2050 CliMobCity

Interreg Europe

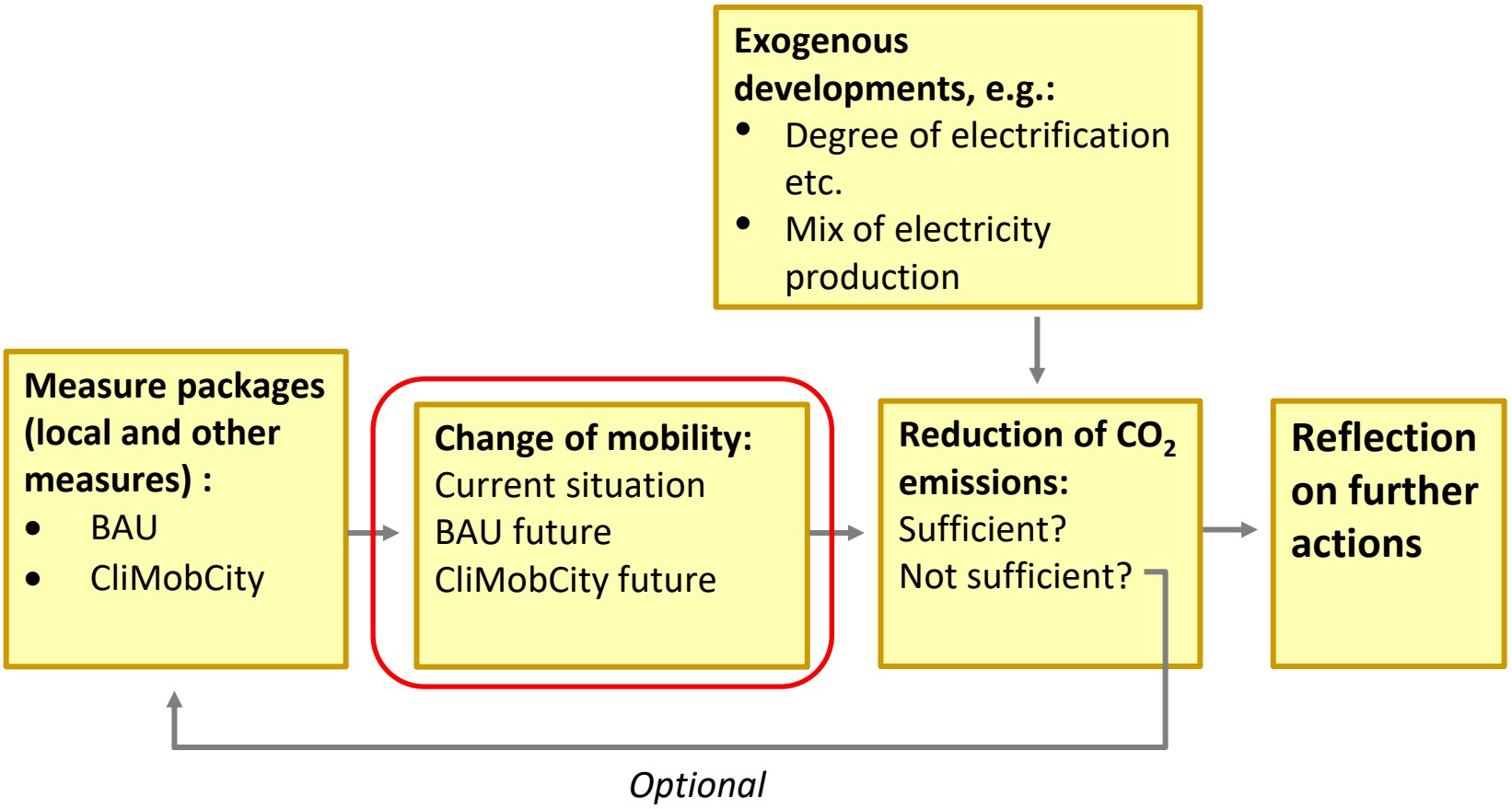
European Union
European Regional
Development Fund

Change of mobility

Ekki Kreutzberger

Final Dissemination Event
19-21 June 2023

List of contents of the project report



Approach

- **Application of macroscopic transport models**

- **Reflection on the output in the light of:**
  - City structure
  - Perspectives for CO_2e reduction and need for electrification
  - Traffic flow and spatial impact

- **Not included in the mobility modelling:**
  - Novel transport services and mobility (micromobility, shared vehicle offer, mobility hubs).
  - Shift to post-fossil fuel vehicles

Transport models applied

- **Input (measure packages BAU, CliMobCity):**
  - Transport networks (services, infra, capacity, speeds etc.)
  - Social-economic data: where how many residents, work-places, shops, other attractions, and their properties (e.g. age, drivers' licence, car ownership, mobility preferences)

- **Output:**
  - Trips (separately for all modes, origins + destinations)
  - Travel time
  - Passenger-kms
  - Vehicle-kms

Transport models applied

- **Bydgoszcz, Thessaloniki, Leipzig:**
  4-stage multimodal mobility model (PTV Visum software)
  1) Trip production and attraction
  2) Trip distribution: from where to where?
  3) Modal split of trips
  4) Assignment of traffic to routes

- **Plymouth:**
  Saturn Highway Assignment Model (WSP)
  - Only mode is road transport
  - Only step 4 of above
  - Other modes by experts' knowledge and hand accounts

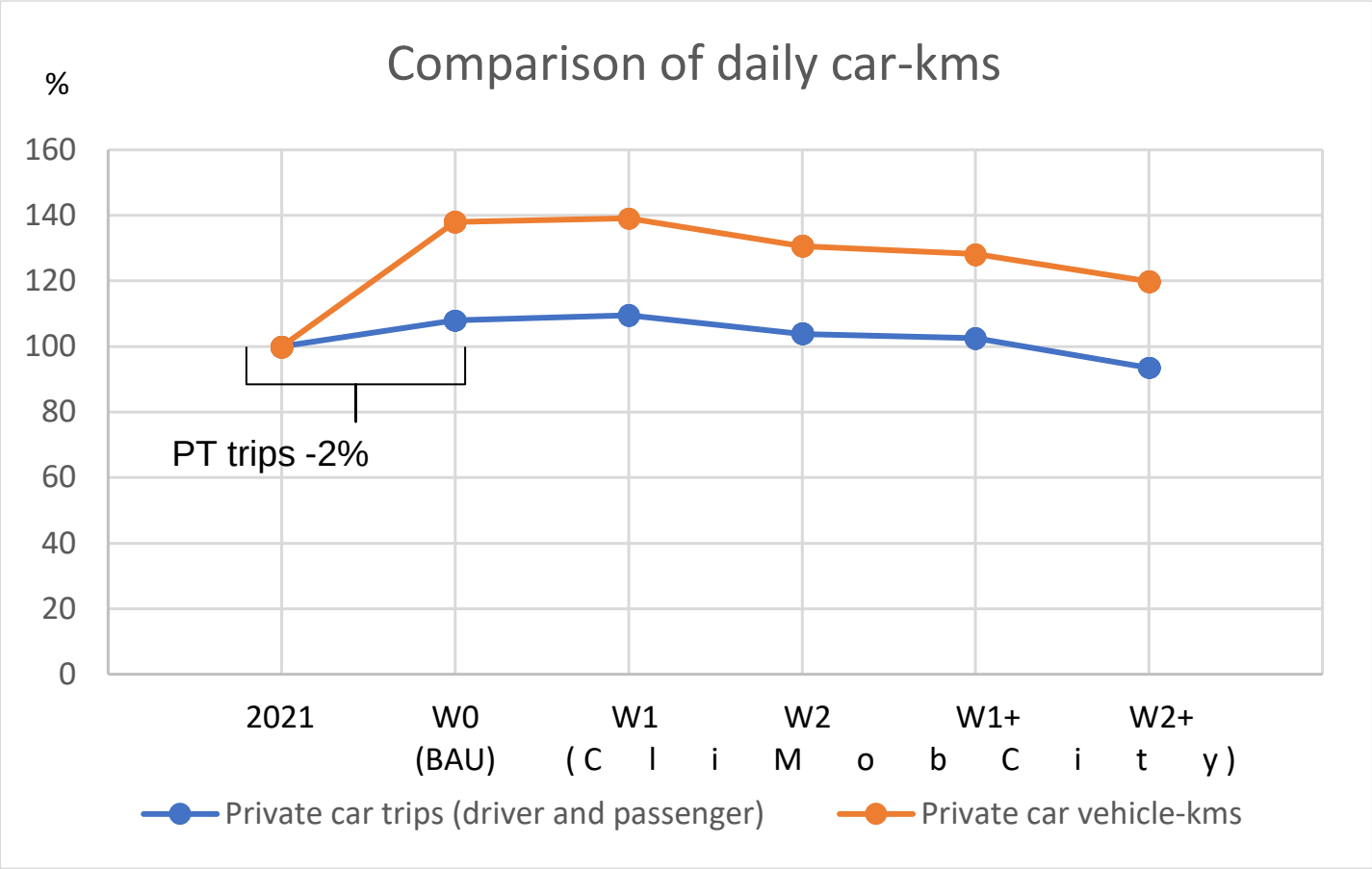
Notion regarding measure packages

- **The measures in the CliMobCity packages are additional to the measures in the BAU packages …**

- **… unless – for single measures – the contrary is stated. Example such exception:**
  - the cancellation of the suburban ring road in Bydgoszcz' measure package W2 (and W2+)
  - the alternative urbanisation of Bydgoszcz in W2 (and W2+)

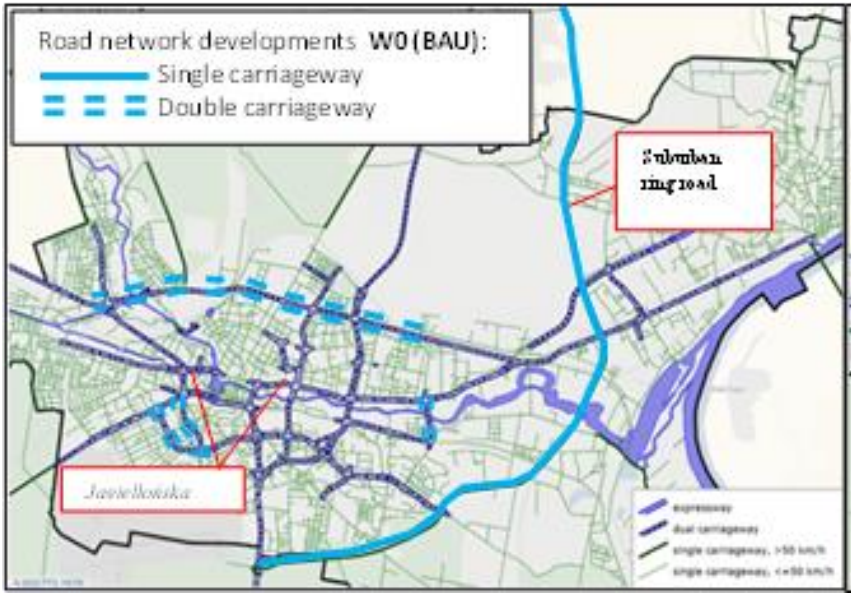
Bydgoszcz

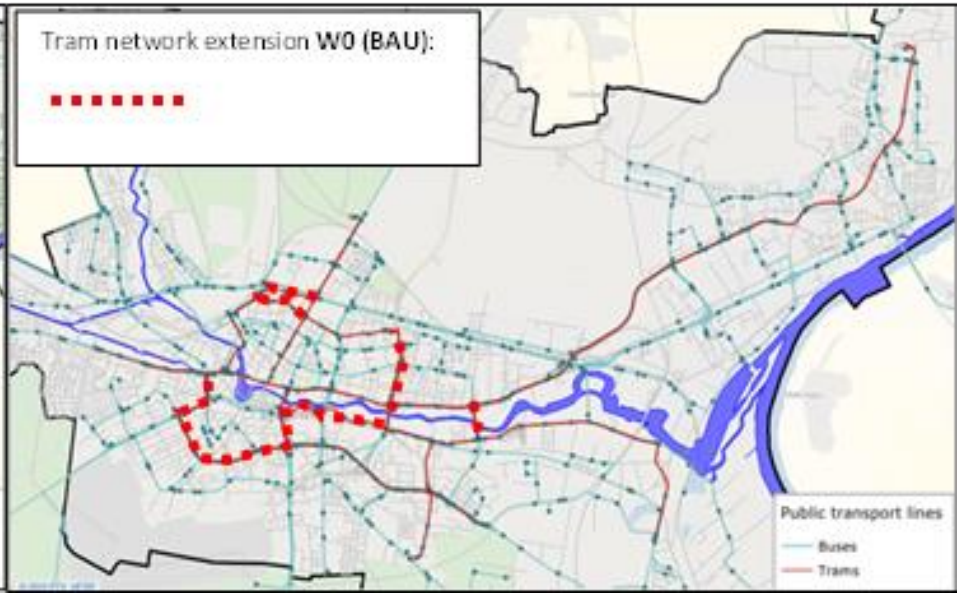
Bydgoszcz
Comparison of private car-kms



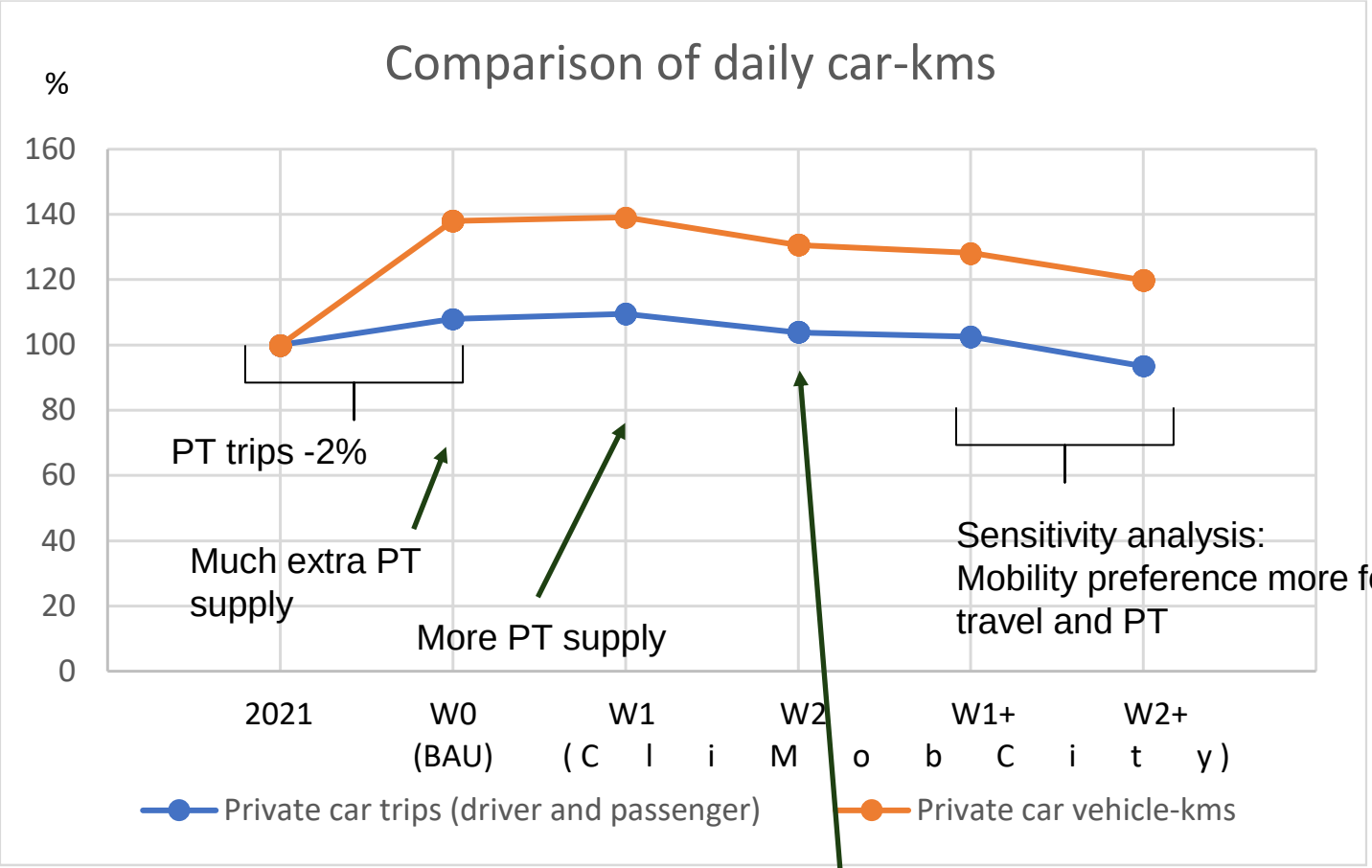
HGV-kms:
2021 – BAU: + 31%
2021 – CliMobCity: also about + 30%

Recalling: measures in W0 (BAU)





Bydgoszcz
Comparison of private car-kms



HGV-kms:
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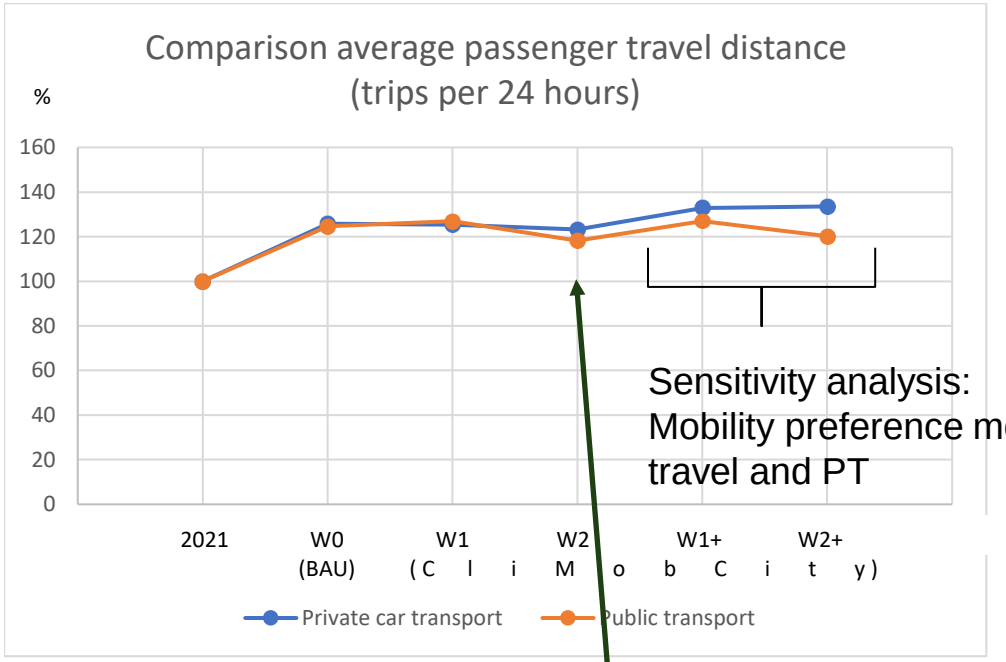
Reurbanisation
Cancel suburban ringroad
Higher frequency PT central area

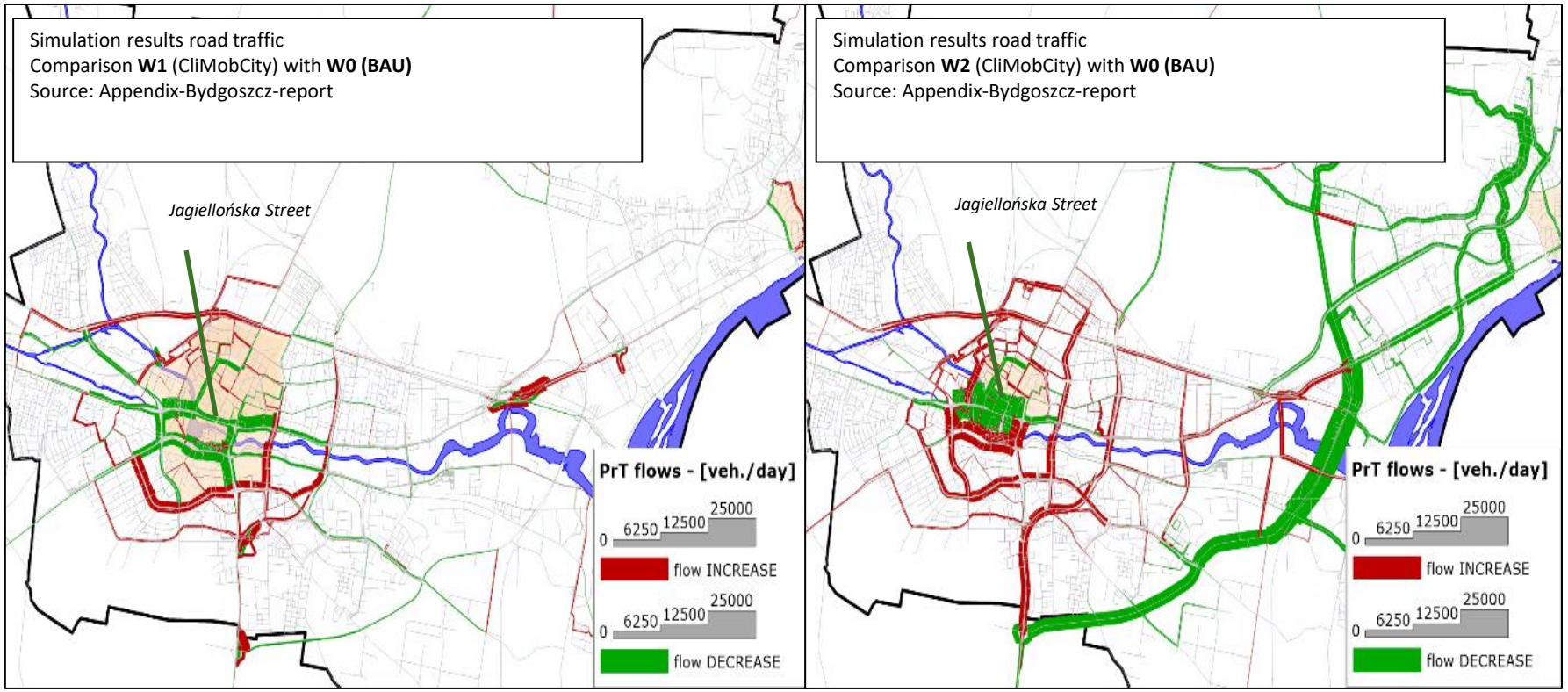
Bydgoszcz
Comparison of private car-kms



Sensitivity analysis:
Mobility preference more for active travel and PT

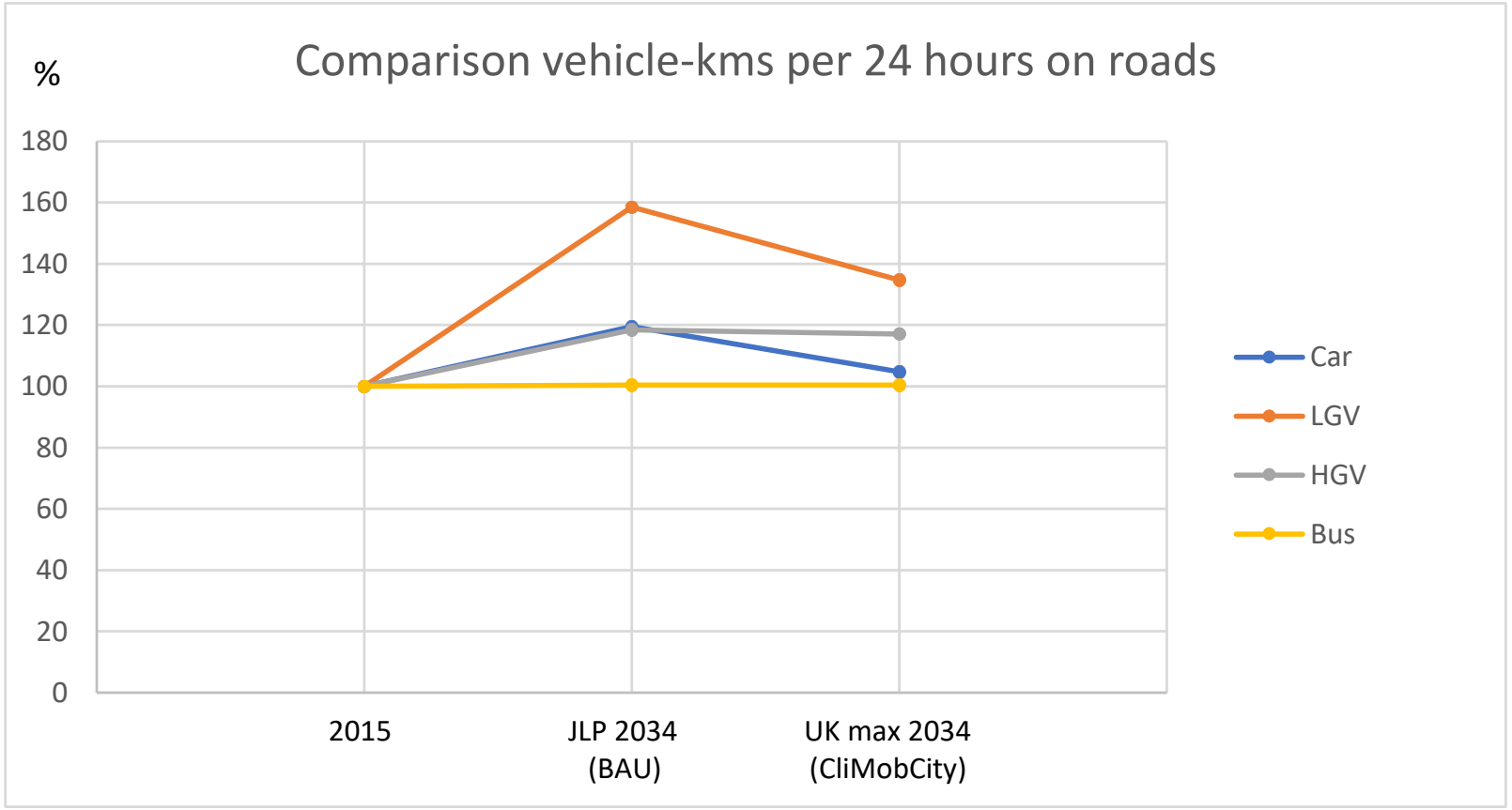
Reurbanisation
Cancel suburban ringroad
Higher frequency PT central area

Bydgoszcz
Comparison of traffic intensities

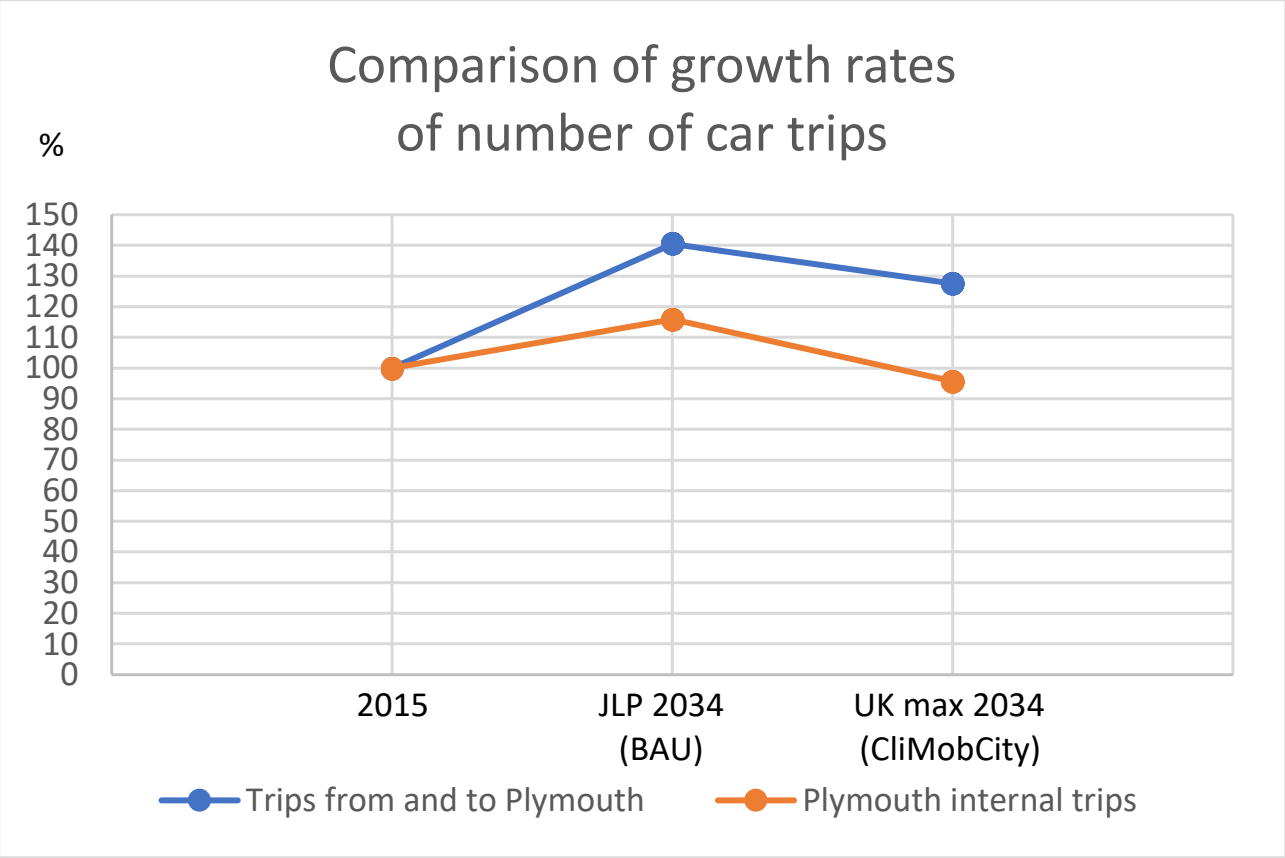


Plymouth

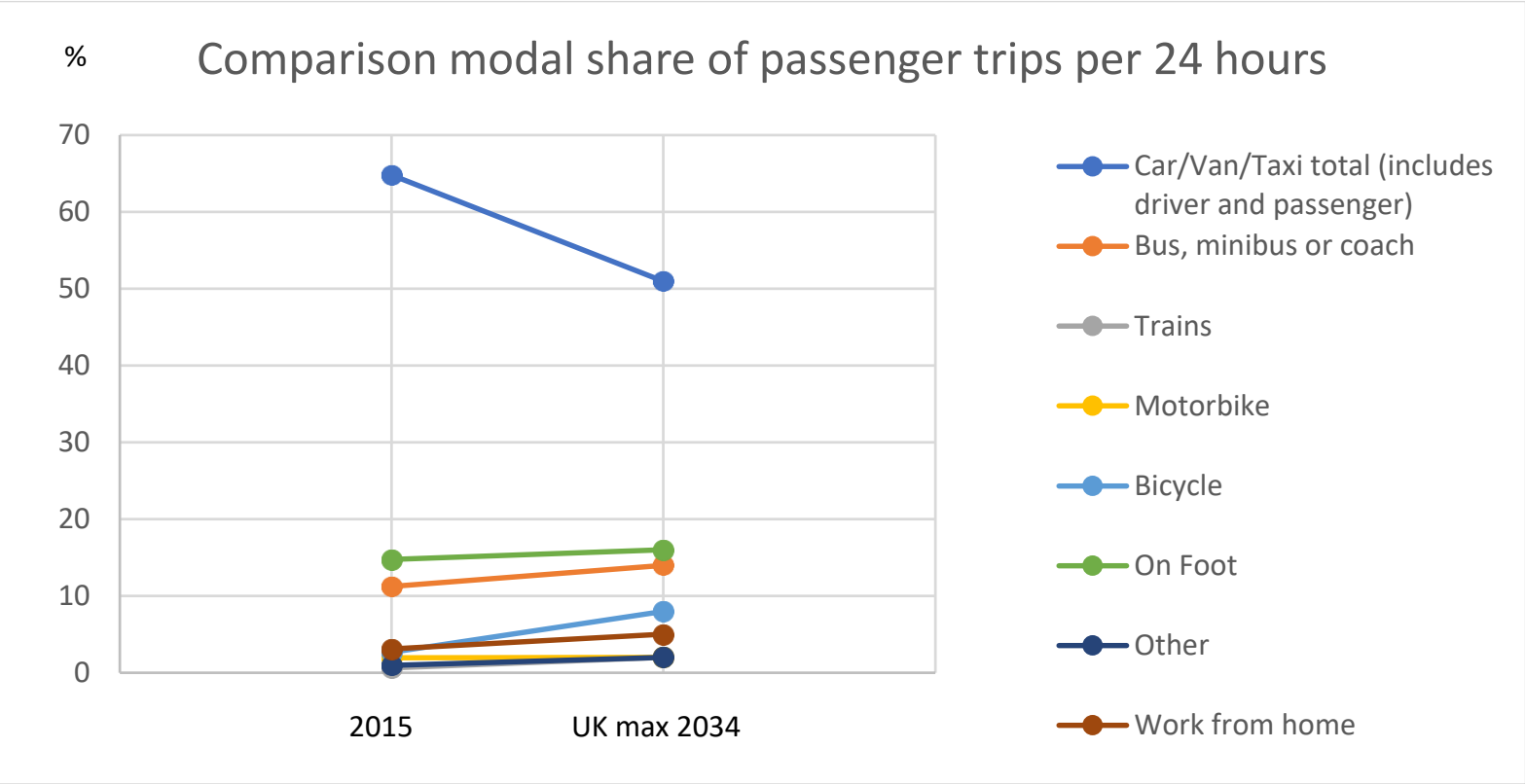
Plymouth
Comparison of vehicle-kms



Plymouth
Backgrounds to vehicle-kms

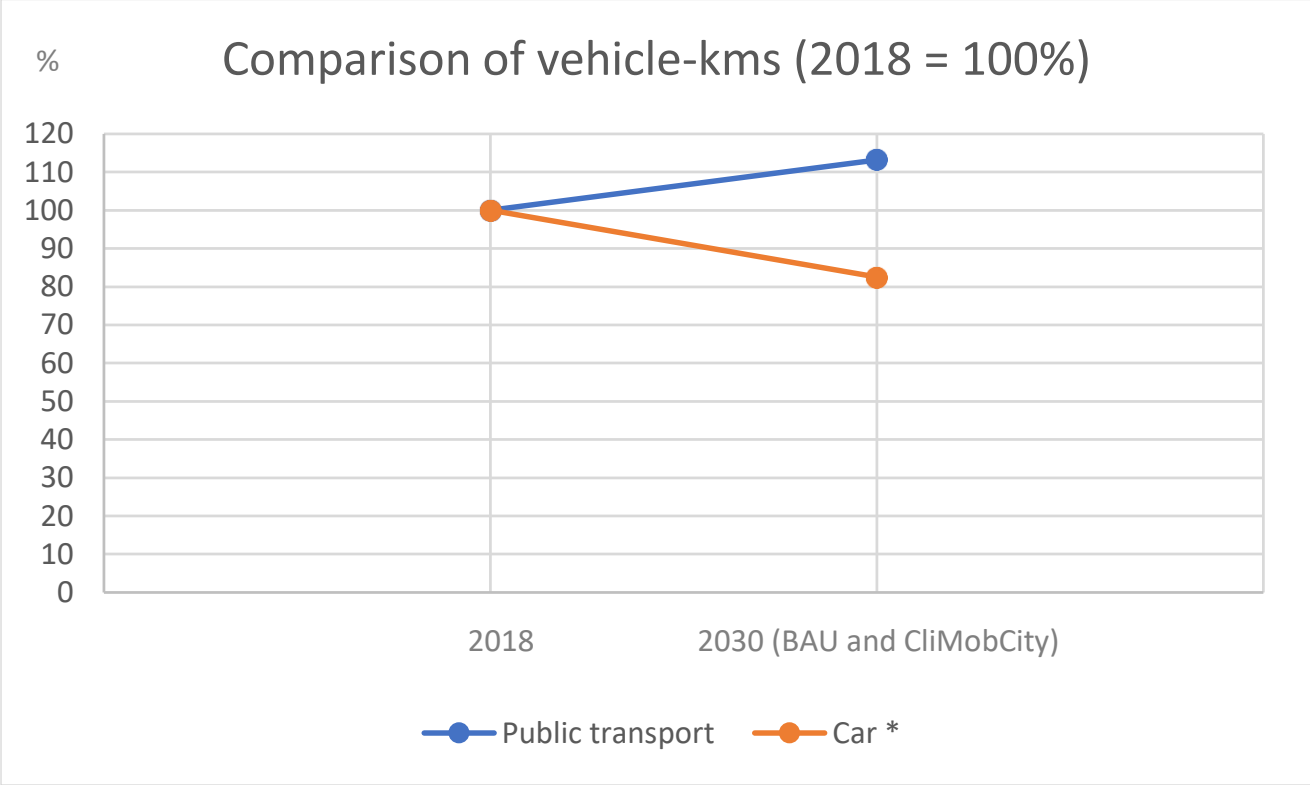


Plymouth
Backgrounds to vehicle-kms



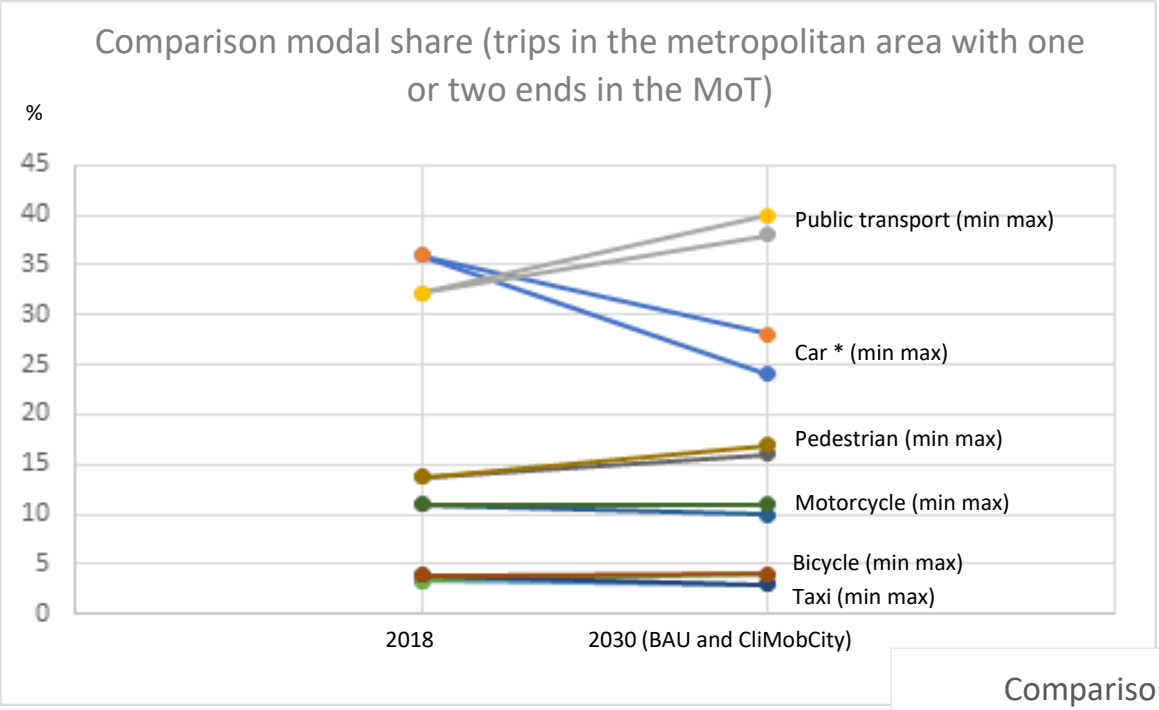
Thessaloniki

Thessaloniki
Comparison of vehicle-kms

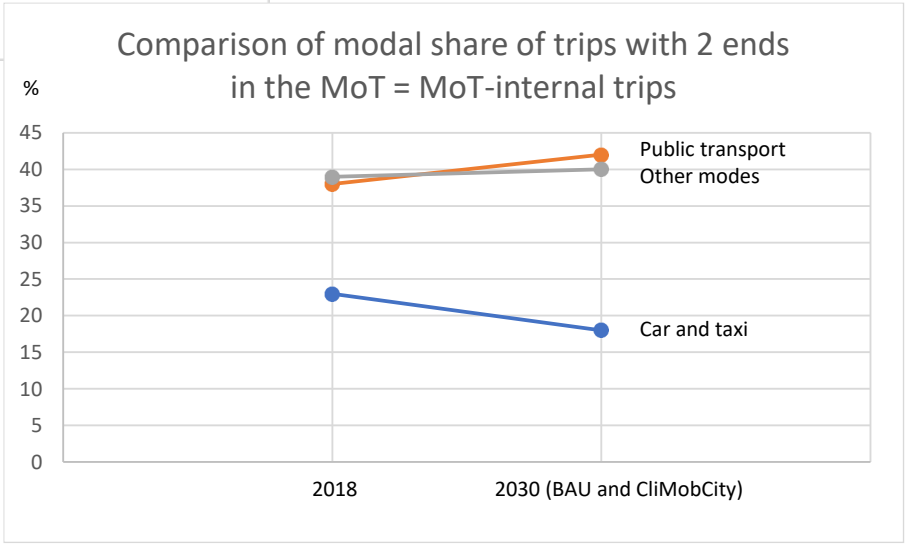


Development PT passenger-km = +63%

Thessaloniki
Backgrounds to vehicle-kms



* Private and – in 2030 – also shared electric car.
Source data: *Appendix-Thessaloniki-report*, Table 7.



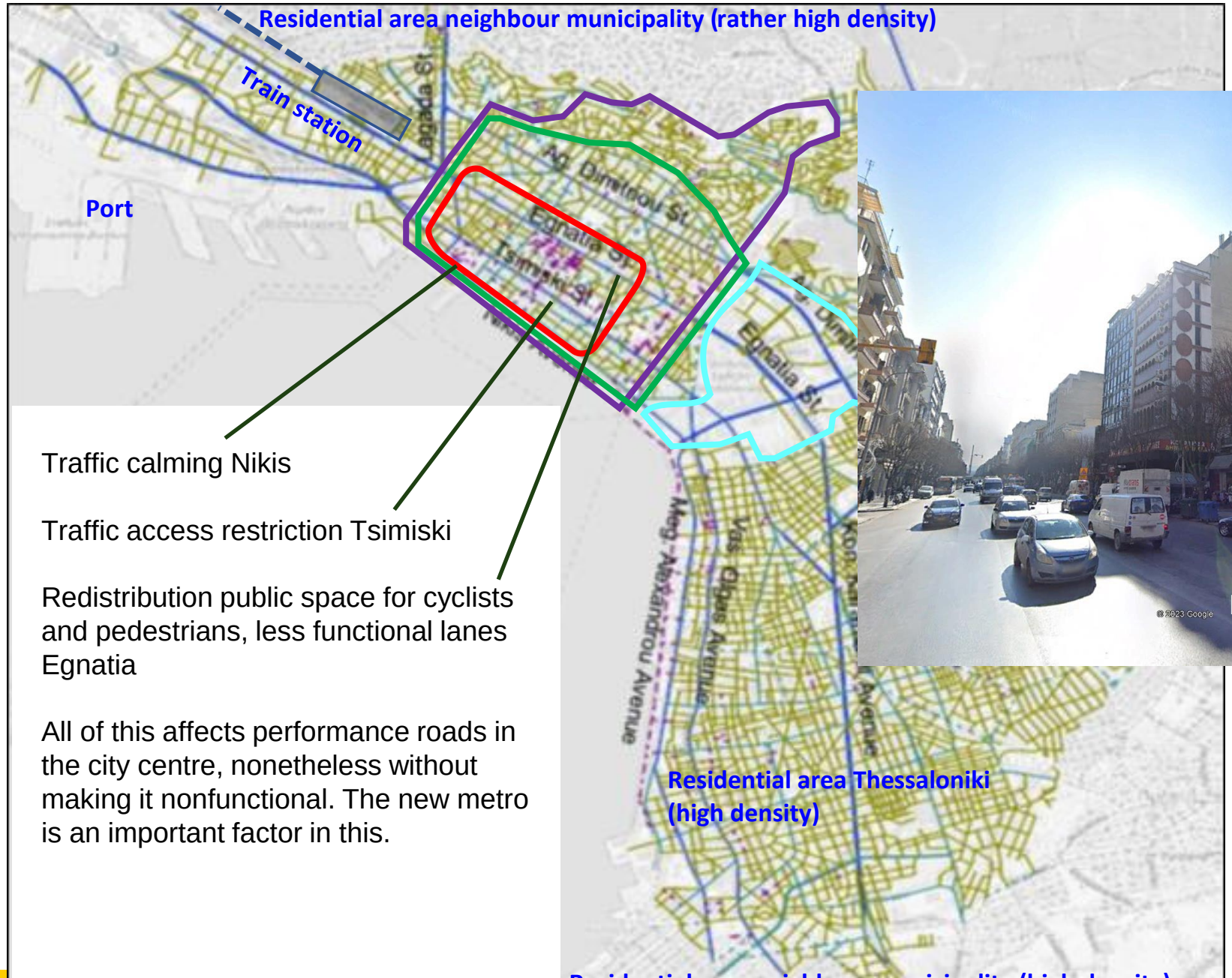
Thessaloniki
Backgrounds to vehicle-kms

Average distance public transport increases
from 7km (2018) to 10km (2030)

Accompanied by

Average distance car declines
from 8.1km (2018) to 7.8km (2030)

Thessaloniki backgrounds



Traffic calming Nikis

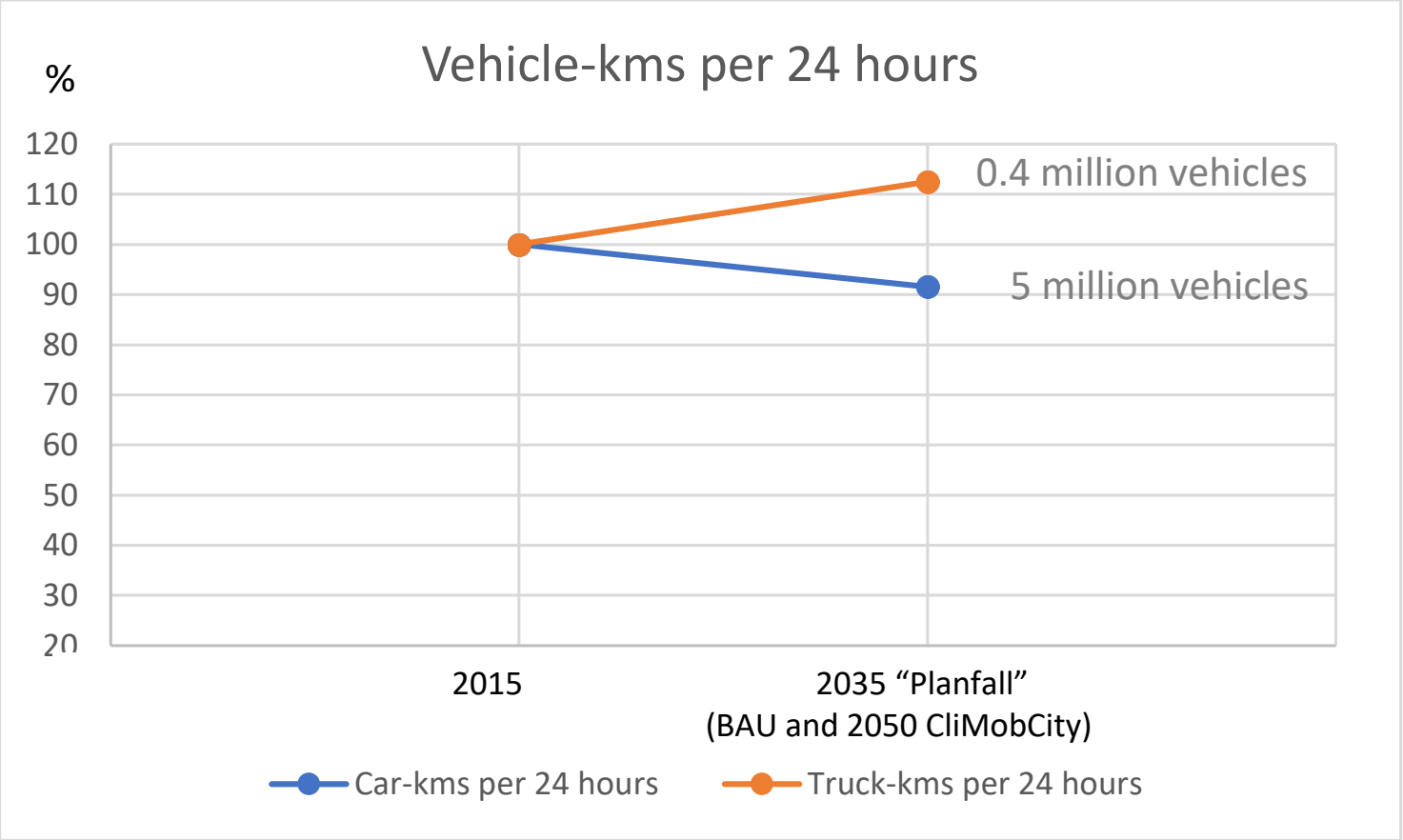
Traffic access restriction Tsimiski

Redistribution public space for cyclists and pedestrians, less functional lanes Egnatia

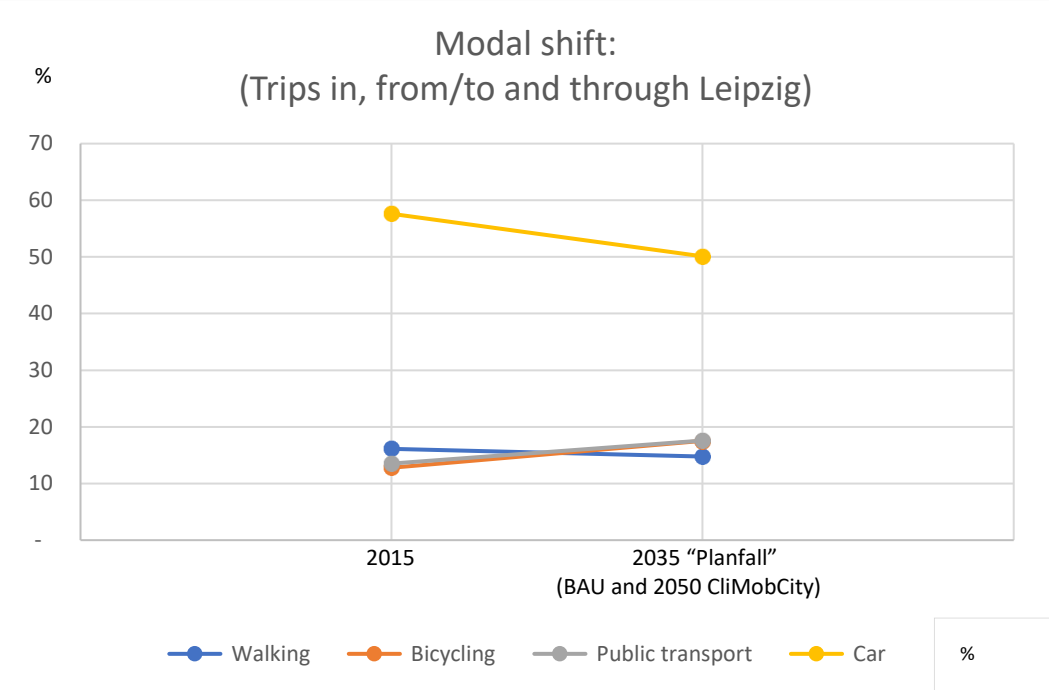
All of this affects performance roads in the city centre, nonetheless without making it nonfunctional. The new metro is an important factor in this.

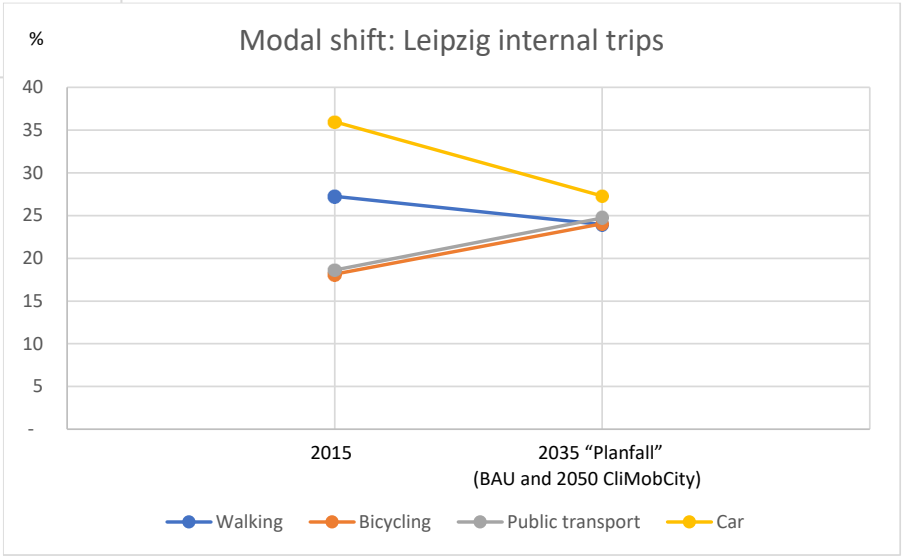
Leipzig

Leipzig
Comparison of vehicle-kms



Leipzig
Backgrounds to vehicle-kms





Leipzig
Backgrounds to road vehicle-kms

Car trips in, from and to Leipzig

CAR TRIPS IN, FROM AND TO LEIPZIG	Absolute 2035	Index 2015 -> 2035	
Number of passenger trips in cars	1.011.082	95	%
Car-km total network (including non-municipal area)	9.493.068	97	%
Average car distance total (km)	14	114	%
Car-km within Leipzig	4.728.115	92	%
Average car distance within Leipzig (km)	7	107	%

From/to: share increases from
22% (2015) to 25% (2035)

Concluding Summary

From measures to mobility effects

	Measures	Change car-kms (%). From base year to BAU	Measures	Change car-kms (%). From base year to CliMobCity car-kms (%)
Bydgoszcz	• Road widening and new links • New tram infra links and service lines	+38	W2: • Re-urbanisation • Frequency PT central area • Cancel suburban ring road • Limitation through traffic centre	+31
Plymouth	• PT infra improvements • Road junctions, roundabouts and links	+19	• Bus infra improvements • P+R bus Sherford • Tavistock rail • Hubs and electric charging	+5 *
Thessaloniki	• New metro • Suburban train • Active travel infra development	-18	• Shared electric car nodes (small scale) • Public bus electrification	-18
Leipzig	• Road infra links and widening • Regional train infra • Tram infra links and services	-8	• Accelerate electric charging points • Hub network with shared vehicles • Public bus electrification	-8

* Based on expert calculations without demand modelling.

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Thank you!