

# Key issues in Milan's mobility

## Under a local/metropolitan lens

BERIA Paolo

Milan, 27/05/2026



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- 01** Introduction: Milan metropolitan mobility
- 02** ATM: proud and troubles
- 03** Fight for space: cycling, parking, traffic calming and road design
- 04** The unexpected success: road pricing
- 05** Immaterial infrastructure: ticketing and integration
- 06** Local/Regional challenges

01 Introduction: Milan metropolitan mobility

# Introduction: Milan metropolitan mobility

## Modal share

A "small" city, with **good modal share:**

Within Milano

- 23% car
- 28% walking
- 33% public transport

To Milano

- 46% car
- 13% walking
- 26% public transport

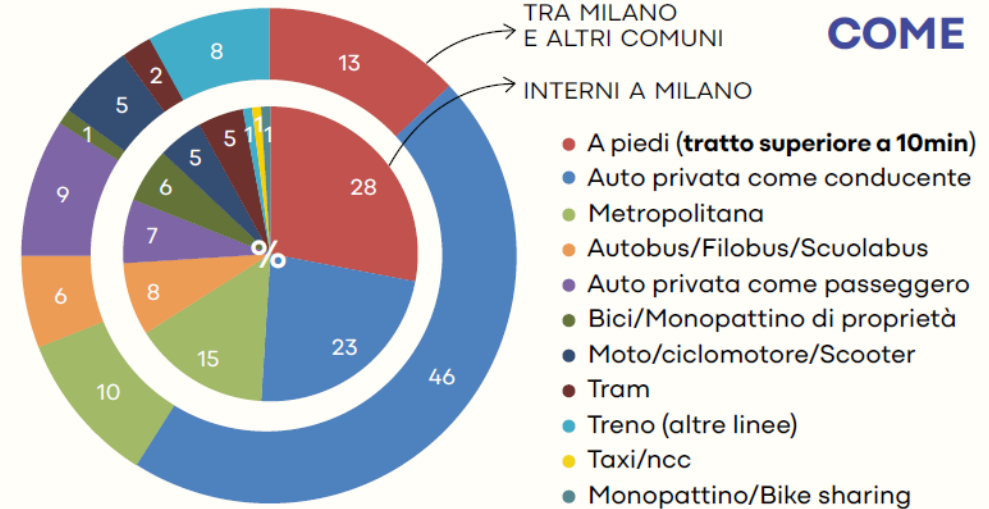
**A city potentially suitable for active mobility** (small & functions dense)

## GLI SPOSTAMENTI A MILANO: DOVE, COME E PERCHÉ? <sup>[1]</sup>

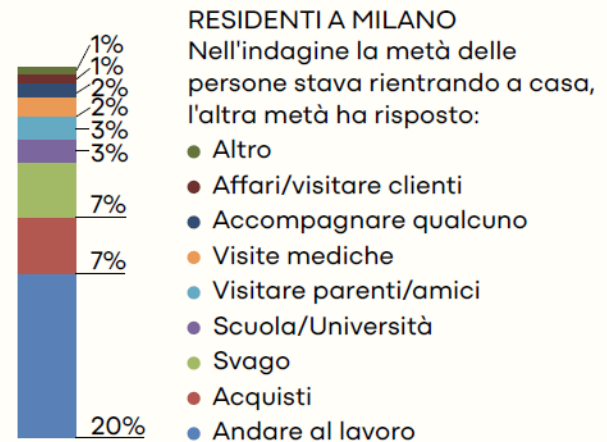


**64%**  
 (QUASI DUE TERZI) DEGLI SPOSTAMENTI A MILANO SONO SOTTO I 5KM, UNA DISTANZA PERCORRIBILE A PIEDI O IN BICICLETTA

**l'80%**  
 DEGLI SPOSTAMENTI CHE PARTONO DA MILANO SONO SOTTO I 10KM



## PERCHÉ



## 01 Introduction: Milan metropolitan mobility

# Introduction: Milan metropolitan mobility

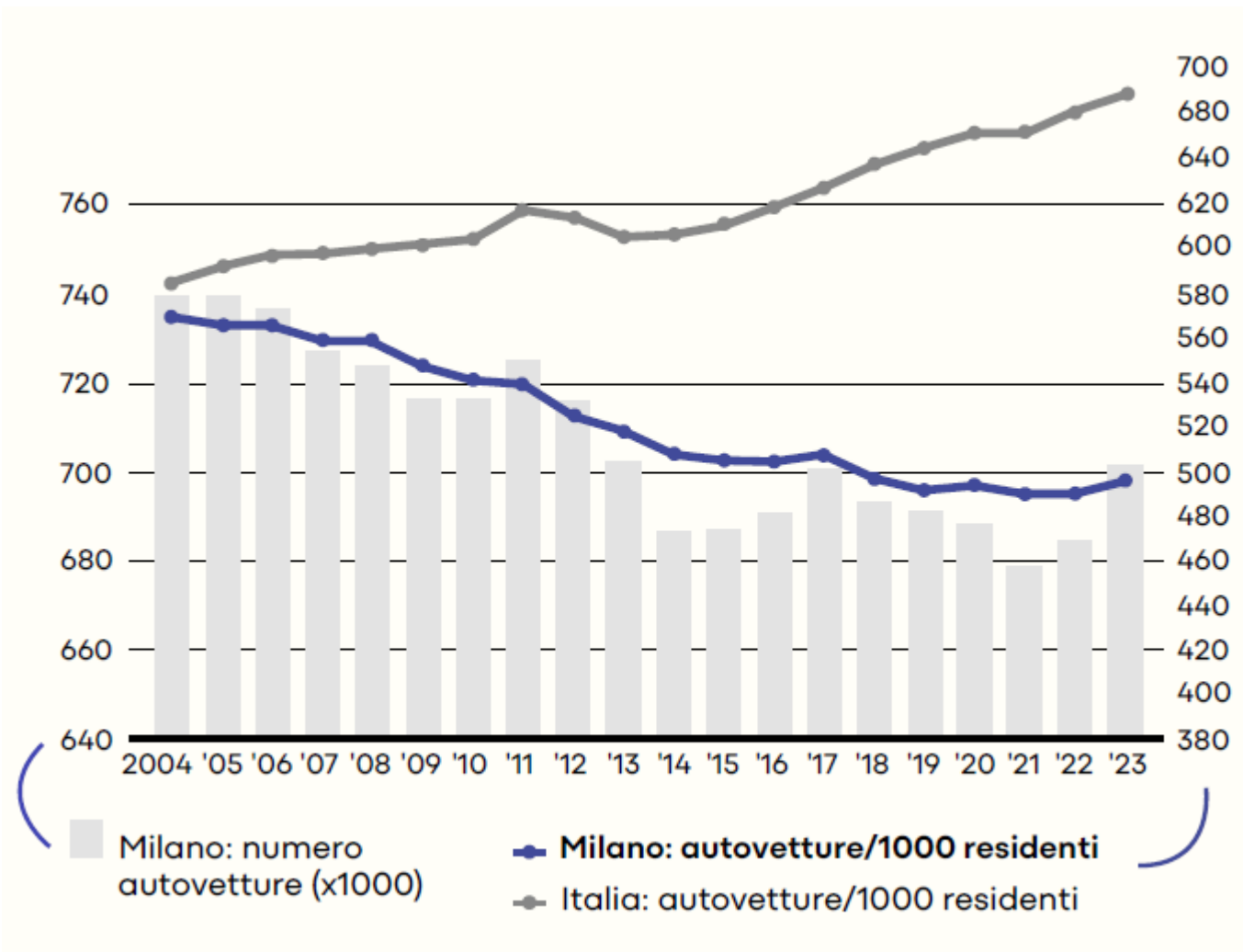
## Motorization rate

High but **decreasing** motorization rate!

→ *policies work*

... But car number **increased** 2021-2023!

→ *Still a successful city*

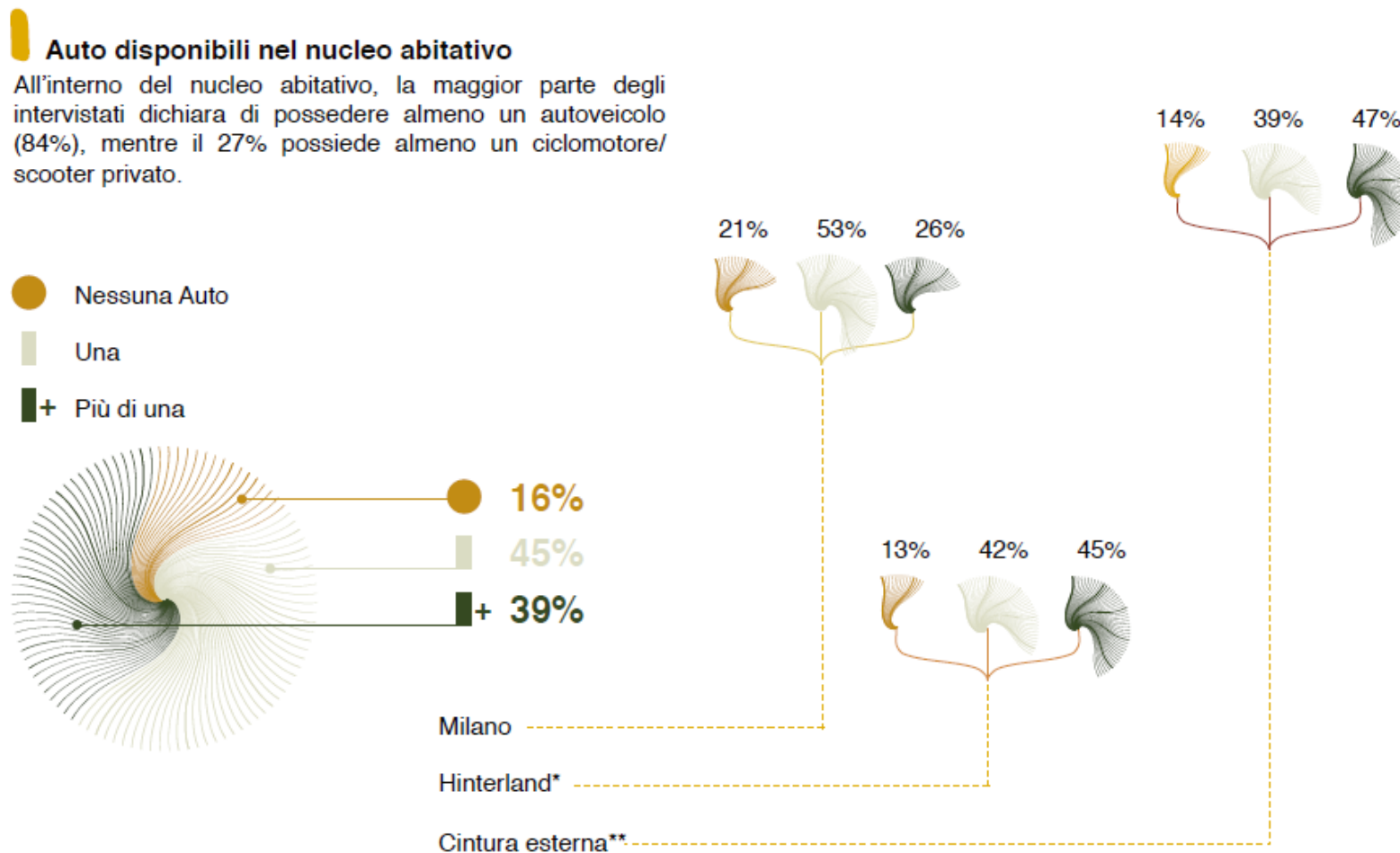


01 Introduction: Milan metropolitan mobility

# Introduction: Milan metropolitan mobility

## Motorization rate

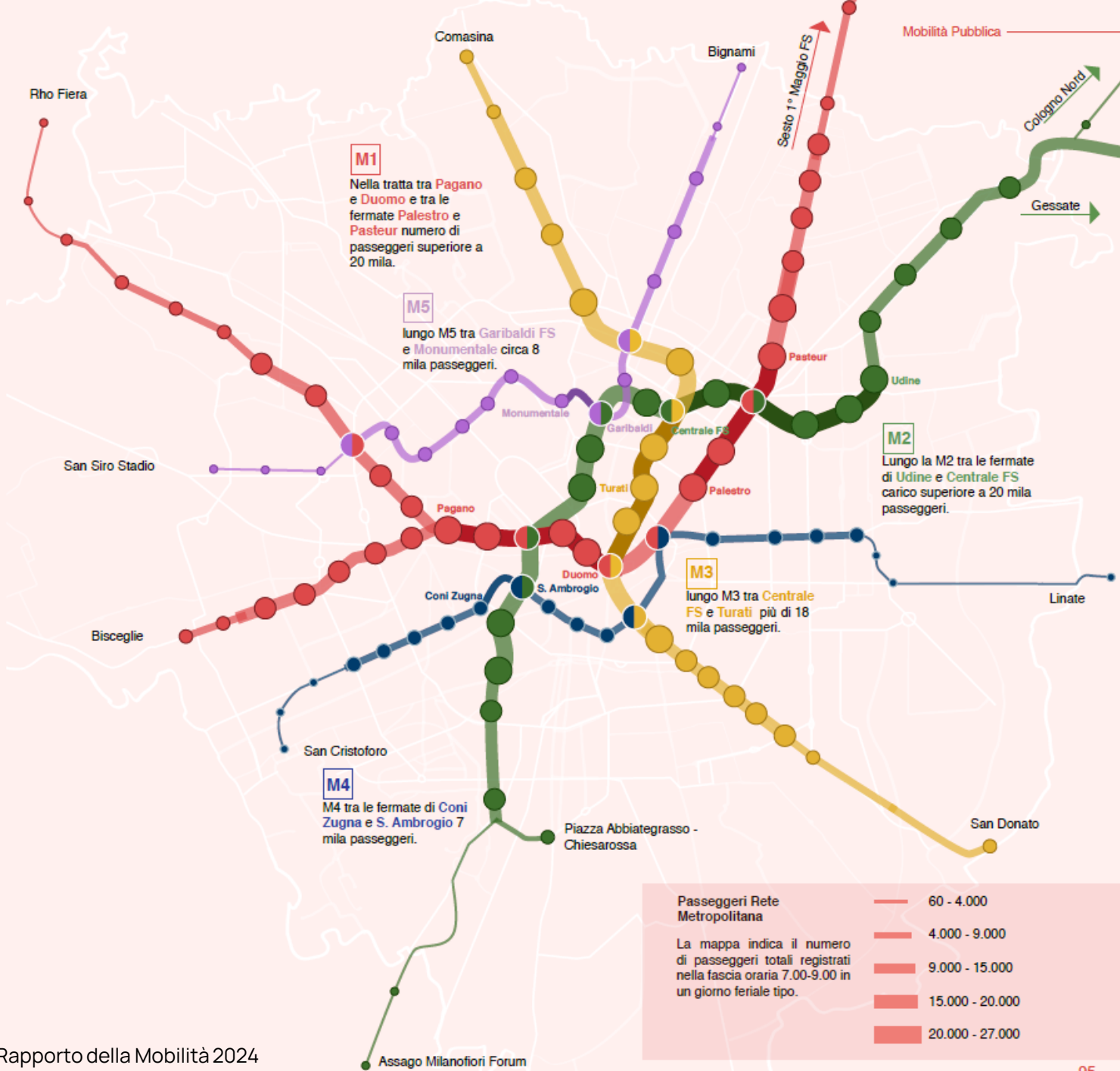
**Cars per household** are much lower in Milan than anywhere else.  
→ *Can be lived without a car*



01 Introduction: Milan metropolitan mobility

# Introduction: Milan metropolitan

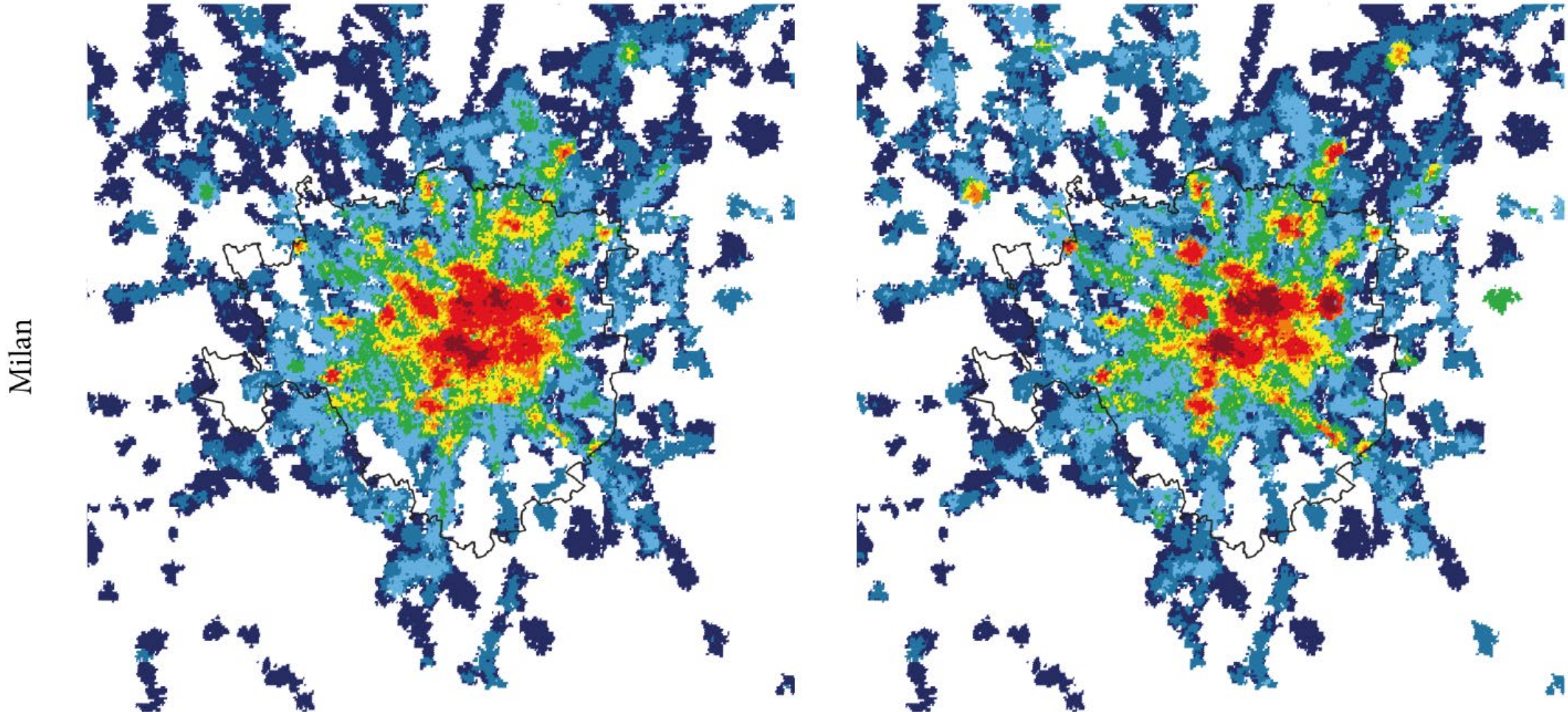
## Metro usage



01 Introduction: Milan metropolitan mobility

# Accessibility

## PTAL and SFPTAL



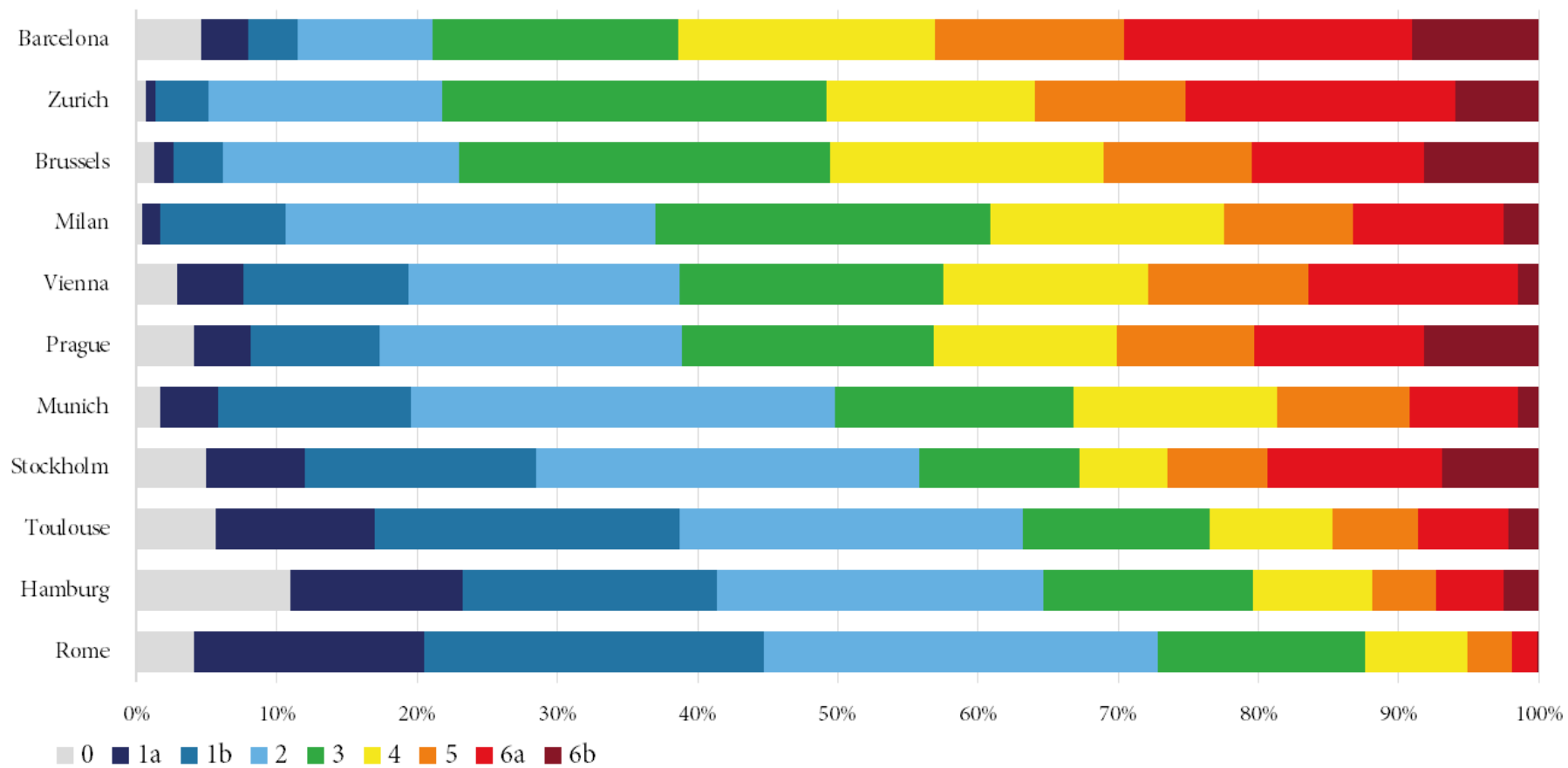
Battilocchi et al. (mimeo). Comparing accessibility to public transport in large European cities. A step beyond the PTAL indicator

01 Introduction: Milan metropolitan mobility

# Accessibility

## PTAL and SFPTAL

Share of population per SFPTAL score



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**02 ATM: proud and troubles**

## A public company to be proud of...

**Public company, 100%** owned by Milan city

ATM proved quite **effective** in managing public transport and is considered a national benchmark for quality and reliability.

**Public transport share** is among the highest in Italy, thanks to a reliable system that allows families to avoid using (and owning) cars.

Access to metro is considered as unavoidable for large projects.

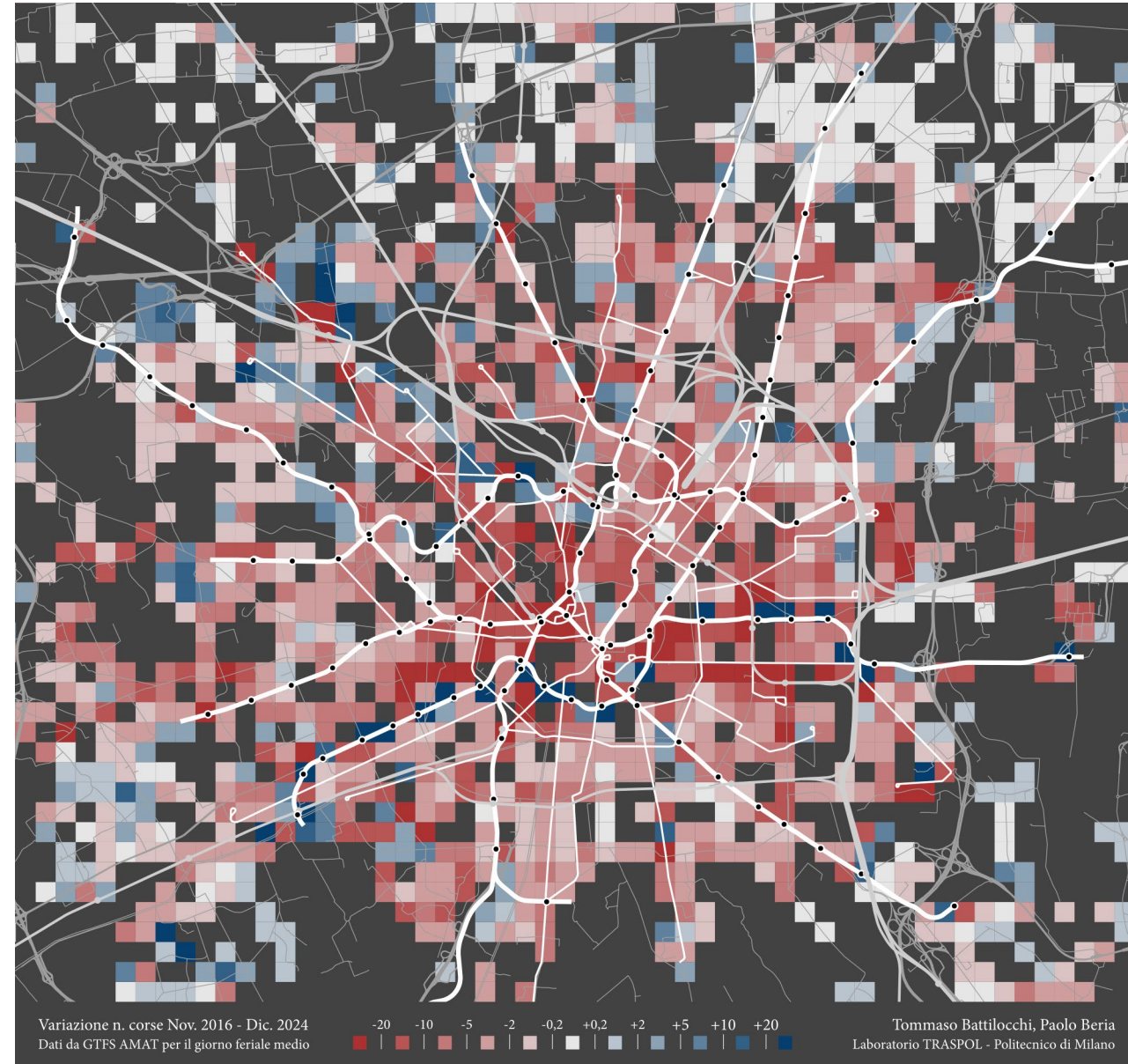


**02 ATM: proud and troubles****... but with dark clouds in the horizon****Low productivity of surface transport****Public company, 100% owned by Milan city**

- No competitive tendering
- No efficiency, high production costs
- High level of labour conflict

**Huge productivity problem: surface network is extremely slow (<12 km/h)**

- Low performance for customers, unreliable
- Everyone wants a metro stop!
- Less demand, emptier lines
- High costs
- Lack of personnel



## 02 ATM: proud and troubles

# ... but with dark clouds in the horizon

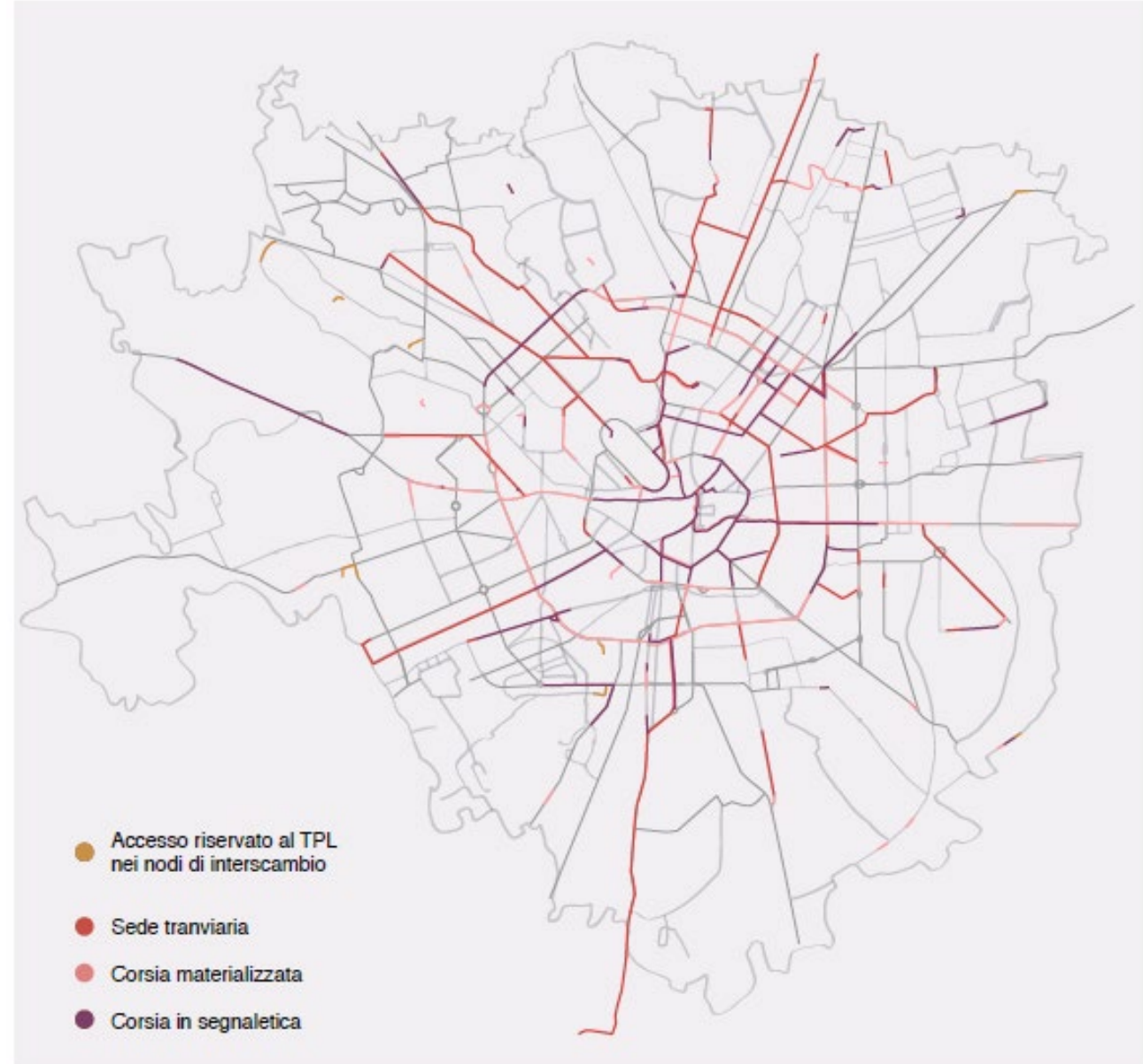
## Low productivity of surface transport

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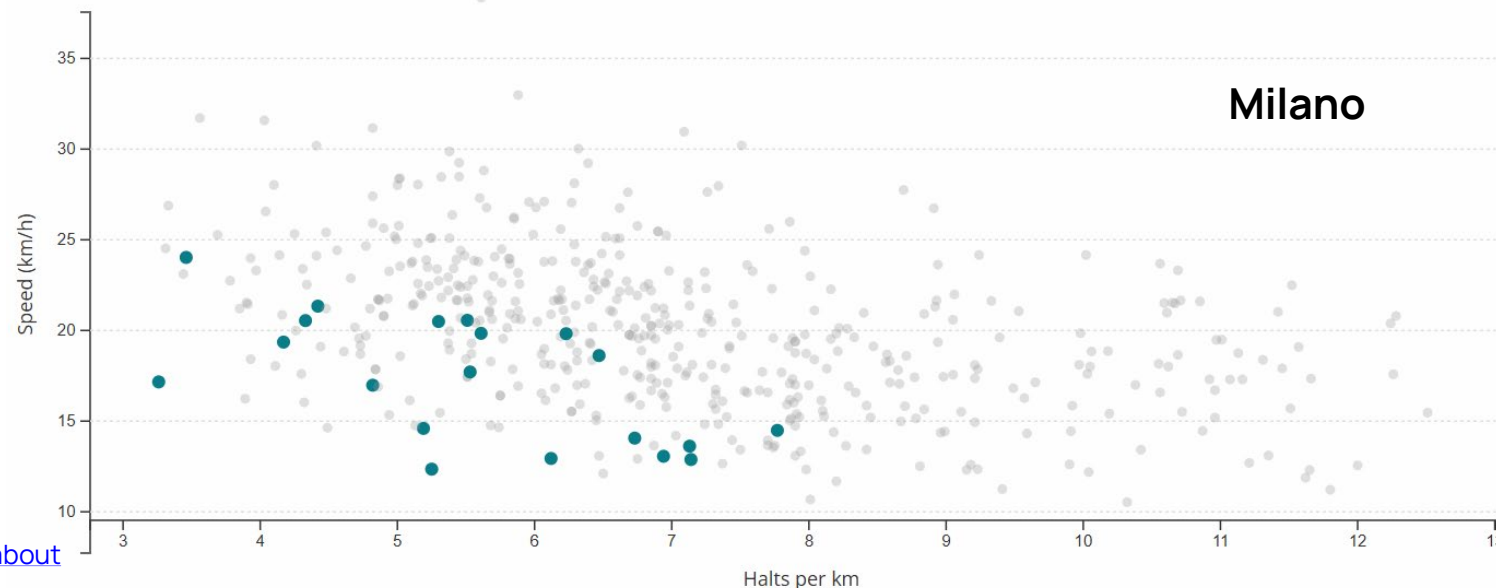
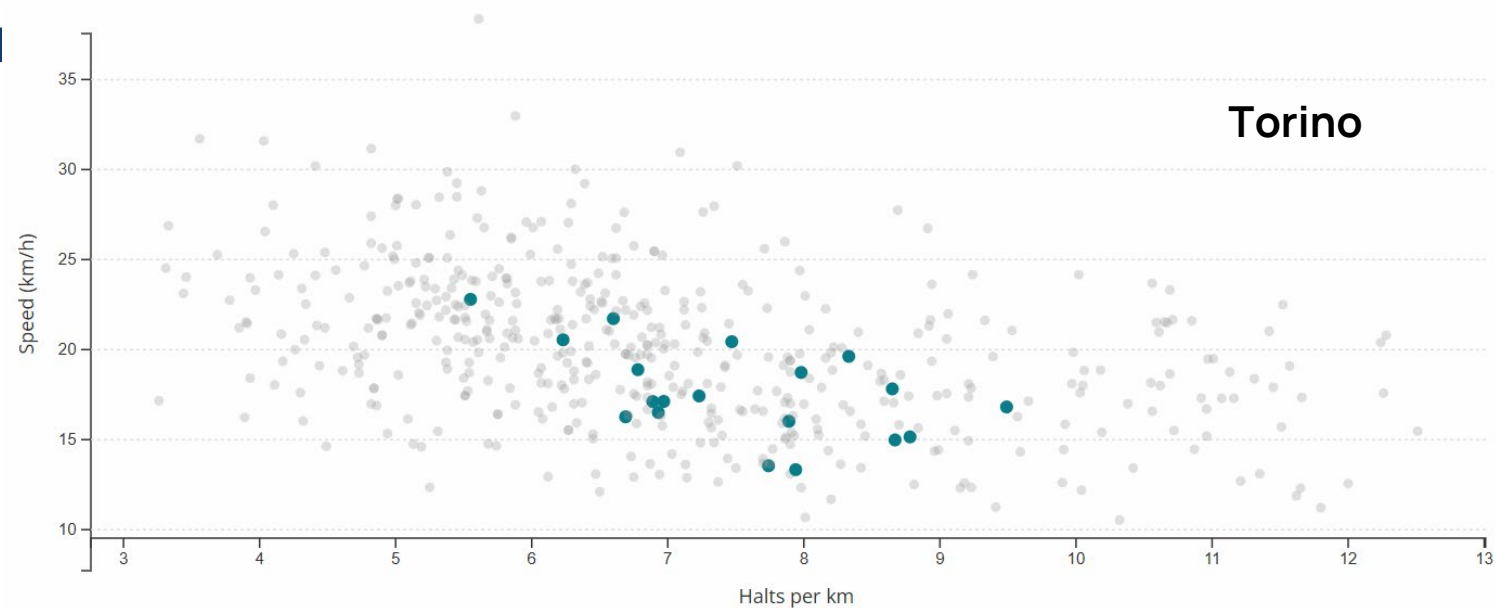
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**02 ATM: proud and troubles**

# ... but with dark clouds in the horizon

## Project financing is a huge burden for the city

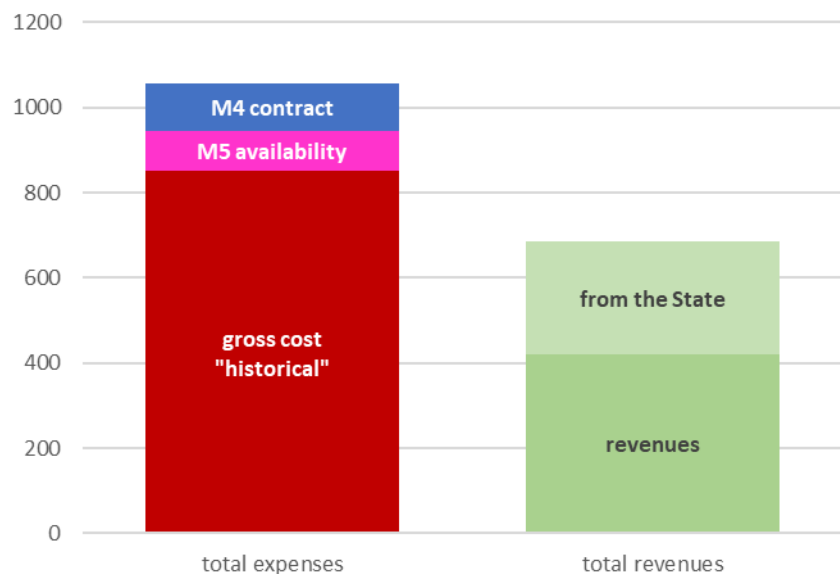
**Revenues/cost ratio is historically quite good:**

2012: 51,7%

2019 (with M5 and new STIBM): 62,3%

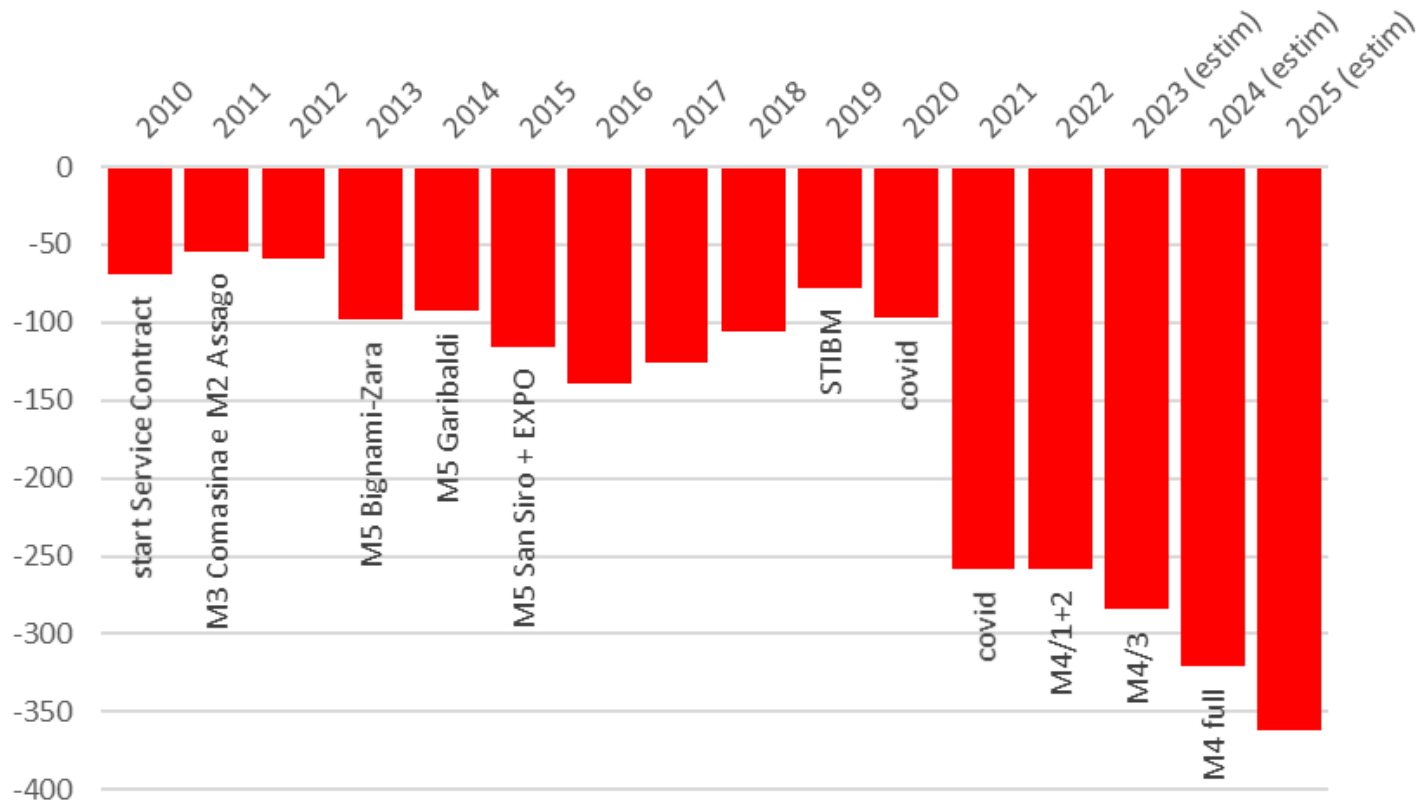
**...until post-covid and M4 project financing**

2024: 47,1%



Ok, the share is still high, but... **what about the financial burden?**

→ Project financing cost and **the city** is paying for them!



### 03 Fight for space: cycling, parking, traffic calming and road design

## Conflict for road space

More than elsewhere, in Milan the **conflict for road space is harsh.**

Medieval urban structure, impetuous growth after WWII,  
“small” admin borders → limited expansion.  
**But, also, a structural lack of regulation.**

- Cars
- Parking
- Cycling
- Walking – quality pedestrian space
- Green
- Commerce



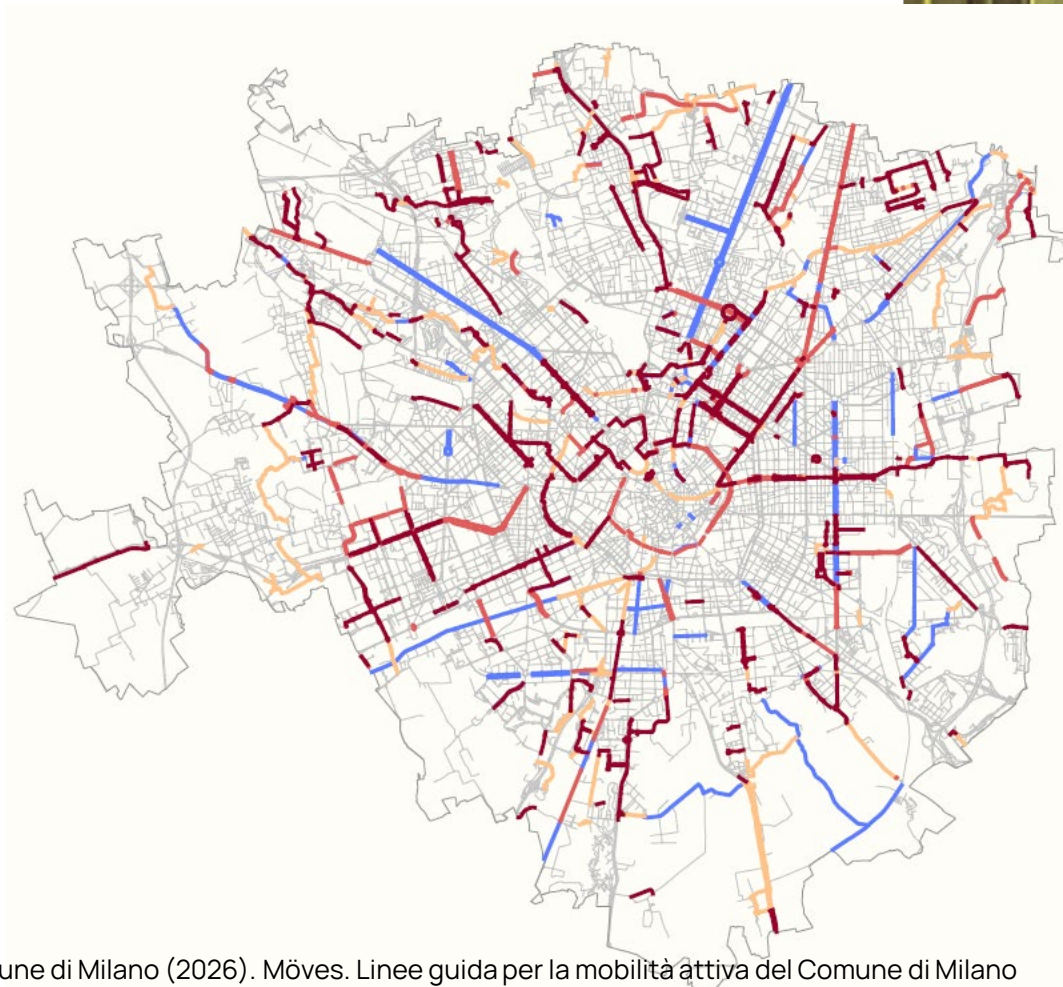
03 Fight for space: cycling, parking, traffic calming and road design

# Conflict for road space

## Cycling

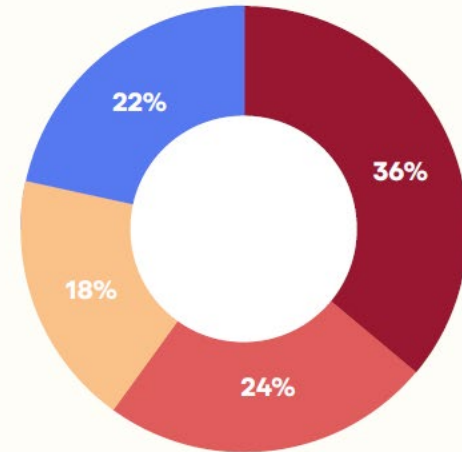
- Timid cycling plans, limited investments
- Scarce spatial coordination & continuity
- Very contested

→ ... 2026: a new strategy ("Möves")!



MAPPA DELLO STATO DI FATTO DEGLI ITINERARI CICLABILI

- Ciclabile sede propria
- Ciclabile in segnaletica
- Promiscuo pedoni
- Promiscuo veicoli



Comune di Milano (2026). Möves. Linee guida per la mobilità attiva del Comune di Milano

### Vittorio Feltri: «I ciclisti? Mi piacciono solo quando vengono investiti». Il Pd: «C'è un limite alla decenza, si dimetta»

di Chiara Evangelista

Il direttore editoriale de Il Giornale: «Mi danno fastidio le piste ciclabili. E il caro affitti non m'interessa: io vivo nella mia casa». I dem: «Feltri si scusi con le famiglie delle vittime della strada»



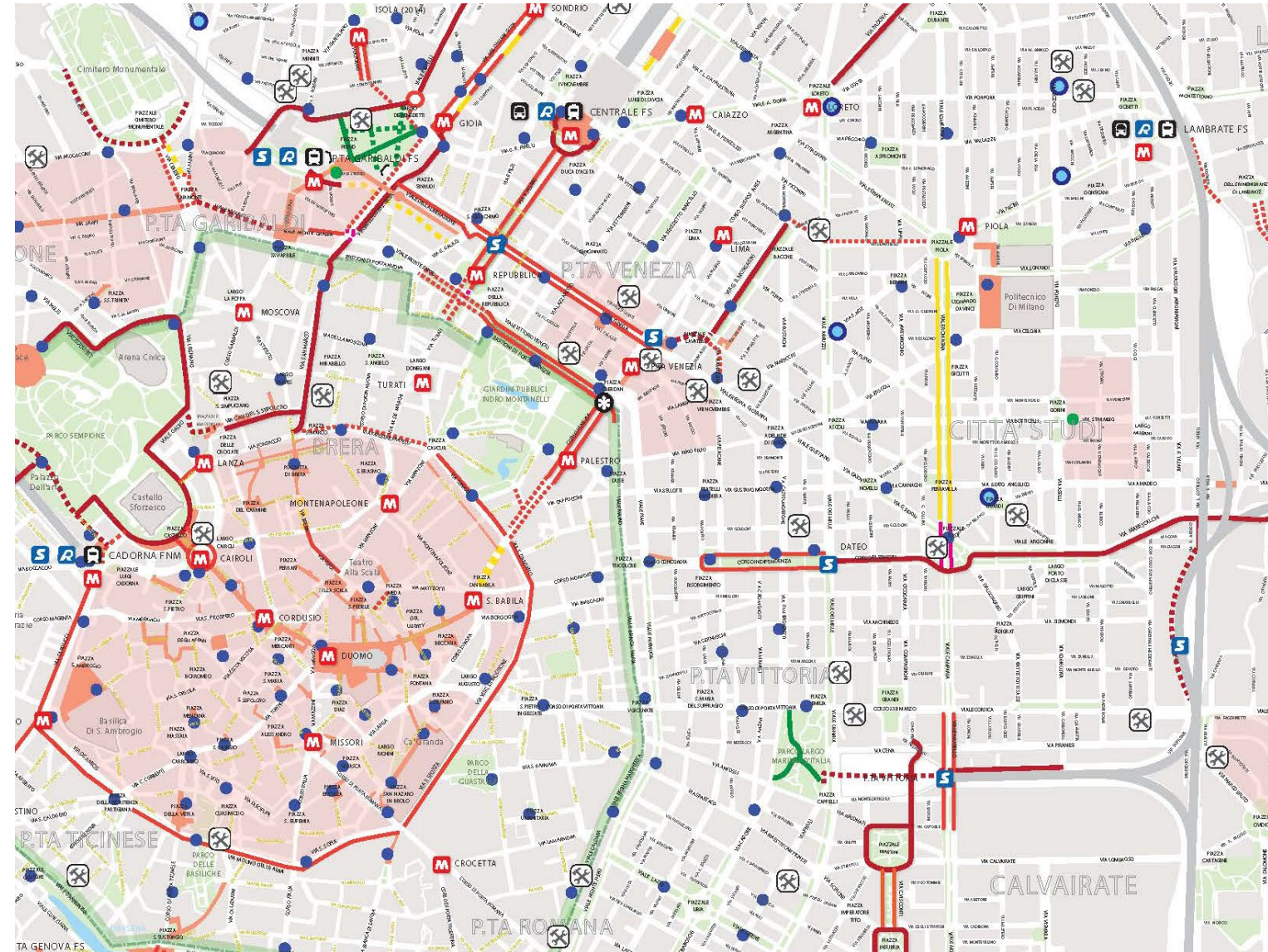
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# Conflict for road space

## Cycling

- Timid cycling plans, limited investments
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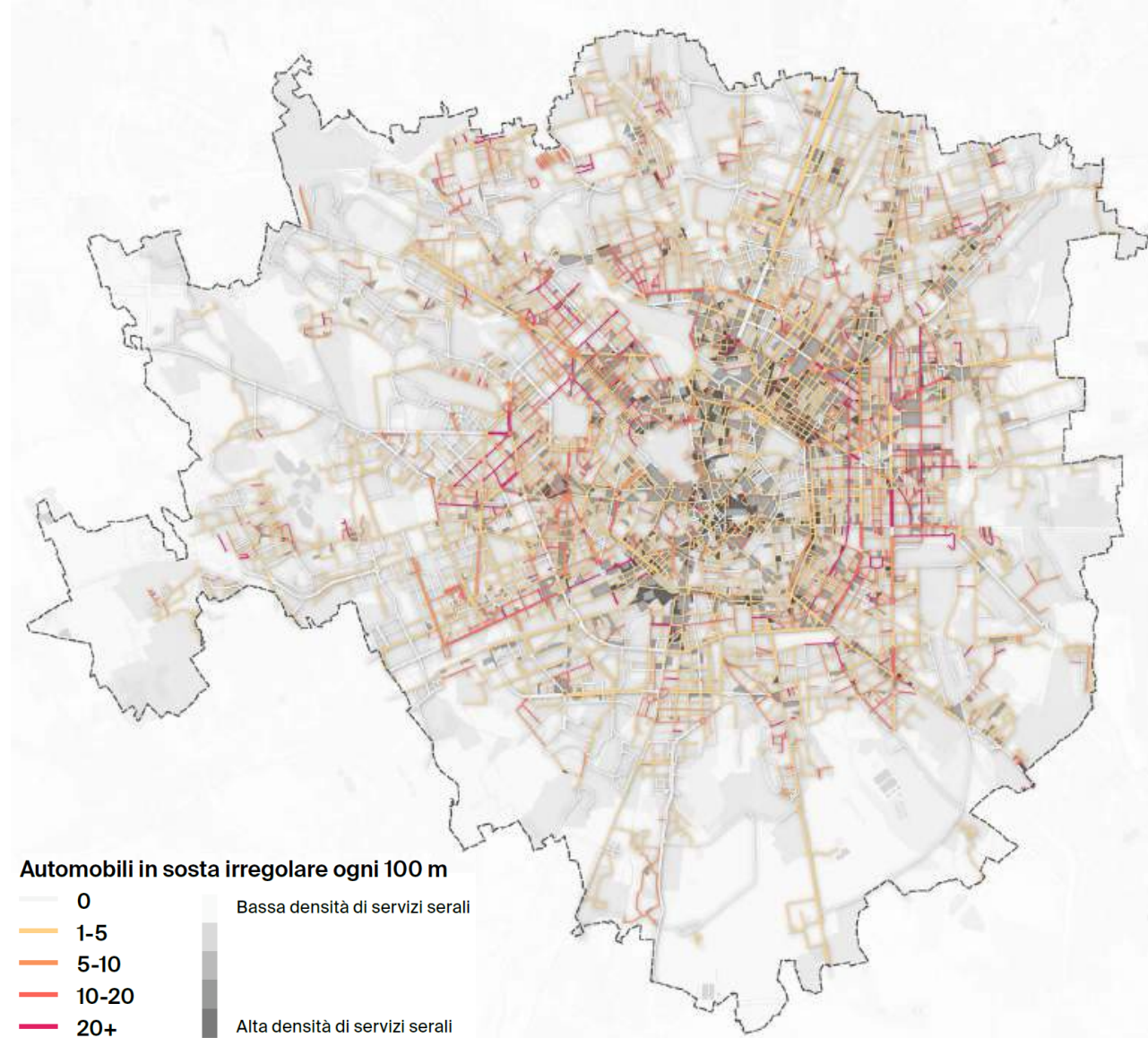
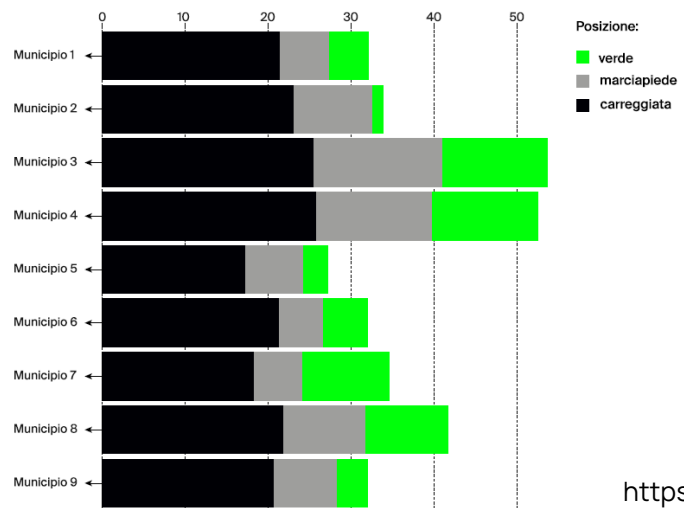
03 Fight for space: cycling, parking, traffic calming and road design

# Conflict for road space

## Parking

- No recent parking plan (and no more at stake?)
- Stop to underground parking since >10y, assuming that they “stimulate” the use of car (*true?*)
- Park pricing covering nearly the entire city, but very loose enforcement (very high rate of evasion)
- Enormous problem of **informal parking**
- Milan is full of cars, *but parked...*

Automobili in sosta irregolare per km di strada

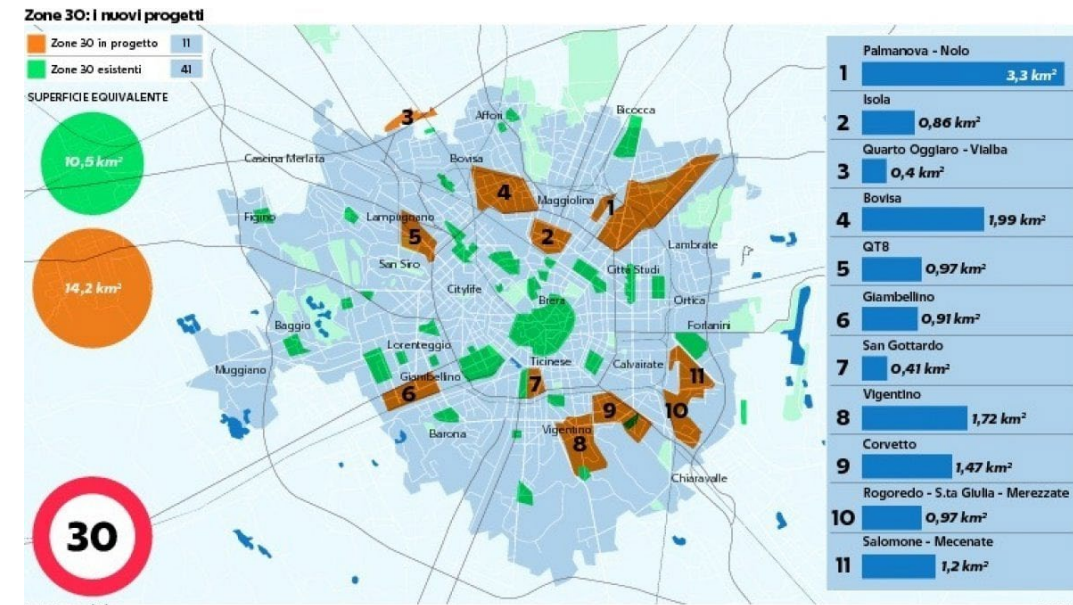
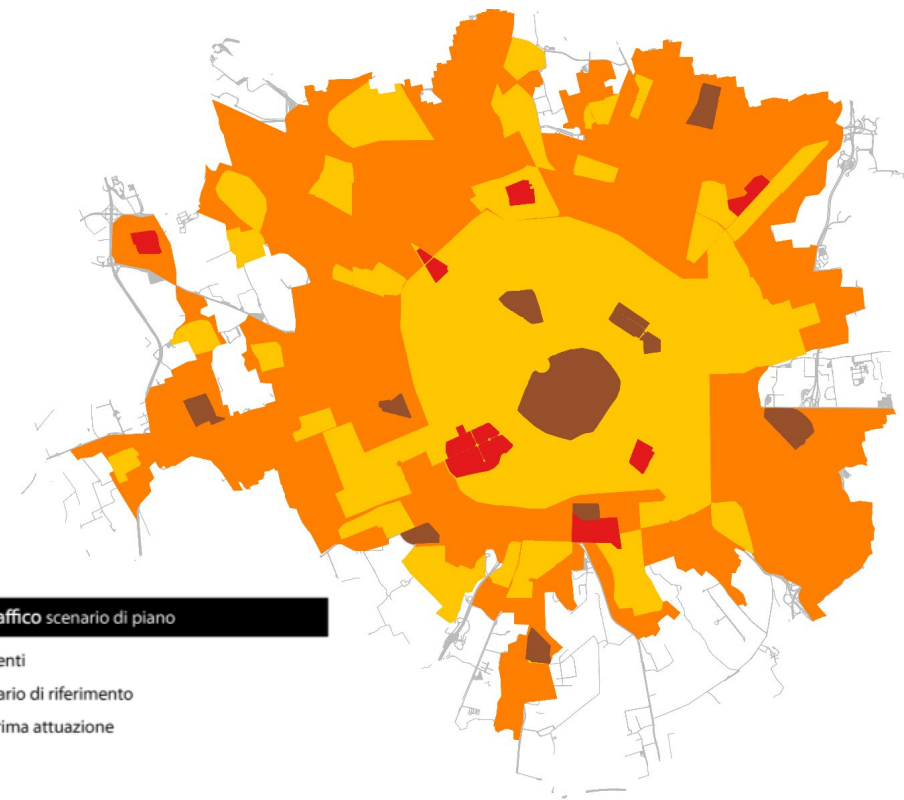


### 03 Fight for space: cycling, parking, traffic calming and road design

## Conflict for road space

### Traffic calming

- Not yet a 30-km city, but planned (<https://www.comune.milano.it/aree-tematiche/mobilita/pianificazione-mobilita/piano-urbano-della-mobilita>).
- Good results in Bologna
  - -15,2% accidents,
  - -5% injured people,
  - -33,3% deaths,
  - +63,6% severe injuries (9 vs 5,5/year),
  - -7,7% accidents involving injured people,
  - -32,3% accidents without injured people.
- Emissions effects is positive or negligible (<https://www.sciencedirect.com/science/article/pii/S0967070X10000739>)

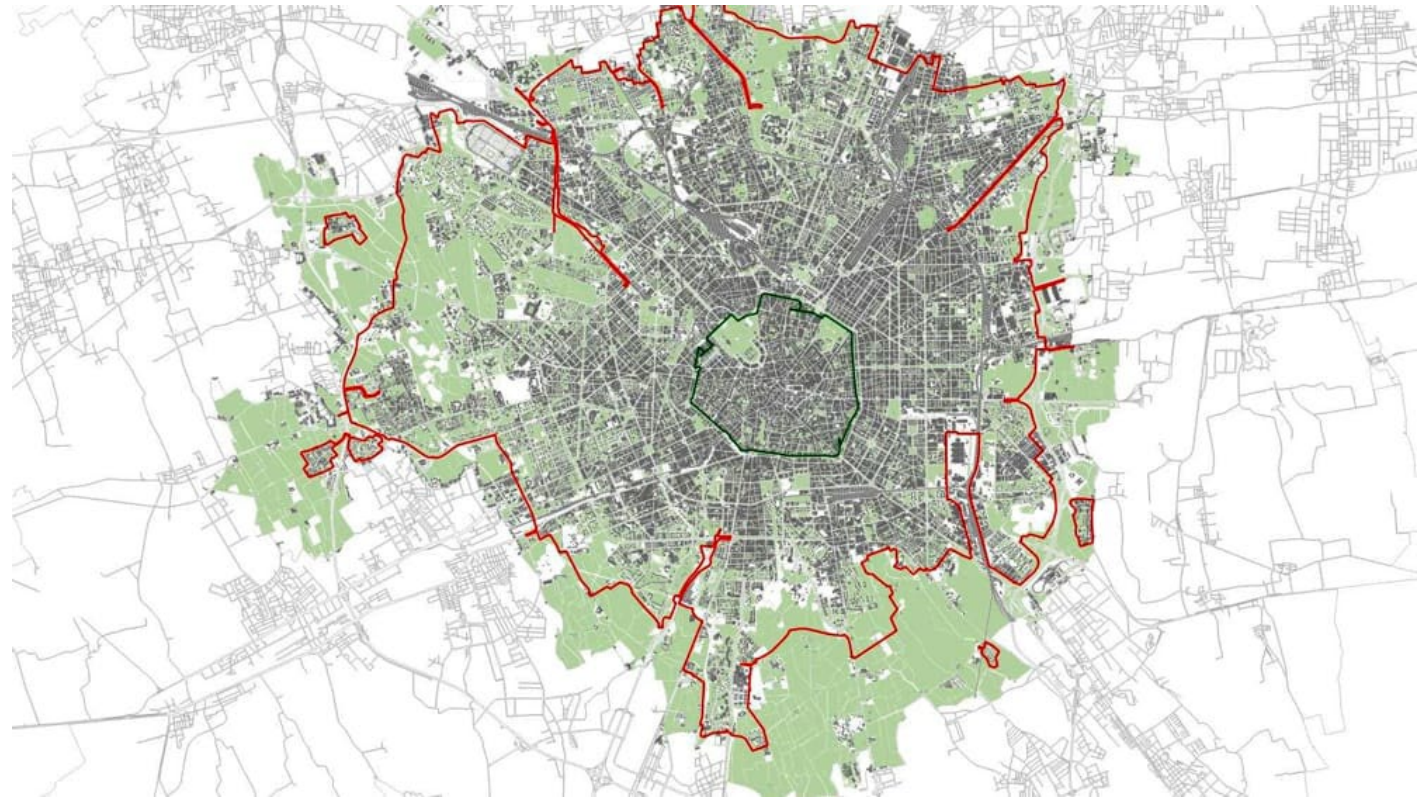


### 03 Fight for space: cycling, parking, traffic calming and road design

## Conflict for road space

### Area B

- Emission policy, forbidden entry for “polluting vehicles”
- Creates a **virtual city wall** from the metropolitan area
- Distributive issues

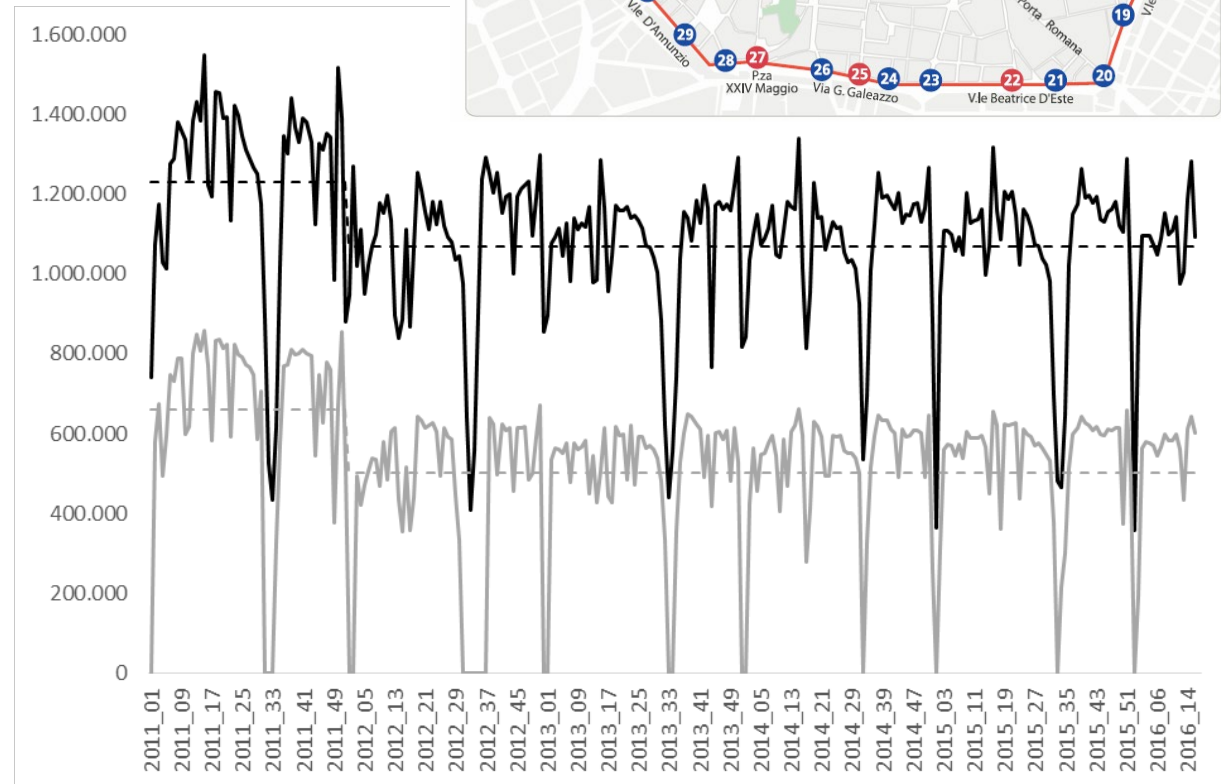
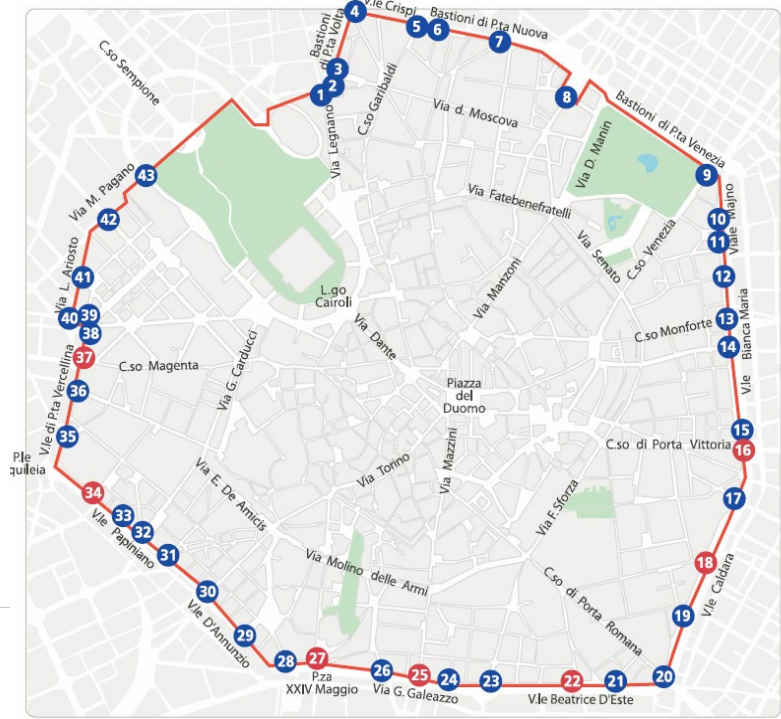


04 The unexpected success: road pricing

# Congestion pricing

## Area C

- Since 2012, substituting a previous (ineffective) emission pricing.
- Approved by a referendum (“**introduce first, get acceptability later**”)
- Effective and measurable effect (~-30%) and lasting in time.
- Very effective but also accepted: **it affects the many but infrequent occasional trips**, preserving residents and commuters (that have metro)
- Politically sensitive extension to less served areas.



Source: Beria, Tosi, Nuccio (2017)

04 The unexpected success: road pricing

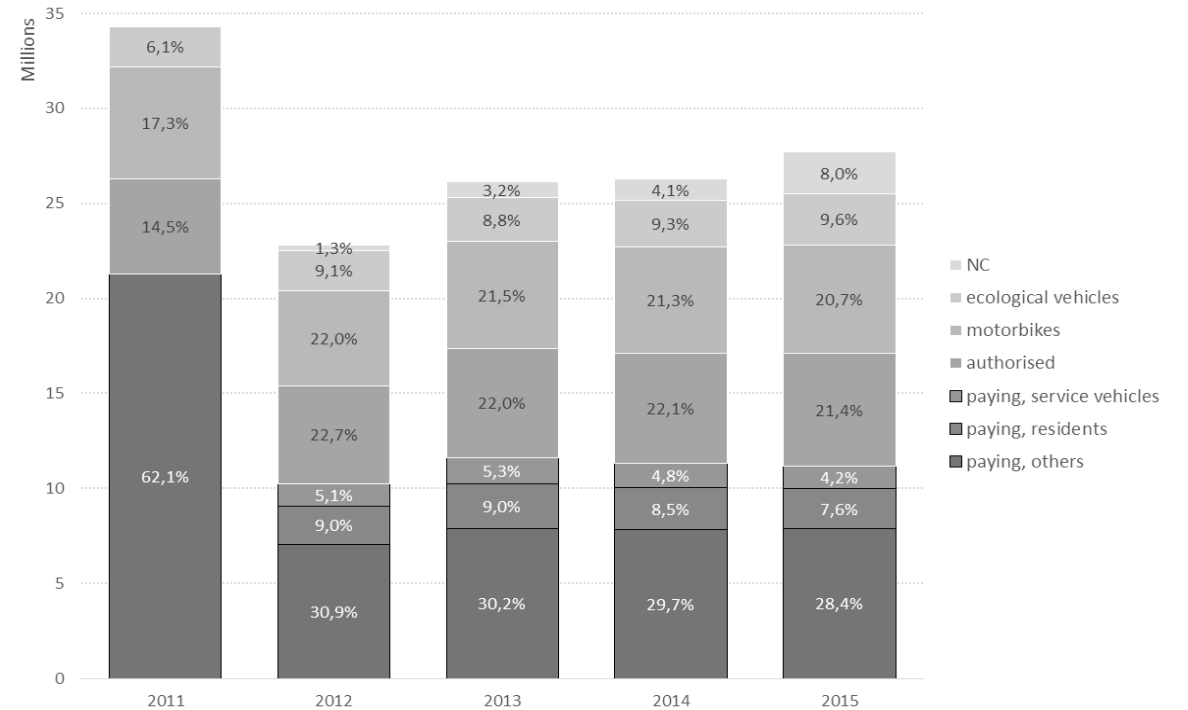
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*Classification of vehicles crossing the cordon during priced hours and days, 2011-2015*



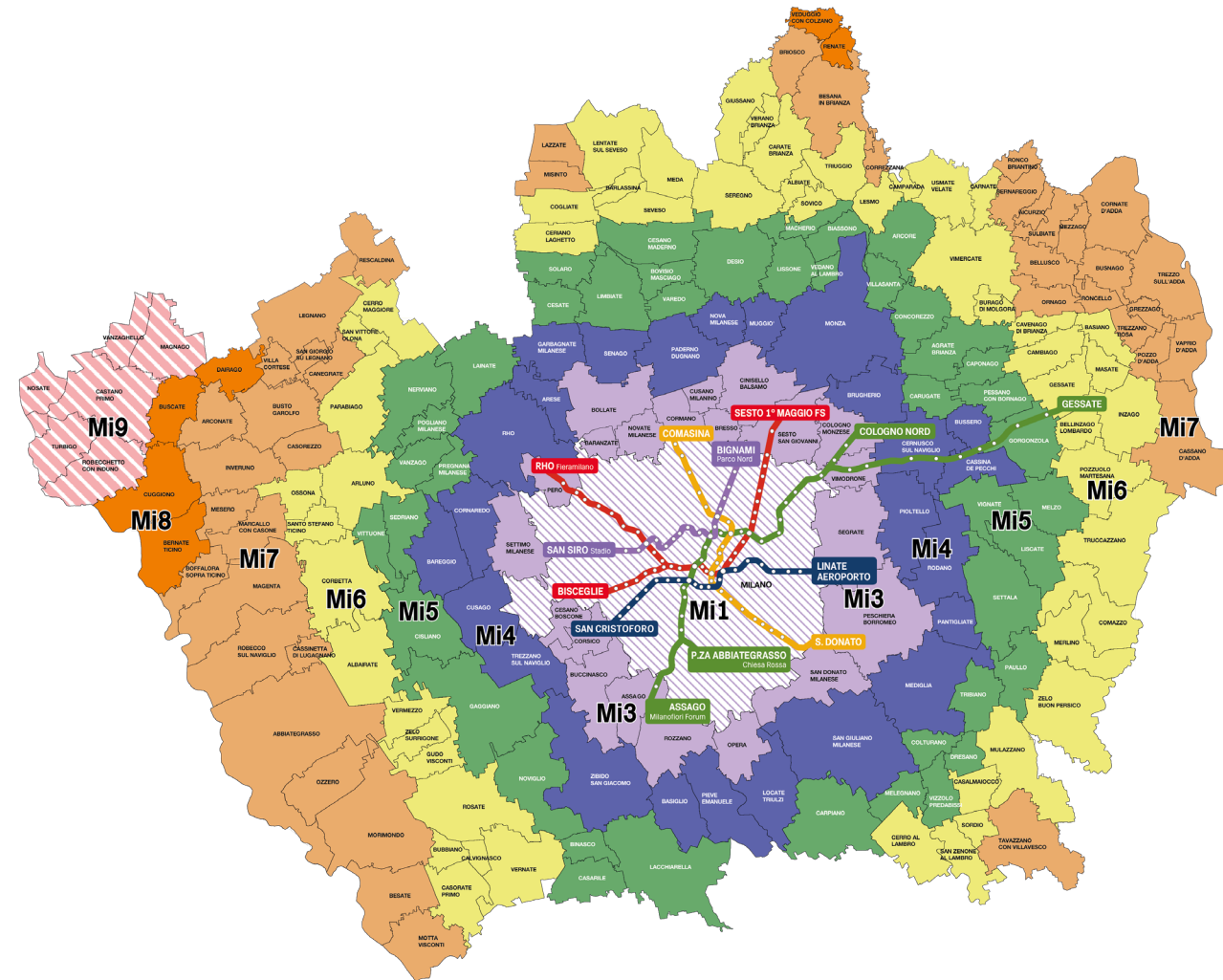
Source: Beria, Tosi, Nuccio (2017)

## 05 Immaterial infrastructure: ticketing and integration

# Beyond infrastructure

## Fares integration

- Relatively recent alignment with European best practices: one **integrated fares system** for the whole metropolitan area, including trains
- The mobility area is broader
- Low season tickets vs single tickets: **fidelisation**
- Reduction of Mi3-Mi4 prices and increase of Mi1-Mi2.

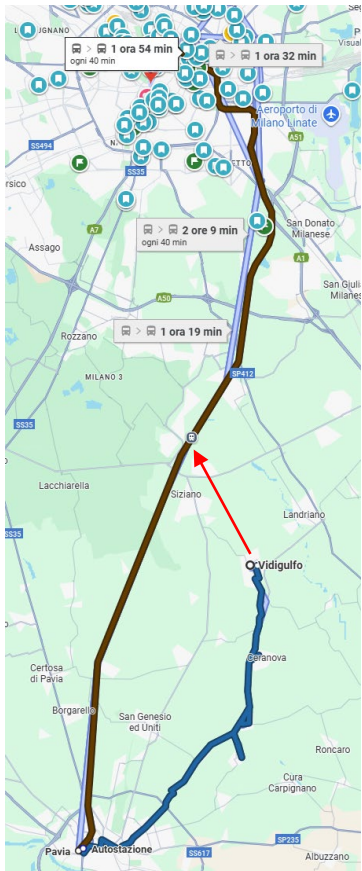


05 Immaterial infrastructure: ticketing and integration

# Beyond infrastructure

## First/last mile bus integration

- Very poor integration...



Orario valido dal 12/09/2025

Linea 172

Pavia Autostazione - Siziano - Pieve E. FS - Milano Romolo FS/M2

		LUNEDI-VENERDI - INVERNALE Scolastico																	
PAVIA Autostazione		05.05	05.55	06.40	07.25	09.05	11.05	11.55	12.45	13.50	13.50	14.10	14.10	14.35	15.05	16.05	17.10	18.05	
PAVIA Matteotti/Griziotti/Petrarca		05.07	05.57	06.42	07.27	09.08	11.08	11.58	12.48	13.53	13.53	14.13	14.13	14.38	15.08	16.08	17.13	18.08	
PAVIA Cairoli/Emanuele Filiberto		05.10	06.00	06.45	07.30	09.11	11.11	12.01	12.51	13.56	13.56	14.16	14.16	14.41	15.12	16.12	17.17	18.12	
PAVIA Tasso/Alzaia/Colesino		05.11	06.01	06.46	07.32	09.13	11.13	12.03	12.53	13.58	13.58	14.18	14.18	14.43	15.14	16.14	17.19	18.14	
PAVIA Vigentina/Cassino		05.13	06.03	06.48	07.35	09.16	11.16	12.06	12.56	14.01	14.01	14.21	14.21	14.46	15.17	16.17	17.22	18.17	
S.GENESIO U. P.ta Pescarina/Due Porte		05.18	06.08	06.53	07.41	09.22	11.22	12.12	13.02	14.07	14.07	14.27	14.27	14.52	15.23	16.23	17.28	18.23	
S.GENESIO U. Ponte Carate/Platani		05.20	06.10	06.55	07.43	09.24	11.24	12.14	13.04	14.09	14.09	14.29	14.29	14.54	15.25	16.25	17.30	18.25	
ZECCONE Italia												14.14	14.14	14.34	14.59	16.30			
ZECCONE SP205 Vigentina/Vittadini		05.24	06.14	06.59	07.47	09.28	11.28	12.18	13.08	14.13	14.13	14.33	14.33	15.00	15.29	16.31	17.34	18.29	
BORNASCO Vigentina/Verdi		05.28	06.18	07.03	07.51	09.32	11.32	12.22	13.12	14.17	14.17	14.37	14.37	15.13	15.33	16.35	17.38	18.33	
BORNASCO Gualdrasco - Preziosa/Cadore												14.24	14.24	14.44	15.05	16.40			
BORNASCO Gualdrasco - Trieste												14.25	14.25	14.45	15.06	16.41			
VIDIGULFO Pontelungo - SP205		05.31	06.21	07.06	07.54	09.35	11.35	12.25	13.15	14.20		14.40		15.36		17.41	18.36		
SIZIANO Casamatta/S.Vitale		05.36	06.26	07.12	08.00	09.40	11.40	12.30	13.20	14.25	14.31	14.45	14.51	15.12	15.41	16.47	17.46	18.41	
SIZIANO S.Rocco/Cantalupo		05.37	06.27	07.13	08.01	09.41	11.41	12.31	13.21	14.26	14.32	14.46	14.52	15.13	15.42	16.48	17.47	18.42	
SIZIANO Roma/Negri (Chiesa)		05.37	06.27	07.13	08.01	09.41	11.41	12.31	13.21	14.26	14.32	14.46	14.52	15.13	15.42	16.48	17.47	18.42	
SIZIANO S.Teresa, 38		05.39	06.29	07.15	08.03	09.43	11.43	12.33	13.23	14.28	14.34	14.48	14.54	15.15	15.44	16.50	17.49	18.44	
PIEVE E. Pieve Emanuele FS		05.44	06.34	07.21	08.09	09.48	11.48	12.3	13.28	14.33		14.34	14.48	14.54	15.15	15.44	16.50	17.49	18.44
PIEVE E. Dei Pini/Abeti (Ex Q.re IHCIS)		05.48	06.38	07.25	08.13	09.52	11.52	12.42	13.32	14.37		14.38	14.52	15.13	15.42	16.48	17.47	18.42	
PIEVE E. Roma/Gemelli		05.51	06.41	07.28	08.16	09.55	11.55	12.45	13.35	14.40		14.41	14.55	15.16	15.45	16.51	17.50	18.45	
OPERA Dossio Cavallino - SP28		05.52	06.42	07.29	08.17	09.56	11.56	12.46	13.36	14.41		14.42	14.56	15.17	15.46	16.52	17.51	18.46	
OPERA Diaz/Manara		05.55	06.45	07.32	08.20	09.59	11.59	12.49	13.39	14.44		14.45	14.59	15.20	15.49	16.55	17.54	18.49	
OPERA Diaz /S.Francesco		05.56	06.46	07.33	08.21	10.00	12.00	12.50	13.40	14.45		14.46	15.00	15.21	15.50	16.56	17.55	18.50	
OPERA Berlinguer/Allende		05.58	06.48	07.35	08.23	10.02	12.02	12.52	13.42	14.47		14.48	15.02	15.23	15.52	16.58	17.57	18.52	
OPERA Noverasco - S5412, 1		06.01	06.51	07.39	08.27	10.05	12.05	12.55	13.45	14.50		14.51	15.05	15.26	15.55	17.01	18.00	18.55	
MILANO Ripamonti/Camporgnago		06.01	06.51	07.40	08.28	10.05	12.05	12.55	13.45	14.50		14.51	15.05	15.26	15.55	17.01	18.00	18.55	
MILANO Ripamonti/Quintosole		06.02	06.52	07.41	08.29	10.06	12.06	12.56	13.46	14.51		14.52	15.06	15.27	15.56	17.02	18.01	18.56	
MILANO Ripamonti, 514		06.03	06.53	07.42	08.30	10.07	12.07	12.57	13.47	14.52		14.53	15.07	15.28	15.57	17.03	18.02	18.57	
MILANO Ripamonti/Macconago (IEO)		06.04	06.54	07.43	08.31	10.08	12.08	12.58	13.48	14.53		14.54	15.08	15.29	15.58	17.04	18.03	18.58	
MILANO Vigentino - Ripamonti		06.06	06.56	07.46	08.34	10.10	12.10	13.00	13.50	14.55		14.56	15.10	15.31	16.00	17.06	18.05	19.00	
MILANO Cernenate/Volvino		06.11	07.03	07.53	08.41	10.15	12.15	13.05	13.55	15.00		15.01	15.15	15.36	16.05	17.11	18.10	19.05	
MILANO Cernenate/Montegani		06.12	07.03	07.53	08.41	10.16	12.16	13.06	13.56	15.01		15.02	15.16	15.37	16.06	17.12	18.11	19.06	
MILANO Romolo FS/M2		06.17	07.09	07.59	08.47	10.21	12.21	13.11	14.01	15.06		15.07	15.21	15.42	16.11	17.17	18.16	19.11	

	S13 24342 7	S13 24442 10	S13 24442 11	S13 24344 7	S13 24344 32843 8	S13 24444 10	S13 24444 11	S13 24346 7	S13 24346 32845 8	S13 24446 11	S13 24446 10	S13 24348 7	S13 24348 32847 8	S13 24448 10	S13 24448 11	S13 24350 7	S13 24350 32849 8
Pavia 26-141-150-154-156	12.39	12.39	12.39	13.09	13.09	13.09	13.09	13.39	13.39	13.39	13.39	14.09	14.09	14.09	14.09	14.39	14.39
Certosa di Pavia	12.47	12.47	12.47	13.17	13.17	13.17	13.17	13.47	13.47	13.47	13.47	14.17	14.17	14.17	14.17	14.47	14.47
Villamaggiore	12.53	12.53	12.53	13.23	13.23	13.23	13.23	13.53	13.53	13.53	13.53	14.23	14.23	14.23	14.23	14.53	14.53
Pieve Emanuele	12.56	12.56	12.56	13.26	13.26	13.26	13.26	13.56	13.56	13.56	13.56	14.26	14.26	14.26	14.26	14.56	14.56
Locate Triulzi	13.00	13.00	13.00	13.30	13.30	13.30	13.30	14.00	14.00	14.00	14.00	14.30	14.30	14.30	14.30	15.00	15.00
Milano Rogoredo	13.06	13.06	13.08	13.36	13.38	13.36	13.38	14.06	14.08	14.08	14.06	14.36	14.38	14.36	14.38	15.06	15.08
Milano Porta Vittoria	-	-	13.14	-	13.44	-	13.44	-	14.14	14.14	-	14.14	-	14.44	-	14.44	15.14
Milano Dateo	-	-	13.17	-	13.47	-	13.47	-	14.17	14.17	-	14.17	-	14.47	-	14.47	15.17
Milano Porta Venezia	-	-	13.20	-	13.50	-	13.50	-	14.20	14.20	-	14.20	-	14.50	-	14.50	15.20
Milano Repubblica	-	-	13.23	-	13.53	-	13.53	-	14.23	14.23	-	14.23	-	14.53	-	14.53	15.23
Milano Porta Garibaldi Passante	-	-	13.26	-	13.56	-	13.56	-	14.26	14.26	-	14.26	-	14.56	-	14.56	15.26
Milano Lancetti	-	-	13.29	-	13.59	-	13.59	-	14.29	14.29	-	14.29	-	14.59	-	14.59	15.29
Milano Bovisa Politecnico 166-167-168-169-MXP-S2-S3 a	-	-	13.35	-	14.05	-	14.05	-	14.35	14.35	-	14.35	-	15.05	-	15.05	15.35
Milano Bovisa Politecnico M13-169	-	-	-	-	14.06	-	-	-	14.36	-	-	-	-	15.06	-	-	15.36
Bollate Centro	-	-	-	-	14.13	-	-	-	14.43	-	-	-	-	15.13	-	-	15.43
Garbagnate Milanese	-	-	-	-	14.21	-	-	-	14.51	-	-	-	-	15.21	-	-	15.51

05 Immaterial infrastructure: ticketing and integration

# Beyond infrastructure

## First/last mile bus integration

→ The outcome: rail & bus are largely **two separate systems** in the broader urban area

**Modal choice to access the station from MI and MZ provinces (capitals excl), only regional trains to Milan, year 2019**

	Job commuting	Business	Study commuting	Non systematic
Car (passenger)	44%	37%	14%	19%
Car (driver)	19%	25%	13%	16%
Car (taxi, sharing, etc.)	0%	0%	0%	0%
Metro	0%	2%	1%	4%
Bus	1%	0%	8%	1%
Motorbike	0%	0%	0%	0%
Bike	1%	5%	3%	3%
Walking	36%	32%	60%	57%
Other	0%	0%	1%	0%

## 06 Local/Regional challenges

# Local vs. metropolitan scale

## Who bears the increasing costs?

### Local scale issues

- **Transport “gentrification”**: areas connected by metro
- Unsustainable surface transport: **downward spiral** slower trams → less passengers → less frequency → lower revenues, ...
- Increase of **financial burden** for the city to operate metro lines + increase unit costs of tram/bus lines
- **Poor level of the other public services** (schools, sport facilities, road maintenance, green maintenance, etc...)

### Metropolitan scale issues

- Every external municipality **wants a metro stop!** → vicious political mechanism
- **Excessive metro extensions**
- **Who pays** for it (Milan/State/metropolitan area)?
- An *investment-hungry* Milan vs. rest of the region

## 06 Local/Regional challenges

# Local vs. metropolitan scale

## Conflicts

### Local scale issues

- **Low acceptability** and **city users' conflicts** (cyclists vs. shops, cyclists vs. cars, parking vs. shops, ...)
- **Low quality** of urban environment. *Shabby, but not chic...* except for some areas
- Lack of a "vision".

### Metropolitan scale issues

- Milan-based solutions for a **problem (pollution) that is regional**
- **Unfriendly city for external users**
- **Housing market** is "constrained" to Milan because the metropolitan area is not considered as an alternative due to low reliability and performance of Trenord/SFR → gentrification



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**Thank you for your attention!**

**Please, quote as follows:**

Beria P. (2026). *Key issues in Milan's mobility under a local/metropolitan lens*. Lecture held at CRAFT, Milan Politecnico, 27/05/2026.

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