ROMA CAPITALE

Smarticipate workshop

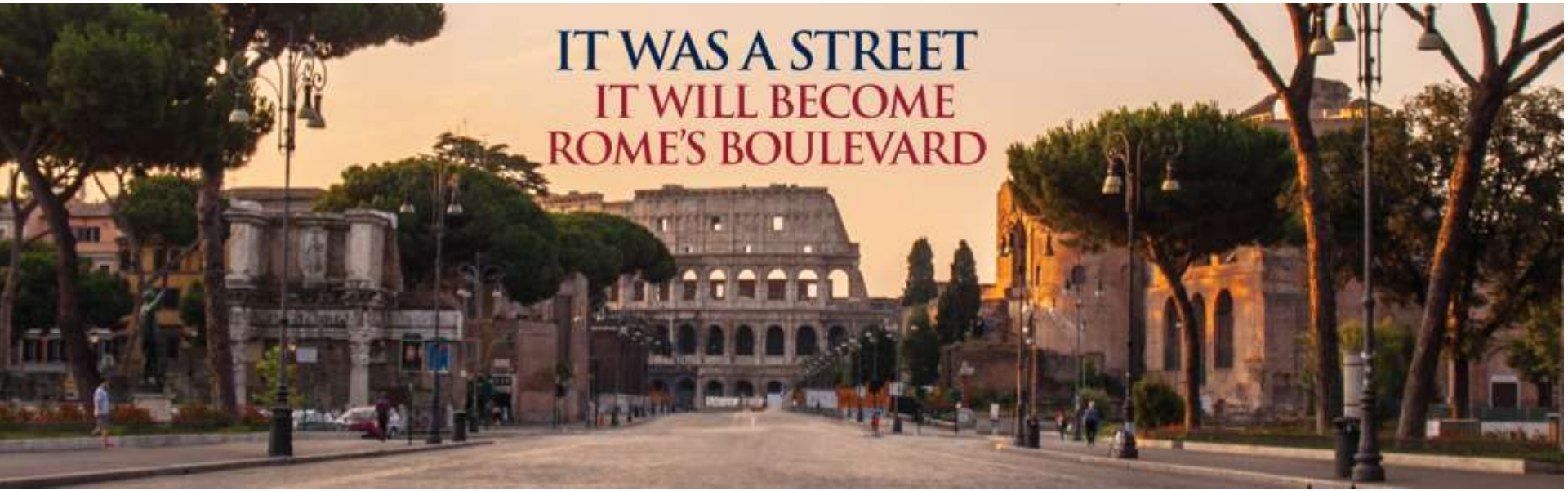
Mobility Masterplan, ITS and Open data in Jubilee of Mercy year

Casa della città - Rome, May 9th, 2016

Ing. Fabio Nussio
International Co-operation
Mobility Agency of the City of Rome

Rome, a view on the city
History and Heritage

Rome just turned 2769 years of age on Apr 21st



Rome, a view on the city

- **Municipal Area** 1.285 skm
- **Population**

  Metropolitan Area 4.400.000

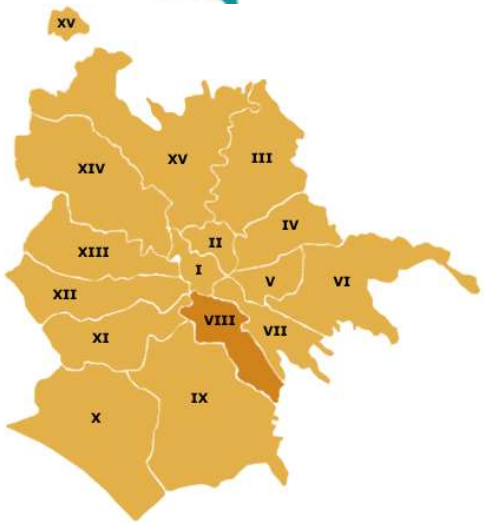
  City Residents 2.900.000
- **Road Network** 5.000 km

  Main road network 800 km
- **Vehicles** 2.650.000

  Cars 1.890.000

  2 wheels 600.000

  Goods delivery 160.000
- **Daily Trips** 6.000.000
- Peak-hour Trips 670.000



Rome, a view on the city
Cultural attitude for private vehicles

Motorization rate: 978 veh./1.000 inhabitants

Residents evolution in Rome

Population 1988

2.858.000 WITHIN GRA

500.900 OUTSIDE GRA

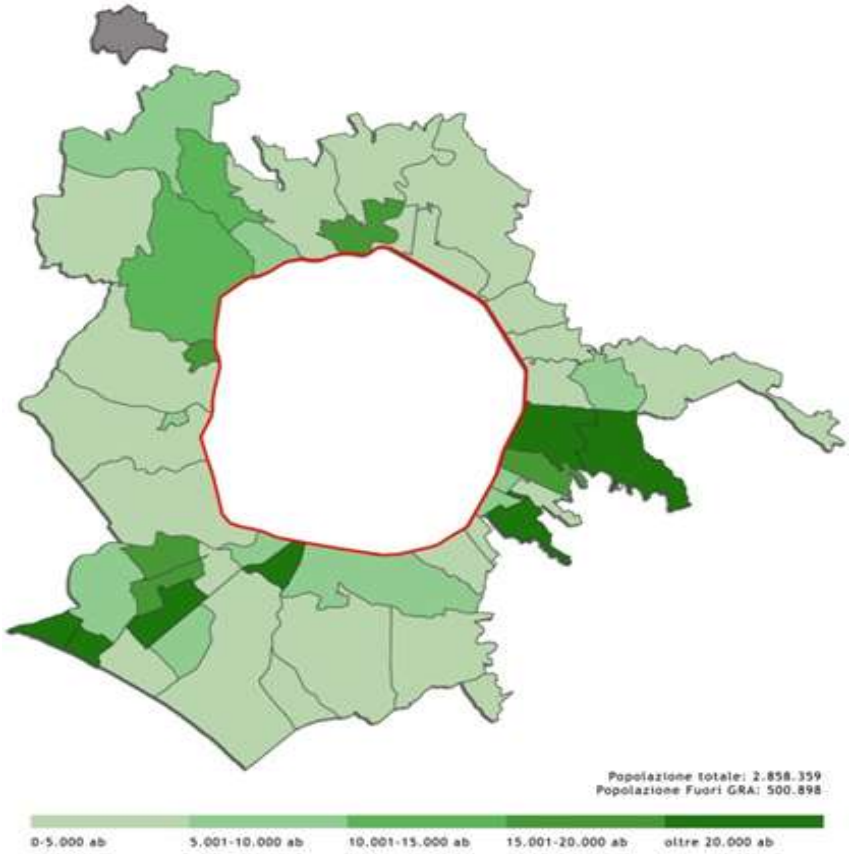
17%

Population 2008

2.884.000 WITHIN GRA

704.600 OUTSIDE GRA

24%



Residents evolution in Rome

Population 2012

2.884.000 WITHIN GRA

747.000 OUTSIDE GRA

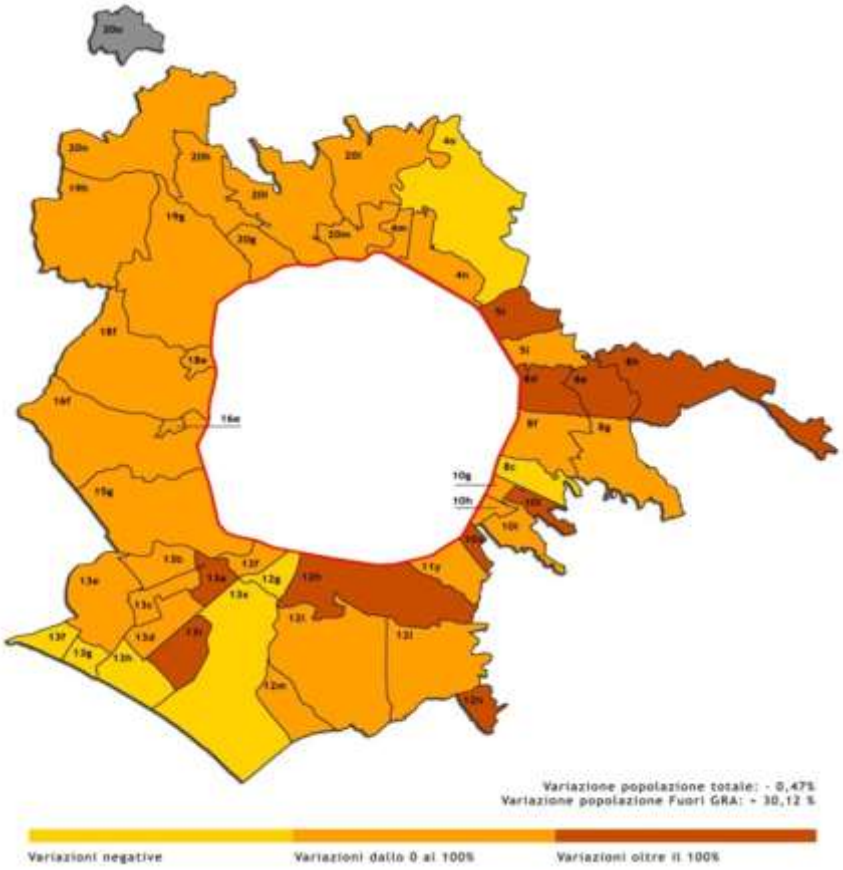
26%

Population 2020

2.980.000 WITHIN GRA

896.000 OUTSIDE GRA

30%



The Mobility Agency role

Rome Mobility Agency

- **Planning, Regulating and Controlling Mobility (Public and Private);**
  - Rome Mobility Agency manages the bus service contracts performed by the PT Operators:
    - **public operator ATAC**, managing metro, tram networks and 80% of surface PT,
    - Private operator **Roma TPL** for 450 buses, 28 M km/year, i.e. 20% of the Bus service in Rome, mainly in the peripheral net
  - Monthly payments to the PT operators is based on AVM service certification data
- **Permits and user contacts;**
- **Development of new mobility projects;**
- **ITS tools, infomobility & Mobility Centre;**
- **Management of Sustainable Mobility Policies**
- **R&D projects (+50 from 1998)**

"Metrebus" - Integrated regional PT system with single ticket

- ATAC (Public PT operator – City of Rome)
- ROMA TPL (Peripheral bus lines – City of Rome)
- Cotral (Regional Bus PT service)
- TRENITALIA (Metropolitan and regional railways)

	estensione rete in km	utenza: passeggeri giorno
RETE AUTOBUS URBANI	2.060	789.000
RETE AUTOBUS REGIONALI	1.847	167.000
RETE METROPOLITANA	41	713.000
RETE TRAMVIARIA	39	90.000
RETE FERROVIARIA URBANA E REGIONALE	872	547.000
AREA METROPOLITANA DI ROMA CAPITALE: GIORNO FERIALE MEDIO		
TOTALE RETE	4.859	2.306.000
EFFICIENZA DELLE RETE DI T.P.L.	21,3 %	

New mobility Masterplan (PGTU)

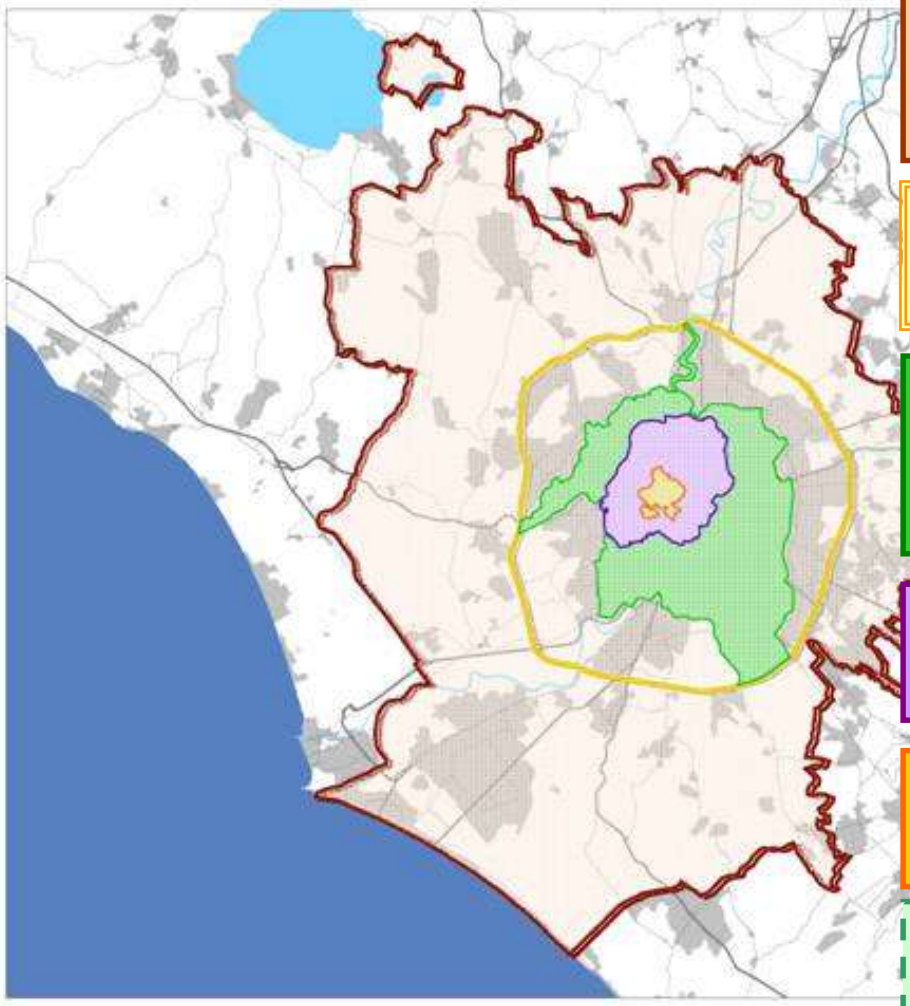
GENERAL GOALS

Reconnect the city, **reduce** private vehicles, recover **public spaces**, improve the **environment** and **quality of life** with limited financial resources

EXPECTED OUTCOMES

- Increase by **20%** public transport speed and users;
- **Reduce by 50% road fatalities** by 2020
- Increase bicycle use within 2 years from current 0.6% to 2% (daily), and **within 5 years** to 4% (in town) and to **10% in the city center**;
- Increase car and bike sharing systems
- Reduce access of private vehicles to city center

The starting point: bands of increasing restriction zones



Municipality Area – 1285 km²
"Blue Label" Emission Check
(all vehicles and PTWs)

External Ring (GRA) – 344 km²
Tourist Coaches Regulation

Green Belt –154 km²
Pollution emergencies,
Multi-modal interchanges, Park&ride

Rail Ring – 48.4 km²
Emission restrictions, Pay parking schemes

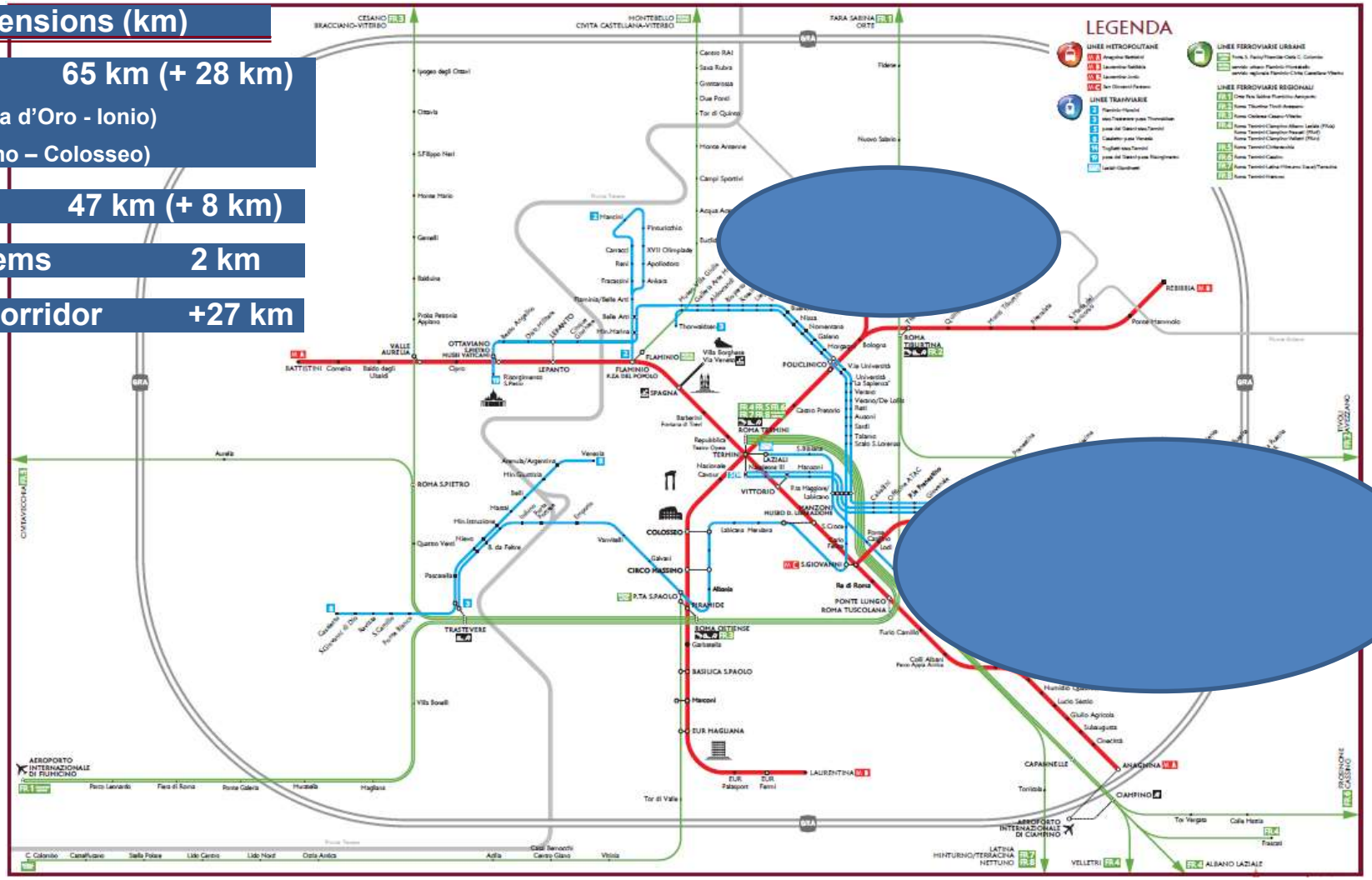
LTZ – 5.5 km²
Stop to all vehicles (except permit holders)

Pedestrian – 1/2 km²
Zero Emission Area (walking & electric)

Collective Transport

Main line extensions (km)

Metro	**65 km (+ 28 km)**
- Line B1 (Conca d'Oro - Ionio)	
- Line C (Pantano – Colosseo)	
Tramway	**47 km (+ 8 km)**
Cable Systems	**2 km**
Urban PT Corridor	**+27 km**

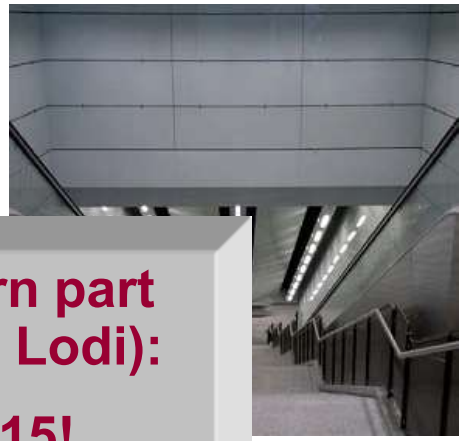


Modal share of the PT network (short -term): **25,8 %**

New metro and existing background:

Piazza Venezia survey

Mass Rapid Transport System Expansion: Line C – from south to centre



Line C

Work in progress from Montecompatri-Pantano terminal to S.Giovanni Station

Montecompatri-Pantano/S. Giovanni (T7-T6A-T5-T4): 1° phase – works in progr

Length:	**km 18,5** (10,8 Km underground)
Stations:	**22** (11 underground)
Start:	**feb-2007**
Scheduled end:	
- Montecompatri-Pantano/Centocelle:	**2013**
- Montecompatri-Pantano/Lodi:	2014
- Montecompatri-Pantano/S. Giovanni:	2015
Investment:	**1.818 million euro**

Opening of the southern part of C Line (up to piazza Lodi):

Completed June 29, 2015!

Contract:	General Contractor
Contractor:	Metro C S.p.A. (Astaldi Spa - Vianini Lavori Spa – Consorzio Cooperative Costruzioni – Ansaldo Trasporti Sistemi Ferroviari Spa - CMB)

Investment:	**792 million euro**

Venezia/Ottaviano (T2)

Lenght:	**km 3,5**
Stations:	**3**

Line B1: working in a complicate environment

B1 Extension

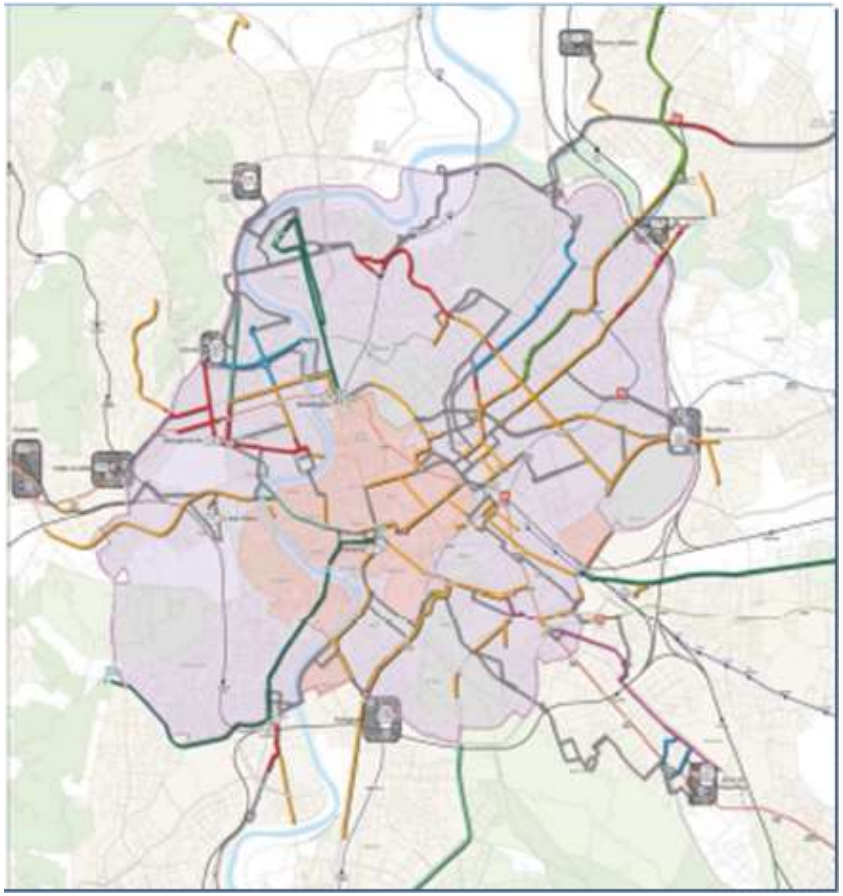
- Length: 3,9 km
- -1,5% city PM10, -4.500 ton CO2
- 9 million hours saved/yr.
- Open 6/2012 up to Conca D'Oro
- Cost: 0,51 Billion €

Opening of Ionio station:

April 21, 2015

mobilità ROMA

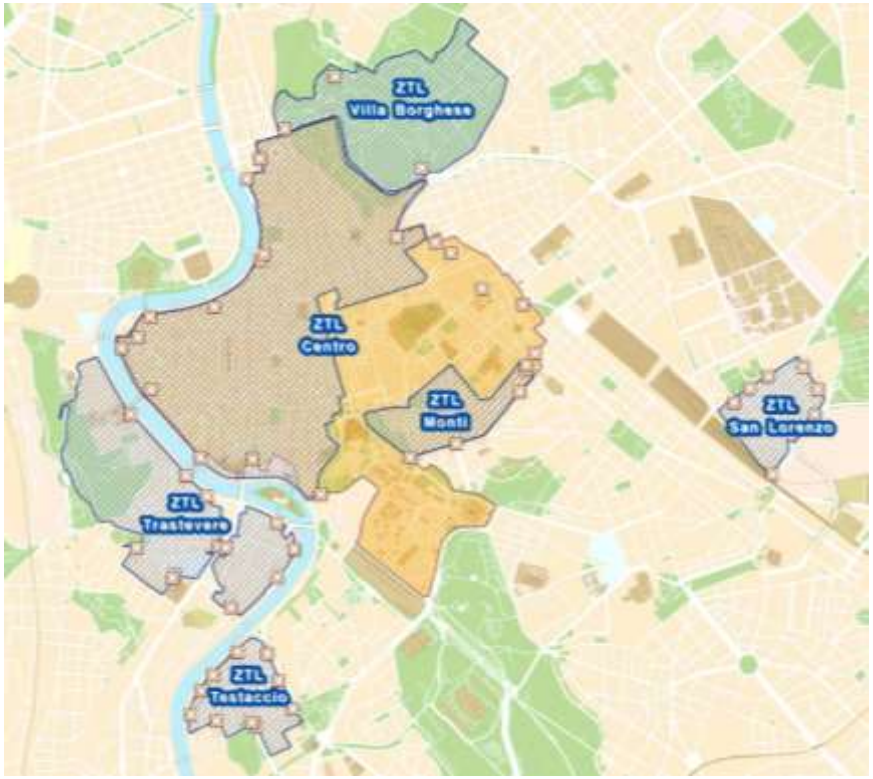
Rail Ring zone: PT reorganization and CC scheme



- **Rail Ring zone (700,000 inh.):** revised rules to limit private traffic.
- **Rationalization of PT**: more integrated with Metro, Tram and Railways nodes. **Reducing and optimizing stops and lines with multiple steps program**.

- Promotion of car sharing, car pooling, bike sharing and electric mobility in a **multi-modal approach**;
- **New LTZ concept**: by 2017 rewarding system for non-pollutant drivers with **congestion charging concept**.

LTZs & Access control: electronic Gates



LTZ Historic Center

Mon. to Fri. 6.30 am - 6 pm
Sat. 2 pm – 6 pm
Fri. & Sat. 11 pm – 3 am

LTZ Trastevere

Mon. to Fri. 6.30–10 am
Fri. & Sat. 9,30pm–3am

LTZ Villa Borghese

Mon. to Sun. 0 –24

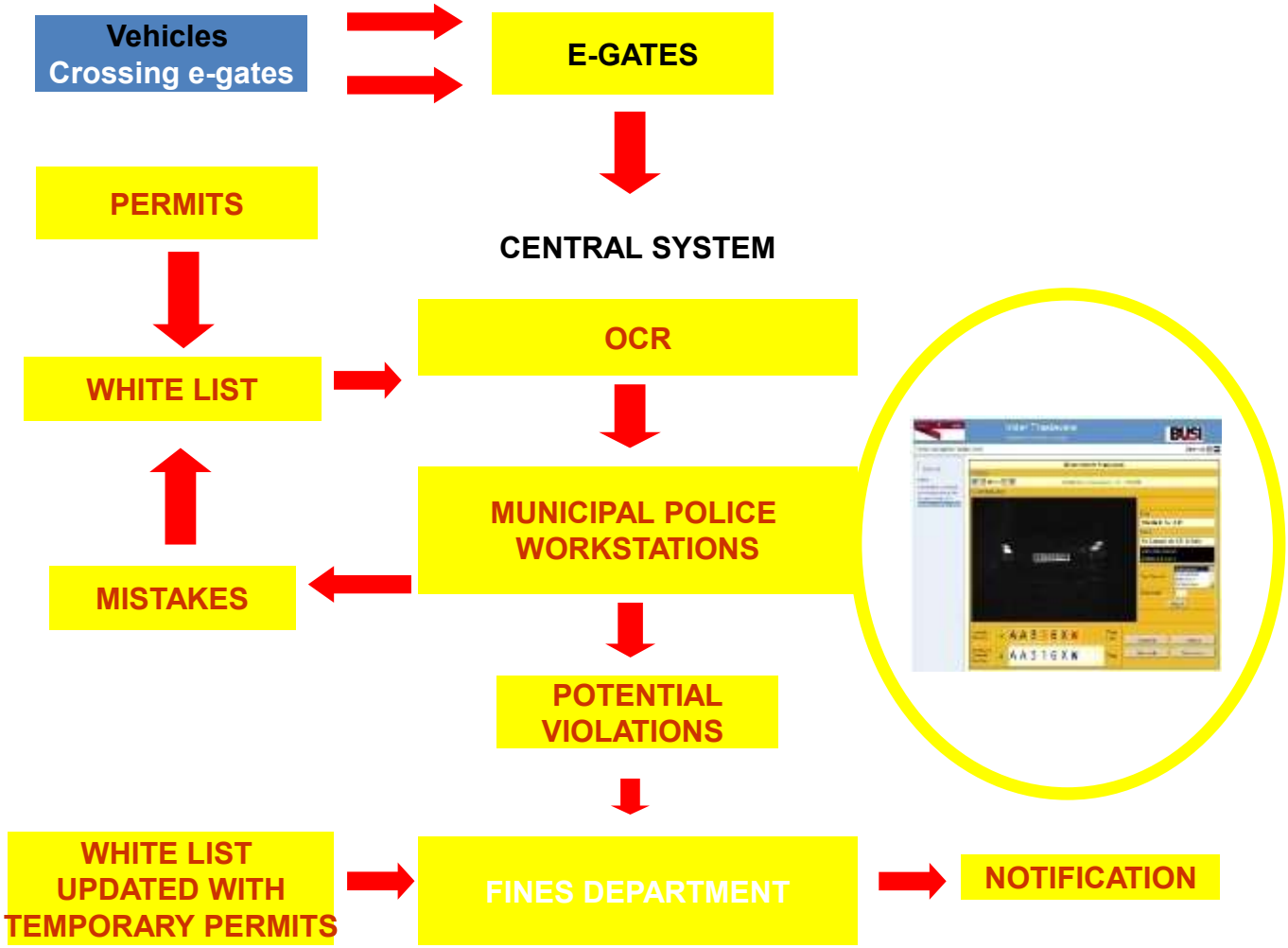
LTZ San Lorenzo

From Wed. to Sat. 9.30 pm – 3 am
(May to July & September- October)
Fri. & Sat. 9,30pm–3am
(November – April)

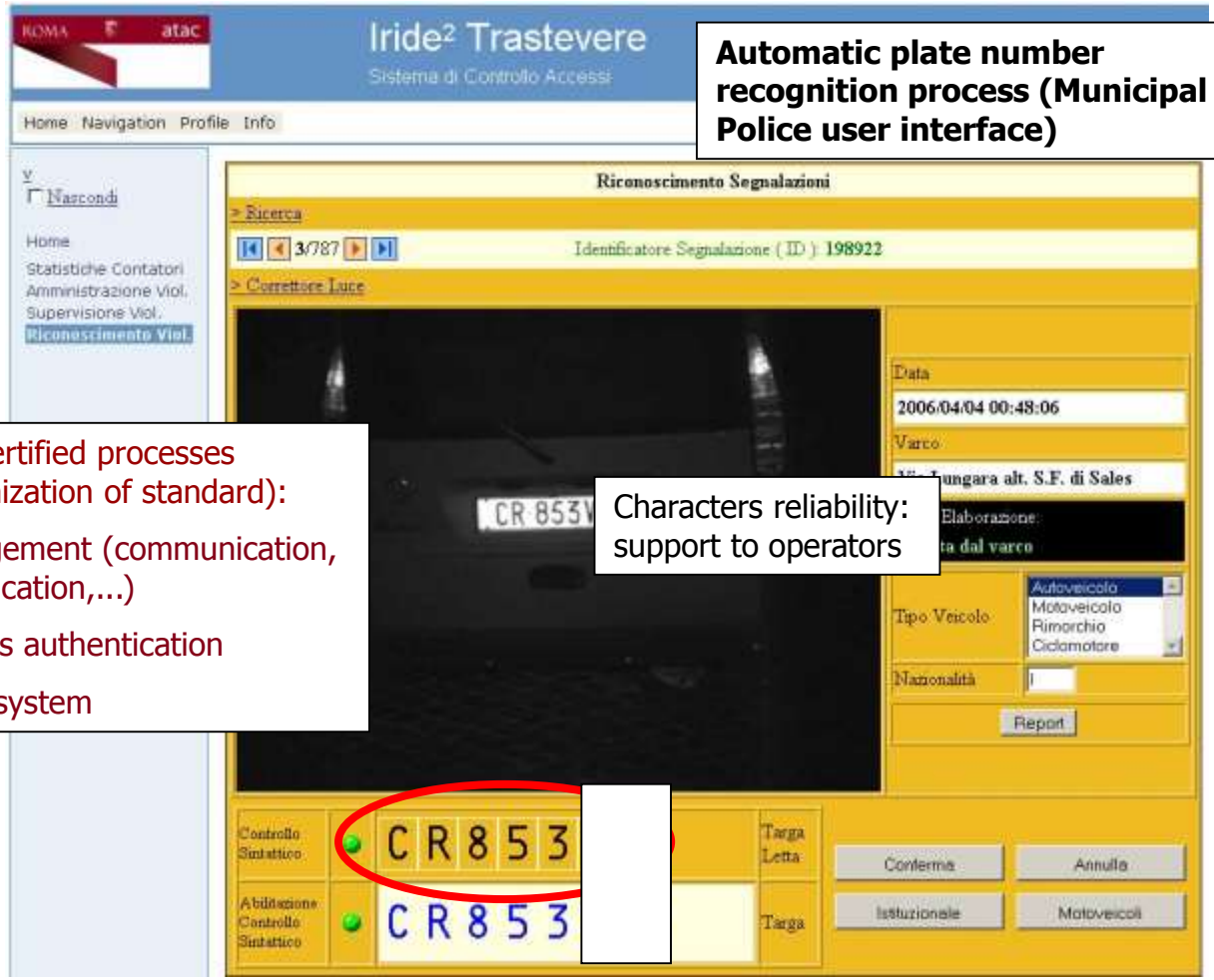
LTZ Testaccio

Fri. & Sat. 9,30pm–3am

The Enforcement process: logical scheme



LTZ – e gates Municipal Police interface



Automatic plate number recognition process (Municipal Police user interface)

UNI certified processes (organization of standard):

Management (communication, classification,...)

Images authentication

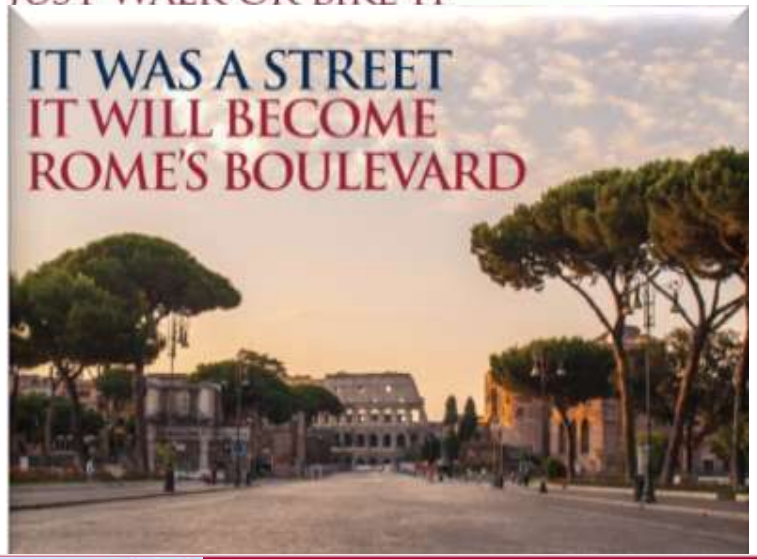
Filing system

Characters reliability: support to operators

Sustainable Mobility: Priority of Mobility Masterplan (PGTU)

FORI PEDONALI

JUST WALK OR BIKE IT

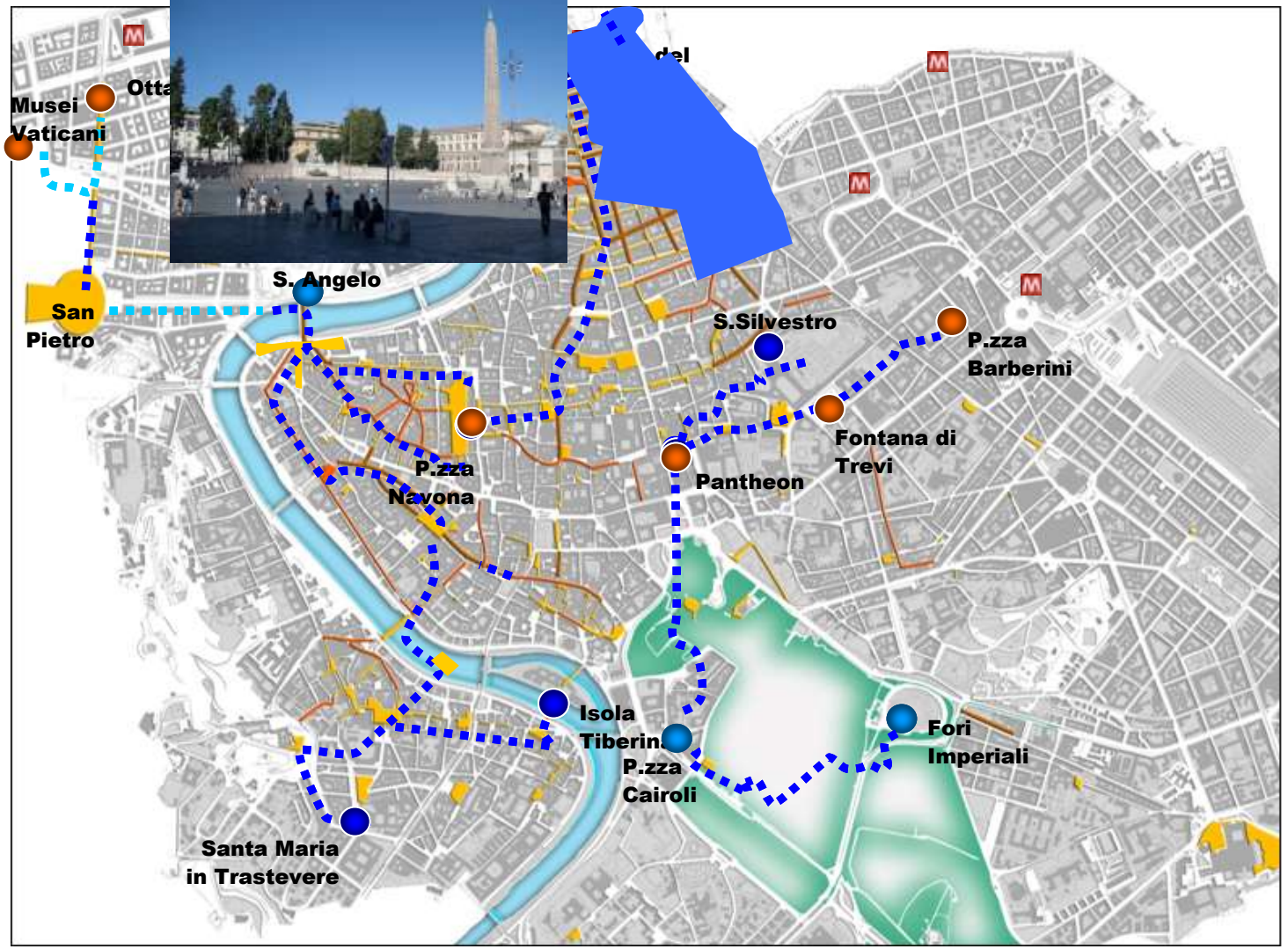


Tridente environmental island

1. Closed from-to: 6.30 am – 7 pm (mon-fri) 10am – 7 pm (sat)
2. 4 new e-gates to be made operational next months
3. Closed also to PTW !!

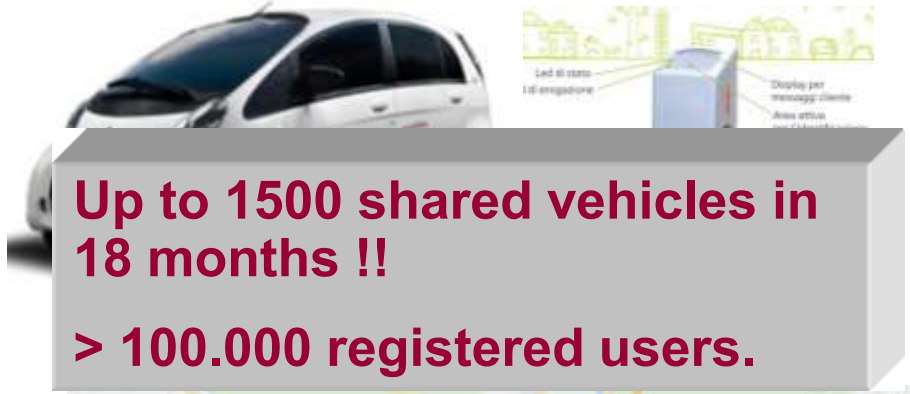
Pedestrian pathways and Tridente zone

1. Review of access & parking regulation
2. Increase car and bike sharing systems
3. Introduce electric and hybrid vehicles.
4. Create environmental islands, pedestrian areas and pathways



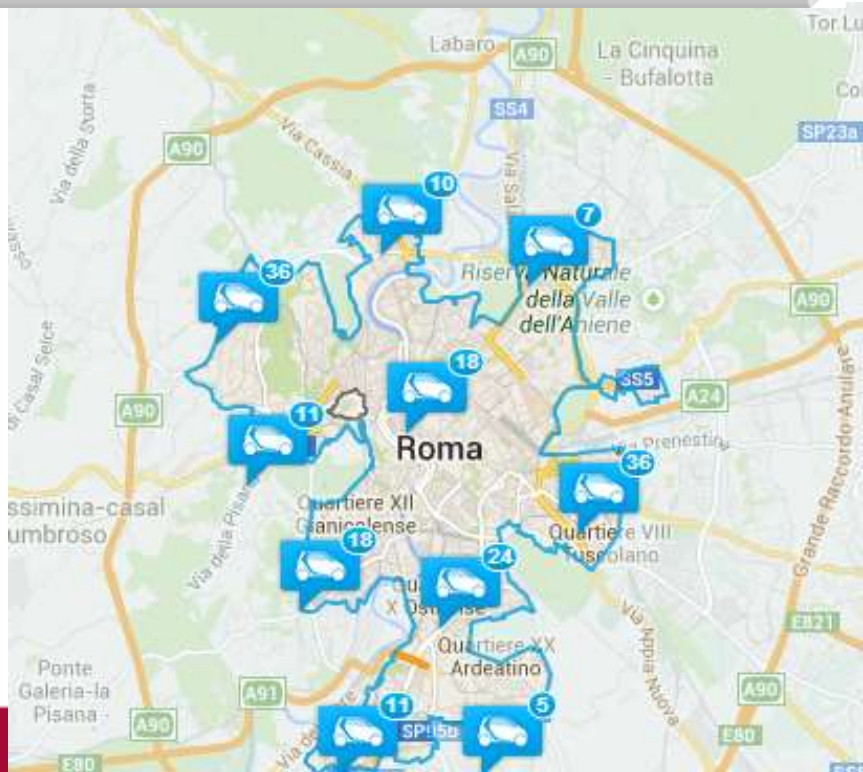
Car-sharing: fixed and free-flow schemes

- **Car sharing fixed scheme**: managed by Mobility Agency, working in 4 central districts. Annual fee, fixed places, return to same place, low hourly costs.
- **Car sharing free-flow scheme:** working in 35 sq km of the city, free places, leave where you want, higher costs (per minute).
- Managed by three Private Operators: **Car2go** (with Smart, operating from March), **Enjoy** (with FCA 500 started in June 2014), **Sharengo** (with e-cars started in Feb 2016)



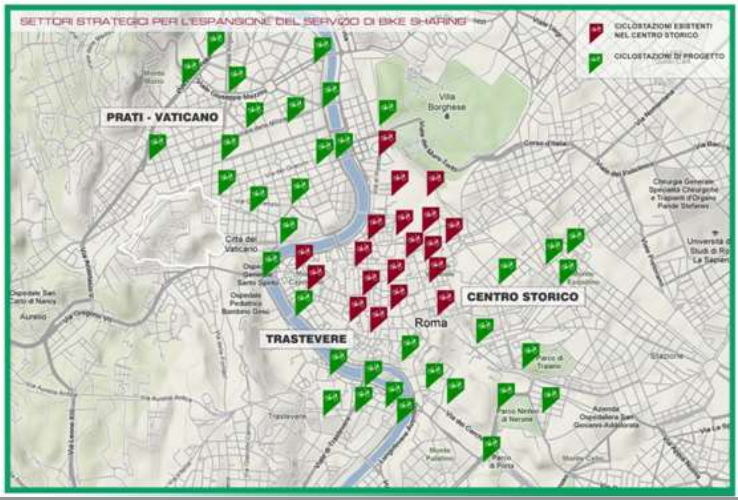
Up to 1500 shared vehicles in 18 months !!

> 100.000 registered users.



Scooter and Bike-sharing schemes

- **New bike-sharing scheme**: re-launch of the system with more stations, financed by new advertising installations – to be soon open. Bike availability with open data app.
- **Call for Tender** for scooter-sharing scheme, following the "roman attitude" towards this historic way of moving

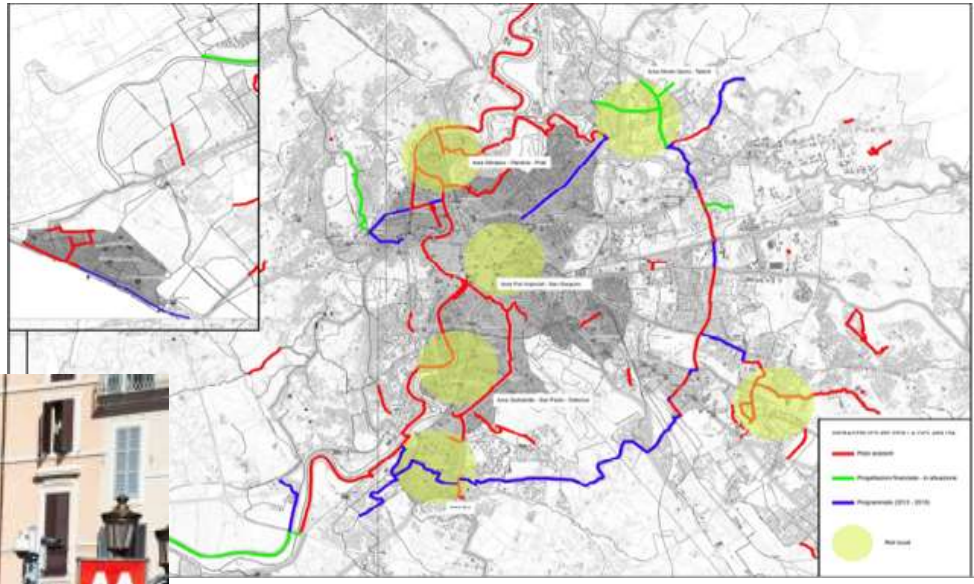


Strong impulse to sharing modes

- **Promotion of multimodality and "active mobility"**
- **Scooter-sharing to limit purchase and travelling of old scooters within the city**
- **Revitalisation of bike-sharing scheme to be integrated with ciclyng plan.**

Cycling plans

- **Working tables** with City Boroughs and associations
- **Selected about 80 Km of track paths, some already in final design or implementation.**



Mobility Center of Rome

The Center then puts together a series of subsystems, each dedicated to the performance of specific functions of monitoring and / or regulation of traffic flows.

Infomobility	Variable message signs (VMS)	66
	UTT (Urban Travel Times)	51
	Electronic poles of bus stop	300
	muoversiaroma.it - mobile	
Sanctioning & fining	E-gates for Limited Traffic Zones & Pre-signalling signs	47
	E-gates for PT bus lanes	17
	Fotored	1
	Vistared	10
	Velox	4
	Safety Tutor	2
Monitoring, Cont rolling Management	Video surveillance cameras	45
	Traffic Measurement Stations	130
	Traffic lights	1376

• UTT – Urban Travel Times

Monitoring system measuring travel times of private traffic in the urban context. It assess **the level of service** offered by the transportation network, identify problems due to the occurrence of abnormal situations (accidents, events). Information on the state of the traffic on the routes monitored **is transferred in real time** (through different dissemination channels), allowing users to change their routes as a function of the current level of network congestion

Current status

- Over **130 Km** monitored
- Travel time of more than 40 sectors
- **15 routes** monitored
- Data update every **5 minutes**
- Messages posted on VMs & www.muoversiaroma.it

UTT (Urban Travel Times): How does it work ?

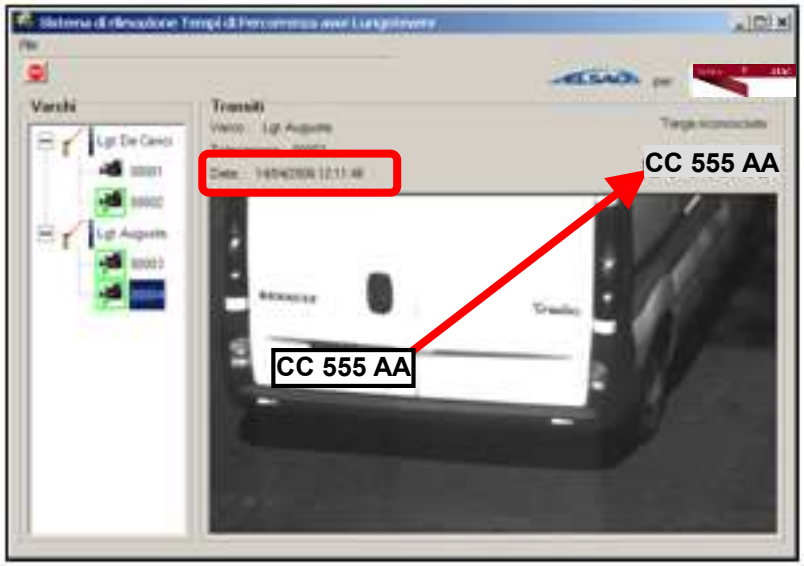


PLATE RECOGNISED AND TIME RECORDED AT THE ENTRY SECTION

Targa: CC 555 AA
14-apr-06 11:50:39

PLATE RECOGNISED AND TIME RECORDED AT THE EXIT SECTION

Targa: CC 555 AA
14-apr-06 12:11:48

TRAVEL TIME
21 mins
9 secs

- AVM – Automatic Vehicle Monitoring

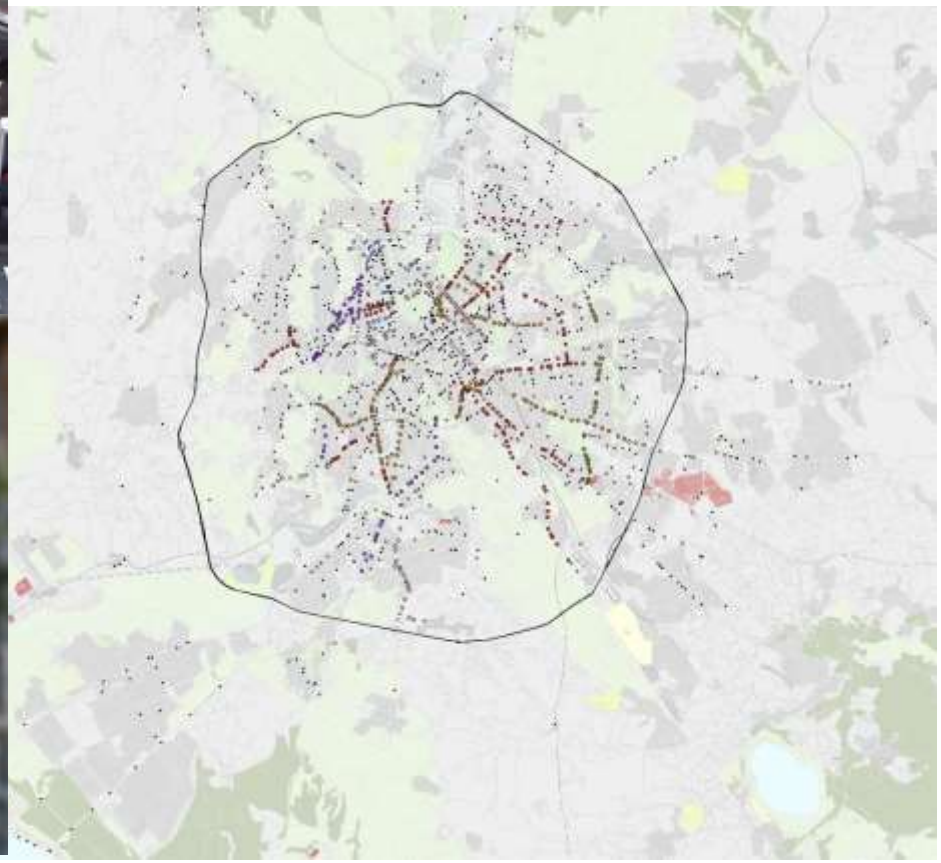
The AVM system, installed on Atac and RomaTPL fleets and bus, allows real-time capture of key figures relating to public transportation, including the location of the coming bus.
The AVM data is feeding in an automatic way both the electronic poles on roads and traffic service operated by Rome Mobility Services, including www.muoversiaroma.it

Information to the citizen through 300 electronic poles: the Mobility Service Centre sends to the poles electronic information on traffic and road conditions, which alternate on the display to the estimated times of arrival of the bus

To date about 2.600 equipped bus

Traffic signals in Rome

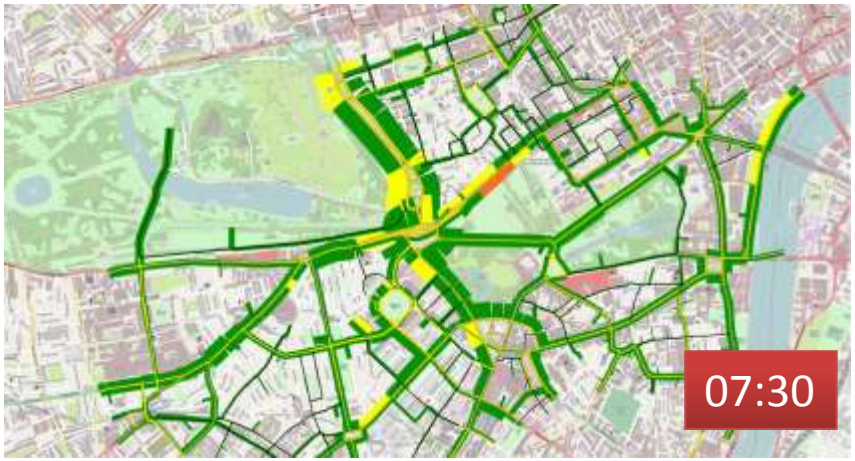
Complex systems can implement control strategies for dynamic and static traffic light on the real traffic conditions



Current status

Traffic signals	**1.530**
Non centralized	1.003
Synchronized	159
Under UTC	527
with LED lights	315

Data fusion and forecasting – work in progress !



Images courtesy from providers during test phases

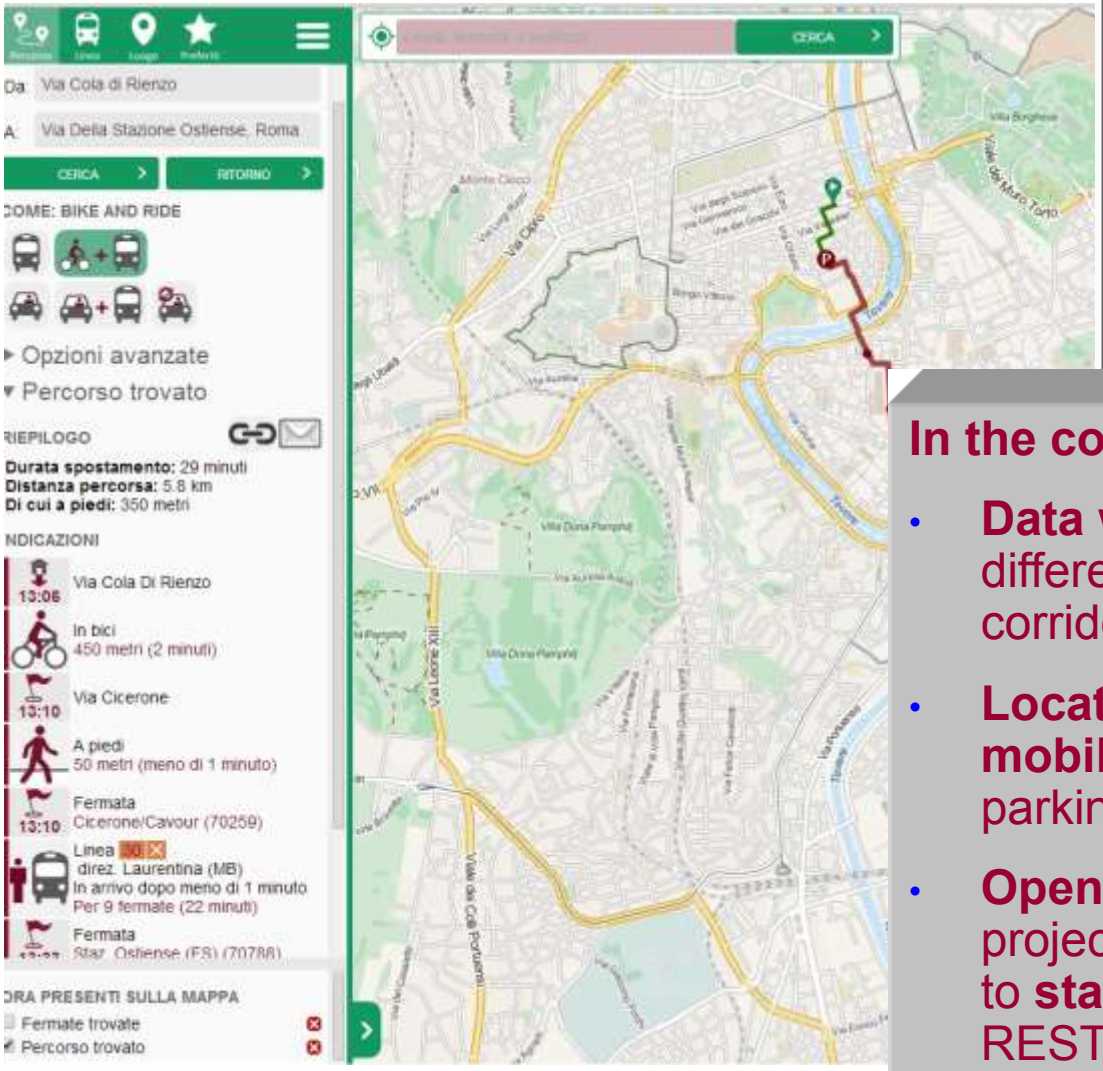
RTTI in selected zones or in all main roads ?

The open data portal

- **Contents:**
  - Static dataset both geographical and numerical
  - A real time API for both public and private transport
  - A selection of tools for webmasters
  - All the source code of our apps and services
- **About 30M access to our real time API per month**
- Support to the developer community
- **30+ apps developed or enhanced in only 6 months**

- http://www.agenziamobilita.roma.it/it/servizi/open-data/
- (Italian only, we'll provide English translation)

New multi-modal personal travel: new AM choices !!



In the coming years:

- **Data ware-house:** integration among different databases and with TEN-T corridor operators
- **Location-aware services and mobile ticketing,** both for PT and parking lots.
- **Open Data & Co-operation:** new projects with EU and int. actors, adapt to **standards** (DATEX II, REST/JSON), **crowdsourcing**

JUBILEE OF MERCY

MERCIFUL LIKE THE FATHER

PONTIFICAL COUNCIL FOR THE PROMOTION OF THE NEW EVANGELIZATION

Jubilee of Mercy in Rome: from December 8, 2015

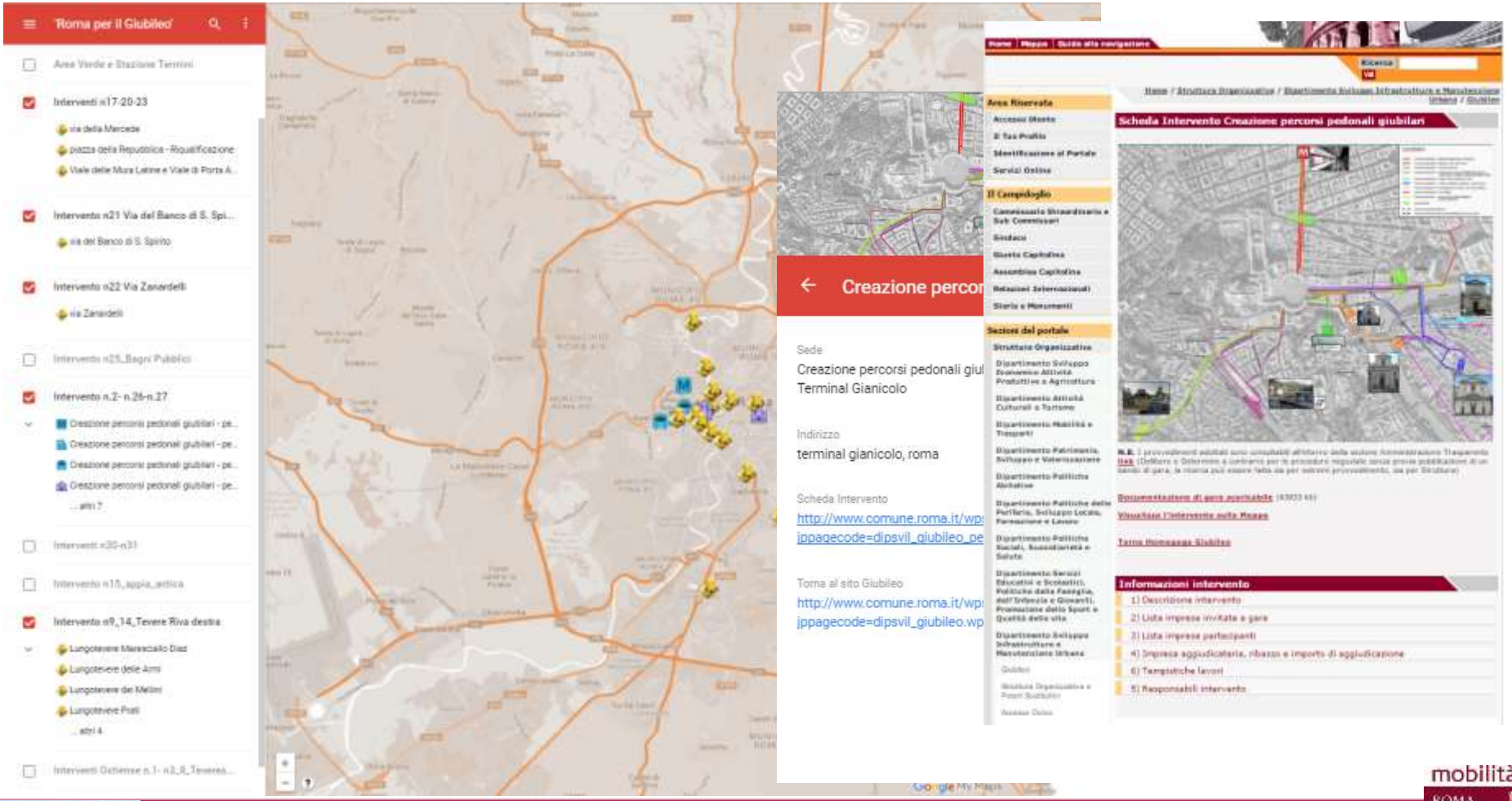
Short terms (end 2015) intervention plan *to improve mobility and pollution conditions in order to facilitate the reception of pilgrims coming in Rome with 31 interventions.*

- **Increase PT efficiency and maintenance**, r**earrange spaces** near main PT & railway nodes, **exchange bus parking areas** outside the center, new **pedestrian and bike paths.**
- Strengthening the **mobility network** (roads, subways, junctions of the railway system and of tramways with requalification of surrounding zones, **starting from Termini**.

Jubilee of Mercy in Rome: from December 8, 2015

Interactive map of works status:

http://www.comune.roma.it/pcr/it/dipsvil_giubileo.page



Open data, ITS: smart city for the Jubilee

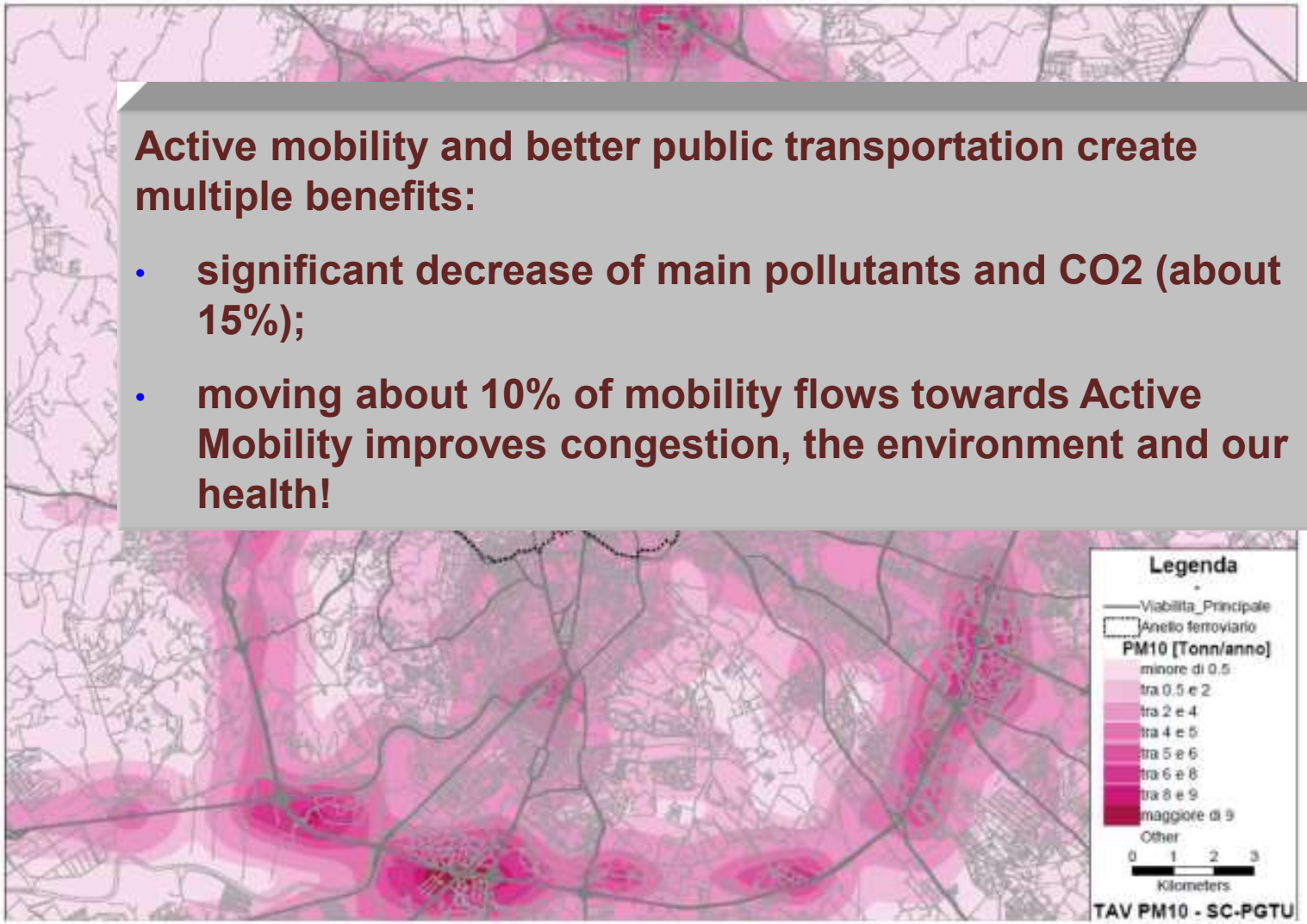
Inside the **Jubilee (December 2015 - November 2016)** we are working to:

- Extend the **Open data concept**, **data standardisation** according emerging EU Regulations, new Priority Zones and link with EU Corridors
- Support the implementation of a "**personal mobility assistant**";
- **ITS** to support the *city governance*, and the protection of "*environmental Islands*" and optimisation with LED lamps of the traffic light network and its use as ***Internet of Things*** on Rome territory
- **Integration of information** between transport modes and transport operators, integration of the information coming from the social networks.

ITS implementation for the Jubilee

- **Limited Traffic Zone for Rail Ring Area: implementation of 1st LTZ part** to support the *city governance*, controlling tourism coach and freight vehicles crossing the zone and parking areas nearby
- **Integration of information:** testing new infomobility systems coming from EU R&S project, integration of the information coming from train sector.

Effect of the Mobility Masterplan on environment: PM10



Active mobility and better public transportation create multiple benefits:

- **significant decrease of main pollutants and CO2 (about 15%);**
- **moving about 10% of mobility flows towards Active Mobility improves congestion, the environment and our health!**

ROMA CAPITALE

Thank you for your attention!

mobilità ROMA

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Mobility Agency of the City of Rome
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Mobility Masterplan, ITS and Open Data in Jubilee year