

5 - TERRITORY

5.1 - Competitive scenarios: a regional comparison

The construction of Corridor V, the multimodal transit route that will cross southern Europe from Lisbon to Kiev, will have important consequences not only in terms of transport, but also in its effects on the dynamics of regional development.

Corridor V is often seen as a competitor, in terms of international traffic, from the Iberian peninsula to part of Eastern Europe (Hungary, Slovakia and the Czech Republic), with one axis placed north of the Alps, taking in the cities of Ljubljana and Budapest, leading to Munich and Nuremberg and then heading westwards. This competition concerns several areas: from transport, in relation to the flow of passengers and freight, to the area of finance and particularly the investments needed to create the infrastructure, or the area of production, linked to the process of relocalisation of businesses and economic activities.

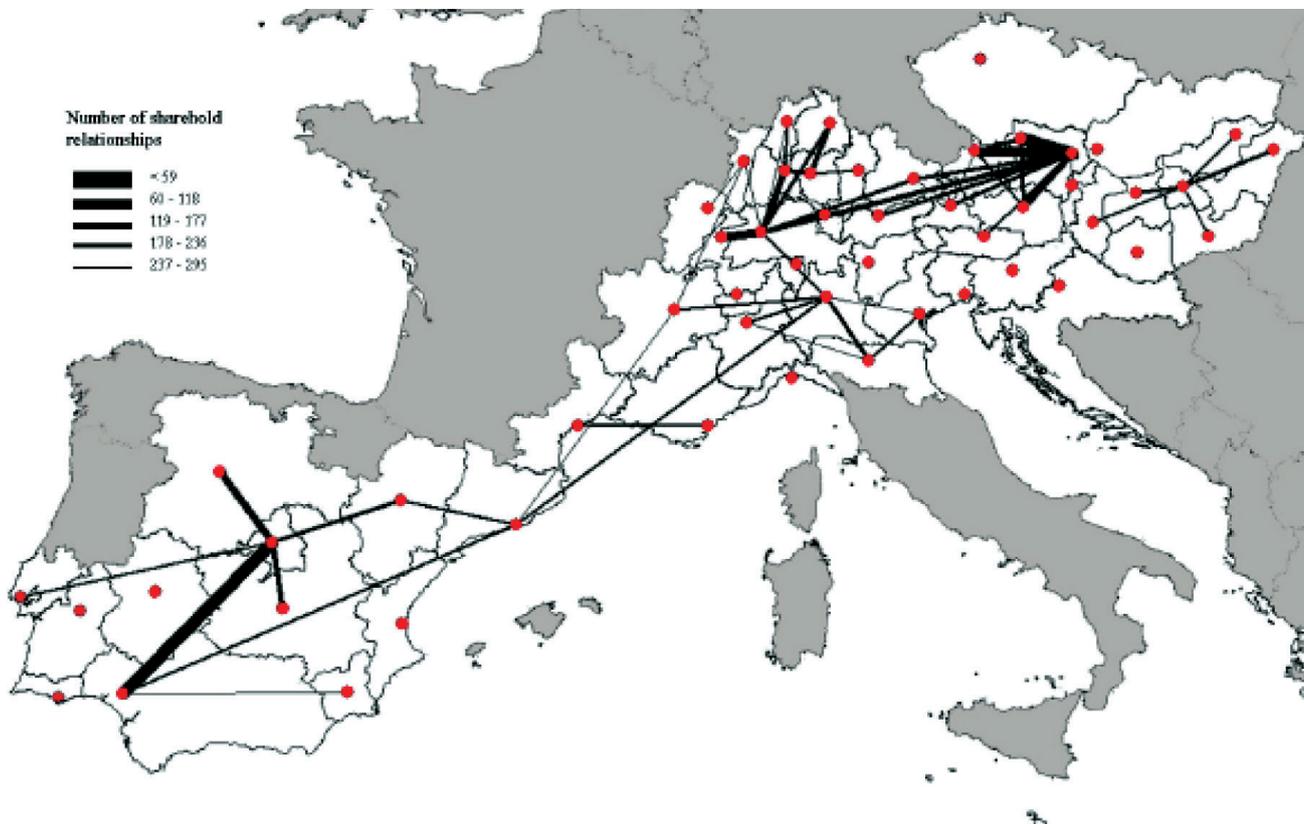
The analysis of the geographic macro-areas along Corridor V, which considered a wide range of different variables¹, brought to light a predictable disparity that

tells against the most economically weak areas of eastern regions and countries (Czech Republic, Slovakia, Croatia and East Hungary) and a number of western and southern zones (Alentejo, Algarve, Extremadura, Aragon). Apart from differences that are based solely on economic indicators (GDP, unemployment), it is also important to note that several components emerged as being decisive factors in the socio-economic structure of the regions.

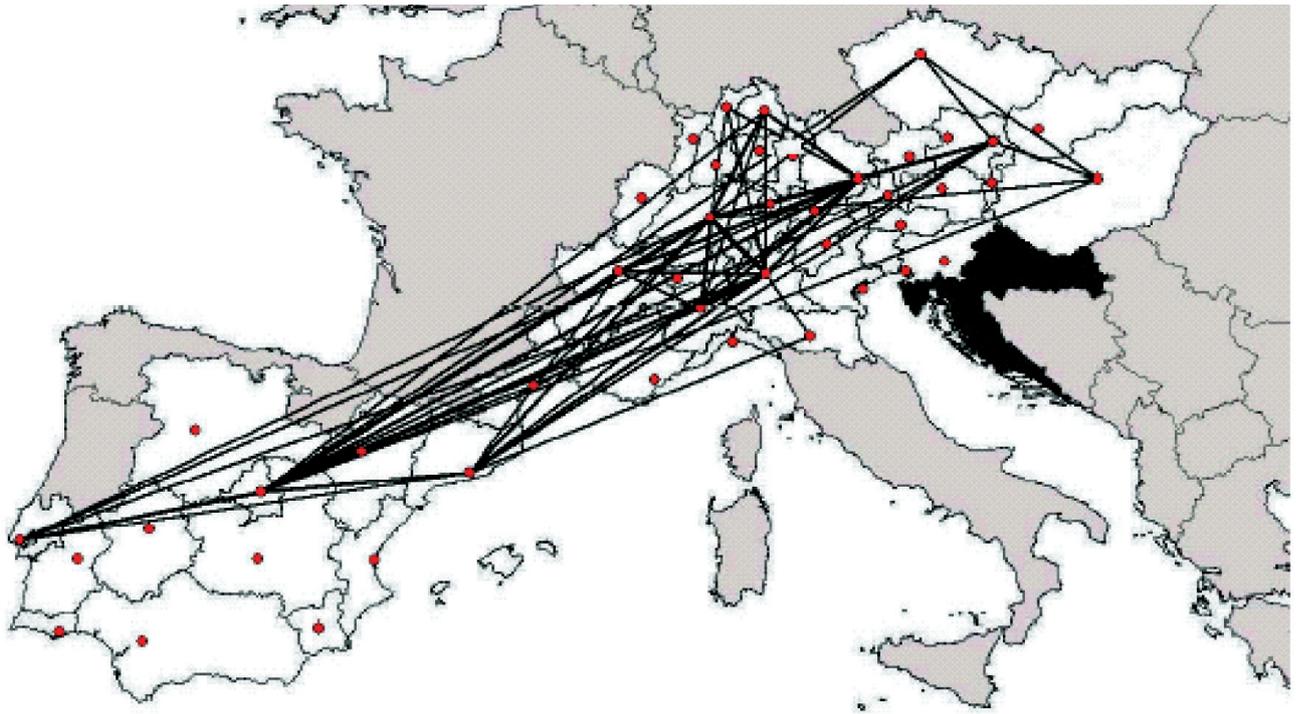
First of all, the research and innovation sector shows a divide between eastern and western regions, which, despite being problematic, bears a number of undertones that are worth observing. The Iberian region (with the exception of a few strongly innovative areas such as Catalonia and the Madrid area) and the Slovakia/Croatia/Hungary region (also here with the exception of a few high profile areas) both show signs of a certain amount of fragility. Nevertheless, in this sense, signs of weakness are also to be seen in a number of areas in France and Italy (particularly in the so-called "Triveneto" areas, i.e. Veneto, Friuli-Venezia-Giulia and Trentino-Alto Adige).

Contrasting with these are the central and northern regions (France, Germany, Switzerland, most of Austria), which are doubtless on a higher level. In particular, the German regions of Stuttgart, Karlsruhe, Tübingen and

Figura 122. Firm networks – interfirm shareholding across the Corridor



Source: Polytechnic and University of Turin's elaborations

Figure 123. Knowledge networks – co-operation in research

Source: Polytechnic and University of Turin's elaborations

Oberbayern seem to act as “flywheels” of the Corridor’s capacity for innovation. In terms of spatial interaction, the relationship between north and south appears no less significant than between east and west. However it is important not to fall into the trap of equating innovation exclusively with high technology. On the contrary, an analysis of industrial specialisation in low-grade technological activities suggests that there are technological patterns that are shared by the eastern European regions and by more central regions and, in particular, eastern Italy. Promotion of the idea that work on European Union territory should be shared internationally deserves more in-depth analysis. Nevertheless it is reasonable to suppose that the increase in interaction between the east and the north can bring about diffusive and imitative mechanisms².

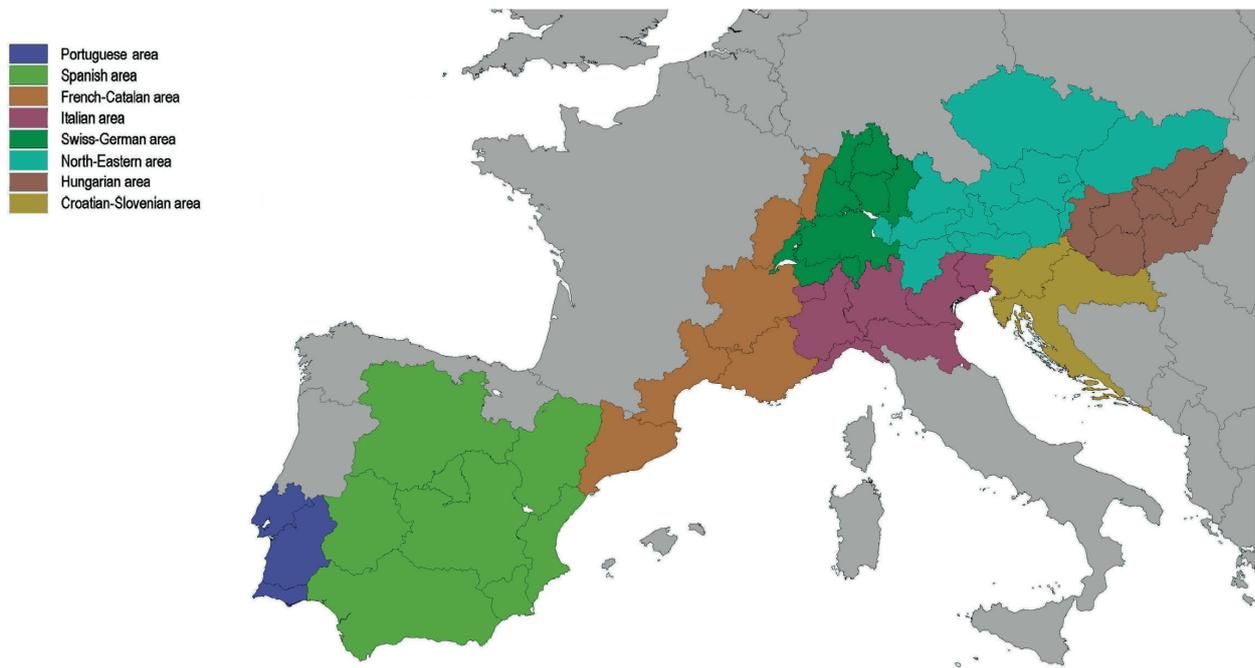
One of the important aspects of competition that has emerged is the important role played by human capital, education (here considered exclusively as university training) and more widely speaking, cultural milieu. The geographical picture appears, in this case, to be much more ambiguous and diverse, with clusters of regions with somewhat differing performances, without there being a clear North/South or East/West divide. From an analysis of the scientific cooperation networks, this condition emerges particularly clearly: among the better performing regions are the Austrian regions together with Italian regions, while among the weaker areas can

be found parts of the central section of the corridor (particularly in the Franco-German stretch). In this respect, the increase in spatial interaction between the regions appears to be an important phenomenon, whose purpose is promoting a valid European space for research and education.

The analysis of the networks covering the Corridor has also brought to light a strongly hierarchical spatial structure, in which only a few connections gravitating on major urban centres unite different “radial” structures. It is possible that the Corridor may not counterbalance this spatial structure. From a regional point of view (intra-national), the addition of minor urban centres to the supra-local networks will continue to depend on the gateway role played by major urban centres. Nevertheless, the Corridor will be well placed within this structure, encouraging interaction between the various regional and national networks. The regions that emerge as nerve centres of international networks, that is, Catalonia, Madrid Region, Rhône-Alpes, Oberbayern, Switzerland, Lombardy and the Vienna region, are all directly affected by the Corridor. Of course, there are different levels of involvement (also due to the central position of Lombardy, Switzerland and Oberbayern), but all these regions share more or less direct links to the networks that make up the Corridor.

In this respect, the aim of polycentric spatial development appears yet again to be validated; the connection

Figure 124. Enterprise networking

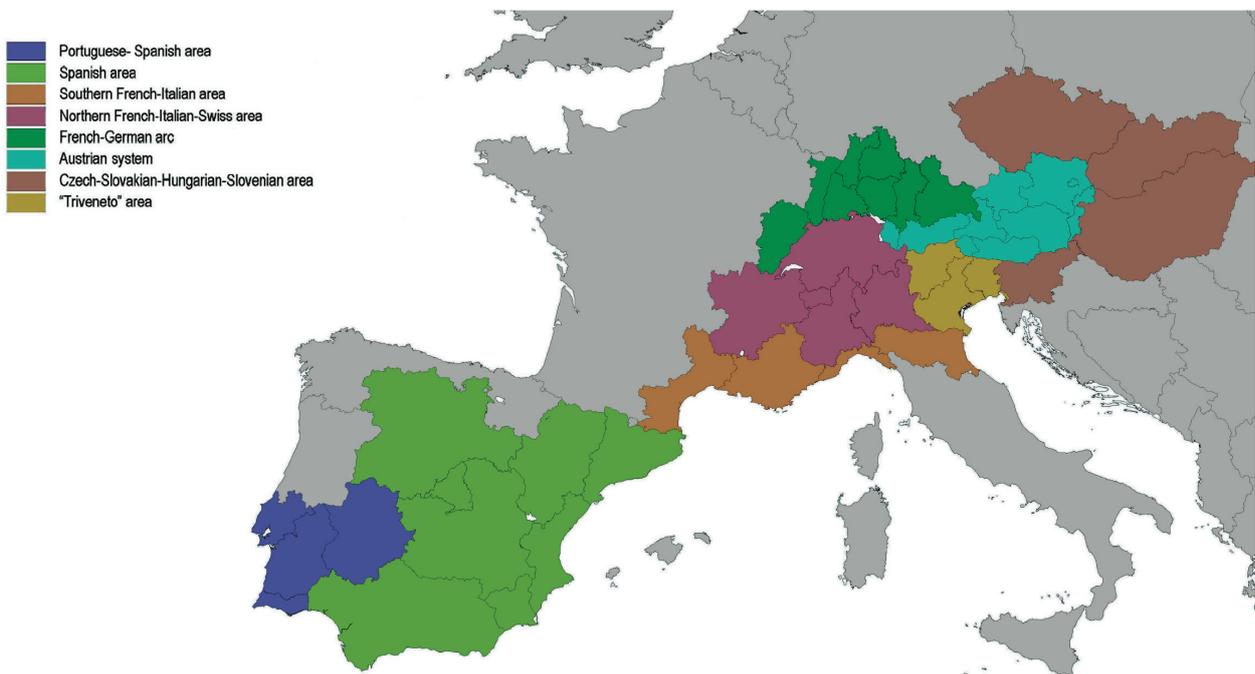


Source: Polytechnic and University of Turin's elaborations

of peripheral regions to the dynamics of the Corridor remains a priority. This is particularly so for Castile-la Mancha, the Murcia region and Andalusia in the west, and Slovenia and Styria in the east. These are regions that join structurally weak socio-economic situations to a relatively marginal position, which might otherwise

worsen further, without intervention, as a consequence of the new geographical set-up that the Corridor will create in Europe.

Figure 125. Research networking



Source: Polytechnic and University of Turin's elaborations

5.2 - Projects on infrastructure networks³

5.2.1 The Italian section of Corridor V: the main road and rail interventions to be carried out

5.2.1.1 Rail interventions

Examination of the strategic projects provided for in the Strategic Infrastructure Law (Legge Obiettivo) and by the State-Region Framework Agreements/Accords reveals an extremely fragmentary picture both in terms of planning, and with regard to timing and implementation. The implementation phases planned at various levels appear not to be linked to functional logic or “strategic” considerations when it comes to the problem of multimodal transport, but rather to a “tactical” attitude of ascertaining whether or not opportunities exist for carrying out this or that project.

With regard to the High Speed/High Capacity railway, the sections that are currently under construction (Turin–Novara stretch: nearing completion, Novara–Milan stretch: construction sites open; Padua–Mestre section: nearing completion, Milan–Bologna stretch: nearing

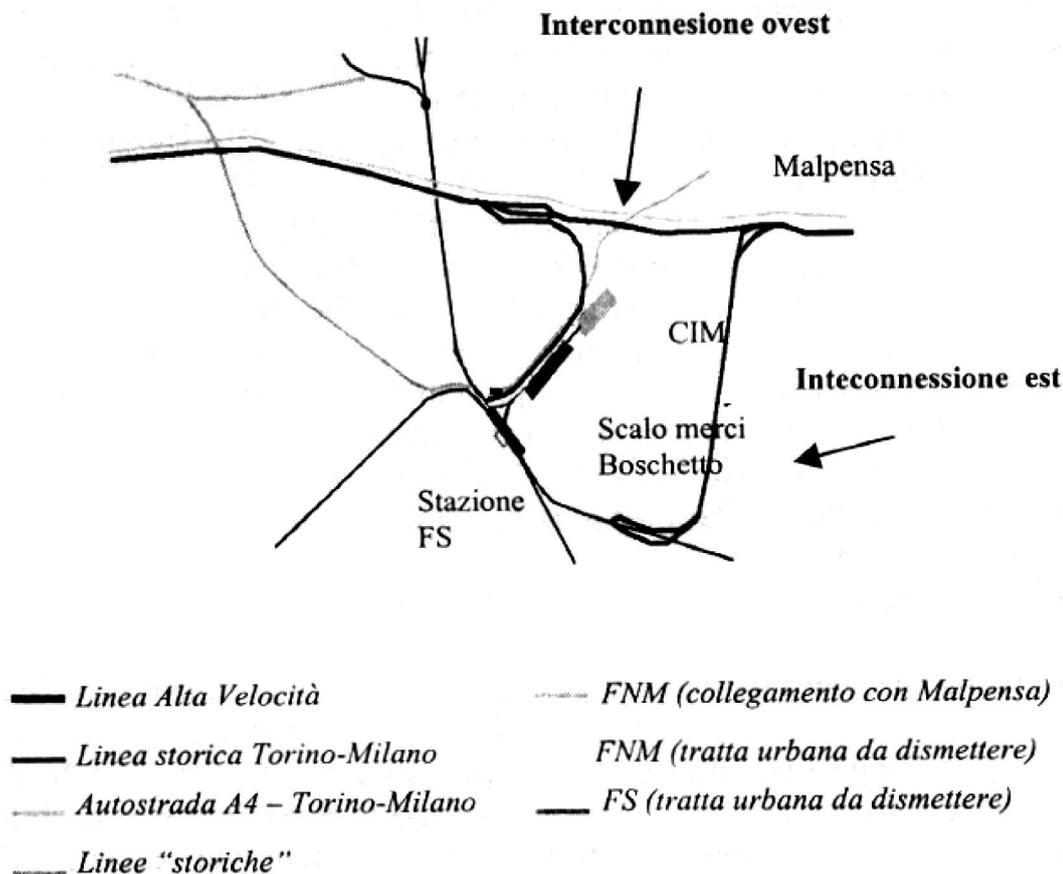
completion) appear unconnected to one another and above all, they do not provide for the setting up of a network, even partial, along the West-East axis. Perhaps it is no coincidence that the signs in the TAV construction sites along the Turin–Milan section bear the wording “Works for the Strategic Infrastructure Law–High Speed /High Capacity Railway–Turin –Milan–Naples line”.

Construction of the Turin–Novara stretch is linked to the advent of the Turin Winter Olympics in 2006 and completion of the link with Malpensa airport is expected for the same date, despite the fact that construction of the Novara node has been much debated and that a direct train link between Malpensa and the High Speed/High Capacity railway will not be possible until 2006.

The delay in planning and implementing the Novara–Milan stretch, even though the construction sites were opened recently, slightly “ahead of the expected delay” – especially in the case of the site near the Rho Pero Exhibition centre – was mainly due to lack of financing. This makes it practically impossible to imagine the Turin–Milan line being linked to the Milan–Rome line before 2010, thus penalising current investments.

Still with respect to the high-speed railway, completion

Figure 126. Interlink Project proposed by TAV S.p.A. for Novara



Source: Polytechnic and University of Turin's elaborations

Figure 127. HSR's in northern Italy



Source: ITALFERR – in “TRAIL Liguria”

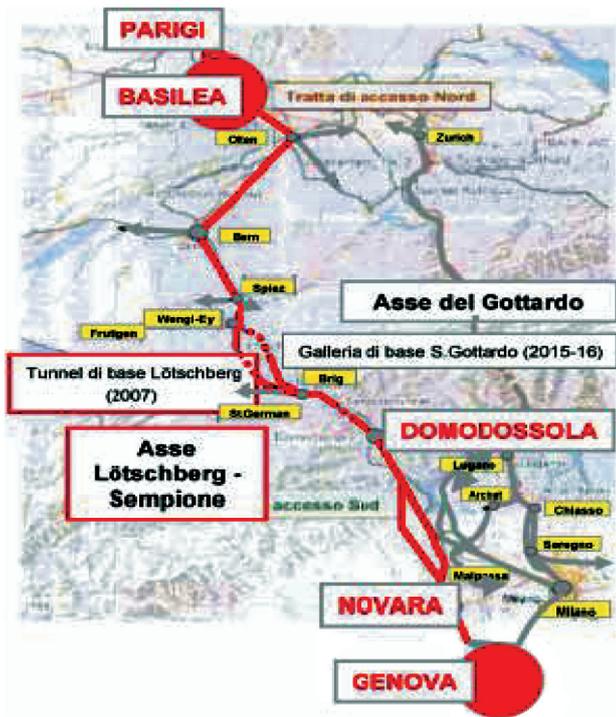
of continuity of Corridor V is related on the western front to the actual willingness of the French government to take part in the creation of the Lyon–Turin tunnel and, on the other front, by a certain amount of indecisiveness on the part of Italy in completing a number of links to the European network (especially with regard to the Gotthard and Lötschberg tunnels in Switzerland, which will be ready and open to rail traffic in 2012 and 2007 respectively). On the eastern front of the Corridor, it is important to remember the position of “scepticism” held by Slovenia towards the creation

of the high-speed railway.

The main urban nodes located along the Corridor are in some cases still trying to find their feet with regard to the creation of the new rail line (especially Turin, Novara and Trieste). The case of Novara is particularly emblematic, in that the node is situated at the intersection of the north–south axis Genoa–Sempione–Rotterdam with the west–east axis Lyon–Trieste and also bears the burden of the connecting line to Malpensa.

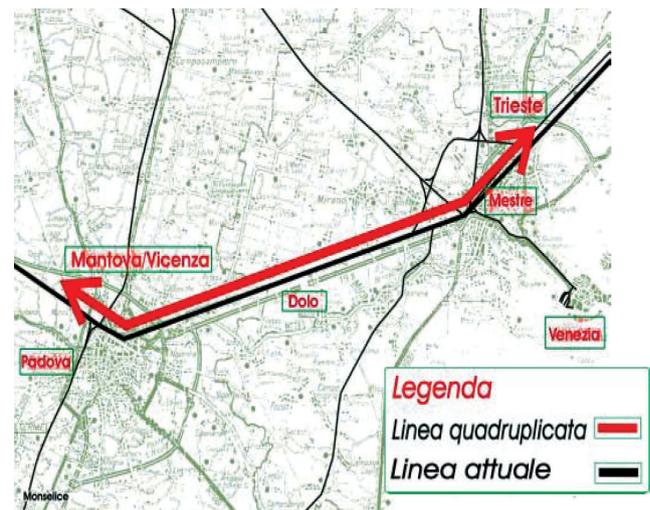
The Milan–Verona stretch will be completed in 2008 (the project was approved by the Conferenza di Servizi), the Verona–Padua section is still held up by the problem relating to the Vicenza node; the Padua–Venice Mestre stretch will be completed in 2005, while the Venice–Trieste section should be completed by 2010, although in actual fact the debate in Trieste regarding the rail node and concerning the choice of the best route is still alive and kicking. Extension of this section

Figure 128. Genoa – Novara – Sempione – (Rotterdam) Itinerary



Source: RFI, 2004

Figure 129. The Padua – Mestre High-Speed stretch



Source: RFI, 2004

to Ljubljana is expected for 2015, but it will probably take place later than this date.
The overall planned costs for the creation of the

Table 33. Planned costs for the Turin – Trieste high-speed rail line

Tratta	Costi (in MEuro)
Turin - Novara	955,45
Novara - Milan	516,00
Milan - Verona	189,00
Verona - Trieste	209,00
TOTALE	1.962,45

Source: Polytechinc and University of Turin's elaborations

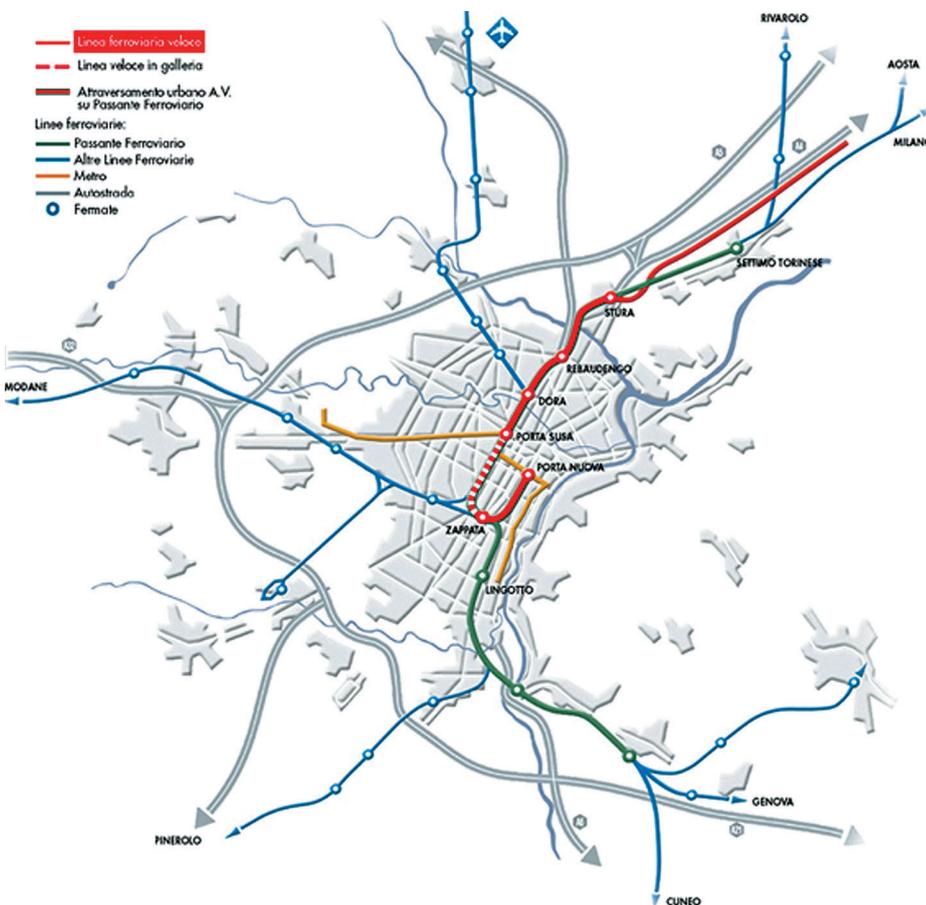
Turin–Trieste high-speed rail line is around 1,962m euros, divided per section as shown in the previous table.

In addition to the interventions for construction of the high-speed lines, the Regions are setting up numerous projects aimed at transforming and adapting the regional railways, to enable creation of Regional Metropolitan Rail Systems, targeted on, the one hand at satisfying the demand for more efficient commuter mobility and on the other at ensuring proper links between the various local systems to the national and international rail network.

In Piedmont, the imposing operation of structuring the Turin rail node, already underway for a number of years and almost nearing completion with the creation of the railway link, prompts the need to create a regional network connected to the national/international network via Porta Susa station.

This station will become an urban multimodal terminal, in that the public surface transport lines and the new metropolitan rail line will all converge on it. An interchange car park has already been created next to the station. In addition to the upgrading of the city's existing stations, two new ones will be created (one north and the other south of the city) to serve the regional rail system. In the Novara node, the Ferrovie Nord Milan sta-

Figure 130. The Turin underground railway link



Source: Polytechinc and University of Turin's elaborations

Figure 131. The Turin underground railway link -



enlarged area

Source: Polytechnic and University of Turin's elaborations

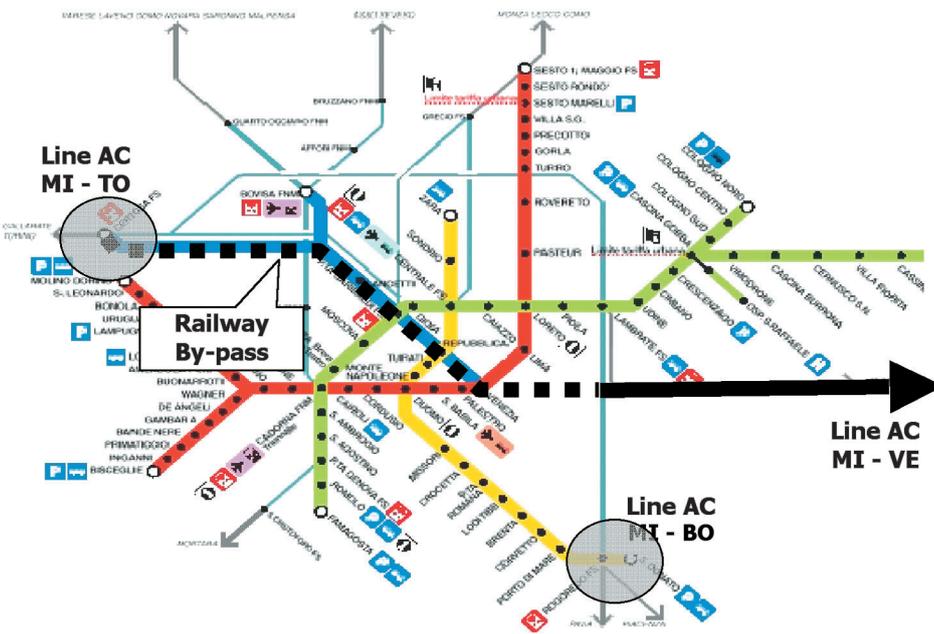
tion has been upgraded to enable a connection between the Piedmont rail system and the metropolitan system in Lombardy.

In Lombardy, the recent completion of the Milan underground railway link, which enables use of the railway as an urban underground system, has led to the restructuring of the entire regional service, such that it links up the south-east rail network with the north-east network and the three underground lines. 8 "S" lines have been identified (on existing lines) and activation of two more suburban lines is planned for 2008.

Activation of the Regional Metropolitan Rail Service is also planned for the Veneto region. In the Verona area, the public transport system is currently undergoing radical transformation with the introduction of the tramline connecting the east and west zones of the city. The tramline will pass through Porta Nuova station from where a Metropolitan Rail System will depart linking "Catullo" Verona-Villafranca airport, 4 including the creation of a new station.

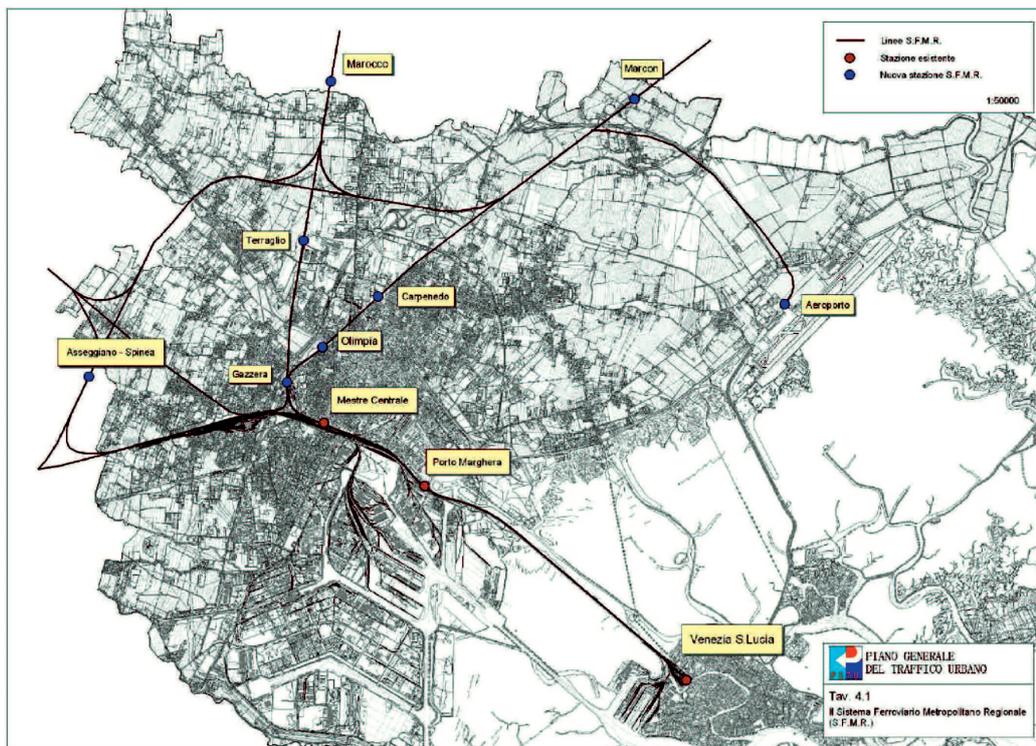
Four more regional service lines are also being planned, one of which, terminating in Vicenza, directly links up with the Regional Metropolitan Rail System of the eastern section of the Veneto region. The settlement characteristics of central Veneto have long suggested that the secondary railway lines, which form a quadrilateral joining Venice, Treviso, Vicenza and Padua, should be reutilised as a "metropolitan service". Interventions on the network of stations are also being planned, as well

Figure 132. The Milan underground railway link



Source: Polytechnic and University of Turin's elaborations

Figure 133. The Regional Metropolitan Rail System (Mestre node)



Source: Comune di Venezia, P.G.T.U. Venezia - Tav. 4.1

as a link with Venice’s Tessera airport.

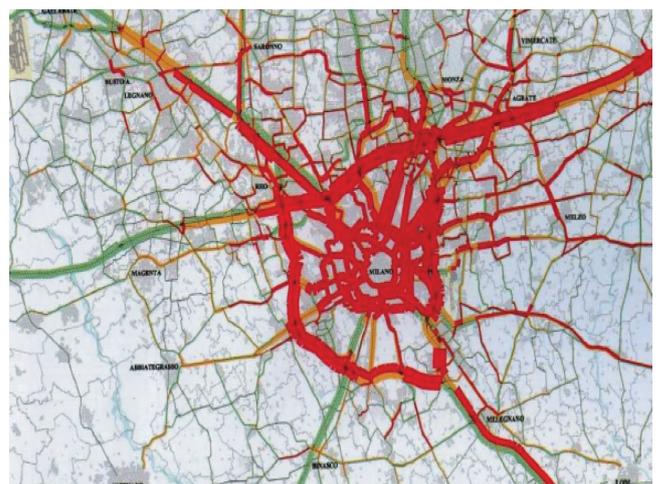
5.2.1.2 Interventions on the road network

The greatest critical points on the road network are concentrated around the main urban nodes. The greatest part of investment is directed at solving “local” problems to create alternative routes to the existing ones thus decongesting traffic flow around urban and metropolitan settlements. Generally speaking, planned interventions consist of improving the by-pass system (Turin, Brescia), constructing new by-passes more externally to the existing ones (Milan, Mestre, Bergamo, Bologna) and creating various piedmont systems (Piedmont, Lombardy, Veneto). In this case, the need to coordinate the various interventions becomes obvious, so that waste between projects can be prevented⁵.

Many conflicts arise from the planning of the new works, which almost always meet with hostility from local inhabitants and the administrators of the territories being crossed. This is the case with the Mestre railway link or with the Lombard piedmont route, works which after only thirty years have seen the final approval of the routes (Lombard piedmont route, Mestre railway link) and the opening of the construction sites (Mestre railway link), after being put forward by the Strategic Infrastructure Law and by the State-Regions accord as being one of the works of national priority.

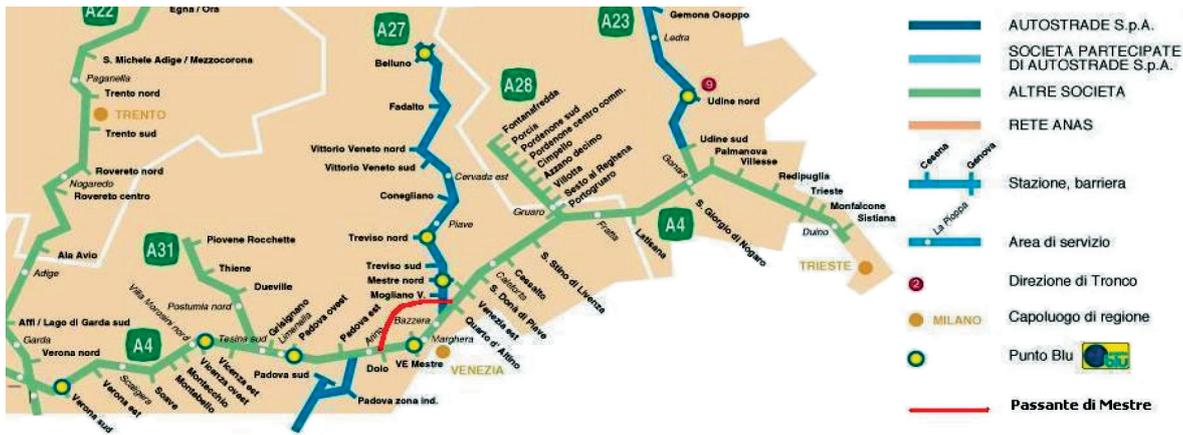
In the Strategic Infrastructure Law, of the investments planned for the completion of priority projects over ten years, around 12% is directed at interventions on urban nodes. In Lombardy, of the 16 billion euro set aside for works of national interest, 1.5 billion are directed at works in the urban/metropolitan areas of Milan, Brescia and Monza, while 4.25 billion are directed to projects to

Figure 134. Traffic flows on the road network in the Milan node



Source: Polytechnic and University of Turin’s elaborations

Figure 135. The route of the Mestre road by-pass



Source: www.trail.liguria.it, 2004

enable bypassing of the Milan node. Only 5.46 billion euros are directed at actually implementing the Corridor. In Piedmont, of the 16.8 billion euro destined for priority works, 3 billion are directed at interventions on the nodes. Most urban nodes in Italy within Corridor V are further affected by important projects connecting the north and south.

We have already mentioned Novara as being the intersection between the Genoa–Sempione Rotterdam axis and the east-west axis. Milan is affected by upgrading both northwards of the axes going towards Sempione and Gotthard and southwards by the construction of the Milan–Rome Naples high-speed line. Lastly, Verona is strategically placed at the intersection between the key Brenner highway and the east-west axis. The greater part of renovation efforts being made on the city is centred on the south/south-west urban quadrant outlined by these axes. These north-south links were confirmed last year by the revision of the “European priority projects” of the TEN networks, making modernisation and reinforcement of existing transport infrastructural networks even more urgent.

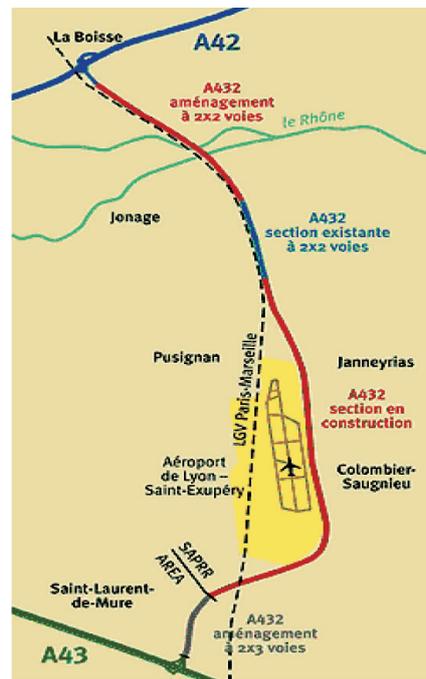
The road works should benefit from the procedural innovations introduced by the Strategic Infrastructure Law, with the aim of overcoming the difficulties met locally during the project-approval phase. These are basically problems relating to acquiring approval of the works, not so much for procurement of economic resources, given that the growing need for a proper road network in the north of Italy, expressed by all parties involved, is in fact a guarantee of financing.

5.2.1.3 Other interventions

Within the infrastructure programme described there is a missing link between investments for the high-speed network and investments on the airport system. Indeed, unlike in other European cities, there is no intermodal

strategy capable of connecting the airport system in northern Italy directly to the high-speed network. Although infrastructure investments in Italian airports in 2003-2004 amount to 606.5m euro, none of the main international airports (Turin–Caselle, Milan-Linate and Milan-Malpensa, Bergamo-Orio al Serio, Brescia-Orzinuovi and Verona-Villafranca) is or will be directly connected to the high-speed line (which is not the case in France, for example, with Lyon-Saint-Exupery and Paris-Charles-De-Gaulle).

Figure 136. The multimodal node at Lyon-Saint-Exupery airport



Source: http://www.saprr.fr/iv_ang/actus/a432.asp#

Figure 137. The Novara CIM


Source: CIM Novara

5.2.1.4 Logistic

The main interventions on the logistics nodes can be found in those urban nodes placed on the intersection between one north-south TEN axis and an east-west one. The most significant cases of interventions on logistics systems can be found in Novara and Verona.

In the first case, the city of Novara is dealing with the project of extending and expanding the Centro Intermodale Merci – CIM (Freight intermodal Centre) sit-

uated north-east of the urban agglomeration, close to both the by-pass and the Turin-Milan motorway, currently linked to the historic railway line and next to the future East-Novara interconnection of the high-speed rail line.

In the second case, the experience of the “Quadrante Europa” freight village in Verona has long constituted an important and successful initiative for the city in the area of logistics. Future expansion projects go alongside the requalification and recovery of vast areas within the urban fabric of the city, with the aid of specific legislative instruments⁶.

Also the requalification and expansion operations of the intermodal and logistics centres linked to Ligurian and Adriatic ports are important and, in particular, the interventions on the ports of Savona, Genoa and La Spezia, in Liguria, and the interventions planned for requalifying and expanding Venice’s commercial port in the area of Porto Marghera. In Trieste, major expectations are placed on the area of Ronchi dei Legionari airport, where construction of a new HS/HC rail link station and of a new air/rail/road intermodal terminal could give rise to a virtuous transformation of the surrounding areas and encourage the settling of new valuable functions.

5.2.1.5 Timing and cost of the works⁷

In relation to the timing, it can be seen how for practically all the road projects, completion of the works is expected by 2010/2011 (some were already completed by the end of 2004 and the start of 2005⁸), while the time horizon for the rail projects is further away: the most imposing interventions, which are also decisive for the continuity of Corridor V (Fréjus Tunnel, Venice-Trieste-Ljubljana high-speed railway) are not expected to be completed before 2015 and even beyond.

The rail and road projects also differ from one another even in terms of the scale of territory that they cover. While the road construction works are directed at solving local traffic problems (broadly speaking, since the local level, in some cases, covers extremely vast areas, such as in Lombardy and Veneto), the rail projects are directed specifically at creating the European TEN networks.

In terms of investments for the selected works, total mobilised resources amount to a little less than 100 billion euro, where around 30% is directed at interventions on the road network and around 67% at rail network operations. Only the remaining 3% is reserved for interventions on logistics terminals.

With reference to the works for the trans-Po rail route, we can see the trend of spending forecasts by comparing the data contained in the two DPEF (financial and economic planning document) for 2003-2006 and 2004-2007 (see table below):

Table 34. Construction times for the trans-Po highway

Tratta ferroviaria	Previsione DPEF 2003/2006	Previsione attuale*
Valico ferroviario del Frejus	2011-2015	2015
Torino – Novara	2006	Fine 2005
Novara – Milano	2007	2008
Milano – Verona	2008	2010
Verona – Venezia - Trieste	2007	2010
Genova – Milano (3° valico)	2009	2013

Source: according to the DPEF (financial and economic planning document) 2003-2006⁹ and current forecasts¹⁰

* forecast of the contractor station or forecast deriving from the state of progress of works

Table 35. Trend of spending forecasts in millions of Euros for the Trans-Po route in the DPEF for 2003-2006 and 2004-2007

	DPEF 2003-2006		DPEF 2004-2007		Variazione %
	Tratta ferroviaria	Previsioni di spesa	Regione di riferimento	Previsioni di spesa	
Asse ferroviario sul Corridoio V	Valico del Frejus	149,77	Piemonte	1.603,00	+ 91
	Torino - Milano	955,45	Lombardia	2.661,00	+ 64
	Novara - Milano	516,46	Lombardia - Veneto	350,00	- 47
	Milano - Verona	180,76	Veneto	1.170,00	+ 85
	Verona - Venezia - Trieste	309,87	Friuli - Venezia - Giulia	1.479,00	+ 79
	TOTALE	2.112,31	TOTAL	7.213,00	+ 70
Asse ferroviario Ventimiglia - Genova - Novara - Milano - Sempione (Rotterdam)	Genova - Milano	106,12		200	+ 47
	TOTALE	106,12	TOTAL	200	+ 47
	TOTALE GENERALE	2.218,43		7.413,00	+ 70

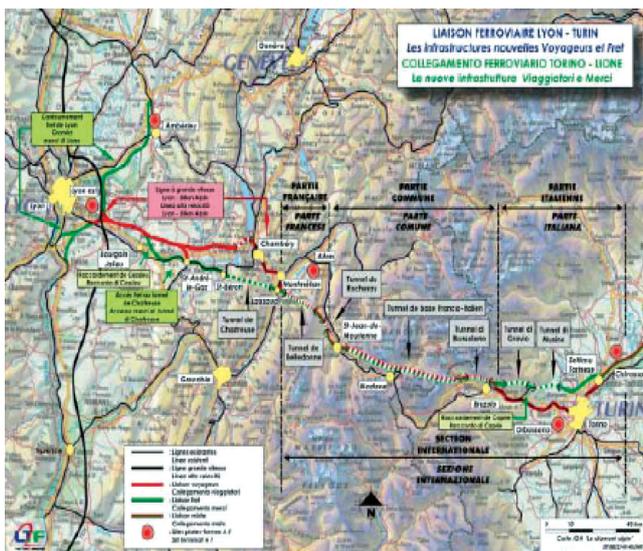
Source of data and tables: www.trail.liguria.it/Interventi/Corridoio_5/tratte.htm
 (based on data from Transpadana - Direttrice ferroviaria Europea and "Sole 24 ORE") - updated April 2004

Table 36. Burden of financing between Italy and France for the construction of the Lyon-Turin rail link

Tratta	Costo (milioni di €)	Competenza francese	Competenza italiana
RFF - Lyon - St-Jean-de-Maurienne	4.085	100%	=
LTF - St-Jean-de-Maurienne - Bruzolo	6.700	37%	63%
RFI - Bruzolo - Settimo T.	2.300	=	100%
TOTALE	13.085		

Source: based on data from Transpadana News - updated April 2004

Figure 138. The international stretch of the Lyon-Turin rail link



Source: RFI, 2004

As for the relationship between large-scale works and regional financial forecasts, in Piedmont around 70% of the funding planned by the DPEFR (the regional financial economic planning document) for 2004-2007 for construction of mobility infrastructure (trans-European networks and crossings; expansion of important supra-regional nodes; mobility works for the Olympic Games) is directed at interventions for the development of Corridor V.

In Lombardy, however, only 35% of the financing planned by the DPEFR for 2004-2007 for “mobility infrastructure” is for interventions relating to Corridor V. It is important to note that:

- The resources set aside for mobility amount to the twice as many as those set aside by Piedmont.
- The projects for the high-speed railway also include the Milan-Bologna line and generally speaking, these investments alone cover 39% of the total destined for this area.

Veneto and Friuli-Venezia-Giulia regions do not consider the rail projects for Corridor V in their DPEFR for 2004-2007.

5.2.2 A look at the other “AlpenCorS” Regions

5.2.2.1 The role of the Rhône-Alpes region in the European and French context¹¹

The geographical position of the Rhône-Alpes Region allows it to play a central role in the French transport system. Rhône-Alpes is simultaneously the gateway to the alpine system towards Italy (Mont Blanc and Fréjus tunnels) and Switzerland (Geneva area) and the main transit route between northern and southern Europe (Spain, Italy).

Together with the two bordering regions, Languedoc-Roussillon and PACA (Provence-Alpes-Côte-d’Azur), Rhône-Alpes forms a macro-region spread out along and around the Rhône valley, extremely important in terms of economic activity (significant number of transport and logistics companies), for the demographic dynamics of the area (positive balance), for its settlements (both in terms of how its urban agglomerations have developed, and of the spread of minor towns and urban centres in the region) and for its wealth of environmental and landscape resources. Generally speaking, in the French scenario the so-called “Vallée du Rhône et Arc Languedocien” is an evolving area.

From the point of view of transport and mobility, both the Rhône Valley and the “arc Languedocien” belong to the European multimodal corridors and their macro-areas are covered by all types of transport: by road, rail, sea (Marseilles/Fos port) and by river/canal (waterways have platforms for multimodal exchange).

The motorway systems includes seven motorways and sixteen national roads, which connect to all the main urban centres; the rail network includes the north-south rail route from Paris to Marseilles and the south-west line from Spain directed to Italy. The area boasts numerous logistics centres.

In 2003, the CIADT – Comité Intérministériel de l’Aménagement et du Développement et du Territoire defined a transport policy oriented towards affirming the role of Rhône-Alpes at the heart of the European transport system, outlining three particular objectives:

- To organise the Lyon-Saint-Étienne–Grenoble–Clermont-Ferrand metropolitan system;

Table 37. Portion of investments on the corridor in regional DPEFR

Regione	Totale stanziato dal DPEFR per l’area mobilità in milioni di Euro	Totale costi “grandi opere” considerate in milioni di Euro	“Peso” in percentuale
Piemonte	26.524,349	18.520,96	70%
Lombardia	53.872,162	18.881,91	35%

Source: DPEFR 2004-2007 Regione Lombardia and Regione Piemonte

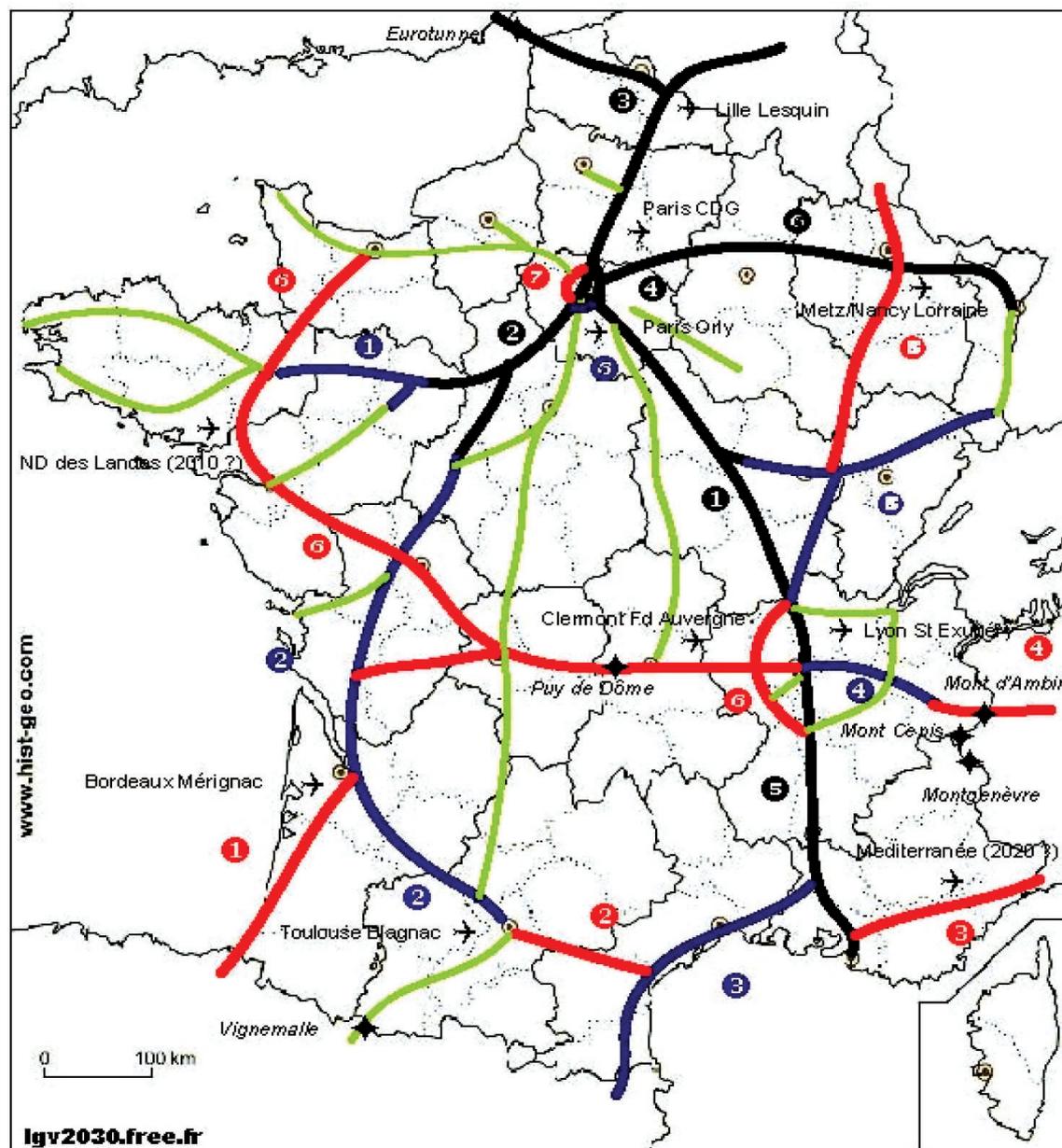
- To facilitate localisation of settlements along Saône-Rhône axis;
- To develop east west relations.

The last objective is shared by European transport policy, with regard to the construction and development of European Transport Networks. In the list of TEN projects, Rhône-Alpes is affected by the creation of the Lyon – Turin section of Corridor V and by the creation of the

Lyon/Geneva/Basel–Duisburg–Rotterdam/Antwerp route. The Region is also indirectly affected by the construction of the high-speed south-east European line Barcelona-Montpellier and by the “sea motorways”, which involve Languedoc–Roussillon and PACA (Provence–Alpes–Côte-d’Azur).

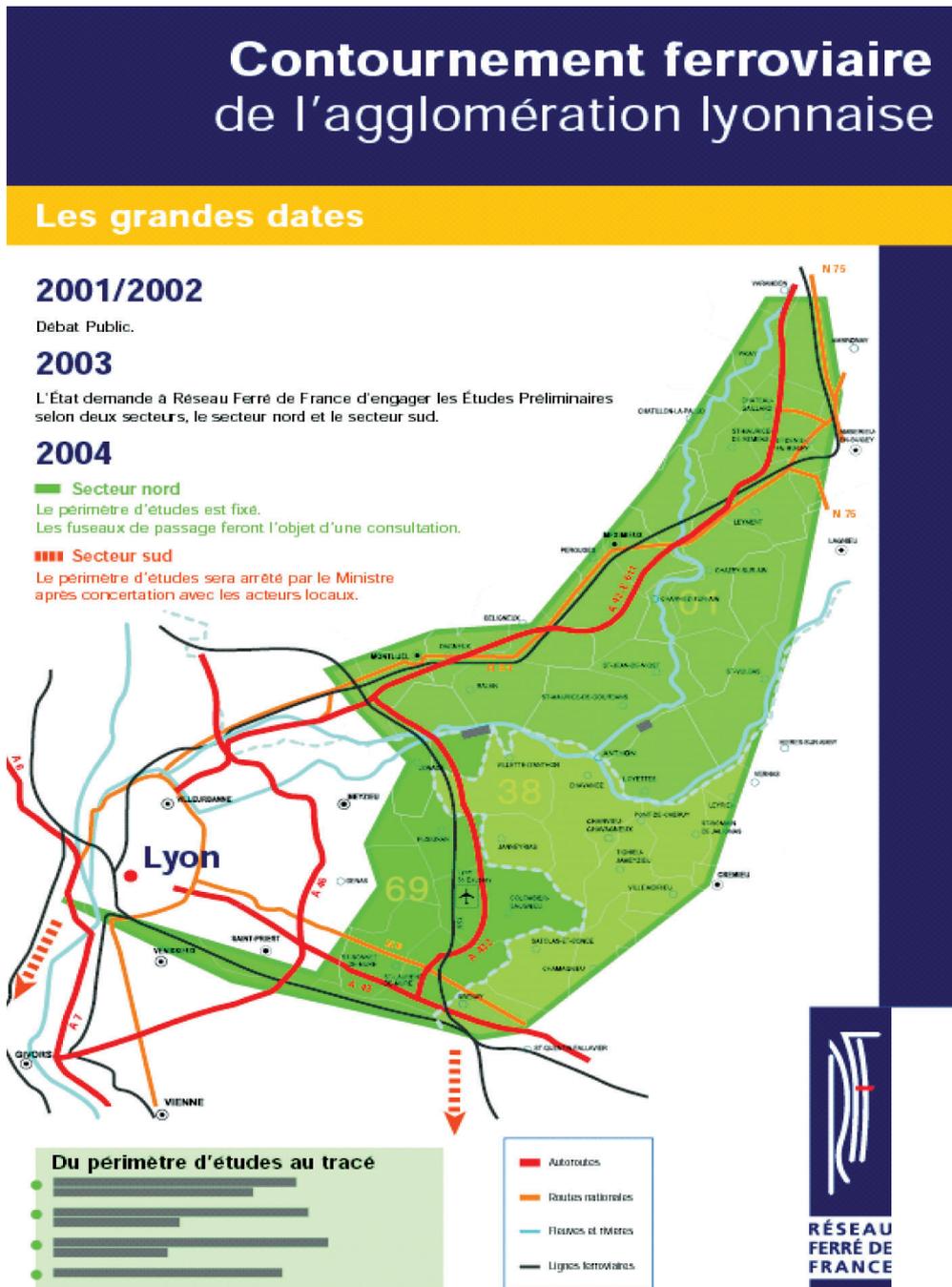
The main infrastructure projects planned in the area include:

Figure 139. LVGS: existing and in project



- LGV existantes ou en construction
- LGV en cours d'étude (horizon 2020)
- LGV à lancer (horizon 2030)
- Aménagement progressif des lignes classiques à V200/220 (avec ou sans pendulation)
- Aéroport desservi directement par TGV
- Tunnel de plus de 15 km

Figure 140. The Railway Freight skirting of the Lyon Agglomeration: CFAL



Source: Polytechnic and University of Turin's elaborations

- Infrastructure currently under construction;
- Infrastructure already declared as being of "public interest" and for which the preliminary project is being drawn up;
- Infrastructure that has only been decided (by CPER) or announced (by CIADT). These last projects will probably not be completed before 2025.

Completion of all works is expected for 2020. Projects for the road system are aimed at emphasising alternative

routes to the A7 and A48 motorways and at improving existing motorways, by building new lanes and sections. Other projects aim to improve connections between the local road system and the regional and national network. As for the rail system connected to creation of Corridor V, the main projects consist of building the Lyon freight by-pass in the Rhône-Alpes region, building the high-speed line in the PACA region (cost: 4.7–6.7 billion euro) and building a high-speed line (for freight and passen-

gers) in Languedoc-Roussillon, between Perpignan and Figueras in Spain (cost: 150m euro).

The Lyon-Turin project is one of the works planned by the CPER and confirmed by the CIADT on 23 December 2003. Nevertheless, it appears that the choice to build a freight by-pass, a western motorway by-pass and the Rhine-Rhône TGV give priority to links with existing corridors and not to the construction of Corridor V («Lyon-Turin», Monginevro), despite current east-west links being particularly critical, both for national connections (travelling time between Lyon and Bordeaux is more than 7 hours), and for international links (particularly with Italy).

Conversely, along the North-South route, Lyon is well connected to Paris (travelling time: less than 2 hours; connections: 24 return journeys per day) and to Marseilles (travelling time: 1h 30 minutes; connections: 15 return trips per day) by means of the high-speed passenger line. Even for freight traffic, 80% of all transported goods comes from the north and even if traffic from the south-west were to triple, this flow rate would still be higher. These and other economic considerations raised by the French government cause doubts as to whether France has any immediate interest in creating the Lyon-Turin link.

5.2.2.2 The slovenian approach

Slovenia is an important connection node between Western Europe and Northern Europe and the Balkans. Following independence, the country adopted a specific development strategy for transport networks, with the aim of improving east-west connections and relations with central Europe.

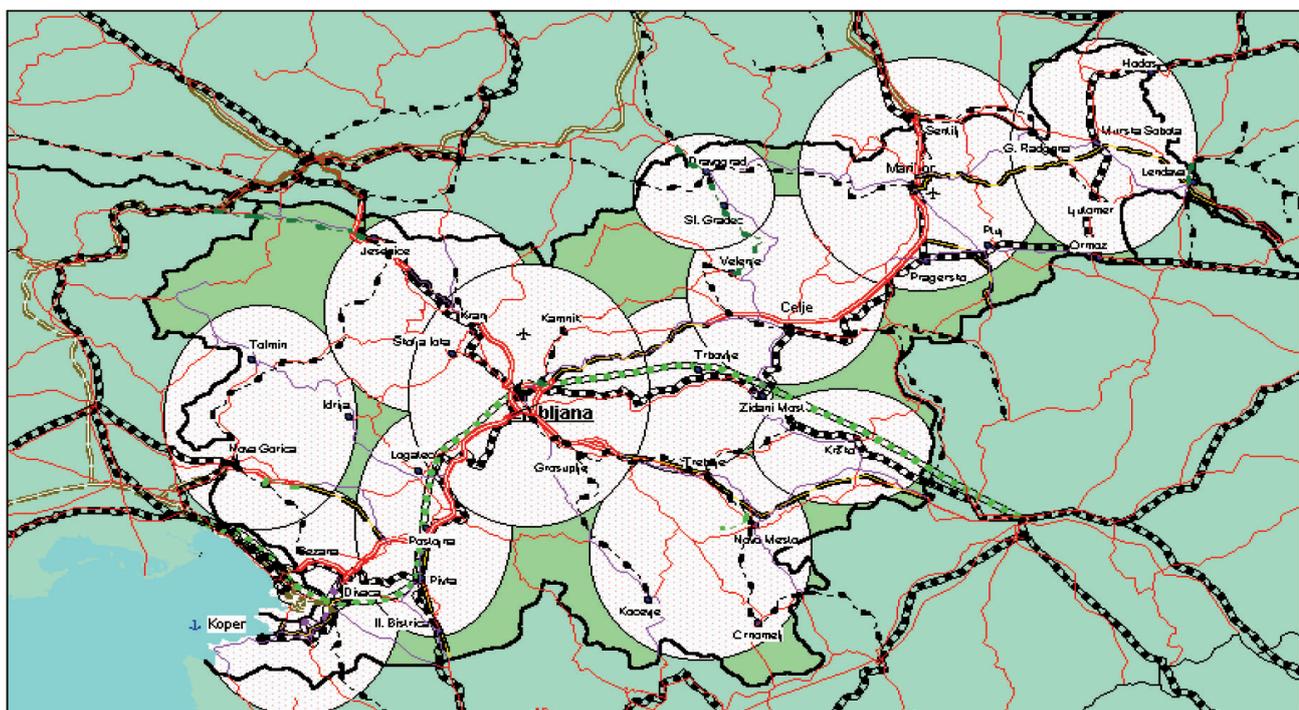
Demand for passenger and freight transport is continuously increasing, so much so that it has led the Slovenian Government to increase and improve the country's existing road (in particular) and rail networks. Combined transport only covers a small percentage of the entire system, given that most internal movement (both passenger and freight) is by road (90%). 2/3 of international transport is by road and the rest is by rail, rail freight across Slovenia accounting for around 40% of the entire national rail transport.

In this context, Slovenia's most recent transport policy has come up with the following objectives:

- Controlling traffic flow;
- Protecting the environment;
- Reducing road accidents;
- Eliminating the (negative) consequences of deregulation;
- Building new motorways to improve and complete the existing network.

Most public investments¹² are currently directed at

Figure 141. Main infrastructural projects in Slovenia



Source: Slovenia, "Resolucija prometne politike" »Transport Policy - 2004

improving the road system, while funds for the railway are almost entirely directed at electrifying most of the lines and doubling the tracks on the Koper-Divaca, Ljubljana-Jesenice (Austrian border–towards Villach) and Maribor-Sentilj (Austrian border–towards Graz) lines.

The high-speed rail project has been officially accepted by the Slovenian governments in all relevant European documents, however, many doubts are still expressed regarding the route and whether Slovenia has a real interest in it.

5.2.2.3 The main infrastructure projects in the north-east regions of Austria¹³

The eastern region of Austria ("Östregion"), which includes the provinces of Vienna, Lower Austria and Burgenland, is in a strange transport situation both geographically and politically speaking. Previously situated on the "edge" of the European Union, after the enlargement to the first Eastern European countries, it now finds itself in a crucial and central position in Europe.

The region is at the intersection of a number of key corridors for freight and passenger traffic, of which the flow is expected to increase as a direct result of the enlargement of the Union:

- The East-West corridor of the Danube which winds

its way from south-east Europe (Black Sea) through Hungary, Slovakia and Austria as far as Western Europe;

- The North-South corridor which winds its way from Warsaw/Prague as far as northern Italy and which is destined to become an increasingly important route for freight traffic.

These corridors cross the Vienna–Bratislava–Győr region and place significant pressure on the rail and road infrastructure of the area.

Against the backdrop of the gradual development of the Trans European Network (TEN) and of its primary nodes – in particular, deriving from integration of the TINA corridors into the TEN the main focal points of infrastructure development for the east Austrian region are identified as:

- For road infrastructure¹⁴:
 - Significant improvement in accessibility across the north and east in the manufacturing districts of the Czech Republic, Poland, Slovakia and Hungary (Corridors 4 and 5);
 - Elimination of shortage of transport operators along the Danube axis in order to improve accessibility to the manufacturing areas of Eastern Europe;
 - Improving regional and trans-regional accessibility to the borders;

Figure 142. The corridors identified by the "Generalverkehrsplan Österreich 2002"

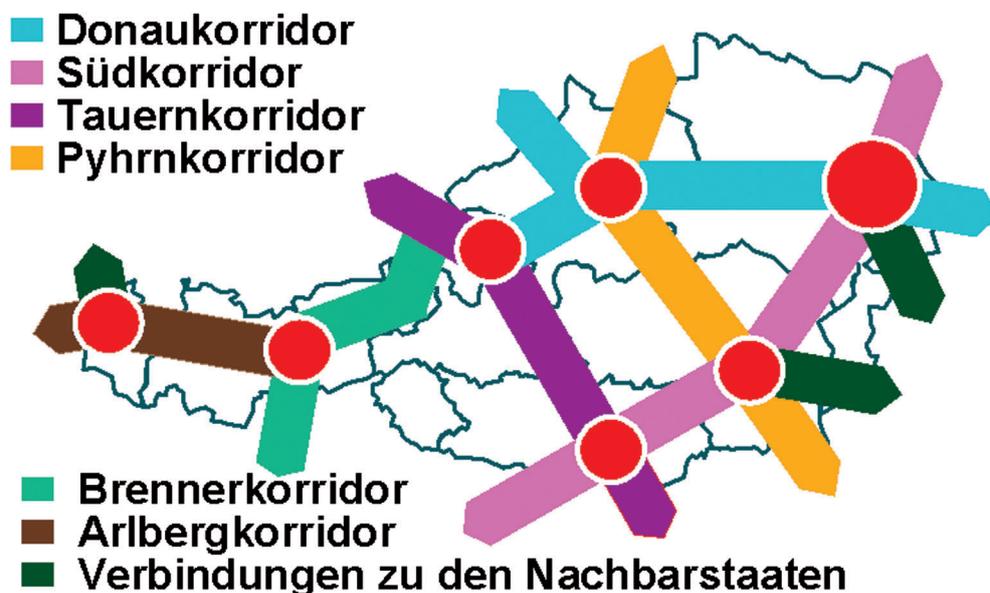
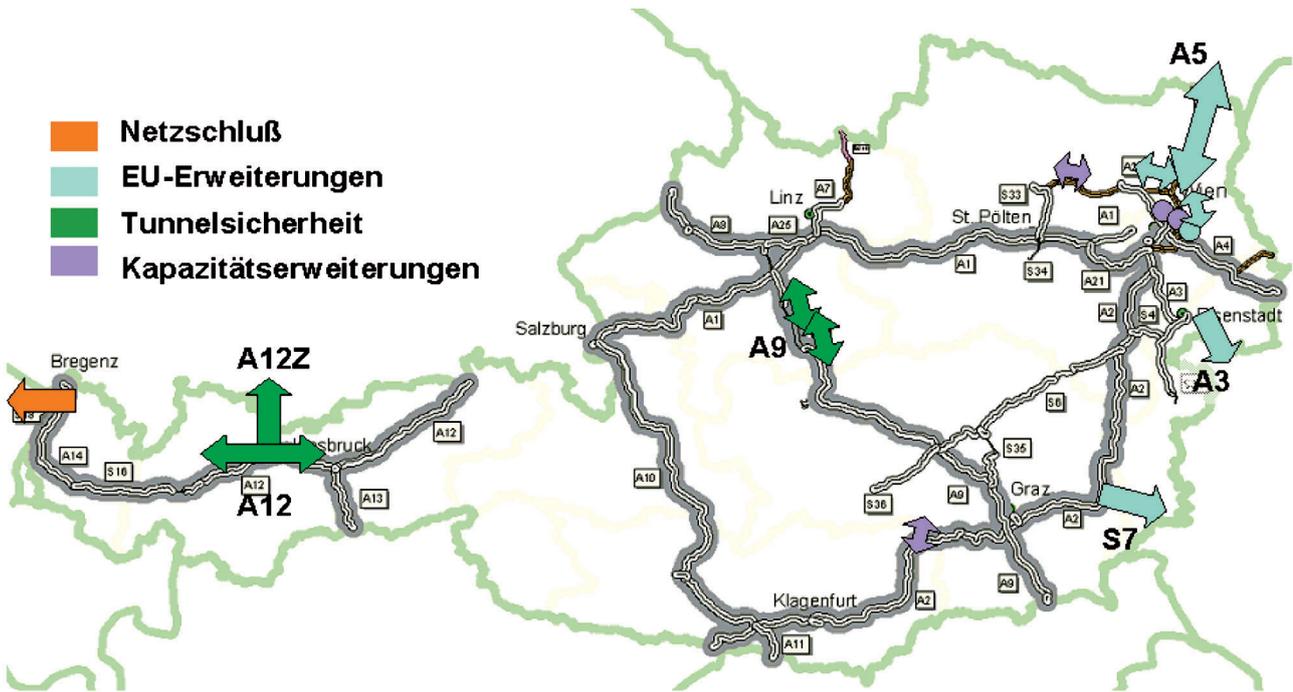


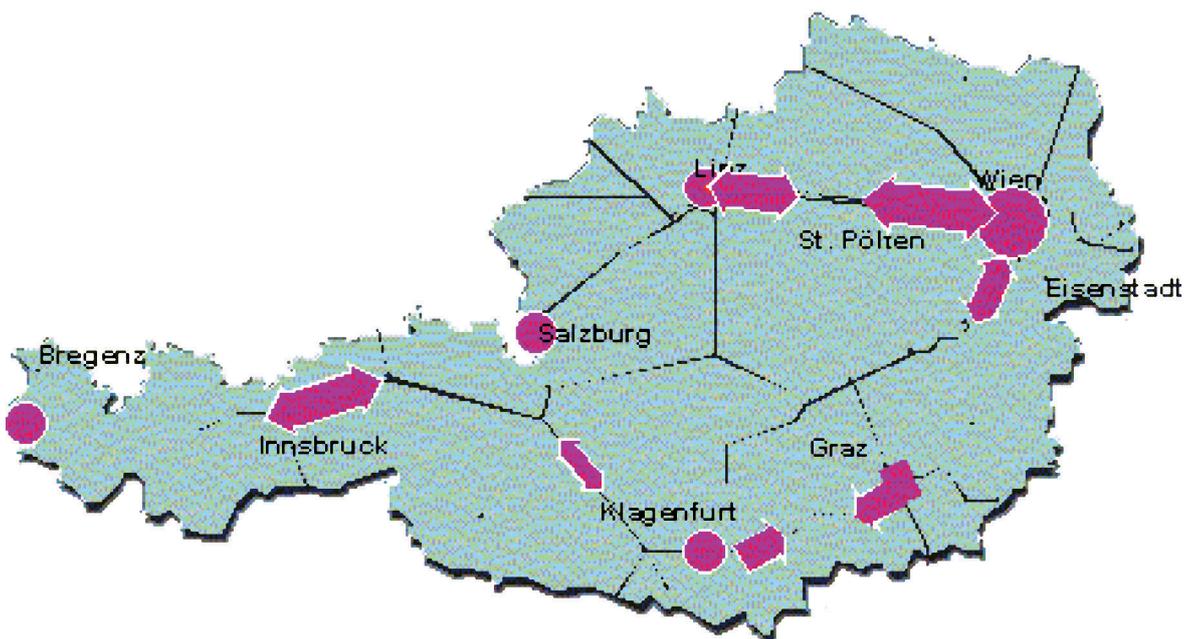
Figure 143. Austria - the road projects planned



Source: Generalverkehrsplan Österreich, 2002

- For primary nodes:
 - Protection and development of the intermodal traffic node of the Vienna region by:
 - Building platforms for intermodal transfer points and logistics services (rail, road, water, air corridors);
 - Facilitating freight and passenger flow, particularly on the rail network;
 - Building platforms for intermodal transfer points and logistics services (rail, road, water, air corridors);
- Lastly, there is one interesting piece of data comparing

Figure 144. Austria - the rail projects planned



Source: Generalverkehrsplan Österreich, 2002

the burden of investments for the “Corridor V link” on the entire investments in the road, rail and river infrastructures¹⁵ planned by the “Generalverkehrsplan Österreich 2002” with the similar burden in the General Transport Plan and in the State-Region Framework Agreements/Accords in Italy: this amounts to around 10% of the corresponding share in our country.

5.3 - Territorial policies and infrastructure investments

An analysis of the relationship between territorial policies and infrastructure investments in main urban nodes located along Corridor V was conducted according two standpoints:

- Whether and what relationship exists between current territorial/infrastructure planning and infrastructure investments;
- In which way local urban planning policy has been affected by corridor investments.

The main conclusions reached after analysis of the

nodes are presented below¹⁶.

5.3.1 Investments on urban nodes

The table shows the list and extent of the main node infrastructure projects and the main projects regarding urban transformation planned in each urban area of the Italian section of the Corridor. Around 3,500 million euro (3.5b) are directed at the infrastructure projects and for urban transformation projects the amount of funds set aside or planned stands at around 2,400 million euro (2.4b). These figures demonstrate how the urban nodes are going through a phase of radical reorganisation and restructuring, obviously with different nodes proceeding at different rates and with differing consideration of the Corridor policies. We will now look at a few details of the individual nodes examined, proceeding from west to east.

Table 38. Urban nodes – Economic-financial entity of the analysed projects

NODI URBANI - Entità economico-finanziaria dei progetti analizzati
(URBAN NODES – ECONOMIC-FINANCIAL ENTITY OF THE ANALYSED PROJECTS)

Nodo urbano (Urban node)	Progetti infrastrutturali (Infrastructure Projects)			Progetti di trasformazione urbana (Urban Transformation Projects)		
	Quantità (Quantity)	Descrizione* (Description)	Costo totale o parziale (Total or Partial Amount)*	Quantità (Quantity)	Descrizione* (Description)	Costo totale o parziale (Total or Partial Amount)*
TORINO	8	Passante ferroviario	1180,000	8	Spina Centrale	1630,000
		Collegamento Caselle Aeroporto – linea AC	91,000		Edifici e strutture olimpiche	360,000
		Totale	1271,000		Totale	1990,000
NOVARA	6+1 (logistica)	stazione FS/FNME	18,000	2	PRUSST “S. Agabio”	
		Interporto CIM	11,400****		Totale	
		Totale	29,400			
MILANO	4	Collegamento stradale Fiera Rho-Pero A8	600,000	4	Garibaldi-Repubblica	153,000***
		Passante ferroviario - tratta P.ta Venezia-Daateo-P.ta Vittoria	120,334		Area ex stazione di P.ta Vittoria	18,000***
		Totale	720,334		Rogoredo-Montecity	187,000***
					Totale	358,000****
VERONA	16+1 (logistica)	Infrastrutture gomma-ferro: tramvia	300,000	2	PRUSST “Verona Sud”	380,000 (di cui 2,800 finanziati dallo Stato)
		Idrovia	44,414		Totale	380,000
		Totale	344,414			
VENEZIA-MESTRE	9+1 (logistica)	Passante di Mestre	750,000	7	PRUSST “Arsenale”	
		Tessera Aeroporto	108,000		Stazione S. Lucia	22,400
		Tessera Viabilità	38,000		P.le Roma	114,400
		Scalo merci	28,000		Università S. Giobbe	disponibili 24,400
		Porto di Venezia (commerciale + turistico)	196,870		Università via Torino (Mestre)	tot 67,000, disponibili 24,000
		Porto Marghera	184,750 di cui per l'interporto 57,980		VE GA	200,000
		Totale	1.153,61		Totale	428,000
TOTALI GENERALI	43+3		3518,758	17		2398,000****

Source: Polytechnic and University of Turin's elaborations

5.3.1.1 Lyon¹⁷

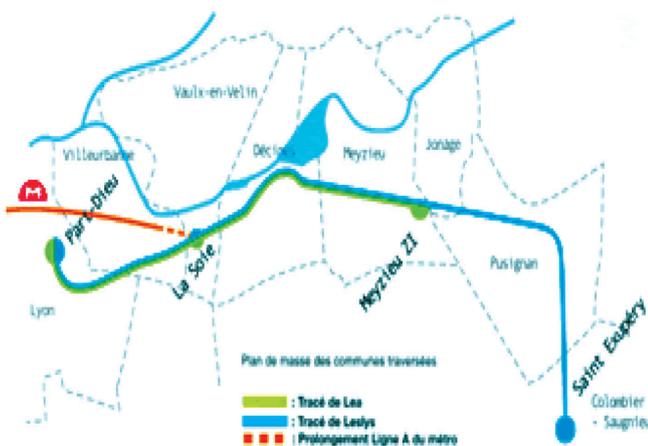
Transport policy in the Lyon area has seven main strategic objectives:

- Developing a regional passenger transport system that is efficient and attractive, to provide a credible alternative to private transport¹⁸;
- Reinforcing intermodality, as a prerequisite for progressive assertion of collective public transport;
- Providing facilities for the general public in regional service railway stations¹⁹;
- Providing facilities within the European plurimodal platform at Lyon-Saint Exupéry, with high-quality access to the airport (Lyon-Saint Exupéry International Airport has an annual traffic rate of around 6 million passengers), motorways and railways (TGV station);
- Creating sites to increase the transfer of freight from rail to water;
- Improving rail connections between regional terminals and access to large roads (including improvements to network performance and the international airport link - "Leslys" and LEA - Ligne de l'Est de l'Agglomération - tramlines);
- Creating the necessary connections to the three major national and European projects: the high-speed RHIN-RHONE line, the Lyon "Freight By-Pass" and the Lyon-Turin transalpine pass.

We mention three more important urban transformation projects involving Lyon and which are particularly significant in terms of relations with existing and planned infrastructure networks:

Figure 145. Lyon - scheme of the public transport lines Lea and Leslys

Lea & Leslys : les lignes



Source: Polytechnic and University of Turin's elaborations

Figure 146 Lyon - the "international city" project



Source: photo from <http://www.grandlyon.com/index.php?id=24>

- *The "international city" project*: this project involves the existing complex called "International city" in the northeast section of Lyon, which is to be given a boost in order to improve its appeal for business and tourism. Planned works include a new public open area, a new international hotel, offices and an extension to the current conference building;
- *The "Lyon Confluence" project*: this involves the central area of Lyon and is targeted at improving the city's connections with the infrastructure networks. Again, planned schemes include enhancing the infrastructure networks and creating new public areas for leisure facilities;
- *The "High Excellence pole"*: situated in the eastern sector of Lyon between the city centre and the airport and covering an area of 400 hectares; it is directly linked to the A43 motorway and it is made up of a technological centre called "Lyon Alps Door", which houses Lyon 2 University, parks and public areas. Plans include schemes to boost the infrastructure network.

Figure 147. The "Lyon Confluence" project



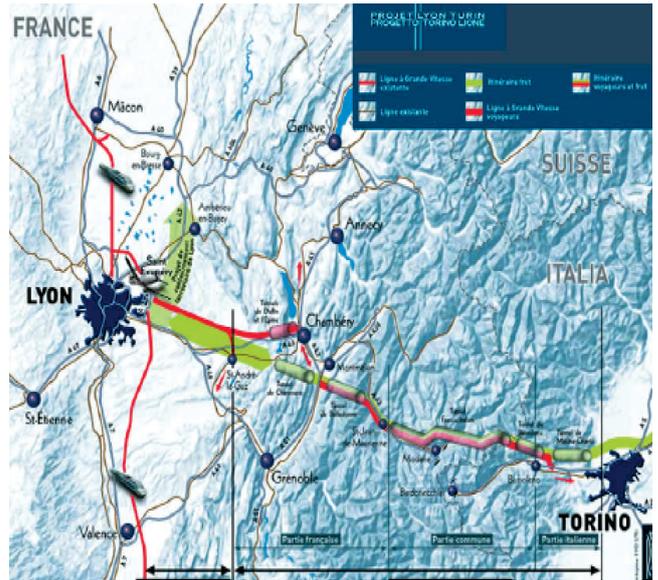
Source: Polytechnic and University of Turin's elaborations

Figure 148. Lyon - The "High Excellence pole"



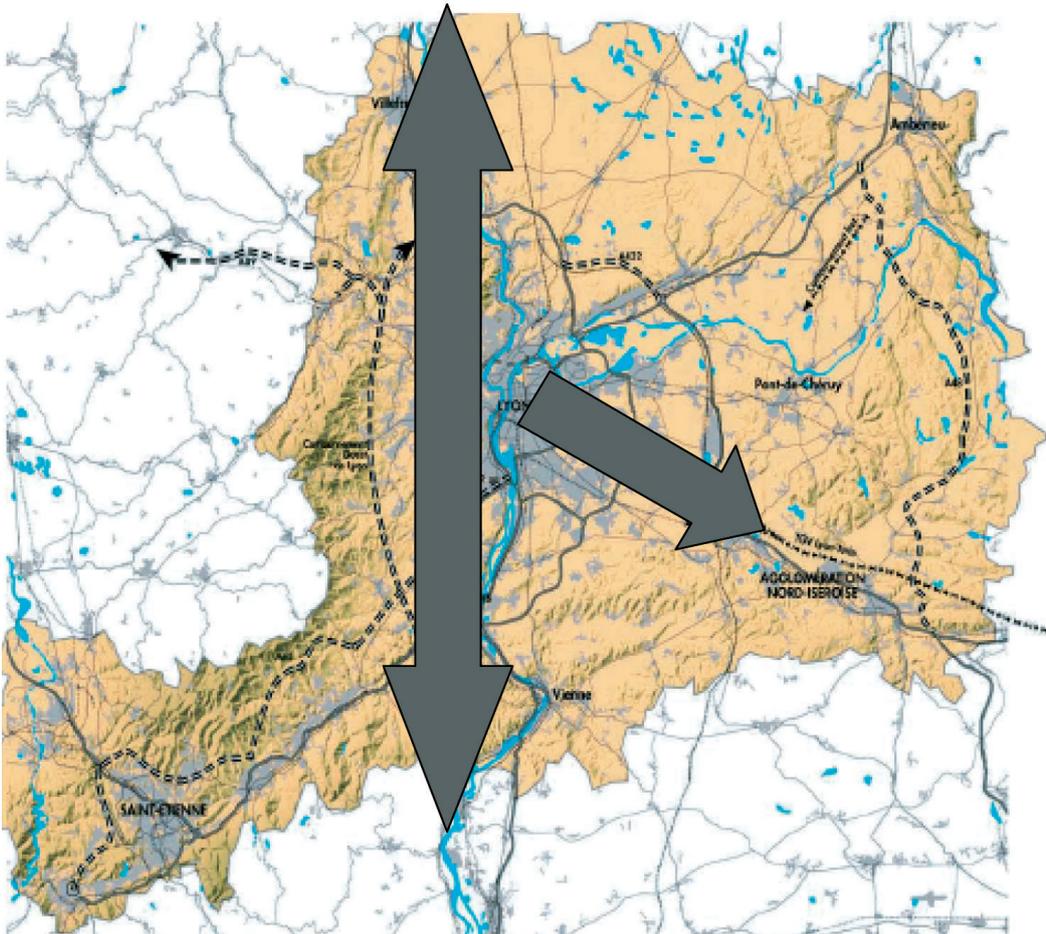
Source: Communauté Urbaine "Grand Lyon"

Figure 150. The Lyon infrastructural node and connections with the high-speed Lyon-Turin line



Source: Polytechnic and University of Turin's elaborations

Figure 149. Structural scheme of the urban node of Lyon



Source: Polytechnic and University of Turin's elaborations.

5.3.1.2 Turin

Turin is going through a period of radical urban transformation, which is set to change the entire face of the city and appears to be closely related to the infrastructure policies of the corridor. Among them, two particular measures will cover most of the work on the city: the construction of a rail link with redevelopment of the vast areas of abandoned land running alongside it, and organisation of the 2006 Winter Olympics.

The area involved by the railway by-pass is a strip that

crosses the city from the north (i.e. airport direction). On the other hand, work related to the Olympic Games, besides regarding some areas nearby the rail by-pass, are focused on its south part (i.e. the areas where the historical industrial building “Lingotto” and General Market are located).

Figure 151. Turin - the main areas of urban transformation



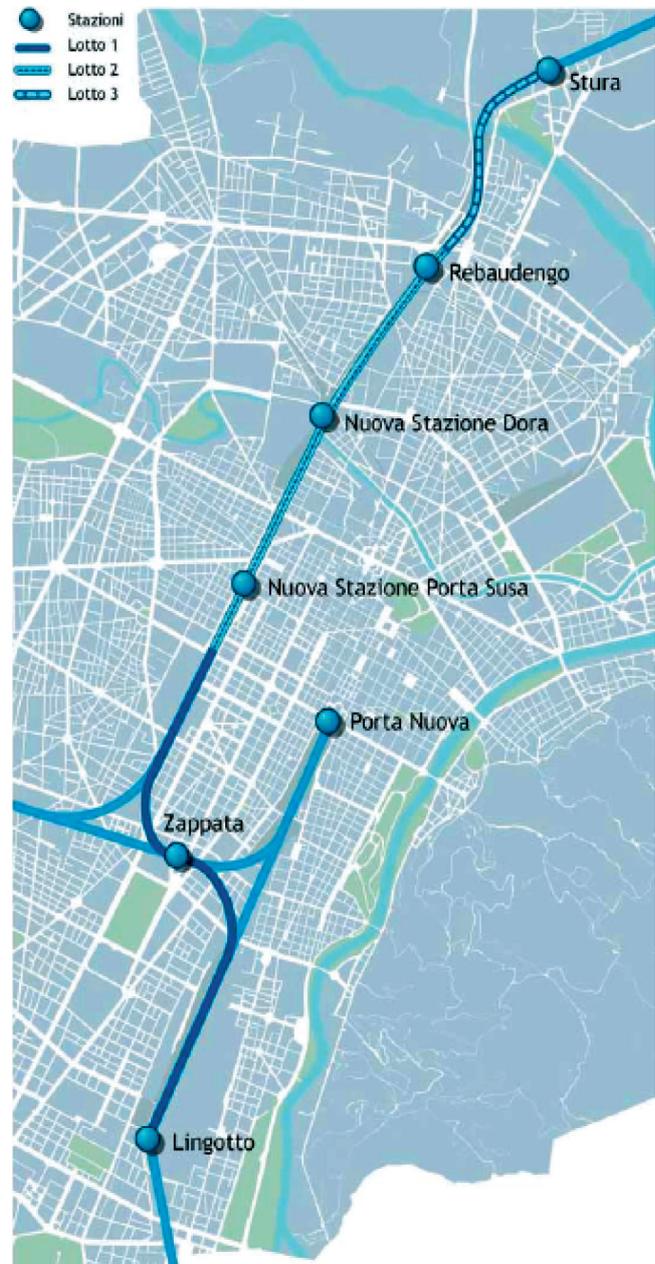
Source: www.oct.it – processed image

Figure 152. Turin - Rail stations and new underground line with respect to the areas of urban transformation



Source: www.oct.it – processed image

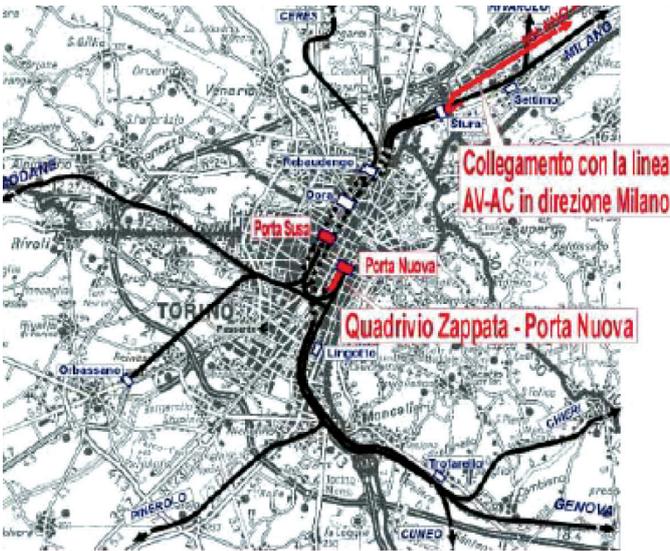
Figure 153. Turin - Stations planned for the Rail Link and land plots



Source: Polytechnic and University of Turin's elaborations

The schemes are closely related to transport policy. Construction of the rail link will bring a boost to the railway for both supra-local and local transport.

Figure 154. The Turin railway node



Source: RFI, 2004

The area under transformation also contains Porta Susa station, which, as well as being Turin's high-speed railway station, will become the city's main station. A series of other minor stations (from north to south: Stura, Rebaudengo, Dora, Zappata, Lingotto) are involved as well, being nodes of the local transport network. The new underground line will be linked to this system of urban transformation at Porta Susa and Lingotto stations.

On the one hand corridor policies have enabled this transformation to take place (development of the rail node and of the underground rail system are the conditions that have made most of the projects possible) while on the other they bring added value.

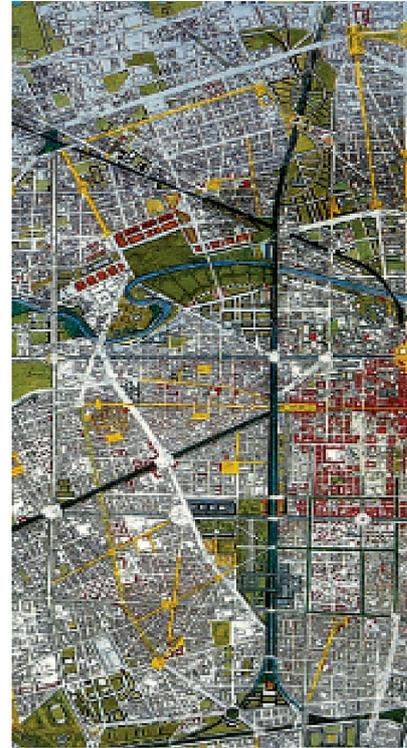
Figure 155. Turin - section of the new Porta Susa Station



Source: Polytechnic and University of Turin's elaborations

All works planned for these areas will benefit from an efficient transport system that will create a network for the new urban facilities. So it is no surprise that in addition to the new residential properties, new cultural, commercial and service facilities will also be established in these areas of transformation.

Figure 156. Turin - the Central Backbone



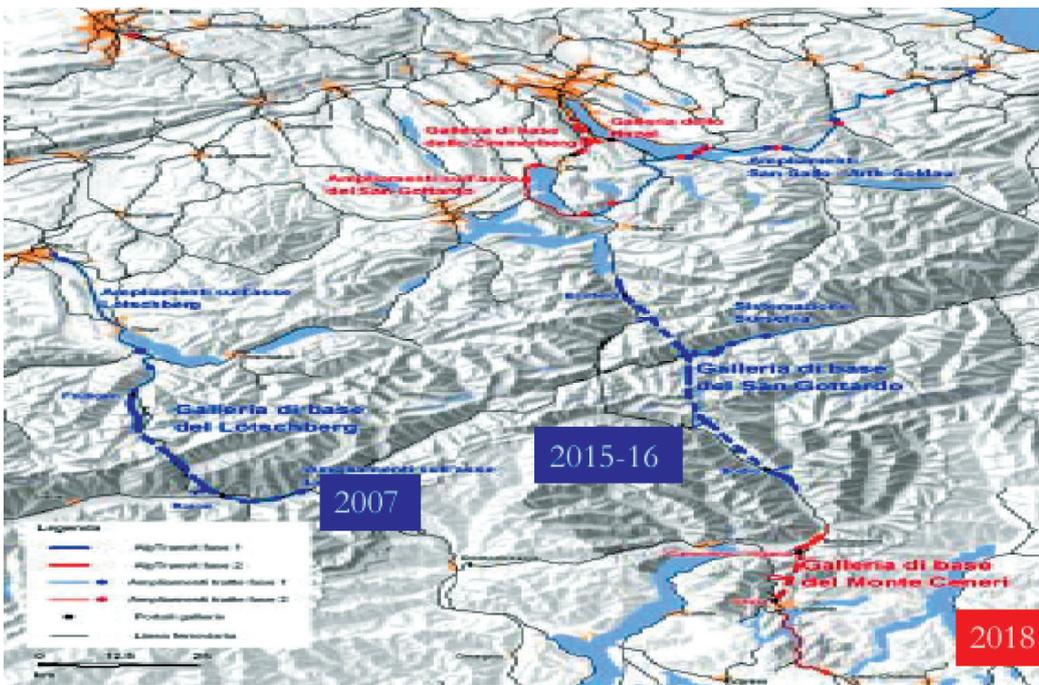
Source: www.otc.torino.it

Figure 157. Structural scheme of the urban node of Turin



Source: Polytechnic and University of Turin's elaborations

Figure 158. Alpine transits in Switzerland



Source: RFI

5.3.1.3 Novara

The city of Novara is geographically located at the intersection between two important infrastructure routes going north-south (Sempione–Ligurian ports) and west-east (Turin–Trieste) and is halfway between the metropolitan districts of Milan and Turin.

These two axes are today characterised by an already strong infrastructural network, but above all, are the focus of a number of important road and rail projects,

some of which are already underway:

- Reinforcement of the Rotterdam–Genoa rail corridor with development of the alpine passes in the Alp-Transit project (Gotthard and Lötschberg–Sempione in the north, Terzo Valico (third mountain rail pass) in the south between Liguria and Piedmont);
- The Lyon-Trieste west-east connection, with construction of the section of the high-speed/high-capacity railway, as well as modification and development of the A4 Turin-Milan motorway.

Figure 159. Detail of the Novara urban node rail network



Source: Polytechnic and University of Turin's elaborations

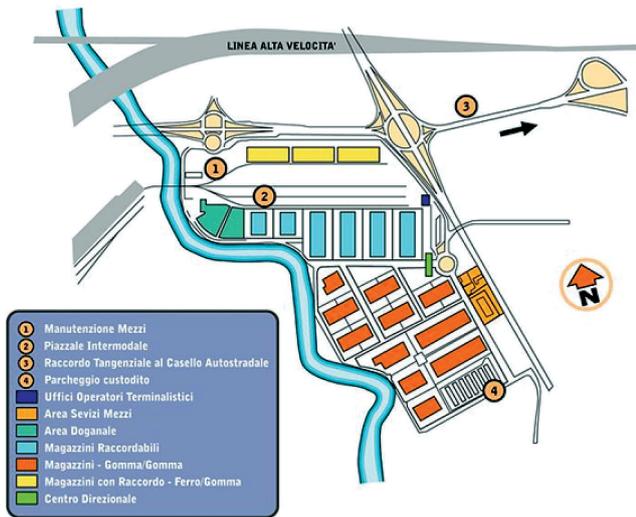
The city is situated close to Malpensa intercontinental airport, which will be accessible in around twenty minutes, once the Malpensa-Boffalora motorway link road is complete (interconnection with the A4).

The motorway slip road will also connect the city to Gotthard on the following route: A4–Malpensa link road –A8 to Varese–Varese link road–Mendrisio–Gotthard motorway.

Under the heading of “Approdo alla città” (Arriving in town) Novara’s 1998 P.R.U.S.S.T (Urban requalification and sustainable development programme) sets out the station’s connection to the high-speed railway, the construction of the new FNME station with connection by rail to Malpensa 2000, possible relocation of the coach station to the immediate vicinity of the two stations and rationalisation of the intermodal freight system.

The development of the CIM (Centro Intermodale Merco-Intermodal freight centre), planned in the north-east of the city, should draw many opportunities for

Figure 160. Novara freight village Map

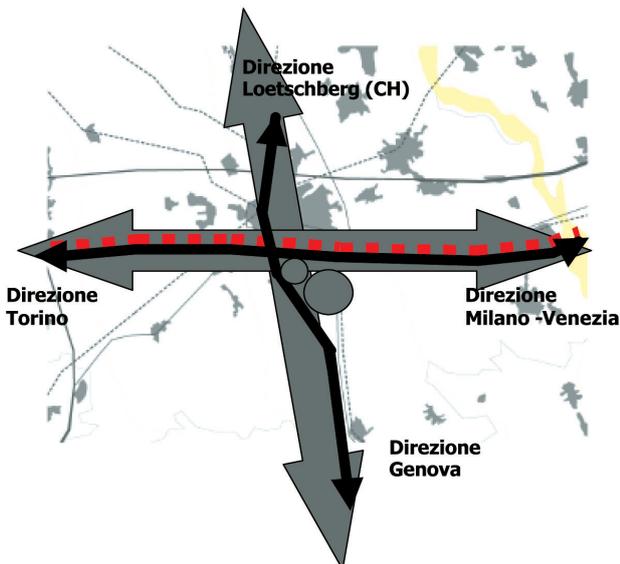


Source: Polytechinc and University of Turin's elaborations

developing its potential from the infrastructure projects just described, in connection with the existing railways freight terminal "Boschetto".

The CIM should operate warehousing, distribution and storage services, and would thus take part in the project to revive the manufacturing sector, which is spread out all over this urban node, together with projects for the existing university and science and technology pole.

Figure 161. Structural scheme of the urban node of Novara



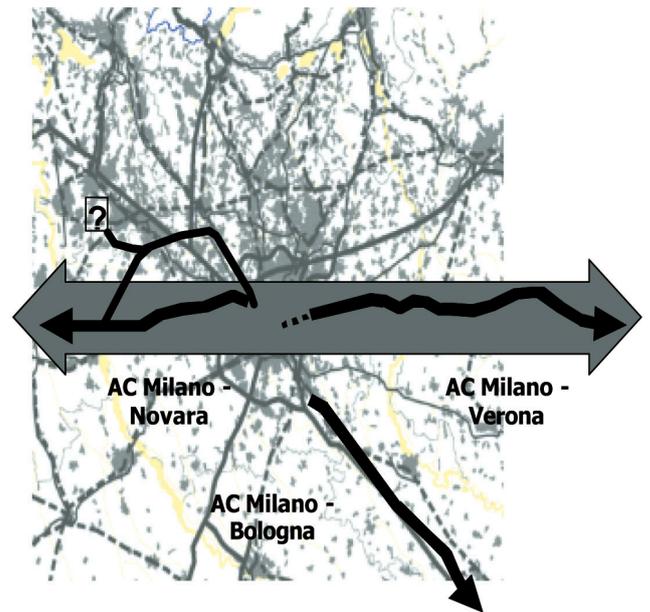
Source: Polytechinc and University of Turin's elaborations

5.3.1.4 Milan

The transformations undergone by the Milan node over the last decade highlight the importance of the axis between the two high-speed rail stations (Certosa–Rogoredo) and represent the implementation, even if to differing degrees, of the indications given in the Director Document of the Rail Link Project drawn up at the end of the 1980s by the city of Milan. Indeed, the Certosa–Rogoredo axis coincides with the rail link axis. Implementation of a few of these projects, particularly the Porta Vittoria scheme, comes as a result of completion of a section of the Milan rail link. The experience in Milan confirms that infrastructure investments can indeed be the vehicle of important transformations, including privately initiated ones, provided that the time horizon for completion of these projects remains within the short term.

The functional aspect of the projects described is the

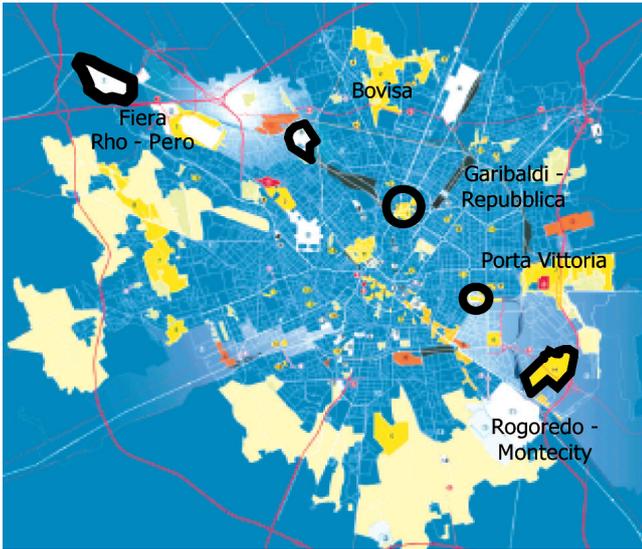
Figure 162. The Milan node and Corridor V



Source: Polytechinc and University of Turin's elaborations

element that more than anything else distinguishes them from other schemes in the rest of the city, (almost) all of which are geared towards the property market and, in particular, privileging the sector that is most profitable: residential property. Among the interventions that were analysed only Milan–Santa Giulia (former Rogoredo–Montecity) includes a substantial portion of residential works (and this is in fact mostly a residential project), although it does also boast the new conference centre, in addition to a high number of offices. In addition to the Rho–Pero terminal, which will be home to the new exhibition centre, the Bovisa area will have a

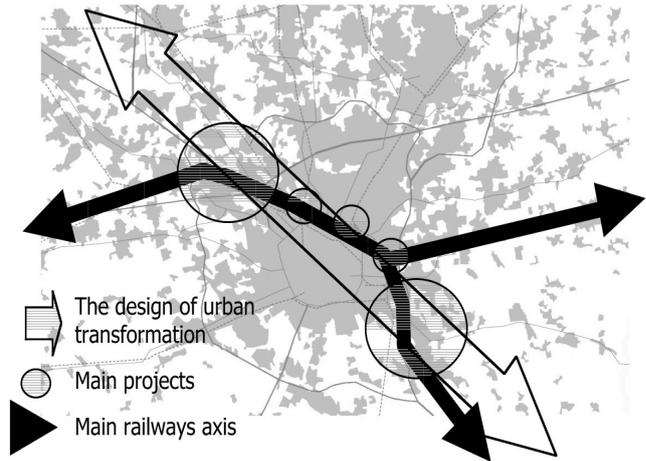
Figure 163. Milan - The selected projects



Source: Polytechinc and University of Turin's elaborations

university flavour (although not without a hint of the residential), the Garibaldi-Repubblica zones will contain executive facilities for the civil service and the fashion city, Porta Vittoria will hold the new European library (as well as residential and leisure facilities). Construction of the high-speed line has had a definite influence on positioning the new external exhibition centre, while its relationship to other projects is less direct and, in some cases, also raises a number of critical issues.

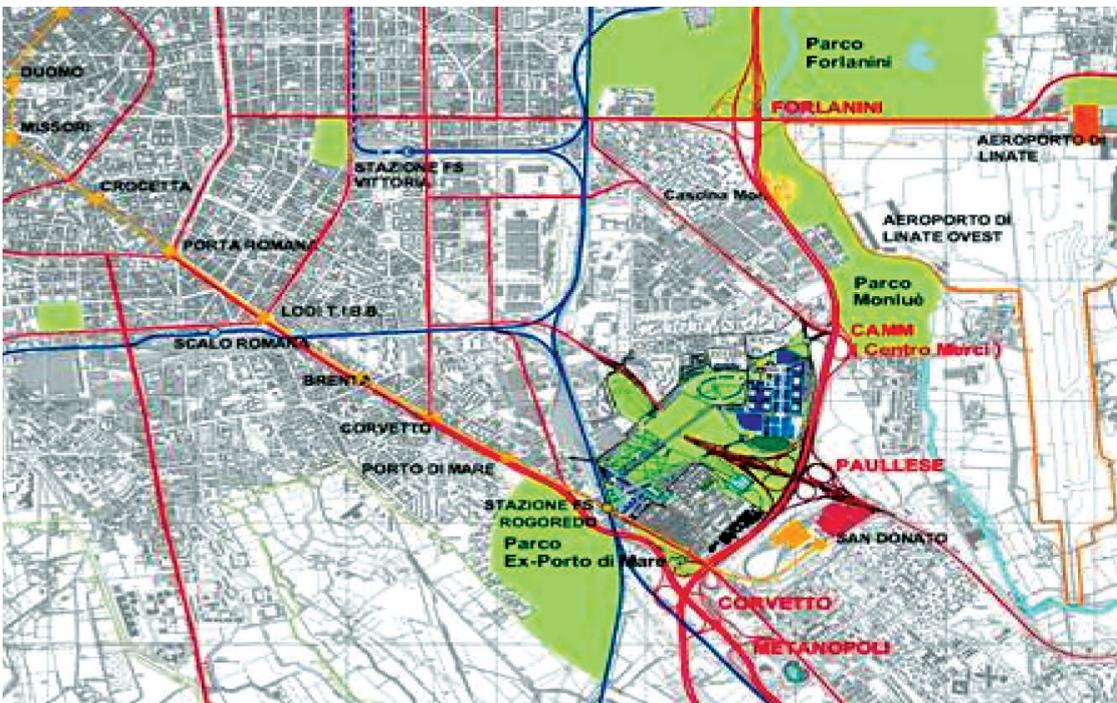
Figure 165. Structural scheme of the urban node of Milan



Source: Polytechinc and University of Turin's elaborations

One example is Milan–Santa Giulia, where the conference centre is situated almost one kilometre away from Rogoredo railway and underground station, which, however, is surrounded by residential facilities. Hence, it is vital for Milan to broaden its localisation horizons by redefining its infrastructure schemes in step with the new accessibility resulting from completion of the high-speed network and, at the same time, establish more rigorous standards in ascertaining compatibility between urban transformation projects and infrastructure investments.

Figure 164. The new Milan – Santa Giulia district (former Rogoredo – Montecity)

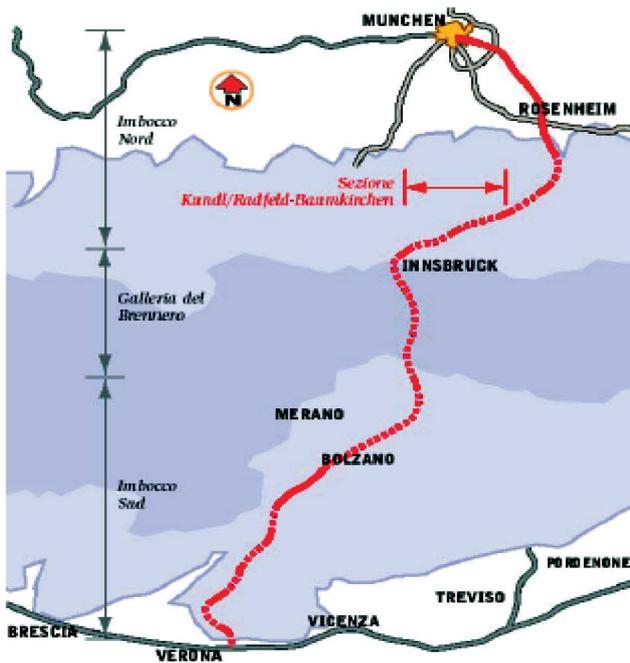


Source: Polytechinc and University of Turin's elaborations

5.3.1.5 Verona

The main projects for urban transformation in Verona centre on the south-southwest area of the city, near the intersection between the two infrastructure clusters that run along the north-south (Brenner-Bologna) and west-east (Turin-Venice) axes.

Figure 166. Diagram of the route of the high-speed/high-capacity Brenner line



Source: www.lom.camcom.it/trasporti

This vast region hosts one of the most important logistics centres in Europe, Quadrante Europa, which is currently planning expansion of its logistics facilities and activities in addition to creating the new Mercato Agroalimentare (Food and Agriculture Market), due to be relocated, thus freeing up vast areas of southern Verona, and creating the Science and Technology Park. The P.R.U.S.S.T. and the Preliminare della Variante di PRG (Preliminary Version of the Urban-planning document) – which collects and summarises all plans and projects for the Verona area²⁰ – both talk about the installation of several facilities. 29% of the total construction volume will be residential, whereas the remaining 71% is destined for executive and tertiary sector structures, with facilities and equipment (especially public green areas) covering 22% of the areas destined for building. The other interventions are directed at redevelopment and improvement of the existing infrastructure network, with emphasis on the road system, and their relationship with the Corridor policies is direct. Construction of the Milan-Venice HS/HC rail line, improvement of the Brenner line, construction of the “TiBre” motorway link

Table 39. Verona South area – Coordination zones subject to urban equalization

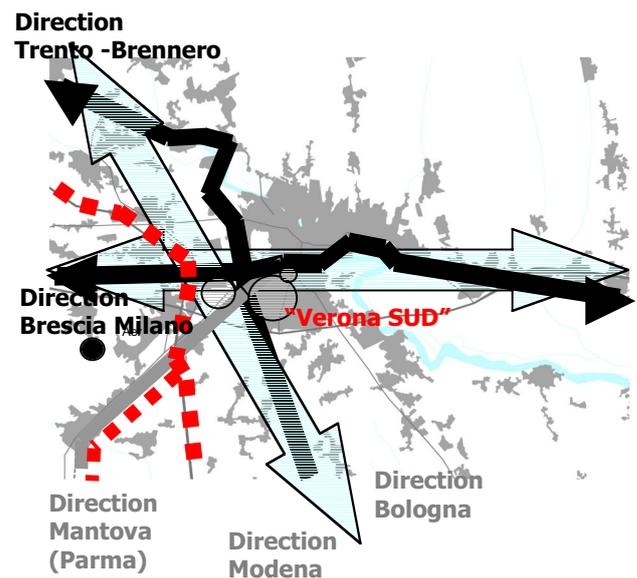
1. surface area of redevelopment zones =	1,710,057m ²
Areas destined for building projects =	1,399,042m ²
Urbanisation areas*	311,015m ²
2. construction volume	
1,399,042m ² x 2.5 m ³ /m ² =	3,497,605m ³
3. distribution	
Residential	1,003,175m ²
Executive – Tertiary	2,494,430m ²
4. rate of construction suitability	
It =	3,497,605 m ³ / 1,710,057m ²

* system of green areas with equipment and facilities in: Comune di Verona, (2004), Preliminare della Variante di PRG, p.135

road and the work planned on the existing motorway toll booths all contribute to the construction and reorganisation of the Corridor.

These schemes also affect provincial and local government policy for reorganisation of traffic and mobility systems. The redevelopment and enhancement of state roads, city access roads, the public urban transport system, by creating two new tram routes and an underground line that will also connect the city to the airport, are all seen not merely as solutions to the mobility problems and other critical difficulties in the current system, but also as the manifestation of an all-round strategy to strengthen Verona’s metropolitan status within the region and Europe as a whole.

Figure 167. Structural scheme of the urban node of Verona



Source: Verona Municipal Council website

5.3.1.6 Venice

The selection of the intervention projects (intervention on infrastructural nodes, projects for the university sys-

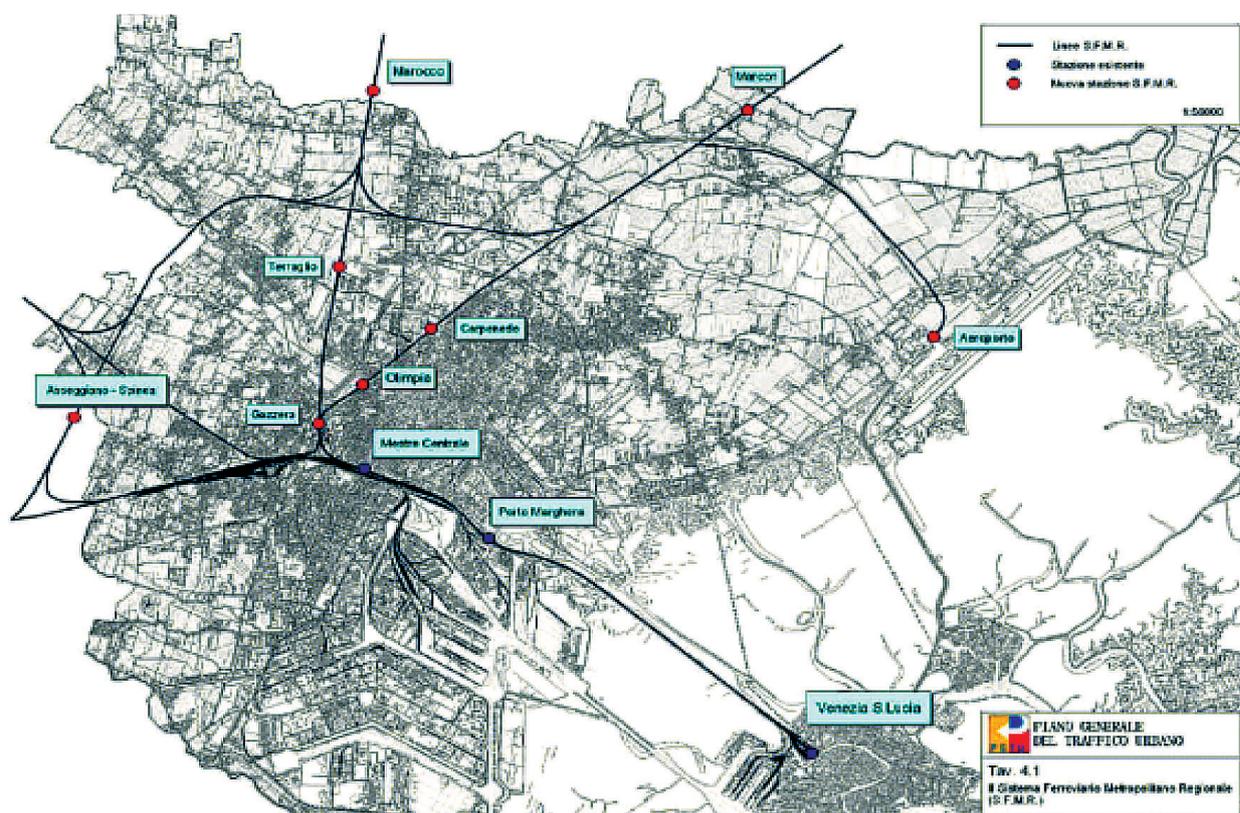
tem and scientific and technological research, i.e. relating to regional facilities and institutions) automatically led to selection of the variety and type of facilities pro-

Table 40. Venice - technical features of the Mestre road by-pass

Number of toll booths	6	Three barriers on the A4 and A27; three new toll booths: Spinea, Martellago, Preganziol/Casale sul Sile
Type of road	Cnr 78/80 I°	3 x 3.75m lanes + 1 x 3m emergency lane in each direction
Roadway	32,5 m	Overall width
Planned speed	110-140 km/h	
No. accesses to by-pass system	15	
Artificial tunnels	7	Overall distance 1367 m
Road cutting sections	8	Overall distance 7965 m Stretches ranging from 60m to 400m in length
Viaducts	1	Mestre - Castelfranco railway; 645m long
River crossings	14	Single span bridges
Overpasses	15	
Underpasses	22	Three barriers on the A4 and A27; three new toll booths: Spinea, Martellago, Preganziol/Casale sul Sile

Source: Fondazione Nord-Est, (2004), Passante di Mestre

Figure 169. Venice - SFMR network



Source: Comune di Venezia, (2002), Piano Generale del Traffico Urbano – Allegato B

vided for by the projects themselves and/or already in place. Basically, facility categories feature the service sector, trade, advanced tertiary industry, high-quality facilities for culture, research and university education and mobility facilities. The residential sector barely features. Four main projects are planned for the infrastructure and mobility system of the Venice–Mestre metropolitan district: “Mestre Link Road”; implementation of the Regional Metropolitan Rail System (S.F.M.R.); a number of infrastructure schemes directly related to urban and industrial redevelopment projects; development of the system for channelling the flow of tourism in Venice. The first three are more important and are directly related to corridor policies and also have a greater effect on local mobility policies (transit flow and commuter flow) and on urban infrastructure hierarchy (reorganisation of road access in the industrial and residential zones of Mestre).

They also involve a series of parking schemes, as planned in the Piano dei Parcheggi Scambiatori di Venezia (Venice Interchange Parking Plan) of 1996, such as creation of the so-called “interchange parks” for SFMR and public urban transport stations.

Similarly to the Verona node, in Venice’s case the relationship is mostly direct between the interventions planned in almost all sector and territory planning documents and Corridor policies. Interventions mostly fall within two strategic objectives of the infrastructure system. The first concerns the networks and entails the upgrading, redevelopment and integration of the existing infrastructure system with new works. The other objective concerns the nodes and entails the “systemisation” of the existing nodes in the Venice area (see, for

example, the “Porto di Venezia” and “Porto di Marghera” projects for the freight terminal and railway station).

Some of the schemes are directed mainly at solving local problems (“Airport Terminal”, “Freight Terminal”), such as rechanneling the flow of commuter and tourism traffic (moreover tourism is international). Nevertheless the increased quality of the mobility system of the entire metropolitan area thanks to projects such as the Mestre Road Link and the Regional Metropolitan Rail System will also have a positive effect on the accessibility of these areas.

In the case of Tessera Airport, the schemes planned as part of the restructuring and expansion project are partly intended to solve the problem of connecting the node locally to the existing networks, but they are mainly directed at redeveloping the entire airport site. In this case, the connection between scheme and policies is direct, with the airport being an infrastructural node strategically placed, in terms of range of access, between eastern Italy, Slovenia and Austria.

For some of the regional transformation projects relating to mobility nodes, the level of intervention is strictly local. Nevertheless they either feature some aspects that are important for the construction of the various sections of the corridor, otherwise they themselves may benefit from its construction.

The link with corridor policy is much more direct in the case of schemes for the system of innovation and technological research (the VEGA park), since planned or created facilities are closely related to the dynamics of the Venetian economy.

Figure 170. Venice - Tessera airport project



Source Archivio Trasformazioni Urbane, in www.comune.venezia.it

Figure 171. Proposed route for the Venice – Trieste - Ljubljana stretch of the HS/HC railway



Source: RFI, 2005

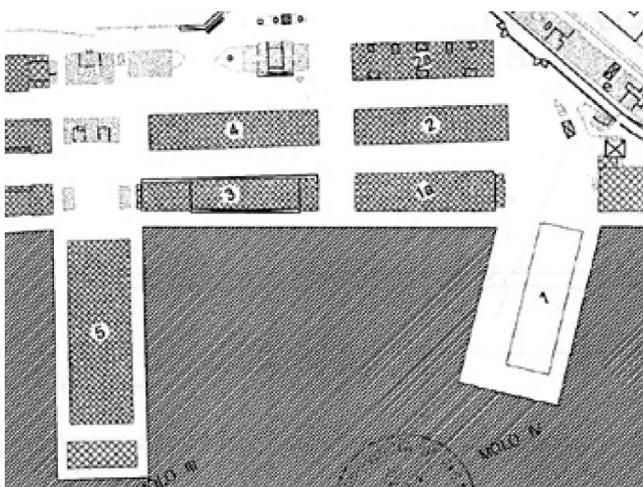
5.3.1.7 Trieste²¹

Corridor V projects in the Trieste area, both for phase I (Ronchi–Trieste line, which terminates at the main rail station) and phase II²², are not a decisive component of the future urban set-up in the city. Generally speaking, the dynamics of planned or implemented projects do not seem to be particularly influenced by the Corridor V issue.

The main factors determining this state of affairs may be summarised as follows:

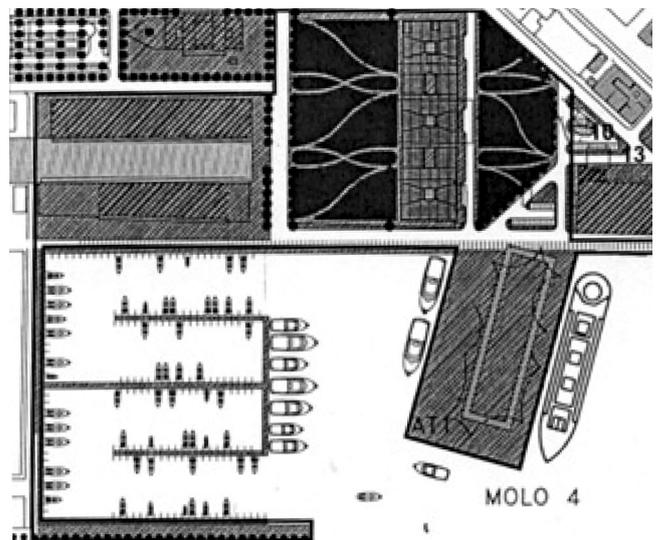
- In the projects so far proposed for the Trieste area, the infrastructure of the HS/HC lines will interfere very little with the urban territory, since most of them will be constructed in tunnels near the city. Moreover, the HS/HC project does not interfere, or

Figure 172. Trieste - Porto Vecchio – state of affairs



Source: Polytechnic and University of Turin's elaborations

Figure 173. Trieste - The Mario Botta project for Porto Vecchio



Source: Polytechnic and University of Turin's elaborations

only slightly, with urban areas that are already in use, and the position of stations in the city will not change greatly;

- the potential of the HS/HC station, in terms of urban planning, is not considered significant in and for itself, since the area of the city where the HS/HC stations should be placed (in two subsequent phases) is also home to the infrastructure of Porto Vecchio. The Porto Vecchio area holds a far stronger potential for urban transformation, for generating influxes and for producing an impact on the city than that is held by the HS/HC stations;

- Local decision-makers consider the rail infrastructure of Corridor V to be an important prospect for increasing accessibility to the Trieste district, in preference to other areas of Italy and Europe, and more so for cargo (port traffic) than passengers. On the whole, there is more interest for purely transport-related aspects than for those related to urban planning, and factors linked to the passenger railways stations are considered far less important. In this respect, there is greater emphasis on the shape of the route beyond the urban area of Trieste and more interest in how it connects to Slovenian lines and to the port systems of Trieste and Koper;
- The area in which the HS/HC Venice-Trieste-Ljubljana line may well have a greater impact is "Ronchi dei Legionari" Airport, north of Trieste near Monfalcone. Construction of a new rail station near the airport and of a new air/rail/road intermodal terminal invests the HS/HC project with an opportunity to provide a strong boost to the territory. This also involves establishing locations for further valuable facilities (commercial etc.) that might kick start the development of a new "urban frontier" forming a junction between the Monfalcone area and the Trieste zone through modal interchange and rail services.

Figure 174. Trieste - The old free port



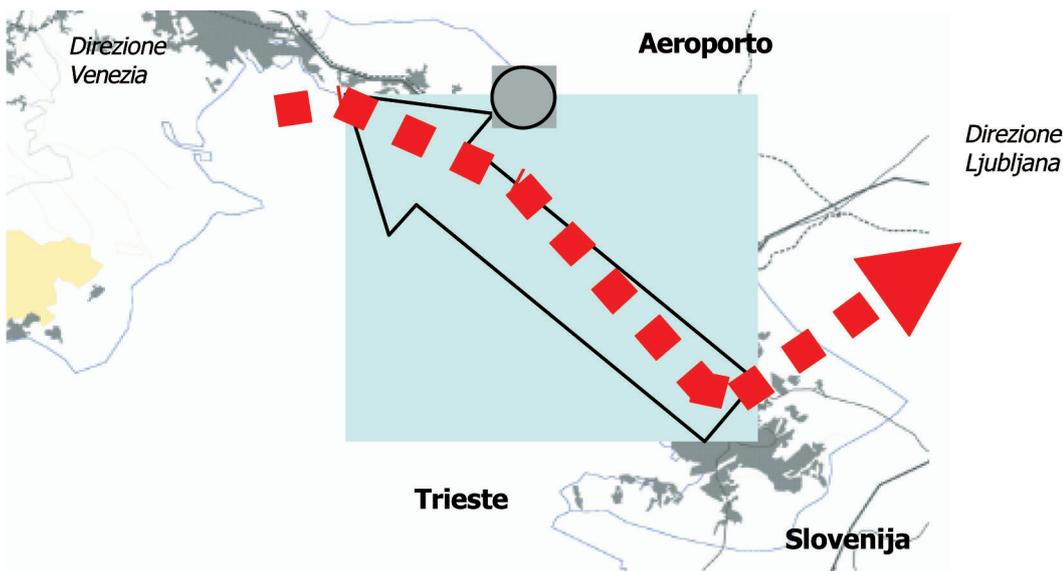
Source: Porto di Trieste 2005

Figure 175. Trieste - "Ronchi dei Legionari" Airport



Source: Aeroporti FVG 2005

Figure 176. Structural scheme of the urban node of Trieste



Source: Polytechnic and University of Turin's elaborations

5.3.1.8 Ljubljana²³

There is in fact very little to say about Ljubljana. The main infrastructure projects underway or in the planning stage in Slovenia do not involve works that are directly linked to construction of the Corridor V HS/HC rail link. Rather, they are mostly directed at strengthening existing infrastructure and particularly the road systems. Ljubljana is working consistently to achieve status as a European capital and hence, while schemes do involve major works to renew the fabric of the city, construction and/or reorganisation of Corridor V are not high up on the agenda of processes for urban transformation.

5.3.2 Defining a possible sphere of influence of corridor policies on the infrastructural and urban-planning policies of the main urban nodes located along Corridor V

One possible representation of the extent to which corridor policies influence the infrastructural and urban-planning policies of the regions belonging to the Corridor²⁴ - as emerges from analysis of the nodes - is shown in the picture that below. It depicts the overall capacity of each urban node and the area affected by it (metropolitan area - inter-regional area) to exploit the opportunities provided by the construction/reorganisation of Corridor V for urban and territorial development and enhancement of local systems. There appears to be considerable interest in the completion of the corridor in Piedmont (better and faster connections with France and hence with the north and

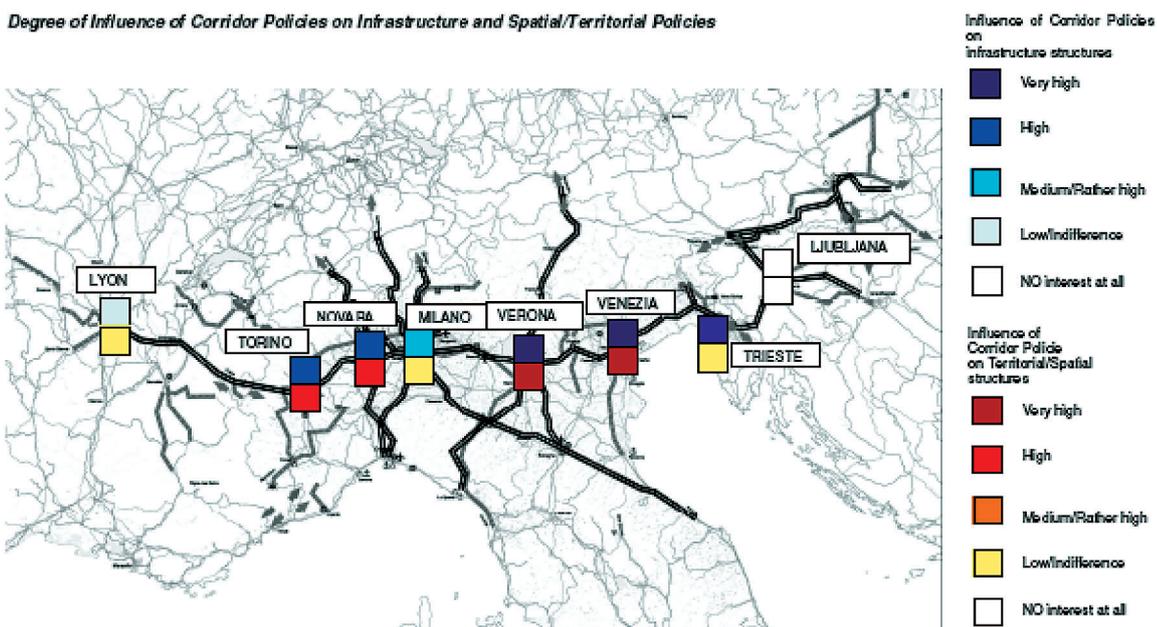
south of France) and in Italian regions of the north-east, where a particularly dynamic economic system demands substantial improvements to the area's infrastructure in order to improve connections with the markets and manufacturing areas of Eastern Europe. Conversely, the main urban nodes situated on the existing principal north-south axes, such as Lyon and Milan, seem less "interested" in the construction/completion of Corridor V, and more so in matters concerning urban renewal and transformation.

5.4 Conclusion

5.4.1 The Corridor concept

The most widely circulated image of the corridor has so far been limited to its infrastructure and the relationship between this and the territory is only considered in terms of the critical issues that it raises²⁵. Divergent opinions are very rarely met with the issue of major infrastructure coinciding with the issue of local development (as in the cases of the 2006 Turin Winter Olympic Games and the Rho-Pero exhibition centre in Milan). The Corridor, however, stands as a multifunctional backbone (or even a multifunctional platform) in which infrastructural clusters cross to form the arteries of a region that is replete with outstanding centres of science, culture and research, advanced manufacturing, environmental and landscape resources, extensive facilities and

Figure 177. Influence of corridor policies on the infrastructural and urban-planning policies



Source: Polytechnic and University of Turin's elaborations

Figure 178. Press Review “MI-TO” project

14-OTT-2004 Panorama da pag. 77
 Settimanale Milano Direttore: Carlo Rossella Lettori Audipress 3316000

ATTUALITÀ

COME INTEGRARSI

- ▶ Milano, con **1,3 milioni** di abitanti nel comune e **3,3** nella provincia, produce reddito per circa **100 miliardi** d'euro l'anno, il **10 per cento** del pil italiano.
- ▶ Torino, con **900 mila** abitanti nel comune e **1,9** nella provincia, produce reddito per **46 miliardi** d'euro l'anno.
- ▶ Entro il febbraio 2006 basteranno **50 minuti** per coprire i **125 chilometri** del percorso Milano-Torino su un treno ad alta velocità.
- ▶ Sono **1.233** le imprese milanesi in provincia di Torino per un totale di **27.139** dipendenti.
- ▶ Sono **790** le aziende torinesi con sede in provincia di Milano, per un totale di **21.427** addetti.

Nel fotomontaggio, la Mole di Torino e il Duomo di Milano.

LEGGI: [L'ESCLUSIVA DI CHI È COME CAMERAS](#)

MEGAPROGETTI IL «POLICENTRISMO» ALL'ITALIANA

IL RITORNO DEL MI-TO

Due grandi città. Una ferrovia ad alta velocità. Una regione nel cuore d'Europa. Così, a Milano e Torino, le due Camere di commercio rilanciano un'idea ambiziosa: allearsi per vincere.

2006, in coincidenza con le Olimpiadi invernali di Torino, unirà i due capoluoghi settentrionali in meno di 50 minuti, dimezzando gli attuali tempi di percorrenza.

2006, in coincidenza con le Olimpiadi invernali di Torino, unirà i due capoluoghi settentrionali in meno di 50 minuti, dimezzando gli attuali tempi di percorrenza.

Source: Polytechnic and University of Turin's elaborations

quality tourist resources.

Therefore the major investments in infrastructure that are being made along the Corridor should be considered one of the driving forces for strategic change in the exploitation and transformation of the region and not as fortuitous incidents that are rated by urban policy only at a later date.

The Corridor is also a basis of regional competitiveness allowing a number of regions to find a more competitive position within the European market²⁶.

5.4.2 Infrastructure investments and node policies

On the whole, the analysis of the existing relationships between infrastructure investments and regional policies reveals the lack of coordination in managing transport issues and exploitation of the territory able to handle current transformations. This lack of “orientation” in defining objectives and clear strategies for the node set-

up may lead to the danger that decisions and choices will be left up to the property market. However the market does not tend to make a distinction between different locations when it comes to functional mix, privileging the most profitable function at any given moment, irrespective of the quality or degree of access to the networks. This leads to insufficient exploitation of infrastructure investments.

In the major urban nodes, there has been a convergence, although somewhat limited, of infrastructure and territorial investments as a means of ex-post adaptation to policies that are being implemented. The medium to large urban nodes have enough resources to independently deal with the issue of convergence between new transport infrastructure and urban policies, although this does not always happen.

In the case of medium-sized urban centres, the topic has generally been limited to negotiations for compensation and additional schemes aimed primarily at persuading

local people to accept the work on the new infrastructures. These bodies do not have the resources to manage the transformations deriving from the new infrastructures, resulting in a negative impact on the territory and on insufficient exploitation of the infrastructure investments.

Small centres mostly face the problem of their level of acquaintance with the activities that are taking place, of managing the transformations created by the investments and of establishing coordination between different local bodies. In the first case, an individual local council can, in association with bordering localities (metropolitan districts, provinces), manage the problem and try to find common ground between infrastructure investments and urban transformation. In the second case, this task must be fulfilled by higher administrative bodies (provincial or regional authorities).

There is a further coordination problem between new infrastructures and smaller urban nodes. This is particularly so for the new road infrastructures which have a significant impact on accessibility to regions that are currently marginal (unlike rail investments which are more selective in terms of which nodes are bolstered).

In these contexts, a number of critical issues emerge concerning:

- The lack of clarification regarding the demand for new facilities deriving from the new infrastructures (estimating the new demand for facilities and activities resulting from the new infrastructures and their format);
- The lack of coordination between small urban centres which might otherwise produce a network of facilities in a given district to make them compatible with the demand, and enable them to form a single organisation to deal with the potential demand from new enterprise, companies and property dealers wishing to locate to areas involved in the projects.

Notes:

- 1 *The analysis was carried out according to the Nuts 2 scale; in addition to traditional Eurostat/Regio data, specific sources were also considered, such as Cordis and Amadeus base data. For a detailed description of the indicators used see the Second Interim Report.*
- 2 *Welfens et al., 1999; Gambardella and Malerba, 1999.*
- 3 *For more information see: Interim Report 1, Interim Report 3 and Final Report, with their respective annexes and maps.*
- 4 *Agreement between Veneto Regional Council, Villafranca Municipal Council and "V. Catullo" Airport, signed on 22.01.2000.*
- 5 *See emblematic case of the projects for the new Brescia–Bergamo–Milan motorway (BreBeMi) and the new Milan eastern by-pass, where lack of coordination between the two projects is creating numerous problems in the territory (inadequate link road between the BreBeMi and the by-pass.*
- 6 *In the case of Verona's Quadrante Europa freight village, Regione Veneto approved a specific Area Plan, which features as a variation of the regional territorial plan and which has direct effects on underlying planning levels.*
- 7 *Details for individual regions can be found in Interim Report 3 and annexes and in the Final Report. However tables are available for the following regions and/or autonomous provinces, directly involved in the AlpenCorS project, or involved indirectly as "observers" (from west to east): Piedmont, Lombardy, Veneto, Autonomous Province of Trento, Friuli-Venezia-Giulia. Also examined were those regions which, although not involved in the project, are in a position of natural geographical continuity with the above, or are situated along the TEN networks interwoven with Corridor V: e.g. Liguria, which belongs to the Genoa–Rotterdam corridor, Emilia-Romagna and the Autonomous Province of Bolzano both located along the Brenner Corridor I.*
- 8 *See the case of the interventions to improve traffic in Valtellina, Lombardy, which concluded before the World Ski Championships last February.*
- 9 *Unlike the DPEF for 2003-2006, the DPEF for 2004-2007 no longer contains references to the time schedule of works.*
- 10 *Details for individual regions can be found in Interim Report 3 and annexes.*
- 11 *Details for the main infrastructure projects planned in Slovenia can be found in the Interim Report 3 and annexes.*
- 12 *The chapter is based on a report summary kindly provided by Land Niederösterreich for the AlpenCorS project.*
- 13 *For a detailed analysis of projects that are finished, underway or in planning, please see Interim Report 3 and annexes.*
- 14 *For details of the projects considered and relevant planned sums, see the aforementioned Interim Report 3.*
- 15 *Complete results and analysis are contained in Interim Report 2 and a summary of these can be found in Interim Report 3 and in the Final Report.*
- 16 *The study of the Lyon node was drafted by Solange Martin.*
- 17 *Since 1997 the supply of public transport in Rhône-Alpes has risen from 25% to more than 30%. During the same period the number of users of the regional transport service has increased by 30-35%. Since 1998, 305m euros have been invested to improve the regional transport fleet, while over the 2002–2007 period, financing for the regional rail service (TER - Trains Express Régionaux) is estimated to be around 500m euro, of which around 75% is for the procurement of new vehicles and rolling stock, in preparation for the total overhaul planned for 2010. In 2002, in addition to*

the decision to develop the high-speed network (particularly the "Lyon-Turin" line), the Rhône-Alpes region decided to invest widely in developing the regional rail service.

- 18 *In December 2003 the Rhône-Alpes region adopted a regional plan to renew and improve its rail stations, spending 3m euro between 2004 and 2008*
- 19 *This contains all superordinate planning forecasts, i.e. the Quadrante Europa Area Plan and the Verona PTCP (Territorial Plan for Provincial Coordination) and programmes and plans such as the P.R.U.S.S.T., which is already contained in the current version of the PRG (Urban-planning document), and the PGTU (General Urban Traffic Plan) of the City of Verona.*
- 20 *By Vittorio Torbianelli – I.S.T.I.E.E. Università di Trieste*
- 21 *At the moment the second phase only exists as a feasibility study (Trieste-Ljubljana segment and Roiano rail station).*
- 22 *By Vittorio Torbianelli – I.S.T.I.E.E. Università di Trieste*
- 23 *Not considering the Austrian regions.*
- 24 *This is also the most common image seen in the press. See the extensive Press Review conducted by the research group on the topic of Corridor V. In almost two years of monitoring articles in the national press, the predominant view is limited to purely economic and infrastructural issues. Out of a total of around 3,000 articles selected for their references – direct or indirect – to the issue of Corridor V, only a small number deal significantly with the approach of the AlpenCorS project.*
- 25 *See the "MI-TO" project, officially launched on 15 October 2005 at Cernobbio by the Chambers of Commerce of Milan and Turin to create a macro-region to relaunch its role in Europe, by fully exploiting the existing synergy, relationship and networks, and the transport and mobility prospects that will arise from construction of the high-speed line between the two cities.*