublin

We are working with Smart Dublin to pilot virtual and managed loading zones

Pilot objectives

- COVID 19 – High St recovery
- Kerbside economy
- Data and freight demand management
- Impact on congestion/emissions

grid. eventually everything connects.

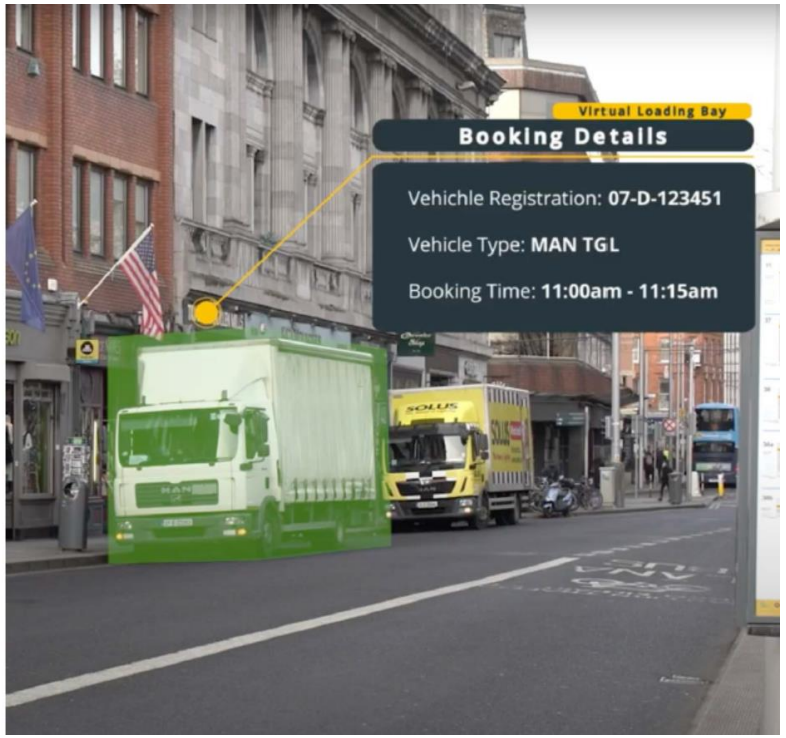


Figure 25 Information on Smart City Pilot in Dublin, from Product presentation courtesy of Grid Smarter Cities, www.gridsmartercities.com

Final messages

1.

There’s no piece of technology or solution that will solve all your barriers or fit all your needs.

2.

The entry points for working with kerbside management are many. The most important bit is that you as a city start looking at your kerb and the data it generates as an asset.

Thank you for your attention

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