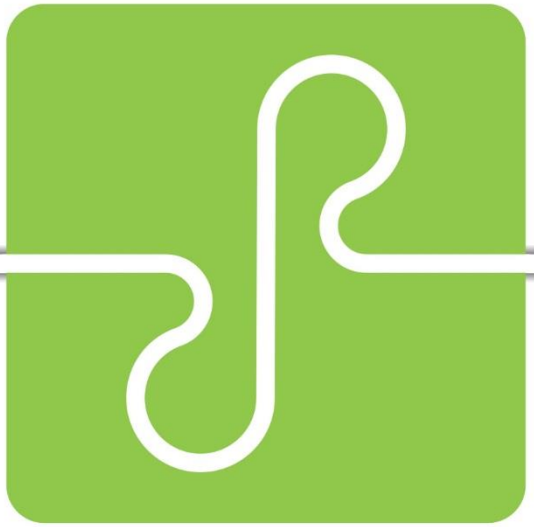
Regional Programme for Mobility and Transport

A plan for a region more competitive and accessible with quality, safe, integrated and resource efficient transport and more connected to the word.



Summary Document

Regione Lombardia

Table of Contents

General coordination for drafting the Programme

General Directorate of Infrastructures and Mobility of the Lombardy Region

Other entities of the working group

General Directorates of the Lombardy Region:

- Environment, Energy and Sustainable Development
- Territory, Urbanism and land protection
- Agriculture
- Safety, Civil Protection and Immigration
- Economical Development
- University, research and open innovation

Central Directorates of the Lombardy Region:

- Planning, Finance and Management Control
- Organisation, Personnel, Estate and Information System

Entities of the Regional System:

- ARPA Lombardia (Lombardy agency for the environmental protection)
- ERSAF (Regional agency for services related to agriculture and forests)
- ILSPA (Regional Infrastructures Company)
- ÉUPOLIS LOMBARDIA (Lombardy agency for reseach, statistics and training)
- LISPA (Regional Company for Information Technology)

With consultancy from ‘ATI Studio Gioia Gibelli’ and ‘Poliedra - Politecnico di Milano’.

Preface

On 20 September 2016, the Lombardy Regional Council, with resolution no. 1245, approved the Regional Programme for Mobility and Transport (RPMT). It represents an integrated planning tool of great importance as ***"it constitutes the system of mobility relationships, based upon demand and supply, comparing it with the layout of existing infrastructure and identifying the integrated planning requirements of infrastructural networks and transport services"*** (Regional Law 6/2012).

The RPMT has been constructed based on an ***in-depth analysis of the mobility demand***, and on ***the extensive involvement of territorial and industry stakeholders***, carried out within the scope of, in parallel with and downstream of the complex Strategic Environmental Assessment process. This process has produced, inter alia, a large database known as the 2014 Origin/Destination Regional Matrix. The OD Matrix is available open source on the open data portal ***www.dati.lombardia.it***

This document summarises and presents the essential content of the Programme, constituting an interpretation aid for the approved deed. It is split into:

- ageneral elements section, which sets out the construction process and the process of involvment of stakeholders, the Programme's structure and main characteristics and the expected benefits from its implementation;

- three subsequent sections, relating, respectively, to the relevant context and the analysis of the current situation, the choices made (i.e. objectives, strategies, actions and tools), and the RPMT implementation and monitoring system.

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General elements

Construction process and involvement of stakeholders

The Regional Programme for Mobility and Transport is a complex tool, whose construction process involved, from the very start (June 2013), several periods of debate with territorial bodies, industry stakeholders, relevant entities on environmental matters and other potentially interested parties.

As well as being investigated at meetings of the Regional Conference on Local Public Transport, Assessment Conferences and Strategic Environmental Assessment Public Forums in July 2014 and 2015, the process of drafting the RPMT and its contents was discussed, in particular, at:

- meetings with the ***neighbouring territorial bodies*** held from 2013;
- technical meetings with industry **stakeholders**, held between May and June 2014;
- three specific workshops, organised between September and October 2014 (23 September 2014 - “Interactions between urban and non-urban mobility”; 30 September 2014 - “Functionality and management of networks"; 8 October 2014 - “Promote the logistics chain in a competitive and resource efficient way”).

During the preparation phase of the RPMT, technical meetings and three seminars were organised (in October and December 2013 and in April 2015) to draft the Origin/Destination Regional Matrix at the basis of the Programme.

Over 3,500 entities were invited to the various meetings and working groups: 700 participants and over 250 technical reports and contributions allowed for the contents of the RPMT to be finalised.

After its adoption by the Regional Council with resolution dated 23 December 2015, during the V Council Commission, 56 hearings were held with entities representing the different components involved in the many dimensions of the demand and supply of mobility.

The Programme was ultimately approved by the Regional Council on 20 September 2016, with resolution no. 1245, 34 years after the last general planning instrument for transport in the Lombardy Region.

Approval process

2013

- Preliminary activities: ***June/August 2013***
- Technical meetings with neighbouring Regions: ***July/November 2013***
- Formal launch of Programme & Strategic Environmental Assessment process: ***Oct 2013***

2014

- Publication of Programme and Scoping Document preliminary proposal: ***June 2014***
- First Conference and SEA Public Forum: ***July 2014***
- Thematic workshops open to the public (urban and non-urban mobility, management and functionality of networks, competitive and resource efficient logistics): ***Sept/Oct 2014***

2015

- Publication of Programme Proposal, Environmental Report, Non-Technical Summary, Environmental implications assessment: ***May 2015***
- Second Conference and SEA Public Forum: ***July 2015***
- Reasoned opinion of the SEA Authority: ***December 2015***
- Regional Council resolution adopting the overall Programme including Environmental Report, Non-Technical Summary, Environmental implications assessment, Reasoned opinion and Summary Declaration: ***December 2015***

2016

- Discussion of Programme at the V Commission of the Regional Council: ***Jan/June 2016***
- Approval of Programme by Regional Council: ***20 September***

1

3 O/D Matrix Workshop	*209* Contributions comments	*3* RPMT thematic workshops
3,500 invitations	*700* participants	*50* technical reports
2 SEA public forums	*2* SEA assessment conferences	*56* Council Commission Hearings

Structure and characteristics
of the Regional Programme for Mobility and Transport

The Regional Programme for Mobility and Transport identifies the **objectives**, **strategies**, **actions** for mobility and transport in Lombardy, indicating, in particular, **the fundamental structure of the infrastructural networks and services**.

Its **timeframe is for the short–medium term** (indicatively 5 years), with a **medium–long term timeframe of analysis and perspective**. In this sense, the RPMT is expected to be updated at least on a five-yearly basis, subject to the opportunity of considering annual changes/additions in a dynamic logic of the **plan-process** type, using, in particular, monitoring activity.

The **relevant geographic area is Lombardy**, considered within the complex system of the **extended territorial context** in which it is.

Logical structure & contents of document

The Programme is split into three logically connected parts

PART 1	***PART 2***	***PART 3***
presents the relevant ***context*** and contains ***analyses*** (general and specific)	develops the objectives, strategies, actions and tools, i.e. the ***choices of Programme***	defines the methods of ***implementation*** and ***monitoring*** of the Programme

There are also three annexes

Annex 1	*Annex 2*	*Annex 3*
"EU, national and regional policies"	***"Supporting document for definition of choices of RPMT"***	***"Strategy for electric mobility"***
which summarises, in schematic terms, the main content and indications emerging from the regulatory, planning, programming and guidance tools at European, national and regional level.	which assesses with a multidisciplinary approach different scenarios of development for Lombardy's system of infrastructure and services, identifying strategic indications useful for determining the content of Part 2 of the Programme.	which presents areas of intervention and actions to develop electric mobility in Lombardy.

Accompanying the programme are

MAPS	*APPENDIX*
in visual support of the interventions outlined by the Programme on the rail network and on the logistics and intermodal cargo transport system, on the subway and tram network, on the road network and on regional cycle paths.	containing the methods of construction of the 2014 Origin/Destination Matrix and some results of the analysis of the Matrix itself.

The Regional Programme for Mobility and Transport is characterised by:

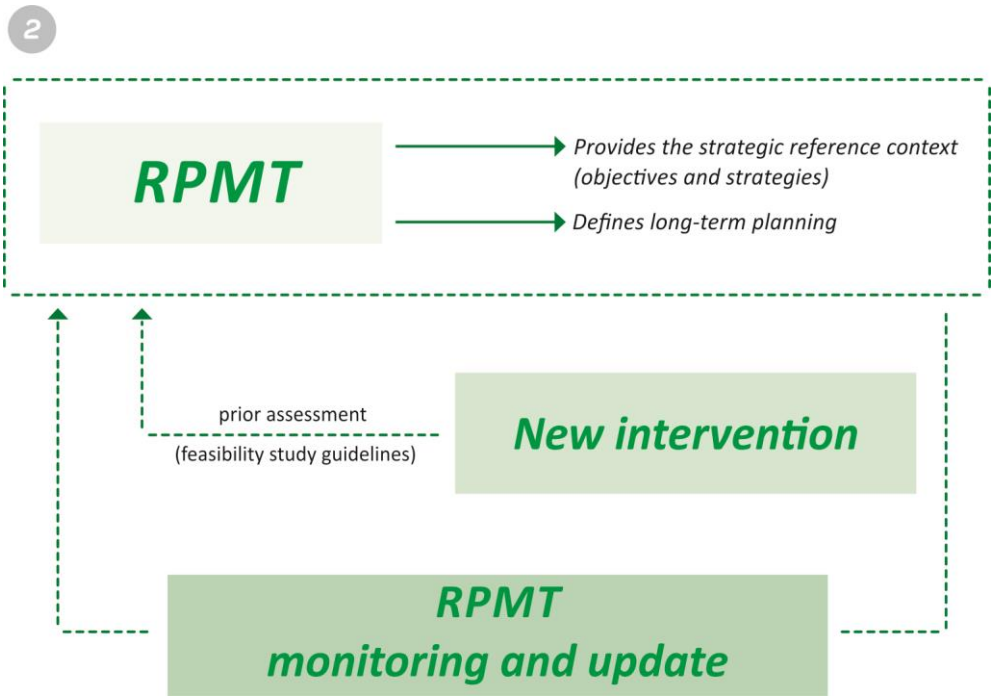
- **The integrated approach** to the issue of transport and relationships existing between mobility and territory, environment and economic system which places at the centre not the modes of transport but rather the entity completing the journey (citizens and enterprises);
- The application of a **logic of "plan-process" nature**, involving updates that will also be focused on the outcomes of the monitoring work;
- Specific attention to the issue of the **demand for mobility**, highlighted in particular by the activity carried out to construct the 2014 O/D Regional Matrix;
- **The open approach** evidenced by the publication, in April 2015, of the 2014 Origin/Destination Regional Matrix on the platform www.dati.lombardia.it and by the promotion of many opportunities for discussion open to the public;
- Integration between the drafting of the RPMT and the **Strategic Environmental Assessment** process and the related environmental sustainability aspects;
- The use of **tools of transport and environmental modelling** and of **cost–benefit analysis** to support the definition of the Programme's choices (method to be reused, in depth, in the RPMT implementation phase);
- The introduction of a "**toolbox**" available to all industry stakeholders to improve skills and tools in relation to mobility and transport.

A new planning model

With the Regional Programme for Mobility and Transport, the Lombardy Region has introduced a new planning model for infrastructural mobility and transport interventions in line with what has been done nationally with the New Code of Contracts and with the 2016 Economy and Finance Document.

To use the resources in a targeted manner on interventions with greatest added value on the territory, and thus to ensure better overall efficiency, it will be absolutely essential for the insertion of relevant work in regional planning to develop specific feasibility analyses. These are to be supported by cost–benefit analyses, in accordance with the Guidelines for preparing Feasibility Studies for infrastructural interventions, already approved (available on the website www.regione.lombardia.it).

The system of monitoring and periodic update of the Programme completes its implementation and verification process.



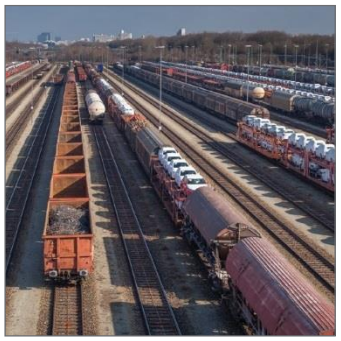
Expected results and benefits at 2020

The Regional Programme for Mobility and Transport of the Lombardy Region sets **OBJECTIVES** and outlines **STRATEGIES** and **ACTIONS** that must ensure that Lombardy is connected with the world, competitive, accessible, able to ensure quality, safe, integrated and resource efficient transport, both for mobility of people and cargo.

Using specific forecasting models, the **BENEFITS** that will be drawn from the planned interventions by 2020 have been estimated, in terms of:

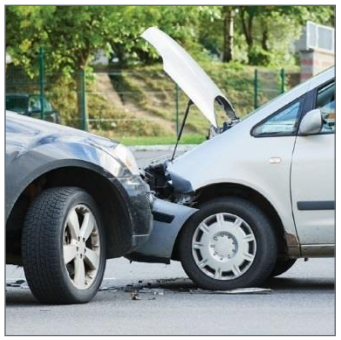
Reduction of road congestion, particularly in the busiest areas and on the busiest roads, increasing the average journey speed by 6% and reducing time losses (i.e. hours lost due to road congestion) by 6%;

Improvement of collective transport services (with the aim of consolidating the trend of growth of collective transport) increasing rail services by 20% and Local Public Transport services by 3%, with related increases in use estimated, respectively, at 19% and at 5%;



Increase in supply of intermodal transport (increasing the capacity of terminals related to Lombardy by 30% and rail capacity by 30 million tonnes per year);

Reduction of environmental impact (with particular attention to air pollution), with reductions estimated with the support of ARPA Lombardy in line with the content of the Integrated Regional Air Quality Plan and the Regional Environmental Energy Programme: 20% for PM10, 35% for NOx, 25% for COV and 6% for climate changing emissions;



Support to the reduction of road accidents in line with the objectives set by the EU.

In economic terms, the benefits at 2020 are quantifiable in the order of ***900 million Euro/year***, due to the reduction of travelling times for people and cargo, due to lower social costs from the reduction of accidents and due to the reduction of climate changing emissions.

Part 1

of the Regional Programme
for Mobility and Transport

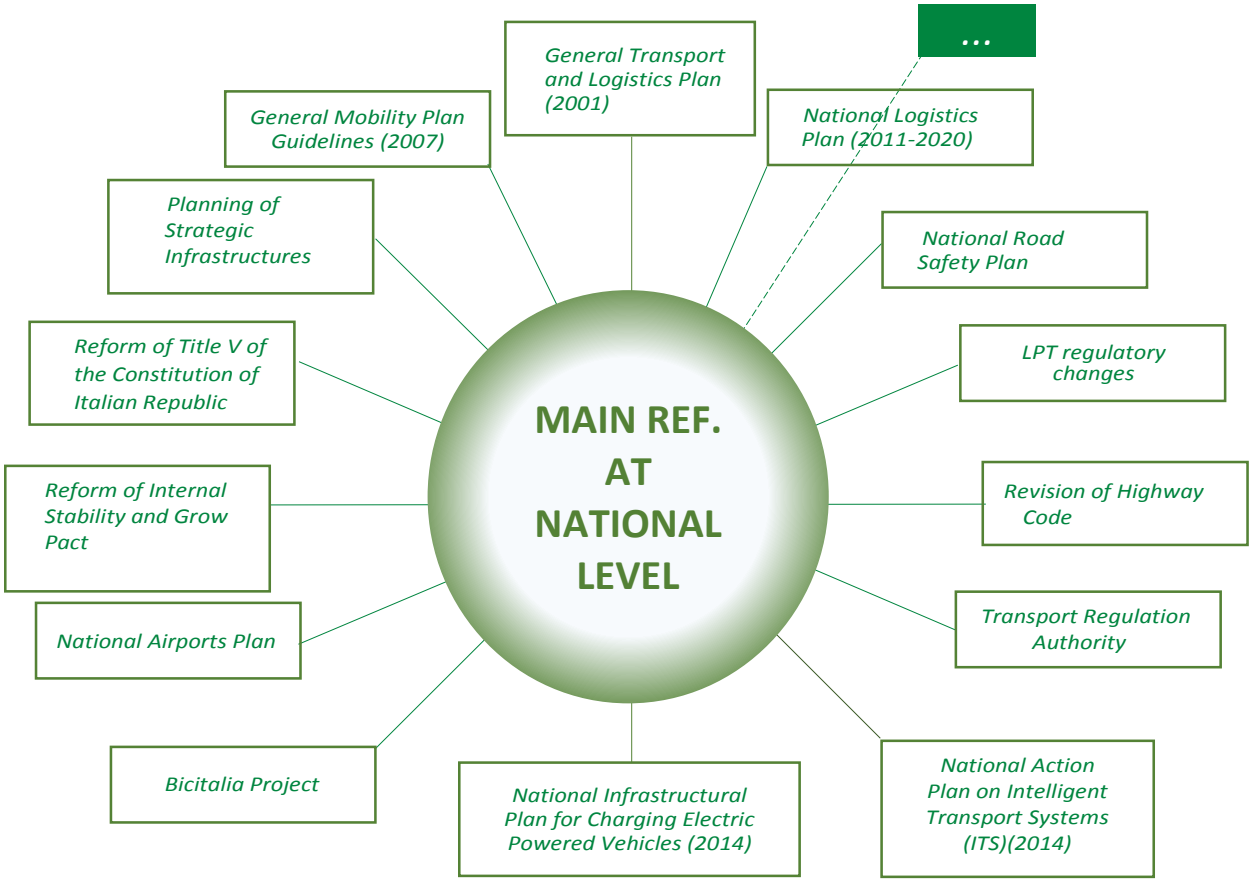
RELEVANT CONTEXT AND ANALYSIS OF CURRENT SITUATION

Policy Context

Mobility and transport planning in the Lombardy Region is included in a complex policy context, in relation to which the main references at european, national and local level must be considered, as well as the relevant strategic context of Switzerland and the neighbouring Regions.

The following were particularly considered:

- the contents of the White Paper “Roadmap to a Single European Transport Area - towards a competitive and resource efficient transport system” (2011);
- policies for developing the trans-European transport network (known as TEN-T network);
- EU directives on the deployment of Intelligent Transport Systems (Directive 2010/40/EU) and on the deployment of alternative fuels infrastructure (Directive 2014/94/EU);
- the “Eurovelo” cycling project.


MAIN REF. AT NATIONAL LEVEL
...
General Transport and Logistics Plan (2001)
National Logistics Plan (2011-2020)
General Mobility Plan Guidelines (2007)
Planning of Strategic Infrastructures
National Road Safety Plan
Reform of Title V of the Constitution of Italian Republic
LPT regulatory changes
Reform of Internal Stability and Grow Pact
Revision of Highway Code
National Airports Plan
Transport Regulation Authority
Bicitalia Project
National Infrastructural Plan for Charging Electric Powered Vehicles (2014)
National Action Plan on Intelligent Transport Systems (ITS)(2014)

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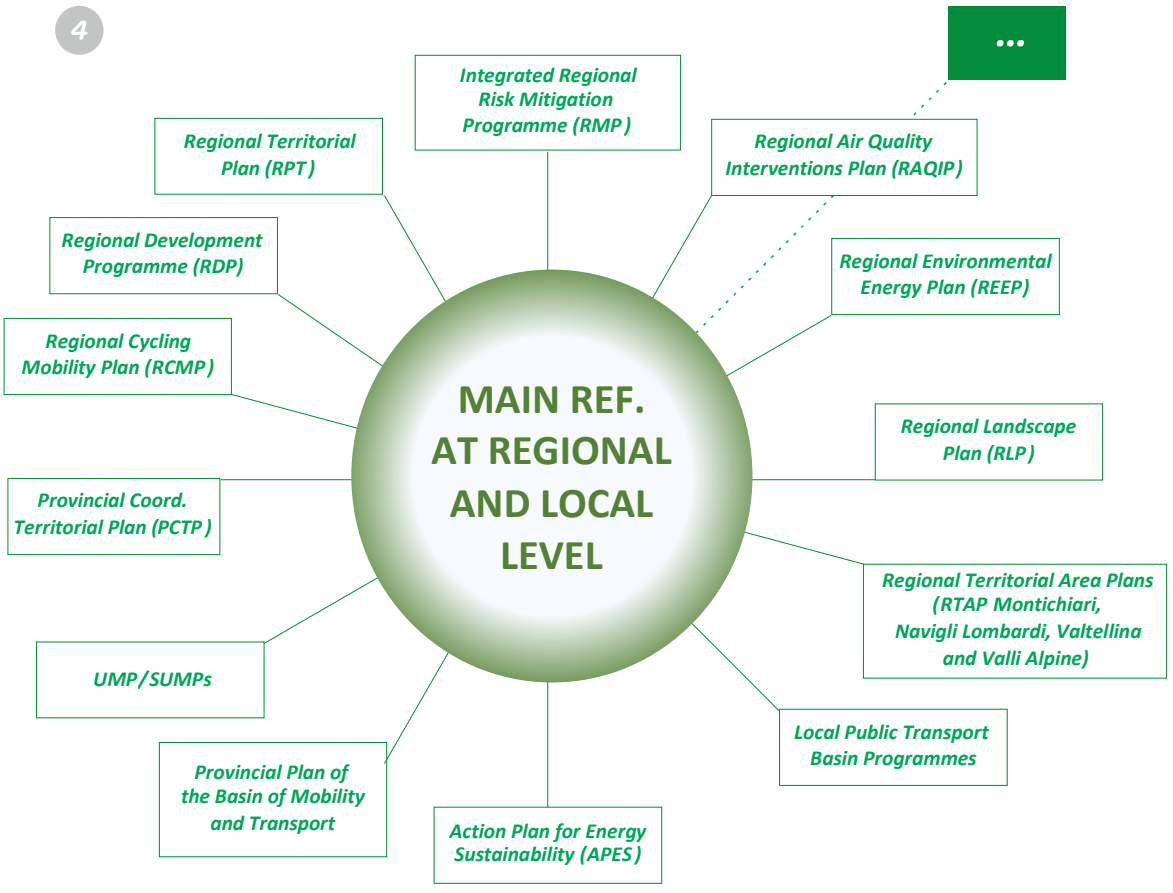

MAIN REF. AT REGIONAL AND LOCAL LEVEL
...
Integrated Regional Risk Mitigation Programme (RMP)
Regional Territorial Plan (RPT)
Regional Air Quality Interventions Plan (RAQIP)
Regional Development Programme (RDP)
Regional Environmental Energy Plan (REEP)
Regional Cycling Mobility Plan (RCMP)
Regional Landscape Plan (RLP)
Provincial Coord. Territorial Plan (PCTP)
Regional Territorial Area Plans (RTAP Montichiari, Navigli Lombardi, Valtellina and Valli Alpine)
UMP/SUMPs
Local Public Transport Basin Programmes
Provincial Plan of the Basin of Mobility and Transport
Action Plan for Energy Sustainability (APES)

The TEN-T corridors in Lombardy

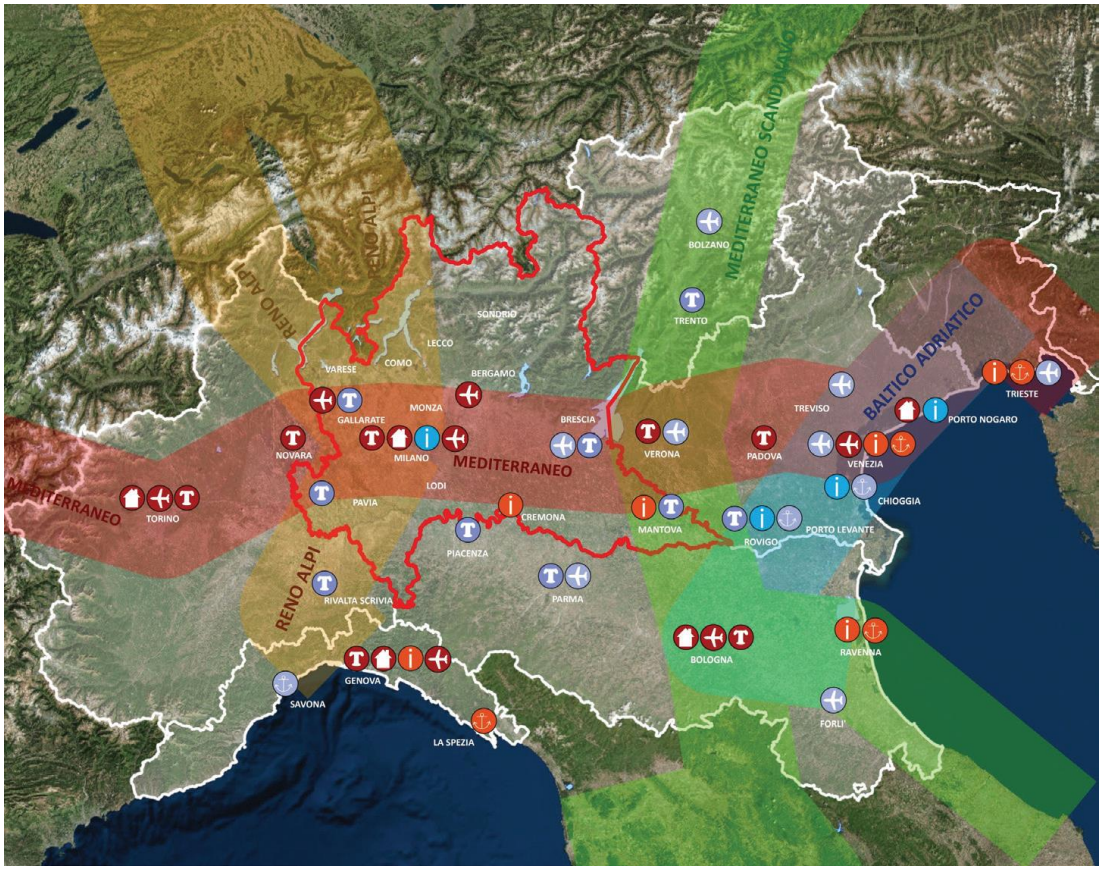
European policies give priority to the *construction of a trans-European transport network* aimed at ensuring mobility of persons and cargo as well as offering quality infrastructure to users, overcoming existing bottlenecks.

This network, known as TEN-T, has evolved over time, from the definition of a list of priority projects to the identification of hubs to be interconnected, by way of a network (first level - core network, and second level - comprehensive network) with the aim of improving territorial cohesion and competitiveness.

The "governance platform", to guarantee development of the core network and to stimulate its coordinated development in all Union countries, isprovided by the "Corridor" tool.

Lombardy enjoys a strategic position with respect to the European mobility system, crossed by three of the four Corridors in Italy and the nine Corridors identified by the EU:

- *Rhine - Alpine Corridor;*
- *Mediterranean Corridor;*
- *Scandinavian – Mediterranean Corridor.*



Transport demand

Demand Analysis is a fundamental **reference basis** for preparing good policies on mobility and transport.
By being aware of demand and assessing its evolution, it is possible to indicate the system of necessary interventions more appropriately. This is achieved through an analysis process that, considering infrastructural and service scenarios planned for supply, allows for current and potential critical situations to be assessed.

The data presented is the summary of a **complex information system** established by the Region and representing a fundamental asset for structuring regional policies as well as for local bodies and industry operators.

For passenger transport, reference is made to the **2014 Origin/Destination Regional Matrix** as well as to the **local and regional public transport monitoring system;** for cargo transport, we refer to the investigations conducted, based upon ISTAT data, in the research project developed by Èupolis Lombardia "Cargo Mobility: actions for developing intermodal transport and logistics competitiveness".

Passenger demand

In 2014, Lombardy saw approximately **16.40 million journeys/day** compared to approximately **15.7 million** in 2002.
The mobility ratio[1] increased **from 70% in 2002 to 74% in 2014** while the **time per capita/day** used **for journeys reduced from 72 to 66 minutes**.
The number of **passengers*km decreased by 16%**, from approximately **164 million in 2002** to approximately **137 million in 2014**, also based upon the reduction of the **average journey distance** declining from **10.6 km in 2002** to **8.7 km in 2014**.

1 Ratio between mobile population (i.e. those who have made at least one journey on the relevant day) and total population.

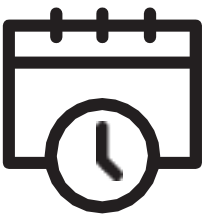
Why we move

Partly due to the dynamics of the labour market in recent years, 2014 saw more **occasional journeys** (i.e. those made to make purchases, to perform personal tasks, to lead or take persons, to visit relatives, friends or acquaintances, for leisure or tourism, for medical visits or for health reasons), amounting to 4.18 million/day, than journeys for work reasons, amounting to 3.66 million/day. This is testimony to an **increasingly flexible demand for mobility**.
The amount of journeys increased compared to 2002 for all reasons, except for the purpose of work.

The distribution of mobility demand by reasons for the journey
(absolute value and distribution %) - Total
(Journeys on the average weekday, excluding returns to home)

	2002 (absolute value, million)	2002 (%)	2014 (absolute value, million)	2014 (%)	Variations absolute values 2014-2002 (%)
Work	3.71	44.7%	3.66	39.9%	-1.35%
Study	0.76	9.2%	0.90	9.8%	+18.42%
Business	0.21	2.5%	0.44	4.8%	+109.52%
Occasional journeys	3.62	43.6%	4.18	45.5%	+15.47%
Total	8.30	100%	9.18	100.0%	+10.60%

When we move



The distribution of total journeys by time bracket reflects the traditional distribution for peak hours with a **significant peak** (in the order of 15% of total journeys) **in the bracket between 7am and 8am**. The morning peak relates, in particular, to outbound journeys for study and work while the distribution of occasional journeys is more homogeneous during the day (even though concentrated in some time brackets during the day: from 8am to 12pm and from 2pm to 7pm). This phenomenon, associated with the increase of the **amount of occasional journeys**, represents an important element of **challenge for organising the supply** of public transport.

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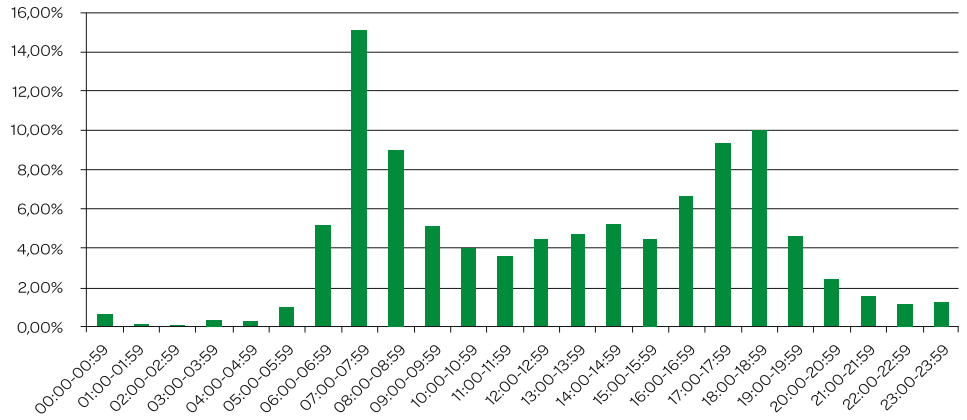
Distribution of total journeys (including returns to home) by time bracket



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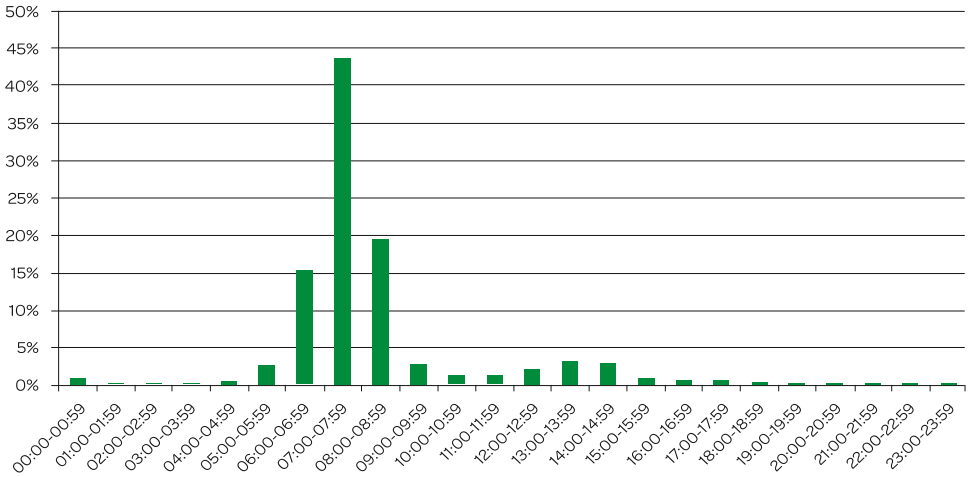
Distribution of systematic journeys (excluding returns to home) by time bracket



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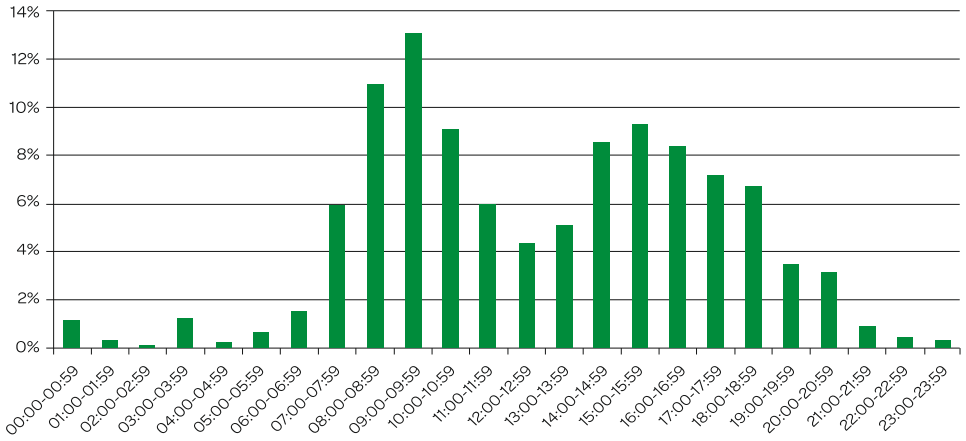
Distribution of occasional journeys (excluding returns to home) by time bracket



How we move

With respect to **modes of transport**, between 2002 and 2014, **collective transport** as a whole recorded an **increase in its part share** (from roughly 14 to 19%), with an **increase of the use of the train of 50%**, while the **car** (driver and passenger), **despite remaining the most used mode of transport, lost a total of approximately 7 percentage points** (from 69 to 62%). The reduction stands at 6 percentage points when considering only the case of "car driver". **Non-motorised journeys** record a **slight increase** from **12 to 15%**.

The modal split of total journeys
compared between 2002 and 2014

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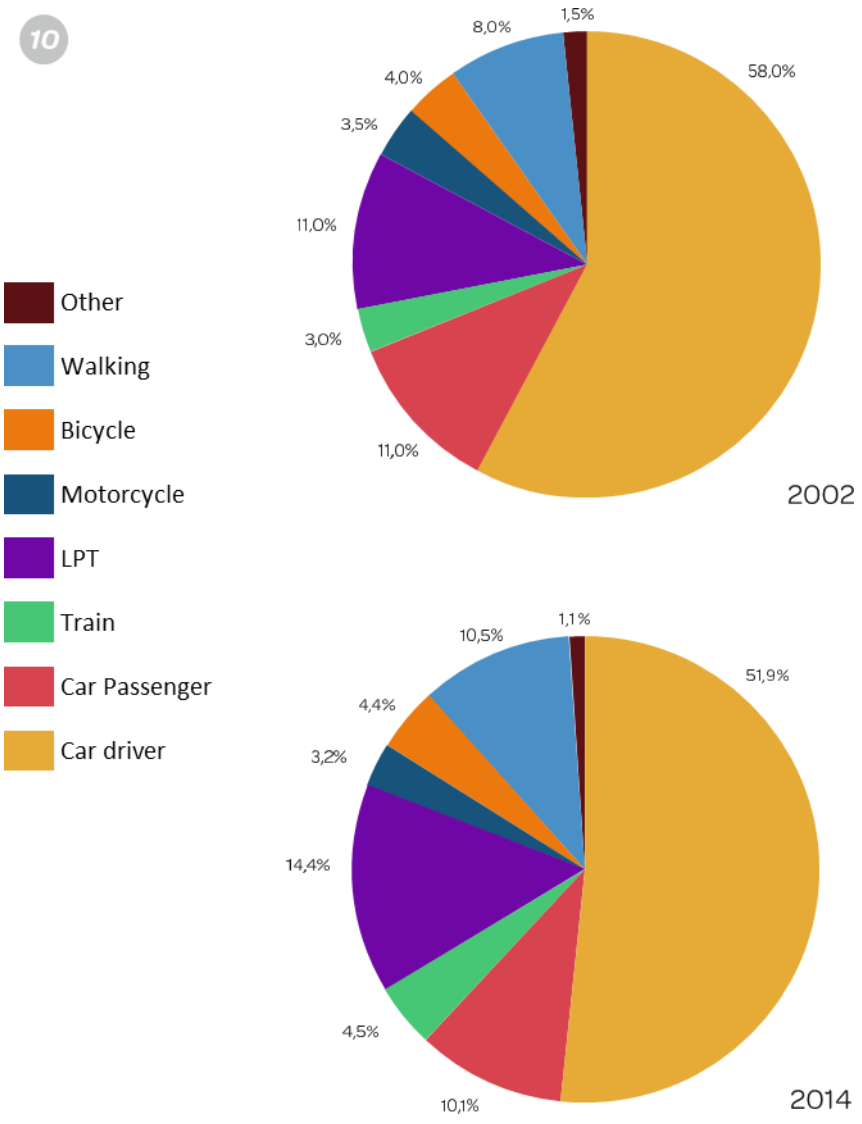

By cross-referencing the data relating to modes of transport with the data relating to journey distance, it is noted that **non-motorised means** (walking and bicycles) are used, clearly, almost exclusively for journeys within 10 km and that, for journeys over 20 km, the use of private modes of transport decreases to the benefit of public modes.

Modal split for different journey distances

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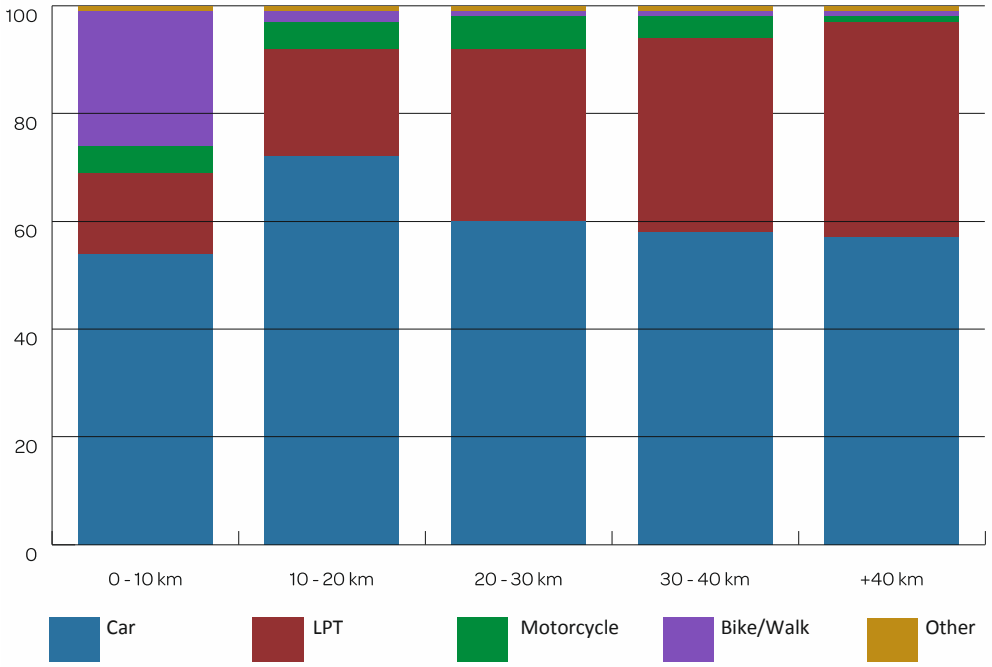

Compared to the national data, Lombardy has a significantly higher percentage use of public transport (the national figure, for 2013, is approximately 11%) **and lower car use** (the national figure, for 2013, is approximately 69%).

Where we move

The figures below analyse the distribution of inbound and outbound journeys by Province, net of returns to home.

In relation to its demographic dimension and the extent of the activities and services present in its territory, **the province of Milan records almost one-third of outbound journeys and over 35% of journeys inbound**. This is followed by Brescia and Bergamo which correspond, in total, both for outward and inward, to shares in the order of 23% - 24% of journeys in Lombardy.

Distribution of total outbound journeys (excluding returns to home) by Province

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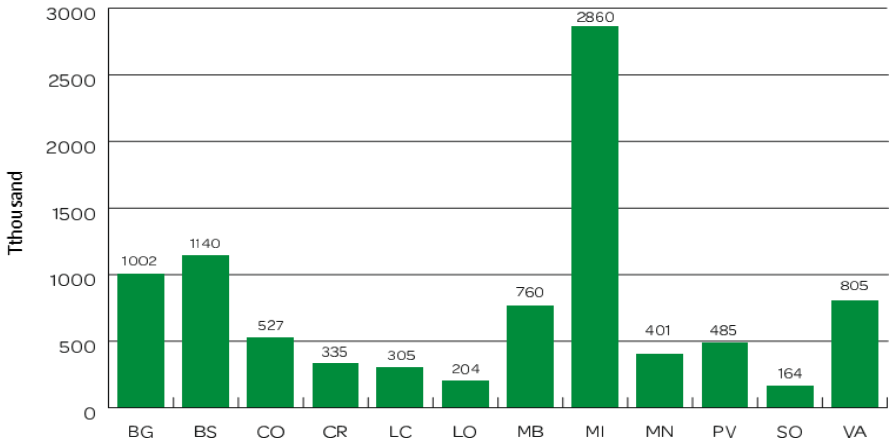
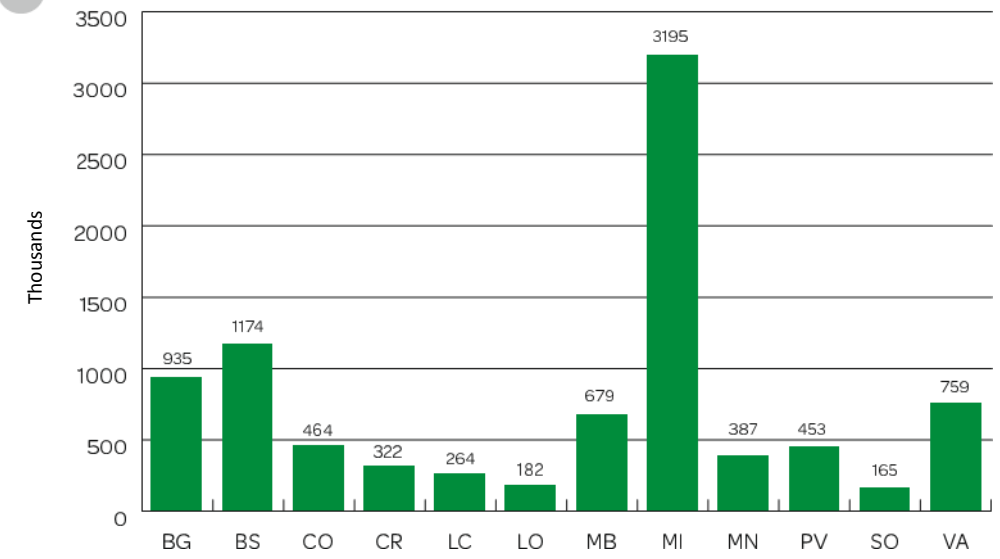


Distribution of total inbound journeys (excluding returns to home) by Province

13



The figure below presents the difference between journeys inbound and outbound by each municipality and highlights which areas gravitate on the main urban hubs. The analysis shows, for example, a known phenomenon: the area surrounding Milan, being characterised by a high number of inbound and outbound journeys, has a predominance of the latter and records, therefore, a prevalence of the residential function over that linked to activities.

Difference between inbound and outbound journeys in Lombardy (2014)

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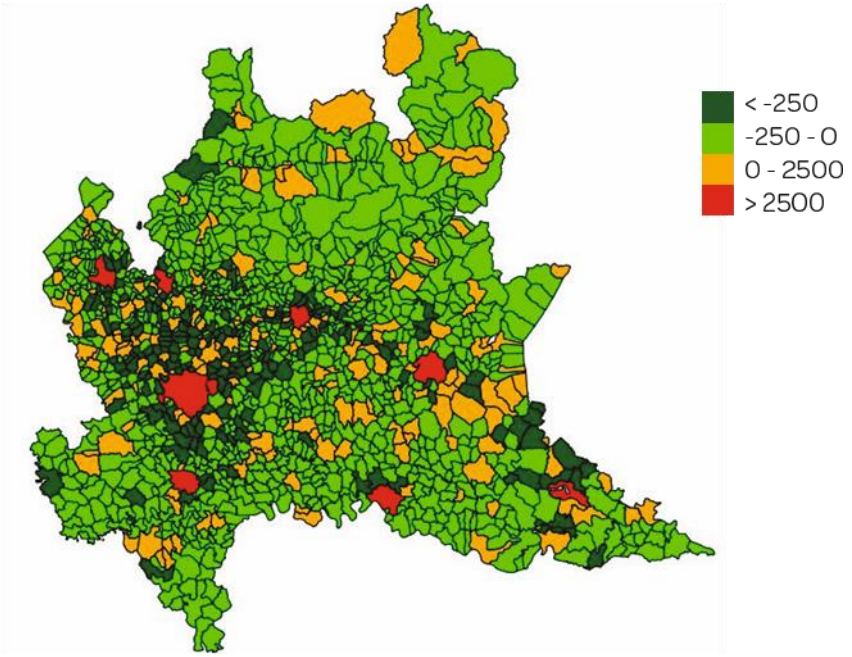


Source: From 2014 O/D regional matrix

Cargo mobility demand

For transporting cargo, the “by road” mode is mainly used.

15 Distribution of cargo traffic in Lombardy (year 2011)

MODES OF TRANSPORT	TRAFFIC ROUTE	FLOW MILLIONS OF TONNES	FLOW %
RAIL	National	4.0÷4.5	1.1
	International	24.0	6.0
	Sub-total RAIL	**28.0÷28.5**	**7.1%**
ROAD	Domestic	196.6	48.9
	O/D National	164.9	41.1
	International	11.6	2.9
	Sub-total ROAD	**373.1**	**92.9%**
	TOTAL (RAIL + ROAD)	**401.1÷401.6**	**100.0%**

Transport by road

Transport by road covers almost 93% of total cargo transport involving Lombardy. Over 50% of that share relates to domestic transport, while the portion related to international traffic is below 3%.

The **average distances** travelled by cargo on road **are in the order of 90 km** (30 km for transport on own account and 110 km for transport under contract).

A significant component of the flows take place on the **motorway network**, on which **heavy cargo traffic** has been substantially **stationary** in recent years.

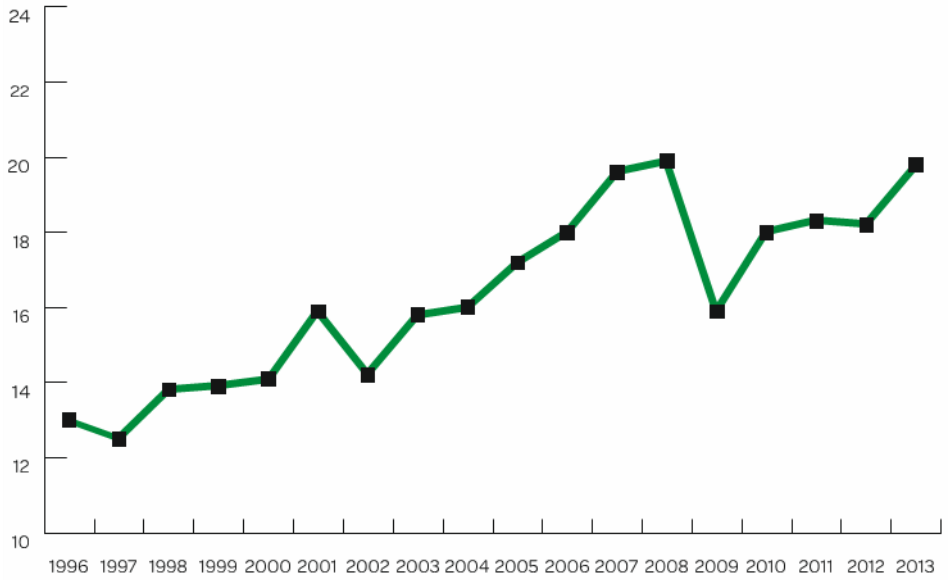
The number of heavy vehicles present on average on motorway routes involving Lombardy concerns roughly 7,000 vehicles/day identified on the A8/A26 branch to reach almost 60,000 vehicles/day on the A4 (Milan-Brescia section and Brescia-Padua section) and the A1 (Milan-Bologna section).

Rail transport

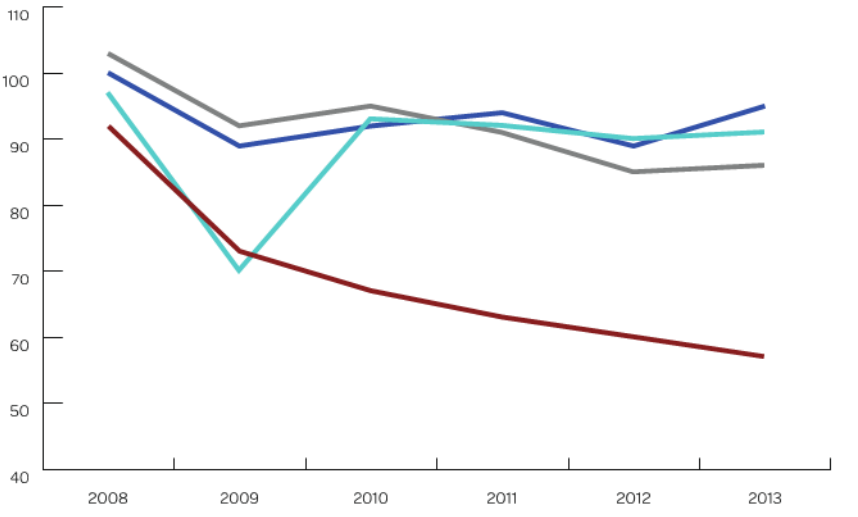
Excluding the traffic component within Lombardy (amounting to approximately 49% of the total and presenting characteristics little suited to the railway system), **rail transport represents approximately 14% of the total**.
The role of the railway is more significant when focusing on the **modal split of the international component** of cargo traffic. On these routes, in fact, the **railway represents 67.4% of the total international traffic**.
The **majority of international railway traffic is constituted by intermodal transport (approximately 62%)**.

Over recent years, the share of **intermodal railway traffic in Lombardy** has remained essentially **constant** against a significant **reduction in railway traffic** recorded **nationally**.

16 Intermodal traffic in Lombardy - trend in the period 1996-2013



17 National cargo traffic trend (starting from july 2007)



Average data of six-month survey/year

Air transport

In the logistics industry, **Malpensa airport** plays a fundamental role, moving almost **50% of national cargo traffic** with approximately **450,000 tonnes/year**.
The quantities mentioned above may appear to be scarcely significant but it should be considered that cargo air transport in Italy, despite representing only **2% of the total of overall cargo transport in terms of volume**, covers **40% of the total in terms of value** (source ISTAT, 2011).

Shipping

As regards water transport, 2013 was characterised by a good increase compared to 2012, with values in line with previous years and standing at **400,000 tonnes**.
In this case, the transported cargo is mainly poor goods (aggregates and grains) i.e. those related to industrial manufacturing processes connected to business established near the loading areas.

Recent evolution
Current mobility and transport situation

Some figures and information relating to mobility in Lombardy:

COLLECTIVE TRANSPORT

- Reform of Local Public Transport (LPT) (Regional Law 6/12 and its implementation) with identification of 6 transport areas and the provision of standardisation and reward mechanisms. The concept of collective transport includes rail transport and LPT.

COLLECTIVE TRANSPORT
Rail transport

- Roughly 2,000 km of rail network (approximately 320 of which is the regional network granted on concession to Ferrovienord Spa)
- 421 stations (120 of which on the regional network)
- 77% of Lombardy municipalities (corresponding to 92% of Lombardy citizens) have a railway station within a 5 km radius
- The supply of rail services amounting to approximately 42 million trains x km per year, corresponding to more than 2,000 daily departures
- A rail fleet consisting of roughly 330 compositions with an average age of 21 years
- Rail service contracts for managing the service and the network for over 550 million Euros per year
- Over 700,000 passengers/day on regional rail services managed by Trenord ltd
- An increase in rail supply (and demand) from 2001 to 2014 exceeding 50%
- An operating costs/pricing revenues ratio close to 45% (significantly above the minimum coverage required by national legislation - equal to 35%)

COLLECTIVE TRANSPORT
Car-trolley bus-subway-tram transport

- A **subway network** of approximately 110 km
- A **tram and fast tram** network of approximately 310 km
- An overall supply (automotive, subway, tram and fast tram services) close to 300 million vehicles x km
- Roughly 6,100 **buses** with an average age of 8 and a half years
- Roughly 190 subway trains with an average age of 23 years
- Roughly 430 trams with an average age of 39 years
- 60 local public transport **service contracts**
- 750 million **LPT passengers** per year, with annual increases, recently, in the order of 3%
- An **operating costs/pricing revenues** ratio close to 50% (significantly above the minimum coverage required by national legislation - equal to 35%).

COLLECTIVE TRANSPORT
Navigation services
and cable transport services

- 5 major lakes (Maggiore, Como, Garda, Iseo, Ceresio) and 18 minor lakes
- 3 managers of **scheduled public navigation** (Gestione Governativa Navigazione Laghi, Navigazione Lago Iseo srl, Società Navigazione Lago di Lugano)
- 122 ships and 142 ports of call (84 in Lombardy)
- 9 million passengers per year
- 9 **ropeway installations** that carry out the public transport service, with a total production of 200,000 wagons x km per year

MOTORWAY AND ROAD SYSTEM OF REGIONAL SIGNIFICANCE

- Over 700 km of **motorways**, over 10,000 km of **provincial roads**, roughly 1,000 km of national roads and over 58,000 km of **municipal** roads
- 3 **contracting authorities** (Ministry of Infrastructures and Transport, Concessioni Autostradali Lombarde Spa, Infrastrutture lombarde Spa) and 12 motorway **concession holders**
- 7.6 million vehicles (76% of which represented by cars) with a motoring ratio of 588 cars for every 1,000 inhabitants
- Significant traffic loads, particularly in the metropolitan area and to the north of Milan, with peaks of 120 - 140,000 vehicles/day
- Around 30,000 **road accidents** per year, with over 400 fatalities (with a **reduction** compared to 2001 of the number of accidents of about **40%** and of the number of fatalities of about 60%)
- 3,100 **fuel distribution systems**
  (with over 650 **methane/LPG/electric** distribution points)

AIR AND HELICOPTER TRANSPORT

- 3 **airports** classified by the EU as **core airports** (Malpensa, Linate, Orio al Serio) and 1 airport classified as **comprehensive** airport (Montichiari)
- Malpensa indicated, with Turin, by the National Airports Plan as a strategic airport and intercontinental gateway
- 3 airports (Malpensa, Linate, Orio al Serio) among the top 4 in the national ranking for passenger traffic
- Almost 40 million passengers/year (roughly 19 for Malpensa, roughly 9 each for Linate and Orio al Serio)
- **Malpensa in first place in Italy for cargo transport** with over 450,000 tonnes transported per year

CYCLING MOBILITY

- **Regional Cycling Mobility Plan** approved in 2014
- 17 **long-distance regional cycling routes** (3 of European level and 7 of national level) totalling over 2,900 km
- Successful **bike-sharing initiatives** in the main urban centres

CARGO MOBILITY
INTERMODAL AND LOGISTICS TRANSPORT

- 18,000 enterprises, 90,000 staff and **10 billion Euro/year turnover** in the cargo transport and logistics sector in Lombardy
- Roughly 30 million tonnes of cargo transported every year by rail
- A network of terminals based upon mainly private investments
- 1.45 million units of **intermodal transport** of capacity for intermodal terminals of interest to Lombardy
- International and supra-regional protocols relating to prospects along the **Rhine-Alpine Corridor** (AlpTransit and the development of logistic areas at Liguria's ports service)
- Regional guidelines for **city logistics**

Part 2

of the Regional Programme
for Mobility and Transport

PROGRAMME CHOICES

Objectives of the RPMT

The implementation of transport and mobility policies has **significant effects on the lives of citizens and enterprises**. Every choice made in this regard has consequences on decisions concerning residence/domicile and production houses and ultimately, therefore, on the territorial, social and economic structure. At the same time, the policies and decisions of other sectors have significant impacts on the mobility and transport system, greatly affecting the extent and characteristics of the demand.

The desire to provide a unitary and coherent interpretation of the Programme's proposals for action with other regional policies thus determines the opportunity to relate the decisions not only to themes of transport **efficiency** and **effectiveness** and service quality but also, with a view to integration between sectors, to themes of **competitiveness**, **socio-economic and territorial development and environmental sustainability**.

In relation to the foregoing, the **Programme's system of objectives** has been split into **general objectives**, valid on a cross-sectional basis, **correlated** to a set of **specific objectives** that address in more detail the industry issues, maintaining, however, an **integrated** approach between the different modes of transport.

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SPECIFIC OBJECTIVES / ***GENERAL OBJECTIVES***	To improve Lombardy's connections: primary network	To improve connections (regional scale): integrated reg. network	To develop collective transport and achieve modal integration	To achieve integrated, competitive & resource efficient logistics & cargo trans. system	To improve connections with the Milan area & other hubs	To develop further initiatives for resource eff. mobility & gov. of demand	To act to improve transport safety
To improve Lombardy's connectivity for competition & development							
To ensure freedom of movement and ensure territorial accessibility							
To guarantee quality and safety and development of integrated mobility							
To promote environmental sustainability of the transport system							

General objectives

The RPMT's general objectives are:

- **to improve Lombardy's connectivity in order to strengthen its competitiveness and socio-economic development;**
- **to ensure freedom of movement for citizens and cargo and guarantee accessibility to the territory;**
- **to guarantee the quality and safety of transport and the development of integrated mobility;**
- **to promote the environmental sustainability of the transport system.**

The objective **"to improve Lombardy's connectivity in order to strengthen its competitiveness and socio-economic development"** focuses on the issue of Lombardy's positioning within the national and international context of transport and market relations, a context in which the issue of competitiveness of territories and enterprises is playing an increasingly significant role.

The objective **"to ensure freedom of movement for citizens and cargo and guarantee accessibility to the territory"** is based upon the principle that mobility is an essential right, constituting the freedom of individuals. Mobility should therefore be considered in its social and territorial dimension as a "right for everyone" and as a necessary condition for cohesion, as well as for the attractiveness and competitiveness of the territories.

The objective **"to guarantee the quality and safety of transport and the development of integrated mobility"** concerns how the Lombardy Region sees transport in its future: quality, safe and integrated. Quality and safety are fundamentally important elements which must be addressed in an overall manner and which focus, correctly, on the user's perspective. The issue of integration presents a wide range of meanings: integration between different modes of transport, integration between long and short networks (i.e. between long distance journeys and those on a regional/local scale), organisational/managerial integration between mobility and transport operators, integration of pricing policies, integration between different levels of transport planning/programming, integration between infrastructures and services, integration with the landscape, environment and territory, integration with settlement decisions, integration with socio-economic systems.

The objective **"to promote the environmental sustainability of the transport system"** focuses on the need for the entire transport system - and not just some of its segments - to focus on the environment. This principally refers to the need to contribute to reducing local pollutants and climate-change emissions and the exposure of the population to atmospheric and noise pollution as well as to minimise the impacts of the transport and mobility system on that of the landscape-environment.

Specific objectives

The following system of specific objectives fits into the system of general objectives; these specific objectives have also been identified with the aim of avoiding a vertical interpretation (by mode) in favour of a cross-sectional interpretation of the complex phenomenon of mobility:

- A ***to improve Lombardy's connections on a macro-regional, national and international scale: primary network;***
- B ***to improve connections on a regional scale: integrated regional network;***
- C ***to develop collective transport in universal form and achieve integration between different modes of transport;***
- D ***to achieve an integrated, competitive and resource efficient logistics and cargo transport system;***
- E ***to improve connections with the Milan area and with other significant regional hubs;***
- F ***to develop further promotional initiatives of resource efficient mobility and actions for governing demand;***
- G ***to intervene to improve transport safety.***

Some elements are discussed below relating to the specific objectives which partly anticipate the contents of the sections dedicated to strategies and actions.

A *To improve Lombardy's connections on a macro-regional, national and international scale: primary network.*

B *To improve connections on a regional scale: integrated regional network.*

With these two objectives, the aim is to contextualise the issue of infrastructure by introducing a hierarchy of networks, similarly to EU policies on the **TEN-T network**. In particular:

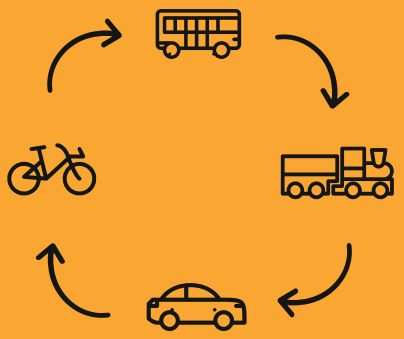
- **in the analysis of the primary network** one should refer to the Core and Comprehensive networks indicated at EU level, duly integrated with the elements of the network deemed to be of similar validity;
- **the regional network** will represent the fundamental infrastructural nerve centre for ensuring accessibility of the territories to/from the primary network.

The creation of strategic infrastructure must be done with a view to integrating at various levels (long networks/short networks; different modes) and considering, in particular:

- the **completion of the work already commenced and the optimisation of existing infrastructure**, within the european and national framework of large infrastructure;
- the creation of **new infrastructure, corresponding to the priorities of the system with quality projects**, that take account, from the initial stages, of environmental, economic and financial sustainability and the efficient use of resources and supervision over time;
- the **improvement of competitiveness of the airport, helicopter, port and inter-port system** in a logic of integration, even supra-regional and of international competitiveness;
- with particular attention to the network of regional nature, the completion of the integrated **cycle network**.

C

To develop collective transport in universal form and achieve integration between different modes of transport.



The objective is focused on collective transport and on its development in an intermodal and universal perspective (i.e. in extended coverage of space and in time).

Collective transport must aim to assume a competitive role within mobility, not only in urban areas but also on a regional scale, through the reorganisation of governance by **completing the regional reform** that Lombardy Region has set out (Regional Law 6/2012) and by implementing the process of **regionalisation of scheduled public navigation** on lakes Maggiore, Como and Garda.

In that context, steps will also be taken through:

- the **re-planning of collective transport services**, in the perspective of a single and universal system;
- the development of a network of **unique relations**, with **strong accessibility** on the **territory** and broad availability during **the daily service**;
- the re-planning of networks in a logic of **clear functional hierarchy** and **readability on the territory**;
- **technological innovation** for ticketing, mobile information, monitoring and safety;
- **accessibility**, through the implementation of information and communication systems and increase of user orientation;
- the creation/completion of **railway and subway infrastructures and interchange nodes** in a system logic, also considering forms of supplementary mobility for managing the "first/last mile";
- investments for the **renewal and expansion of railway transport**, as well as vehicle fleets for subways, fast trams, ropeways and buses.

D

To achieve an integrated, competitive and resource efficient logistics and cargo transport system.

The objective is focused on the fundamental role of logistics and cargo mobility in the industrial and economic development of the region, **promoting, in particular, the transfer of cargo** through more efficient forms of mobility, by way of:

- new infrastructural and managerial structures, at regional/macro-regional (intermodal) and urban (city logistics) level, integrating transport over medium/long distances (by rail/water) with that of distribution (by road);
- the promotion of homogeneous regulations, particularly in the urban area, which encourage the use of vehicles with reduced environmental impact and a coordinated system for operators.

E

To improve connections with the Milan area and with other significant regional hubs.

The objective is focused on the **relationship between the mobility system on a regional scale and the complexity of the Milan area and other main Lombardy hubs**. In the Milan area, in particular, where the overall mobility system must be able to respond effectively and rapidly to the strong transport demand, specific strategies must be implemented to achieve the maximum integration and permeability between the regional system and the urban system, maintaining each of their distinctive characteristics. In this logic, it is also strategic, with particular reference to the Milan area, to reduce urban crossings of cargo transport and road vehicles in general.

F

To develop further promotional initiatives of resource efficient mobility and actions for governing demand.

Notwithstanding the need to orient all of the Programme's interventions towards resource efficient development at environmental level, the objective is focused on promoting further initiatives largely characterised by specific attention to the environment. This area includes in particular issues of management of transport demand, reduction of road congestion, development of training, education, awareness-raising and research actions on resource efficient mobility, as well as the promotion of technologies with lower environmental impact and soft mobility (pedestrian zones, use of bicycles, etc.), in coherence with the content of the Regional Cycling Mobility Plan.

G

To act to improve transport safety.

The objective focuses attention on the issue of **transport safety**, with particular reference to road and rail. This issue is an absolute priority, particularly for road transport, for which the increasingly stringent objectives to reduce accidents and the respective consequences (indicated at european and national level) require articulated policies coordinated between infrastructural, technological and vehicle interventions and initiatives of prevention, training and communication to citizens. Safety in the rail area and the collective transport system involves, on the other hand, as well as in interventions on the linear infrastructure components (particularly for railways), also the comfort and safety of the environments in which journeys take place (stations, stops, vehicles, etc.).

Strategies, actions and tools

The RPMT's **strategies, actions and tools** are defined in particular as a result of:

- the assessment of the relevant context and analysis referred to in the first part of the Programme;
- the guidelines for mobility of the future developed in correlation with the objectives of the Programme;
- specific assessments of infrastructural and service scenarios prepared with reference to the years 2015, 2017 and 2020;
- the analysis of the indications emerging from the Strategic Environmental Assessment process.

Assessment of different infrastructural (road and rail) **and service** (Regional Railway Service and LPT) **scenarios** (2014, 2015, 2017, 2020)

The RPMT has been assessed using cost–benefits analyses conducted for infrastructural and service scenarios. Annex 2 of the Programme in fact contains multi-criteria assessments, analysing the financial aspects (investments and management costs), transport considerations resulting from the use of multi-modal methods, analyses of accidents, indications regarding territorial and landscape-environmental impacts. All these elements provide the input for a simplified cost-benefit analysis, the **First Year Cost-Benefit Ratio**, by which the current situation (2015) is assessed, along with the configuration of infrastructure and services expected in 2017 and four different prospects of growth to 2020 of the mobility supply for Lombardy.

The structure of the analysis, established by packages of services and by progressive - and not alternative - infrastructures, is not aimed at assessing the individual projects - for which some interesting elements of assessment to be investigated with ad hoc analyses are, however, provided - but at acquiring information for defining the strategies on which to base regional planning.

The costs–benefit analysis has also estimated that the economic benefits of the regional choices contained in the RPMT are in the order of 900 million euro/year. In particular, it is estimated that roughly 600 million euro/year for time saving for journeys by people, roughly 200 million euro/year for savings of time for cargo transport and the remaining 100 million euro/year for the reduction of social costs linked to accidents and the reduction of climate-change emissions.

General objectives, specific objectives and their relationship

Each of the 7 specific objectives of the Programme is associated with a set of strategies, developed in a cross-sectional approach and with a view to integrating the different modes of transport. The Programme indicates 20 regional strategies to implement a more effective, efficient, safe and resource efficient mobility and transport system. Each strategy is presented considering the current situation and the relevant development scenarios.

Specific Objectives	Strategies
To improve Lombardy's connections on a national and international scale: primary network	**A.** To follow the development process of rail connections nationally and internationally **B.** To upgrade and complete the motorway network **C.** To support the strengthening of Lombardy's airport system, encouraging the development of Malpensa as Northern Italy's main airport
To improve connections on a regional scale: integrated regional network	**A.** To preserve and increase the functionality of the regional network **B.** To implement upgrade interventions and the completion of the regional network and integration with the primary network
To develop collective transport in universal form and achieve integration between different modes of transport	**A.** To promote the evolution of the governance model **B.** To develop the service offered **C.** To integrate modes of transport
To achieve an integrated and competitive logistics and transport system on a national and international scale	**A.** To promote the strengthening of the system of infrastructure and interchanges **B.** To promote managerial and technological improvements to increase competitiveness **C.** To promote initiatives to increase the effectiveness and sustainability of City Logistics
To improve connections with the Milan area and with other significant regional hubs	**A.** To reduce congestion due to crossings flows **B.** To improve railway lines (suburban) **C.** To encourage the development of interchange hubs between public and private mobility and network synergies in public mobility
To develop further promotional initiatives of resource efficient mobility and actions for governing demand	**A.** To give impulse to mobility management **B.** To promote innovative technologies and activate rewarding incentives and mechanisms **C.** To develop actions for regulation and pricing of circulation **D.** To activate education, awareness-raising and research actions on sustainable mobility
To act to improve transport safety	**A.** To improve public transport safety **B.** To reduce road accidents in coherence with EU objectives

ACTIONS	■ INFRASTRUCTURAL INTERVENTIONS ■ SERVICE INTERVENTIONS ■ REGULATORY, MANAGEMENT, ANALYSIS INTERVENTIONS etc
99 interventions (including 61 aimed at sustainable mobility)	
TOOLS	■ FOR PLANNING AND PROGRAMMING ■ FOR DESIGN AND INNOVATION OF PROCEEDINGS ■ FOR TECHNOLOGICAL INNOVATION ■ OF SUPPORT FOR SECTORAL STAKEHOLDERS ■ FOR DEMAND ORIENTATION AND GOVERNANCE
27 tools (including 21 aimed at sustainable mobility)	

ACTIONS

Based upon the architecture of objectives and strategies, the Programme defines **99 actions** (**61** of which are specifically focused upon **sustainable mobility**), grouped into separate paragraphs by mode of transport.
The actions correspond not only to infrastructural interventions, but also to initiatives concerning services or those of a regulatory/managerial nature.
With a view to creating integration between infrastructure and services, all infrastructural interventions on the railways are correlated with the system of services that may be activated upon their realisation.

The 20 interventions mentioned below are considered **key** elements for developing regional policies on mobility and transport. These are actions to strengthen rail transport (10), to strengthen collective transport services (4) and to improve road accessibility (6), which must be given specific attention during the implementation and monitoring phase.

The overall value of investments required from all system stakeholders (also in the long-term period) is in the order of 40 billion Euros, broken down as follows: **38%** for **rail transport**, **16%** for **road LPT** and **45%** for **road transport**.

Key actions

Key actions in the field of rail transport

in order to increase the regional rail service, the following actions are essential:
- construction of the High Speed/High Capacity Treviglio-Brescia-Verona Line
- upgrading of the Chiasso-Seregno-Monza-Milan Line
- improving of rail connections to Malpensa
- upgrading of Rho-Gallarate line
- construction of the Varese-Mendrisio Line
  (with construction of the Arcisate - Stabio section and reopening of Varese - Porto Ceresio section)
- definition of technological and structural interventions on the key area of Milan and on other main hubs of the Lombardy rail system
- purchasing of railway rolling stock.

Interventions on the rail network and for intermodal cargo transport

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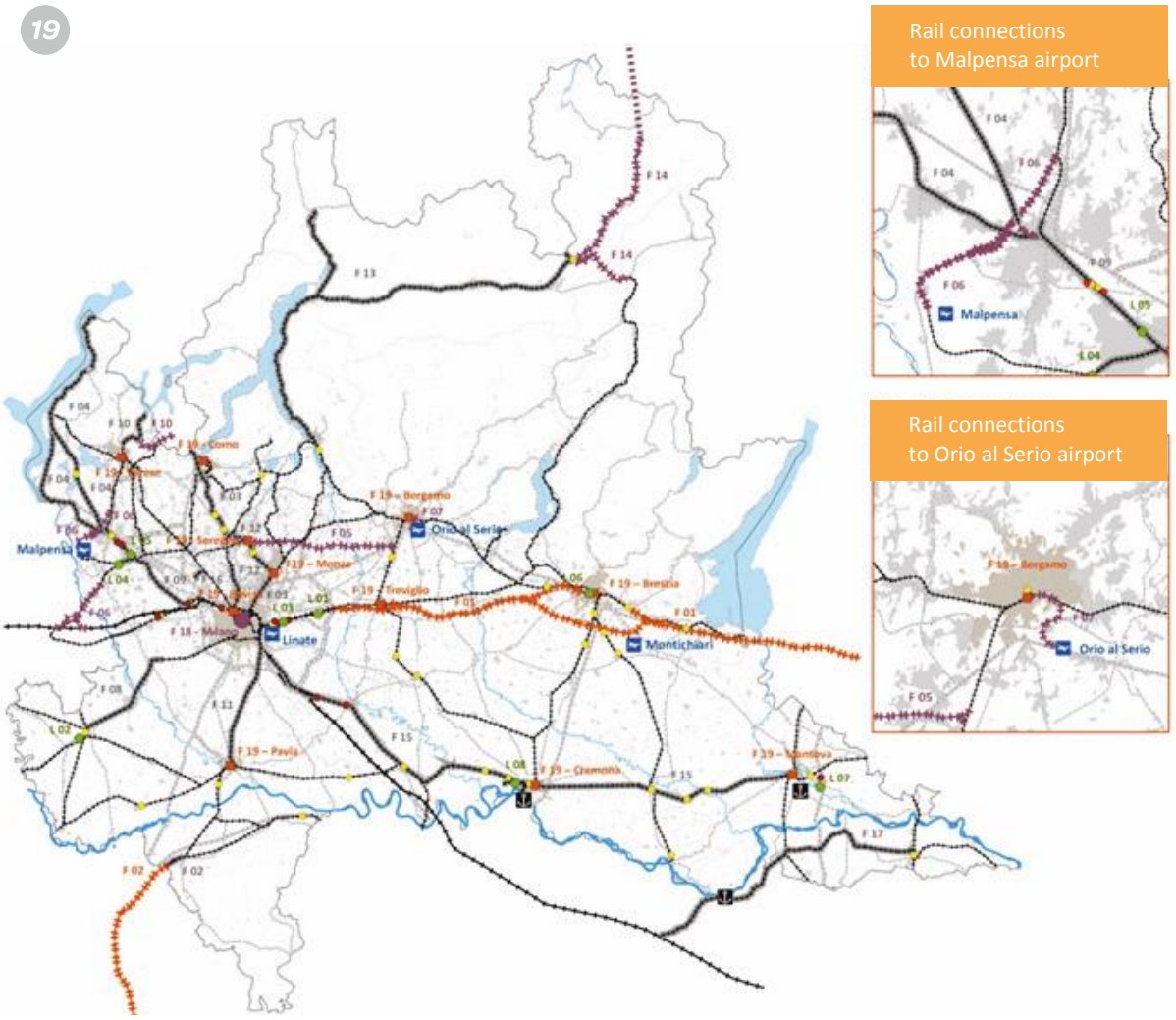
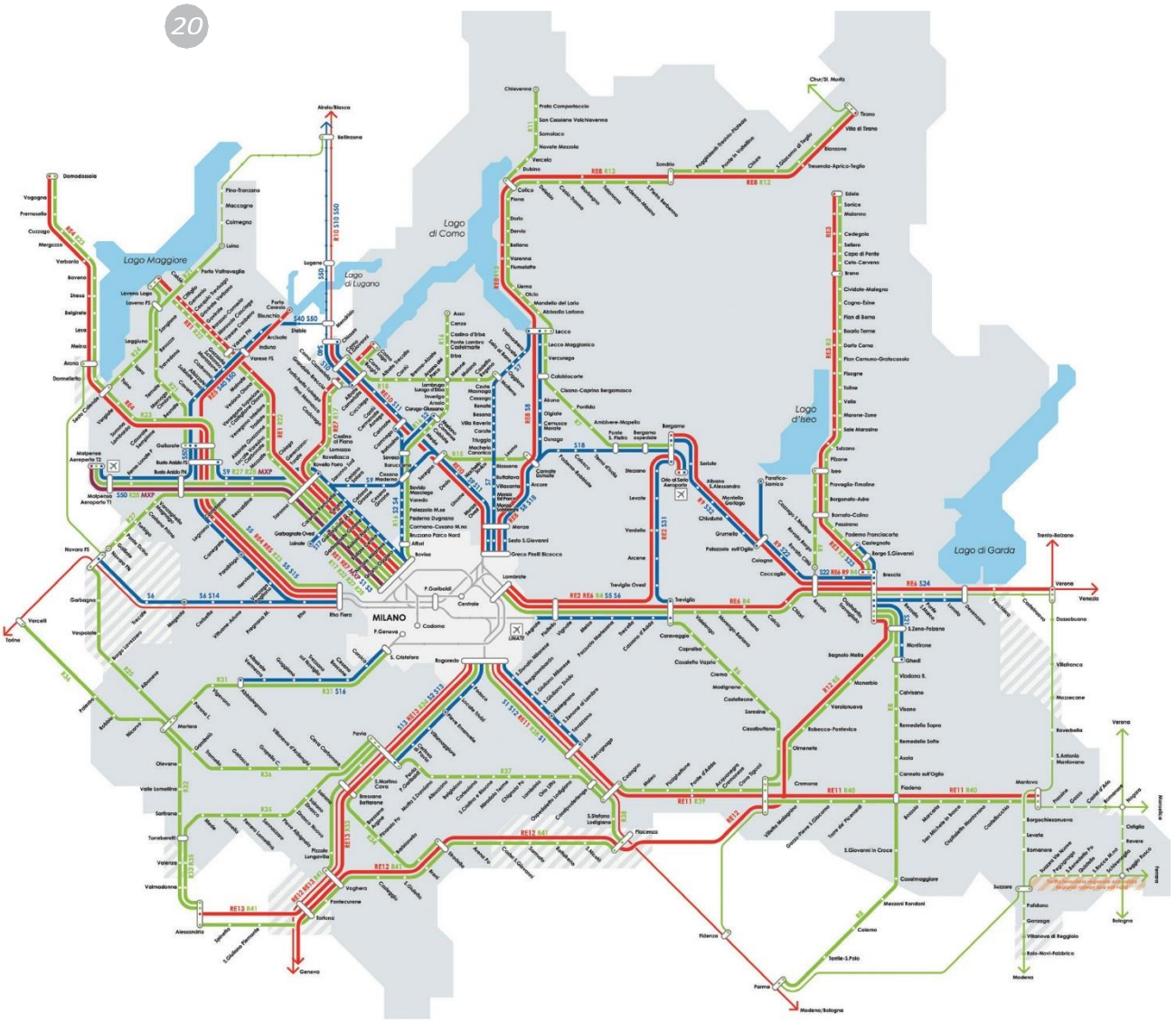


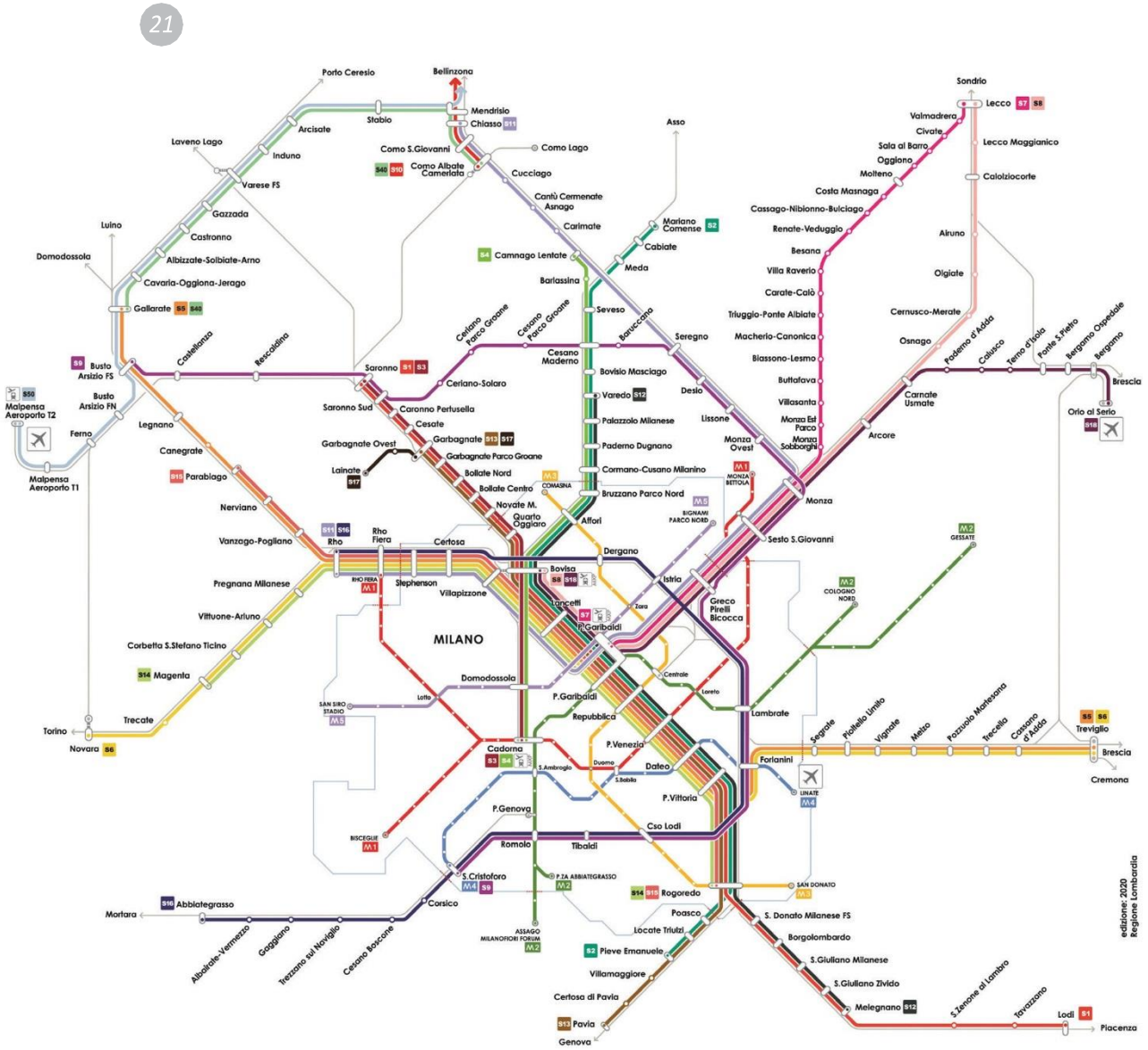
Rail connections to Malpensa airport

Rail connections to Orio al Serio airport

Regional Railway Service (medium to long-term hypothesis)

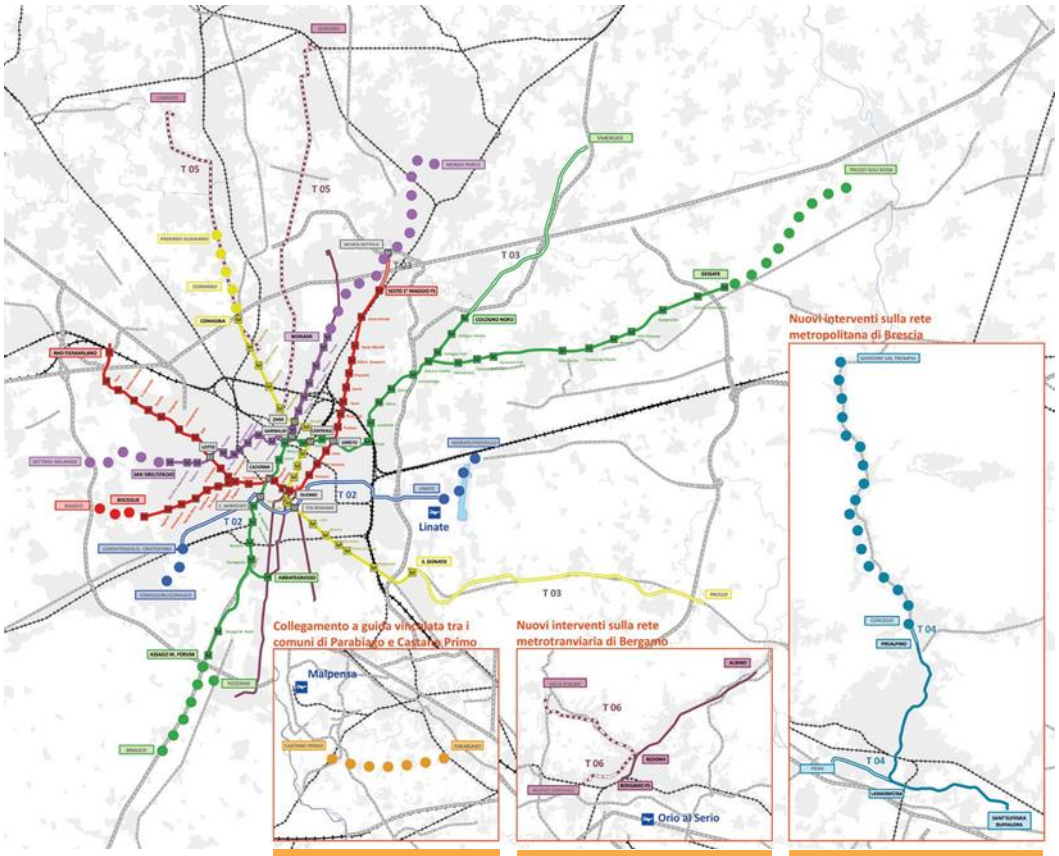


Suburban Rail Service (medium to long-term hypothesis)



in order to improve Local Public Transport services, the following actions are priorities:
- fine-tuning of the operations of Local Public Transport Agencies
- renewing of the vehicle fleet of car-trolley bus-subway-tram services and developing a pricing integration.

Subway and Tram Network



Collegamento a guida vincolata tra i comuni di Parabiago e Castano Primo

Nuovi interventi sulla rete metrotranviaria di Bergamo

Nuovi interventi sulla rete metropolitana di Brescia

Connection to guided transport systems between municipalities of Parabiago and Castano Primo

New interventions on the Bergamo subway system

New interventions on the Brescia subway system

in order to reduce congestion and improve connections on the non-urban network, the following actions are essential:

- completion of the Pedemontana Lombarda motorway
- construction of the A4/A51 junction and the East connection of the A35 motorway
- completion of the Milan North Ring road/Rho-Monza motorway
- upgrading of the provincial road formerly known as SS 415 “Paullese” and implementation of actions for road accessibility to Malpensa and Valtellina.

Road network

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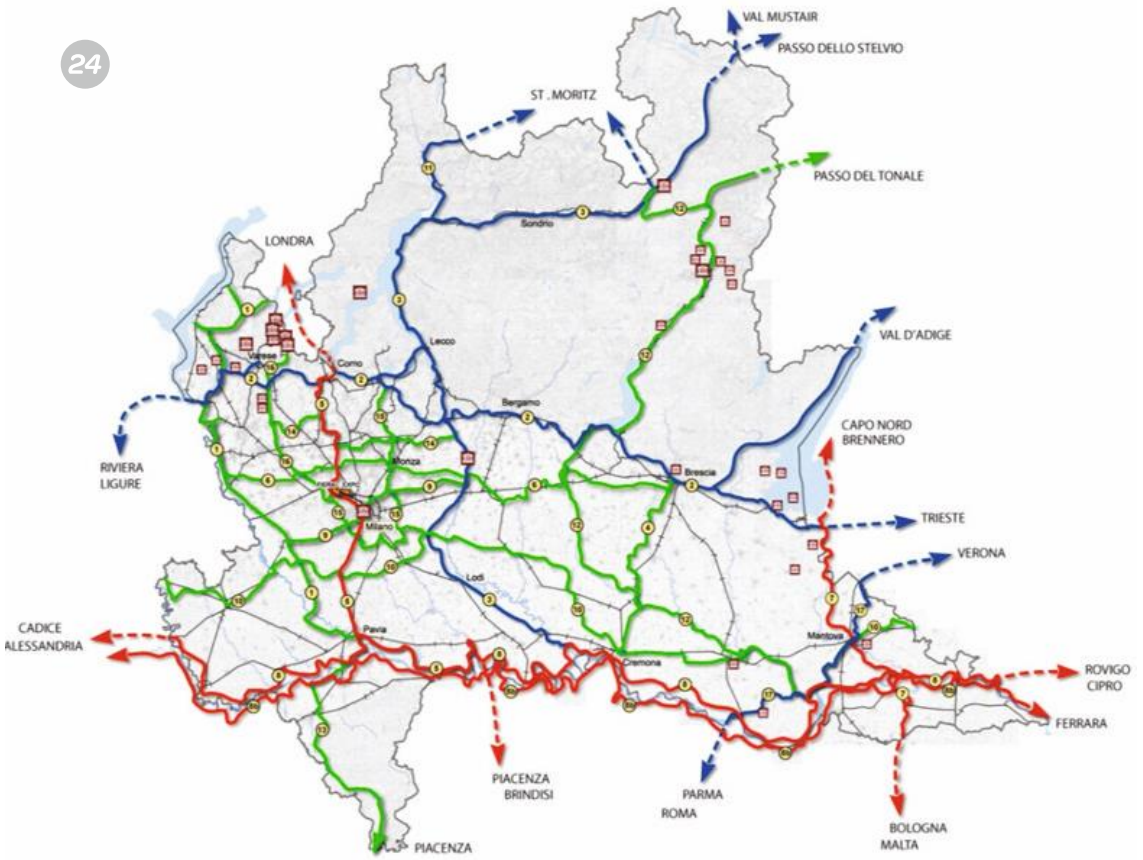
Regional Cycle Paths

In 2014, the Lombardy Region established a specific instrument for planning cycling mobility, the **Regional Cycling Mobility Plan** (RCMP), used by the RPMT as a tool of reference for regional policies in the sector.

The **Regional Cycling Mobility Plan** defines, in particular, a **cycling network of regional interest**, constituted by **17 long distance cycle routes**, 3 of which European and 7 national, covering over 2,900 km.

It plans, in particular, the creation of two national cycle-ways "**VenTo - Ciclovia del Po**" and "SOLE" (situated in the eastern part of Lombardy, crossing it in a north–south direction), which will be a strong element of tourist attraction internationally.



How to search for an action within the RPMT

Check if the action in question falls within those illustrated specifically in chapter 7 of the Regional Programme for Mobility and Transport.

To facilitate this search, the chapter is split into **separate paragraphs by mode of transport**:

7.1 Rail Infrastructure and Regional Rail Service
7.2 Car-trolley bus-subway-tram service, cableways and supplementary mobility
7.3 Services for navigation and development of State-owned lakes
7.4 Motorway and road transport system and private mobility on roads
7.5 Air and helicopter transport
7.6 Logistics and intermodal cargo transport
7.7 Cycling mobility

Two cases are proposed:

It is explicitly cited in Chapter 7

It is a Programme action and there is a specific summary table, at the end of the paragraph in which it is discussed, highlighting its **relationship with the specific objectives**, set out in Chapter 5, and with the correlated system of strategies illustrated in chapter 6.

If it is a physical intervention, the action will also be identified in the tables attached to the programme.

ACTION TO BE SOUGHT

It is not explicitly cited in Chapter 7

It is not an action explicitly planned by the Programme as it has a more local dimension or is subject to feasibility assessments.

Its **coherence with the RPMT's objectives and strategies** can be **verified** considering the contents of Chapters 5 and 6.

TOOLS

To encourage the pursuit of the Programme's objectives, a system of **27 cross-sectional tools** have also been defined (21 of which are specifically focused upon sustainable mobility) which may help to facilitate the development of effective, efficient and sustainable initiatives in the field of mobility and transport.

The tools can be classified depending on which areas they relate to:

- planning and scheduling
- design and innovation of proceedings
- technological innovation
- support for industry stakeholders
- orientation and governance of demand

Key tools

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- The **five-year update of the passenger Origin-Destination Matrix** (also to be considered with a view to preparing a similar matrix for commercial vehicles and cargo transport);
- Activation of a **Supra-Regional Directorship Cabinet** for mobility and transport;
- Establishment of a ***Regional Directorship Cabinet*** for sustainable mobility;
- Use of **simulation tools to assess the impacts** of each intervention;
- Promotion of **mobile information**, i.e. information tools on transport solutions and on the state of infrastructures for use by citizens, enterprises, technicians and industry stakeholders;
- Development of initiatives for **managing timescales of demand**, particularly targeted at reducing mobility with private vehicles and the concentration of journeys into some time brackets, in step with policies in favour of work time flexibility and timetable plans by Local Bodies.

Other tools already prepared by the Lombardy Region are a significant support to the implementation of the contents of the RPMT and the definition of a new planning model, especially in the context of the new national regulation on contracts: in particular, this refers to the **Guidelines for preparing Feasibility Studies** for infrastructural interventions, published on the website ***www.regione.lombardia.it***

In addition, the construction of a **regional matrix of commercial and heavy vehicles**, planned by the Programme itself and currently being implemented, is also of significant interest for the planning of infrastructural interventions.

Part 3

of the Regional Programme
for Mobility and Transport

PROGRAMME IMPLEMENTATION AND MONITORING

Implementation and monitoring

The system of actions planned by the Regional Programme for Mobility and Transport will be implemented by the Regional Economy and Finance Document, updated every threeyears. The actions will be funded in coherence with budget availability for the relevant period, insofar as the Lombardy Region is responsible.

The **implementing bodies** will be the Regional Council and the other relevant bodies involved in each intervention.

In order for the programme's progress to be **verifiable** and to activate the **corrective actions** that will guarantee, even in altering conditions, that the expected results are achieved, a monitoring system is established:

- monitoring the **implementation of the Programme**, to check for any criticalities and delays in implementing the actions and in developing the tools;
- monitoring the **results of the Programme**, integrated with the environmental programme, provided by the Strategic Environmental Assessment process and split into two different systems of indicators:
  - **indicators of strategic nature** - synthetic - which measure the performances of the Programme, providing information on the implications in terms of mobility, transport and environment;
  - **precise indicators** - analytical - to construct a more articulated information database, useful for developing detailed analyses and considerations.

Below there is the table of synthetic indicators with the basic values of reference and the targets to be achieved by 2020.

Key indicators

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Mobility of persons - accessibility and freedom of movement		
Average road network speed (km/h)	From **46.6** (2014) to **52**	▲
Regional Rail Service offer (trains x km/year)	From **42** (2013) to **50**	▲
Mobility of persons - integration		
Price integration satisfaction index (..../10)	From **6.17** (2014) to **6.8**	▲
No. of integrated travel tickets (million)	From **2.5** (2013) to **3**	▲
Mobility of persons - quality		
User satisfaction index (LPT/RRS) (.../10)	From **6.58** (2014) to **6.8**	▲
Average age of circulating fleet (LPT) (years)	From **8.5** (2012) to **7.5**	▼
Average age of circulating fleet (RRS) (years)	From **21** (2014) to **20**	▼
Mobility of cargo - competitiveness		
Intermodal terminal capacity (UTI, million/year)	From **1.45** (2013) to **1.90**	▲
Average road network speed (heavy vehicles) (km/h)	From **41.9** (2014) to **45**	▲
Safety		
Annual number of road accident fatalities (no.)	From **438** (2013) to **282**	▼
Modal balance		
Private vehicle mileage reduction (vehicles x km/day)	**- 500.000** (compared to 2015)	▼
Integrated collective transport journeys (million/year)	From **968** (2013) to **1,030**	▲
Economic-financial sustainability		
Revenues/costs ratio (LPT and RRS) (%)	From **46** (2012) to **48**	▲
Health		
Concentrations of atmospheric polluting substances	**RAQIP objectives**	▼
Climate change		
Annual climate-change emissions transport sector (kt/year)	From **17.8** (2012) to **15.9–17** (REEP objectives)	▼
Landscape		
Index of open space fragmentation	**Limitation of indexes presented in Environmental Report**	

Some of the monitoring indicators may be updated annually, while others will be updated halfway through the reference period of the Regional Programme for Mobility and Transport, in concomitance with a **monitoring report** that will be prepared with a view to verifying the Programme's stage of progress and its effects.

Notes