

*Measure title:* **Changing Parking Behaviour (New pricing policy)**

*City:* **Donostia–San Sebastián** *Project:* **ARCHIMEDES** *Measure number:* **23**

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## Executive Summary

Parking policy is one of the main drivers for car use, as well as one of the more effective tools to moderate its use. Within this measure, which is part of a package of measures aiming at reducing the number of cars entering the city of Donostia-San Sebastian, in addition to the extension of the parking management scheme, a new pricing policy has been designed and introduced in order to reduce the number of car trips in the centre of the city. The policy integrates both on-street and underground parking. Parking fares (both on-street and underground) have been increased and differentiated according to an improved zoning structure.

Parking management measures are very sensitive and very often raise strong position from citizens. This has been the case in Donostia-San Sebastian, where the extension of the paid parking area has been assessed as negative by a majority of the population, with an increased negative perception even before the scheme started operating (59% before the implementation and 75% after it started operating). This is a surprising result, taking into account that with the regulation of parking, residents have more parking spaces available to park. However, visitors from other districts may see their parking options limited. The public opinion sees also to be independent from the overall mobility improvements driven by the measure (among other measures).

Due to the unpopularity of the measure DSS 23, the political opposition has made use of the parking policy as a political tool for confrontation against the local government. The media has also been a very important catalyst for public opinion, especially if the measure objectives, and its integration in an overall mobility strategy for the city, are not clearly understood. Therefore, besides the technical implications of the measure, which is rather straightforward, special care should be taken during the process implementation. It is very important to provide regular and clear information about the measure objectives, including overall sustainable mobility issues, especially to the media, so that this information can be used to boost the measure and not to penalize it. Regular contacts with neighbours associations are also required to reduce social contestation. If citizens' opposition is limited, political cooperation is more likely to be achieved.

However, in Donostia-San Sebastián, in a context of a steady increase in car travel, a modal shift towards sustainable modes of transport such as public transport and bicycle has been achieved, resulting in a reduction in car use of 0,1% as compared with the situation before the CIVITAS project started. If compared to the BaU situation, the modal shift away from car achieves a 0,4% in 2011, while cycling increased by a 0,3% and public transport by a 0,1%. On the contrary, walking levels seems to be slowly going down, which is not a desirable result. Attention should be placed to this issue in the coming years.

Consequently, a reduction in traffic levels has also been experienced. The number of cars entering to the CIVITAS corridor has been reduced in more than 7.500 cars per day as compared to the before situation.

Following the reduction in traffic levels, a decrease in parking demand has also been experienced, decreasing by a 21% if the current situation is compared to the situation before the new parking management scheme started operating.

## **A Introduction**

Within this measure, two different kind of actions have been implemented:

- Implementation of a new parking policy and the extension of the restricted parking area to the western part of the city
- Extension of the paid parking scheme to the business areas

Given the differences in the methodological approach between them, as well as the different rhythm in its implementation, the assessment of these measures have been split in two separate reports, corresponding this one to the implementation of a new parking policy and the extension of the restricted parking area.

### **A1 Objectives and target groups**

#### **A1.1 Objectives**

The measure objectives are:

(A) High level / longer term:

- Reduce the use of private car achieving a modal shift towards public transport and cycling.

(B) Strategic level:

- Extend paid-parking zone to all flat areas of the city.
- Implement a new pricing and zoning policy integrating both on-street and underground parking facilities.

(C) Measure level:

- Decrease the number of cars entering the city centre
- By achieving these objectives, the measure will contribute to reach the corridor and city level objectives
  - i. Maintain the high level of 47% pedestrian mobility
  - ii. Increase PT passengers by 5%
  - iii. Reduce number of cars entering the city centre by 5%
  - iv. Increase bicycle use by 30%

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

The measure is directed towards citizens and commuters travelling by private car to the city centre.

## **A2 Description**

The growing demand for parking in the western part of the city mainly due to increased commercial activity revealed the need to extend the restricted parking scheme to this area. Consequently the paid parking scheme was implemented in the districts of Antiguo, Benta Berri and Errotaburu.

In addition to the extension of the parking management scheme, a new pricing policy has been designed and introduced in order to reduce the number of car trips to the centre of the city. The policy integrates both on-street and underground parking. Parking fares (both on-street and underground) have been increased and differentiated according to an improved zoning structure.

Four Pricing Zones have been defined, following a radial criterion, fixing more deterrent, higher to lower rates depending on parking demand in each zone.

- **Special Zone:** This applies to areas where parking demand is higher. It is the most expensive pricing zone and it is associated with the shortest Maximum Lengths of Stay.
- **Red Zone:** Also intended for high parking demand areas where parking charges are, however, somewhat cheaper than those of the Special zones.
- **Blue Zone:** This targets “peripheral” areas with short and medium-term parking demand.
- **Green Zone:** Meant for the “outlying” areas, in order to avoid the border effect and to provide long-term parking facility in those areas. Prices are more affordable and Maximum Length of Stay is the longest.

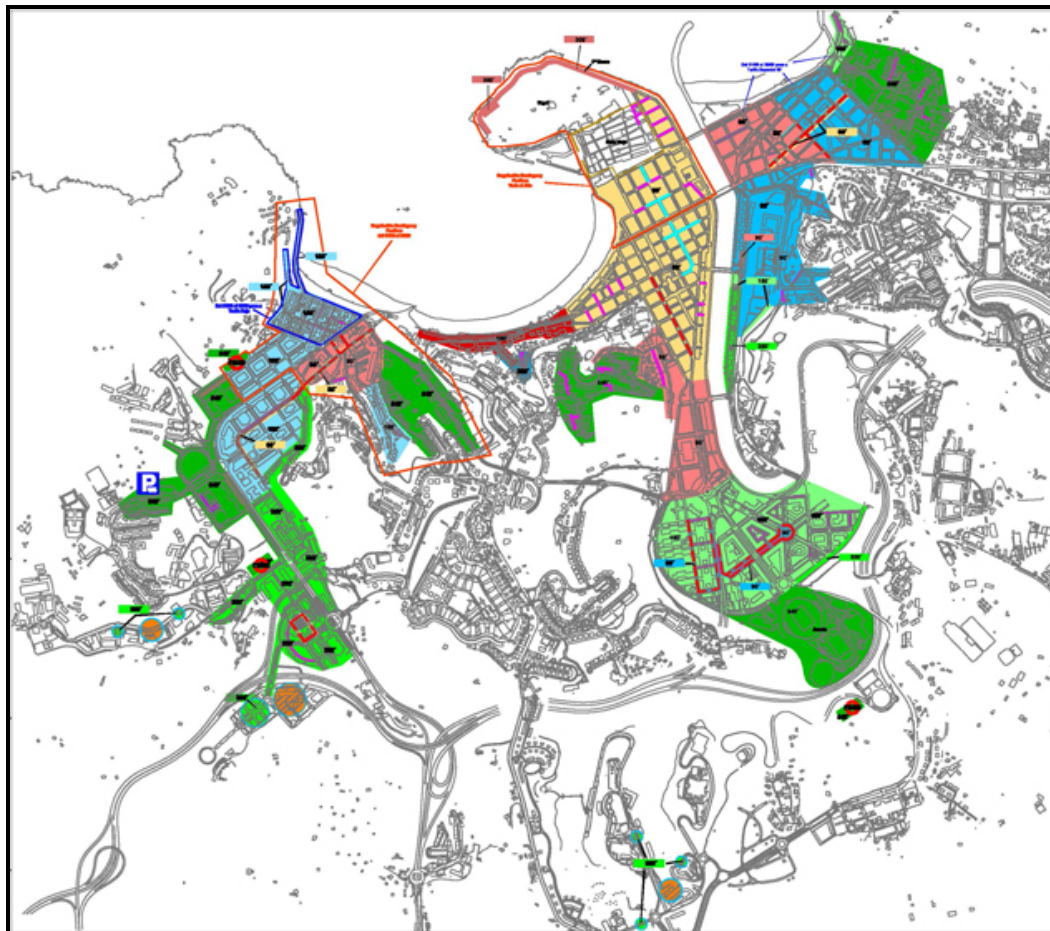
The system also establishes Maximum Lengths of Stay based on the type and level of demand that needs to be met in each zone, namely:

- Up to 90 minutes: in markedly commercial areas.
- Up to 180 minutes: at the borders of commercial areas.
- Up to 300 minutes: in peripheral areas having no demand for short-stay parking and where a low vehicle turnover is expected.
- Up to 540 minutes: in outlying districts where demand for short-stay parking is nil and the number of available parking spaces makes compulsory vehicle turnover unnecessary.

These conditions are combined with 3 tariff bands that are defined according to the type of user as follows:

- **Tariff 1** (normal rates) covers general fees applicable to most users.  
Tariffs 2 and 3 complement Tariff 1 and have been set to meet specific needs of different users.
- **Tariff 2** is for Commercial or Multi-purpose vehicles (e.g. a plumber’s van) performing activities in town. Tariff 2 is 13.50% cheaper than Tariff 1 and establishes no Maximum Stay.
- **Tariff 3** applies to Commercial or Multi-purpose Vehicles related to businesses based within the boundaries of the controlled zone (e.g. delivery vans of a supermarket). Tariff 3 is 70% cheaper than Tariff 1 and establishes no Maximum Stay.

The following map shows the Pricing Zones and Maximum Lengths of Stay in the City.



**Figure 1: Pricing Zones**

What follows is the fares structure associated to the parking zones:

TARIFF	MAX. STAYS (mins)	Special Zone €	Red Zone €	Blue Zone €	Green Zone €
1	15	0.67	0.54	0.43	0.27
	60	1.90	1.46	1.10	0.86
	90	2.64	1.92	1.47	0.97
	180	5.02	3.65	2.77	1.39
	270	7.46	5.44	4.08	1.87
	300	8.28	6.05	4.51	2.03
	540				3.42

TARIFF	MAX. STAYS (mins)	Special Zone €	Red Zone €	Blue Zone €	Green Zone €
2	15	0.58	0.48	0.37	0.23
	60	1.66	1.27	0.96	0.75
	90	2.31	1.68	1.28	0.84
	180	4.39	3.20	2.43	1.22
	270	6.52	4.76	3.57	1.64
	300	7.25	5.29	3.94	1.77
	540	13.07	10.02	6.95	3.00

TARIFF	MAX. STAYS (mins)	Special Zone €	Red Zone €	Blue Zone €	Green Zone €
3	15	0.20	0.16	0.13	0.08
	60	0.57	0.44	0.33	0.26
	90	0.79	0.58	0.44	0.29
	180	1.51	1.10	0.83	0.42
	270	2.24	1.63	1.22	0.56
	300	2.49	1.82	1.35	0.61
	540	4.48	3.43	2.38	1.03

**Figure 2: Fares structure**

As part of the measure, the parking regulation bylaw was modified to reflect the changes in the parking policy.

Finally, the measure also included the implementation of preferential and reserved areas for high occupancy vehicles (HOV) as a mean to promote this type of transport, considered a powerful tool to reduce congestion of cities.

An information campaign in order to inform citizens about the changes in the parking policy was also conducted.

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## **B Measure implementation**

### **B1 Innovative aspects**

The innovative aspect of the measure is:

- **New policy instrument:** Parking fares and allowed parking time will be variable according to zoning structure.

### **B2 Research and Technology Development**

A research study was undertaken to inform the design of the parking strategy demonstration that will be implemented by Donostia-San Sebastián.

The study helped to design the new pricing and zoning policy, and developed a monitoring and evaluation programme for the demonstration.

### **B3 Situation before CIVITAS**

Before the CIVITAS-ARCHIMEDES project started, a similar parking management scheme was already in operation, with paid parking areas covering an important part of the flat areas of the city. But the district of Antiguo –Ibaeta, Banta Berri and Errotaburu were not under regulation yet.

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

The implementation of the measure followed the next stages:

- **Stage 1** – Inclusion of the extension of the paid parking area in the parking regulation bylaws (September 2008 – March 2010).
- **Stage 2** – Approval of the new fare structure in local tax regulations (September 2008 – March 2010).
- **Stage 3** – Tender for the subcontracting of the operation of the new paid parking areas and start the operation of the new scheme (March 2008 – December 1010)



**Picture 1: Park meter**

- **Stage 4** - Launch information campaign to explain the new policy and to highlight the advantages of the alternative transport modes. (January 2011).



Picture 2: Parking information leaflet

- **Stage 5** - Demonstration and monitoring (December 2010 – September 2012)

## B5 Inter-relationships with other measures

The measure is related to other measures as follows:

- **Measure DSS18.** – Advanced Park & Ride Network.

## **C Planning of Impact evaluation**

### **C1 Measurement methodology**

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

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

Parking policy is one of the main drivers for car use, as well as one of the more effective tools to moderate its use. This measure is part of a package of measures (measures n<sup>o</sup> 18, 23 and 75) aiming at reducing the number of cars entering the city of Donostia-San Sebastian by changing parking behaviour.

The new parking policy introduced with this measure is expected to make single occupant car trips less attractive, encourage drivers to carpool and/or shift to public transport. It is expected that this measure will alleviate traffic congestion in inner city streets, improving private cars but also public transport operation, making the latter a more competitive and attractive mode.

The overall strategy to reduce the number of cars entering the city and circulating within its neighbourhoods is expected to provide benefits in the form of better air quality, less carbon emissions and reduced noise levels, resulting in a better health and quality of life for Donostia-San Sebastian citizens. It is also expected that the need for on-street parking spots will be reduced, allowing the municipality to recover public space for other uses.



**C1.1.1 Selection of indicators**

NO.	EVALUATION CATEGORY	EVALUATION SUB-CATEGORY	IMPACT	INDICATOR	DESCRIPTION	DATA /UNITS
<b>ECONOMY</b>						
2a		<b>Costs</b>	Costs	Capital costs	Capital cost per system or unit	Euros, quantitative
2b				Operating costs	Costs per pkm or vkm	Euros/pkm or Euros/vkm, quantitative, derived or measured
<b>ENVIRONMENT</b>						
8		<b>Pollution and Nuisance</b>	Emissions	CO2 emissions	CO2 per vkm by type	G/vkm, quantitative, derived
9				CO emissions	CO per vkm by type	G/vkm, quantitative, derived
10				NOx emissions	NOx per vkm by type	G/vkm, quantitative, derived
11				Particulate emissions	PM10 and/or PM2.5 per vkm by type	G/vkm, quantitative, derived
<b>SOCIETY</b>						
13		<b>Acceptance</b>	Awareness	Awareness level	Awareness of the policies/measures	Index (%), qualitative, collected, survey
<b>TRANSPORT</b>						
29		<b>Transport system</b>	Modal Split	Average modal split-trips	Percentage of trips for each mode	%, quantitative, derived
			Traffic Levels	Occupancy Rates	Occupancy rates in paid parking areas	Hours / parking space
				Number of vehicles	Number of cars entering the city centre	Vehicles/day

**C1.1.2 Methods for evaluation of indicators**

No.	INDICATOR	TARGET VALUE	Source of data and methods	Frequency of Data Collection
2a	Capital costs		ADS expenses in infrastructure and technology associated to the extension of paid parking areas.	When implementation or purchase takes place
2b	Operating costs		Financial accounts from parking operator with costs related to the operation of paid parking areas.	Annual
8, 9, 10, 11	CO <sub>2</sub> , CO, NO <sub>x</sub> , PM emissions		Model based on the mobility survey and traffic flows data	One in 2012
13	Awareness level		Data has been collected through a specific survey over a representative sample of potential users of paid parking areas. The target audience is citizens of all ages and gender living or visiting the neighbourhoods where paid parking will be extended. The survey method consisted of on-street personal interviews to randomly selected individuals. The questionnaire included questions regarding awareness levels. A sample size of 400 interviews was used (95% confidence level)	1 time after the implementation of the measure
29	Modal split	Maintain the 47% of pedestrian mobility on modal split	Actualization of the Regional Mobility Survey (Basque Govern) based on a field work campaign (mobility survey) conducted in the framework of the studies for the implementation of the metro network in Donostialdea	One in 2012
	Occupancy Rates		Non resident occupancy in paid parking areas are manually accounted by paid parking areas inspectors	Every 3 months
	Number of vehicles	Reduce the 5% the number of cars entering compared to 2006	ADS is responsible for the monitoring of the number of private cars entering the city centre along the CIVITAS corridors. Automatic traffic counters implemented in the main arterial roads entering the city are used for that purpose.	Annual

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

<b>EVALUATION TASK</b>	<b>INDICATORS INVOLVED</b>	<b>COMPLETED BY (DATE)</b>	<b>RESPONSIBLE ORGANISATION AND PERSON</b>
Analysis of financial accounts.	2a, 2b	Months 24, 36, 48	ADS – J Ramón Ordoñez (ADS)
Model based in the Regional Mobility Survey and data of traffic flows	8, 9, 10, 11, -	Month 42 <sup>1</sup>	ADS – J Ramón Ordoñez (ADS)
Specific survey to reveal the attitude towards the implementation of a P&R network connected to PT services.	14	Month 36	ADS – J Ramón Ordoñez (ADS)
Model based in the Regional Mobility Survey and data of traffic flows	29	Month 42 <sup>1</sup>	ADS – J Ramón Ordoñez (ADS)
Occupancy rates		Month 27-30-33-36-39-42-45-48	ADS – J Ramón Ordoñez (ADS)
Traffic counts and/or traffic modelling		Month 39	ADS – J Ramón Ordoñez (ADS)

### C1.2 Establishing a baseline

The main scope of the evaluation process is to assess the impact on mobility patterns, namely modal share and traffic levels, of a more efficient management of parking demand in Donostia-San Sebastián. But also environmental, cost and acceptance issues are considered in the evaluation plan, since these are also important assets of the mobility strategy deployed by ADS within the CIVITAS project.

The data collection method for the evaluation of the measure is as follows:

**Cost** indicators results have been gathered from the parking area of the mobility department. Apart from capital costs, the operating costs of regulated zones does not take into account the power consumption of OTA machines (park meters) because they work with batteries, and its charging is attributed to maintenance costs.

**Society** indicators results have been gathered through on-street surveys in neighbourhoods affected by the measure. The criteria used to distribute surveys in order to achieve a representative universe with a 95% confidence, has been as follows:

DISTRICTS TO SURVEY	ANTIGUO	CENTRO	GROS	AMARA	TOTAL
Population	17.411	14.200	20.396	26.004	78.010
% Population	22,32%	18,20%	26,15%	33,33%	100%
<b>Nº Survey</b>	<b>85</b>	<b>70</b>	<b>100</b>	<b>128</b>	<b>383</b>

Table 1: Distribution of Acceptance surveys by districts

Two survey campaigns were conducted in order to cover both “before” and “after” scenario. The “before” survey was made in July 2010, while the “after” was made in March 2012. In both cases, a representative sample of citizens of all ages and gender living in or visiting the neighbourhoods affected by the new parking policy were randomly selected for on-street personal interviews. The questionnaire included questions regarding awareness levels (see questionnaire annexed to this report).

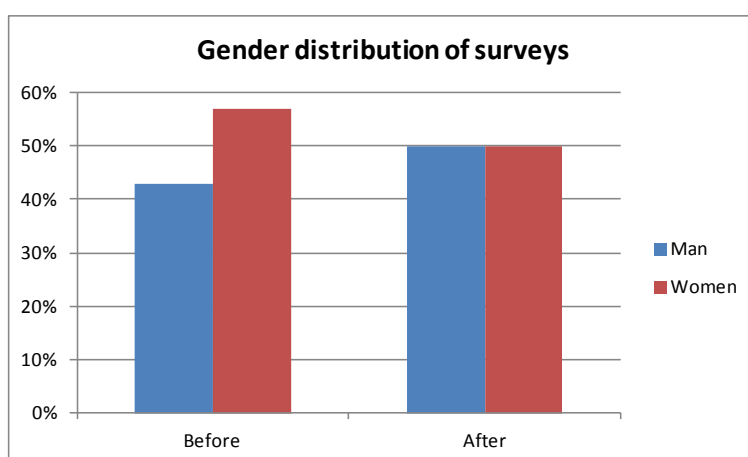


Figure 3: Gender distribution of surveys

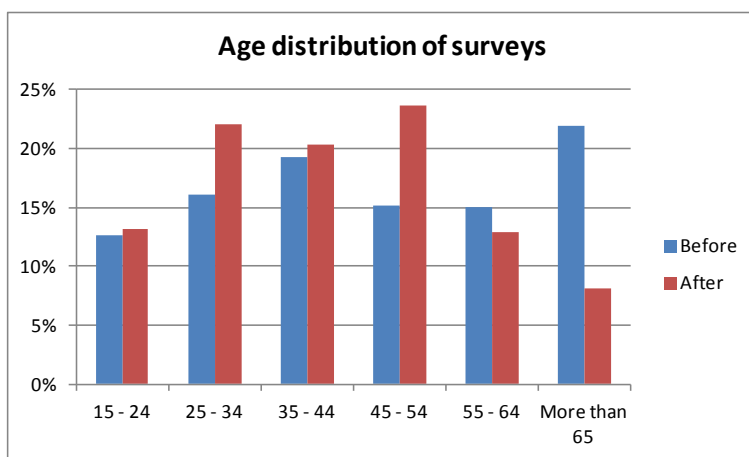


Figure 4: Age distribution of surveys

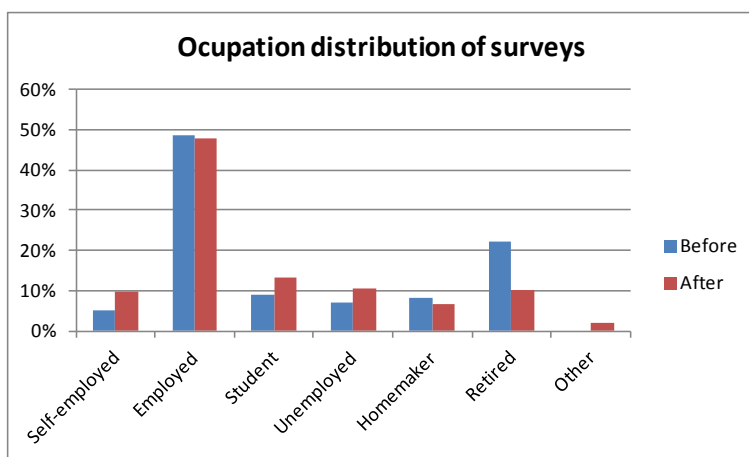


Figure 5: Occupation distribution of surveys

Regarding **traffic levels**, the permanent automatic traffic counters network implemented in the main arterial roads entering the city are used to monitor the current number of private cars entering the city centre along the CIVITAS corridors. Future traffic levels are forecasted by means of the Traffic Model explained below.

As for **modal split** information, it is provided through a Traffic Model built based on data from the previous Regional Mobility Survey performed by the Basque Government (data referred to 2006) updated with traffic counts on the different modes.

A classic four step model has been designed to assess modal shift, traffic performance and emissions. Car traffic, public transport and non-motorized modes have been considered within the demand model.

In order to replicate trips generation (including origin and destination), modal share and traffic assignment to the road network, the following input has been used:

- Urban zoning according to Regional Mobility Survey traffic zones and census division
- Road network characteristics (nº lanes, speed management, traffic regulations, etc.)
- Non-motorized transport network characteristics (walking and cycling exclusive connections)
- Public transport service provision characteristics (frequency, capacity, etc.)
- Socioeconomic variables (population projections, income, etc.)

- Urban development plans
- Baseline modal share: actualization of the Regional Mobility Survey (Basque Govern) based on a field work campaign (mobility survey) conducted in the framework of the studies for the implementation of the metro network in Donostialdea
- Traffic counts from automatic traffic gauging devices in the main corridors entering the city
- Cycling levels from Bicycle Observatory statistical database

CUBE (Citilabs) modelling software has been used for calibration and future projections. CIVITAS and BaU scenarios have been projected. The modelling software includes an emissions module used to determine emission volumes in both scenarios.

For **environment** indicators, the travel forecasting model has been used in the assessment of the emissions data.

### ***C1.3 Method for Business as usual scenario***

If this measure would not be implemented, the awareness level about changes on underground and Park & Ride facilities would be limited, favouring public opposition to these measures, and reducing its potential for success. Also, fewer drivers would leave their cars at home or would connect with public transport for the final stage of their trips. As a result, car use reductions promoted by changes in parking policy would be minored.

For evaluation purposes, the BaU scenario has been estimated as follows:

#### ***Capital and operational cost***

BaU scenario would mean that no extension of the paid parking scheme would have been implemented; therefore there would be no additional investment or operational costs.

#### ***Emissions***

The BaU scenario is calculated by the demand model calibrated within this measure according to the evolution in traffic levels without the implementation of the CIVITAS measure (i.e. it is assumed that no extension of the parking regulation would have occurred).

#### ***Society***

Before the CIVITAS project there was not a regular survey program regarding acceptance, lacking of reference data. Therefore is not possible to estimate a BaU scenario in this regard.

#### ***Occupancy***

Before the CIVITAS project occupancy rates on OTA regulated areas were not regularly assessed. Therefore is not possible to estimate a BaU scenario in this regard.

#### ***Average modal split- trips***

The BaU scenario is calculated by the demand model calibrated within this measure according to the evolution in traffic levels without the implementation of the CIVITAS measure (i.e. it is assumed that no extension of the parking regulation would have occurred).

## C2 Measure results

### C2.1 Economy

**Table C2.1.1: Costs**

Indicator	Before (date)	BaU (date)	After (date)	Difference: After – Before	Difference: After – BaU
<b>2a. Capital costs</b>	951.116	N/A	3.879.876	2.928.760	N/A
<b>2b. Operating costs</b>	1.462.047,24	N/A	3.082.371,02	1.620.323,78	N/A

As expected, the implementation of the measure has resulted in an increase in operational costs, as the regulated area which requires control is now larger.

Following is a detailed analysis of the different costs of the measure:

Capital costs: including signposting, provision of ticket machines and control equipment.

	Infrastructures/Facilities		
	Spots	€/Spot	Total
<b>Antiguo-Ibaeta extension</b>	10.659	364	3.879.876,00
<b>Already regulated zone</b>	3.349	284	951.116,00

**Table 2: Costs of infrastructures/facilities**

The Antiguo zone was already regulated with 4.1 and 4.2 sectors, because of that, the already regulated zone refers only to those two sectors. The extension instead, creates 5 new sectors: 4.3, 4.4, 4.5, 4.6 and 4.7 and it enlarges also 4.1 and 4.2 sectors time coverage. That is the reason behind the important cost difference.

The amortization period is set to 9 years, having begun in February 2011. The annual amortization together with financial expenses amounts to 403.483,21 €

Operation costs: insurance, software, consumptions and others.

	Spots	Staff	Exploitation	€/Spot/Year	Total year
<b>Antiguo-Ibaeta extension</b>	10.659	2.694.067,90	388.303,12	289,18	3.082.371,02
<b>Already regulated zone</b>	3.349	1.276.593,76	185.453,48	436,56	1.462.047,24

**Table 3: Operation costs**

Annual maintenance costs are distributed as follows:

Maintenance	Cost (€)
Parking machines	63.500
Vertical signposting	20.000
Road marking	40.000
Personal HW	15.000
IT HW	1.160
HOV Control system	1.800
Networks	1.190
Parking machines SW	2.100
IT SW	2.500
OC Servers	1.000

**Table 4: Annual Maintenance Costs**

## C2.2 Environment

**Table C2.2.1: Pollution and Nuisance**

Indicator	Before (2008)	BaU (2011)	After (2011)	Difference: After – Before	Difference: After – BaU
<b>8. CO<sub>2</sub> emissions</b>	249.777,00 Tonnes/year	262.389,86 Tonnes/year	261.943,75 Tonnes/year	12.166,75 Tonnes/year	-446,12 Tonnes/year
<b>9. CO emissions</b>	21.854,80 Tonnes/year	22.958,58 Tonnes/year	22.923,32 Tonnes/year	1.068,52 Tonnes/year	-35,27 Tonnes/year
<b>10. NOx emissions</b>	1.562,00 Tonnes/year	1.640,67 Tonnes/year	1.636,27 Tonnes/year	74,27 Tonnes/year	-4,40 Tonnes/year
<b>11. Particulate emissions</b>	11.301,40 Tonnes/year	11.766,57 Tonnes/year	11.733,61 Tonnes/year	432,21 Tonnes/year	-32,96 Tonnes/year

There is an overall increase in emission levels as compared with the situation before the CIVITAS project, due to the increased mobility levels experienced in the city.

Nevertheless, although moderate in relative terms, both regarding GHG and pollutant emission levels, significant reductions have been achieved by the CIVITAS project as compared to the BaU scenario (ranging from nearly 450 tonnes per year of CO<sub>2</sub> to 4,5 tonnes per year of NOx).

## C2.3 Society

**Table C2.3.1: Acceptance**

Indicator	Before (2010)	BaU (date)	After (2012)	Difference: After – Before	Difference: After – BaU
<b>13. Awareness level</b>	57%	N/A	47%	-10%	N/A
<b>14. Acceptance level</b>	41%	N/A	25%	-16%	N/A



Society indicators results have been gathered through on-street surveys in the neighbourhoods affected by the measure. In particular, the following question was asked:

First of all, awareness level was assessed. In particular, citizens were asked whether they knew or not about city plan to extend the parking regulation zones of the city.

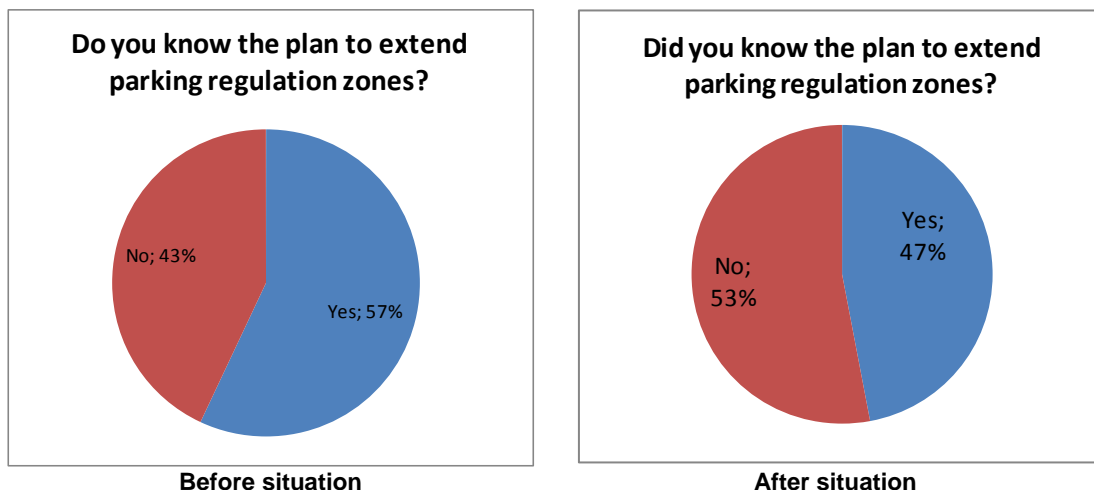


Figure 6: Awareness in on street surveys about the measure

Both before and after situation reveal a big share of unaware population. This is especially relevant in the after situation, with the measure already implemented. The most probable reason is that a significant share of people regarded the question as a future plan to be implemented in the future, instead of the recently implemented one. Also it may be related to a high proportion of non-car users surveyed who was not aware about traffic and parking regulations.

Citizens were also questioned about their overall assessment of the parking situation in Donostia-San Sebastian, with answers ranging from “1/very bad” to “5/very good”.

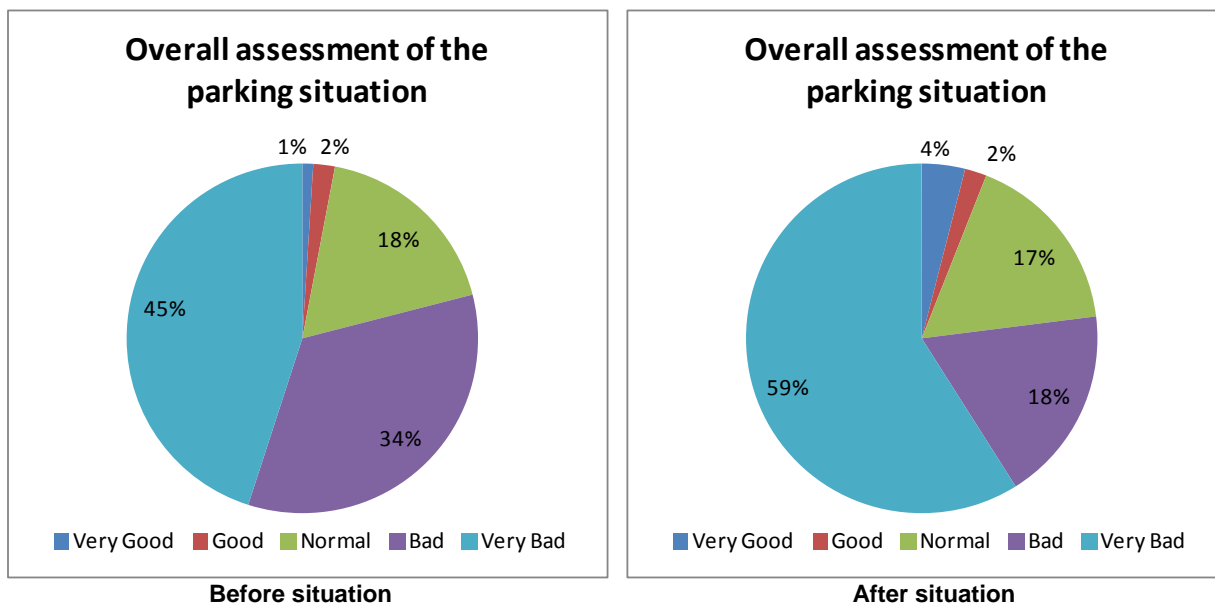


Figure 7: Overall assessment of the DSS parking situation in on street surveys

The overall opinion on the parking situation in the city is quite negative, with a majority of the surveyed people assessing it as “very bad”. After the implementation of the measure a slight increase in the share of population assessing the situation as “good” or “very good” increased, although with a higher proportion of “very bad” responses. Although this means a negative result, it is somehow expected, since citizens are very sensitive to parking restriction measures, and since more parking places are regulated, less free parking places are offered which may be considered by the user as a reduction in parking supply.

Finally the particular opinion of citizens regarding the extension of the paid parking areas was surveyed.

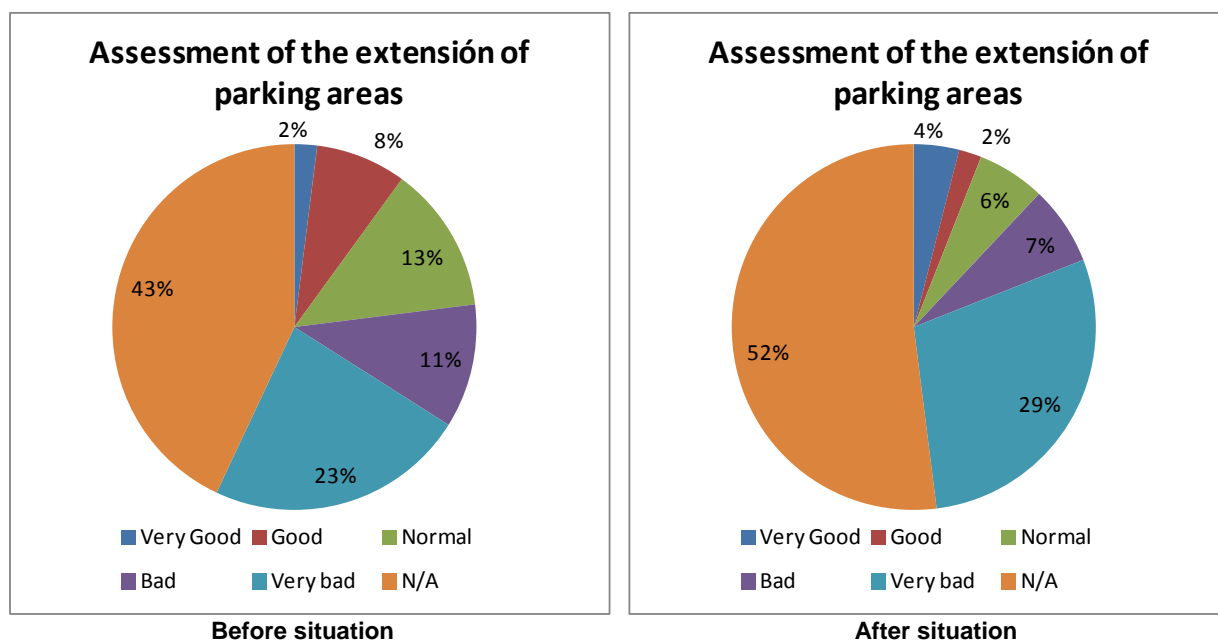


Figure 8: Assessment of the extended parking areas in on street survey

As expected, according to the unawareness levels identified, most of the surveyed population didn’t provide an answer to the question.

Among the respondents who were aware of the OTA extension, we can see that the overall assessment negative (59% before the implementation and 75% after it started operating) with a high proportion of very negative perception. This is a surprising result, taking into account that residents’ general opinion may be positive because with the regulation of parking they have more parking spaces available to park. However, visitors from other districts have to pay now for parking, so we can assume that the negative response may come from respondents from other districts.

Although the second wave of surveys confirmed the negative reaction predicted before the implementation of the measure, it is expected that the outcomes of the measure may finally curve this opinions.

It should be highlighted that the best figures of “very positive” response were gathered in Antiguo district where the OTA extension was applied.

## C2.4 Transport

**Table C2.4.1: Modal Split**

Indicator		Before (2008)	BaU (2011)	After (2011)	Difference: After –Before	Difference: After – BaU
29. Average modal split-trips	Car	48,9%	49,2%	48,8%	-0,1%	-0,4%
	Public Transport	15,3%	15,2%	15,3%	0%	0,1%
	Cycle	4,5%	4,5%	4,8%	0,3%	0,3%
	Walk	31,3%	31,1%	31,0%	-0,3%	-0,1%

Modal shift in favour of sustainable modes of transport is moderate in the short term, achieving a reduction in car use of 0,1% as compared with the situation before the CIVITAS project started. It should be highlighted that this achievement is made in a context of a steady increase in car travel, thus it can be considered a positive result.

If compared to the BaU situation, the modal shift away from car achieves a 0,4% in 2011, while cycling increased by a 0,3%. On the contrary, walking levels seems to be slowly going down, which is not a desirable result. Attention should be placed to this issue in the coming years.

**Table C2.4.2: Traffic Levels**

Indicator	Before (2010)	BaU (2010)	After (2011)	BaU (2011)	After (2012)
Occupancy rates in paid parking areas	44%	N/A	24%	N/A	23%

Indicator	Difference: 2011 –Before	Difference: 2011 – BaU	Difference: 2012 –Before	Difference: 2012 – BaU
Occupancy rates in paid parking areas	-20%	N/A	-21%	N/A

The occupancy rate indicator show the figures referred to the same sectors before regulation and after regulation (although before the new regulation scheme the created new sectors - 4.3 to 4.7- were not identified in that way their occupancy was controlled).

Results from the table reveal a significant decrease in average occupancy rates, which can be associated to an overall reduction in parking demand as a consequence of the reduction in traffic levels within the city centre.

Indicator	Before (2006)	BaU (2011)	After (2011)	Difference: After –Before	Difference: After – BaU
Number of cars entering the CIVITAS corridors	51.343 Cars/day	44.015 Cars/day	43.720 Car/day	-7.623 Cars/day	-295 Cars/day

The number of cars entering to the CIVITAS corridor has been reduced in more than 7.500 cars per day as compared to the before situation. This situation has been possible due to the combination of parking management and the promotion of sustainable modes of transport.

### C3 Achievement of quantifiable targets and objectives

No.	Target	Rating
1	To reduce the number of cars entering the city centre by 5% compared to 2006 levels.	***
2	Maintain the share of pedestrian mobility on modal split	*
3		
<b>NA = Not Assessed    O = Not Achieved    * = Substantially achieved (at least 50%)</b> <b>*** = Achieved in full            ** = Exceeded</b>		

### C4 Upscaling of results

Up-scaling this measure to the whole city would mean that paid parking regulation would be extended to all neighbourhoods in the city. Nevertheless, it is not clear that including the whole city in the regulated parking policy would be effective. There would be the need to study which areas should be included and which not.

### C5 Appraisal of evaluation approach

Overall, it is considered that the evaluation approach is in concordance with the measure objectives, and data collection procedures adequate.

A survey assessing the time spent searching for parking by drivers could have been included in the analysis in order to evaluate the improvement driven by the new parking management scheme.

The implications of parking policy over the overall mobility situation of the city and the perception of citizens in this regards could have also been of interest within the survey conducted.

### C6 Summary of evaluation results

Parking management measures are very sensitive and very often raise strong position from citizens. This has been the case in Donostia-San Sebastian, where the extension of the paid parking area has been assessed as negative by a majority of the population, with an increased negative perception even before the scheme started operating (59% before the implementation and 75% after it started operating). This is a surprising result, taking into account that with the regulation of parking residents have more parking spaces available to park. However, visitors from other districts may see their parking options limited.

The public opinion sees also to be independent from the overall mobility improvements driven by the measure (among other measures).

In Donostia-San Sebastián, within a context of a steady increase in car travel, a modal shift towards sustainable modes of transport such as public transport and bicycle has been achieved, resulting in a reduction in car use of 0,1% as compared with the situation before the CIVITAS project started. If compared to the BaU situation, the modal shift away from car achieves a 0,4% in 2011, while cycling increased by a 0,3% and public transport by a 0,1%. On the contrary, walking levels seems to be slowly going down, which is not a desirable result. Attention should be placed to this issue in the coming years.

Consequently, a reduction in traffic levels has also been experienced. The number of cars entering to the CIVITAS corridor has been reduced in more than 7.500 cars per day as compared to the before situation.

Following the reduction in traffic levels, a decrease in parking demand has also been experienced, decreasing by a 21% if the current situation is compared to the situation before the new parking management scheme started operating.

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

The service is continuously monitored and amended. Currently, there are plans to extend the regulated areas to a limit where there is no parking supply beyond the reserved area, in order to avoid the border effect of this kind of schemes.

The continuous monitoring system has also suggested the restructuring of certain parking rates in some nearby areas with unbalanced price jumps, which resulted in cheaper parking areas full of vehicles while the nearby more expensive zones remain nearly empty.

There are also plans to extend the HOV zone close to universities to increase the popularity of this service among service users of the city parking. This service has also been restructured allowing parking to vehicles with 2+ occupants instead of 3+ as was previously required. This change has meant that in one month of operation occupancy rate has increased from 25% to 35%.

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## D Process Evaluation Findings

### D0 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

- **Unavailability of Regional Government mobility survey:** there was a delay in the delivery of the Regional Government mobility survey which has make it impossible to use this data source for evaluation purposes. A model based on the previous mobility survey and traffic flows data have been used instead. Due to the differences in the tools and data sources used, modal share results are not directly comparable. Therefore, the target objective of maintaining a 47% share of pedestrian mobility in modal share has been adapted to the actual situation regarding data sources.

### D2 Barriers and drivers

The main barriers encountered for the development of measure 23 are:

#### Preparation phase

- **Cultural:** The main risk is the public opposition to new and increased parking fares
- **Institutional:** Due to the unpopularity of the measure, the political opposition may use the parking policy as a political tool for confrontation against the local government.

#### Implementation phase

- **Involvement/Communication:** The media may be a very important catalyst for public opinion. If the measure objectives are not clearly understood by the media, it may difficult the development of the measure.

#### Operation phase

- **Positional:** Lack of coordination and synergies with other incentive measures could result in a strong opposition towards car use restriction measures.

#### D2.2 Drivers

As for the drivers, the main ones affecting the measure are:

### **Preparation phase**

- **Positional:** This measure is part of an overall strategy to change parking behaviour in the city. It is linked to the development of a P&R, as well improvements in public transport services and non-motorized infrastructure.
- **Cultural:** CIVITAS developments, among others, are changing public attitude towards sustainable mobility.

### **Implementation phase**

- **Financial:** The availability of CIVITAS funding has been a significant opportunity to develop this measure.

## **D2.3 Activities**

In order to handle the above referred barriers and/or to make use of the drivers, the following activities were taken during the implementation of the measure:

### **Implementation phase**

- **Involvement/Communication:** An information campaign has been carried out in order to involve the inhabitants informing about the new regulated surface parking service.

### **Operation phase**

- **Organizational:** A specific office has been opened at resident's disposal where they can make all the necessary arrangements to request the parking display permission.

## **D3 Description of organisations and risks**

### **D.3.1 Measure partners**

Following there is a brief description of all project partners and its level of involvement with the measure:

- **Department of Mobility - City of Donostia-San Sebastian** - Design new zoning and pricing policy for paid parking extension. Principal role.

### **D.3.2 Stakeholders**

The main stakeholders involved in the measure are:

- **EYSA** - Operate paid parking areas and control its appropriated use (including fining violators). Principal role.
- **EYSA** - Rise awareness about the measure and promote the use of alternative modes of transport. Occasional role.

## **D4 Recommendations**

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

- **System planning:** When a parking regulation is about to be planned one of first consideration that is needed to be taken into account is the different uses that will be given to parking spaces: residential, commercial vehicles or commuter/visitors parking. That requirement is also conditioned to the area where the parking regulation would be implemented, because if it is a populated area you need to consider parking demand of residents, while in an unpopulated area it is only considered vehicle demand from abroad. Adequate mechanisms to guarantee residential parking are required.

It is also necessary to consider in any initiative related to the regulation of parking, the hotspots of the area where the regulation is likely to be implemented: boundaries of the regulated area, geographical barriers, continuity losses of the parking supply, identification of potential edge effects...etc.

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

- **Information:** It is very important to provide regular and clear information about the measure objectives, including overall sustainable mobility issues, especially to the media, so that this information can be used to boost the measure and not to penalize it. Regular contacts with neighbours associations are also required to reduce social contestation. If citizens' opposition is limited, political cooperation is more likely to be achieved.
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## **F Annex: Survey Questionnaires**

### **Before Survey**

#### **Profile**

- a) Age:.....
- b) Gender (Male, Female)
- c) Occupation (Self-employed; Employed; Student; Unemployed; Homemaker; Retired; Other)
- d) Municipality:.....
- e) Do you have a car available daily trips? (Yes, No)

#### **Specific Questionnaire**

1. Do you have a reserved parking place at home?  
(Yes, No, DK/DA)
2. In case you don't have a reserved parking space, how much time do you spend looking for parking?  
(0-5 minutes, 5-15 minutes, 15-30 minutes, more than 30 minutes)
3. Do you have a reserved parking place at your work/study?  
(Yes, No, DK/DA)
4. In case you don't have a reserved parking space, how much time do you spend looking for parking?  
(0-5 minutes, 5-15 minutes, 15-30 minutes, more than 30 minutes)
5. What is your assessment of the current situation regarding parking in Donostia-San Sebastián?  
(0/very bad - 10/very good)
6. Which actions do you think are needed in order to improve parking in Donostia - San Sebastián?  
(Improve public transport, Promote cycling, More parking spaces, Car-pooling, Other:.....)
7. Are you aware of the municipality plan to extend parking regulation?  
(Yes, No, DK/DA)

**8. What is your assessment of the extension of the parking regulation?**

(0/very bad – 10/very good)

**9. What is your assessment of the P&R network foreseen by the municipality?**

(Positive, Not enough, Negative, I don't know it)

**10. What is your assessment of the parking guidance system foreseen by the municipality?**

(Positive, Not enough, Negative, I don't know it)

## After Survey

### Profile

- f) Age:.....
- g) Gender (Male, Female)
- h) Occupation (Self-employed; Employed; Student; Unemployed; Homemaker; Retired; Other)
- i) Municipality:.....
- j) Do you have car available daily trips? (Yes, No)

### Specific Questionnaire

- 11. Do you have a reserved parking place at home?  
(Yes, No, DK/DA)
- 12. In case you don't have a reserved parking space, how much time do you spend looking for parking?  
(0-5 minutes, 5-15 minutes, 15-30 minutes, more than 30 minutes)
- 13. Do you have a reserved parking place at your work/study?  
(Yes, No, DK/DA)
- 14. In case you don't have a reserved parking space, how much time do you spend looking for parking?  
(0-5 minutes, 5-15 minutes, 15-30 minutes, more than 30 minutes)
- 15. What is your assessment of the current situation regarding parking in Donostia-San Sebastián?  
(0/very bad - 10/very good)
- 16. Which actions do you think are needed in order to improve parking in Donostia - San Sebastián?  
(Improve public transport, Promote cycling, More parking spaces, Car-pooling, Other:.....)
- 17. Are you aware of the extension of the parking regulation implemented by the municipality?  
(Yes, No, DK/DA)

**18. What is your assessment of the extension of the parking regulation?**

(0/very bad - 10/very good)

**19. What is your assessment of the P&R network implemented by the municipality?**

(Positive, Not enough, Negative, I don't know it)

**20. What is your assessment of the parking guidance system implemented by the municipality?**

(Positive, Not enough, Negative, I don't know it)

