



SPATIAL PLANNING & URBAN DESIGN

URBANISM NEXT EUROPE  
**2021**



# Street Design Impacts of AVs in Vienna, Austria

Future Perspectives on Public Spaces

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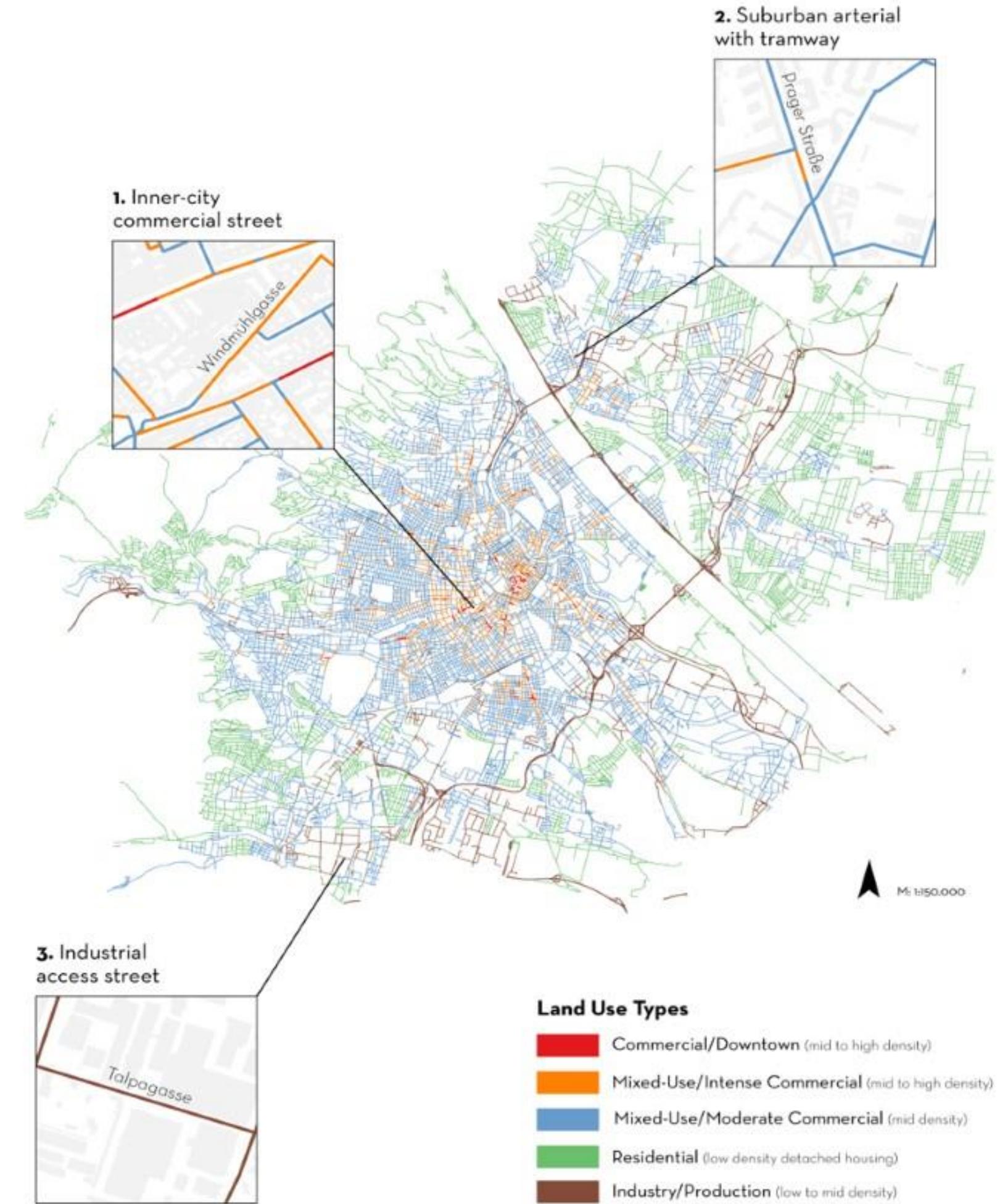


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# Site selection in Vienna

Based on land use types and street typologies to:

- analyze the traffic-land use compatibility;
- and study street design impacts.



# Functional demands of AVs in streets

- pickup/drop-off interaction
- (short-term) parking and maintenance

## Planning and design questions:

- Organization of pickup areas
- Repurposing of street space for public use

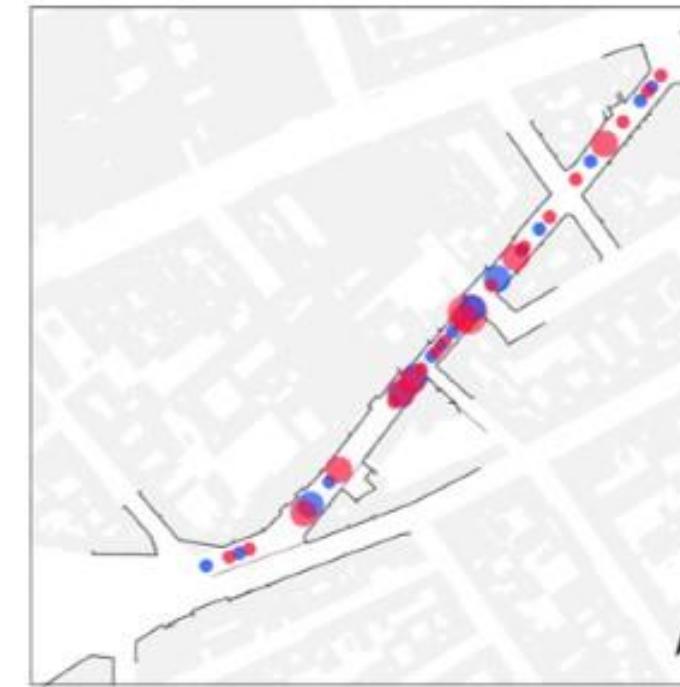


# Functional demands of AVs in streets

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**Density of passenger  
Interactions / hour**



**Demand for passenger  
loading zones**



**Demand for  
short-term parking**

# Inner-city commercial street...

... with an automated mobility on-demand service

## Travel demand results:

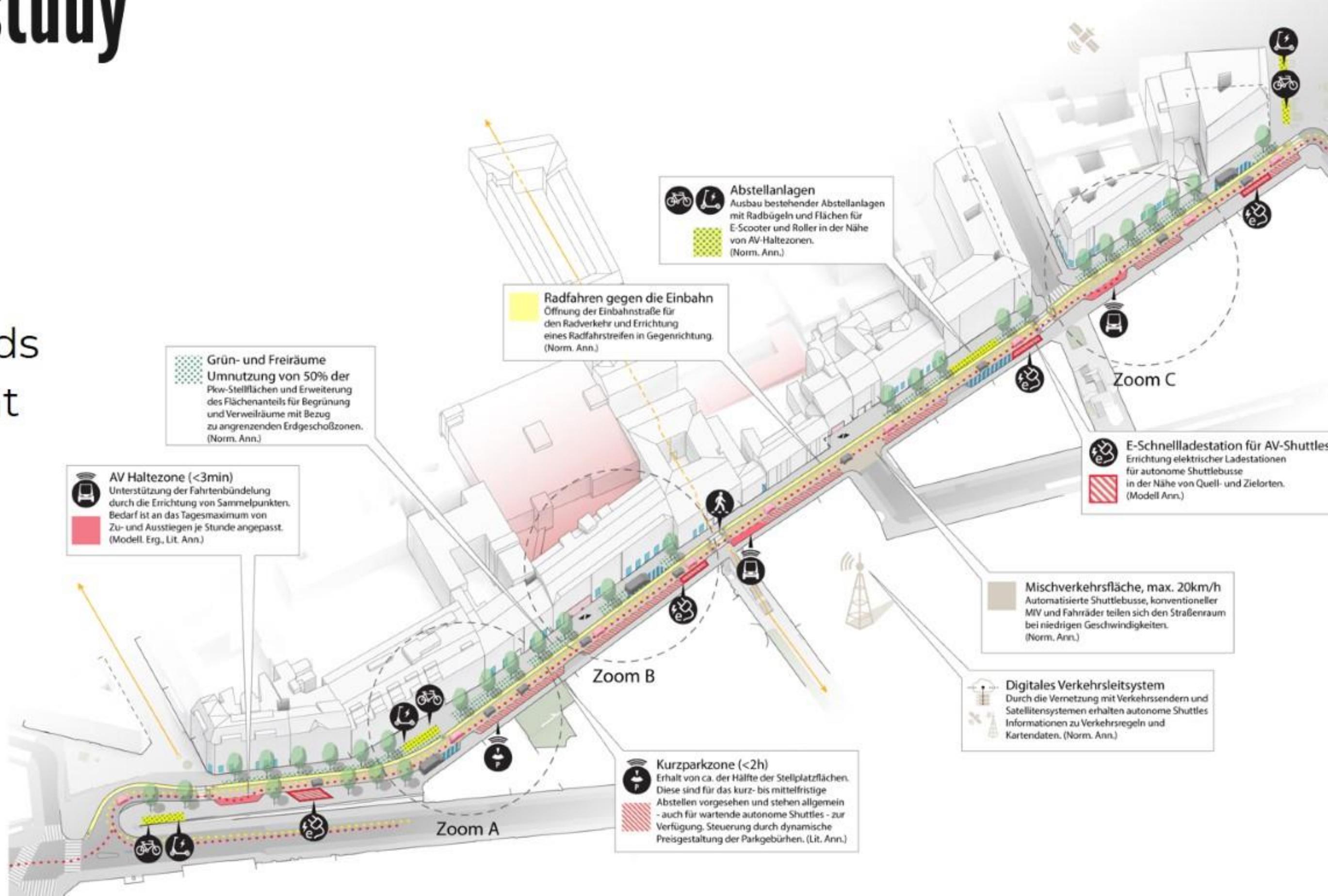
- Increase in traffic,
- Negative impact on traffic and land use compatibility,
- Growing pressure on public spaces due to spatial demand.



# Street design study

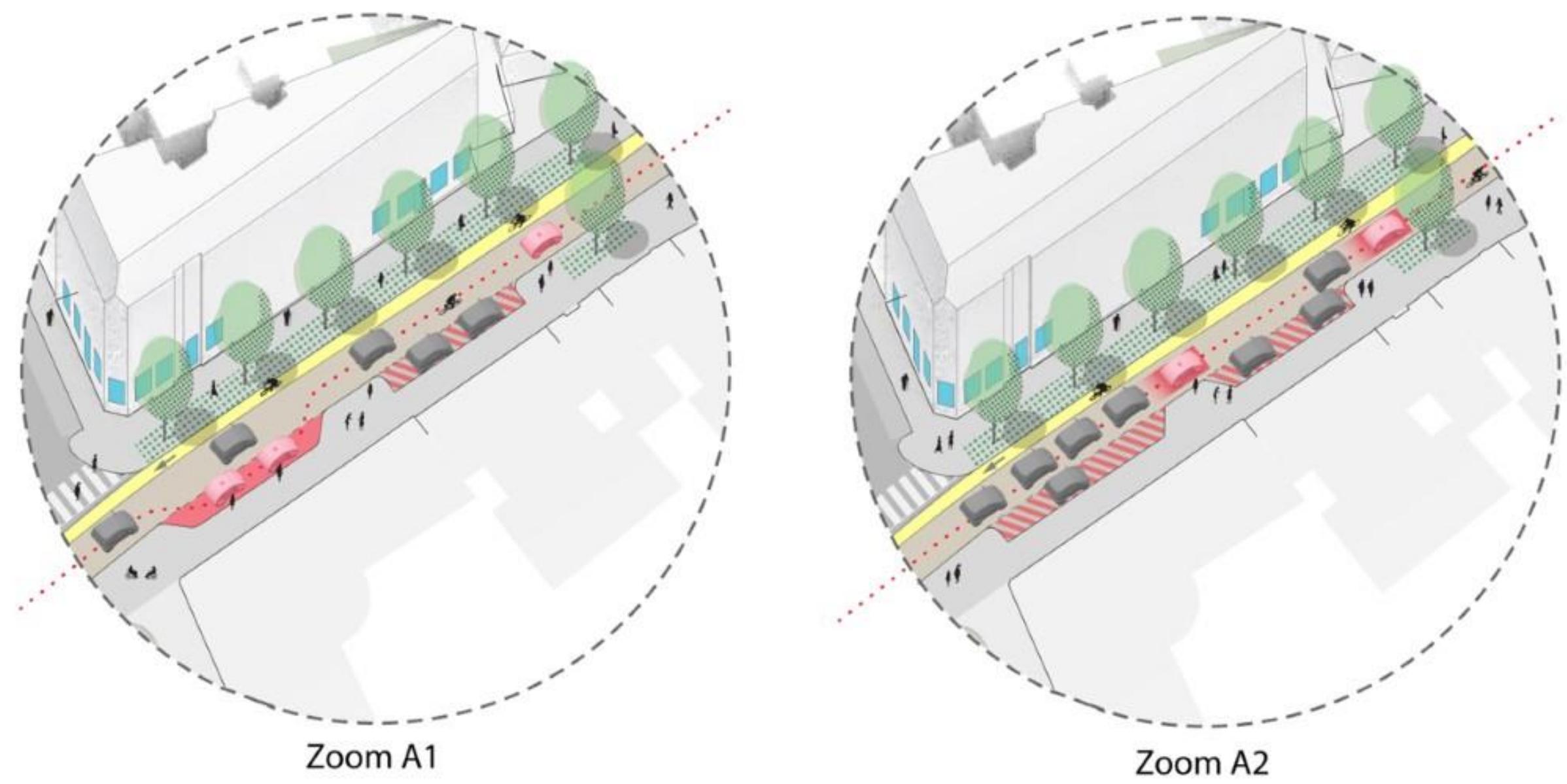
## Based on

- Assessment of functional demands
- Local development objectives



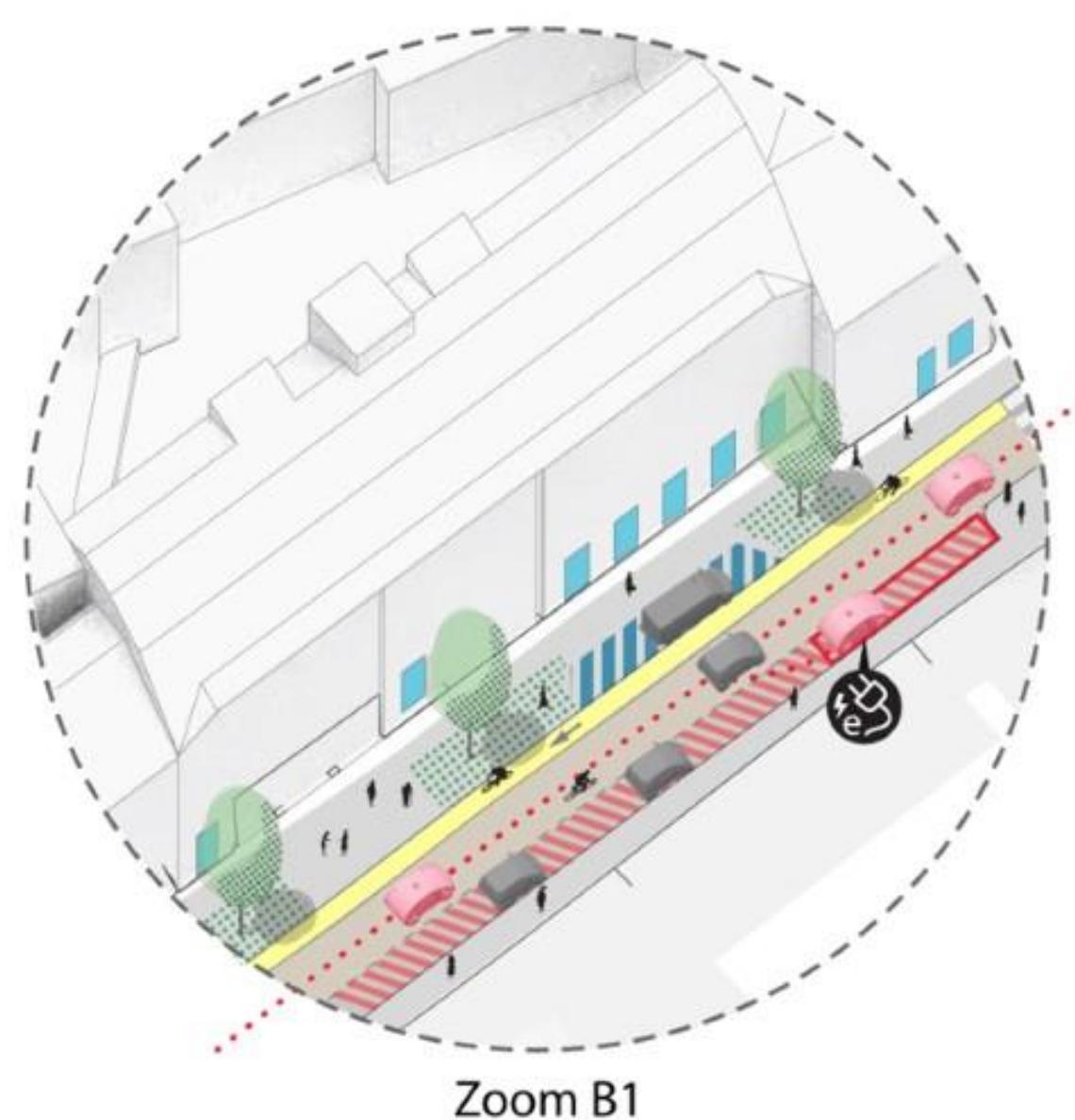
# Transformations 1

Integrating pickup  
and drop-off points

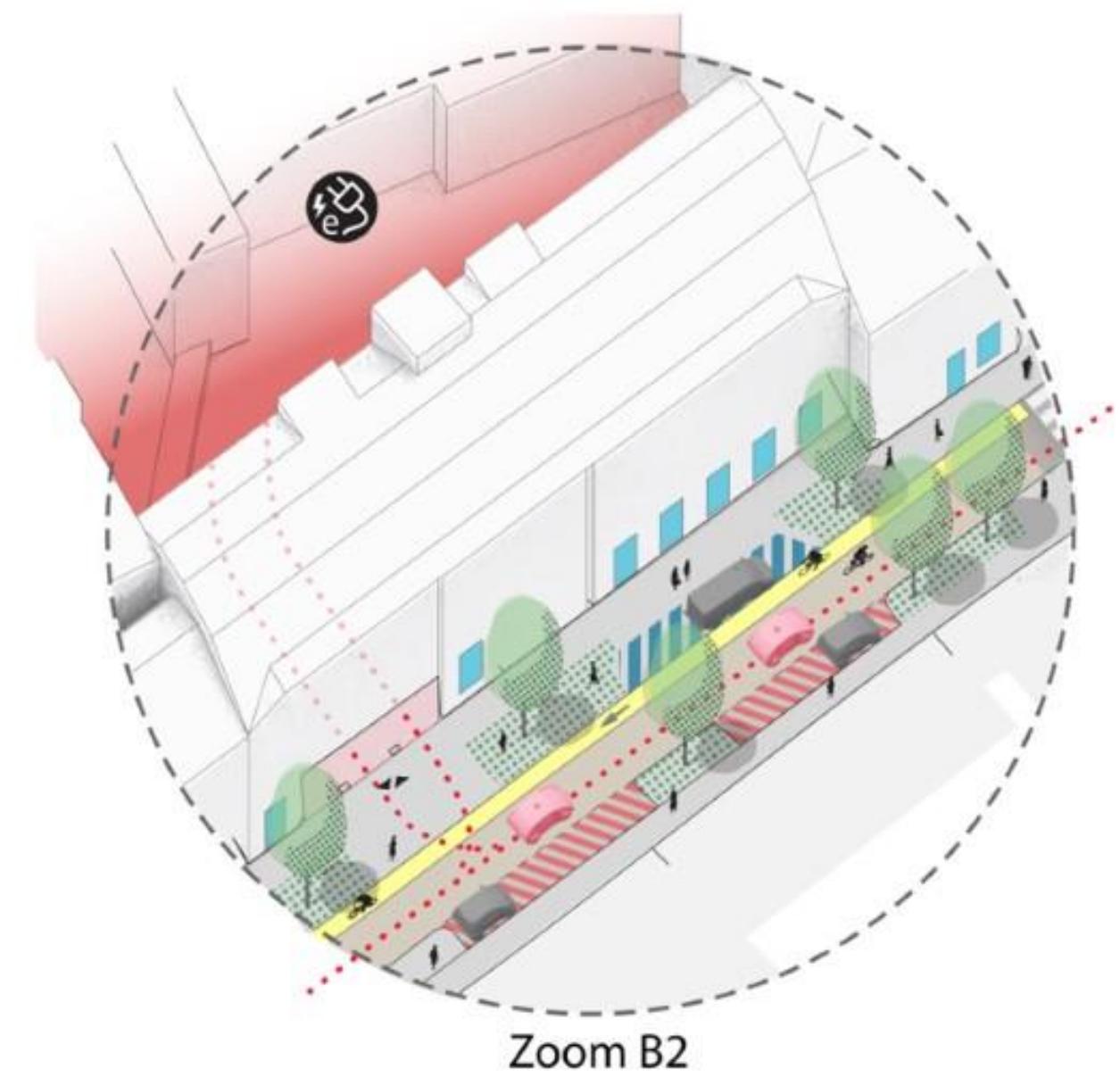


# Transformations 2

Allocating space  
for short-term  
parking



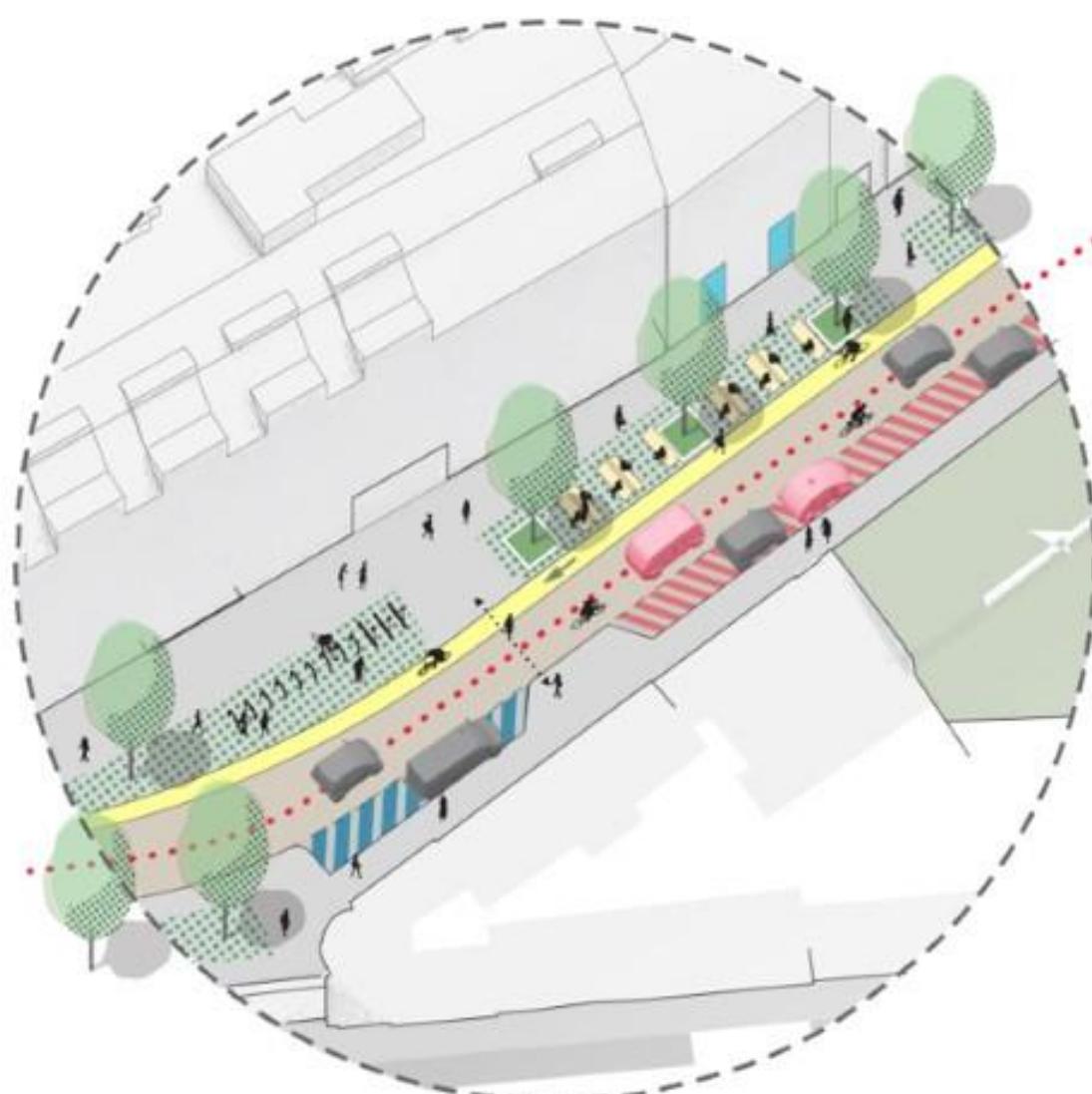
Zoom B1



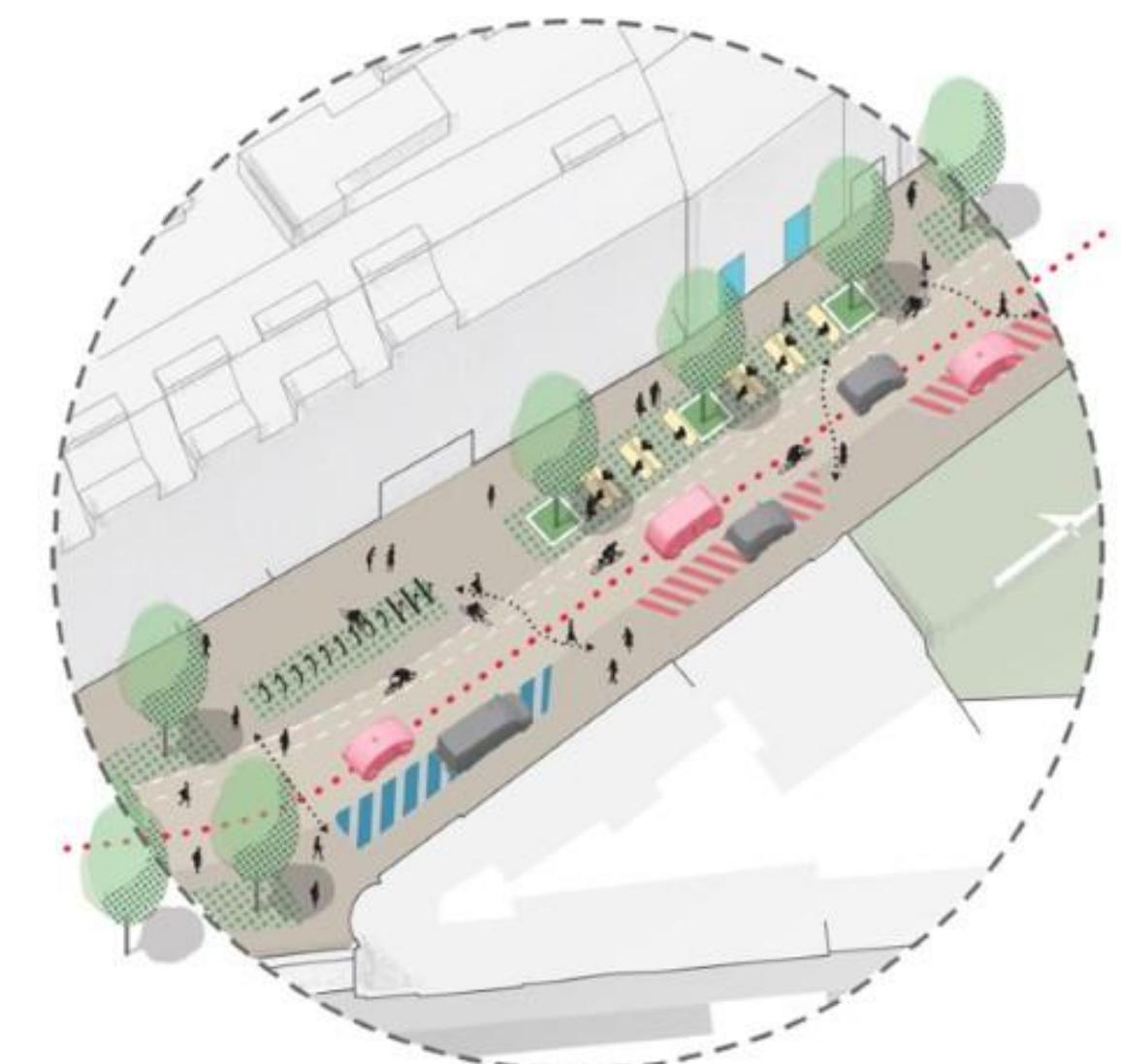
Zoom B2

# Transformations 3

Facilitating the permeability of streets and neighborhoods



Zoom C1



Zoom C2



# Learnings for cities

- How future changes spatially manifest, will differ depending on, i.a., existing **urban structures, land use, and street typologies;**
- Integrated assessments can inform:
  - on possible **trade-offs** of a system change;
  - the selection of adequate **operational conditions** for automated mobility systems;
  - pro-active **policy measures**, necessary to transform urban streets with new mobility systems into accessible, sustainable and lively public spaces.



# Policy considerations for cities

- **Incentivizing measures** for higher vehicle occupancy, shared journeys and car-pooling;
- City-wide **classification of the road network** according to traffic speeds, adjacent land use and access (restrictions) for AV use cases;
- **Prioritizing active mobility** and **transit**;
- Parking studies, inventories and strategic parking infrastructure plans;
- Policy measures to curb environmental impacts of deadheading.



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Do you have any question?

Ask Emilia M. Bruck, [emilia.bruck@tuwien.ac.at](mailto:emilia.bruck@tuwien.ac.at)



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