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Urban Mobility Plans and Accessibility

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Abstract: In France, as in other European countries, towns and cities have committed to reducing the negative effects of automobile traffic—accidents and air pollution—either by regulation or voluntarily in order to improve their inhabitants' quality of life. Creating urban transport plans (PDUs) involves favoring non-automotive travel modes—walking and cycling—as well as public transport. Investment choices and planning of corresponding facilities are an excellent opportunity for improving accessibility to the town and public transport for disabled people and those with reduced mobility. The French law of February 11, 2005 "for equality of rights and chances, participation and citizenship of disabled people" included an obligation for PDUs to include an accessibility appendix whenever they are created, changed or revised. After a short review of the new regulatory obligations for authorities responsible for public transport and cities, this paper examines how PDUs approved since 1997 have dealt with the issue of accessibility for pedestrians and users of public transport. Two examples are analyzed. The first is the PDU for the town of Mulhouse, the actual decisions made concerning highways and public transports and the lessons learned by following indications and the difficulties encountered in involving local authorities responsible for accessibility modifications. The second example is the experience of Valenciennes in creating a street accessibility plan that will form part of the revision of the PDU. These examples highlight the institutional difficulties encountered and suggest methodological elements to facilitate cooperation between the various partners concerned and agreements with disabled people's associations.

Keywords: Accessibility, Planning, Pedestrians, Public transport, Reduced mobility, Disability

1 Introduction

In France, as in other European countries, towns and cities have committed to reducing the negative effects of automobile traffic—accidents and air pollution—either by regulation or voluntarily in order to improve their inhabitants' quality of life. Creating urban transport plans (PDUs, *Plans de Deplacements Urbains*) involves favoring non-automotive travel modes—walking and cycling—as well as public transport.

Investment choices and planning of corresponding facilities create excellent opportunities for improving accessibility throughout urban areas and specifically to public transport for disabled people and those with reduced mobility. The French law of 11 February 2005 "for equality of rights and chances, participation and citizenship of disabled people" (referred to in this

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article as the "PH Law") included an obligation for PDUs to include an accessibility appendix whenever they are created, changed or revised.

This article provides an overview of the inclusion of accessibility in French PDUs and then explores, via actual examples from towns and cities, the methods for creating and monitoring PDUs in order to comply with the PH Law.

2 Legislation for Durable Development

2.1 Legislative changes in France

Urban transport plans were introduced by the Law for Interior Transport Management (LOTI, Loi d'orientation des transports intérieurs) of December 30, 1982 and made mandatory by the Law on Air and the Rational Use of Energy (LAURE, *Loi sur l'air et l'utilisation rationnelle de l'énergie*) of December 30, 1996. From these laws, the authorities responsible for organizing urban transport received increased powers over transport policy, its prescriptive characteristics in terms of street usage and parking, and its necessary coherence with town planning generally.

Creation of a PDU is obligatory for towns and cities with more than 100,000 inhabitants. The law relating to urban solidarity and renovation of December 13, 2000 (SRU, *Loi sur la Solidarité et la Renouvellement Urbain*) required that PDUs include a public parking policy and regulations for private parking areas and spaces for unloading goods.

Urban transport management authorities, when formulating their PDUs, are therefore tasked with trying to reduce (or at least prevent the growth of) automobile traffic by two means: improving public transport in towns and cities; and creating routes for pedestrians and cyclists (Lebondidier and Meunier-Chabert 2004).

Article 45 of the PH Law, furthermore, stipulates that all components of the travel chain—buildings, public transport, streets, and public areas—should be accessible within ten years. Specifically, transport authorities must include an accessibility appendix in their PDUs showing:

- facilities for the use of public transport by disabled people and a calendar of implementation;
- the accessibility plan for streets and public areas (PAV, *Plan de mise en Accessibilité de la Voirie*).

It is important to note that PDU regulation foresees consultation with inhabitants via a public involvement process; this is in addition to a mandate to consult with representatives of disabled people as part of the PH Law.

2.2 What about the rest of Europe?

Conditions imposed by the European Union concern the environment and conservation of energy. The European Directive 2001/42/CE of June 27, 2001 related to evaluation of incidences of certain plans and programs on the environment (Meunier-Chabert *et al.* 2006).

Other similar laws have been passed in other European countries, for example:

- "Piani Urbani del Traffico" (PUT) in Italy,

- "Local Transport Plan" (LTP) in the UK,
- "Plan Communal de Mobilité" (PCM) in Belgium.

A guide is to be published by the Commission for creation of durable PDUs on the basis of best practice seen in several countries (European Commission 2006).

It is important to note that street safety is a clearly identified objective of sustainable development in these plans, as in French PDUs (Trève in Meunier-Chabert *et al.* 2006).

2.3 The First PDUs in France[1]

To date, three-quarters of towns and cities with more than 100,000 inhabitants concerned by these regulations (around 50) have approved their PDU. In addition, almost as many smaller towns have started a voluntary PDU process.

Regarding the essential issue of reducing automobile traffic, and despite the increase in both the number of daily journeys and their length, towns and cities are rising to the challenge in several ways:

- developing public transport services and improving quality of service;
- redistributing traffic ways to favor "soft" transportation modes (walking and cycling), increasing space allocated to pedestrians and cyclists in an attempt to influence travel patterns;
- reducing the speed of automobiles to increase street safety;
- reorganizing car parking through park-and-ride facilities and parking fees.

Analysis of PDUs approved from 1996 to 2000 has been carried out (Certu/ADEME 2002). Moreover, in order to understand these developments and track the implementation of PDUs, some cities have set up programs to track relevant data. Beyond these tools, the essential issue in terms of implementing and monitoring a PDU action plan is the lifespan of a partnership between the various key stakeholders after PDU approval. To track their PDU implementation, some authorities have innovated by drawing up charters, labels or sector plans.

As GART (association of transport authorities) states, the settlement of PDUs has obliged transport management authorities (AOTs, *Autorités Organatrices des Transports*) to become authorities in charge of sustainable mobility (Duchène in Meunier-Chabert *et al.* 2006).

3 Accessibility for Persons with Reduced Mobility in PDUs

The second article of the PH Law stipulates that all types of disability must be taken into account, including ambulatory, visual, auditory, mental and cognitive impairments. Moreover, authorities responsible for urban facilities and for public transport must address the needs of persons with reduced mobility—more generally, those who are impeded by the environment, as defined by the European Council and the European Directive 2001/85/EC.

In this paper, "accessibility" will stand specifically for "enabling transport for persons with reduced mobility".

[1] Summary from Meunier-Chabert et al. 2006

3.1 Accessibility in PDUs already underway

This study analyzed 39 PDUs approved from 1996 to 2000. As accessibility enhancement was not specifically prescribed during that period, the researchers looked for the measures planned to favor accessibility in public transport and in the street environment for pedestrians, using our expertise and knowledge of the regulations.

Accessibility measures for public transport comprised the implementation of:

- accessible tramway lines with low-floor vehicles and elevated platforms for level access, following the initiatives of Grenoble, Nantes, and Strasbourg;
- dedicated public transport routes with low-floor vehicles and raised bus stops (Figure 1);
- bus routes operated with low-floor buses and well-designed bus stops.

Accessibility measures for the pedestrian environment comprised:

- wide sidewalks and well-located urban furniture,
- dropped kerbs at crossings for people with walking difficulties,
- tactile warning surfaces and audible traffic signs for blind and partially sighted people.

Figure 1: Accessible bus and bus stop in Grenoble

Our analysis has shown that accessibility for persons with reduced mobility (PRMs) was covered in around 80 percent of cases. Table 1 presents an overview of the qualitative analysis based, which was based on our own expertise.

Table 1: Accessibility objectives in the PDUs

	Public Transport	Pedestrian amenities
Well addressed	23 (59%)	12 (31%)
Weakly addressed	8 (20%)	17 (44%)
Not addressed	8 (20%)	9 (23%)

Many more efforts are planned in the field of public transport than in the field of pedestrian amenities. All the conurbations which have addressed pedestrian accessibility have addressed public transport accessibility as well, with an eye toward enhancing the accessibility of the entire travel chain.

However, six conurbations planned to reinforce the specialized transport service (paratransit or on-demand adapted transport) rather than developing access to mainstream public transport routes.

A major weakness of most of the PDUs studied lies in the lack of a financial programs for these accessibility improvements in most cases.

3.2 New conditions for PDUs

The PH Law introduces two important conditions:

1. All types of disability must be taken into account; more generally, the needs of persons with reduced mobility must be considered in terms of transport and street facilities;

2. The "travel chain is organized to facilitate total accessibility to disabled people and those with reduced mobility."

"Organization of the travel chain" specifically means the creation of planning or programming documents required by law, i.e.:

- the accessibility management plan for public transport,

- the accessibility implementation plan for streets and public area facilities (PAV, *Plan de mise en Accessibilité de la Voirie*).

Groups of local authorities that carry out or revise PDUs (whether on a compulsory or voluntary basis) must integrate an "accessibility appendix" in their PDUs.

The accessibility appendix must:

- specify the set-up and operational measures for public transport services and a timetable for their implementation. The elements appearing in this public transport accessibility management plan can be itemized as required;

- integrate the accessibility plan for streets and public areas.

A circular was published in April 2006 to provide recommendations to the authorities in charge of implementing the law, in particular:

- *implementation timetable:* while public transport accessibility management plans must be created within three years of February 2005, it is understood that the PDU accessibility appendix must be created at the same time as the PDU or during its revision, from the date of publication of the law.

- *responsibilities and cooperation between authorities:* the PDU is the responsibility of transport authorities. However, in regards to activities aimed at reducing pollution or improving road safety, it is obvious that transport authorities must coordinate with managers of highways and of facilities related to public transport systems (stations, stops, etc.).

- *consultation with users' groups:* the public transport accessibility management plan and the accessibility plan for streets and public areas must be submitted to representatives of the end users, especially disabled people or PRMs. This consultation is an opportunity for dialog during which those involved can understand different users' requirements and restrictions so decision makers can create a calendar that is compatible with legal obligations and available funding mechanisms.

The regulatory references are listed in the references at the end of the paper.

At this writing, no public transport authority has yet approved a PDU including an accessibility appendix. Public transport authorities need recommendations and working methodologies—all the more so as this appendix deals with the entire travel chain and not only with the public transport system. Two examples, described hereafter, highlight some of the issues faced by local authorities.

3.3 Information drawn from Mulhouse's PDU

SITRAM, the transport authority of the Mulhouse conurbation (250,000 residents), approved its first PDU in 2001 and its revision in 2005 (Sitram). The initial PDU did not include a formal accessibility annex, as the document had been completed before the publication of the PH Law. However, as improving accessibility to streets and public transport was a stated objective of Mulhouse's PDU, the public transport authority learned from its previous experience to address accessibility (Wolf 2006).

The accessibility measures planned in the initial PDU included:

- the enhancement of bus stops, after creation of a bill of materials and modernization of the bus fleet;

- a street accessibility plan anticipating the requirements of the PH Law;

- creation of an "accessibility commission" that would follow all stages in the tram-train project.

Annual PDU monitoring has shown that all local authorities were concerned with addressing the needs of PRMs. But in 2004, developments dealing with accessibility for disabled pedestrians were not consistent across the municipalities, some of which lacked the knowledge and competencies necessary to address regulatory and technical issues.

For the PDU revision (2004–2005), the strong points were the introduction of an accessible tram service that entered service in May 2006 (Figure 2), a tram-train project (open by stages from 2007 to 2011), and research for a system to provide information to PRMs.

Figure 2: Tramway and specialized transport means in Mulhouse, part of the PDU measures (Source: SITRAM)

In order to improve accessibility throughout the travel chain, and to do more than merely demonstrating "good intentions," SITRAM created a comprehensive PDU policy that included:

- the distribution of documents to local authorities and their technical services;
- the creation of a working group dealing with street accessibility to facilitate application of PDU actions;
- annual monitoring of PDU actions that involve all development partners.

SITRAM concluded that, while the PDU facilitated initial communication between the municipalities in charge of the street infrastructure and the public transport authority, the question of how this communication can be maintained for continuous improvements had not been addressed.

3.4 Experiment in Valenciennes relating to its PDU accessibility appendix

Certu commissioned an experiment carried out by CETE Nord and DDE Nord[2] with the goal of developing a diagnostic method for accessibility on streets and in public places and eventually proposing recommendations to local authorities that are preparing PDU accessibility appendices.

The town of Valenciennes was chosen because it had a PDU and its tram project was a key part of urban regeneration plans. On this occasion, associations of disabled people joined together in a collective called CHAT (*Collectif Handicap et Accessibility pour Tous*). Local politicians, technical services, and CHAT members agreed to cooperate—with the understanding that the experiment could not cover the entire area in the time given (approximately nine

[2] Certu: Centre d'études sur les réseaux, les transports, l'urbanisme et les constructions publiques
CETE : Centre d'études techniques de l'Equipement
DDE : Direction départementale de l'Equipement
All three are services of the Ministry of Transport, Public works, Tourism and Sea.

months)—in hopes that the experiment would yield information that would be valuable in the preparation of a full accessibility plan.

The experiment included components used for drawing up a PDU and added a cross-referenced approach described below to assess accessibility on streets and in public areas (Mathon *et al.* 2007).

Study scope

After discussion between the partners, two areas of roughly 300 meters in diameter were chosen:

1. a central area including major destinations: a railway station, the town hall, and a school; and,
2. a council housing estate (public housing development) that was undergoing renovation.

These areas offered distinct urban characteristics that could be found everywhere, so that the methodology would be easily transferable to other areas of the city.

Method of assessment

To assess the level of accessibility of various areas, all partners agreed on a method which included:

- recording car parking spaces, including those for disabled people;
- an analysis of street accident figures giving risks for older people;
- an accessibility assessment of street layout and street furniture along the most frequently used pedestrian routes that included sidewalks (width, slope, hindering furniture), reserved parking, public transport stops, street crossings, and access to businesses and public buildings; and,
- a questionnaire-based survey on the actual journeys of disabled people.

Itineraries reflecting typical travel routes in the two experiment areas were selected with the agreement of all partners. The accessibility criteria were recorded on sheets that formed part of a database that was compatible with the city's geographical information system (GIS) (Figure 3).

Major observations

The accessibility assessment performed on the selected itineraries showed that more than half are not accessible. As summarized in Table 2, many impediments to pedestrian travel are temporary.

The survey questionnaire was answered by 158 persons with reduced mobility (including disabled persons, elderly persons, pregnant women, and women with babies in pushchairs). The results reveal the extent to which mobility-impaired persons are impeded when walking in the city:

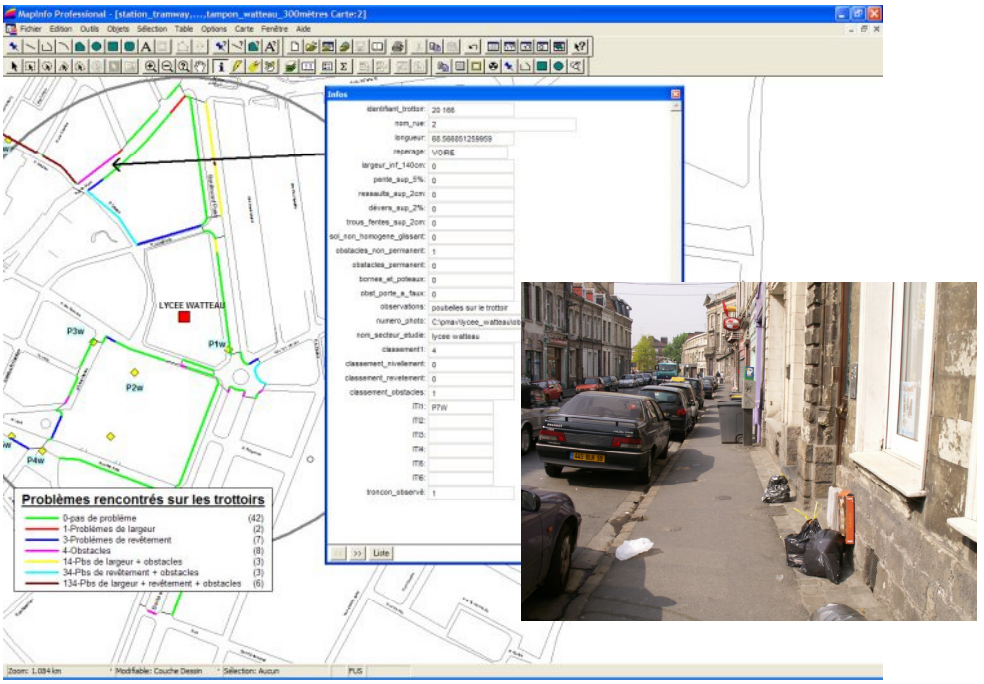

Figure 3: Example of GIS and data collection in Valenciennes

- 60% reported feeling unsafe on sidewalks and 73% felt unsafe when crossing streets;
- 35% could use some itineraries they are familiar with;
- 19% could not travel alone in the vicinity of their homes or in the city.

The major criticisms raised by respondents concerned:

- temporary obstacles on sidewalks (Figure 4),
- the lack of amenities at bus stops and the cost of travel on public transport,
- the lack of public transport service at night,
- excessive walking distances.

Preliminary suggestions

Analysis of data on the two experimental areas provided information that can be incorporated into Valenciennes' PDU accessibility appendix when it is revised, including:

- *Survey points useful for monitoring and assessment of policy:* City technical services should use these monitoring and assessment tools, especially as obstacles on the streets are a major problem for PRMs accessibility. Such observations on improvements for the PAV are on top of PDU action information. They will be part of the annual reports that are due to the accessibility commission for communities of more than 5,000 inhabitants;

Table 2: Accessibility assessment in Valenciennes

Area	Watteau high school	Railway station	St Jean School	Gaumont estate
Length (m)*	2500	1400	1800	1000
Geometric problems	30%	39%	44%	87%
Surface problems	56%	0%	32%	5%
Temporary obstacles	67%	70%	65%	11%
Crossing problems**	100%	28%	79%	86%

* Street length in the area

** Control or uncontrolled crossing

Figure 4: Example of mobility-impaired pedestrians at risk due to illegal car parking

- *Technical references for all local authorities in the area:* Technical references must be approved and implemented for the settlement of the survey methodology and the GIS database. Technical guidelines should be approved for accessible amenities on streets and pedestrians road signs;
- *Prioritization of accessibility measures:* Adoption of an itinerary logic must be consistent with the PDU and other town planning elements (local housing and town planning projects especially). Accessibility of public buildings is obviously a priority;
- *Integrated approaches* must not be forgotten as they create difficulties for PRMs: illegal car parking, temporary obstacles (e.g. household waste, etc.) and pedestrian crossings.

3.5 Strategies for implementation of the accessibility appendix

Certu launched a survey, performed by three CETEs, to interview 19 transport authorities and city managers of conurbations and medium-size communities in order to investigate their strategies for implementing the PDU accessibility appendices. The survey took place during the first months of 2007 in the north and north-west regions of France. The major findings gathered so far are as follows:

- all the studied communities are working on integrating the needs of PRMs in their policies,
- willingness to integrate the needs of PRMs is more frequently seen in city engineering services than among local politicians,
- ten communities have created processes to facilitate consultation with associations of disabled persons,
- seven communities have started work on their PAVs, but most have not yet established their methodologies,
- cooperation with other stakeholders has scarcely been addressed yet, hindering the integrated approach that is necessary for developing a PDU accessibility appendix. However, as seen in the case of Mulhouse, coordination between stakeholders may be more difficult in some conurbations due to complex distributions of responsibilities.

3.6 Conclusion

These studies showed that urban mobility plans drawn up in France and Europe are planning tools in which ensuring accessibility for disabled people and those with reduced mobility is a complementary goal for sustainable development in towns and cities.

The first PDUs adopted in France integrated the needs of PRMs in improving public transport and to a lesser extent in managing pedestrian routes. However, they lacked provisions for funding evaluation and implementation programming.

The examples of Mulhouse's PDU and the experiment in Valenciennes in terms of an accessibility plan for its streets provided information that will be of use to other local authorities. Of particular note is the importance of:

- ensuring consistency and cooperation between authorities when implementing local projects;
- using surveys and technical bills of features common to all local authorities in an urban area;
- monitoring and assessing accessibility improvements over time;
- prioritizing projects by combining itineraries and access to public buildings;
- having an integrated approach to temporary obstacles on pedestrian routes.

These two examples show the importance of management by the PT and town authorities by including associations of disabled people during the entire project. They provide ideas on choices made and help make professionals, managers of public buildings and businesses aware of their needs, thus making accessibility a permanent feature of the travel chain.

Finally, as of the end of 2007 it appears that conurbations and middle-sized communities are late approving the accessibility PT management plan before February 2008 as well as starting to work on the accessibility plan for streets and public areas which are due and end 2009 respectively.

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References

Certu/ADEME. 2002. Bilan des PDU de 1996 à 2000. Technical report, Certu/ADEME. URL http://www.certu.fr.

European Commission. 2006. Guide Commission européene Plans de déplacements urbains durables. URL http://ec.europa.eu./comm/environment/urban/thematic_strategy.htm.

Lebondidier, C. and M. Meunier-Chabert. 2004. PDU (Plan de déplacements urbain) qui es-tu? *Centralien*, (553):13–16.

Mathon, S. *et al.* 2007. Élaborer un plan de mise en accessibilité de la voirie et d'aménagement des espaces publics—expérimentation sur Valenciennes. Technical report, Certu. URL http://www.certu.fr.

Meunier-Chabert, M., H. Trève, M. Dejeammes, and D. Pillant. 2006. Plans de déplacements urbains: quoi de neuf en Europe? *Techni.Cités*, (104). Available on CD-ROM from Certu, http://www.certu.fr.

Sitram. PDU of Mulhouse conurbation. URL http://www.sitram.net/pdf/obs-pdu-2006-2007.pdf.

Wolf, C. 2006. Le pdu de mulhouse, outil d'approche globale et partagée de l'accessibilité. In M. Meunier-Chabert, H. Trève, M. Dejeammes, and D. Pillant, eds., *Plans de déplacements urbains: quoi de neuf en Europe?*