



CIVITAS
Cleaner and better transport in cities
E L A N

CASE STUDY



IMPROVING BUS SERVICES FOR THE DISABLED

SAFETY AND SECURITY



From September 2009 to June 2010 five special minibuses were introduced in Brno. These now operate on specific lines for mobility-impaired people and also on regular lines in low demand areas or in the evenings and during the weekends, when the special lines are out of service. The basic requirement for the minibuses were that they should be able to transport at least six wheelchairs at the same time. This goal was achieved and the feedback from both mobility-impaired and other passengers is positive. Comparisons between the operation costs of minibuses and their standard counterparts show that the former are much cheaper and can save approximately 0.25 EUR/km.

Municipal context

Brno is the second largest city of the Czech Republic and is the political and cultural hub of the southern Moravia region. It is situated at the crossroads of ancient trade routes, which connected the North and South for centuries.

The city lies in the basin of the rivers Svatka and Svitava, and covers an area of 230 km². The river Svatka cuts a 29 km path through the city and is the main supply for the Kninický Dam Lake, a popular recreation area in the city's northwest corner.

Brno has a very well developed public transport system. The tram and trolleybus, an electric bus

that draws electricity from overhead wires, are its low-polluting backbone. Brno has the largest trolleybus network in Europe consisting of 140 vehicles that cover routes of 94 kilometres and transport 45 million passengers a year. To divert traffic from the city centre, a new international railway junction project and the development of a city ring road are underway. Brno has also created cycling and pedestrian zones in the centre.

At 65 percent, the modal share of public transport remains relatively high in Brno. Yet, the city is witnessing a gradual shift instead of slow decline. Another challenge Brno needs to address is to focus on the changing needs of the city's shrinking and ageing population.

MUNICIPAL PROFILE

LOCATION

Brno, Czech Republic

POPULATION

370,000

LAND AREA

230 km²

CIVITAS BUDGET

EUR 2,158,829.7, with an EC contribution of EUR 1,259,689.08



BRNO IN CIVITAS

Brno (Czech Republic) participated in CIVITAS ELAN, an innovative collaboration between the cities of Ljubljana (Slovenia), Ghent (Belgium), Zagreb (Croatia), Brno (Czech Republic) and Porto (Portugal). The motto of the project is "Mobilising citizens for vital cities."

CIVITAS ELAN

CIVITAS ELAN took an approach where "Putting the citizen first" was at the core of the work in the five cities. Aside from encouraging involvement, its cities pro-actively worked to convince citizens that clean mobility solutions are in their interest. With its 68 activities, ELAN increased the modal share of walking and cycling, supported innovative freight delivery solutions, implemented innovative demand management, and increased the use of cleaner and energy-efficient vehicles. It ran from 2008-2012.

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Introduction

Approximately 50,000 mobility-impaired people live in Brno. Customised public transport for this group was neglected before CIVITAS, and the public transport company dealt with these problems by using standard low-floor buses, which are designed for only one or two wheelchairs. In reality, it is quite usual that mobility-impaired persons travel in bigger groups for support. The alternative was buses with a special lift for wheelchairs, which did not have a low-floor. These are however very old and needed to be phased out of service. Both solutions presented some problems: first of all, it is rather expensive to operate standard buses in the off-peak hours on the lines where the demand for transport is low; secondly it is not easy to operate standard buses in the city centre due to their limited manoeuvrability and high operation costs.

To deal with these issues, the city developed the idea, implemented within CIVITAS, to introduce a new special minibus designed primarily for mobility-impaired people and for operations in the city centre. CIVITAS gave the city the chance to share and disseminate information to other cities, municipalities or transport companies and to receive their experiences in turn.

Taking a closer look

The minibuses were designed to transport at least six wheelchairs at the same time and also to be easily changed to standard seating arrangements thanks to folding seats. Another prerequisite was that the vehicles needed to be equipped with a modern information system and loading ramp. It should be more environmentally friendly than standard buses.

Since the beginning of the project, minibuses have operated mainly on two special lines for the mobility-impaired citizens. These run

Monday to Friday, from 5:00 to 20:00. At the weekends, they are partly used for group trips around and beyond the city.

These lines operate in the whole city area and connect the main public institutions, hospitals and buildings. In many cases, these locations are either the trip origin or destination for members of this group. The lines meet at one interchange point in the city centre, where three minibuses wait every two hours for transfer (two buses on line 82 and one bus on line 81).



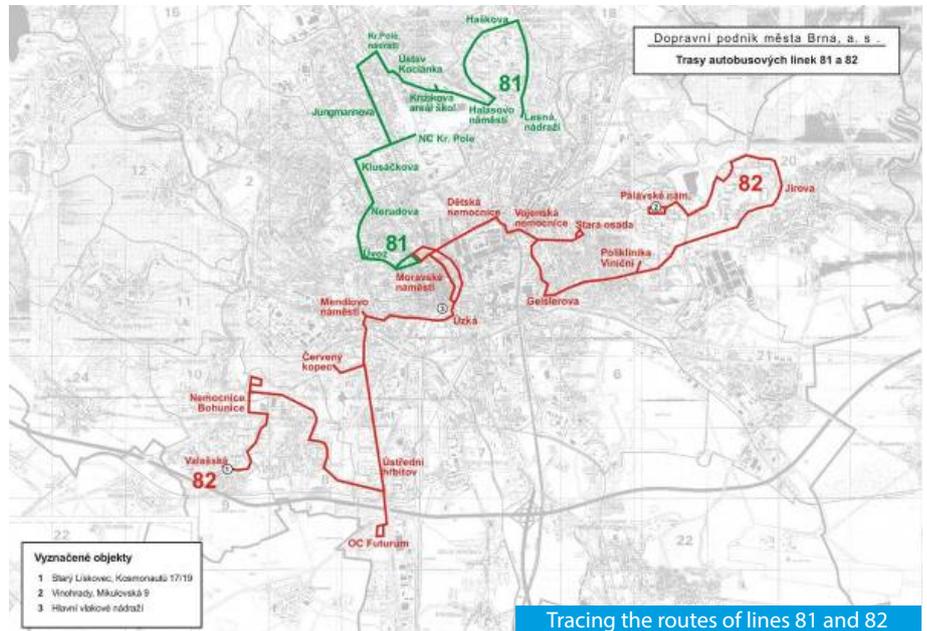
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Despite the fact that the routes of lines 81 and 82 are tailored to the needs of the mobility-impaired, these lines can, in fact, be used by all passengers. For mobility-impaired users the service is free of charge.

During off-peak hours (in the evenings, early morning and during the weekends), the minibuses are able to operate on low-demand lines, where standard bus usage would not be efficient. When the special lines 81 and 82 are not operating, the minibuses run on common lines 53 and 64.

A very good example of effective use of the minibuses is line 53, which operates from the tram terminal to the university campus. This line is used mainly by students. Since the majority of students leave the city on the weekends, on Saturdays (all day) and on Sundays (from 05:00 to 14:00), the minibus has sufficient capacity to serve this line. On Sunday afternoon (from 14:00 to 23:00), when the travel demand is growing as the students return, the city operates articulated buses on the same line.



Tracing the routes of lines 81 and 82

Results

The measure proved to be a success. All five minibuses are in operation and the system fulfils all expectations. No substantial problems or faults occurred during the implementation of the measure.

The local public transport company, DPMB, compared the number of impaired passengers on lines 81 and 82 during the implementation of the measure with the number of users before the implementation of the measure in modified standard buses. The number of disabled passengers stayed nearly the same, but the number of low floor vehicles in the public transport system is steadily increasing. Thus, mobility-impaired citizens now have more possibilities to travel and are less dependent on the special lines.

During several meetings which took place in early 2011, mobility-impaired citizens reported satisfaction with the current status of the operation on lines 81 and 82 and suggested only minor changes in the timetable and position of stops. These changes were implemented. When compared to the standard bus equipped with a lift, travelling by minibus was recognised as



Special minibuses fit more wheelchairs than normal buses

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safer and more comfortable for the mobility-impaired person.

DPMB also compared the operation costs of minibuses and those of the standard buses. The operation costs of minibuses are much lower than standard buses, mainly due to fuel consumption and fuel costs, which are more than twice as low.

Lessons learned

The successful implementation of this measure was the result of solid preparatory work and of the consultations with the target group, which were carried out during all phases. Discussions and workshops for mobility-impaired passengers proved to be a vital step for the success and acceptance of the minibuses.

Some problems occurred during the demonstration phase, but they were of technical nature, involving clutches, brakes, and gearboxes.

Upscaling and transferability

The project is easily replicable, but the success rate could differ as each city has specific conditions and requirements. Success may be only limited in cities where a high number of standard low-floor buses is in operation already, or in cities where a significant percentage of the mobility-impaired citizens is not concentrated in several relatively small areas, but dispersed evenly over the whole city. For these cities, demand-responsive services could be more suitable instead of regular services.

The solution introduced in Brno allows the transport of more than one wheelchair in the minibus, which is otherwise impossible in standard buses due to safety regulations.

This measure will continue after CIVITAS. The public transport company of Brno is considering to operate the minibuses as service on demand for its mobility-impaired passengers.

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References or sources

<http://civitas.eu/content/demand-responsive-bus-service>

Eltis case study and video



One of the minibuses - Moravské náměstí

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