FROM AN EXCLUSIVE RIGHT-OF-WAY TO AN URBAN PROJECT: LOOKING FOR OPPORTUNITIES TO COORDINATE TRANSPORT AND URBANISM

THE CASE OF BUS IN THE INNER SUBURB OF PARIS

Mounya EL-HADEUF, University Paris-Est, IFSTTAR – LVMT,
mounya.el-hadeuf@enpc.fr
Jean LATERRASSE - University of Paris Est Marne La Vallée 77455, France

ABSTRACT

In France, since 1990's, a new concept in public transport appeared, integrating a system approach of the bus and based on the Bus Rapid Transit (BRT) experience adapted to the European context. This is the Bus with High Level of Service (BHLS) (Certu, 2005) as a complementary mode to the tramway system. However, while the renewing of tramway included the different components of the tramway system, from the rolling stock to the urban project, through the infrastructure, the stations, the operating system, and including the right-of-way as a part of the system going invariably with the tramway; the bus system took a long time before it integrates all these components as part of a whole system.

This paper will study the first experiences of bus with exclusive right-of-way in Paris Region even before the concept of BHLS was defined, implemented in the south inner suburb. It traces their emergence, their primary objectives, their implementation and how local towns perceived them and even modified them.

It includes a brief literature review about the bus system and its role in the urban development; especially the land use and how the urban characteristics which can lead to a Transit Oriented Development are present in the inner suburb of Paris. Finally, we will see that bus with exclusive right-of-way can be a focal axis of an urban restructuration, but suffers from a lack of recognition and knowledge about its potential.

Keywords: busway, Paris inner suburb, urban project, rebuilding the town over the town, mixing land use, project acceptance

INTRODUCTION

The principles of "Transit-Oriented Development" (TOD) sets out, at the level of a conurbation or metropolis, to create urban corridors that concentrate and mix housing, jobs and shops around public transport nodes, especially rail based modes (Cervero and al., 2004). However, Calthrope (1993) identified a “neighbourhood TOD” based on bus, in complementary with the “urban TOD” based on rail.

This research raised the issue of the urban space’s structuring at a more local scale, around a public transport route that has lower capacity than a tramway and higher than the traditional bus. This study is also of interest in that it has been conducted in the inner Paris suburbs, a zone where potential accessibility is very high due to the proximity of high volume transport networks, where a major proportion of the population and activities are concentrated and where there are still genuine real estate opportunities.

Did the Paris inner suburb urban characteristics meet the TOD principles? Did the municipalities take advantage from the implementation of bus with exclusive right-of-way in their urban development? How did they coordinate this transport project with their urban project?

LITERATURE OVERVIEW

A large body of literature relative to TOD has an interest in the rail modes and their ability to concentrate and mix different urban activities around the stations. The main effect of the rail-based modes is to increase the real-estate values of the land by increasing its accessibility, so it may lead to modify the urban composition and the density, but empirical research has produced mixed results and there is no consensus on this effect of transit (Cervero and al., 2002).

Another field gets interest in the effect of bus in TOD and seems to indicate that there is no evidence about a potential effect on urban development due to traditional bus, explained by its low capacity and its minor effect to increase accessibility. However, the BRT appears as an exception due to its performance and can be considered as a good alternative to car mobility (Polzin and Baltes, 2002). Despite its performance, the bus still suffers from stigmatization, considered as a low or medium public transport, by contrast with rail (Currie, 2005) and the busway is considered as less permanent than railway (Hensher, 1999) although the absence of evidence that any busway has ever been removed (Currie, 2006). Rather, it seems even bus lines have a strong permanence in time (Sander, 1997).

The literature about TOD implemented around BRT reveals that the BRT system ca be used to direct the urban growth and integrate the land use planning, such as in Curitiba (Cervero, 1998). It is also used to revitalize the urban core by a set of incentive measures, such in Cleveland. But in other examples, implementing TOD principles around bus stations failed to achieve goals because of a set of reasons such as the difficulty to understand the concept of TOD and to apply it, the stigmatization of density and the opposition of residents against higher densities and in general, belief that, unlike railway, busway is unable the success of TOD (BTI, 2008).

However, BHLS in France is almost used to reorganize the public transport system around principle axis of massive transit. The urban potential of BHLS is about their physical insertion in the road, the decreasing of car traffic and a better sharing in favour of pedestrian and soft modes (CERTU, 2009).

Instead of looking for effects of the busway on the urban development, that suppose a lineal causal link, it is better to talk about an interaction between transport and urban policy to achieve a goal of integration (Offner, 1993).

IS THE INNER SUBURB OF PARIS A GROUND FOR IMPLEMENTATION OF TOD'S PRINCIPLES?

The inner suburb is an urbanised ring of about 10 km from the limits of Paris, composed by three departments: Hauts-de-Seine (92) from the North West to the South West, Seine-Saint-Denis (93) at the North and at the East, and Val-de-Marne (94) at the East and the South of Paris.

The inner suburb concentrates 38% of the population of Ile-de-France in less than 6% of its territory while the outer suburb, which represents more than 90% of the territory gather less than 44% of the population of the region and in Paris, 18% of the population live in 1% of the regional territory.

Even it is located at a short distance from Paris, well-known for the performance of its public transport system, the inner suburb nevertheless suffers from a lack of fast efficient transport which has the direct consequence that the proportion of trips made by public transport is half of that in Paris.

A- The development of the inner suburb in the region

The inner suburb knew three main urban development periods (Soulignac, 1993). The first one is strongly linked with the industrialisation period in the 19th century. It knew a quick

development in terms of population and urban area along the Seine, as the main axis of industrial development, and continued along the rail axis, that become larger and covered the territory. This suburbanisation modified the towns around Paris from rural towns to urbanized ones around industrial area, particularly in the North of Paris which was the industrial suburb, and in the South of Paris along the Seine, overlapped by the rail axis that knew an important development between 1837 and 1851, and between 1895 and 1914 (Bastié, 1964). Until the first war, the large part of population of suburb lived in substandard and unsafe housing and during the period of the inter-war, the suburb knew a proliferation of individual dwellings constructed without any organisation, and the first programs of multiple-dwelling units with low rent (HBM[1]) were launched. The second period of massive urbanisation in the suburb corresponds to the period after second war. The housing crisis reaches its paroxysm because of three issues: the insufficient of previous housing programs before the war, the destruction during the war and the migration phenomenon after the war, so that the need of housing was too important: this is the period of large housing complex.
Already as from 1970, the large programs of multiple-dwelling units are less important and a new wave of individual housing will finish covering the main space of the inner suburb, and constitute the third period of development.
These different periods made the suburb of Paris, and especially the first one, a territory very heterogeneous with more or less industrial suburbs, with housing of different types and different sizes, linked to shops and industrial areas.

B- A potential of urban transformation underestimated

During the 1960's, the necessity to face issues due to an uncontrolled development in Paris and its region appears urgent, and the first "Development and Town planning Master Plan for the Ile-de-France Region[2]" (SDAURIF) was established in 1965 arguing how to support the development and what to do for stemming the problems of the region. It had emerged clearly from the analysis that the region of Paris suffers from a congested downtown, an under-equipped suburb and a slow urban renewal, due to a lack of urban planning, and an important spatial mismatch between where people live and where they work. Three guiding principles were taken: the first one was to improve the transport system[3] in order to facilitate the travelling condition for suburban's workers. The second one is based on the hypothesis that the inner suburb reached the pick of its development and has just to be organised to break with the logic of bedroom community. The third one pointed the need of a new town to

[1] Habitat Bon Marché
[2] Ile-de-France is the Paris Region administrative name
[3] both railway and motorway

concentrate the major part of the demographic development of the region. Instead of a single second centre, it was a set of five secondary centres around Paris: the new cities birth.

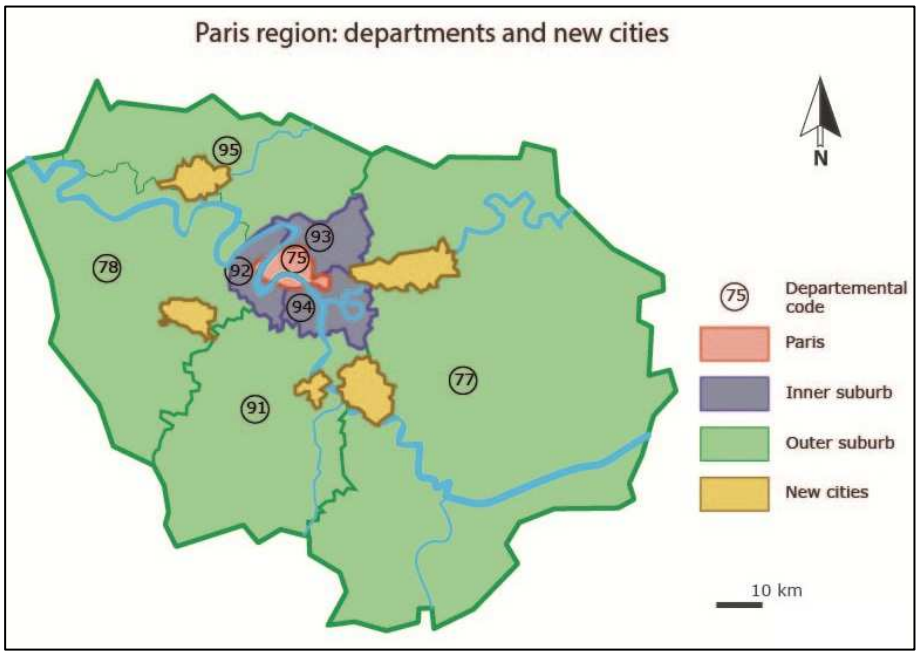

Figure 1 - Presentation of the Paris region, its different departments and the localisation of new cities

Therefore, the inner suburb was considered as a saturated space since 1965, where there are fewer possibilities for evolution, and the future of Paris region was considered in the new cities, built at 20 km far from Paris. But when we look briefly to the evolution of stock housing during the period from 1968 to 2008, we can observe that this "saturated" space contribute to the third of the evolution of new constructions in the region (Table 1). Another interesting point is that the inner suburb's closest part to Paris[4], the densest one, knew the same evolution as the further one.

Tableau 1 - The evolution of housing stock between 1968 and 2008, expressed in units and % - Data from INSEE

Functional division	**Housing stock in 2008**		**Evolution in housing stock 2008-1968**	
	units	**%**	**units**	**%**
Paris	1 344 203	25	122 249	6.82
Inner suburb (near part)	1 319 652	24.54	341 233	19.04
Inner suburb (further)	584 212	10.86	213 310	11.90
Outer suburb (without new cities)	1 799 806	33.46	853 255	47.60
New cities	330 354	6.14	262 340	14.64
Total	**5 378 228**	**100**	**1 792 388**	**100**

[4] Situated at less than 10 km from Paris

So, during the last four decades, towns which are very close to Paris, continued to evolve and contributed to the production of new houses, as well as those farther. Also the small area of the inner suburb composed of towns surrounding Paris, that represents only 1/20 of the area of outer suburb, considered as saturated in 1965, contributed the quarter what the outer suburb constructed during this same period.

This comparison shows the potential evolution of this area in terms of location of population and production of housing. Does it mean that this area reinforce its role as a bedroom community?

C- A space of mixed densities and mixed uses

The space of inner suburb is a special interest because of the presence of important concentration of population and activities on a small space. Even these concentrations are far from being the same level as Paris and the location of activities are more concentrated in the West, considering the suburb as a simple bedroom community is also far from reality.
To handle this, we will use four indicators of land use.

Rate of urbanisation

This is the ration of urbanised area to the total surface of the town. It indicates the level of land use for urban activities. When we look at this rate in the towns of inner suburb, we can see different levels of this ratio, depending on the distance from Paris, but not limited to. This difference can be explained by the presence of large natural parks and woods (Vincennes, Boulogne and Sceaux) and the social composition of the population with a concentration of rich neighbourhoods in the south-west. The farther towns still present a perseverance of rural models and present the part of suburb which is the least urbanised.

Population net density

This is the ratio of the population to only the urbanised surface and corresponds more to the intensity in using the space. The rate of urbanisation and net density of population are not systematically correlated: there are other factors that impact the concentration of population. This density is significantly varying from simple to triple with constant perimeter. The example of South West of suburb, which has a low level of urbanisation ratio, and, at the same distance in the North East, which have a high level of urbanisation ratio, but both of them present the same net density of population is a good illustration.

This can be explained by the presence of large industrial area that covers the North East of the suburb with few populations, which increases the urbanisation ratio but not the density.

Mix housing and jobs index

In addition to the concentration of population, we can observe the mix between housing and employment, which is an indicator[5] for functional diversity. This index is almost about 0.45 for the 93 and 94 departments, 0.24 for the 92 department and 0.10 for Paris. This indicates a higher concentration of employment in Paris and western suburb compared with the northern and eastern one.

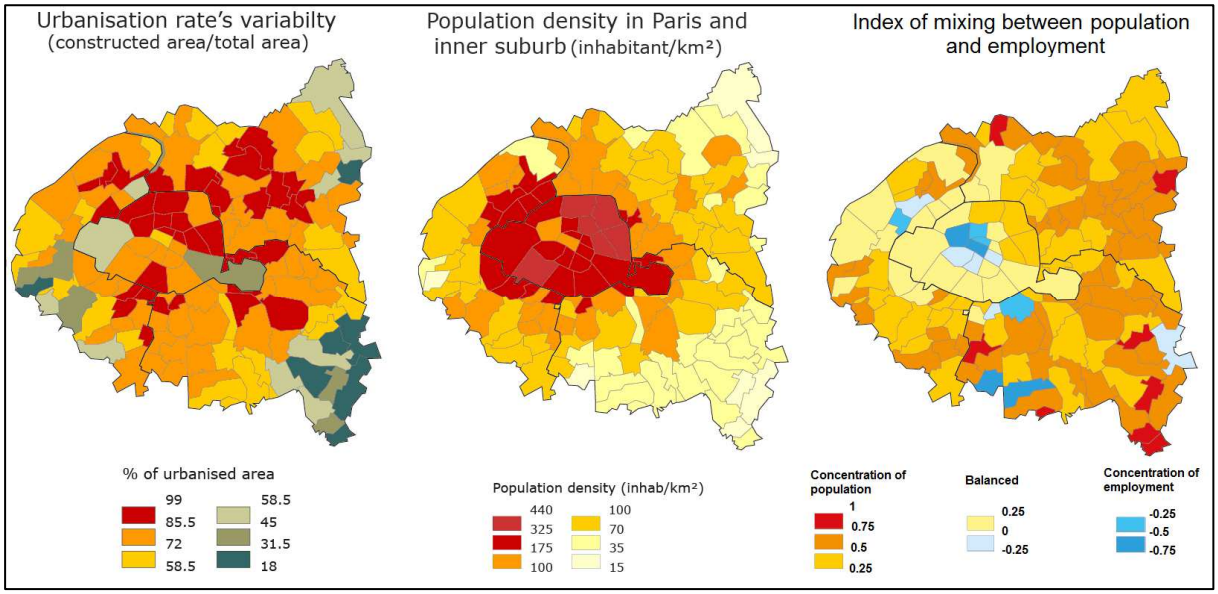

Figure 2 - different indicators of urbanisation intensity, population density and mixing between inhabitants and employment – Data from INSEE, IAUIDF

Land use

But if we look at land use between different functions such as housing, activities and facilities, it is noteworthy that the distribution is approximately the same between the different parts of inner[6] suburb, respectively 70%, 20% and 10%.

[5] We propose this index as the ratio of the difference between population and employment of a space to the sum of them at the same space (population – employment) / (population + employment). It varies between +1 (space for only housing) and -1 for a space only for employment. If index = 0, it is a perfect balance between housing and employment.

[6] The communes of Seine-Saint-Denis and Val-de-Marne can be divided into 2 parts: communes in the nearest part, less than 10 km from the limits of Paris, and the farther ones, located at more than 10 km from Paris

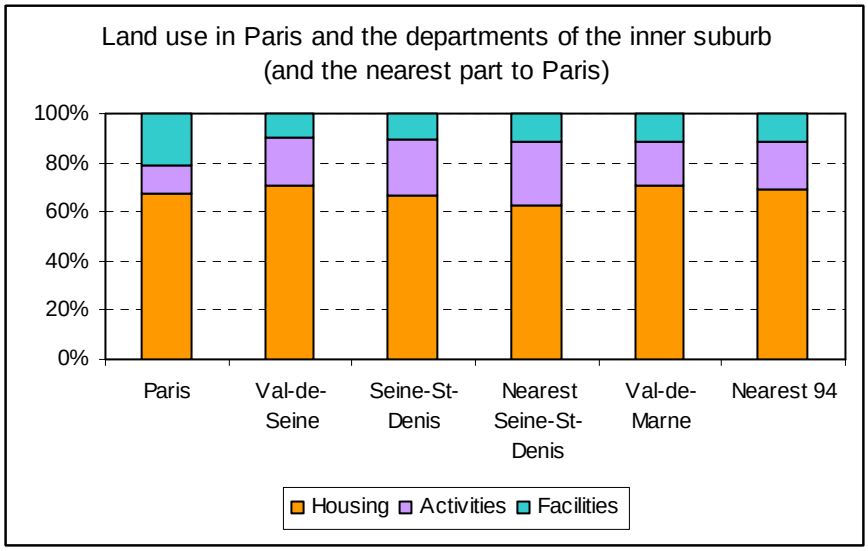

Figure 3 - the distribution of land use in different zones of Paris region – data from IAUIDF

From these simple points, we realize that talking about "a suburb" would be limiting to approach the diversity of the suburbs of Paris. They vary in terms of density of population, the concentration of employment, the intensity in the use of urbanised area, and so on.

One can therefore ask if this urban development, in this suburb, was linked to public transport projects, with awareness and consideration to environmentally friendly modes, particularly walking, could allow a better use to be made of available land by increasing density and functional diversity.

In other words, since the space of inner suburb evolved during the 40 last years, can we find evidences that indicate a potential interaction between this urban evolution and public transport projects realised at the scale of the towns[7], such as exclusive right-of-ways for bus?

HOW DID THE PROJECTS OF RIGHT-OF-WAY START IN THE INNER SUBURB OF PARIS?

Since the 1970's, the "Régie Autonome des Transport Parisiens"[8] (RATP) starts studying the possibility of implementing the concept of Right-of-way Public Transport (RPT) on road, a declination of the American BRT's experience, to provide an adequate response, fast, efficient and low-cost in the Paris suburbs.

At that time, two RPT projects were under study in the RATP: the bus line 183 and the Project of Transversal Val-de-Marne (TVM). This latter one is its flagship project, the

[7] The housing programs are ensured by communes
[8] Paris Pubic Transport system Operator

statement that foreshadowed SDAURIF in 1976, which showed the necessary to link ring road around Paris to break with the radial transport structure which don't reflect the current practice of travel more tangential.

These two projects were similar in their objective, that is to enhance the part of transit mode in the inner suburb rapidly, but they were different in other ways. This difference between these two projects lies in three main points. While the proposed bus 183 is a development project of a right-of-way for a transit line that has existed since the 19th century[9], the project of TVM is a new creation. The second notable difference is in the configuration which is radial for the bus line 183 and it is tangential for the TVM. The last point of difference is the label Bus with High Level of Service (BHLS) that accompanied the last development of TVM project and its absence in the project of 183. These are the differences in the written description of these two synchronic proposed projects.

After 30 years, these two lines, TVM and bus line 183, have the highest passengers traffic at the national level, with 65.000 passengers/day for the first, and 56.000 passengers / day for the last. This can be explained by their role of linking pole to pole of large concentrations of population, employment or entry for railway network (RER[10] and subway) and a high quality service offered (consistency, speed, frequency, amplitude…) compatible with the concept of a High Level Bus Service (BHLS).

But if this important passengers level attendance shows the success of the BHLS concept to concentrate and carry significant flows of passengers, we seek in this study to see if the project design and implementation was guided by a "classical" vision of transport as means of moving passengers from one point A to point B, or if there is a formulation clearly stated or not, on any use of this line of transit as a level for structuring urban space in the Parisian suburbs.

A- The territory concerned by theses projects

These two projects are located in the southern suburb of Paris, along the department of Val-de-Marne. They provide a link between main towns of the southern suburb of different scale of importance, the main public transport network and the important concentration of people and employment.

[9] It was a tramway before it has been replaced by a bus in 1933
[10] Regional Express Network for the Paris Region

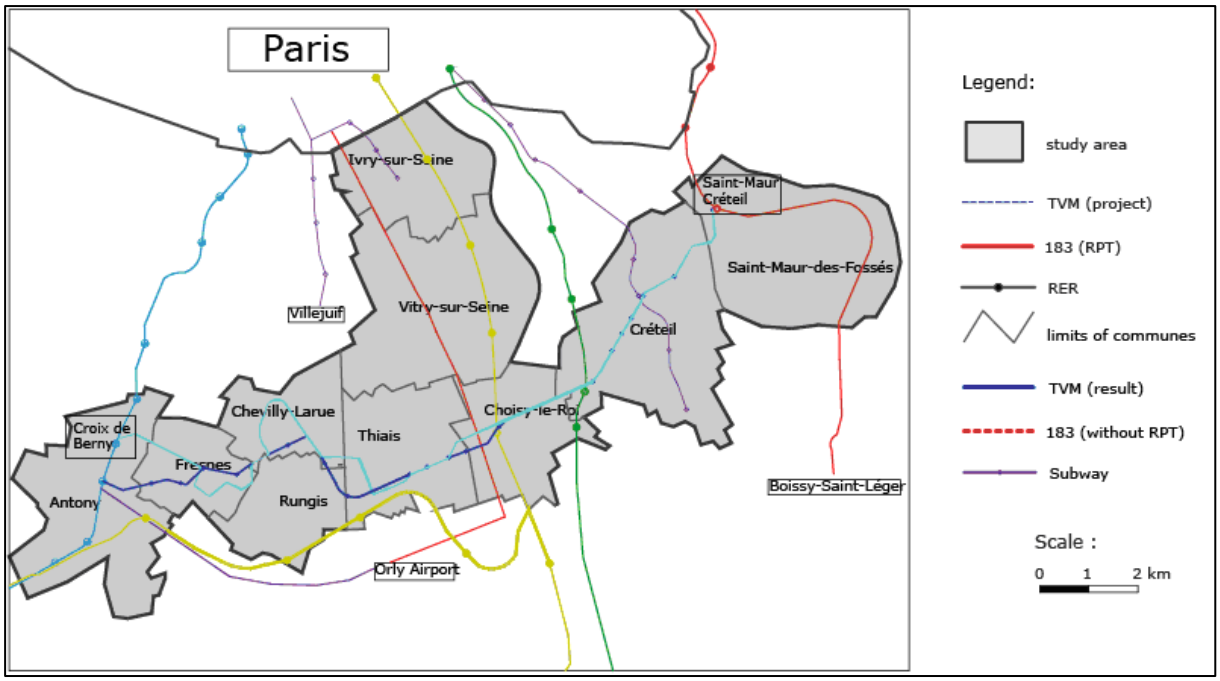

Figure 4 - the territory of southern suburb crossed by the RPT projects, the different towns concerned by theses projects and the railway network present on the territory

The project of set in place the right-of-way for the bus 183 on the Departmental Road 05[11] has its outline plan in 1977, starting from limits of Paris to the Carrefour Rouget-de-L'Isle, which is the current cross-section between bus line 183 and TVM. But only one town, Vitry-sur-Seine, started its construction in early 1980, and the first section was opened in 1989. Other sections were added in 1994, 2001 and 2006, completing the construction of 4.5 km of right-of-way. Ivry-sur-Seine followed up in 2009 with a section of 2 km and the work is still on progress today. The project concerns 100.000 inhabitants and 25.000 employments[12].

The project of TVM has its outline plan approved in 1986 and its construction was divided on two parts: the first one runs through 12.5km from Saint-Maur-des-Fossés, starting from the RER A station, to Rungis and its employment zone of Senia and Marché d'Intérêt National. It goes through the new city centre of Créteil, the centre of Choisy-le-Roi and is connected to subway 8 and RER C. It concerns a population of about 85.000 and than 57.000 employments. The second part of the TVM project completes this first section until Antony on a distance of about 7 km to join the RER B Station and concerns more than 18.000 inhabitants and about 9.000 employments.

The construction of a first section started in 1989, and it was opened in 1993. The second section was opened in 2007.

[11] Former National road 305
[12] In a catch area of 500 m around the bus station

B- Axis for urbanisation versus axis for traffic

The two projects of right-of-way were built on important traffic axis: the former RN 305 for the bus line 183, and the RN 186 for the TVM. The purpose of these implementations is different: the new motorway A86 duplicated the RN 186, and it was expected that a major part of traffic on RN 186 would be transferred on the motorway. So the TVM and its right-of-way was a tool to adapt the road to its less traffic by giving more place for public transport on the road. By contrast, the implementation of right-of-way on former RN 305 corresponds to the necessity to improve the effectiveness of the bus 183 and to limit the increasing of car traffic.

The RN 186 carried between 50.000 and 100.000 vehicles / day in 1975, before the opening of motorway A86. Currently, it has to carry between 20.000 and 50.000 vehicles / day depending on the section while the motorway A86 carries 250.000 vehicles / day.

The RN 305 carried 25.000 vehicles / day and the bus 183 carried 25.000 passengers / day in 1977. Today, the number of vehicle is still the same on the road while the number of passengers on the bus line has reached 56.000 passengers / day. So indeed, it is arguable that the increase in traffic on this road was absorbed by the public transport, especially because there is no transfer of traffic on other roads near the former RN 305.

In these projects, a special attention was given to the urban insertion of the bus right-of-way. A series of operations of enlargement of the road, alignment of the building, removing trees and replanting them, and a better balanced sharing of the road between the different users and modes constitute the dominant aspect of the right-of-way.

Beyond the physical insertion of the right-of-way in the road, and all the modifications required, how the local towns take advantage of the passage of a bus on right-of-way to redefine their urban objectives?

C- Three local approaches for bus on right-of-way

The implementation of right-of-way for bus was not accepted simply by the local municipal leaders and population. Many objections were made before its construction, and after. But when we look, as a neutral observer to the impact of this right-of-way on the urban structure, we can define 3 main positions.

The RPT as a backbone of the urban project – the case of Vitry-sur-Seine

The case of Vitry-sur-Seine is worth to know (El-Hadeuf and Laterrasse, 2012) because this town, initiated in the 1960's, an important project of restructuring the urban plan that leads to the reorientation of the centre of the town from an east-west axis to a north-south one, along the former RN 305.

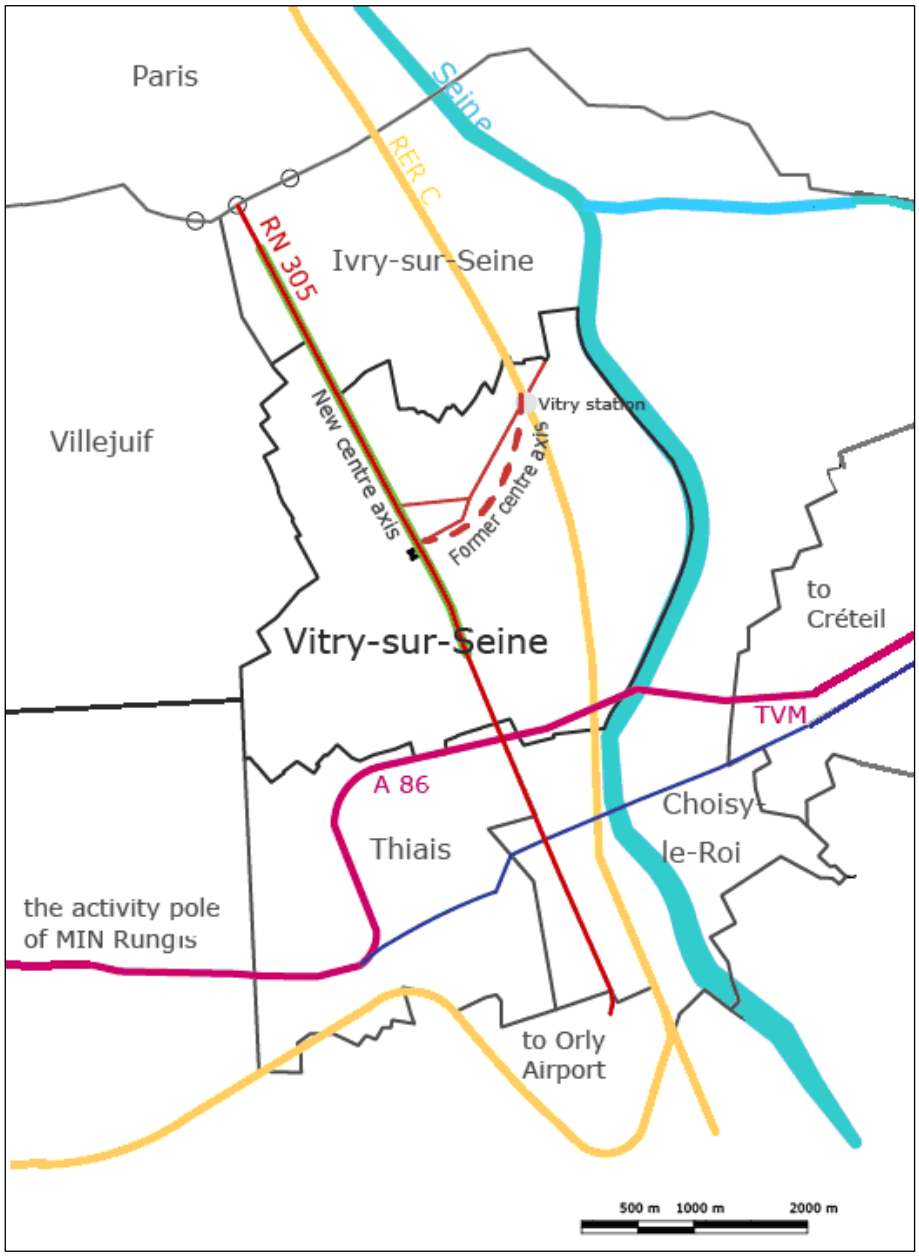

Figure 5 - the town of Vitry-sur-Seine based its development on the former RN 305 and changed the axis of its centre from East-Wets to North-South one

This project started by the renewal of the former centre, which was destroyed and rebuilt on the model of modern urbanism. This operation was followed closely by another project called “Grand Ensemble” of 8000 dwellings located near the former RN 305 axis, to the south in a zone hitherto unaffected by urbanization and continuous with the town centre. This large housing operation was accompanied by a series of implementing shops and facilities by constructing a new Town Hall opened on the road in one side, and the sitting of a theatre facing it on the other side of the road.

The statement of the road's role as a centre was further strengthened by implementing different ZAC[13], large retails outlets and the museum for Modern Art. Today, this important restructuring operation is still going on with new projects of ZAC and housing operation of ANRU[14].

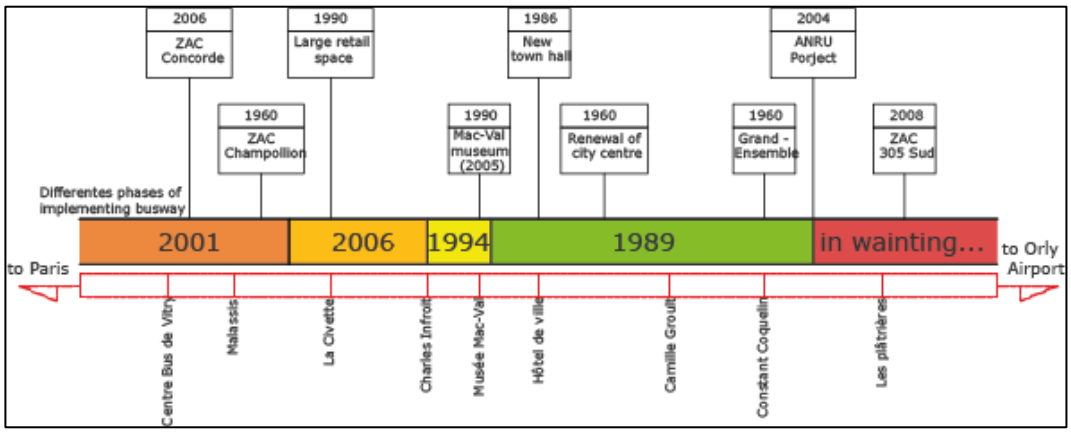

Figure 6 - diagram showing the different phases of construction of the exclusive busway, the year of opening the right-of-way in each section and the different urban projects along the former RN 305

Thus, three different planning principles have been applied since 1960, leading to the creation of today's town around the linear centre by concentrating apartments along the RN 305, achieving equilibrium between housing and businesses, setting up major facilities that generate flows and higher urban functions and by making vehicles on the road less visually intrusive by planting trees and considerably reducing the number of roadside parking spaces by approximately 30%.

In this way, as a result of the combination of efficient transport supply, a set of measures to increase density around the RN 305 and functional diversity along its entire length, the bus way can be seen as an example of successful linkage between urban restructuring and public transport. This restructuring has undeniably created a dynamic which has generated greater interest in high-end property transactions or the creation of businesses on land which is being made more accessible by the gradual extension of the exclusive bus way.

The RPT as a motive for urban operations – the case of Choisy-le-Roi

The implementation of the TVM was accompanied by some urban operations such as the renewal project in Choisy-le-Roi.

The centre was built on the basis of modern urbanism with the “above the street” urban planning. The RN 186 was bordered by blind frontages, parking entrance, loading docks and

[13] Concerted Development Zone
[14] National Urban Renewal Agency

ventilation ports and gives the road a non-urban appearance and its role as an animation axis was far from certain, at contrary, it plays the role of fragmenting the urban fabric.

At the first time, the project of TVM was seen as a reinforcement of this fragmentation, and the better way to stem the problem is to dig it under a large place that will connect the two sides of the town centre. Unfortunately, a limited financial resource prevents the project to be achieved and after its opening, difficulties grow and others emerge.

So, in the second time, we see the project TVM as a whole system that must be connected to the neighbourhood and the RER station, opening both sides of the town centre by creating visual and pedestrian continuity. A square was realised and a footbridge was removed to reach the aim of visual continuity between the two sides of the road.

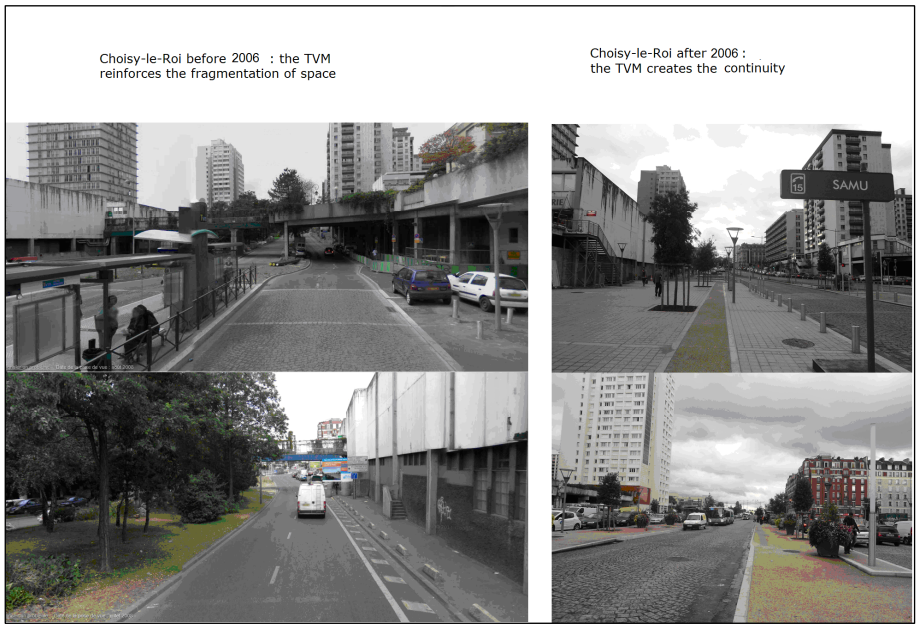

Figure 7 – the first step of integrating TVM in the road reinforced the fragmented character of the city while a second operation after 2006 create continuity in Choisy-le-Roi

Due to this second renewal project, pedestrians were given a large place in the new shared road and the reflexion on the renewal town centre integrates the road and the RPT as an integral part of a whole project.

The RPT as a road project – the case of Antony

In these towns, the project was identified as a road project with no effect on the urban context, quite the opposite. The original path of TVM proposed by the RATP runs through a residential area and serves the RER B and Orly-Val, the automatic train leading to the Orly airport.

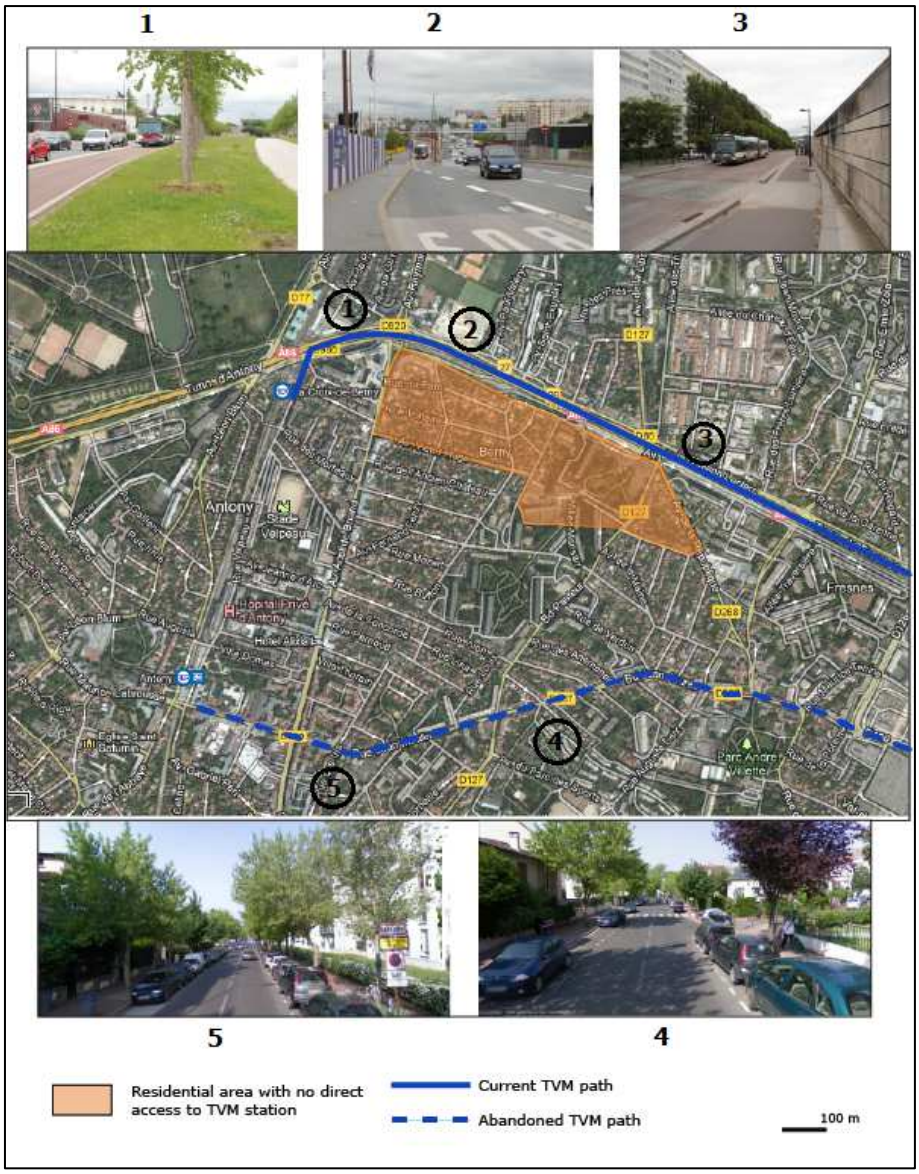

Figure 8 - the current path of TVM in Antony is passing through fragmented area while the former one was passing through residential areas

The municipal leaders of Antony considered the TVM as a disserving project for the neighbourhood life and made a strong opposition to the project as presented at first. A new path was proposed, that doubled the motorway A86, bordered by less residential areas that have no direct pedestrian access to the TVM station.

After modifying the path of the TVM project, which made loosing half the population that would supposed to be served by the project, a particular attention was given to the physical insertion of right-of-way on the specific context of a road situated on both sides of motorway taking a tunnel. The treatment given to this right-of-way changed in its position and configuration from a “two-direction axial right-of-way” to a “simple lateral bus lane” in Antony. Not only this downgrading, the path of the bus lane changes its position on the road from the

left lane side to the right one, and another time to the left. This change of position decreases the comfort condition in the bus and reduces its speed, especially that the bus have not priority in the intersections.

It shows the secondary role given to the bus compared with the cars that have priority in the all section route.

WHAT ARE THE LIMITS OF THESE EXAMPLES?

Even these two projects represent a special case by their efficiency, the level of passenger flows and the urban organisation around the axis, they failed to arouse much enthusiasm among local leaders and the general public. We shall now attempt to understand why.

A- A long time for projects which want to be rapidly efficient

The first limit highlighted is the slowness of the process, the fact that it has to be broken down into stages whose rational basis could seem debatable. These two projects were decided in the 1970's as a rapid answer to a transport demand, but takes about 30 years to be implemented, and until now, are still on progress. This has doubtless played a part in a disparagement of a project which is still incomplete. Especially if it is compared with the project of extending the subway outer Paris, that started in the same period and was operating 3 years later. The very obvious disadvantages of this "Long March" is that it has made its adverse impacts more noticeable, and has come to overshadow the benefits of the project whose real nature and success have not always been clearly perceived.

B- A rejected transport mode

When talking to municipal leaders and technical departments about the project of TVM or bus 183, they were surprised of the interest because it is "just a bus". They see it as a set of problems and not as a solution. They highlighted that buses are noisy, cause pollution and are overcrowded and uncomfortable when fully loaded. Overloading interferes with operation and the regularity of buses during peak periods reducing the speed average to only 16 km/h, in addition with congestion at intersections. Finally, they consider the new road layout unfavourable to green modes and there is a lack in pedestrian crossings which encourages unsafe crossing of the road.

It has to be accepted that these two projects experience operating problems with regard to speed and regularity, but these problems are shared by every transport system which has reached saturation, and are not specific to the bus. However, a set of measures could have

dealt with most of the problems in question. It is regrettable that the busway project did not employ a more comprehensive systems approach and failed to implement all the measures that may be associated with an exclusive right-of-way such as priority at traffic signals, improved intersection layout, improvement of the relationship between pedestrians and public transport. It should be noted that such a "system" approach is included in the project for the future tramway which will replace the present-day bus 183 and which is constantly mentioned as a response to the unsolved problems. One senses here a negative representation of the bus which some individuals consider to be responsible for a number of evils or at least unable to mitigate them, according to its "road-based" nature, which means that it is an inherently "non-sustainable" mode and therefore without any redeeming points. It gives the impression that French attitudes towards public transport are still prejudiced against the bus which is seen as a second-best solution or "public transport for the poor".

C- A neglected potential of restructuring effect for bus

The exclusive bus way 183 is a unique example, if not in France at least in the Paris suburbs, of the restructuring of a town centre around a bus route. But how is this example perceived by the town's leaders, the engineering departments and the general public? Our attempt to answer this question has given us a better idea of the complexity of the problem raised by the restructuring process and, in particular, by the time-scale over which it took place.

When talking to municipal leaders and engineering departments, we found criticisms about the restructuring process, as much to the selected transport mode and the remodelling of the road as the quality of the proposed urban frontage.

The grievances involve considerations of very different types. Some relate to operating difficulties or ancillary facilities and do not cast doubt on the validity of the process as a whole. Others relate to the choice of the bus as the mode, and the individuals in question feel that abandoning the bus in favour of a tramway would solve the problems. Finally, others relate to the way the restructuring process was implemented.

However, there are grounds on which we can base a contradictory positive representation of public action and the choices made by the municipality: the reason that the potential financial backers are unanimous in their support of the project to replace the articulated bus with a tram is that the increase in passenger flows that have been brought about by the combined effects of the exclusive bus lane and the process of urbanization mean the change has become indispensable. However, it has to be admitted that this is not the view that holds sway. The situation in which changing urban projects go hand in hand with changes in

ridership on the bus route is perceived more from the (negative) standpoint of saturation and a lack of foresight regarding the transition to a higher capacity mode than from the (positive) standpoint of a process that has resulted in the successful implementation of an ambitious project.

We can suggest that the inadequate explanation of the initial project may partly be to blame for the lack of acceptance. Even more than funding, this issue is an essential one which is raised whenever there is a question of "rebuilding the town over the town". As soon as one sets out to restructure an old urban fabric on the basis of exclusive right-of-way transport, be it road-based or rail-based, the slowness of the expropriation process means it will necessarily take a very long time, particularly in France where law is highly protective of private property. An important point is to be noted here: while the actions of successive mayors, if not sharing the same vision, at least exhibited a degree of consistency based on the dominance of the former RN 305 as the major axis of urban development, we have not observed a commitment to, or even the existence of a clearly specified urban project which would have guided the various operations that have been undertaken in the last 50 years. The public has been consulted, even if only in the framework of municipal elections, and has approved medium- and long-term goals in the areas of housing, transport and business creation, without necessarily being aware of the overall coherence of the implemented measures. However, in a long-term process, surely a project should primarily involve interaction between the framing of coherent plans for action and its approval by all the actors, even if the process leads to new the framing of new plans? Putting it another way, surely an urban project of this scale should be interactive and iterative in order to avoid being merely something which is imposed on the public, even with the best intentions.

IN CONCLUSION

In our view, two important lessons have emerged from this case study: the first is that an exclusive right-of-way that is appropriately linked to a development process and an urban plan can act as an effective lever for change, irrespective of whether the selected mode is road-based or rail-based or an intermediate system such as the trolleybus. Consequently, we do not believe that the contrast which is sometimes made between the different modes, which maintains that some modes integrate more successfully within urban areas than others, is justified. The essential criterion is capacity. In addition to this, we plead for the rehabilitation of the bus as a transport mode, on condition that it receives the same attention as rail-based modes, in particular with regard to integration within the urban environment.

The second lesson is the importance of the urban project, that is to say its framing and approval by all the relevant actors, including the general public. When stressing this point, we are not losing sight of the fact that the urban project is part of a dynamic: approval involves both the new population which moves into a renovated district and the population that is already living there. But it must allow this dynamic to unfold in an effective way, in order to provide a connection between transport and spatial planning, as advocated by TOD. This is where the role and strength of the project should lie. We consider that planning requires an overall, systemic, vision of the town or city. It is not a question of placing objects next to one another, it is a question of creating synergies between objects in the framework of a coherent vision of urban space and its dynamic at the service of a shared collective project.

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