

Car park → Centre shuttles: a new service to promote sustainable mobility in medium-sized towns

This fact sheet is part of a series on the following topics:

- demand-responsive transport,
- transport figures,
- transport quality,
- rates,
- etc.



Towns of 20,000 to 100,000 inhabitants and their urban areas are the living environment for a quarter of the French population. They are just as involved as cities in sustainable mobility issues. But solutions need to be tailored to the particular challenges and contexts of these so-called “medium-sized” towns.

In 2007, Certu and the French federation of mayors of medium-sized towns (FMVM) launched a survey to examine Car park – Centre shuttles, a concept particularly well-suited to this size of urban area.

What is the “Car park → Centre shuttle”?

The “Car park → Centre shuttle” is a regular and frequent (roughly once every ten minutes) public transport system connecting one or more car parks on the outskirts directly to the town centre. These car parks are usually close to the town centre (approx. 1 to 3 km).

There are two kinds:

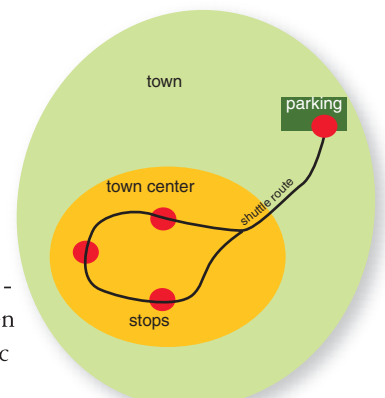
	Car park → Centre shuttle	“Mixed” shuttle
Users	Car park users	All
Purpose	Quick access to town centre	Access to town centre and greater coverage specially for people with impaired mobility
Towns	Albi, Aurillac, Beauvais, Brive, Cahors and Épinal	Auxerre, Bourges, Épinal, Mâcon, Narbonne, Rodez and Salon-de-Provence

From a Car park-Centre shuttle, it is possible to move to a “mixed” shuttle in order to make the service profitable. But the number of stops in the town centre must be limited in order to keep the service attractive for car park users.

The concept of the Car park-Centre shuttle has not yet really taken off in medium-sized towns, in spite of its potential for improvement:

- relieving congestion in the town centre and improving accessibility;
- solving parking problems;
- giving space back to cyclists and pedestrians;
- redeveloping public spaces and breathing new life into the town centre.

The city of Bourges was something of a pioneer in this field, with a Car park – Centre shuttle brought into service in 1999. Between 2003 and 2007, a dozen medium-sized towns have included Car park-Centre shuttles into their public transport networks.



Source: Cete Lyon

Why set up a Car park→Centre shuttle?

► To increase traffic fluidity in the town centre

A small, geographically hemmed-in town centre, or one with narrow streets may make motor vehicle traffic difficult. This is the case with the town centre of Cahors. Surrounded by the river Lot, the town can be accessed only by one of three bridges. Access was improved by setting up two Car park-Centre shuttle circuits from two car parks located on the other side of the river.

A growing population making more and more journeys sometimes makes traffic conditions difficult in medium-sized towns. Congestion phenomena may occur, especially at rush hours or during road-works. The lack of space may make it impossible to increase parking facilities. So Aurillac, Auxerre and Bourges have set up a Car park-Centre shuttle service to solve recurring congestion problems and to save on development work for cars in the town centre. The shuttle service in Salon-de-Provence was set up to help ease traffic problems caused by building work in the town centre. The experiment was continued after the work was completed.



The two shuttles in Cahors make access to the town centre easier (source: Cahors commune website)

► To restrict the use of the car and to requalify urban space

The desire to restrict the use of the car and to give the town back to pedestrians and cyclists may be the reason behind setting up a Car park-Centre shuttle service. This then becomes one of the attractive features of the town centre. This is the case with Cahors, in anticipation of a major urban requalification project.

Because they are small, shuttles are practical and user-friendly, and they may also provide motorists who are unfamiliar with public transport services with the opportunity to try them out and then start using them regularly. In this way, the shuttle can showcase public transport.

How do Car park→Centre shuttles work?

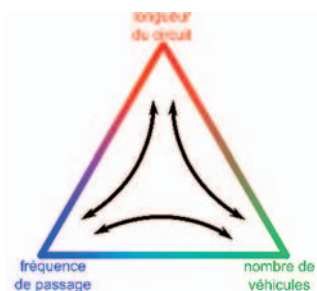
► The route, the frequency and the number of vehicles are interdependent

The service (route, service, timetables and frequencies) is generally defined on the basis of consultation between the urban transport authority, or the commune, and the network operator. A compromise is sought between:

- the route itself, related to political and commercial strategies and restrictions imposed by the nature of the urban area;
- the frequency;
- capital and running costs related to the number of vehicles.

The “ideal” route depends on where the car parks are located, points of interests in the city and traffic conditions (congestion, traffic light-controlled junctions, the number of stops, etc.). It must be short (1 to 3 km between the car park and the centre), relatively straight, and with a limited number of stops to allow for high speed.

In general, the frequency is given from the time required for the minibus to make a complete circuit. At least a ten-minute frequency at rush hour appears necessary to offer an attractive service to the motorist.



Source : Cete de Lyon

The circuit, operating times and frequencies may change over time. Some networks modified the circuit or the frequency after a few months' operation, as the offer was not sufficiently in line with users' demands, or of those of the shops and services served by the network. Use and satisfaction surveys make it possible to gain a better understanding of the real and desired use of the shuttle service.

► Circuits are often optimized by a loop in the town centre and a radial route back to the car park

Various types of service may be set up. A "lasso" shape is generally chosen for various reasons:

- the need for a fast and direct connection between the car park and the central business district;
- a compromise between high service coverage and efficiency in the central business district;
- traffic restrictions, especially one-way routes through narrow streets.



In Brive, the shuttle route combines speed, high service coverage and urban restrictions (source: Brive urban area community)

► Only a few stops to combine service with speed

The shuttles examined propose different service offers. Most routes have fixed stops, which makes the service easier to understand. There may be just a few stops, from 2 to 4 (not counting the car park stops), such as in Aurillac, Cahors, Épinal and Fougères for example. Some networks opt for more stops, which restricts speed and, with it, the likelihood of the service appearing attractive to motorists. All, or only some, of the fixed shuttle stops may be in common with those of the conventional public transport network.

Demand-responsive stops for boarding or alighting, available on certain Car park-Centre shuttle, need to be ruled out. They may lead to:

- misplaced use of the shuttle instead of walking, especially as the service is often free;
- a significant drop in operating speeds and regularity because of the many unplanned stops;
- safety issues with users/pedestrians who may surprise motorists or bus drivers



A fixed and intelligible stop in Épinal (source: Épinal commune website)

► Regular information about the shuttle encourages people to use it



Simple and readable information in Épinal (source: Epinal urban area inter-community passenger transport association)

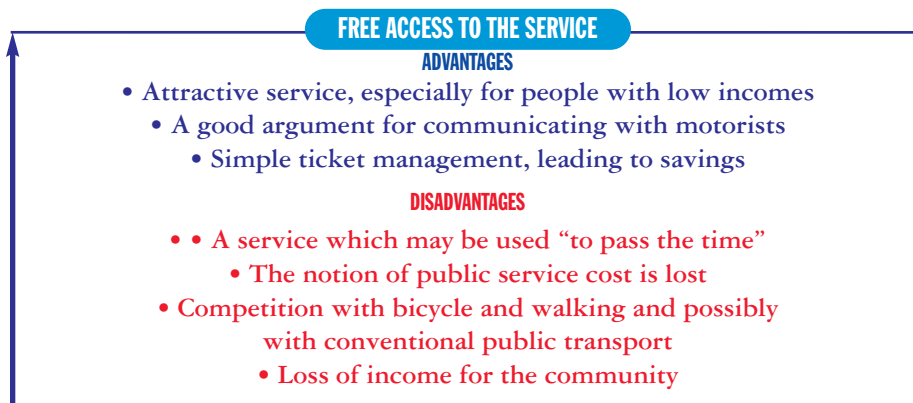
Information can be provided in close collaboration with the conventional public transport network. As far as the network is concerned, the shuttle route can be made to co-exist with the conventional lines.

Publicity can be extended to include motorists going into the town centre via leaflets or small posters given out in collaboration with the parking service.



► Generally free access to the service

In the vast majority of cases, access to the shuttle service is free. In rare cases, payment is required (€0.20 in Rodez, as against €1 euro for a single journey ticket on conventional bus in 2006).



Several types of ticket system have been set up. The most frequently encountered situation is the absence of a ticket. This means that the drivers have to count the shuttle users. In Aurillac, return tickets are handed out to users on presentation of their car park ticket (as many shuttle tickets as there are people in the car). In this way, this system allows access to the shuttle to car park users only. The system used in Annemasse offers a good compromise, and may be taken

as a source of inspiration. Access to the shuttle is granted either on presentation of a ticket given when parking (shuttle access is in this case free), or by using a conventional public transport ticket or a travel card for non-car park users. This system encourages motorists to leave their car in a car park in the outskirts, this being the main aim of the shuttle service. It also allows other people to use the service thereby securing a return on investments.

► More information needed on why people travel

In the majority of cases studied, the systems set up targeted travel from home to work, and more occasionally leisure activities. But it is difficult to determine why people really use the service. Very few networks have carried out statistically reliable customer surveys. It would be worthwhile performing qualitative and quantitative surveys on a fairly regular basis to find out why people travel, how full the shuttle is and how much use is made of the car park(s). In this way, the offer will be better suited to the demand, the service improved, and costs optimized.

Source: Cete Lyon

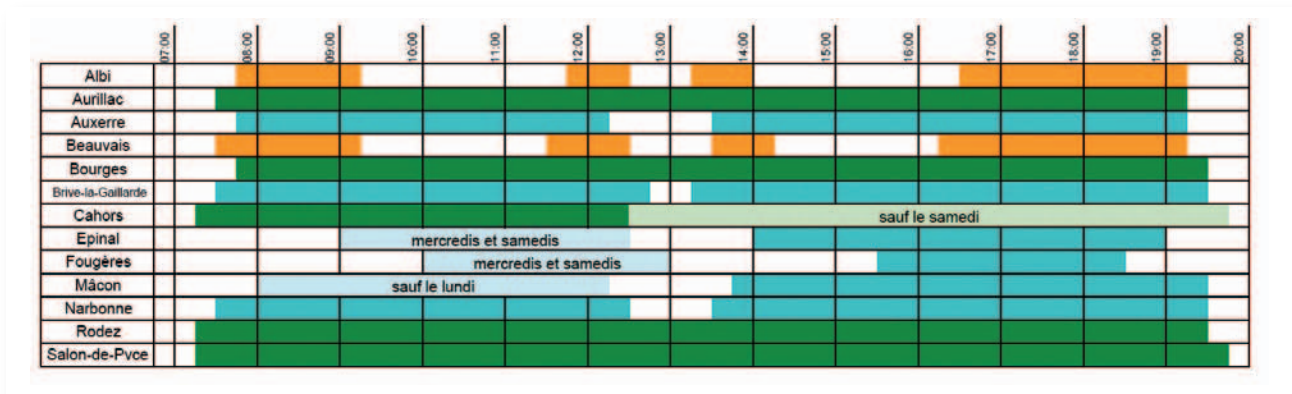


► Time periods are mainly adapted for shopping and regular frequencies at 10 or 15 minute intervals

Most Car park-Centre shuttle services operate from Monday to Saturday.

The daily time periods covered may be classified into three categories:

- **the shuttle runs all day long**; this corresponds to several reasons for travelling (mainly travel from home to work and shopping);
- **the service operates with a 30 minute to one and a half hours break**. This break makes it possible to reduce the operating costs of the shuttle;
- **the service runs only at rush hours**, for longer in the evenings (approximately three hours) than in the mornings (approximately one and a half hours), and for a shorter period around midday (less than one hour). This strategy corresponds more to an offer for travel from home to work, while allowing for additional travel after work (for leisure activities and shopping).



For two-thirds of the systems examined, frequencies are regular throughout the day. Some networks adopt “rush hour” and “off-peak” frequencies.

The most usual frequencies are every 10 and 15 minutes. Car park-Centre shuttle services that have high rates of use propose a ten-minute frequency at rush hours.

► From one to three minibuses with about twenty seats provide the service

The majority of networks use one to three minibuses (or microbuses) each with 18 to 22 seats. These small vehicles and their modern design give a dynamic image to the service.



*Auxerre shuttle
(source: Auxerre urban community)*



*Narbonne shuttle
(source: Narbonne urban area community)*

► The location of the car parks is a question of opportunity, but is not always relevant!

The location of the car park in relation to the town centre is a determining factor in shuttle use. Too short a distance (less than 1 kilometre) would be likely to create competition between the shuttle and walking. A car park that is too far away may limit the efficiency of the shuttle (in terms of its travel time) and therefore restrict the number of people using it. On the other hand, a car park located between 1 and 3 kilometres away seems a good compromise. It encourages use of the shuttle to get to the town centre, the waiting time for the shuttle being compensated for by the time that motorists don't waste looking for a parking space.

In practice, the car parks used as part of a Car park-Centre shuttle service are seldom purpose-built. They are generally existing car parks. Sometimes wasteland used as an informal or illegal car park is converted to a "proper" car park.

Car parks often undergo development work to convert them: the tarmac is repaired, markings drawn, and platforms or even barriers or a ticket distributor are added.

To limit capital costs and to cater for a variety of uses, the car park may be used by shuttle-users during the day, and as a car park during events.

Generally, the commune is the owner of the car park and is in charge of its upkeep. An original experiment was undertaken in Narbonne: an urban-area community insertion agency manages and maintains the car parks served by the shuttle.

► One or two free access car parks provide several hundred well-used spaces if the car park is visible and easy to access

Most networks use only one car park, less often two, in liaison with the shuttle. The capacity of the car parks is, in contrast, very variable and depends mainly on opportunity. The smallest, in Albi, has 50 places, and the largest, in Épinal, has 2,000. In general, the number of spaces per car park is approximately 250 to 300.

The networks examined rarely if ever carry out surveys into the use of the car parks. It is therefore difficult to give detailed occupancy rates and their reasons.

All the shuttle car parks are free, and free of access except in Aurillac. In Narbonne, the guarded car park which existed before the shuttle service was set up, and which was used for the latter, required payment. It was made free of charge some time after the shuttle service was set up.

A bus stop or shelter at the entrance to the car park gives visibility to the service, and may give information about the characteristics of the shuttle (timetable, or at least frequencies, and the route taken) to provide a satisfactory level of user comfort.

► Few changes in parking on the roadway

In the vast majority of cases examined, “parking” as a subject did not involve any consultation parallel with setting up the shuttle service by the transport authority. So no major modifications to parking in the central business district (spaces withdrawn or regulations changed) were made when the Car park-Centre shuttle service was set up.

Marking upstream of the car park helps users to find it easily, and to understand that it is a “special” car park. Carriageway markings (space markings on the ground, direction of movement within the car park, pedestrian paths, etc.) help the overall shuttle + car park system to be easily understood.



Source: The Aurillac car park and its access barrier, served by the shuttle (source: CETE Lyon)

For optimal effectiveness and improvement in inhabitants' living conditions, this service must nevertheless be consistent with the parking policy and, more generally, with the overall transport policy.

How should Car park → Centre shuttle services be managed?

The shuttle is operated by the usual public transport operator, facilitating its integration into the network. As the shuttle service may be set up while a contract between the transport authority and the operator is pending, an additional clause to the contract is signed when the system is put into place. This defines the system of remuneration in relation to the operating costs.

Funding for running the shuttle is dealt with by the transport authority and/or the commune. The operator remuneration corresponds to that of the existing contract for the conventional network, often on a flat rate per kilometre basis.

How much does a Car park → Centre shuttle service cost?

Most networks examined bought new vehicles, representing an average investment cost of approximately €100,000 euros inclusive of tax per minibus. Only Épinal chose a hire system in order to observe how the system worked before investing.

In all the systems examined, a certain homogeneity in operating costs is to be observed: these amount to an average of €3.30 per kilometre.

When the service is properly designed and used, the cost of a trip ranges between 1 and 2 euros.



Macon shuttle (source: CETE Lyon)



Aurillac shuttle (source: Aurillac urban area community)

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CETE Lyon

THE 7 KEYS FOR SUCCESS FOR A CAR PARK → CENTRE SHUTTLE SERVICE



Source: Greater Lyon

- 1 One or more well-situated car parks (approximately 1 to 2)
- 2 High frequency during rush hour (10 minutes)
- 3 High speed, by limiting the number of stops in the centre
- 4 Quality facilities (pedestrian paths, parking spaces, stops, etc.)
- 5 Easy to understand (markings, information, etc.)
- 6 Good publicity before and during start-up
- 7 Integration into a comprehensive parking (spaces withdrawn from use in the town centre, regulation, etc.) and transport policy



Bourges shuttle (source: Bourges transport authority)



Créabus

Further reading:

Available on the Certu website (www.certu.fr) under the heading "urban and periurban transports":

- Monographs on the shuttles in Aurillac, Cahors, Épinal, Narbonne and Rodez – produced by Cete Lyon and Cete du Sud-Ouest

- Results from the survey on shuttles – produced by Cete de Lyon, Cete du Sud-Ouest, Certu and the FMVM (2006 data)

- A presentation of the concept of Car park- Centre shuttle – produced by Certu during AGIR 2008 in Albi
"Transport in medium-sized towns: What is the role of public transport?" Certu, CNFPT, FMVM