

CiViTAS
Cleaner and better transport in cities

ARCHIMEDES

AALBORG • BRIGHTON & HOVE • DONOSTIA-SAN SEBASTIÁN • IAŞI • MONZA • ÚSTÍ NAD LABEM

Monza

R41.1 – Study of walking bus routes in Monza

Monza

September 2009



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Contents

1. INTRODUCTION.....	4
1.1 BACKGROUND CIVITAS.....	4
1.2 BACKGROUND ARCHIMEDES.....	5
1.3 PARTICIPANT CITIES.....	5
1.3.1 <i>Leading City Innovation Areas</i>	5
2. MONZA	5
3. BACKGROUND TO THE DELIVERABLE	6
3.1 SUMMARY DESCRIPTION OF THE TASK.....	7
4. SCHOOL TRAVEL PLANS IN MONZA	7
4.1 DESCRIPTION OF THE WORK DONE.....	7
4.2 SPECIFICATION OF WALKING BUS ROUTES.....	8
4.3 MAIN OUTCOMES	17
4.4 COMMUNICATION ACTIVITIES	17
4.5 PROBLEMS IDENTIFIED	17
4.6 FUTURE PLANS	18

1. Introduction

1.1 Background CIVITAS

CIVITAS - cleaner and better transport in cities - stands for Clty-VITAlity-Sustainability. With the CIVITAS Initiative, the EC aims to generate a decisive breakthrough by supporting and evaluating the implementation of ambitious integrated sustainable urban transport strategies that should make a real difference for the welfare of the European citizen.

CIVITAS I started in early 2002 (within the 5th Framework Research Programme);
CIVITAS II started in early 2005 (within the 6th Framework Research Programme) and
CIVITAS PLUS started in late 2008 (within the 7th Framework Research Programme).

The objective of CIVITAS-Plus is to test and increase the understanding of the frameworks, processes and packaging required to successfully introduce bold, integrated and innovative strategies for clean and sustainable urban transport that address concerns related to energy-efficiency, transport policy and road safety, alternative fuels and the environment.

Within CIVITAS I (2002-2006) there are 19 cities clustered in 4 demonstration projects, within CIVITAS II (2005-2009) 17 cities in 4 demonstration projects, whilst within CIVITAS PLUS (2008-2012) 25 cities in 5 demonstration projects are taking part. These demonstration cities all over Europe will be funded by the European Commission.

Objectives:

- to promote and implement sustainable, clean and (energy) efficient urban transport measures
- to implement integrated packages of technology and policy measures in the field of energy and transport in 8 categories of measures
- to build up critical mass and markets for innovation

Horizontal projects support the CIVITAS demonstration projects & cities by :

- Cross-site evaluation and Europe wide dissemination in co-operation with the demonstration projects
- The organisation of the annual meeting of CIVITAS Forum members
- Providing the Secretariat for the Political Advisory Committee (PAC)
- Development of policy recommendations for a long-term multiplier effect of CIVITAS

Key elements of CIVITAS

- CIVITAS is co-ordinated by cities: it is a programme “of cities for cities”
- Cities are in the heart of local public private partnerships
- Political commitment is a basic requirement
- Cities are living ‘Laboratories’ for learning and evaluating

1.2 Background ARCHIMEDES

ARCHIMEDES is an integrating project, bringing together 6 European cities to address problems and opportunities for creating environmentally sustainable, safe and energy efficient transport systems in medium sized urban areas.

The objective of ARCHIMEDES is to introduce innovative, integrated and ambitious strategies for clean, energy-efficient, sustainable urban transport to achieve significant impacts in the policy fields of energy, transport, and environmental sustainability. An ambitious blend of policy tools and measures will increase energy-efficiency in transport, provide safer and more convenient travel for all, using a higher share of clean engine technology and fuels, resulting in an enhanced urban environment (including reduced noise and air pollution). Visible and measurable impacts will result from significantly sized measures in specific innovation areas. Demonstrations of innovative transport technologies, policy measures and partnership working, combined with targeted research, will verify the best frameworks, processes and packaging required to successfully transfer the strategies to other cities.

1.3 Participant Cities

The ARCHIMEDES project focuses on activities in specific innovation areas of each city, known as the CIVITAS corridor or zone (depending on shape and geography). These innovation areas extend to the peri-urban fringe and the administrative boundaries of regional authorities and neighbouring administrations.

The two Learning cities, to which experience and best-practice will be transferred are Monza (Italy) and Ústí nad Labem (Czech Republic). The strategy for the project is to ensure that the tools and measures developed have the widest application throughout Europe, tested via the Learning Cities' activities and interaction with the Lead City partners.

1.3.1 Leading City Innovation Areas

The four Leading cities proposed in the ARCHIMEDES project are:

- Aalborg (Denmark);
- Brighton & Hove (UK);
- Donostia-San Sebastián (Spain); and
- Iasi (Romania).

Together the Lead Cities in ARCHIMEDES cover different geographic parts of Europe. They have the full support of the relevant political representatives for the project, and are well able to implement the innovative range of demonstration activities proposed.

The Lead Cities are joined in their local projects by a small number of key partners that show a high level of commitment to the project objectives of energy-efficient urban transportation. In all cases the public transport company features as a partner in the proposed project.

2. Monza

Monza is a city on the river Lambro, a tributary of the Po, in the Lombardy region of Italy, some 15km north-northeast of Milan. It is the third-largest city of Lombardy and the most important

economic, industrial and administrative centre of the Brianza area, supporting a textile industry and a publishing trade. It is best known for its Grand Prix.

The City of Monza, with approximately 121,000 inhabitants, is located 15 km north of Milan, which is the centre of the Lombardia area. This area is one of the engines of the Italian economy; the number of companies is 58,500, i.e. a company for every 13 inhabitants.

Monza is affected by a huge amount of traffic that crosses the city to reach Milan and the highways nodes located between Monza and Milan. It is also an important node in the Railways network, crossed by routes connecting Milan with Como and Switzerland, Lecco and Sondrio, Bergamo and Brianza. "Regione Lombardia", which in the new devolution framework started in 1998, has full responsibility for establishing the Local Public Transportation System (trains, coaches and buses) and has created a new approach for urban rail routes using an approach similar to the German S-Line or Paris RER.

Monza has recently become the head of the new "Monza and Brianza" province, with approximately 750,000 inhabitants, so will gain the full range of administration functions by 2009. Plan-making responsibilities and an influence over peri-urban areas will require the city to develop new competencies.

In this context, the objective of the City of Monza in participating in CIVITAS as a Learning City is to set up an Urban Mobility System where the impact of private traffic can be reduced, creating a new mobility offer, where alternative modes become increasingly significant, leading to improvements to the urban environment and a reduction in energy consumption (and concurrent pollution).

3. Background to the Deliverable

Monza is the Italian coordinator for the "I Walk to School" international organisation, since it was the first city in Italy to organize Walk to School Events in 2001. Since then, every year in Monza there is a Walk to School week, at the end of which five schools (one for each town district) are rewarded for the sustainable behaviour of their pupils in their home-school journey. In order to increase awareness about positive effects of pedestrian mobility in children, some schools in Monza have also experienced forms of sustainable mobility and particularly walking buses.

The ARCHIMEDES project involves the testing and implementation of differentiated and complex measures on the issue of mobility, one of which involves the testing of mobility initiatives on education.

In particular teachers, students and families of four primary schools throughout the municipality - Buonarroti, Citterio, Manzoni and Omero Institutes - are involved in demonstrating alternative forms of mobility on the way to school.

Specifically for these schools a 'walking bus' (or Pedibus) service will be developed. Walking Bus is structured as an accompanying service that allows small groups of students who reside in the same area of the city to reach their school premises on foot, following programmed routes and accompanied by parents and/or volunteers.

The possibility of using such a service allows us to pursue multiple objectives:

- firstly, it breaks the old habit of going to school by private cars, thus generating traffic congestion near schools at the time of entry and exit of students.

- secondly it gives students the opportunity to enjoy an important moment of independence, socialisation and growth.
- moreover taking a short walk includes field-testing of education and road rules, implementation of orientation skills and knowledge of the territory.
- last but not least, it develops a network for collective accompanying so that families attending the same school experience collective collaboration and solidarity, and contributes to the revitalisation of the neighbourhoods as well.

This measure covers 2 tasks.

RTD

Task 11.4.6 Development of a Walking Bus Route

Fundamental research into the physical possibilities for implementing walking bus routes in Monza.

DEMO

Task 4.16 School Travel Plans

Monza has issued a subcontract for specialist support to design the participatory workshops following completion of the route development task. This subcontract includes, during workshops, visits in school from skilled staff in order to define, in concert with teachers and according to their didactic programs, how to project, together with pupils, pedestrian paths to school.

3.1 Summary Description of the Task

Monza will undertake research to design the scheme of pedestrian paths (“PEDIBUS”) acting just like a Public Transport Line for children to walk to school. Stops and a timetable will be defined and agreed with the parents of the children involved. Key stakeholders such as the local police, teachers and school managers will be consulted to co-ordinate the scheme with the school timetables, start and end times and also to discuss security aspects of the scheme.

Once the basic research is complete participatory design workshops will be held in primary schools within the CIVITAS corridor to raise awareness among students, parents and teachers about the benefits of pedestrian home – school mobility and testing of forms of sustainable home – school mobility (walking bus, cycling bus, safe routes).

4. School Travel Plans in Monza

4.1 Description of the Work Done

First step towards activation of the service is the definition of the paths that Walking Bus (“Pedibus”) groups can use to reach the school. This definition is based on the analysis of both the residence distribution and the characteristics of street mesh, especially pedestrian paths, in the area surrounding the school.

The analysis of where students live identifies areas in which the largest number of students is concentrated, which are the areas where paths are then more precisely defined.

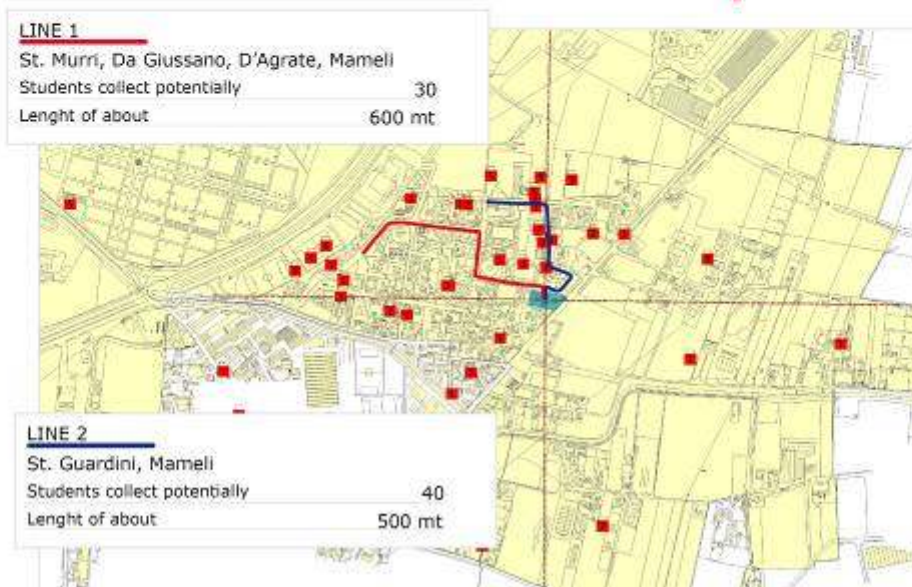
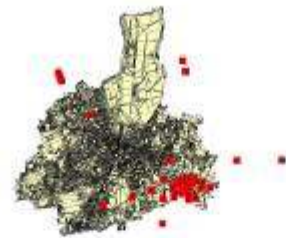
The routes, with a maximum duration of 20-25 minutes, are chosen to favour paths that provide wide safety margins: roads where pavements are sufficiently broad to accommodate a group of pedestrians, and where pedestrian crossings are well-marked and protected.

4.2 Specification of Walking Bus Routes

Manzoni School, Mameli Street 18

MANZONI SCHOOL

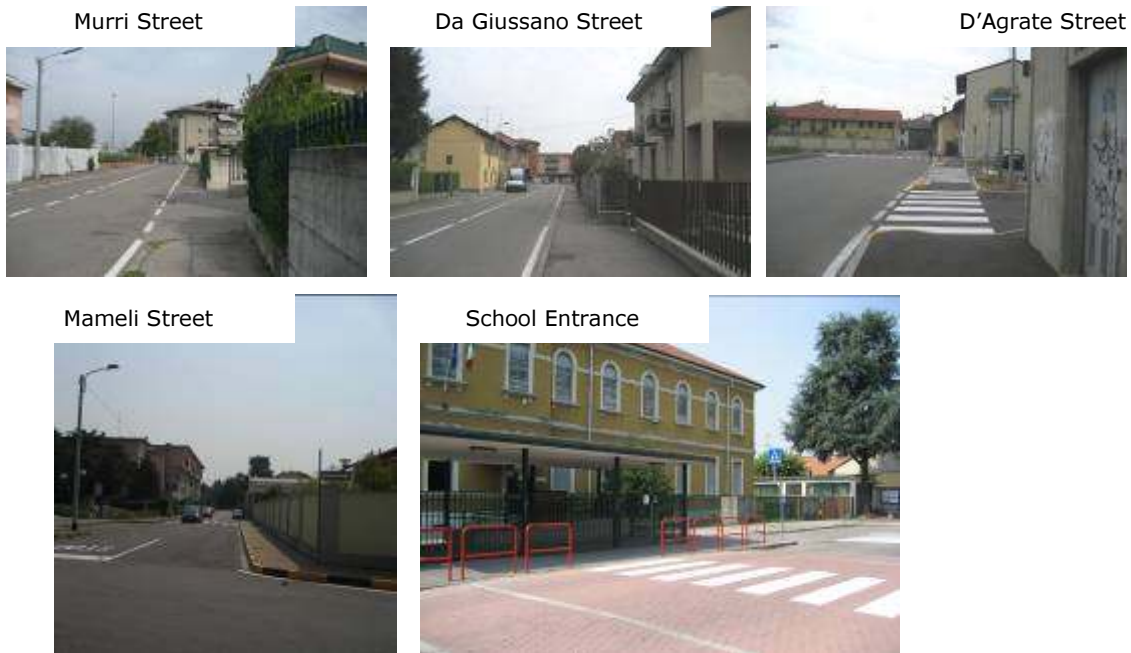
Number of students enrolled in the area	127
Students residing in the City of Monza	103
Students living in nearby municipalities	24
Students living beyond the radius of 800 mt from the school	33



Manzoni School, located in Mameli Street 18, has a catchment area of 127 pupils. 19% of the total, amounting to 24 students, come from neighbouring towns, while 103 students, i.e. 81% of the total, live in the municipality of Monza.

The homes of students are concentrated in two main macro-zones: the first in the quadrant west of the school and the second being in the North. Then two routes across these areas are proposed, to collect about 30 and 40 potential members respectively.

LINE 1 Route: Murri St, Da Giussano St, D'Agrate St, Mameli St (alternatively Murri St, Ferruccio St, Fieramosca St, D'Agrate St, Mameli St)



The proposed route is 600 metres long and potentially collects thirty students. Along the way pavements are wide enough to accommodate a group of children. The pedestrian crossings are generally well identified by special signals.

The alternative route along the streets Ferruccio and Fieramosca does not present sufficient safety margins. Indeed, the final stretch of Fieramosca St lacks a pavement and the pedestrian path between D'Agrate St and Mameli St is not sufficiently marked.

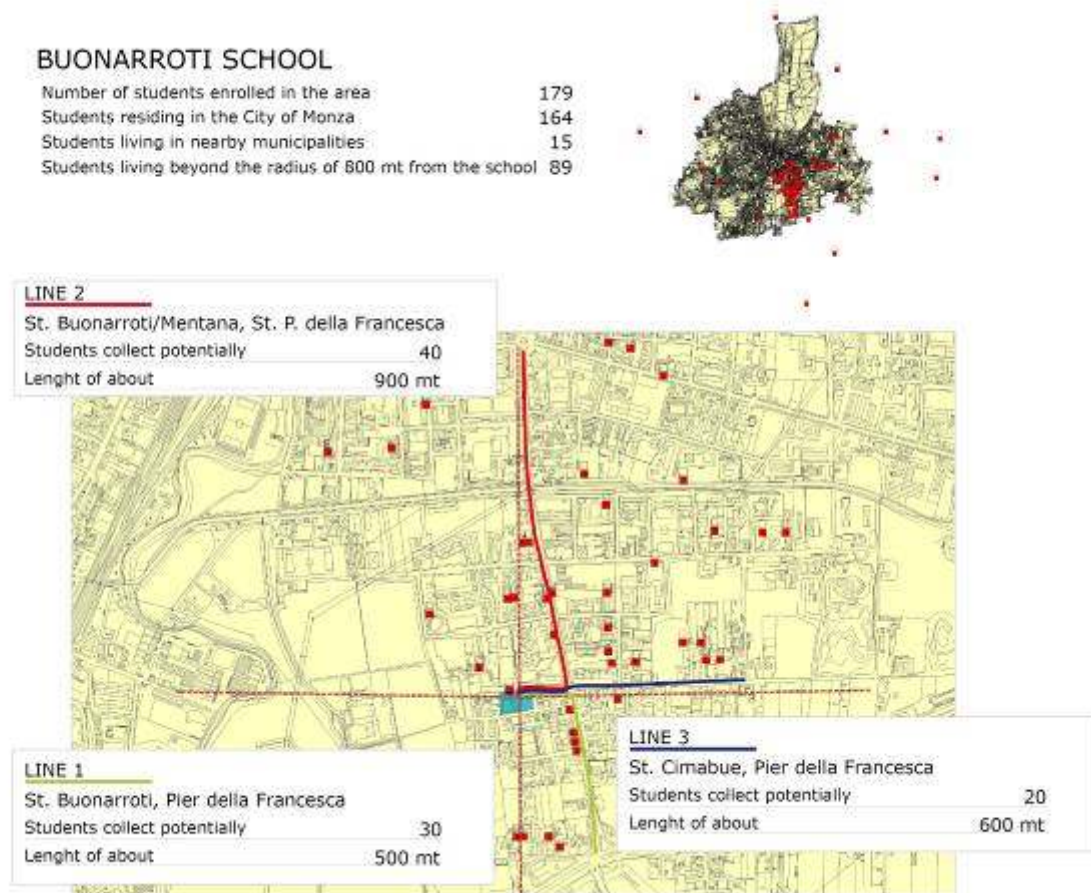


LINE 2 Route: Guardini St, Mameli St

The route starts on Guardini St at a Public Park and runs along the right-hand pavement towards the school. There are no reported difficulties or obstacles to mobility for a group of pedestrians. The overall length of the route is approximately 500 metres.



Buonarroti School, Pier della Francesca Street



In total 179 students attend the Buonarroti School. The vast majority of them (92% or 164 students), reside in the municipal area, with the remaining students living in neighbouring municipalities.

The origins, whilst being within the municipal boundaries, appear to be rather widespread: about a hundred students reside outside a radius of 800 metres from the school.

In order to define pedibus routes three 3 macro-zones have been identified, south, east and north of the school.

LINE 1 Route: Buonarroti St (southerly - crossing Fermi St), Pier della Francesca St

The route runs along Buonarroti St, proceeding towards the left side of the school, for a total length of 500 metres. The pavement is wide enough to accommodate the Pedibus group.

Buonarroti Street



Buonarroti Street



P. della Francesca Street



There are about thirty potential subscribers to this line, potentially including those students who come from the southern area of Fermi St and who are probably usually accompanied to school by car, because of the distance and the traffic congestion of Fermi St. The opportunity for these students is to be driven to the terminus of this pedibus route rather than to school, so avoiding traffic jams caused by private cars in the area around the school.

LINE 2 Route: Buonarroti St (northerly - crossing Mentana St), Pier della Francesca St

Buonarroti Street



Buonarroti Street



Buonarroti Street



Buonarroti Street



Buonarroti St.



Pier della Francesca St.



This walking bus route also runs along Buonarroti St, in this case starting from the corner with Mentana St and proceeding towards the school on the right-hand pavement, heading south.

The pavement, flanked in the initial part by the bicycle path, is wide and suitable for use by a group of pedestrians. Moreover, the many crossings are well marked, sometimes with the presence of signal lights.

In this case, the length of the path is about 900 metres and the number of potential subscribers is around 40.

LINE 3 Route: Cimabue St, Pier della Francesca St.

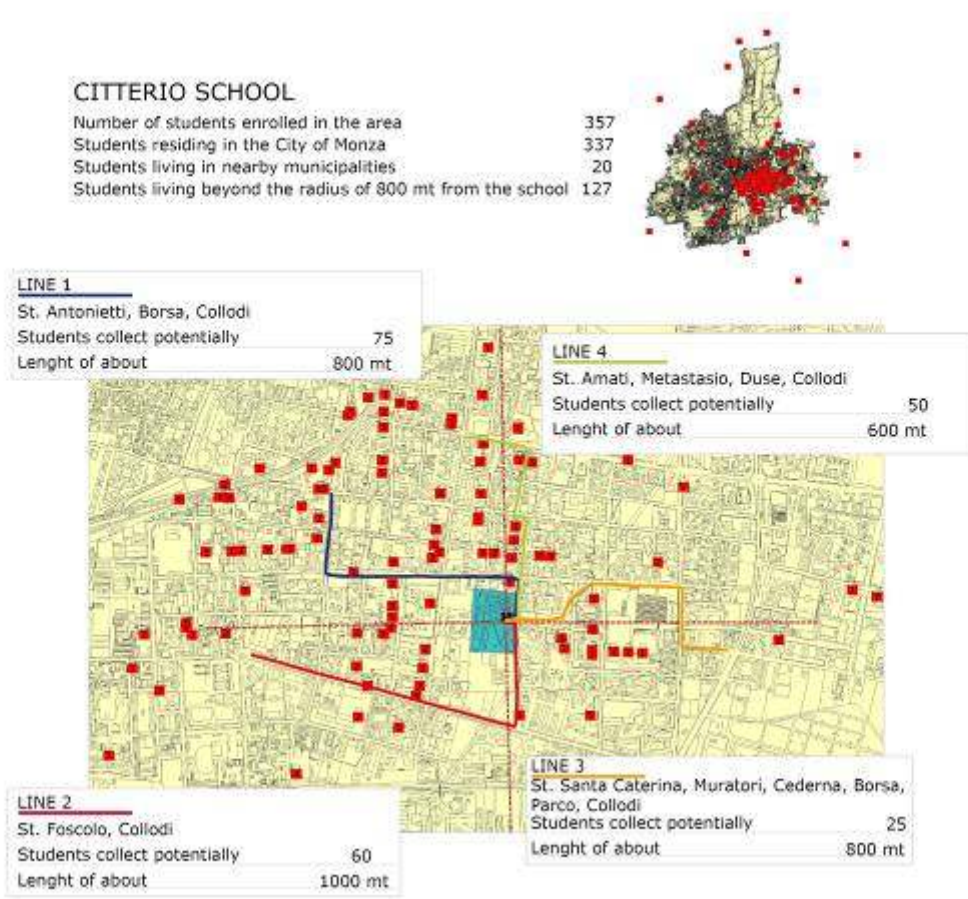
The third proposed route spans from Cimabue St to Buonarroti St, then it crosses into Pier della Francesca St, thus arriving at the school.



Cimabue Street

Along the way no problematic areas are identified. The only node is represented by the intersection between Buonarroti St and Cimabue St, where the pedestrian crossing is controlled by traffic lights, ensuring maximum security to Pedibus group. The path length is about 600 metres and there are about 20 potential subscribers.

Citterio School, Collodi Street



Citterio School enrolls 357 students, most of whom, i.e. 337 or 94% reside within the municipal boundaries, with the remaining students living in neighbouring municipalities. Analysis of origins leads to the definition of 4 pedibus routes that approach the school coming from four main directions: north, east, southwest and northwest.

LINE 1 Route: Antonietti St, Borsa St , Collodi St

The route, designed to intercept residents from the northwest quadrant of the school, starts in Antonietti St at the corner with Rota St, continues to the beginning of Borsa St then takes on Collodi St up to the school. The trip takes place entirely on roads having good safety margins. The pavements are always present, large enough to accommodate a group of children and road crossings are well marked. The length of this pedibus line is 800 metres and there are about 75 potential members at this location.

Antonietti Street



Borsa Street



Collodi Street



LINE 2 Route: Foscolo St, Collodi St

Foscolo Street



The route of line 2, about one kilometre long, potentially collects 60 residents from the west and south of the school. Running along an important road like Foscolo St, this route could also intercept car trips made by families living in areas further from the school. Again the route takes place along a road fit to host a group of students, with pavement and signals of pedestrian crossings.

LINE 3 Route: Santa Caterina Square, Muratori St, Cederna St, Borsa St, Park, Collodi St

Muratori Street



Cederna Street



Borsa Street





Park



Collodi Street

The length of line 3 is about 800 metres and can collect 25 potential members. The route starts from Santa Caterina Square, then takes Cederna St, passes Muratori St, continues on Borsa St up to the park at the corner with Deledda St, and after crossing the park the group arrives in Collodi St, thus reaching the school. Along the proposed route pavements are always present and crossings are properly signalled.

LINE 4 Route: Amati St - crossing Ferrara St, Metastasio St, Borsa St, Duse St, Collodi St



Amati Street



Metastasio St.



Duse Street

Line 4 aims to collect students coming from the north and northwest quadrant. The length of this route is about 600 metres and there are about 50 potential members. The route starts at the corner of Amati St into Ferrari St, runs along Amati St then continues on Metastasio St, crosses Rota St and then takes Duse St and ends on Via Collodi up to the school. These streets have pavements on both sides; road crossings are visible and ensure a safe passage for a group of pedestrians.

Omero School, Omero Street

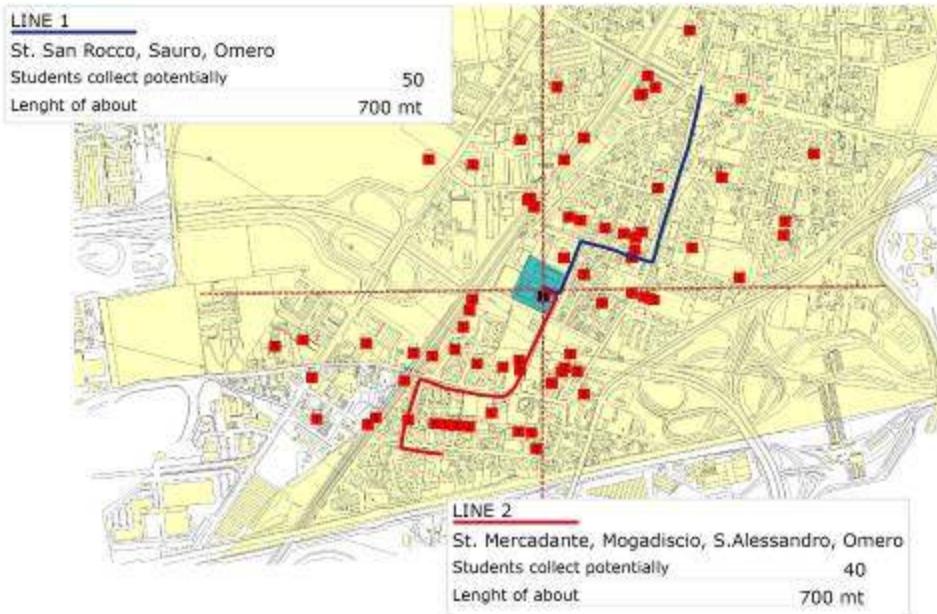
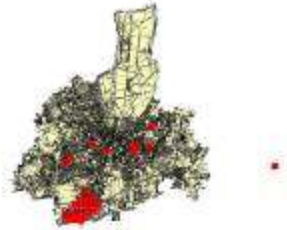
Omero School has a catchment area of 144 students, with most of them, i.e. 95%, or 137 students, residing within the municipal boundaries. 7 students come from neighbouring municipalities.

The majority of students reside within a radius of 800 metres from the school. However it is necessary to underline the presence of major infrastructures that fragment the territory and which are barely surmountable.

The origins of the students are concentrated in the quadrants north and south of the school.

OMERO SCHOOL

Number of students enrolled in the area	144
Students residing in the City of Monza	137
Students living in nearby municipalities	7
Students living beyond the radius of 800 mt from the school	47



LINE 1 Route: San Rocco St, Sauro St, Omero St

To collect also residents in the northwest area, beyond the railway, the route starts from San Rocco St, on the corner with Monte Santo St, and continues until the corner with Sauro St that is taken to reach Omero St.

San Rocco Street



San Rocco Street



San Rocco Street



Sauro Street



Sauro Street

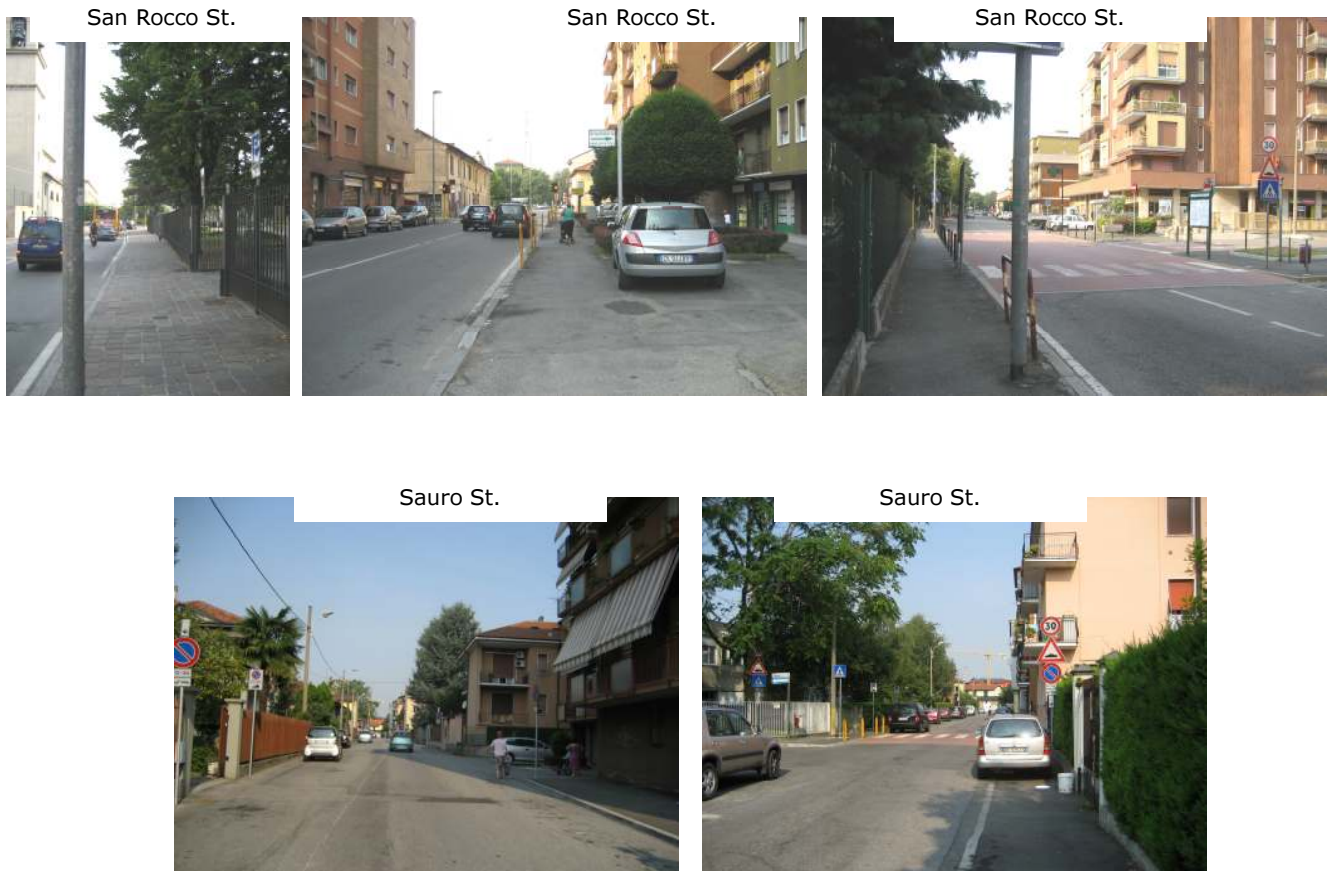


The route has a length of about 700 metres and can potentially collect 50 students. The streets have pavements wide enough to allow a pedibus group to transit. On San Rocco St there are several raised pedestrian crossings [“on castellana”], which reduce the speed of vehicular traffic and ensure greater safety for pedestrians.

A single problematic node is located at the crossing between Sauro St and Omero St , where a short section of the pavement is often occupied by parked cars, that could force the group to a short walk on the roadway. However, the alternative route running along San Rocco St, Cellini St and then Paisiello St, Sauro St and finally Omero St, departs significantly from the residences of potential users.

LINE 2 Route: Mercadante St, Mogadiscio St, S.Alessandro St, Omero St

The route crosses the quadrant south of the school, potentially collecting about 40 students. It starts from the corner between Mercadante St and Mogadiscio St, continues on Mogadiscio St and then takes S.Alessandro St and Omero St up to the school. Along the way pedestrian crossings are always signalled and pavements ensure the safety of the pedibus group.



4.3 Main Outcomes

The study for the definition of walking bus (pedibus) routes revealed a generally positive situation in the areas near the schools involved in the project. There were no particularly critical nodes in the street mesh.

In general, pedestrian paths are characterised by the presence of sufficiently broad pavements, road signals in good state and well-marked pedestrian crossings; in some cases, particularly in the busiest crossroads, even traffic lights are installed to facilitate crossing pedestrians. This situation ensures a good level of security, favourable condition regarding the opportunity to experience the activation of pedibus for interested schools.

4.4 Communication Activities

The routes will now be evaluated and shared with the families involved within special participation and consultation activities that will be organised before the activation of pedibus.

4.5 Problems Identified

The only negative situation occurs near the Omero school, along Sauro Street, where as noted, a short stretch of pavement is used by residents as a parking, although it is a “no parking” area. The situation may be addressed as part of workshops with classes, raising the awareness of local residents with the distribution of so-called “sweet fines”, fines drawn by children themselves in order to highlight the need to observe the rules so that the roads could be accessible and liveable for everyone, either motorist or pedestrian.

4.6 Future Plans

Focus groups and workshops will be organised in order to define, in conjunction with teachers and according to their didactic programs, how to project, together with pupils, pedestrian routes to school.