

Measure title: **Park and Ride Guidance System in Monza**

City: **Monza**

Project: **ARCHIMEDES**

Measure number: **80**

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## **Executive summary**

As a premise, it must be said that the title of the initial measure is somehow deviant to the real purpose of the intervention, which is actually a technological system to inform drivers about the availability of parking places in the city parkings, and not a traditional P&R system. For this reason, in this document the system will be referred to as “Infoparking system”.

After conducting a study aimed at identifying the most important and used parkings in the city and the traffic flows directed to the city centre (where most of parkings are located), an agreement with parking owners has been found about the location of a new signalisation helping the parking searchers and also about reciprocal obligations concerning the implementation of the measure.

The tender, managed by Trasporti Pubblici Monzesi TPM, was published in January 2011 and awarded to Solari of Udine. The contract was signed in October 2011.

After a careful inspection and decision on idoneous locations of panels, related with technical aspects of the installation, streetworks have been completed and all 55 scheduled panels have been installed. The system has been activated on March 26<sup>th</sup> 2012. All Monza parkings but one (which is still not connected due to the high costs of car counting system updating) have interfaced to the central system.

The evaluation strategy was focused on investments faced by Comune of Monza to implement the measure, and checking the awareness of the implementation between car drivers. The main issue has been measuring the occupancy rate of the parkings in the city.

**Key result 1** - The implementation of the system has required an important investment by Comune of Monza, which will nevertheless improve the situation of traffic in the city, reducing parasitic traffic of cars looking for a free parking place.

**Key result 2** – The implementation of infoparking system represents an important technological evolution in parking management. Before the implementation of this measure, Comune of Monza was not aware of the occupancy rate of parkings if not for data provided by parking owners, which, as shown in this document, are far from reliable. With the infoparking system, data are now much more reliable and can be used to better understand distribution of cars in the different parkings of the city.

**Key result 3** – The implementation of the system is well known and accepted by citizens, who would also welcome further improvements, like webservices or smartphone applications to check parking availability.

During the implementation of the measure, some barriers appeared as the difficulty in involving all parking owners (one of them has not interfaced his system yet), or an appeal against the tender assignment (which has delayed the starting of implementation). Some problems in achieving energy connection for all panels have had to be solved due to the long and slow bureaucracy of the supplier.

On the other hand, almost all parking owners have been strongly committed in cooperating for the good result of implementation, so the installation of the system can be considered an important achievement both as far as technological improvements are concerned (data about occupancy rate of parkings is now much more reliable) and for the new service offered to citizens and to visitors coming from outside Monza.

Such a measure can be replicable in each city in order to achieve reliable data concerning the occupancy rate of parkings. These data can prove very useful for decision makers to take decisions concerning traffic and also to direct traffic flows to parkings which are not particularly crowded in order to avoid traffic congestion.

The experience of Monza, however, has shown that involvement of parking owners is an important step to gain approval for a complete implementation of the system, since a balance has to be found when planning the number of panels to be installed in order not to occur in competition between operators.

Another important aspect to be considered when planning the installation of this kind of system is the definition of location of panels, for a better management of traffic flows, on the one hand, and for defining technical aspects especially as far as power supply is concerned,

## **A Introduction**

### **A1 Objectives**

The measure objectives are:

(A) High level / longer term:

- (1) To be ready to accept the increased number of vehicles reaching the city of Monza which, after the election term of June 2009, has become the capital of the Province of Monza and Brianza

(B) Strategic level:

- (1) To reduce useless movements of vehicles in highly congested areas

(C) Measure level:

- (1) To correctly address people reaching Monza by car to available parking areas, minimising the time spent by drivers looking for available parking places
- (2) To use variable message signs also for general information on traffic

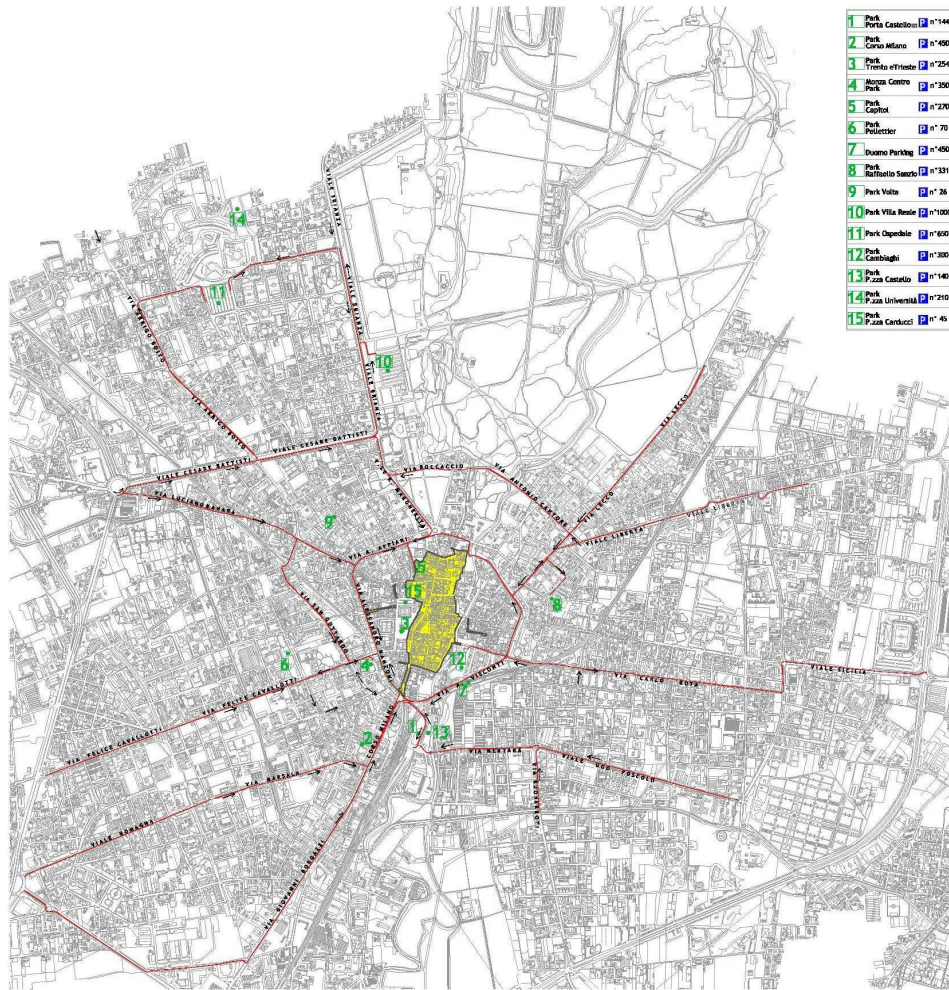
#### **A1.2 Target groups**

- Car drivers
- Citizens
- Tourists and visitors

The system is connected to the most important parkings located in the city of Monza, depicted in the next page map, so a large amount of places is managed by the system.

### **A2 Description**

The aim of this measure is to design and implement a real time infoparking system that will inform drivers about the occupancy rates of the most important parkings in the city of Monza.



**Figure 1 - Location of Monza parkings**

**Task 11.8.3 Park & Ride Parking Guidance System**

A study has been undertaken by the specialised consulting Project Automation PA and Trasporti Pubblici Monzesi TPM to design an infoparking system, exploiting results from the study undertaken in Donostia - San Sebastián.

**Task 8.15 P&R Parking Guidance System**

A networked VMS system has been implemented on key routes within the city of Monza. The system provides real time information on parking availability within the city.

**A3 Person in charge for evaluation of this measure**

Name of person                      Simonetta Vittoria

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Name of organisation: **Comune of Monza**  
Direct telephone: **0039 039 2832839**  
e-mail: **mobilita@comune.monza.it**

## **B Measure implementation**

### **B1 Innovative aspects**

The innovative aspects of the measure are:

- **New conceptual approach** – The application of an infoparking system is a new challenge for the city of Monza. Since now, drivers coming to Monza have been used to spend a lot of time looking for available parking areas. With this system, it will be possible for drivers to direct to parking areas where availability is greater.
- **Use of new technology/ITS** – Infoparking systems are classical ITS for traffic management. Thus also on the technological point of view, the adoption of such a system is a new issue for Monza.
- **Targeting specific user groups** – The implementation of this measure is addressed to drivers coming to Monza and looking for available parking areas, but is also useful for particular traffic situations or for emergency management (disruptions, street accidents, particular events like Formula 1 grand Prix which Monza hosts every September)
- **New organisational arrangements or relationships** – Since 2007 contacts were established with the Companies owning the most significant Parkings in the City to promote such a system, gaining a substantial approval. Opinions have been asked about the most suitable position of panels containing information and directions to reach parkings.
- **New physical infrastructure solutions** – Panels have been installed which carry information about the occupation rate of car parks according to the suggestions obtained by parking owners. Parking systems have been interfaced with the system that manage sinformation in order to collect occupancy rates data in real time.

### **B2 Planning of Research and Technology Development Tasks**

#### **Task 11.8.3 Park & Ride Parking Guidance System**

Within this research task, the work has focused on the identification of the parking areas to be considered by the system.

There is a distinction among the parking areas in that some are owned by private companies and others are public areas currently assigned by the Municipality to TPM Company, which is a private company 100% owned by the Municipality of Monza.

Meetings have therefore been arranged with the companies owning the most significant parking areas in the City, aimed at gaining the approval to implement the measure. An agreement between parking owners and Comune of Monza about the location of the signs and about reciprocal obligations concerning the implementation of the measure has been reached.

A second stage of the research task has implied examination of data collected in the draft of the General Urban Traffic Plan (GUTP), which is going to be adopted by the City government.



More specifically, in the actual hierarchic structure of the city a primary role is assigned to the external ring which surrounds the city and comprises the following streets: Viale Lombardia-Viale Campania-Via Aquileia-Via Monte Santo-Via Fermi-Viale delle Industrie-Viale Stucchi-Viale Libertà-Via Boccaccio-Viale Battisti.

The road network of urban distribution includes the following radial routes: Via Borgazzi - Corso Milano, Via Cavallotti, Via Manara - Via Tognetti - Via Prina, Viale Regina Margherita, Via Lecco, Via Rota, Viale Foscolo- Via Buonarroti -Via Mentana - Via Turati – Via Correggio.

The historical centre of Monza is included in the ring made up by Via Manzoni -Via Appiani - Via D’Azeglio -Via Aliprandi -Via Visconti. The road system is organized to allow accessibility to the various parking areas.

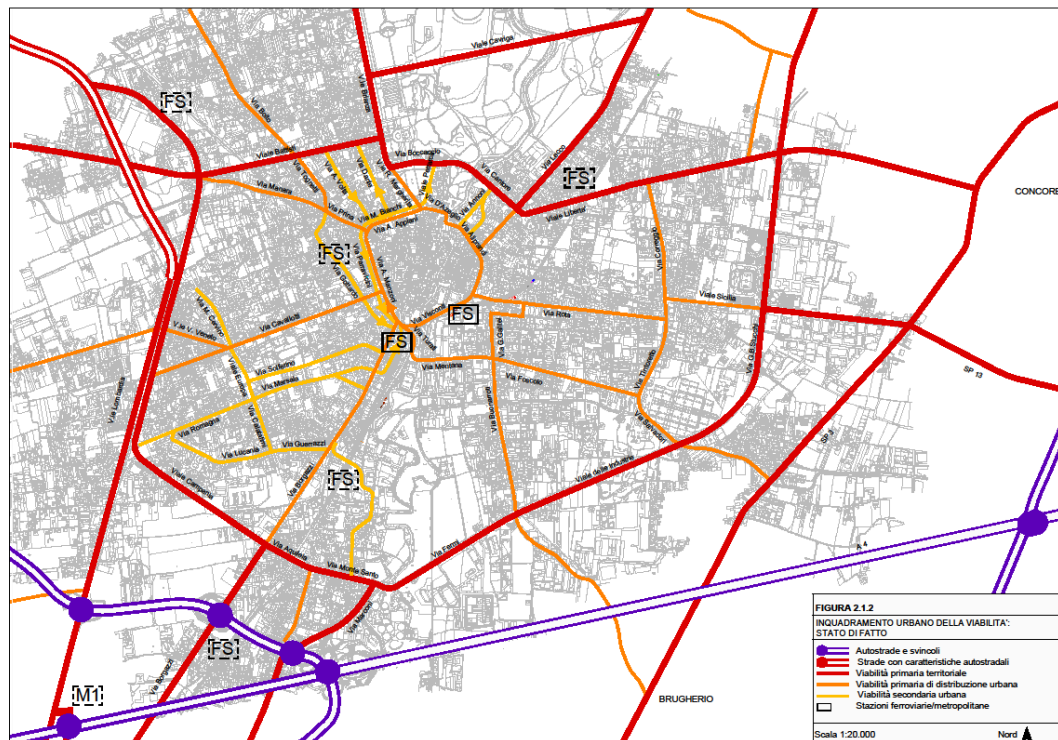


Figure 1 -Monza primary road network (from GUTP)

### B3 Situation before CIVITAS

There was no Infoparking in Monza when ARCHIMEDES project was submitted. Contacts had already been established in 2007 with the companies owning the most significant parking areas in the City to promote such a system, gaining a substantial approval.

In addition, TPM has been delegated by the Municipality to manage all services related to public parking areas in the City as well as to become the reference partner of the Municipality to set up technological systems for Mobility Management, within the framework if ITS (Intelligent Transportation Systems), supporting it in the execution of public tenders.

In the meantime, after the elections in June 2009, Monza has officially become the capital of the new Province of Monza and Brianza and its administrative offices are starting their activity. This new role will increase the mobility attraction, both for existing institutions (Hospital, University) and local government offices (Province, Police). As a consequence, in order to be ready to accept an increased number of vehicles used to reach the new services, it is very important that the most important parking areas are clearly identified with the real time availability of parking places.

In addition, as well known all over the world, every September Monza hosts Formula 1 Grand Prix, and more that one hundred thousand people approach the city; InfoPark will be very useful also for this purpose.

What's more, the panels carrying information concerning the occupation rate of car parks will be enriched with messages to be used also for general information about traffic which will be very useful not only during Formula 1 Grand Prix, but also for daily commuters.

Most of the parking areas in Monza are located close to the Historical Centre, as shown in [Figure 1](#). As known, drivers are attracted to reach the city centre, but parking areas are not always equally used, so the result is traffic congestion due to cars driving round looking for available parking places.

Eliminato: Figure 1

## **B4 Actual implementation of the measure**

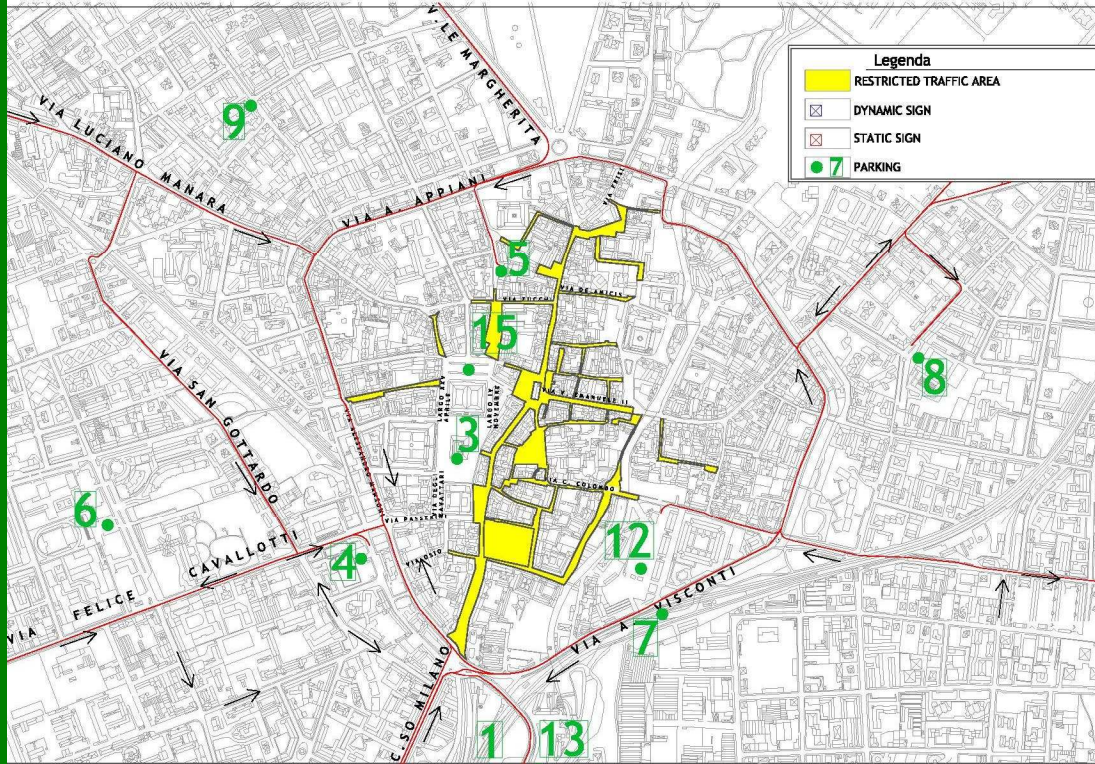
**Stage 1: Identification of location of signs (M24 – M26)** – Once the parking areas to be included in the system had been identified, as depicted in [Figure 1](#), and road network and traffic flows had been analysed, experts from the Municipality proposed the location of the signs, both static and dynamic as depicted in Figures 2 and 3.

Eliminato: Figure 1



**Figure 2 - Monza general plan: identification of position for signs**





**Figure 3- Monza historical centre : identification of position for signs**

The following scheme is the basic source of information to establish the quantity of Message Signs to be installed across the city. Each sign is graphically represented with the information needed in that location.

Starting from data collected in the draft of the General Urban Traffic Plan, nine principal routes (numbered from 1 to 9) approaching the historical centre have been identified. It has been decided to direct traffic flows towards the nearest parking area along the route, in order to distribute flows in a homogeneous way in the city and to avoid traffic congestion in the historical centre.

The first signs along each route are static indications since they indicate parking areas near the historical centre, without giving the number of available places which could change before reaching the area. Dynamic indications have been located in proximity of important crossroads, in order to direct drivers to the chosen parking area, giving in that moment the information about available places.

It has been decided to equally distribute the number of dynamic signs between the different parking areas in order to consequently obtain an equal distribution of traffic flows in the city. In each sign there may be a different number of modules, indicating different parkings: the entire system is made up by 83 modules.



1 Buonanotti/Foscolo Parcheggi	2 Rota/Arivosto Parcheggi	3 Lecco/Cantore Park Raffaello Sanzio Park Cambiaggi Park Ospedale Park Villa Reale Altri parcheggi	4 Brianza/Ramazzotti dir. Centro Park Ospedale Park P.zza Università Park Villa Reale Altri parcheggi	5 Piazzale Virgilio / Battisti Parcheggi Battisti/Gliuzzi Park Ospedale Park P.zza Università Park Villa Reale Altri parcheggi	6 Piazzale Virgilio / Manara Parcheggi MONZA Manara/ Cattaneo Altri parcheggi Park Corso Milano Monza Centro Park
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1b Mantana/Castello Park Trento e Trieste Park P.zza Castello Park P.zza Carducci Park Porta Castello	2b Vicorini di Stazione Park Corso Milano Altri parcheggi	3b Raiberti/Lecco dir. Centro Park Raffaello Sanzio	4b Regina Margherita/Citterio Park Capitol	5b Park Volta	6b Pina/Passarini Park Capitol Park Trento e Trieste Monza Centro Park
1b* Mantana/Castello Park P.zza Castello Park Porta Castello	2c Vicorini di Via Lecco Park Raffaello Sanzio	3c Raiberti/Lecco dir. Cantore Park Raffaello Sanzio	4c Appiani/Pennati BIFACCIALE Park Capitol	5c Park Ospedale Park P.zza Università Altri parcheggi	6c Manzoni / Locatelli Park Trento e Trieste Park P.zza Carducci Monza Centro Park
1c Turati/Vicorini Monza Centro Park Park Corso Milano Park Trento e Trieste Park P.zza Carducci	3d Lecco/Algradi Park Cambiaggi Duomo Parking Altri Parcheggi	3e Bocaccio/Régina Margherita Park Ospedale Park Villa Reale Park P.zza Università Park Capitol	4d Ramazzotti/Bralle dir. Ospedale Park P.zza Università Park Ospedale	5d Bolto / Pergolesi BIFACCIALE Park Ospedale Park P.zza Università	6d San Gottardo / Cavallotti Monza Centro Park Park Corso Milano
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				5f Cadore/Bolo BIFACCIALE Park P.zza Università	6f Paravicini/Cavallotti Monza Centro Park Pavoni/Cavallotti Monza Centro Park

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Progetto Archimedes: SISTEMA INFOPARKING DI INDIRIZZAMENTO E GUIDA AI PARCHEGGI DELLA CITTÀ DI MONZA

abaco delle paline Il Responsabile del procedimento: Giovanni Fraschetti

disegno n. 2  
del 30/1/2016

7 Cavallotti / Montecervino Parcheggi Park Pellettier	8 Marsala / Maui Parcheggi	9 Borgazzi / Molinetto di Centro Parcheggi	<table border="1"> <thead> <tr> <th>Parcheggi convenzionati</th> <th>n. colonne</th> <th>n. pannelli</th> <th>n. posti</th> </tr> </thead> <tbody> <tr><td>1 Park Porta Castello</td><td>5</td><td>1</td><td>144</td></tr> <tr><td>2 Park Corso Milano</td><td>6</td><td>6</td><td>450</td></tr> <tr><td>3 Park Trento e Trieste</td><td>6</td><td>1</td><td>254</td></tr> <tr><td>4 Monza Centro Park</td><td>6</td><td>6</td><td>350</td></tr> <tr><td>5 Park Capitol</td><td>5</td><td>2</td><td>270</td></tr> <tr><td>6 Park Pellettier</td><td>2</td><td>2</td><td>70</td></tr> <tr><td>7 Duomo Parking</td><td>6</td><td>1</td><td>450</td></tr> <tr><td>8 Park Raffaello Sanzio</td><td>5</td><td>4</td><td>331</td></tr> <tr><td>9 Park Volta</td><td>1</td><td>1</td><td>26</td></tr> <tr><td>10 Park Villa Reale</td><td>7</td><td>3</td><td>1000</td></tr> <tr><td>11 Park Ospedale</td><td>8</td><td>3</td><td>650</td></tr> <tr><td>12 Park Cambiaggi</td><td>6</td><td>1</td><td>300</td></tr> <tr><td>13 Park P.zza Castello</td><td>5</td><td>1</td><td>140</td></tr> <tr><td>14 Park P.zza Università</td><td>5</td><td>6</td><td>210</td></tr> <tr><td>15 Park P.zza Carducci</td><td>6</td><td>1</td><td>45</td></tr> </tbody> </table>	Parcheggi convenzionati	n. colonne	n. pannelli	n. posti	1 Park Porta Castello	5	1	144	2 Park Corso Milano	6	6	450	3 Park Trento e Trieste	6	1	254	4 Monza Centro Park	6	6	350	5 Park Capitol	5	2	270	6 Park Pellettier	2	2	70	7 Duomo Parking	6	1	450	8 Park Raffaello Sanzio	5	4	331	9 Park Volta	1	1	26	10 Park Villa Reale	7	3	1000	11 Park Ospedale	8	3	650	12 Park Cambiaggi	6	1	300	13 Park P.zza Castello	5	1	140	14 Park P.zza Università	5	6	210	15 Park P.zza Carducci	6	1	45	<p><b>LEGENDA</b></p> <p> pannello a messaggio variabile</p> <p> pannello indicativo</p> <p>n.26 pannelli a messaggio variabile</p> <p>n.29 pannelli indicativi</p>
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disegno n. 2a  
del 30/1/2016

Figure 4 - List for signs' positioning

**Stage 2: Development of tender documents (M24 – M27)** - TPM has developed the tender document in order to define technical and legal requirements of the system to be installed. More specifically, object of the tender were design, supply, installation (including activation and testing), warranty and maintenance of the Infoparking system in the city of Monza.

The firm which was awarded the tender had to draft the final design of the system in all its details and to engineer it, presenting the Gantt project activities. The supply included all materials and equipment, included its transportation, packaging and insurance, and the delivery of all documentation necessary to operators for a correct functioning of the system (included instruction manuals and certifications which are considered compulsory by Italian law) . Installation included the relocation of the existing road signs according to what defined in technical annexes, wiring and connecting all hardware and software equipment, executing of all street works to install panels, activation and testing of the system, its maintenance and warranty for 24 months after the release of the certificate of final inspection.

Tender documents have been shared by TPM with technicians of Mobility and Transportation Department and of Traffic Department of the Municipality of Monza.

**Stage 3: Issuing of the tender (M28 – M37)** -The tender has been published in January 2011 and four offers were presented, even though only three were examined, since one was soon excluded for administrative failings. In June tender was awarded to Solari of Udine, but the second ranked company presented an appeal against assignment, which delayed the subscription of the contract and the start of activities. In September the appeal was ruled by administrative court and in October the contract was finally signed.

**Stage 4: Inspections of locations of panels (M38)** – As soon as Solari has signed the contract, inspections have started on locations of panels in order to define technical aspects of the streetworks that had to be done for installing the panels. Some minor changes have been made to the original locations, mostly due to the necessity of locating panels in a more visible position, or of better achieving power supply, or of avoiding damages to flower beds, green areas and trees.

**Stage 5 – Implementation of the system (M39 – M41)** – Streetworks have been completed and all 55 scheduled panels have been installed. The system has been activated on March 26<sup>th</sup> 2012. All Monza parkings but two (one is still facing technical problems, the other one is still not connected due to the high costs to afford to update the car counting system) have interfaced to the central system.

## **B5 Inter-relationships with other measures**

The measure is related to measure 75 in Donostia – San Sebastian: Monza will capitalize the experience gained by the leading city, working together in order to optimize the effectiveness of the scheme.

Aalborg has developed also an Infosystem for the city center parkings within the implementation of measure AAL 20 Changing Parking Behaviour in the city of Aalborg.

## **C Impact Evaluation Findings**

### **C1 Measurement methodology**

#### **C1.1 Impacts and indicators**

##### **C1.1.0 Scope of the impact**

The indicators chosen in the table below were selected as directly related to the introduction of the measure.

The indicators relate to:

**Economy** – The impact of the introduction of the measure as far as capital and operating costs incurred to Comune di Monza to set up the Infoparking system have been considered; benefits have not been considered, since no direct operational revenues are expected;

**Society** – Awareness and acceptance have been assessed through a survey conducted after the installation of the system, aimed at understanding the reaction of drivers to the implementation of the measure.

**Transport** – impacts concerning Transport System have been considered, but only as far as the occupancy rate of the city parkings is concerned, both before and after the interventions.. Thanks to performances offered by the system, it is now possible for Comune di Monza to have reliable data about the occupancy rate of each city parking, whilst before the installation of the system data were derived only by information provided by parking owners through the number of sold tickets. In the first draft of the MLEP also the number of cars crowded in the neighbourhood of parking had been taken into account, because for some parkings there were queues of cars waiting to access the parking. In order to solve this problem, which affected traffic in the city centre, during these years some infrastructural interventions have been made aimed at canalizing cars directed to parkings, separating them from the ordinary traffic flow, and these interventions have solved the problem. Analysis on traffic volumes have not been carried out, since the number of vehicles affected at searching free places is negligible with respect to the average amount of cars moving across the road network of the city, even though in the survey some questions have been asked concerning how long people take to find a free parking place .

No indicators concerning energy and environment have been assessed since reductions in fuel consumption and in emissions are not the primary benefit expected by the introduction of the infoparking system.

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### C1.1.1 Selection of indicators

NO.	EVALUATION CATEGORY	EVALUATION SUB-CATEGORY	IMPACT	INDICATOR	DESCRIPTION	DATA /UNITS
	<b>ECONOMY</b>					
2B		<b>Costs</b>	Operating Costs	Operating costs	Costs per communication lines and per maintenance of the system	Euros
2A			Capital Costs	Capital costs	Costs per implementation of the system	Euros
	<b>SOCIETY</b>					
13		<b>Acceptance</b>	Awareness	Awareness level	Awareness of the policies/measures	Index (%), qualitative, collected, survey
14			Acceptance	Acceptance level	Attitude survey of current acceptance of the measure	Index (%), qualitative, collected, survey
	<b>TRANSPORT</b>					
		<b>Transport System</b>				
<b>NEW</b>			Parkings occupancy rates	Occupied positions	Number of occupied positions in parkings	No, Quantitative, measurement



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### C1.1.2 Methods for evaluation of indicators

No.	INDICATOR	TARGET VALUE	Source of data and methods	Frequency of Data Collection
2B	Operating Costs	The minimum allowed	Expenditures to keep the system operational (communication lines), predictive and corrective maintenance activities	Once, at intervention completed
2A	Capital Costs	The minimum allowed	Amount of money spent by the Municipality to implement the system	Once, at intervention completed
13-14	Awareness/Acceptance	High degree of awareness/acceptance	A survey has been conducted by a subcontractor to measure acceptance and awareness level of users of the InfoParking system. The survey has been organized outside parkings with interviewers who have asked people about their perception of the new service. The sample considered has been of 221 people. The face to face method reduces percentage of mistakes in the survey.	Data have been collected once during the demonstration stage
<b>NEW</b>	Occupancy rate in parkings	The maximum allowed	Parkings Mgmt systems usually collect data that have been used to calculate occupancy rates before the implementation of the system. After the activation of the Infoparking system, data concerning occupancy rates have been provided by the system itself.	Twice during the project: before the start of the system and when the system is operational .

### C1.1.3 Planning of before and after data collection

EVALUATION TASK	INDICATORS INVOLVED	COMPLETED BY (DATE)	RESPONSIBLE ORGANISATION AND PERSON
Measuring Operating Costs	2B	Month 44 (only after data)	Comune of Monza – Simonetta Vittoria
Measuring Capital Costs	2A	Month 44 (only after data)	Comune of Monza – Simonetta Vittoria
Measuring acceptance and awareness level of target group of car	13,14	Month 44 (only after	Comune of Monza –

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Measure number: **80**

EVALUATION TASK	INDICATORS INVOLVED	COMPLETED BY (DATE)	RESPONSIBLE ORGANISATION AND PERSON
drivers		data)	Simonetta Vittoria
Occupancy rate in parkings	31	Month 42(before data) Month 44 (after data)	Comune of Monza – Simonetta Vittoria
D12.2 Baseline and first results from data collection	All indicators	Month 34	Comune of Monza – Simonetta Vittoria
D12.3 Draft results template available	All indicators	Month 49	Comune of Monza – Simonetta Vittoria
D12.4 Final version of results template available	All indicators	Month 51	Comune of Monza – Simonetta Vittoria

## **C1.2 Establishing a Baseline**

As shown in Figure no. 1, there are 14 parkings in Monza, which can all be inscribed within one kilometer from the historical center, apart from the parkings of Park and Villa Reale and of the Hospital and University, that are located outside the historical centre to serve these two important mobility attractors.

It is quite common, due to this physical location, that drivers approaching the historical centre of the city looking for a free parking place, in case they do not find one immediately, start looking for it in nearby parkings.

Before ARCHIMEDES, no real time information about the occupancy rates of the parkings had been activated in the city of Monza: the only real time available information can be achieved just before entering some of the parkings which are equipped with a panel with FREE/OCCUPIED writing.

What is so far missing is a complete information system concerning the available number of parking places not only in the immediate vicinity of parkings, but along principal routes approaching the historical centre so to direct traffic flows towards the nearest parking area along the route, in order to distribute flows in a homogeneous way in the city and to avoid traffic congestion in the historical centre.

### **C1.3 Building the Business-as-Usual scenario**

Without the implementation of a Park and Ride Guidance System, the traffic flows of people looking for available parking areas would have substantially remained unmanaged; due to the new role of the city of Monza as capital of the new Province, flows will likely increase. Time spent looking for an available place will not be reduced and therefore, in the Business as Usual scenario, the behaviour of the system will remain unchanged.

Moreover, Comune of Monza would not have had reliable data on occupancy rate of parkings, since data provided by parking owners are not reliable: with the implementation of the measure, it is possible to verify occupancy rate for each single parking in order to evaluate if any adjustment to traffic organization in the city can be done to improve traffic situation.

## **C2 Measure results**

### **C2.1 Economy**

#### **Table C2.1.1: Costs**

As regards costs for the implementation of the measure, it has been considered how much Comune of Monza has invested for the installation of the system and for operating costs which include expenditures to keep the system operational (communication lines), predictive and corrective maintenance activities.

The base bid amounted to 747.462,00 € VAT included, but the tender has been awarded for the total amount of € 429.493,50 VAT included. Another investment has concerned the activation of nine new power supplies to take electricity to the panels, since the most part of them has been connected to power supplies already working for the Municipality (for instance, to connect traffic lights to power supply). The firm who has been awarded the tender should have paid to the Municipality a tax for occupation of public land and a contribution to the excavations to be carried out on public roads, but

the City Government decided to exempt from these payments, in order to facilitate the installation of the system, also considered the interest of the city for this implementation.

Indicator	Before (date)	B-a-U (date)	After (December 2011)	Difference: After –Before	Difference: After – B-a-U
No. 2A: Capital Costs	Not applicable	Not applicable	<ul style="list-style-type: none"> <li>• € 429.493,50 VAT inc. to implement the system</li> <li>• € 3.313,00 for 9 new power supplies.</li> </ul>	Not applicable	Not applicable
No. 2B: Operating Costs	Not applicable	Not applicable	<ul style="list-style-type: none"> <li>• € 1.800,48 VAT included a year for data transmission</li> <li>• € 4.796,00 VAT included a year for electricity consumption</li> </ul>		

As far as operating costs are concerned, 31 SIM cards have been activated in order to equip dynamic panels with a GPRS connection. For each SIM card a new contract for data transmission has been activated with the supplier: each contract costs 58,08 VAT included per year, for a total cost of 1800.48 € per year for data transmission.

As far as electricity costs are concerned, the cost is of 0,22 € for each consumed Kw/h. So, if we consider that each one of the 83 modules to be installed consumes an average of 30W for 8960 hours in a year, total electricity consumption of the system per year is of about 21.800 Kw/h for a total expense of about 4.796,00 €.

## C2.4 Transport

In the summary table the difference between occupancy rate in parkings before and after the implementation of the measure is shown. Before data cannot be compared to after data since data collected before the installation of the system have been provided by parking owners: these data are not based on a counting system, but on average occupation of the parkings derived by the number of sold tickets, without evaluating occupancy time and the real occupancy hour by hour. After the implementation of the measure, on the contrary, each parking owner has interfaced his cash system to the infoparking server, so data are now much more reliable since they are derived from the features offered by the system itself. For this reason the difference between after and before data has not been assessed since the two data are not comparable since they are derived from different criteria (average occupation derived from tickets sold against a technologically system interfaced with every parking's cash system) .

Indicator	Before (March 2012)	B-a-U (date)	After (May 2012)	Difference: After –Before	Difference: After – B-a-U
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Measure title:

**Park and Ride Guidance System in Monza**

City: **Monza**

Project: **ARCHIMEDES**

Measure number: **80**

<p><b>NEW!</b> Parkings occupancy rate</p>	<p>Trento e Trieste - <b>75%</b>  Monza Centro Parking - <b>42%</b>  Università - <b>40%</b>  Castello - <b>47%</b>  Hospital - <b>95%</b>  Park - <b>not applicable</b>    Corso Milano – <b>65%</b>  Capitol – <b>77%</b>  Raffaello Sanzio – <b>15%</b>    Duomo – <b>35%</b>  Cambiaghi - <b>21%</b>  Porta Castello – <b>data not provided</b></p>	<p>The same as before (without the implementation of the system occupancy rates would have remained the same and data would have been provided by parking owners)</p>	<p>Trento e Trieste <b>51,4%</b>  Monza Centro Parking – <b>36%</b>  Università – <b>9,08%</b>  Castello – <b>51%</b>  Hospital – <b>50,28%</b>  Park – <b>1,28%</b> on working days <b>11,24%</b> on Sunday  Corso Milano – <b>73,5%</b>  Capitol – <b>63,5%</b>  Raffaello Sanzio - <b>21,28%</b>  Duomo – <b>38,3%</b>  Cambiaghi - <b>not interfaced yet (1)</b>  Porta Castello - <b>not interfaced yet (2)</b></p>	<p>NOT APPLICABLE</p>	<p>NOT APPLICABLE</p>
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(1) Cambiaghi parking has not been interfaced yet because of the significant investment (also for some necessary infrastructural intervention, since the area is open and needs to be closed with a system of bars to allow cars entering and exiting the parking to be counted) to be afforded by the parking owner to interface the counting system to the infoparking system.

(2) Porta Castello parking, managed by Italian railways, has not been interfaced yet because of a technical problem due to the fact that the counting system adopted is brand new, so a suitable software has to be developed, and the owner intends to develop it at his own expense (in order to be the owner of the software).

There are two other small parkings in Monza, Volta and Pellettier, for which only static panels have been installed, since parking places are shared between Municipality offices for cars of the municipality fleet and private citizens (Volta) and between citizens renting a parking place and occasional users (Pellettier): due to the shared use of these parkings, it would have been impossible to check with a counting system which vehicle was authorized to park (because belonging to the Municipality fleet or because its owner has rented a parking place) and which one was of occasional users.

Thanks to the functionalities offered by the system, now it is possible for Comune di Monza to have reliable data about the average occupancy rate of parkings in the city, which will also allow decision makers to take decisions about traffic in the city.

Data concerning the average occupancy rate of Monza parkings are reported in detail in Section 1 of Annex 1 to the present report.

### C2.5 Society

In May 2012, after the installation of the system is completed, a qualitative survey has been realized on 221 people aimed at evaluating awareness and acceptance of citizens of the implementation of the measure.

The survey has been conducted in order to verify the knowledge and the use of Infoparking system and how it has changed -or is going to- people's habits. The opinions of the respondents were acquired at eight parking areas, at different days and hours, through interviews based on a questionnaire designed ad hoc according to Municipality of Monza's requirements.

Key results of the survey are shown in the table below and described in detail in the following graphs.

Indicator	Before	B-a-U (date)	After (May 2012)	Difference: After –Before	Difference: After – B-a-U
No. 13 - Awareness	Only after data	Not applicable	<b>66,1%</b> know the system <b>67,4%</b> do not know if they will save time <b>40,7%</b> noticed VMS <b>16,6%</b> changed habits by checking infoparking	Only after data	Only after data
No. 14 Acceptance	Only after data	Not applicable	<b>79,2%</b> did not use infoparking the day of survey <b>33,1%</b> think it will help	Only after data	Only after data

The survey involved 221 people, mainly men, representative of all ages and occupations and using the parking areas for errands or job/study; many of them were not from Monza but from Brianza (41%) or other areas (Milan, Como, Lecco areas – 33%), as some of the parking areas are close to public offices (Hospital, Law Court, Chamber of Commerce, University, ecc.) or market areas.

From survey results, half of the 221 respondents use only seldom Monza parking areas, while the other half uses them frequently and often uses more than one parking area. The interviews have been made at eight parking areas (Cambiaghi, Capitol, Corso Milano, Centro, Hospital, University, Raffaello Sanzio, Villa Reale) but also Trento e Trieste parking (not yet interfaced when the survey was realized because of technical problems) is frequently used by the respondents. Depending on the different areas of the town, sometimes parking areas are the only chance and people never (16%) look for alternatives in the streets or if they do, they waste more than 15 minutes to park (38%)

Even if it is a new service for the city, 66% of the respondents (which means 2 out of 3) are aware of Infoparking, but only 9% have used it the day of the interview and only 20% have ever used it to choose the parking area. Some of them in fact have to go just close to the parking they chose

(Hospital, University, Villa), they know only that parking area (Capitol, Hospital) and have never found it too busy or –as a commuter- subscribed for a particular parking area (Corso Milano, Raffaello Sanzio). That’s why only 16,5% of the respondents think Infoparking changed or is going to change their habits in choosing the parking, 33% think it will help them saving time and only a few are able to estimate time savings thanks to the implementation of the measure.

As for qualitative evaluation of Infoparking, positive answers are much more than critical ones, even if reliability has to be improved (some of the displays are often out of order, people say, which is probably due to the fact that, when the survey was realized, some parkings had not completed activities for interfacing yet, so the message displayed is “Waiting for data”). As for system improvements, web access (20%) and smartphone apps (18%) are considered as the most interesting features to be activated.

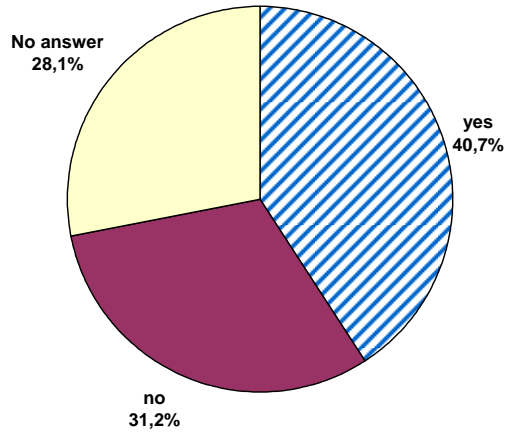
Besides Infoparking, more than 40% of the respondents noticed traffic displays in the town and almost all of them find these displays useful and clear.

The survey has shown that, in conclusion, Infoparking is well known and is surely useful to help people choosing park area but it has to be considered that commuters, people going to a particular place (public office, hospital, ecc.) and people knowing Monza very well have not yet appreciated it and probably Infoparking will never change their habits; on the other hand, many people (above all from Brianza or other areas) think it will be very useful in case the parking area they know and use is full or it is impossible to use the road to reach it.

Below results of the survey concerning awareness and acceptance of the measure are reported, whilst details of the whole results are reported in Annex 1 to the present report.

**INDICATOR NO. 14 (Awareness)**

Did you notice traffic displays giving information on traffic? (221 answ.)

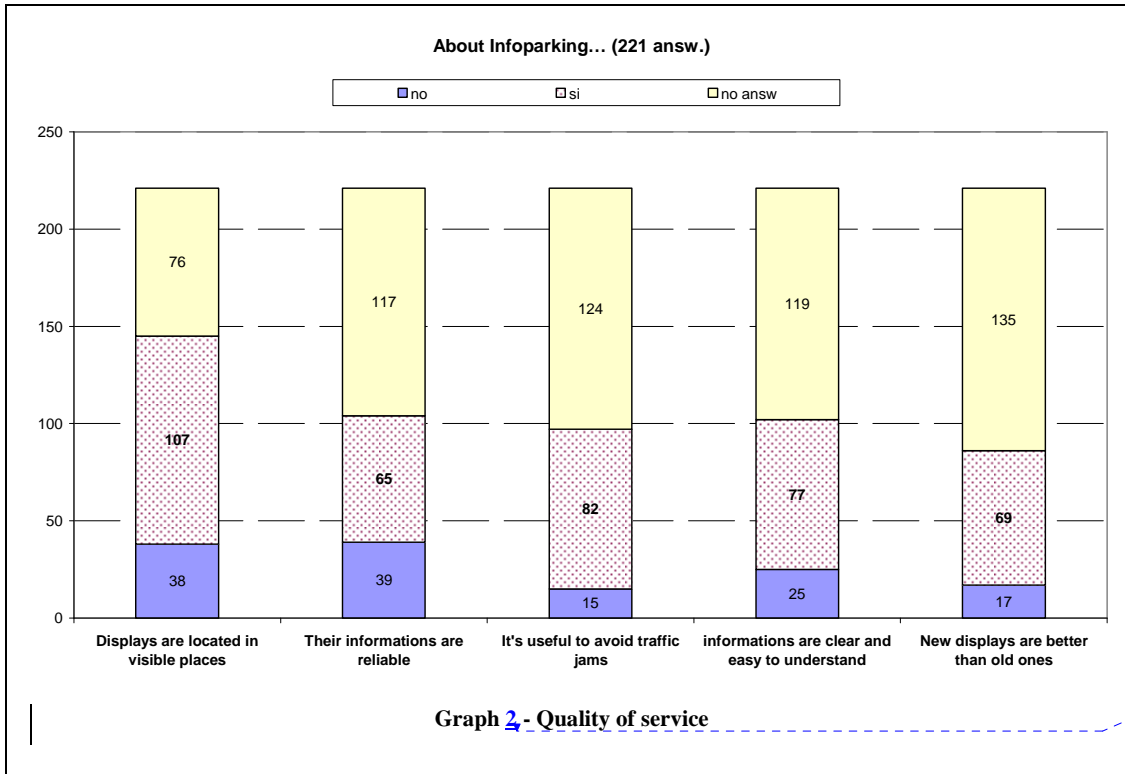


Graph 1 - Visibility of VMS

Eliminato: 26

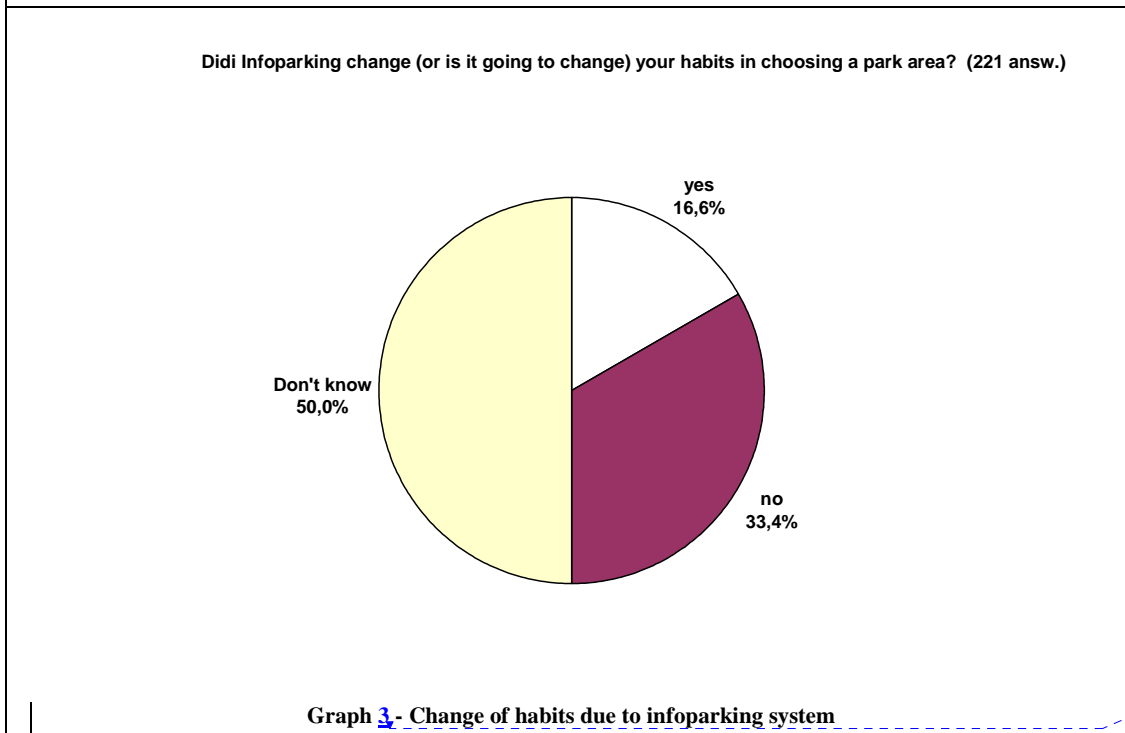
INDICATOR NO. 19 (Quality of service)





Eliminato: 27

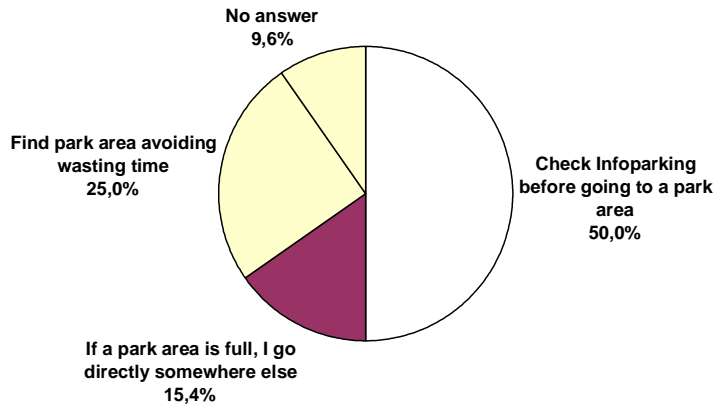
**INDICATOR NO. 19 (Quality of service)**



Eliminato: 28

**INDICATOR NO. 14 (Awareness)**

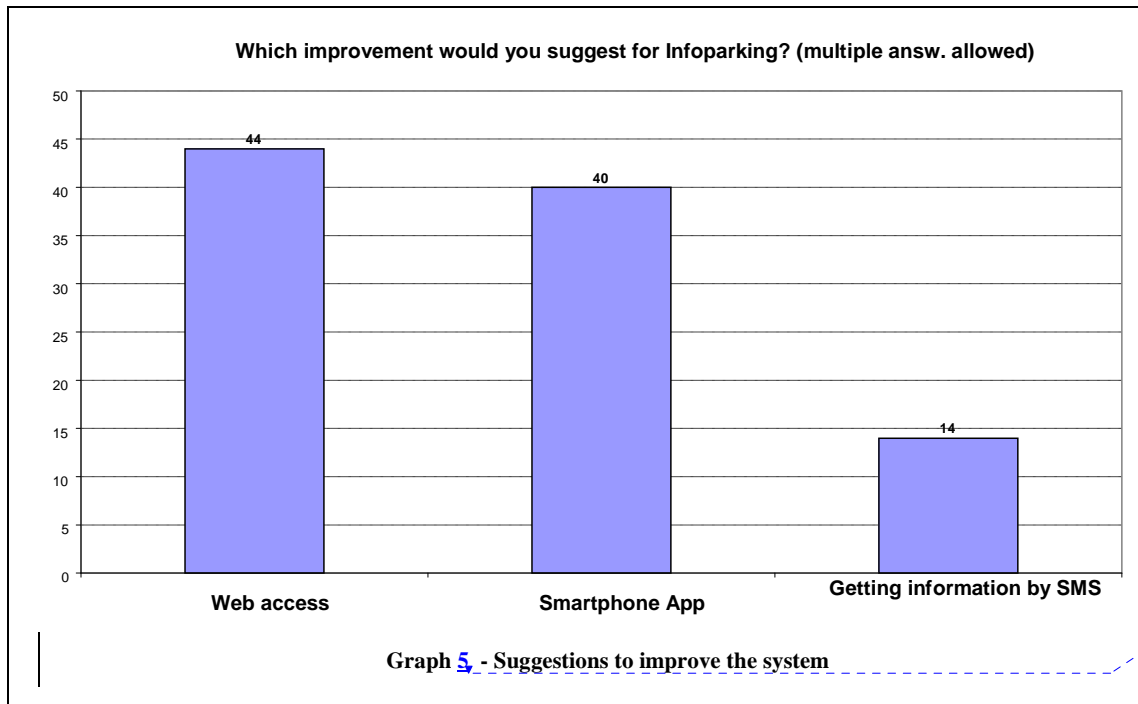
How did your habits change? (52 answ.)



Graph 4 - How did habits change

Eliminato: 29

**INDICATOR NO. 19 (Quality of service)**



Eliminato: 30

### C3 Achievement of quantifiable targets and objectives

No.	Target	Rating
2A	Measuring Capital Costs	**
2B	Measuring Operating Costs	**
13-14	Measuring acceptance and awareness level of target group of car drivers	**
19	Measuring occupancy rate in parkings	*
<b>NA = Not Assessed    O = Not Achieved    * = Substantially achieved (at least 50%)</b> <b>** = Achieved in full    *** = Exceeded</b>		

All target and objectives have been achieved through the implementation of the measure. The only achievement which has not been completely accomplished (even though achieved for more than 50% of parkings) is the measurement of occupied positions in parkings, since two parkings are not interfaced yet with the system: one because of technical problems and the other one because of high costs to be afforded by the management to interface to the system.

### C4 Up-scaling of results

As the infoparking System becomes operational, it is quite easy to add new parkings and new signs or dynamic arrows to the system, as new routes become significant to be equipped. The process of adding a new parking and of managing data about occupancy rates to the system requires the interface activity. It must be considered that the Municipality has established to the Companies which have built

two new parkings in Project Financing a clause binding them to provide data on occupancy rates in order to interface them with the System which will be implemented in ARCHIMEDES. This clause will be applied to all new parkings which will be built in Monza.

## **C5 Appraisal of evaluation approach**

Evaluation activities have been aimed at :

- collecting data about investments needed by Comune of Monza to implement the measure;
- checking the level of knowledge of the measure implementation between users of public transport;
- measuring the occupancy rate of the parkings in the city.

Considering that with the implementation of this measure Comune of Monza has achieved an important technological evolution in parking management, it can be assessed that evaluation approach worked well. The part which proved difficult was the one connected to assess awareness and acceptance of the system by citizens: as a matter of fact, due to the delay in implementation of the measure caused by the appeal against the assignment of the tender, the survey was held only one month after the activation of the system, so people had little time to get used to the system.

## **C6 Summary of evaluation results**

**Key result 1** - The implementation of the system has required an important investment by Comune of Monza, which will nevertheless improve the situation of traffic in the city, reducing parasitic traffic of cars looking for a free parking place.

**Key result 2** – Technical evolution in parking management: before the implementation of the measure, Comune of Monza was not aware of the occupancy rate of parkings if not for data provided by parking owners, which, as shown in this document, are far from reliable. With the infoparking system, data are now much more reliable and can be used to better understand distribution of cars in the different parkings of the city.

**Key result 3** – The implementation of the system is well known and accepted by citizens, who would also welcome further improvements, like webservices or smartphone applications to check parking availability.

## **C7 Future activities relating to the measure**

Once that the system has been installed and tested, no future activities are scheduled, since the infoparking system should live a life of its own. Obviously a monitoring of the occupancy rates of parkings will be necessary in order to test the effectiveness of the system in better distributing traffic flows so to avoid parasitic traffic of drivers looking for a free parking space.

An extension of the system will be possible in case other parkings are built in the city and at this extent it will be important to require that owners interface their systems to the Infoparking scheme: it can be assumed that, with an already installed system to which all existing parkings are connected, it will be interest of owners to be connected to the system so to exploit the opportunity of a correct distribution of potential users.



## D Process Evaluation Findings

### D.0 Focused measure

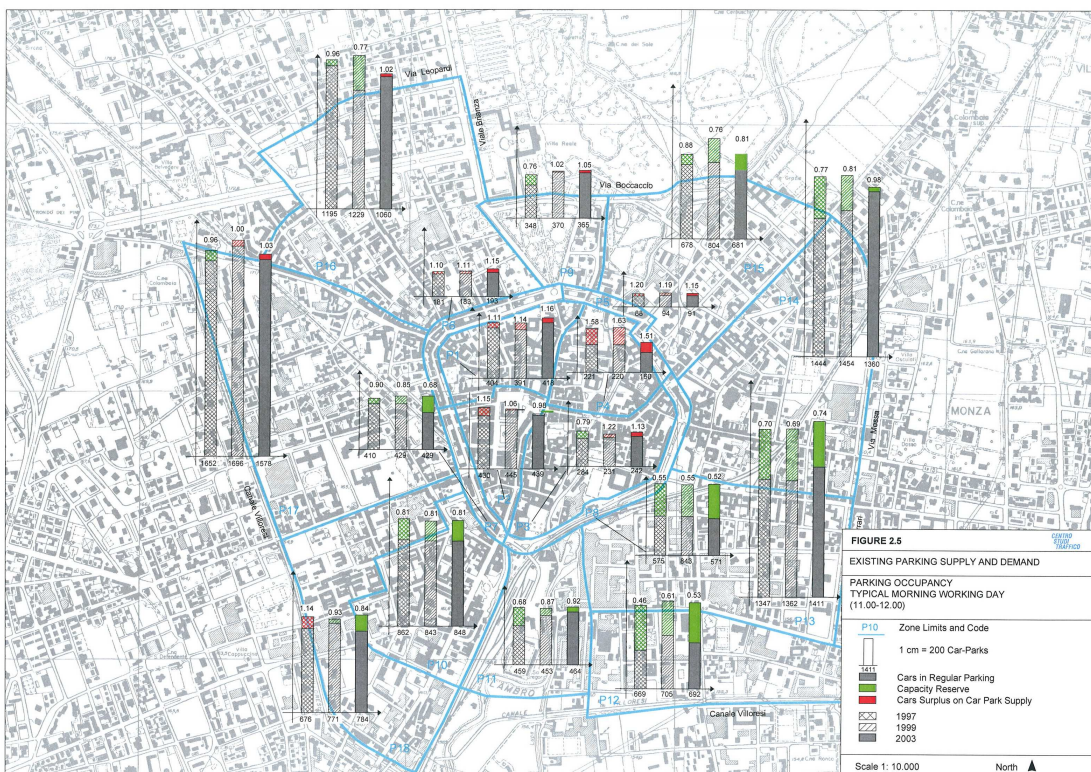
X	0	No focussed measure
	1	Most important reason
	2	Second most important reason
	3	Third most important reason

### D1 Deviations from the original plan

There have been no deviations from the original plan, apart from the delay due to the appeal by the second ranked company against the tender assignment.

### D2 Barriers and drivers

Monza city centre and its surroundings count about 12.200 public parking spaces, more than 80% charge free. Occupancy rates of parking places on the road in the City Centre (where the most part is not charge free) are very high (in some cases even superior to 1) while capacity reserves are still available around the city centre, mainly east and south, as shown in the following figure.



**Figure 6 - Parking occupancy rates in the city centre (according to GUTP)**

About 4417 parking spaces are located in parking lots, whilst about 808 parking spaces are managed by TPM with parking meters on the road. Data concerning occupancy rates of parkings in parking lots have been provided in Section C, and it can be easily seen how there is still capacity in most of parkings, whilst figure no. 6 shows the occupancy rate of parking places located on the road on a typical morning of a working day.

If we consider that almost all parking places in the city centre are not charge free, so people wanting to park their car in the city centre have to pay for it, it can be assumed that the implementation of the system should help drivers to

## **D.2.1 Barriers**

### **Preparation phase**

- **Involvement** – Arrangement of agreements with Parking Owners not willing to replace their own signs with the ones installed by the Municipality: actually parking owners would prefer to maintain their signs not only in order to capitalize the investment done, but also because each one would like to have more visibility in the city.

### **Implementation phase**

- **Institutional** – Delay in starting implementation activities, due to the appeal against the tender assignment
- **Problem related** – Problems in achieving energy connection for all panels due to the long and slow bureaucracy of the supplier.

### **Operation phase**

- **Financial/problem related** – After the implementation stage, there are two parkings which are not connected yet. For one of them (Porta Castello, managed by Italian railways) there is a technical problem due to the fact that the counting system adopted is brand new, so a suitable software has to be developed, and the owner intends to develop it at his own expense (in order to be the owner); for the other one (Cambiaghi) the reason has to be find in the significant investment to be afforded to interface the counting system to the infoparking system.

## **D2.2 Drivers**

### **Preparation phase**

- **Involvement** – Apart from representing a barrier for not willing to replace their own signs with the ones installed by the Municipality, Parking Owners have, on the other hand, shown a serious commitment in implementing the system in order to have a more balanced distributions of users
- **Political** – Strong political commitment of Mobility councillor to implement the measure in order to have less parasitic traffic in the city centre looking for parking

### **Implementation phase**

- **Planning** – Many inspections in the city have been made with Municipality technicians of all the involved Departments and representatives of Solari Udine (the

firm which has been awarded the tender) in order to define technical aspects of the streetworks to do for installing the panels, to better connect to power supply, or to avoid damages to flower beds, green areas and trees.

- **Involvement** – Suggestions of parking owners have been very useful to identify the best location for panels: minor changes have been suggested to the original locations, mostly due to the necessity of locating panels in a more visible position.

#### Operation phase

- **Cultural** – A quick response by all parking owners (but two) to the need of interfacing the counting system of each parking to the infoparking system has allowed a quick activation of the system, which represents a technological opportunity to control the occupancy rate of parkings in a more rational and reliable way and to inform citizens about events and mobility issues in the city through VMSs.

### **D.2.3 Activities**

#### Preparation phase

- **Planning** – The research stage has been dedicated to the study of traffic flows in the city, in order to define the location of the signs, both static and dynamic.
- **Institutional** – TPM has developed the tender document in order to define technical and legal requirements of the system to be installed

#### Implementation phase

- **Institutional** – In June tender was awarded to Solari of Udine, but the second ranked company presented an appeal against assignment, which delayed the subscription of the contract and the start of activities. In September the appeal was ruled by administrative court and in October the contract was finally signed.
- **Spatial** – As soon as Solari has signed the contract, inspections have started on locations of panels in order to define technical aspects of the streetworks that had to be done for installing the panels

#### Operation phase

- **Spatial** – Streetworks have been completed and all 55 scheduled panels have been installed. The system has been activated on March 26<sup>th</sup> 2012.
- **Technological** – The functioning of the system is daily checked by TPM staff and by technicians of Municipality which are also in charge of writing messages on VMSs to inform citizens about events or mobility issues in the city

### **D3 Participation of stakeholders**

### **D.3.1. Measure Partners**

- **Comune of Monza** – Mobility and Transportation Department has coordinated relationships with parking owners in order to gain approval for providing data on occupancy rates
- **TPM** - TPM, as project partner, has set up the system as delegated from Municipality to manage all services related to parking areas and has developed the tender document. Moreover, TPM also manages, on behalf of Municipality of Monza, all public Parkings in the city
- **Project Automation** – Project Automation, as ARCHIMEDES partner, has assisted TPM for technological aspects during the research stage of the measure

### **D.3.2 Stakeholders**

- **Owners of the parkings** – Owners of parkings have been involved during the implementation stage to help for the development of the system and the most suitable location of panels and to provide data on occupation.
- **Merchants and Stores located in the Centre of the City** – Traders of the city centre benefit from by good performances and fares in Parkings, which will attraction more people in the city centre.

## **D.4 Recommendations**

### **D.4.1 Recommendations: measure replication**

Such a measure can be replicable in each city in order to achieve reliable data concerning the occupancy rate of parkings,. These data can prove very useful for decision makers to take decisions concerning traffic and also to direct traffic flows to parkings which are not particularly crowded in order to avoid traffic congestion.

The experience of Monza, however, has though that involvement of parking owners is an important step to gain approval for a complete implementation of the system, since a balance has to be found when planning the number of panels to be installed in order not to occur in competition between operators.

Another important aspect to be considered when planning the installation of this kind of system is the definition of location of panels, for a better management of traffic flows, on the one hand, and for defining technical aspects especially as far as power supply is concerned,,

### **D.4.2 Recommendations: process**

**Defining power supply location** - In case of exploitation of the measure, it is advisable to define in advance where to take power supply, since procedures to activate new supplies have revealed lengthy and complicated. Fortunately, exploiting the delay caused by the appeal to administrative court, it has been possible to have everything ready for the implementation stage, but in case of future extensions, it will be very important to deal with this problem.

**Involving parking owners** - The strong wish to implement the measure has allowed to gather the parking owners who, although usually in competition with each other, have understood the importance of the implementation of measures for a more correct distribution of traffic flows in town.

**Extension to new parkings** - For a future implementation of the system in all city private parkings, it is advisable to insert in the building authorization a clause requiring owners of new parkings to interface with the system in order to have an expandible system.

**ANNEX 1 TO MERT NO. 80****PARK (AND RIDE) GUIDANCE SYSTEM IN MONZA**

This annex is made up by two sections: in the first one, data concerning occupancy rate of Monza parkings are reported, according to data provided by parking owners derived by the number of sold tickets, before the implementation of the measure, and to data of reports derived from technical specifications of the system itself, once it has been installed.

In Section 2 details of the survey concerning awareness and acceptance of the implementation of the measure are reported.

**SECTION 1- OCCUPANCY RATE OF PARKINGS****BEFORE DATA**

It should be remembered that the average occupancy is calculated including also Saturdays and Sundays, even though usually parkings are less full on weekends, apart in some cases. The following data have been provided by parking owners, but, as explained before, they are not based on a counting system, but on average occupation of the parkings derived by the number of sold tickets, without evaluating occupancy time and the real occupancy hour by hour.

<b>PARKING</b>	<b>NO. OF PARKING PLACES</b>	<b>AVERAGE OCCUPANCY RATE</b>	<b>NOTES</b>
Trento e Trieste	254	75%	On Thursday and Saturday morning (market day) the parking is completely full
Monza Centro Parking	350	42%	
Università	210	40%	
Cambiaghi	300	21%	This parking is completely full on Saturday and Sunday evenings, since it's very close to the city centre, but it is scarcely used during the week (especially because on Thursday and Saturday morning in this area there is the city market)
Castello	144	47%	
Hospital	650	95%	In this parking the occupancy rate on working days from 7,30 to 14,30 is 95%, even though on Saturdays and Sundays it reduces to 40%
Park	1000	Not applicable	It is very difficult to define an average occupancy rate for this parking without a vehicle counting system, since it is basically empty in winter

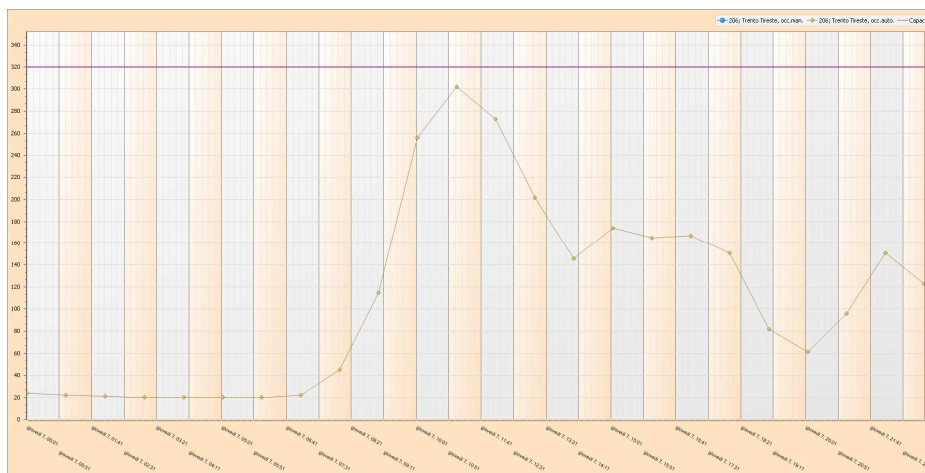


			and during working days, whilst it is full for 50% on Saturday and Sunday in winter and on rainy days and full for 90% at weekends in spring and summer.
Corso Milano	450	65%	
Capitol	270	77%	
Raffaello Sanzio	331	15%	
Duomo	420	35%	On Thursday and Saturday morning (market day) the parking is completely full
Porta Castello	144	Data have not been provided by parking MGT	

**Table 1: Average occupancy before (data from parking owners)**

**AFTER DATA**

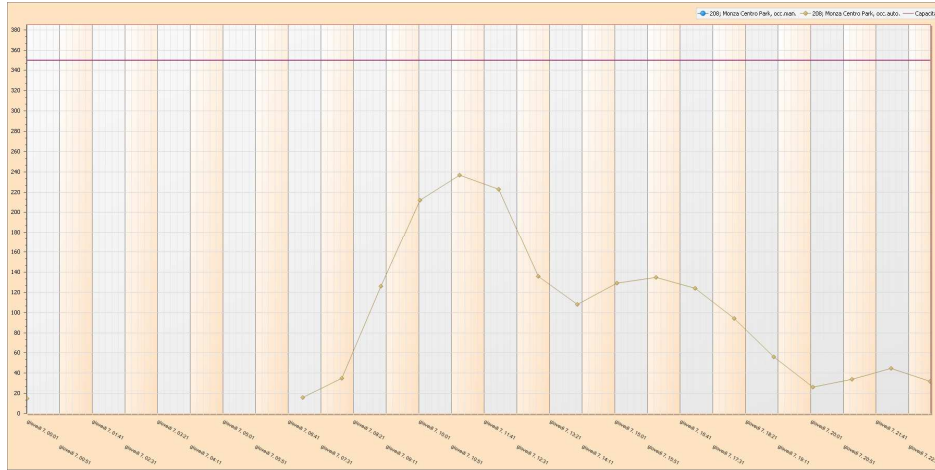
The following graphs have been derived by the features offered by infoparking system to calculate occupancy rate: it has been chosen an average working day (Thursday).



**Graph 6 - Trento e Trieste Parking -**

**Average occupancy rate from 8,00 o'clock to 20,00 o'clock: 51,4%**

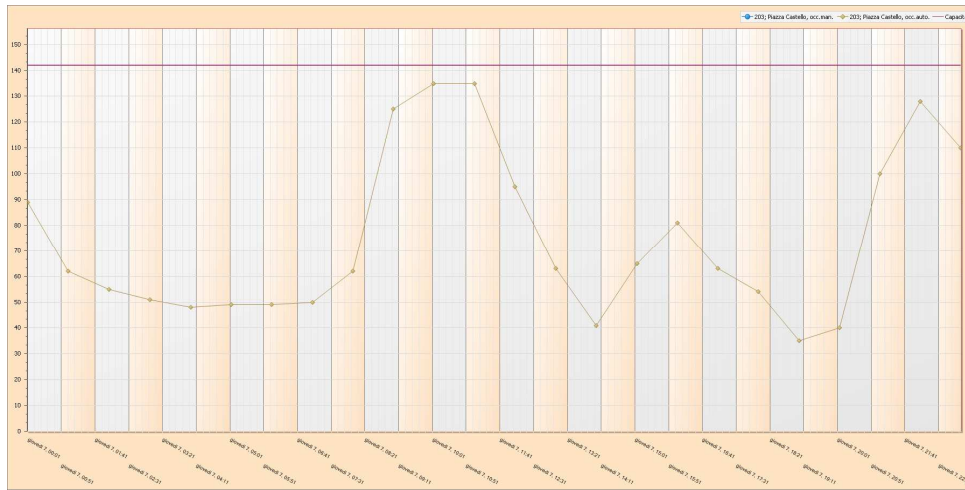
**Eliminato: 1**



**Graph 7 - Monza Centro Parking -**

average occupancy rate from 8,00 o'clock to 20,00 o'clock: 36%

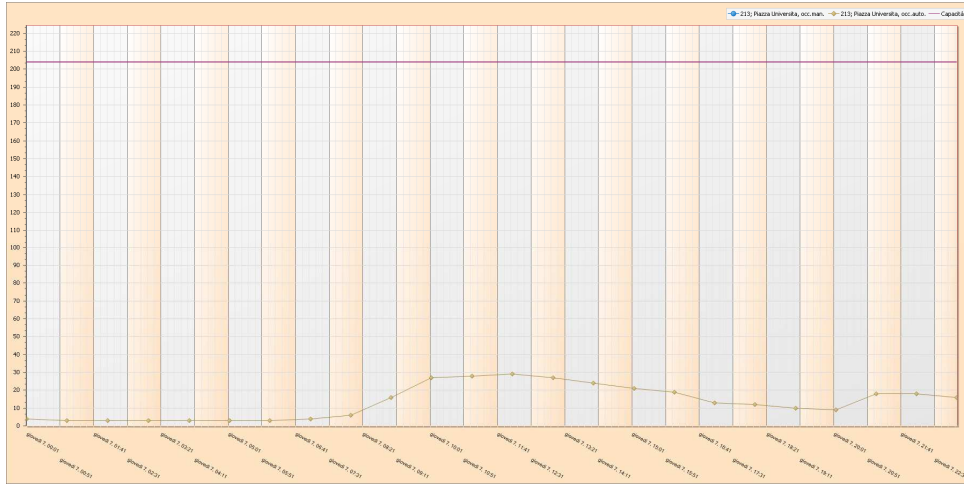
Eliminato: 2



**Graph 8 - Università Parking -**

Average occupancy rate from 8,00 o'clock to 20,00 o'clock: 9,08%

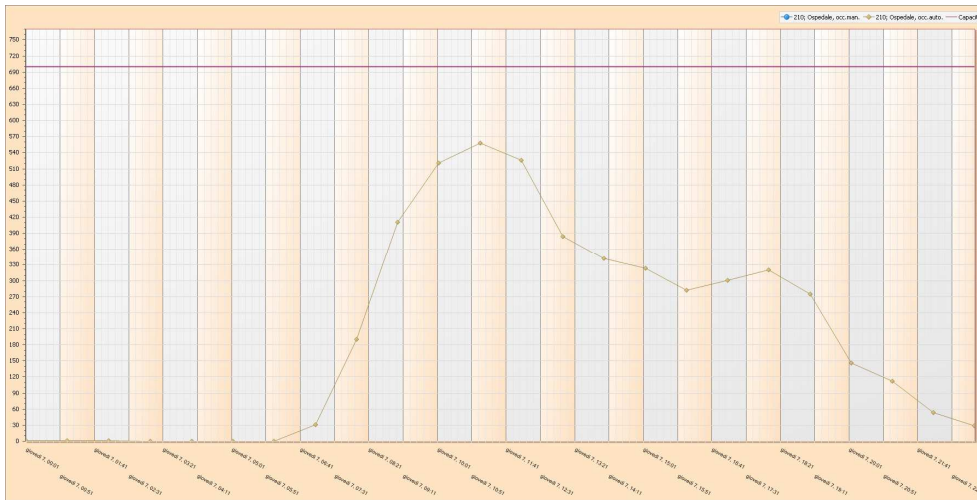
Eliminato: 3



**Graph 9 - Castello Parking -**

Average occupancy rate from 8,00 o'clock to 20,00 o'clock: 51%

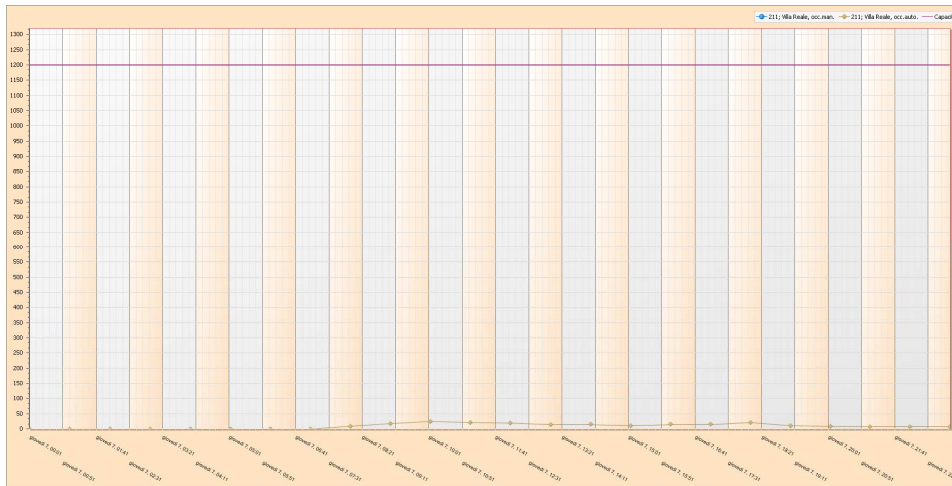
Eliminato: 4



**Graph 10 - Hospital Parking -**

Average occupancy rate from 8,00 o'clock to 20,00 o'clock: 50,28%

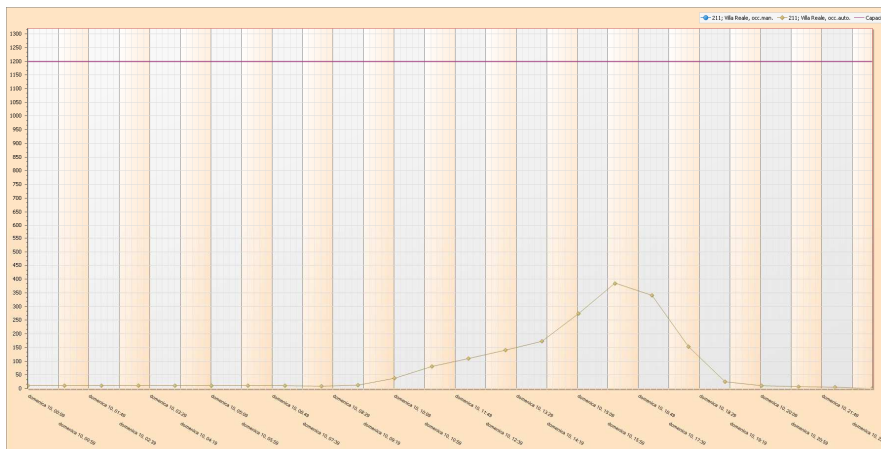
Eliminato: 5



**Graph 11** - Park Parking -

Average occupancy rate from 8,00 o'clock to 20,00 o'clock: 1,28% on working days

Eliminato: 6



**Graph 12** - Park Parking -

Average occupancy rate from 8,00 o'clock to 20,00 o'clock: 11,24% on Sundays

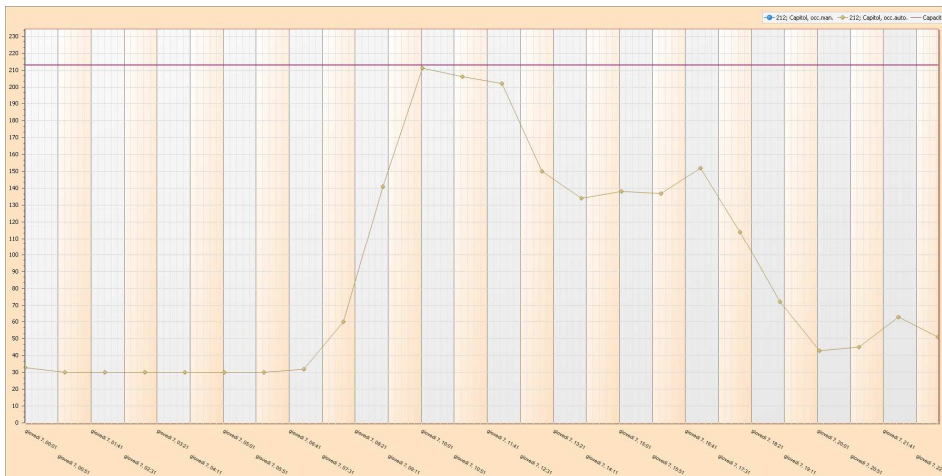
Eliminato: 7



Graph 13- Corso Milano Parking -

Average occupancy rate from 8,00 o'clock to 20,00 o'clock: 73,5%

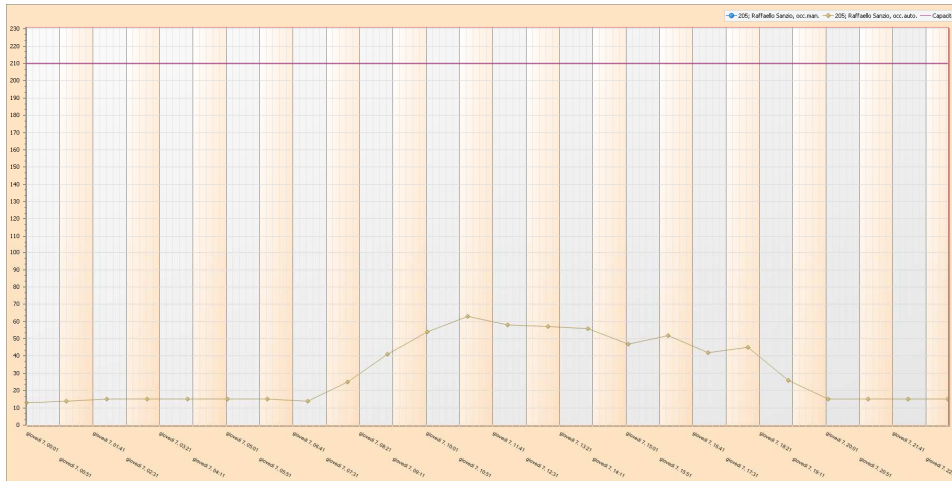
Eliminato: 8



Graph 14- Capitol Parking-

Average occupancy rate from 8,00 o'clock to 20,00 o'clock: 63,5%

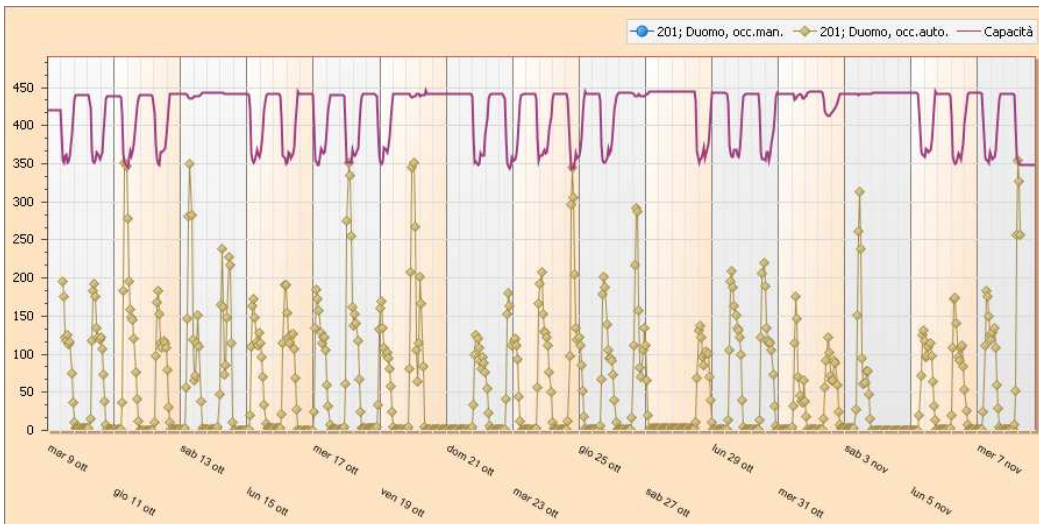
Eliminato: 9



**Graph 15 - Raffaello Sanzio Parking –**

**Average occupancy rate from 8,00 o'clock to 20,00 o'clock: 21,28%**

**Eliminato: 10**



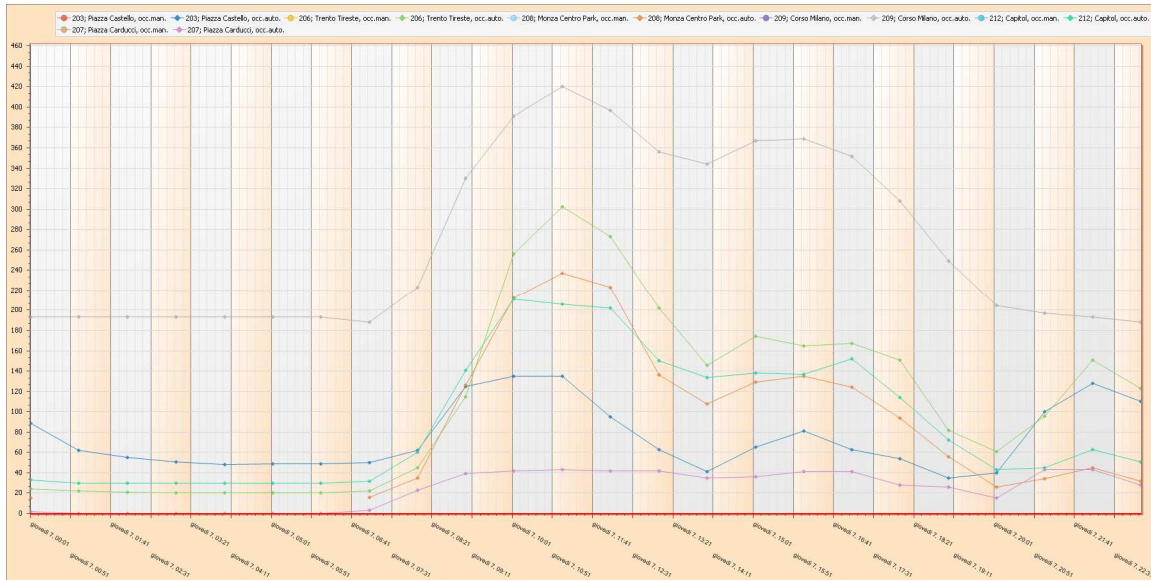
**Graph 16 - Duomo Parking –**

**Average Occupancy rate from 8,00 o'clock to 20,00 o'clock: 38.3%**

**Eliminato: 11**

Another feature offered by the infoparking system is the opportunity to compare the occupancy rate of several parkings: this feature will allow to study possible variations to traffic organization in order to avoid parasitic traffic directing to parkings.





**Graph 17.- Comparison between occupancy rates of several parkings**

**Eliminato: 12**

Thanks to the functionalities offered by the system, now it is possible for Comune di Monza to have reliable data about the average occupancy rate of parkings in the city, which will also allow decision makers to take decisions about traffic in the city.

**SECTION 2 – RESULTS OF THE SURVEY**

In May 2012, after the installation of the system is completed, a qualitative survey has been realized on 221 people aimed at evaluating awareness and acceptance of citizens of the implementation of the measure.

The survey has been conducted in order to verify the knowledge and the use of Infoparking system and how it has changed -or is going to- people’s habits. The opinions of the respondents were acquired at eight parking areas, at different days and hours, through interviews based on a questionnaire designed ad hoc according to Municipality of Monza’s requirements.

The survey involved 221 people, mainly men, representative of all ages and occupations and using the parking areas for errands or job/study; many of them were not from Monza but from Brianza (41%) or other areas (Milan, Como, Lecco areas – 33%), as some of the parking areas are close to public offices (Hospital, Law Court, Chamber of Commerce, University, ecc.) or market areas.

From survey results, half of the 221 respondents use only seldom Monza parking areas, while the other half uses them frequently and often uses more than one parking area. The interviews have been made at eight parking areas (Cambiaghi, Capitol, Corso Milano, Centro, Hospital, University, Raffaello Sanzio, Villa Reale) but also Trento e Trieste parking (not yet interfaced when the survey was realized because of technical problems) is frequently used by the respondents. Depending on the

different areas of the town, sometimes parking areas are the only chance and people never (16%) look for alternatives in the streets or if they do, they waste more than 15 minutes to park (38%)

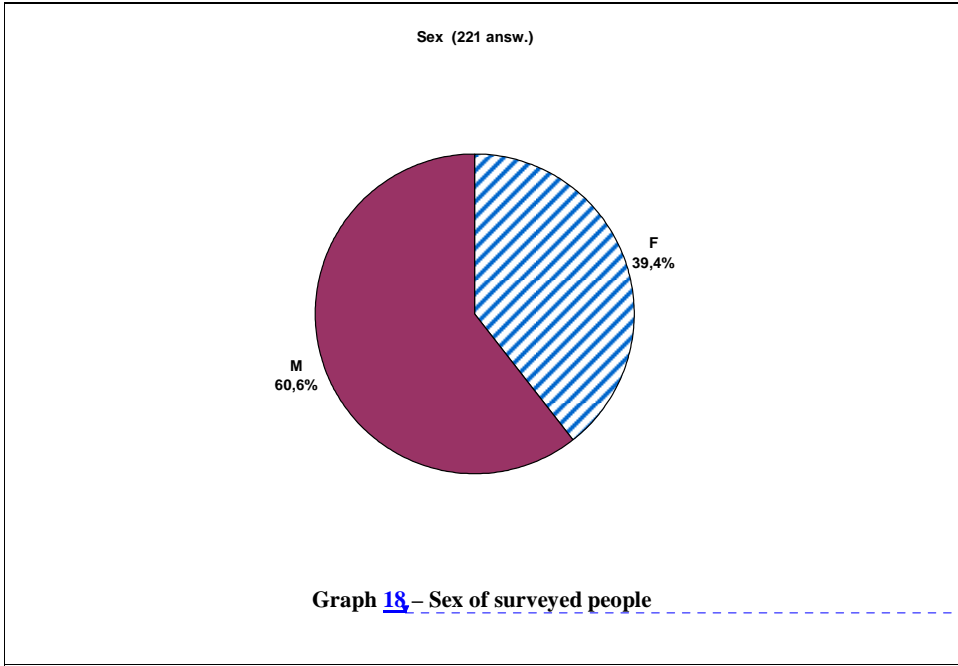
Even if it is a new service for the city, 66% of the respondents (which means 2 out of 3) are aware of Infoparking, but only 9% have used it the day of the interview and only 20% have ever used it to choose the parking area. Some of them in fact have to go just close to the parking they chose (Hospital, University, Villa), they know only that parking area (Capitol, Hospital) and have never found it too busy or –as a commuter- subscribed for a particular parking area (Corso Milano, Raffaello Sanzio). That’s why only 16,5% of the respondents think Infoparking changed or is going to change their habits in choosing the parking, 33% think it will help them saving time and only a few are able to estimate time savings thanks to the implementation of the measure.

As for qualitative evaluation of Infoparking, positive answers are much more than critical ones, even if reliability has to be improved (some of the displays are often out of order, people say, which is probably due to the fact that, when the survey was realized, some parkings had not completed activities for interfacing yet,so the message displayed is “Waiting for data”). As for system improvements, web access (20%) and smartphone apps (18%) are considered as the most interesting features to be activated.

Besides Infoparking, more than 40% of the respondents noticed traffic displays in the town and almost all of them find these displays useful and clear.

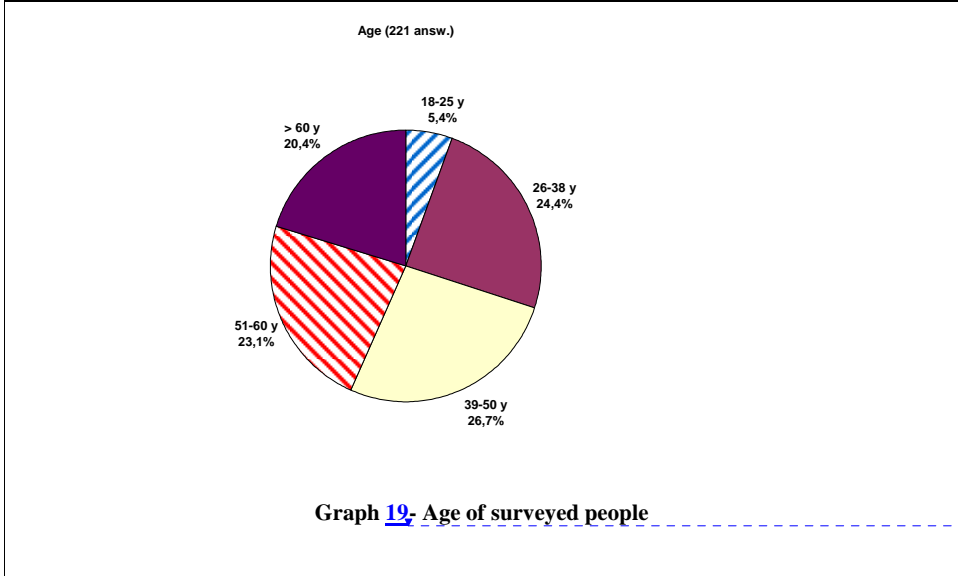
The survey has shown that, in conclusion, Infoparking is well known and is surely useful to help people choosing park area but it has to be considered that commuters, people going to a particular place (public office, hospital, ecc.) and people knowing Monza very well have not yet appreciated it and probably Infoparking will never change their habits; on the other hand, many people (above all from Brianza or other areas) think it will be very useful in case the parking area they know and use is full or it is impossible to use the road to reach it.

**SEX OF SURVEYED PEOPLE**



Eliminato: 13

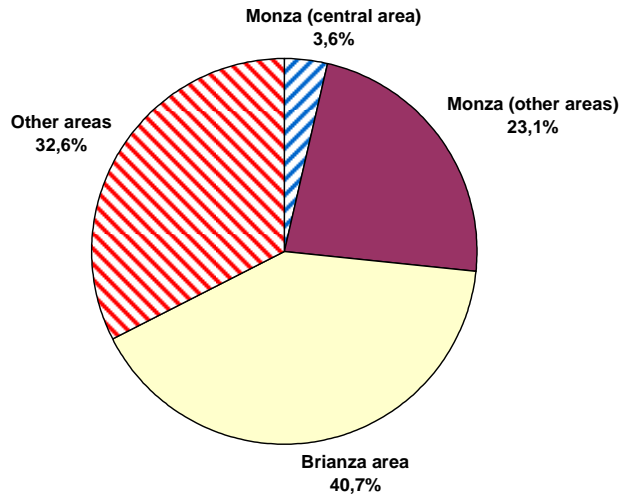
AGE OF SURVEYED PEOPLE



Eliminato: 14

**LIVING AREA**

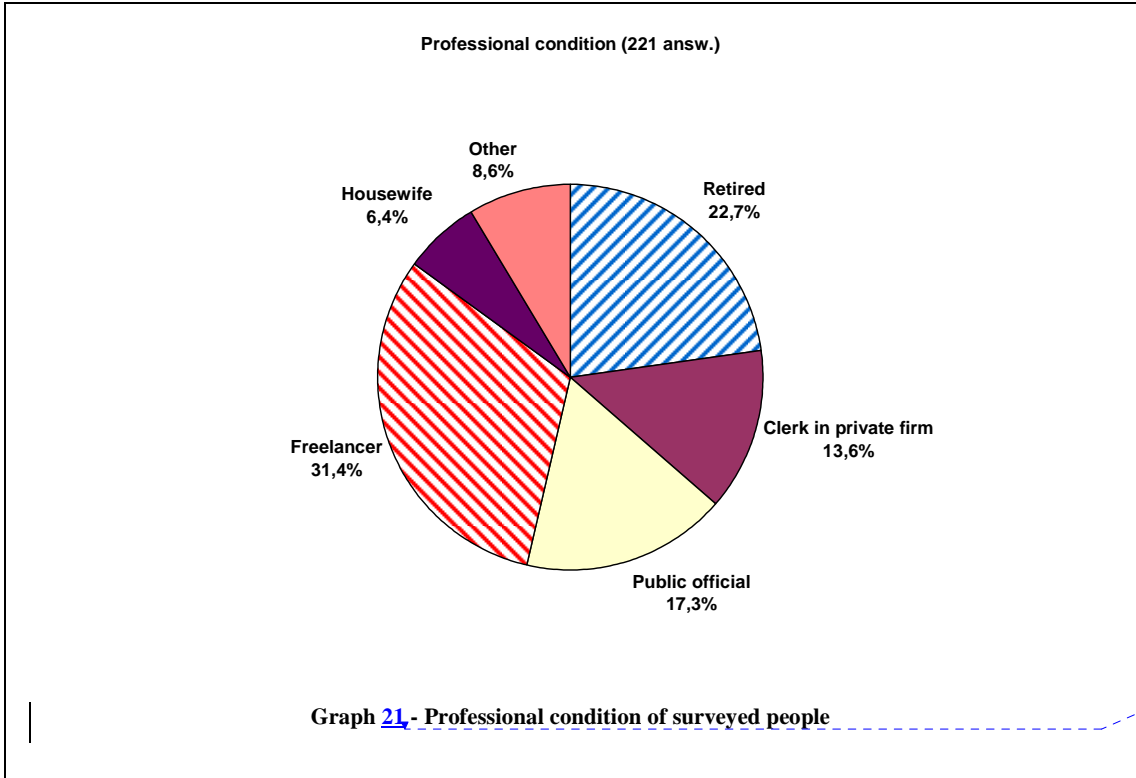
Living area (221 answ.)



Graph 20 - Living area of surveyed people

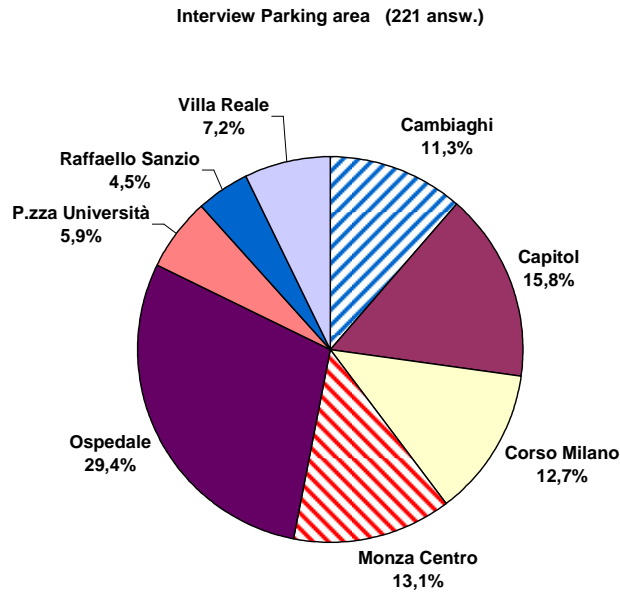
Eliminato: 15

**PROFESSIONAL CONDITION**



Eliminato: 16

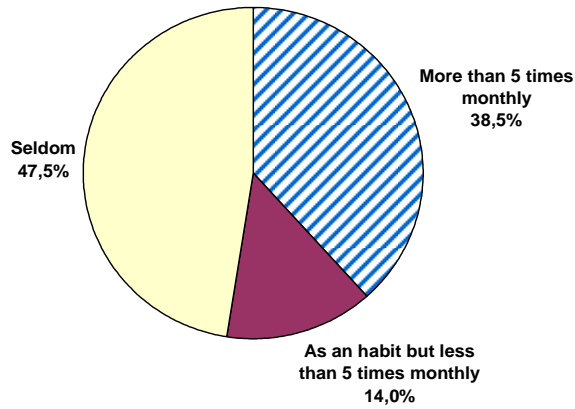
Graph 17: INTERVIEW SITE



Eliminato: 17

Graph 18: PARKING HABITS

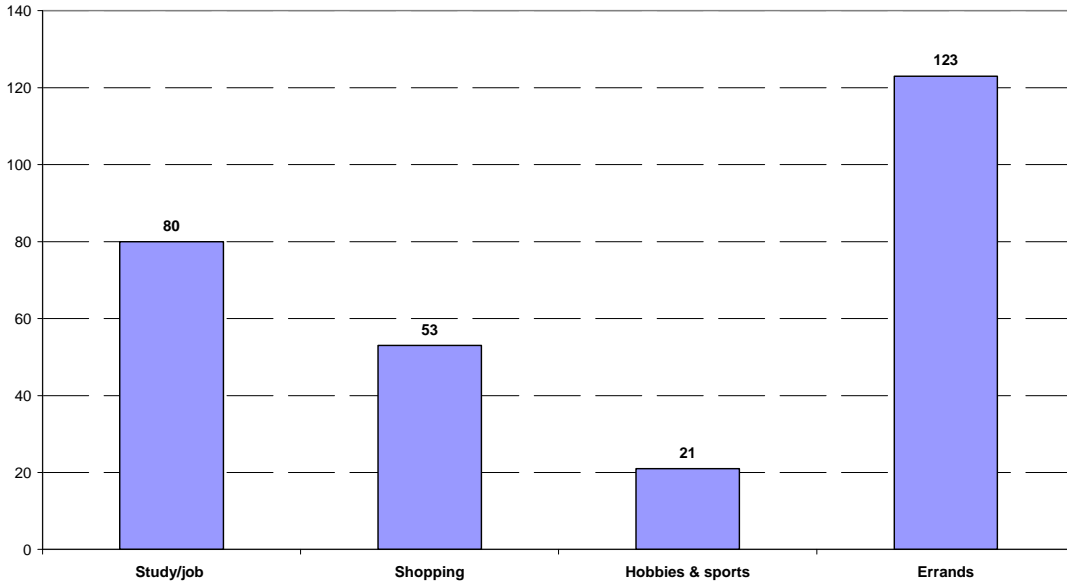
How often do you use public parking areas at Monza? (221 answ.)



Graph 22 - Parking habits

**PARKING HABITS**

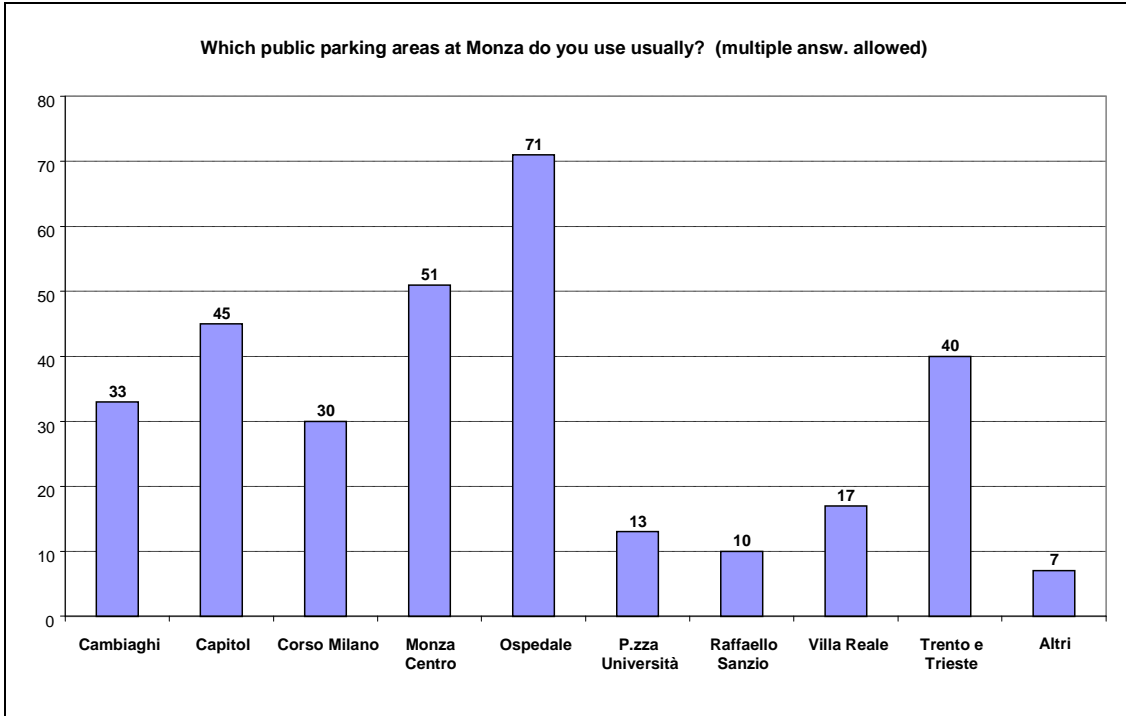
**Reasons to use public parking areas at Monza (multiple answ. allowed)**



**Graph 23 - Reasons to use parkings**

**Eliminato: 18**

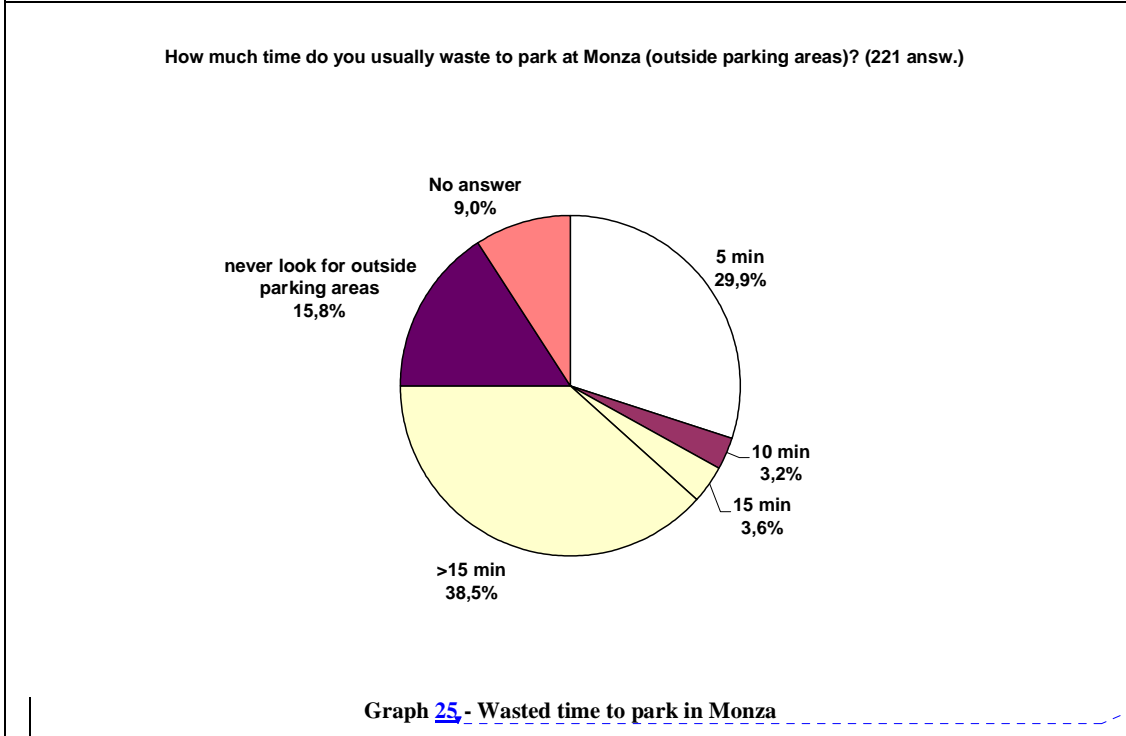




Graph 24 - Parkings used by surveyed people

Eliminato: 19

PARKING HABITS

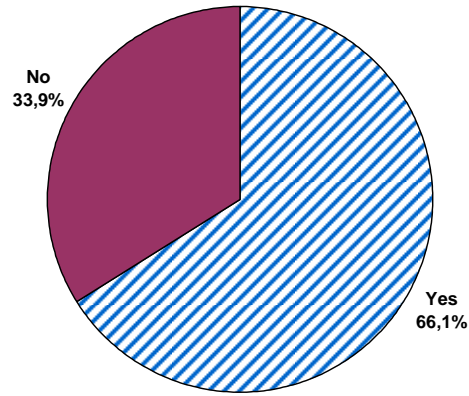


Graph 25 - Wasted time to park in Monza

Eliminato: 20

**INDICATOR NO. 14 (Awareness)**

Do you know infoparking? (221 answ.)

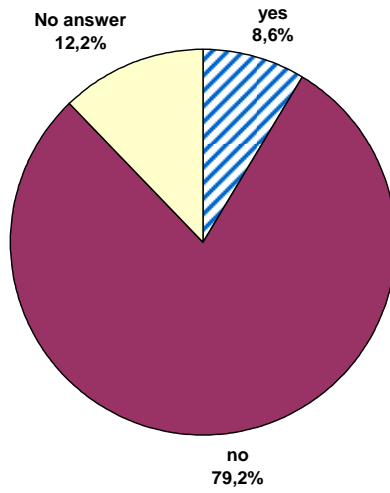


Graph 26 – Knowledge of Infoparking system

Eliminato: 21

**INDICATOR NO. 13 (Acceptance)**

Did you use Infoparking when choosing this park area today? (221 answ.)

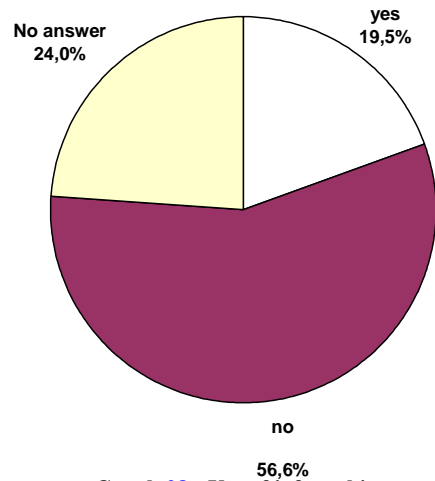


Graph 27 - Acceptance of infoparking system

Eliminato: 22

INDICATOR NO. 13 (Acceptance)

Did you ever use Infoparking when choosing a parking area? (221 answ.)

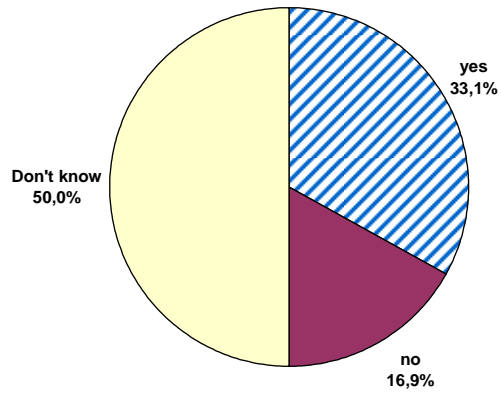


Graph 28 - Use of infoparking system

Eliminato: 23

**INDICATOR NO. 13 (Acceptance)**

Do you think Infoparking helped (or can help in future) you saving time in parking? (221 answ.)

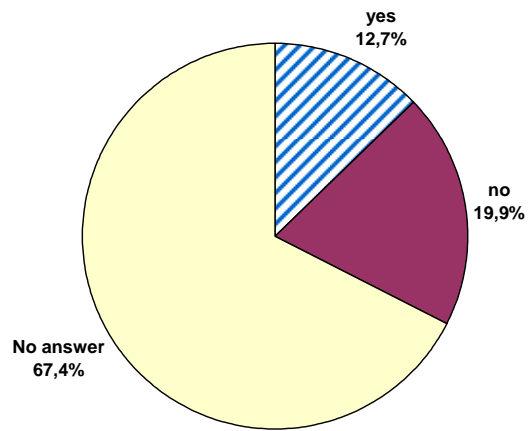


Graph 29 - Helpfulness of infoparking system

Eliminato: 24

**INDICATOR NO. 14 (Awareness)**

Can you estimate time saving in parking with Infoparking? (221 answ.)

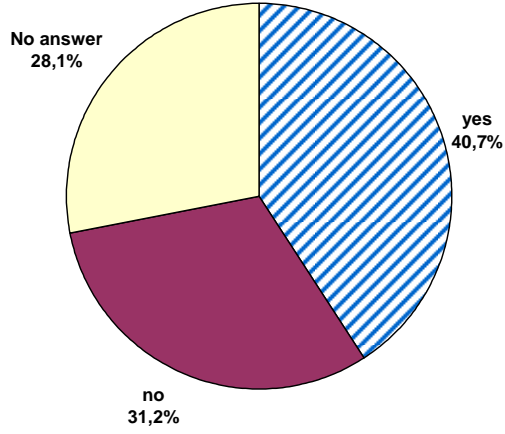


Graph [30](#) - Estimate of time savings

Eliminato: 25

INDICATOR NO. 14 (Awareness)

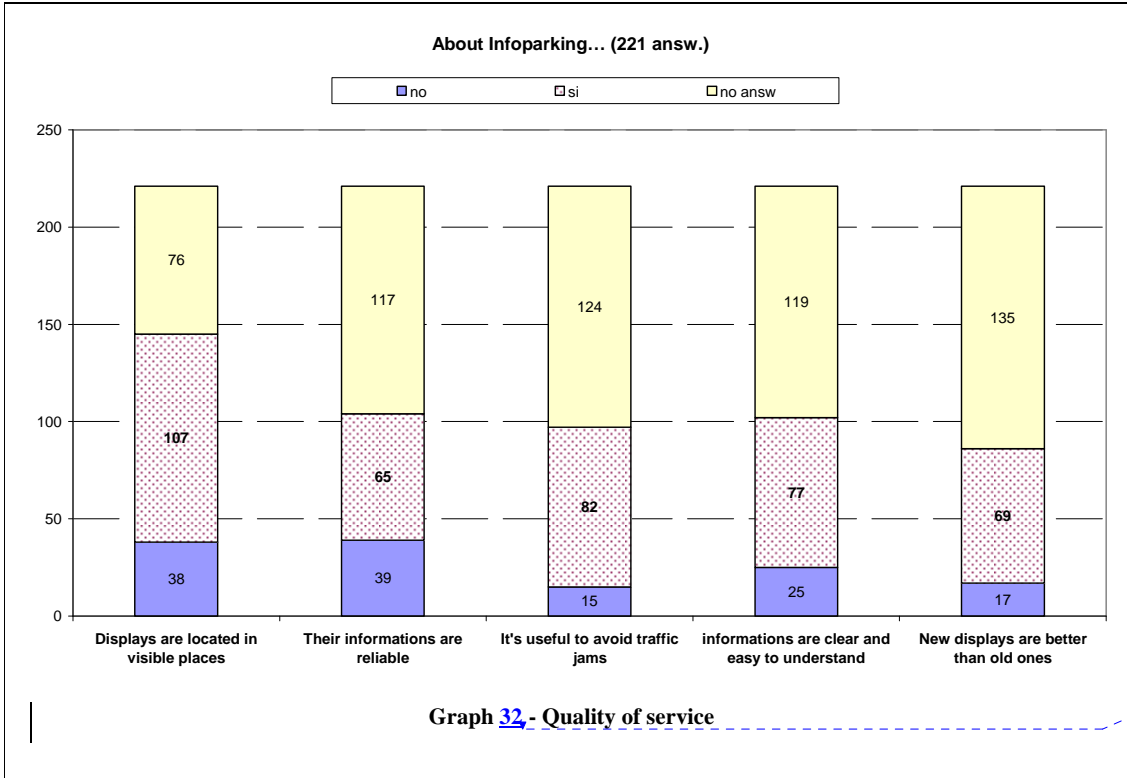
Did you notice traffic displays giving information on traffic? (221 answ.)



Graph 31- Visibility of VMS

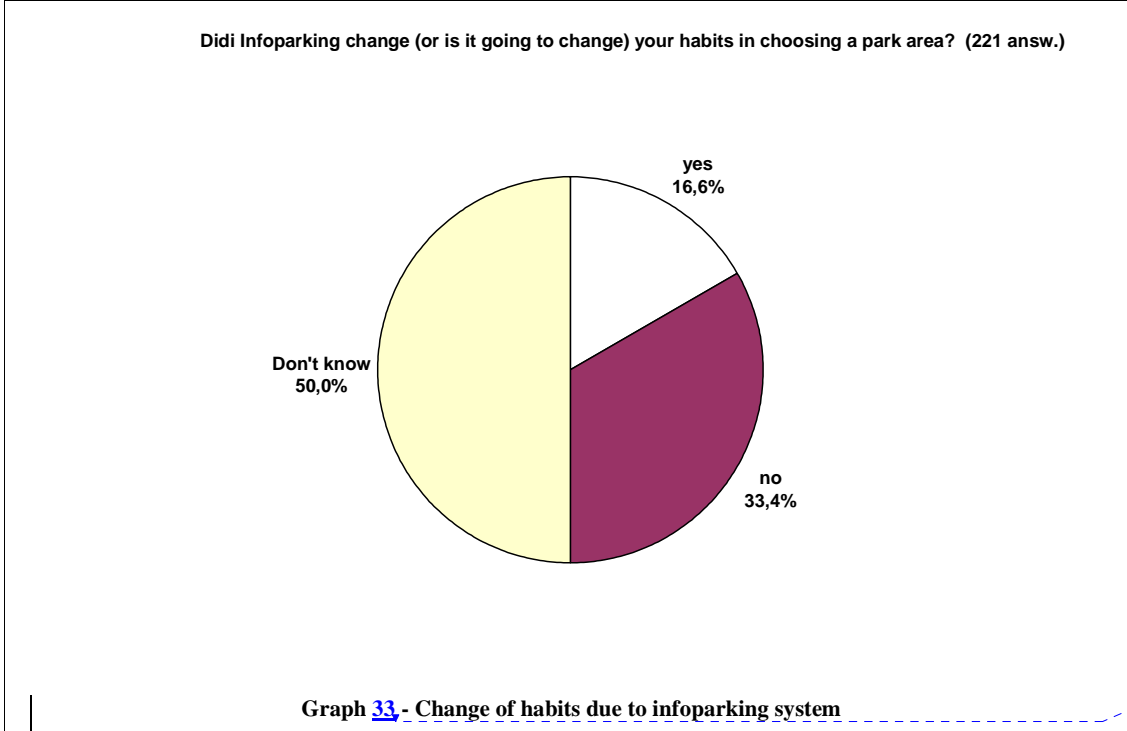
Eliminato: 26

INDICATOR NO. 19 (Quality of service)



Eliminato: 27

**INDICATOR NO. 19 (Quality of service)**

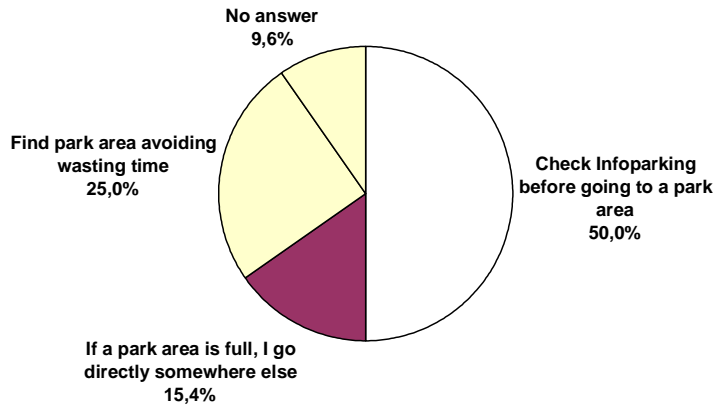


Eliminato: 28



**INDICATOR NO. 14 (Awareness)**

How did your habits change? (52 answ.)

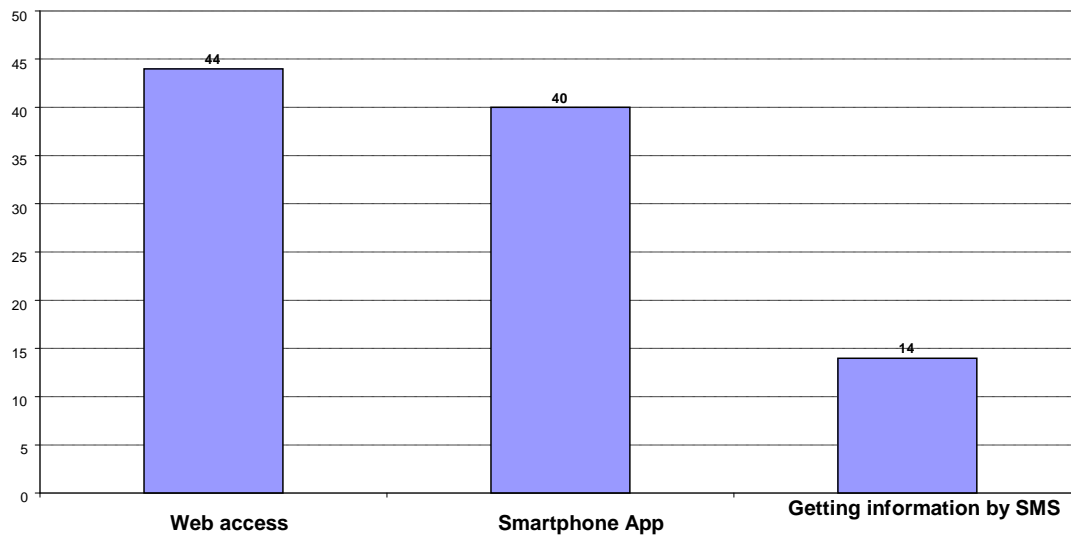


Graph 34 - How did habits change

Eliminato: 29

**INDICATOR NO. 19 (Quality of service)**

**Which improvement would you suggest for Infoparking? (multiple answ. allowed)**



**Graph 35 - Suggestions to improve the system**

Eliminato: 30

*Measure title:* **Park and Ride Guidance System in Monza**

*City:* **Monza**

*Project:* **ARCHIMEDES**

*Measure number:* **80**

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