Joint PASTA and Stepping Stone projects
POLIS working group meeting, Brussels, 7-8 April 2014

Rome case study: The new Mobility Masterplan and its active mobility measures

Ing. Fabio Nussio - Head of International Co-operation
Mobility Agency of the City of Rome
### The context of mobility

#### Municipal Area
1.285 skm

#### Population
- Metr. Area: 4,500,000
- City residents: 2,800,000

#### Road Network
- km 5,000
  - Main road network: km 800

#### Vehicles
- Total: 2,650,000
  - Cars: 1,890,000
  - 2 wheels: 600,000
  - Goods delivery: 160,000

#### Daily Trips
- Total: 6,100,000

#### Peak-hour Trips
- Total: 560,000

### Main City characteristics
- The historic and cultural heritage
- Narrow and not modifiable roads
- The status of Italian Capital City
- The inner presence of the Vatican City
- The Attitude (85 vehicles/100 citizens)
- The Tourists (>23 millions per year)
Evolution of the population in Rome

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<tr>
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<th></th>
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</thead>
<tbody>
<tr>
<td>Rome municipality</td>
<td>2.858.000</td>
<td>2.884.000</td>
<td>2.884.000</td>
<td>2.980.000</td>
</tr>
<tr>
<td>External to road ring</td>
<td>500.900</td>
<td>704.600</td>
<td>747.000</td>
<td>896.000</td>
</tr>
<tr>
<td>% external GRA</td>
<td>17%</td>
<td>24%</td>
<td>26%</td>
<td>30%</td>
</tr>
</tbody>
</table>

Source: Research Roma oltre GRA
Scenari della mobilità romana

Rome case study: new traffic MP and AM measures
Rome case study: new traffic MP and AM measures
Mobility & Impacts in Rome in 2005

Metropolitan Area

Old Town – City Centre

Traffic inducing:
- Energy disruption
- Congestion
- Pollution
- Safety risks

Impacting on:
- Health
- City attractiveness
- Economic growth
- Quality of life
CO2 emission map (tons/y) from mobility in Rome in 2011
Learning from European co-operation on Sustainable Mobility

The SUMP – Sustainable Urban Mobility Plan & CIVITAS Approach: 
Guidelines for Roma Capitale Administration


Large technical & political table: Rome SUMP (2010) - Sustainable (Urban) Mobility Strategic Plan, now updated by new Mobility Masterplan, taking care of the indications given by EC Urban Mobility Package:

Reconnect the city, reduce the use of private vehicles (car & motorbikes), recover and redistribute public spaces and improve the environmental status!

- **Mass Rapid Transport System Expansion** Underground and Urban Railways, new tramway system.
- **Completion of the road system** as well as PT priority, parking management and park&ride improvements

### Main line extensions (km)

<table>
<thead>
<tr>
<th>Transport Line</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metro</td>
<td>66 km (+ 29 km)</td>
</tr>
<tr>
<td>Tramway</td>
<td>69 km (+ 30 km)</td>
</tr>
<tr>
<td>Railways</td>
<td>168 km (+ 16 km)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Transport Line</th>
<th>Length</th>
<th>n* stops</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metro</td>
<td>37</td>
<td>48</td>
</tr>
<tr>
<td>Tramway</td>
<td>39</td>
<td>188</td>
</tr>
<tr>
<td>Corridors</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>Urban Railway</td>
<td>58</td>
<td>47</td>
</tr>
<tr>
<td>Railways(2)</td>
<td>152</td>
<td>42</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>318</td>
<td></td>
</tr>
</tbody>
</table>

(2) Metropolitan area
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 ú
Sustainable Mobility Strategic Plan

New station Tiburtina (High speed train) & New Int. Freeway Tunnel
Already in operation!

New Int. freeway tunnel
- Length: 3.2 km (2.2 in tunnel)
- From Nomentana to A24
- 9 security exit and 56 cameras
- Opened May 2012
- Cost: 168 Million €
- Financing: 100% City
New tramway implementation completed in 2013

New tramway terminus p.zza Venezia

Requalification Largo Argentina

New tramway line in via Botteghe Oscure
New metro and existing background
Mass Rapid Transport System Expansion:
Line C – from south to centre

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

S. Giovanni/Colosseo (T3)
- Length: km 3
- Stations: 2
- Start: 2013
- Scheduled end: 2020
- Investment: 792 million euro

Venezia/Ottaviano (T2)
- Length: km 3.5
- Stations: 3
Evolution of the Plan with financial crisis

- Financial crisis is limiting the available resources, in particular on Mass Rapid Transport System Expansion: choices need to be tuned with real economic possibilities of the City Administration.

- Support by the EU: Cities are more involved in EU documents, like the Urban Mobility Action Plan: SUMP, urban logistic, access control, ITS, road safety, but primarily about people living in urban context. Cities are now urban nodes, to be financed by TEN-T CEF tool.

- New administration is pushing on the integration of the available infrastructure, increasing their efficiency and maintenance in particular on PT as well as planning works on new tramway system and better integration with the Lazio Region for what regard urban railways.

- New Administration is already pushing short term action towards sustainable mobility as well as new pedestrian area and soft modes.
The new mobility model: 6-zones with different characteristics

Different urban fabrics characteristics and density of each zone require different mobility organizations to make consistent the offer of public and private transport, with safety conditions and in compliance with environmental characteristics.

In each area specific objectives and prevalent actions to recover balance among all modes and healthy quality of life are proposed.
The mobility & env model: 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** 0.5 km²
  - Zero Emission Area (walking & electric)
New characteristics of the zones

The objective of Zone 1 (Central Area) is the maximum reduction of private car traffic crossing the zone and almost exclusive use of pedestrian mobility, bicycle and PT. The entire area will be divided into environmental islands, identifying routes for pedestrians and cyclists at the service of the main center historical and tourism poles, while reducing the impacts of goods delivery.

In Zone 2 - Rail Ring, the obj is limitation of private car traffic crossing the zone and to obtain a prevailing use of PT and cycling - environmental islands and progressive introduction of forms of pricing.

In Zone 6, streamlining of PT services for the systematic trips to / from Rome and a better connection with sea resources, encouragement of alternative mobility systems and environmental islands,

In the outer zones, encouraging the use of PT on the penetration lines and interchanging with cycling, supported by the diffusion of cycling park & ride on main TP nodes. Priority is the balance between the use of PT and private mobility.
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 am - 10 am
Fri. & Sat. 9.30 pm - 3 am

LTZ Villa Borghese
Mon. to Sun. 0 am - 24

LTZ San Lorenzo
From Wed. to Sat. 9.30 pm - 3 am
(May to July & September - October)
Fri. & Sat. 9.30 pm - 3 am
(November - April)

LTZ Testaccio
Fri. & Sat. 9.30 pm - 3 am

San Lorenzo: 7 e-Gates
Trastevere: 12 e-Gates
Historic Center: 22 e-Gates
Testaccio: 10 e-Gates
New PT re-organisation and LEZ Rail Ring

- Rail Ring zone: low emission zone that could become **subject to payment** according to vehicle emission class;

- **Restructuration of PT** in order to be more integrated with Metro, Tram and Railways nodes

- Reinforcement of **PT main axes** to reach and inside the Rail Ring zone;

- **New protected lanes for PT**;

- **New traffic light regulation**;

- **Fight against illegal car parking**
The new Plan want to actively promote car sharing, car pooling, bike sharing and electric mobility in a multi-modal approach to everyone mobility.

This implies the capacity to guarantee sustainability of urban transport and a drastic reduction of transport emissions in the city – within economically acceptable conditions.

Active Mobility model is proposed especially for systematic short-distance trips and for commuting more challenging trips with PT.

Mobility manager: enhancing the structure to coordinate the mobility managers of Companies;

Car-pooling: new apps and integration with Mobility Managers system.
Support to e-Mobility diffusion

- Implementation of a **wide public recharging network** with a common standard, strengthening **PPP with energy utilities** and automotive industry;
- Possible **e renewal of public fleets with e-vehicles**;
- Research and development of **innovative systems of e-vehicles sharing**;
- Administrative and political **support measures**;

![Recharging Points](image)
Car-sharing: fixed and free-flow schemes

- **Car sharing fixed scheme**: working in 4 central districts.
- **Annual fee, fixed places, return to same place, low hourly costs.**
- **10 e-vehicles** (Citroen C0) in regular service from December 2012
- Managed in experimental way directly by the **Mobility Agency**

<table>
<thead>
<tr>
<th>Year</th>
<th>Vehicles</th>
<th>Parking pl.</th>
<th>Customers</th>
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<tbody>
<tr>
<td>2005</td>
<td>9</td>
<td>5</td>
<td>201</td>
</tr>
<tr>
<td>2006</td>
<td>9</td>
<td>5</td>
<td>318</td>
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<tr>
<td>2007</td>
<td>33</td>
<td>21</td>
<td>704</td>
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<td>2008</td>
<td>41</td>
<td>25</td>
<td>1018</td>
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<td>2009</td>
<td>104</td>
<td>61</td>
<td>1365</td>
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<td>2010</td>
<td>106</td>
<td>62</td>
<td>1951</td>
</tr>
<tr>
<td>2011</td>
<td>104</td>
<td>68</td>
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<td>2012</td>
<td>118</td>
<td>81</td>
<td>2674</td>
</tr>
<tr>
<td>2013</td>
<td>122</td>
<td>82</td>
<td>3057</td>
</tr>
</tbody>
</table>
Car-sharing: fixed and free-flow schemes

- **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 starting in June), **BEE** (with Renault Twizy within 2014)

**Strong impulse to vehicle sharing:**

Up to 1500 cars available in 12 months!
The cycling plan in Rome: existing paths (red) implementations (green), planned (blue), local network (light yellow)

- Integrated network of cycle paths,
- extension of the network to connect major working destinations, the network nodes of the TPL network and the main green areas
**Bike-sharing scheme**

**Old scheme:** Managed by Agency with Municipal support. In the past years, lackness of financial support and progressive system failure;

**New administration scheme:** re-launch of the system with more stations, financed by new advertising installations to be open within 2014. Bike availability with open data app.

- Strong impulse to Bicycle mode
  - Revitalisation of bike-sharing scheme.
  - Resources to implement the cycle path framework plan
Decarbonisation of the inner city centre

1. Definition of areas and routes closed to traffic – avoidance of flow traffic;

2. Review of regulation for access and parking of vehicles for mobility of people and goods

3. Development of vehicles sharing systems (cars, vans, bicycles)

4. Progressive introduction of electric and hybrid vehicles.

5. Realization of pedestrian areas and pathways
New Freight Delivery Plan: Testing transit-point in city centre

- Based on PPP cooperation between City Administration and main Association of Entrepreneur (Unindustria). Supported by EU SMARTSET project.
- Attempt to manage transport needs with residents and environmental issues: *van-sharing with electric vehicles.*
- In positive case, starting of a permanent Urban Goods Distribution Centre.
New city district requalification projects

1. Requalification of the Trastevere south district;
2. Refurbishment of the Sunday market area;
3. New traffic schemes with new cycle lane and increase of safety
4. Renovation and use for social activities of historical complex.
5. Incentives for new Small and Micro Enterprises in the area

Porta Portese – a resource for Rome
New City Administration: more attention to soft modes

1. Closure of part of Via Fori Imperiali;

2. Extension of Central LTZ intended as an integration of environmental islands

3. Future extension of archeological park.

Pedestrian Colosseo project

- Closure of part of Via Fori Imperiali;
- Extension of Central LTZ intended as an integration of environmental islands;
- Future extension of archeological park.
In 2011, there have been over 18 thousand accidents with victims, **186 deaths and 24,000 injured** in road accidents.

Overall, **pedestrians, cyclists and motorcyclists account for 65% of deaths.**

Rome pays **every year a social cost of more than 2 billions euro for road accidents;**

In 2011 the Municipality approved the **Road Safety Plan 2012-2020.**

The plan is incorporating the outcomes of EU project like eSUM and its action pack. (http://www.esum.eu/actionpack.html)

The overall fixed goal for the Plan is to **halve the number of fatalities within 2020, with specific goals for each component of risk.**

The Plan also identifies the **road junctions to make secure**, where more than 15 accidents per year happened between 2008 and 2010.
The Monitoring Centre for Road Safety

- The Centre goal is increasing road safety levels, with **integrated Mobility information layer** dedicated to road safety and linked to other Mobility Agency ITS Systems
- Data collection and management, assessment and monitoring of interventions, planning and design activities, production of reports
- Development of **traffic projects to improve junctions/roads/areas safety**, according to yearly available resources
- Designs and tests of **innovative measures** (infrastructural, signalling, etc ...)
- Implementation of a “**Shared Procedure**” among all subjects and operators in order to increase road safety.
Some indications on the interventions

From 2004 up now, **about 140 interventions** across the city including **350 crossing** were analysed, solutions were discussed with all citizens, modified, approved and financed.

**About 60 interventions are already completed, 25 Millions Euro** of investment for the implemented works.

**13 City Districts** interested *(69% of the whole city population)*, 79% areas inside the external road ring (GRA) and 50% of the municipality area.

**On 68 crossings** where interventions were already completed before 2009, referring to 2004 (before the interventions) and to 2009 (after completion) we have:

- **A total reduction of accidents of 38%, a reduction of the injured of 32%, 37% less people** involved in accidents!
The Road Safety Monitoring Centre & Information system

<table>
<thead>
<tr>
<th>Incident</th>
<th>Person</th>
<th>Vehicle</th>
<th>Analysis</th>
<th>Map</th>
<th>ID_Veneto</th>
<th>Strada</th>
<th>ID_Persona</th>
<th>ID_Vetture</th>
<th>ID_Veicolo</th>
<th>Tipo</th>
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</table>

![Image of the Road Safety Monitoring Centre & Information system interface](image-url)
Rome case study: new traffic MP and AM measures
POLIS WG Env & Health - Brussels, 7-8 April 2014
Rome case study: new traffic MP and AM measures
Rome case study: new traffic MP and AM measures
Rome case study: new traffic MP and AM measures
## ITS & AM: Mobility Center today: facts & figures

<table>
<thead>
<tr>
<th>Infomobility</th>
<th>Sanctioning &amp; fining</th>
<th>Monitoring, Controlling Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable message signs (VMS)</td>
<td>E-gates for Limited Traffic Zones &amp; Pre-signalling signs</td>
<td>Video surveillance cameras</td>
</tr>
<tr>
<td>UTT (Urban Travel Times)</td>
<td>E-gates for PT bus lanes</td>
<td>Traffic Measurement Stations</td>
</tr>
<tr>
<td>Electronic poles of bus stop</td>
<td>Fotored</td>
<td>Traffic lights</td>
</tr>
<tr>
<td>muoversiaroma.it - mobile</td>
<td>Vistared</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Velox</td>
<td></td>
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<tr>
<td></td>
<td>Safety Tutor</td>
<td></td>
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</tbody>
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|                                |                                |                                |
|                                |                                |                                |
|                                |                                |                                |

- An "old style" service
- [http://muoversiaroma.it](http://muoversiaroma.it) (mobile)
- [http://muovi.roma.it](http://muovi.roma.it) (mobile)
New multi-modal personal travel: new AM choices !!
By the end of 2013, the Agency made available to the public a Developers Portal, inside the new corporate web site (http://www.agenziamobilita.roma.it/en/open-data.html)

In this portal, both developers and citizens are finding static and real time data, under a standard publishing license, where find:

- (a selection of) XML real time services
- Static set of data
- HTML widgets to be included on other websites
- Source code (GPL v3)/
Open data

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- (a selection of) XML real time services
- Static set of data
- HTML widgets to be included on other websites
- Source code (GPL v3)/
Mobile app & open data

- App and HTML5 now available for iOS/Android/WP8
- Position-aware functionalities
- Future crowdsourced data

- But alsoé.
Plans for coming years

- **Data ware-house**: integration among different databases and with TEN-T corridor operator

- **Multi-modal path-finder**: better support to AM choices **for all city users**

- **Open Data & Co-operation**: new projects with EU and int. actors (Google, IBM, moovit), adapt to standards (DATEX II, REST/JSON), better service and social contribution
Results of Mobility Masterplan

- Public transport: from 26.9% to 34.8% (+ 64,000 passengers in peak hour)
- Private cars: from 50% to 43.4% (- 38,000 movements in peak hour)
- PTW: from 15.4% to 14.9%; (- 3,000 movements in peak hour)
- Bike + pedestrian: from 5.6% to 7.0% (+ 7,500 in peak hour)
Effect of the Mobility Masterplan on environment

First results on pollutant emissions from transport (peak hour 2018 vs. 2013) are showing a significant decrease of main pollutants (about 15%).

<table>
<thead>
<tr>
<th>Zona</th>
<th>CO</th>
<th>NO\textsubscript{X}</th>
<th>COVNM</th>
<th>PM\textsubscript{10}</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anello ferroviario</td>
<td>-32%</td>
<td>-45%</td>
<td>-25%</td>
<td>-52%</td>
</tr>
<tr>
<td>Fascia Verde</td>
<td>-14%</td>
<td>-15%</td>
<td>-12%</td>
<td>-16%</td>
</tr>
<tr>
<td>Intra Gra</td>
<td>-17%</td>
<td>-17%</td>
<td>-16%</td>
<td>-18%</td>
</tr>
<tr>
<td>Extra Gra</td>
<td>12%</td>
<td>16%</td>
<td>-12%</td>
<td>-11%</td>
</tr>
<tr>
<td>ROMA</td>
<td>-14%</td>
<td>-14%</td>
<td>-14%</td>
<td>-15%</td>
</tr>
</tbody>
</table>

CO\textsubscript{2} decrease is also expected in the same percentage.

<table>
<thead>
<tr>
<th>Zona</th>
<th>CO\textsubscript{2}</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anello ferroviario</td>
<td>-24%</td>
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<td>Fascia Verde</td>
<td>-17%</td>
</tr>
<tr>
<td>Intra Gra</td>
<td>-18%</td>
</tr>
<tr>
<td>Extra Gra</td>
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<td>ROMA</td>
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</tr>
</tbody>
</table>
Effect of the Mobility Masterplan on environment: PM10
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Effect of the Mobility Masterplan on environment: PM10

In other words ...

Moving about 10% of mobility flows towards Active Mobility is better for health and environment!

NEXT STEPS:

Â Evaluation of AM effects on health according to PASTA methodology, trying to include it in the City Council approval of the Mobility Masterplan;

Â Real Test during PASTA.
Thank you for your attention.

Ing. Fabio Nussio - Head of International Co-operation
Mobility Agency of the City of Rome
fabio.nussio@agenziamobilita.roma.it